



Transportation Activity Management Plan 2021-2031



This page is left blank for printing

Quality Assurance & Plan Status

1. Plan Version and Control		
Date	Version Number	Checked by
January 2012	Version 1 (v1)	Grant Holland
March 2015	Version 2 (v2)	Grant Holland
Dec 2017	Version 3	Ben Wong
October 2021	Version 4	Grant Holland

2. Overall Responsibility for the Co-Ordination of all Matters in this Plan		
Date	Name	Designation
2011-12	Andrew Mazey v1	Asset Manager Transportation
2013-15	Andrew Mazey v2	Asset Manager Transportation
2015-18	Ben Wong v3	Transport Asset Planner
2018-21	Rebecca Tinga v4	Transport Asset Planner

3. Prepared By		
Date	Name	Designation
2011-12	Andrew Mazey v1	Asset Manager Transportation
2013-15	Andrew Mazey v2	Asset Manager Transportation
2015-17	Ben Wong v3	Transport Asset Planner
2018-2021	Rebecca Tinga	Transport Asset Planner

4. Input From			
Date	Name	Designation	Input
2011-12	Grant Holland	Senior Consultant, Waugh Infrastructure Management Ltd	Plan Preparation
2011-12	Lenard Smythe	Consultant, Waugh Infrastructure Mgt Ltd	Plan Preparation
2011-12	Mike Tapper	Associate – Rooding, BECA	Asset Information
2011-12	Edward Guy	Director, Rationale Ltd	Growth Analysis
2013-15	Grant Holland	Senior Consultant, Waugh Infrastructure	Plan Preparation
2013-15	Ben Wong	Transport Asset Planner, Selwyn District Council	Plan Preparation
2013-15	Dave Smith	Principal Transport Planner, Abley Transportation Consultants	Modelling, Development Contribution Policy, Project Cost Estimate, Project Feasibility Scoping
2013-15	John Row	Senior Transport Planner, Beca	Project Feasibility Scoping
2015-18	Professor Natalie Jackson	Director of Natalie Jackson Demographics	Growth Model
2015-18	Dave Smith	Associate, Abley Transportation Consultants	Modelling, Development Contribution Policy, Project

4. Input From			
Date	Name	Designation	Input
			Cost Estimate, Project Feasibility Scoping
2015-18	Dr Theuns Henning	Director of Transport Research Centre, University of Auckland	Pavement Modelling Review, Unsealed Road Strategy Review
2015-18	Grant Holland	Senior Consultant, Waugh Infrastructure Management Ltd.	Revision of sections 3, 5 and parts of section 9
2018-21	Grant Holland, Andy Bartlett, Katherine Hill, Jenni Fraser	Consultants, Waugh Infrastructure Management Ltd.	Reviewed all sections

5. Council Adoption	
Date	Record of Decision:
March 2012	As part of 2012-22 Long Term Plan adoption
June 2015	As part of 2015-25 Long Term Plan adoption
June 2018	Pending as part of 2018-28 LTP adoption
October 2021	

6. Public Consultation	
Date	Form Of:
April 2012	Selwyn District Council web site v1
April 2015	Selwyn District Council web site v2
April 2018	Selwyn District Council web site v3
May 2021	Selwyn District Council web site (draft for consultation)

7. Plan Update and Review	
Date	Record Of:
2013-15	Full review in preparation of 2015-25 Draft Copy LTP V2
2015-18	Full review in preparation of 2015-25 Draft Copy LTP V3
2018-2021	

8. Peer Review Record		
Date	Reviewer	Designation
2015	Grant Holland	Consultants, Waugh Infrastructure Management Ltd.
2018	Ross Waugh	Director, Waugh Infrastructure Management Ltd. (AM Policy Review and Maturity)
2021	Grant Holland, Andy Bartlett	Consultants, Waugh Infrastructure Management Ltd.

CERTIFICATION OF ACTIVITY MANAGEMENT PLAN

Certification of Activity Management Plan

This Activity Management Plan is an evolution of former versions and has been updated over the 2018-21 period to reflect current issues and management of the transportation activity.

I have reviewed the 2021 Transportation Activity Management Plan and I am satisfied that it:

- Is based on the organisational assumptions adopted by the Council.
- Reflects the population growth forecasts adopted by the Council.
- Is based on reasonably complete and reliable data.
- Takes account of relevant Council policies and strategies.
- Is consistent with published national and regional transportation planning frameworks
- Includes financial forecasts that:
 - Reflect the assumptions and area based on reasonable cost information.
 - Include all relevant activities and cost centres.
 - Capital programmes have been appropriately analysed between demand, improved levels of service and renewals.
- Includes performance measures that appropriately reflect the major aspects of the activities (i.e. they are things that matter to the community e.g. availability, reliability, quantity, quality, cost, timeliness, customer satisfaction, sustainability, effectiveness, safety) and link to the objectives for the activity and community outcomes.
- Can be implemented taking account of available organisational resources.

This plan aligns with the Transportation Business Case Submitted to NZTA in December 2020.

It is acknowledged that amendments may be required following:

- Public Consultation of the Statement of Proposal.
- Publication of a revised Government Policy Statement on Land Transport Funding.
- Publication of the Regional Land Transport Plan by Environment Canterbury.
- NZTA's allocation of funding which will not be published until August 2021 in the National Land Transport Programme.

Signed	Date
Andrew Mazey Asset Manager Transportation	
Signed	Date
Murray Washington, Asset Manager	

TABLE OF CONTENTS

Quality Assurance & Plan Status

Certification of Activity Management Plan

Excerpt from Council's Auditor's Review of the Draft Long Term Plan and Asset Management Plans

Activity Summary 2021-31 Selwyn Long Term Plan

1.0	Executive Summary
2.0	Introduction
3.0	Strategy, Plans, Legislation and Procedures
4.0	Description of Transportation Activity and Asset Classes
5.0	Road Safety
6.0	Levels of Service
7.0	Growth and Demand
8.0	Risk Management
9.0	Lifecycle Management
10.0	Asset Management Processes and Practices
11.0	Financial
12.0	Plan Implementation
13.0	Appendices

1.0 KEY ISSUES FOR SUSTAINABLE DEVELOPMENT

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

Contents

1.0	KEY ISSUES FOR SUSTAINABLE DEVELOPMENT	1
1.1	Overview	3
1.2	Services covered	3
1.3	What we do and why we do it	3
1.4	Planning ahead	6
1.5	Demand and asset management	7
1.6	Major projects	8
1.7	What you can expect from us – Transportation	9

This page is left blank for printing

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 covered

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

Sealed Roads	1,520 km	Unsealed Roads	1,130 km
Urban Roads	340 km	Rural Roads	2,310 km
Footpaths	385 km	Cycleways	27 km
Roundabouts	103 roundabouts	Traffic signals	4 signalised intersections
Bridges	98 Bridge structures plus large culverts	Road Signs	18,698 signs
Street Lights	7,530 street lights	Bus Stops	94 stops, 12 covered shelters
Total Road Network	2650 km	Total asset value	\$829 million.

1.3 What we do and why we do it

The Transportation Activity we undertake provides the key roading and transport infrastructure and services needed for the vital economic and social linkages that allow Selwyn residents, businesses and visitors to live, work, and play in the district and beyond. We do this through working with Waka Kotahi NZ Transport Agency (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 safely and efficiently control use and reduce congestion at key intersections,
- 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.

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

Community outcome	How the transportation system contributes:
A healthy community	Provide facilities to enable residents to select active transport options Deliver a safe transportation network by working to meet objectives set out under the Road to Zero Strategy
A safe place in which to live, work and play	Maintain, operate, and upgrade the transportation network to ensure the overall safety of the network and reduce fatal and injury crashes
An educated community	Provide road, cycle, and pedestrian links to the education hub at Lincoln University, and to Christchurch City tertiary institutions
An accessible district	Provide a well-maintained, operated, and affordable land transport network and systems for the safe and efficient movement of people and freight. Advocate for improvements to state highways operated by Waka Kotahi NZ Transport Agency and public transport services operated by ECan. Promote walking and cycling as a safe, viable mode of transport and recreation.

Councils Transport Activity also has to 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)
- Canterbury Regional Land Transport Plan (Canterbury Regional Council)

For the 2021 GPS we need to demonstrate that our Transport Activity and programmes outlined in our Long Term Plan and Activity Management Plan also helps to contribute to these key transport national strategic priorities, in addition to our own Community Outcomes

- Safety
- Better Travel Options
- Improved Freight Options
- Climate Change

As evident there are close parallels relating to safety, better transport options, and providing a roading network for moving freight when these are compared. 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.

- 1. The existing network and driver behaviour contribute to an unacceptable number of fatalities and serious injuries,*
- 2. 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, and*
- 3. Growth and changes in travel patterns is impacting the network condition and efficiency.*

By addressing these problems this in turn will also realise benefits at both a national and local level. We believe there are four key benefits that will be achieved from the Councils responsible management of the Districts roading and transport infrastructure and services. This is expressed in the following benefit statements, which also align with both the GPS and our Community Outcomes responsibilities.

- 1. Developing a transport system where no-one is killed or seriously injured,*
- 2. Providing people with better transport options to access social and economic opportunities,*

3. Improving freight connections for economic development, and

4. Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access.

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.

Well-being	Possible negative effect	The Council's response is to
Social	Poorly designed, operated or located transport infrastructure may cause noise, dust, visual or other impacts which have adverse effects on quality of life and the environment.	Design and locate new infrastructure and use buffer zones and plantings in a way that reduces the effects of potentially disruptive assets such as new roads near residential areas.
	Transport routes can separate communities.	Integrate walking and cycling links with vehicle and public transport routes to connect communities with each other and with other amenities and shopping precincts. By walking and cycling, residents can interact with their neighbourhood and environment resulting in a sense of safety and belonging while being engaged in a health activity. Link up amenities such as schools, community centres, reserves and libraries with safe and efficient transport routes.
	The use of roads can be hazardous.	Identify hazards and risks and attempt to reduce these through a combined effort of engineering improvements, education, behaviour change and enforcement. Ensure speed limits are appropriate and carry out repairs and renewals in a timely manner.
	Rates have to be levied to cover the cost of providing services that contribute to the Council's goals and its statutory obligations, while	Responsibility provides efficient and effective levels of service that the community can afford. Provide a range of transport services so people and businesses can make informed travel choices on what is appropriate and affordable for them.

	remaining sustainable and affordable.	
	Failure to levy rates at the appropriate time may result in an excessive burden for future generations.	Consider 'whole of life' costs and apportion capital costs equitably over time. Ensure that charges are realistic and do not result in accumulated costs later. Plan ahead for economic growth and population expansion. Carry out renewals and new works in a timely manner.
	Failure to make adequate service provision, together with unreliable services, may limit growth and impact on economic prosperity.	Work with other Local and Regional Authorities to coordinate major transport planning and funding initiatives as a joint enterprise. This is likely to be more successful than if the Council acted in isolation. Participate and collaborate in the Greater Christchurch Partnership to achieve integrated and sustainable transport and land use planning.
	Expanding transport routes can increase vehicle movements and subsequently the use of fossil fuels.	Put in place 'an integrated, safe, responsive, sustainable and affordable land transport system'. Utilising integrated transport packages, the Council can encourage other choices through public transport planning and walking and cycling routes to reduce the dependence on motor vehicles and fossil fuels. The Council supports the 'Park and Ride' concept in future town planning.
Environmental	Transport routes can impact on rural amenity and landscape values.	Consider all aspects of community well-being, not just economic outcomes. Work with the topography of the land to integrate transport corridors with the landscape. Use design techniques which minimise adverse environmental effects.
	Transport routes add hard surfacing to formerly permeable land, exacerbating stormwater run-off, glare and noise. Run-off can cause pollution if it flows directly into streams.	Integrate soft stormwater treatment features into roading design e.g. the use of grassed and planted swales and retention basins to capture run-off, treat it and release it slowly into streams and water courses.
	Vehicles produce exhaust emissions that are	Coordinate with national and regional plans to control emissions that include providing in the

	potentially harmful while growth will introduce more vehicles onto the road.	District other transport choices such as walking and cycling and public transport in an attempt to at least halt or preferably reduce the amount of emissions by a reduction in motor vehicle usage. To be effective, this also has to be combined with wider efforts and incentives such as achieving a more modern and fuel efficient and emission limiting national vehicle fleet. Facilitate the provision of more Electric Vehicle Charging sites when requested.
	Street lighting in new urban subdivisions can add to light pollution that impacts on people's enjoyment of the environment. This has to be balanced against personal safety and property protection.	Follow specific standards for any new street light installations to reduce light spill and glare while still remaining effective. Some smaller more rural townships may elect to have a reduced level of lighting to meet their concerns. Utilisation of new technology such as LED lamps and control systems to manage lighting more effectively.
Cultural	Needing to understand the needs of inclusive transport planning. Maintenance, improvement works and new transport routes have the potential to impact iwi such as damage to heritage sites, mature vegetation and remnants of the District's culture and history.	Assess the impact on cultural well-being as a normal part of the decision-making process. Be respectful of Te Tiriti o Waitangi (the Treaty of Waitangi) and the voice of Maori through related national and regional cultural and representations on transport matters. Consult with local communities of interest to identify sites that are of importance to them and design routes accordingly. Consult with Tangata Whenua and the Historic Places Trust.

1.4 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	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
Constraints to NZTA funding shares	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	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
Responding to community demands for active and public transport options	Continue to deliver footpath, cycleway, and public transport infrastructure improvements

1.5 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.

1.6 Major projects

Information on key transportation projects planned for the first three years of the programme and beyond are set out below:

Major project	Year(s)	Cost and funding
Prebbleton Arterial Intersection Upgrades A series of intersections safety improvements subsidised by NZTA to replace priority controlled intersections with roundabouts to improve safety and congestion outcomes on key arterial commuter routes and connectivity to the Southern Motorway. The Shands/Trents, Shands/Hamptons, & Springs/Hamptons intersections will be upgraded during the 2021-31 LTP.	2022 – 25	\$13,885,000 The arterial intersection upgrades are co-funded through the NZTA's Road to Zero activity class. The funding assistance rate has not been confirmed but expected at least 51%
Rolleston Town Centre & Car Parks Road layout and parking facility improvements and upgrades to create better and more accessible retail and social opportunities in the growing Rolleston township. Includes upgrade of standard streets to slow speed zones, improved walking and cycling and public transport facilities and public car parks.	2021 – 29	\$16,300,000 Funded by Council in conjunction with returns from new retail commercial development the new town centre will create.
Lincoln Town Centre Upgrades to Gerald Street road frontages and layouts, and creation of car public parking facilities to enhance the Lincoln Town Centre access and environment. Also includes slow speed zones and cycle lanes that connect to the University. Replacement of road substructures that are deteriorating.	2024 – 32	\$21,423,000 Intersection and traffic signal upgrades are co-funded through NZTA's local road improvements works category at a 51% funding assistance rate
Rolleston/SH1 Access Local Road Upgrades Upgrade works to improve local road connections to Stage 2 of the Christchurch Southern Motorway. Improvements include road, walking & cycling, and public transport infrastructure improvements. Coordinated with the NZTA NZUp programme to provide a SH1 Rolleston "Fly Over" and intersection upgrades along the SH1 e.g. Dunns Crossing and Walkers Road	2021 – 32	\$25,720,000 Realignment, widening, and intersection improvement works are co-funded through NZTA's local road improvements works category at a 51% funding assistance rate
Safe Network Programme Safety Improvements A programme of speed improvements and intersections upgrades working under the Ministry of Transport's Road to Zero strategy. The programme in Selwyn has been co developed with the NZTA and looks to combine both safety works and funding with other road improvements to complete the upgrade of key road routes in coordinated way	2021 - 30	\$15,545,000 Safe Network Programme improvements are co-funded through the NZTA's Road to Zero activity class at a 51% funding assistance rate
Public Transport Facilities Upgrades Originating from the Greater Christchurch Partnership, Councils share of the programme to improve transport facilities in the District in support of Environment Canterbury's Metro Bus improved services. Includes upgrades to bus stops with more shelters and seats, new and also improved Park N Ride facilities at both Lincoln and Rolleston	2021 - 30	\$7,260,000 Public Transport Infrastructure Upgrades are funded by the NZTA's through both Low Cost/ Low Risk and local road improvement works activity classes at a 51% funding assistance rate

1.7 What you can expect from us – Transportation

Objective	Current Service	Planned Service 2021-24	Indicative Service 2024-31	Performance Measure	Service area	Current Performance	2021/22	2022/23	2023/24	2024-31
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		Likely external funding constraints may require programmes to be reassessed	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. (Mandatory Performance Measure)	All	85%	>75% resolution within the timeframe specified	>75% resolution within the timeframe specified	>75% resolution within the timeframe specified	>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	89%	≥90%	≥90%	≥90%	≥90%
					Rural	98%	≥95%	≥95%	≥95%	≥95%
					All roads	96%	≥95%	≥95%	≥95%	≥95%
				Maintenance of a sealed local road network: The distance of the sealed local road network that is resurfaced. (Mandatory Performance Measure)	Sealed roads	66.2km	≥75km	≥75km	≥75km	≥75km
				Maintenance of the Unsealed Road network: The percentage of roads to achieve “good” or “very good” grades in both of the previous biannual visual condition surveys.	Unsealed Roads	New measure	70%	70%	70%	70%

Objective	Current Service	Planned Service 2021-24	Indicative Service 2024-31	Performance Measure	Service area	Current Performance	2021/22	2022/23	2023/24	2024-31
				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). (Mandatory Performance Measure)	Footpaths	89%	≥80%	≥80%	≥80%	≥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)	Assess, plan and implement new roading projects to upgrade the network in conjunction with non-road based solutions to manage demand in an integrated and sustainable manner		The percentage of individual large capital projects generally completed in the year that they were programmed to occur	Roading Improvements	50%	≥75%	≥75%	≥75%	≥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. (Mandatory Performance Measure)	Road Safety	4 fatal and 14 serious	Progressively reducing number of fatal and serious crashes.			
	Use travel demand management and implement infrastructure to encourage modeshift to public and active transport modes			Public Transport: The change from the previous financial year in the number of passenger utilising public transport to, from, or within the district	Public Transport Utilisation	New measure	Progressive increase in patronage numbers			

Objective	Current Service	Planned Service 2021-24	Indicative Service 2024-31	Performance Measure	Service area	Current Performance	2021/22	2022/23	2023/24	2024-31
				Active Transport (Walking): The length of new footpaths constructed	Active Transport	New measure	2,800m	2,800m	2,800m	2,800m
				Active Transport (Cycling): The number of schools participating in the School Cycle Skills Education Programme		New measure	3 schools	3 schools	3 schools	3 schools
To contribute to an integrated and responsive local and regional transportation system				Allocate the appropriate staff and resources to represent the interests of the Council and the community in Greater Christchurch and regional transportation planning, earthquake recovery, funding and implementation initiatives	Attendance at relevant Regional Transport Committee (RTC) and Regional Transport Officers Group (TOG) meetings and forums.	88%	≥80%	≥80%	≥80%	≥80%

This page is left blank for printing

2.0 INTRODUCTION

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

Contents

2.0	INTRODUCTION	1
2.1	Overview	3
2.1.1	Structure and Format	4
2.1.2	Glossary	6
2.2	Sector Influences	9
2.2.1	National Land Transport Fund	9
2.2.2	Government Policy Statement on Land Transport (GPS)	9
2.2.3	One Network Road Classification (ONRC)	10
2.3	Activity Management Plan Utilisation	13
2.3.1	Development of Asset Management Systems	13
2.3.2	Roles and Responsibilities	13
2.3.3	Resourcing and Implementation	13
2.4	Council Asset Management Policy and AMP Assessment	14
2.4.1	Objective	14
2.4.2	Independent Review	14
2.4.3	Earlier Compliance Status	14
2.5	Continuous Improvement	16
2.6	Key Assumptions	17
2.7	Summary of Services	19
2.7.1	Asset Summary	19
2.7.2	Service Summary	19
2.8	Stakeholders	20
2.8.1	Key Stakeholders	20
2.8.2	Relationships with Key Organisations	24
2.9	Improvement Plan Items	27

This page is left blank for printing

2.1 Overview

The overall objective of Asset Management is to:

To meet a required level of service in the most cost-effective manner, through the management of assets for present and future customers. - IPWEA

The purpose of this Activity Management Plan (AMP) is to outline and explain the Selwyn District Council's long-term management approach for the provision and maintenance of transportation assets and activities in the District.

This AMP will:

- Detail the extent and quality of services required by the community now, and in the future,
- Explain how the system will be management under the current legislative framework and environment,
- Have clear linkages to agreed community outcomes and Levels of Service,
- Explain how Council manages the acquisition, maintenance, operation, renewal, and disposal of roading assets to 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 and constraints,
- Provide plans to manage the risk of asset failure,
- Provide evidence to substantiate funding bids to Waka Kotahi, and
- Proactively improve knowledge of its assets.

This AMP is intended to be read in conjunction with Council's Long Term Plan (LTP) and fulfils requirements of Schedule 10 of the Local Government Act (2002). It should be read in parallel with the Strategic and Programme Businesses Cases submitted to Waka Kotahi (The New Zealand Transport Agency) for consideration to secure co-funding investment.

2.1.1 Structure and Format

Table 2-1: Transportation Activity Management Plan 2021 Structure

Part 1 Long Term Plan Summary of Significant Activities The LTP summary provides an overview of the Transportation Activity, Activity Classes and expenditure programmes at a District level Strategic Business Case The strategic business case defines the strategic direction, outcomes, and current performance levels to support the Council's co-funding application to Waka Kotahi for the Maintenance, Operations, and Renewals continuous programme. <i>Audience:</i> Those seeking a District wide overview of how the continuous programme of maintenance, operations, and renewals
Part 2 Programme Business Case The programme business case is submitted to Waka Kotahi alongside the full 3-year co-funding applications; for capital projects and safety improvements <i>Audience:</i> Waka Kotahi (The New Zealand Transport Agency), Audit new Zealand
Part 3 Activity Management Plan The Activity Management Plan follows the format set out by the International Infrastructure Management Manual and outlines the Council's overall objectives for the future of the Transportation system, and the structures, policies, systems and processes that Council has in place to manage the transportation activity for present and future customers. It details the Levels of Service, Growth, Sustainability, Risk Management, Life Cycle Management Processes, Financial Processes, and Gap Analysis, and includes a Summary of the Services that make up Transportation Activity. <i>Audience:</i> Residents and Iwi, and key stakeholders (especially Waka Kotahi, and Audit new Zealand),

Table 2-2: Activity Management Plan Section Descriptions

Section	Content
Section 1: Key Issues for Sustainable Development	Describe the challenges and aspirations faced by the Transportation Activity and informs the strategic direction for Transportation for the short term (2018-2021) and long term (2018 - 2028).
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 15 years and shows the plan framework.
Section 3: Strategies and Goals	This section describes the combination of directives in place and their impact on the transportation.
Section 4: Transportation Activity and Asset Classes	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: 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.

2.1.2 Glossary

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 Council Community Plan (LTCCP)	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 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.
Pavement	Used to describe the structure of the road or carriageway, it is never used in the alternative meaning of ‘footpath’
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). AMP’s 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.

2.2 Sector Influences

The Selwyn roading network is funded through a combination of sources; INTERNAL funding made up from general rates and development contributions, and external funding secured from the National Land Transport Fund.

The strategic directions and outcomes established by the government help direct and shape the overall asset and activity management decisions made at the council level. The greater the alignment with government objectives, the greater the Waka Kotahi investment assistance that may be available for Council to secure.

2.2.1 National Land Transport Fund

The National Land Transport Fund is made up of revenue collected from fuel excise duty (FED), road user charges (RUC), vehicle and driver registration and licensing, state highway property disposal and leasing, and road tolls. It is administered by Waka Kotahi on behalf of the ministry of transport. Securing funding from the NLTF for local investment requires aligning the investment with the Government's objectives at the national level.

Approved investment from the NLTF in Selwyn is co-funded at a 51% funding assistance rate (FAR), where the NLTF makes up 51% of the investment and Council raises the other 49%.

2.2.2 Government Policy Statement on Land Transport (GPS)

The Ministry of Transport publishes the Government policy on Land Transport (GPS) every 3 years, setting the strategic directions for achievement and investment in the transportation system.

“The Government Policy Statement on land transport (GPS) sets out how money from the National Land Transport Fund is allocated towards achieving the Government’s transport priorities. It sets out ranges for funding for activities such as public transport, state highway improvements, local and regional roads and road safety — we call these activity classes. Each GPS sets out the priorities for the following 10-year period, and is reviewed and updated every 3 years.”

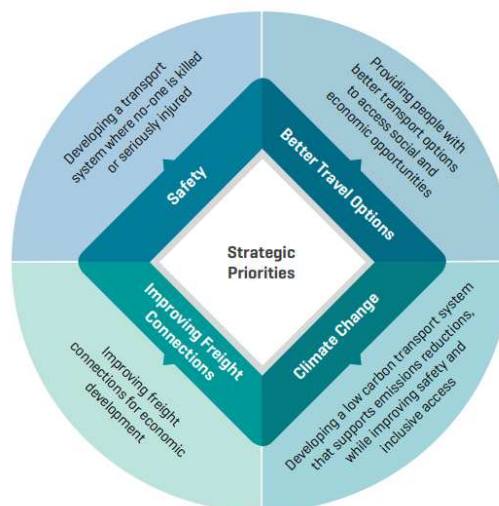


Figure 2-1: GPS 2021/22 - 2031/32 Strategic Priorities

The vast geographical coverage of the Selwyn district spans the peri-urban fringes of Christchurch city to the Arthurs Pass National Park. The area hosts a range of geographical, residential, and industrial settings, and provides a broad representation of the many demographic and transportation environments that can be found across the country. This creates a situation in which our own strategic objectives will naturally align well with government objectives.

2.2.3 One Network Road Classification (ONRC)

The One Network Road Classification (ONRC) was developed by a joint Local Government / New Zealand Transport Agency (NZTA) project team as part of the Road Efficiency Group (REG) Work Program. The ONRC facilitates a customer-focused, business case approach to budget bids for the National Land Transport Programme and allows Waka Kotahi to compare the state of roads across the country directly and direct investment where it is needed most. The ONRC divides New Zealand's roads into six categories based on how busy they are, whether they connect to important destinations, or are the only route available.

The classifications are:

- National,
- Arterial,
- Regional,
- Primary collector,
- Secondary collector, and
- Access

The ONRC is used in Selwyn to aggregate roads by use and importance and target management objectives and funding to the most widely used aspects of the transportation network, and allows Council to realise maximum benefits from investment.

RIGHT ROAD, RIGHT VALUE, RIGHT TIME

The One Network Road Classification (ONRC)

The ONRC is a new framework that categorises roads throughout the country. This is the first time in the history of New Zealand that consistent specifications will apply to all public roads from Cape Reinga to the Bluff, depending on what purpose they serve.

The ONRC considers the needs of all road users, be they motorists, cyclists or pedestrians. It will give road users more consistency and certainty about what standard and services to expect on the national road network, including the most appropriate safety features. It will also help New Zealand to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country.

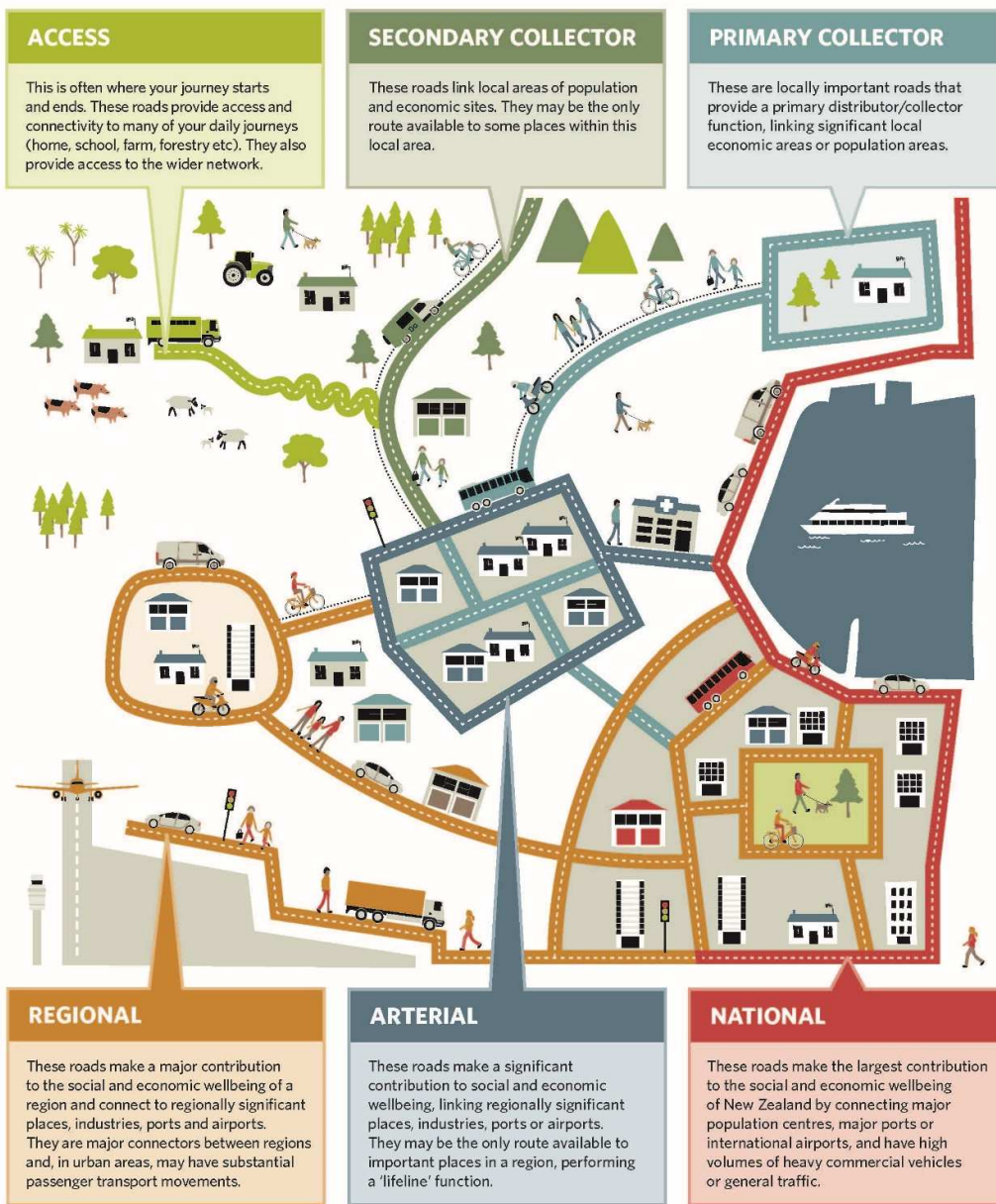


Figure 2-2: ONRC classification descriptions ([Waka Kotahi](#))

The ONRC is currently being enhanced to better include active and public transport modes, and to reflect that transport corridors are not just for travelling through. These additional functions are captured in the One Network Framework (ONF). The ONF's core aim is to align the ONRC with the Government's outcomes, and to acknowledge the distinct geographical differences across the country's transport network. It will use the "movement and place" approach to better consider the mode priorities, physical and community settings, economic situation, and growth.

2.3 Activity Management Plan Utilisation

2.3.1 Development of Asset Management Systems

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.

2.3.2 Roles and Responsibilities

Table 2-3: Activity Management Plan Enactment

	Item	How is this done
1	Organisational culture of asset management developed.	Workshop sessions with Councillors regarding general and discipline-specific asset management
2	Council Staff understand the reasons for the plans and the implications for the long term use of them.	Plans are fit for purpose and concise
3	The Activity Management Plans are adopted/accepted by staff.	Through adoption at Council level
4	Understand all the reporting requirements for Levels of Service and Internal Benchmarking.	Adhering to industry standards and best practice guides
5	Instigation of processes to encourage Council Staff to use the Plan.	Through implementing the Improvement plan

2.3.3 Resourcing and Implementation

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

2.4 Council Asset Management Policy and AMP Assessment

2.4.1 Objective

The objective of Asset Management at a Council level 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.

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.

This Asset Management Policy links to Council's Long Term Plan and Transportation Asset Management Plan. As much as possible planning is based around communities of interest, as this promotes an integrated management regime and encourage efficiencies across the District's Transportation services. 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.

The policy requires regular structural review of asset management practices. This structured assessment follows the guidance provided in Section 4.6.1 (Taking a Continuous Improvement Approach) of the International Infrastructure Management Manual (IIMM).

2.4.2 Independent Review

Council commissioned a specialist consultant to undertake a detailed analysis of appropriate asset management practice within the guidance offered by this Policy. The analysis 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. The results of the most recent assessment was that the Transportation was considered to be Intermediate *"but using a more sophisticated and nearer to comprehensive approach"*.

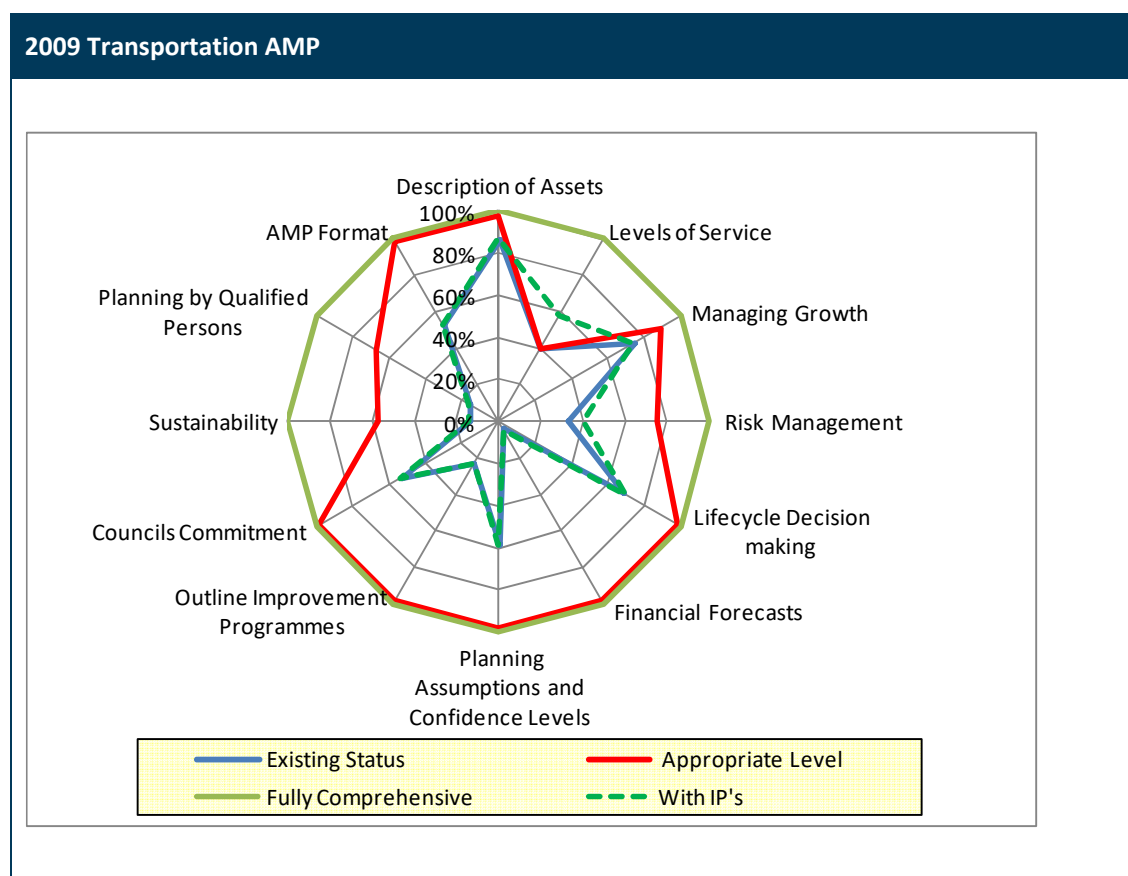
2.4.3 Earlier Compliance Status

The Transportation 2009 Activity Management Plan Compliance Status Report indicated that: *The AMP's were extensive and contain a good mix of narrative and data which build up a picture of the assets involved and the service levels. Overall, the assessment indicates the AMP's are at or exceed a 'core' level in the key description of assets, lifecycle management areas and the level of other areas vary across the suite of AMP's. Given that Council has adopted a 'core plus' level of asset management*

practice, there is scope for improvement in the majority of areas. It is acknowledged that there has been a focus on managing the high levels of growth experienced, and there has been a considerable list of projects under way. This focus may have been to the detriment of other areas such as risk management and building internal AM capacity.

The detailed analysis carried out on the Transportation 2009 AMP Compliance status in 2010 is shown in Figure 2-3 below. Council's level of achievement and any gaps in appropriate asset management practice were identified. The compliance status was again carried out on the 2011 AMP and indicates the increase in the level of sophistication of the AMP and management of the assets.

Figure 2-3: Transportation AMP Compliance Status



It is noted this assessment is now dated and informed many of the enhancement made since.

2.5 Continuous Improvement

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 involved in the transportation section, as well as stakeholders.

Key advances in the 2018 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:

- Consolidating the discussions into a lighter, shorter, and more concise document,
- Reformatting sections for NZTA and general usage,
- Overhauling Section 9 (Lifecycle Management) for clarity,
- Addressing review point from previous peer-reviews.

2.6 Key Assumptions

Assumptions have been considered at a corporate and an activity level. An assumptions report is prepared as part of the Long Term Plan process to contribute to the risk assessment undertaken when making the decisions and recommendations outlined. The full assumptions report details assumptions across the areas of Council operation, the assumptions applying to the transportation system and networks have been included in Part 4 the Strategic Business Case.

Table 2-4: Key Assumptions, and their uncertainties and risks for the Transportation Activity

Stated Assumption	Level of Uncertainty	Risk
It is assumed asset lives will be as set out in the statement of accounting policies.	Moderate	There is a risk that assets will wear out more quickly than forecast and require replacement earlier than planned.
The Council revalues its assets so that carrying values are maintained at fair value based on condition. It is assumed that revaluations will take place a minimum of every three years and that replacement value of the assets will reflect construction costs.	Moderate	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.
The Selwyn District population will continue to grow at a medium-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. The numbers of persons per house will decrease over time	Moderate	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.
It is assumed that the level of financial assistance received from NZTA for eligible roading and transport activities will remain at 51% for the 2021-31 period. Funding Assistance for large Capital transport works would be achieved on a case by case basis through a Business Case approach with NZTA. Some capital projects could attract a Targeted Enhanced Financial Assistance Rate (TEFAR) on a case basis by the NZTA. NLTP Funding is provided by the NZTA in 3 year periods and that the following 7 years will be funded in a similar manner	Moderate	There is a risk that sufficient funds will not be available to pay for the planned capital projects. 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 reprioritisation of NZTA funding which may result in capital projects being deferred for funding.
There will be growth in traffic on state highways and local networks within Selwyn district that is generally consistent with projected population growth rates. Heavy vehicle traffic growth will be higher than general growth with concentrations around industry and freight transport hubs, especially 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.	Moderate	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 effected. Without investment and engagement in travel demand measures (TDM) to stem traffic growth from new developments this may lead to increased traffic congestion

Stated Assumption	Level of Uncertainty	Risk
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 Strategies include: Government Policy Statement on Land Transport Funding (GPS), Regional Land Transport Plan, Greater Christchurch Mode Shift Plan, Travel Demand Strategy, Public Transport Futures Strategy Transport Statement	Moderate	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 may 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.
It is assumed that climate change is happening and that this will impact SDC's roles and responsibilities, from an emissions mitigation and climate change adaptation perspective. The current assessments of climate change impact on SDC's infrastructure and activities shows that there will be a low to minor impact within the period covered by the Long Term Plan.	Moderate	There is a risk that climate change will happen more quickly or much later than expected or that the impact will be different to those predicted. Council's business units may not recognise climate change adequately in the delivery of their services.
Staff will target resources based on the level of criticality and risk (highest to lowest where criticality has been assessed).	Low	Prioritisation may be inappropriate
A minimum 10 year renewal plan with indicative renewal out to 30 years is followed, with funding via general rates and external sources as relevant to the asset. NZTA financial assistance is allocated in 3-year NLTP blocks. No depreciation funding identified for any assets on the basis that actual identified renewal needs form the basis of ongoing funding needs.	Low	That renewal planning is inappropriate and there are funding consequences
There will be no new technologies deployed that will <u>significantly change</u> the demand for or of provision of services.	Low	Service delivery is poorly aligned with technological developments and opportunities
The condition and remaining typical life have been accurately assessed, permitting appropriate renewal forward programmes to be developed and routinely updated.	Moderate	Asset renewals are required earlier than expected
Asset lives have been adopted from the best information available at the time of assessment using asset condition assessment and deterioration modelling as applicable.	Moderate	Asset renewals are required earlier than expected
The reclassification of roading networks and determination of Levels of Service, will not vary the current Levels of Service or management priorities beyond that allowed for in AcMPs.	Moderate	Nationally agreed service levels differs from what is locally acceptable and /or funding is affected

2.7 Summary of Services

Selwyn District covers a diverse area, including rapidly growing urban centres on the periphery of Christchurch, small rural towns and alpine settlements, and extensive agricultural land across the Canterbury Plains. 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.

2.7.1 Asset Summary

Transportation is a significant service for Council; annual operating expenditure represents 14% of Council's overall annual operating expenditure over the next decade.

The Selwyn Transportation Network is covers a vast geographical area and includes a significant amount of infrastructure. It includes 2,650km of roads, 385km of footpaths, and 27km of cycleways. There are 3 signalised intersections, 103 roundabouts, 98 bridges, and 94 bus stops. Selwyn also has 7,530 street lights and 18,698 roads signs.

Over half of the Selwyn roading network is sealed, 1,520km of road are sealed and 1,130km are unsealed. 340km of road are classified as urban, rural roads make up the remaining 2,310km.

2.7.2 Service Summary

Alongside Physical; assets there are a numbers 'services oriented' provision as part of the transportation activity.

These include

- Park and Ride
- Road Safety promotion, education and advertising (includes school cycle education, Leading learners, car seat fitting course, road safety for seniors)

2.8 Stakeholders

2.8.1 Key Stakeholders

Key stakeholders are those who have significant specific involvement with the assets or the service facilitated by the assets. In particular the 'Public Service providers', including schools, hospitals, the Defence Force, corrections facilities, 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 that make up the transportation network.

Different issues will require different levels of engagement; from a broad approach, to specific engagement limited to those directly affected. The key stakeholders affected by the Selwyn District transportation system are outlined below.

Table 2-5: Key Stakeholders and Significant User Groups

Stakeholders – External & National	Stakeholders Main Interests	Engagement Range	Engagement Methods
Accident Compensation Commission		Limited	Correspondence
Age Concern	Transport Sector groups	Limited	Occasional correspondence
Audit NZ	Legislative responsibilities as defined in Legislation	Limited	
Automobile Association	Transport Sector groups	Limited	Regular contact at road safety co-ordination meetings.
Cycle Advocates Network (CAN)	Transport Sector groups	Limited	Occasional correspondence
Department of Conservation	Enhance conservation values	Limited	
Energy Conservation Authority	Transport Sector groups	Limited	Occasional correspondence
Federated Farmers	Transport Sector groups	Limited	Correspondence
Local Government New Zealand/ Central Government	Ensure that Local Government Act is complied with (via Auditor-General) Enhance value of decision making process	Limited	
Ministry Of Education	Safety for school children (urban and rural)	Limited	Correspondence
Ministry for the Environment		Limited	
Ministry of Health		Limited	
Ministry Of Transport		Moderate	
New Zealand Police	Road Safety Partner	Limited	On-going liaison and appropriate formal contact where required. Police representatives are part of the Road Safety Coordinating Committee

Stakeholders – External & National	Stakeholders Main Interests	Engagement Range	Engagement Methods
Waka Kotahi - New Zealand Transport Agency	Legislative responsibilities as defined in Legislation, Funding Partner	Moderate	Continual and frequent informal contact and appropriate formal contact where required
New Zealand Trucking Association	Transport Sector groups	Limited	Occasional correspondence
KiwiRail & NZ Railways Corporation	Transport system provider	Limited	Close liaison with KiwiRail on level-crossing maintenance. Occasional correspondence on other matters
Telecommunications companies	Utility operator	Limited	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	Limited	Occasional correspondence
The Forest Owners Association	Transport Sector groups	Limited	Occasional correspondence
New Zealand Heavy Haulage Association	Transport Sector groups	Limited	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)	Moderate	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:	Limited	Regular contact with relevant staff. Formal liaison of elected representatives at executive level
Canterbury District Health Board	Community Health	Limited	Occasional correspondence
Canterbury Regional Council	Resource use is sustainable as directed in the RMA 1991	Moderate	
Canterbury Regional Land Transport Committee	LTMA 2003 role	Moderate	Correspondence, meeting attendance, submissions
Central Plains Water Trust	Development of irrigation facilities	Moderate	Correspondence Meetings to coordinate work programmes
Greater Christchurch Partnership	Partnership in urban growth over 35 year period	Moderate	
Living Streets Canterbury	Urban design	Limited	Correspondence
Waka Kotahi 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	Moderate	Regular personal contact and appropriate formal contact where required Delegations – streetlights, street sweeping etc.
Orion NZ Ltd	Utility operator	Limited	Close liaison. Full procedures to be developed reflecting the 2009 NZUAG “Code of Practice for Working in the Road”
New Zealand Trucking Association	Transport Sector groups	Limited	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	Broad	
All commercial and private road users including: • Pedestrians • Cyclists • Motorists • Heavy-vehicle operators • Equestrians • Drivers	Reliable transportation services at an affordable cost that considers their favoured mode of transport	Broad	
BUG-R (Bicycle User Group – Rolleston)	Transport Sector groups		
Christchurch to Little River Rail Trail Trust	Cycle trail development	Limited	
Consultants and Contractors	Commercial opportunities	Limited	
Local Businesses/Industries	Transportation services to suit commercial needs and expansion, at affordable cost	Moderate	
Local Iwi/Ngai Tahu Te Runanga o Ngai Tahu Tuahuriri Runanga	Enhance waterways and Te Waihora for Mahinga kai, cultural/spiritual values	Limited	Corporate level consultation
Schools	Safety for school children (urban and rural)	Limited	Correspondence Programmes
SPOKES	Transport Sector groups	Limited	

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	Broad	
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	Limited	

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

2.8.2 Relationships with Key Organisations

There are a number of other key organisations and groups with which relationships are maintained. These include:

- Waka Kotahi – The New Zealand Transport Agency (NZTA),
- Environment Canterbury – Canterbury Regional Council,
- Christchurch City Council,
- Waimakariri District Council,
- Greater Christchurch Partnership member organisations, and
- Tangata Whenua

Waka Kotahi – The New Zealand Transport Agency:

NZTA is a funding partner for most of Council's road maintenance, renewals and new works and is therefore a significant stakeholder. Council also operates the street lighting networks located on State Highways under delegation from NZTA.

Environment Canterbury:

Environment Canterbury (ECan) has statutory responsibility for regional transportation planning and public transport. ECan's areas of responsibility include, Regional Transport Planning, Regional Transport Committee, Public Transport, and Natural Resource Management.

Environment Canterbury is responsible for the development of the Regional Land Transport Plan (RLTP), and coordinating the suite of documents that align with the RLTP. ECan establishes and chairs the Regional Transport Committee (RTC), which is responsible for preparing the Regional Land Transport Plan, and for advising the Regional Council on strategic land transport planning and funding matters. Environment Canterbury is also responsible for the provision of public transport within the Canterbury region. This covers the entire Greater Christchurch area and includes work on the Metro Strategy.

Christchurch City Council and Waimakariri District Council:

Christchurch City and Waimakariri District are Selwyn's immediate neighbours, and the transportation networks are intrinsically linked. Christchurch City lies at 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. The Waimakariri and Selwyn Districts are joined by road 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. This is guided by Policy R423 - Maintenance Of Boundary Roads.

Table 2-6: Cross-Boundary Responsibilities

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 1257
Waimakariri Gorge Road	Waimakariri District Council Boundary	Selwyn District Council	Bridge Maintenance included in Contract 1420	Any lighting included in Contract 1257
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 1257
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 (Barbers Rd to Bicknor St)	Christchurch City Council Boundary	Christchurch City Council	Road and bridge maintenance excluded from Contract 1420	Any lighting excluded from Contract 1257

Greater Christchurch Partnership:

The Greater Christchurch Partnership is a voluntary coalition of local government, iwi, health and government agencies working collaboratively for the prosperity of Greater Christchurch. The Greater Christchurch Partnership Committee is an evolution of the Greater Christchurch Urban Development Strategy Implementation Committee, which was established in 2007 to oversee the implementation of the Greater Christchurch Urban Development Strategy

The Greater Christchurch Partnership is made up of representatives from Councils in the Greater Christchurch area, Iwi, and Government organisations:

- Christchurch City Council
- Environment Canterbury
- Selwyn District Council
- Waimakariri District Council
- Te Rūnanga o Ngāi Tahu
- New Zealand Transport Agency
- Canterbury District Health Board
- Greater Christchurch Group - the Department of Prime Minister and Cabinet

The work of the regeneration agencies is critical to achieving the long-term vision for Greater Christchurch.

Tangata Whenua

For Maori, linking the past, present and future is an important concept of life. There is much value in learning from the past in planning for the future. Kaitiakitanga – safe guarding our future (guardianship) and Tikanga (protocols) are two powerful concepts embodied in Maori culture.

Council work with Tangata Whenua and will continue to enhance the relationships with the local Iwi through their representative Te Runanga Taumutu. Enhancement of the relationship will be undertaken by the Asset Manager Transportation through discussions on issues that affect both Iwi and Council in relation to the Transportation Activity. Council will seek to understand and exercise the principles of Kaitiakitanga so those who follow can enjoy what we enjoy today, and seek to establish the right Tikanga that will enable us to deliver services in an integrated and sustainable way.

Objectives and processes are discussed in the Mahaanui - Iwi Management Plan (2013).

2.9 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
I.P. 2.1 and 2.2	2.1 Review maintenance responsibility agreements with Christchurch City Council and Waimakariri District Council. 2.2 Review NZTA agreements and delegations for currency (e.g. CSM connections and streetlights).	Now completed (see section 12.2.2).
I.P 2.3	Rescore AMP for compliance before 2021 LTP	Completed (independent review)
IP 2.4	Review Assumptions, including traffic demand	Included in LTP process, on going as part of Greater Christchurch Model Management Group
IP 2.5	Implement ONRC Transition Plan	Superseded
IP 2.6	Review comments on Council hierarchy once ONRC fully implemented, reference District Plan hierarchy	Completed as part of AMP and ONF processes
<i>New Improvement Plan Items</i>		
IP 2.7	Consider approach to co-design and engagement with Maori	

This page is left blank for printing

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

3.0	STRATEGY, PLANS, LEGISLATION AND PROCEDURES	1
3.1	Role of Strategies and Plans	3
3.2	Government and Industry Direction	4
3.3	National Strategies and Plans	5
3.3.1	National Infrastructure Plan	5
3.3.2	Road to Zero	6
3.3.3	NZTA Road Safety Guides	7
3.3.4	National Policy Statement on Urban Development	8
3.3.5	New Zealand Transport Strategy	11
3.3.6	Government Policy Statement on Land Transport (GPS)	11
3.3.7	Arataki Waka Kotahi NTZA's Long Term Strategic View	13
3.3.8	The National Land Transport Programme	15
3.4	Legislation	15
3.4.1	Key Legislation – Implications of Asset Management	15
3.4.2	Civil Defence Emergency Management (CDEM) Act 2002	16
3.4.3	Climate Change Response Act 2002 and the Climate Change Response (Zero Carbon) Amendment Act 2019	16
3.4.4	Fencing Act 1978	17
3.4.5	Health and Safety at Work Act (HSWA) 2015	17
3.4.6	Land Transport Management Act 2003	18
3.4.7	Local Government Act (LGA) 2002	18
3.4.8	Local Government Act 1974	18
3.4.9	Local Government Rating Act 2002	18
3.4.10	Resource Management Act (RMA) 1991	19
3.4.11	Utilities Access Act 2010	20
3.4.12	National Environmental Standards	20
3.4.13	Standards, Codes of Practice and Guidelines	20
3.4.14	AS/NZ Standards	21
3.5	Regional and Greater Christchurch Strategies Plans and Business Cases	22
3.5.1	Canterbury Regional Council Plans and Strategies	22
3.5.2	Greater Christchurch Partnership	25
3.5.3	Waka Kotahi/NZTA	30

3.6	Selwyn District Council Strategies, Plans, Policies and Bylaws	33
3.6.1	Sustainability Principles	33
3.6.2	District Wide Strategy (Future for Selwyn)	34
3.6.3	Walking & Cycling Strategy and Action Plan 2018	36
3.6.4	Road Safety Strategy & Action Plan (2014)	36
3.6.5	Procurement Strategy	36
3.6.6	Council's Long Term Plan (LTP)	38
3.6.7	Annual Plan	38
3.6.8	30 Year Infrastructure Strategy	38
3.6.9	Delivery of Services Review	39
3.6.10	Council's District Plan	39
3.6.11	Council's Engineering Design Standards for Subdivisions and Development	40
3.6.12	Master Plans and Structure Plans	40
3.6.13	Council Policies	42
3.6.14	Council Bylaws	46
3.6.15	Council's Mission Statement	47
3.6.16	Council's Statement on Quality of Service	47
3.6.17	The Council's Statement of Values	48
3.7	Improvement Plan Items	49

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, staying abreast of proposed legislative or policy changes and continued membership of industry organisations.

3.3 National Strategies and Plans

National policy statements are issued by the government to provide direction to regional and local government about matters of national significance which contribute to meeting the purposes of relevant legislation.

3.3.1 National Infrastructure Plan

The National Infrastructure Plan 2015 (NIP 2015) is the third National Infrastructure Plan to be released by the Government.

The NIP 2015 confirms the Government's long term vision for infrastructure and is designed to reduce uncertainty for businesses by outlining the Government's intentions for infrastructure development with a 30-year outlook. It provides a framework for infrastructure development rather than a detailed list of projects and it includes a series of actions.

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

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

The NIP 2015 is the first Infrastructure Plan that details a comprehensive suite of actions that will be undertaken to deliver on the new approach. The actions are focussed on what central government, local government and infrastructure peak bodies will do, reflecting the collaborative effort required to change how infrastructure is planned, developed and managed in New Zealand. Significant policy work and consultation will be required to develop the detail. The following list of actions are taken from the NIP 2015.

The Action Plan for **Asset Management** means:

- Local government will have a long-term view of their investment requirements to make more informed decisions. The Local Government Amendment Act 2014 is a step towards this, requiring an infrastructure strategy for at least a 30-year period;
- Infrastructure providers will develop a more sophisticated approach to understanding the condition of those assets, the timing of renewals, and how they are performing in comparison to similar networks. This will be progressed through the establishment of shared metadata standards across roading, the three waters, and government built assets
- Infrastructure providers will be able to understand how their networks interact with other infrastructure networks as well as the implications for land use planning and the end user of infrastructure services.
- Individual sectors will progress specific programmes to improve their asset management maturity including the establishment of a programme to enhance the capability, productivity and leadership in asset management throughout the public sector in New Zealand by IPWEA New Zealand and the NIU

The Action Plan for **Land Transport** means:

Our roads will become more efficient and remain affordable as non-asset solutions such as demand management become more commonplace. This will be achieved through:

- An assessment of the potential of demand management tools, including road pricing, to improve the estimation of demand for infrastructure and optimise the use of infrastructure (MoT).

- The Transport Analytics Governance Group's work to develop shared metadata standards across roads to support decision-making and collaboration between authorities (consortium of NZTA and local councils).
- The recently established One Network Road Classification (ONRC) which will allow road controlling authorities to make more strategic decisions on how roads are used (NZTA/LGNZ)

Our roads will become less congested and our air cleaner as Intelligent Transport Systems (ITS) are deployed; the government will assist this through the Intelligent Transport Systems Action Plan which includes identifying and tackling regulatory barriers (MoT).

Greater regional integration and collaboration will allow us to connect our regions to the global marketplace and to our cities. This will be achieved through the Government's Accelerated Regional Roads Package (NZTA).

Our transport network will support international connectedness and a strong export economy through:

- The maintenance of the National Freight Demand Study to provide up-to-date forecasts to guide freight infrastructure investment and land-use planning decisions across the public and private sectors (MoT).

The National Infrastructure Plan now is the responsibility of the Infrastructure Commission: Te Waihangā. A draft New Zealand Thirty Year Infrastructure Strategy is due to be released for consultation in mid-2021. Following consultation, the Strategy will be presented to Minister for Infrastructure in early 2022. The New Zealand Infrastructure Strategy will be due for review every 5 years.

3.3.2 Road to Zero

Road to Zero (Te Ara ki te Ora) is the Te Manatū Waka Ministry of Transport's strategy guiding improvements in New Zealand's road safety over 10 years until 31 December 2029.

Waka Kotahi, the New Zealand Transport Agency sets safety standards for roads and promotes, assists and audits road controlling authorities' safety management systems in line with the goal of Road to Zero.

The aim of Waka Kotahi is to ensure New Zealand's roads are designed, constructed and managed safely and at a reasonable cost. To achieve this, the Agency works in partnership with road controlling authorities (such as Selwyn District Council), equipment suppliers and educational and enforcement organisations (such as ACC and NZ Police).



Road to Zero is discussed in more detail in **Section 5 – Road Safety**.

3.3.3 NZTA Road Safety Guides

Waka Kotahi NZTA provide a **range of guidance 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



3.3.4 National Policy Statement on Urban Development

The National Policy Statement on Urban Development 2020 (NPS-UD 2020) is an update to the National Policy Statement on Urban Development Capacity 2016 (NPS-UDC). It brings several changes to the planning regime promoting affordable housing and streamlined processes.

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. It is noted that not all of the NPS-UD 2020 objectives and policies apply to all councils

Although the objectives and high-level policies of the NPS-UD 2020 apply to all councils that have all or part of an urban environment within their district, the NPS-UD 2020 adopts a tiered regime. This means that some policies apply only to tier 1 or tier 2 councils. Selwyn District is confirmed as containing a Tier 1 urban environment (in line with Greater Christchurch).

A key issue within the NPS-UD that affects Transportation is a change to the ability to require car parking requirements in District Plans.

50. Minimum parking requirements currently dictate the number of off-street car parks a new development must provide. We consulted on whether to remove car parking minimum requirements in certain zones. This would provide developers the flexibility to determine the number of carparks in their developments.... The New Zealand Transport Agency (Waka Kotahi) will be providing guidance on this.

4.5. Require local authorities in all tiers to remove minimum car park requirements, in all zones

4.6. Encourage all local authorities to manage the supply and demand of car parking through comprehensive parking management plans...

5.2 Tier 1 councils have 18 months from the NPS-UD gazettal to notify plan changes to implement car parking policy.

Timeframe for preparing or reviewing a Future Development Strategy

79. We propose the deadline for preparing or reviewing an FDS be linked to informing the 2024 long-term plans. This is because gazettal of the NPS-UD in July 2020 does not allow sufficient time for local authorities to develop the FDS to inform 2021 long-term plans. Additionally, this will focus implementation in the short term on giving effect to the intensification policies and car parking policies that are likely to substantially increase development capacity.

Tier 1 urban environment	Tier 1 local authorities
Auckland	Auckland Council
Hamilton	Waikato Regional Council, Hamilton City Council, Waikato District Council, Waipā District Council
Tauranga	Bay of Plenty Regional Council, Tauranga City Council, Western Bay of Plenty District Council
Wellington	Wellington Regional Council, Wellington City Council, Porirua City Council, Hutt City Council, Upper Hutt City Council, Kāpiti Coast District Council
Christchurch	Canterbury Regional Council, Christchurch City Council, Selwyn District Council , Waimakariri District Council
Tier 2 urban environment	Tier 2 local authorities
Whangārei	Northland Regional Council, Whangarei District Council
Rotorua	Bay of Plenty Regional Council, Rotorua District Council
New Plymouth	Taranaki Regional Council, New Plymouth District Council
Napier Hastings	Hawke's Bay Regional Council, Napier City Council, Hastings District Council
Palmerston North	Manawātū-Whanganui Regional Council, Palmerston North City Council
Nelson Tasman	Nelson City Council, Tasman District Council
Queenstown	Otago Regional Council, Queenstown Lakes District Council
Dunedin	Otago Regional Council, Dunedin City Council
Tier 3 urban environment	
All other local authorities with jurisdiction over an “urban environment” (<i>Urban environment is defined in the NPS-UD as “any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that:</i> a) <i>is, or is intended to be, predominantly urban in character; and</i> b) <i>is, or is intended to be, part of a housing and labour market of at least 10,000 people”.</i>	

Improving how our cities respond to growth to enable improved housing affordability and community wellbeing

What is the National Policy Statement on Urban Development (NPS-UD)?

National direction that sets out objectives and policies for urban development under the Resource Management Act 1991. Councils must give effect to these objectives and policies.

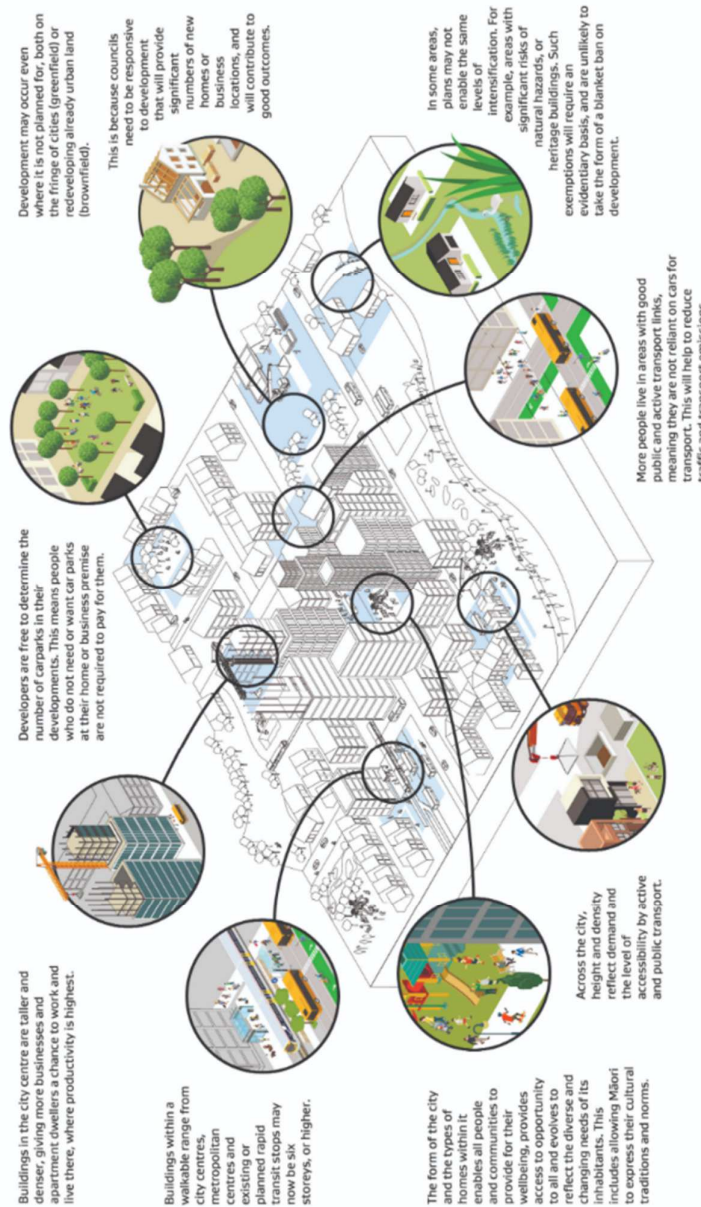
Why do we need an NPS-UD?

Constraints in the planning system have made it harder for people to build and live in the homes they want, where they want. This has led to high land prices, unaffordable housing, and a system that incentivises land banking and speculation. It has also resulted in people having poor access to employment, education and social services. This impacts most on our poor, vulnerable and younger generations.

Where does it apply?

Some policies apply only to "Tier 1" local authorities in Auckland, Christchurch, Wellington, Tauranga and Hamilton. These include the most directive policies, particularly regarding intensification.

Others apply to both Tier 1 and Tier 2 (Napier-Hastings, Nelson, Whangarei, Palmerston North, New Plymouth, Rotorua, Dunedin, Queenstown). The majority of policies, including car parking, apply to all urban environments that have, or are planned to have, more than 10,000 inhabitants.



Major policies in the NPS-UD

Intensification

Council plans will need to enable (but not require) greater height and density, particularly in areas of high demand and access.

Car parking

Councils will no longer be able to require developers to provide car parking through their district and city plans. However, developers can still provide car parking if they wish. Mobility parking is not affected by this direction.

Responsiveness

Councils must consider private plan changes where they would add significantly to development capacity, good outcomes and are well connected by transport corridors.

Wider outcomes

Councils are directed to give greater consideration to ensuring that cities work for all people and communities. Particular focus is given to access, climate change and housing affordability.

Strategic planning

Councils are required to work together produce "Future Development Strategies", which set out the long-term strategic vision for accommodating urban growth.

Evidence and engagement

Councils must use a strong evidence base for their decision making and ensure they engage with Māori, developers and infrastructure providers.

New Zealand Government

3.3.5 New Zealand Transport Strategy

The New Zealand Transport Strategy (NZTS) was first published in 2002, and updated in 2008. It provides the Government's over-arching strategic vision for transport to 2040 as follows:

"People and freight in New Zealand have access to an affordable, integrated, safe, responsive and sustainable transport system."

It is supported by five principle transport objectives:

- Ensuring environmental sustainability.
- Assisting economic development.
- Assisting safety and personal security.
- Improving access and mobility.
- Protecting and promoting public health.

To deliver the vision and targets of the Strategy, key components have been identified for government intervention and facilitation by regulation, enforcement, economic incentives, investment, and education as follows:

- Integrated land use and transport planning.
- Making best use of existing networks and infrastructure.
- Investing in critical infrastructure and the transport sector.
- Increasing the availability and use of public transport, cycling, walking and other shared and active modes.

The NZTS has been largely superseded by subsequent policy decisions by the Te Manatū Waka Ministry of Transport and Waka Kotahi NZTA, but remains a current document.

3.3.6 Government Policy Statement on Land Transport (GPS)

The Land Transport Management Act (LTMA 2003) requires the Minister of Transport (Te Manatū Waka) 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. Regional land transport plans must be consistent with the GPS, and Waka Kotahi (NZTA) must give effect to it with regards to land transport planning and funding.

The draft GPS 2021 (due for adoption late 2021) outlines four strategic priorities for land transport:

- Safety,
- Better Transport Options,
- Improving Freight Connections
- and Climate Change.

These themes, objectives and priorities guide the development of levels of service for the roading activity.

Figure 3.1: Transport Outcomes Framework

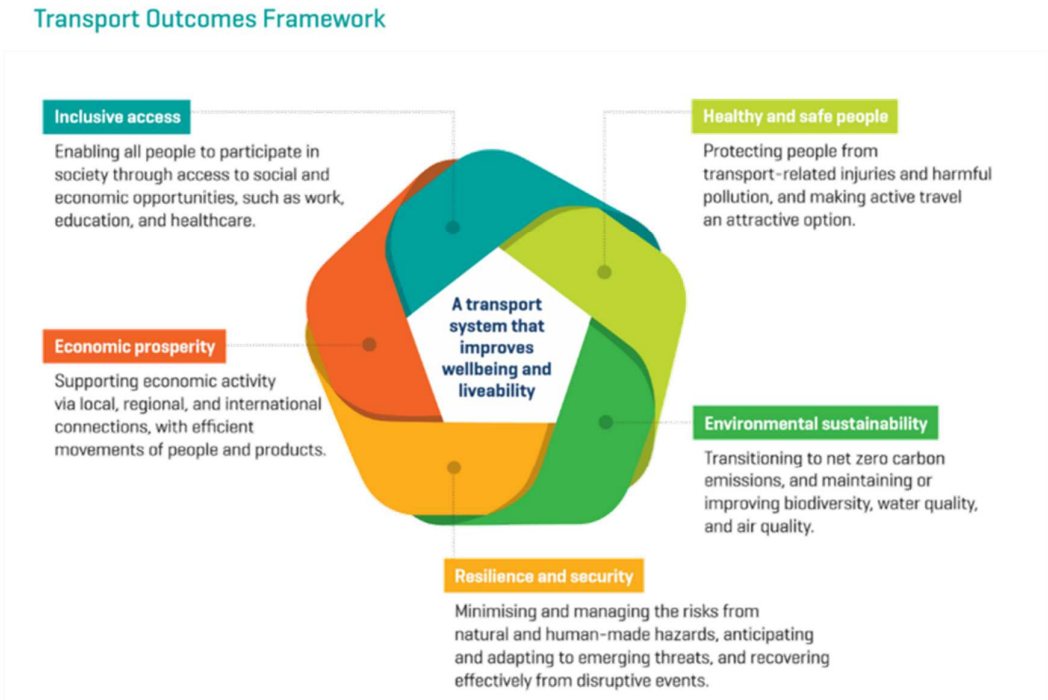
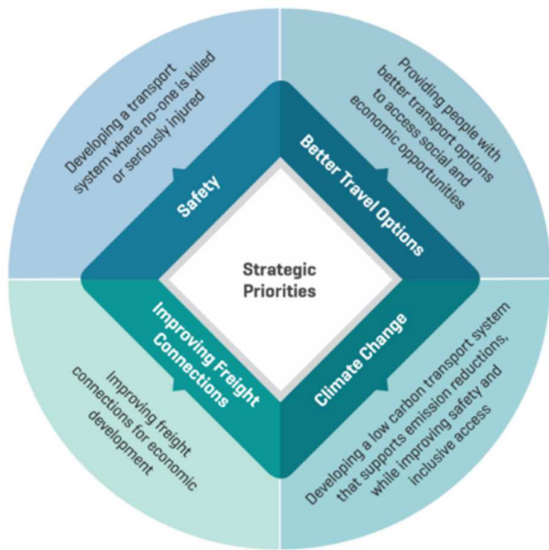


Figure 3.2: Investment Guided by Four Strategic Priorities

Investment will be guided by four strategic priorities

Considering the 10 year context (2021/22-2030/31), the Government has identified four strategic priorities for land transport investment to best contribute to improving our communities' wellbeing and liveability:



3.3.7 Arataki Waka Kotahi NTZA's Long Term Strategic View

Arataki (version 2) is Waka Kotahi's plan for the land transport system in 2021-2031. The second-generation plan, adopted in August 2020 outlines the Agency's views of what is needed to deliver on the government's current priorities and long-term objectives for the land transport system.

REGION STEP CHANGES



IMPROVE URBAN FORM

Greater Christchurch Partnership are working towards general intensification of Christchurch over the next 30 years and intensification of existing urban areas. Project 8011, the Central City Residential Programme, aims to increase the population of central Christchurch to 20,000 by 2028.

TRANSFORM URBAN MOBILITY

Growth in greater Christchurch has placed increasing demand on land transport networks. Approximately 22,000 workers commute into Christchurch daily from the Selwyn and Waimakariri districts, largely in private vehicles.⁶⁶

SIGNIFICANTLY REDUCE HARMS

Canterbury has a poor road safety record. Crashes in the region highlight the need to focus on the Christchurch urban area and surrounding townships, SH1 between Christchurch and Timaru and high-risk rural roads. Particular issues exist around speeding on high-risk roads, not wearing seatbelts, crashes at intersections and crashes involving vulnerable users.⁴⁷

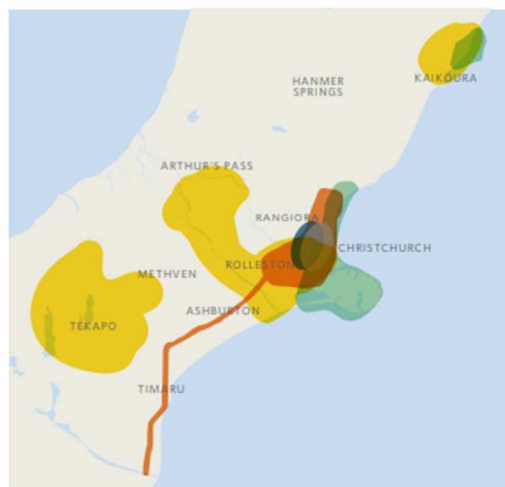
TACKLE CLIMATE CHANGE

Some transport networks are at risk from sea level rise, coastal flooding and extreme weather events. Without intervention, growth in and around Christchurch and the wider Canterbury region will result in continued travel by private vehicles resulting in increased carbon emissions.

SUPPORT REGIONAL DEVELOPMENT

The economic impact of COVID-19 will be felt strongly in Canterbury because of its high dependence on international tourism. Areas where this will be felt most strongly will be Kaikōura and Mackenzie District, because they are important visitor destinations and Christchurch, because of role as an international gateway. This will also flow on to Selwyn.

There is likely to be increased unemployment, particularly among young people and Māori. These communities need improved access to employment, education and essential services.



599,694

REGIONAL
POPULATION²⁵

11.2%
REGIONAL
POPULATION
GROWTH
2013-18²⁵

12.8%
OF NATIONAL
POPULATION²⁵
2018

12.2%
OF NATIONAL
DEATHS
& SERIOUS
INJURIES (DSI)⁴⁷

364 TOTAL DSI⁴⁷
ANNUAL AVERAGE
FOR PERIOD 2016-19

14%
OF NATIONAL
VEHICLE
EMISSIONS⁴⁸

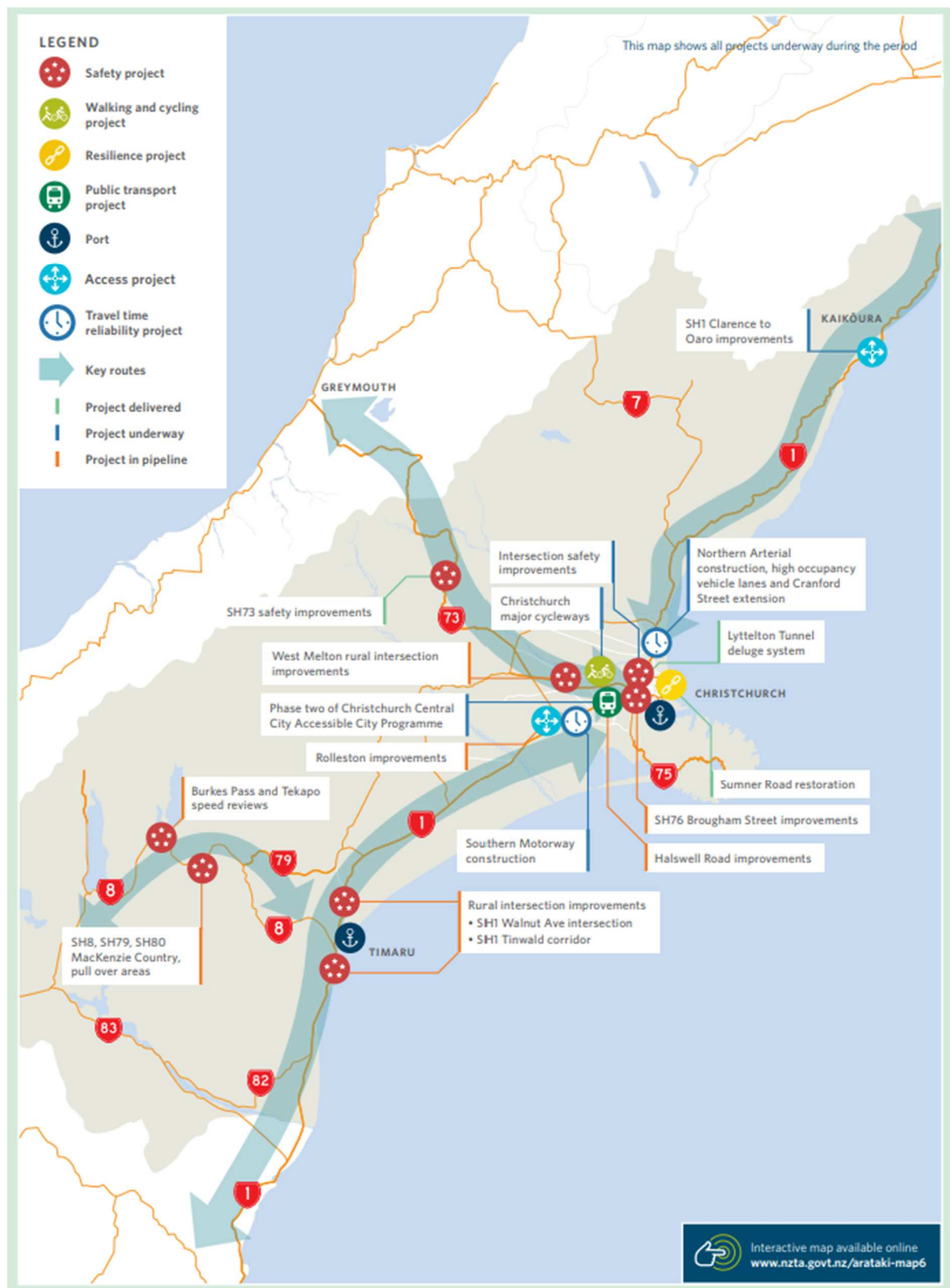
12.4%
OF NATIONAL
GROSS
DOMESTIC
PRODUCT
YEAR END
MARCH 2018²⁴

3.7%
REGIONAL
UNEMPLOYMENT
RATE

4.1% NATIONAL RATE
YEAR END
JUNE 2019⁴⁹

Pre COVID-19 data

The document illustrates the Agency's commitment to existing projects in Selwyn District – particularly safety and growth.



3.3.8 The National Land Transport Programme

The National Land Transport Programme (NLTP) contains all the land transport activities, such as road improvements and maintenance and public transport services which are expected to receive funding from the NZ Transport Agency. The NLTP is compiled from the proposed Regional Land Transport Programmes in accordance with available funding. The NLTP 2021-2024 is expected to be finalised by August 2021.

3.4 Legislation

3.4.1 Key Legislation – Implications of Asset Management

Legislation is established by the New Zealand Parliament and can determine requirements for Local Government. Significant legislation and regulations affecting the Transportation activity are provided in Table 1.

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

Table 1: Legislation Impact on the Transportation Activity

Legislation & Regulation	Activity Impact
Biosecurity Act 1993	*
Building Act 2004 and amendments	**
Building (Earthquake-prone Buildings) Amendment Act 2016	*
Canterbury Earthquake Recovery Act 2011/ Greater Christchurch Regeneration Act 2016	**
Civil Defence Emergency Management Act 2002	***
Climate Change Response Act 2002 (and amendments particularly the Climate Change Response (Zero Carbon) Amendment Act 2019)	**
COVID-19 Recovery (Fast-track Consenting) Act 2020	*
Energy Efficiency and Conservation Act 2000	*
Environmental Protection Authority Act 2011	*
Epidemic Preparedness Act 2006 (and amendments)	*
Fencing Act 1978	*
Fire and Emergency New Zealand 2017	*
Government Rounding Powers Act 1989	**
Greater Christchurch Regeneration Act 2016	**
Health and Safety at Work Act 2015	***
Heritage New Zealand Pouhere Taonga Act 2014	*
Land Transport Act 1998 (including amendments, particularly Land Transport Amendment Act 2017)	**
Land Transport Management Act 2003	***
Local Government Act 2002 (and amendments)	***

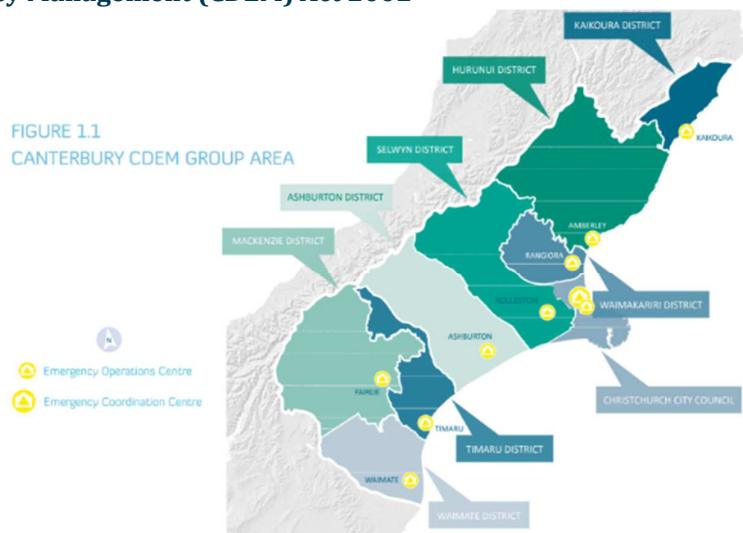
Legislation & Regulation	Activity Impact
Local Government Act 1974 (and amendments)	**
Local Government Rating Act 2002 (and amendments)	**
Local Government (Financial Reporting and Prudence) Regulations 2014 (<i>previously Local Government (Financial Reporting) Regulations 2011</i>).	**
Ngāi Tahu Claims Settlement Act 1998	*
Public Works Act 1981 (and amendments)	*
Resource Management Act 1991 (and amendments)	**
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 is described below:

3.4.2 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 the Canterbury Regional CDEM Group to support emergency management within Selwyn District boundaries.

FIGURE 1.1
CANTERBURY CDEM GROUP AREA



3.4.3 Climate Change Response Act 2002 and the Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response Act, inclusive of the Zero Carbon amendment, provides a framework within which New Zealand can develop and implement clear and stable climate change policies, to enable New Zealand to contribute to global reductions and to prepare for and adapt to the effects of climate change. Key elements include:

- setting a domestic greenhouse gas emissions reduction target for New Zealand to:
 - reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050

- reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
- establish the Climate Change Commission as an independent agency to provide evidence-based advice to government on climate issues. The Commission is also responsible for monitoring and reviewing progress towards the country’s goals for reducing emissions and adapting to a changing climate.

3.4.4 Fencing Act 1978

This act sets out requirements and responsibilities in relation to mutual boundary fences.

3.4.5 Health and Safety at Work Act (HSWA) 2015

The Health and Safety at Work Act 2015 (HSWA) was enacted on 4 April 2016 and is part of “Working Safer: a blueprint for health and safety at work” and reforms New Zealand’s health and safety system.

The HSWA:

- **reinforces** proportionality – what a business needs to do depends on its level of risk and what it can control.
- **shifts** from hazard spotting to managing critical risks – actions that reduce workplace harm rather than trivial hazards.
- **introduces** the “reasonably practicable” concept – focusing attention on what’s reasonable for a business to do.
- **changes** the focus from the physical workplace to the conduct of work – what the business actually does and so what it can control.
- **supports** more effective worker engagement and participation – promoting flexibility to suit business size and need.

A guiding principle of the HSWA is that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from work risks, as is reasonably practicable. The HSWA shifts the focus from monitoring and recording health and safety incidents to proactively identifying and managing risks so everyone is safe and healthy.

The HSWA identifies four duty holders:

persons conducting a business or undertaking (PCBUs) – these may be individuals or organisations	have the primary responsibility for the health and safety of their workers and any other workers they influence or direct. They are also responsible for the health and safety of people at risk from the work of their business
officers	(company directors, partners, board members, chief executives) must do due diligence to make sure the business understands and is meeting its health and safety responsibilities
workers	must take reasonable care for their own health and safety and that their actions don't adversely affect the health and safety of others. They must also follow any reasonable health and safety instruction given to them by the business and cooperate with any reasonable business policy or procedure relating to health and safety in the workplace.

other persons at workplaces	who come into the workplace, such as visitors or customers, also have some health and safety duties to ensure that their actions don't adversely affect the health and safety of others

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.

3.4.6 Land Transport Management Act 2003

The Land Transport Management Act 2003 contains requirements for content, development of and consultation on the District's Land Transport Programme prior to its adoption by Council.

An amendment in 2008 by the Land Transport Management Amendment Act, introduced the requirement for a Regional Transport Committee (RTC) to develop a three-year Regional Land Transport Programme (RLTP). This programme was aligned to the Regional Land Transport Strategy which was prepared separately. The programme is now contained within the Land Transport Plan. Environment Canterbury is responsible for preparing the Canterbury Regional Land Transport Plan programme, in relation to both national and regional outcomes and the funding priorities.

An amendment to the Act in 2017 (Land Transport Amendment Act 2017) introduced the opportunity to restrict heavy traffic on roads based on damage to a road or a danger to the safety of road users. Previously such controls would be via a Council Bylaw. Council may seek to use this opportunity to allow for better management of the network including focussing heavy traffic onto higher level/more appropriate routes.

3.4.7 Local Government Act (LGA) 2002

The LGA defines the purpose of Local Authorities as enabling local decision-making by and on behalf of the community and allows Local Authorities the power of general competence.

Subsequent amendments to the LGA have introduced additional requirements on Local Authorities, including asset management planning and strategies, and community engagement (2012). In 2019, the LGA was changed further by the Local Government (Community Well-being) Amendment Act 2019 which clarified the purpose of Local Authorities as being to "promote the social, economic, environmental, and cultural well-being of its district or region in the present and for the future".

3.4.8 Local Government Act 1974

A significant part of the Local Government Act 1974 has been repealed (as replaced by the Local Government Act 2002), with specific sections still in force, particularly those relating to the Transportation activity. Part 21, Section 319 of this Act essentially empowers the Council to maintain its roads to the standard it determines as appropriate.

3.4.9 Local Government Rating Act 2002

This Act provides Council with flexible powers to set, assess, and collect rates to fund Council activities while ensuring that rates are set in accordance with decisions that are made in a transparent and consultative manner (decision making processes determined by the Local Government Act 2002).. The Act provides for processes and information to enable ratepayers to identify and understand their liability for rates.

3.4.10 Resource Management Act (RMA) 1991

The RMA is the main piece of legislation that sets out how we should manage our environment. It requires the preparation of District Plans and Regional Plans which determine the use of resources and impacts on the environment. There have been numerous amendments to the Resource Management Act over the years, with the most significant anticipated through the RMA reform which is currently underway.

3.4.10.1 Anticipated RMA reform

This will be the most significant, broad-ranging and inclusive review of the resource management system since the Resource Management Act 1991 (RMA) was enacted. Three new pieces of legislation are proposed to replace the RMA. These are detailed as follows.

1. Natural and Built Environments Act (NBA) Bill

This is the core piece of legislation to replace the RMA. The purpose of this Act is to enhance the quality of the environment to support the wellbeing of present and future generations.

This would be achieved by:

- promoting positive outcomes for both the natural and built environments
- ensuring that use, development and protection of resources only occur within prescribed environmental limits
- ensuring adverse effects of activities on the environment are avoided, remedied or mitigated.

Under the Act, central government's proposed new National Planning Framework will provide a set of mandatory national policies and standards on specified aspects of the new system. These will include environmental natural limits, outcomes and targets.

2. Strategic Planning Act (SPA) Bill

This Act provides a strategic and long-term approach to how we plan for using land and the coastal marine area. Long-term spatial strategies in each region would be developed to identify areas that:

- will be suitable for development
- need to be protected or improved
- will need new infrastructure and other social needs
- are vulnerable to climate change effects and natural hazards such as earthquakes.

The regional strategies would enable more efficient land and development markets to improve housing supply, affordability and choice, and climate change mitigation and adaptation.

The Strategic Planning Act will integrate functions under the RMA, Local Government Act 2002, Land Transport Management Act 2003 and the Climate Change Response Act 2002 to enable clearer and more efficient decision-making and investment.

3. Climate Change Adaptation Act (CCA) Bill

This Act would support New Zealand's response to the effects of climate change. It would address the complex legal and technical issues associated with managed retreat and funding and financing adaptation.

The NBA and SPA are anticipated to work together as core parts of a revised resource management system, with all three Bills being progressed through parliament in 2022.

3.4.11 Utilities Access Act 2010

The Act establishes a framework for the National Code of Practice to govern how corridor managers and utility operators coordinate their activities within transport corridors.

The purpose of the Code is to:

- Maximise the benefit to the Public while ensuring that all Utility Operators are treated fairly.
- Ensures that disruptions to roads, motorways, and railways caused by Work by Utility Operators are kept to a minimum, while maintaining safety.
- Provides a nationally consistent approach to managing access to Transport Corridors.

During 2012 Council Engineers investigated the Utilities Access Act 2010 and associated National Code of Practice for Utility Operators' Access to Transport Corridors to consider and document:

- Implications of the Code
- The context of the Selwyn District:
 - Overview
 - Roles
 - Systems
 - Business processes
 - Implementation

The Code is a mandatory requirement for all road and rail controlling authorities and utility network operators under the Utilities Access Act 2010 and came into effect on 1 January 2012. The Code was reviewed in 2016.

3.4.12 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 of New Zealand's Regions and Districts.

See 3.3.3 for National Policy Statement on Urban Development (NPS-UD 2020).

3.4.13 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.

3.4.14 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 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 Strategies Plans and Business Cases

Canterbury Region and Greater Christchurch area strategies and plans are discussed in the following sections.

Canterbury Regional documents relate to the entire region and are typically developed under Environment Canterbury's direction.

The group of documents developed for the Greater Christchurch area prior to, or under the Greater Christchurch Urban Development Strategy (UDS), now called the Greater Christchurch Partnership also follow.

3.5.1 Canterbury Regional Council Plans and Strategies

The Regional Council requirements of the Resource Management Act 1991 are implemented by ECan through the resource consent procedure, and the regional plans. Key regional plans as relating to Selwyn's Transportation activity are discussed below.

3.5.1.1 *Canterbury Regional Council's Regional Policy Statement*

The Canterbury Regional Policy Statement (CRPS) 2013 gives an overview of the significant resource management issues facing the region, including issues of resource management significance to Ngāi Tahu. The purpose of the CRPS is to set out objectives, policies, and methods to resolve these resource management issues and to achieve the integrated management of the natural and physical resources of Canterbury.

There are specific policies related to infrastructure and recovery and rebuilding of Greater Christchurch.

Regional Policy Statement Proposed Change 1

Proposed Change 1 was developed to address land use and urban growth management in Greater Christchurch until 2041. Proposed Change 1 enables land within Future Development Areas to be rezoned by the Selwyn and Waimakariri District Councils, if required, to meet their medium term (ten year) housing needs. It also sets out which land is to remain rural for natural resource protection or other reasons.

This process has been undertaken through the Streamlined Planning Process, with Change 1 gaining approval from the Minister for the Environment on 28 May 2021. The change to the CRPS is due to be made operative in July 2021.

3.5.1.2 *Land and Water Regional Plan (LWRP)*

Under the Resource Management Act 1991, the Regional Council must achieve integrated management of the natural and physical resources of the region, including control over the use of land and freshwater. The Canterbury Land and Water Regional Plan (1 December 2015) aims to provide clear direction on how land and water are to be managed in the region. The operative LWRP is inclusive of plan changes 1-6. A 7th Plan Change is currently being progressed.

3.5.1.3 *Canterbury Natural Resources Regional Plan (NRRP)*

The Canterbury Natural Resources Regional Plan (operative 2011) assists Environment Canterbury to carry out several of the functions set out in section 30 of the RMA. These relate to the integrated management of Canterbury Region's natural and physical resources, and include, but are not limited to, the control of the use of land for various specified purposes.

3.5.1.4 *Canterbury Regional Land Transport Plan 2021-2031 (RLTP)*

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.

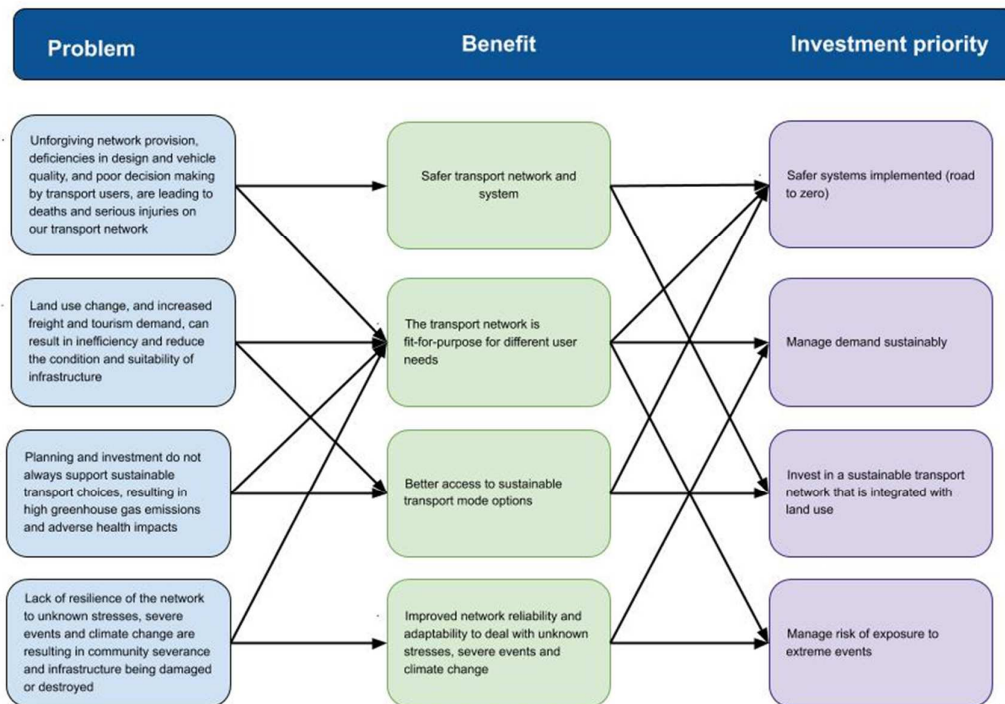


Figure 3: Canterbury RLTP ILM (Environment Canterbury)

N.B. The outcomes of these priorities may have been tweaked based on the latest NZTA Business Case work. Refer to **Section 7 – Growth and Demand** for more details.

3.5.1.5 Canterbury Regional Public Transport Plan 2018-28

The Canterbury Regional Public Transport Plan is a legislative document that sets out Ecan's objectives and policies for delivering public transport in Canterbury. It describes the services that Ecan proposes to provide in the future to meet the needs of new and existing customers and the policies which those services will operate by.

It also identifies key partnerships with operators and territorial authorities in Canterbury.

3.5.1.6 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.

3.5.1.7 Land Use Recovery Plan

The Land Use Recovery Plan took effect on 6 December 2013. It is a statutory document, and directs Christchurch, Waimakariri and Selwyn District Councils along with Environment Canterbury to make

changes to District Plan and Canterbury Regional Policy Statement. Some of these changes took effect immediately and others were to be developed by the relevant council within specified timeframes.

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.

This does not include the additional sections that will be unlocked via the Special Housing Accord and the NPS-UD.

*This is discussed in **Section 7 – Growth and Demand**.*

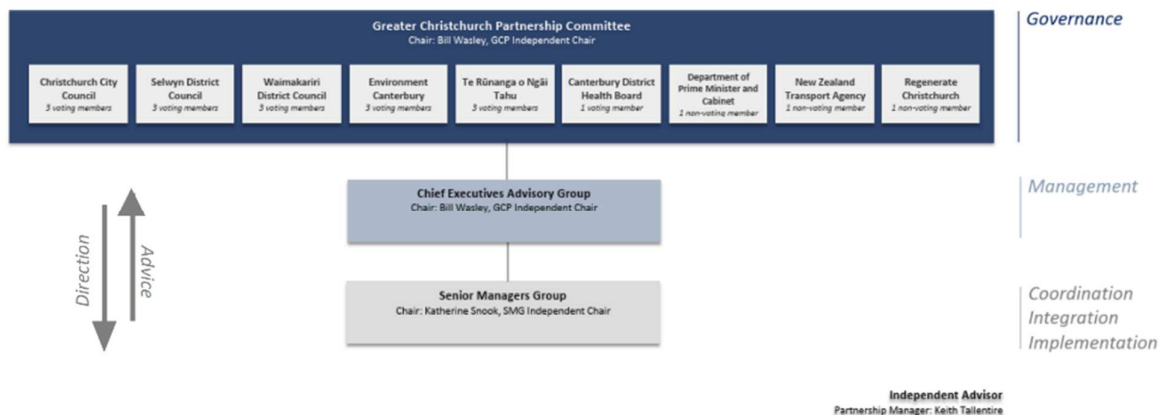
3.5.2 Greater Christchurch Partnership

The Greater Christchurch Partnership is a voluntary coalition of local government, iwi, health and government agencies working collaboratively for the prosperity of Greater Christchurch.

Almost 80% of the Canterbury regional population live in Greater Christchurch, emphasising its importance as a strategic regional centre and principal economic hub.

The Greater Christchurch Partnership includes:

- Environment Canterbury
- Te Rūnanga o Ngāi Tahu
- Canterbury District Health Board
- Christchurch City Council
- Waimakariri District Council
- Selwyn District Council
- Waka Kotahi (New Zealand Transport Agency)
- Department of Prime Minister and Cabinet (Greater Christchurch Group)



The Committee is an evolution of the Greater Christchurch Urban Development Strategy Implementation Committee, which was established in 2007 to oversee the implementation of the Greater Christchurch Urban Development Strategy. Subsequently, the Committee has also provided a forum for recovery, regeneration and resilience matters.

One of the key functions of the Committee is to establish an agreed strategic framework to manage growth, and address urban development, regeneration, resilience and wellbeing matters for Greater Christchurch.

3.5.2.1 *Greater Christchurch Transport Statement (GCTS)*

The GCTS is a framework for integrated transport planning and network development. The GCTS focuses on the strategic links between key places within the Greater Christchurch area, with the partners committed to working together to build resilience, efficiency and reliability into the transport network, at the same time ensuring the community is provided with sustainable transport choices. The Christchurch International Airport, the Lyttelton Port of Christchurch, KiwiRail and Ministry of Transport are all signatories to the GCTS along with the members of the Greater Christchurch Partnership.

3.5.2.2 *Greater Christchurch Urban Development Strategy*

The Greater Christchurch Urban Development Strategy (UDS) has had 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). The Strategy partners include Environment Canterbury, the Christchurch City Council, Selwyn and Waimakariri District Councils and the New Zealand Transport Agency.

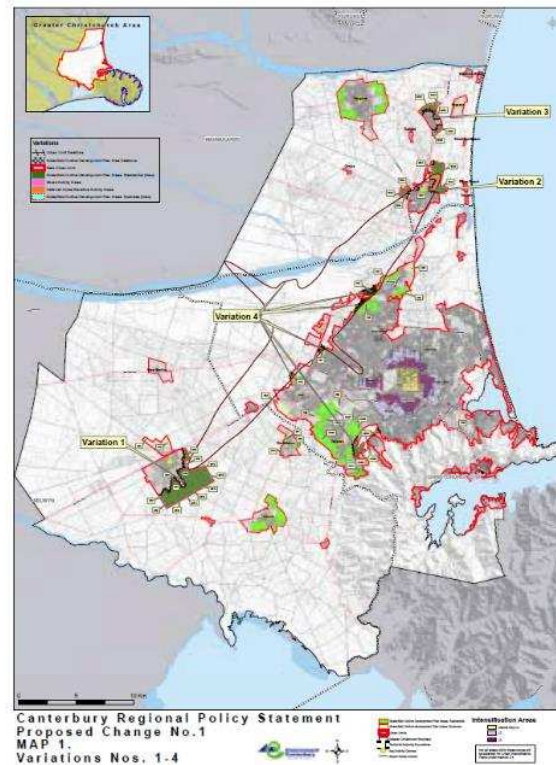


Figure 4: Canterbury Regional Policy Statement Proposed Change No.1

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 on growth management options for the area.

Greater Christchurch Area priorities

The most pressing strategic transport issues needing partnership action in the short term.

- Port access
- Public transport operation and growth
- Western corridor, airport access and overall freight growth and opportunities
- Northern and south-west access, future growth and changing land use
- Central City linkages to other key places



3.5.2.3 Greater Christchurch Transport Statement

Developed as a collaboration project in 2012, this Statement focusses on the commitment of the Greater Christchurch transport partners to work together.

The Statement confirms that the key transport providers are working together to deliver a seamless transport system over the greater Christchurch area that:

- Supports earthquake recovery and the growth of Canterbury, and
- Connects people and places with a range of sustainable and affordable transport options.

This will be achieved through:

- Integrated decision-making on transport and land use, and
- Aligning our transport investments to get better value for money.



3.5.2.4 Greater Christchurch Freight Study (GCFS)

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 the Greater Christchurch Councils and ECan. The study was supported by Lyttelton Port, KiwiRail and Christchurch International Airport Limited (CIAL).

The study was undertaken in three steps with sub-reports as follows:

1. **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.
2. **The Freight Infrastructure Statement** assessed current infrastructure capacity, supply chain capability and identified constraints and opportunities for the future.
3. **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.

3.5.2.5 *The Mode Shift Plan*

The Regional Mode Shift Plan Greater Christchurch (2020), published September 2020 by Waka Kotahi NZ Transport Agency is a Greater Christchurch Partnership document. It provides a sound overview and strategy for mode shift in Selwyn.

In 2018 the Ministry of Transport developed a Transport Outcomes Framework. The framework sets out the durable, long-term outcomes the government aims to achieve, through the transport system, to improve intergenerational wellbeing and liveability. Mode shift and reducing car dependency have been assessed as contributing to all five outcomes within the framework.

Contribution of mode shift toward transport outcomes

Outcome	Mode Shift Contribution
Inclusive Access	Better travel options and a more efficient transport system mean that more people can access social and economic opportunities, especially to ensure that those with disabilities or low incomes can fully participate in society
Economic Prosperity	More efficient movement of people and products, including to large and highly productive employment centres, can reduce costs and boost income levels, as well as unlocking urban development opportunities.
Environmental Sustainability	An increase in public transport and active modes reduces pressure on natural resources and reduces carbon emissions from the vehicle fleet, while more efficient use of land (given reduced demand for roads) lessens the impact on biodiversity and water
Healthy And Safe People	Greater use of active modes promotes physical activity. Public transport is a very safe way to travel, and having fewer vehicles reduces crashes, noise and harmful emissions, all of which increase public health benefits.
Resilience And Security	Providing more transport choice means a greater range of alternative travel options is available in the face of short and long-term disruption to the transport system

Central government suggests there are a range of ‘levers’ available to achieve mode shift. Those regarded as applicable to Greater Christchurch follow.

Table 3: Focus Areas of this Mode Shift Plan

Levers	1. Shaping Urban Form	2. Making Active and Public Transport* More Attractive	3. Influencing Travel Demand and Transport Choices
Focus Areas	6. Enable, support and encourage housing, business growth and public facilities in areas with sustainable travel options.	8. Encourage the uptake of public transport through investment in infrastructure and services to make public transport more attractive.	10. Make sure it is safe, easy and intuitive for people to change to sustainable modes.
	7. Ensure the layout and design of urban areas supports public transport, walking and cycling	9. Encourage the uptake of walking and cycling through investment in infrastructure and services to make active modes safer and more attractive.	

Initial Priorities of the Mode Shift Plan

Priority Package 1: Connecting the cycleways

Filling in critical gaps in the cycleway network will enable end-to-end journeys to be undertaken more safely, thereby supporting more residents to travel by bike and e-bike, and fully leverage the significant investment made to date in this network.

Package 2: Public Transport Service Improvements

A holistic approach to grow public transport mode share will be confirmed in mid/late 2020 through the PT Futures detailed business cases; however, the short-term opportunities that are likely required regardless of PT Futures include:

- Enhancing overcrowded services
- Piloting On-Demand Public Transport
- Improving Bus Prioritisation
- Streamlining the Customer Experience

Package 3: Encouraging Behaviour Change

Behaviour change initiatives provide a relatively low cost - high benefit mechanism to deliver mode shift, particularly where campaigns are aligned with improvements in infrastructure and services.

The business case is still under development and has not been committed by the partners.



Passenger Transport and Mass Rapid Transit (MRT) are components of the future system.

3.5.2.6 *Christchurch Rolleston and Environs Transportation Study – CRETS (2007)*

The roading issues pertaining to growth between Christchurch, Rolleston and Lincoln were examined in the Christchurch Rolleston and Environs Transportation Study (CRETS).

The 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. The Selwyn based projects have been scrutinised through the Business Case Approach.

CRETS was a foundational document for transportation change in the area and has progressively been replaced by new plans and programmes.

3.5.2.7 *Prebbleton Arterial Intersections Business Case (2015)*

The Prebbleton Light Strategic Business Case was undertaken to support better transport outcomes in and around Prebbleton. The document remains current as implementation proceeds.

3.5.3 *Waka Kotahi/NZTA*

3.5.3.1 *NZTA State Highway Business Cases (2017)*

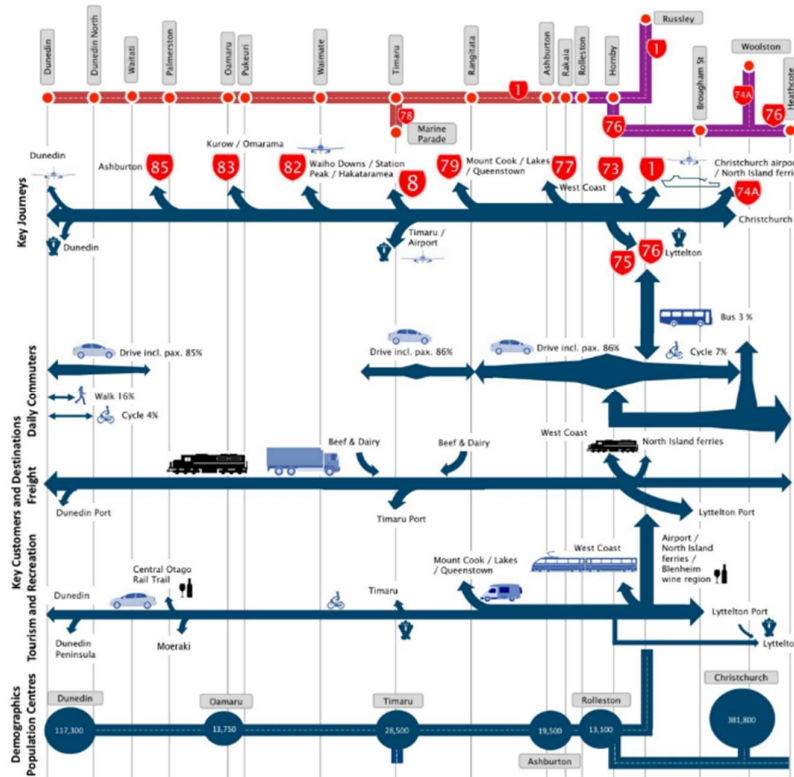
The Management Plans describe the customer service delivery story for portions of network as measured against the ONRC framework.

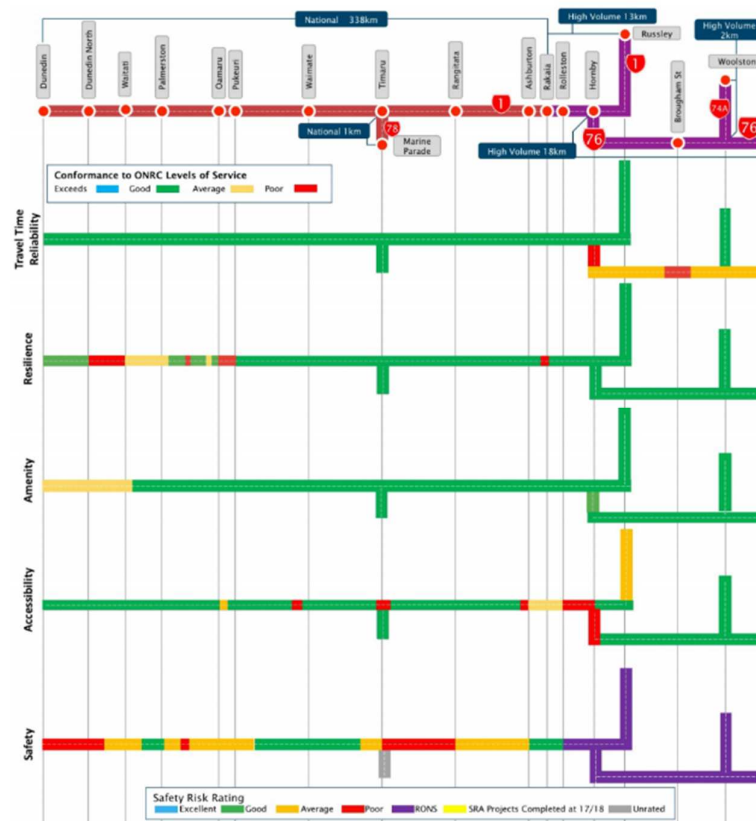
3.5.3.2 *Christchurch to Dunedin Corridor Management Plan 2018 - 2028*

This Corridor Management Plan describes the customer service delivery story for the Christchurch to Dunedin corridor, as measured against the One Road Network Classification performance framework. It is intended to describe the investment story, i.e. why invest in this corridor, in a context everyone can understand whether the activities are delivered through investment in the State Highways maintenance, operations, renewals and improvements programmes. The corridor management plan considers a combination of:

- The pressures on the system that are resulting in increased demand or a reduction in levels of service
- The current state of the system and how it is performing
- The response the Agency is investing in to deliver the customer levels of service along the corridor

The corridor starts at the intersection of SH73, Russley, Christchurch, passing through to Hornby where SH76 joins SH1 linking to the Port of Lyttelton. The corridor includes SH74A a local link between SH76 and SH74. SH1 continues south from Hornby along the east coast ending at St Andrew Street in central Dunedin. The corridor provides connections to other corridors linking to the central and western South Island communities and visitor destinations. The South Island main trunk rail line runs alongside SH1 from Hornby to Waitati on the northern edge of Dunedin... and offers an alternative for freight movement.



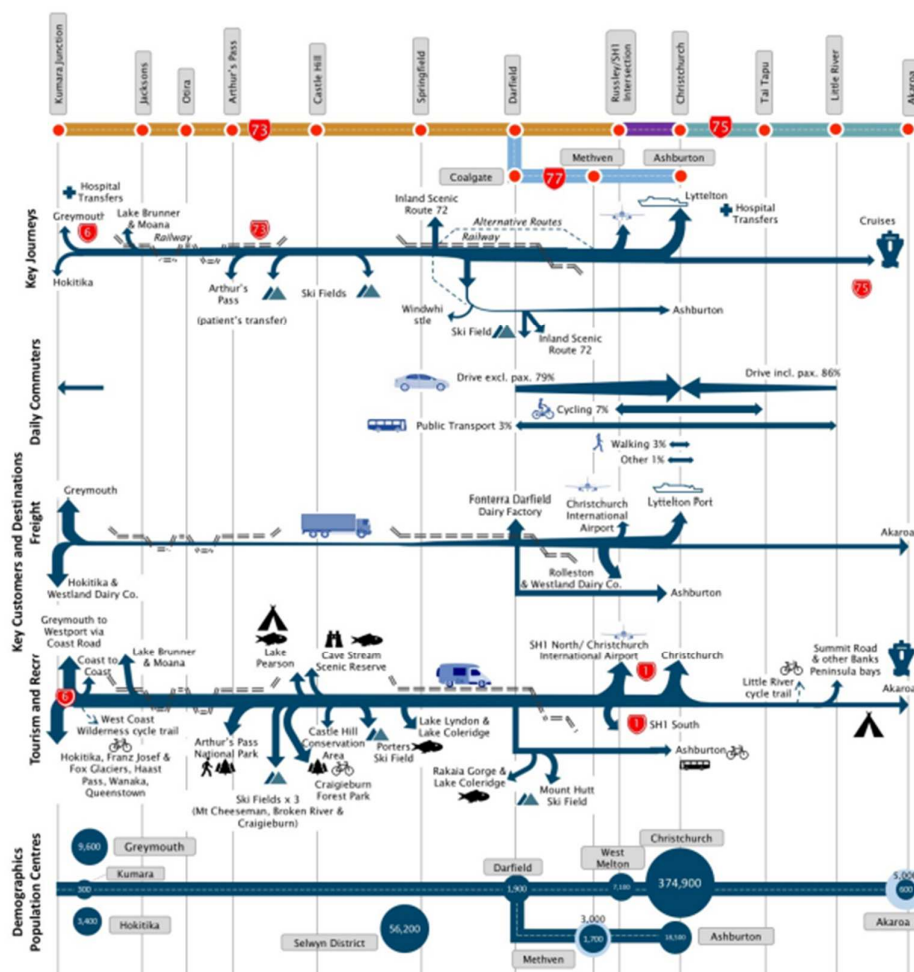


2018 – 2028 Akaroa to Kumara Corridor Management Plan

SH73 from Kumara Junction on the West Coast of the South Island to the SH73/SH76 intersection in Christchurch, and SH75 continuing southeast to Akaroa on Banks Peninsula. The CMP also includes SH77 from Darfield to Ashburton, via Methven, to the west of Christchurch.

Resilience is identified as the key level of service challenge.

The section of corridor through the Southern Alps (SH73) has a high level of risk. There are limited viable alternative routes should critical assets, such as bridges in the Otira Gorge and over the Waimakariri River fail, or a major blockage occur along this section due to flooding, slips, rockfalls and snow/ice. The only alternative route across the Southern Alps is via SH7 to the north in the event of road closures, which is a significant detour. There are no alternative routes available for SH75 to Akaroa

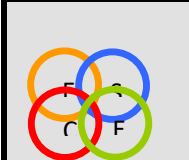
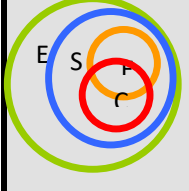


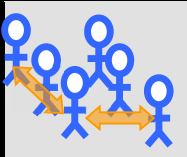
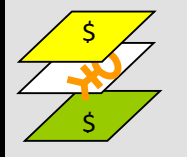
3.6 Selwyn District Council Strategies, Plans, Policies and Bylaws

3.6.1 Sustainability Principles

In February 2008 Council adopted Seven Sustainability Principles to guide planning and management of infrastructure.

Figure 3.4: Selwyn District Council Seven Sustainability Principles

	Principle 1: Make decisions based on the four aspects of well-being Integrate environmental, economic, social and cultural considerations within Council decision making. Consider both the short-term and long-term effects of the decision
	Principle 2: Observe the Precautionary Principle to provide contingency and enable adaptability of our community Err on the side of caution in the face of scientific uncertainty and a risk of serious or irreversible environmental damage

	Principle 3: Seek “intra-generational” and “inter-generational” equity Improve quality of life and create opportunity for all of the current generation, without compromising the quality of life and opportunity of future generations
	Principle 4: Internalise environmental and social costs Develop and adopt a system that recognises the true costs and benefits of protecting and restoring environmental/ecological, human, social and cultural resources affected as a result of the services that Council provides
	Principle 5: Foster community welfare Support and encourage the region to prosper socially and culturally. Our assets are not just our built assets but our people, their skills and the connections between them
	Principle 6: Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems Conserve, and sustainably use and manage, the district’s biodiversity, recognising the various services that ecosystems provide to humans as well as the environment’s intrinsic value
	Principle 7: Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes Recognise that we are part of a whole globe system whether we can physically see the impacts of our actions or not.

3.6.2 District Wide Strategy (Future for Selwyn)

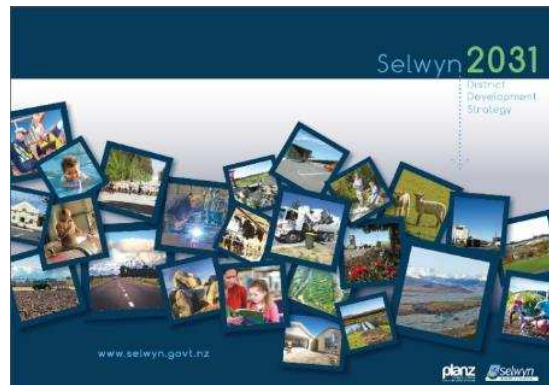
In 2014 Council adopted “Selwyn 2031” the District Development Strategy. This strategy has been in preparation since 2011.

The Vision of “Selwyn 2031” is:

“To grow and consolidate Selwyn District as one of the most liveable, attractive and prosperous places in New Zealand for residents, businesses and visitors.”

To achieve this vision, Selwyn 2031 identifies the following five high-level Directions to guide Council’s future decision-making:

- A more sustainable urban growth pattern
- A prosperous community
- A great place to live
- A strong and resilient community
- sustainably managing our rural and natural resources



Recent growth has been more rapid than expected, and joint planning through the Greater Christchurch Partnership has become more prevalent.

Key actions identified in Selwyn 2031 include the role of transportation, as detailed below.

KEY ACTIONS

Selwyn 2031 identifies an extensive list of actions to address a range of urban growth issues. The Strategy includes an implementation schedule for each set of actions. However the timing of each action will be prioritised and assessed through the Long Term Plan processes. Some of the key the outcomes anticipated by the actions are:

District-wide strategic planning

- The preparation of Area Plans for Malvern and Ellesmere and their environs;
- Facilitate sustainable urban growth through the implementation of a series of LURP actions within the metropolitan greater Christchurch area.

New strategic developments

- Cater for projected residential and business growth until at least 2031 through the development of over 900 hectares of land that has been rezoned and/or identified as a greenfield priority area within the Land Use Recovery Plan and District Plan.

Building our economic strengths

- Strengthen key economic activities by protecting the function of Rolleston, Lincoln, Darfield and Leeston as Key Activity Centres;
- Ensuring an appropriate scale and distribution of rural, retail and industrial activities;
- Facilitating development within existing or identified priority business areas within Rolleston and Lincoln;
- Safeguarding the continued operation of strategic infrastructure.

Integration of land use and infrastructure

- Achieve greater efficiencies in the provision of core infrastructure through a revision of the population projections in the Selwyn Growth Model and;
- Implementation of the township network approach;
- Continued preparation, monitoring and review of strategic urban growth plans.

Protection of our existing character

- Retain the district's sense of rural identity by adopting a consolidated approach to urban growth;
- Reinforce and enhance the character of each township by requiring outline development plans and the use of good urban design principles within new development areas.

Better transport links

- Improve transport safety, connectivity and funding efficiencies through the implementation of a 'one network' approach;
- Use of outline development plans for greenfield and intensification areas and other localised strategic initiatives.

Improved supply of housing types

- Provision of a range of housing types to meet the diverse range of social, cultural and economic needs of the community.

Enhancing our cultural connections

- Recognition of Te Taumutu Rūnanga as kaitiaki;
- Consideration of tāngata whenua values in the development of all strategic urban growth plans.

Strengthening our community's wellbeing

- Encourage appropriate levels of health, community and social services; opportunities for employment, heritage conservation and arts; and the provision of quality public space and community facilities and services within townships.

Higher quality living and business environments

- Achieve safe, functional and attractive living and business environments by requiring new development to occur in accordance with outline development plans, design guidelines and to give effect to higher level strategic planning documents.

Better monitoring

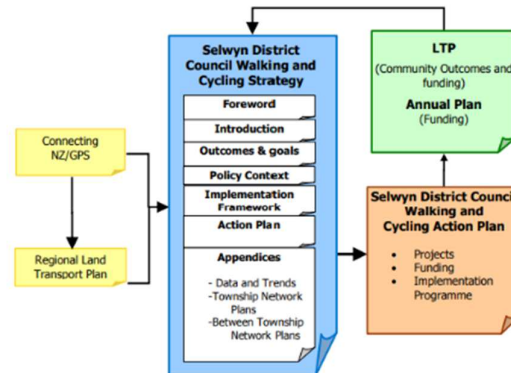
- Establish and implement systems to monitor the outcomes sought by Selwyn 2031, including the rate of uptake of residential and business land.

3.6.3 Walking & Cycling Strategy and Action Plan 2018

The Walking and Cycling Strategy seeks to achieve the vision of a *“Selwyn where more people walk and cycle safely for transportation and enjoyment”*.

While the strategy aligns with the 2018 Government Policy Statement and 2015 – 2025 Canterbury Regional Transport Plan; the direction remains appropriate.

The Appendices of the Strategy include Township Plans and Project Prioritisation Methodology band results.



3.6.4 Road Safety Strategy & Action Plan (2014)

The existing Selwyn Road Safety Strategy 2014 was developed prior to the Road to Zero initiative, in support of Council’s Vision Zero: *“Zero road deaths and serious injuries on Selwyn roads”*.

The Strategy which extended to 2020 is due for review and this is discussed in **Section 5 Road Safety**. While the strategy is dated, the included Road Safety Action Plans have been regularly revised and implemented.

Council’s oversight of the Road Safety Strategy was through its District Road Safety Subcommittee. This committee has since dissolved, and much of the role is now undertaken at a regional, coordinated level.

An Improvement Plan item is to review the Selwyn Road Safety Strategy to 2020.

3.6.5 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.

The Road and Townships Maintenance Contract is key for service delivery. A new version was prepared in 2020 and contractor selected via tender process in early 2021. The contract term is five years with a possible extension of another two years. Renewal works are included in the contract. The incumbent, HEB was the successful contractor will continue through the 2021/22 to 2023/24 triennium into the next LTP cycle.

REG Smart Buyer Self Assessment

This is to be revisited due to the improvements in processes since originally completed.

REG | THE ROAD EFFICIENCY GROUP

Smart Buyer Self Assessment

This assessment is based on the Smart Buyer Principles identified in the Road Maintenance Task Force Report. Score the following by ticking the appropriate box - (1) Disagree to (5) Strongly Agree.

Whenever you score yourself "4 or 5" think of an example you can use to justify your score to an independent auditor or the other attendees at this workshop.

Assessment statement Our Organisation	Score				
	1	2	3	4	5
1. Fully understands the different contracting models available.				✓	
2. Holds meetings that update the contracting industry on the forward works programme and any changes in approach, and proactively engages with the contracting industry to ensure it gains optimal value from any changes being implemented.			✓		
3. Has sufficient robust data (or is in the process of gathering robust data) on our networks to enable optimal integrated decision-making.				✓	
4. Has access to expertise that fully enables best use of the data available.				✓	
5. Is open to alternative solutions to those proposed in the contract documents.					✓
6. Understands risk and how to allocate and manage it.				✓	
7. Has a Council that is prepared to pay more now to achieve a lower whole of life cost.				✓	
8. Actively pursues value for money & does not always award contracts to the lowest price.				✓	
9. Is able to manage supplier relationships/contracts to ensure optimal expenditure, which sustains infrastructural assets at appropriate levels of service.				✓	
10. Supports ongoing skill and competency training and development for staff.				✓	
11. Actively shares and gains knowledge within the sector.				✓	
12. Is effective in keeping up with best practice in procurement, including best practice RFP/contract documentation.				✓	
13. Regularly seeks and receives candid feedback from suppliers on its own performance as a client and consistently looks to improve its performance.			✓		
14. Explores opportunities for collaboration by either sharing in-house resources with neighbours, or by procuring together or tendering together. That exploration could be through an LGA s17A evaluation of transport function delivery options.				✓	
Number of ticks in each column			2	11	1
Multiplying factor	x1	x2	x3	x4	x5
Total Score in Column			6	44	5
Total Score	55				

3.6.6 Council's Long Term Plan (LTP)

The LGA 2002 requires Territorial Authorities to prepare a LTP that sets out Council's funding intentions over a ten-year period. The Act prescribes how Councils should prepare their plans and what should be included in the final document. Consultation with the community is a very important part of this process to ensure community feedback.

The LTP is reviewed by Council every three years and provides information on all Council activities, how these will be delivered, how much they will cost and how they will be paid for. Land Transport is considered to be a significant activity under the Local Government Act.

The first year of each LTP is also considered to be the Annual Plan for the first year of the LTP period and as a result there is no separate Annual Plan process until the second year of an LTP.

3.6.7 Annual Plan

In accordance with the LGA 2002 Territorial Authorities in New Zealand must prepare and adopt an Annual Plan for each financial year. The Annual Plan must support the LTP in providing integrated decision-making and co-ordination of the resources of the Territorial Authority and contribute to accountability to the community.

The Annual Plan process provides an opportunity to adjust Council's direction (set in the LTP) for the twelve months following. It also provides an opportunity for Council to highlight the key issues it faces and update the community on achievements and plans for the following year.

3.6.8 30 Year Infrastructure Strategy

Changes to the LGA 2002 in 2014 requires that a Territorial Authority must prepare and adopt, as part of its LTP an Infrastructure Strategy for a period of at least 30 consecutive financial years.

The Infrastructure Strategy is informed by this AMP and Business Case developed for NZTA. It could be referred to if required.

The task of building, operating and maintaining infrastructure assets in an affordable manner is becoming increasingly difficult in view of the challenges Council faces. The issues and response proposed by transportation are shown below.

Key issue	Transportation Impact	Transportation Response
Rapid Growth and demographic change	Increasing traffic with growth	Integrate planning with Greater Christchurch partners
	Changes to vehicles in future	Promote alternative modes of transport (walking & cycling)
	Affordability in maintaining the network	Progress safety initiatives and programmes
	Public transport improvements and mass rapid transit on the horizon	Monitor asset condition and model long term management approach
	Investment in footpaths – wider and smoother to suit aging population	

Changing Government Priorities and Legislative Environment	In terms of PT and MRT we need to have nimble and adaptable solutions not locked into hard infrastructure that doesn't suit in the future	Reflect national and regional priorities and ensure these fit the Selwyn context. Prioritise actions based on Selwyn's community outcomes
Climate Change	What do we expect and what changes need to be made?	Commission scientific assessment of climate change impacts on Council infrastructure. Use this work as the basis for Council policy for infrastructure adaptation and emissions mitigation, as identified in Activity Management Plans
Environmental Impacts, sustainability and Compliance requirements		
Infrastructure Resilience	<i>Investment in maintenance needs to keep up with issues in parts of the district</i>	Increase resilience through climate change adaptation
Impacts of COVID-19	COVID-19 may affect economic activity and rate of growth	Monitor district activity and adapt programmes to suit.

(from Infrastructure Strategy 2021/22 – 2050/51)

3.6.9 Delivery of Services Review

Section 17A of the LGA (2014) requires that a Territorial Authority must review the cost-effectiveness of service delivery arrangements for meeting the needs of communities within its District or Region for good-quality local infrastructure, local public services, and performance of regulatory functions. The review must consider options for governance, funding and delivery.

While not separately audited or consulted on, the review is integral to demonstrating efficient, effective services that represent value for money.

3.6.10 Council's District Plan

The District Plan, a requirement of the RMA 1991, sets out in a systematic way the manner in which Council intends to deal with its functions under the Act. In doing this, the District Plan specifies objectives, policies and methods in relation to resource management issues in the District to achieve the integrated and sustainable management of the District's resources.

The Council has adopted the principle of zoning. This technique recognises that different areas of the District will have different resources, character and levels of amenity and the community will seek different environmental results for these areas.

The Selwyn District Plan was made partially operative on 10 June 2008 and there have been multiple plan changes and variations made. Plan Change 12 was the most significant in terms of transportation planning, and was entitled "A proposed Plan Change to provide for better urban form, a more sustainable land transport system and also to cater for future transport networks."

An objective of PC 12 was to align the District Plan with local, regional and national strategic planning documents that have been published or revised in relation to transport within the District. Plan Change 7, which also takes account of the new strategic policy direction from an urban growth perspective, does create some overlap. Plan Change 7 also seeks to implement relevant District Plan provisions in respect to the Council's subdivision design guide for residential subdivision in the urban living zones.

The 'Generation 2' Proposed District Plan was publicly notified on 5 October 2020. Following a call for submissions to the Proposed District Plan, the summary of submissions was notified on 19 April 2021 and the further submission consultation closed on 7 May 2021. Due to errors in some of the summarised submission points further submissions on the errata submission points was called for and consultation was held between 31 May and 14 June 2021. Hearings are scheduled to commence in August 2021 with the Proposed Plan being made operative by the end of 2022 (subject to any Environment Court proceedings).

3.6.11 Council's Engineering Design Standards for Subdivisions and Development

The role of Engineering Design Standards for Subdivision and Development has been strengthened through plan changes.

The guidance provided now includes:

- Engineering Code of Practice (2012).
- Subdivision Design Guide (SDC, 2009) – A design guide for residential subdivision in the urban living zones.
- Medium Density Housing Design Guide (SDC, 2009) – A design guide for medium density housing.
- Good Solutions Guide Subdividing Large Rural Style Lots.
- Commercial Design Guide (SDC, 2011) – A design guide for commercial development.
- Subdivision Design Guide & Urban Design Action Plan.

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.

Periodic reviews occur, and further review will follow the development of the Generation 2 Selwyn District Plan.

3.6.12 Master Plans and Structure Plans

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.

3.6.12.1 Rolleston Town Centre Master Plan

Council undertook consultation around the development of Rolleston as the ‘hub of the district’, and on the basis of community engagement, developed a Rolleston Town Centre Master Plan which was adopted in April 2014. The vision for the town 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.

Key projects from the Master Plan have been integrated into this AMP.



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

3.6.12.2 Lincoln Structure Plan

The Lincoln Structure Plan, adopted 28 May 2008, 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. In support of the Structure Plan, a Lincoln Town Centre Streetscape Report that looks at different design options for Gerald Street through Lincoln was prepared in 2015.

3.6.12.3 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; and infrastructure.

3.6.12.4 Prebbleton Structure Plan

The Prebbleton Structure Plan was adopted by Council on 24 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 the Regional Policy Statement, and will guide plan changes, resource consents and the review of the Selwyn District Plan.

3.6.13 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 4: Policy Impact on the Transportation Activity

Policy Group	Policy Name	Transportation Impacted Range
Advertising A2	Political Signs A202	**
Building B2	Earthquake Prone Dangerous and Insanitary Buildings B201	*
Community Awards / Funding C2	Arts Funding - Creative New Zealand C205 Sport New Zealand Rural Travel Fund Policy C210 Ward Discretionary Fund Policy C211 Community Grants Policy C213 Art in Public Places Policy C214	*
Council Property C5	Land Sales C502 Sale Of Vehicles and Plant C503 Vehicle Replacement and Procurement C504 Vandalism C505	**
Community Planning and Design C6	Crime Prevention Through Environmental Design C602	**
Engineering E1	Civil Engineering Standards E101	***
Finance Policy F1	Appointment and Remuneration of Directors and Trustees F104 Elected Members Disclosure of Interests Policy F105	**
Graffiti G2	Graffiti Removal Policy G201	*
Housing H1	Housing Policy H101	*
Insurances I1	Community Halls I101	*
Land Bank L1	Strategic Purchase of Land for Designated Purposes L101	**
Leasing L2	Renewal of Leases and Licences Policy L202 Term of Leases and Licences Policy L207 Leases and Licence Rental Reviews Policy L208 Transfer of Farming Leases or Licences Policy L209	*

Policy Group	Policy Name	Transportation Impacted Range
Property Numbering & Naming of Roads & Private Rights of Ways N1	Property Numbering N101 Road Naming N102	***
Public Facilities P2	Public Toilets P202 Play Policy P204	*
Procurement P3	Procurement Policy P301	***
Rating R1	Interest on Separate Rate Accounts Policy R107 Lump Sum Policy R116 Rating For Utilities R118 Land Information Memorandum Additional Information R119 Environment Canterbury Rates Collection R120 Rates Remission Policy Including Māori Freehold Land Policy R123 Water Billing Policy R124	**
Reserves On Council Land R3	Camping on Reserves R301 Fencing of Reserves R303 Reserve Naming Policy R304 Memorial Seats in Reserves and Public Spaces R305	*
Roads R4	Standards and Guidelines for Construction and Maintenance of Roads R401 Temporary Road Closures 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 Policy 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 Underground Fund R432 Berm Maintenance R433	***
Resource Management R5	Processing Of Late Submissions and Further Submissions R501 Resource Consent Applications by Council, Councillors and Council Staff R503	*
Sewerage S1	Connecting Rural Properties to Rising Sewer Mains S102 Connecting City Ratepayers to Prebbleton Rising Main S103	*
Solid Waste S2	Waste Management Policy S201	*
Stormwater & Land Drainage S3	Land Drainage Tailings Policy S301	**

Policy Group	Policy Name	Transportation Impacted Range
Subdivisions S4	Point Strip Policy – S405 Bonding Policy for Subdivisions Works and Large Projects S406	**
Trees On Council Land T2	Vegetation and Tree Management Policy T201	*
Townships T3	Community Centres, Public Halls, Recreation Reserves & Township Committees Policy T302	*
Water Races W1	Irrigation From Water Races W101 Water Race Ponds W102 Race Cleaning and Maintenance W103 Water Race Tailings W104 Relocation and Construction of New Water Races W106 Closures of Water Races W107 Exemptions From Paying Water Race Rates W109 Water Races within Subdivisions W111 Soak Holes W112 Credits for Unplanned Disruption of the Water Race Supply W115 Repair of Water Race Sinkholes W116 Planned Works Outage Management W117	*
Water Supplies W2	Commitment to Water Supply Management W201 Extension of Water Supplies W203 Council's Role in Community Water Supplies W210 Temporary Connection to Council Community Water Supplies W212 Backflow Protection at Point of Supply W213	*
Works Contributions W3	Amalgamation Policy W305	**
GOVERNANCE POLICIES		
Climate Change C1	Climate Change Policy C201	**
Council Activities C2	Anzac Day C402 Public Forums C416 Public Statements C417 Standing Orders C421 Sister City Visits C423	*
Dogs D1	Dog Control D100	*
Gambling G1	Gambling Venue Policy G101	*
Liquor Licencing L4	Local Alcohol Policy L401	*
LONG TERM PLAN POLICIES		
Long Term Plan Policies	Development Contributions Significance and Engagement ~~Partnerships With the Private Sector L503~~ Lump Sum Revenue and Financing Development of Māori Capacity to Contribute to Council's Decision Making Processes ~~Liability Management L510~~ ~~Investment L511~~	***

It is Council policy that a review of the Policy Manual will be undertaken no later than 6 months following each triennial election.

Impact of Specific Policies

The impact of the policies that are focussed on Transportation issues are summarised in Table 5 below:

Table 5: Impact of Transportation-focussed policies summarised

POLICY NAME/DESCRIPTION	SUMMARY
Bridges B1	
Bridge Repairs/Enhancements B101	Details the responsibilities and cost apportionment for repair and replacement of bridges
Engineering E1	
Civil Engineering Standards E101	Review and appropriateness of standards
Culvert Use E102	Water pipes may be permitted through culverts
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
Roads R4	
Standards and Guidelines for Construction and Maintenance of Roads R401	Adoption of "NZTA" and Austroads guidelines, standards, specifications and rules
Community Board to be Advised of Closures R402	Self-explanatory
Temporary Road Closures R403	Processes for temporary road closures
Inland State Highway Route R404	Re-establishment supported by Council
Payment of Roding Development Contributions R406	By 28 February to be included in the next financial years' work programme
Completion Date for Roding Projects R409	Construction season, normally 30 October to 30 April
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
Grading of Roads R413	The Council's policy for grading of roads approved for maintenance is to maintain the surface in a safe and roadworthy condition as defined by the maintenance specifications. Note – the contractor shall determine the frequency of grading necessary to meet the required conditions.
Ranking of Seal Extensions R414	Details ranking process based on BCR and the number of occupied dwellings per 100m. (Note – this should be revoked and replaced in entirety by R 431)
Provision of Judder Bars R416	Judder bars are not to be installed on gravel roads
Mailbox Access R417	Access to mailboxes not SDC responsibility
Stock Crossing Funding R419	Details the cost apportionment for the construction of underpasses
Sealing of Entranceways R421	Details the maintenance of sealed and unsealed entranceways

POLICY NAME/DESCRIPTION	SUMMARY
Maintenance of Boundary Roads R423	Details the agreement between Christchurch City Council and SDC
Road Stopping R424	Process for road stopping
Unsealed Road Contributions R425	Links with R414
Cellphone Antenna Mast/ Streetlight Pole Installation R426	Criteria for approval
Street Lighting - Discretionary R427	Criteria for discretionary lights
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

3.6.14 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 Bylaws	Dog Control Bylaw 2012 Keeping Animals, Poultry and Bees Bylaw 2021 Stock Droving Bylaw 2008	***
Cemetery Bylaw	Cemetery Bylaw 2017	*
General Bylaw	General Bylaw 2009	**
Parks and Reserves Bylaw	Parks and Reserves Bylaw 2009	*
Public Places	Public Places Bylaw 2018	**
Transportation Bylaws	Speed Limits Bylaw 2018 & Register 2019 Traffic and Parking Bylaw 2009	***
Utility Bylaws	Stormwater and Drainage Bylaw 2018 Water Race Bylaw 2008 Water Supply Bylaw 2008 Wastewater Drainage Bylaw 2016 Trade Waste Bylaw 2016	*
Waste Management (Refuse) Bylaw	Waste Management and Minimisation Bylaw 2019	*

Impact of Specific Bylaws

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

Table 6: Impact of Transportation-Focussed Bylaws Summarised

Animal Related Bylaws	
Stock Driving Bylaw 2008	The Bylaw sets out the rights and obligations of people driving stock on roads within the District, promotes best driving practices and promotes the safety of stock drivers, animals and other road users.
Transportation Bylaws	
Public Places Bylaw 2018	Enables the management of public places in order to balance the various different, and sometimes competing, lawful uses for which public places may be used. It seeks to provide for reasonable controls to protect health and safety, to protect the public from nuisance and to provide for the regulation of trading in public places. <i>Note "Public place" means an area that is open to or used by the public, which is under the control of the Council, and includes:</i> - roads, streets, carparks, footpaths, cycleways, accessways, ... and - State Highways within the district with a posted speed limit of less than or equal to 70 km per hour for which there is current delegation in place from the New Zealand Transport Authority to the Council."
Speed Limits Bylaw 2018 and Register 2019*	Details speed limits on the District's managed roads including register and maps.
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.
Waste Management Bylaws	
Waste Management and Minimisation Bylaw 2019	Resource Recovery Parks accepts aggregate etc as clean fill.

*A review of speed limits in line with Safe Network Programme initiatives may be required during the 2021-24 period.

3.6.15 Council's Mission Statement

The Council's Mission Statement is:

"To achieve excellence in the management of resources and the provision of services for the People of Selwyn District"

3.6.16 Council's Statement on Quality of Service

The emphasis on quality and service shall be, at all times, the focus of the Council activities.

The Council will maintain and strive to improve the quality of services that are provided.

It will continue to provide services that meet the needs of its 'customers' and exceed their expectations in the process.

To achieve success, the Council will demonstrate innovation in providing solutions to meet those needs and expectations into the future while operating in a cost-effective and business-like manner.

3.6.17 The Council's Statement of Values

In fulfilling its statutory and community obligations, the Council will operate according to the following values. Asset management and service delivery, as core functions of the Council, are therefore consistent with the following Values:

Leadership

The Council will guide, inform and seek community involvement in policy decisions in accordance with the principles of community governance.

Community Service

The Council will provide quality services in a prompt, helpful and friendly manner, minimising the cost through innovative management and best utilisation of resources.

Commercial

The Council's service charges will be based on the benefits of those services to the recipients after considering the equity, efficiency and transparency of those services.

Environment and Biodiversity

The Council will encourage and, where appropriate, carry out or enforce measures to sustain and enhance the district's biophysical environment, including its biological diversity.

Health and Safety

The Council will encourage and, where appropriate, carry out or enforce measures to sustain and enhance public health and safety.

Economic Development

The Council will encourage and, where appropriate, facilitate sustainable economic development.

Cultural Diversity

The Council will have due regard for the diversity of cultural perspectives within the District.

Treaty of Waitangi

The Council will have due regard for the principles of the Treaty of Waitangi.

Staff

As a good employer, The Council will continue to attract, retain and develop skilled staff.

3.7 Improvement Plan Items

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.

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 3.4	Implementing the District Wide Strategy will require some resources and may involve some specific studies	<i>As required</i>
IP 3.5	Collation and analysis of the suite of Engineering Design Standards to ensure consistency across the range of former, current and proposed levels of service and standards is identified as an Improvement Plan item	<i>Development Engineer to action. Transport Asset Planner to assist.</i>
IP 3.8	Undertake delivery of service review (LGA s17A) prior to next maintenance contract	Completed
IP 3.9	Update Procurement Strategy (associate timing with delivery of services review and next maintenance contract)	<i>Completed</i>
IP 3.11	Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431)	
<i>New Improvement Plan Items</i>		
IP 3.12	Parking strategy/ Future Development Strategy <i>Tier 1 councils have 18 months from the NPS-UD gazettal to notify plan changes to implement car parking policy.</i> deadline for preparing or reviewing an FDS be linked to informing the 2024 long-term plans	
IP 3.13	Consider temporary restriction of heavy traffic on roads - identify routes where heavy traffic may be restricted due to damage to a road or danger to the safety of road users.	
IP 3.14	Review the Selwyn Road Safety Strategy to 2020	
IP 3.15	REG Smart Buyer Self Assessment to be revisited due to the improvements in processes since originally completed.	
IP 3.16	Review of speed limits in line with Safe Network Programme initiatives.	

This page is left blank for printing

4.0 TRANSPORTATION ACTIVITY AND ASSET CLASSES

This section contains an overview of the transportation assets which make up the transportation activity in the Selwyn District. It details the hierarchical breakdown of the assets and shows a summary of the spatial distribution across the district.

Contents

4.0	TRANSPORTATION ACTIVITY AND ASSET CLASSES	1
4.1	Transportation Assets	3
4.2	Network Hierarchy	5
4.3	Council Transportation Activities	10
4.4	Improvement Plan Items	12

This page is left blank for printing

4.1 Transportation Assets

All information included in this section is accurate as at 30 June 2020

Transportation is a significant service for Selwyn District Council. The annual operating expenditure represents around one-quarter of Council's overall annual operating expenditure while capital works are also a large proportion of the District's spend. A valuation report is prepared annually to establish the replacement cost of the entire transportation network.

At the end of the 2019/20 financial year the Selwyn District Transportation Network has a replacement cost of \$829,141,456. This is a 2.1% increase on the previous year's valuation.

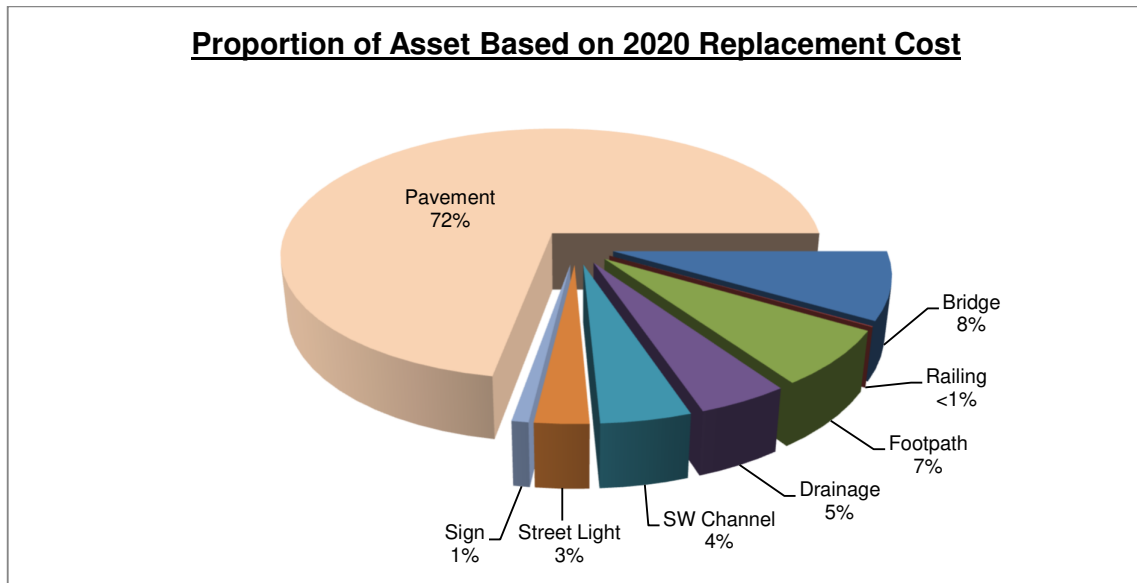


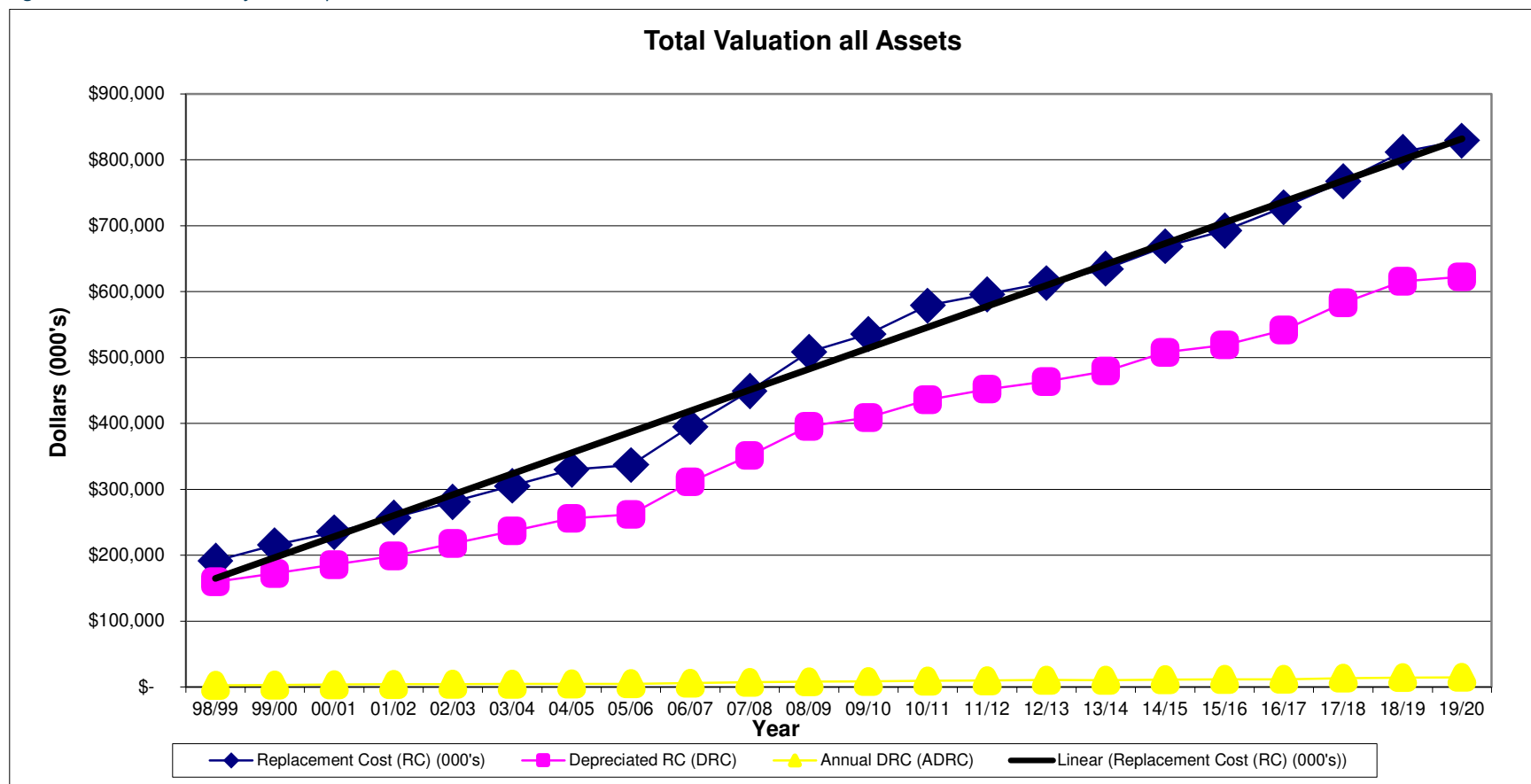
Figure 4-1: Proportion of Asset Based on 2020 Replacement Cost

(Source: Valuation Report - BECA, 2020)

The valuation of Council Transportation assets is undertaken by Beca as part of the SDC Transport Asset Information Services contract. The valuation is produced for financial reporting purposes, required under the Local Government Act, using the RAMM Asset Valuation Module. The valuation meets the requirements of the Public Benefit Entity International Public Sector Accounting Standard 17 (PBE IPSAS 17).

The valuation covers only the components of Council-owned transportation infrastructure, and does not include the value of the land beneath them nor any power or telecommunication cabling which services them. The asset valuation module is also able to project the remaining useful life of assets.

Figure 4-2: Total Valuation of All Transportation Assets



(Source: Transportation Valuations Summary - Beca)

4.2 Network Hierarchy

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.

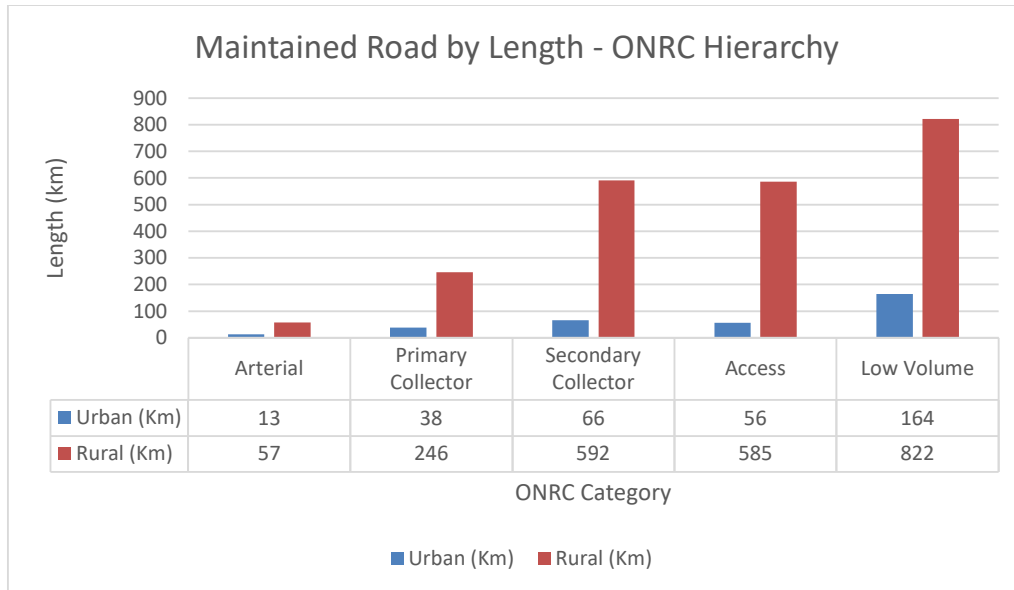


Figure 4-3: Road Hierarchy and Urban/Rural Setting (RAMM)

Council uses a simplified hierarchy for planning purposes in the District Plan. 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 District Plan is again under review at the time of writing, though the road hierarchy remains largely unchanged other than addition from roads being built in the intervening decades. The district plan hierarchy is largely used for land-use planning purposes, rather than for transportation purposes.

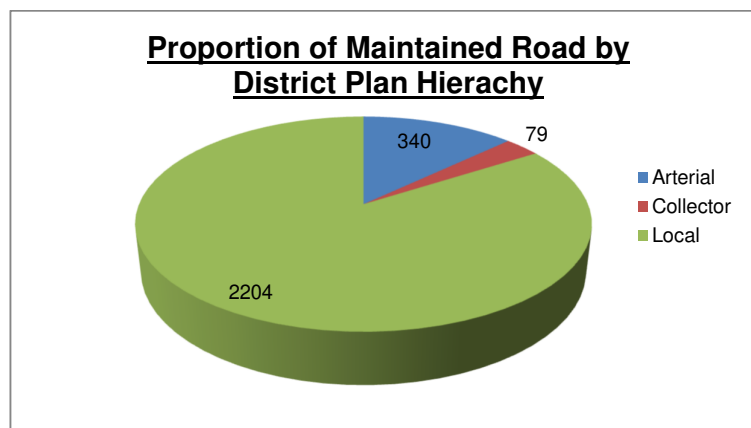


Figure 4-4: Proportion of maintained road by District Hierarchy class (Beca)

The ONRC hierarchy is reviewed every five years to keep up with the impacts on the network of population growth and industry changes. The spatial distribution of the ONRC hierarchy across the district was updated and agree with Waka Kotahi this year and is shown in the following maps.



Figure 4-5: Selwyn District One Network Roading Classification Hierarchy by Townships – Peri-Urban Centres



Figure 4-6: Selwyn District One Network Roading Classification Hierarchy by Townships – Outer-Plains Centres



Figure 4-7: Selwyn District One Network Roading Classification Hierarchy by Townships – Malvern Hills & High Country Centres

This page is intentionally blank

4.3 Council Transportation Activities

In providing transport services to the District, Council manages assets and delivers programmes that support effective and safe use of the transport network. 'Non-asset' solutions focus on improving the use of existing assets and supporting behaviour change to achieve better outcomes for the community. Council is actively involved in the following areas:

Road Safety

Implementing national, regional and local road safety initiatives involves a number of Council staff. Road safety is an integral part of the transportation planning and operations management carried out by the wider transportation team. The Road Safety programme for 2021-2024 has an emphasis on intersections, mature drivers, and young drivers. To align with the latest Communities at Risk Register, specific attention is given to intersection safety initiatives. Council has introduced a Driving Skills Refresher course and subsidised refresher driving lessons for drivers over the age of 65, to provide more emphasis on the safety of mature drivers. The expansion of the Young Drivers focus area to cover all drivers at a learner ability (including migrants) has also resulted in growth to this focus area to allow for additional mentor/training programmes. The increase in consistency and variety of educational courses that will be on offer in the Selwyn district highlights the Road to Zero focus area of driver licensing and training.

Walking and Cycling

Encouraging walking and cycling provides positive benefits for health and efficient use of the transportation system. This mode shift where people walk and cycle instead of driving reduces congestion on the motorway which allows the road asset to be used longer before requiring a capacity upgrade. Council has prepared a Walking and cycling strategy to identify initiatives to encourage modeshift and priorities investment in infrastructure improvements.

Passenger Transport

Passenger Transport is provided in line with the Metro Strategy. Environment Canterbury operate the public transportation services, and the associated bus stop, shelter, and park and ride infrastructure is provided by Council. Council advocates for passenger transport services within the District ensuring that ECan is notified regarding new subdivisions so that buses can be routed around these areas and actively encourages residents to utilise the service.

Travel Demand Management

Travel Demand Management (TDM) aims to reduce the impact of increasing traffic by influencing the travel that occurs. This involves behaviour change more than the provision of additional assets. Travel Demand Management studies and initiatives are driven at the Greater Christchurch Partnership level, and Selwyn District Council acts as a collaborative funding partner rather than an activity leader in these actions.

Transportation Planning

The transportation sector is highly regulated and planning is required to ensure:

- Long Term Planning and consultation occurs as required under the Local Government Act 2002.
- NZTA funding application requirements are met and rules and guidance are complied with.
- Development is managed effectively within the Resource Management Act 1991 and the Regional/Greater Christchurch/District Planning Framework.

- The asset is managed effectively and efficiently through the use of technology, information management and effective decision making.
- Sustainability objectives are targeted.

Transportation planning is undertaken by Council staff with specialised assistance from consultants.

4.4 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 4.2	Review current ONRC hierarchy. Identify whether existing classification is fit for purpose given ADT growth.	Include in ONF process
<i>New Improvement Plan Items</i>		

5.0 ROAD SAFETY

This section discusses the provision and funding of road safety provisions within the district, detailing the extent and nature of road user education programmes and provisions of physical interventions on the road network.

Contents

5.0	ROAD SAFETY	1
5.1	Road Safety Management.....	3
5.2	Road Safety Promotion	4
5.3	Road to Zero & Safe Network Programme	6
5.4	Road Safety Funding	9
5.5	Improvement Plan Items	12

This page is left blank for printing

5.1 Road Safety Management

Council takes its responsibility to improve road safety extremely seriously, and is committed to providing engineering, education, and enforcement solutions to address safety issues on its network. Council has developed a Selwyn Road Safety Strategy (*Road Safety Strategy to 2020*) 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 to deliver the objectives of the Government's "Road to Zero" strategy. The Road Safety Strategy includes an Action Plan that describes what targeted actions Selwyn District and our Road Safety partners will undertake to achieve Road to Zero outcomes. The current Road Safety strategy and Action Plan (RSAP) are currently being updated for future initiatives.

A revision of the Road Safety Strategy is underway.

Council's Road Safety Subcommittee was involved throughout the development of the Road Safety Strategy. This committee group consists of two Councillors, Council staff, NZ Police, ACC and a representative from the New Zealand Trucking Association. There is 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 monitor and review progress in implementing the Road Safety Strategy and Action Plan.

Waka Kotahi NZTA maintains a comprehensive database for suitably qualified and experienced users. The Crash Analysis System (CAS) records extensive details of all reported crashes in New Zealand. The NZTA gives Council access to this database for extraction of relevant crash information, and this is used to ascertain crash trends and emerging road safety issues in the District, and to inform policy and strategy decisions.

The DIA Mandatory Performance Measure One (road safety), requires Council to report annually on:

- 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.

The measure of the number of injuries and fatalities recognises the public's interest in the safety of roads. The measure is intended to provide information for members of the public on trends in road safety in their area. Road crashes can involve factors outside a territorial authority's control (such as driver behaviour). Nevertheless, because territorial authorities have primary responsibility for local roading infrastructure, including construction and maintenance of roads, they can contribute to improved road safety.

The measure records the change in the number of crashes resulting in serious injuries and fatalities across each local road network each year. This is to establish trends, rather than tracking actual serious crash numbers.

5.2 Road Safety Promotion

Council runs a comprehensive Road Safety Programme, supporting engineering, enforcement and – most significantly – education initiatives within the community. The Road Safety Programme for 2021-2024 places significant emphasis on addressing:

- Crashes at both rural and urban intersections
- Crashes involving older road users (aged 75 and over)
- Crashes involving young drivers (aged 16-24)

Annual national Road Safety risk assessments, published in Waka Kotahi NZTA's "Communities at Risk Register 2019" highlights 14 crash categories and groups them as strategic priorities:

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

Each of the 14 crash categories also ranks each Road Controlling Authorities' levels of risk in each category - based on crashes between 2013/14 and 2018/19 - resulting in a ranking indicating the levels of concern. Selwyn District Council are ranked as having the following crash categories within "High Concern", "Medium Concern" or "Above-average" designations:

- Rural intersections – High concern
- All intersections – High concern
- Older road users – High concern
- Distraction – Above-average

Whilst these represent the priority areas for the Council, the numbers of crashes on Selwyn District Council's local road network has been trending upwards for the ten year period of 2009/10 to 2018/19. Targeting specific safety deficiencies at sites across the network is intended to support on-going reductions in serious crash numbers.

Road Safety Promotions (RSP) are national, regional and local campaigns and initiatives to encourage and deliver the behavioural changes required to support the road safety outcomes sought through the Road to Zero activity class.

The Road Safety Promotions programme addresses a number of objective areas:

- Intersections,
- Alcohol,
- Mature Drivers,
- Young Drivers,
- Distraction & Fatigue,
- Restraints,
- Motorcycles,
- Speed & Loss of Control, and
- Cycle Skills.

Between 2017-2019, 38% of all crashes in Selwyn occurred at intersections. This amounted to 202 injuries, with 6 fatalities. Large, yearly intersection education campaigns are run reminding drivers of the risks that intersections pose. Council promotes education and awareness around how to use intersections safely, with messaging also pushed throughout the year to support behaviour change towards adopting safer driving practises at intersections. Support is given for engineering changes and improvements at high risk intersections to ensure the community are well prepared for the changes in layout. There is also continual collaboration with Police to target higher risk intersections to reduce crash risk. Intersection awareness guides and media are produced highlighting the risks intersections pose. Additional focus will be given to creating more media types to educate and increase awareness of the risk that rural intersections pose in the 2021-2024 period.

A multi-strategy approach is used to tackle alcohol related factors; working to change drink/drive behaviours through localised campaigns, visual cues and advertising. Council works with licenced premises' (including sports clubs and universities) to encourage the use of courtesy vans and visual reminders of planning safe trips home. Approaches are taken to remind drivers of legal blood alcohol concentration (BAC) levels, but also reiterate that even small amounts of alcohol can cause impairment. Council also collaborates and supports initiatives run by Police.

Many mature drivers that live rurally in Selwyn rely on driving to maintain their independence and quality of life. Between 2017-2019, mature drivers accounted for 9% of all crashes in Selwyn. There were 85 injuries as a result, with 8 fatalities and 26 serious injuries. Education sessions are provided for mature drivers, which focus on increasing driver confidence, refreshing road rule knowledge, and increasing driver safety. Council promotes increased awareness and education around the benefits of refresher driving lessons, and collaborates with Occupational Therapists, Driving Instructors, Proactive Drive, and Police.

Between 2017-2019, young drivers accounted for 27% of all crashes in Selwyn. There were 132 injury crashes, including 4 fatalities and 41 serious injuries. Education courses, workshops, and advertising/campaigns are also run to target Young Drivers; encouraging young and learner drivers to utilise resources such as Drive GO. Council supports membership and goals of Students Against Dangerous Driving (SADD) and promotes other opportunities to engage young drivers and passengers in road safety. Support is given to parents, coaches, and mentors to be the best teacher they can be for learner and restricted drivers, by making sure information and activities are available to them. Council also helps utilise other opportunities for driving education within the Selwyn District secondary schools as they arise. Young Driver courses are delivered regularly. Attendees are kept updated with new opportunities as they arise (e.g. Mentor Driving and Leading Learners). The Young Drivers road safety category also includes new drivers at any age by running initiatives like mentoring programmes catering to the rural and migrant communities.

Distraction and fatigue education programmes aim to educate on the dangers of distracted drivers, especially around driving and cell phone use. Promotional material is produced that appeals to all age groups that can work as visual cues in the car to influence behaviour change towards driving phone free. Council also works in collaboration with the local Police, Fire and Emergency New Zealand (FENZ), and local high schools. There is also collaboration with workplaces with large fleets to educate staff on the dangers of distracted and fatigued driving and how to reduce risk, and support is given for workplace initiatives for staff.

Between 2017-2019, there were 88 crashes in Selwyn where distraction/attention diverted was recorded as a contributing factor. The 32 injury crashes resulted in 1 fatality and 13 serious injuries. Collectively fatigue and driver distraction are a causative factor in 16% of all crashes in Selwyn. Between 2017 -2019, Selwyn had 62 crashes where fatigue was recorded as a contributing factor. The 19 injury crashes resulted in 5 fatalities and 3 people with serious injuries.

Restraints campaigns are run in rural settings, working as a reminder on the importance of wearing a seatbelt. Collaborative initiatives are run with licenced premises on having visual cues to work as a reminder towards behaviour change. Council works with local Police and FENZ to spread awareness targeting family and friends of those who may think that they don't need to wear a restraint. Training of volunteer Car Seat Champions is given to run Child Restraint Clinics to ensure safe installation and use of car seats.

Council actively works to promote increased driver awareness of motorcycle riders through yearly campaigns which align with Motorcycle Awareness Month and ACC messaging, and increased promotion of Ride Forever training and the benefits of attending the different levels. Council covers the cost of Ride Forever courses for Selwyn residents to attend any level. Council actively collaborates with other Canterbury Councils, ACC, Police, MSAC and other motorcycle partners to deliver and annual Canterbury Motorcycle Safety event.

Large yearly Speed & Loss of Control campaigns are run, raising awareness and educating on the risks that are associated with driving at speed, and driving in winter. Educating road users on how to adjust driving behaviour in challenging and higher risk conditions is extremely important. Council collaborates with local businesses with large fleets to spread messages of driving to the conditions in winter. Windscreen ice scrapers and cloths are produced to help promote safe vehicle use in winter. Promotions are run around changes to speed limits, and continual awareness of the increased risk speed poses to all road users.

Council supports the delivery of in school cycle skills training within urban schools to educate on safe cycling. Training will increase confidence and ability to in turn increase likelihood of utilising cycling as a form of transport.

5.3 Road to Zero & Safe Network Programme

Selwyn is delivering a number of safety improvements and interventions in the next LTP cycle, including travel speed reviews, intersection upgrades, and road widening. Most of these works fall well under the \$2million value threshold and are funded through the Low Cost/Low Risk (LC/LR) works category. The LC/LR works generally take the form of intersection safety upgrades, and safe system & speeds interventions.

Table 5.1: Low Cost/Low Risk Safe Network Program Interventions for NLTP 21-24

LC/LR Project Name	Cost
Leeston Rd Leeston - Doyleston SNP (NLTP 2021-24 Approved)	\$5,000
Ellesmere Junction Road - Weedons Rd to Days Rd – SSS (NLTP 2021-24 declined)	\$5,000
Leadleys SH75 - 600m west of SH75 SNP (NLTP 2021-24 declined)	\$5,000
Lincoln Rolleston Road - 440m S of Levi Rd to Selwyn Rd – SSS (NLTP 2021-24 declined)	\$10,000
Waimakariri Gorge Road Waimakariri Bridge - 1000m N of Woodlands Rd SNP (NLTP 2021-24 Approved)	\$200,000
Aylesbury Road - Wards Rd to Burdons Rd – SSS (NLTP 2021-24 Approved)	\$100,000
Old West Coast SH73 - Calders SNP (NLTP 2021-24 Approved)	\$20,000
Springs & Hodgens IS SNP (NLTP 2021-24 Approved)	\$225,000
Maddisons & Dawsons IS SNP (NLTP 2021-24 Approved)	\$100,000
Selwyn & Robinsons IS SNP (NLTP 2021-24 declined)	\$225,000
Leeston & Goulds IS SNP (NLTP 2021-24 Approved)	\$100,000
Goulds & Ellesmere Junction IS SNP (NLTP 2021-24 declined)	\$100,000
Weedons Ross & Newtons IS SNP (NLTP 2021-24 declined)	\$100,000
Trices & Tosswill IS SNP (NLTP 2021-24 Approved)	\$500,000

The Safe Network Programme also facilitates the application of targeted enhanced funding assistance rates for projects that don't fall below the LC/LR expenditure cap but align strongly with the Road to Zero outcomes. Council currently have three additional SNP intersection upgrade projects to be delivered under Road to Zero that are not funded under Low Cost/Low Risk:

- Shands Road & Trents Road dual lane roundabout,
- Shands Road & Hamptons Road dual lane roundabout, and
- Springs Road & Hamptons Road dual lane roundabout.

Three criteria are used to prioritise intersection upgrades. Collective Risk (Number of Crashes or Number of Injuries), personal Risk (Traffic Volumes / Crash or Injury), and the number of crashes resulting in death or serious injury. Current traffic volumes and growth, heavy vehicle proportions and relative growth, and the number of approaches to the intersections are also factored for in assessing the on-going safety and performance of intersections and the need for improvements.

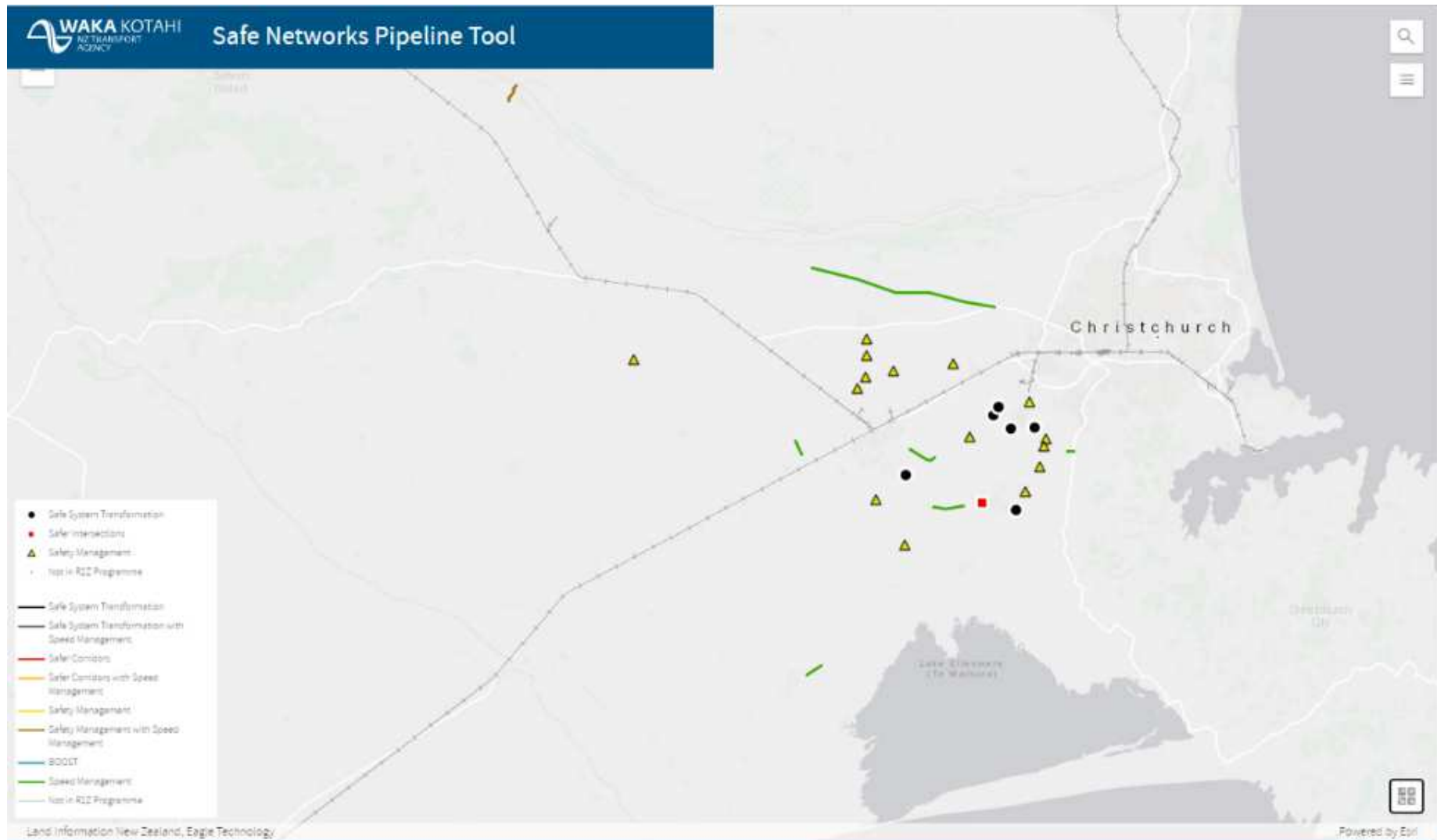


Figure 5-1: Spatial Distribution of endorsed Safe Network Programme intervention works

5.4 Road Safety Funding

Road Safety activities are eligible for financial assistance from Waka Kotahi NZTA. The funding assistance levels are dependent upon alignment with NZTA objectives set out in the Road to Zero strategy. Council places a high priority on Road Safety and funds part of the Road Safety program without NZTA subsidy.

A new activity class was created for the 2021-24 NLTP for road safety works to be funded through; the Road to Zero Activity Class. Funding for works undertaken in the Road to Zero Activity Class is available through a number of work categories.

Council draws funding for Road Safety interventions from the following work categories

- Work Category 341 – Low Cost/Low Risk Improvements, and
- Work Category 432 – Promotion, education and advertising.

Work category 432 is used specifically to promote the safe use of the land transport network through education, advertising, raising awareness and provision of public information.

The alignment of initiatives with NZTA priorities is assessed as shown in

Table 5.2 below, and the indicative 3 year budgets submitted for NLTP 21-24 follows. More details of the Road Safety Promotions programmes and the Road to Zero safety improvement projects are also included in the Selwyn District Council Programme Business Case to support the 2021/22 – 2023/24 National Land Transport Programme. This documentation details the Council's response to Waka Kotahi NZTA, in support of the funding requested for local road safety service delivery.

Table 5.2: Alignment of Initiatives with NZTA Strategic Fit

Strategic Fit	Objectives
High	Alcohol Intersections Motorcycles Speed/Loss of control Young Drivers Mature Drivers
Medium	Distraction & Fatigue
Low	Road Safety Community Programmes

Table 5.3: 3 Year Financial Forecast for Road Safety 2021-24

Road to Zero Focus Area	2021/22	2022/23	2023/24	Three Year NLTP Total
Alcohol	27000	29000	32000	88000
Distraction	15000	16000	17000	48000
Restraints	6500	7500	9000	23000
Intersections	30000	35000	40000	105000
Driver licencing & training – Mature Drivers	27500	31500	36000	95000
Motorcycling	25000	30000	34000	89000
Speed	30000	35000	40000	105000
Driver licencing/training – Young Drivers	60000	62000	65000	187000
Cycling	70000	80000	90000	240000
Total	291000	32600	36300	980000

(Source: Draft Selwyn 2021-2031 Land Transport Program v3)

Table 5.4: Road safety programme 2021-31

Road to Zero	Target Audience	Planned Intervention Type	2021/22	2022/23	2023/24	Three Year NLTP Total Costs		2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Focus Areas			Budget	Budget	Budget	Budget								
Alcohol	All road users	Advertising (Promotional)	27000	29000	32000	88000								
Distraction	All road users	Advertising (Promotional)	15000	16000	17000	48000								
Restraints	All road users	Advertising (Promotional)	6500	7500	9000	23000								
Intersections	All road users	Advertising (Promotional)	30000	35000	40000	105000								
Driver licencing/ training	Older road users 65+	Education course	27500	31500	36000	95000								
Motorcycling	Motorcyclists	Event	25000	30000	34000	89000								
Speed	All road users	Advertising (Promotional)	30000	35000	40000	105000								
Driver licencing/ training	Young drivers (16-24yrs)	Education course	60000	62000	65000	187000								
Cycling	Young road users (0-15yrs)	Education course	70000	80000	90000	240000								
			291000	326000	363000	980000	\$980,000	381150	388773	396548	404479	412569	420820	429237

(Source: Draft Selwyn 2021-2031 Land Transport Program v3)

5.5 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 5.3	Review Road Safety Audit requirements and processes for Council's roading projects, in conjunction with Waka Kotahi NZTA	To be actioned
<i>New Improvement Plan Items</i>		
IP 5.4	Revision of the Road Safety Strategy	Is underway

6.0 LEVELS OF SERVICE

The Levels of Service (LoS) for the Transportation Activity and the performance measures against which they are assessed are outlined in this section. The LoS are aimed at supporting the Community Outcomes, and meeting strategic goals.

Contents

6.0	LEVELS OF SERVICE	1
6.1	Community Outcomes & Activity Objectives	3
6.1.1	Community Outcomes	4
6.1.2	Activity Objectives	7
6.2	Sustainability Principles	10
6.3	Customer Expectations	11
6.3.1	Service Requests	11
6.3.2	Residents Survey	14
6.3.3	Service Life of Facilities and Network	18
6.4	Consultation Processes	19
6.4.1	Community Outcomes for the Long Term Plan	19
6.4.2	Statutes that Include Consultation	19
6.4.3	Significance Policy	19
6.4.4	Consultation Policy	19
6.4.5	The Special Consultative Procedure	19
6.4.6	Community Consultation	20
6.4.7	Maori Contribution	21
6.5	Performance Levels of Service	22
6.5.1	Current and Target Levels of Service	22
6.5.2	Mandatory Performance Measures	23
6.5.3	One Network Road Classification (ONRC) Performance Measures	24
6.5.4	Performance Goals	25
6.6	Technical Levels of Service	28
6.6.1	Monitoring and Reporting	28
6.6.2	Maintenance Contract Key Performance Indicators	28
6.6.3	ONRC Technical Levels of Service	30
6.7	Transportation Negative Effects	32
6.8	Improvement Plan Items	34

This page is left blank for printing

6.1 Community Outcomes & Activity Objectives

Level of Service (LoS) targets have been developed to reflect community expectations and regulatory requirements. 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.

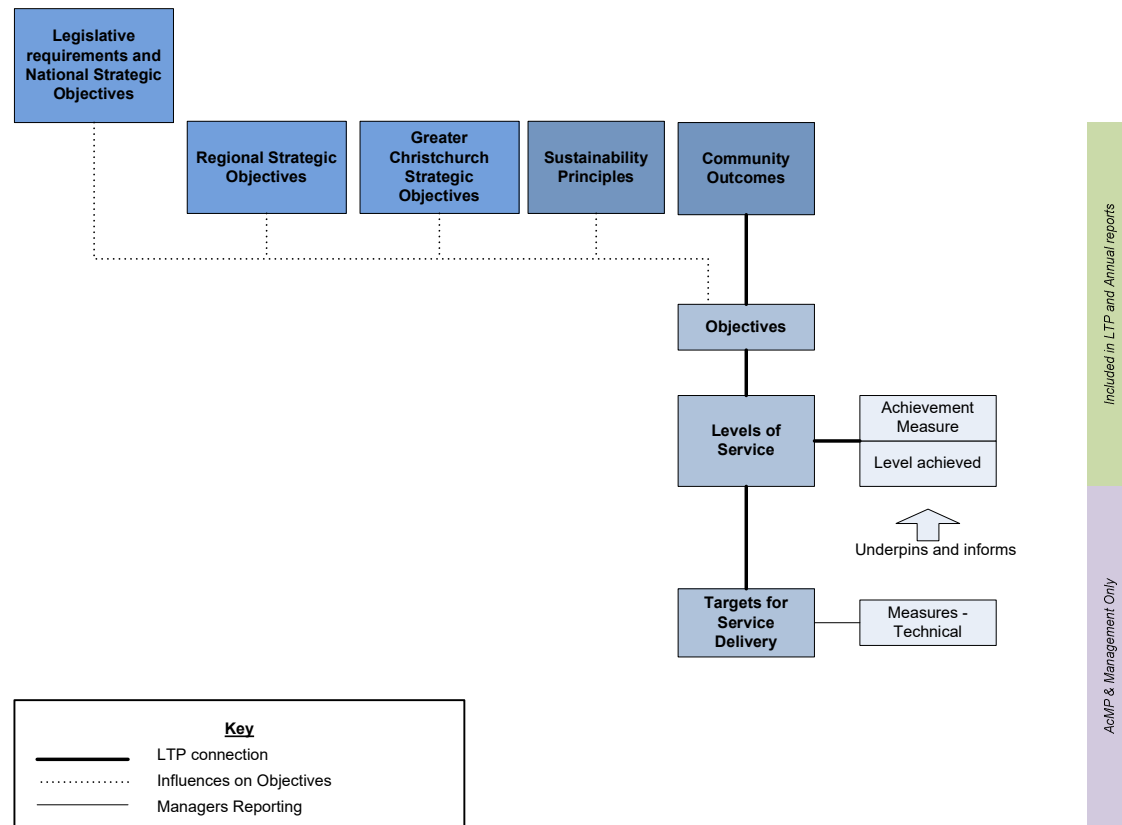


Figure 6-1: Legislative, Strategy, Sustainability and Community Outcome Linkages



Figure 6-2: Level of Service Establishment Pyramid

The Local Government Act requires all Territorial Authorities to have a Long Term Plan (LTP) which sets out Council's long-term goals, work programmes and services for the next decade. These goals must aim to promote community well-being as defined by the Community Outcomes.

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.

Activity goals and objectives are set to direct the community outcomes as they apply to each of the activity areas. Levels of Service are established to define what Council intends to deliver to the customers; what the minimum standard the road user will experience will be. Service targets and performance measures are established to measure and report on the progress of the activity in achieving the outcomes established in the Long Term Plan and measure how the customer experiences the service.

6.1.1 Community Outcomes

The Community Outcomes identified in the 2021-31 LTP as relating specifically to the Transportation Activity are detailed below.

Table 6-1: 2020/21 Annual Plan Community Outcomes

Well-Being	Key Community Outcomes
Environment	A clean environment
	A rural district
Social	A healthy community
	A safe place in which to live, work and play
	An educated community
Economic	A prosperous community
	An accessible district
Culture	A community which values its culture and heritage

Table 6-2: Community Outcomes Relating to the Transportation Activity

Well-Being	Key Community Outcomes	Community Outcomes	Council Role	Key Performance Indicators
Social	A safe place in which to live, work and play	Pedestrians, cyclists and motor vehicle users can safely move around Selwyn District	Maintain, operate and upgrade the transportation network and work with key stakeholders and the community to reduce fatal and injury crashes	Progressively reduce the number of fatal and serious crashes per year on Selwyn roads (shared indicator)
Economic	An accessible district	Effective and accessible transport system	Provide a well maintained, operated and affordable land transport system	Condition and Maintenance of Sealed and Unsealed Road Networks
			Advocate for improvements to state highways (NZ Transport Agency) and public transport services (ECan) where community concerns are raised	Attendance at relevant Regional Transport Committee (RTC) and Regional Transport Officers Group (TOG) meetings and forums.

The achievement of Community Outcomes can be assisted through the delivery of required LoS. The LoS have been reviewed to ensure they adequately align with the intention of the Community Outcomes. The Community Outcomes in Table 6-3 have a more direct link to Council's objectives and service targets and are referred to in the LTP.

Table 6-3: Transportation Network Contribution to Community Outcomes

Community outcome	How the transportation system contributes:
A healthy community	Provide facilities to enable residents to select active transport options Deliver a safe transportation network by working to meet objectives set out under the Road to Zero Strategy
A safe place in which to live, work and play	Maintain, operate, and upgrade the transportation network to ensure the overall safety of the network and reduce fatal and injury crashes
An educated community	Provide road, cycle, and pedestrian links to the education hub at Lincoln University, and to Christchurch City tertiary institutions
An accessible district	Provide a well-maintained, operated, and affordable land transport system. Advocate for improvements to state highways operated by Waka Kotahi NZ Transport Agency and public transport services operated by ECan. Promote walking and cycling as a safe, viable mode of transport and recreation.

Actions contributing to the broader Community Wellbeing that the Community Outcomes aspire to can be defined more specifically to assist in the definition of levels of service and establishment of performance targets.

The community wellbeings and expectations are tied into the service outcomes and levels of service in Council's Roading Maintenance contract, and are used to inform the project specifications for capital project contracts.

The following points can be used as guidance for specific actions to enhance community outcomes and wellbeing:

Table 6-4: Recommended actions contributing to community outcomes and wellbeing

Environmental:
<i>By providing dust-free surfaces on roads where economically viable.</i>
<i>By providing an efficient and sustainable transportation system, including non-polluting transport options, that contributes to the reduction of exhaust emissions.</i>
<i>By providing efficient and appropriate urban road stormwater collection and treatment systems (in conjunction with Utility Stormwater Activity Management practices).</i>
<i>By installing and providing bridges and culverts in environmentally sensitive ways.</i>
<i>By controlling the contamination of drainage and other adjoining waterways from inappropriate activities occurring in the road corridor.</i>

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 where hazards have been identified.

By constructing 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.

Social and Cultural

By consulting on all known and potential matters of interest to the tangata 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.

Are 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

6.1.2 Activity Objectives

The following objectives have been developed with reference to Council's existing Community Outcomes and Sustainability Principles. They are designed to protect the wellbeing of existing and future generations, and performance indicators are in place to measure and report against these objectives.

Table 6-5: *Transportation Activity 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

In some instances the community outcomes cannot be achieved through a certain activity, and there is never full overlap between the outcomes and the activity-specific objectives. This may be due to physical limitations of the activity or the unavoidable negative effects of the activity. The overlap between the transportation activity objectives and the council-wide community objectives are shown in the following table.

Table 6-6: Relationship between Objectives and Community Outcome Achievement Actions

Objectives	Environment		Social							Economic		Culture	
	A clean environment	A rural district	A healthy community	A safe place in which to live, work and play					An educated community	A prosperous community	An accessible district	A community which values its culture and heritage	
	Air, land, water and general environment to be kept in a healthy condition	A living environment where the rural theme of Selwyn is maintained	Selwyn people have access to appropriate health, social and community services	We are safe at home and in the community	We know & help our Neighbours	We maintain a coordinated and effective response to, and recover from, emergency and disaster events	Pedestrians, cyclists and motor vehicle users can safely move around Selwyn district	Our young people have access to safe entertainment and recreation activities	Our district provides a range of quality, lifelong education and training opportunities	Selwyn has a strong economy which fits within and complements the environmental social and cultural environment of the district	Effective and accessible transport system	Our district provides a range of arts and cultural experiences and facilities	Our heritage is preserved and shared
Provide a well maintained, operated and affordable land transport system	Secondary Link	Secondary Link		Secondary Link		Secondary Link	Key Link			Secondary Link	Key Link		
Cater for any significant projected traffic increases in a sustainable manner		Secondary Link		Secondary Link			Key Link			Secondary Link	Key Link		
Pedestrians, cyclists and motor vehicle users can safely move around the Selwyn district				Secondary Link			Key Link			Secondary Link	Key Link		

Objectives	Environment		Social						Economic		Culture		
	A clean environment	A rural district	A healthy community	A safe place in which to live, work and play					An educated community	A prosperous community	An accessible district	A community which values its culture and heritage	
	Air, land, water and general environment to be kept in a healthy condition	A living environment where the rural theme of Selwyn is maintained	Selwyn people have access to appropriate health, social and community services	We are safe at home and in the community	We know & help our Neighbours	We maintain a coordinated and effective response to, and recover from, emergency and disaster events	Pedestrians, cyclists and motor vehicle users can safely move around Selwyn district	Our young people have access to safe entertainment and recreation activities	Our district provides a range of quality, lifelong education and training opportunities	Selwyn has a strong economy which fits within and complements the environmental social and cultural environment of the district	Effective and accessible transport system	Our district provides a range of arts and cultural experiences and facilities	Our heritage is preserved and shared
Contribute to an integrated and responsive local and regional transportation system.		Secondary Link		Secondary Link			Key Link			Secondary Link	Key Link		

6.2 Sustainability Principles

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

Table 6-7: Indications of particularly strong links between sustainability principles and transportation activity objectives

		Objectives			
		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
Sustainability Principles	Make decisions based on the four aspects of well-being	Strong Link	Strong Link	Strong Link	Strong Link
	Observe the Precautionary Principle to provide contingency and enable adaptability of our community		Strong Link		Strong Link
	Seek "intra-generational" and "inter-generational" equity	Strong Link	Strong Link		Strong Link
	Internalise environmental and social costs				Strong Link
	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		Strong Link		Strong Link

6.3 Customer Expectations

6.3.1 Service Requests

Customer service requests are logged at Selwyn through a financial and administration management system called Magiq. Service requests are directed to the relevant areas of council for action by Customer Service staff, and are actioned and closed by department staff. The DIA requires reporting on service requests as a mandatory non-financial performance measure, so robust records of service requests, their nature, and resolution timeframes are kept by Council.

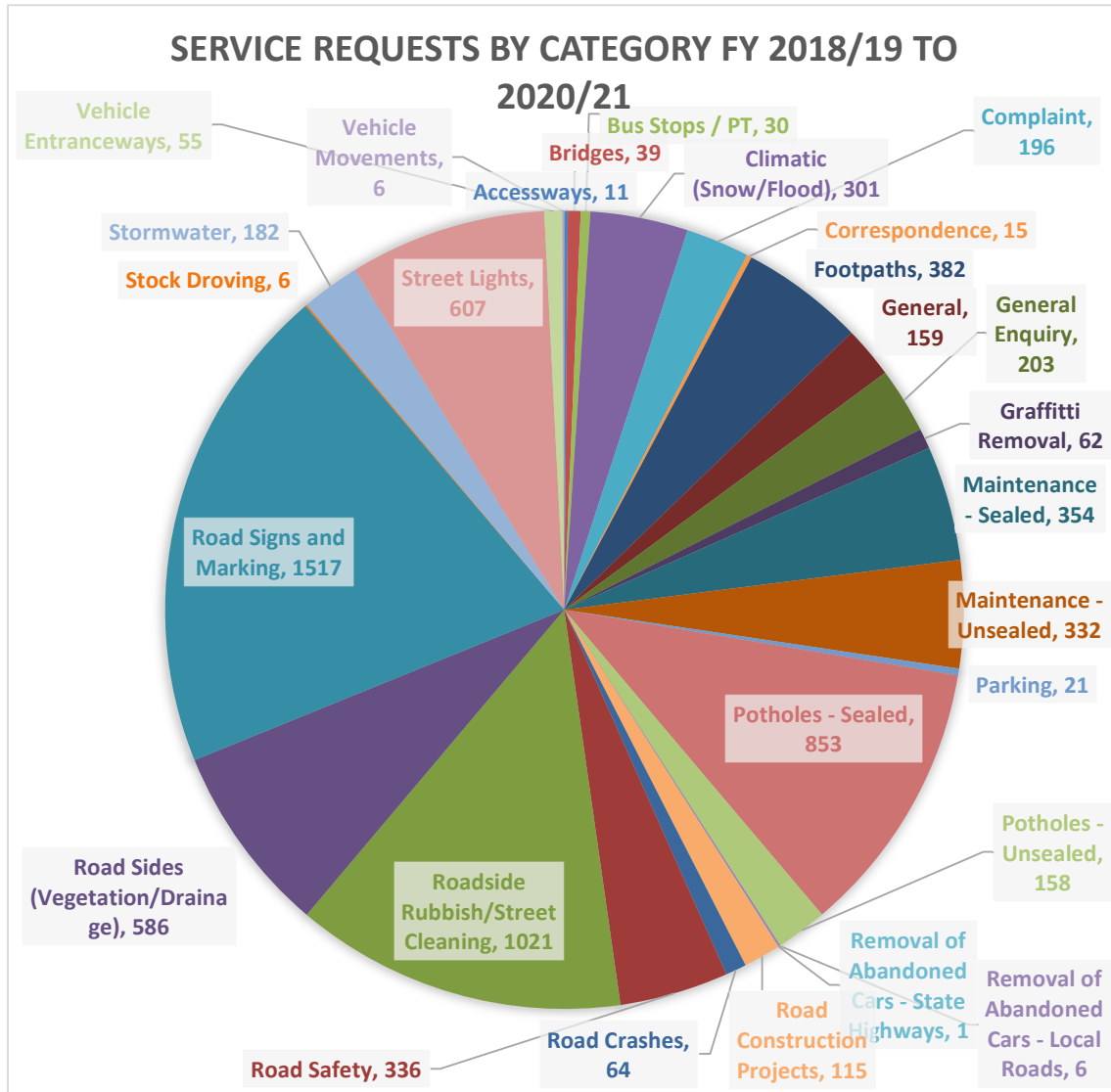


Figure 6-3: Service Request Composition Breakdown FY 2018/19 - 2020/21 (to March 2021)

The service request trends have changed in the most recent 3-year window. Where requests relating to maintenance was traditionally the dominant category, this has been eclipsed by requests relating to the upkeep of signs and road markings. Roadside rubbish and street cleaning requests have also increased past the volume of general maintenance requests. The categorisation on service requests has increased in detail as time as passed, and over time extra categories have been established as

themes have emerged, and some umbrella categories appear to have reduced in volume as a consequence of this.

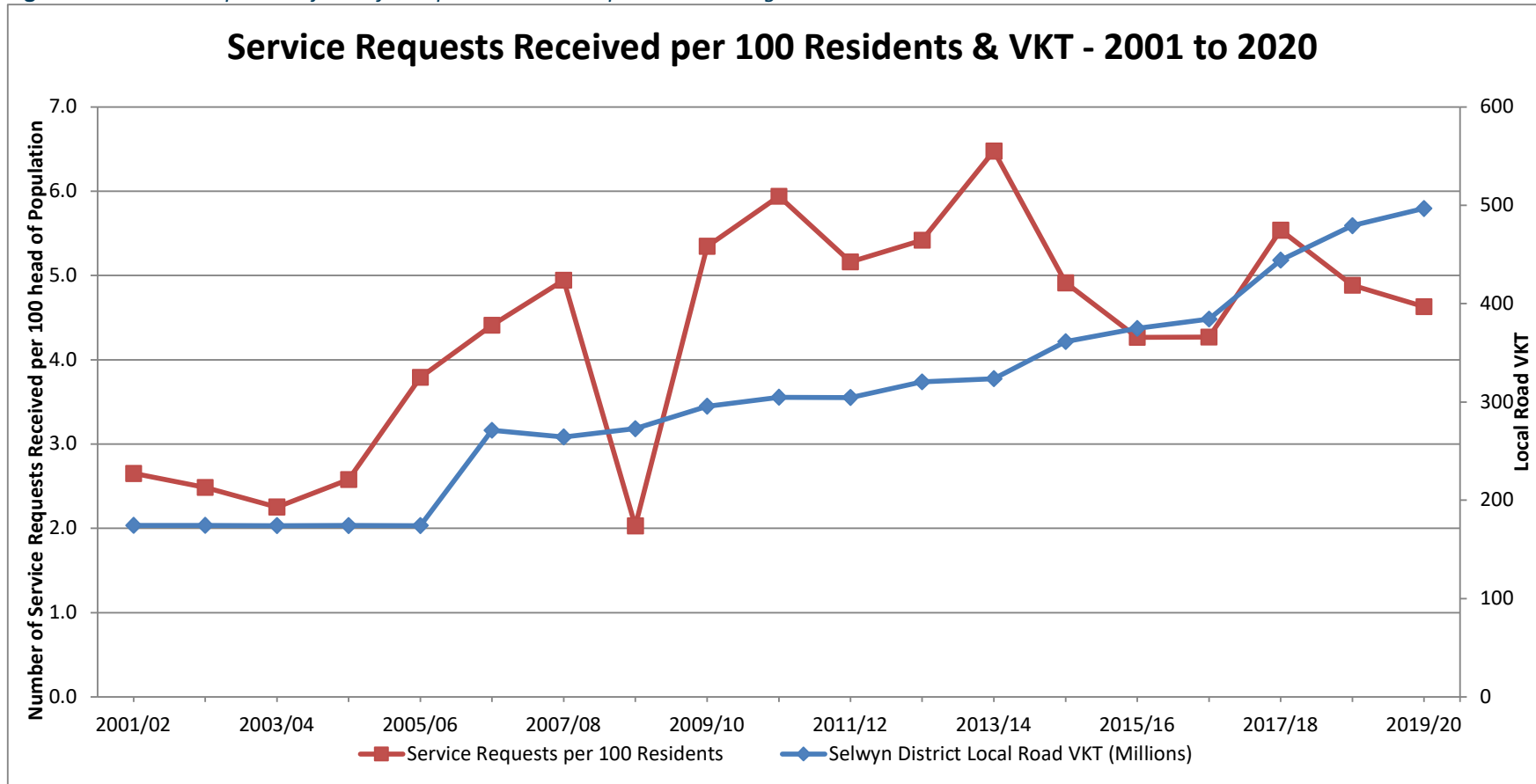
Table 6-8: 3 Year Summary of Customer Contacts – Transportation Network

Request Category	FY 18/19	FY 19/20	FY 20/21*	Average	Total
Accessways	4	2	5	4	11
Bridges	14	18	5	12	37
Bus Stops / PT	10	15	4	10	29
Climatic (Snow/Flood)	174	101	24	100	299
Complaint	52	88	39	60	179
Correspondence	7	7		7	14
Footpaths	150	117	73	113	340
General	48	74	29	50	151
General Enquiry	67	81	36	61	184
Graffiti Removal	12	29	14	18	55
Maintenance - Sealed	113	132	75	107	320
Maintenance - Unsealed	119	132	46	99	297
Parking	7	10	2	6	19
Potholes - Sealed	318	338	156	271	812
Potholes - Unsealed	67	44	31	47	142
Removal of Abandoned Cars - Local Roads	6			6	6
Removal of Abandoned Cars - State					
Highways	1			1	1
Road Construction Projects	50	43	12	35	105
Road Crashes	29	22	7	19	58
Road Safety	84	113	103	100	300
Roadside Rubbish/Street Cleaning	399	372	162	311	933
Road Sides (Vegetation/Drainage)	281	214	47	181	542
Road Signs and Marking	482	576	288	449	1346
Stock Droving	1	4	1	2	6
Stormwater	69	66	35	57	170
Street Lights	244	213	99	185	556
Vehicle Entranceways	27	15	11	18	53
Vehicle Movements	4	2		3	6
Total	2839	2828	1304	2324	6971

(Source: Transportation Service Request Analysis Summary)

As the District population and distance travelled (VKT) increase, an increase in service requests should be expected. Council actively encourages residents to contact Council and use the use service request system to report faults, but recently the number of Service Request per head of population has dropped despite the increase in VKT and encouragement.

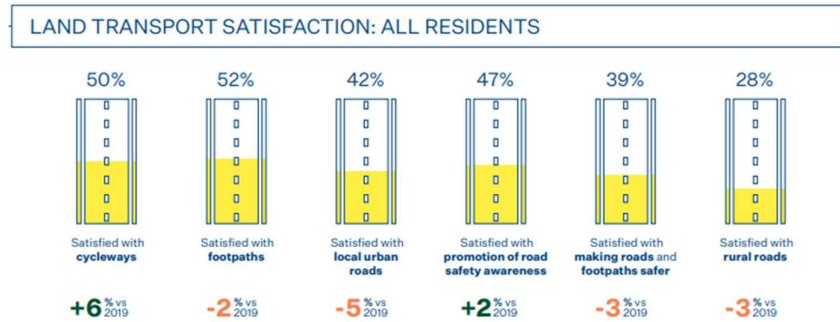
Figure 6-4: Service Requests adjusted for Population and compared with VKT growth



(Source: Transportation Service Request Analysis Summary)

6.3.2 Residents Survey

Council gains knowledge of customer expectations and concerns using information and feedback from its annual Resident Surveys. The Resident Surveys are undertaken on behalf of Selwyn by Research First. The surveys consider demographic and geographic location splits and track the trends of the responses over time. The executive summary of the 2020 report shows the overall results.

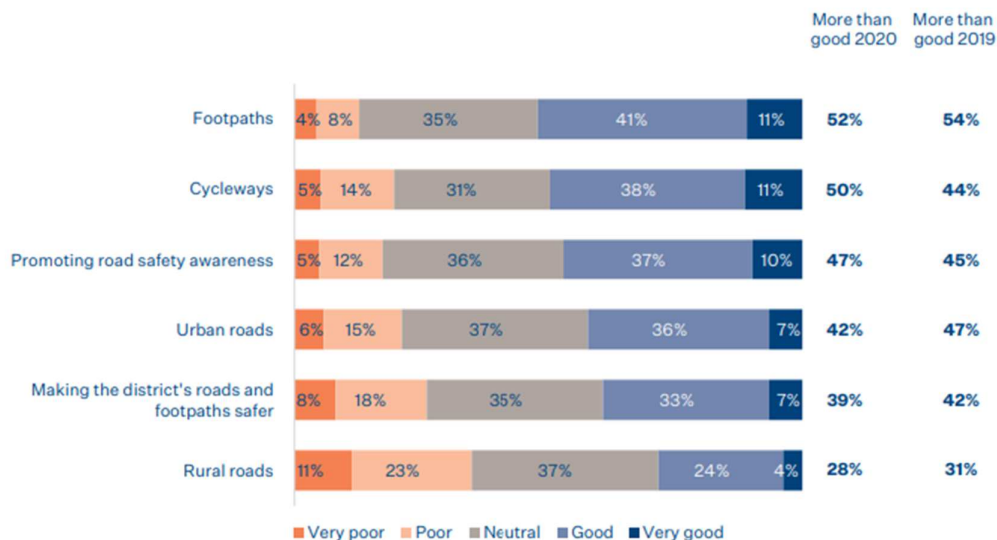


Residents' Survey 2020

Respondents were asked to rate the Council's performance across the following services:

- Urban roads;
- Footpaths;
- Cycleways;
- Making the district's roads and intersections safer;
- Rural roads; and
- Promoting road safety awareness.

Respondents were most satisfied with footpaths (52%) and cycleways (50%). Residents were least satisfied with rural roads (28%). There are no significant differences when compared with the 2019 results.¹



Residents' Survey 2020

¹ Research First (2020), Selwyn District Council [Residents' Survey 2020](#)

The large number of neutral responses does impact the analysis.

Researchers found that the trends in resident satisfaction with Land Transport are generally stable over time.

Figure 5.2: Land Transport, All Residents, Over Time

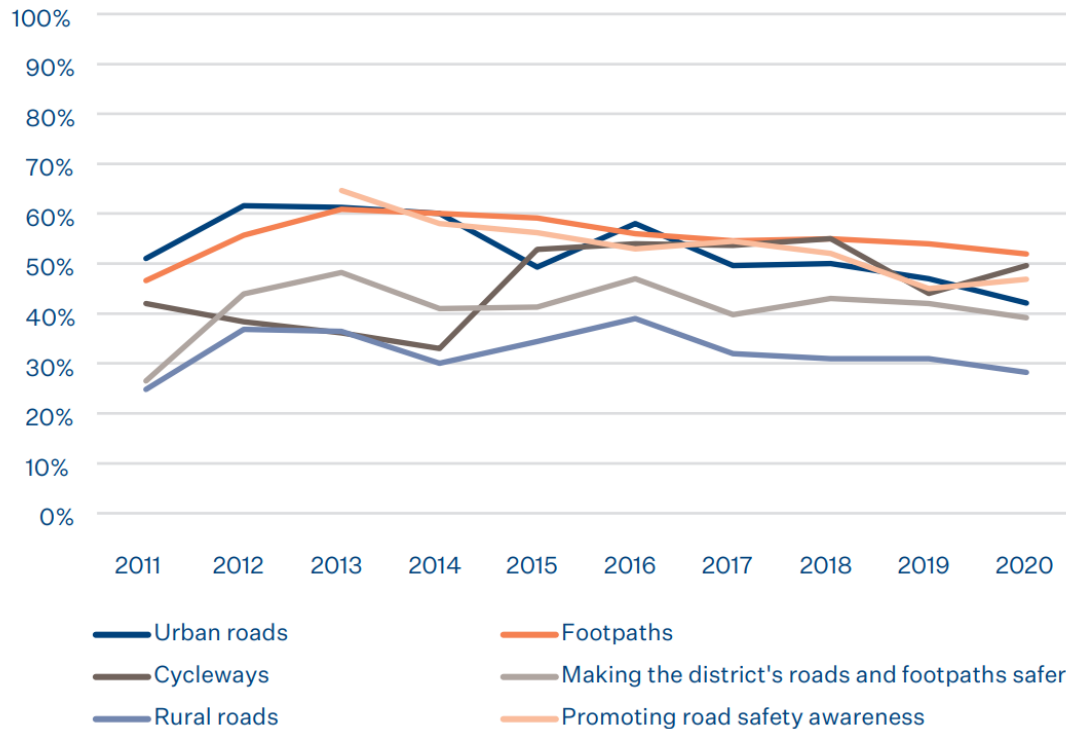


Figure 6-5: Resident Satisfaction of the Transportation Activity 2011-2020 (Research First)

Surveyors also ask residents for the reasons which lead to their dissatisfaction with services, which are grouped under general themes, and compared with the numbers of similar responses in previous years. Council keeps an internal time series record of resident survey responses over time, aggregating the responses into bands which are assigned letter grades.

These bands are descriptions should be reviewed during the 2021-24 period.

Overall Trend – B

Combining the scores of the categories provides an overall trend, showing how the general perception of the transportation network is tracking over time. To target improvements in perception the trends in the scores of the specific areas are considered, to help prioritised forward work plans.

Attribute Area	Grade	Discussion
Urban Roads	B	Urban Road (formerly “Town streets” in historical surveys) ranked highly in early surveys. The decline in ranking is a combination of the physical manifestations of accelerated wear from rapidly increasing populations, and higher resident expectations in later years. There was marked increase in performance rating from 2001 that reflected the Council’s emphasis on funding a street upgrading programme. This programme has been in decline in recent years and may be reflected by the way this measure fluctuates a little at the upper end of the B category. A decline in performance may also reflect residents’ dissatisfaction with the state of older streets in the District when compared to the new streets constructed by private developers.
Rural Road	C	This is undoubtedly one of the largest regular transport activities provided by the Council; the lower performance rating reflects the varied expectations road users have towards this activity
Cycleways	B	The “Cycleways and safe cycling routes” activities have been combined for this commentary, and the level of satisfaction has increased over time. This reflects the higher level of investment in dedicated cycle facilities in recent Long Term Plan cycles.
Footpaths	B	Footpaths are most often the highest rated component of the transportation network. The relative young age of most of Selwyn’s peri-urban townships results in footpaths that are largely undisturbed, as the services buried beneath are well within their initial service lives and access has not been required for repairs or upgrades, resulting in a network of footpaths still in pristine condition.
Road Safety	B	Road safety is a combination of promotional activity and physical interventions on the transportation network itself. In 2005 the “Road Safety coordinator” position was re-established and in 2016, “Schools Road Safety coordinator” was established in the Roading Department. This has allowed an improved coordination and input into engineering solutions which has assisted in improving road safety and is in addition to education and enforcement functions. The outcomes from the position also became more goal and objective orientated and is associated with on-going projects such as intersection behaviour, drink driving, seat belts, fatigue etc.

The Resident Surveys indicate the changes in priorities of the customer and allows council to better understand expectations and adjust levels of service if required. As the survey results trend very flat for transportation there are no significant inconsistencies and therefore no direct deficiencies to address. The Resident Survey methodology is being updated from 2021, which will initially impact trend analysis for a period. After trends are re-established time series comparison will become relevant again.

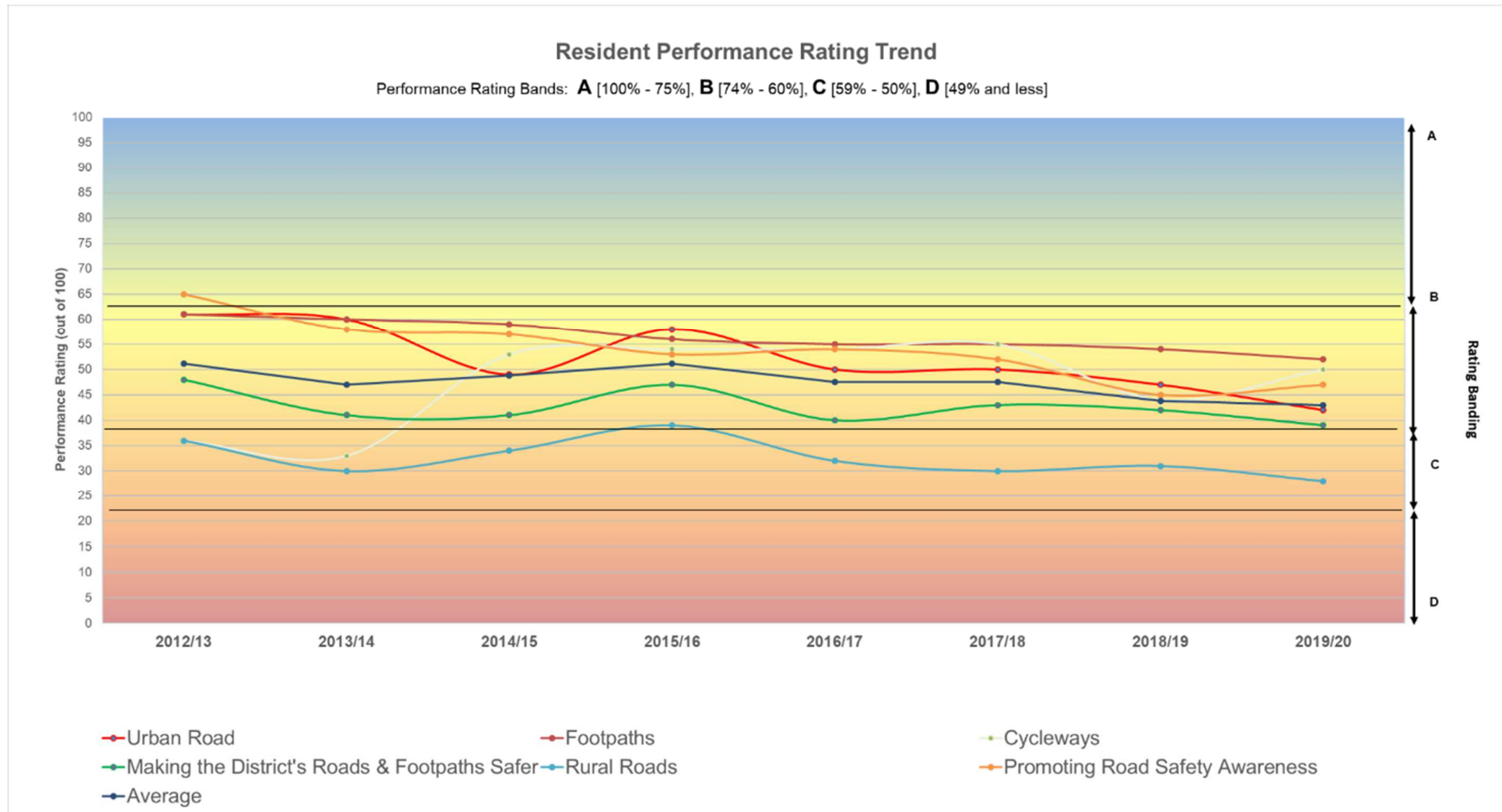


Figure 6-6: Resident Performance Rating Trends 2012 to 2020 (Research First)

6.3.3 Service Life of Facilities and Network

The service life of transportation assets is a key attribute used to inform maintenance, operations, renewals, and replacement programmes. Service life is influenced by factors outside the actual expected lives of the individual assets within the Transportation Activity, and can change as the conditions of operation change. These changes are taken into account in each of the planning cycles and service life estimates are continuously updated to ensure accuracy.

Table 6-9: Service Lives and Planning Windows of Networks, Facilities, and Documents

Planning Document	Planning Window or Expected Life				
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	

6.4 Consultation Processes

6.4.1 Community Outcomes for the Long Term Plan

Council has carried out significant consultation to establish the Community Outcomes for the LTP. These were reviewed in 2011 following the changes to the Local Government Act in 2010. For the 2018 LTP the Community Outcomes retains the essence of those included in previous LTP's. Changes to any service delivery levels of service are also considered as part of the Long Term Plan process.

6.4.2 Statutes that Include Consultation

Statutes that require Council to undertake consultation for Transportation include:

- Local Government Act (LGA) 2002.
- Resource Management Act 1991.
- Land Transport Management Act 2003.
- Ngai Tahu Settlement Claims Act 1998.

6.4.3 Significance Policy

Under the LGA 2002, each Council is required to have a Policy of Significance. The requirements for this policy is to ensure that in making decisions the Council is:

- Clear about why it is addressing a matter.
- Has considered and evaluated different options and alternatives.
- Has understood the community view on the matter and the options for addressing it.
- Has understood the views and preferences of the affected party.

A Significant Activity is one that has a high degree of significance in terms of its impact on either:

- The well-being of the people and environment of Selwyn District and/or
- Persons likely to be affected by or with an interest in that activity and/or
- Capacity of Council to provide for the well-being of the District

Transportation is considered by Council as a significant activity and therefore consultation with the community is required.

6.4.4 Consultation Policy

Council's Public Consultation Policy (C301) states that Council will:

- Clarify its expectations through public consultation.
- Allow sufficient time for effective response to its proposals.
- Report on public proposals and follow up when necessary.
- Maintain the consultative process.
- Have regard to its consultative statement.

6.4.5 The Special Consultative Procedure

There are a number of instances where Council will undertake consultation at a District wide or comprehensive level. This generally occurs when there is a requirement to use the Special Consultative Procedure as prescribed in the LGA 2002. This occurs in the following situations:

- Adopting or amending the LTP. The LTP is reviewed every three years with the Annual Plan giving effect to that Plan in the intervening years.

- Adopting the Annual Budget.
- Adopting, amending or reviewing a Bylaw.
- Proposing a change in the way a significant activity is undertaken.
- Significant decisions not already provided for in the LTP.
- Termination of a service.

Council may decide that some decisions are significant and therefore require a more rigorous assessment of options and a more robust consultative process. These decisions are treated as amendments to the LTP and can be dealt with either separately or as part of the Annual Plan process.

6.4.6 Community Consultation

Council has undertaken a range of consultation processes over the past few years specifically targeted at gathering information on the extent of infrastructure it will provide or how a service is managed.

Table 6-10: Transportation Activity Consultation Processes

Council Plans and Processes	Key Stakeholders Involved	Frequency	Reasons for Consultation	Extent of Consultation
LTP process (from 2015)	Community, Key Stakeholders	3-yearly	Legislative requirement criteria of LGA 2002	In accordance with the LGA 2002 consultation requirements
Bylaws	Community	5-yearly	Legislative Requirement LGA 2002 s158	Public and Industry submissions requested
Residents Survey (from 1999)	Community	Annually	Rate satisfaction with services provided by Council	1,036 residents surveyed by telephone
Development Contributions Policy	Key Stakeholders	3-yearly	Identification of projects associated with policy	Discussion with stakeholders
District Plan changes	Community, Key Stakeholders	10 -yearly	In accordance with the RMA 1991 consultation requirements	In accordance with the RMA 1991 consultation requirements
Regional Land Transport Plan	Community	3-yearly	Legislative requirement of LTMA 2003	Consultation undertaken by Environment Canterbury
Walking and Cycling Strategy	Community	TBC	Seek community aspirations for Walking and Cycling, inform forward works and NLTP programmes	Township Committee meetings
Road Safety Strategy	Community	TBC	Seek community and stakeholder impressions of future safety work	(Subject to new strategy being prepared or being done regionally)

6.4.7 Maori Contribution

The Local Government Act requires Council to establish processes that provide opportunities for Maori to contribute to Council's decision-making. Council acknowledges there are a number of partners involved in this planning process and delivering for the community. A strong relationship with Ngāi Tahu Whanui represented by Papatipu Rūnanga and Te Rūnanga o Ngāi Tahu. Council has established open lines of communication and meets regularly with Ngā Rūnanga to discuss planning, management and specific issues such as Te Waihora. Council has included local Iwi representation on community project teams and the District Plan Committee.

6.5 Performance Levels of Service

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.

6.5.1 Current and Target Levels of Service

Primary or Customer LoS relate to how the customer receives the service in terms of both tangible and intangible measures/criteria. Secondary or Technical LoS are developed to ensure the Primary LoS are met.

Table 6-11: Four Transportation Objectives Link Community Outcomes and Service Targets

Transportation Objectives	Service Statement	Implementation Measures
Provide a well maintained, operated and affordable land transport system.	Undertake maintenance and renewal programmes to ensure the safe and efficient on-going operation of the roading network and related transport facilities to the satisfaction of ratepayers, road users and the NZ Transport Agency.	• Customer service requests • Road roughness and condition measures • Resealing targets • Footpath condition rating
Cater for any significant projected traffic increases in a sustainable manner.	Assess, plan and implement new roading projects to upgrade the network in conjunction with non-road based solutions to manage demand in an integrated and sustainable manner.	• Project completion record • Walking and Cycling Projects Implemented • Changing travel behaviour schemes
Pedestrians, cyclists & motor vehicle users can safely move 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.	• Causality and crash statistics • Success of Road Safety Promotions • Utilisation of Safety Funding
	Use travel demand management and implement infrastructure to encourage modeshift to public and active transport modes	• Public transportation utilisation • New infrastructure construction targets • Uptake of education programmes
Contribute to an integrated and responsive local and regional transportation system.	Allocate the appropriate staff and resources to represent the interests of the Council and the community in Greater Christchurch and regional transportation planning, funding and implementation initiatives.	• Participation in Regional Transportation Coordination activities and initiatives

Objectives specific to each different asset class have also been developed; these are included in the technical specification for those individual assets.

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

- 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 the Sealed 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.

Selwyn also report on a number of non-mandatory measures further to the Audit New Zealand measures. These are included in [Table 6-12](#)

6.5.3 One Network Road Classification (ONRC) Performance Measures

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. 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 measures are summarised below. Some Customer Outcome Performance Measures align with the mandatory performance measures. The Technical Output Performance Measures are discussed further in section 6.6.

Group	Customer Outcome Performance Measures	Technical Output Performance Measures	Measured by Selwyn
Safety	1: the number of fatal and serious injuries on the network	1: permanent hazards	
	2: collective risk(fatal and serious injury rate per kilometre)	2: temporary hazards	
	3: personal risk (fatal and serious injury rate by traffic volume)	3: sight distances	
		4: loss of control on wet roads	System Generated
		5: loss of driver control at night	System Generated
		6: intersections	System Generated
		7: hazardous faults	
		8: cycle path faults	No
		9: vulnerable users	System Generated
		10: roadside obstructions	
Resilience	1: the number of journeys impacted by unplanned events		No
	2: the number of instances where road access is lost		No
Amenity	1: Smooth Travel Exposure (STE) – roughness of the road (% of travel on sealed roads which are smoother than a defined threshold	1: roughness of the road (median and average)	System Generated
	2: peak roughness	2: aesthetic faults	
Accessibility	1: proportion of network not available to Class 1 heavy vehicles and 50MAX vehicles	1: accessibility (signage is fit for purpose in providing direction and guidance to road users)	No
Cost Efficiency Performance Measures	1: pavement rehabilitation		System Generated
	2: chipseal resurfacing		System Generated
	3: asphalt resurfacing		System Generated
	4: unsealed road metalling		
	5: Overall network cost, and cost by work category		System Generated

6.5.4 Performance Goals

Short and medium-term performance goals have been set for each performance measure. Those requiring an increase in performance will be achieved by implementing improvement actions. Short term goals should be achieved within the first three years of the AMP period while medium-term goals signal the improvement planned over a ten year period.

The performance goals are aligned with the prioritised expenditure programme such that the targets reflect the actual improvement in performance expected if the expenditure programme is implemented.

The proposed measures integrate the Mandatory Performance Measures, and consider performance issues to date and the One Network Road Classification system. Further integration of technical measures and the ONRC will occur.

Figure 6-7: *Four Transportation Objectives Link Community Outcomes and Service Targets*

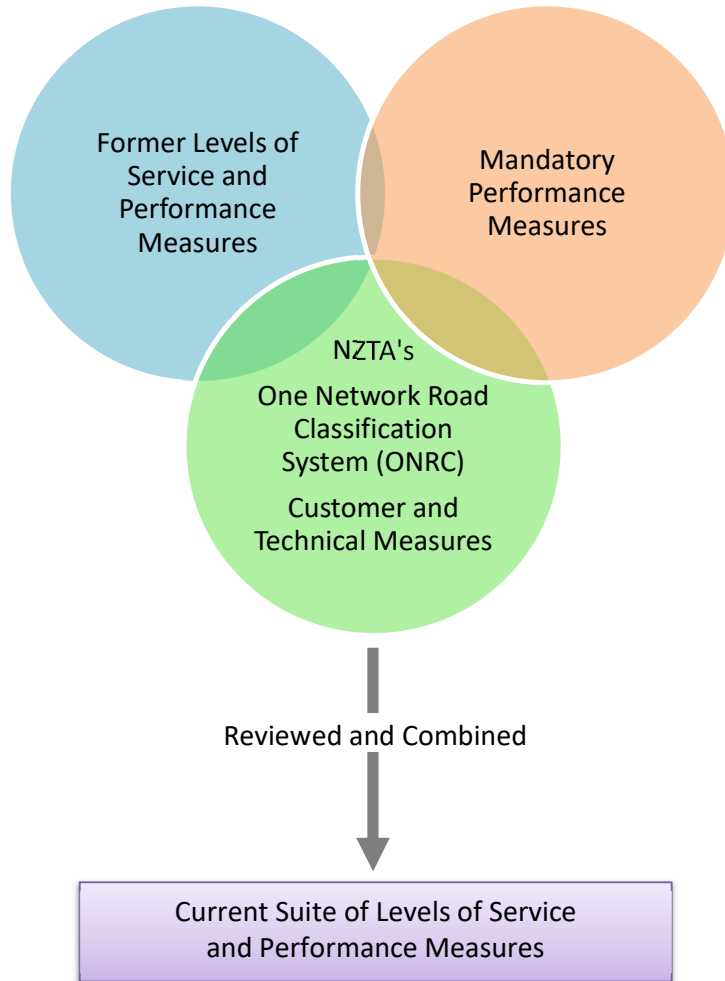


Table 6-12: Levels of Service and Performance Goals (Annual Plan)

Objective	Current Service	Planned Service 2021-24	Indicative Service 2024-31	Performance Measure	Service area	Current Performance	2021/22	2022/23	2023/24	2024-31
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		Likely external funding constraints may require programmes to be reassessed	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. (Mandatory Performance Measure)	All	85%	>75% resolution within the timeframe specified	>75% resolution within the timeframe specified	>75% resolution within the timeframe specified	>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	89%	≥90%	≥90%	≥90%	≥90%
					Rural	98%	≥95%	≥95%	≥95%	≥95%
					All roads	96%	≥95%	≥95%	≥95%	≥95%
				Maintenance of a sealed local road network: The distance of the sealed local road network that is resurfaced. (Mandatory Performance Measure)	Sealed roads	66.2km	≥75km	≥75km	≥75km	≥75km
				Maintenance of the Unsealed Road network: The percentage of roads to achieve “good” or “very good” grades in both of the previous biannual visual condition surveys.	Unsealed Roads	New measure	70%	70%	70%	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 long term plan). (Mandatory Performance Measure)	Footpaths	89%	≥80%	≥80%	≥80%	≥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)	Assess, plan and implement new roading projects to upgrade the network in conjunction with non-road based solutions to manage demand in an integrated and sustainable manner		The percentage of individual large capital projects generally completed in the year that they were programmed to occur	Roading Improvements	50%	≥75%	≥75%	≥75%	≥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. (Mandatory Performance Measure)	Road Safety	4 fatal and 14 serious	Progressively reducing number of fatal and serious crashes.			

Objective	Current Service	Planned Service 2021-24	Indicative Service 2024-31	Performance Measure	Service area	Current Performance	2021/22	2022/23	2023/24	2024-31
	Use travel demand management and implement infrastructure to encourage modeshift to public and active transport modes			Public Transport: The change from the previous financial year in the number of passenger utilising public transport to, from, or within the district	Public Transport Utilisation	New measure	Progressive increase in patronage numbers			
				Active Transport (Walking): The length of new footpaths constructed	Active Transport	New measure	2,800m	2,800m	2,800m	2,800m
				Active Transport (Cycling): The number of schools participating in the School Cycle Skills Education Programme		New measure	3 schools	3 schools	3 schools	3 schools
To contribute to an integrated and responsive local and regional transportation system				Allocate the appropriate staff and resources to represent the interests of the Council and the community in Greater Christchurch and regional transportation planning, earthquake recovery, funding and implementation initiatives	Attendance at relevant Regional Transport Committee (RTC) and Regional Transport Officers Group (TOG) meetings and forums.	88%	≥80%	≥80%	≥80%	≥80%

6.6 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. The technical LoS are important to demonstrate to Waka Kotahi 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.

6.6.1 Monitoring and Reporting

The technical levels of service are monitored through Council's Customer Satisfaction Surveys, RAMM, and dTIMS outputs. Road rating and roughness surveys are undertaken every three years to assess the condition of the sealed network. From this a Treatment Selection Report is produced which provides an assessment of the condition of the network and details specific faults and defects found in the survey.

These faults include:

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

These faults directly impact customer perception of the transportation network, though being visible indicators on deterioration or from the physical impact that have on users. 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. Smooth Travel Exposure is a proxy measurement of roughness that is a mandatory performance measure required by the DIA, it standardises roughness measurements across different road classifications and can be used to directly compare roads within a territorial authority and externally against other Road Controlling Authorities for national comparisons.

A robust system for measuring, recording and reporting performance is essential for tracking whether Council is achieving objectives and delivering the agreed levels of service. Commitment from internal staff and external suppliers, consultants, and contractors is essential for successful performance reporting.

Regular performance reviews of targeted improvement areas are required and time-series reporting to track trends and adjust approaches is vital to ensure the outputs of the reporting retain their relevance and value.

6.6.2 Maintenance Contract Key Performance Indicators

A suite of KPIs has been developed in collaboration with the road maintenance contractor to reflect the high level objectives and level of service targets. Reporting is undertaken on a monthly basis and discussed at partnering meetings. HEB Construction currently holds the Selwyn District Roding Maintenance contract.

A number of performance targets have been set for the contract to measure and report against to identify areas where achievement is satisfactory and areas where improvement is needed. An overall target performance rate of 85% has been agreed for this contract.

High Level (40%)	KPI 1	H&S Notifiable Events
	KPI 2	H&S Non- Notifiable Events
	KPI 3	H&S Site Check Compliance
	KPI 4	Regulatory Compliance
	KPI 5	Customer Opinion Survey
	KPI 6	Potholes
	KPI 7	P1 Urgent Unscheduled
Service Delivery (40%)	KPI 8	Unscheduled
	KPI 9	Response to Quotes & Info
	KPI 10	Op Inspection Report
	KPI 11	Scheduled Wks. Programme
	KPI 12	Unsealed Maintenance
	KPI 13	Technical Compliance (in Job)
	KPI 14	Asset protection - instances of damage by Contractor
Managerial Processes (20%)	KPI 15	Complete and accurate contract management plans
	KPI 16	Provision of improvements (innovation)
	KPI 17	Timely and Accurate claim
	KPI 18	Work Management and Asset Management
	KPI 19	Resolution of issues

The agreed KPIs cover the high level, service delivery, and managerial aspects of the contract and ensure that all of the delivery aspects of the contract are being monitored.

The performance is summarised, and a full report is prepared discussing performance highlights and any factors that may have contributed to areas of deficiency. A performance score is calculated for each monthly report, and these are compared in every report to performance scores across the previous 12 months.

Figure 6-8: Monthly Partner Report Summary (HEB Construction)

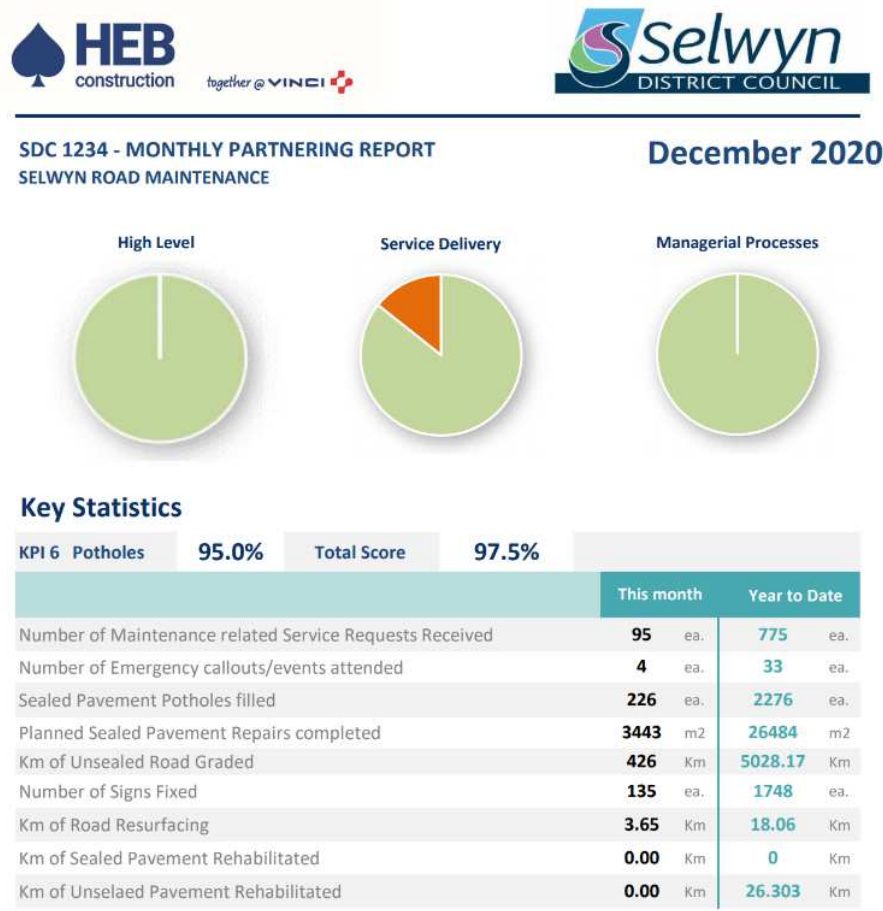
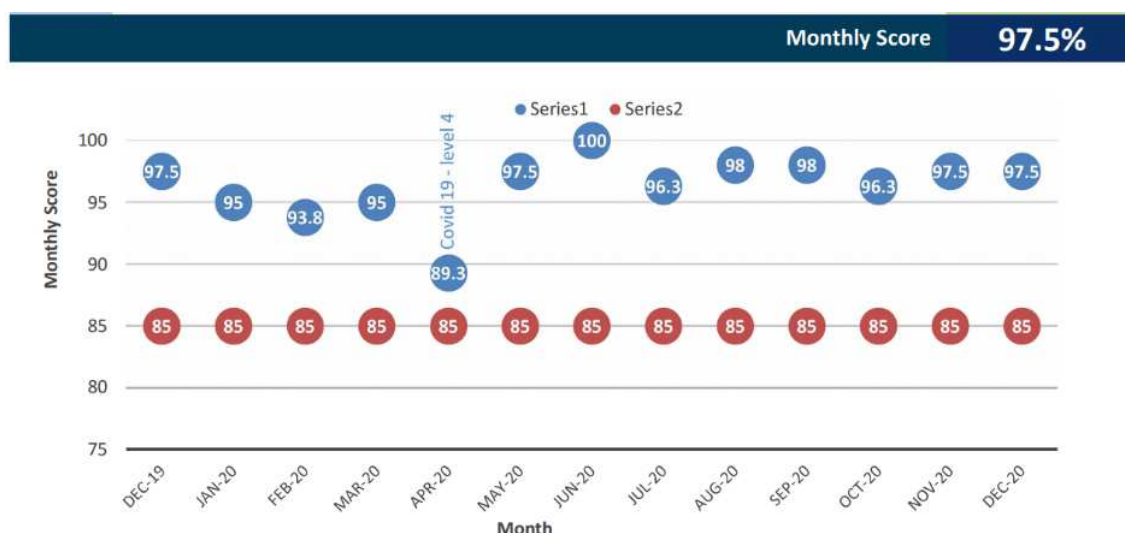


Figure 6-9: Performance scores (blue) for the year December 2019 to December 2020 (HEB). Red series is the 85% performance target.



6.6.3 ONRC Technical Levels of Service

The ONRC Output Measures indicate technical levels of service that support the Customer outcomes and Mandatory Performance measures. They are intended for further investigation of the customer measures so the reasons for achievement or non achievement. There are a series of questions in the One Network Road Classification (ONRC) Performance Measures Guide (2016) to assist this investigation.

The following example (safety) illustrates how the combination of measures assists this investigation and therefore what interventions may be appropriate

Mandatory Performance Measure	Customer Outcome Performance Measures	Technical Output Performance Measures <i>Which of these contribute to the number of fatal and serious injuries?</i>	Intervention is a contributing factor
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. <i>A reduction is sought</i>	1: the number of fatal and serious injuries on the network <i>Similar to Mandatory Performance Measure - A reduction is sought</i>	1: permanent hazards	<i>Investigate controls and rectification processes</i>
	2: collective risk (fatal and serious injury rate per kilometre) <i>Indicates crash rate against the length of network</i>	2: temporary hazards	<i>Investigate identification and rectification processes</i>
	3: personal risk (fatal and serious injury rate by traffic volume) <i>Indicates crash rate against the amount of traffic on the network</i>	3: sight distances	<i>Investigate where sight distances are inadequate and undertaken improvement action</i>
		4: loss of control on wet roads	<i>Investigate where skid resistance is inadequate and undertaken improvement action</i>

		5: loss of driver control at night	<i>Investigate if urban or rural – and if lighting or delineation factors</i>
		6: intersections	<i>Investigate controls and if improvement is required</i>
		7: hazardous faults	<i>Investigate identification and rectification processes</i>
		8: cycle path faults	<i>Investigate identification and rectification processes</i>
		9: vulnerable users	<i>Investigate if vulnerable users needs are catered for</i>
		10: roadside obstructions	<i>Investigate controls and rectification processes</i>

Inspections have been undertaken and refinement of the process, along with ONF integration is proposed for 2021-24.

6.7 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 following measures to address them.

Table 6-13: Transportation Negative Effects

Well-being	Possible negative effect	The Council's response
Social	Poorly designed, operated or located transport infrastructure may cause noise, dust, visual or other impacts which have adverse effects on quality of life and the environment	Design and locate new infrastructure and use buffer zones and plantings in a way that reduces the effects of potentially disruptive assets such as new roads near residential areas
	Transport routes can separate communities.	Integrate walking and cycling links with vehicle and public transport routes to connect communities with each other and with other amenities and shopping precincts. By walking and cycling, residents can interact with their neighbourhood and environment resulting in a sense of safety and belonging while being engaged in a healthy activity
		Link up amenities such as schools, community centres, reserves and libraries with safe and efficient transport routes
	The use of roads can be hazardous	Identify hazards and risks and attempt to reduce these through a combined effort of engineering improvements, education, behaviour change and enforcement. Ensure speed limits are appropriate and carry out repairs and renewals in a timely manner
Economic	Rates have to be levied to cover the cost of providing services that contribute to the Council's goals and its Statutory obligations, while remaining sustainable and affordable	Responsibly provide efficient and effective levels of service that the community can afford. Provide a range of transport services so people and businesses can make informed travel choices on what is appropriate and affordable for them
	Failure to levy rates at the appropriate time may result in an excessive burden for future generations	Consider 'whole of life' costs and apportion capital costs equitably over time. Ensure that charges are realistic and do not result in accumulated costs later. Plan ahead for economic growth and population expansion. Carry out renewals and new works in a timely manner
	Failure to make adequate service provision, together with unreliable services, may limit growth and impact on economic prosperity	Work with other Local and Regional Authorities to coordinate major transport planning and funding initiatives as a joint enterprise. This is likely to be more successful compared to if the Council acted in isolation

Well-being	Possible negative effect	The Council's response
	Expanding transport routes can increase vehicle movements and subsequently the use of fossil fuels	Put in place 'an integrated, safe, responsive, sustainable and affordable land transport system'. Utilising integrated transport packages, the Council can encourage other choices through public transport planning and walking and cycling routes to reduce the dependence on motor vehicles and fossil fuels. The Council supports the 'Park and Ride' concept in future town planning
Environmental	Transport routes can affect rural amenity and landscape values	Consider all aspects of community well-being, not just economic outcomes. Work with the topography of the land to integrate transport corridors with the landscape. Use design techniques, which minimise adverse environmental effects
	Transport routes add hard surfacing to formerly permeable land, exacerbating stormwater run-off, glare and noise. Run-off can cause pollution if it flows directly into streams	Integrate soft stormwater treatment features into roading design e.g. the use of grassed and planted swales and retention basins to capture run-off, treat it and release it slowly into streams and water courses
	Vehicles produce exhaust emissions that are potentially harmful while growth will introduce more vehicles onto the road	Provide other transport choices such as walking and cycling and public transport in an attempt to at least halt or preferably reduce the amount of emissions by a reduction in motor vehicle usage. To be effective, this also has to be combined with wider efforts and incentives such as achieving a more modern and efficient national vehicle fleet
	Street lighting in new urban subdivisions can add to light pollution that affects people's enjoyment of the environment. This has to be balanced against personal safety and property protection	Follow specific standards for any new street light installations to reduce light spill and glare while remaining effective. Some smaller more rural townships may elect to have a reduced level of lighting to meet their concerns
Cultural	Road maintenance, improvement works and new transport routes have the potential to damage heritage sites, mature vegetation and remnants of the District's culture and history	Assess the impact on cultural well-being as a normal part of the decision-making process. Consult with local communities of interest to identify sites that are of importance to them and design routes accordingly. Consult with Tangata Whenua and the Historic Places Trust

6.8 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items.

Item		Action
<i>Previous Improvement Plan Items</i>		
<i>New Improvement Plan Items</i>		
IP 2.7 (see section 2.9)	Consider approach to co-design and engagement with Maori	
IP 6.5	ONRC Inspections - refinement of the process, along with ONF integration proposed for 2021-24.	

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

7.0	GROWTH AND DEMAND	1
7.1	Overview	3
7.2	Population and Projections	4
7.2.1	District Growth Model	5
7.2.2	Individual Community Projections	7
7.2.3	COVID-19 Implication of Growth Projections	8
7.3	Population Growth Drivers	10
7.4	Transportation Growth Drivers	10
7.4.1	Employment	11
7.4.2	Agriculture	12
7.4.3	Industry	12
7.4.4	Commercial	13
7.4.5	Tourism	14
7.4.6	Higher Education and Research	14
7.4.7	Access to Vehicles	15
7.4.8	Mode Choice	17
7.4.9	Legislative Change	18
7.5	Planning for Growth and Demand	18
7.5.1	Asset Capacity	19
7.5.2	Transportation Models	19
7.5.3	Growth-related work	22
7.6	Development Contributions	23
7.6.1	Subdivision Commitments	23
7.6.2	Subdivision Development	24
7.7	Growth Related Projects	27
7.7.1	Prebbleton Arterial Intersection Projects	27
7.7.2	Cycleways	27
7.7.3	Seal Widening	28
7.7.4	Seal Extensions	28
7.7.5	Te Ara Ātea and Rolleston Town Centre projects	28
7.7.6	CSM2 Rolleston Access	29
7.7.7	Lincoln Town Centre	30

7.7.8	Project Integration	30
7.8	Improvement Plan Items	31

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, and
- Climate change.

There are 4 main demand factors that affect the ongoing operation and performance of the roading network and transportation system:

1. **A population increase** will result in higher traffic volumes, which can increase deterioration and congestion, and may reduce the customer Level of Service. The resulting demand for maintenance and improvement will increase costs and required works will cause further disruptions on the network.
2. **A change in the way a road is used** will create demand for upgrades to accommodate the new use patterns. For example, the creation of a new subdivisions or the development of new industrial areas will change the patterns of access for different types of vehicles on different roads as commuter and commercial traffic patterns adjust to the new developments.
3. **A change in the road users' expected level of service** may prompt improvements to deliver perceived value for money. Burgeoning communities tend to expect high levels of service, as the assets associated with growing communities are typically new. These expectations may be transferred to the wider roading network and improvements may be required to deliver consistency.
4. **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.

Demand for new or upgraded assets arises from meeting the needs of both the existing and the expected future populations. This demand manifests itself in the need for:

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

7.2 Population and Projections

The population of the Selwyn District has tripled in the past thirty years, from 20,520 in 1986 to approximately 65,600 in 2019. The district has grown by 6% per year since 2013, much higher than the national average of 2%. The population has almost doubled since 2006.

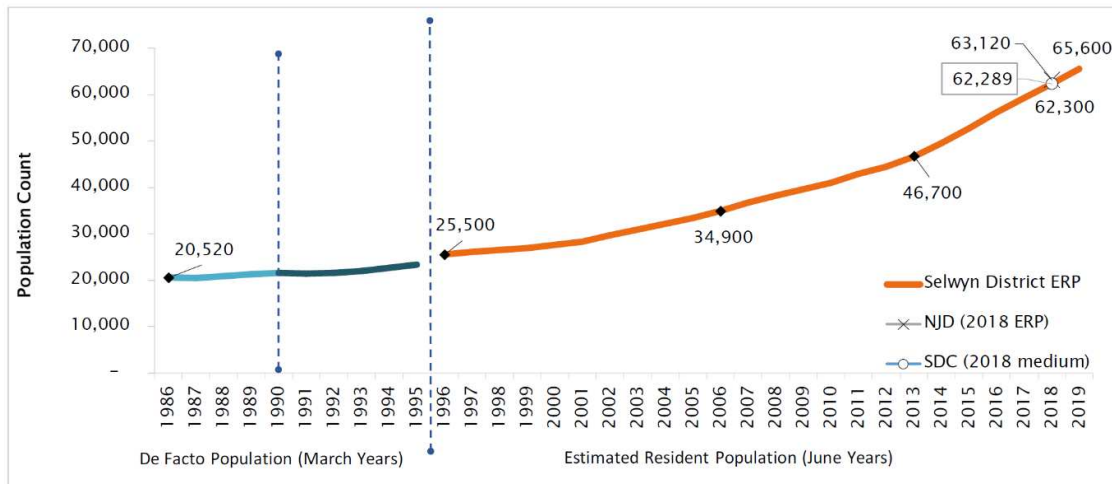


Figure 7-1: Selwyn District Population Size and Growth, 1986-2019¹

This growth has been from both migration and natural increase, with most migration resulting from regional population movements. In recent years this has accounted for over 80% of total growth. The majority of this migration is coming from Christchurch City (approximately 70% of new residents moving to Selwyn from Christchurch City).

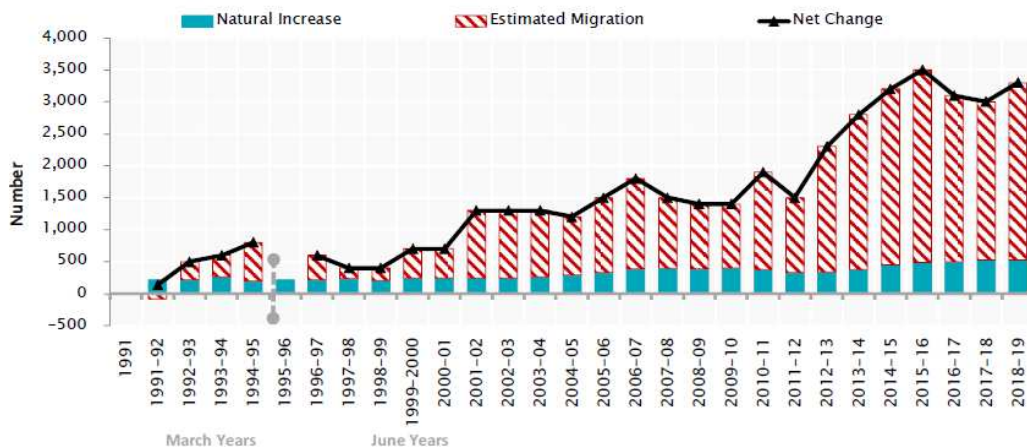


Figure 7-2: Selwyn District Estimated Components of Change (1991-2019)¹

Selwyn is the third-youngest territorial authority in New Zealand, but the District's population is also ageing at a faster rate than both the wider Canterbury Region and New Zealand averages. This does not appear to be caused by significant migration gain at older ages but rather from ageing-in-place. Selwyn has larger growth in residents of older ages than the Canterbury and New Zealand averages.

¹ Source: Jackson, N.O. (2020). Selwyn – 2020 Review of Demographics Report (Part A).

7.2.1 District Growth Model

The Selwyn District growth model is used to predict the strength and distribution of growth across the district, which is important to understand in the provision and management of infrastructure in the district. Providing infrastructure in advance of development is the most cost-effective method, but care must be taken to avoid constructing speculative infrastructure to service growth that doesn't eventuate.

A Growth and Demand report has been prepared in line with the Long Term Plan process, which contains the population, household and dwelling projections that are used to base infrastructure planning decisions off for the next 3, 10, and 30 year programmes. The model itself takes household projections as inputs and uses these to spatially identify the capacity to facilitate the growth within the district. The capacity estimates are based on the historic trends of development, which are constrained by the operative District Plan at the time of development.

Selwyn District Growth and Demand



Figure from teara.govt.nz

The main considerations for the provision of the transportation system are to anticipate where and when populations will move, to ensure that adequate transport infrastructure is available to service the demands of communities while balancing the need to ensure that there is not over-investment in under-utilised facilities. Figure 7-3 shows the estimated spatial distribution of township growth for Selwyn for the next 10 years, and shows the areas where the most value will be achieved in targeting infrastructure investment.

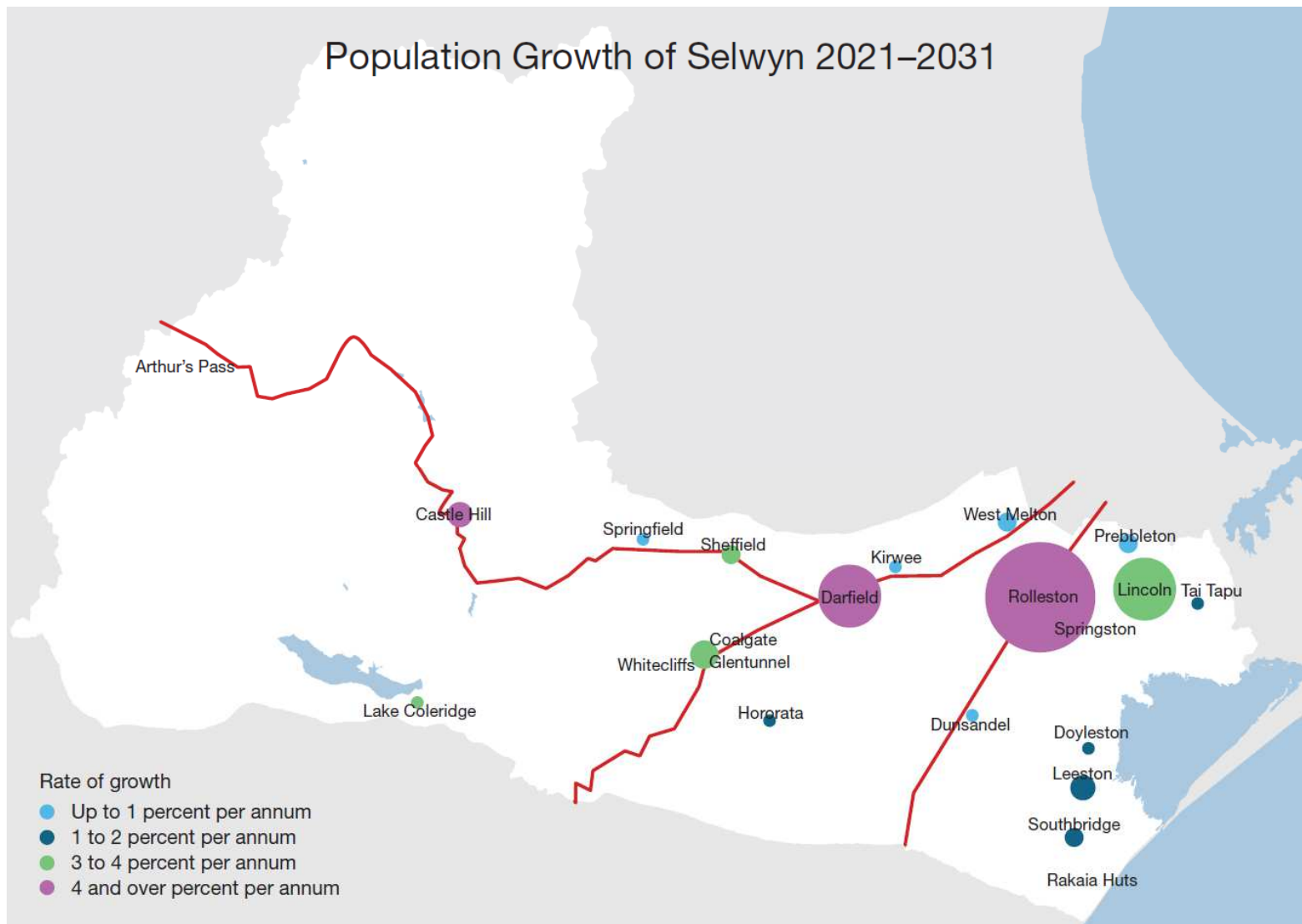


Figure 7-3: Population Growth for Selwyn 2021-31(Source: Jackson, N.O. (2020). *Selwyn – 2020 Review of Demographics Report (Part A)*.)

7.2.2 Individual Community Projections

Growth can be expressed in both absolute quantities and percentage increases. While the percentage increases indicated for some of the rural communities are higher, the greatest absolute growth occurs in the peri-urban Greater Christchurch Partnership areas. In the later decades from 2031-51 the Central Selwyn growth rates settle and the majority of the growth will be centred within the Rolleston-Lincoln-Prebbleton urban township belt.

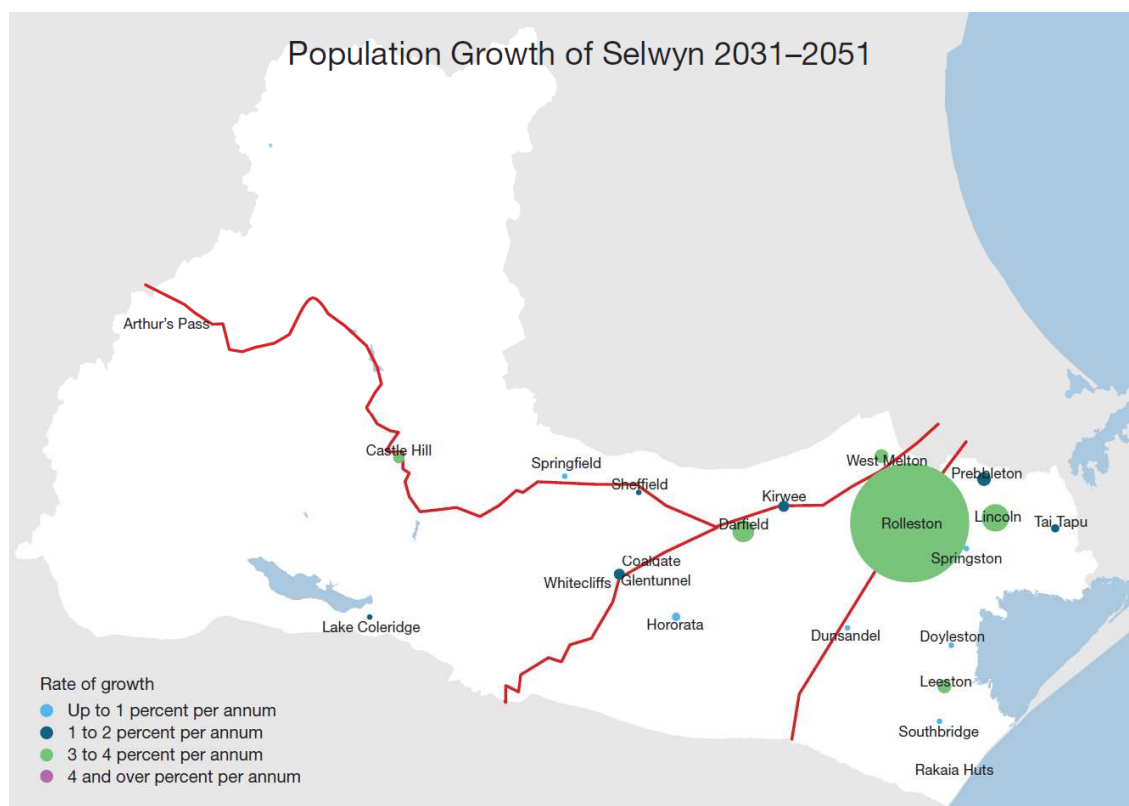


Figure 7-4: Population Growth for Selwyn 2031-51²

This is reflected in the majority of the planned Council investment being concentrated around these centres, particularly town centre upgrades and arterial route safety improvements. Much of the infrastructure required to service the growing outer townships, especially in Darfield and Castle Hill, is created during private development and then vested in Council, and only minor connectivity or safety upgrades are required from Council investment.

The 10-year and 30-year projections for individual townships show that the growth is strongest in Rolleston across both periods. Growth is generally stronger in the first 10 years of the projections for most of the other townships with the rates generally levelling in the latter 20 years. These trends are addressed in the Long Term Plan, and the details of the individual projects that address the new and emerging demand for transport services are found in **Section 7.5.3 (Growth-Related Works)** of this AMP.

² Source: Jackson, N.O. (2020). Selwyn – 2020 Review of Demographics Report (Part A).

7.2.3 COVID-19 Implication of Growth Projections³

In the wake of the COVID-19 pandemic, economies across the country were expecting to slow. April forecasts expected the New Zealand economy to shrink by 8% with unemployment reaching 9%. The Selwyn economy was expected to weather the impact slightly more optimistically than the national average, suffering only a 5.4% contraction in the economy and a 7.1% unemployment rate.

This slightly more positive outlook can be attributed in part to the resilience afforded by the diversity of the Selwyn economy. Exports of food products remain strong, and some commodities exports are increasing. Selwyn's largest industry is the agricultural forestry and fishing sector and continues primary export strength is likely to support the district's economy. The strength of the dairy sector in the district further bolsters the district's position, as food production is continuing at a similar rate.

Selwyn's relative resilience can also be attributed to the comparatively low exposure to international tourism. Only 32% of the normal tourism spend in the district is from foreign tourists, and domestic tourism spending is expected to hold up much better than international. Domestic tourism is forecast to drop by only 21%, compared with a 91% drop expected in international tourism.

The construction sector was forecast to take the largest hit of the industries in Selwyn, with a forecast decline of 27%. Increases in unemployment and decreases in house prices along with tighter bank lending conditions are expected to slow the demand for new home builds in the district. Infrastructure builds however are expected to have slightly higher resilience, with the government's shovel ready project scheme signalling the government's desire to use this channel to try and stimulate the economy's recovery. Strong growth in the population up until COVID-19 and increases to building stock has increased the baseline level of maintenance work required which may further mitigate some amount of downturn for parts of the industry that tend to be less cyclical.

Revised forecasts released in November 2020 show a more optimistic recovery for Selwyn District based on economic metrics for Selwyn District to the quarter ending June 2020. Key findings included:

- Selwyn's economy contracted by 10.4% over the lockdown period, (12.4% contraction nationally)
- It rebounded and grew by 2.6% over the September quarter (3.2% nationally)
- Biggest hits from global recession are yet to come
- Selwyn will take a smaller and later hit than most other districts (-0.9% to April 2021 and -0.7% to April 2022)
- This will be driven by a slowdown in Selwyn's construction boom
- Primary sector exports and food product manufacturing will remain stable or expand

As at June 2021, Infometrics⁴ reported that the Selwyn economy has maintained its strong run through the post-COVID environment, with Infometrics provisional estimates showing that June 2021 quarter GDP was 8.8% higher than June 2019. GDP was 7.0% higher over the year to June 2021, ahead of the national growth rate of 4.2%, a period of comparison which is distorted by nationwide lockdown in the previous year. Employment of Selwyn residents has been relatively strong too, up 0.8%, compared to a 1.3% decline for Christchurch City residents.

³ As summarised from the *Economic Impacts of COVID-19 on the Selwyn Economy – Revised Estimates*, Infometrics, November 2020 and Strategic Business Case, from the report *Economic Impacts of COVID-19 on the Selwyn Economy – Early Estimates*, Infometrics, April 2020

⁴ *Quarterly Economic Monitor Report* – Selwyn District, Infometrics, June 2021

Selwyn District Quarterly Economic Infographic JUNE 2021

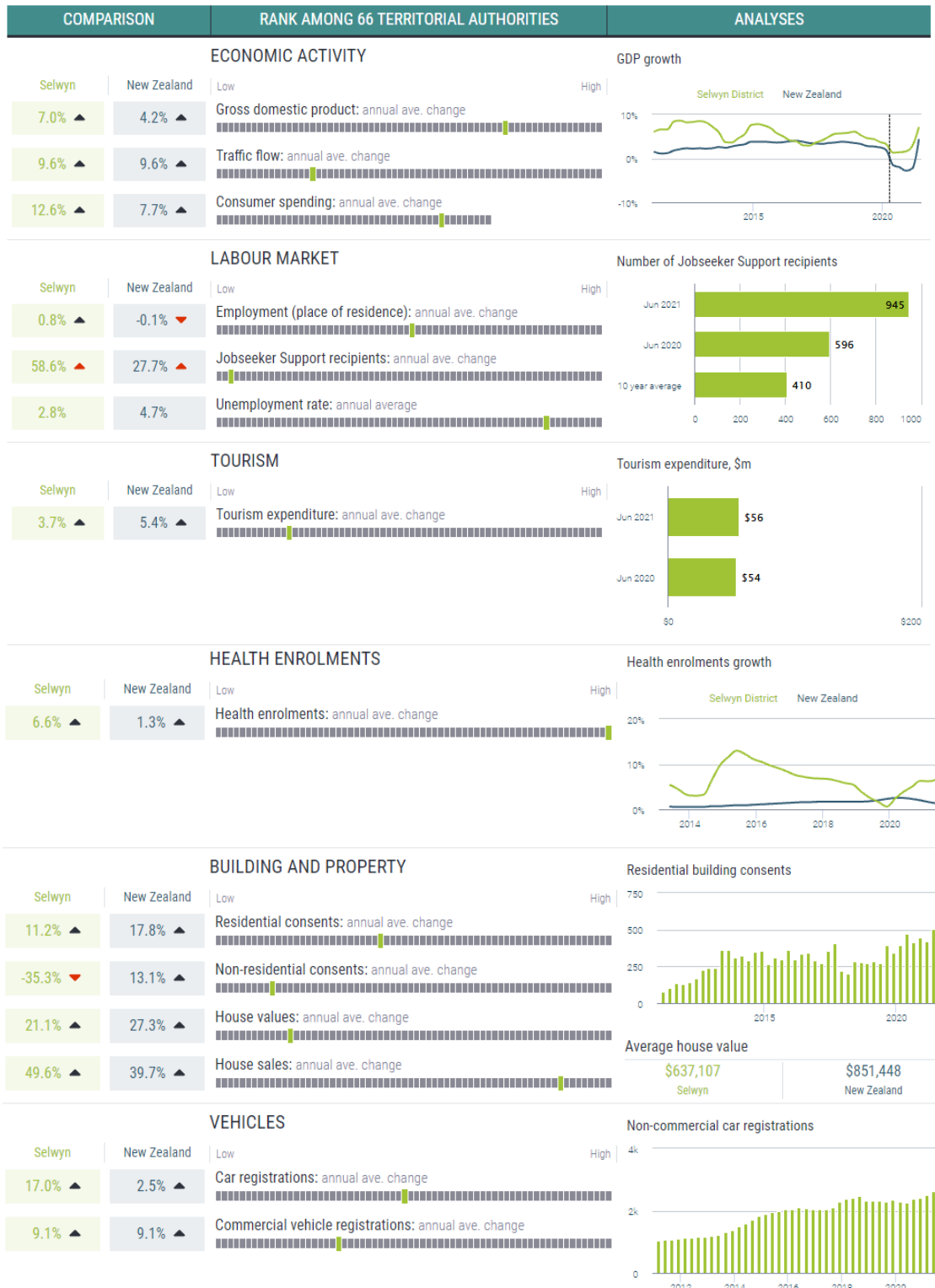


Figure 7-5: Selwyn Quarterly Economic Monitor Report Infographic, Infometrics, June 2021

The financial impacts of COVID-19 in the district, while less than some other areas of New Zealand, will none the less also tighten budgets in Selwyn for at least the beginning years of this AMP. It is likely that these reductions to Selwyn's economy will reduce the Council's revenue and in the wake of this, it becomes vitally important to ensure investments are targeted to return maximum value.

7.3 Population Growth Drivers

Although Selwyn's accelerated growth arch originates before the 2010 Canterbury and 2011 Christchurch earthquakes, post-quake recovery has further accelerated this growth, particularly following the official red-zoning of many of the eastern suburbs. Prior to red-zoning of Christchurch suburbs, the neighbouring districts of Selwyn and Waimakariri were expected to cater for the continuing growth of the city and increasing land demands. With geographic limits to Christchurch City expanding to the east and challenges to the south due to the comparative extra cost of developing hillside land, the city would expect to naturally grow much more quickly across the plains to the north and west.

The growing demand for new builds to expand the first home and rental markets coupled with the demand for good bearing soils upon which to establish, have created a perfect storm of growth in Selwyn that has continued well after the original earthquakes and will likely carry on long into the future. This is particularly the case for Rolleston where the land is almost entirely TC1⁵, and able to attract homeowners away from the city by virtue of requiring only standard foundations and minimal additional engineering, a cost saving over building particularly in the TC2 and TC3 zones in the city.

With the increasing financial advantages of opting for a new build over an existing property for first home buyers, the demand for new titles is high. Selwyn has significant amounts of land which could be made available for residential development. This has contributed to continued high demand even a decade after the original earthquake events.

7.4 Transportation Growth Drivers

While population growth can account for large proportions of growth in transportation demand, several other factors also influenced the amount of transportation growth. Growth rates vary across the district and are dynamic in response to projects such as CSM2.

Traditionally future growth rates used we in the order of:

- Total traffic volumes 3 % per annum
- Heavy traffic volumes 4 - 5% per annum

Practice has shown the above figures are the values of the lower end of the ranges; and reflect an increased element of uncertainty over in the growth rate due to increased fuel prices and the effects of other government policies.

Growth in demand and utilisation of the transportation network is driven by a number of physical and social factors. Growth and change in the types of utilisation within the system is also an important consideration in the long term planning and management of transportation networks, so understanding and anticipating the drivers of growth and change are vital to ensuring that

⁵Building.govt.nz, "Understanding the Technical Categories" <https://www.building.govt.nz/building-code-compliance/canterbury-rebuild/understanding-the-technical-categories/>

transportation investment will meet demand. The amount of employment, the nature of the industries, the relative affluence and access to different transportation modes and the legislative environment all impact the patterns of growth and demand within the transportation network.

Growth models used across Greater Christchurch indicate 7 to 10% are more likely.

7.4.1 Employment

Continuing growth in demand on the transportation system is underpinned by the strong economy. The Selwyn economy generated around \$2.8b in 2019, and continues to experience higher GDP growth than national averages. This growth has improved productivity and household incomes in the district.

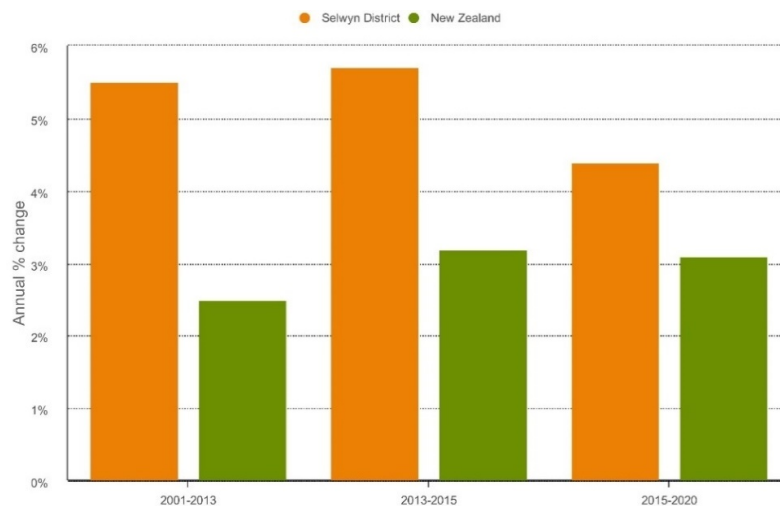


Figure 7-6: GDP growth since 2001 (Infometrics)

The economy relies on just a few key industries. Agriculture is the largest employment sector, but as the district continues to urbanise, service and retail sectors are growing, focussed in peri-urban areas. The Herfindahl–Hirschman Index (HHI) below demonstrates the level of diversification of the economy. The higher the index, the more concentrated economic activity is on a few industries (less diverse).



Figure 7-7: HHI Index in Selwyn, 2000-2020

Employment growth in Selwyn is up 3.1% in 2020, compared to 1.6% national growth. Diversity of employment is demonstrated in

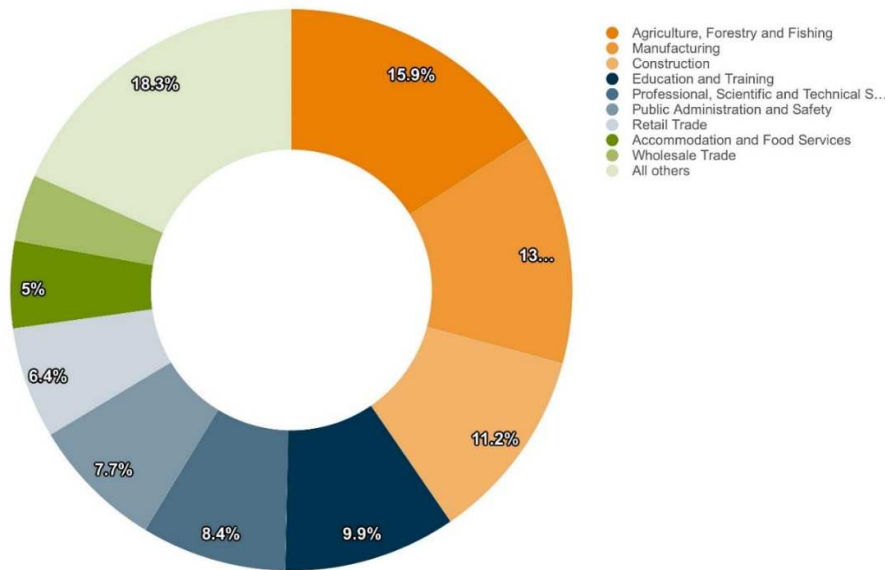


Figure 7-8: Employment composition of the Selwyn District (Infometrics)

7.4.2 Agriculture

The growth in the agriculture employment sector is modest, as the current trends are generally for larger commercial farms favouring machinery over labour, but the sector generates demand for support services and contributes to the diversification of the economy through stimulating other industries and sectors.

The dairy industry has seen steady increase in recent years, while beef and sheep farms have begun to subside. The Central Plains Water scheme facilitated the provision of water to an irrigable area of 60,000Ha and increased the productive capacity of Selwyn land, assisting with the on-going intensification of dairy farming in the region. In 2008 Synlait opened a new dairy factory outside Dunsandel, in 2015 Westland Milk Products increased its Canterbury presence by building a \$40 million plant to make “long life” milk at Rolleston, and in 2012 Fonterra opened a new milk processing plant west of Darfield. Herd sizes and production have remained generally steady year-on-year as domestic and international demand remain high.

These three developments have both changed and increased the patterns of use and demand within the district of heavy commercial traffic, including the freight burdens of moving raw material from farms to plant, and carting the processed milk to retail hubs within New Zealand and to export depots.

7.4.3 Industry

The Rolleston Industrial Area development began in 2000 with the establishment of the Izone development. It has grown to one of the largest industrial park in New Zealand, and is now made up to two parts; the original 188ha Izone development and the later 122ha Iport development. The Rolleston Industrial Area’s key tenants are the Lyttelton Port of Christchurch’s Midland Port inland port facility and the Port of Tauranga’s MetroPort Christchurch facility.

Manufacturing and utilities is the fastest growing employment sector in the district, growing by almost 8% in the last decade, facilitated by the establishment and rapid uptake in opportunities in the Rolleston Industrial area. This has led to increases in traffic demand within the district, both from increases in light commuter traffic from increased employment opportunities, and from heavy vehicles from increased freight opportunities from the new industry.

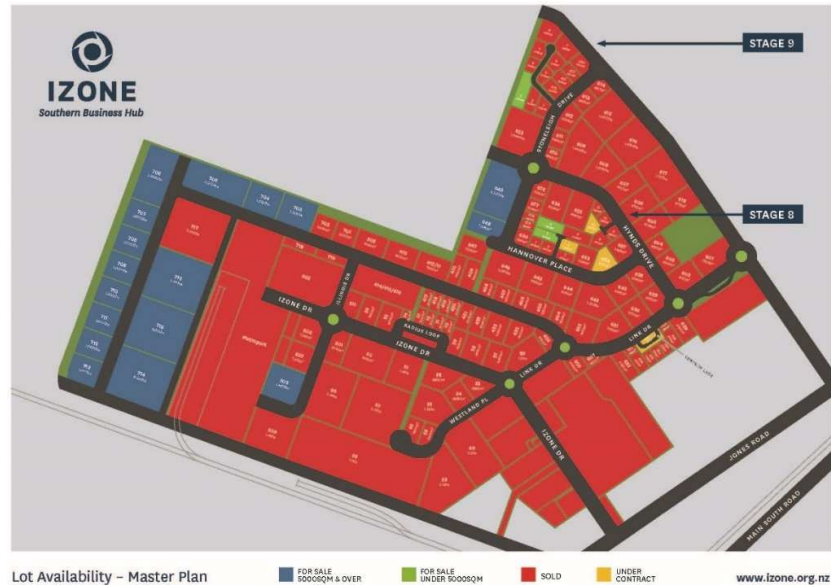


Figure 7-9: Izone Industrial Park Masterplan (Source: <https://www.izone.org.nz/the-development/master-plan/>)

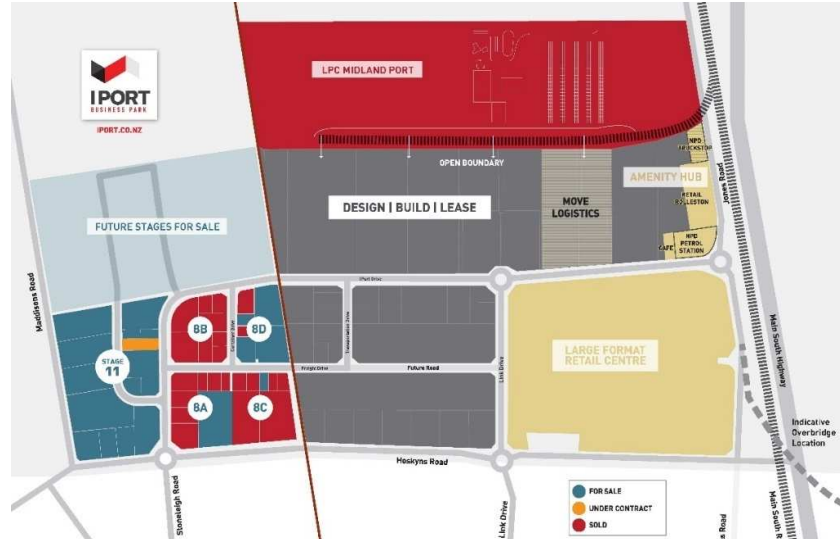


Figure 7-10: Iport Industrial Park Masterplan (Source: <https://www.ishop.co.nz/for-lease-and-sale/>)

7.4.4 Commercial

Along with population growth, commercial centres in the district are developing. This development is being seen in the Rolleston town centre and Lincoln, alongside changes in commercial activity. Commercial development creates a different form of demand for transportation provisions with an emphasis on walking, and ensuring access is available via a range of modes.

7.4.5 Tourism

Tourism is an important sector, supported and encouraged by the Council. Under normal conditions tourist numbers had continued to grow nationally, and within the Canterbury region. A number of the small settlements such as Arthurs Pass, Castle Hill, and Lake Coleridge are popular places for holiday homes and recreational facilities. These settlements also provide services and facilities to long-distance traffic. The district plays host to destinations for both summer and winter sports.

Tourism traffic occurs both within the District (point to point) and through the District into the wider region. The majority of through tourist traffic is carried on the State Highway Network (Waka Kotahi). Within the scheme of network use within the District, wear-and-tear attributed to tourism traffic represents a relatively small proportion of the total volume.

7.4.6 Higher Education and Research

Lincoln University is located on the outskirts of Lincoln Township and is widely regarded as a centre of excellence in agricultural and land-use research and development. A number of crown research facilities are located around the university campus; AgResearch, Landcare Research, and Plant & Food research are all located within a kilometre of the campus.

The University facility attracts almost three times as many people to work and study in west Lincoln than those who commute within the meshblock. The majority of daily commuters to the university precinct come from Lincoln East and Springston, the meshblocks immediately next to the campus, however there are measurable arrivals from Christchurch City as well. The main area in Christchurch city that generates trips to the university is Riccarton, which is a popular area for student flats, and indeed that entire trip generation is for education trips.

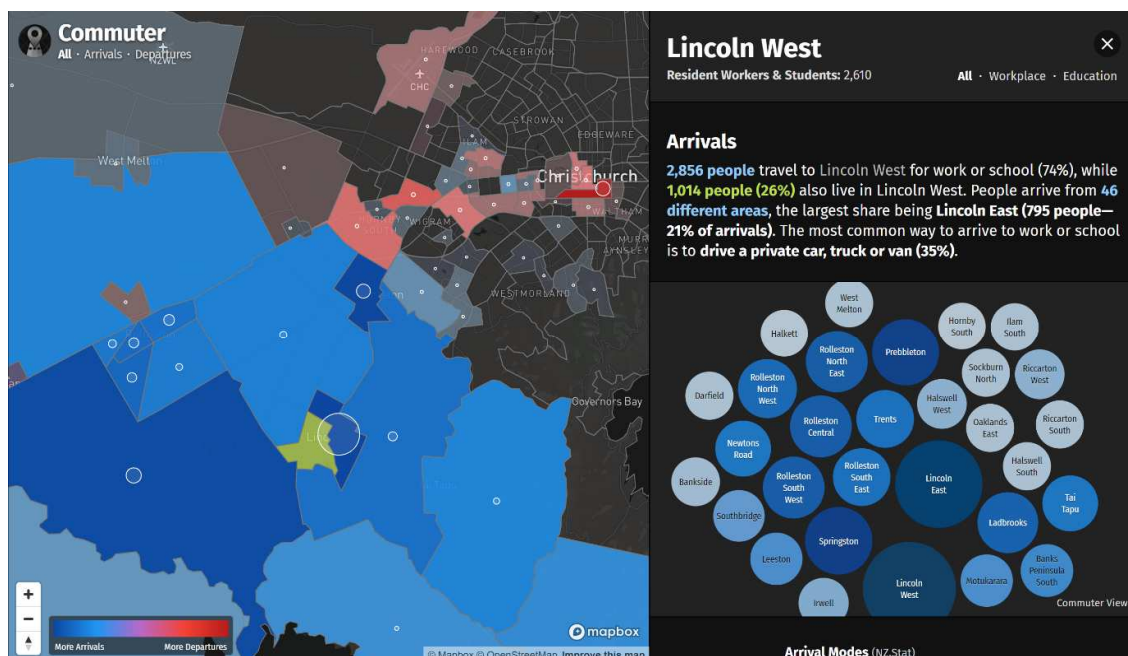


Figure 7-11: Lincoln West Meshblock commuting statistics (<https://commuter.waka.app/>)

7.4.7 Access to Vehicles

Access to vehicles also plays a distinct role in the growth in traffic demand. Vehicle accessibility tends to increase in stronger economic settings. Selwyn has one of the highest vehicle accessibility rates in New Zealand as a result of the strong agricultural and industrial economy within the District. Higher rates of vehicle access leads to increased trip making and subsequent increases in traffic volumes, resulting in increased congestion and travel delays on busy routes and safety risks.

The District is following the national trends towards smaller households, and greater access of each household to motor vehicles. The number of vehicles in the District is therefore expected to continue to increase at a faster rate than the population growth-rate.

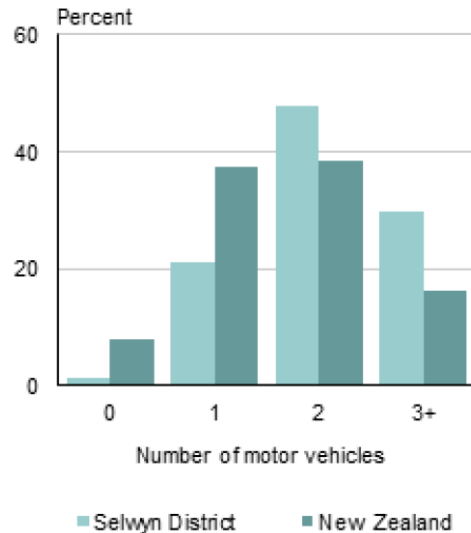
The major influences on the level of car ownership and vehicle access include:

- General level of economic activity,
- Real cost of motoring,
- Public transport availability,
- Household structure,
- Population demographics,
- Legal driving age, and
- Road-user preferences.

These factors will have different effects in urban and rural areas, given the changing demographic patterns in each.

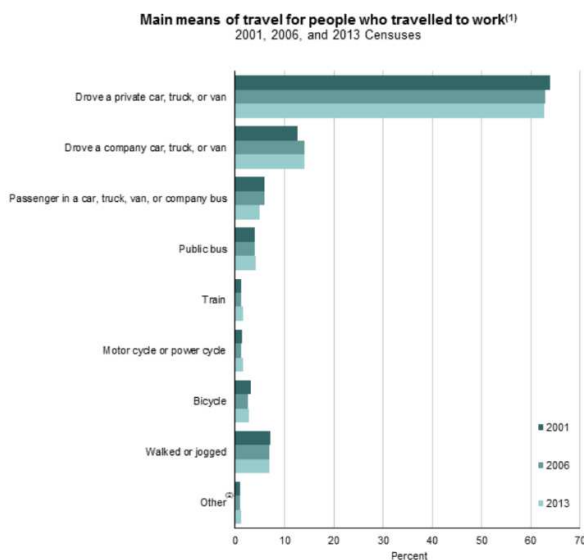
Access to motor vehicles

Selwyn District and New Zealand
2013 Census



Source: Statistics New Zealand

Figure 7-12: Access to Motor Vehicles (Stats NZ)



1. For employed people aged 15 years and over.

Figure 7-13: Means of Travel for Commuting Purposes (Stats NZ)

Census results from 1996 to 2013 shows the rate of vehicle ownership and access to motor vehicles in Selwyn is high and increasing. In 2001 this figure was 1.92 vehicles/household (veh/hh), an increase from 1.79 veh/hh in 1996. In 2006 the figure was 2.03 veh/hh increasing to 2.06 veh/hh in 2013. The preferred means of travel for commuters on Census Day for people residing in Selwyn was driving a private car, truck or van at almost 65%. Driving a company car, truck, or van was the next most common response with 19.4% of commuters using company vehicles. Combined, this means 84% of motorists drive to work in single-occupant vehicles.

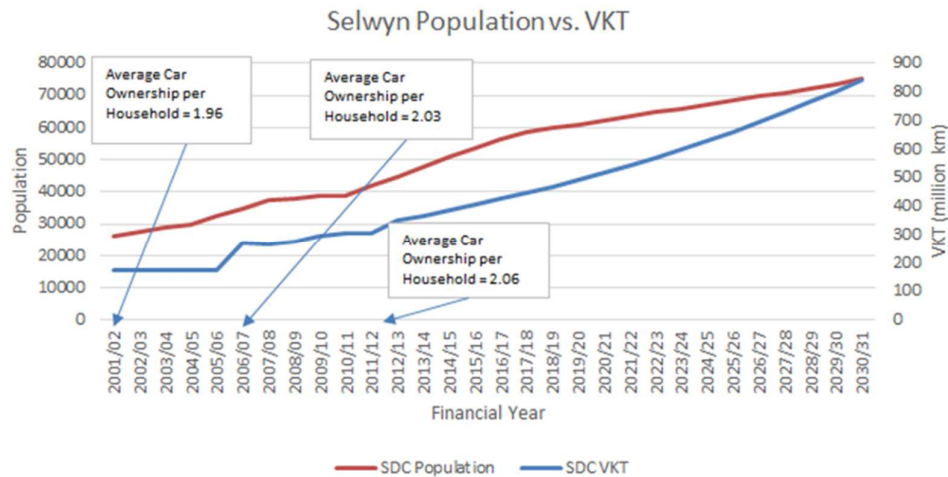


Figure 7-14: Selwyn District Growth in Vehicle Kilometres Travelled (VKT)

VKT growth as a consequence of high vehicle access

Both asset growth and population growth continue to be strong across Selwyn district. While aligned, there are so many factors involved there is no comprehensive cause and effect relationship.

Considering historical trends and the projection above, there is a wide range across the district, but an overall average of 9 to 15% is expected. As discussed in **Section 7.4**, projections differ based on assumptions made and methods used.

Table 7-1: Examples of Historical VKT and Asset Growth

	VKT					
Township	2006	2009	2012	2015	2017	% Increase
LINCOLN	11029056	12818730	14172894	15322707	15394175	40%
PREBBLETON	6396282	6874006	7762256	8956329	9095393	42%
ROLLESTON INDUSTRIAL	2566759	3007166	4000442	7128968	7864125	206%
ROLLESTON RESIDENTIAL	15294868	16000842	20001428	24708917	25747351	68%
WEST MELTON	457503	725391	1089014	1564909	1756098	284%

	Length					
Township	2006	2009	2012	2015	2017	% Increase
LINCOLN	18540	19754	23479	36012	37485	102%
PREBBLETON	14994	23484	24087	29446	31510	110%
ROLLESTON INDUSTRIAL	50982	56240	60455	89950	99771	96%
ROLLESTON RESIDENTIAL						
WEST MELTON	2090	5253	10980	14362	18131	768%
TOTAL	86606	104731	119001	169770	186897	

Township	VKT					% Increase
	2006	2009	2012	2015	2017	
ARTHURS PASS	15681	9714	12501	10101	10101	-36%
CASTLE HILL	43967	50405	66341	56888	56915	29%
COALGATE	633015	633980	684659	684659	684659	8%
DARFIELD	3545076	3668495	3988365	4228432	4257148	20%
DOYLESTON	793624	783032	824722	894090	1047322	32%
DUNSANDEL	558214	578603	631630	724691	724691	30%
GLENTUNNEL	31917	36910	45222	45222	45222	42%
HORORATA	481730	584366	599488	604393	607212	26%
KIRWEE	748777	726840	940924	950336	962433	29%
LAKE COLERIDGE	54233	50223	49853	50358	50358	-7%
LEESTON	3943848	4289914	4741761	5261675	5388292	37%
RAKAIA HUTS	92927	50977	47095	77135	84140	-9%
SHEFFIELD	165060	177462	204459	177581	177581	8%
SOUTHBRIDGE	1003290	969606	1157082	1060214	1090650	9%
SPRINGFIELD	112511	119204	111335	118438	139317	24%
SPRINGSTON					1422143	
TAITAPU					536541	
WADDINGTON	521457	581382	589713	580060	580060	11%
WHITECLIFFS	84463	85338	134973	134973	134973	60%

Ward	VKT					
	2006	2009	2012	2015	2017	
Malvern	55956910	59669854	66794142	69341112	69630215	24%
Ellesmere	48486309	49239243	52699922	59355888	60095606	24%

7.4.8 Mode Choice

Mode choice increasingly has an observable impact on traffic volumes, and plays a key role in travel demand management strategies employed to control traffic demand and growth.

In 2008 agreement was made between ECan, Christchurch City, Selwyn District and Waimakariri District Council to jointly fund the Ministry of Transport Household Travel Survey. The survey is a well-established national travel survey, and additional sampling was undertaken to allow annual sub-regional analysis of travel mode behaviour and mode choice. The household travel survey information is helpful in helping create targets for walking and cycling mode shift that are realistic and achievable.

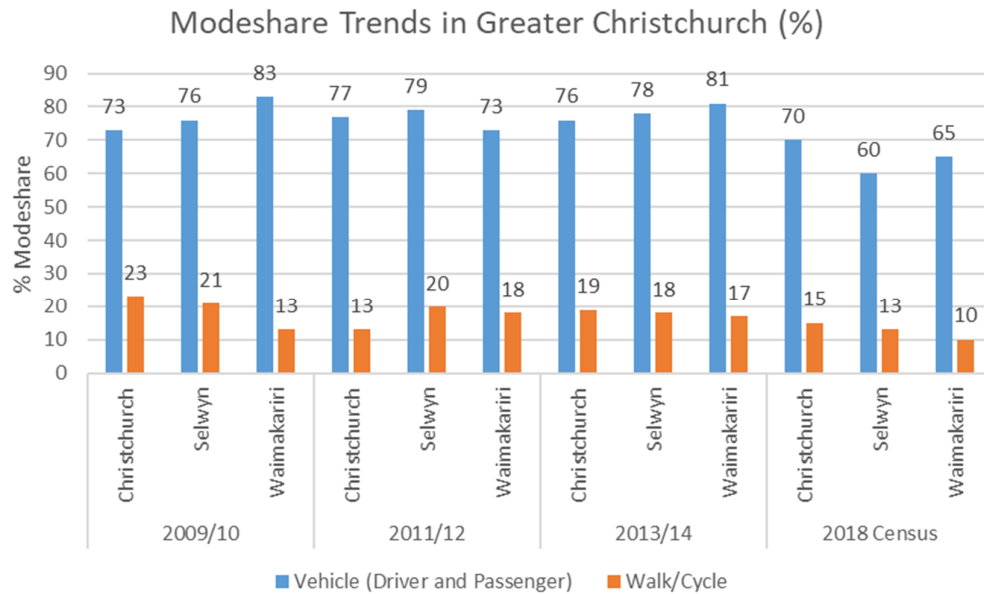


Figure 7-15: Modeshare Comparison between Selwyn, Waimakariri, and Christchurch City

7.4.9 Legislative Change

Changes to legislation can influence the demand for different 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). Changes in government tend to lead to changes to transport policies, to match the governments' over-arching priorities. It is accepted that legislative change can occur at any time and that the impacts of such changes can be broad or specific.

Legislative changes which are on the horizon which may have an impact on mode choice are discussed in **Section 3.4**.

7.5 Planning for Growth and Demand

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

- Increased trip making resulting in demand for better pavements, signage, delineation and footpaths.
- Increasing customer expectations and levels of service resulting in a demand for better surfaces e.g., grading frequency of unsealed roads to reduce dust.
- Growth in the dairy farming sector significantly increasing the frequency of heavy loads on pavements along dairy routes, resulting in faster pavement deterioration, thereby increasing maintenance costs and the demand for more seal.
- Significant heavy traffic associated with the development of the two inland ports in the Rolleston Industrial Zone.
- Growth in tourism 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.
- Maintenance costs increasing due to the assets vested to Council through subdivision and private development.

7.5.1 Asset Capacity

The urban roading network is rapidly expanding and this puts pressure on key locations. This is evident with traffic lights being installed recently at several local road intersections. The Greater Christchurch traffic model is used to identify potential congestion points and simulate management options. The expansion of Rolleston and Lincoln and the Greater Christchurch rural environs are expected to push the capacity of some roads. The first impact is at major intersections, where change will be implemented. To address this change within the townships, a greater priority is needed on walking and cycling as well as passenger transport to limit (single) private vehicle travel.

By comparison, the District's rural roads and intersections are operating below capacity, and many are unlikely to exceed them in the near future. Under prevailing conditions on most of the principal rural roads, two lane roads can be expected to carry up to 4,800 vehicles/day without a significant decrease in the level of service. However, there are some points where the road is having difficulty meeting the demand and where growth will put increased strain. In the more rural areas, there is significant redundancy in the network that reflects the historical development of most roads that came about from the simple metalling of partially formed tracks as the district developed.

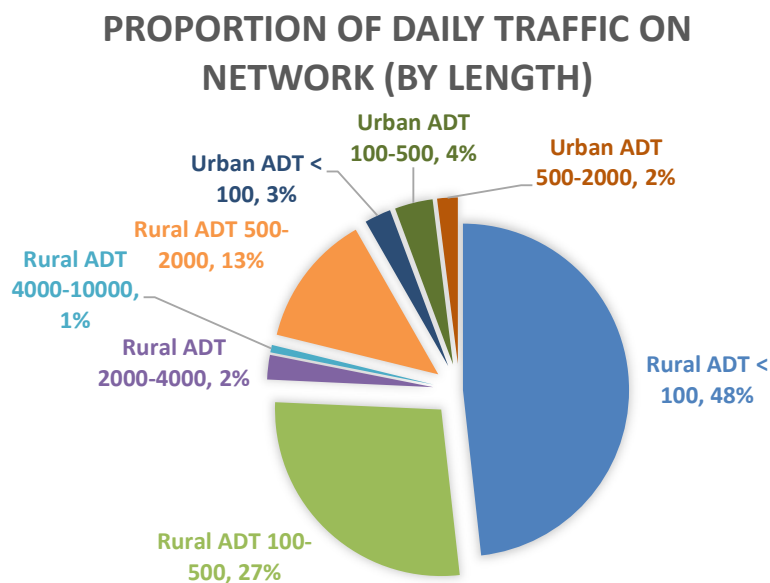


Figure 7-16: Proportion of Daily Traffic on the Selwyn Network

7.5.2 Transportation Models

To understand the impacts of growth on the transportation network and the triggers for when Council should respond with road improvements, Abley Transportation Consultants were engaged to develop and maintain transportation models for the rapidly growing Eastern Selwyn townships. The traffic model is used to estimate the impacts of development and land use change on the transportation system, and to evaluate the effectiveness of mitigations and improvements. The models have been regularly updated since establishment with the latest land use and traffic count information for calibration and to ensure that they remain relevant and accurate. The information sheets below provide an overview of how the Selwyn Traffic models work.

Selwyn District Council is a member of the Greater Christchurch Model Management Group, which also includes Waka Kotahi/NZTA, Christchurch City Council and Waimakariri District Council representatives. The Partnership and key work is discussed further in **Section 3.5.2**.

SELWYN TRAFFIC MODEL INFORMATION SHEET

Prepared for: Selwyn District Council
 Job Number: 4494-00
 Issue Date: 6 March 2015
 Prepared by: Jared White, Senior Transportation Engineer

1. INTRODUCTION

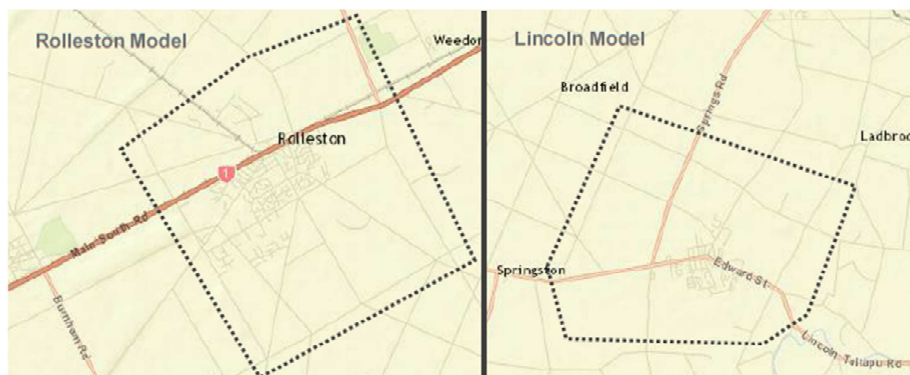
The Selwyn District Council (SDC) has commissioned Abley Transportation Consultants (Abley) to prepare this short note to provide a summary of the inputs to the two sParamics Microsimulation (Paramics) models of Rolleston and Lincoln and how the models have been used to support traffic planning in the District.

Paramics is widely used throughout New Zealand and across the globe to provide a visual assessment of intersections, road corridors or entire road networks. It is known as a microsimulation tool because it simulates actual driver behaviour and interactions on a true to scale road network. Drivers in this virtual network have to find gaps in opposing traffic streams on their journey from A to B in the model and will come across queues at pinch points and intersections, much like a typical journey in real life such as driving from home to work.

2. MODEL INPUTS

The geographical area that represents each model is shown in **Figure 2.1** and the model includes all roads within the areas that are highlighted.

Figure 2.1
Paramics Model
Extents



T +64 9 974 9820 (Akl)
 T +64 3 377 4703 (Chch)
 F +64 3 377 4700
 E office@abley.com

Auckland
 Level 8, 57 Fort Street
 PO Box 911336
 Auckland 1142
 New Zealand

Christchurch
 30a Carlyle Street
 PO Box 25350
 Christchurch 8144
 New Zealand

www.abley.com

ConnectBetter

All of the existing households and jobs within the areas in **Figure 2.1** are grouped based on Stats NZ meshblock boundaries and these areas, known as zones, form the origin or destination of vehicle trips in the model. The number of trips to and from each zone depends on the amount and type of activity and are informed by industry standard rates. Each model was validated to observed traffic counts so that the model's closely replicate turning movements at intersections and traffic flows on major roads.

After validating the base models the future models were created by including expected growth in household, commercial and industrial activities. The vehicle generation rates calibrated in the validation process are applied to the growth areas creating a future traffic demand. In each of the future models any committed infrastructure was included such as the improvements along the State Highway as part of the Christchurch Southern Motorway projects. New roads in the residential areas are based on the proposed road networks in the ODP areas.

For Rolleston the future growth included the following as advised by Council:

- Household growth in the ODP areas set out by the District Plan (Approx. 5625 HHs);
- Approximately 72,000m² GFA in the Town Centre informed by the Rolleston Town Centre Master Plan;
- Industrial land near IZONE included:
 - Completion of all IZONE stages;
 - 32Ha in Cockburn Block (Priority Business Area under the LURP);
 - 122Ha in Carters Block (Priority Business Area under the LURP).

For Lincoln the future growth included the following as advised by Council:

- Household growth in the ODP areas set out by the District Plan (Approx. 4100 HHs);
- Increased activity in the town centre and transitional commercial area between the town centre and New World supermarket;
- Commercial development in Business 2B/Living Z land south of the University;
- Increased activity at the University and Agriculture Research Centres.

Some visual outputs of the future models are shown in **Figure 2.2** including the Springs Road / Gerald Street roundabout upgraded to signals and an aerial view of the Rolleston future model

Figure 2.2
Paramics Model
Examples



7.5.3 Growth-related work

The transportation system provides the fundamental access function between and within housing areas and is therefore directly affected by changes in land use and development in residential areas. While this may have a very minor local impact, some developments can be significant at a network level.

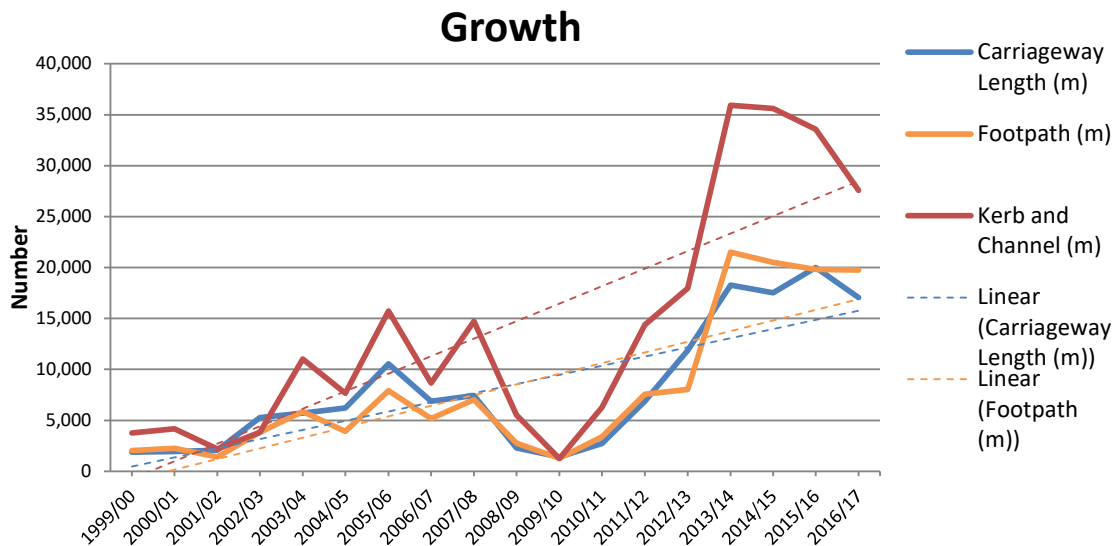


Figure 7-17: Vested Asset lengths⁶

Growth demands are addressed in three principal ways:

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

It is reasonable to assume that the Council may need to fund a share of subdivision road works related to development in future. However, by the nature of subdivision developments, the corresponding needs for subdivision commitment expenditure can be difficult to define and predict over a 10-year programme period. 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 resulting in the number of dwellings increasing at a slightly faster rate than the residential population over the same period.

⁶ Transportation Improvements Work Summary – To be updated through to 2021/21 Valuation data.

Where a new development fronts an existing legal road, improvements will often need to be made to the road; sometimes improvements are also required to parts of the wider network. These improvements can include footpaths, kerb and channel, access improvements, increased seal width, improved sight lines and improvements to adjacent intersections. Changes to land use, causing additional traffic generation can also necessitate upgrades to existing roads. As with subdivisions, this can warrant a contribution being imposed on the developer.

There is a need to streamline processes for the maintenance and asset management of vested assets. It is proposed this 'end to end' process review be undertaken in the 2021-24 period.

7.6 Development Contributions

Development contributions are contributions which can be required from developers to help offset the effects of growth on the network. They are levied under the Local Government Act 2002. Financial contributions (or subdivision charges) are costs 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.

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 level of service, shown in Figure 7-19 as the higher of the two sloping lines, may still attract a growth component but it will be of a lesser proportion.

The Council prefers to utilise its development contribution policy for establishing upgrade contributions for any improvements remote from the subdivision. The roads over which such contributions are sought are generally adjacent to the development in urban areas. Development contributions can also be applied on a wider network-level basis for infrastructure needed to support the resulting wider traffic growth.

Subdivision charges are levied for specific works that need to be carried out on roads adjacent to new developments, where the standard of the road is inadequate for the development. 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. The costs of these works are shared by the Council, based on projected traffic volumes changes anticipate to result from the development.

7.6.1 Subdivision Commitments

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 Plan, or Annual Plan, following receipt of payment. Alternatively, a developer may suggest carrying out the upgrading work in conjunction with the construction of the subdivision.

Until recently, the nature of subdivision development gave Council little, if any, control over the timing and implementation of development projects. 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 provide greater certainty in the anticipated urban form which is

deemed appropriate. This enables coordinated planning to occur and opportunities for lead infrastructure to be provided by Council and funded by development contributions.



Figure 7-18: New Traffic Lights at Rolleston and State Highway 1 (partially paid by Developer Contributions)

In some instances, it is possible for the Council to refuse consent for developments requiring extensive upgrade work where the investment does not represent value-for-money for ratepayers, but such circumstances are relatively rare, and the burden of justification lies with the Council.

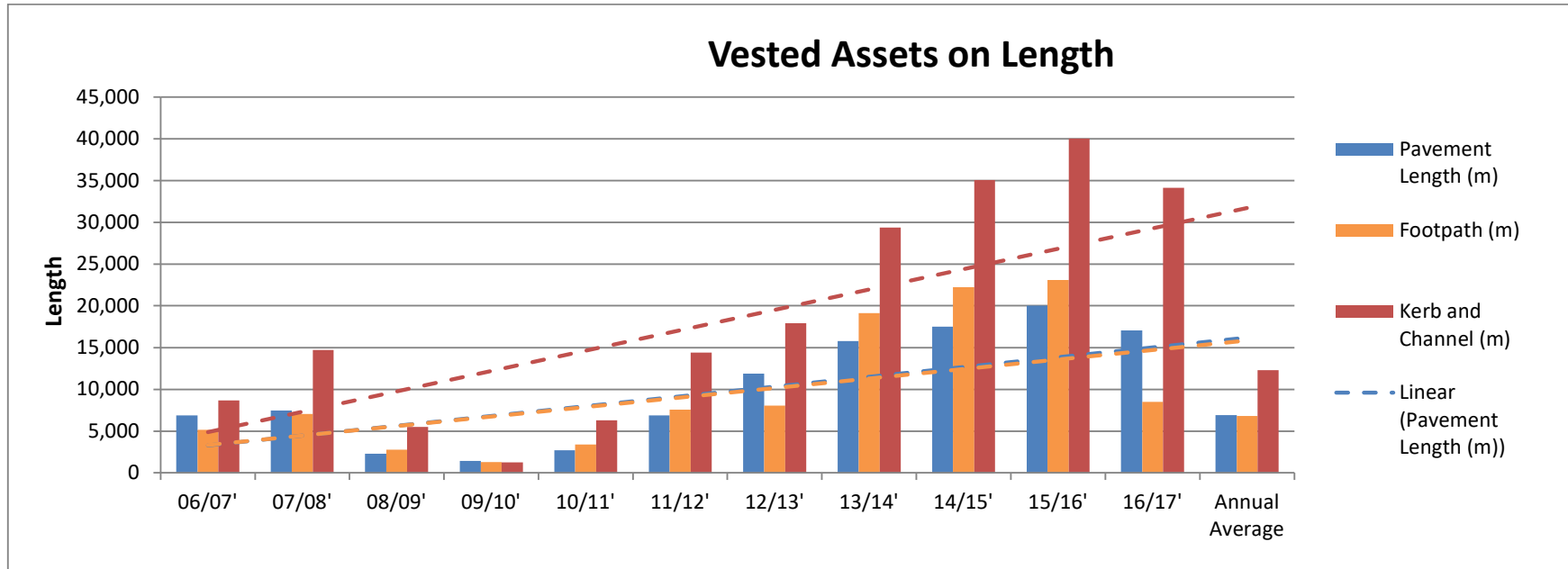
7.6.2 Subdivision Development

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. The on-going maintenance and renewal of the new roads and associated assets built in these developments is the responsibility of the Council.

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.

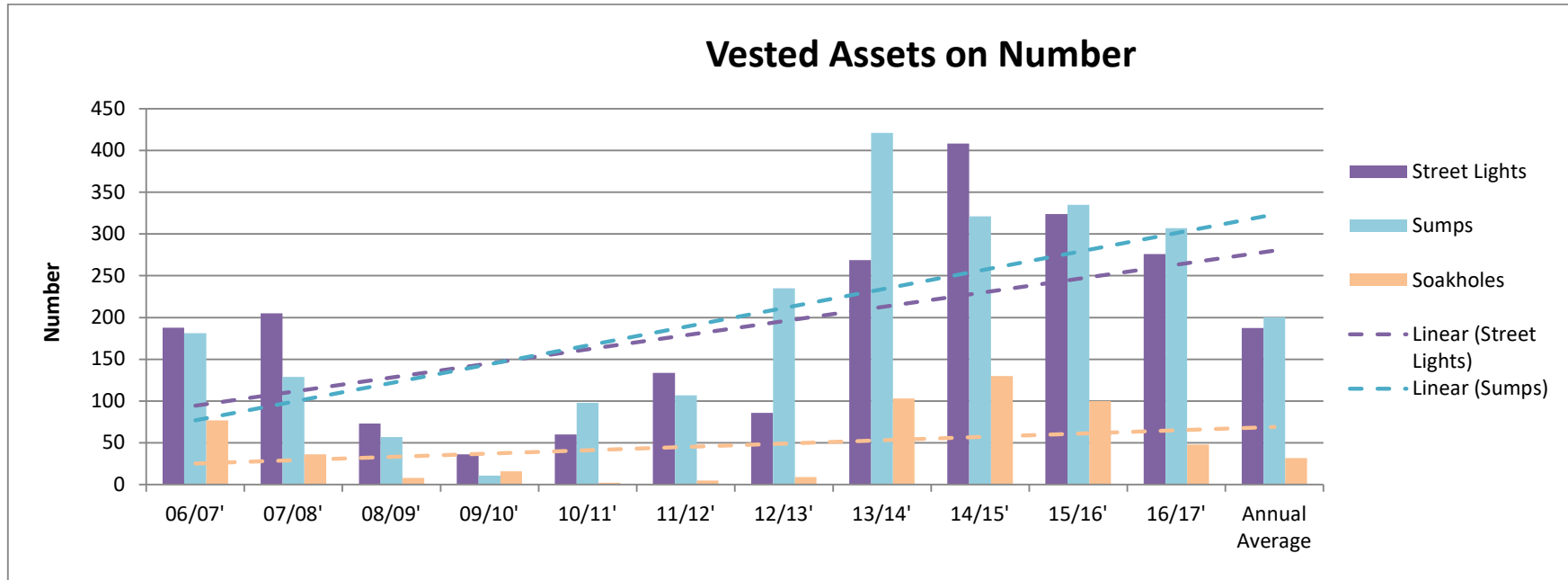
Figure 7-19: Vested Assets – by Length



Source: Transportation Improvements Work Summary

To be updated through to 2021/21 Valuation data.

Figure 7-20: Vested Assets — by Number



Source: Transportation Improvements Work Summary

To be updated through to 2021/21 Valuation data.

7.7 Growth Related Projects

7.7.1 Prebbleton Arterial Intersection Projects

Improvements are needed to the surrounding Prebbleton roading network to cater for the increased and changing traffic movements to access the motorway interchange 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.

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. 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 have been worked out with NZTA.

Prebbleton projects:

- Springs/Hamptons Rd Roundabout (2024/25) - \$3,500,000 (2024-27 NLTP)
- Hamptons Rd Widening (2024/25) - \$500,000 (2024-27 NLTP)
- Shands/Hamptons Rd Roundabout (2023/24) - \$5,000,000
- Trents Rd widening (2022/23) - \$385,000. (2021-24 Approved)
- Shands/Trents Rd Roundabout (2022/23) - \$4,500,000

7.7.2 Cycleways

Council is continuing 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. Cycleways that are likely to attract NZTA funding assistance are *italicised*.

New cycleways determined to be a high priority by Council are planned for:

- Darfield to Kirwee Cycleway (2032/33) - \$2,400,000 (Future NLTP)
- Templeton to Prebbleton Cycleway (2023/24) - \$1,200,000 (2021-24 Approved)
- Springston to Rolleston Cycleway (2040/41) - \$1,200,000. (Future NLTP)
- Springs Road to Lincoln Cycleway (2046/47) - \$444,000. (Future NLTP)
- Leeston to Southbridge Cycleway (2036/37) - \$3,250,000. (Future NLTP)
- Glentunnel to Whitecliffs Cycleway (2021/22) - \$360,000 (NLTP funding declined)
- Darfield to Sheffield Cycleway (2038/39) - \$3,840,000. (Future NLTP)
- Sheffield to Springfield Cycleway (2043/44) - \$2,940,000. (Future NLTP)
- West Melton to Kirwee Cycleway (2047/48) - \$3,960,000. (Future NLTP)
- West Melton to Waimakariri Cycleway (2050/51) - \$3,300,000. (Future NLTP)
- Mountains to Sea Cycleway (Feasibility Study) (2022/23) - \$150,000
- Prebbleton to CSM1 Cycleway (2031/32) - \$500,000 (Future NLTP)

7.7.3 Seal Widening

Seal widenings have a safety benefit and a capacity benefit and a lifecycle benefit. Projects that are proposed for NZTA funding assistance are *italicised*.

- Weedons Road widening (2032/33) - \$1,475,000 (*Future NLTP*)
- Hoskyns Road widening (2022/23) - \$1,600,000.
- Ellesmere Road widening (2024/25). \$1,950,000 (*Future NLTP*)
- Wards Seal widening (2046/47) - \$4,550,000 (*Future NLTP*)
- Weedons Road widening (2030/31). \$1,000,000 (*Future NLTP*)
- Leaches Road widening (2036/37) - \$4,500,000 (*Future NLTP*)
- Two Chain Road widening – Stage 2 (2040/41) - \$850,000 (*Future NLTP*)
- Alyesbury Road (2044/45) - \$2,325,000 (*Future NLTP*)
- Burnham School Road (2034/35). \$450,000 (*Future NLTP*)

7.7.4 Seal Extensions

Seal extensions are desirable from a community and level of service perspective, but more difficult to justify economically. There is no financial assistance available from Waka Kotahi NZTA for this work. Council has established a long term view with progressive approach to seal extensions. Candidate sites and rough order estimates follow.

- Coaltrack Road extension Stage 1 (2026/27) - \$612,500
- Coaltrack Road extension Stage 2 (2033/34) - \$490,000
- Coaltrack Road extension Stage 3 (2033/34) - \$420,000
- Tancred's Road extension (2022/23) - \$245,000
- Kerrs Road extension (2032/33) - \$280,000
- Brookside Road extension (2030/31) - \$700,000
- Kings Road extension (2037/38) - \$262,500
- Creyke Road extension (2033/34). \$332,500
- Clintons Road (Bangor). (2035/36) - \$245,000
- Kynvetts Road (2039/40) - \$630,000
- East Maddisons Road Extension (2032/33) - \$210,000
- Clintons Road (2041/42) - \$525,000

The list indicates an average annual investment of around \$260,000 per year.

7.7.5 Te Ara Ātea and Rolleston Town Centre projects

Rolleston's population is expected to increase to almost 26,000 in 2030. It is important for Rolleston as Selwyn's largest town, continues to be seen as a desirable place to live, work and play. Work on the new and improved Rolleston Town Centre development began in November of 2019, centred around the Te Ara Ātea library and community centre anchor project. A number of roading improvements for the development will be carried out as the development continues. Project stages that are likely to attract NZTA funding assistance are *italicised*.

Rolleston Town Centre Project Stages:

- Wordsworth Street Extension (2021/22) - \$740,000
- Wordsworth Street South (2021/22) - \$1,750,000
- Moore St Extension (2026/27) - \$1,435,000
- Rolleston Drive Access Upgrade (2021/22) - \$1,980,000
- Traffic Signals at Rolleston Dr/Tennyson St (2021/22) - \$3,000,000
- Tennyson/Moore St Roundabout (2026/27) - \$1,105,075
- *Markham Way Traffic Calming (2022/23) - \$300,000 (2021-24 Approved)*
- Town Centre Service Lane (2023/24) - \$570,000
- Town Centre Signage (2023/24) - \$13,578

A number of public car parking facilities will be established in order to service the development. Council is taking the lead on funding the car park development to create fully public parking facilities that are not restricted to patrons of the commercial development. This helps to provide a level of connection with the outer district as well as with the local residents and creates a space with a much wider appeal.

Rolleston Town Centre Car Parking Project Stages:

- Carpark 3 accessed from Tennyson Street (2021/22) - \$894,772
- Carpark 6 accessed from Rolleston Drive (2021/22) - \$946,196
- Carpark 4 (2021/22), Carpark 5 (2023/24), and Carpark 7 (2025/26) accessed from the Wordsworth Street Extension - \$2,468,337

7.7.6 CSM2 Rolleston Access

CSM2 will make it easier for people to work and live in Rolleston and 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 will ensure Rolleston continues to be Selwyn's employment and business hub. It is expected that most or all of the CSM2 Access upgrades will attract NZTA co-funding.

CSM2 Access Improvement Projects:

- Weedons Ross Rd Widening (2021/22) - \$1,525,000 *(2021-24 Approved)*
- Railway Rd Izone Upgrade (2022/23) - \$500,000 *(2021-24 Approved)*
- Brookside Road/Rolleston Dr Roundabout (2024/25) - \$600,000 *(Future NLTP)*
- Hoskyns Rd Widening Stage 1 (2024/25) - \$1,865,000 *(Future NLTP)*
- Rolleston Pedestrian Rail upgrades (2025/26) - \$165,000 *(Future NLTP)*
- Lowes Rd/Levi Dr/Masefield Dr Roundabout (2025/26) - \$3,500,000 *(Future NLTP)*
- Jones Rd Cycleway (2027/28) - \$670,000 *(Future NLTP)*
- Two Chain Rd Widening Stage 1 (2028/29) - \$500,000 *(Future NLTP)*
- Walkers Rd/Two Chain Rd Roundabout (2028/29) - \$1,200,000 *(Future NLTP)*
- Jones Rd/Two Chain Road Realignment (2028/29) - \$3,000,000 *(Future NLTP)*
- Rolleston to Burnham Cycleway (2029/30) - \$2,700,000 *(Future NLTP)*
- Hoskyns Rd Widening Stage 2 (2030/31) - \$700,000 *(Future NLTP)*
- Burnham School Rd/Dunns Crossing Rd Traffic Signals (2032/33) - \$3,000,000 *(Future NLTP)*

- Rolleston South to Rolleston Industrial Zone Cycleway (2033/34) - \$654,000 (*Future NLTP*)
- West Melton to Rolleston Cycleway (2034/35) - \$1,800,000 (*Future NLTP*)
- Lowes Rd/Dunns Crossing Rd Roundabout (2035/36) - \$2,500,000 (*Future NLTP*)
- Burnham School Rd Widening (2042/43) - \$850,000 (*Future NLTP*)

7.7.7 Lincoln Town Centre

Lincoln’s residential population is also expected to increase strongly 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. To meet the growing traffic demand within Lincoln, the following improvement projects are planned over the next 20 years. Projects that are likely to attract NZTA funding assistance are *italicised*.

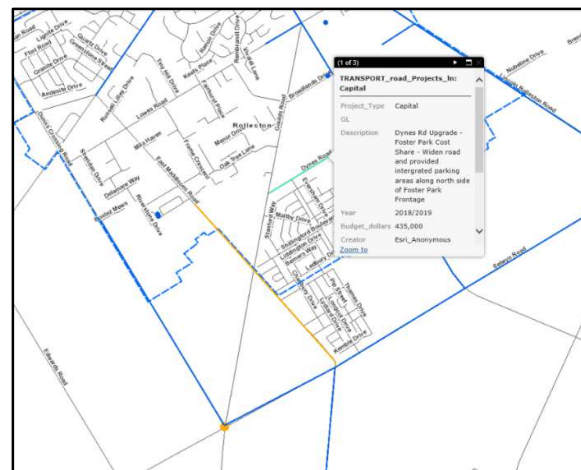
Lincoln Town Centre Projects:

- Gerald St Upgrade Eastern End (2027/28) - \$4,000,000 (*Future NLTP*)
- Gerald St Upgrade Transitional Section (2029/30) - \$3,500,000 (*Future NLTP*)
- Gerald St Upgrade Western End (2033/34) - \$2,500,000 (*Future NLTP*)
- *Gerald St/West Belt Traffic Signals (2027/28) - \$2,000,000 (Future NLTP)*
- *Gerald/Veron Dr Traffic Signals (2029/30) - \$2,500,000 (Future NLTP)*
- *Gerald/James/Edward Traffic Signals (2034/35) - \$2,000,000 (Future NLTP)*
- Springs/Gerald/Ellesmere Junction Rd Traffic Signals (2033/34) - \$3,500,000 (*Future NLTP*)
- Lyttelton St Parking Precinct (2025/26) - \$703,000 (*Future NLTP*)
- Gerald Street Parking Precinct (2028/29) - \$720,000 (*Future NLTP*)

7.7.8 Project Integration

Council is developing a 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.

Figure 7-39: 30 Year Water and Transport GIS Layer



7.8 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 7.6	Continue to monitor Lincoln HUB proposal and impact on Transportation network	Completed
IP 7.7	Update this section and associated asset issues as CSM2 is established (Ongoing)	Completed
<i>New Improvement Plan Items</i>		
IP 7.9	Collate and update vested asset and project works including graphs	<i>Include in new Improvement Plan</i>
IP 7.10	streamline vested assets processes for the maintenance and asset management purposes ('end to end' process review be undertaken in the 2021-24 period)	<i>Include in new Improvement Plan</i>

This page is left blank for printing

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

8.0	RISK MANAGEMENT	1
8.1	Risk Management Strategy	3
8.1.1	Risk Assessment Outcomes	4
8.1.2	Recommendations for Improving Risk Management and Planning	6
8.2	Risk Assessment	7
8.2.1	Identification	7
8.2.2	Risk Assessment Criteria	7
8.2.3	Transportation Network Risk	8
8.2.4	Treatment and Monitoring	8
8.2.5	Prioritising Expenditure	9
8.3	Risk Assessment Outcomes	10
8.3.1	Risk Register	10
8.3.2	Planning Risk	23
8.3.3	Management Risk	24
8.3.4	Delivery Risk	25
8.3.5	Physical Asset Risk	26
8.4	Natural Hazards	27
8.4.1	Context	27
8.4.2	Climate Change	28
8.4.3	Resilience to Natural Hazards	29
8.4.4	Lifelines and Critical Infrastructure	30
8.4.5	Emergency Planning and Procedures	31
8.4.6	Business Continuity	32
8.5	Network Events	33
8.5.1	Condition and Performance Risks	33
8.5.2	State Highway Detours	34
8.5.3	Network Operations	34
8.6	Health and Safety	35
8.7	Temporary Traffic Management	35
8.8	Service Delivery Risks	37
8.8.1	External Provider Risks	37

8.8.2	Internal Risk	37
8.9	Management and Organisational Risks	39
8.9.1	General Management Risks	39
8.9.2	Policy and Plan Risks	39
8.10	Improvement Plan Items	41

8.1 Risk Management Strategy

Risk can be defined as the likelihood of something adverse happening. Risks can be seen to arise from many areas of Transportation management, both in the physical assets, service delivery to road users and organisational management of the services provided. Therefore the Transportation risks include:

- risk items that could impact directly on the assets (e.g. weather events damaging road or bridge);
- risks that impact on the council's ability to operate or manage the transportation services and/or required level of service; and,
- 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.

Section 8.2 details the risk assessment process that identifies risks into the four categories illustrated in the figure. 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.

The strategies used to manage risks include the following strategies:

- Risk management, mitigation or control – Council uses active measures to manage the risk to acceptable levels;
- Risk avoidance – Council may have certain by-law, policies or procedures in place that avoid the occurrence of certain risk events.
- Risk acceptance – Council may choose to except certain risks when they are minor or out of the council's control to manage; and,
- Risk transfer – some risk 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.



Figure 8-1: Risk classification hierarchy

Risk management is the systematic application of management policies, procedures and practices to the tasks of Identifying, Analysing, Evaluating, Treating and Monitoring of risks. 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. A good example is Council 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.

8.1.1 Risk Assessment Outcomes

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.

Table 8-1: High-level risks and mitigations

Risk	Current Controls or Further Management Required	Linkage to other AMP Section (where financial allowance was made)
Planning Risk		
Natural Hazards – Major and Minor Events	Natural hazards are well defined, and emergency response processes are in place for minor and major events is adequate. 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.
Traffic Demand Increases Causes 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.
Councils' Roadway 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		
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.
Inability to Fully Utilise Funding Options	Transport has a two-way relationship to maintain with both funding arms, Waka Kotahi and Council 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.
Business Continuity: Loss of System Knowledge	Loosing of 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.
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	No financial implication or allowance in AMP required.

Risk	Current Controls or Further Management Required	Linkage to other AMP Section (where financial allowance was made)
	sufficient information sharing and management of relationships.	
Delivery Risk		
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
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.
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 with 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.
Physical Risk		
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 on bridges) is included in the Life Cycle Costing Section 9.
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. Council is undertaking a programme of addressing this issue, and it is believed that the risk is managed appropriately.	Cycleway improvement is included in the Life Cycle Costing Section 9.

Risk	Current Controls or Further Management Required	Linkage to other AMP Section (where financial allowance was made)
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 Life-cycle Section 9 and Level of Service Section 6.
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.
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 on bridges) is included in the Life Cycle Costing Section 9.

8.1.2 Recommendations for Improving Risk Management and Planning

Section **Error! Reference source not found.** 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. Establishing a corporate risk policy;
2. 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;
3. Updating the risk register as part of the asset management cycle with more focus on specific risks associated with each section within the AMP;
4. Establishing a more robust programme management system for capital and maintenance works; and,
5. 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).

8.2 Risk Assessment

8.2.1 Identification

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.

Risks have been reassessed as part of the development of this AMP. The process used has drawn from NZTA Research Report 415 Case studies and best-practice guidelines for risk management on road networks along with SNZ HB 4360:2004.

This involves classifying risks into areas which focusses the analysis and management approach.

The following risk register illustrates this approach.



8.2.2 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.

Figure 8-2: Risk classification hierarchy (RIMS – Risk Guideline)

The likelihoods and consequences of events occurring, or risks arising, will be measured as described in the Risk Register.

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.

Risks are assessed based on the following criteria:

Table 8-2: Risk Assessment Matrix

	Consequence				
Likelihood	Insignificant	Minor	Significant	Major	Catastrophic
Rare	Low	Low	Moderate	Moderate	Significant
Unlikely	Low	Low	Moderate	Significant	High
Possible	Low	Low	Moderate	Significant	High
Moderate	Low	Moderate	Significant	High	High
Likely	Moderate	Moderate	High	High	High

8.2.3 Transportation Network Risk

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

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 (Strength, Weakness, Opportunity, and Threat). 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', and
- Separating the risk management activity into a set of elements, which provide a logical framework for risk identification and analysis.

8.2.4 Treatment and Monitoring

If all possible work that impacts level of service was completed, 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 risk 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:

- Planning and design,
- Human resourcing,
- Climatic influences,
- Construction,
- Maintenance,
- Operation,
- Monitoring, and

- Renewals.

All of these factors can impact on a successful outcome and will affect the lifecycle cost of the asset involved.

8.2.5 Prioritising Expenditure

The successful management of the Transportation activity is dependent on the coordination of a multitude of activities. A work programme is produced that consists of planning, design, construction, operation, maintenance, and monitoring of the assets. There are competing demands placed on the operation & maintenance 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.

Typically, assets are replaced when there is unacceptable risk to levels of service because of asset condition, operability, or vulnerability to external influences. 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.

8.3 Risk Assessment Outcomes

8.3.1 Risk Register

This section outlines the risks to the Council's roading network and the approach to their management that will be used by 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 continually revised as part of the Council's process of continual asset management improvement.

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

Table 8-3: 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 reduced 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		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		Senior Management
7	Risks associated with council-owned roads and bridges on private land – e.g. council-owned bridges and walls on private property/private 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		Senior Management
16	Moderate natural hazards – e.g. landslide/major storm event/heat wave 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		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		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		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		Transportation 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 strategic planning - relying on reactive responses instead	Too much going on	Increased risk associated with transportation	Having consultants look through Council processes		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		Senior Management
5	Ineffective strategic 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		Senior Management
6	Ineffective input into regional strategic planning – results in reduced funding available to council, extra requirements, clashing objectives	2	4	8	Strategic input provided by SDC to the RLTP is ineffective	Poor evidence to support SDC's perspectives c	Projects requested by Council are not approved	Trained staff are responsible for input into the RLTP process		Senior Management
8	Underestimating the effects of climate change – inadequate council readiness, resulting in e.g. encroachment of the 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 dealing with potential subsidence of the 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		Senior Management
18	Hazardous materials – e.g. leakage from a 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		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						

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							
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 8-4: Management Risk

Management Risk									Green - acceptable Orange - Monitor Red - Manage (see further analysis)	
Ref #		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									
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		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		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		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		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 representatives 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		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		Senior Management
9	Handover of low-quality assets from property developers or council	3	3	9	Property developers may hand over assets that are 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		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 contractors. Review procurement strategy regularly		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						

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 8-5: Delivery Risk

Delivery Risk										
Ref #		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		Senior Management
1	Inadequate project management – e.g. projects inadequately scoped, budgeted, managed, documented, and reviewed/inadequate consultation with owners/resource consent issues, resulting in excess time and cost, loss of image and other impacts	3	4	12	As above	As above	As above	As above		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		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		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"		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		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		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						

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 Management Process	Asset Manager Transportation	8	Y	Senior Management
1	4	4	5	N					
3	4	12	1	Y	Prepare Capital Programme Management 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 8-6: Physical Asset Risk

Physical Asset Risk										
Ref #		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 facilities on the street									
22	Car parks: Inappropriate number of car-parking facilities off the street – including car parks for the disabled									
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 motorists about road condition		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 this risk		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		Senior Management
27	Traffic signals/controls: Power outage causing delays and potential accidents	3	4	12	Traffic lights that 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 the right of way. Indecision can also lead to collisions	Injuries and fatalities	Backup generators to provide electricity to key traffic signals. There are not many signalised intersections in Selwyn		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		Senior Management
17	Bridges and structures: Bridge collapse/damage/deterioration/erosion/blockage – affecting accessibility, safety (but excluding catastrophic events)	2	5	10	Bridge maybe closed to allow for detailed examination of its structural integrity	Lack of ongoing inspection and maintenance of the bridge, poor design and construction of the bridge could contribute to this event	Traffic delays 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		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 may be unable to use the roads. Traffic may be stuck in the flooded areas.	Injuries, fatalities and disruption of journey	Building resilience into the roading system so that an alternative exist to the low lying road		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 needs to be included in the road carriageway. Audits need to occur to ensure any issue with drainage is picked up		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) (NZTA 2009)	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 the District Plan requirements	Vehicles may not have enough room to manoeuvre within the car park. Vehicles door may not be able to be open	Where applicable, ensuring parking meets district plan requirements is part of the resource consent requirement		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 it's appeal	Close collaboration with ECAN and PT users to determine what infrastructure can be provided to encourage PT use		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		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 may be inaccurate	Incorrect data entry, wrong assessment methodology used by engineers	Corporate may be using incorrect valuation numbers.	Using respected consultants i.e. BECA Waugh and employing skilled staff in Council to ensure the integrity of data and assessment process		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		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						

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/dT IMS Contract	Asset Manager Transportation	4	Y	Senior Management
2	4	8	1	Y	Include in Capital Programme Management Process	Asset Manager Transportation	8	Y	Senior Management

Table 8.5: Physical Asset Risk (continued)

Physical Asset Risk										
Ref #		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 – e.g. substandard geometry/surfaces/markings 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.		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 e.g. loss of water supply/electricity/telecommunications	1	4	4	Services on structures can be damaged	Vandalism or accidents can sever services on structures	Loss of services	Having the services protected or embedded		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 road 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		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						

Table Caption: Physical Asset Risk (continued)

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							

<This page is intentionally blank>

8.3.2 Planning Risk

The top planning risk factors identified as include:

- ***Insufficient Management of Traffic Demand:***

The significant population growth impact on the road network is discussed in the Growth and 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 that is mentioned in Section 9 Life Cycle Cost is the significant increase of heavy vehicles and the impact on the deterioration of pavements. This risk should be investigated further as part of the Risk Register review.

Additional Risk Treatments Required: No

- ***Planning Risk Dealing with Major Natural Hazards:***

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 8.4 discusses the council's approach to resilience.

Additional Risk Treatments Required: Yes

- ***Risks Related to Moderate Natural Events:***

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.

Additional Risk Treatments Required: No

- ***Risks Associated with Councils' Roading Asset on Private Land:***

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.

Additional Risk Treatments Required: No

8.3.3 Management Risk

- **External Economic Influences:**

The experience during COVID-19 has shown how quickly the global economy can change and how that impacts on the local economy. There are a number of risks associated with the economy that are well beyond the means for Council to deal with; 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 constructed or re-sealed could be significantly affected, thus having a roll-on effect on the level of service provided to the road users. Given Council's 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 is maintained.

Additional Risk Treatments Required: No

- **Inability to Fully Utilise Funding Options:**

Given the mixed investment into Transportation from Waka Kotahi and internal allocation, 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, and
- 3) Maintaining the trusting partnering relationship with the investors.

The asset management planning tools and processes Council uses are aimed at minimising associated risk and knowing the right level of investment. Council uses the analysis as evidence for investment requests. The asset management improvement programme also includes using new technology and knowledge to better estimate and demonstrate investment needs. Council 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.

Additional Risk Treatments Required: Yes

- **Business Continuity & Loss of System Knowledge:**

All councils face a significant risk of losing systems knowledge that result from staff turnover and having insufficient systems to manage information regarding assets and asset performance. Business continuity is directly threatened by the risk of valuable lessons from the past being lost. The efficiency of the organisation is hampered by new staff or system lag time to restore lost knowledge. Existing mitigation measures for this risk include documenting the procedures in practice documentation. The Council also have a practice of supplementing internal staff with external resources to assist with producing documentation. 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 staff turnover.

Additional Risk Treatments Required: No

- **Lack of Political Alignment:**

There is a risk that the technical strategy and vision for the road network and investment strategy may differ between elected members. Elected members often have 3 to 6 year vision that corresponds with election cycles. Local initiatives may not always receive national subsidy leading to high levels of unsubsidised work being undertaken. The road asset management planning horizon ranges between 3 years for the Waka Kotahi funding applications, to 10 years for the activity management plan, and up to 30 years for the strategic asset management plan. Should council members make 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 Councillors to get support for the technical asset management strategy for the road network.

Additional Risk Treatments Required: No

8.3.4 Delivery Risk

- **Inadequate Portfolio and Capital Works Contract Management:**

Successful portfolio management depends on several factors that significantly impact the delivery of the works programme within planning horizons. There are also external factors such as contractor's capabilities to mobilise their teams on time and progress the work according to 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 manage this risk adequately, and a more formal capital programme management system should be adopted.

With the increasing complexity of the programme and size, there is more required to understand the needs from a programme management perspective.

Additional Risk Treatments Required: Yes

- **Inadequate Project Management:**

Each individual project also has a significant risk of not being able to deliver on the intended outcome, or run overtime or over budget. Project delivery risk management relies on the ability of the contract to cover the likelihood and consequences of delivery issues. Best practice in contract specification is therefore essential to manage project risk. The appropriate contract management relationships focus on identifying issues early and address these through appropriate mechanisms.

Additional Risk Treatments Required: No

- **Non-compliance with Legislation and Legal Requirements:**

The Occupation Safety and Health (OSH) legal requirements are ever-changing, and there is a risk for the council not being a) aware of new requirements; and, b) not being agile to adjust processes quick enough to new requirements. Current arrangements are for updating councils procedures and staying abreast to developing requirements are deemed sufficient to manage this risk to satisfaction.

Additional Risk Treatments Required: No

8.3.5 Physical Asset Risk

- **Minor to Major Natural Hazards roads and bridges:**

Natural Hazards have been identified as the most significant physical infrastructure risk. Minor climatic events such as ice or snow could create unsafe operating environments for motorists. This issue is of high significance and it is anticipated that new processes will be developed to deal with resilience in a more holistic manner.

Additional Risk Treatments Required: Yes

- **Road User Type Conflicts:**

The government policy statement encourages all road controlling authorities to invest in promoting choices of active and sustainable transport modes in communities. There is a risk that the uptake of alternative travel modes happens faster than the works to facilitate these modes, increasing the likelihood of conflict between travel modes having to share roadways. These conflicts could result in reduced user satisfaction, or in crashes and injuries.

Additional Risk Treatments Required: No

- **Inadequate Road Marking and Signing:**

Insufficient marking and signage is an ongoing risk that has serious safety implications on road users. Typical causes for insufficient signage are vandalism, insufficient audits, and changing road layouts and conditions. The state of signage is a standard performance reporting measure from the Road Efficiency Group (REG) and the council regularly reports on this measure. Signage maintenance is also included in maintenance contracts, thus ensuring this risk is sufficiently managed.

Additional Risk Treatments Required: No

- **Traffic Signal/Controls Failures:**

The failing of traffic signals and controls will result in potential crashes and injuries of road users. The most likely cause of traffic signal failures are power failure or vehicles hitting the signals. Council has back-up power generation options in place for signals that could adequately mitigate the risk for power failures, and protocols are in place with traffic signals being knocked over to restore the services within a prescribed time-frame.

Additional Risk Treatments Required: No

- **Non-Natural Bridge Failures:**

Bridges provide critical linkages across rivers and river valleys that will become inaccessible if the bridges fail due to poor condition or over-loading. These failures will occur with a lack of investment or lack of robust asset management processes.

Additional Risk Treatments Required: No

8.4 Natural Hazards

8.4.1 Context

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.*

NH-Policies include (abbreviated)

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.

8.4.2 Climate Change

Climate change affects patterns or regular weather and intensifies the events and the frequency of events at the extreme ends of the spectrum of climate events.

Significant rainfall events will occur more frequently, and higher downpours are expected. Hotter and dryer spells in summer will also increase, and occur more frequently.

The mean is also changing, often referred to as “slow-burning” climate change. Coastal erosion is an example of slow burning change, taking a bit longer to manifest problematic issues. Slow-burning climate change is a risk that the council has to consider and manage. Transportation issues include increased subgrade moisture conditions, and high-temperature impacts on surfaces. The impact on bituminous surfaces is of particular concern as increased use of bitumen products will contribute to increasing Council’s carbon footprint.

Significant work has been completed in the understanding of climate change in the region. Studies completed by Council and Environment Canterbury have shown potential climatic changes that will pose risks to infrastructure and services in the short, medium, and long term. This section mostly deals

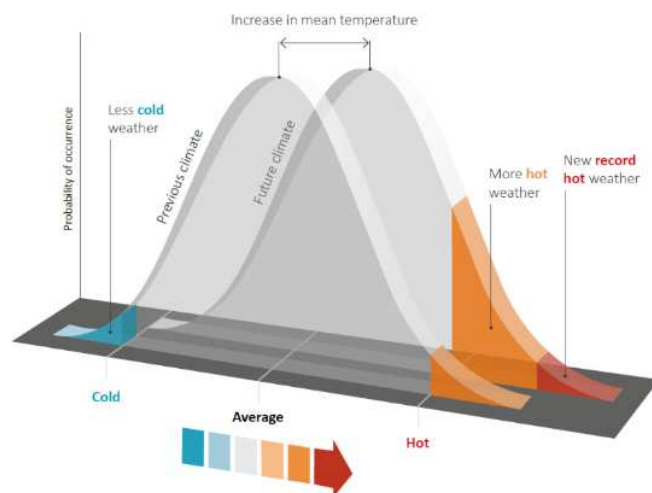


Figure 8-3: Climate Shift (Royal Society of New Zealand)

with risks related to disaster events such as floods. Council-wide approach to climate change is documented in the Council Climate Change Policy.

8.4.3 Resilience to Natural Hazards

The likelihood of some events is relatively low, there are others that are almost certain to happen but the timeframes are unknown. Council is following a holistic approach to resilience.



Figure 8-4: Cycle of Resilience to Natural Hazards (Source: Theuns Henning)

Following any natural hazard event that affects infrastructure or utilities, an assessment is undertaken to ascertain the extent of damage, intervention required, priority of reinstatement, and the resource requirements. The effects and intervention lists contained in this plan can be used to ensure all contingencies are considered. The interconnectivity and interdependence between the Transportation activity and other utilities during and after an event is very important and has been identified in the Plan.

Table 8-7: 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	Risk assessment and control processes in place for future use
Readiness	Planning and preparation required to equip agencies and communities to respond and recover	Emergency Management Plans and Emergency procedures manual prepared for future use. Exercises undertaken to test readiness.
Response	Addressing immediate problems after an emergency	Emergency Management Plans prepared for future use.
Recovery	Addressing the long-term rehabilitation of the community	Managed by the Civil Defence Emergency Management Group

8.4.4 Lifelines and Critical Infrastructure

Investment prioritised for roads and bridges that are classified as critical links. The criticality of an asset reflects only the consequence of the asset failing. High criticality assets are best defined as assets which have a high consequence of failure, but may not necessarily have 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 of the critical roading infrastructure was undertaken in 2015. 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 are appropriate. The key local roads requiring attention are Coleridge Road and part of Homestead Road (to avoid risk to isolated residences at Lake Coleridge, and the hydro station), and
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 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, and
- Setting priority for collecting asset information within the required levels of confidence.

8.4.5 Emergency Planning and Procedures

The District is at the mercy of a wide range of potential 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.

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 principle 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, and
- Ensure 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.

The Township Volume of the District Plan contains a basic strategy to address Natural Hazard issues, and is applicable to all works

The significance of the various hazards to lifelines are ranked in the order of the study with earthquake the greatest threat. Flooding is limited in extent within the District. Meteorological hazards also tend to significantly affect only limited areas. Snowstorms are historically more significant, and high winds have also caused disruption to infrastructure. Mass movement and coastal hazards may be very significant for the immediately affected area but are limited geographically.

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 during holiday periods. There are appreciable seismic rock-fall risks at Arthur's Pass, and
- The Rakaia Huts and Selwyn Huts are popular fishing and recreational areas with a permanent population of approximately 200. This number can also increase rapidly during holiday periods

8.4.6 Business Continuity

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning during a disaster, rather than simply being able to recover after the fact. 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, and
- 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.

8.5 Network Events

The operation of the transportation 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. The associated risks are further reduced by the management measures described under each heading.

8.5.1 Condition and Performance Risks

There are a number of factors contributing to the condition and performance-related risks on the roading network including traffic volumes, failures of structures, and pavement failure.

The number and size of vehicles using a road are the major influences on condition, and on the cost of maintaining the desired condition and level of service. Council has a traffic-counting programme that keeps this matter under review. The traffic-counting programme also monitors the proportion of heavy vehicles on representative roads. This monitoring supplements the detailed network knowledge gained from in-situ monitoring and observation of the network. Significant land-use changes that affect traffic loadings are also monitored, and upgrading can be funded.

Bridges are protected through regular inspection by appropriately trained and experienced external consultants. Any bridges with reduced capacity must have legally enforceable load or speed (or both) 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 have the opportunity to use an alternative route.

Permits for over mass 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. 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.

Material failures include deterioration through normal wear and tear, and unexpected failures. Council carries out regular condition-ratings of all its sealed and unsealed roads using industry-standard procedures, and at intervals accepted as appropriate by Council and Waka Kotahi. Deterioration modelling is used to assist in forecasting the quantum of pavement and sealed-surfacing renewals works.

The bridge inspections outlined in the Lifecycle Management Plans monitor the condition of the overall bridge structure, and the individual components and materials. Core samples are taken from the structural members of timber bridges as appropriate on the recommendation of the experienced bridge inspector.

8.5.2 State Highway Detours

Road crashes and other disruptive events on the State Highways in the District can precipitate the need for traffic diversions onto local roads, subjecting them to volumes and axle loads for which they are not necessarily designed to withstand, 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.

The NZTA and Council have established a protocol that provides for traffic to be diverted on to The Council's 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

8.5.3 Network Operations

- **Mechanical Failure**

The only mechanical equipment on the road network relevant to this plan are railway crossing signals and barrier arms. These are the property of the NZ Railways Corporation and are operated, maintained, and inspected by KiwiRail. Any failures noticed by or reported to the Council are relayed to KiwiRail staff urgently.

- **Electrical failure**

On-road electrical failures may affect urban street lighting or traffic signals, as these are dependent on grid supplied electric power. Failure of individual lights is managed through the Street Light Maintenance Contract that specifies response times for individual street light failures, or localised 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 dispersed nature of the street-lighting network means that stand-by generation is not practical.

- **Vandalism**

The most significant risk posed by vandalism is obliteration of warning or regulatory signs to the extent that their messages are lost, or the removal entirely of these signs. Council's maintenance contracts cover reinstatement of signs damaged by vandals but discovery of removed signs is often.

- **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 sometimes 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.

8.6 Health and Safety

Council is responsible for providing a safe work environment for its staff, contractors, and the 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 at work Act 2015. Council staff are exposed to risks associated with the Transportation activity. Council provides training in general and specific safety areas as required.

Council's contractors have Health and Safety Officers, who undertake and maintain workplace risk registers. Contractors' staff have monthly Health and Safety meetings, with documentation of meetings included in the monthly contract performance meetings.

8.7 Temporary Traffic Management

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 worksites are required to be controlled by appropriately qualified site traffic management supervisors (STMS). 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.

Warrants for temporary speed limits at work sites approved as required under the Council's delegated authority.

Council requires that all contractors engaged to work on behalf of Council have in place effective health and safety systems. During works checks are made to ensure that the submitted plans are being adhered to. TTM site audits will be performed by Council staff as part of the ONRC performance measure suite.

All work within the road reserve requires the contractor or 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 traffic management and reinstatement.

All requests are entered into a database which keeps information on traffic management plans. Having the information in a database allows the contractor or property owner to be contacted if there are problems with the worksite or reinstatement of surface. The database:

- Records all relevant details of each Traffic Management Plan (TMP), and

- 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. 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 Service Delivery Risks

8.8.1 External Provider Risks

There are inherent risks associated with any work undertaken under contract. Contractual difficulties, or the failure of contract entirely, and skill deficiencies within contracting organisations both pose risk at contractual levels.

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, and
- Attempting to understand the contractors' businesses and the pressures on them.

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.

8.8.2 Internal Risk

Staff turnover and loss of skill-sets is a key internal risk area. The effects of the loss of key staff, with key knowledge, requires constant management. Council recognises that staff turnover is inevitable and the importance of continuous capture and transmission of knowledge. 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.

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.

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.

Workplace health and safety risks are 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 Council’s Health and Safety committees meet regularly. 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 in operating and legislative standards, especially when sudden, can be a risk area for Council. Changes to environmental standards can have significant and costly implications for Council. It manages these risks by continually reviewing proposals and actively participating in consultation processes 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. 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 changes 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’s funding assistance rates (FAR) are reviewed a year prior to the start of each NLTP. Council is particularly vulnerable to changes in funding assistance rates, as these represent a significant portion of the affordability of the affordability of Council’s operations. 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

A lack of clear guiding policy documentation, deficiencies in IT and record management systems, exceedance of delegated authorities, and business continuity pose risk to the general management for the organisation. 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. The risks associated with exceedance of authority, or delegated authority, can be at contractual, financial, and technical levels. A person to whom appropriate authority is not designated may not have the skills or experience required to discharge non-delegated responsibilities.

Council has not yet 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, and
- Personnel Policies and Strategies related to business continuity.

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.

8.9.2 Policy and Plan Risks

Major errors or deficiencies in the roading plans and strategies 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 plans and strategies,
- Observing the smart purchaser principle,
- Regular review of documentation,
- Corporate commitment to following plans and strategies, and
- Having plans adopted by the Council.

Capacity planning is vitally important to setting forward work programmes and securing adequate future funding. Forecast demand is based on corporate growth models, which are in turn based on the best information available from Statistics New Zealand, corporate, and specialist data. As these trends and effects are relatively long term, periodic review and network knowledge are sufficient to ensure adequate risk management.

Design and construction standards are imposed to adequately manage the long-term risks of subdivisions and developments that do not rest with the developer or designer. 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 is similarly required to meet statutory and appropriate best practice standards as specified in contract documents. 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.

Inadequately or improperly supervised contracts put Council at risk through their potential to either deliver beyond their original scope at a cost to Council, impose unexpected future maintenance costs on Council, or through the Council paying for work that has not been delivered. 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.

In large organisations there are risks associated with frequent changes in responsibility resulting in loss of “project ownership” and projects floundering. 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. Processes are in place to ensure that the desired results will be achieved, on time, to the standard required.

Council also holds consents for a number of activities and works associated with the road network. 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 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 8.2	Participate in Regional/Greater Christchurch Risk Management process development.	<i>Include in new Improvement Plan</i>
IP 8.3	Integrate Regional/Greater Christchurch Risk Management process into Council practices including this AMP.	<i>Include in new Improvement Plan</i>
IP 8.4	Prepare and undertake periodic reviews of the risk register, including reviews by Council; this could usefully be done in the early stages of the regular AMP Review processes.	<i>Include in new Improvement Plan</i>
IP 8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	<i>Include in new Improvement Plan</i>
IP 8.6	Undertake criticality assessment of Transportation Assets.	<i>Include in new Improvement Plan</i>
IP 8.7	Further review of funding and emergency reserve required for future events (noting this will not be funded in the rapid growth period).	<i>Include in new Improvement Plan</i>
IP 8.8	Prepare a State Highway Detour Policy, which is proposed as a combined project with NZTA (contained within Corridor Maintenance agreement, but also required as per ONRC)	<i>Include in new Improvement Plan</i>
IP 8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Emergency Management and Lifelines Planning (as per ONRC).	<i>Include in new Improvement Plan</i>
<i>New Improvement Plan Items</i>		
IP 8.10	Establish a corporate risk policy	
IP 8.11	Resilience improvements – proactive approach. For example, incorporating a holistic resilience responsive asset management process would see the over-all resilience of the infrastructure improvements with time	
IP 8.12	Update the risk register with more focus on specific risks associated with each section within the AMP	
IP 8.13	Establish a more robust programme management system for capital and maintenance works (i.e. a formal capital programme management system should be adopted)	
IP 8.14	Develop a strategy for climate response that includes both climate mitigation (reducing carbon footprint) and adaption climate-responsive maintenance and renewals	

Item		Action
IP 8.15	Risk Register continually revised as part of the Council's process of continual asset management improvement	
IP 8.16	Assess planning risks associated with dealing with major natural hazards	
IP 8.17	Assess and develop processes for minor to major natural hazards roads and bridges	
IP 8.18	Assess Planning Risks associated with Inability to Fully Utilise Funding Options (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)	
IP 8.19	Progress Response Plan - Effects and Intervention for Transportation.	
IP 8.20	Review and liaise with Waka Kotahi NZTA regarding State Highway Detours – need for traffic diversions onto local roads	

9.0 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. 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 2018-2028 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 2021-2031 Lifecycle Management planning for the Council's transportation assets is now also read in conjunction with the Selwyn District Council Programme Business Case to support the 2021/22 – 2023/24 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

9.0	LIFECYCLE MANAGEMENT STRATEGY	1
9.1	Lifecycle Management Strategy	3
9.1.1	Lifecycle Management - An Overview	3
9.1.2	Lifecycle Analysis – Network Summary	5
9.1.3	Network Components	8
9.1.4	Asset Group Details	11
9.2	Asset Life Cycle Management and Service Delivery	28
9.3	Maintenance and Operations Plan	29
9.3.1	Maintenance and Operations Overview	29
9.3.2	Maintenance Activities	30
9.3.3	Operations	31
9.3.4	Monitoring, Quality Assurance and Supervision	33
9.3.5	Corporate Operations	36
9.3.6	Asset Management and Service Delivery	36
9.4	Approach for Managing Services Delivery Risks	38
9.4.1	Risks Associated with External Providers	38
9.4.2	Internal Risk that May Impact of Service Delivery	38
9.5	Asset Renewals Plan	40
9.5.1	Renewal Planning Overview	40
9.5.2	Renewal Activities	40
9.5.3	Renewal Strategy and Funding mechanism	42
9.5.4	Renewals Planning Tools	43
9.6	Asset Improvement and Development Plan	45
9.6.1	New Improvements	45
9.7	Asset Disposal Plan	47
9.8	Lifecycle Funding	48
9.9	Lifecycle Risk Management	50
9.9.1	Treating and Monitoring Risks	50
9.9.2	Prioritisation of Expenditure to Manage Risks	50
9.1	Improvement Plan Items	51

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

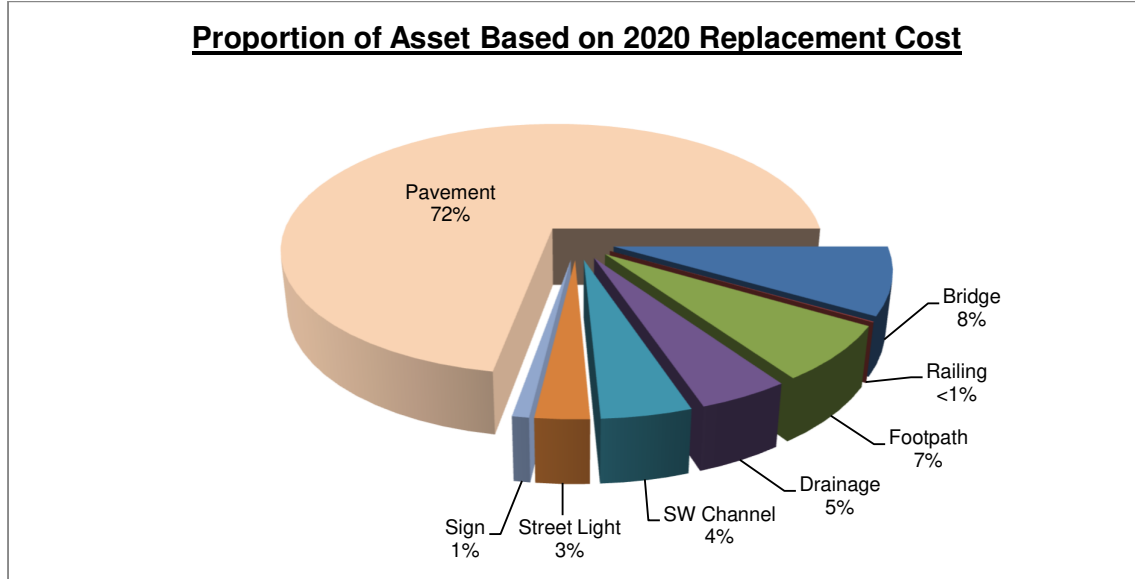
Asset Type	Component	Replacement Cost	Annual Depreciation	Unit	Quantity
Pavement *	Subgrade	\$ 145,298,413	\$ -	m	2,524,385
	Sub-base	\$ 135,392,825	\$ -	m	2,524,385
	Basecourse	\$ 227,784,720	\$ 5,132,284	m	2,524,385
	Top Surface	\$ 90,492,094	\$ 5,129,659	m	2,525,072
	Total	\$ 598,968,052	\$ 10,261,943		
Drainage	Culverts	\$ 22,574,214	\$ 237,266	m	33,921
	Structures	\$ 14,581,315	\$ 389,856	each	8,228
	Total	\$ 37,155,529	\$ 627,122		
SW Channel	SW Channel	\$ 36,941,682	\$ 468,078	m	508,429
	Total	\$ 36,941,682	\$ 468,078		
Street Light	Light	\$ 4,927,815	\$ 306,755	each	7,129
	Bracket	\$ 2,544,761	\$ 63,250	each	7,102
	Pole	\$ 14,644,828	\$ 365,591	each	7,102
	Total	\$ 22,117,404	\$ 735,596		

Asset Type	Component	Replacement Cost	Annual Depreciation	Unit	Quantity
Sign & Markings	Sign	\$ 6,851,581	\$ 565,863	each	18,373
	Total	\$ 6,851,581	\$ 565,863		
Railing	Railing	\$ 701,582	\$ 18,252	m	5,116
	Total	\$ 701,582	\$ 18,252		
Footpath	Footpath	\$ 57,160,975	\$ 1,672,294	m	386,076
	Total	\$ 57,160,975	\$ 1,672,294		
Bridge	Bridge (Deck)	\$ 69,244,651	\$ 625,662	each	140
	Total	\$ 69,244,651	\$ 625,662		
Total		\$ 829,141,456	\$ 14,974,809		

Source: Valuation Report (BECA, 2020)

* 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



Source: Valuation Report (BECA, 2020)

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 9.4: Network Summary — Length (km)

	Sealed	Unsealed	Network
Urban	329.0	3.0 *	332.0
Rural	1,181.0	1,119.0	2,300.0
Both	1,510.0	1,119.0 *	2,632.0

Tables 9.5 and 9.6 show that 57% of the network (by length) consists of sealed roads, and these contribute to over 96% of the use of the network (478 million VKT's out of the total 497 million VKT's)

Table 9.7: Network Summary – Proportion of Total Lengths

	Sealed	Unsealed	Network
Urban	12.5%	0.1% *	12.6%
Rural	44.9%	42.5%	87.4%
Both	57.4%	42.5% *	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 9.8: Network Summary —Road Network Use (Percentage by Vehicle Kilometres Travelled)

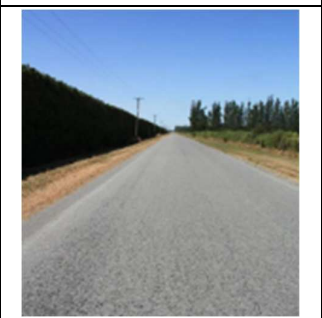
	Sealed	Unsealed	Network
Urban	21.96%	<0.01%	21.96%
Rural	74.38%	3.66%	78.04%
Both	96.34%	3.66%	100.00%

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 9.9: 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 sight rails.
	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 \$600 million, the pavements asset equate to 72% 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 over weight, traffic.

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 is one road section that may be a seal extension candidate - Knyvetts Rd a secondary collector, 2.7km between Glasseys Rd and Heslerton Rd. In the 2018 LTP, this section of road is proposed to be sealed in 2033/34.

Unsealed roads where traffic counts indicate ADT of greater than 150 include but not limited to:

- ESSENDON RD
- FRASERS RD (LAKE REGION)
- OLD SOUH RD
- PINEGROVE RD
- RIVER RD
- TANCREDS RD
- TWO CHAIN RD

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 criteria before they can be considered for funding.

Unsealed urban roads are being successively sealed reflecting that these are difficult to maintain and do not provide the level of service expected by residents in the District's townships.

A candidate list is included in section 7.7.8.

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 3.41m². 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 rubber-ring 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 the majority 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 plains 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 Regional 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 extends 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 its 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 be 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 7% 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 cul-de-sac and other streets to enable increased connectivity. Footpaths are not normally found in rural-residential 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 3.41m².

The bridge inventory reviewed in 2019-20 comprises of 139 structures. Bridge assets account for 8% 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

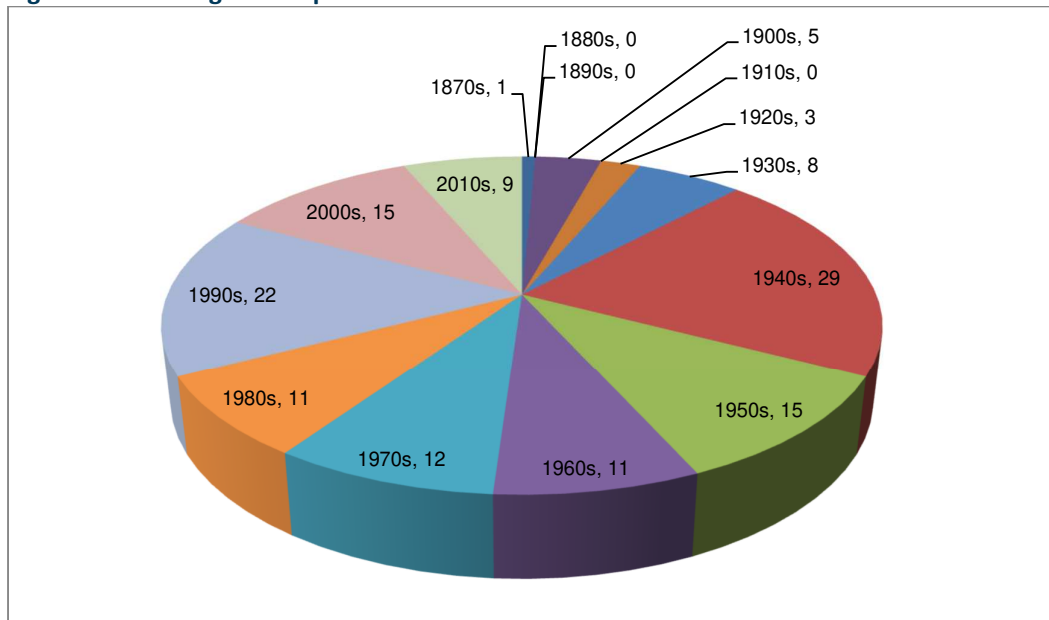
Bridge	Ownership	Management Responsibility
Waimakariri Gorge Bridge, Waimakariri Gorge Road	50% Selwyn District Council 50% Waimakariri District Council	Selwyn District Council
		
Knights Stream Bridge, Trices Road / Sabys Road (CCC)	50% Selwyn District Council 50% Christchurch City Council	Christchurch 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 \$. 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.

The establishment of a PT Facilities Plan is a project for the 2021-24 period. This will consider route locations, demand and the level of service provided.

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 its 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.

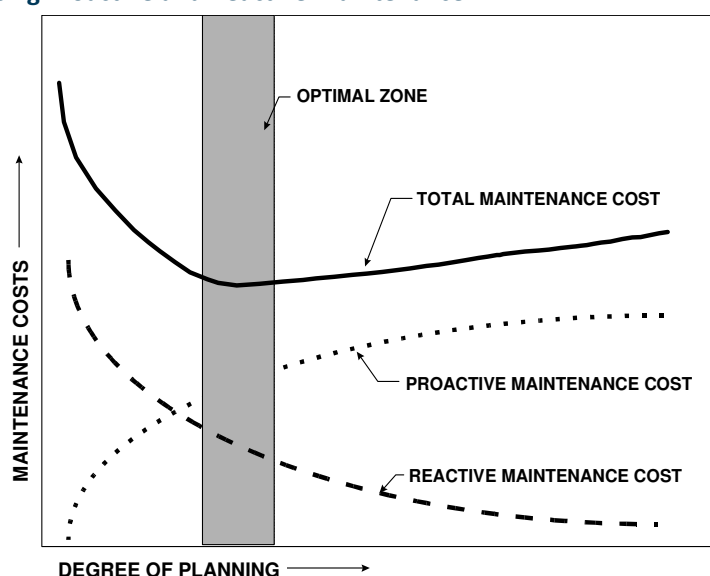
9.3 Maintenance and Operations Plan

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 8.

Table 9.1 – 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 2021-2031 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 a 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 9.10 10: 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 District-wide 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 provides 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 9.10 11: 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. 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.
	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
	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 on 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 Section 9.105.4 and in Section 6 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 street lights. 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 (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.

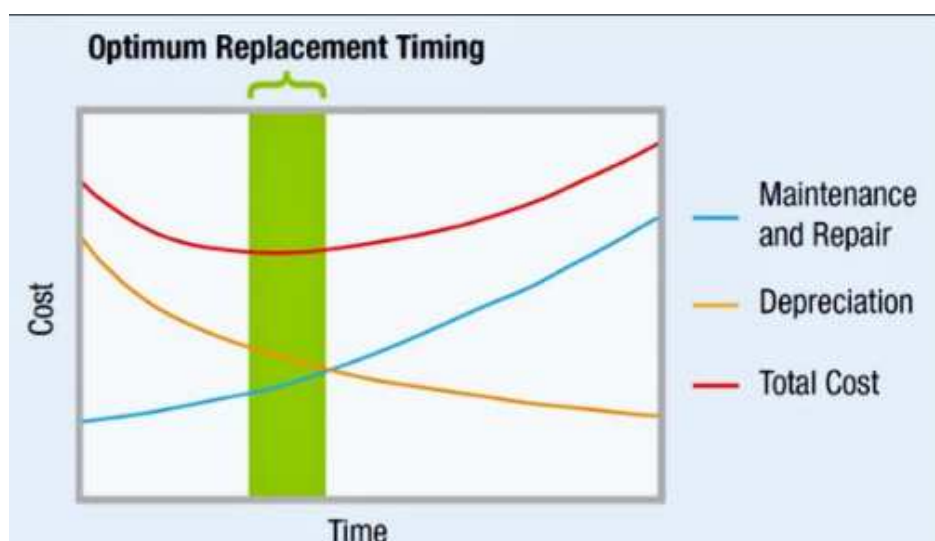
9.5 Asset Renewals Plan

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 layers.
- Extensive excavation of existing structural layers and their replacement with new material.
- Replacement of kerb and channel, footpaths, street lights, 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 the purpose of 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.

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 a large number of 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 a number of 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 street lights.

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 time 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, with the exception of street lights 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.

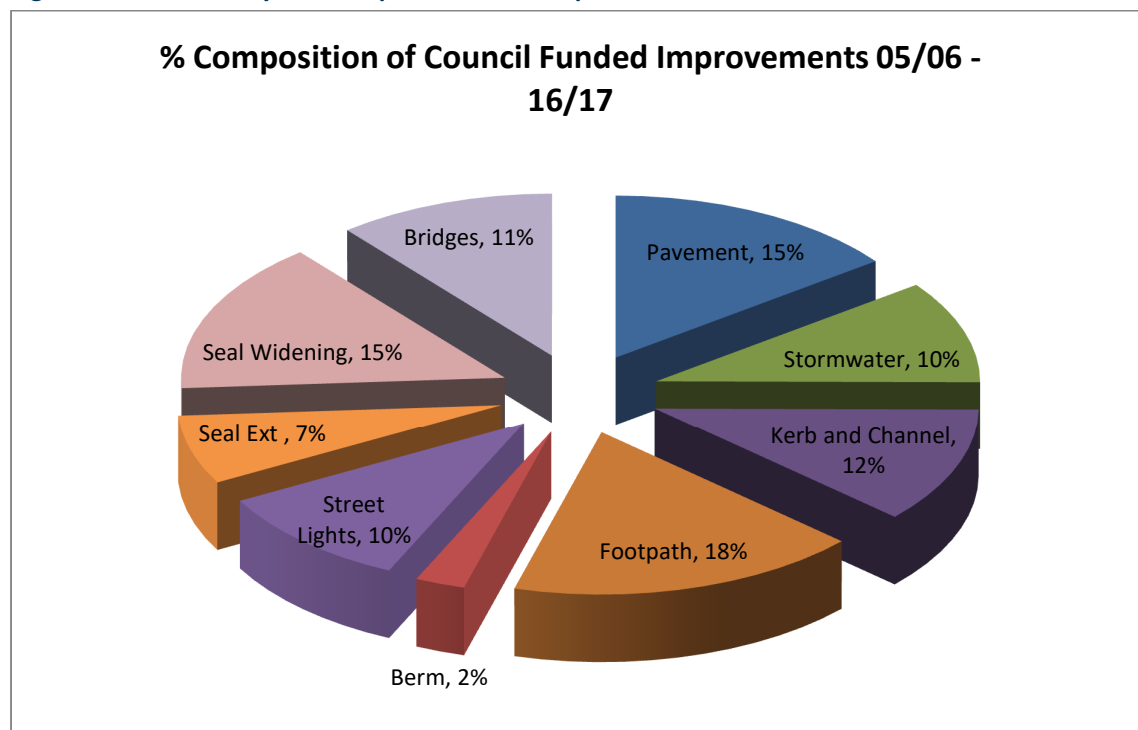
New Improvement sections of the life cycle management plans identify future new improvement works, and explain the proposed future development strategy in terms of ‘how’ the provision of additional asset capacity will be undertaken. This is a specific requirement of the Local Government Act 2002.

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.

The following graph shows the distribution of asset improvements, produced by both the Council's improvement programmes and the improvements vested by private developers, for each significant asset group.

Figure 9.1.5: Summary Asset Improvements Composition



Source: Transportation Improvement Works Summary

To be updated based on new data

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 9b.), 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 (Vaugh)

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 a number of 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 consist 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.

9.1 Improvement Plan Items

While this section of the plan requires substantial review there is a satisfactory understanding of the Lifecycle Management processes in place and experienced staff are able to manage the issues at hand.

Item		Action
<i>Previous Improvement Plan Items</i>		
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.	Not yet complete
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.	
IP 9.7	Investigate and monitor maintenance metalling against theoretical requirements (depreciation) and implement findings from Gravel Road Study.	Not yet complete (IDS Unsealed Roads Model in implementation phase)
<i>New Improvement Plan Items</i>		
IP 9.8	Improve data 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.	
IP 9.9	Establish a PT Facilities Plan. This will consider route locations, demand and the level of service provided.	2021-24 period
IP 9.10	Update Summary Asset Improvements Composition Pie Chart	

This page is left blank for printing

10.0 ASSET MANAGEMENT PROCESSES AND PRACTICES

Contents

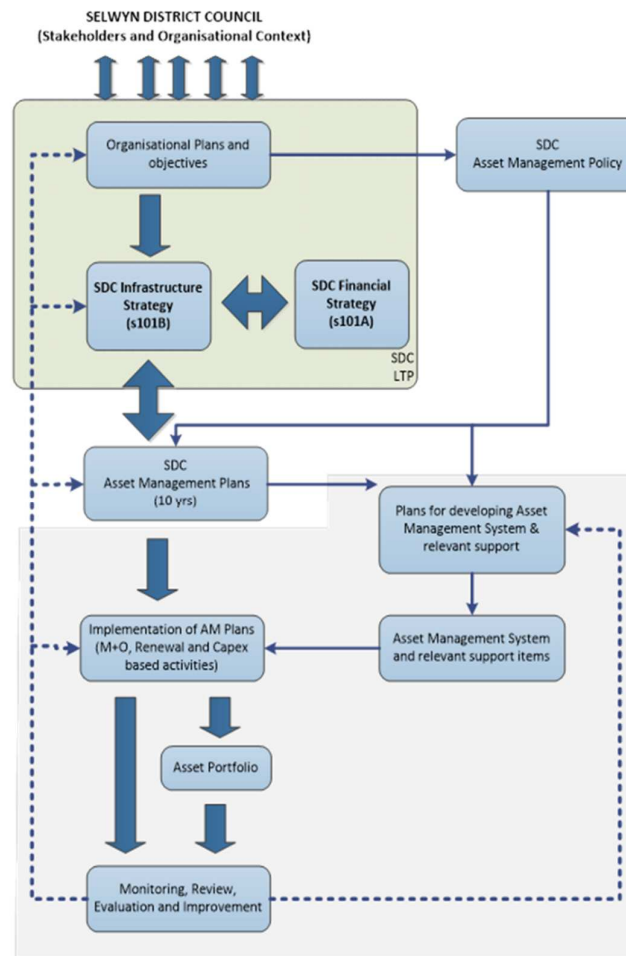
10.0	ASSET MANAGEMENT PROCESSES AND PRACTICES	1
10.1	The Asset Management Processes	3
10.2	Data Management	5
10.2.1	Information Systems and Business Practices.....	5
10.2.2	Accounting and Financial Systems.....	6
10.2.3	Public Enquiries and Concerns	6
10.2.4	RAMM	6
10.2.5	RAMM Contractor (Works Management)	8
10.2.6	RAMM Asset Management	8
10.2.7	RAMM Data Quality	10
10.2.8	dTIMS	11
10.2.9	Asset information Security.....	12
10.3	Organisational Structure.....	13
10.3.1	Staff Structure	13
10.3.2	Council and Committee Structure.....	13
10.3.3	Staff Competencies	13
10.4	Quality Assurance	14
10.4.1	Audits	14
10.4.2	Roading Standards and Guidelines	14
10.5	Data Quality Report	15
10.6	Improvement Plan Items	20

This page is left blank for printing

10.1 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. The services to be delivered contribute towards the achievement of the community outcomes in Council's Long Term Plan.

Gaps between required standards and levels of service, and the ability of the network to deliver them are identified and processes are put in place to manage these gaps. 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 asset management actions 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.



Adapted from ISO55000:2014, Figure B1

Figure 10-1: Asset Management Planning Process (Selwyn District Council Infrastructure Strategy)

Council's Transportation Asset Management 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.

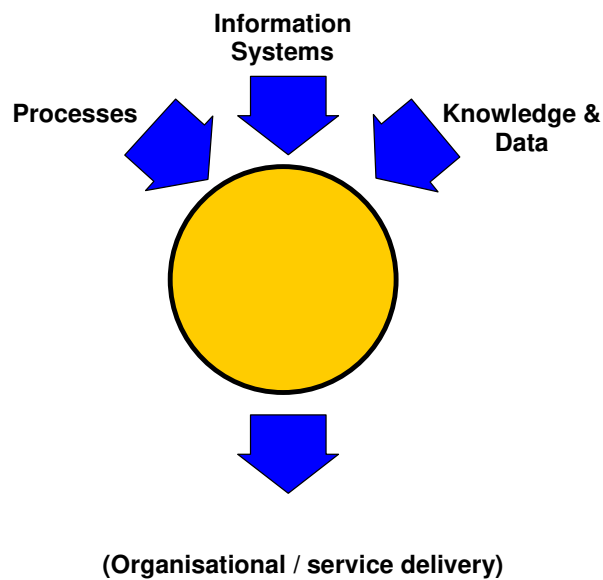


Figure 10-2: Key Asset Management Inputs and Outputs

The tables in the following section set out the current business practices and the desired business practices that need to be developed. The AM Improvement Plan details the development priorities, timetables, resources, and costs.

10.2 Data Management

10.2.1 Information Systems and Business Practices

Council uses a number of information management systems for different asset management functions.

Table 10-1: *Overview of Management and Data Systems*

System	Current Business Practice
Asset Registers	Reliable asset registers available for most assets contained in RAMM.
Financial System	MagiQ is used to manage financial system functions. 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	Performance & condition information held and updated in RAMM for major asset groups (eg. Pavements and bridges)
Customer Enquiries	Customer service system integrated in MagiQ
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	AM plan to include risk register and analysis. No risk management strategy in place at a corporate level, risk management is undertaken at an activity level
Optimised Renewal Strategy	dTIMS is 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 and functionality.

System	Current Business Practice
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.

10.2.2 Accounting and Financial Systems

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 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 Selwyn District Council uses the MagiQ financial management system.

The activity relies on the Council's core financial systems which include:

- MagiQ 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, elected representatives, and Committees.

10.2.3 Public Enquiries and Concerns

To assist reactive maintenance, Council deploys a Customer Service Request system. Requests for service (RFS) are presently recorded via MagiQ and forwarded to the appropriate council staff or maintenance contractor for action. The RFS are recorded with details such as name, location, issue, and priority to enable tracking for resolution.

The receiving officer or 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 arising during the resolution process. Requests for service are discussed in more depth in Section 6.3 Customer Expectations.

10.2.4 RAMM

RAMM is the Council's Transportation Asset Management Information System (AMIS), which was created as a database to store inventory condition information from inspections carried out according to Transfund's 1997 Road Assessment and Maintenance Management (RAMM) manual. The system is currently used by all Road Controlling Authorities in New Zealand, and Waka Kotahi NZTA.

Council uses RAMM as the main inventory database for its transportation assets. 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, contractors, and consultants.

An extensive range of inventory items can be recorded using RAMM:

Table 10-2: RAMM Main 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

The system has a number of other asset groups set-up, such as 'Minor Structures' (which include retaining walls), 'Railings', and 'Signs'. Many of these are used by Selwyn District Council to record asset inventory data but are used less intensively in analysis tasks.

Council also uses the RAMM system to undertake asset valuation using its Asset Valuation Module and record 'Maintenance Cost' data, which can be transferred or entered manually into the system.

The RAMM system is used to generate reporting automatically for Waka Kotahi NZTA, and datasets for other reporting and analysis systems. These include the Road Efficiency Group 'One Road Network Classification Performance Measures Reporting Tool' and dTIMS models.

The Transport Asset Information Services (professional services) contractor undertakes operational management and quality checks on the data entered in the RAMM system.

User defined table are not currently detailed. This is an improvement item for then next AMP iteration.

10.2.5 RAMM Contractor (Works Management)

Road network maintenance data is entered directly by the contractor and used for both Asset Management and contract management purposes. As with other parts of RAMM, the system is available simultaneously to users in the Council, contractors, and consultants enabling them to:

- Record requests for service and track their progress and completion,
- Issue works orders,
- Record, programme and report works pending by location and asset element,
- Track work types, faults, estimates and claims,
- Allow contractors to sign-off maintenance repairs and service requests as they are completed and update the RAMM asset database accordingly,
- Collect and update data in the field directly, and
- Evaluate problems and issues on-site though the availability of data held on the assets.

Costs can be tracked within RAMM Contractor works management functionality and transferred to RAMM 'Maintenance Cost' records to support Asset Management planning.

RAMM Contractor also includes the Street Lighting Inventory Maintenance (SLIM) module, used in the maintenance and operational management of Selwyn District Council's streetlight assets.

The professional services contractor undertakes quality checks on the data entered by the maintenance contractor.

10.2.6 RAMM Asset Management

RAMM has built-in data standards, data assessment & analysis functionality covering a range of Asset Management functions.

Traffic Counting

RAMM can store both automated and manually entered traffic count and traffic estimation data. Nationally, transportation's core objective is to have reliable traffic counts, traffic volume (journeys travelled) and traffic mix (heavy vehicle loading) data available on all carriageways and treatment lengths, contingent on a robust current and historical traffic counting programme. This will allow both

local authorities and Waka Kotahi NZTA to understand the current traffic volumes and traffic mix at a detailed level on the network and be able to extrapolate future traffic volumes and traffic mix as a result of growth.

Selwyn District Council has undertaken programmed traffic counting on its road network from the inception of its RAMM system. This translated into each carriageway being counted on a three-yearly cycle. Approximately 150 classified “control” count sites were employed to cover key routes only, providing traffic mix data that could be extrapolated across the network. The classified count sites were used in tandem with “Volume only” and “Special” count sites to gain visibility on traffic volume and traffic mix changes over time.

In 2016, the Client refined its traffic counting strategy to create a more targeted program that correlated with the carriageways ONRC hierarchy across the district, aligned with Customer Levels of Service. The network was consolidated from carriageway sections into “traffic links”, and counting these links based on ONRC hierarchy. Links were created by:

- splitting Selwyn District into “East Selwyn” and “West Selwyn” geographic regions
- joining carriageway sections that did not split at an intersection (except between sealed and unsealed carriageways)
- consolidated joined links to reflect either urban or rural traffic mix

This resulted in approximately 2800 links being created for counting purposes. It is not practical to measure each of these links with a classified counter annually. Instead, “Core” sites have been selected across the District that will provide an annual snapshot of traffic mix information for the District. These core sites will have annual classified counts. HPMV routes fall into this category. Complementing these core sites are “Rotational” sampling sites that will allocate three-yearly volume counts to every Arterial, Primary Collector and Secondary Collector link, and six-yearly volume counts to Access and Low Volume links.

Classified counts are also required to be undertaken that inform the Christchurch Transport Model (CTM). On a township level, classified counts are programmed in Rolleston and Lincoln that help inform the regional Paramics traffic simulation models. These models provide forecast into future transport demand and inform the quantity of Development Contributions collected from Developers.

Using this methodology, Selwyn District Council’s traffic count program was developed for the 2016/17 to 2018/19 Financial Years and was provided to the Professional Services consultant. Responsibility for completing traffic counting and traffic estimation activities currently forms part of the Transport Asset Information Services (professional services) contract deliverables.

Asset Inspections, Surveys and Condition Rating

Recording the results of visual asset inspections and Road Condition rating is another key function of the RAMM system. The road network is divided into ‘Treatment Length’ sections with consistent construction types and traffic loading. Sections are then further subdivided into 100 metre sections for roughness ratings, and 50 metre sections of visual inspection every 500 metres.

Increasingly, the results of advanced data collection across the network are recorded in short sections of 10 or 20 metres length across the network. RAMM and dTIMS are both able to use these highly detailed surveys to improve analysis results.

A sample of the sealed road network’s condition is assessed and recorded, based on a visual assessment of pavement condition. This condition rating exercise is carried-out by specialised teams

on foot to collect visual data on defects such as cracking, flushing and potholes. Roughness data, and increasingly other fault and distress information such as rutting, skid resistance and pavement deformation, are collected from a mechanical or electronic survey of the road. Roughness is measured using meters or laser profileometers capable of measuring NAASRA and IRI roughness, attached to a vehicle, over the whole sealed road network. Other characteristics, such as skid resistance (SCRIM) and pavement strength (SNP) can be calculated from High Speed Data, Falling Weight Deflectometer and Multi-Speed Deflectometer surveys.

Treatment Selection and Forward Works Programme

The absolute values of defects and distress are used in a costing algorithm in RAMM, called the Treatment Selection Algorithm (TSA). The TSA takes into account the faults measured, carriageway roughness, traffic volumes, and maintenance costs to determine overall costs of alternative treatments. Unit cost rates are determined by the user. Treatment alternatives vary depending on the type of pavement and are reported for the current year and subsequent year.

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

Treatment options are ranked based on benefit cost ratios (BCR) for pavement renewals and priority indicators (PI) for resurfacing. Priority indicators 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.

The TSA has recently undergone changes, and the new Candidate Selection Algorithm (CSA) is likely to be in-use during the 2021-24 Activity Management Plan cycle. Responsibility for running and reporting the TSA results currently forms part of the Transport Asset Information Services (professional services) contract deliverables.

10.2.7 RAMM Data Quality

Council's Professional Services consultant performs an annual review of the accuracy of RAMM data annually. These reviews provide confidence that Council's asset data is accurate.

Table 10-4: 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 & ~95% accurate (RAMM) Bridges- >100% complete & ~95% accurate (RAMM) Footpaths- >100% complete & ~95% accurate (RAMM) Street lights- >100% complete & ~95% accurate (RAMM) Kerb & channel- >100% complete & ~95% accurate (RAMM) Signs- > 100% complete & ~95% accurate (RAMM) Markings- > 95% complete & ~95% accurate (RAMM) Minor culverts- 50% complete and 50% accurate (RAMM)
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

10.2.8 dTIMS

The RAMM database is updated continually to enable Forward Work Programmes to be developed via the Treatment Selection process and the predictive modelling software tool dTIMS (Deighton Total Infrastructure Management System). dTIMS runs a computerised pavement deterioration modelling tool that provides analysis, prediction, and costing of major pavement renewal works including reseals and sealed road pavement rehabilitations.

The model has been developed specifically for New Zealand roads, allowing for the comparison of future asset condition, different budgets and alternative levels of service in terms of renewal intervention levels to be tested and optimised. The system also has the advantage of being able to forecast the need for works at a treatment length level as well as at the network level. It is a flexible system that enables the user to alter the framework or models to suit their locally calibrated conditions. Council's dTIMS analysis is undertaken and delivered by the professional services contractor.

dTIMS uses data stored in RAMM such as traffic volumes and pavement strength to predict the future network condition and treatment needs over longer-term outlooks. Treatments can be triggered using intervention level or budget constrained approaches and include reseals, smoothing, strengthening, and reconstruction options. Key data required for dTIMS analysis includes layer thickness, construction date, sub grade strength and maintenance costs. Where this data is not available, assumptions based on local knowledge, Falling Weight Deflectometer (pavement strength) testing,

desktop study of construction drawings, or a mixture of methodologies are used to ensure results are representative for the Selwyn District Council sealed road network. These assumptions can also be introduced into dTIMS, from outside of RAMM.

Whilst dTIMS modelling remains focussed on sealed pavements for the Selwyn District Council network, new models are potentially enabling data use to give much greater confidence to asset management planning and Forward Works Programmes for unsealed roads, footpaths, bridges and other asset groups.

10.2.9 Asset information Security

The responsibility for asset information security rests with the Council's IT department. Data is stored in the Council's EDRMS system which is backed up nightly and stored on-premises and in our secure cloud repository. Council information systems are security controlled, allowing some staff to view the data, and others to add and edit it. Data manuals are available that explain the various procedures.

10.3 Organisational Structure

10.3.1 Staff Structure

Council's road and bridge asset management is carried out by in-house staff and external specialist contractors and consultants. Within Council's Infrastructure unit are the Transportation Service Delivery team and the Strategic Asset Management team who perform parallel but integrated functions to ensure the delivery of the optimised lifecycle asset management strategy and maintenance, operations and renewals plans on the roading network. Road network professional services are largely delivered by in-house staff, who are accountable to the Service Delivery Manager. There are cross-departmental links, and key relationships with contractors and consultants, that are important to the correct functioning of the roading team and management of the roading network.

10.3.2 Council and Committee Structure

The Selwyn District Council is made up of twelve elected representatives; the Mayor, and the eleven councillors representing the four ward areas. Two councillors represent the Ellesmere Ward, four councillors represent the Selwyn Central ward, three councillors represent the Springs ward, and two councillors represent the Malvern ward.

Council also has an extensive committee structure. In addition to the Mayor and Councillors, there is a specific Community Board for the Malvern Ward area, established under the Local Government Act 2002, with the delegated authority from the Council to make decisions on specific matters which affect the Malvern Hills area. Community halls and public reserves in each area are run by local hall committees and reserve committees with funding and support from the Council.

10.3.3 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. Staff experience in Asset Management ranges up to 30 years.

Training and professional development plans are defined on a role-by-role basis, established as part of staff professional appraisal processes. Learning development plans are established that guide the amount and nature of training and development opportunities, to make sure these are tailored to staff specialties and enhance their undertaking of responsibilities. The nature of training opportunities has changed dramatically in the past year and as courses are increasingly adapted for the online environment more training opportunities become available.

The risks associated with staffing and competencies are discussed under the risk section.

10.4 Quality Assurance

10.4.1 Audits

A number of audits are undertaken to assure quality in all aspects of asset and delivery management:

- Procedural Audits are undertaken 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.
- 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.
- Information 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.
- 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.
- Performance Audits establish whether the stated objectives for the operation of the asset have been achieved.

10.4.2 Roading Standards and Guidelines

Council utilises a range 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.

10.5 Data Quality Report

The Road Efficiency Group prepares Data Quality Reports that allows Councils to see where they sit for different criteria relative to the other Road Controlling Authorities across New Zealand. The RAMM system is used to generate reporting automatically for Waka Kotahi NZTA, and datasets for other reporting and analysis systems. These include the Road Efficiency Group 'One Road Network Classification Performance Measures Reporting Tool' (ONRC PMRT).

Selwyn's data quality has been consistently strong since the ONRC PMRT was introduced in 2017. The outputs are used extensively throughout the Selwyn District Council Programme Business Case to support the 2021/22 – 2023/24 National Land Transport Programme, and in a range of Activity Management Planning work.

An improvement plan for data is to be developed as part of the preparation of the next Transportation Information Management Tender document. This will consider data gaps and actions to address those gaps.

2019/20

Selwyn District Council Asset Management Data Quality Report

REG THE ROAD
EFFICIENCY
GROUP

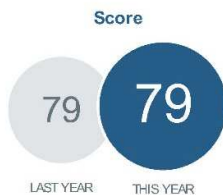
In 2019/20 the Asset Management Data Quality suite of metrics has been expanded to include the previously separated report metrics interrogating the data underpinning the ONRC Performance Measure results. As such, there is no separate ONRC data quality report for 2019/20.

The data quality of each RCA is assessed annually against a suite of data quality metrics. Each RCA metric result is compared against an expected standard and the distribution of all RCAs. The intent is for this report to identify potential issues with how the RCA's data is being collected, managed, and maintained. Further analysis will be required to determine if additional action is needed.

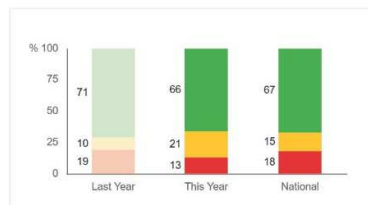
This report assesses the Road Asset Maintenance and Management (RAMM) data supporting asset management and associated decision support systems. For three metrics, renewal as-built data in RAMM are compared with the achieved renewal activity reported in the New Zealand Transport Agency Transport Investment Online (TIO) system.

Refer to the following overviews for further information:

- Data quality framework; The intent and purpose of the data quality framework.
- Data quality dimensions; Why the three quality dimensions; accuracy, completeness and timeliness are important.
- Understanding the data quality results; How to read and understand the annual data quality reports.
- Frequently Asked Questions (FAQs) and detailed metric descriptions in the Performance Measures Reporting Tool.



Overall Results

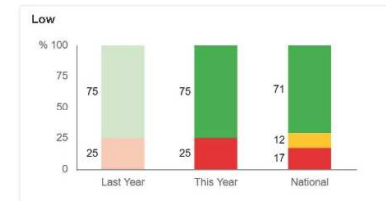
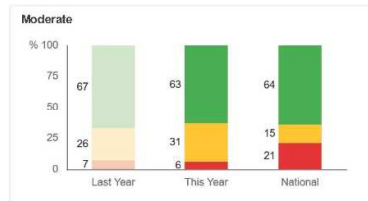
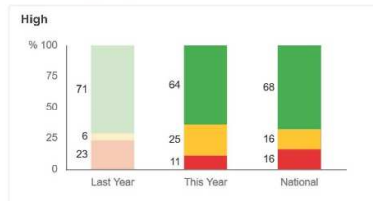


Expected Standard
Minor Issues
Major Issues

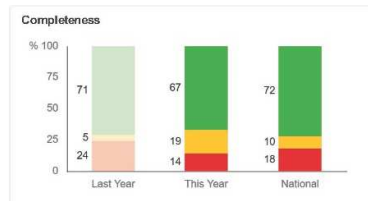
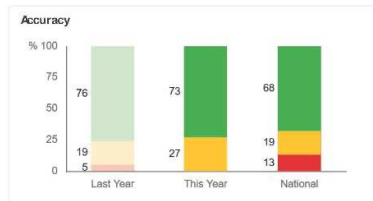
Import Date: 14th August 2020

Data Source: This report uses RAMM data from the annual snapshots loaded onto the ONRC Performance Measures Reporting Tool (PMRT) by the RCA and data input into TIO by the RCA.

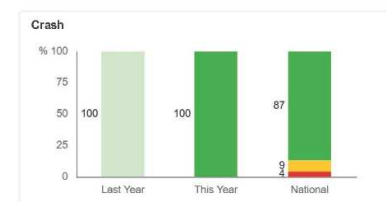
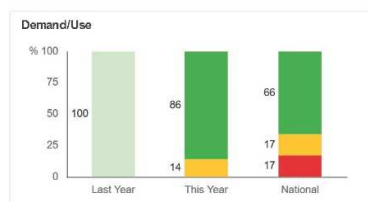
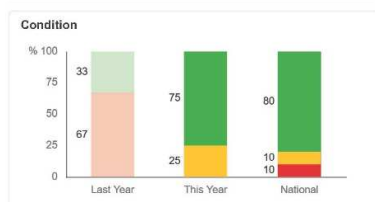
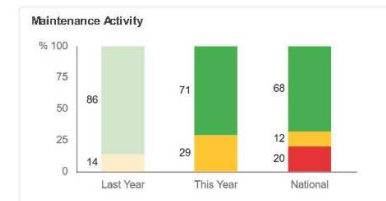
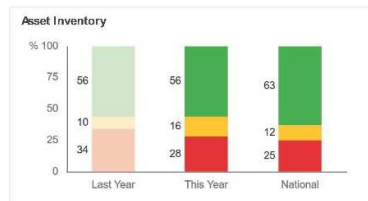
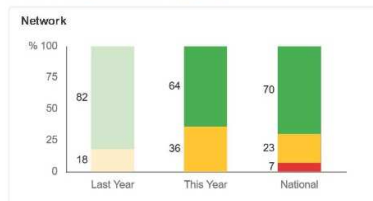
Results by Importance



Results by Quality Dimension

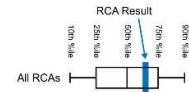


Results by Data Category



2019/20

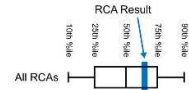
Selwyn District Council Asset Management Data Quality Report



Cat	Sub	Ref	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		98.5	—			
		CWAY3 ^a	ONRC categories assigned to new carriageways	Completeness	High	AMENITY COST-EFFICIENCY SAFETY		100.0	—			
		CWAY4	ONRC categories are assigned	Completeness	High	AMENITY COST-EFFICIENCY SAFETY	✓	100.0	—			
		CWAY7	Sealed/unsealed network correctly defined	Accuracy	High	AMENITY COST-EFFICIENCY SAFETY	✓	98.2	—			
		CWAY5	Assigned ONRC category aligns with traffic data	Accuracy	Moderate	AMENITY COST-EFFICIENCY SAFETY		86.8	▼			
		CWAY6a ^a	Rural carriageways are generally not short	Accuracy	Moderate	AMENITY COST-EFFICIENCY SAFETY	✓	93.0	—			
		CWAY6b ^a	Urban carriageways are generally not short	Accuracy	Moderate	AMENITY COST-EFFICIENCY SAFETY	✓	99.7	—			
		CWAY2a ^a	Rural number of lanes matches carriageway width	Accuracy	Low	AMENITY COST-EFFICIENCY SAFETY	✓	99.9	—			
		CWAY2b ^a	Urban number of lanes matches carriageway width	Accuracy	Low	AMENITY COST-EFFICIENCY SAFETY	✓	98.3	—			
		TREAT1	Treatment Length dimensions match sealed area	Accuracy	High	AMENITY		97.4	—			
Asset Inventory	Treatment Length	TREAT2a	Treatment Lengths are generally not short	Accuracy	High	AMENITY	✓	87.9	—			
		TREAT2b	Treatment Lengths are not too long	Accuracy	High	AMENITY	✓	80.3	—			
		TREAT5	Treatment Lengths match renewals	Timeliness	High	AMENITY	✓	89.3	▼			
		TREAT3	Treatment Lengths match major surfaces	Accuracy	Moderate	AMENITY	✓	88.8	—			
	Surfacing	SURF1a ^a	Achieved chipseal resurfacing renewal programme as-built	Timeliness	High	COST-EFFICIENCY		94.2	—			
		SURF1b ^a	Achieved asphaltic concrete resurfacing renewal programme as-built	Timeliness	High	COST-EFFICIENCY		108.6	▲			
		SURF2	Surface records have valid attribute data	Accuracy	High	COST-EFFICIENCY		99.7	—			
		SURF3	Surface records correctly located	Accuracy	High	COST-EFFICIENCY	✓	94.7	—			
		SURF4	Surface records with Original Cost	Completeness	High	COST-EFFICIENCY	✓	42.8	▲			
		SURF5	Surface records with Work Origin	Completeness	High	COST-EFFICIENCY	✓	66.3	▲			
		SURF6	Surface records newer than pavement	Accuracy	Moderate	COST-EFFICIENCY	✓	81.3	—			
	Pavement	PAVE1 ^a	Achieved pavement renewal programme as-built	Timeliness	High			118.4	—			
		PAVE2 ^a	Pavement layer records have valid attribute data	Accuracy	High			100.0	▲			
		PAVE3 ^a	Pavement layer records with Work Origin	Completeness	High			100.0	—			

2019/20

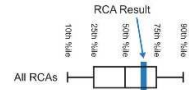
Selwyn District Council Asset Management Data Quality Report



Cat	Sub	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	Major Issues	Minor Issues	Expected Standard
Asset Inventory	Footpath	FOOT1	Footpath asset known	Completeness	Moderate			99.9	▲	85	90	95
		FOOT2	Footpath asset records maintained	Timeliness	Low			16.2	▼	0	5	10
	Drainage	DRAIN1	Culvert assets known	Completeness	Moderate			91.7	▲	20	36	52
		DRAIN2	Culvert asset records maintained	Timeliness	Low			3.6	▼	0	5	10
	SW Channel	SWC1	SWC asset known	Completeness	Moderate			95.4	▲	5	24	43
		SWC2	SWC asset records maintained	Timeliness	Low			11.3	▼	0	5	10
	Signs	SIGNS1	Sign assets known	Completeness	Moderate			66.3	▼	5	24	43
		SIGNS2	Sign asset associated to a 'road'	Accuracy	Low			99.8	▲	90	92	94
		SIGNS3	Sign replacement activity	Timeliness	Low			0.3	▼	0	5	10
	Railings	RAIL1	Railing assets known	Completeness	Moderate			37.9	▲	5	24	43
		RAIL2	Railing asset records maintained	Timeliness	Low			0.8	▼	0	9	18
	Retaining Walls	RETAIN1	Retaining Wall assets known	Completeness	Moderate			0.0	NEW	0	20	40
		RETAIN2	Retaining wall asset records maintained	Timeliness	Low			0.0	NEW	0	20	40
	Streetlights	LIGHTS1	Streetlights associated with a 'road'	Accuracy	Low			99.7	▲	90	92	94
		LIGHTS2	Streetlights records have a light	Completeness	Low			99.8	▲	95	96	97
		LIGHTS3	Streetlight replacement activity	Timeliness	Low			27.6	▲	0	10	20
Maintenance Activity	Maintenance Activity	MAINT2	Complete pavement and surface maintenance activity	Completeness	High	COST EFFICIENCY	✓	10.0	▼	0	5	10
		MAINT4	Correctly located pavement and surface maintenance activity	Accuracy	High	COST EFFICIENCY	✓	95.4	▲	45	56	67
		MAINT6	Level of pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	High	COST EFFICIENCY		99.9	▲	80	85	90
		MAINT7	Pavement and surface maintenance activity has a valid location	Accuracy	High	COST EFFICIENCY	✓	99.5	▲	95	96	97
		MAINT1	Consistency of pavement, surfacing and shoulder maintenance activity units	Accuracy	Moderate	COST EFFICIENCY		1.7	▼	0	1	2
		MAINT3	Pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	Moderate	COST EFFICIENCY		99.7	▲	35	48	61
		MAINT5	Correctly located shoulder and drainage maintenance activity	Accuracy	Low	COST EFFICIENCY		98.2	▲	35	48	61

2019/20

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	Roughness	ROUGH1	Roughness survey within 2.5 years	Completeness	High	AMENITY	✓	97.4	NEW			
		ROUGH2	Roughness data has valid location	Accuracy	High	AMENITY	✓	99.9	—			
	Rating	RATING1	Road rating data current	Completeness	High			91.5	NEW			
		RATING2 ³	Rating data locations valid	Accuracy	Moderate			99.8	NEW			
Demand/Use	Traffic Count	COUNT1	Well targeted traffic count programme	Completeness	High	AMENITY COST EFFICIENCY	✓	86.1	—			
		COUNT3	Traffic loading understood	Completeness	High	AMENITY COST EFFICIENCY	✓	29.8	—			
		COUNT2	Traffic count programme activity on sealed network	Timeliness	Moderate	AMENITY COST EFFICIENCY	✓	44.8	▲			
	Traffic Estimates	ESTIM1	Network has traffic estimates	Completeness	High	AMENITY COST EFFICIENCY	✓	99.9	—			
		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	✓	99.8	—			
		ESTIM3	Traffic estimates updated following counts	Accuracy	High	AMENITY COST EFFICIENCY	✓	97.6	—			
		ESTIM4	Considered traffic loading	Completeness	High	AMENITY COST EFFICIENCY	✓	100.0	—			
		CRASH1	Crash data is recent	Timeliness	Moderate	SAFETY	✓	0.0	NEW			
		CRASH2	Crash records with valid location	Accuracy	Moderate	SAFETY	✓	99.4	—			

Notes:

- 1 - Metric references denoted with a letter at the end are subsets of the same indicator (eg CWAY2a and CWAY2b). Their results are aggregated to report as a single indicator in the charts on page 1.
- 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 either the achieved quantity recorded in TIO or the as-built quantity recorded in RAMM is 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.

10.6 Improvement Plan Items

The following table outlines the status of previously raised improvement items and lists new improvement items that relate specifically to AM Processes and Practices

Item		Action
<i>Previous Improvement Plan Items</i>		
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	Not progressed
<i>New Improvement Plan Items</i>		
IP 10.3	Improvements to measurement systems to support ONRC and mandatory performance measures	
IP 10.4	Data quality standards and methodology review	
IP 10.5	User defined table are not currently detailed	
IP 10.6	Implement new Transportation Information management contract with priority on data quality score improvements	

11.0 FINANCIAL

This section sets out financial statements, funding strategy, depreciation forecast and charges for Council's Transportation Activity.

Context

It should be noted that this financial overview was prepared in the following context:

- NZTA requiring a Business Case Approach be used to justify its investment.
- Amendment of the Government Policy Statement arising from a change in government.

Contents

11.0 FINANCIAL	1
11.1 Financial Strategy	3
11.1.1 Introduction	4
11.1.2 Expenditure Trends to Date	5
11.1.3 Financial Summary	7
11.1.4 Implementation	15
11.2 Funding of Transportation Activity	18
11.2.1 Local Rates	18
11.2.2 Waka Kotahi NZTA Financial Assistance (Investment)	18
11.2.3 Debt	21
11.2.4 Depreciation	21
11.2.5 Fees and Charges	21
11.2.6 Development Contributions	22
11.2.7 Funding Strategy	22
11.3 Key Financial Forecasts Assumptions	23
11.4 Confidence Levels	23
11.4.1 Components of the Financial Forecast	23
11.4.2 Asset Data	24
11.5 Improvement Plan Items	25

This page is left blank for printing

11.1 Financial Strategy

This plan provides the substantiation for budget forecasts put forward in the LTP (2021-2031) for the Transportation activity.

To enable ongoing improvement of budget estimates, a commitment to asset management is vital
To this end, Council will:

- Implement a progressive improvement approach to asset management planning. Improvement projects will be monitored quarterly as part of Council's performance reporting system.
- Prepare, maintain and periodically review an AMP outlining sustainable long-term asset management strategies. The AMP will typically be reviewed three-yearly in advance of the LTP. Annual amendments or updates may be undertaken if significant asset management changes occur.
- Report variations in the adopted annual plan budgets against the original asset management plan forecasts and explain the level of service implications of budget variations.

11.1.1 Introduction

This section provides an overall financial summary for the next decade. These forecasts are based on much longer term projections contained in the AMP and Infrastructure Strategy spreadsheets.

All forecasts are presented in two forms:

- The amounts detailed in the AMP, which do not include forecast inflation.
- The amounts for inclusion in the Long Term Plan, which include forecast inflation as required by the Local Government Act 2002.

The projected total annual costs and the methods by which they are proposed to be funded for the next decade are indicated in the Figures and Tables in Section 11.1.2.

The funding apportionment rationale is contained in the Council's Revenue and Financing Policy.

All infrastructure expenditure falls into one of following categories:

1. **Operational expenditure** - Activities that have no effect on asset condition but are necessary to keep the asset utilised appropriately, i.e. overhead, management costs.
2. **Maintenance expenditure** - The on-going day to day work required to keep the assets operating at the required LoS. Maintenance expenditure ensures assets reach the assumed effective life.
3. **Renewal expenditure** - Significant works which restores or replaces an existing asset to its original size, condition or capacity.
4. **New Improvement Works expenditure** (also called Development and Capital works) - Works to create a new asset, or to upgrade or improve an existing asset beyond its original capacity or performance in response to changes in usage, customer expectations, or anticipated future need. Improvement works can be driven by changing customer expectations for an improved LoS or the need for expansion of the network (Growth).
5. **Disposal expenditure** - Any costs associated with the disposal of a decommissioned asset.

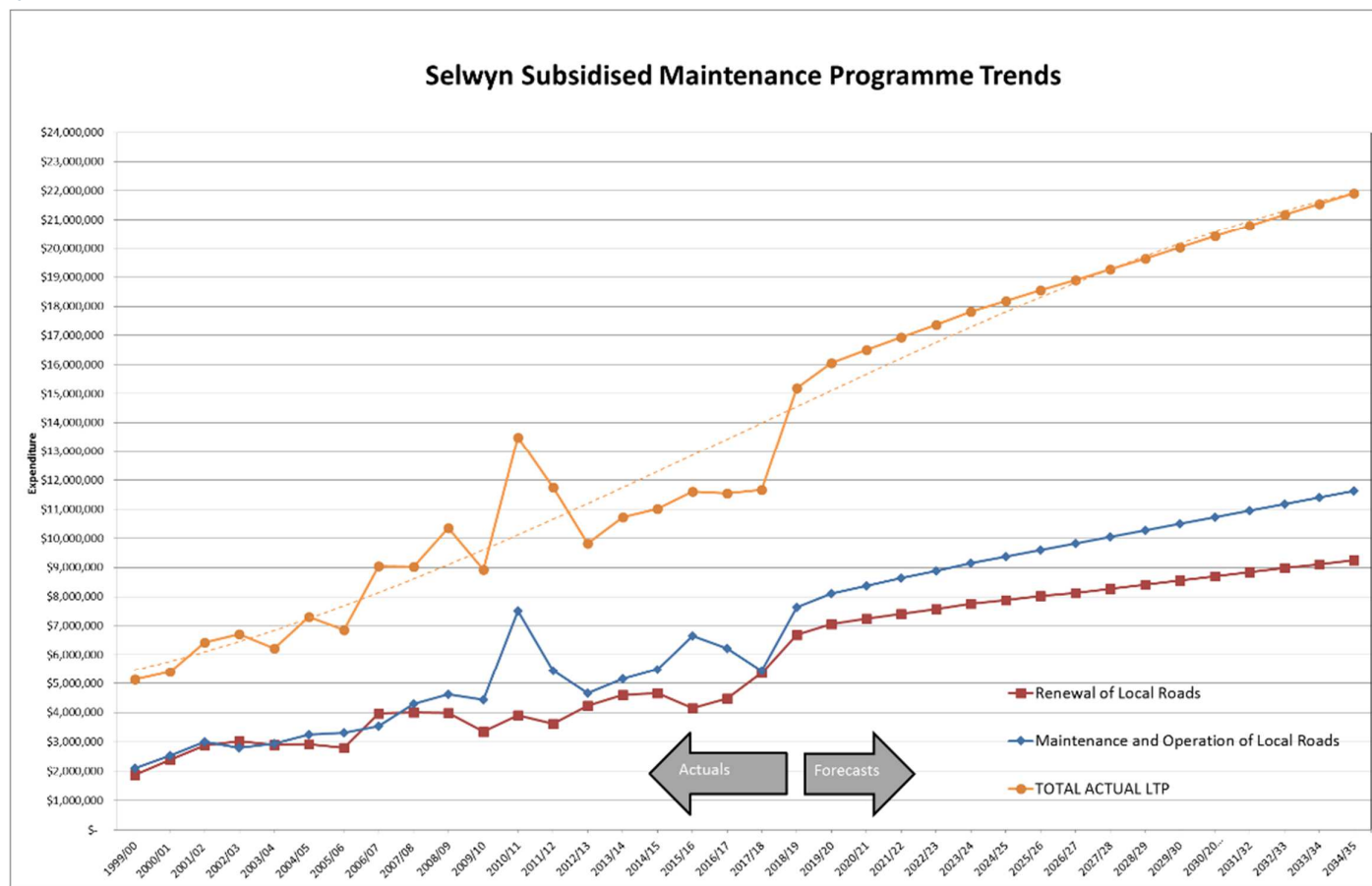
If a project results in the replacement of an asset due to physical deterioration and also provides for capacity that helps meet increased demand, the proportions are allocated against Improvement and Renewal categories on the basis of marginal cost.

11.1.2 Expenditure Trends to Date

Tracking actual expenditure provides a comparison for forecasts; Figure 11.1 illustrates the trend from 1999/2000 to 2019/20.

The 2010-11 earthquakes had a significant impact on the 2010/11 financial year with total expenditure well above the trend. Since then growth driven expenditure has been the most significant item.

Figure 11.1: Expenditure Trends to Date



(Source: Transportation LTP Activities Summary – to be updated)

N.B. From 2015/16 administration cost is included within Activity Class/Work Category cost and is no longer a separate line item.

11.1.3 Financial Summary

A 10-year forecast of expenditure for each asset group in the Maintenance and Operations, Renewals, New Improvements and Disposals category is separated into two major categories:

- Subsidised expenditure, which is co-funded by Council and Waka Kotahi NZTA (the Land Transport Programme).
- Non-subsidised expenditure, which is fully funded by the Council.

The following charts and tables show the 30 year overall roading forecast in summary.

The charts and tables reflects the project moderation and prioritisation process which is discussed in the Section 7 of this AMP. In summary this means:

In 2018 the capital project prioritisation approach was:

2018 to 2027 Programme: 'high priority' projects planned for 2018 to 2027

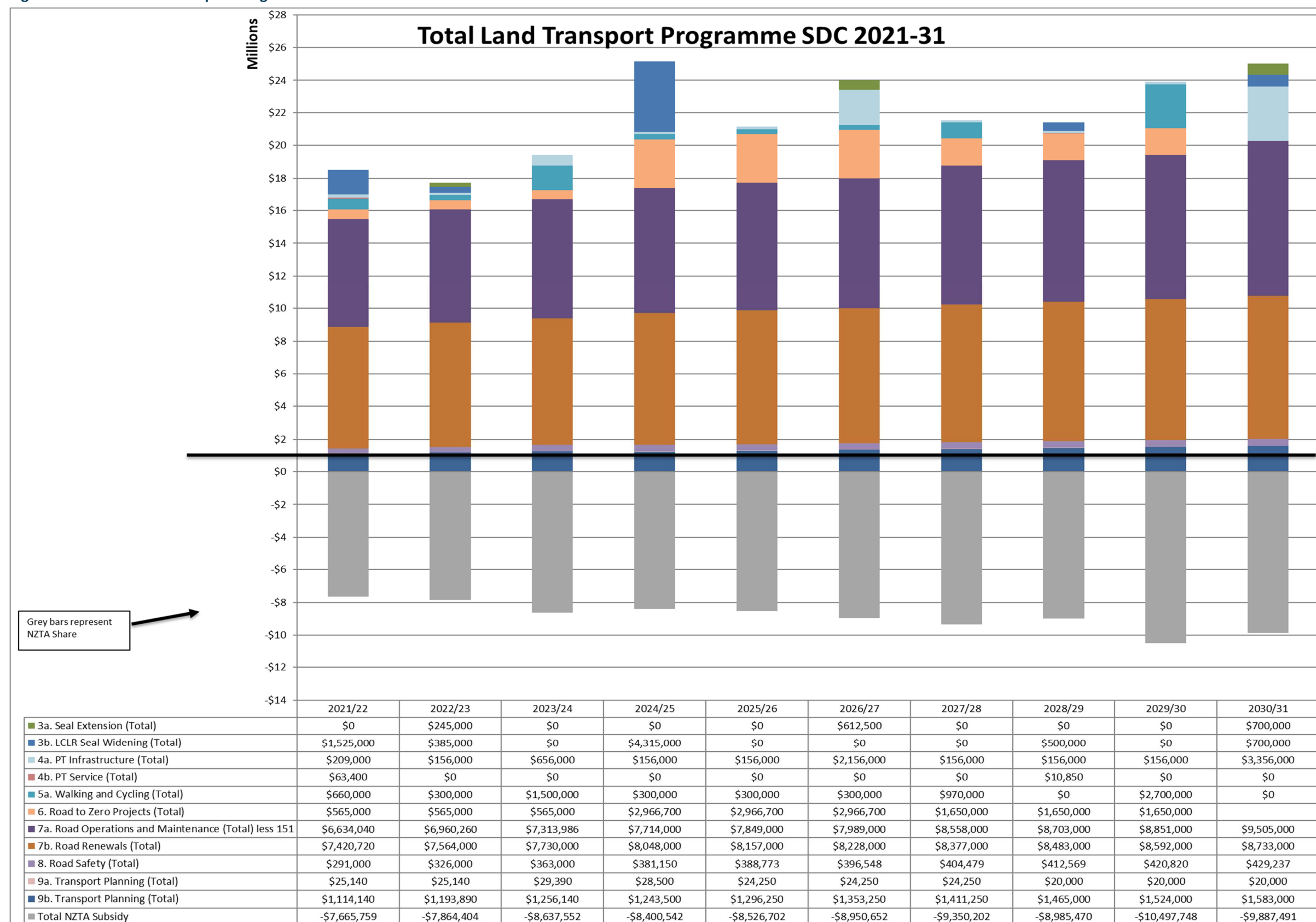
2028 to 2037 Programme: (a) 'high priority' projects planned for 2028 to 2037
(b) 'medium priority' project planned for 2018 to 2027 which have been delayed by 10 years

2038 to 2047 Programme: (a) 'high priority' projects planned for 2038 to 2047
(b) 'low priority' project planned for 2018 to 2027 which have been delayed by 20 years
(c) 'medium priority' project planned for 2028 to 2037 which have been delayed by 10 years

This process continued through into the 2021-31 LTP, with adjustments made to align with:

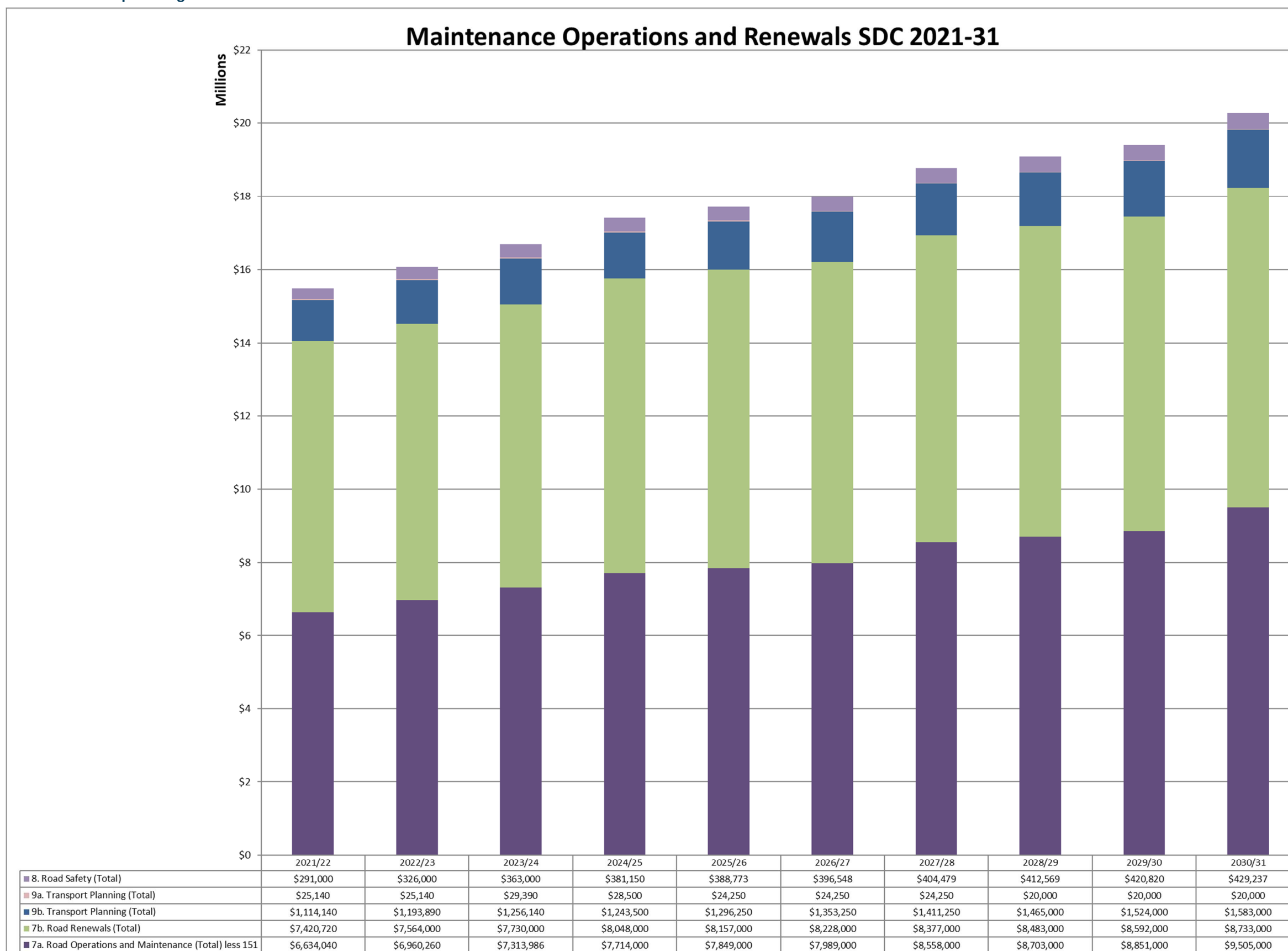
- National priorities include committed projects such as NZ UP
- Regional priorities and committed projects
- Greater Christchurch Partnership priorities and committed projects
- Moderated safety projects

Figure 11.2: Total Land Transport Programme 2021-31



(Source: 2021_10_27 Selwyn transport forecast)

Figure 11.3: Subsidised Land Transport Programme 2021-31



(Source: 2021_10_27 Selwyn transport forecast)

Table 11.1: Subsidised Land Transport Programme (Maintenance and Renewals) 2021-31

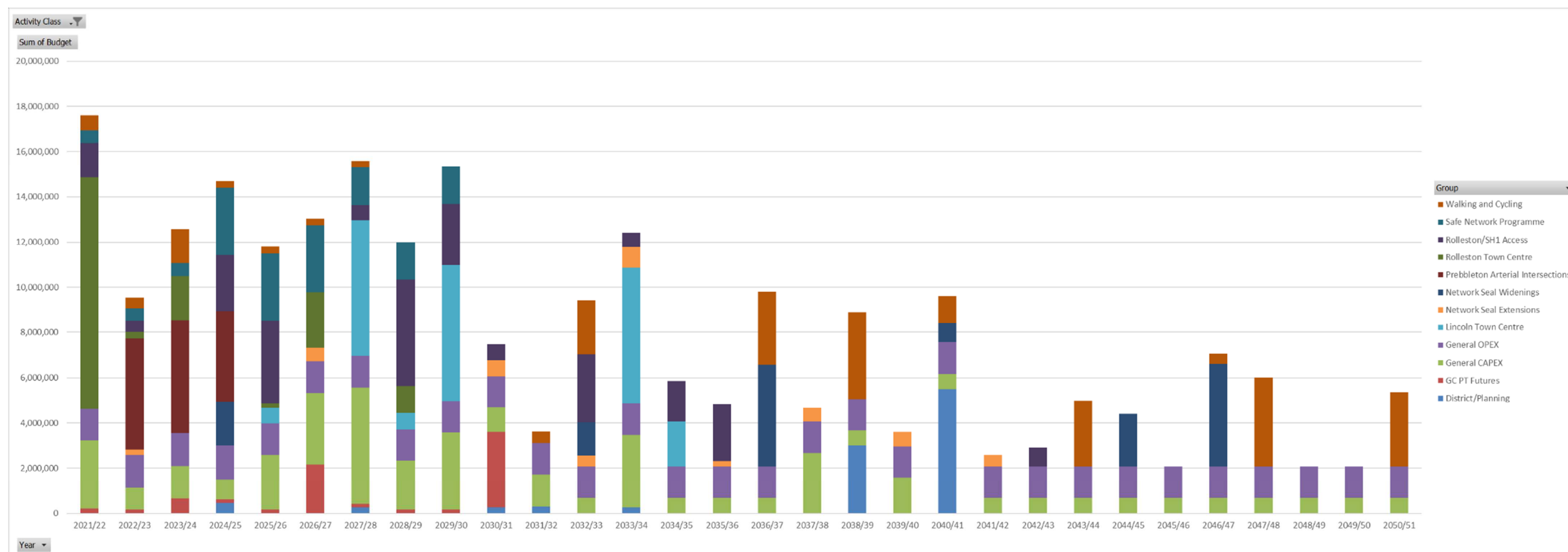
Cat.	Activity	2020/21 BASELINE	2021/22 Proposed	2022/23 Proposed	2023/24 Proposed	2024/25 Proposed	2025/26 Proposed	2026/27 Proposed	2027/28 Proposed	2028/29 Proposed	2029/30 Proposed	2030/31 Proposed
003	Activity Management Plans	\$20,890	\$20,890	\$20,890	\$20,890	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
002	Traffic Model		\$4,250	\$4,250	\$8,500	\$8,500	\$4,250	\$4,250	\$4,250			
432	Promotion, Education and Advertising		\$291,000	\$326,000	\$363,000	\$381,150	\$388,773	\$396,548	\$404,479	\$412,569	\$420,820	\$429,237
111	Sealed Pavement Maintenance	\$1,873,000	\$2,110,140	\$2,376,000	\$2,553,000	\$2,757,000	\$2,842,000	\$2,930,000	\$3,313,000	\$3,406,000	\$3,501,000	\$3,950,000
112	Unsealed Pavement Maintenance	\$853,000	\$938,300	\$949,000	\$961,000	\$969,000	\$978,000	\$987,000	\$997,000	\$1,006,000	\$1,015,000	\$1,024,000
113	Routine Drainage Maintenance	\$1,105,000	\$1,105,000	\$1,017,000	\$1,029,000	\$1,142,000	\$1,152,000	\$1,163,000	\$1,174,000	\$1,184,000	\$1,195,000	\$1,206,000
114	Structures Maintenance	\$208,000	\$208,000	\$210,000	\$213,000	\$215,000	\$217,000	\$219,000	\$221,000	\$223,000	\$225,000	\$227,000
121	Environmental Maintenance	\$872,000	\$872,000	\$882,000	\$893,000	\$1,035,000	\$1,044,000	\$1,054,000	\$1,064,000	\$1,073,000	\$1,083,000	\$1,093,000
122	Network Services Maintenance	\$1,006,000	\$1,106,600	\$1,217,260	\$1,338,986	\$1,257,000	\$1,268,000	\$1,280,000	\$1,420,000	\$1,433,000	\$1,446,000	\$1,603,000
123	Network Operations	\$78,000	\$90,000	\$97,000	\$104,000	\$107,000	\$111,000	\$114,000	\$117,000	\$121,000	\$124,000	\$128,000
124	Cycle Path Maintenance	\$52,000	\$52,000	\$53,000	\$53,000	\$59,000	\$60,000	\$60,000	\$67,000	\$67,000	\$68,000	\$75,000
125	Footpath Maintenance	\$100,000	\$100,000	\$107,000	\$116,000	\$119,000	\$123,000	\$127,000	\$130,000	\$134,000	\$138,000	\$142,000
131	Level Crossing Warning Devices	\$52,000	\$52,000	\$52,000	\$53,000	\$54,000	\$54,000	\$55,000	\$55,000	\$56,000	\$56,000	\$57,000
151	Network and Asset Management	\$1,089,000	\$1,089,000	\$1,100,000	\$1,158,000	\$1,215,000	\$1,272,000	\$1,329,000	\$1,387,000	\$1,445,000	\$1,504,000	\$1,563,000
		\$7,288,000	\$7,723,040	\$8,060,260	\$8,471,986	\$8,929,000	\$9,121,000	\$9,318,000	\$9,945,000	\$10,148,000	\$10,355,000	\$11,068,000
211	Unsealed Road Metalling	\$1,108,000	\$1,207,720	\$1,222,000	\$1,236,000	\$1,248,000	\$1,260,000	\$1,271,000	\$1,283,000	\$1,294,000	\$1,306,000	\$1,318,000
212	Sealed Road Resurfacing	\$3,607,000	\$4,240,000	\$4,370,000	\$4,485,000	\$4,525,000	\$4,567,000	\$4,609,000	\$4,652,000	\$4,694,000	\$4,736,000	\$4,779,000
213	Drainage Renewals	\$156,000	\$206,000	\$208,000	\$210,000	\$244,000	\$247,000	\$249,000	\$289,000	\$291,000	\$294,000	\$326,000
214	Sealed Road Pavement Rehabilitation	\$995,000	\$1,002,000	\$972,000	\$976,000	\$1,193,000	\$1,230,000	\$1,230,000	\$1,268,000	\$1,304,000	\$1,340,000	\$1,378,000
215	Structures Component Replacement	\$115,000	\$115,000	\$116,000	\$118,000	\$119,000	\$120,000	\$121,000	\$122,000	\$123,000	\$124,000	\$125,000
222	Traffic Services Renewals	\$317,220	\$350,000	\$354,000	\$358,000	\$362,000	\$365,000	\$368,000	\$372,000	\$375,000	\$378,000	\$382,000
224	Cycle Path Renewals											
225	Footpath renewals	\$300,000	\$300,000	\$322,000	\$347,000	\$357,000	\$368,000	\$380,000	\$391,000	\$402,000	\$414,000	\$425,000
		\$6,598,220	\$7,420,720	\$7,564,000	\$7,730,000	\$8,048,000	\$8,157,000	\$8,228,000	\$8,377,000	\$8,483,000	\$8,592,000	\$8,733,000
		\$13,886,220	\$15,459,900	\$15,975,400	\$16,594,376	\$17,386,650	\$17,691,023	\$17,966,798	\$18,750,729	\$19,063,569	\$19,387,820	\$20,250,237

Local Road Maintenance (FOR NZTA 10 YEAR
FORECAST)

\$14,054,760 \$14,524,260 \$15,043,986 \$15,762,000 \$16,006,000 \$16,217,000 \$16,935,000 \$17,186,000 \$17,443,000 \$18,238,000

(Source: 2021_10_27 Selwyn transport forecast)

Figure 11.4: CAPEX Program 2021/22 2037/38



(Source: 2021_10_27 Selwyn transport forecast)

This page is left blank for printing

Table 11.2: Main Projects Funded by the 2021-31 Long Term Plan

Main Projects Funded by the 2021-31 Long Term Plan, and Identified Beyond			
Project	Year	Budget	Description
Intersection Upgrades			
Trents Road Widening	2022/23	\$ 385,000	between Oakely Drive and Shands Road
Shands/Trents Road Roundabout	2022/23	\$ 4,500,000	safety upgrade - Prebbleton arterial network
Shands/Hamptons Road Roundabout	2023/24	\$ 5,000,000	safety upgrade - Prebbleton arterial network
Hamptons Road Widening	2024/25	\$ 500,000	between Springs and Shands Road
Spring/Hamptons Road Roundabout	2024/25	\$ 3,500,000	safety upgrade - Prebbleton arterial network
Brookside Road/Rolleston Drive Roundabout	2024/25	\$ 600,000	safety upgrade
Lowes Road/Levi Drive/Masefield Drive Intersection Upgrade	2025/26	\$ 3,500,000	safety upgrade - link to Southern Motorway Interchange
Spring Road /Tosswill Road Traffic Signals	2026/27	\$ 2,500,000	safety upgrade - Prebbleton main street
Selwyn/Weedons Road Roundabout	2027/28	\$ 4,500,000	safety upgrade - Rolleston southern arterial link
Lincoln Rolleston Road/Selwyn Road Intersection Upgrade	2028/29	\$ 1,500,000	safety upgrade - Rolleston southern arterial link
Walkers Road/Two Chain Road Roundabout	2028/29	\$ 1,200,000	safety upgrade - Rolleston Industrial Zone southern link
Goulds/East Maddisons Road Roundabout	2029/30	\$ 2,500,000	connects Farington and new subdivisions to Goulds Road
		\$ 30,185,000	
Lincoln Town Centre Upgrade			
Lincoln Public Carpark Stage 1	2025/26	\$ 703,000	further town centre parking north of Gerald St
Gerald Street/West Belt Traffic Signals	2027/28	\$ 2,000,000	part of main street upgrade
Gerald Street Upgrade Eastern End	2027/28	\$ 4,000,000	between Kildare Terrace and West Belt
Lincoln Public Carpark Stage 2	2028/29	\$ 720,000	further town centre parking south of Gerald Street
Gerald Street/Vernon Drive Traffic Signals	2029/30	\$ 2,500,000	part of main street upgrade
Gerald Street Upgrade Transitional Section	2029/30	\$ 3,500,000	between West Belt and Veron Drive
		\$ 13,423,000	
Other			
Township Street Light LED Upgrade	2021/22	\$ 1,600,000	completes the district wide conversion started in 2017
Welcome to Selwyn' Road Sign Replacements	2024/25	\$ 120,000	replacement signs at District boundaries
Public Transport Facilities			
Foster Park - Park N Ride	2023/24	\$ 500,000	improved parking to access express bus services
Lincoln 'Park N Ride'	2026/27	\$ 2,000,000	new facilities for parking to access to express bus services
Rolleston 'Park N Ride'	2030/31	\$ 3,200,000	new facilities for parking to access to express bus services
		\$ 5,700,000	
Greater Christchurch Bus Stop Improvement Programme	Annual	\$ 156,000	improved bus stops, shelters and Information systems to support Metro Bus Services in the district
Road Upgrades			
Weedons Ross Road Widening	2021/22	\$ 1,525,000	seal widening and intersection upgrades from Maddisons Road to West Melton
Weedons Ross Road, West Melton Upgrade	2021/22	\$ 250,000	Coordinated with NZTA upgrade of Weedons Ross Road/SH73 Intersection
Small Bridge Replacements	2021/23	\$ 300,000	replacement of small weight restricted or damaged bridges - Harper River Diversion Bridge
Railway Road Upgrade	2022/23	\$ 500,000	widening and sealing between Detroit Drive and West Melton Road to improve access to Izone
Springton Rolleston Road Upgrade Stage 2	2022/23	\$ 115,000	kerb and channel north of Broadlands Drive to Lowes Road
Tancred's Road Seal Extension	2022/23	\$ 245,000	between Birchs Road and Springs Road as part of new subdivision works in area
George Holmes Road Upgrade	2023/24	\$ 250,000	kerbing and footpath extensions from Jones Road
Old Tai Tapu Road Undergrounding	2023/24	\$ 330,000	undergrounding of overhead wires along Old Tai Tapu Road past church and library
East Maddisons Road Upgrade	2024/25	\$ 210,000	kerbing and footpath between Rockburn St to north of Goulds Road east side
Ellesmere Road Seal Widening	2024/25	\$ 1,950,000	seal widening and intersection upgrades between Edward Street and Knights Stream Bridge
Hoskyns Road Widening Stage 1	2024/25	\$ 1,885,000	seal widening and intersection upgrades between Maddisons Road and Sandy Knolls Road
Meijer Drive Extension	2025/26	\$ 1,500,000	extension on to Boundary Road as part of development of land block in this area
Small Bridge Replacements	2025/26	\$ 250,000	replacement of small weight restricted or damaged bridges
Coaltrack Road Seal Extension Stage 1	2026/27	\$ 613,000	between Stranges Road and Golf club
Jones Road/Two Chain Road Realignment	2028/29	\$ 3,000,000	safety upgrade - Rolleston Industrial Zone southern link
Two Chain Road Widening Stage 1	2028/29	\$ 500,000	between Walkers Road and Ward Road - Rolleston Industrial Zone southern link
Small Bridge Replacements	2029/30	\$ 250,000	replacement of small weight restricted or damaged bridges
Brookside Road Seal Extension	2030/31	\$ 700,000	between Edward Road and Burnham Road
Hoskyns Road Widening Stage 2	2030/31	\$ 700,000	between Sandy Knolls Road and SH73
Rural Ford Upgrade	2030/31	\$ 400,000	Malvern area unsealed ford upgrades with concrete bases
		\$ 15,453,000	
Road Renewal Funding	Annual	\$ 1,000,000	additional funding for district road repairs beyond national funding allocations
Rolleston Town Centre			
Rolleston Public Carpark 3	2021/22	\$ 895,000	part of a series of public carparks for the new town centre staged to match development
Rolleston Public Carpark 4	2021/22	\$ 915,000	part of a series of public carparks for the new town centre staged to match development
Rolleston Public Carpark 6	2021/22	\$ 946,000	part of a series of public carparks for the new town centre staged to match development
Wordsworth Street South Extension	2021/22	\$ 1,750,000	new access road off Rolleston Drive to service northern retail developments and car parking
Rolleston Drive Access Upgrade	2021/22	\$ 1,980,000	upgrade west of Tennyson Street to slow vehicle speeds plus improved crossing facilities to town centre
Traffic Signals at Rolleston Drive/Tennyson Street	2021/22	\$ 3,000,000	safety upgrade - also for safer pedestrian crossing
Wordsworth Street North Extension	2021/22	\$ 740,000	new access road south of Moore Street to access reserve, retail developments and car parking
Markham Way Traffic Calming	2022/23	\$ 300,000	upgrade to slow vehicle speeds and install additional footpath
Service Lane	2023/24	\$ 570,000	provides loading and freight access to town centre retail developments
Rolleston Public Carpark 5	2023/24	\$ 1,368,000	part of a series of public carparks for the new town centre staged to match development
Rolleston Public Carpark 7	2025/26	\$ 185,000	part of a series of public carparks for the new town centre staged to match development
Tennyson/Moore Street Roundabout	2026/27	\$ 1,015,000	safety upgrade as part of Moore Street extension
Moore Street Extension	2026/27	\$ 1,435,000	new road between Norman Kirk Drive and Tennyson Street
Rolleston Public Carpark 8	2028/29	\$ 1,200,000	part of a series of public carparks for the new town centre staged to match development
		\$ 16,299,000	
Safety Upgrades			
Mathias Street Level Crossing Upgrade	2024/25	\$ 250,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
Rolleston Rail Crossing Pedestrian Upgrades	2025/26	\$ 165,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
Creyke Road Level Crossing Upgrade	2027/28	\$ 250,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
North Terrace Level Crossing Upgrade	2030/31	\$ 250,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
		\$ 915,000	
"Road to Zero" Road Safety Improvement Projects	Annual	\$ 1,550,000	Annual average for a range of road and intersection upgrades to contribute to national safety objectives
Road Safety and Behaviour Programmes	Annual	\$ 327,000	Annual average over first 3 years, alcohol, driver and cycle training, speed and more district wide programmes
Walking and Cycling			
Glentunnel to Whitecliffs Domain Cycleway	2021/22	\$ 360,000	off road cycleway alongside Whitecliffs Road
Mountains to Sea Cycleway Feasibility Study	2022/23	\$ 150,000	to understand what is involved to create a cycleway from Arthurs Pass to the East Coast through the district
Templeton to Prebbleton Cycleway	2023/24	\$ 1,200,000	off road cycleway alongside Trents Road - links between planned City and Rail Trail networks
Jones Road Cycleway	2027/28	\$ 670,000	between Jones Road and Weedons Road - links to Rolleston to Templeton Cycleway
Rolleston to Burnham Cycleway	2029/30	\$ 2,700,000	from Elizabeth St to Aylesbury Road along northside of SH1 and along Runners Road
		\$ 5,080,000	
Township Footpath Extension Programme	Annual	\$ 300,000	to complete, extend, fill missing sections of footpaths across the districts townships up to 2027/28

Table 11.3: Projects funded beyond 2021-31 Plan

Projects funded beyond this 2021-31 Plan			
Project	Year	Budget	Description
Intersection Upgrades			
Burnham School Road/Dunns Crossing Road Traffic Signals	2032/33	\$ 3,000,000	safety upgrade - also for safer pedestrians/school crossing
Gerald/James/Edward Street Traffic Signals	2034/35	\$ 2,000,000	part of main street upgrade
Lowes Road/Dunns Crossing Road Roundabout	2035/36	\$ 2,500,000	safety upgrade
Gerald Street Upgrade Western End	2033/34	\$ 2,500,000	part of main street upgrade
Traffic Signals Springs/Gerald/Ellesmere Junction Road	2033/34	\$ 3,500,000	part of main street upgrade
		\$ 13,500,000	
Other			
Dark Sky's LED Street Lighting Upgrades	2039/40	\$ 900,000	replacement of street lighting in key natural, coastal and observatory areas for "Dark Sky's" accreditation
Road Upgrades			
Springs Road Upgrade Stage 2	2031/32	\$ 750,000	between Trents and Hamptons Road, undergrounding overheads and road reconstruction
East Maddisons Road Seal Extension	2032/33	\$ 210,000	between Selwyn Road and Ellesmere Junction Road
Kerrs Road Seal Extension	2032/33	\$ 280,000	between Two Chain Road and West Melton Road
Weedons Road Widening	2032/33	\$ 1,475,000	between Levi Road and Shands Road
Broadlands Drive Stage 3 Extension	2033/34	\$ 2,300,000	new section road between Nicolau Drive and Lincoln Rolleston Road - arterial link
Coaltrack Road Seal Extension Stage 3	2033/34	\$ 420,000	between Greendale Road and Bridge Road
Coaltrack Road Seal Extension Stage 2	2033/34	\$ 490,000	between Hollands Road and Ridgens Road
Clintons Road Seal Extension	2035/36	\$ 245,000	south of Bangor Road to Darfield
Leaches Road Seal Widening	2036/37	\$ 4,500,000	between Rockward Road and SH77 Windwhistle
Prebbleton Streets Upgrade	2037/38	\$ 2,000,000	undergrounding overheads, road reconstruction works Charles, William and Norris Street
Kings Road Seal Extension	2037/38	\$ 263,000	between Main Rakaia Road and Glasseys Road
Crekye Road Seal Extension	2037/38	\$ 332,000	between Telegraph Road and Wards Road
High Street Leeston Upgrade	2038/39	\$ 3,000,000	between Manse Road and Messines Street undergrounding overheads, road reconstruction works
Kynvetts Road Seal Extension	2039/40	\$ 630,000	between Heselton Road and Glasseys Road
High Street Southbridge Town Centre Upgrade	2040/41	\$ 5,500,000	undergrounding overheads and upgrades to footpaths, paving to improve amenity
Two Chain Road Widening Stage 2	2040/41	\$ 850,000	between Walkers Road and Aylesbury Road - Rolleston Industrial Zone link from Burnham/SH1
Clintons Road Seal Extension	2041/42	\$ 525,000	between Bealey Road and Adams Road
Burnham School Road Widening	2042/43	\$ 850,000	between Burnham Road and Dunns Crossing Road - Rolleston township south link from Burnham/SH1
Aylesbury Road Widening	2044/45	\$ 2,325,000	between Burdons Road and Bealey Road
Wards Road Seal Widening	2046/47	\$ 4,550,000	between Two Chain Road and Bealey Road
		\$ 31,495,000	
Safety			
Horndon Street North Level Crossing Upgrade	2031/32	\$ 300,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
Homebush Road level Crossing Upgrade	2033/34	\$ 250,000	safety upgrade of existing rail level crossing with alarm and/or barrier features
		\$ 550,000	
Walking and Cycling			
Prebbleton to Southern Motorway Cycleway	2031/32	\$ 500,000	along Springs Road north of Prebbleton to new motorway overpass facilities
Darfield to Kirwee Cycleway	2032/33	\$ 2,400,000	off road cycleway alongside SH73, railway line
Rolleston South to Rolleston Industrial Zone Cycleway	2033/34	\$ 645,000	Off road cycleway connecting to Rolleston to Burnham Cycleway from Jones and Two Chain Road
West Melton to Rolleston Cycleway	2034/35	\$ 1,800,000	extends existing Hoskyns Road cycleway and new off road cycleway on West Melton Road
Leeston to Southbridge Cycleway	2036/37	\$ 3,250,000	off road cycleway alongside Southbridge Leeston Road
Darfield to Sheffield Cycleway	2038/39	\$ 3,840,000	off road cycleway alongside SH73, railway line
Springston to Rolleston Cycleway	2040/41	\$ 1,200,000	off road cycleway along Rattletrack Road and Springston Rolleston Road
Sheffield to Springfield Cycleway	2043/44	\$ 2,940,000	off road cycleway alongside SH73, railway line
Springs Road to Lincoln Uni Cycleway	2046/47	\$ 444,000	from Boundary Rd Rolleston to Lincoln cycleway direct to Gerald Street and Lincoln University
West Melton to Kirwee Cycleway	2047/48	\$ 3,960,000	off road cycleway alongside SH73 and railway line
West Melton to Waimakariri River Park Cycleway	2050/51	\$ 3,300,000	alongside Weedons/Bells/Stackhouse Rd then unformed road section to river at Thompsons Rd end
		\$ 24,279,000	

11.1.4 Implementation

The key issues identified in terms of the financial forecast are:

1. Securing sufficient NZTA investment.
2. Ensuring there is sufficient funding to keep maintenance intervention at appropriate levels.
3. Aligning works with State Highway projects and other demand driven projects.
4. The impact of new assets - Council and Development initiated.
5. The potential bow-wave of reseals; particularly Asphaltic Concrete from new developments.

Securing Sufficient Investment

Funding the Transport Activity is dependent on rates, NZTA investment and development contributions. Any reduction in NZTA investment results in either an increase in the rates requirement or a reduction in the works programme.

Maintenance Funding

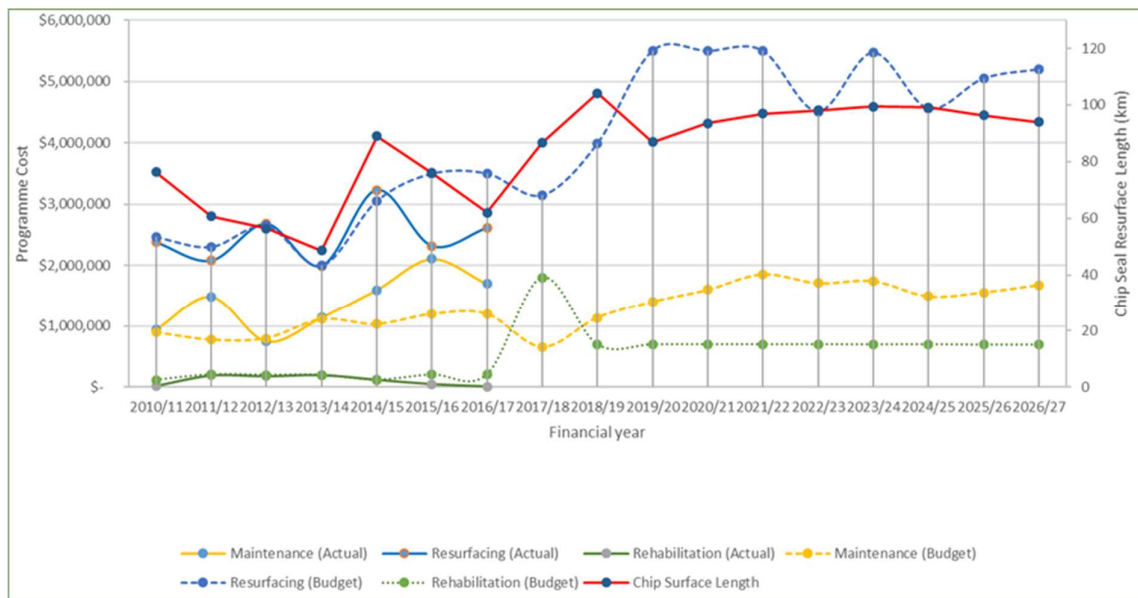
Council's maintenance strategy involves 'doing the right job at the right time'. Ensuring there is sufficient funding to keep maintenance intervention at appropriate levels is necessary to avoid unacceptable LoS failures or damage to the asset which will be more expensive to repair if an intervention cannot be actioned due to funding constraints.

The approaching bow-wave of reseals

Periods of rapid growth in the District have seen an increase in the extent of new assets vested from Developers or built by Council. This has an on-going impact in the future reseal programme. This is particularly notable for Asphaltic Concrete which is commonly used in new subdivisions; with a peak in the quantity of future reseals combining with a higher unit cost of AC

A Strategic Investment Assessment Undertaken in 2017 proposed a forward programme aimed to step up every three years to an appropriate programme.

Figure 11.5: Predicted Reseals and Rehabilitations versus Depreciation



(Source: Strategic Investment Assessment FINAL)

Aligning works with State Highway projects and other demand driven projects

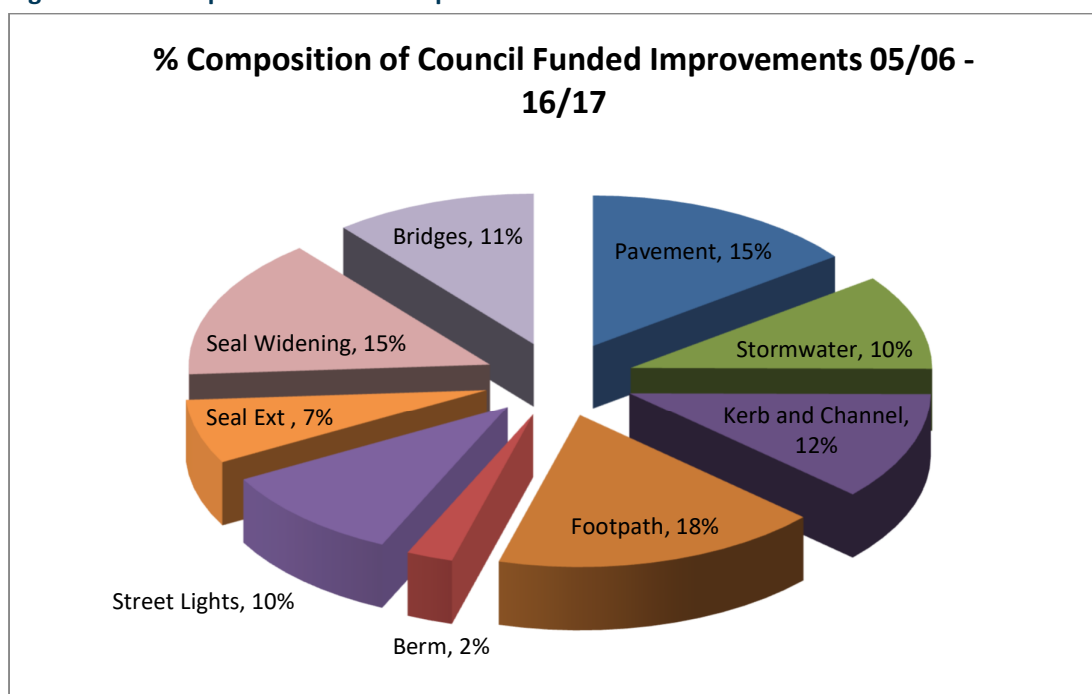
Council's programme should be sufficiently flexible to respond to projects such as the Christchurch Southern Motorway, Rolleston SH1 Improvements and other developments within the District. This is a challenge in a fiscally restrained environment and where programmes are 'locked in' in advance. This plan aims to identify the relevant projects and provide a timely programme that will align. Where capital works may not be immediately achievable, adequate maintenance interventions will be required.

Impact of Increasing Asset Base

With the on-going growth and development in the District and Greater Christchurch area, there is a considerable extent of assets being added to Council's Transportation portfolio each year. New assets are either vested in Council as a result of subdivision development or from improvement projects completed by Council. The impact of the overall lifecycle of these new assets is an increasing issue for Council and likely to become a priority.

The combination of vested assets and Council initiated improvements is illustrated in Figure 11-7 to Figure 11-9 following.

Figure 11.6: Composition of Asset Improvements



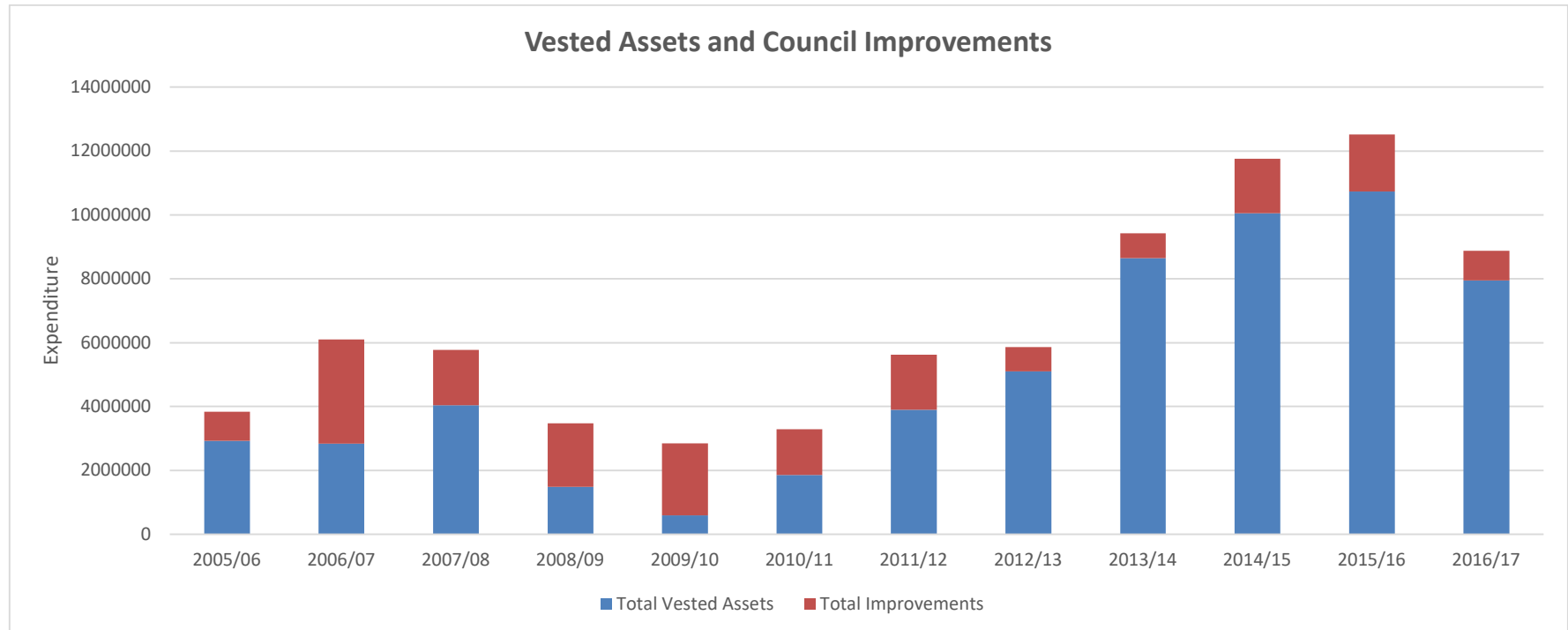
(Source: Transportation Improvement Works Summary (to be updated))

Renewals: 10 Year Financial Renewal Plans (high level)

The overall renewal plans is a combination of the renewal requirements determined for each asset group. The groups have different characteristics and when combined and provide a portfolio type view of the renewal forecast.

The renewal requirements for each asset group is discussed in Section 9 of this AMP – Lifecycle Management.

Figure 11.7: New Infrastructure Sources



(Source: Transportation Improvement Works Summary (to be updated))

11.2 Funding of Transportation Activity

11.2.1 Local Rates

Council manages the Transportation Activity on a District wide basis. Rates are collected for Transportation from across the District.

11.2.2 Waka Kotahi NZTA Financial Assistance (Investment)

Roading activity receives financial assistance from the NZTA and projections of this revenue are carried forward at the current financial assistance rate (FAR).

Council has been advised that NZTA's financial assistance rates of 51% will continue for the 2021-2024 NLTP for all Activity Classes.

The inherent risk in forecasting subsidised expenditure is that subsidy provided by NZTA could decrease which places a greater burden of the net cost of these activities to Council, and that projects expected to be subsidised may not be eligible for financial assistance by the time they are due for funding.

Risk reduction is inherent in asset management planning, and expenditure is included in the category most appropriate for the type of work or circumstances in which it will be carried out.

Full hypothecation of the National Land Transport Fund results in 'ring fencing' of income and expenditure nationally. This has impacted on the funds available for various activity classes as discussed under the Government's Policy Statement on Land Transport Funding (see Section 3).

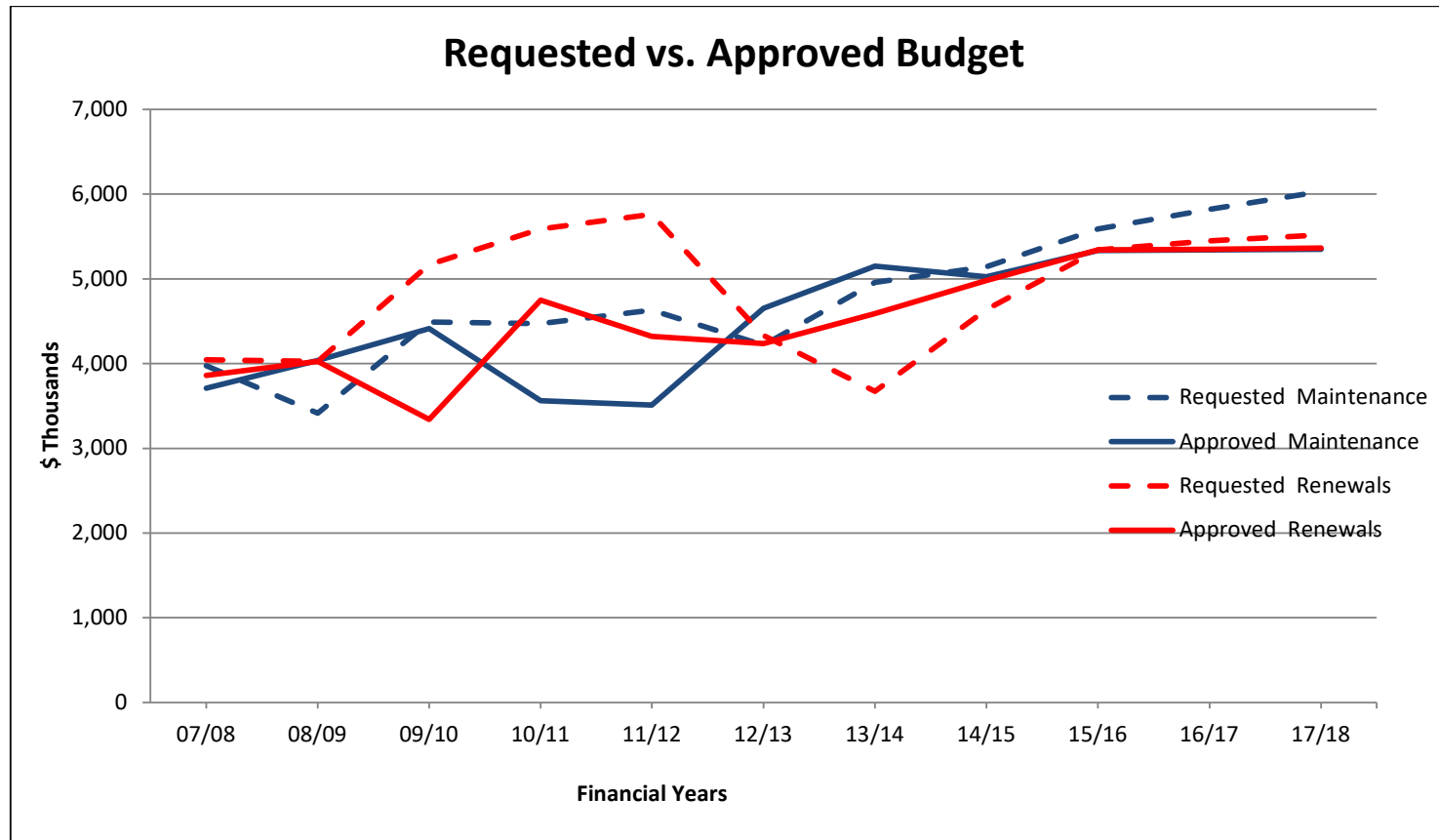
The difference between funding requested and funding allocated is tracked as illustrated below.

As illustrated since 2009, the gap between requested and approved funding has increased for both maintenance and renewal activities; this situation improved in 2014/15 with the gap between requested and approved funding shrinking.

COVID-19 impacted National Land Transport Funding and Waka Kotahi in 2020 indicated there would be a reduced allocation for the 2021-41 NLTP. Indicative allocation provided in May 2021 signalled an increase but show many work categories would be short of the funding requested. Final allocations in September 2021 were closer to the amounts requesting with the Ministry of Transport sourcing an increase in overall funding (\$2B) allocated.

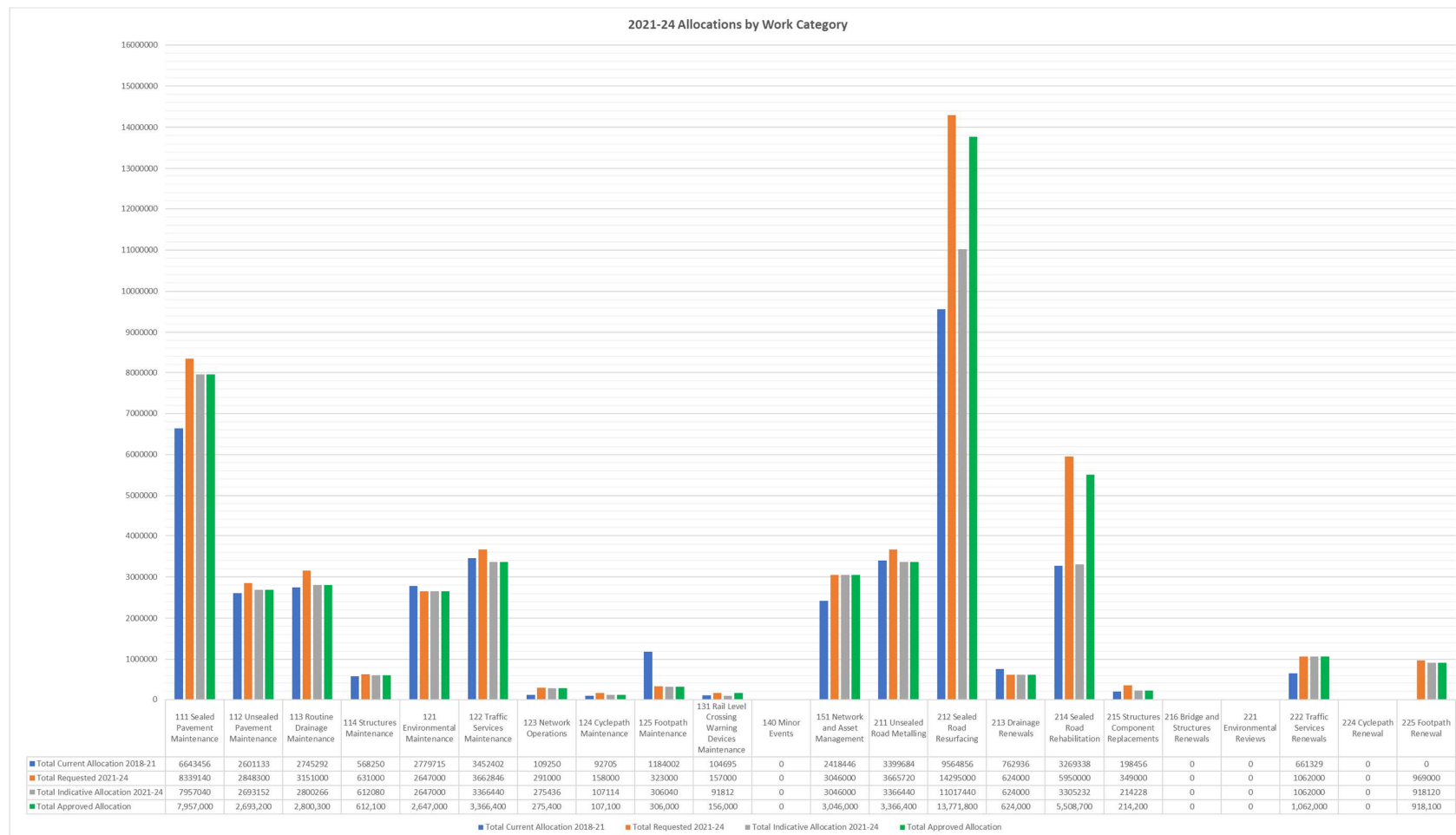
The differences across these allocations is illustrated in Figure 11.9

Figure 11.8: Difference between Funding Requested and Funding Allocated 2007/08 – 2017/18



(Source: Transportation LTP Activities Summary (to be updated))

Figure 11.9: Indicative and allocated funding 2021



11.2.3 Debt

Debt is used across Council activities to smooth peaks in expenditure and apply a consideration of intergenerational equity to capital projects with a long-term impact.

There is currently no debt registered specifically against the transportation activity.

11.2.4 Depreciation

Depreciation is the systematic allocation of (the cost of the asset, or other amount substituted for cost, less its residual value) of an asset over its useful life. Council re-values assets on a 3-yearly basis and this enables calculation of depreciation (loss of service potential) which is compared with the renewal programme investment levels.

Work completed during the year which is eligible to be capitalised, is added to the asset register and its depreciation component added to the opening value to obtain a year end figure for the Annual Report.

Council's transportation network asset depreciation calculation policy is:

- "Roads and Footpaths assets, other than land and buildings and plant associated with these activities, are valued on the basis of Optimised Depreciated Replacement Cost (ODRC) in accordance with FRS 3, with methodology as set out in the International Infrastructure Management Manual (IIMM).
- The assets are depreciated on a straight line basis, with an appropriate depreciation rate determined for each major component type".

The weighted average expected useful economic lives and depreciation rates of the major roading components are detailed in the Valuation report.

11.2.5 Fees and Charges

Table 11.7 below lists the types of fees and charges that are imposed by the Council for activities that occur on the transportation network. There are currently no road opening fees charged to utilities or contractors who access or excavate the legal road for placement of services.

However the administration and inspection of new vehicle crossings incur a charge.

Fees and charges will be reviewed as Council implements the Code of Practice for Utilities Access to the Transport Corridor.

Current fees and charges are detailed in the Council's schedule of fees and charges, which is reviewed annually.

Table 11.4: Fees and Charges for the Transport Activity

Fee / Charge	Comments
Charge for administration and inspection	Required as part of the Vehicle crossing application for new builds.

11.2.6 Development Contributions

Council will adopt a new Development Contributions Policy as part of the Long Term Plan 2018-28. This followed specific consultation prior and integration with the capital works programme. The policy is available in full in the Long Term Plan 2018-28 or on Council's website.

11.2.7 Funding Strategy

The focus of this Plan is on identifying the optimum (lowest lifecycle) cost for assets necessary to produce the desired level of service. How the necessary cash flow is funded is a matter for separate consideration as part of Council's Long Term Plan and Annual Plan processes, in accordance with its financial policies.

The service potential is negative for all asset groups illustrating that annual renewal expenditure is less annual depreciation. The following could explain these results:

- This could be due to the asset being relatively good condition so renewal cannot be justified in the forecast period.
- The depreciation rates used for the valuation of some asset components may not be appropriate for the asset and further investigation of appropriate rates may be warranted.
- The effective lives of some assets may be very long so programmed renewals do not appear in the twenty-year time frame.

It is likely a mixture of the above reasons is responsible. However for road pavements the significant lack of renewals reflects that the majority of the roading network is built on solid subgrade with good drainage over the Plains area (as discussed in Section 5.1, Road Pavements) that do not require significant maintenance work.

Funding sources available road assets:

- Rates (general, separate, special, differential).
- User charges.
- Development impact levies.
- Private development that is subsequently handed over to Council.
- NZTA subsidy.

Under the current rating policy, roading services are financed from general rates, which are a combination of general purposes rates levied on the basis capital value on all rateable property in the District. Significant development works are funded from development contributions and loans.

Within the uncertainty surrounding the level of NZTA investment and the variations in the rate of subdivision development, the optimisation of the LTFS/LTP will aim to minimise the fluctuations in rates requirements from one year to the next. In the future as revenue is strained and there and an increase in objectives requiring funding there is less scope for significant increases in NZTA funding. This is compounded with an acceleration in network demand and associated deterioration in the growth area of the district.

While the long term strategy continues to be an optimised approach there are restrictions on what is achievable in the short term. The programme proposed for 2021-24 is focussed on managing asset deterioration, rather than levels of service achievement. This asset preservation approach is intended to enable a return to optimal programmes in three to six years subject to adequate funding and costs being predictable.

11.3 Key Financial Forecasts Assumptions

The following basic assumptions have been made in preparing 20-year cash flow forecasts and are additional to those detailed in Section 2.5 of the AMP – Key Assumptions.

- The assumptions made for the asset valuations are carried forward throughout the entire activity management plan. These assumptions are detailed in the Valuation Report.
- Where appropriate, maintenance and renewal allocations are based on preserving current LoS in line with recent expenditure levels. These levels have been increased to match the growth of new assets were this can be predicted.
- The forecast levels of new improvements use trends and averages from previous years for both private developments e.g. new subdivision roading infrastructure constructed and from new works undertaken by Council, including that shown in Annual Budget.
- Significant changes in the cash flows may also result from more detailed evaluation of the details and timing of individual asset renewal and new improvement projects.

11.4 Confidence Levels

The confidence in the asset data used as a basis for the financial forecasts has been assessed using the following grading system from the IPWEA/NZWWA NZ Guidelines for Infrastructure Asset Grading Standards.

Table 11.5: Confidence Levels

Confidence Levels	
Grade A	Highly Reliable: Data based on sound records, procedure, investigations and analysis which is properly documented and recognised as the best method of assessment
Grade B	Reliable: Data based on sound records, procedures, investigations, and analysis which is properly documented but has minor shortcomings' for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation
Grade C	Uncertain: Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported , or extrapolation from a limited sample for which grade A or B data is available
Grade D	Very Uncertain: Data based on unconfirmed verbal reports and/or cursory inspection and analysis

11.4.1 Components of the Financial Forecast

The confidence level in the components of the financial forecast is assessed as being in the range 'A-B'.

This means the forecasts are regarded as sufficiently reliable for the purposes of this plan. Asset Management issues that impact on the confidence levels are identified for improvement in Section 12.

11.4.2 Asset Data

Council operates a Road assessment and maintenance management (RAMM) database, the prime asset register for the network. RAMM is routinely updated and random samples of newly collected RAMM data is QA field checked by the Consultant. RAMM is continually checked during the course of use and any anomalies are corrected when identified.

All information held in the databases is reliable. Some data fields are incomplete, but this relates to information that is unknown or cannot be readily assessed e.g. historical information relating to construction dates and pavement structure etc.

Council's RAMM database has been assessed and a data quality report prepared. This can be found in Section 10 of the AMP.

11.5 Improvement Plan Items

As this section details the financial statements and forecasts for the Transportation Activity which are derived from elsewhere in the plan, improvement items relate to financial statements and forecasts, not the information the statements are derived from.

Item		Action
<i>Previous Improvement Plan Items</i>		
<i>New Improvement Plan Items</i>		
IP 11.2		

This page is left blank for printing

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

12.0	PLAN IMPLEMENTATION	1
12.1	Council Commitment to Asset Management.....	3
12.2	Previous Improvement Programme Achievements	3
12.2.1	Comment on 2009 AMP Improvement Programme	3
12.2.2	Comment on 2012 AMP Improvement Programme.	3
12.2.3	Comment on 2015 AMP Improvement Plan	6
12.2.4	Comment on 2018 AMP Improvement Plan	11
12.3	Other Work Completed.....	17
12.4	Improvement Programme	17
12.4.1	AM Improvement Process.....	17
12.4.2	Funding AM Improvements	18
12.4.3	AM Improvement Programme	18
12.4.4	Combined 2021 AMP Improvement Plan.....	20
12.5	AMP Review and Monitoring.....	30
12.6	Improvement Plan Items.....	31

This page is left blank for printing

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 reprioritisation of Improvement Plan items may occur as the sector thinking develops and matures.

12.2.1 Comment on 2009 AMP Improvement Programme

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.

12.2.2 Comment on 2012 AMP Improvement Programme.

The following table contains the improvement plan as described in the 2012 AMP along with a commentary on the achievement to date (as at January 2015).

The following items were carried forward into the 2015 Improvement Plan.

2012 AMP Improvement Programme

Section	IP Ref	Item	Status 26/1/2015
Strategy	3.5	Collation and analysis of the suite of Engineering Design Standards to ensure consistency across the range of former, current and proposed levels of service and standards is identified as an Improvement Plan item.	All documentation is now consistent. Some challenges may develop should ONRC statements conflict with SDC standards.
Road Safety	5.1	Develop access to and reporting from CAS to provide up to date data on Road Safety and support performance reporting.	To be implemented as RSS/SMS process.
Road Safety	5.2	Implement Recommendations in RISA Reports.	To be implemented as RSS/SMS process.
Road Safety	5.3	Formalise protocols for Safety Audits.	To be implemented as RSS/SMS process.
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
Risk	8.2	Participate in Regional/Greater Christchurch Risk Management process development.	Limited involvement as organisations priorities lie elsewhere.
Risk	8.3	Integrate Regional/Greater Christchurch Risk Management process into SDC practices including this AMP.	No progress to date.
Risk	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.	Under way as part of this AMP.
Risk	8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	No progress to date.
Risk	8.6	Undertake criticality assessment of Transportation Assets.	Limited progress, to follow ONRC process.

Section	IP Ref	Item	Status 26/1/2015
Risk	8.7	Review funding and emergency reserve required for future event and seek confirmation from NZTA on this approach.	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
Risk	8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Emergency Management and Lifelines Planning.	Not undertaken.
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.	Not undertaken.
Plan Implementation	12.1	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	To occur in August 2015.

12.2.3 Comment on 2015 AMP Improvement Plan

The following table contains the Improvement Plan as described in the 2015 AMP, along with a commentary on the achievement to date (as at December 2017).

The following items were carried forward into the 2018 Improvement plan (those from 2012 are shown in bold)

2015 AMP Improvement Plan

Section	IP Ref	Item	Status 14/12/17	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Introduction	2.3	Rescore AMP for compliance.	<i>To be undertaken in 2018.</i>	<i>Include in next IP.</i>	1		Asset Manager.
Introduction	2.4	Review Assumptions, including traffic demand.	<i>Action based on Consultant feedback.</i>	<i>Include in next IP.</i>	3		Transport Asset Planner.
Strategy	3.5	Collation and analysis of the suite of Engineering Design Standards to ensure consistence across the range of former, current and proposed levels of service and standards is identified as an Improvement Plan item.	<i>All documentation is now consistent. Some challenges may develop should ONRC statements conflict with District Plan standards. This is being addressed as part of the District Plan Review.</i>	<i>Include in new Improvement Plan.</i>	3		Transport Asset Planner.
Strategy	3.7	Consider the NZTA Road Safety Guides and integrate these into capital, maintenance and management actions	<i>Ongoing.</i>	<i>Include in next IP</i>	2		Transport Asset Planner.
Strategy	3.8	Undertake delivery of services review (LGA s17A) prior to next maintenance contract	<i>Action is Asset Manager decision.</i>	<i>Include in next IP</i>	2		Asset Manager.

Section	IP Ref	Item	Status 14/12/17	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Strategy	3.9	Update Procurement Strategy (associate timing with delivery of services review and next maintenance contract)	Ongoing.	Include in next IP	1		Asset Manager.
Strategy	3.10	Undertake speed limit review	Ongoing.	Include in next IP	1		Team Leader – Rooding.
Strategy	3.11	Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431)	Removed during next Policy Manual review.	Include in next IP	2		Transport Asset Planner.
Road Safety	5.1	Develop access to and reporting from CAS to provide up to date data on Road Safety and support performance reporting.	Superseded by development of Deficiency Database layer in RAMM GIS to prioritise LC/LR improvement projects	Include in new Improvement Plan	1		Transport Asset Planner.
Road Safety	5.3	Formalise protocols for Safety Audits; Integrate with OSH processes (VAULT).	Ongoing. Requirement of ONRC Performance Measures.	Include in new Improvement Plan	3		Team Leader – Rooding.
LoS	6.4	Establish methodologies for mandatory performance measurement.	Completed	None	1		
Growth	7.6	Monitor Major Developments and impact on Transportation network: a. Lincoln HUB proposal. b. Lincoln Town Centre. c. Rolleston Town Centre.	Ongoing.	Include in new Improvement Plan.	2		

Section	IP Ref	Item	Status 14/12/17	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Growth	7.8	Further development of Traffic Models (including CTM) to deliver projections and Development Contribution information.	Ongoing.	Include in new Improvement Plan.	2		Transport Asset Planner.
Risk	8.2	Participate in Regional/Greater Christchurch Risk Management process development.	Ongoing.	Include in new Improvement Plan.	3		Transport Asset Planner
Risk	8.3	Integrate Regional/Greater Christchurch Risk Management process into SDC practices including this AMP.	Ongoing.	Include in new Improvement Plan.	3		Transport Asset Planner
Risk	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.	Include in new Improvement Plan.	1		Transport Asset Planner
Risk	8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	Ongoing.	Include in new Improvement Plan.	3		Transport Asset Planner
Risk	8.6	Undertake criticality assessment of Transportation Assets.	Ongoing.	Include in new Improvement Plan.	3		Transport Asset Planner

Section	IP Ref	Item	Status 14/12/17	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
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).	<i>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.</i>	<i>Include in new Improvement Plan.</i>	3		Asset Manager
Risk	8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Emergency Management and Lifelines Planning (as per ONRC).	<i>Ongoing.</i>	<i>Include in new Improvement Plan.</i>	4		Transportation Asset Planner
Risk	8.10	Monitor network bridge assessment for 50MAX and HPMV compliance, identify any isolated areas and propose preferred routes or upgrade works.	<i>Ongoing as traffic patterns change.</i>	<i>Include in new Improvement Plan.</i>	2		Transport Asset Planner.
Lifecycle Management Strategy	9.207	Investigate and monitor maintenance metalling against theoretical requirements (depreciation).	<i>Gravel Roads Study being prepared as part of AMP process.</i>	<i>Include appropriate item in new IP.</i>	2		External

Section	IP Ref	Item	Status 14/12/17	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
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.	<i>Ongoing.</i>	<i>Include in new Improvement Plan.</i>	3		Transport Asset Planner.
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.	<i>See 9.1. Ongoing training occurring</i>	<i>Include in new Improvement Plan</i>	4		Transport Asset Planner.
AM Processes and Practices	10.3	Improvements to measurement systems to support ONRC and mandatory performance measures.	<i>Ongoing</i>	<i>Include in new Improvement Plan</i>	1		Transport Asset Planner.
AM Processes and Practices	10.4	Data quality standards and methodology review	<i>Ongoing</i>	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner.

12.2.4 Comment on 2018 AMP Improvement Plan

The following table contains the Improvement Plan as described in the 2018 AMP, along with a commentary on the achievement to date (as at October 2021).

2018 AMP Improvement Plan

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Introduction	2.3	Rescore AMP for compliance.	Completed via Rationale in 2018 and REG processes	None	1		Asset Manager
Introduction	2.4	Review Key Assumptions.	Part of LTP processes	None	3		Asset Manager
Strategy	3.5	Collation and analysis of the suite of Engineering Design Standards to ensure consistence across the range of former, current and proposed levels of service and standards is identified as an Improvement Plan item.	Not yet complete	Include in new Improvement Plan	3		Transport Asset Planner / Development Engineer
Strategy	3.7	Consider the NZTA Road Safety Guides and integrate these into capital, maintenance and management actions.	Complete	None	2		Transport Asset Planner
Strategy	3.8	Undertake delivery of services review (LGA s17A) prior to next maintenance contract.	Complete	None	2		Asset Manager
Strategy	3.9	Update Procurement Strategy (associate timing with delivery of services review and next maintenance contract).	Complete	None	2		Asset Manager
Strategy	3.10	Undertake speed limit review.	Complete	None	1		Team Leader - Roading

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Strategy	3.11	Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431).			1		Transport Asset Planner
Description of Transportation Activity	4.1	Ensure ONRC length is the same as District Plan length. There is a very minor discrepancy at the moment.	Complete	None	2		Transport Asset Planner
Description of Transportation Activity	4.2	Review current ONRC hierarchy. Identify whether existing classification is fit for purpose given ADT growth.	Include in ONF process	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Road Safety	5.2	Implement Recommendations arising from recently completed Technical Audit.	Complete	None	2		Team Leader - Roothing
Road Safety	5.3	Formalise protocols for Safety Audits	Not yet complete	<i>Include in new Improvement Plan</i>	3		Team Leader - Roothing
Growth	7.6	Monitor Major Developments and impact on Transportation network: a. Lincoln HUB proposal. b. Lincoln Town Centre. c. Rolleston Town Centre.	Complete	None	2		Transport Asset Planner
Growth	7.7	Update this section and associated asset issues as CSM2 is established (Ongoing)	Complete	None	2		Transport Asset Planner
Risk	8.2	Participate in Regional/Greater Christchurch Risk Management process development.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Risk	8.3	Integrate Regional/Greater Christchurch Risk Management process into Council practices including this AMP.	Not yet complete	Include in new Improvement Plan	3		Transport Asset Planner
Risk	8.4	Prepare and undertake periodic reviews of the risk register, including reviews by Council; this could usefully be done in the early stages of the regular AMP Review processes.	Not yet complete	Include in new Improvement Plan	1		Transport Asset Planner
Risk	8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	Not yet complete	Include in new Improvement Plan	3		Transport Asset Planner
Risk	8.6	Undertake criticality assessment of Transportation Assets.	Not yet complete	Include in new Improvement Plan	3		Transport Asset Planner
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).	Not yet complete	Include in new Improvement Plan	3		Asset Manager
Risk	8.8	Prepare a State Highway Detour Policy, which is proposed as a combined project with NZTA (contained within Corridor Maintenance agreement, but also required as per ONRC)	Not yet complete	Include in new Improvement Plan	3		Transport Asset Planner

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Risk	8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Emergency Management and Lifelines Planning (as per ONRC).	Not yet complete	<i>Include in new Improvement Plan</i>	4		Transport Asset Planner
Risk	8.10	Monitor network bridge assessment for 50MAX and HPMV compliance, identify any isolated areas and propose preferred routes or upgrade works.	Complete	None	2		Transport Asset Planner
Lifecycle Management	9.101	Consider introduction of High Speed Data Collection as a replacement of/addition to manual rating	Awaiting national guidance.	None	3		Transport Asset Planner
Lifecycle Management	9.102	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.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Lifecycle Management	9.103	Complete Lifecycle "Maintenance and Renewal" Plan	Complete	None	2		Transport Asset Planner
Lifecycle Management Strategy	9.207	Investigate and monitor maintenance metalling against theoretical requirements (depreciation) and implement findings from Gravel Road Study.	Not yet complete (IDS Unsealed Roads Model in implementation phase)	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Lifecycle Management Strategy	9.208	Improve footpath data and develop an indicative renewal plan	Not yet complete	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Lifecycle Management Strategy	9.209	Refine categorisation and knowledge of the responsibilities for water race culverts between the transportation and utilities activities.	Not yet complete	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Lifecycle Management Strategy	9.211	Ensure 24 bridges/culverts have span count recorded against them.	Complete	None	2		Transport Asset Planner
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.	Not progressed	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
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.	Not progressed	<i>Include in new Improvement Plan</i>	None		Transport Asset Planner
AM Processes and Practices	10.3	Improvements to measurement systems to support ONRC and mandatory performance measures.	Ongoing, processes now in place	None	1		Transport Asset Planner

Section	IP Ref	Item	Status 27/10 /2021	Further Action Proposed	Priority	Est Cost \$,000 (if external)	Internal/External Resource
AM Processes and Practices	10.4	Data quality standards and methodology review	Ongoing, processes now in place	None	2		Transport Asset Planner
AM Processes and Practices	10.5	Future roughness survey data to be recorded in the hsd_rough table in RAMM.	Awaiting national guidance./	None	1		Transport Asset Planner
AM Processes and Practices	10.6	Continue to audit the maintenance activity to confirm the data is both complete and of value to the decision making process.	Ongoing, processes now in place	None	1		Transport Asset Planner
Plan Implementation	12.6	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	Ongoing	Include in new Improvement Plan	1		Transport Asset Planner

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

This Activity Management Plan has been prepared using information from the 2003 Asset Management Plan, through to the current version along with the 2014 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.

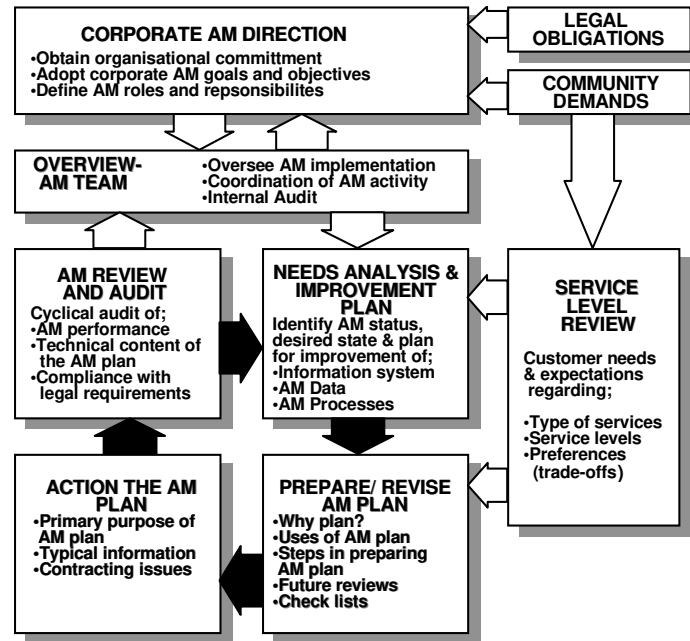
Figure 12-1 below illustrates the process of using and developing the AM plan.

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 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. Improvements to AM planning and AM plans aligns with NZTA's Tactical Planning work category (WC 003).

An application for \$20,000 per year has been made for the 2018/19 to 2020/21 period will be used to progress the AMP Improvement Plans.

12.4.3 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.

12.4.4 Combined 2021 AMP Improvement Plan

Bring previously incomplete items, and new items from the 2021 AMP sections together, the following Improvement Plan has been developed.

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Introduction & LoS	2.7	Consider approach to co-design and engagement with Maori	New		2		
Strategy	3.5	Collation and analysis of the suite of Engineering Design Standards to ensure consistence across the range of former, current and proposed levels of service and standards is identified as an Improvement Plan item.	Not yet complete	<i>Development Engineer to action. Transport Asset Planner to assist.</i>	3		Transport Asset Planner / Development Engineer
Strategy	3.11	Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431).	New		1		Transport Asset Planner
Strategy	3.12	Parking strategy/ Future Development Strategy <i>Tier 1 councils have 18 months from the NPS-UD gazettal to notify plan changes to implement car parking policy.</i> deadline for preparing or reviewing an FDS be linked to informing the 2024 long-term plans	New		2		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Strategy	3.13	Consider temporary restriction of heavy traffic on roads - identify routes where heavy traffic may be restricted due to damage to a road or danger to the safety of road users.		<i>Include in new Improvement Plan</i>	4		
Strategy	3.14	Review the Selwyn Road Safety Strategy to 2020	Is underway	<i>Include in new Improvement Plan</i>	1		
Strategy	3.15	REG Smart Buyer Self Assessment to be revisited due to the improvements in processes since originally completed.	New		1		
Strategy	3.16	Review of speed limits in line with Safe Network Programme initiatives.		<i>Include in new Improvement Plan</i>	2		
Description of Transportation Activity	4.2	Review current ONRC hierarchy. Identify whether existing classification is fit for purpose given ADT growth.	Include in ONF process	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Road Safety	5.3	Formalise protocols for Safety Audits	Not yet complete	<i>Include in new Improvement Plan</i>	3		Team Leader - Rooding
Road Safety	5.4	Revision of the Road Safety Strategy	-	<i>3.14 above</i>	-	-	-
LoS	6.5	ONRC Inspections - refinement of the process, along with ONF integration proposed for 2021-24.	New		2		
Growth	7.9	Collate and update vested asset and project works including graphs	New		1		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Growth	7.10	Streamline vested assets processes for the maintenance and asset management purposes ('end to end' process review be undertaken in the 2021-24 period)	New		2		
Risk	8.2	Participate in Regional/Greater Christchurch Risk Management process development.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Risk	8.3	Integrate Regional/Greater Christchurch Risk Management process into Council practices including this AMP.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Risk	8.4	Prepare and undertake periodic reviews of the risk register, including reviews by Council; this could usefully be done in the early stages of the regular AMP Review processes.	Not yet complete	<i>Include in new Improvement Plan</i>	1		Transport Asset Planner
Risk	8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Risk	8.6	Undertake criticality assessment of Transportation Assets.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
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).	Not yet complete	<i>Include in new Improvement Plan</i>	3		Asset Manager

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Risk	8.8	Prepare a State Highway Detour Policy, which is proposed as a combined project with NZTA (contained within Corridor Maintenance agreement, but also required as per ONRC)	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Risk	8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Emergency Management and Lifelines Planning (as per ONRC).	Not yet complete	<i>Include in new Improvement Plan</i>	4		Transport Asset Planner
Risk	8.10	Establish a corporate risk policy	New		3		
Risk	8.11	Resilience improvements – proactive approach. For example, incorporating a holistic resilience responsive asset management process would see the over-all resilience of the infrastructure improvements with time	New		3		
Risk	8.12	Update the risk register with more focus on specific risks associated with each section within the AMP	New		2		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Risk	8.13	Establish a more robust programme management system for capital and maintenance works (i.e. a formal capital programme management system should be adopted)	New		4		
Risk	8.14	Develop a strategy for climate response that includes both climate mitigation (reducing carbon footprint) and adaption climate-responsive maintenance and renewals	New		2		
Risk	8.15	Risk Register continually revised as part of the Council's process of continual asset management improvement	New		4		
Risk	8.16	Assess planning risks associated with dealing with major natural hazards	New		3		
Risk	8.17	Assess and develop processes for minor to major natural hazards roads and bridges	New		3		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Risk	8.18	Assess Planning Risks associated with Inability to Fully Utilise Funding Options (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)	New		3		
Risk	IP 8.19	Progress Response Plan - Effects and Intervention for Transportation.	New		3		
Risk	IP 8.20	Review and liaise with Waka Kotahi NZTA regarding State Highway Detours – need for traffic diversions onto local roads	New		2		
Lifecycle Management	9.1	Consider introduction of High Speed Data Collection as a replacement of/addition to manual rating	New		1		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Lifecycle Management	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.		1		
Lifecycle Management	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.	Not yet complete	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
Lifecycle Management	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.	New		3		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Lifecycle Management Strategy	9.5	Refine categorisation and knowledge of the responsibilities for water race culverts between the transportation and utilities activities.	Not yet complete	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Lifecycle Management Strategy	9.6	Improve footpath data and develop an indicative renewal plan	Not yet complete	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Lifecycle Management Strategy	9.7	Investigate and monitor maintenance metalling against theoretical requirements (depreciation) and implement findings from Gravel Road Study.	Not yet complete (IDS Unsealed Roads Model in implementation phase)	<i>Include in new Improvement Plan</i>	2		Transport Asset Planner
Lifecycle Management Strategy	9.8	Footpaths - Improve data 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.	New		2		
Lifecycle Management Strategy	9.9	Establish a PT Facilities Plan. This will consider route locations, demand and the level of service provided.	New		1		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Lifecycle Management Strategy	9.10	Update Summary Asset Improvements Composition Pie Chart	New		1		
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.	Not progressed	<i>Include in new Improvement Plan</i>	3		Transport Asset Planner
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.	Not progressed	<i>Include in new Improvement Plan</i>	4		Transport Asset Planner
AM Processes and Practices	10.3	Improvements to measurement systems to support ONRC and mandatory performance measures	New		2		
AM Processes and Practices	10.4	Data quality standards and methodology review	New		2		
AM Processes and Practices	10.5	User defined table are not currently detailed	New		3		
AM Processes and Practices	10.6	Implement new Transportation Information management contract with priority on data quality score improvements	New		1		

Section	IP Ref	Item	Status 27/10 /2021	Action	Priority	Est Cost \$,000 (if external)	Internal/External Resource
Plan Implementation	12.6	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	Ongoing	<i>Include in new Improvement Plan</i>	1		Transport Asset Planner

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 Improvement Plan Items

As this section related to the Improvement Plan itself, few improvement plan items have arisen.

Item		Action
<i>Previous Improvement Plan Items</i>		
IP 12.6	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	Ongoing
<i>New Improvement Plan Items</i>		