

# Transportation Activity Management Plan 2024

## Executive Summary

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# 1 Executive Summary

This executive summary provides a brief overview of our district's transport infrastructure, outlines the key issues which require consideration and the approach to be taken to address these issues.

Our Transportation goal is:

*“To plan, provide, maintain, develop and improve the transport network so that Waimakariri is a great place to be, and transport is accessible, convenient, reliable and sustainable”*

## 1.1 Background

Over the last decade Waimakariri District has experienced significant growth and associated increases in traffic movements, from both private vehicles and commercial vehicles including heavy freight. This growth is expected to continue into the future. The district has also experienced increasing severe weather events which have tested the resilience of our network and the ability to be able to respond.

The transport system needs to respond to changes in population and land use, to ensure that it continues to provide a high quality of life in the Waimakariri District. The transport activity needs to provide people with ease of access to key activity centres, employment, education, healthcare, and recreation opportunities. It also needs to provide for the safe and efficient movement of freight to support a thriving economy.

To achieve this change, we need to transition away from what has historically been a private vehicle centric focus, into a transport system that provides options for how people can travel. This has benefits in that it can reduce the number of vehicle trips taken which results in reduced vehicle emissions, as well as providing health and wellbeing benefits for the community from active modes of travel.

Increasing adverse weather events and higher ground water levels, coupled with an increase in heavy freight movements are causing faster deterioration of roads within the district and an increased need to focus on maintenance activities, such as drainage maintenance and high shoulder removal, to minimise deterioration. Increasing costs have resulted less Road Maintenance, Operations and Renewals work being able to be undertaken, with increasing faults and decreasing customer satisfaction. A focus on these areas will help provide a more resilient transport network.

The five key focus areas for Council to address include:

- Increased Maintenance, Operations & Renewals Activities.
- Increased focus on resilience.
- Focused programme of safety improvement on key transport corridors
- Delivery of our walking & cycling network.

- Improvements to public transport infrastructure to support Greater Christchurch strategy.

This Activity Management Plan has been developed to align with the following national, Greater Christchurch and district documents and strategies:

- Draft Government Policy Statement on Land Transport 2024 (GPS)
- “Arataki” – NZ Transport Agency (Waka Kotahi’s) 30 Year visions and objectives for the land transport system
- Greater Christchurch Urban Development Strategy (UDS)
- Our Space 2018-2048
- Greater Christchurch Spatial Plan - under development
- Greater Christchurch Transport Plan (GCTP) – under development
- Greater Christchurch Transport Investment Programme (GCTIP) – under development
- Greater Christchurch VKT Reduction Plan – under development
- Canterbury Regional Land Transport Plan (RLTP)
- Canterbury Regional Public Transport Plan (RPTP)
- Waimakariri District Long Term Plan (LTP)
- Waimakariri Infrastructure Strategy
- Waimakariri Integrated Transport Plan

There are other strategic documents that inform the AMP as follows:

- Waimakariri Transportation Procurement Strategy 2022
- Waimakariri Organisational Sustainability Strategy & Action Plan 2020
- Waimakariri Walking and Cycling Strategy and Approved Walking & Cycling Network Plan
- Waimakariri District Parking Strategy

## Council’s Goal

**Purpose:** To make Waimakariri a great place to be, in partnership with our communities guided by our outcomes, through the following roles:

- ❖ As a service provider.
- ❖ As a funder of activities by others.
- ❖ As an advocate on behalf of our community.
- ❖ As a regulator under legislation.

The following goal for the provision of transport infrastructure in the Waimakariri District Council has been developed from the Community Outcomes. Our Transportation goal is:

*“To plan, provide, maintain, develop and improve the transport network so that Waimakariri is a great place to be, and transport is accessible, convenient, reliable and sustainable”*

## Key issues / Challenges

A key component of the preparation of the Transportation Activity Management Plan is the utilisation of the Strategic Business Case process. This requires the key strategic issues facing the district and the associated benefits of addressing these to be identified. Only once there is a key directional focus established should we investigate and decide on possible solutions to these issues.

The five key focus areas include increasing maintenance of the network, focusing on resilience, continuing a programme of safety improvements, developing our walking & cycling network and continued improvements to support public transport. This focus allows the transportation network to continue to cater for growth while utilising and maximising existing infrastructure. Provision for alternate modes of transport including walking, cycling and public transport, will allow choice in the way people can travel and relieve some pressure on existing infrastructure. Access to SH1 and SH72 continues to be a key focus area for the district, along with road safety, and road maintenance resulting from increasing growth, heavy vehicle movements and increased weather events.

The introduction of the Western Belfast Bypass and the Northern Corridor including the extra lanes on the Waimakariri River Bridge have been beneficial to the district and to the broader Canterbury region in terms of access and the economy. Travel times between Waimakariri District and Christchurch City have been reduced, however local constraints on the network particularly around the Skew Bridge, West Rangiora route, Tram Road and Southbrook Road continue to cause issues and safety concerns.

Infrastructure such as the replacement of the Skew Bridge, safety improvements on Tram Rd and the West Rangiora Route, and the construction of the new Rangiora Eastern Link Road will be required to support ongoing growth and address known safety issues. SH1 Woodend Bypass has now been committed to by the Government and is important infrastructure not only for the Waimakariri District but also for the Canterbury region.

The AMP explores options to resolve these issues, ranks these options to determine the best solution to the identified issues, and determines a means to fund and implement them.

## Asset Growth

Between 2020 and 2023 there have been the following increases in roading assets.

- ❖ Roads – 28.09 km (1.8%)
- ❖ Kerb and Channel – 38.45 km (8.62%)
- ❖ Footpaths – 38 km (10.7%)
- ❖ Signs – 1,541 (8.5%)
- ❖ Streetlights – 149 (2.83%)
- ❖ Traffic Signals - 1 set

Note that the lower percentage increase of roads compared to other assets is due to most of the increase being in urban areas. As such, they include associated assets such as footpaths and kerb and channel. The increase in growth and traffic volumes in the district has also

resulted in an increase in the need for signalised intersections with the associated infrastructure.

The length of unsealed roads has remained reasonably static; however, they have suffered through repeat adverse weather events over the three years. Increasing events wash fines out of the running course which results in this being lost at an accelerated rate. The length of unsealed roads with traffic volume greater than 200 vehicles per day (formerly one of Council's Level of Service measures) has reduced to less than 1% of the network. This proportion is expected to stay roughly the same over the next three years, which will mean while the rural vehicle traffic will increase, the urban traffic will increase by more in real terms.

The district's population is expected to continue to grow for the foreseeable future, although the rate of growth is likely to be lower than in recent years, reducing from 2.4% in 2020 to an average of 1.9% per annum over the next 10 years.

## Traffic Growth

Overall travel on the network increased from vehicle kilometres travelled (vkt) increased from 437 million in 2019/20 to 580 million in 2022/23. This is an increase of 33% over this time span, an average of 10.9% per annum, compared with 371 million vehicle kilometres travelled (vkt) in 2016/17 increasing to 437 million in 2019/20, a 17.6% increase or an average of 5.9% per annum.

## Asset Description

A key goal of Waimakariri District Council is to provide a safe, responsive and sustainable network. To achieve this, Council manages the following asset with an optimised replacement cost of \$1,315 million.

*Table 1-1: Change in Replacement Cost of Roading Assets Included in this Plan*

Asset Group	Replacement Cost 2020 (\$000)	Replacement Cost 2023 (\$000)
Road Carriageway	700,042	884,878
Bridges and Structures	117,880	149,280
Footpath, Cycle paths and Shared Paths	42,129	53,575
Road Drainage	140,982	187,362
Streetlights	11,461	17,396
Traffic Services & Bus Seats / Shelters	14,702	20,564
Traffic Signals	915	1,620



## 1.2 Levels of Service

The Levels of Service developed in this Plan are based on the District's Community Outcomes. The Community Outcomes are the result of public consultation carried out up to and during preparation of the 2024 to 2034 Long Term Plan (LTP).

While transport contributes to almost all community outcomes in some measure, those specific to transport are as follows:

- Our community has reliable access to the essential infrastructure and services required to support community wellbeing.
- Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.
- Our district transitions towards a reduced carbon and waste district.
- The natural and built environment in which people live is clean, healthy and safe.
- Infrastructure and services are sustainable, resilient, and affordable.
- Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy.

In establishing the Levels of Service, the Council has considered its legal obligations, comments made to it through formal consultation processes, the results of customer surveys, sound engineering practice, affordability and economic efficiency.

There are five Rooding Performance measures asset by the Department of Internal Affairs. These are shown in Table 1-2 below.

Table 1-2: LTP Level of Service

Roads and Footpaths							
Community Outcome	Council Response	Level of Service	Measure	Targets	Performance 2019/20	Performance 2020/21	Performance 2021/22
A place where everyone can have a sense of belonging.	<p>Council commits to promoting health and wellbeing and minimizing the risk of social harm to its communities.</p> <p>Our community has equitable access to the essential infrastructure and services required to support community wellbeing.</p>	The road network is increasingly free of fatal and serious injury crashes.	* 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. (DIA measure)	Reduction in fatalities and serious injury crashes	One more fatality and 9 fewer serious crashes on Waimakariri local roads for the whole of 2019/20 financial year compared with 2018/19-8	There were 4 more fatalities and 5 more serious crashes on the local road network for the current financial year compared with the previous year	During the year there were 4 fatal crashes and 21 serious injury crashes. This is a reduction of five fatal crashes and 4 serious injury crashes from the previous financial year.
<p>A place...</p> <p>...where everyone can have a sense of belonging.</p> <p>...that values and restores our environment.</p> <p>...supported by a resilient and innovative economy.</p>	<p>Our community has equitable access to the essential infrastructure and services required to support community wellbeing.</p> <p>Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</p> <p>The natural and built environment in which people live is clean, healthy and safe.</p> <p>Infrastructure and services are sustainable, resilient, and affordable.</p>	Sealed roads provide a level of comfort that is appropriate to the road type.	* The average quality of ride on a sealed road network, measured by smooth travel exposure. (DIA measure)	95% for rural and 75% for urban roads	98% / 80%	98%/80%	98%/84%
		Optimised programmes are delivered that are affordable and at a cost so that service productivity is improving.	* The percentage of the sealed local road network that is resurfaced annually (DIA measure)	5%	4.45%	4%. Higher quantity of asphalt means shorter length of road able to be resurfaced within budget	3.8% Covid affected Contractor resources. Remaining reseal programmed for start of new year's season
		Footpaths are safe, comfortable and convenient.	* The percentage of footpath that falls within the level of service or service standard for the condition of footpaths. (DIA measure)	95% of footpaths rated better than very Poor	99%	99%	99%
		Requests for service will be responded to in a prompt and timely manner.	* The percentage of customer service requests relating to roads and footpaths responded to within service delivery standards. (DIA measure)	95%	96.4%	94%	93.8%

### 1.3 Future Demand

The Waimakariri District has experienced significant growth over the last decade and is expected to continue to grow into the future, albeit at lower rates than those experienced in recent years. Statistics New Zealand (StatsNZ) projects low, medium and high growth rates. Waimakariri has chosen to use the high growth scenario. This equates to a projected district population of 101,791, a 46% increase over the next 3 decades.

StatsNZ also forecasts more people over the age of 65 and fewer young people in the District. Older people are more likely to have difficulty driving safely due to the effects of aging such as deteriorating eyesight and reaction time and greater likelihood of serious injury when they do crash.

The OECD International Transport Forum (2013) concluded that car use was declining internationally, however, this trend tends to be less pronounced in rural areas, and there is no evidence of declining car usage in the Waimakariri District. Vehicle kilometres travelled measures the quantity of travel in the district rather than just vehicle ownership or length of the network. Vehicle kilometres travelled in WDC increased from 437 million in 2019/20 to 580 million in 2022/23.

As population increases, any reduction in car usage that does occur is likely to be accompanied by a corresponding increase in walking, cycling and public transport usage. Council's walking and cycling strategy and Walking & Cycling Network Plans promote improved walking and cycling infrastructure, including new walking & cycling connections and footpaths.

The construction of the Christchurch Northern Corridor was completed late 2020 and this project has also included a cycle facility, which links Christchurch City to Waimakariri District (including a walking and cycling clip on the Motorway Bridge). This has been a key project for unlocking walking and cycling opportunities between Waimakariri and Christchurch City.

Alongside this, Waimakariri District Council has developed a Walking & Cycling Network Plan which identifies gaps and key projects in the network. Council has progressed the design of key walking & cycling infrastructure as part of the Transport Choices Funding package made available through central government, however construction funding has not been provided and as such there are significant gaps in the current network which need to be addressed. Increases in demand for walking & cycling infrastructure will continue into the future.

Waimakariri District Council has been working with the Greater Christchurch partners to develop and agree a package of Travel Demand Management initiatives to help promote changes in travel behaviour within the Greater Christchurch area.

Park & Ride facilities have been delivered in Rangiora and Kaiapoi, along with peak hour express bus services, to provide time and cost-effective alternatives for peak hour commuters. A further site is to be developed in Woodend to cater for the Woodend / Pegasus / Ravenswood area.

Much of the population growth in the district is expected to occur in Rangiora, Kaiapoi, and Woodend (including Pegasus and Ravenswood). In addition, there is expected to be continuing demand for rural-residential and larger “lifestyle” type blocks close to Christchurch city. Changes in the proposed District Plan now allow the traditional 10-acre (2.5 hectare) blocks east of Mandeville to be subdivided further, while the blocks west are no longer able to be subdivided below 20 hectare.

Other likely land use changes include the continuing demand for ongoing gravel extraction. The previous conversion to dairy has largely occurred and is likely to remain fairly static. Some logging will continue but is very dependent on the international market and harder to programme ahead for.

### **What changes might this lead to?**

The anticipated population growth, demographic changes, vehicle use trends and land use changes would suggest the following future transport trends:

- ❖ A continuing increase in car usage;
- ❖ A possible reduction in the proportion of trips at peak time due to aging population;
- ❖ Increased pedestrian demand and footpath usage;
- ❖ Increased cycle numbers;
- ❖ Increasing numbers and size of heavy vehicles;
- ❖ Changing work patterns and the ability to work remotely, and;
- ❖ Increases in on-line shopping and goods delivery options.

Generally (with some exceptions), the district’s roads and intersections are far from their ultimate capacities, and many are unlikely to reach those points in the near future. However, there are some parts of the network that are having difficulty meeting the demand and where growth will put them under strain with longer delays at peak times being more likely in future, or where significant deterioration of the road will be likely to occur. This deterioration is particularly the case where the roads carry a higher than usual proportion of heavy traffic.

### **How will we deal with these issues?**

The general approach to be taken in assets development to meet future trends is as follows:

- ❖ Maintaining and using the existing transport infrastructure efficiently and effectively;
- ❖ Targeted investment in infrastructure improvements for both access and safety outcomes;
- ❖ Increased emphasis on walking, cycling and public passenger transport to provide greater transport choice, integration, flexibility and to promote good public health outcomes;
- ❖ Ensuring growth areas and development support modal choice and provide opportunities for people to travel less, especially by private motor vehicle;

- ❖ Implement travel behaviour change programmes to encourage more efficient travel patterns, noting that these will be limited by lack of NZTA funding and the impact of Christchurch earthquakes; and
- ❖ Funding growth components of projects from development and/or financial contributions.
- ❖ While motorway infrastructure constructed to the north-west of Christchurch has improved access to and from our city neighbour, there is still issues with access in Waimakariri District itself, particularly around our largest town of Rangiora. A number of projects have been planned for the 2024-34 Long Term Plan (LTP) to help address these issues and are included in Table 1-4 of this chapter of the AMP.

Major programmes and costs to meet the demand described above are shown below. The full detail is shown in **Section 7 - [The Lifecycle Management Plan](#)**

Table 1-3: Major Projects and Costs

Project	\$M	When
Kaiapoi to Woodend Cycle Connection	2.2	31/32-32/33
Ravenswood Park N Ride	1.5	26/27-27/28
Kaiapoi Roding Improvements - Williams St South	2.0	28/29-29/30
North-West Arterial Rangiora – Lehmans to River Rd	2.2	29/30-30/31
West Rangiora Route	14.2	24/25-33/34
Woodend Improvements in conjunction with Woodend Bypass <i>(Note: this will be dependent on the timing of the Bypass)</i>	2.0	26/27-27/28 & 31/32-32/33
South Eyre/Giles/Tram Roundabout	1.9	26/27-27/28
Tram Rd Route Improvements (widening, intersection improvements, delineation)	7.7	23/24-33/34
Rangiora / Woodend / Tuahiwi / Boys Rd Intersection Improvements	1.9	26/27 & 28/29
Robert Coup Dr / Ohoka Rd Intersection Improvements	1.2	26/27-27/28
Skew Bridge Replacement	12.0	24/25-28/29
Southbrook Future Improvements	3.9	25/26-27/28 & 31/32-32/33
Northbrook / Ivory Intersection Improvements	1.5	27/28-28/29
New Eastern Arterial	35.1	24/25-29/30
North South Collector Rd	6.0	24/25 & 28/29

Many of the demand assumptions above are based on an underlying assumption that transport in the future will be delivered in similar ways to transport in the comparatively recent past. While Covid changed some working patterns and allowed more flexibility in the way people work, this has largely stabilised and people have largely returned to pre-Covid behaviours, however activities such as online shopping and home deliveries continue to be popular. Public Transport which suffered a significant drop in use during and after the pandemic, has in late 2023 finally reached and surpassed pre-Covid levels.

Other changes in technology are still coming to the fore, however, are likely to include semi-autonomous and fully autonomous vehicles. Many of these technologies are still being developed however have the potential to significantly alter private and commercial transport over time.

Until such time as this becomes more commonplace and is widely accepted, the development of technology, and changes in public attitudes towards transport will be monitored, along with population, demographic and land use trends. Expected transport demand will be reviewed and revised accordingly.

Electrification of the vehicle fleet is progressing however at current rates this will take some time before the entire fleet transitions away from fossil fuels. Moving to electric vehicles has benefits due to emissions reduction. This is particularly important in a dispersed district where there are often no alternate modes, for portions of the Community, in which people can travel.

## 1.4 Risk Management

This section outlines the risk management process used for the WDC road network. The objective of risk management is to identify the specific risks associated with the ownership and management of road network assets and identify how these risks will be mitigated. While it is not possible to eliminate all risk, it is important to be proactive in the management of risk to minimise adverse outcomes.

There are four strategic risk areas which have been identified and are outlined in this Transportation Activity Management Plan. These four strategic risk areas align with our Transportation Problem Statements and include:

1. Safety
2. Resilience
3. Sustainability
4. Integration of Land Use Planning and Transport

These are covered further in Section 5, however in summary these issues affect the network and the resulting community outcomes as follows.

Road safety is the risk to the public on a number of levels. Road safety has health, financial, and quality of life implications, that is best solved with a multi-faceted, integrated approach.

Sustainability is the ability for an asset or activity to be maintained at a certain rate or level. In the transportation sector, it includes financial, environmental and asset sustainability. Sustainability in its many forms requires a larger focus as part of day-to-day business and needs additional consideration, for example, the effects of roading runoff contamination on the environment, vehicle emissions on air quality and increased carbon.

Resilience in a transport network relates to the ability of the network to continue to function during a natural hazard event, and to quickly recover. This considers how we will manage our network, access to key infrastructure and communication to ensure our Community is safe from harm. In recent years, Waimakariri has experienced a number of heavy rainfall events and are becoming more common, hence a need to ensure our infrastructure is able to cope where possible, and that appropriate systems are in place to ensure our residents health, safety and wellbeing is not compromised.

Integration of Land Use Planning and Transport becomes an issue when growth occurs in an ad hoc manner and in places which do not readily support the growth.

## 1.5 Life Cycle Management

The in-house Roding team of the Council undertakes programme management, routine network management, investigations and reporting, and management of the Roding and transport assets. Physical works are carried out by external contractors, while specialist professional services (including bridge inspections and structural advice, road safety audits and advice, transport planning, traffic assessments, traffic counting, road condition rating and surveys) are provided by external consultants.

The Life Cycle Management Plan focuses on key asset groups (road carriageway, bridges and road structures, footpaths & cycleway, road drainage, streetlights, traffic services, and passenger transport). Management strategies focus on lifecycle activities (operation, maintenance, renewal, creation) for each asset group to improve the decision-making and evaluation of options associated with each asset, and to optimise lifecycle costs. Programme management can include travel demand management and behavioural change, e.g. rather than dealing with congestion by building more roads, encouraging moves to walking, cycling and public transport reduces the number of trips by private motor vehicles.

### **Asset Condition, Performance and Capacity**

Transport assets need to be maintained to a good condition to provide a safe transport network for the public to use, and to meet customer level of service. Established asset management practices help to ensure this is achieved and that associated budgets are in place and met.

The following tables document the condition, performance and capacity of the assets based on best information currently available.

Table 1-4: Summary of Asset Condition, Performance and Capacity

Road Carriageway	
Condition	Performance/ Capacity
<p>The condition of the sealed road is assessed by roughness, condition rating and surface age. The 2023 roughness surveys indicate that overall average of 85% of all urban roads and 98% of all rural roads users experience smooth travel within the Waimakariri District Council. Both percentages are above the targeted LOS of 75% and 95% respectively.</p> <p>Formal condition rating is not undertaken on unsealed roads. Condition is monitored through contractor and Council staff inspections as well as service requests received from road users. The latest satisfaction survey indicated a decrease in customer satisfaction with our unsealed, which reflects the increase in storm events making maintaining a suitable road surface more difficult.</p>	<p>The 2022 customer satisfaction survey indicated a decrease in the percentage of households satisfied with the carriageway network, both sealed and even more so unsealed compared to previous years. This reflects the adverse weather events experienced over recent years, the increased population growth, and the insufficient funding to respond to increasing network needs.</p> <p>In addition to damage from the weather events, unsealed rural roads are likely to be particularly susceptible to increasing maintenance requirements due to increasing heavy vehicles associated with new dairy farm conversions, gravel extraction and other land use changes. These impacts require specific strategies to be developed to enable the network to cope.</p>
Bridges and Road Structures	
Condition	Performance/ Capacity
<p>The condition of all bridges has been assessed as being generally in good to average condition. There is no formal condition rating for the remaining road structures, however the condition of these assets is assessed through the routine inspections undertaken by the road network maintenance contractor.</p>	<p>The majority of bridges in the district have adequate capacity to cater for most of the projected future loading and traffic volumes, however some strengthening/widening may be required for HPMV capacity.</p>
Footpath & Cycleways	
Condition	Performance/ Capacity
<p>The 2022 condition rating indicated that 98% (391km) of the footpath network is in average to excellent condition, with just 2% in poor or very poor condition, programmed to be replaced over the next three years.</p>	<p>District wide satisfaction with the footpaths has decreased from 83.7% for town footpaths in 2019 to 78.2% in 2022 and from 59.6% to 58.9% for small settlement footpaths. The decrease in rating appears to be related to higher maintenance needs such as dealing with trip hazards, rather than overall footpath conditions.</p>



Road Drainage	
Condition	Performance/ Capacity
<p>The 2020 condition rating of the surface water channel indicated that 76% (449 km) of the SWC network is in average to excellent condition. The priority in the next 10 years programme will be replacement of kerb and channel which has deteriorated to the point of causing deterioration to the road pavement or surface due to water ingress.</p> <p>A recent review of culverts undertaken by the maintenance contractor indicated a number of these assets will require closer inspection and rating over the next three years, however generally culverts are inspected regularly through maintenance inspections and based on these inspections they are considered to be in a good condition.</p>	<p>The existing drainage systems are generally adequate except in flood conditions. Attention has been given over the last 3 years to ensuring at-risk areas are upgraded where possible, and sumps in high-risk areas are given highest priority at times of potential flooding.</p> <p>There has also been a move to ensure detritus which might contaminate waterways is being captured in sumps using reusable insets. These were initially used in conjunction with other environmental drainage assets such as swales to capture silt, but there is a move to also use these in central urban areas to catch detritus.</p>
Streetlights	
Condition	Performance/ Capacity
<p>The condition of the overall street lighting inventory has not been rated in any formal way however, overall condition of the street light assets is still considered satisfactory based on maintenance inspections, RAMM data and the number of service requests.</p>	<p>The majority of the older streetlights do not comply with the national standard for street lighting; however, the levels of complaints are low which indicates that the community is satisfied with the service levels provided and there are no identified safety issues. Generally, when poles have been replaced the lamps are upgraded at the same time, and funding has been allocated to increased LED replacement for the next LTP.</p>
Traffic Services	
Condition	Performance/ Capacity
<p>There is no formal condition rating system for the traffic services assets. However, the condition of these assets is assessed through the routine inspections undertaken by the road network maintenance contractor and the annual day and night safety inspections carried out by the professional Service Providers. In general, the condition of the traffic services assets is considered to be good.</p>	<p>The performance of the traffic services in the district is considered adequate based on road users' complaints, crash data, safety audits and road inspections. However, this is a critical group of assets and there are continued plans to improve these. Particularly, an assessment of the suitability of traffic facilities for an older population is a project which will need to be investigated in the future.</p>
Public Transport Infrastructure	
Condition	Performance/ Capacity
<p>The majority of the bus shelters and seats are in good or excellent condition, having been constructed following the review of the bus service in 2005. The main driver for maintenance/renewal is vandalism.</p>	<p>The current bus service is monitored by Ecan, however potential changes in service are consulted with the district. There is more focus on actively encouraging alternative modes of travel including public transport and to complement this Park and Ride facilities are being developed.</p>

## Routine Operation and Maintenance

Operational activity is work or expenditure that is necessary to provide or keep the asset functioning. It has no effect on asset condition, where routine maintenance is the day-to-day work required to keep assets operating at required service levels, and falls into two broad categories:

- ❖ **Planned Maintenance:** Inspection and maintenance works planned to prevent asset failure.
- ❖ **Unplanned Maintenance:** Action to correct asset malfunctions and failures on an as-required basis (i.e., urgent repairs).

Council's operations and maintenance strategy is intended to retain the required levels of service, mitigate risk and minimise costs by monitoring the condition and performance of assets, implementing a balanced programme of planned, and unplanned works.

To achieve this, assets are monitored through routine proactive inspections, testing and the analysis of customer complaints and condition reports. Service levels are managed by assessing the condition of assets against levels of service, the levels of customer expectation, and implementing appropriate action. One way of minimising asset ownership costs is by ensuring effective and efficient technologies are used to improve operational and management efficiencies (e.g, JunoViewer, RAMM etc.). Opportunities for improvement in this area are considered where appropriate.

## Renewal / Replacement Planning

Renewals are programmed with the objective of achieving:

- ❖ A net benefit to the national and/or local economy from the renewals.
- ❖ The lowest life cycle cost for the asset, i.e., it is uneconomic to continue repairing the asset.
- ❖ An affordable cash flow profile
- ❖ Other savings by co-ordinating renewal works with other planned works within the road reserve or adjacent to it.
- ❖ Reduced risk: The risk of failure and associated financial and social impact or potential failure can justify replacement or renewal of an asset. For example, the effect or impact and extent of discontinuation of a service, the potential extent of property damage, increased risk of crashes or other health risk.

## Creation/Acquisition/Augmentation Plan

New capital projects are identified by the Council as a response to growth and demand or to better meet customer needs or achieve target LOS. The major projects and Roading assets groups are considered and prioritised through the development of the Council's Long Term Plan (LTP). The projects may be partially funded by external funding sources such as the New Zealand Transport Agency, or other third-party contributions.

## 1.6 Financial Summary

The forecast expenditure requirements over the ten years planning period to continue to manage the Roothing and transport activities are presented in figure 1-1 below. The financial forecasts presented in the plan are based on 2024 dollars.

Figure 1-1: Total Expenditure and Revenue 2024-2034 (\$'000)

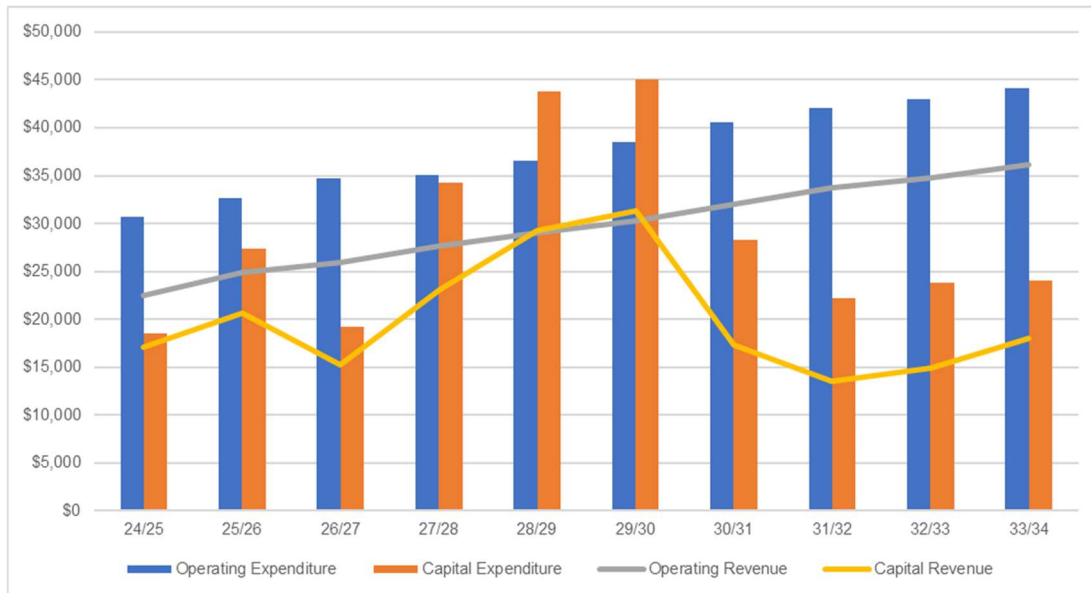


Table 1-5: Total Expenditure and Revenue 2024-2034 (\$'000)

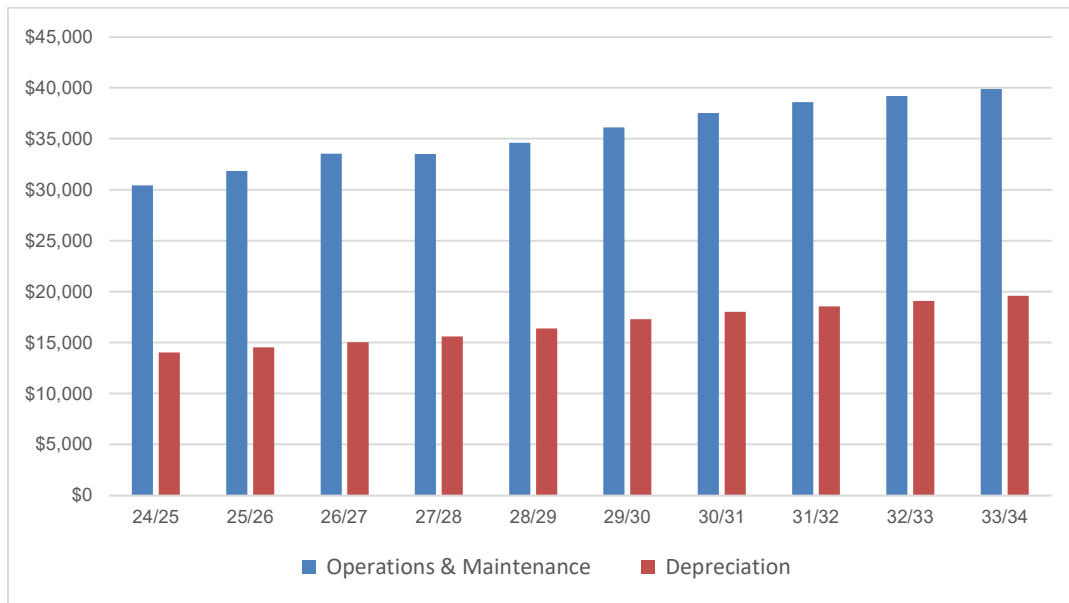
Financial Year	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>Operating Expenditure</b>	\$30,645	\$32,672	\$34,758	\$35,085	\$36,568	\$38,534	\$40,532	\$42,017	\$42,997	\$44,079
<b>Capital Expenditure</b>	\$18,500	\$27,334	\$19,167	\$34,306	\$43,822	\$45,048	\$28,340	\$22,206	\$23,799	\$23,999
<b>Operating Revenue</b>	\$22,549	\$24,955	\$25,965	\$27,707	\$29,024	\$30,258	\$32,053	\$33,764	\$34,829	\$36,121
<b>Capital Revenue</b>	\$17,066	\$20,707	\$15,232	\$23,024	\$29,256	\$31,334	\$17,341	\$13,526	\$14,931	\$18,026

### Operating Expenditures

Operation and maintenance expenditure is projected at \$1.62B over the 30-year planning period for activities undertaken by the council to operate and maintain the network (including inflation).

The expenditure forecast is based on historical costs, contract rates and projected expenditure for future maintenance requirements. Allowances are made for predicted growth in the network, and inflation. 45% of the operating expenditure is considered depreciation. The breakdown of budget is shown below:

Figure 1-2: Operations and Maintenance Cost Requirements 2024-2034

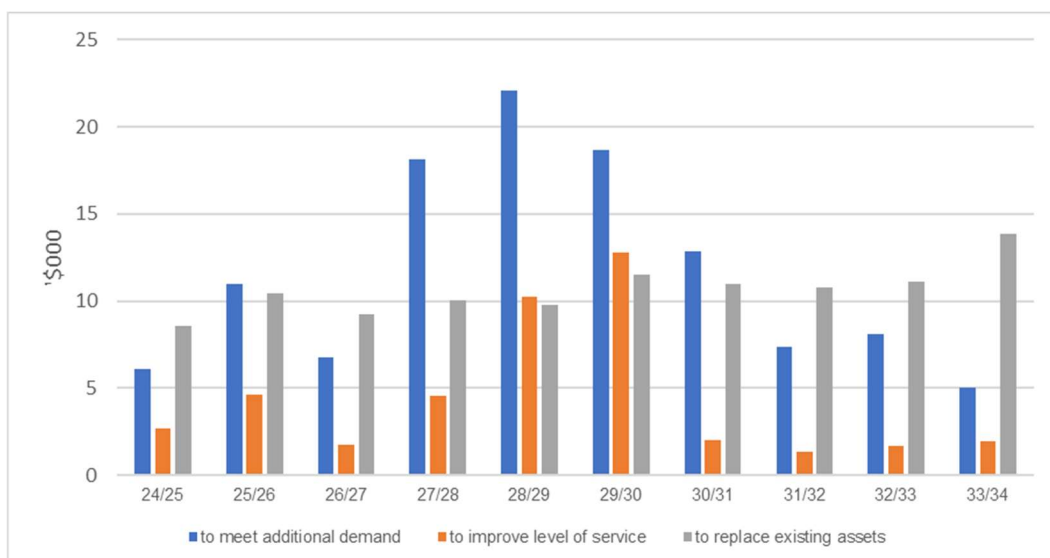


## Capital Expenditure

Capital expenditure includes renewals and new projects.

- Renewal work does not increase the asset's design performance but restores, rehabilitates, replaces, or renews an existing asset to its original capacity. New work is the creation of a new asset or extension of an existing asset beyond its current capacity to meet or improve a level of service or to cater for growth.

Figure 1-3: Capital Cost Requirements 2024-2034



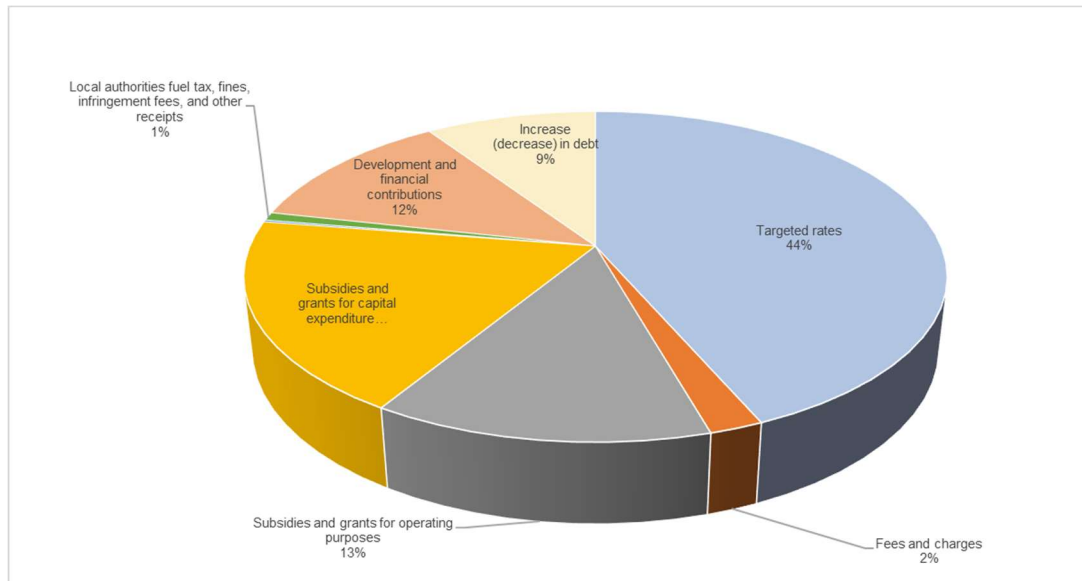
## Revenue/ Funding

Funding for capital development and maintenance of the Roding network comes from a variety of sources as per table 1-7 below.

Table 1-6: Funding Source by \$ (10 years)

Funding Source	\$000
Targeted rates	216,410
Fees and charges	10,432
Subsidies and grants for operating purposes	65,452
Subsidies and grants for capital expenditure	93,391
Internal charges and overheads recovered	959
Local authorities fuel tax, fines, infringement fees, and other receipts	3,972
Development and financial contributions	60,362
Increase (decrease) in debt	46,690
Total	497,667

Figure 1-4: Funding Sources by %



Funding for operation and maintenance of the Roding and transport network is provided from Roding rates, fees and charges, and financial assistance received from NZTA. Funding for capital expenditure is provided from debt funding, renewals funds (depreciation), development/financial contributions, and NZTA financial assistance.

## Valuation

The Council undertakes a full independent valuation of its Roding assets annually. These assets were revalued using the asset register as at 30 June 2023. Table 1-8 summarises the valuation of the transport network assets as at 30 June 2023.

Table 1-7: Asset Valuation as June 2023

Valuation as at 30 June 2023			
Asset Description	Replacement Cost \$	Annual Depreciation \$	Depreciated Replacement Cost \$
Formation	461,875,841	0.00	461,875,841
Sealed Pavement Surface	85,995,417	3,844,220	46,364,349
Sealed Pavement Layers	311,539,070	2,562,456	213,155,769
Unsealed Pavement Layers	25,467,824	394,502	23,808,370
Drainage	75,659,370	1,042,434	53,521,308
Surface Water Channels	111,702,739	1,433,141	82,871,173
Footpath	53,574,742	1,077,309	39,637,587
Traffic Facilities	2,022,465	103,336	1,321,023
Signs	8,703,631	663,043	3,376,467
Railings	2,650,480	69,744	1,904,385
Street Lights	17,395,913	385,985	11,256,759
Minor Structures	2,181,262	44,474	1,401,399
Islands	5,006,437	62,580	4,113,093
Bridges and Bridge Culverts	149,279,836	1,139,099	83,655,559
Traffic Signals	1,620,943	54,031	1,346,021
<b>Total</b>	<b>1,314,675,971</b>	<b>12,876,345</b>	<b>1,092,639,102</b>

## 1.7 Asset Management Practices

An asset management system is a combination of processes, data and software which are utilised to effectively manage assets.

The primary asset management tool and data register used by Council for road and transport infrastructure assets is the Road Asset Maintenance Management (RAMM) database. The use of RAMM or an equivalent asset management system is a prerequisite of the New Zealand Transport Agency for obtaining Government subsidy for Roding work.

The following systems are also operated by the Council to help manage the assets:

- ❖ Pavement Deterioration Model (JunoViewer)
- ❖ Geographical Information System (GIS)
- ❖ TechOne Accounting/ Financial/Non-roading Asset Management Systems
- ❖ Total Record and Management System (TRIM)

The Council employs a team of eleven to manage the roading and transport network. Council has an internal professional services consultant in the Project Delivery Unit, who largely deliver the Roothing Capital Works Programme on an annual basis. As well as this, specialist professional services for areas such as structures and valuations, are provided by external consultants.

## 1.8 Monitoring and improvement Programme

The Council is committed to ongoing improvements in asset management. The current approach for asset management planning incorporates problem identification, evidence gathering, analysing, communication, resourcing and delivery improvements. This is incorporated into the Activity Management Plan which is then independently peer reviewed.

An improvement plan is developed as part of the AMP preparation and seeks to emphasise the most important improvements and to prioritise the importance of each action. Of particular importance are plans to improve performance monitoring and evidence gathering, to better inform decision making.

This plan was peer reviewed by Infrastructure Associates in January 2024, and recommendations from the peer review have been included in the improvement plan where it was considered appropriate.

The improvement plan focuses on improving systems, data, processes and organisational practices to raise the level of advancement in the AMP. The AMP needs to be a living document which is relevant and integral to daily asset management activities. To ensure the plan remains useful and relevant the following on-going process will be undertaken:

*Table 1-8: Improvements*

Action	Timing
Formal adoption of the plan by the Council	Three-yearly
Review and reporting against KPI's	Quarterly
Revise the plan annually to incorporate new knowledge resulting from the AM improvement programme	Annually
Formally review three-yearly to assess adequacy and effectiveness	2025/26
Track progress of implementing the improvement programme quarterly	Quarterly
Review condition assessment information (following condition rating)	Varies from 1-4 years

A number of items requiring improvement have been identified during preparation of this plan. It is intended to prioritise these improvements and develop an action plan to implement them.



# Transportation Activity Management Plan 2024

## Introduction

June 2024








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**Document Acceptance:**

Action	Name	Role	Signed	Date
Prepared by	Yvonne Warnaar	Asset Planning Engineer (Roothing)		29/01/2024
Reviewed by	Joanne McBride	Roothing & Transport Manager		24/06/2024
Approved by	Gerard Cleary	General Manager, Utilities and Roothing		24/06/2024
Adopted by	Utilities & Roothing Committee			16/07/2024

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## 2 Introduction

Waimakariri District Council is responsible for the management of a safe transportation network that is accessible, convenient, reliable and sustainable. The transport activity needs to provide people with ease of access to key activity centres, employment, education, healthcare, and recreation opportunities. It also needs to provide for the safe and efficient movement of freight to support a thriving economy.

To achieve this change, we need to transition away from what has historically been a private vehicle centric focus, into a transport system that provides options for how people can travel.

This document should be read in conjunction with the overarching Introduction to the Waimakariri District Council Utilities and Roding Activity Management Plans, which gives an overview of the district along with its activities, aims and aspirations.

### 2.1 Background

#### Our District

The Waimakariri District lies to the north of the Waimakariri River in North Canterbury. The district covers around 225,000 hectares of land. It extends from Pegasus Bay in the east to the Pukatea Range in the west and is bounded to the north by the Hurunui District.

Waimakariri District is largely made up of fertile flat land, or highly productive rolling downs. Much of the land to the east of Rangiora is reclaimed swamp, which is subject to poor drainage and occasional flooding. The north-western portion of the district is hill and high country. These hills, including Mt Oxford, Mt Richardson, Mt Thomas and Mt Grey dominate the district's western landscape.

We have a district which can be described as having two halves, with distinctly different characteristics. The east side of the district has our larger urban areas and higher population, and in the west the land is more rural in character with a strong agricultural base and lower population, with some areas being remote in nature.

The towns of Kaiapoi and Rangiora are the major urban areas in the Waimakariri District. The district's other main urban areas include Woodend / Ravenswood, Pegasus and Oxford, and along with this we have a number of small villages and settlements. Connecting communities is a key challenge.

#### Transportation Activity

Waimakariri District Council is a road controlling authority with the role of managing the districts transport network. Our goal is *to provide a transport network which is affordable, integrated, safe, responsive and sustainable, and which contributes to the attainment of high quality natural, living and productive environments within the District and assists development of a strong sense of community.*

To deliver upon this goal, Council manages (as at 1 July 2023):

- *1,562 km of roads (979km sealed and 568km unsealed)*
- *157 bridges and 132 large culverts*
- *385km of footpaths and 25km of shared paths*
- *5,648 Street lights*
- *32 bus shelters*

### **Key Issues / Challenges**

The Waimakariri District has experienced significant growth over the last decade. Along with this we have seen increases in traffic movements from private motor vehicle trips and increases in heavy freight movements associated with servicing key activity centres and moving primary products. This growth is expected to continue well into the future. In conjunction with this, we have experienced increasing severe weather events which have tested the resilience of our network and the ability to be able to respond, and rapidly increasing costs across the market.

The transport system needs to respond to changes in population and land use, to ensure that it continues to provide a high quality of life in the Waimakariri District. The transport activity needs to enable ease of access to key activity centres, employment areas, education, healthcare, and recreation opportunities. It also needs to provide for the safe and efficient movement of freight to support a thriving economy.

To achieve this change, we are transitioning away from what was historically a private vehicle centric focus, into a transport system that provides for different users as well as providing options for how people can travel. This has benefits in that it can reduce the number of vehicle trips taken which results in reduced vehicle emissions, as well as providing health and wellbeing benefits for the community from active modes of travel.

Increasing adverse weather events and higher ground water levels, coupled with an increase in heavy freight movements are causing faster deterioration of roads within the district and an increased need to focus on maintenance activities, such as drainage maintenance and high shoulder removal, to minimise deterioration. Increasing costs have resulted less Road Maintenance, Operations and Renewals work being able to be undertaken, with increasing faults and decreasing customer satisfaction. This will be one of the areas of focus for Council to help provide a more resilient transport network.

The five key focus areas for Council to address include:

- *Increased Maintenance, Operations & Renewals Activities.*
- *Increased focus on resilience.*
- *Focused programme of safety improvement on key transport corridors*
- *Delivery of our walking & cycling network.*

- *Improvements to public transport infrastructure to support Greater Christchurch strategy.*

## **Our Strategy**

Over the last decade Waimakariri District has experienced significant growth. Along with this we have seen increases in traffic movements from private motor vehicle trips and increases in heavy freight movements associated with servicing key activity centres and moving primary products. This growth is expected to continue well into the future. In conjunction with this we have also experienced increasing weather events which have tested the resilience of our network and the ability to be able to respond.

The transport system needs to respond to changes in population and land use, to ensure that it continues to provide a high quality of life in the Waimakariri District. The transport activity provides people with ease of access to key activity centres, employment areas, education, healthcare, and recreation opportunities. It also needs to provide for the safe and efficient movement of freight to support a thriving economy.

To achieve this change, we are transitioning away from a private vehicle centric focus, into a transport system that provides for different users as well as providing options for how people can travel. This has benefits in that it can reduce the number of vehicle trips taken which results in reduced vehicle emissions, as well as providing health and wellbeing benefits for the community from active modes of travel.

Increasing adverse weather events and higher ground water levels, coupled with an increase in heavy freight movements are causing faster deterioration of roads within the district and an increased need to focus on maintenance activities, such as drainage maintenance and high shoulder removal, to minimise deterioration. This also helps ensure a resilient network.

## **Purpose of the Plan**

The objective of this Transportation Activity Management Plan is to outline a strategic, tactical and operational plan, which provides a framework and guidance that assists Waimakariri District Council in meeting the needs of the District's transport network users through the effective use of its assets and associated activities.

It also informs the vision and objectives of Council's commitments to the community, as defined in the Long Term Plan (LTP), whilst being consistent with the strategic direction both nationally through the Government Policy Statement (GPS) and regionally through Canterbury's Regional Land Transport Plan (RLTP). The Plan will help to ensure delivery of good-quality local infrastructure, local public services, and ensure performance of regulatory functions are achieved.

The purpose of this plan is to:

- *Identify how Transportation activities are to be managed.*

- *Explain how Waimakariri District Council will deliver the required level of service in the most efficient, effective and appropriate manner.*

This AMP is based on the International Infrastructure Asset Management Manual. This document recognises that assets exist to address the needs of the customer, in this case the users of the Waimakariri District transport system. An asset that is not meeting those needs because it is no longer utilised, however well preserved it may be, serves no useful function and may actually be diverting resources away from those assets more in need. In addition to assets, activities such as education, marketing, travel demand management and many other 'soft' measures are recognised as providing a synergy which allows better utilisation of assets. As such, they are an integral component of the plan.

The Activity Management Plan includes consideration of the Better Business Case Approach. This approach seeks to focus the AMP on the key issues facing the Road Controlling Authority and how the proposed programme of works would address these.

For this Activity Management Plan the identified key issues to be addressed, to best ensure the long-term maintenance of transport system and the well-beings for users are:

1. Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.
2. Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting in effects ranging from temporary disruption to potentially life-changing impacts.
3. Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.
4. Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur.

These will be further addressed throughout the document, along with exploring ways to manage these key issues.

Activity Management Plans should be reviewed every three years to align with and inform the Long Term Plan (LTP).

The main benefits derived from the preparation and implementation of the AMP are:

- *Improved understanding of service level options and standards.*
- *Better understanding and forecasting of asset related management options and costs.*
- *Managed risk of asset failure.*
- *Improved decision making based on risk management practices.*
- *Clear justification of forward works programmes and funding requirements based on asset and activity needs.*



## Plan Structure

The AMP is designed to take the reader through the various considerations and decisions taken in arriving at the best possible outcome for the Waimakariri District. In coming to those decisions, Council and staff carefully weigh up the positives and negatives within the decision-making process, to try and balance needs and wants against the ability of the community to pay for these. To arrive at that balance, a great deal of information gathering is undertaken. The various chapters of the AMP take the reader through this process so they can better understand how the final programme of work was arrived at.

## Approval Process

The Activity Management Plan approval process involves:

- *Review by Management Team*
- *Approval by Council*

No direct community-wide consultation has been undertaken on the levels of service in this plan. It is Council practice to consult on Activity Management Plan levels of service through the Long Term Plan (LTP) process where the financial outcomes, levels of service, key performance measures and major capital projects are presented for community comment and submissions. In addition, service requests, Council's three yearly customer satisfaction surveys, and feedback to Councillors / Community Boards all provide valuable information to determine whether there is community desire to consider changes to existing levels of service.

Furthermore, for each capital project there is a consultation process undertaken with directly affected residents / businesses. This allows an opportunity for the community to provide feedback on designs and standards which are set through the levels of service in this plan.

## Waimakariri's Story

In pre-European times there were several important Ngai Tahu settlements in the area now occupied by the Waimakariri District. The centre of Ngai Tahu was the pa of Tūrakautahi, known as Kaiapoi. Today, the hapu Ngāi Tūāhuriri is based at Tuahiwi, to the north of Kaiapoi. People who identify themselves as having Māori ancestry presently represent 8.6% of the District's population, and a number live in the eastern part of the district.

During the early years of European settlement, Kaiapoi developed as a river port. Rangiora was the area's main market town, and the development of Oxford was based on timber milling. The roles of the district's main urban areas have changed during recent years, mainly as the result of the rapid population growth. European settlement concentrated on the fertile soils of the plains. Until the middle of the 20th Century extensive agricultural and pastoral farming predominated. More recently, horticulture and forestry have gained in importance, however today only 11% of the district's labour force is involved with agriculture, forestry and fishing.

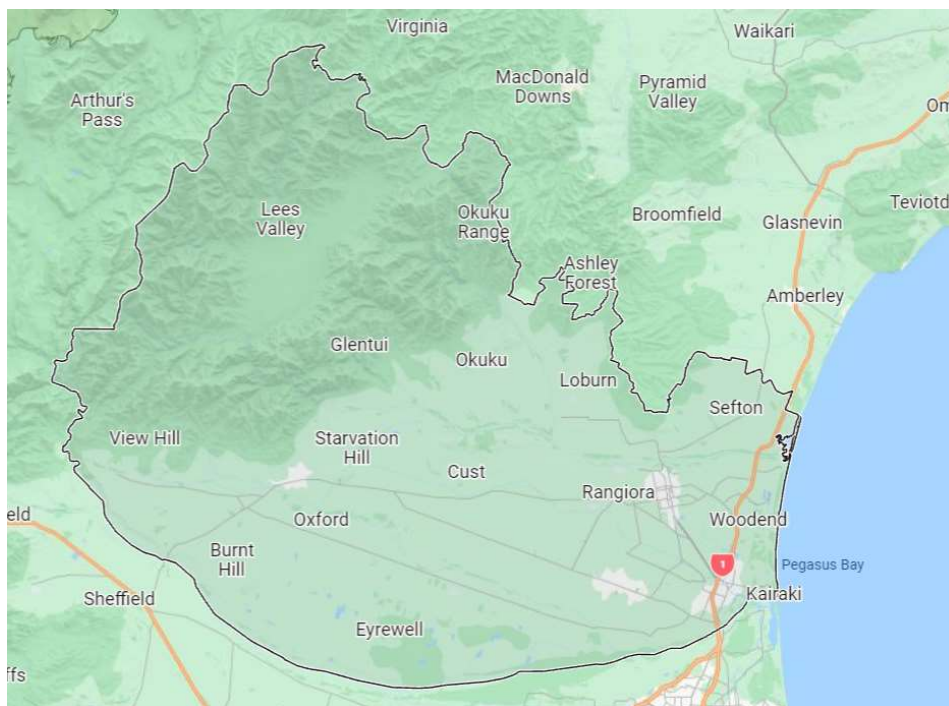
There has over several years, been a substantial increase in the number of people living in the district's rural areas with many small holdings being created. Some of these are used for full-

time or part-time horticultural enterprises (e.g., vegetable or flower growing), while other small holdings have no involvement in agriculture. These holdings, together with the District's rural residential (Residential 4) zones, provide opportunities for people to live in the district's rural areas.

The district has few major industries. A large fibre-board plant at Sefton draws on local wood resources. Other industries are mainly small to medium scale service and processing enterprises. Despite this, industrial business growth has been significant in recent years and areas such as Southbrook Industrial area is continuing to grow and expand, providing more opportunities for employment within the district. There has been increasing employment within the district in wholesale/retail, the hospitality industry, education and health and community services.

The Waimakariri District has a high level of connectivity across several areas. The South Island Main Trunk Railway and State Highway 1 cross the eastern portion of the district, providing a strong regional linkage. The district also has an airfield at Rangiora and is close to the Christchurch International Airport. South Island telecommunication trunk mains run through the district and fibre has been installed throughout our urban and several settlement areas.

Figure 0-1: Map of Waimakariri District



Over the last 6 years, there has been a focus on developing a walking & cycling network plan for the district, and work on delivery of key walking & cycling infrastructure has begun to build a cohesive network, offering different opportunities and choice for how people get around in our district.

The district offers a wide range of recreational opportunities. It has sandy beaches, estuaries, river gorges and braided rivers, which offer a range of opportunities for fishing, boating and rafting. The foothills and mountains offer a variety of tramping experiences which complement a growing range of walking trails and formal recreational areas.

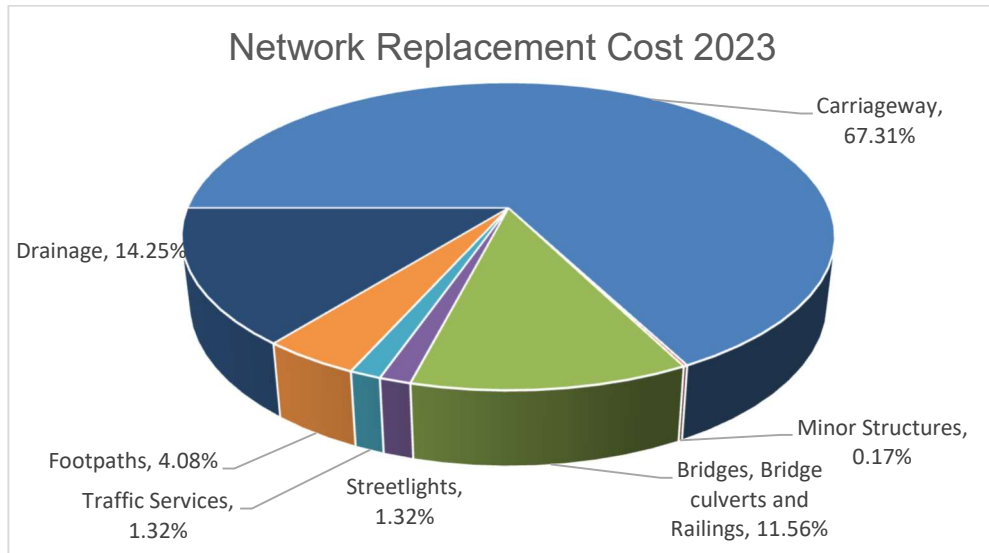
Despite ongoing growth, the Waimakariri District retains its rural /small town charm and character. Its two high schools (year 9-15), two composite schools (year 1-13), and many primary schools are well supported by the community. There are an increasing number of pre-schools in the district. There is also an extensive range of community and recreational organisations.

Table 0-1: Assets Included in Activity Management Plan by Type and Quantity [1][2] (from 2023 valuation)

Asset Group	Quantity/ Length 2020	Quantity/ Length 2023	Asset Group	Quantity/ Length 2020	Quantity/ Length 2023
	2021 AMP	2024 AMP		2021 AMP	2024 AMP
Road Carriageway Length (km)			Road Drainage (km)		
Total network	1,555	1,586	Kerb & Channel	416	454
Sealed Roads	971	999	Culverts	26.11	26.58
Unsealed Roads	586	587	Swale	29.9	30.1
Bridges & Structures (number)			Subsoil drain	4	22
Bridges	157	157	Road Drainage (each)		
Large Culverts	131	132	Sumps	4107	4843
Stock underpass	13	13	Soak pit	574	626
Cattle stops	19	27	Traffic Services (each)		
Streetlights (number)			Signs	18602	18,994
Poles	4970	5580	Traffic Islands	1026	1092
Lights	5264	5414	Tactile Indicators	633	1567
Passenger Transport (number)			Active Warning Signs	31	34
Bus Shelters	20	32	Bollards	326	358
Bus seats	26	26	Traffic Signals	3	4
Footpaths, Cycle Paths and Shared Paths (km)			Traffic Services (km)		
Total network	356.6	394.7	Railings	7.2	9.76
			Edge Marker post	399	399

Waimakariri remains one of the faster growing Districts in the country, albeit at a slightly slower rate than previous years. The AMP figures clearly show an increase in most asset quantities. Where figures are lower than previous, this can be due to either an error in data which has been corrected, or some assets moving into other categories, for example small bridges replaced with culverts which do not qualify as bridges as defined by the New Zealand Transport Agency are reclassified with drainage assets.

Figure 0-2: Network Replacement Costs 2023 (Source 2023 Valuation)

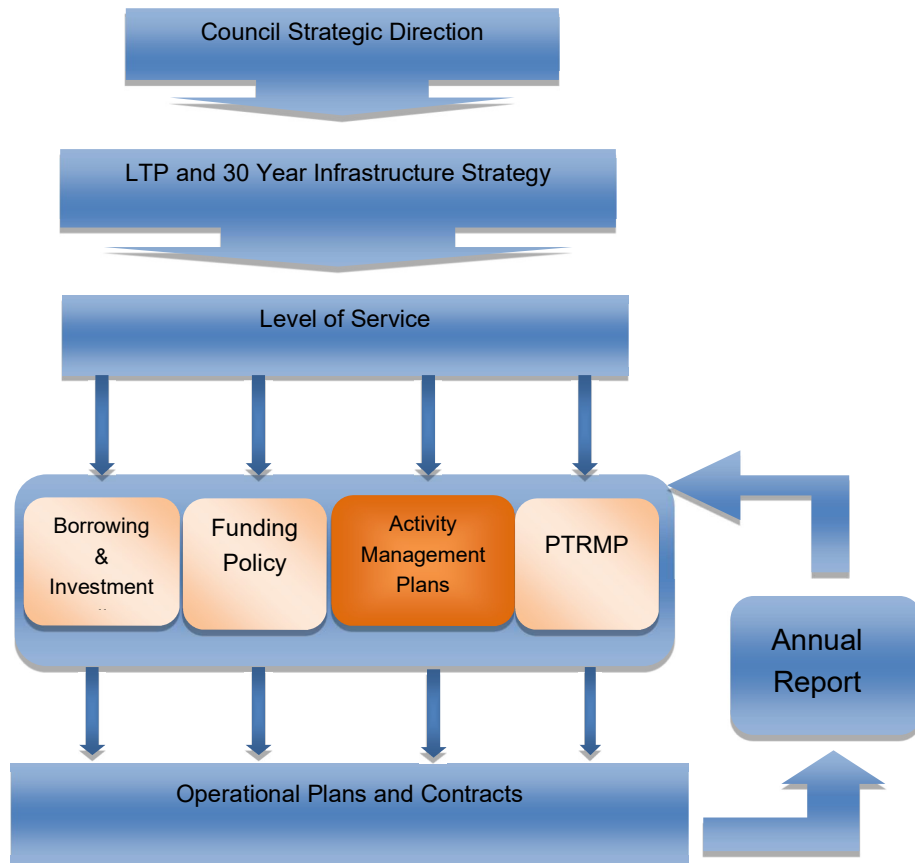


As is illustrated in this chart, two thirds of the network replacement cost lie in our carriageways, followed by drainage assets, and bridges. While the majority of work is carried out in maintaining and renewing our carriageways it is planned, moving forward, to have an increased focus on drainage works. An increased focus on bridge maintenance and component renewal has begun, however network replacement costs as a proportion of the whole network have largely been unchanged from the previous valuation which is to be expected.

## 2.2 Relationship with other planning documents

The Council’s operation and delivery of all Roding and Transportation activities is directed and shaped by legislation, statutory plans, processes, and other documents. **Error! Reference source not found.** and **Error! Reference source not found.** identify the AMP’s relationship:

Figure 0-3: Document linkage chart – Local Planning documents



### Strategies, Policies and Plans that Impact on this activity

**Error! Reference source not found.**-2 below outlines the strategic documents utilised by the Council as part of the planning process. It identifies the external and internal influences on Council’s activity management plans and provides a brief insight as to how those influences are manifested.

Figure 0-3: Hierarchy of WDC Policy, Strategy and Planning

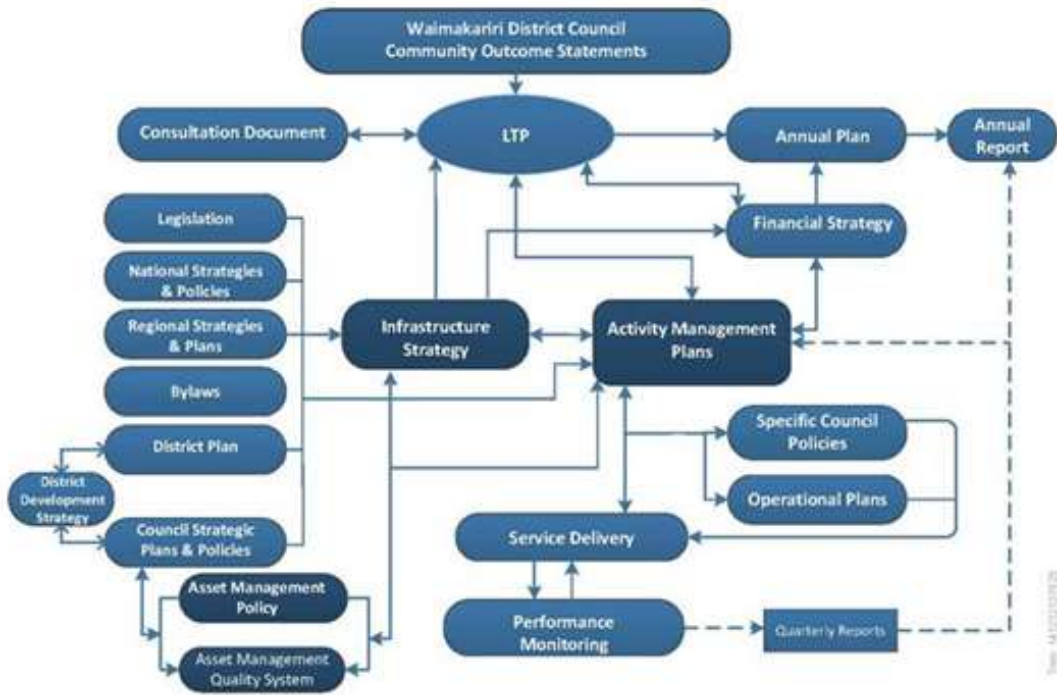


Table 0-2: National, Regional and Local Strategies and Plans

Documents	Descriptions
<b>Key Internal Documents</b>	
30 Year Infrastructure Strategy	Required by LGA 2002, it is intended to be a vehicle for identifying the significant infrastructure issues facing the council over that period, the principal options for managing those issues, and the implications of those options. The Strategy is based on a set of assumptions and the risks regarding the accuracy of these increase over time. The Strategy is therefore reviewed every three years as part of the LTP cycle. Projects identified in years eleven onwards are considered to be fluid due to the greater degree of uncertainty about the operating environment and underlying assumptions.
Long Term Plan (LTP)	The Long Term Plan is a comprehensive statement of the Council's plans for the next ten years. It is the primary instrument for the Council to report on its intentions on delivering its services to the community. The service level options, and associated costs developed in this Activity Management Plan will be fed into the Long Term Plan.
Integrated Transport Strategy	The overarching document which informs the direction of planning for transport in Waimakariri District, and a framework for the plans and more focused strategies which sit beneath and alongside it.
Activity Management Plans	These documents 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 the long-term strategy of the Council to the operational resources and directs them in how they deliver a level of service required to meet community expectations as defined by the desired 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	The Annual Plan outlines the Council's work programme and key projects for the next year.
Financial and Business Plans	The financial and business plans requirement by the Local Government Amendment Act (3). The expenditure projections will be taken directly from the financial forecasts in the Activity Management Plan.

Documents	Descriptions
<b>Key Internal Documents</b>	
Bylaws	<p>Bylaws are required by the Local Government Act 2002 for every local authority. They are a rule or regulation made by a Local Authority on a diverse range of subjects. The following Bylaws relate to this AMP:</p> <ul style="list-style-type: none"> <li>• Waimakariri District Council Vehicle Crossings Bylaw 2019</li> <li>• Waimakariri District Council Stock Movement Bylaw 2020</li> <li>• Waimakariri District Council Parking Bylaw 2019 and schedule of restrictions</li> <li>• Signage Bylaw 2019</li> </ul>
Waimakariri District Council Speed Management Plan	<p>Legislation put in place under the Labour government required all Councils to have a speed management plan in place by March 2024. Waimakariri has carried out considerable planning and consultation for this, however currently the only speed management changes that look likely to go ahead at this point are for speed zones around all schools.</p>
Contracts	<p>The service levels, strategies and information requirements contained in the Activity Management Plan are the basis for performance standards in the current Maintenance and Professional Service Contracts.</p>

<b>Key External Documents</b>	
Government Policy Statement (GPS)	<p>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.</p>
National Land Transport Programme (NLTP)	<p>The NLTP is a three-year land transport programme that is funded by Waka Kotahi (NZTA). It provides the mechanism whereby investment is allocated to Road Controlling Authorities to assist in the delivery of activities which support desired government direction as conveyed through the GPS and Transport Framework Outcomes</p>
Our Space 2018-48	<p>A strategic framework put in place to update the work of and complement the UDS.</p>
Greater Christchurch Travel Demand Management (TDM) Strategy	<p>This strategy outlines how travel demand will be managed in the greater Christchurch area to meet the transport outcomes of the GCP.</p>



## Key External Documents

Regional Land Transport Plan (RLTP)	The RLTP is the vision of the Canterbury region, bringing together its key objectives for its member RCA's, its views on the future transport directions for the Region, and the programme of work its members seek to deliver, including prioritisation for NLTF allocations.
Canterbury Regional Public Transport Plan (RPTP)	The RPTP outlines the current state of our regional public transportation network and the challenges we face now and in the future. The priorities in the plan reflect the context of regional, national and international events and trends. The programmes and projects in it are the regional responses to these challenges and include actions for Canterbury's regional and district councils and (Waka Kotahi New Zealand Transport Agency).
Greater Christchurch Mode Shift Plan	The Greater Christchurch Mode Shift Plan is the first document to describe the sub-region's integrated and cohesive approach to delivering mode shift. It responds to a request from the Government for all high-growth urban areas to produce regional mode shift plans.
Arataki (Waka Kotahi)	<p>Arataki is Waka Kotahi's 10-year view of what is required to deliver on the Government's current priorities and long term objectives for the land transport system. Arataki outlines the context for change, the step changes in existing responses that it believes are needed, and the levers the Transport Agency will use, in partnership with others, to shape change.</p> <p>It includes national, pan-regional and regional summaries</p>
Transport Outcomes Framework	The Transport Outcomes Framework takes a strategic, long-term, and integrated approach to transport and makes clear what government is aiming to achieve through the transport system in the long term.
Road to Zero – New Zealand's Road Safety Strategy	The Road to Zero Strategy articulates government's vision of 'a New Zealand where no one is killed or seriously injured in road crashes', providing guiding principles for design of the road network and road safety decisions, as well as targets and outcomes for 2030.

## Other Council Strategies, Policies and Plans

The following is a list of other Council strategies, policies and plans relevant in varying degrees to Roding and Transportation in the Waimakariri District Council.

- *Waimakariri District Walking and Cycling Strategy*
- *Rangiora Town Centre Strategy (RTC2020)*
- *Kaiapoi Town Centre Plan*
- *Waimakariri District Accessibility Strategy 2017-21*
- *Age-Friendly Waimakariri Plan and Process 2019-2021*
- *Waimakariri District Plan*
- *West Rangiora, East Rangiora, Kaiapoi and Woodend Structure Plans*
- *Kaiapoi Traffic Study*
- *District Transport Study*
- *Rangiora Transport Study*
- *Rangiora Parking study*
- *Kaiapoi Parking study*
- *Waimakariri District Development Strategy*
- *Waimakariri Rural Residential Development Strategy 2019*
- *Waimakariri Road Safety Action Plan*

## Policy and Planning Developments

The District Transport Study, Rangiora Transport Study, and Kaiapoi Traffic Study were all based on data from the 1996 census and were developed prior to a more integrated and sustainable approach to transport planning as required by the Land Transport Management Act and as envisaged in the Greater Christchurch Urban Development Strategy (UDS). Hence, they are now somewhat out of date, although some key aspects have been incorporated in current plans as detailed below.

The key strategies in managing transportation in the district are 'Our Space', the Regional Land Transport Plan (RLTP) and the National Road Safety Strategy "Road to Zero".

The Whakawhanake Kāinga Komiti (Urban Growth Partnership for Greater Christchurch) has now developed a draft Spatial Plan for the sub-region, which sets out a plan for shaping and accommodating future growth in Greater Christchurch, by providing more affordable housing, emissions reduction, and climate resilience. Once adopted by partners, which is anticipated to occur in early 2024, the Spatial Plan builds on and replaces the previous plans and strategies developed for Greater Christchurch (including the UDS and Our Space) but does not seek a fundamental change from their strategic direction.

At a more detailed level specific transport studies and plans have been and will continue to be carried out as part of the development of Structure Plans and Outline Development Plans for the growth areas defined in the UDS.

Other strategies and plans such as the Road Safety Action Plan, the Walking and Cycling Network Plan, Age-friendly Waimakariri Plan and the Greater Christchurch Travel Demand Management Plan are specific documents that support the overall directions in the RLTP.

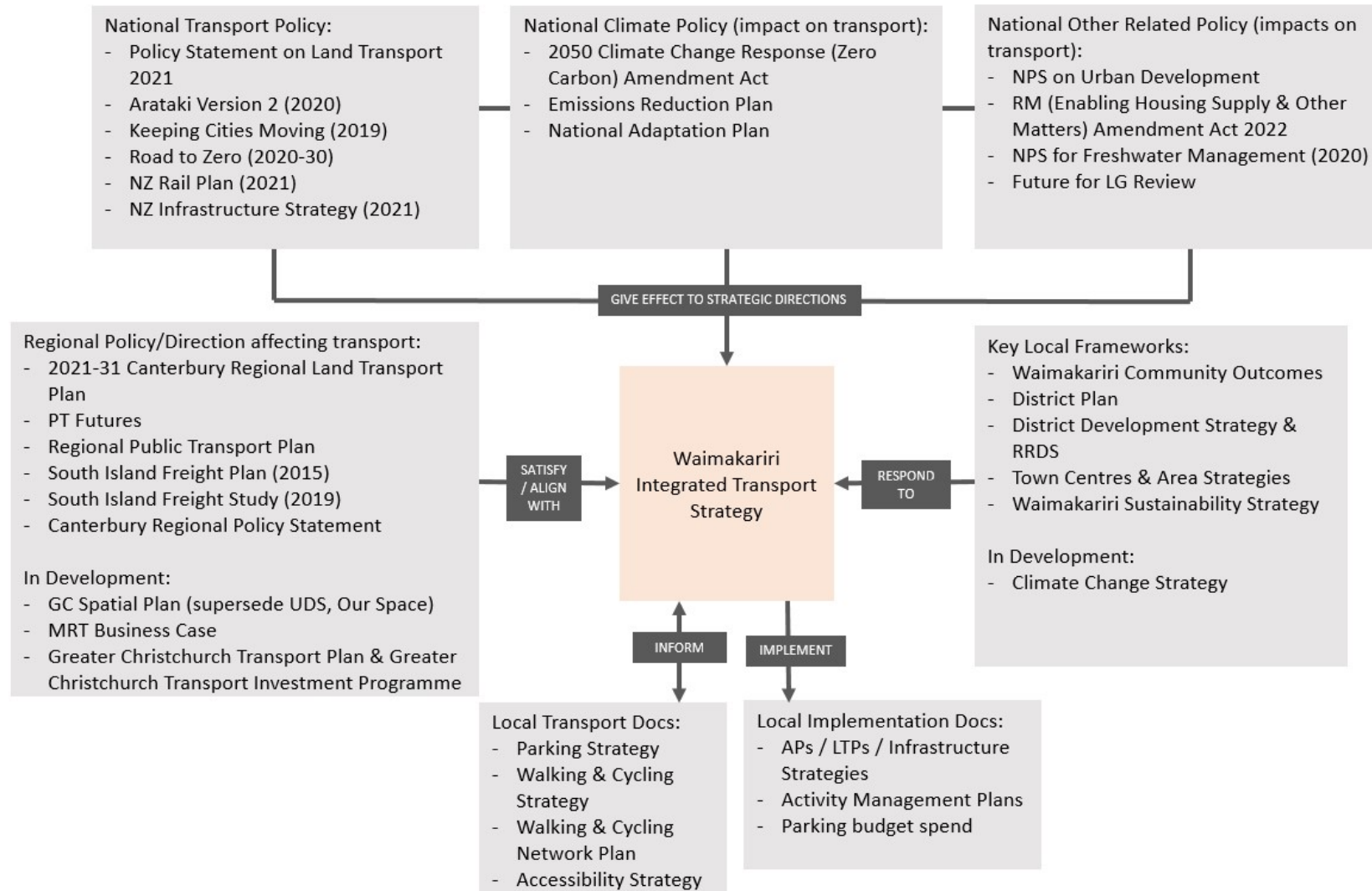
In addition, Council has recently developed a draft overarching Integrated Transport Strategy (ITS) for Waimakariri District, which outlines an integrated approach to delivering transport planning and investment, and encouraging behaviour change over future generations. It gives effect to strategic directions contained in transport and other related national policy documents (including considering a pathway to contributing to VKT reduction targets), while aligning with key sub-regional transport and land use policy and future strategies. The draft ITS proposes five Key Moves:

1. Create a well-connected multi-modal district;
2. Integrate land use and transport to underpin higher density living in urban areas;
3. Design transport network for the efficient movement of freight;
4. Deliver a safe transport system for everyone;
5. Achieve travel behaviour change.

These Key Moves are consistent with directions signalled in this Transportation AMP, and further key ITS proposals will be integrated into the next AMP. The Council will consider a final ITS for adoption in early 2024.

## Strategic Context

Figure 0-4: Strategic Document relationships



## 2.3 Consultation

### Key Stakeholders in the Plan

The levels of service for the transportation activity are determined by the Community. How the services are provided is determined by the Council in response to the requirements of both the key stakeholders and legislation.

Key stakeholders are broadly defined as:

- *Waimakariri Community*
- *Elected Members*
- *Internal Partners*
- *Other Stakeholders*

### Waimakariri Community

The Waimakariri Community are the direct users of the district's transportation network. This includes commercial and private road users, users of footpaths and of cycleways. **Section 3: Level of Service** explains the needs and wants of the Waimakariri Community in more detail.

### Elected Members

Elected members have a vital interest in Roding and Transportation assets, and they represent the views of the community. They include Councillors and Community Board members.

### Internal Partners

Some of the key Council departments who contributed to or affected the decision-making process of the AMP Included

- **Asset Information Team** – *Responsible for ensuring that new asset data is maintained to a high standard, and that historic data is continually being improved. Ensuring data is correct is critical for a good AMP and AIM team played a large part in this. Also provided some of the supporting charts, and that data was up to date for annual revaluations.*
- **3 Waters** – *3 Waters liaise with the Roding department regarding forward works planning to ensure work is carried out at an optimal time that does not involve rework over recently completed work. High level planning carried out by managers of respective departments and the Roding Operations.*
- **Greenspace Unit** – *Liaison regarding Reserves / Roding overlap and project coordination. Ongoing consultation.*
- **Finance & Business Support** – *Provide a comprehensive list of documents which help to inform the plan, for example the Financial Strategy. They also assist asset managers during the budget period in financial forecasting to ensure the programme is affordable. For this AMP finance helped with regular updates as budget projections*

progresses, and ensuring information fed into the Financial Chapter was aligned with proposed expenditure, LTP and IS financials.

- **Strategy & Business Team** – Responsible for developing corporate strategies and policies. The strategies provide direction and highlight community priorities and the policies can impact on the way activities are carried out, for example, the Climate Change Policy requires climate change to be considered in all Council decision-making. Provided input into the risk management chapter, and reading resources for Climate Change background, also wrote the LTP and IS.
- **Development Planning Unit** – Provided key information on population growth, demographics other high level planning information. What, where, when, and historic information from external sources such as Department of Statistics.
- **Project Delivery Unit – Development Team** – Provided information on areas and quantities of growth over next 3 years based on proposed known new subdivisions.
- **Project Delivery Unit – Civil**. This department manages the Carriageway Lighting contract and provided key information regarding future needs of this asset.
- **Roading Operations Team** – Provided information on work carried out (including financials), Proposed programmes, prioritisation methods for renewals work, and assistance in predicting future work based on known rates.
- **Roading Strategic Team** - Provided information on safety issues, alternative modes, demand information and Strategic Business Case.
- **Special Projects Engineer** - Part of Project Control Group and assistance with specific issues, for example the Bridge Renewals Programme and the NZTA 24-27 Maintenance, Operations & Renewals bid.
- **Roading & Transport Manager** - Part of Project Control Group. Has overall decision control over AMP, in addition provided information and decisions around all Improvement projects, plus key conduit for information regarding the Greater Christchurch partnership work, amongst others.

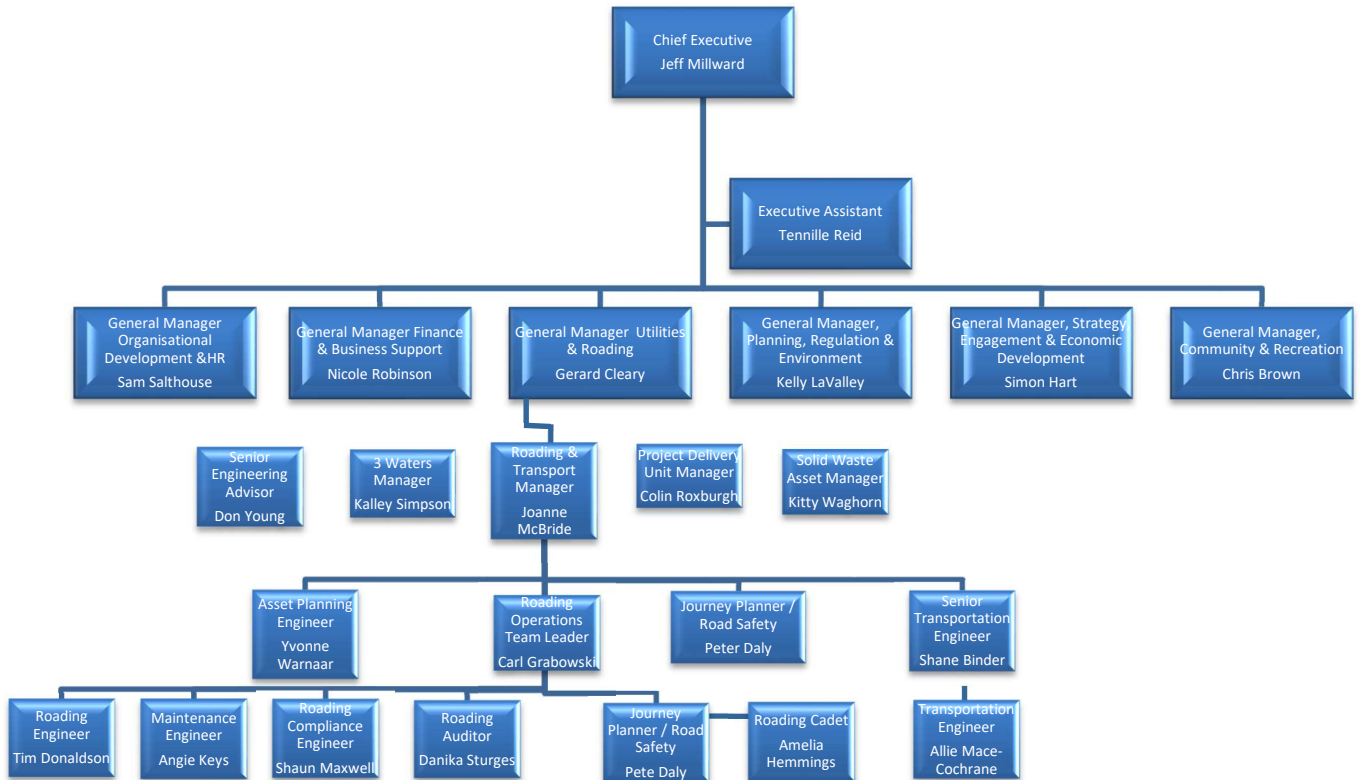
## Other Stakeholders

There are external parties with an interest in the management of WDC road assets and include, but are not limited to:

- *Tangata Whenua*
- *Ministry of Transport and NZ Transport Agency*
- *Regulatory and monitoring bodies including Environment Canterbury, Ministry of Health, Department of Conservation, Audit NZ*
- *Contractors and consultants*
- *Police, Fire, emergency services and ACC*
- *Environmental and recreational interest groups (eg, Fish and Game)*
- *Automobile Association*
- *Road Transport Association*

- NZ Police
- Local Government Organisations
- Utility providers

Figure 0-5: Organisational Structure



## Reasons and Justification for Asset Ownership

Transportation is fundamental to the quality of life in Waimakariri District. It provides people with access to employment, services, education, and recreation, as well as providing for the movement of goods to support a thriving economy. The road corridor also provides access for utilities such as power, telecommunications, water supply and waste disposal.

The Council considers that the provision of effective and efficient transportation systems is a key component of its goals to provide high quality living and productive environments.

Ownership of roads, other than State Highways, is vested in the Council by the Local Government Act 1974. This makes continued Council ownership the only available option.

State Highways are vested in the Crown and are maintained by Waka Kotahi (New Zealand Transport Agency). There are two State Highways in the District, State Highway 1 and State Highway 71.

The legal authority for the Council to be involved in the provision of Roothing and ownership of assets is contained in the Local Government Act 1974.

The key legislative direction is contained in Section 319 of the Local Government Act 1974. This section establishes the ability of the Council to carry out various activities. It does not require any of these activities to be carried out neither does it establish standards for the work the Council does on the road.

In addition to S353 of the Local Government Act 1974 the statutes, regulations, rules, bylaws, policies, and other documents detailed in this plan all constrain or shape the Council's ability to carry out its desires for transportation. The most frequently encountered constraints are those imposed by the following documents:

- *Local Government Act 2002*
- *Government Roothing Powers Act*
- *Land Transport Management Act*
- *Resource Management Act 1991 and associated district and regional plans*
- *The Local Government (Rating) Act 2002.*

## **Council Vision**

The Council's vision is 'To make Waimakariri a great place to be, in partnership with our communities.'

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

## **Community Outcomes**

The Council has undertaken consultation with the Community on the Long-Term Plan in 2004, 2006, 2009, 2012, 2015, 2018 and 2021. Among the many topics that were consulted on were the community's preferences and desired outcomes for the next 20 years and beyond. It is the Council's responsibility to ensure that all activities that it undertakes are directed towards delivering outcomes.

The community outcomes that Waimakariri District Council will work towards are shown in Table 2-3.



Table 0-3: Community Outcomes 2023

<u>Social</u>	<u>Cultural</u>
<p>A place where everyone can have a sense of belonging...</p> <ul style="list-style-type: none"> <li>• Public spaces are diverse, respond to changing demographics and meet local needs for leisure and recreation.</li> <li>• Council commits to minimizing the risk of social harm to its communities.</li> <li>• Housing is available to match the changing needs and aspirations of our community.</li> <li>• Our community groups are sustainable and able to get the support they need to succeed.</li> <li>• Our community has access to the knowledge and skills needed to participate fully in society and to exercise choice about how to live their lives.</li> <li>• People are able to enjoy meaningful relationships with others in their families, whanau, communities, iwi and workplaces.</li> <li>• Our community has reliable access to the essential infrastructure and services required to support community wellbeing.</li> </ul>	<p>...where our people are enabled to thrive and give creative expression to their identity and heritage...</p> <ul style="list-style-type: none"> <li>• Public spaces express our cultural identities and help to foster an inclusive society.</li> <li>• The distinctive character of our takiwā, arts and heritage are preserved and enhanced.</li> <li>• Members of our community are able to engage in arts, culture and heritage events and activities as participants, consumers, creators or providers.</li> <li>• Waimakariri's diversity is freely expressed, respected and valued.</li> <li>• There is an environment that supports creativity and innovation for all.</li> <li>• Local arts, culture and heritage are able to make a growing contribution to the community and economy. (new)</li> </ul>

<p><u>Environmental</u></p> <p>...that values and restores our environment...</p> <ul style="list-style-type: none"> <li>• People participate in improving the health and sustainability of our environment.</li> <li>• Land use is sustainable; biodiversity is protected and restored.</li> <li>• Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</li> <li>• Our district transitions towards a reduced carbon and waste district.</li> <li>• The natural and built environment in which people live is clean, healthy and safe.</li> <li>• Our communities are able to access and enjoy natural areas and public spaces.</li> </ul>	<p><u>Economic</u></p> <p>...and is supported by a resilient and innovative economy.</p> <ul style="list-style-type: none"> <li>• Our district is prosperous and reflects the value of both paid and unpaid work.</li> <li>• Infrastructure and services are sustainable, resilient, and affordable.</li> <li>• Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy. (modified and expanded)</li> <li>• There are sufficient and appropriate locations where businesses can set up in our District.</li> <li>• There are sufficient skills and education opportunities available to support the economy. (new)</li> <li>• There is access to meaningful, rewarding, and safe employment within the district.</li> </ul>
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The community outcomes which most strongly associate with the Roding and Transport activity are as follows:

- *Public spaces are diverse, respond to changing demographics and meet local needs for leisure and recreation.*
- *Shared paths, separated cycle lanes and low speed streets with greenways have encouraged a wider group of users to participate in alternative modes in a safe and enjoyable manner.*
- *Our community has reliable access to the essential infrastructure and services required to support community wellbeing.*

*As well as ensuring roads are maintained to a suitable standard for private and commercial motor vehicle use, Council is also working to ensure that there is choice in the way that people may choose to move around. This includes but is not limited to walking, cycling, micro mobility and public transport.*

- *Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.*

Council ensures its network and critical infrastructure is well maintained, and that the risk of damage is minimised where possible. Also, future needs of the network for resilience are well understood and planned for to improve resilience (e.g., drainage / retaining works to minimise impacts from severe weather events).

- *Our district transitions towards a reduced carbon and waste district.*

Council's major contributions to reducing carbon include better utilisation of natural materials such as gravel for construction and remetalling unsealed roads, encouraging the use of alternate modes of travel including walking / cycling / public transport, and the continuing transition to electric vehicles.

- *The natural and built environment in which people live is clean, healthy and safe.*

Safety is, and will continue to be, a high focus area. Deaths and serious injuries on our roads are continuing to trend upwards. These losses have a devastating impact on families and communities. Planning for and implementing safe infrastructure as well as safe & appropriate speeds can help reduce the risk of a crash occurring and reduce the impact, which in turn can reduce harm.

- *Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy.*

Council continues to seek more sustainable ways of doing its business in the transportation space, for example, pavement rehabilitation may include reuse (milling) of existing surfaces and incorporating into the road, rather than removal and waste to landfill.

## **Four Wellbeing's**

Each community outcome is associated with one or more of four Wellbeing's; social, economic, environmental, and cultural, which the *Local Government Act 2002* requires councils to promote. As each infrastructure activity is aligned to specific community outcomes, the contribution it makes to community wellbeing can be easily seen.

## **UN Sustainable Development Goals**

The community outcomes also broadly align to the United Nations Sustainable Development Goals (SDG). These are a blueprint for providing a better and more sustainable future for all by 2030 and have been incorporated into the Council's 2021-2031 LTP for the first time.

The SDG's most relevant to the Roding and footpath activity are as follows:

- SDG 3 Good Health and Well-being (ensure healthy lives and promote well-being for all at all ages)
- SDG 9 Industry, Innovation and Infrastructure (build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation)

- SDG 11 Sustainable Cities and Communities (make cities and human settlements inclusive, safe, resilient and sustainable)
- SDG 12 Responsible Consumption and Production (ensure sustainable consumption and production patterns)
- SDG 13 Climate Action (take urgent action to combat climate change and its impacts).

### Infrastructure Vision

The Infrastructure Strategy vision for its infrastructure provision and management is ‘To provide well maintained infrastructure that meets the needs of today’s community and caters for the projected growth in the district’s population in a manner that is sustainable and anticipates a changing environment.’ This effectively underpins the planning for the Transport Activity Management Plan.

### Principal Goal

Sitting underneath this is the principal goal for the Roothing and footpath activity which is ‘To plan, develop, operate, maintain and improve the district’s transport infrastructure, delivering an affordable, integrated, safe, responsive and sustainable transport network.’

The following diagram shows how the above all fits together.



Figure 0-4: Linkages to Infrastructure Vision

## Strategic Approach, Council's Role

The management of the Transportation activity is driven by the expectations and needs of the community, as reflected in the Council's Community Outcomes and the agreed levels of service.

Legislation, in particular the Local Government Act 2002, Land Transport Management Act 2003, Government Rooding Powers Act and Resource Management Act govern this activity.

The transport activity is also influenced by the Regional Land Transport Plan (RLTP), the Greater Christchurch Urban Development Strategy (UDS), the New Zealand Transport Strategy (NZTS) and the Government Policy Statement on Transport Funding (GPS), as well as the Council's District Plan, Integrated Transport Strategy, and a number of other plans and strategies.

The UDS is a strategy to manage growth through to 2041 in the Greater Christchurch area, which includes the eastern part and main urban areas of the Waimakariri district. The Waimakariri District Council is a partner to this strategy. Over time there has been a move to a more integrated and sustainable approach to transport planning as required by the Land Transport Management Act and as envisaged in the Greater Christchurch Urban Development Strategy (UDS). The key strategies in managing transportation in the district are 'Our Space', the Regional Land Transport Plan (RLTP) and the National Road Safety Strategy.

The Whakawhanake Kāinga Komiti (Urban Growth Partnership for Greater Christchurch) has now developed a draft Spatial Plan for the sub-region, which sets out a plan for shaping and accommodating future growth in Greater Christchurch, by providing more affordable housing, emissions reduction, and climate resilience. Once adopted by partners, which is anticipated to occur in early 2024, the Spatial Plan builds on and replaces the previous plans and strategies developed for Greater Christchurch (including the UDS and Our Space) but does not seek a fundamental change from their strategic direction.

At a more detailed level specific transport studies and plans have been and will continue to be carried out as part of the development of Structure Plans and Outline Development Plans for the growth areas defined in the UDS.

Transport planning at the regional level is implemented through the Regional Land Transport Plan (RLTP). The RLTP is guided by the Government Policy Statement (GPS), MOT Transport Framework Outcomes and Land Transport Management Act (LTMA).

## 2.4 Legislative Requirements

Waimakariri District Council is defined under legislation as the "Road Controlling Authority" for the district's roads. As such it is required by law to control activities on roads, although it may choose the level at which it will maintain the assets providing these services.

Legislation sets the minimum standards of service which the assets must meet. The key legislation, policy and planning documents affecting the levels of service provided by the land transport activity are:

- The Local Government Act 2002, particularly Schedule 10, which covers.

**The requirement to consider all options and to assess the benefits and costs of each option.**

**The consultation requirements**

- *The Local Government Act 1974, particularly Part 21 Roads (Other Than Regional Roads), Service Lanes, and Access Ways.*
- *The Government Roading Powers Act 1989.*
- *The Land Transport Act 1998.*
- *The Land Transport Management Act 2003.*

**Other legislation which parts of will influence work done in the transport sphere:**

- *The Resource Management Act 1991.*
- *The Local Government (Rating) Act 2002.*
- *The Health and Safety in Employment Act 1999.*
- *The Building Act*
- *The Public Works Act 1987.*
- *The Telecommunications Act 1987.*
- *The Electricity Act 1992.*
- *The Railway and Corridor Management and Safety Act 1992.*
- *The Biosecurity Act 1993.*
- *The Summary Offences Act 1991.*
- *The Bylaws Act 1910.*
- *The New Zealand Coastal Policy Statement 1994.*
- *The Civil Defence Emergency Management Act 2002 (Lifelines).*

**Recent additions to legislation which will influence planning and decision making:**

- *The Climate Change Response Act.*
- *The Government's Sustainable Development Action Plan.*
- *Planned changes to the Resource Management Act*

## 2.5 Policy Context

The principal purpose of the core statutes governing transport are summarised below:

### **Land Transport Management Act**

The Land Transport Management Act is the principal statute guiding land transport planning and funding in New Zealand. The purpose of the Act is to contribute to the aim of achieving an affordable, integrated, safe, responsive and sustainable land transport system.

### **Local Government Act**

The Local Government Act (LGA) 2002 guides local government planning and the way Councils carry out their functions. It includes provisions guiding the development of Council long-term plans and infrastructure strategies, where the local funding share for transport network investment is identified alongside other local investment priorities.

Included in the Local Government Act (2002) is a requirement for Council to prepare a Significance Policy. Under this, the Roding Network as a whole is considered to be a Strategic Asset.

### **Resource Management Act**

This provides the statutory framework for land use planning, which can have significant influence on travel choice and transport network demand.

### **Climate Change Response Act 2002**

As amended by the Climate Change Response (Zero Carbon) Amendment Bill in 2019. Key provisions include setting a target to reduce net carbon emissions to zero by 2050.

### **Plan Framework**

This plan has been prepared in accordance with the International Infrastructure Management Manual (IIMM) framework, whilst incorporating changes required to simplify meeting NZTA requirements. The 2021 Activity Management Plan was peer reviewed by David Jeffrey of Infrastructure Services in January 2021 (Appendix B). The recommendations in the peer review have been taken into account in this plan where appropriate, either by immediate modifications or by additions to the Improvement Plan.

## 2.6 Sophistication / limitations of the Activity Management Plan

The Council has determined an appropriate level of sophistication for the plan is Core Plus. The Transportation Activity Management Plan peer review was conducted by Infrastructure Associates Ltd in January 2024 and concluded that Waimakariri had a score of 76 out of 100, which is at Intermediate Level, and 3 points higher than the previous review. This is deemed appropriate for a Council of Waimakariri's size and demographics. It should be noted that Advanced Level is 80 or above, and that Council is not far from achieving this level with this Activity Management Plan.

# Transportation Activity Management Plan 2024

## Strategic Business Case

June 2024





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**Document Acceptance:**

Action	Name		Signed	Date
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Reviewed by	Joanne McBride	Roothing & Transport Manager		24/06/2024
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Adopted by	Utilities & Roothing Committee			16/07/2024

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## 3 Strategic Business Case

### 3.1 Strategic Case Summary

Waimakariri District Council is located within a high growth urban area. Over time the district has transitioned from one which primarily served to support a rural community, to a fast-growing urban population requiring a different approach to doing business.

Managing and maintaining the network in the face of growth and expectations is becoming increasingly challenging on the available budget. Council is seeking a substantial increase in its programme.

This section of the AMP applies the 5 Case Model Framework to support the application for co-funding that helps address the issues raised in its Problem Statements, and the Regional and National Objectives, outlines the linkages from problem to benefit and solutions and provides a brief summary of the key evidence required to support funding of the district's transport programme.

The 5 Case model examines the following:

- Strategic Case – Is there a need for investment? Involves stating the problem, and the benefits in solving the problem, including supplying supporting evidence.
- Economic case – Is the proposed investment value for money?
- Financial Case – Is the investment affordable – is there sufficient Council budget available to support the programme?
- Management Case – Is the investment achievable, are there sufficient suitable resources to deliver?
- Commercial Case – Is the investment viable? Will Council endorse and provide support?

The planned works for Waimakariri District are designed to provide the optimum synergy if all works are completed. Many projects will be less effective if only part of the work is carried out, thus reducing overall benefits. While it is recognised that not all desired works can be carried out at once, it is important to understand the disbenefits of only carrying out the 'top value projects. Often the problem being solved will simply move problems further downstream until such time as a holistic package of works can be completed.

Figure 3-3 includes a map of the programme of works proposed around the district, which highlights those which have been achieved to date, and those which are still required to deliver on the district future transport needs.

### 3.2 Background

Waimakariri District Council's Activity Management Plan (AMP) outlines how it will deliver the services ratepayers and road users need to go about everyday business and life. The AMP details the district's planned transport and roading investment and how it fits with Waimakariri community outcomes, regional transport strategies, the Government Policy



2014). Of these 1586 km of roads, around 323km are urban, compared with 240 in 2014 reflecting the growth in urban areas within the district.

### Network Classifications

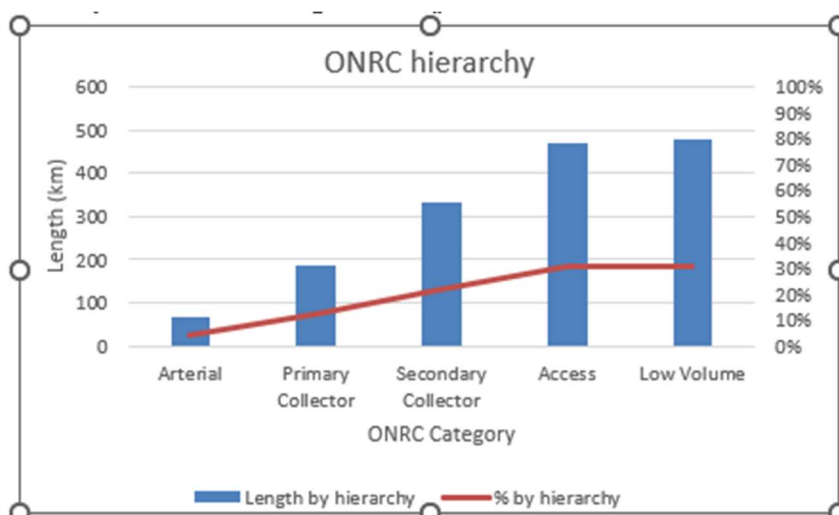
The network assets are classified through a number of different hierarchies. The Council standard is the District Plan hierarchy, fixed at time of District Plan being adopted, and unchanging unless a District Plan change is authorised. Its primary use is for enforcing planning rules.

The One Network Road Classification (ONRC) is a tool used by Road Controlling Authorities (RCAs) to better prioritise work on their network. The ONRC was developed by the Road Efficiency Group, a joint local government and NZ Transport Agency initiative, provide a nationally consistent framework to classify the country’s roads and to allow measurement of performance against peers. The intent of the system was to focus transport outcomes on the road user through the classification, customer outcomes, and performance measures. Some of the measures suggested have been incorporated to measure Levels of Service gaps.

A new classification has since been developed which takes place and function into consideration. Known as the One Network Framework (ONF), it will be used to allow Councils to envision and move towards a multi-dimensional system catering to all user needs as appropriate to their classification. For example, a road may be low volume and hence less important through the ONRC but be critical for pedestrian movements. The new classification system will be incorporated as appropriate over the next NLTP period.

Figure 3-2 shows the allocation of the district’s network to the ONRC.

Figure 3-2 - Waimakariri District One Network Road Classification



## Key Stakeholders

Numerous people and groups have an interest in the Waimakariri road network. They include:

- Dairy farming
- Forestry
- Transport operators
- Businesses
- Police
- Heavy Transport representatives
- Council staff and elected representatives
- Automobile Association
- Waimakariri Access Group
- NZTA (HNO and Planning & Investment)

## 3.4 Strategic Business Case Background

For almost a decade now Waka Kotahi has emphasised the importance of utilising the Business Case Approach to setting a strategic approach to managing the transport network. Waimakariri District Council is also incorporating Business Case thinking in its approach to determining work priorities, albeit with slightly different thresholds and requirements. For NZ Transport Agency (Waka Kotahi), this involves Council determining what the key strategic transport issues are facing the District through consultation and evidence gathering, defining the benefits to be gained by addressing these issues then directing the responses such as work programmes or interventions required to realise the benefits and solve the problems. The Strategic Business Case identifies those problems and benefits and defines measures which will allow monitoring of success of the solutions.

Transport is fundamental to ensuring there is a high quality of life and a thriving economy in the Waimakariri District. There is increasing pressure on the transport network, and it is imperative that Waimakariri District Council is able to address current and future issues. To achieve this Council is focused on maintaining defined levels of service and addressing growth pressures through the sound management of the transport network.

Central Government set its strategic priorities for transport<sup>2</sup> indicating a focus on economic prosperity, inclusive access, healthy and safe people, environmental sustainability, and resilience and security, road safety, access/options, and the environment.

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<sup>2</sup> Government Policy Statement on Transport 2024 was released July 2024 post development of this AMP.

The Canterbury region has identified the priority outcomes for the region to ensure an accessible, affordable, integrated, safe, resilient and sustainable transport system’.

## **Setting the Scene - Previous AMP's**

When Waimakariri District Council first introduced Business Case Planning to its work, It was a relatively stable network, able to manage its Maintenance, Operations and Programme and the effects of the increased population, along with aspirations for a move from a car -dependant, primarily rural District to one which provided for the growing diversity of residents with the infrastructure which would allow greater mode choice and reduce car dependency within the available funding envelope.

The 2018-21 Activity Management Plan began the journey, and the 2024-27 continues the programme of work of building this interconnected network.

Reviewing the 2018-2021 Strategic Business Case is a useful introduction to this journey. Although funding is generally provided in three year segments to address issues as they can be prioritised and afforded, a much longer timeframe is often required to achieve a whole, integrated solution to larger problems. They often require a significant one-off capital investment, such as the replacement of a major bridge, or a series of smaller projects which once fully integrated provide a more significant change than if they had not been considered in synergy.

Steady population growth, land use change and business development over the past few years have resulted in ongoing pressure on the transport network. The problems this pressure is creating was identified in 2017 by a group of stakeholders as:

- The State Highway and connecting local roads not coping with the demand at peak periods, leading to increased and unreliable travel time; and
- Increased volumes of traffic leading to increased risks of crashes; and
- Increased rate of land use change putting pressure on maintaining the network.

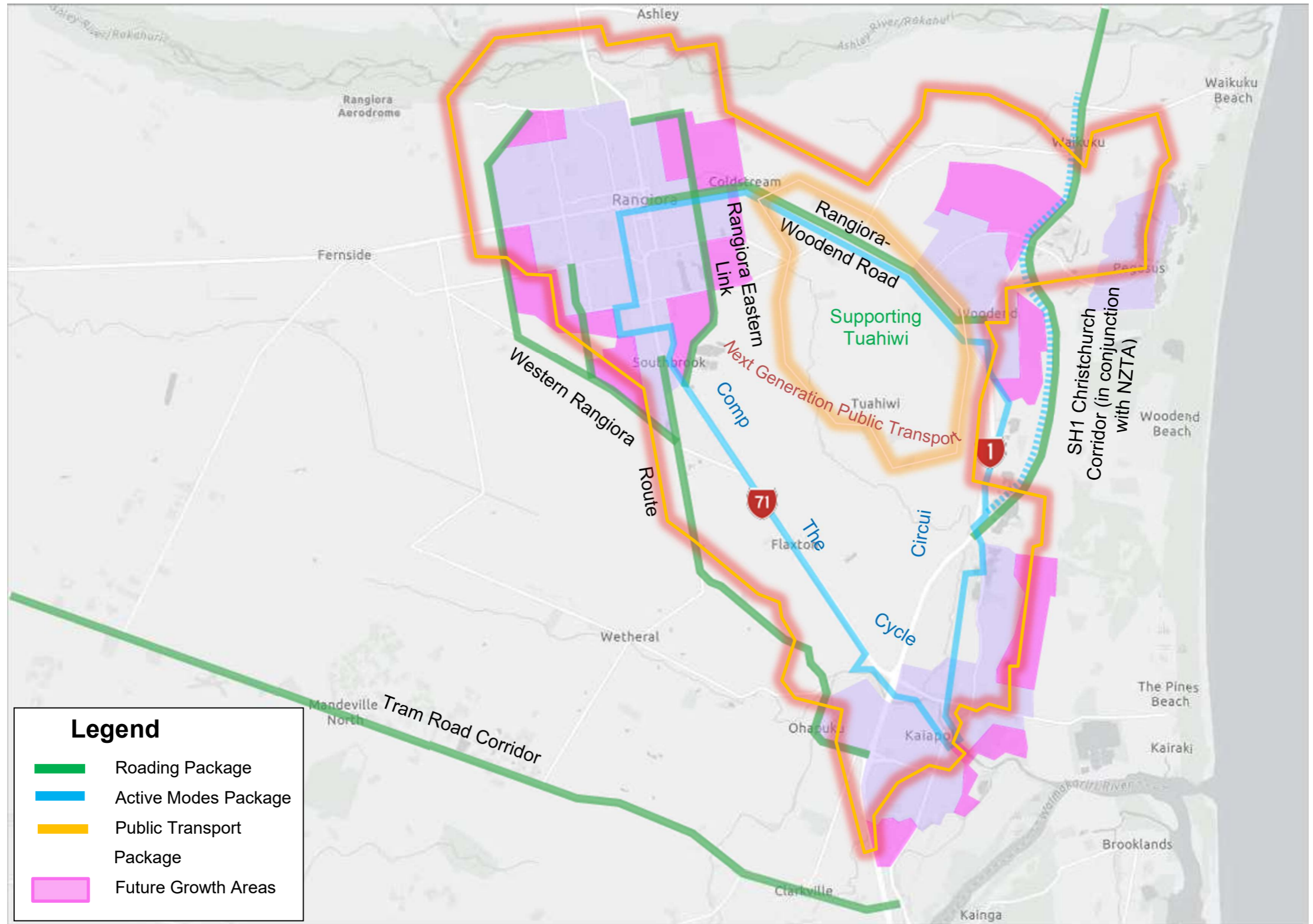
Benefits in resolving the identified problems included:

- Providing users with consistent and reliable travel times,
- Decreased numbers and severity of crashes, and
- The network maintained at appropriate levels of service to meet changing land use.

A spatial plan of the proposed projects was provided to support the previous Business Case. This has been included in this current Strategic Business Case, with an update of progress and identification of the projects completed to date, and works planned for the future.



Figure 3-3: Strategic Context Map 2021 - 2033



**Programmes of Improvements**

- Strategic Infrastructure**
  - Rangiora Eastern Link Road
  - Woodend Bypass (NZ Transport Agency)
- Growth Related Projects**
  - *Kippenberger / MacPhail Roundabout*
  - North / South Collector Road
  - Gladstone Road connection to Pegasus
  - Woodend East North / South Road Collector Rd
- Network & Resilience Management**
  - Lees Valley Willow Walls
- Completing the Walking & Cycle Circuit**
  - *Passchendaele Memorial Path*
  - *Rangiora-Woodend Path*
  - Woodend-to-Kaiapoi Path
  - Woodend-to-Pegasus Path
- Supporting Public Transport**
  - *Kaiapoi Park & Ride Facilities*
  - Keir Street Connection
  - *Rangiora Park & Ride Facilities*
  - Ravenswood Park & Ride Facilities
- Rangiora-Woodend Road Corridor**
  - *Rangiora-Woodend Path*
  - Rangiora-Woodend / Boys Roundabout
  - Widen Rangiora-Woodend Rd Rural Safety Management
- Safety Improvements**
  - Northbrook / Ivory Intersection
  - Fawcetts / Cones Intersection
- Tram Road Corridor Safety Improvements**
  - Tram / Poyntz Intersection
  - Tram / Two Chain Intersection
  - Tram / No 10 Intersection
  - Tram / McHughes / Bradleys Roundabout
  - Tram / Burgesses Intersection
  - Tram / S Eyre / Giles Intersection
  - Tram / Heywards Intersection
- Western Rangiora Route Safety Improvements**
  - Widen Skewbridge Rd (Skew Bridge-Threlkelds)
  - Widen Flaxton Rd (Threlkelds-Fernside)
  - Skew Bridge Replacement
  - *Fernside / Flaxton Roundabout*
  - Lehmans / Johns Intersection
  - Lehmans / Oxford Roundabout
  - Widen Lehmans (Fernside-Oxford)
  - *Ohoka / Island Traffic Signal*
  - Widen Fernside Rd (Flaxton-Lehmans)
  - North-west Rangiora New Arterial Rd
- Supporting Tuahiwi (MR873)**
  - To be Determined

Note projects in *italics* are in progress or completed

The key objectives underpinning the solutions to the problems identified in the first Strategic Business Case included:

- Maintaining and using the existing transport infrastructure efficiently and effectively through demand management and network optimisation measures.
- Targeted investment in infrastructure improvements for both capacity and safety outcomes.
- Implementing travel behaviour programmes to encourage more efficient travel patterns and to reduce the number of single occupancy vehicles at peak times.
- Increased emphasis on walking, cycling and public transport to provide greater transport choice, integration, and flexibility, and promotion of good public health outcomes. (and environmental sustainability)
- Ensuring growth areas and new developments support modal choice and provide opportunities for people to travel less, especially by private motor vehicle.

In practice this means managing the demand on the transport network by encouraging more efficient travel patterns, improved multi-modal transport options, increased vehicle occupancy and more passenger transport usage. This is undertaken at a greater Christchurch level working with our neighbouring Councils and the Transport Agency.

As well as changing transport behaviour, the overall road network (i.e. Waimakariri, State Highway and neighbouring Council networks) need to be optimised to ensure maximised people-carrying capacity across all networks (moving more people).

The three connections between Rangiora and State Highway 1 (Rangiora Woodend Road, State Highway 71, and the Flaxton Road / Skewbridge Road corridor), and the connections between Kaiapoi and State Highway 1, need to be improved to provide a safe and appropriate level of service that utilises the network efficiently.

While reliable travel time would appear to be primarily an economic measure, drivers who feel pressured are more inclined to make risky decisions, such as overtaking at inappropriate times, or attempting to enter traffic from side roads where there is not a sufficient gap on the road they are turning into or crossing. Thus, projects designed to support traffic flow will also contribute to road safety.

Finally, in addition to the need for improvement projects required to address capacity and demand issues, some projects were proposed to be investigated and (if appropriate) constructed, to address safety issues (mostly through low cost low risk projects). Investigations were carried out for the West Rangiora Route, Tram Road, and Southbrook Road, and initial recommendations made. A programme of improvements has been developed for the West Rangiora Route and Tram Road and it is proposed to implement these over a number of years.

Key programmes commenced in the 2018/2021 period and progress achieved to date includes:

Table 3-1: 2018-2021-2024 - Key Programmes

<p>Townsend Road / Fernside Road / Flaxton Road / Skewbridge Road / Island Road route improvements.</p>	<p>West Rangiora route investigation completed, and this has identified a number of safety projects.</p> <p>New roundabout installed at the Flaxton Rd / Fernside Rd intersection. Right Turn Bay at Skewbridge / Mulcocks Rd intersection.</p>
<p>Rangiora Woodend Road and Woodend access improvements.</p>	<p>Walking &amp; cycling facilities along with traffic calming on Rangiora Woodend Rd and School Road. Under construction.</p> <p>A right turn bay was constructed at the Rangiora Woodend Rd / Boys Rd intersection.</p>
<p>Travel Demand Management (TDM) programmes to align to Greater Christchurch TDM Business case.</p>	<p>Ongoing.</p>
<p>Targeted intersection improvements and clear zone improvements.</p>	<p>Ongoing changes in funding have meant much of this work in the 21-24 NLTP has been fully funded by Council.</p>
<p>Road Safety (education and promotion) programmes with our road safety partners.</p>	<p>Ongoing programme with planned initiatives delivered.</p>
<p>Walking and cycling improvement and education programmes to encourage more walking and cycling.</p>	<p>Walking &amp; Cycling Network Plan endorsed off by Council.</p> <p>Ongoing programme with some planned initiatives delivered. Key connections between Woodend and Kaiapoi, and Ravenswood to Woodend are currently on hold due to changes in funding.</p>
<p>Passenger transport infrastructure programmes to align to Greater Christchurch PT Business Case.</p>	<p>Stage one of Park and Ride facility development complete. Stage Two underway. Future Park and Ride planned for Woodend / Ravenswood and informal areas to be considered in Mandeville.</p>
<p>Ivory St widening and safety improvements.</p>	<p>Complete</p>

Table 3-2: Capital Projects from 24/25-33/34

Description	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
	As at 30 June 2025	As at 30 June 2026	As at 30 June 2027	As at 30 June 2028	As at 30 June 2029	As at 30 June 2030	As at 30 June 2031	As at 30 June 2032	As at 30 June 2033	As at 30 June 2034
Major Towns - new kerb and channel	-	-	350,000	-	-	350,000	-	-	350,000	-
New Footpaths Major Towns	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
New Streetlighting Major Towns	50,000	-	50,000	-	-	-	-	-	-	-
Tuahiwi Gritted Footpath Surfacing	100,000	-	-	-	-	-	-	-	-	-
Bridge Renewal & Widening Projects	-	-	-	500,000	-	-	500,000	-	-	500,000
Minor safety - Lighting - LCLR LRI	25,000	25,000	25,000	30,000	30,000	30,000	35,000	35,000	35,000	40,000
Minor safety- Intersection Improvements	120,000	120,000	120,000	130,000	130,000	130,000	140,000	140,000	140,000	150,000
Minor Safety - School Safety Project	50,000	50,000	50,000	60,000	60,000	60,000	70,000	70,000	70,000	80,000
Minor Safety - Speed Treatments	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Minor Safety - Walking & Cycling improvements	100,000	100,000	100,000	110,000	110,000	110,000	120,000	120,000	120,000	130,000
Minor Works - other	50,000	50,000	50,000	60,000	60,000	60,000	70,000	70,000	70,000	80,000
Minor safety - Roadside Hazards Removal	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Minor safety- Delineation upgrades	-	100,000	-	-	100,000	-	-	100,000	-	-
Minor safety - High Risk rural Intersections Treatments - RTZ	200,000	200,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Flood Projects (Tram Rd, Depot Rd & Woodfields Rd) - RESILIENCE?	300,000	700,000	-	-	-	-	-	-	-	-
Minor Improvements - Drainage (culverts)to consider in year 4?	-	-	-	100,000	-	-	100,000	-	-	100,000
Broad road subsidised LCLR	50,000	-	-	-	-	-	-	-	-	-
School Safety Improvements	550,000	-	-	-	-	-	-	-	-	-
Mafeking Bridge Improvements	50,000	550,000	-	-	-	-	-	-	-	-
Town Centre Upgrades	295,000	-	-	300,000	-	-	300,000	-	-	300,000
Car Parking Provision - Town Centre Parking	-	-	-	-	-	2,250,000	-	-	-	-
North East Subdivision area	-	-	-	-	-	50,000	200,000	-	-	-
Streetlight upgrade High St from East Belt to King St	-	100,000	-	-	-	-	-	-	-	-
Streetlight upgrade Williams St Bridge to Cass St (Kaiapoi Town Centre)	-	-	-	-	500,000	-	-	-	-	-
Improvements to Hilton/Williams St Pedestrian facilities (Linking Western Precinct to town) THIS SHOULD BE A GREENSPACES PROJECT	-	-	37,500	250,000	-	-	-	-	-	-
Land - Blake St Extension	-	675,000	-	-	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	-	2,250,000	-	-	-	-	-	-
Support for MUBA (Area directly adjacent to KTC) (LoS portion)	12,500	125,000	125,000	-	-	-	-	-	-	-
Land Purchase - improved LOS	100,000	-	-	100,000	-	-	100,000	-	-	100,000
Direct payment to Developers	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608
Design Fees	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861
Cost of Council Performed Works	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608
Rangiora Airfield/Prior Rd Upgrade	-	1,012,000	-	-	-	-	-	-	-	-
West Rangiora Route Improvement	-	-	-	-	-	350,000	-	-	-	-
Woodend East ODP	-	-	200,000	-	-	600,000	-	-	1,000,000	1,000,000
East Woodend ODP - north south road & widening existing	-	-	-	300,000	300,000	300,000	300,000	300,000	300,000	-
West Rangiora Growth ODP	0	0	0	684,888	228,296	456,592	228,296	228,296	228,296	228,296
Kaiapoi North Improvements - Smith St/Williams St, Smith St/Ranfury St and other intersection improvements	-	-	-	-	-	-	-	600,000	-	-
Support for MUBA (Area directly adjacent to KTC)	37,500	375,000	375,000	-	-	-	-	-	-	-
North/South Collector Road	-	1,500,000	-	-	-	-	3,000,000	-	-	-
Shared Path (East/West Collector Road)	-	-	-	-	-	-	220,000	-	-	-
New Passenger Transport Infrastructure	125,000	200,000	200,000	125,000	200,000	200,000	125,000	100,000	51,000	51,000
Skew Bridge Replacement	50,000	623,000	-	-	-	-	-	-	-	-
New Eastern Link Road	-	50,000	666,000	-	-	-	-	-	-	-
Minor safety - Roadside Hazards Removal	-	-	-	50,000	666,000	-	-	-	-	-
Lees Valley Willow Walls & culverts	-	-	-	-	50,000	712,000	-	-	-	-
Ashley Gorge Rd / German Rd	-	-	-	-	50,000	712,000	-	-	-	-
Realignment and Safety Improvements Oxford / Tram Road Intersection	350,000	-	-	-	-	-	-	-	-	-
Intersection Safety Improvements Two Chain Road / Tram Road Intersection	-	-	-	-	-	-	50,000	746,000	-	-
Town Centre Upgrades	-	-	-	-	-	-	-	-	-	1,210,000
Flood Projects (Tram Rd, Depot Rd & Woodfields Rd) - RESILIENCE?	-	-	-	-	100,000	1,400,000	-	-	-	-
Widen culvert on Townsend Rd	-	-	-	-	-	-	-	612,000	-	-
Fernside/Todds Intersection	-	-	-	-	-	-	-	600,000	-	-
Direct Payment to Developers	-	-	-	-	-	-	-	100,000	1,458,000	-
Council Performed Work	414,000	-	-	-	-	-	-	-	-	-
Walking and Cycling Projects	-	50,000	450,000	-	-	-	-	-	-	-
School Safety Improvements	-	-	-	-	-	-	-	-	-	514,000
28 Roundabout installation at Bradleys / McHughes / Tram Road Intersection	-	-	-	-	-	-	-	-	-	562,000
Sub Totals	-	-	-	-	-	-	-	-	-	318,000
Rangiora Airfield/Priors Rd Upgrade contribution	-	-	-	-	-	-	-	-	323,000	-
Marsh Rd / Railway Rd - Intersection	-	-	-	-	-	-	-	-	648,000	-
Fernside/Townsend Intersection	-	-	-	-	-	100,000	1,300,000	-	-	-

Description	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
	As at 30 June 2025	As at 30 June 2026	As at 30 June 2027	As at 30 June 2028	As at 30 June 2029	As at 30 June 2030	As at 30 June 2031	As at 30 June 2032	As at 30 June 2033	As at 30 June 2034
Intersection Upgrades Island Road / Greigs Road / Tram Road	50,000	150,000	-	330,000	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	500,000	500,000	-	-	-	-	-	-
Durham Land Purchase for Carparking	100,000	100,000	150,000	-	-	-	-	-	-	-
Widen Skewbridge Rd - Mulcocks to Threlkelds	-	50,000	450,000	-	-	-	-	-	-	-
Minor safety- Delineation upgrades	250,000	-	-	-	-	-	-	-	-	-
Streetlight upgrade High St from East Belt to King St	-	-	100,000	-	1,800,000	-	-	-	-	-
Mulcocks and Fernside Rd closure - Kiwirail & NZTA	250,000	-	-	-	-	-	-	-	-	-
Land - Blake St Extension	-	-	-	-	-	-	-	430,000	-	-
Land - Blake St Extension	-	-	-	-	-	-	-	486,000	-	-
East Mixed Business Use Development (Growth portion)	-	-	-	-	-	-	-	-	330,000	-
Kaiapoi Roading improvements - Williams St south intersections.	-	-	-	-	480,000	-	-	-	-	-
Johns Road/Plasketts Road Improvements	-	-	-	-	-	-	840,000	-	-	-
Fernside Rd/Townsend Rd Roundabout	1,800,000	-	-	-	-	-	-	-	-	-
Minor Improvements - Drainage (culverts)to consider in year 4?	-	-	-	-	-	-	420,000	-	-	-
East Mixed Business Use Development (LoS portion)	-	-	-	-	420,000	-	-	-	-	-
Intersection Safety Improvements South Eyre Road / Giles Road / Tram Road Intersection	-	-	-	-	-	370,000	-	-	-	-
Rangiora Woodend Rd / Boys Rd / Tuahiwi Rd Intersection	-	-	-	-	-	-	570,000	-	-	-
Woodend Improvements in conjunction with NZTA PBC and Woodend Bypass	-	-	-	-	-	-	-	-	150,000	-
Southbrook ODP – new footpaths and road improvements	-	-	-	-	-	-	-	-	400,000	-
Kaiapoi Park and Ride	-	-	-	223,000	290,000	-	-	-	-	-
Rangiora Park and Ride	-	-	-	476,000	360,000	-	-	-	-	-
Ravenswood Park and Ride	-	-	-	-	500,000	1,000,000	-	-	-	-
Coldstream Rd/Golf Links Rd Improvements	-	-	-	-	330,000	-	-	-	-	-
Johns Rd/Plasketts Rd/Fernside Rd Improvements	-	-	-	-	200,000	-	-	-	-	-
Kaiapoi Roading Improvements	-	-	-	-	-	-	-	-	-	1,500,000
West Rangiora Roading Improvements - Lehmans to River Rd	-	-	-	-	-	200,000	2,000,000	-	-	-
Walking and Cycling Projects	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Rangiora Woodend Road Intersection Improvements	-	-	100,000	-	1,800,000	-	-	-	-	-
Robert Coup Dr/Ohoka Rd Implentation	-	-	200,000	1,000,000	-	-	-	-	-	-
Skew Bridge Replacement	180,000	1,220,000	400,000	10,150,000	50,000	-	-	-	-	-
Southbrook Rd Future Improvements	50,000	50,000	50,000	-	-	-	-	-	-	-
Rangiora Woodend Rd Traffic Calming	-	-	-	-	-	150,000	-	-	-	-
Charles Upham Dr / Oxford Rd Roundabout	-	-	-	-	-	-	700,000	-	-	-
Oxford Rd / Lehmans Rd Roundabout	100,000	1,400,000	-	-	-	-	-	-	-	-
Fawcetts Rd / Cones Rd Intersection	-	100,000	400,000	-	-	-	-	-	-	-
North Eyre Rd / No. 10 Rd	-	-	-	-	-	200,000	-	-	-	-
Swannanoa Rd / Johns Rd	-	-	-	-	-	-	-	500,000	-	-
Ashley Gorge Rd / German Rd	250,000	-	-	-	-	-	-	-	-	-
Northbrook Rd / Ivory St Intersection	-	-	-	150,000	1,350,000	-	-	-	-	-
Lees Valley Willow Walls	200,000	200,000	280,000	-	100,000	-	-	100,000	-	-
Marsh Rd / Waikoruru Rd - Sealing of unsealed Rd	-	-	-	50,000	750,000	-	-	-	-	-
Marsh Rd / Railway Rd - Intersection	-	-	-	-	-	-	-	150,000	850,000	-
Mulcocks and Fernside Rd closure - Kiwirail & NZTA	-	200,000	-	-	-	-	-	-	-	-
Car Parking Provision - Town Centre Parking	-	-	-	-	-	750,000	-	-	-	-
Land - Blake St Extension	-	225,000	-	-	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	-	750,000	-	-	-	-	-	-
New Eastern Link Road	187,500	1,350,000	162,500	275,000	7,750,000	7,800,000	-	-	-	-
New Eastern Link Road	93,750	675,000	81,250	137,500	3,875,000	3,900,000	-	-	-	-
New Eastern Link Road	93,750	675,000	81,250	137,500	3,875,000	3,900,000	-	-	-	-
North/South Collector Road	-	500,000	-	-	1,000,000	-	-	-	-	-
	<b>8,363,077</b>	<b>15,229,077</b>	<b>7,662,577</b>	<b>21,137,965</b>	<b>29,423,373</b>	<b>28,049,669</b>	<b>13,297,373</b>	<b>7,396,373</b>	<b>8,132,373</b>	<b>8,772,373</b>

## 3.5 Strategic Business Case 2024-2027

### Next Steps

Since the last Activity Management Strategic Business Case was prepared, the issue of congestion has been partly alleviated by improvements to the State Highway Network south of the district. Southbrook Road remains an area where congestion and access are a challenge and will require ongoing commitment to improving the western and eastern accesses to Rangiora to encourage drivers to avoid using Southbrook Road as a through route and reduce the traffic volumes through here.

Some changes to the previous Problem Statements have been undertaken in recognition of progress made, and of changing national and local government priorities. Of particular importance for the latest AMP is a greater focus on maintenance and operation of the network, which recognised that BAU is as important as new capital projects. Waimakariri is seeking a significant increase over the previous three-year funding, in part to recognise the effect of cost fluctuations over the last three years, but also the impact of growth on the network, starting with providing sufficient funding to maintain and manage the network. The other major impact on the network has been the effect of a number of significant storm events, which have affected the resilience of the network.

The Problem Statements for the 24-27 AMP and the Benefits of resolving these issues are detailed below.

*Table 3-3: Problem Statements and Benefits of Resolving*

<b>Problems</b>	<b>Benefits</b>
1. Population growth and changing land use is resulting in increased vehicle use, making it harder to maintain safe and appropriate levels of service	<p>Better integration between land use and transport will allow for more efficient use of the existing transport network.</p> <p>Improved non-motorized facilities will increase throughput on existing network with limited additional investment and lower long-term lifecycle costs.</p> <p>Intentional routing of freight traffic will reduce maintenance impacts and out-of-context roading issues.</p>
2. Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life-changing impacts.	<p>Providing environmentally friendly options allows people to choose travel that assists with lowering emissions and helping to control climate change.</p> <p>Planning and preparing for extreme weather events will reduce the chances of loss of life and helps to minimise disruption.</p> <p>Strengthening resilience of roading network for future climate change-related events will reduce future rehabilitation costs.</p>
3. Lack of mode choice leads to social disconnect, increased need for more roads, environmental impacts due to vehicle emissions and lack of opportunity for safe and healthy activity.	<p>Improving mode choice will expand opportunities for both essential and non-essential journeys for all users regardless of ability or means.</p> <p>Shift from vehicular travel to alternative modes will contribute to improved air quality and reduce emissions.</p> <p>More focus on walking and cycling will provide residents an opportunity to participate in low-cost healthy activity and the potential for social contact.</p> <p>Increased public transport mode share will provide for more efficient and lower-emissions use of the existing network.</p>

<p>4. Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur</p>	<p>Crashes, while they are still likely to occur, will be of lesser severity and societal impact.</p> <p>Reduced costs to the community through loss of life and ongoing rehabilitation.</p>
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### 3.6 Strategic Context

Waimakariri District’s transport investment fits into the wider regional and national framework through the links to the Government’s Policy Statement on Transport, Ministry of Transport’s Transport Framework Outcomes, Canterbury’s Regional Land Transport Plan and the District’s Long Term Plan. Waimakariri District Council’s response to the defined problems and benefits is closely linked to these local, regional, and national objectives showing good alignment for the transport investment. This is shown in Table 3-3.

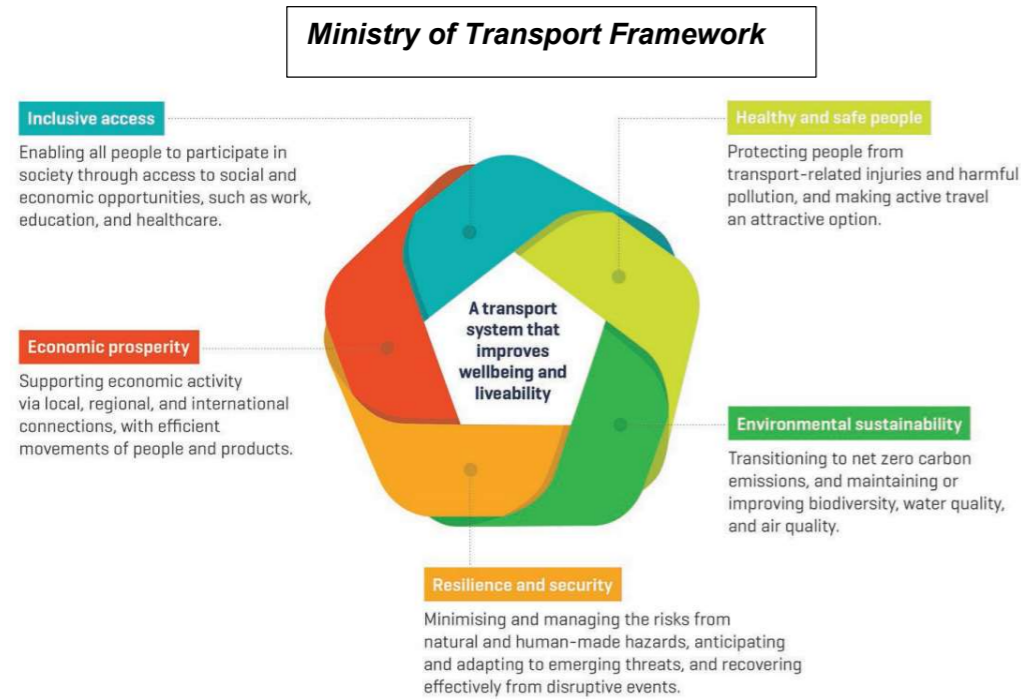
The key external agencies providing the strategic guidance have released documents which detail the outcomes they aim to achieve, and with which there is an expectation that Road Controlling Authorities will align themselves. The key objectives are illustrated in Figure 3-4, however full copies of the national documents are available online.

The Regional Land Transport Plan and Waimakariri District Council Long Term Plan will be available from July 2024.

Locally, Council has produced several Outline Development Plans and strategic documents which assist with decision making regarding where work should be targeted. These include Rangiora and Kaiapoi ODP, Rangiora Parking Strategy, the Walking and Cycling Strategy, and the Road Safety Action Plan. Many of Council’s plans and strategies also integrate with those of the Regional Council and the Greater Christchurch area (Selwyn District, Christchurch City and Waimakariri District through the Greater Christchurch Partnership, e.g., Our Space and the Regional Passenger Transport Plan). 2023 saw the development of an Integrated Transport Strategy, which should provide direction for future strategic transport decisions.

### 3.7 National and regional Land Transport Objectives

Figure 3-4: National and Regional Land Transport Objectives



**Government Policy Statement 2021**

Note that the 2024 GPS was released on 1 July 2024, and as such was not available to be incorporated into these documents during development. The AMP was developed with consideration of the 2021 GPS.



#### Regional Land Transport Plan 2024-2034

**Regional Land Transport Plan – 30-year vision**

An innovative, resilient, low emissions transport system that helps Canterbury thrive for generations.

**Strategic objectives we will deliver our vision with**

<p><b>Maintenance</b> Strengthen the maintenance of the current network, so the network continues to underpin the outcomes across the region</p>	<p><b>Resilience</b> Develop a resilient transport network that can better cope with unknown stresses, natural disasters and climate change impacts</p>	<p><b>Emissions</b> Develop a range of transport emission reduction solutions across Canterbury to reduce negative environmental and health impacts</p>
<p><b>Growth</b> Develop the transport network to support well-planned, quality urban environments in areas of high growth</p>	<p><b>Safety</b> Reduce harm on our roads</p>	<p><b>Freight</b> Transition to a low emission freight system that is more resilient, productive, and innovative</p>



### 3.8 Community Outcomes

These have been redeveloped in this LTP to align with the 4 well-beings.

Table 3-4: Community Outcomes

<p>Social</p> <p>A place where everyone can have a sense of belonging...</p> <p>Public spaces are diverse, respond to changing demographics and meet local needs for leisure and recreation.</p> <p>Council commits to minimizing the risk of social harm to its communities.</p> <p>Housing is available to match the changing needs and aspirations of our community.</p> <p>Our community groups are sustainable and able to get the support they need to succeed.</p> <p>Our community has access to the knowledge and skills needed to participate fully in society and to exercise choice about how to live their lives.</p> <p>People are able to enjoy meaningful relationships with others in their families, whanau, communities, iwi and workplaces.</p> <p><b><i>Our community has reliable access to the essential infrastructure and services required to support community wellbeing.</i></b></p>	<p>Cultural</p> <p>...where our people are enabled to thrive and give creative expression to their identity and heritage...</p> <p>Public spaces express our cultural identities and help to foster an inclusive society.</p> <p>The distinctive character of our takiwā, arts and heritage are preserved and enhanced.</p> <p>Members of our community are able to engage in arts, culture and heritage events and activities as participants, consumers, creators or providers.</p> <p>Waimakariri's diversity is freely expressed, respected and valued.</p> <p>There is an environment that supports creativity and innovation for all.</p> <p>Local arts, culture and heritage are able to make a growing contribution to the community and economy. (new)</p>
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<p>Environmental</p> <p>...that values and restores our environment...</p> <ul style="list-style-type: none"> <li>• People participate in improving the health and sustainability of our environment.</li> <li>• Land use is sustainable; biodiversity is protected and restored.</li> <li>• <b><i>Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</i></b></li> <li>• <b><i>Our district transitions towards a reduced carbon and waste district.</i></b></li> <li>• <b><i>The natural and built environment in which people live is clean, healthy and safe.</i></b></li> <li>• Our communities are able to access and enjoy natural areas and public spaces.</li> </ul>	<p>Economic</p> <p>...and is supported by a resilient and innovative economy.</p> <ul style="list-style-type: none"> <li>• Our district is prosperous and reflects the value of both paid and unpaid work.</li> <li>• <b><i>Infrastructure and services are sustainable, resilient, and affordable.</i></b></li> <li>• <b><i>Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy.</i></b></li> <li>• There are sufficient and appropriate locations where businesses can set up in our District.</li> <li>• There are sufficient skills and education opportunities available to support the economy.</li> <li>• <b><i>There is access to meaningful, rewarding, and safe employment within the district.</i></b></li> </ul>
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### 3.9 Alignment of Objectives Across Agencies

Table 3-5: Strategic Linkages

No.	MOT Framework	GPS: <i>Note, this is draft only; with a new Government there is a strong likelihood that the next GPS, due mid-2024, will have a different set of objectives</i>	RLTP	Waimakariri District Council Community Outcomes	Related Problem Statements (from next page)
1	Healthy and safe people: protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option	Developing a transport system where no-one is killed or seriously injured  2024 GPS: Transport is made substantially safer for all	Safety: Reduce harm on our roads	<ul style="list-style-type: none"> <li>The natural and built environment in which people live is clean, healthy and safe.</li> </ul>	<ul style="list-style-type: none"> <li>1, 4</li> </ul>
2	Economic prosperity: encouraging economic activity via local, regional, and international connections, with efficient movements of people and products.	Improving freight connections for economic development	<p>Growth: Develop the transport network to support well-planned, quality urban environments in areas of high growth.</p> <p>Freight: Transition to a low emission freight system that is more resilient, productive and innovative</p>	<ul style="list-style-type: none"> <li><b>Infrastructure and services are sustainable, resilient, and affordable.</b></li> <li>There is access to meaningful, rewarding, and safe employment within the district.</li> <li><b>Our community has reliable access to the essential infrastructure and services required to support community wellbeing.</b></li> </ul>	<ul style="list-style-type: none"> <li>2, 3</li> </ul>
3	Environmental sustainability: transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.	<ul style="list-style-type: none"> <li>Developing a low carbon transport system that supports emissions reductions while improving safety and inclusive access</li> <li>GOS 2024: Transitioning to a lower carbon transport system</li> </ul>	Emissions: Develop a range of transport mission reduction solutions across Canterbury to reduce negative environmental and health impacts	<ul style="list-style-type: none"> <li>The natural and built environment in which people live is clean, healthy and safe.</li> <li>Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy.</li> <li><b>Our district transitions towards a reduced carbon and waste district.</b></li> </ul>	<ul style="list-style-type: none"> <li>3</li> </ul>
4	Inclusive Access: Enabling all people to participate in society through access to social and economic opportunities, such as work, education and healthcare	Providing people with better transport options to access social and economic opportunities		<ul style="list-style-type: none"> <li>There is access to meaningful, rewarding, and safe employment within the district.</li> <li>Our communities are able to access and enjoy natural areas and public spaces.</li> <li><b>Our community has reliable access to the essential infrastructure and services required to support community wellbeing.</b></li> </ul>	<ul style="list-style-type: none"> <li>1</li> </ul>
5	Resilience and security: Minimising and managing the risks from natural and human-made hazards, anticipating, and adapting to emerging threats, and recovering effectively from disruptive events	Resilience and security was not one of the four strategic priorities in 2021, but it did feature in the draft 2024 GPS as “Increasing Resilience: The transport system is better able to cope with natural and anthropogenic hazards”. In view of the frequency of natural disasters of late this is likely to remain a focus of the new government	Resilience: Develop a resilient transport network that can better cope with unknown stresses, natural disasters and climate change impacts	<ul style="list-style-type: none"> <li>Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</li> </ul>	<ul style="list-style-type: none"> <li>2</li> </ul>

### 3.10 Problems, Benefits, Strategic Responses and Performance Measurement

Table 3-6: Definition of Problems, Strategic Responses and Performance measures

No	Problems	Benefits	Strategic Responses	Benefits Framework Assessment Category	Objective	KPI	Target
1	Population growth and changing land use is resulting in increased vehicle use, making it harder to maintain safe and appropriate levels of service.	Better integration between land use and transport will allow for more efficient use of the existing transport network.  Improved non-motorized facilities will increase throughput on existing network with limited additional investment and lower long term lifecycle costs.  Intentional routing of freight traffic will reduce maintenance impacts and out-of-context roading issues.	Apply One Network Framework considerations to future development and system expansion.  Liaise with heavy transport operators to develop freight network.  Develop a cohesive walking and cycling network to provides users with options and encourage reduced motor vehicle use.  Manage maintenance strategies to prioritise road hierarchy and crash risk and meet appropriate levels of service.	Economic Prosperity. Healthy and Safe People	Land use changes are designed to make alternative mode choice easier, resulting both in a reduction in the number of motorised journeys, and the subsequent negative effects on the network.  Sealed roads provide a level of comfort that is appropriate to the road type.	Commitment to Waimakariri Freight Strategy from freight operators.  Customer satisfaction with walking and cycling facility provision.  The average quality of ride on a sealed road network, measured by smooth travel exposure. (DIA measure).	Commitment to development of a Freight Strategy.  Increased approval rates for walking & cycling provision in customer satisfaction survey.  95% for rural and 75% for urban roads.
2	Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life-changing impacts.	Providing environmentally friendly options allows people to choose travel that assists with lowering emissions and helping to control climate change.  Planning ahead and preparing for extreme weather events will reduce the chances of loss of life and helps to minimise disruption.  Strengthening resilience of roading network for future climate change-related events will reduce future rehabilitation costs.	Continue to build facilities for and promote alternative mode travel.  Ensure event planning is well-disseminated and effective.  Evaluate potential for roading network impacts from future climate change related events.	Environmental Sustainability, Resilience and Security	Critical routes are accessible in emergency events.  Evidence gathered and analysed sufficient to support planning for climate change.	Number of incidents where residents were affected by a road closure that could have been avoided with appropriate engineering measures.	All high-risk, high impact routes reviewed annually to ensure they remain fit for purpose.  Climate change review completed by March 2025.
3	Lack of mode choice leads to social disconnect, increased need for more roads, environmental impacts due to vehicle emissions and lack of opportunity for safe and healthy activity.	Improving mode choice will expand opportunities for both essential and non-essential journeys for all users regardless of ability or means.  Shift from vehicular travel to alternative modes will contribute to improved air quality and reduce emissions.  More focus on walking and cycling will provide residents an opportunity to participate in low-cost healthy activity and the potential for social contact.  Increased public transport mode share will provide for more efficient and lower-emissions use of the existing network.	Ensure overall transport investment meets the needs of all users regardless of ability or means.  Encourage transition away from fossil fuel driven vehicles.  Complete network identified in the district's walking & cycling strategy.  Deliver cyclist education.  Improve Park & Ride and bus stop amenity, includes connectivity with local community.	Inclusive Access	Residents of Waimakariri District have full opportunities to undertake both essential and non-essential journeys by a range of transport modes.	% of planned projects which assist with modal choice and access delivered.  Park & Ride facility satisfaction.  Bike stands / facilities.  Number of people travelling by public transport.	100% delivery by June 2024  Increase in community satisfaction with Park and Ride facilities.  New bike stands installed to support the Walking & Cycling Strategy.  Annual increase in public transport boarding numbers.
4	Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur.	Crashes, while they are still likely to occur, will be of lesser severity and societal impact.  Reduced costs to the community through loss of life and ongoing rehabilitation.	Deliver driver education.  Set safe and appropriate speeds for all roads in the district.  Develop safety management system integrating across design, capital projects, contractors, and asset management.	Healthy and Safe People	Network is safer for all users.	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. (DIA measure).  Reduction in 85 <sup>th</sup> percentile speed on roads where able to be recorded through existing traffic counting system).	Reduction in fatalities and serious injury crashes.  Reduction in 85 <sup>th</sup> percentile speed on roads where able to be recorded through existing traffic counting system.

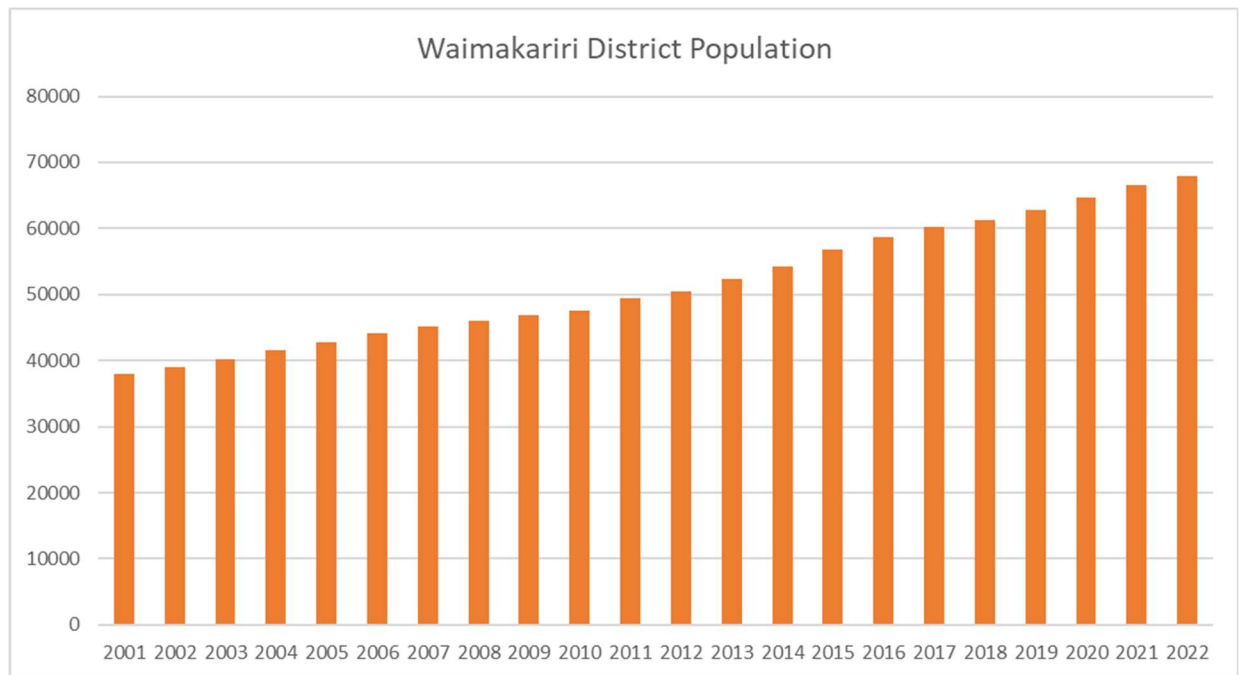
### 3.11 Economic Case

#### Evidence Supporting Business Case Statements

##### Population & growth

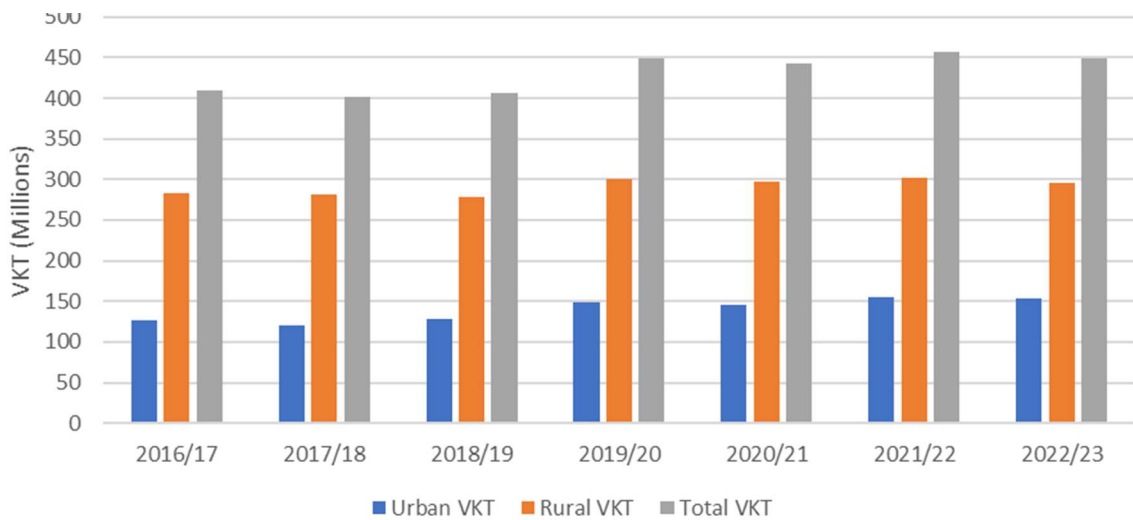
- The Waimakariri District has had an increasing population trend over the past twenty-year period, from 40,200 in 2003 to estimated 69,760 in 2023, i.e. just under 74% increase. As a comparison, the New Zealand population grew by just over 30%. With this level of growth, the Waimakariri District has been one of the fastest growing districts in New Zealand.
- Between 2020 and 2023 Waimakariri is estimated to have grown from 64,700 to 67,900, an average growth rate of just over 1%.
- The population is expected to grow to 77,100, by 2030, which by then will have averaged to an annual growth rate of around 1.5%.

Figure 3-5: Waimakariri District population growth (2001 to 2022)



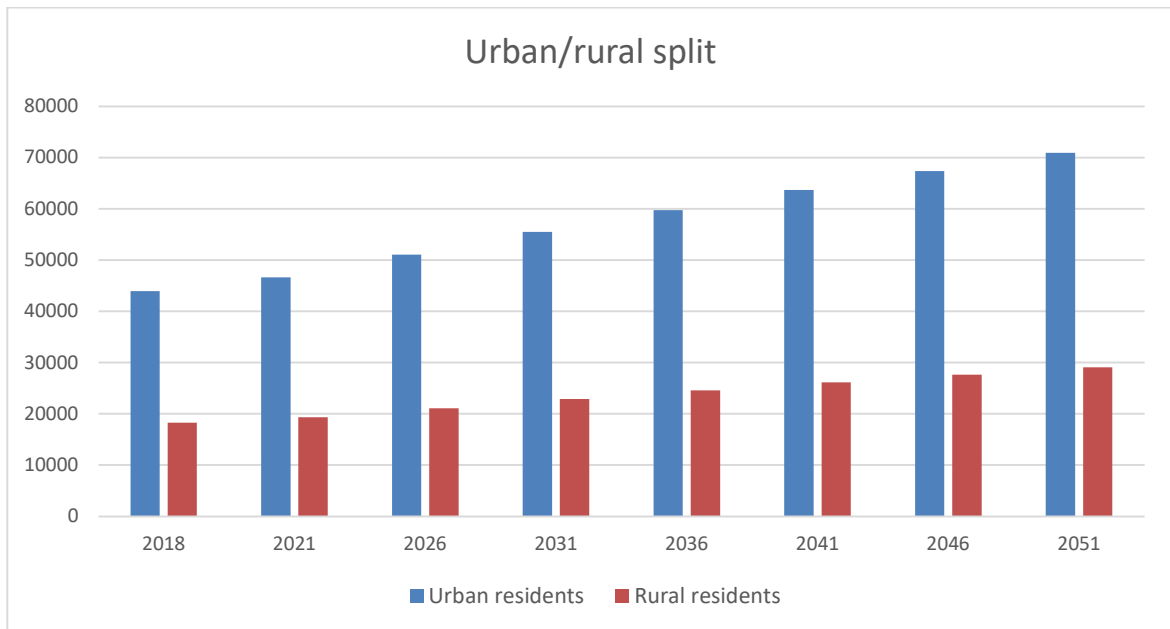
- With this population growth, roading and transport assets have grown:
- Vehicle kilometres travelled in the district has grown by 22% in urban areas, and around 5% in rural areas since 2016/17. The overall move from rural to urban travel is 3.3%.
- The district's urban road network has grown around 13% in the last three years, the same as for the previous three years, and up from 9% for the three years before that.

Figure 3-6: Vehicle Kilometres Travelled (VKT) Trends



- While the percentage of urban versus rural residents has stayed relatively stable, this has resulted in a larger increase by number of urban residents, which is expected to grow as the population increases. Urban development has a higher density of traffic, and more incidental assets such as footpaths, lighting etc. that are more expensive to maintain. Conversely, this also provides the opportunity for more modal choice and environmentally friendly transport.

Figure 3-7: Urban and Rural Residents



The National Policy Statement on Urban Development Capacity (NPS-UDC), which came into effect on 1 December 2016, identified the Waimakariri District as a high growth urban area (i.e. projected to grow by more than 10% between 2013 and 2023).

The NPS-UDC required the Council to provide sufficient development capacity to meet demand for residential and business land over a 30-year period, including 15-20% additional development capacity to ensure there is competition in the housing and business markets, which would require additional transport infrastructure to accommodate the increased numbers of residents. This was to have been partially offset by high density infill development which would require less new infrastructure, but potentially more provision for walking and cycling. With the change of government in 2022, it is expected that this policy is unlikely to remain in place, and development may potentially revert to a less dense nature.

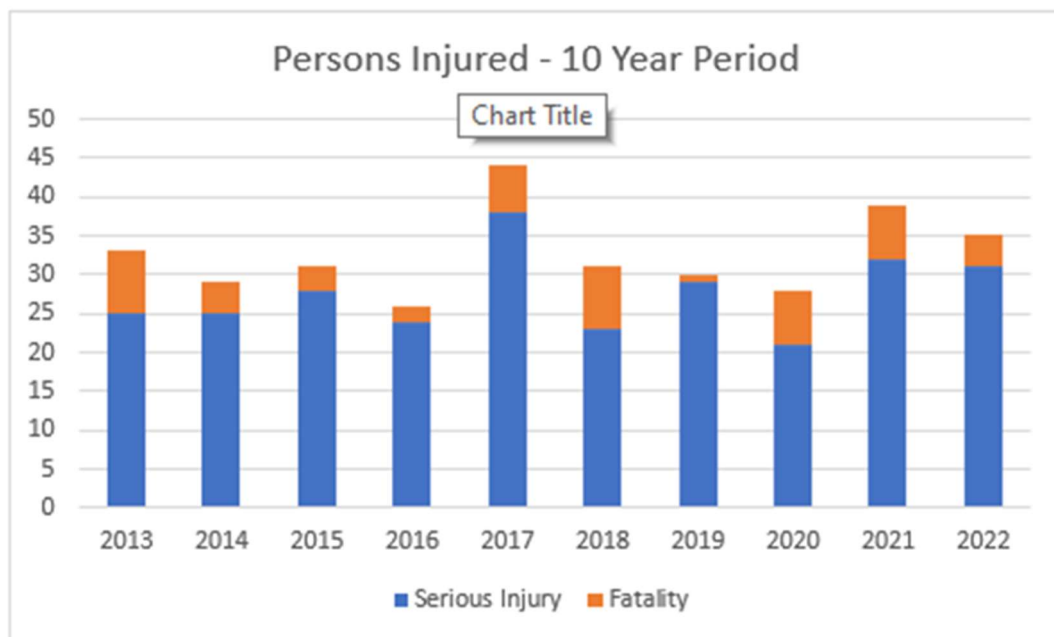
## Road Safety

Excluding the decade high in 2017, fatal and serious crash numbers have been relatively stable over the last ten years and are not showing any sign of potential consistent downward trends (2023 has to date had 34 reported fatal and serious injury crashes).

The geographic nature of the district, (high risk rural roads and intersections) combined with the population growth and reliance on vehicles for transport means a changed approach safety is essential to bring about any noticeable change and not risk the increased exposure bringing about an increasing crash trend.

Proposed programmes include rural road intersections, hazard removal, safety outside schools, amongst others.

Figure 3-8: Waimakariri fatal and serious casualties. (Source CAS data)



## Economic growth

Waimakariri has over recent years experienced substantial growth in employment. As reported by Statistics New Zealand. Unfortunately, the statistics from the most recent census are not yet available. Therefore, information from the previous AMP will remain current until new statistics are available.

Over the period between 2013 and 2019 the number of business locations in Waimakariri District increased by 6.9% c.f. 8.9% in the previous 6-year period, however, company car usage in Waimakariri increased 103% compared with the previous six years.

The number of paid employees in Waimakariri District increased by 24.4 percent at the year ended February 2019, very slightly down on the increase from 2006 to 2013 of 25.6%

The reliance on the private vehicle is one the most significant causes of local pinch points and poor journey time reliability. Around 42% of the district's usually resident workforce travel to Christchurch for work and about 2,000 of the daytime workforce commutes into the District from Christchurch. Commuting travel also occurs for many other reasons such as travel to schools, medical, shopping, and recreational opportunities.

The South Island's freight task is predicted to increase by 68% between 2012 and 2042. Canterbury accounts for 48% of the total freight moved around the South Island (Draft South Island Freight Plan, 2015). The freight route from Picton along the east coast of the South Island is the primary freight route in the South Island. Woodend is currently the pinch point, with the Northern Corridor over the Waimakariri River Bridge flowing freely with its recent improvements. The Woodend Bypass has been included as a key transport link with the Draft GPS, which will help alleviate safety and access concerns through Woodend. Care will need to be taken that growth further north can continue to be catered for, by such measures as mode choice, including alternative freight carriage modes.

The other key routes carrying freight include through Southbrook Road, through the centre of Rangiora, or alternately along the West Rangiora Route (Fernside Rd / Flaxton Rd / Skewbridge Rd & Ohoka Rd to SH1). This is becoming more popular for commuters however it is planned to improve the route for heavy vehicles along this route. To achieve this a number of improvements will be required to ensure the route is accessible and safe, and constructed to the standard required to cope with the anticipated volume of traffic, especially heavy traffic.

Another key piece of strategic infrastructure required is the Rangiora Eastern Link Road. This new road will connect at SH71 and run north to Northbrook Road, providing an alternative route to Southbrook Road, which is a very busy corridor carrying over 26,000 vpd in parts. Southbrook area is a key commercial / industrial area within the Waimakariri District. As such there is a strong heavy freight demand within the area. This has been proposed for a number of years, as part of a synergistic package of projects designed to not only manage growth in in the district, but also to improve access / congestion issues on Southbrook Rd and to facilitate connections with and opportunities in Christchurch, as part of Greater Christchurch Partnership.

Up until recent times Waimakariri has managed to maintain a comfortable network on minimal budget increases. A key indicator of network performance is represented by the Smooth Travel Exposure by ONRC classification. Generally the network is performing well, both year on year and against our peers and nationally but it is noted that Smooth Travel



Exposure, while still not at a concerning level, is trending downwards. (the higher the STE, the better the network). This may be reflective of the high growth in our urban areas.

Figure 3-9: Urban STE trend by ONRC for Waimakariri District

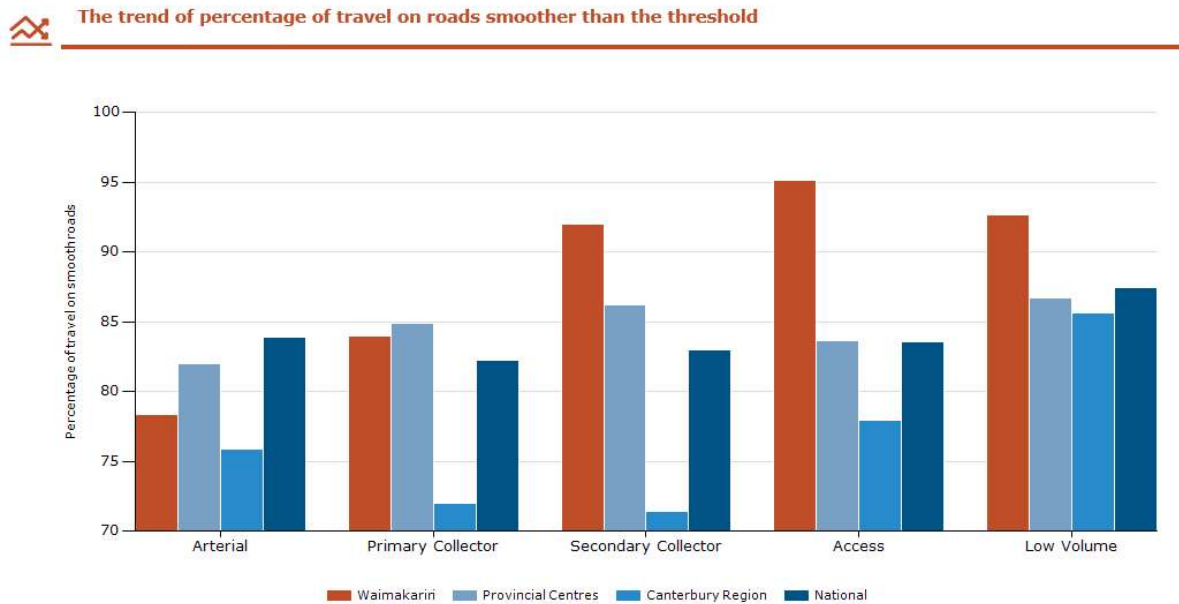
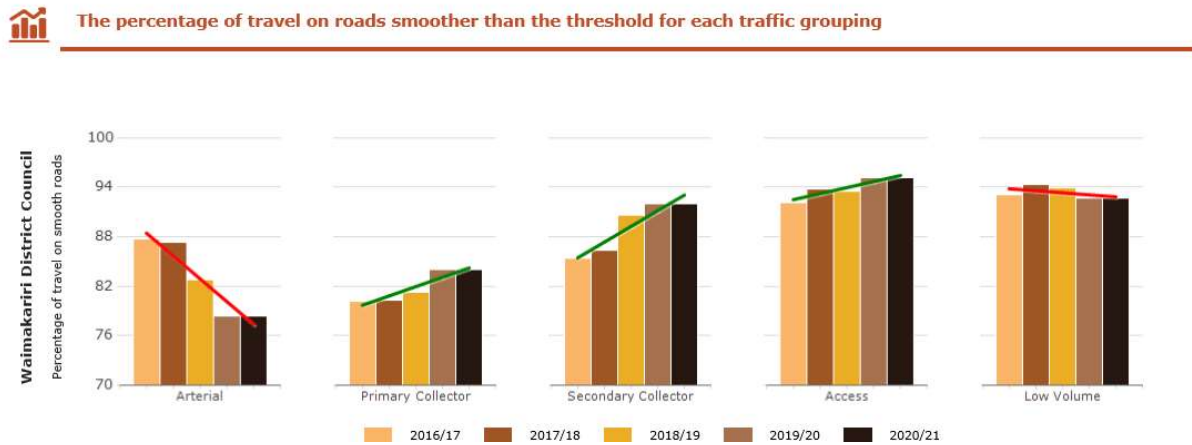
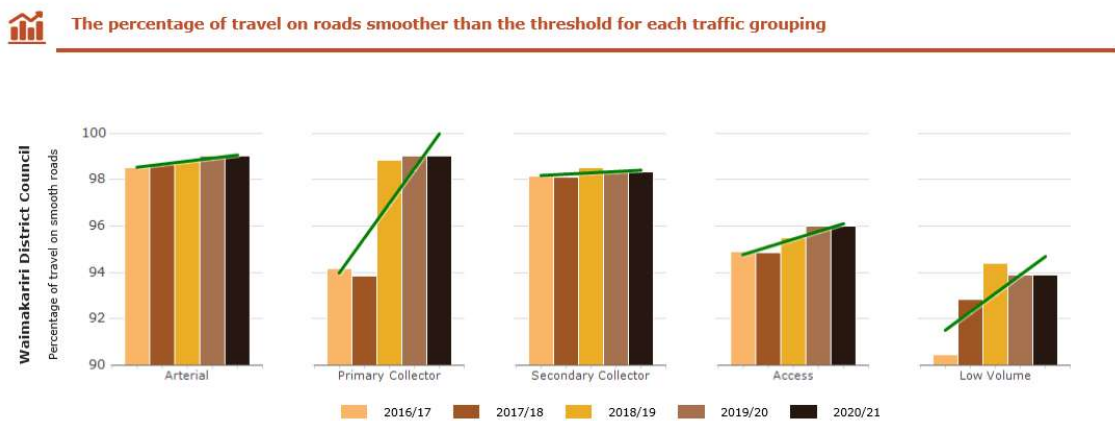


Figure 3-10: Rural STE trend by ONRC for Waimakariri District



**The trend of percentage of travel on roads smoother than the threshold**

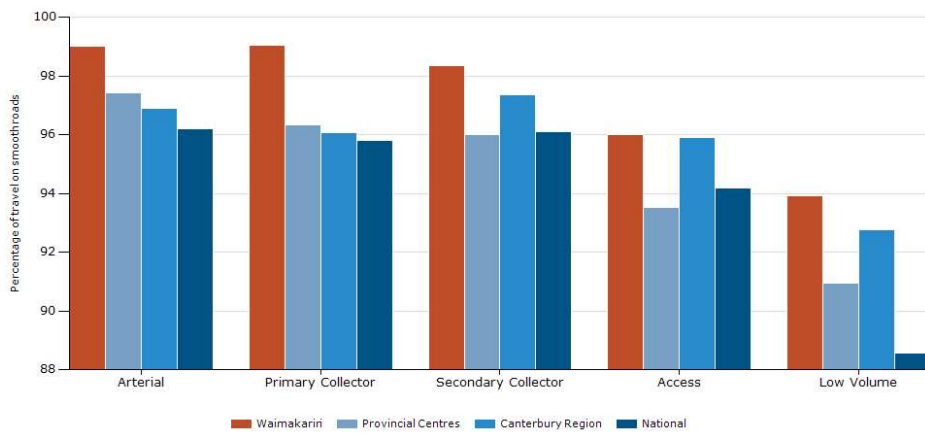
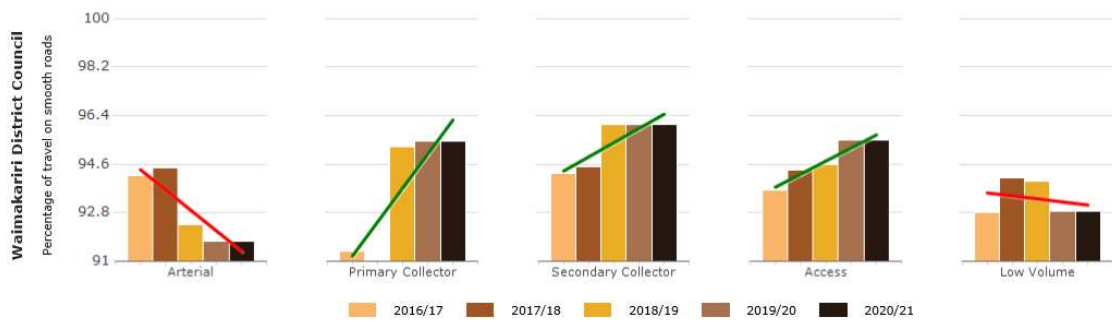
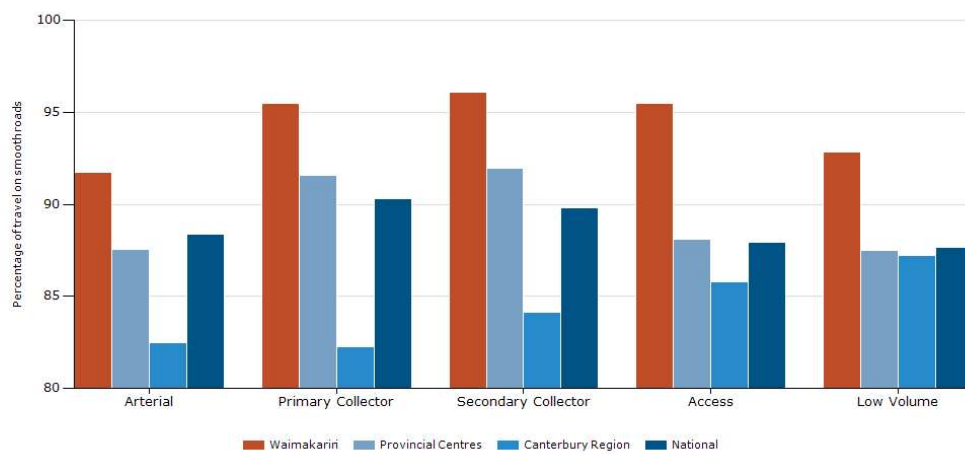


Figure 3-11: Combined STE trend by ONRC for Waimakariri District

**The percentage of travel on roads smoother than the threshold for each traffic grouping**



**The trend of percentage of travel on roads smoother than the threshold**



## 3.12 Financial Case

The programme of works proposed for the next three years is fully outlined in Section 7 Financial Summary of the AMP, providing the expenditure proposed for the next ten years.

### Council support

The Council Long Term for 2024-2034 fully supports the funding applications.

### Adequacy of Programme to meet asset and customer needs:

At the last AMP trends showed that generally the network was holding together reasonably well. However, in the leadup to this AMP, the quantity and cost of maintenance work has been steadily increasing, not only due to inflation but also to an increase in the numbers of faults needing repaired. The proposed cost increases are described in greater detail in the Programme Business Case. They are however targeted at rectifying long term underfunding of drainage issues while ensuring current needs, such as maintain the road surfaces and not allowing these to reach a point where greater investment is needed to restore them.

### Key Funding Requests for 2024-2027

Table 3-7: Key funding requests

Activity	24/25 (\$)	25/26(\$)	26/27 (\$)
Maintenance	5,375,870	5,946,452	6,121,458
Operations	4,541,580	4,887,421	5,098,838
Renewals	8,552,205	10,097,978	9,119,271
Road Safety Promotion	307,500	316,725	326,227
Minor / Low cost low risk improvements	3,180,000	3,690,000	1,770,000

While Council is wishing to manage rates increases, roading improvements are seen as a high priority and as such has been supported by Council, however this is still to be considered through the LTP process.

### Programme Risks / Unknowns

There are several risks that have been identified during the development of the strategic case which require further management and/or investigation. These include:

### Resilience

Increased extreme weather events are proving to be a challenge, both nationally and locally. Waimakariri has already had to carry out remedial works a consequence of several events. It has identified some potential areas for investment, but more work is planned for the next NLTP to further understand what work is needed to attempt to mitigate future damage.

## Sustainability

Council also is proposing more work on understanding our contributions to emissions and how these might be reduced in the district.

## Safety

As mentioned earlier, Waimakariri District is experiencing an increasing trend in fatal and serious crashes. While it is difficult to pinpoint consistent trends in causes of crashes, it is recognised that inconsistent or substandard networks are often contributing causes to crashes even when not recognised officially, particularly for inexperienced, elderly, or impaired drivers. As Waimakariri's population grows, so does the exposure factor. The Council wishes through its proposed programmes to ensure that its community meet their desired outcomes while at the same time supporting regionally and nationally identified goals.

### 3.13 Management Case

The Council team is staffed in-house under the leadership of the Rooding & Transport Manager. They are responsible for the end-to-end process of managing the rooding and transport network. This includes the role of Corridor Manager to ensure works of utility operators is efficiently managed within the network.

The team has a mix of operational, asset and transport planning and road safety staff who have close relationships with the Strategy and Policy, Planning, 3 Waters, Greenspace and other Council teams, including Finance. The collaborative nature of the team extends outward to the Greater Christchurch and Regional level through various groups.

The team utilises the Council's in-house Project Delivery Unit (PDU) to manage programme and project delivery, overweight permits, speed limit reviews and other specific tasks. Specialist consultants are utilised to provide specialist advice on bridges and structures, safety and transport modelling.

In addition to the Rooding & Transport Manager, the Rooding Team consists of the following operational staff:

- Rooding Operations Team Leader, who is responsible for five operational staff:
- Rooding Contract Engineer – manages contracts, unsealed network maintenance, pavement rehabilitation and reseal programme.
- Rooding Maintenance Engineer – deals with day-to-day maintenance issues in the field, customer liaison/service requests, and small safety projects.
- Rooding Compliance Officer – manages road corridor activities including CARs, temporary traffic management, and compliance issues such as overhanging vegetation and stock movement.
- Rooding Auditor – Network auditing and ensuring vehicle crossings are constructed to Council standard.

- Roothing Cadet – newly introduced role which provides support to the rest of the department particularly in the area of network inspections and auditing.
- Senior Roothing Engineer Role – Additional role to be added to the team.

The remaining roles are directly managed by the Roothing & Transport Manager.

- Asset Planning Engineer (Roothing) - Responsible for the AMP, RAMM and NZTA funding.
- Senior Traffic Engineer - Resource Consents, design and project safety auditing (overseeing PDU design).
- Transportation Engineer – Assisting the Senior Traffic Engineer.
- Journey Planner / Road Safety Coordinator – Travel Demand Management, Public Transport and Road Safety.

### 3.14 Commercial Case

#### Section 17 Processes

Council has in place an NZ Transport Agency (Waka Kotahi) endorsed Procurement Strategy which was endorsed by the Agency in 2020.

Except for carriageway Road network maintenance and renewal management is carried out under a single road maintenance contract covering the whole district. The contract model is a collaborative model with Council staff and the contractor working as 'one team' focussing on best for network outcomes. The contractor is responsible for network inspections, programming and carrying out the work. Minor improvement works are included in the maintenance contract for greater efficiency. There is a comprehensive performance management process in place for the contract. The contract was re-let in November 2020 for a 3+1+1 period to the incumbent contractor and will be due for letting during this AMP period.

Specialist work and larger cost items such as some bridge renewal work is mostly carried out through the maintenance contractor's subcontractors, but at times where specialist experience or knowledge is required, or the main contractor does not have the in-house resourcing due to the workload at that time, other contractors may be brought in. Council is working on setting up a panel of preferred contractors and this may save some time in these cases.

Street light maintenance and renewals is carried out under a similar, but separate, contract. This contract was originally let in November 2019 but due to problems did not commence officially until April 2021, with the incumbent managing basic maintenance until then. It is also due in the next few years for re-letting.

Projects are procured through a range of options from lowest price conforming tender processes to short listing and selected tender processes depending on the type and

complexity of the project. Very small one-off projects such as safety improvements at an intersection, may be carried out directly through the maintenance contract where this is shown as the best price option.

### **Ability to Deliver Programme**

Traditionally Waimakariri programmes have been delivered with minimal cost increases whilst maintaining levels of service. However, the high increased growth in the District has made this impossible to sustain. With regards the MOR programme, for both the current and previous NLTP, Council has easily spent its original allocation and more. In the case of the 2018-2021 programme, a further \$440,000 was sought, approved and spent within the last two months of the programme, enabling extra drainage work to be carried out. In the current programme, a cost scope adjustment of almost \$3.4 million was approved but even this has proved to be insufficient to maintain the current programme, due to the high cost fluctuations. The new programme requested is designed to maintain the current levels of service and also carry out general catchup activities. With a large labour market just across the river there is no shortage of available contractors to carry out the work, and the Section 17 Processes provide more detail on procurement.

### **Collaboration**

The Waimakariri District Council is a party to the North Canterbury Rooding Collaboration MOU. This includes Selwyn, Hurunui and Kaikoura District Councils. Council also works in partnership with the other Greater Christchurch partners through the Greater Christchurch Partnership agreement and the Transport Managers Group and with various projects such as PT Futures and Business Case and the Travel Demand Management Business Case.

Council roading staff are represented on Regional Transport Officers Group, the Regional Road Safety Working Group and the Regional RAMM user group amongst others, including collaborative corridor management.

# **Transportation Activity Management Plan 2024**

## **Levels of Service**

**June 2024**



**Prepared by**

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## 4 Levels of Service

### 4.1 Introduction

Levels of service are targets that provide a standard to measure to in order to deliver a desired outcome. The Council operates, maintains and improves roads, footpaths, bridges, traffic services and other Rooding ancillaries on behalf of ratepayers, residents, road users and the Crown. It strives to meet the levels of service sought by the community, and those required by law, statutory regulations, bylaws, and other quasi-statutory documents such as district and regional plans and resource consents, and to do so at the standard desired by the local community and other stakeholders.

Key objectives of this Activity Management Plan include:

- informing customers of the current level of service provided and any proposed changes to those levels of service and the associated cost.
- measuring performance against these defined levels of service
- identifying and quantifying the gaps
- developing Asset Management strategies to deliver the required level of service
- identifying the costs and benefits of the services offered.
- enabling assessment of suitability, affordability and equity of the services offered.

The Levels of Service in this document range from measures set by the Department of Internal Affairs to 'customer' levels of service defining expected outcomes from the activities, such as how long a customer may expect to wait for normal services after an emergency event, through to 'technical' levels of service which covering such things as acceptable periods between defect remediation. These levels of service must somehow accommodate a wide variety of wants and needs, sometimes conflicting, and help to deliver in a manner which best meets the needs and desires of the community at large.

Information regarding performance against Customer Levels of Service can be found in the appropriate section throughout this chapter. Technical Levels of Service are incorporated in this AMP against the relevant sections in this document, primarily in the Lifecycle Management Plan.

The Levels of Service are based on the following key input areas:

Figure 4-1: Levels of Service Key Inputs



### Legislative Requirements

Key legislation covering minimum standards will include such things those covering what utilities may or may not do in the road corridor, changes to transport legislation such as the need to accommodate High Productivity Motor Vehicles, and potential future legislation around vehicle emissions and carbon measurement. Appendix x contains a list of current relevant legislation but with this environment constantly changing this should not be treated as exhaustive or even necessarily the latest legislation.

### Strategic and Corporate Goals

The primary purpose of Council is *'to make Waimakariri a great place to be, in partnership with our Communities guided by our outcomes, through the following roles:*

1. As a service provider;
2. As a funder of activities by others;
3. As an advocate on behalf of our community;
4. As a regulator under legislation.'

The following goal for the provision of transport infrastructure in the Waimakariri District Council has been developed from the Community Outcomes. Our Transportation goal is:

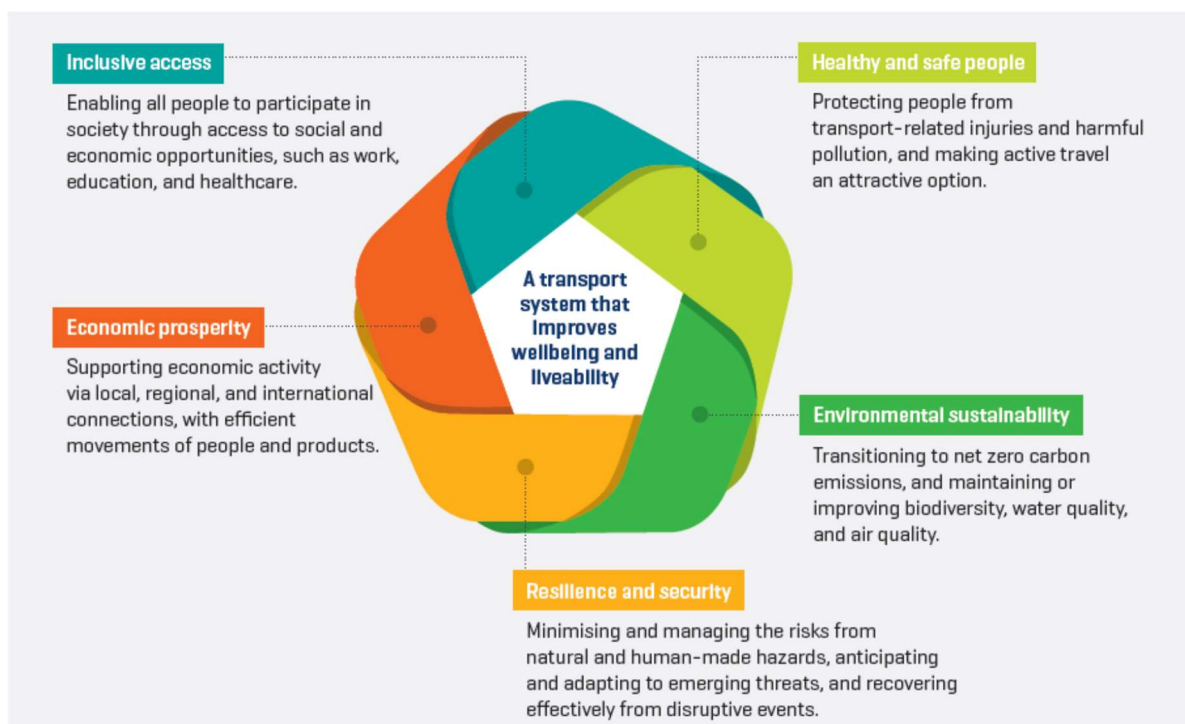
*"To plan, provide, maintain, develop and improve the Roding and Transport network so that it is affordable, integrated, safe, responsive and sustainable and it contributes to the attainment of high quality natural, living and productive environments within the District and assists development of a strong sense of community."*

## 4.2 Nationally Strategic Documents

There are several strategic documents which outline national priorities. In preparing the AMP and our three-year programme it is important to be cognisant of these. NZ Transport Agency (Waka Kotahi) uses these documents for prioritising the funding assistance it provides to Road Controlling Authorities.

### Ministry of Transport's Transport Outcomes Framework

The Ministry of Transport's Transport Outcomes Framework (June 2018) identifies what the government is trying to achieve through the transport system. It has established that the purpose of the transport system is to improve people's wellbeing, and the liveability of places. It does this by contributing to five key outcomes, summarised in the diagram below:



A guiding principle in the framework is mode neutrality. Mode neutrality involves two important aspects:

1. Ensuring that all modes and options are considered and evaluated to find the best system solution.
2. Making users and decision-makers more aware of the benefits and costs of transport choices, to incentivise robust decision-making and smart travel choices.

Specifically, the framework notes that more attention needs to be given to public transport and active modes as well as rail and coastal shipping.

The Transport Outcomes Framework is integral to the Investment Benefits Framework, which requires RCAs requesting national investment to

- identify how the work they intend to carry out relates to these five categories, and
- to select the measures which will be used to identify how the activities will be evaluated to determine the degree of success or otherwise at meeting predetermined targets.

The Transport Outcomes Framework is a guiding document for the Government Policy Statement (GPS) for Transport as described in the following section.

## Government Policy Statement for Transport



The GPS sets out the key policies the Government seeks to have delivered over the next ten years, with a three yearly refresh and revision. It is important that consideration is given to aligning with these when funding is sought from Waka Kotahi NZ Transport Agency. A draft GPS was released in August 2023, but with a change of government a new GPS is not now due until mid 2024, and it is expected this will see changes in direction and objectives.

## Arataki

Arataki is the Waka Kotahi view of what is needed to deliver on the government's current priorities and long-term objectives for the land transport system. It looks at each of the Regions and provides guidance in what are seen to be the key challenges facing the region.

The first Arataki was delivered three years ago. This has since been reviewed, and the following identified as the most important challenges to be resolved over the next 10 years for Waitaha/Canterbury to make progress towards transport outcomes. Consideration should be given as to how Arataki suggestions could be incorporated into Council work programmes.

## Suggested Arataki Measures responding to these questions

- Support, enable, and encourage growth and development in areas that have good travel choices and shorter average trip lengths through the Greater Christchurch Partnership and spatial planning work.

*Significant developments have been occurring in areas on the fringes of Rangiora, allowing better access by alternative modes.*

- Accelerate the delivery of walking and cycling networks predominantly through reshaping existing streets, to make these options safe and attractive. •

*Waimakariri has been actively expanding its on and off-road cycle network since 2018, from 24 to 48 km, particularly shared paths. There is an on-road programme of repair, upgrades, and new footpaths but this work will be more targeted going forward utilising the ONF to prioritise work.*

- Implement the Public Transport Futures programme, starting with bus services and infrastructure improvements; confirm the design and timing of rapid transit along the corridors in the north and southwest of Greater Christchurch.

*Waimakariri has been rolling out bus stop infrastructure improvements and will follow the lead of Environment Canterbury for any service enhancements. At this time, no rapid transit is anticipated to service the District.*

- Explore new and emerging technologies, such as on-demand services, to improve access to social and economic opportunities. •

*Waimakariri is working with our partners at Environment Canterbury to explore financially sustainable extensions to existing public transport services, potentially using new modes.*

- Better understand the impact of future economic transformation on travel patterns and freight volumes

*As the District increases its self-sufficiency and attracts more residential and commercial traffic from Greater Christchurch, the resulting impacts on travel patterns are being supported by investments in public and active transport and resilient roading connections.*

- Explore opportunities to move to a more multi-modal freight system with greater use of rail and coastal shipping.

*Waimakariri is working with our partners at Environment Canterbury to better understand freight shift opportunities across the region.*

- Confirm how key resilience risks will be addressed over time, and work with communities to identify plans for when to defend, accommodate, or retreat.

*Business plan for Lees Valley, addressing ongoing resilience and community separation issues. In the longer term there is a need to address coastal encroachment and for groundwater rise to being investigated.*

- Continue to implement road safety plans and programmes including those focused for iwi/ Māori.

#### *Active Road Safety Committee*

- Improve or maintain, as appropriate, physical access to marae, papakāinga, wāhi tapu and wāhi taonga.

#### *Ongoing work at Tuahiwi*

- Reduce financial and other barriers to iwi Māori getting a driver's licence in areas not well served by public transport.

*Further work needs to be undertaken to determine how best to facilitate this action.*

Note that Waimakariri issues are only addressed in this document either through general Canterbury issues or as part of the Greater Christchurch Partnership. While many issues are common to a number of Canterbury Districts this AMP will identify those most critical for Waimakariri, while ensuring these are not inconsistent with national and regional directions.

### 4.3 Regional and Local Transport Documents

#### **Waimakariri District Levels of Service**

Waimakariri Transport LTP Levels of Service measures are based on Department of Internal Affairs (DIA) measures, with targets adopted to meet Council requirements as appropriate. Technical Levels of Service (those the Contractor is required to meet under their contract agreement) were developed a number of years ago and have not been revised in recent times. The Community Outcomes are the result of public consultation carried out up to and during preparation of the 2024/34 Long Term Plan (LTP).

The Council has considered many factors in defining the levels of service on its Roding network. These included:

- Its statutory/legal obligations
- The needs and expectations of the District community as a whole and other communities within the District, established through comments made to it through formal consultation processes, the results of customer surveys
- The Council's vision, goals, objectives and policies.
- Waka Kotahi NZ Transport Agency requirements
- Sound asset management, including sound engineering practice and accounting practice (affordability and economic efficiency).

#### **Community Outcomes**

Community Outcomes describe the aspirations and priorities that a local authority aims to achieve in order to promote the social, economic, environmental, and cultural well-being of its district or region, in the present and for the future. Waimakariri's Community Outcomes were revised in preparation for the coming Long Term Plan and as such feed into the AMP. When deciding on



our work programme we should be cognisant of these and how they connect to National and Regional outcomes sought.

Table 4-1: Community Outcomes

<p><b>Social</b></p> <p>A place where everyone can have a sense of belonging...</p> <ul style="list-style-type: none"> <li>• Public spaces are diverse, respond to changing demographics and meet local needs for leisure and recreation.</li> <li>• Council commits to minimizing the risk of social harm to its communities.</li> <li>• Housing is available to match the changing needs and aspirations of our community.</li> <li>• Our community groups are sustainable and able to get the support they need to succeed.</li> <li>• Our community has access to the knowledge and skills needed to participate fully in society and to exercise choice about how to live their lives.</li> <li>• People are able to enjoy meaningful relationships with others in their families, whanau, communities, iwi and workplaces.</li> <li>• Our community has reliable access to the essential infrastructure and services required to support community wellbeing.</li> </ul>	<p><b>Cultural</b></p> <p>...where our people are enabled to thrive and give creative expression to their identity and heritage...</p> <ul style="list-style-type: none"> <li>• Public spaces express our cultural identities and help to foster an inclusive society.</li> <li>• The distinctive character of our takiwā, arts and heritage are preserved and enhanced.</li> <li>• Members of our community are able to engage in arts, culture and heritage events and activities as participants, consumers, creators or providers.</li> <li>• Waimakariri's diversity is freely expressed, respected and valued.</li> <li>• There is an environment that supports creativity and innovation for all.</li> <li>• Local arts, culture and heritage are able to make a growing contribution to the community and economy. (new)</li> </ul>
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<p>Environmental</p> <p>...that values and restores our environment...</p> <ul style="list-style-type: none"> <li>• People participate in improving the health and sustainability of our environment.</li> <li>• Land use is sustainable; biodiversity is protected and restored.</li> <li>• Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</li> <li>• Our district transitions towards a reduced carbon and waste district.</li> <li>• The natural and built environment in which people live is clean, healthy and safe.</li> <li>• Our communities are able to access and enjoy natural areas and public spaces.</li> </ul>	<p>Economic</p> <p>...and is supported by a resilient and innovative economy.</p> <ul style="list-style-type: none"> <li>• Our district is prosperous and reflects the value of both paid and unpaid work.</li> <li>• Infrastructure and services are sustainable, resilient, and affordable.</li> <li>• Our district readily adapts to innovation and emerging technologies that support its transition to a circular economy. (modified and expanded)</li> <li>• There are sufficient and appropriate locations where businesses can set up in our District.</li> <li>• There are sufficient skills and education opportunities available to support the economy. (new)</li> <li>• There is access to meaningful, rewarding, and safe employment within the district.</li> </ul>
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#### 4.4 Customer Research and Expectations - Measuring Performance

##### Levels of Service and Performance Measures

Council has a range of measures by which by which it can determine how well the community's needs and desires are being met. These range from customer service outcomes to technical measures used to evaluate contractor delivery. While Council's Roving Community Levels of Service performance measures have been based around the DIA required measures, it is anticipated that in future more measures may need to be developed, however some work is required to ensure these are useful, simple, repeatable and that Council agrees to them.

Other performance measures Council has to take into consideration are those utilised from the Waka Kotahi Investment Benefits Framework, which assist the Agency in measuring whether desired results have been achieved from their investment.

The five Annual Report measures were set by The Department of Internal Affairs, with the targets set by council, and became the new LOS measures as of 1 July 2015. These will also be measured against for the next LTP (2024-2034).

The measures, targets and results for Waimakariri District Roding are shown in the table below. In the last three years Council has failed to meet its target measures for quantity of resurfacing carried out annually, reduction in numbers of fatalities and serious injury crashes (only met once in the last 3 years) and responding to service requests within the required target period. It is actively working to deal with the issues related to service request response, but the other two targets are to a certain extent governed by available funding, in particular the resurfacing. Crash rates are not only governed by engineering works, but many external factors and RCAs are limited by the influence they have in this area.

The process of reporting overall progress towards achievement of Community Outcomes to which the Roding and Transport Activity primarily contributes is managed corporately through the Council Policy Team to ensure consistency between all activities. Performance against these targets is reported quarterly.

Table 4-2: Community Outcomes Measures and Targets

Roads and Footpaths										
Community Outcome	Council Response	Level of Service	Measure	Targets (2024-2034)	Achieved					
					17/18	18/19	19/20	20/21	21/22	22/23
A place where everyone can have a sense of belonging.	<p>Council commits to promoting health and wellbeing and minimizing the risk of social harm to its communities.</p> <p>Our community has equitable access to the essential infrastructure and services required to support community wellbeing.</p>	The road network is increasingly free of fatal and serious injury crashes.	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. (DIA measure)	Reduction in fatalities and serious injury crashes	There were the same number of fatalities and 5 more serious crashes in Waimakariri District for the 2017/18 financial year compared with the previous one. (Overall increase)	One less fatality and six fewer serious injury crashes on Waimakariri local roads for the whole of 2018/19 financial year compared with 2017/18. (Overall decrease)	One more fatality and 9 fewer serious crashes on Waimakariri local roads for the whole of 2019/20 financial year compared with 2018/19. (Overall decrease)	There were 4 more fatalities and 5 more serious crashes on the local road network for the current financial year compared with the previous year. (Overall increase)	During the year there were 4 fatal crashes and 21 serious injury crashes. This is a reduction of five fatal crashes and 4 serious injury crashes from the previous financial year. (Overall decrease)	There were 2 fatalities and 6 serious injury crashes in the last quarter of the 2022/23 financial year, resulting in a cumulative total of 32. This compares with 26 in the 2021/22 financial year. (overall increase)
A place... ...where everyone can have a sense of belonging. ...that values and restores our environment. ...supported by a resilient and innovative economy.	<p>Our community has equitable access to the essential infrastructure and services required to support community wellbeing.</p> <p>Our district is resilient and able to quickly respond to and recover from natural disasters and the effects of climate change.</p> <p>The natural and built environment in which people live is clean, healthy and safe.</p> <p>Infrastructure and services are sustainable, resilient, and affordable.</p>	<p>Sealed roads provide a level of comfort that is appropriate to the road type.</p> <p>Optimised programmes are delivered that are affordable and at a cost so that service productivity is improving.</p> <p>Footpaths are safe, comfortable and convenient.</p> <p>Requests for service will be responded to in a prompt and timely manner.</p>	<p>The average quality of ride on a sealed road network, measured by smooth travel exposure. (DIA measure)</p> <p>The percentage of the sealed local road network that is resurfaced. (DIA measure)</p> <p>The percentage of footpath that falls within the level of service or service standard for the condition of footpaths. (DIA measure)</p> <p>The percentage of customer service requests relating to roads and footpaths responded to within service delivery standards. (DIA measure)</p>	<p>95% for rural and 75% for urban roads</p> <p>5%</p> <p>95%</p> <p>95%</p>	<p>96%/81%</p> <p>3.2%</p> <p>98.9%</p> <p>96%</p>	<p>98% / 81%</p> <p>6%</p> <p>98.7%</p> <p>97.1%</p>	<p>98% / 80%</p> <p>4.45%</p> <p>99%</p> <p>96.4%</p>	<p>98%/80%</p> <p>4%. Higher quantity of asphalt means shorter length of road able to be resurfaced within budget</p> <p>99%</p> <p>94%</p>	<p>98%/84%</p> <p>3.8% Covid affected Contractor resources. Remaining reseal programmed for start of new year's season</p> <p>99%</p> <p>93.8%</p>	<p>98%/85%</p> <p>3.4%. High cost fluctuations have resulted in a reduction of the available budget. This combined with increased asphalt surfacing being completed has resulting in the resurfacing target not being met.</p> <p>98%</p> <p>83.6%. A backlog of service requests due to emergency events and staff shortages has resulted in failing to meet the target in the 2022/23 financial year. Work is continuing to reduce the backlog and it is hoped that these changes will allow the target to be met going forward.</p>

## 4.5 Progress against DIA measures

### **Measure One: Crashes**

**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.**

In terms of actual results, 2022/23 was seen as an increase in combined fatal and serious crash numbers, however looking at results over the last six years it can be seen that numbers fluctuate and no consistent trend can be determined.

Despite this, Council continues to try to reduce crash numbers in the District. This is covered off in more detail in a number of chapters of this AMP, including the Risk chapter, and the Life Cycle Management Plan. This is a difficult measure to achieve a successful result on because so much of the result depends on factors outside Council control, such as Government Policy, work by other agencies, the weather, vehicle design, the economy, even significant events such as Covid. Council has greatest control over the engineering it carries out (maintenance activities, improved minor safety/capital works such as intersection improvements and hazard removal) and the education programmes it delivers, but it also endeavours to work with partners such as police to achieve a synergistic delivery.

### **Measure Two: Ride Quality - Sealed**

**The average quality of ride on a sealed road network, measured by smooth travel exposure.**

Council consistently reaches its targets for this measure, and performs well against its peers. However, this is a feature of a network with extremely stable subbase due to the majority of the roads being built on flood plains with a good free-draining aggregate. This is also a feature of its southern neighbours, and Council is performing slightly worse than these for this measure. There has also been a deteriorating trend on some specific categories of road which do not show up when averaged across the network. Council is programming interventions to ensure the impacts on the network of extreme weather events do not lead to further significant damage which in turn will impact on performance and customer satisfaction.

### **Measure Three: Network Resurfacing**

**The percentage of the sealed local road network that is resurfaced.**

Although the 5% target may not always be required, this AMP has determined that this is currently a reasonable target for Council, at least until further work is done on validating the current model. One factor in the past which has led to a failure to achieve this is where a higher quantity of asphaltic concrete is laid, as this is a higher cost than chip seal, and a previously fixed budget can mean less resurfacing able to be achieved within a given seal season. However, in recent years there have been other governing factors as well, including high inflation resulting in less work being able to be achieved for the same budget. Council propose increasing the budget to ensure the quantity of required resealing can be met, as this

is more cost-effective long term than allowing the roads to deteriorate to the point where they require significant repair.

#### **Measure Four: Footpath Condition**

**The percentage of footpath that falls within the level of service or service standard for the condition of footpaths.**

Council has for some time now carried out a substantial programme of renewals, leading to a generally high level of footpath condition. However, since the last condition rating two years ago, there has been an increasing issue with tree root trip hazards. Council is currently carrying out comprehensive data collection to determine the quantum of the problem, and how best to prioritise repairs. While the condition is a long way off falling below the target, customer satisfaction has been declining, and this combined with the increasing issues identified, and Council will need to continue to monitor closely, programme appropriately and ensure the pedestrian network is kept safe, particularly with Waimakariri's older demographic.

#### **Measure Five: Service Request Response**

**The percentage of customer service requests relating to roads and footpaths responded to within service delivery standards.**

There has been some difficulty in meeting this target due to the high level of service requests received during adverse weather events. A new process has now been put in place and additional resources allocated to help deliver on this measure and ensure customer levels of service are met.

## **4.6 Who We Engage With**

### **Customers and Stakeholders**

Customers are the end users of the system. Expectations in the community are very important in determining future levels of service and in assessing how well the Council is performing with respect to current levels of service. Stakeholders may include those who have an interest in how the service is delivered to their customers or have an effect on their strategic directions and needs, from Environment Canterbury to individual developers, they include but are not limited to:

- Road users: including motorist, cyclists, and pedestrians.
- Disabled users: including wheelchair and mobility scooter users.
- The community: citizens and ratepayers.
- Customers of business.
- Business owners and operators.
- The farming community.
- Schools and community organisations.
- Visitors to the District.

- Consultants and contractors.
- The elected representatives (Councillors and Community Boards).
- Tangata Whenua.
- New Zealand Transport Agency.
- Regulatory and monitoring bodies including Environment Canterbury, Ministry of Health, Department of Conservation, Audit NZ.
- Environmental and recreational interest groups including Fish and Game New Zealand.
- Automobile Association.
- Road Transport Association.
- Environment Canterbury.
- NZ Police.
- Utility operators.
- Developers.

The Council endeavours to accommodate the interests of the customers and stakeholders and will involve them in the decision process as required by statute.

## 4.7 How We Engage

### Direct Consultation

Since its formation in 1989 the Waimakariri District Council has adopted a policy of consultation with its communities. It has surveyed its residents a number of times over the last 24 years and has undertaken a number of formal consultations on Roding matters or that have relevance to this plan. The annual LTP process provides very useful indicators of the stakeholders' concerns and whether levels of service are appropriate.

The Council's knowledge of customer expectations and preferences has traditionally been based on:

- Three yearly Customer Satisfaction Surveys.
- Council's Long Term Plan (LTP).
- Feedback from elected members, the Community Board and Advisory Groups.
- Analysis of customer service requests and complaints.
- Feedback and submissions to specific projects such as walking and cycling projects, road safety projects, Woodend community street review, and town centre plans.

In addition to the previous methods, Council carried out a series of targeted consultations with individual stakeholders such as freight companies, Fonterra, the local bus operator, and Daiken, a wood products company.

## **Levels of Service Engagement**

The Council consulted with the public on its proposed levels of service for Roding in mid-2005. This process included mailing information to all ratepayers, public meetings in six different locations in the district, publication of a detailed Level of Service consultation document, and receiving, hearing and considering submissions.

## **Customer Satisfaction Surveys**

Eight customer satisfaction surveys have been conducted since 2004. Surveys are conducted three yearly, and they are designed to continually monitor a set of organisation-wide key performance areas. A random sample of Council residents across the district are asked to complete a survey with a number of questions which form a longitudinal study. Occasionally questions may be added or deleted, but it is recognised that for good measurement changes should be kept to a minimum.

The following results are collated from previous and current customer satisfaction surveys. The most recent survey was conducted in 2022 with results presented to management in the form of a report in April 2023.

Satisfaction with rural roads is at its lowest level since 2004. A series of flood events has affected all roads adversely, as has the increase in traffic in the district, in particular heavy transport.

There has also been a decrease in satisfaction with cycling facilities despite adding new off-street cycleways. However, written comments to the most recent Customer Satisfaction Survey indicate that this dissatisfaction is primarily targeted at a desire for more cycling facilities than are currently available.

It is not surprising that satisfaction has declined on unsealed roads, both with the multiple flooding events over the last couple of years which have caused substantial damage that takes time to repair, and increased traffic volumes meaning that the metal is being consumed at an increased rate over the previous years. WDC is endeavouring to rectify this in coming years with an increased allocation to ensure adequate wearing course on the unsealed roads.

The Council plans to continue to survey its ratepayers, including questions relating to satisfaction with roads, and associated facilities, in those surveys. Where it is practical to do so questions will be repeated from survey to survey to allow trends to be ascertained.

In general, Waimakariri's Customer Satisfaction survey results are better than its neighbours.



Table 4-3: Percentage of respondents satisfied with aspects of the Roding network

Aspect of Roding	Percent satisfied								Percentage Change						
	2001	2004	2007	2010	2013	2016	2019	2022	2001 to 2004	2004 to 2007	2007 to 2010	2010 to 2013	2013 to 2016	2016 to 2019	2019 to 2022
Town roads	83.6	88.7	82.3	87.8	70.2	83.6	84.1	81.4	+5.1	-6.4	+5.5	-17.6	+13.4	+0.5	-2.7
Town footpaths	63.1	74.8	75.4	82.9	65.3	81.1	83.7	78.2	+11.7	+0.6	+7.5	-17.6	+15.8	+2.8	-5.5
Sealed rural roads	74.1	79	74.7	81.8	80.2	77.2	72	66.1	+4.9	-4.3	+7.1	-1.6	-3.0	-5.2	-5.9
Unsealed rural roads	54.1	53.2	53.9	56	54.1	60.0	60.3	49.5	-0.9	+0.7	+3.9	-1.9	+5.9	0.3	-10.8
Off-street parking in Rangiora	53.4	48.5	38.1	41.8	33.0	53.9	60.5	62.5	-4.9	-10.4	+3.7	-8.8	+20.9	6.6	2
Rangiora town traffic flow system	20.9	22.7	47.6	36.8	23.3	60.5	60.5	-	+1.8	+24.9	-10.8	-13.5	+37.2	0	NA
Kaiapoi off street parking	42.7	47.4	48	51.6	39.4	49.6	53.2	44.0	+4.9	+0.6	+3.6	-12.2	+10.2	3.6	-9.2
Kaiapoi town traffic flow system	38	37.9	36.6	41.3	33.2	50.6	49.6	-	-0.1	-1.3	+4.7	-8.1	+17.4	-1	NA
Provision for cycling	NA	NA	33.1	39.5	29.3	34.4	54.1	52.6	NA	NA	+6.4	-10.2	=5.1	19.7	-1.5
Provision for park and ride	-	-	-	-	-	-	34.9	-	NA	NA	NA	NA	NA	NA	NA
Provision for park and ride Rangiora	-	-	-	-	-	-	-	37.7	-	-	-	-	-	-	NA

Provision for park and ride in Kaiapoi	-	-	-	-	-	-	-	27.1	-	-	-	-	-	-	NA
Small settlement roads	-	-	-	74.2	65.7	70.6	73.3	66.4	-	-	-	-8.5	4.9	2.7	-6.9
Small settlement footpaths	-	-	-	82.9	65.3	59.3	59.6	58.9	-	-	-	-17.6	-6	0.3	-0.7

## Customer Service Requests

Another method of monitoring community expectations and current levels of service is by monitoring the customer service requests relevant to the activity. Relevant statistics for the last 6-years are shown below.

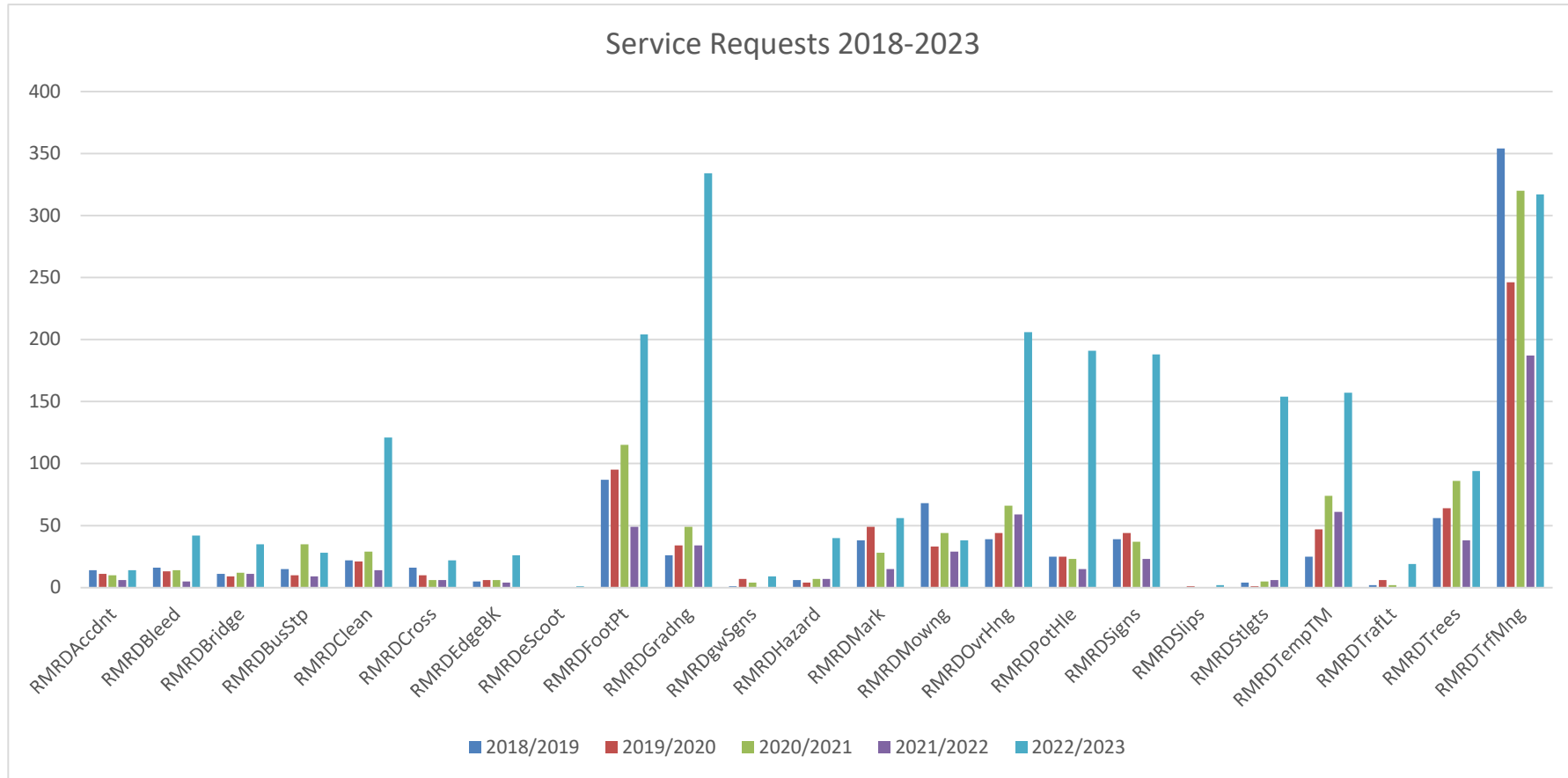
In previous years Traffic Management was the largest category by far for Service Requests, mainly because it encompasses a wide variety of issues, from speed limits to pedestrian crossings, road design etc. These are being reviewed to break them down into a more meaningful categorisation, but this will also include a review of the other categories to see which still are still relevant – for example Earthquakes have not been an issue for a number of years.

2022/23 saw a substantial increase in Grading complaints. This supports Council's business case for increased metalling. Currently there has been insufficient investment in provision of an adequate base of metal to the roads. This, combined with high shoulder / poor drainage, and increased severe weather events has led to a significant decrease in levels of service in this area.

Footpath complaints have also increased significantly. As the general condition rating showed the quantity of poor and very poor footpaths is a small percentage of the whole network, these requests require further investigation to determine if there is any common pattern. This appears to be primarily related to tree roots uplift of concrete paths and damage to the path surface, however further investigation is required to determine if there are other problems that need to be dealt with.

Other issues that have increased in the number of requests received include overhanging trees, potholes and signs. An increase in potholes is likely due to regularly occurring severe weather events and the subsequent saturated pavement, resulting in more rapid deterioration. Wetter conditions can also cause increased growth during growing seasons.

Figure 4-2: Customer Service Request Trends



## Investment Logic Workshops

In addition to the standard Council consultation such as the Satisfaction Surveys and Long Term Plan Consultation, Council has sought further views through a process known as Investment Logic Mapping. As part of the 2018 AMP, workshops were held with a small number of key stakeholders and were designed to uncover the key issues facing the district as they perceived them, examining the evidence around these issues to determine the extent these views were supported by solid information, and defining these issues. They were then examined to determine the benefits to the district and appropriate solutions to the issues.

Three workshops were held in Waimakariri District, the first with the Road Safety Committee as a representative user group to test the proposed format, then one workshop to determine the issues and one to define the benefits of resolving the issues. The Strategic Issues have been re-examined internally and amended to suit future directions, including national and regional. Although some progress has been made to implement the work programmes required to address these, there is still considerable work required to complete all this work, monitor and review.

For the 2021 AMP it was felt that work was still ongoing on many of the projects identified to mitigate or eliminate the problems. The new Problem Statements reframed the originals where appropriate, incorporating organisational and national direction. These were readdressed in 2022. It was felt that for the 21-24 NLTP the underlying issues and directions had not changed significantly, and it was considered the only action required was a refinement of the Problem Statements.

The resultant Problem Statements are:

- 1. Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*

Growth in population not only makes for increased vehicle density and more conflict, but also need for more physical improvements. The contractor also needs to maintain a higher level of service due to increased urbanisation. And in the interim transition to a multimodal network, there is a higher likelihood of conflict where alternative modes meet.

- 2. Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life-changing impacts.*

These events have made it harder to maintain levels of Service as resources to carry out day to day work are diverted to deal with Emergency Works. The widespread nature of these events means many RCAs are facing the same issues, making skilled contracting staff harder to come by. It also impacts Council staff, as their ability to carry out proactive planning and management is impacted by the reactive nature of these works. From a customer perspective, the most current issues manifest as disruptions to lives and livelihoods as roads are cut off, but also the potentiality of unsafe road surfaces and bridges leading to fatal or serious injury.

- 3. Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.*

Council has been actively working towards increasing opportunities for alternative modes. Levels of Service measures need to be expanded to provide a better means of demonstrating success in these areas.

- 4. Road users on our network have little room for error or recovery from mistakes, which can result in fatal and serious injuries when crashes occur.*

Crash records show that in two of the last three years we had more fatal and serious crashes than in previous years.

These are often reflected indirectly in the Levels of Service measurements. Service requests tend to primarily focus on dissatisfaction with the status quo. Therefore, comments on footpaths and cycleways will tend to focus on trip hazards, rough surfaces, lack of maintenance etc. Requests for additional facilities, i.e. more cycle lanes, better public transport, will often feature in submissions to the Long Term Plan, and responses to the Customer Satisfaction Survey. Where these can be correlated reference will be made to the appropriate Problem Statement

### **Targeted Engagement**

In addition to the data gained from Service requests and Customer Surveys, conversations are regularly held with key stakeholders, such as Police, education providers, and heavy transport operators, amongst others. This assisted not only in gaining a view into the high-level issues concerning these stakeholders, but also day to day detail where addressing these more minor issues could still assist in providing a more fit for purpose network to help people with their day to day lives, businesses etc.

## 4.8 Strategic Business Case Performance Measurement

Problems	KPI	Target	Result
Population growth and changing land use is resulting in increased vehicle use, making it harder to maintain safe and appropriate levels of service.	<p>Commitment to Waimakariri Freight Strategy from freight operators.</p> <p>Customer satisfaction with walking and cycling facility provision.</p> <p>The average quality of ride on a sealed road network, measured by smooth travel exposure. (DIA measure).</p>	<p>Commitment to Waimakariri Freight Strategy from freight operators.</p> <p>Increased approval rates for walking &amp; cycling provision in customer satisfaction survey.</p> <p>95% for rural and 75% for urban roads.</p>	<p>Freight Strategy superseded by Integrated Transport Strategy.</p> <p>Approval rates declined.</p> <p>Target achieved.</p>
Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life-changing impacts.	Number of incidents where residents were affected by a road closure that could have been avoided with appropriate engineering measures.	<p>All high-risk, high impact routes reviewed annually to ensure they remain fit for purpose.</p> <p>Climate change review completed by March 2025.</p>	<p>Routes not defined.</p> <p>Ongoing.</p>
Lack of mode choice leads to social disconnect, increased need for more roads, environmental impacts due to vehicle emissions and lack of opportunity for safe and healthy activity.	<p>% of planned projects which assist with modal choice and access delivered.</p> <p>Park &amp; Ride facility satisfaction.</p> <p>Bike stands / facilities.</p> <p>Number of people travelling by public transport.</p>	<p>100% delivery by June 2024.</p> <p>Increase in community satisfaction with Park and Ride Facilities.</p> <p>New bike stands installed as per cycle network strategy.</p> <p>Annual increase in boarding numbers.</p>	<p>Partially complete but change in funding may lead to some planned cycle network projects not being delivered. In all 6.2 km of new cycle facilities have been delivered to date in the current NLTP period.</p> <p>Park and Ride facility survey not been going long enough to comment on this.</p> <p>Funding for these was withdrawn by central Government.</p> <p>Between July 2021 and July 2023 there was an increase of 5,930 passengers, or a 17% increase.</p>

Problems	KPI	Target	Result
Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur.	<p>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 (DIA measure).</p> <p>Reduction in 85<sup>th</sup> percentile speed on roads where able to be recorded through existing traffic counting system).</p>	<p>Reduction in fatalities and serious injury crashes.</p> <p>Reduction in 85<sup>th</sup> percentile speed on roads where able to be recorded through existing traffic counting system.</p>	Not achieved. Results in Table 4-2

#### 4.9 Physical Measurement of Gaps – the One Network Road Classification (ONRC), and the Transition to the One Network Framework (ONF)

During 2013 the joint Local Government/Transport Agency implementation group, the Road Efficiency Group (REG), developed an integrated national road classification, the One Network Road Classification (ONRC).

The priority driver for developing a new single national road classification has been the nationwide need to ensure the ongoing affordability of road maintenance and operations and the findings of the Ministerial Road Maintenance Task Force Report. The task force concluded that a national road classification could help to improve investment prioritisation.

The One Network Road Classification (ONRC) involved categorising roads based on the functions they perform as part of a national network. The classification is designed to help local government and Waka Kotahi Transport Agency to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country. It would also give road users more consistency and certainty about what standard and services to expect on the national road network.

A set of customer Levels of Service (CLoS) was developed for each classification (see below).

These Levels of Service were used to assist in assessing the level of funding NZTA considered appropriate from their funding perspective. Councils could choose to fund a higher level of service if that was the wish of their community. The CLoS that were developed were generally consistent with how the Waimakariri District Council is managed in practice..

However, what was noticeably missing from the ONRC was a consideration of the relevance of Place and Function as well as Movement (traffic volumes). Lack of measurability of pedestrian and cycling activity hindered the ability to properly allow for areas where these activities played an important, and sometimes primary, part in the function of certain roads.



This has led to a movement from the ONRC to the One Network Framework (ONF). This classification incorporates Planning considerations, so Place and Function will also be utilised to determine hierarchy of the network. For example, a road with a high pedestrian function but low traffic volume may be considered as requiring a higher level of service than a road with a similar volume of traffic but low pedestrian numbers in the suburbs.

Work has been undertaken to provide measurable and consistent measures for the ONF, to allow comparison across the country. Councils will still be able to set their own targets for these measures, however it is anticipated that there may be a minimum and maximum level of service set by Waka Kotahi New Zealand Transport Agency which will have an impact on the level of financial assistance made available. Where these do not align, Councils will have to choose whether to modify LOS to align with national standards / priorities or accept certain work will need to be carried out without financial assistance. This work has not yet been carried out and is identified as a future Improvement to the AMP.

It is anticipated by NZTA that by July 2024 all Councils will have identified their preferred future state for their Council's network as defined by the ONF.

### **Regional Levels of Service Results by ONF category**

The Insights tool provided by Waka Kotahi allows comparison by ONF. Most of the charts provided describe some form of Technical Level of Service, and as such are incorporated in the Lifecycle Management Plan, however due to the small numbers in the ONF categories, where it is more relevant ONRC charts are still utilised.

### **Gap Analysis**

The analysis of the current level of service allows the identification of gaps in the data, as well as what areas of service provision could be targeted for improvement in the future.

There are three gaps that should be considered:

- The current gaps between actual level of service and current level of service.
- The gaps that can be predicted to develop between intended and delivered levels of service in future years
- The gap between the ONRC Customer Levels of Service and the Council's Levels of Service (note that this may be replaced by ONF targets over the next year).

The gaps between actual and current levels of service are identified from network inspections, service requests and submissions to annual and LTP plan processes. When gaps are identified they are considered for improvement and programmed if budget allows, and need is justified. Where gaps cannot be improved then consideration is to be given to changing the level of service.

The gaps have been briefly summarised against the Problem Statements introduced earlier in this Chapter. Further information on how Council is managing compared to how the customers are experiencing the network is summarised in the discussions on Customer Satisfaction and

Service Requests, while the physical measures are explained further through ONF and ONRC measures, Waka Kotahi expenditure charts, and key asset summaries extracted from RAMM.

Gaps that can be predicted to develop due to actual or predicted change of use such as population growth, changing demographics or when there are funding constraints are identified and are discussed in the Demand Chapter of the AMP. These gaps should then be managed by obtaining increased funding, or changing the level of service in consultation with the community, for example accepting a lower Technical standard, or postponing/cancelling some proposed capital works.

The identified gaps in the actual assets, which in turn impacts on the Customer Experience and potential management of these gaps is discussed in greater detail in the Demand, Programme Business Case and Life Cycle Management Plan chapters.

### Negative Effects of this Activity

The transport activity does have some negative effects on the community and environments and is summarised in the following table:

Table 2: Summary of Negative Effects

Negative Impact	Social	Economic	Environmental	Cultural	Mitigation
Dust from unsealed roads could impact on social amenity and air quality	✓		✓		Sealing roads in accordance to Council policy. Properly maintaining unsealed roads Note that the Council does not apply dust suppression on roads
Contaminants from surfaces entering natural waterways may have adverse effects on water quality			✓		Council manages road maintenance to comply with consent condition
Transport carries some risk and can lead to fatal and serious injuries	✓	✓			Ongoing road safety campaigns and education Engineering works through maintenance and improvements to the network
Maintaining a transport network is expensive, and diverts funds that could be used for other activities		✓			Ensuring value for money is considered in all expenditure

## Positive Effects of this Activity

The positive effects of the transport activity are best summed up in Table 4-4.

Table 4-4: Summary of Positive Effects

Negative Impact	Social	Economic	Environmental	Cultural
Enables access to all activities supporting everyday life, such as work, social interactions, education, medical needs etc.	✓	✓	✓	✓
Provides an opportunity for healthy, enjoyable exercise, thereby supporting physical and mental well-being	✓	✓	✓	

## 4.10 Key Improvement Initiatives

Key improvement initiatives relating to the level of service include the following:

Table 4-5: Key LoS Improvements

Improvement action	Priority	Proposed Completion date	Owner and Key Staff
Consider engagement with community regarding government changes to GPS	Moderate	August 2025	APE, R&TM, STE
Review Levels of Service to determine their adequacy for Council needs	Moderate	June 2025	APE, R&TM, STE

# Transportation Activity Management Plan 2024

## Future Demand

June 2024



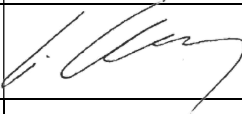


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## 5 Future Demand

### 5.1 Background

Many of the figures derived in this chapter are derived from Census 2018 data. It is almost 6 years since the previous census, and data from the 2023 census is expected available from May 2024. While occasionally estimates/projections have been used, it is considered in many cases that it would be better to wait until more accurate and up to date data is released prior to updating this information. Any estimates derived from projections should be viewed with this caveat.

Waimakariri District is a member of the Greater Christchurch partnership, which is a high growth area under National Policy Statement direction. The approved Future Development Strategy, (FDS), for Greater Christchurch anticipates steady District growth from the current population of 67,900 to around 82,000 by 2033, and in the order of 102,000 by 2052. Up to 15,000 additional homes are expected to be required to accommodate population change over the next 30 years. It is essential to ensure growth is well planned, and an integrated approach taken to land use and transport.

The need to provide better transport options for the Community and continuing changing demographics has refocused Waimakariri's transport direction over time. The population has indicated both through the customer satisfaction surveys and increasing uptake, that this is a community seeking greater opportunities to engage in healthy, environmentally friendly travel both for recreation and for commuting. There is an expectation that infrastructure will be provided so that this can be done safely. In addition, infrastructure needs to be provided locally, not only to reduce the likelihood of residents seeking these opportunities elsewhere, but to also attract visitors from outside of the district.

With age there can come an increase in health issues which often impact ability to drive. By providing options around travel modes, WDC supports this change in lifestyle which many more of the community are seeking, both for an aging population, and for younger families who may be considering moving to the district. A factor in developing improved infrastructure is that many of our urban areas and settlements are within relatively easy commuting distance from each other.

As more people choose to live in the district, providing them with options around how they travel them to consider the use of alternate modes of transport and can help reduce the number of vehicles on the road. This can mean fewer new roads and associated assets need to be built and maintained, and existing roading infrastructure can be better utilised.

Walking & cycling infrastructure is less expensive to build and maintain than roading infrastructure built for cars and trucks. Thus, responding to the demand of a growing community with a multi modal approach provides cost-effective environmental, social and health benefits to the community, and Waimakariri is working to meet these demands through the programmes and projects described in its Transport Activity Management Plan and the Long Term Plan.

While District job self-sufficiency is continuing to increase, there remains a significant commuter workforce available to Christchurch businesses that places peak demand on the capacity of the transport network. These employment areas are however spread across a large area within the Greater Christchurch area and as such establishing viable public transport routes can be challenging (around 40% of the workforce worked outside the Waimakariri District in 2021, down from 60% three years prior).

Capacity increases as well as a range of mode change initiatives to mitigate these effects are continuing. Public transport provides an alternate mode to the private motor vehicle, and an opportunity to indulge in activities only possible when not personally driving (e.g., working or resting). As the public transport network is improved to better meet the needs of potential customers, public transport will also offer an opportunity to transport more people with less impact on the road network.

In 2020, the Greater Christchurch Partnership prepared the PT Futures Business Case Foundations & Rest of Network Business Case, which set out a strategic approach to the development of the Greater Christchurch public transport system over the next decade. This was endorsed by all partners including the Waimakariri District Council in December 2020. The programme of works includes service delivery upgrades (delivered by ECan as the PT Service Provider), with supporting infrastructure delivered by Waimakariri District Council within the district.

Direct bus services were introduced in 2020 and have proven to be very popular, being fast, limited stops service, between Rangiora - Christchurch and Kaiapoi – Christchurch. To support the use of public transport, five Park & Ride sites have been developed, three in Rangiora and two in Kaiapoi. It is anticipated that as public transport services are improved, demand for these sites including complementary facilities (bike stands, lockers, showers / toilets etc.) may also be required, as well as the possible further expansion of the sites themselves. A further Park & Ride site is being investigated in the Woodend / Ravenswood areas, to also be able to connect to existing public transport routes.

It is anticipated that an increase in walking, cycling and public transport usage will lead to a corresponding reduction in car usage. The provision of a well-linked walking and cycling network, as per Council's "Walking and Cycling Strategy" and "Cycling Network Plan" assists by providing a network of walking & cycling facilities at different user grades to provide options for different confidence levels and opens up options for travel, which in turn leads to greater transition to alternative modes for commuting where possible. The current focus is to provide improved linkages into towns from major cycleways including connections to key activity centres and schools (which is currently a gap).

Much of the population growth in the district is currently occurring in the main centres of Rangiora, Kaiapoi, and Woodend (including Pegasus and Ravenswood), and this is expected to continue. There is also expected to be some continued demand for rural-residential and larger "lifestyle" type blocks close to Christchurch city. Meeting this demand is likely to result in ongoing land use change from large agricultural blocks to more rural-residential type blocks

close to townships. With the District Plan now requires subdivision to retain a minimum lots size of 20 hectares in many rural areas, extra pressure will be put upon those remaining rural areas closer to the main urban centres where subdivision into smaller lifestyle blocks may still be possible.

Ongoing gravel extraction to support further subdivision will continue to impact on the network, both from maintenance and safety perspectives.

The anticipated population growth, demographic changes, car use trends, and land use changes would suggest the following transport trends in the future:

- An increase in the demand for cycling facilities and corresponding increase in the numbers of cyclists.
- An increase in pedestrian demand and footpath usage, including an increase in use by vulnerable users such as the elderly.
- A need for improved infrastructure to support the increasing number of aging residents in the District, such as intersection improvements, footpath repairs (trip hazards), road marking and signage improvements.
- An increase in heavy vehicle numbers and size.

Generally, the District's roads and intersections have more than enough capacity to comfortably carry current traffic volumes. It is expected that most of the roads will continue to operate within their capacity for some time. However, locations remain within the network that are having difficulty accommodating current traffic volumes safely. Future growth is likely to put these locations under further strain, with longer delays at peak times being more likely in the future. A Capital Works Programme has been designed for the next 10+ years to address these issues.

In addition to the projects listed below, as mentioned previously, some areas of the network are experiencing much heavier wear due to the high numbers of heavy vehicles, and these have a significant impact on pavements and can take a disproportionate amount of the maintenance budget. Cycling is also more challenging to accommodate on the road network itself, particularly when there is an increased focus on meeting the freight need.

Major programmes and costs to meet the demand described above are shown in the following table. The full detail is shown in Section 7: Financial Summary. It should be noted that while some of these appear to be LOS projects (e.g., safety driven), the safety issues are as a result of increasing traffic volumes, which then increase the exposure and hence the risk of a crash occurring.

Table 5-1: Major Projects and Costs

Project	\$M	When
New Rangiora Eastern Link Road	35.1	2024/25 to 2029/30
West Rangiora Route Improvements	14.2	2024/25 to 2033/34
Skew Bridge Replacement	12.0	2024/25 to 2028/29
Kaiapoi to Woodend Cycle Connection	2.2	2031/32 & 2032/33
Woodend Improvements in conjunction with Woodend Bypass (Note: may need to be moved depending on Bypass progress)	2.0	2026/27 to 27/28 & 2031/32 to 2032/33
South Eyre / Giles / Tram Rd Roundabout	1.9	2026/27 & 2027/28
Tram Rd Route Improvements (widening, intersection improvements, delineation)	7.7	2023/24 to 2033/34
Rangiora / Woodend / Tuahiwi / Boys Rd Intersection Improvements	1.9	2026/27 & 2028/29
Robert Coup Drive / Ohoka Rd Intersection Improvements	1.2	2026/27 & 2027/28
Southbrook Future Improvements	3.9	2025/26 to 27/28 & 2031/32 to 2032/33
Northbrook / Ivory St intersection Improvements	1.5	2027/28 & 2028/29
North-West Rangiora Arterial – Lehman's to River Rd	2.2	2029/30 & 2030/31
Ravenswood Park'n'Ride	1.5	2026/27 & 2027/28
North South Collector Rd	6.0	2024/25 & 2028/29

The 'demand' needs above are generally based on an underlying assumption that transport in the next 10 years will be delivered in similar ways to transport in the comparatively recent past. While new technology is being introduced, it is unlikely to have a significant impact on motor vehicle use over the span of the LTP. Bigger effects on the network will likely come from the increasing growth of in population and an increase in fossil fuel costs over the life of the long term plan, or alternatively fuel taxes or congestion charging. There is still significant development planned for Waimakariri and this will lead to increasing demand in a number of areas. Rapidly increasing fuel costs or alternative forms of travel charging could impact the community and encourage the use of alternate modes such as public transport, in an effort to reduce overall household costs.

The following are the anticipated key demand related issues:

1. Continued increased growth in the Waimakariri District leading to more infrastructure needing to be provided and managed.
2. Increased heavy transport, both initially as construction materials are brought in, and longer term with the need to bring goods to service the growing population.
3. Safety issues caused by increasing volume of traffic. This includes maintenance and operation of the network.
4. Provision of walking & cycling infrastructure to support increasing Community demands, including supporting infrastructure such as cycle stands, repair stations, EV bike charging stations etc.
5. Provision of adequate infrastructure for changing vehicle fleet needs, including EV charging for cars, trucks, bikes, scooters etc. It is noted that EV charging for private and large vehicles is likely to be largely privately provided. Consideration may need to be given to how support can be provided for charging for public transport services. This is more likely in the form of spaces for charging facilities.
6. Provision of adequate infrastructure to support the use of Public Transport, including Park & Ride facilities, bus shelters, bus stop seats, bike stands etc.

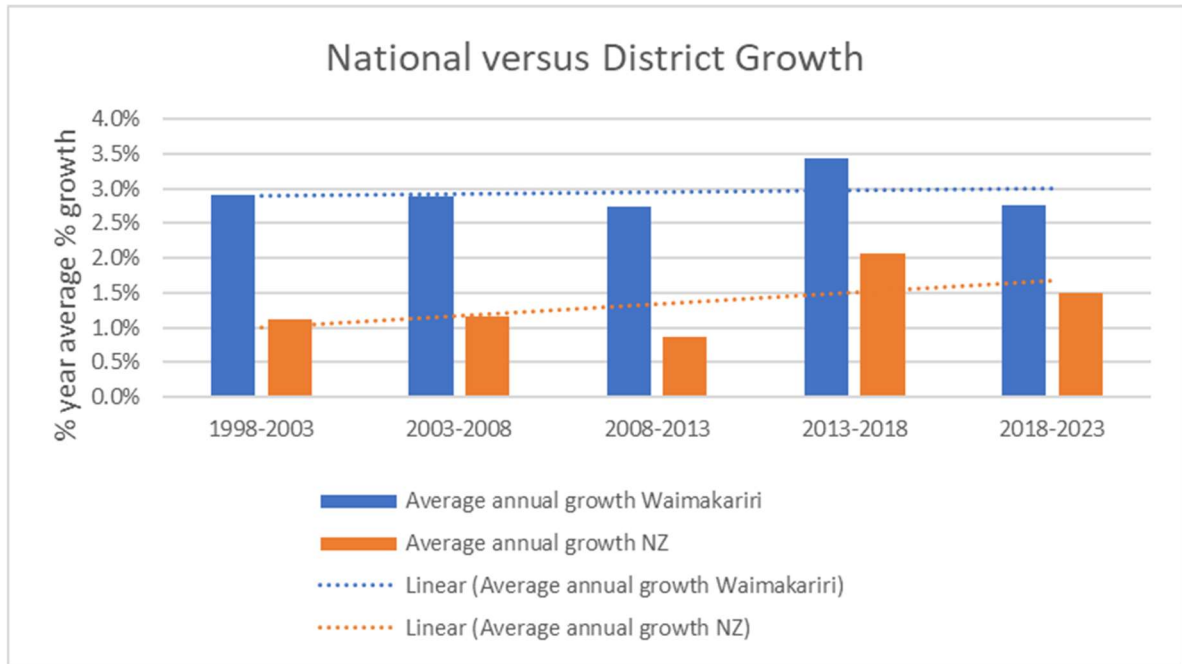
The development of technology, and changes in public attitudes towards transport will be monitored, along with population, demographic and land use trends. Expected transport demand will be reviewed and revised accordingly.

## 5.2 Demand Drivers

### General

The Waimakariri district was one of the five fastest growing (measured as a percentage growth rate) local authorities in New Zealand in seven of the ten years between 2007 and 2016. At the 2018 census growth was 3.81%. In 2019, the national ranking dropped to 11th<sup>th</sup>, and growth now sits at around an estimated 2.7%, (67900-69,760) compared with an average estimated growth rate for New Zealand of 2.3% (5117100-5236300), from 2022-2023. However, this increase in the national population growth is very recent, compared with the 5 year average of 1.5% as shown below.

Figure 5-1: National versus District Population Growth



Growth in the district has largely been concentrated in the towns of Rangiora, Kaiapoi, and Woodend (including Pegasus and Ravenswood), and in the rural areas in the eastern areas of the district. Much of the growth in the rural areas has been in Residential 4A and 4B zones (typically referred to as Rural/Residential development), and in 4ha sites in Rural zones. 4ha was the minimum lot size in rural zones, however this was recently changed through the new District Plan. These sites were often purchased as “lifestyle” blocks rather than traditional rural “farming” operations, however the change to zoning rules has meant that a large part of the district now has a minimum lot size of 20 hectares, which will limit increasing densification in rural areas.

Travel time from Waimakariri to Christchurch has reduced considerably since the opening of the Western Belfast Bypass and the subsequent opening of the Christchurch Northern Corridor (CNC) in December 2020. As a result, further decreases in travel time are unlikely to influence decisions around buying or building in Waimakariri.

Figures on travel for employment show the percentage of Waimakariri residents working in Christchurch has decreased from 60% to 40% between 2018 and 2021, meaning there has been a significant increase in employment opportunities within the Waimakariri District.

The overall population growth in the district is expected to impact on the Rooding and Transport network in a number of ways, including a greater demand for travel, driven by the need to access key activity centres, education, health services and employment. This demand is likely to be met by a combination of the following:

- Increased use of walking, cycling, or other micro mobility modes.
- Increased use of public transport.

- Reduce vehicle kilometres travelled. Without other interventions, an increase in vehicles is likely to result in increased crash numbers and congestion.
- Appropriate parking, improved town centre footpaths and amenity areas, bike stands and charging / repair stations.
- Improved infrastructure for walking & cycling (e.g., separated paths, neighbourhood Greenways, separated cycle lanes, shared paths etc.).
- Improved infrastructure to support public transport (e.g., bus shelters, real time information etc.).
- Improved first/last kilometre connectivity – facilities to support fuller uptake of walking & cycling with better end of journey facilities, and connectivity for mode change locations, such as bus stops, park & ride sites, key activity centres and other high generator areas. Includes installing footpaths where there currently are none, bike stands, charging / repair sites, safe crossing points, lighting for security etc.
- In terms of economic development, the construction, retail, manufacturing and health / community sectors in Waimakariri District are expected to continue to grow over the next three to five years.

One of the issues identified with on-going growth is maintaining access to and from Sh1, Christchurch City and Lyttleton Port. Restrictions to the ability to travel to and from these locations are likely to have impacts on freight servicing businesses. Key routes within the district such as Southbrook Road are already nearing capacity and cause the community access issues.

With growth to the north-east of Rangiora and further development planned to occur, this will increase traffic volumes accessing SH1 through Southbrook in future years. As such the timing of the construction of the Rangiora Eastern Link Road is critical, to ensure that this development can occur and is well supported by transport infrastructure. The new road has been brought into the Long Term Plan to align with the timing of development in this area, being 2024/25 to 2029/30.

The West-Rangiora Route includes Ohoka Road, Skewbridge Road, Flaxton Road, Fernside Road and Lehmans Road. This route provides an important alternate to Southbrook Road / Lineside Road for access between Rangiora and SH1 and connects directly into the Southbrook area which includes a large number of commercial and industrial businesses. There are a number of improvements required along the West-Rangiora route over the next 30 plus years to accommodate continuing growth in the area, and a key constraint on this route is Skew Bridge. Skew Bridge is narrow in nature, has challenging approach geometry and is not able to accommodate HPMV vehicles or pedestrians / cyclists safely, which restricts use and access to the state highway / Silverstream. The bridge has around 17 years life remaining, however continues to be a safety concern and access constraint on an important transport connection within the district.

Dairying continues to be an important activity within the district, with a number of dairy conversions being undertaken over the last 10 years. While the rate of conversion has slowed, the dairying operations themselves continue and with this requires good infrastructure to

support the operations. This has been particularly challenging particularly as the fleet has moved toward HPMV vehicles. Dairying is more labour intensive than the cropping and forestry that it has replaced over the years. It requires daily pick up by milk tankers and has an increased number of people living in the area, which means an increased number of heavy vehicles using the roads. Many of the roads servicing these areas are unsealed and their condition can change rapidly in response to weather extremes and increases in traffic volumes.

Ongoing construction activity and development in the Greater Christchurch area is continuing to impact the district's roads. This includes trucks carrying aggregates from the Waimakariri, Ashley and Eyre Rivers (and other sources), within the district and also into Christchurch, along the district's roads.

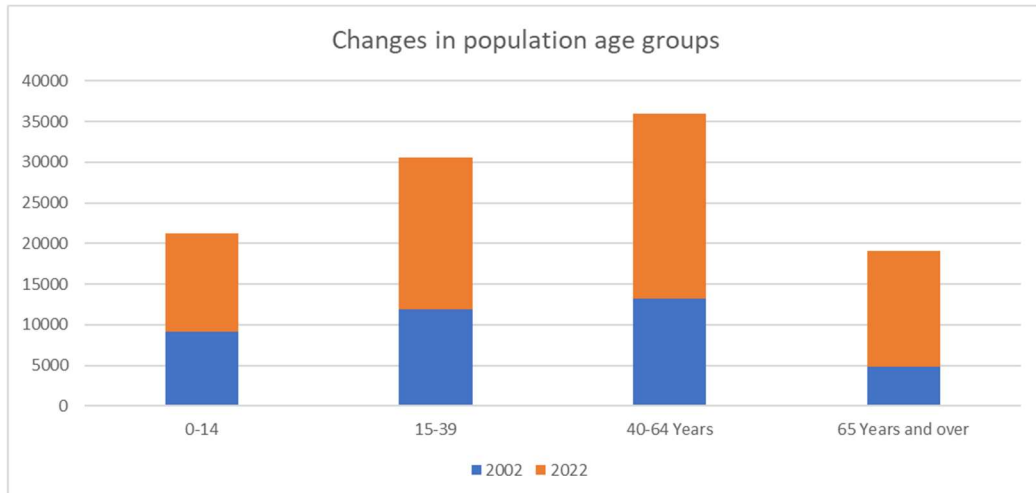
## **Key Assumptions**

The key assumptions on community trends likely to impact on the long-term provision of transport in the Waimakariri District are:

- An increasing number of residents will work within the district. Between 2018 and 2023 this figure rose from 40% to 68%, as further employment opportunities were provided within the district. This trend towards self-sufficiency is anticipated to continue.
- Continued rural subdivision - the changes to rural property sizes in the new District Plan is likely to result in more traffic closer to urban areas and a slowing of development in the west of the District. Longer term this will result in a lower increase in the number of daily rural commutes.
- The continuing trend of forestry on hill-country and dairying and horticulture on the plains which are served by the Waimakariri Irrigation Scheme is anticipated to continue.
- The population is largely located in the eastern side of the district and is largely urban based with associated expectations of amenities such as shops, cafes etc. Population projections expect the proportion of urban versus rural population to remain much as it is now. In practice this means more people, and hence transport users, are likely to be urban based.
- The increasing number of older people in the towns is likely to increase demand for the pedestrian network to cater for motorised and other mobility devices. Population trends in WDC show an increasing number of over 65's in coming years.



Figure 5-2: Changes in Population Age Groups



- Increasing public awareness of environmental issues is expected to result in a greater demand to protect sensitive areas, upgrade damaged ones, and preserve areas of open space. In particular, the need to treat stormwater from roads is likely to increase costs associated with stormwater management.
- Increased awareness of the impacts of vehicle emissions on climate change, is expected to result in increased demand for improved walking and cycling facilities, and public transport services and infrastructure. Resident satisfaction survey written feedback indicated a high desire for increasing cycling facilities. Increased vehicle operating costs make PT, non-motorised, and EV travel more cost effective and thus popular.
- Increasing fossil fuel costs, fuel taxes and/or congestion charging may impact the way in which people choose to travel and may result in a move towards alternate modes including public transport due to cost.

### 5.3 Strategic context

#### The Government Policy Statement (GPS) on Transport

Transportation activities of local authorities are co-funded by central government from the National Land Transport Fund. Revenue raised from Fuel Excise Duty, Road User Charges, and motor vehicle registration and licensing fees supports this fund. The funding framework is currently undergoing a national review.

The standard Funding Assistance Rate (FAR) from the Fund for Waimakariri District is currently 51%.

Assistance from the Fund is guided according to central government's strategic priorities. These strategic priorities are outlined in the Government Policy Statement on Land Transport (GPS). The GPS covers a 10-year period and is reviewed every 3 years. The current GPS was released in September 2020, and covers the period from 2021 to 2031\*.

\* Note – The GPS 2024 was released on 1 July 2024, which was after the development of this plan.

The Government release a draft amended GPS in March 2024, and a final GPS is due to be released by the end June 2024.

Particular areas of focus in the previous Government's GPS included resilience and climate change, including emphasis on providing for alternative transport modes. This is likely to be changed under the new Government, and as such could affect availability of co-funding in these areas. However, due to the short timeframe between requirement for submission of the Activity Management Plan to NZ Transport Agency (Waka Kotahi), no major changes will be made to this AMP, although there may be some changes required to the proposed capital projects.

Transport activities that are not aligned with the GPS Strategic Priorities are unlikely to receive funding from the Land Transport Fund.

### **The National Policy Statement on Urban Development (NPS-UD)**

The National Policy Statement on Urban Development (NPS-UD) was implemented in August 2020. One of the provisions of the NPS-UD was to require Tier 1, 2, and 3 territorial authorities to remove minimum parking provisions from their District Plans. Waimakariri District is a Tier 1 territorial authority. Minimum parking requirements for developments will therefore need to be removed from the Waimakariri District Plan.

The NPS – UD encourages the use of comprehensive parking management plans to manage the effects associated with the demand and supply of car parking.

### **Greater Christchurch Partnership**

Agencies which have responsibility for transport within the Greater Christchurch area include Christchurch City Council, Selwyn District Council, Waimakariri District Council, Environment Canterbury, and NZ Transport Agency (Waka Kotahi).

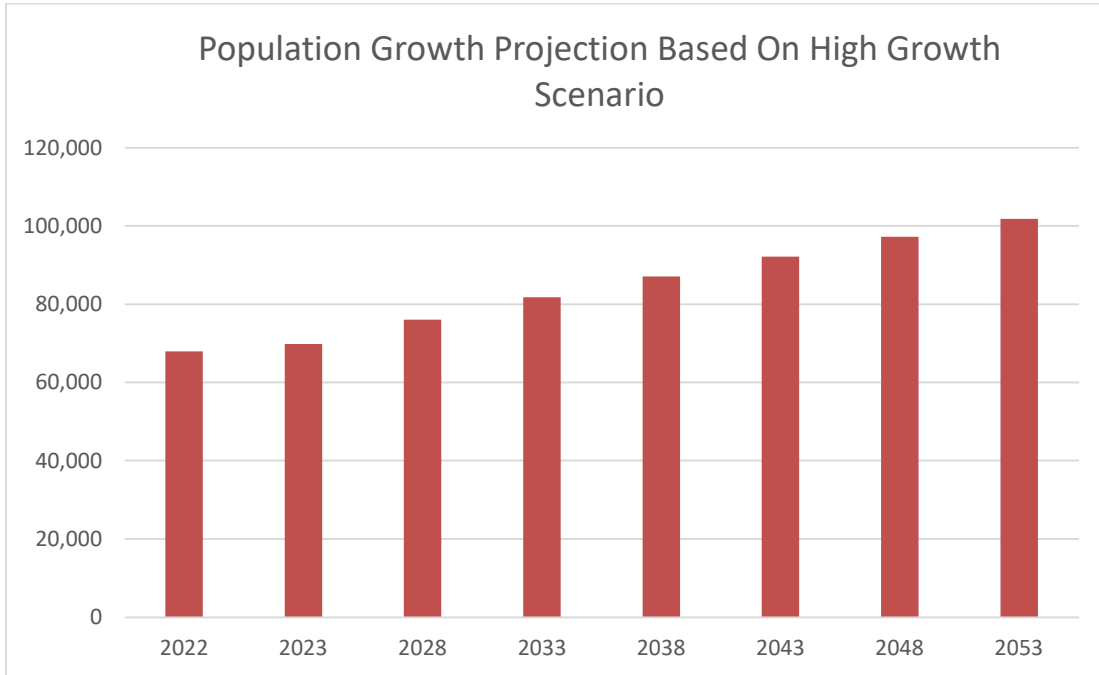
Historically, there have been concerns expressed about increasing vehicle numbers travelling between Waimakariri and central Christchurch via the urban areas north of central Christchurch. In 2020 the new Northern Corridor opened which linked the Northern Motorway with the top of Cranford Street and Queen Elizabeth II Drive. As part of this project, a third lane each way was added to the Waimakariri River Motorway Bridge, along with a walking & cycling path. The south bound third lane is a full time managed "T2" lane, and a morning peak "T2" lane is in operation on the Northern Corridor in the morning peak. Going forward the focus will be on better utilisation of infrastructure through Travel Demand Management and enforcement of the managed lanes.

### **Current and Historical Trends**

- Figure 5-3 shows the Waimakariri population and growth rates for the period from 1996 to 2016. Actual census data from the 1996, 2001, 2006, 2013 and 2018 census results are shown as blue circles on the graph. This data shows the following trends:

- Waimakariri has had an increasing population trend over the past twenty-year period. This has equated to a population increase of 96% from 33,000 in 1996 to an estimated 67,900 in 20231.
  - The population growth has resulted in an average growth rate of 2.8%. As a comparison, the overall growth rate for New Zealand for the same time is 2.2%.
  - The Waimakariri district has been one of the faster growth districts in New Zealand over the past fifteen years.
  - From StatsNZ
    - NZ Population growth rates are projected to be higher in 2018–2033 than in 2033–2048, due to population ageing and a narrowing gap between births and deaths.
    - Of New Zealand’s 67 territorial authority (TA) areas, 65 are projected to have more people in 2033 than in 2018, and 61 are projected to have more people in 2048 than in 2018 (medium projection). The highest projected population growth rates over the 30-year period (2018–2048) are for Selwyn (an average annual increase of 2.2 percent), and Waikato and Queenstown-Lakes districts (both 1.7 percent).
    - Fourteen other TA areas have projected growth higher than the national average (0.7 percent). These include Central Otago and Tauranga districts (1.3 percent), Hamilton (1.1 percent), Whangārei and Mackenzie districts (0.9 percent), and Auckland, Waipa, Far North, Tasman, and Hastings districts, and Chatham Islands territory (all 0.8 percent). Far North, Tasman, and Hastings districts, and Chatham Islands territory (all 0.8 percent).
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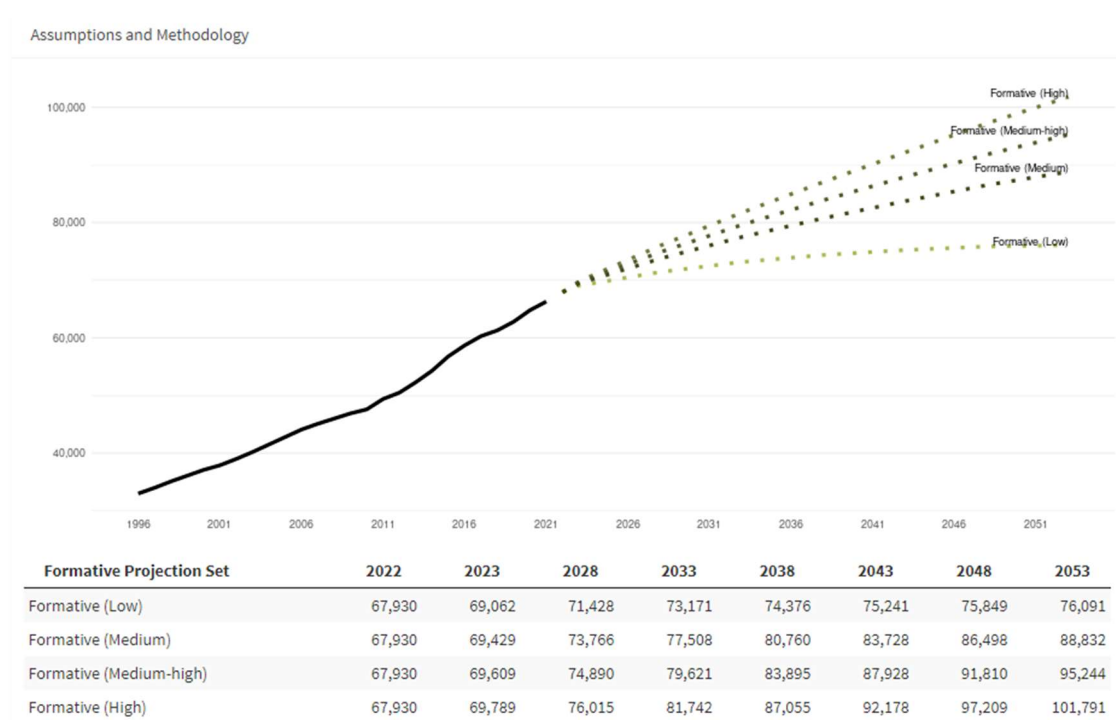
Figure 5-3: Waimakariri Population Estimates 2022-2053



### Population Age Profile

Information company Formative have prepared estimates of demographic changes under each of their population growth scenarios. Figure 5-4 shows projected Demographics Changes to 2053. Council has chosen to adopt the high growth scenario.

Figure 5-4: Projected Demographic Changes 2022 - 2053



## Car Usage

As the population grows so generally does the volume of motor vehicles using the roading network. The OECD International Transport Forum (2013) concluded that car use was declining internationally. However, reductions in car usage were generally less pronounced in rural areas.

The proportion of individuals who drove to work in New Zealand (either in a private vehicle, or a company vehicle) increased from 60% in 2001 to 62% in 2006. It then stabilised at 62% in 2013, increasing to 69% in 2018.

In Waimakariri the proportion increased from 65% in 2001 to 66% in 2006, 67% in 2013, and 78.2% in 2018. This will be updated once new Census statistics are released.

Population growth in the district is expected to impact on the transport network in a number of ways, including:

- An increase in the number of residents creating more demand for travel, resulting from the need to access key activity centres, education, health services and employment areas.
- More people accessing the key activity centres, resulting in increased pressure on parking, town centre footpaths, amenity areas and other supporting facilities.
- Increased demand for walking & cycling facilities including footpaths, shared paths, separated cycleways and neighbourhood Greenways.
- The growth in private motor vehicle travel is the most significant in terms of volumes and the cost of providing solutions. The cost to maintain the roads is likely to increase as the traffic volumes increase.
- Increased demand for EV chargers for vehicles and electric bikes / scooters and other micro mobility devices.
- Increased demand for improved public transport services and infrastructure (including bus shelters, real time information and supporting facilities).

## 5.4 Current and Historic Demand

### Utilisation of Roads

In 2013 a hierarchy of roads was introduced to the country to classify by traffic volume, called the One Network Road Classification (ONRC). While this was an effective means at the time, it focused on the road use purely as a corridor with a focus of getting people from A to B. ONRC enabled RCA's to better focus decision making and for comparisons to be made across RCAs nation-wide.

ONRC is currently in the process of being replaced by the One Network Framework (ONF), which operates around Place and Movement framework. This framework recognises that streets not only keep people and goods moving, but they're also places for people to live, work and enjoy. The ONF is designed to contribute to improving road safety and build more vibrant and liveable communities.

ONF marries network-wide and local considerations. At its heart, the ONF organises transport links by their place and movement roles into road and street types. The ONF is a tool to help establish network function, performance measures, operating gaps and potential interventions for each road and street type. Movement and Place has many uses at the strategic network planning and development level, as well as at the detailed project level.

**Local considerations**

State Highway 1 (SH1) passes through the District, and State Highway 71 Lineside Road (SH71) connects Rangiora with State Highway 1 and Kaiapoi.

SH1 is categorised as a national road under the ONRC, and SH71 as an Arterial. Being state highways, both these roads are administered by NZ Transport Agency (Waka Kotahi). There are no other National or Regional roads within the Waimakariri District.

Figure 5-5 lists the total length of road and percentage of network for each ONRC category of road in the district.

*Figure 5-5: ONRC Length by category and urban/rural split*

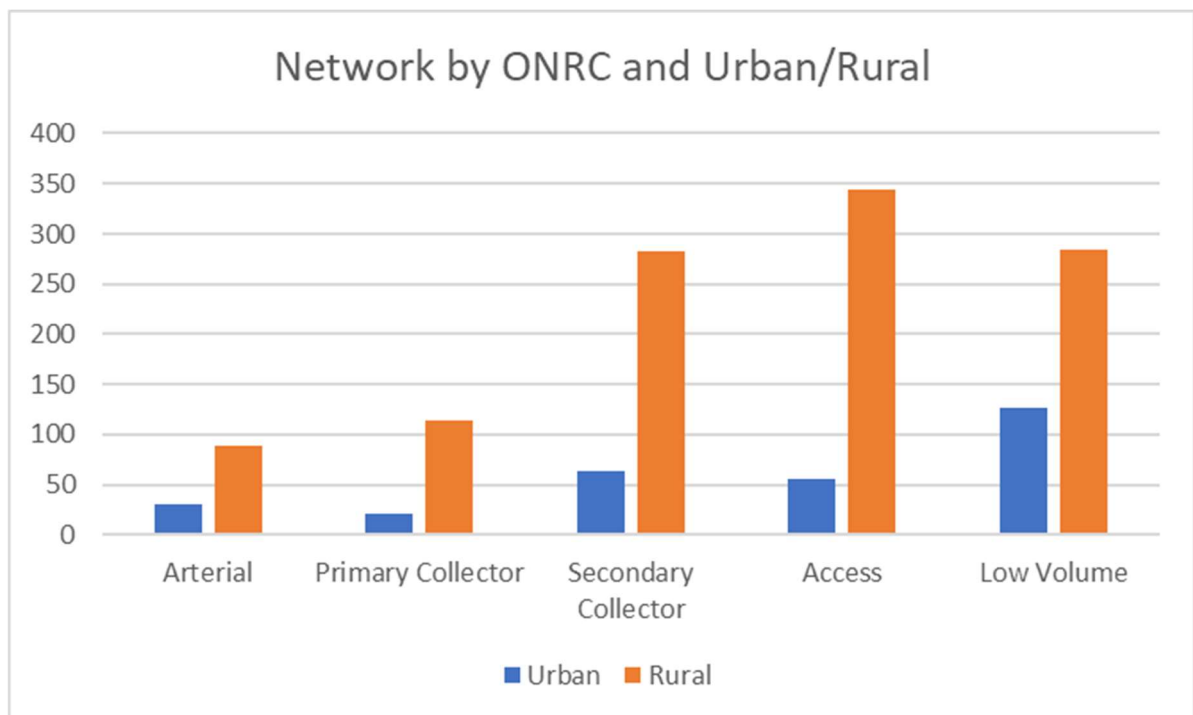


Table 5-2 Summary of the Waimakariri District Roads 2022/23 (ONRC)

ONRC	Total Length (Km)	Urban (Km)	Rural (Km)	Sealed (Km)	Unsealed (Km)	Lane (Km)	Urban Journeys (M VKT)	Rural Journeys (M VKT)	Annual Total Journeys Travelled (M VKT)	Percentage of length
Arterial	123	31	92	123	0.3	246	90.3	148.2	238.5	8%
Primary Collector	141	22	119	139	2.4	280	26.6	78.2	104.8	9%
Secondary Collector	393	67	326	361	32	775	26.2	52.6	78.8	25%
Access	469	56	413	202	267	811	6.2	13.4	19.6	29%
Low Volume	459	123	336	154	305	698	4.0	3.9	8.0	29%
Not Required	4.1	4.1		4.1		8.1				0%
Unclassified	3.6									0%
<b>TOTAL NETWORK</b>	<b>1,594</b>	<b>303</b>	<b>1,287</b>	<b>983</b>	<b>607</b>	<b>2,818</b>	<b>153.4</b>	<b>296.2</b>	<b>449.6</b>	

## Heavy Vehicle Demand

The roading network carries a significant amount of heavy traffic due to the close proximity to Christchurch, and land-use activities such as dairying, cropping, forestry and gravel extraction.

Major employers and freight generators in the district include:

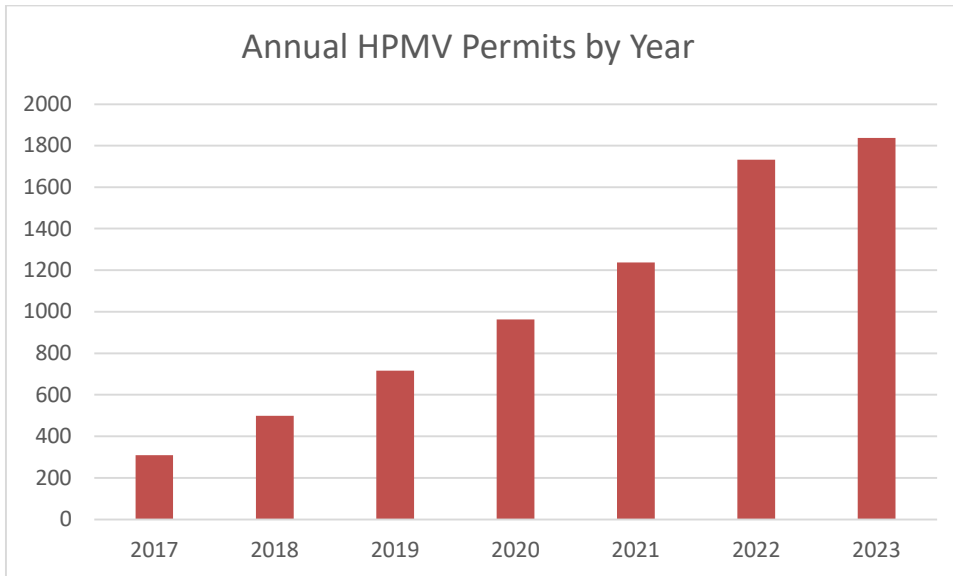
- Daiken (Sefton) - 120 staff, no reliable rail service, raw materials inbound from mills, outbound to Lyttleton Port Company primarily via Ashley River Bridge and through Rangiora (via Ashley Street / Ivory Street / Percival Street / Southbrook Road)
- Hellers (Kaiapoi)
- Luisetti Seeds (Rangiora)
- McAlpines (Rangiora)
- Rangiora Bakery (Rangiora)
- Steve Murphy (Kaiapoi)
- Fonterra (Darfield)
- Hallmark Group Doors (Rangiora)
- Grocery stores
- Sutherland Timber (Kaiapoi)
- Gravel extraction
- Readymix Kaiapoi

Weights will also vary, with ReadyMix for example carrying up to 57.8t per load, through its HPMV permit.

## High Productivity Motor Vehicles

High Productivity Motor Vehicles (HPMV) were introduced in 2011. An HPMV exceeds the maximum length and mass requirements for standard vehicles and operates under a route specific permit issued by the Road Controlling Authority. Permits are valid for a period of two years. *Figure 5-6* shows the number of HPMV permits issued for travel on Waimakariri local roads per year since 2017. There has been continual growth, and 2023 is likely to be higher than currently shown due to December 2023 statistics not being fully compiled prior to chart production.

Figure 5-6: Annual quantities of HPMV permits by calendar year.



While there was a levelling-off of permits between 2015 and 2017, numbers then increased sharply between 2017 and 2020 (from 290 to 967). Council is currently working with Fonterra to investigate whether a general permit could be implemented to avoid having to re-apply each time there is a route change. This could reduce the number of permits but not the number of vehicles travelling. The permits themselves do not reflect the number of trips being made by a particular vehicle on a permitted route.

The five major industries operating with HPMVs in the district are dairying, logging, livestock cartage, general bulk cartage, and road metals / aggregate cartage.

### Footpath/Cycleway Utilisation

No formal assessment of footpath usage in the district has been carried out, however it is expected that the following factors are likely to have resulted in changes in footpath usage in the district:

- Renewal and revitalisation of the Kaiapoi and Rangiora town centres (including replacement and repair of damaged buildings and improved pedestrian amenity) is expected to increase pedestrian numbers in both town centres.
- Older person housing (including retirement villages and over 50's complexes) are expected to increase pedestrian numbers in the vicinity of the complexes. The pedestrians associated with this housing are likely to use a greater proportion of mobility devices than the wider population.
- New Zealand Post has been granted approval to use small delivery vehicles on footpaths.
- E-scooter use
- Council approved a Walking & Cycling Network Plan in October 2022 with a number of key walking & cycling routes being identified as Priority One for delivery in the next 10 years. These will complement the existing off-road cycleways between Rangiora and Kaiapoi, Rangiora and Woodend and Kaiapoi to Belfast (linking to the northern motorway

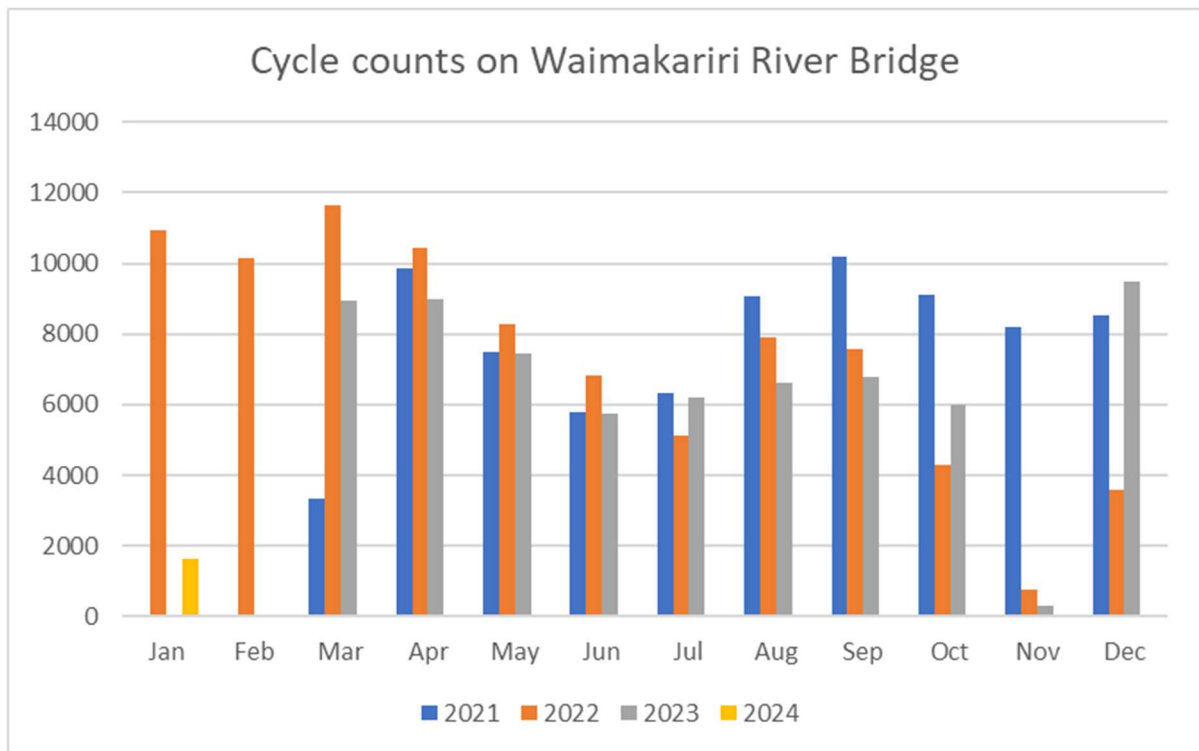


shared path). The provision of these facilities has increased the demand for walking & cycling in the district, and the need specifically to complete the link between our main towns (particularly Kaiapoi to Woodend and Woodend to Ravenswood), as well as addressing the gaps within our urban areas (e.g., within Rangiora).

- Improved first/last kilometre connectivity – facilities to support fuller uptake of walking & cycling with better end of journey facilities, and connectivity for mode change locations, such as bus stops, park & ride sites, key activity centres and other high generator areas. Includes installing footpaths where there currently are none, bike stands, charging / repair sites, safe crossing points, lighting for security etc.

Daily cycle counts are available at the Waimakariri River Bridge. There is some count data which is not considered to be reliable due to technology issues, for example there were zero cyclists counted between 24 December 2022 and 1 March 2023, likewise from 1 November 2023 until the 29<sup>th</sup>. However, it is well accepted that this is a time of high usage for the cycle connection and as such these zero counts have been discounted. At this point the information available is not suggesting any significant change in uptake in cycling.

Figure 5-7: Monthly Cycle counts from 2021 to 2024.



## Parking Demand

Typically, the only areas in which parking demand is not adequately met at all times by on street and private off-street parking is within the town centres of the District. There is demand for parking from both staff and customers of businesses in the town centres.

Parking surveys have been carried out in Rangiora in 2014, 2016, 2017, 2019, 2020 and 2022 and in Kaiapoi in 2014, 2017, 2019, 2020 and 2022. These have been extensive all-day surveys which have recorded parking occupancy at 30-minute intervals throughout the day.

These surveys have been supplemented by weekly spot surveys of Council operated off-street parking in both Rangiora and Kaiapoi.

Results in 2022 were similar to those in 2020. These surveys indicate that parking in both town centres continues to operate at less than 80% capacity most of the time, with some occasional periods of higher occupancy in localised places.

On-street and off-street parking is provided in the Woodend, Pegasus, Cust, and Oxford town centres. Parking in these centres is occasionally raised as an issue.

It is proposed that parking management plans are developed for the town centres, and for any significant new developments.

## **Traffic Growth**

The Council's District Development Strategy framed within this wider future demand context anticipates ongoing residential growth in western and eastern parts of Rangiora and in northeast Kaiapoi.

The Minister for the Environment has agreed to progress under Streamlined Planning Process within the overarching Infrastructure Boundary and in accordance with a Change to the Regional Policy Statement.

As well, continued growth of the Southbrook business area is provided for in the FDS. These changes will result in significant increases in traffic volumes (including heavy vehicles) using Southbrook Road as well as the Fernside Road / Flaxton Road / Skewbridge Road route as a viable and attractive route between West Rangiora, Kaiapoi and State Highway SH1. Assessments of both these routes have been carried out and a number of improvements recommended, some of which commenced in the 18-21 AMP. Key Improvements along this route are included in Council's Long Term Plan, Infrastructure Strategy and this AMP.

Generally, the district's roads and intersections are far from their ultimate capacities and other than a few major roads the majority are likely to reach those points in the near future.

Traffic modelling has been used to assess the projected performance of the networks in both 2041 and 2048 (the Christchurch Transport Model base year, and Waimakariri District Council District Development Strategy horizon respectively). However, over the last three years the model has not been used for further project development.

The Christchurch Transport Model was used to assess traffic changes on the following key routes within the district, as a result of the growth forecast in the District Development Strategy.

Modelling carried out previously suggested the following:

- With a few exceptions (as discussed below), the majority of the district's roads are expected to cope comfortably with projected traffic increases through to 2048.

- Projected traffic volumes on SH1 at the Waimakariri River Bridge are expected to result in congestion at the bridge, even with the extra lanes having been constructed.
- Any congestion on SH1 at the Waimakariri River Bridge is likely to extend to local roads within the district, such as Tram Road.
- Congestion is expected to become more severe on Southbrook Road.
- Measures such as the Rangiora Woodend Road improvements (including improved access to SH1), Rangiora Eastern Link Route, and Flaxton Road / Skewbridge Road improvements are likely to relieve some pressure on Southbrook Road. However, a significant portion of the traffic on Southbrook Road is associated with the Southbrook business area and is less likely to use alternative routes to SH1.
- Traffic volumes on Rangiora Woodend Road and the Flaxton / Skewbridge route are expected to grow to carry a similar traffic volume to Lineside Road (SH71). This supports safety upgrades on these roads.

Modelled future traffic volumes assume that there will be little change in mode share and vehicle occupancy numbers in the future compared to current numbers. Travel Demand Management (TDM) measures which increase walking, cycling, and public transport use are expected to result in a corresponding reduction in private car usage. Such a reduction is expected to help to address the congestion issues identified above.

Another key connection is access from Woodend onto State Highway One. As development on the east of Rangiora occurs, there is likely to be increased demand for vehicles to access SH1 when travelling to Christchurch. Currently all access is via Give Way or Stop controlled intersections, with the exception of Bob Robertson Drive which has a roundabout at the SH1 / Pegasus intersection. Traffic volumes on State Highway One through Woodend are currently around 20,000 vehicles per day (vpd), making access onto the state highway extremely difficult, particularly at peak times. Safety improvement had been planned through Woodend, including signalling the Woodend Rd / SH1 intersection. This is currently on hold due to the new Governments commitment to build the Woodend Bypass. Not having controlled access out onto the state highway is likely to result in drivers instead choosing to access SH1 via Southbrook and SH71 Lineside Road.

This increase in traffic impacts on the capacity of the road network and also on the safety of the network. More vehicles result in a higher risk of crashes.

### **Effects of the Western Belfast Bypass and Christchurch Northern Corridor**

The Western Belfast Bypass (WBB) opened in 2017 and the Christchurch Northern Corridor (CNC) was completed at the end of 2020 which included installing a third lane on the bridge in both directions. These two projects have reduced congestion on the Christchurch Northern Motorway at the Waimakariri River Bridge, and the northern approaches to Christchurch, leading to reduced, and more consistent travel times.

The Northern Corridor also includes a separated shared walking & cycling path and a full time “T2” High Occupancy Vehicle (HOV) lane across the Waimakariri River, and a morning peak

“T2” lane along the length of the CNC from Chaney’s Corner to QEII Drive. “T2” lanes are dedicated lanes for use by vehicles with two or more occupants.

The cycle path is connected to a shared path along the CNC corridor to Christchurch, which also links to Christchurch City’s Major Cycleway projects. A shared path has also been constructed between Tram Road and Kaiapoi, with a combination of shared paths and greenways through Kaiapoi to connect to Kaiapoi Town Centre and Mafeking Bridge, where the Passchendaele Path begins.

To complement the “T2” lanes, Waimakariri District has provided five Park and Ride facilities in Rangiora and Kaiapoi, and Environment Canterbury is providing “Direct” bus services during the morning and afternoon peaks, between the “Park and Ride” facilities and the Christchurch central city.

As these are currently operating well below capacity, there is currently little benefit in terms of travel time by carpooling or using public transport. It is anticipated that as volumes increase, this will change and help drive further behaviour change. At this point however, single occupant vehicles remain the mode of choice.

## **Footpaths and Pedestrian Demand**

Council is planning for an aging population which is expected to have a major impact on future pedestrian facilities. With the proportion of elderly in the population projected to increase the use of mobility scooters is also expected to increase. This results in increased pressure for wider footpaths, particularly in areas such as around rest homes / retirement villages/ health facilities and other key activity centres. Historically footpaths have typically been 1.5m wide, however Council has moved to 1.8m wide which allows space for two mobility scooters or wheelchairs to pass.

A demand for smoother footpaths (fewer bumps, depressions, and potholes) is also likely as and any irregularities in the footpath surface may be difficult for the rider to negotiate. Current road crossings can have steep and/or stepped curbs that are difficult for mobility devices to use, therefore there is likely to be a demand for improvements in this area.

Elderly pedestrians are typically less sure-footed than younger users and therefore are likely to require a smoother surface of footpaths be provided.

## **E-Scooters**

E-scooters and other micro mobility devices are allowed to travel on footpaths. “Flamingo” operate a hire of e-scooters and these can be seen around the townships, but are being used more around the fringes of the towns rather than in the town centres, therefore there are fewer pedestrian/scooter user conflicts than in Christchurch for example. However, the areas and manner in which they are left when not in use pose potential obstructions to visually impaired pedestrians.

There is an increase in the number of privately owned scooters within the district. The ability to be able to control the use of these remains more of a challenge than commercially provided scooters.

## **Cycle Demand**

The construction of cycleways between Kaiapoi, Rangiora and Woodend, along with the connection to the Christchurch Northern Corridor cycleway, has increased cycle within the district. This, in turn has result in demand for improved cycle facilities in Rangiora and between Kaiapoi and Woodend, and Woodend and Ravenswood. There is also demand for similar facilities in other areas throughout the district, including around rural schools where school bus services are not available. The latest customer satisfaction survey indicated that the main issue concerning cyclists was a desire for more dedicated cycle facilities.

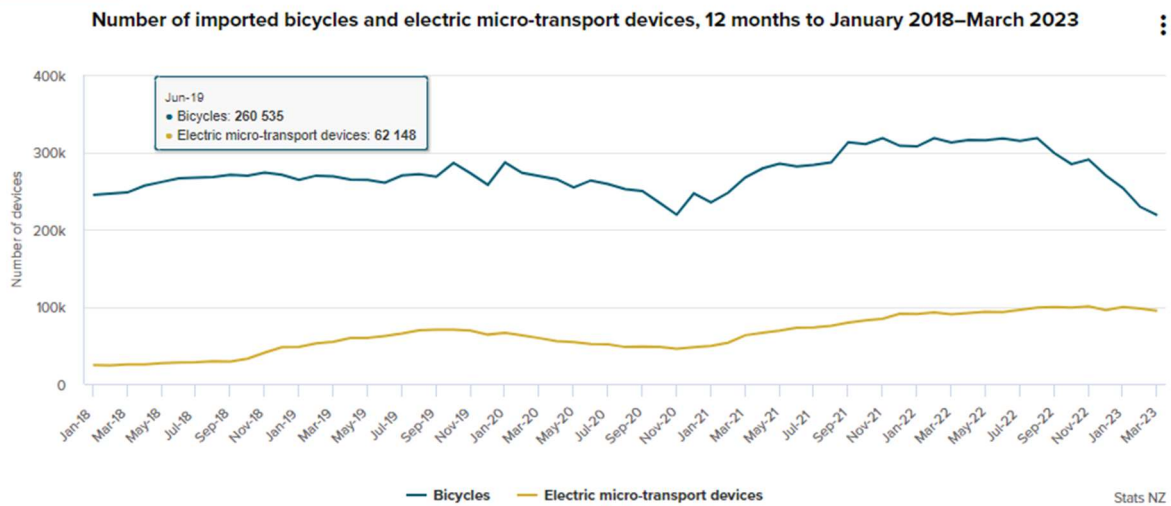
Council was initially successful in securing Transport Choices funding for progressing a number of walking & cycling projects around the district, including the Kaiapoi to Woodend, Woodend to Ravenswood & Rangiora cycle connections. With this being a ministerial fund and the recent elections in October resulting in a change in government, NZ Transport Agency (Waka Kotahi) made the decision to put this fund on hold until such time as the new government has an opportunity to consider its priorities going forward.

On 20<sup>th</sup> December 2023 the new Government announced that all projects on hold in the Transport Choices Programme will not receive any further funding or proceed to implementation. This impacts the Kaiapoi to Woodend, Woodend to Ravenswood & Rangiora cycle connections, plus the new footpath programme. Council will give consideration to how these projects will be funded going forward.

## **E-Bike Uptake**

The numbers of e-bikes sold in New Zealand has increased steadily over the past few years. The number of e-bikes and e-scooters imported into New Zealand reached 94,811 in the 12 months to March 2023. It is anticipated that e-bikes will become an increasingly attractive transport mode choice in years to come. E-bikes are likely to be particularly attractive to travel the longer distances between towns in the Waimakariri District. An increase in e-bike popularity is likely to result in increased demand for cycle facilities which are appropriate for the increased number and higher speeds of e-bikes. However, currently non-electric bicycles still dominate the market, with 218,500 imported during the same period, although the gap is closing. An examination of the demographics of those using ordinary and e-cycles would be likely to show the majority of ordinary cycles will be bought for children and competition cyclists. For many others, e-bikes are proving to be a means of enjoying this activity without needing a certain level of fitness to do so.

Figure 5-8: Quantity of Imported Wheeled Pedestrian Vehicles



### Public Transport

In 2020, the Greater Christchurch Partnership prepared the PT Futures Business Case Foundations & Rest of Network Business Case, which set out a strategic approach to the development of the Greater Christchurch public transport system over the next decade. This was endorsed by all partners including the Waimakariri District Council in December 2020. The programme of works includes service delivery upgrades (delivered by ECan as the PT Service Provider), with supporting infrastructure delivered by Waimakariri District Council within the district.

Direct bus services were introduced in 2020 and have proven to be very popular, being fast, limited stops service, between Rangiora - Christchurch and Kaiapoi – Christchurch. To support the use of public transport, five Park & Ride sites have been developed, three in Rangiora and two in Kaiapoi. It is anticipated that as public transport services are improved, demand for these sites including complementary facilities (bike stands, lockers, showers / toilets etc.) may also be required, as well as the possible further expansion of the sites themselves. A further Park & Ride site is being investigated in the Woodend / Ravenswood areas, to also be able to connect to existing public transport routes.

A Detailed Business Case is also being prepared for Mass Rapid Transport (MRT) in Greater Christchurch. This Business Case has not advanced sufficiently to be considering options for MRT, however early indications are that it is unlikely that Mass Rapid Transport will be viable within Waimakariri District for many years and that a bus system would provide adequate capacity for many years to come. Further work is to be done on the detailed business case and consideration will need to be given to complementary services to support MRT. Any recommendations arising from this Business Case will need to be considered in a future AMP as the business case progresses.

### Shared Vehicles

Several different shared vehicle models currently operate. These models do not require private ownership of individual vehicles. Rather, users purchase rides on an as needed basis. These

rides are able to be shared with other users. Some of these models (such as Uber and Lyft) include drivers who drive the users. Others, such as Cityhop are self-drive models which enable users to rent vehicles by the hour.

These shared vehicle models currently rely on humans to drive them. However, they could be operated by autonomous vehicles should these become an option in the future.

Shared trips in which more than one person shares a trip from a common origin to a common destination have the potential to reduce vehicle usage. However, trips which involve vehicles travelling significant distances to pick up a rider may end up increasing vehicle trips.

### **Impact of Community Expectations on Demand**

Feedback received from some areas of the community indicates a desire for an even higher level of service across the district's roads, despite current technical performance targets generally being met or exceeded. This includes wider shoulders, improved alignments, more permanent surfacing, smoother surfacing, more kerbing, streetscaping, and high levels of road safety intervention. Further engagement with the community will be required in the future to determine the extent of this in light of the generally favourable replies to community satisfaction surveys, with costed options to assist in realistic decision making.

### **Impact of Climate Change on Demand**

Climate change and changing weather patterns are likely to result in more significant weather events, and associated emergency responses, in the 10-year life of this AMP.

Over the last three years, Waimakariri District has experienced a significant increase in the number of severe weather events occurring on three consecutive occasions. This has included severe rainfall events in May 2021, July 2022, February 2022, July 2023 and a severe wind event in October 2023.

The most significant impacts on transport demand are likely to be as a result of:

- Increases in intensity and duration of rainfall. This alters land use and therefore road usage. Rainfall affects the drainage requirements and the water proofing of roads. It also raises ground water levels which results in saturated pavements and quicker deterioration of roads.
- Changes in climate affecting the viability of some crops and agricultural land uses, thereby affecting land uses in the district. Changing land uses could affect transport demand across the district.
- Rising sea levels. This can affect the viability of a small number of small communities near the coast, (Pines Beach, Kairaki, Woodend Beach, and potentially part of Kaiapoi) and impact maintenance and construction of transport infrastructure near the coast.
- Vehicle emissions. Apart from providing better support for electric vehicles Travel Demand Management will be needed to encourage shared vehicle use and greater uptake of alternative modes, such as cycling and public transport.

- Some of these changes, particularly increases in rainfall, are already being experienced and work is underway to improve resilience in areas most affected. The full impact on pavements are not fully known however are anticipated to reduce the expected life of a pavement and potentially result in premature failure occurring.

Further work is required to assess the long-term effects of climate change on the roading network and to develop policies to manage this. Council have resolved to investigate this further during the period of the 24-27 LTP.

## **Economic Development**

Economic development, as defined in the local economic development strategy<sup>2</sup>, is those activities that cause a net gain of money flow into a community. In a broader sense, economic development means increases in business outputs through establishment of new businesses, relocation, or higher existing business productivity growth, increases in employment and real growth in incomes and asset values.

The local economic development strategy predicts that the construction, retail, manufacturing and health / community sectors are set to grow significantly over the next five years. One of the issues identified with that growth is the speed and connectivity of roads into Christchurch. This is particularly true for freight servicing those businesses. More heavy traffic, including HPMVs, on the network is likely to contribute to higher maintenance costs on roads not constructed for the greater loads.

Key Activity Centres (KACs) are required to be identified by the Canterbury Regional Policy Statement (CRPS). They are commercial centres identified as focal points for employment, community activities and the transport network that are suitable for intensive mixed-used development. Rangiora and Kaiapoi town centres have been identified as Key Activity Centres in the CRPS. North Woodend (Ravenswood) has been identified as a potential KAC.

It is anticipated that the retail floor area in the central business districts of Rangiora and Kaiapoi are likely to continue to grow as the population in and around the towns grows.

Recent trends have indicated a growth in online shopping and digital connectivity, and in the number and range of food, beverage, and hospitality activities in the town centres. Should these trends continue, they are likely to result in changes to the make-up and nature of the town centres, with a decreasing emphasis on retail, and a corresponding increasing emphasis on hospitality and social activities.

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<sup>2</sup>Towards a Prosperous Economy Waimakariri Local Economic Development Strategy 2012



This may result in increasing demand for town, and key activity, centres to provide pleasant places to socialise. Amenity factors may become increasingly important in decisions regarding location and function of roads, and location of parking in these centres.

The draft District Development Strategy has identified Southbrook, north Woodend (Ravenswood), and south Kaiapoi as appropriate locations for Business 2 (industrial / manufacturing / warehousing type activities) growth. Further growth in business and employment is likely to result in increased traffic in these areas. This traffic is likely to be made up of workers, customers, and delivery of goods to and from businesses. Good linkages between those business locations and potential employees, sources of incoming goods, and markets are essential for businesses to thrive in those locations.

## **Changing Land Use**

The rural sector of the district is continuing to change with increasing numbers of dairy farms, lifestyle blocks, and industrial and manufacturing businesses on rural land.

These changes increase the number of people living in the area, and the number of vehicles, including heavy vehicles, using the roads.

The development of lifestyle blocks can create conflict in expectations between farmers and “life-stylers”. There may be pressure to seal unsealed roads due to dust and road condition issues that may be acceptable to the farming community but are not necessarily acceptable to residents and drivers more accustomed to urban conditions.

## **5.5 Meeting Demand**

### **Summary of Demand**

- Most roads in the district have the capacity to cater for traffic growth into the future, with some key improvements around intersections to address safety issues.
- A Transport Model has been developed for Rangiora and this shows that the programmed and planned improvements will generally accommodate the demands of urban growth through to 2041.
- One critical road section is Southbrook Road leading into Rangiora. While some improvements have been completed along the corridor to address issues with access, further improvements will be required in the future.
- An alternative route between Rangiora and the Northern Motorway (SH1) is available, however requires further improvements to cater for the anticipated growth along the corridor, and this is the West-Rangiora Route. The West-Rangiora route includes Ohoka Road, Skewbridge Road, Flaxton Road, Fernside Road and Lehmans Road.
- A new road the “Rangiora Eastern Link Road” is proposed to the east of Rangiora, to cater for growth and to take some of the existing traffic from Southbrook Road, to ease the pressure on this corridor which is at capacity, causing access issues for residents, schools and businesses within the area.
- Increased population is likely to result in increased demand on parking, footpaths and amenities in Rangiora and Kaiapoi town centres.

- Increasing demand for walking and cycling facilities, provision for alternate modes and public transport will result in the need to provide targeted infrastructure within the road corridor for all users.
- Increasing need to consider and provide improved first/last kilometre connectivity facilities to support fuller uptake of walking & cycling. This includes better end of journey facilities, and connectivity for mode change locations, such as bus stops, park & ride sites, key activity centres and other high generator areas. Includes installing footpaths where there currently are none, bike stands, charging / repair sites, safe crossing points, lighting for security etc.
- Changing demographics mean that there will need to be more varied management of the network to cater for differing needs.

Rural land use changes, including increased dairy farming activities, quarrying activities, and rural-residential developments, are likely to put pressure on the rural road network.

### Ability to Meet Demand

The key demand issues expected to be faced by the transport network in the district are summarised in *Table 5.3*.

*Table 5-3: Key Demand Factors*

Demand Factor	Impact on Service	Ability to Meet Demand	Management Strategy
Population Growth	Increased car usage resulting in reduced Levels of Service, increased congestion, and increased crashes	Expected growth is expected to be able to be managed with a mixture of:  Improved LOS  Appropriate planning  Travel Demand Management	Projects to increase capacity are summarised in Table 5-1
			Transport planning is an integral part of the District Development Strategy and the District Plan Review process
			Working with Greater Christchurch partners on Travel Demand Management initiatives
Rural Land Use Changes	Increased car usage from increase in residential or “lifestyle” development	Expected growth is expected to be able to be managed with a mixture of:  Increased capacity  Appropriate planning  Travel Demand Management	Projects to increase capacity are summarised in Table
	Increased heavy vehicle numbers from more intensive agricultural or commercial land uses		Transport planning is an integral part of the District Development Strategy and the District Plan Review process

Demand Factor	Impact on Service	Ability to Meet Demand	Management Strategy
Customer Expectations	A community desire for higher levels of service across the District.	Implementation of best practice standards across the District	Acknowledgement that best practice may not always match community expectations.  Communicate this to the community appropriately
Increased Demand for Alternative Modes	A community desire for improvements to allow for alternative modes of transport.	Plan for Walking & Cycling Network with complementary facilities.  First/last kilometre connectivity facilities to support fuller uptake of walking & cycling	Transport planning for infrastructure to support change.
Support increasing Public Transport Services	Support Greater Christchurch PT Futures Business Case and increase in Public Transport Services	Plan for infrastructure to support increasing public transport services.  First/last kilometre connectivity facilities to support fuller uptake of walking & cycling.	Transport planning for infrastructure to support change.
Aging Population	Increased number of mobility devices (including scooters, walkers etc)	Wider footpaths included in all Council footpath renewals	Ongoing consideration of needs of aging population in future works.
	Reduced ability of users to cope with poorly maintained footpaths	Ongoing condition rating of footpaths	
	Increased demand for public transport as ability to drive declines	Consider public transport in all new infrastructure designs	
Increase in Heavy Vehicle mass and dimensions (including HPMVs)	Increased maintenance costs due to larger trucks	Budget for possible increased maintenance costs.	Consider needs of larger vehicles in review of District Plan and Engineering Code of Practice
	Larger vehicles require more space to manoeuvre	Consider larger vehicles in all new infrastructure designs	
Technology Changes	Likely impacts are unknown at the moment		Monitor developments and remain adaptable to rapid change if necessary

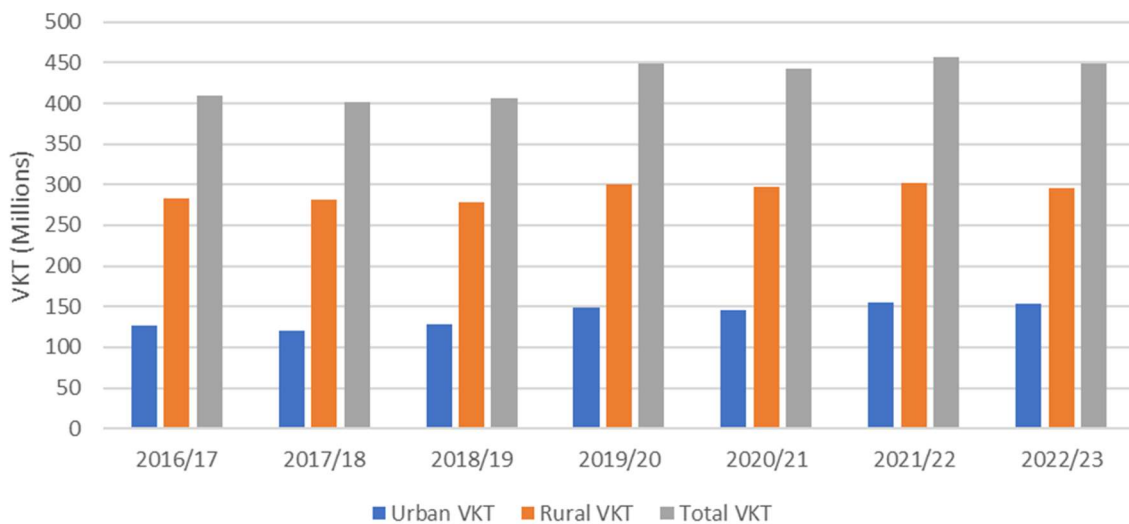
Demand Factor	Impact on Service	Ability to Meet Demand	Management Strategy
Climate Change	Likely impacts are unknown at the moment		Monitor developments and remain adaptable to rapid change if necessary

## General

Most of the District’s roads and intersections do not operate at close to capacity, and therefore have good levels of service with respect to safety and delays for car users. Few are likely to operate at near capacity (and experience deteriorating levels of service) in the near future. However, this is not the case for cyclists, who in many areas are still having to co-exist with motorists and the network is not as yet fully designed to cater for this. There are, however, some parts of the network that are having difficulty meeting the demand and where growth will put them under strain with longer delays at peak times being more likely in future. Increasing delays often result in a decline in safety as drivers accept greater risks in order to avoid delays.

The arterial and collector roads in the rural network are becoming increasingly important in terms of economic productivity. Maintaining a level of service that supports the economic productivity role of these roads is therefore critical. The increased traffic using the rural road network, particularly heavy traffic, is resulting in increased annual maintenance costs to meet the customer levels of service.

Figure 5-9: Vehicle Kilometers Travelled (VKT) Trends



From a safety perspective the increase in traffic volumes on rural roads, which are generally higher speed than urban roads, is likely to have an impact. For example, the head-on collision

risk increases with traffic volume increases on roads if the seal width is not sufficient<sup>3</sup>. Surface conditions may also impact on safety. Proactive maintenance and monitoring of aspects such as seal width will be required as traffic volumes increase. Intersection safety becomes more of an issue, as gap availability reduces, and this can then result in drivers taking risks when attempting to enter traffic flow. Road Safety is discussed further on.

## **Traffic Growth and Congestion on the Northern access into Christchurch**

The opening of the Christchurch Northern Corridor (CNC) in 2020 has alleviated some congestion issues in the district, however ride sharing and an increased uptake of the PT system is still required to realise the benefits of this new infrastructure.

### **Mitigation measures**

- Work with the Greater Christchurch partners on managing driver behaviour change to reduce the number of single occupancy vehicles travelling to Christchurch at peak times. Christchurch City Council TDM team currently undertake journey to work planning including working with businesses in Christchurch to encourage consideration of alternate modes of travel. In addition to this targeted planning work was undertaken in conjunction with the introduction of Direct bus services into Waimakariri. The costs of Greater Christchurch TDM work is shared by the Greater Christchurch partners.
- Continue to monitor existing park & Rides sites usage and further develop sites as / when required. Investigate a potential Park & Ride site in the Woodend / Ravenswood area, along existing PT routes.
- Work with ECan to review and change bus routes and services in the district as required, to maximise patronage and to promote bus usage.

## **5.6 Projects to Address Demand**

The following projects have been identified to address demand:

### **Southbrook Road - Rangiora**

Southbrook Road is one of the busiest roads within the district, and in Rangiora. It links central and northern Rangiora with the business area in Southbrook with Kaiapoi and Christchurch via SH71 (Lineside Road) and Flaxton Road. It also provides access to:

- Residential properties
- A large supermarket
- A large hardware retailer
- A large sawmill
- A restaurant

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<sup>3</sup> The next generation of rural road crash prediction models: final report December 2012, NZTA Research Report 509

- Two schools
- A childcare centre
- Various other hospitality, commercial, industrial businesses and a Refuse Station situated within Southbrook area, all generating traffic due to employment and the services they offer.

The Southbrook area is a larger generator in terms of traffic demand due to the key services it has to offer and as such will always be a destination on its own. The options for increasing the capacity of Southbrook Road by widening are limited due to its 20m road reserve, and the number of established residential and business properties. Taking this approach would create severance issues for Rangiora, where access is already a significant challenge. A wholistic approach needs to be taken, providing options for different routes of travel, to help ease pressure in the Southbrook area, which in parts carries around 26,000 vehicles per day. It is however noted that as Southbrook is a key destination within the district, that it will remain a high traffic generation area.

Future consideration will be required to ensure safe access can be provided for those needing to access and travel through the area.

The planned route improvements to both the western and eastern sides of the district (as noted in the following project outlines) are designed to lessen the demand on the Southbrook Road route, which is poorly equipped to meet the needs of children, residents, businesses, commuters and heavy freight all along the same congested route.

While widening this central route might could be a solution, this would result in greater social disconnect and access issues for those living on either side of the road or wanting to access services in the surrounding areas, more traffic would be encouraged to use this route leading to greater air pollution and vehicle noise, and eventually the road would again reach capacity. Meanwhile safety for pedestrians and cyclists would become worse, our youth would have greater problems accessing educational facilities, and the general neighbourhood would become even less pleasant for those living alongside the route.

An advantage to moving the traffic onto the western route, which is primarily rural, or to the east along an improved State Highway, or via the new Eastern Link Route, would be to spread the growing vehicular load, and in particular move heavy traffic off Southbrook Road, onto more appropriate routes.

### **Rangiora Eastern Link Road – New Infrastructure**

While most of the residential growth in Rangiora in the past 10-years has been to the north-west of town, the development of the Bellgrove subdivision has placed an increasing demand to the north-east of Rangiora.

- A new road, the “Rangiora Eastern Link Road”, has been designated to the east of Rangiora, to cater for growth on the eastern side of the town, and to take some of the

existing traffic from Southbrook Road, to ease the pressure on this corridor which is at capacity.

- The new road corridor is also proposed to include a separated shared path to allow for walking, cycling and alternate modes to use the corridor. While this will not address the current issues identified in the Southbrook corridor, it is anticipated that the forming of this new road, along with other improvements to key routes, will help ease pressure in the Southbrook area.

## **West-Rangiora Route Improvements**

The West-Rangiora route is an alternative route between SH1 and Rangiora, Ohoka Road, Skewbridge Road, Flaxton Road, Fernside Road and Lehmans Road. It is an attractive alternative between south Rangiora and the State Highway as it avoids Southbrook Road and SH71 Lineside Road.

To cater for growth and improve safety along the existing corridor, proposed changes to the route include intersection improvements, safety improvements, and an upgraded replacement of Skew Bridge which is a significant constraint on this important route and is outlined below.

### **Skew Bridge Replacement**

The West-Rangiora route is an alternative route between SH1 and Rangiora (Southbrook). It is an attractive alternative as it avoids Southbrook Road and SH71 Lineside Road.

Skew Bridge is narrow in nature, has challenging approach geometry and is not able to accommodate HPMV vehicles or pedestrians / cyclists safely, which restricts use and access between the state highway / Silverstream and Rangiora.

The bridge has around 17 years life remaining, however continues to be a safety concern and access constraint, on an important transport connection within the district which carries around 10,000 vehicles per day.

### **Linkages to SH1 at Woodend**

- Improvements to linkages between the east and north of Rangiora and SH1 at Woodend are also proposed, which will improve safety and cater for ongoing growth. They will also relieve pressure on Southbrook Road.
- Improved connections to SH1 in Woodend had been proposed by NZ Transport Agency (Waka Kotahi) as part of the Woodend SH1 Safety Improvements, however, are now less likely to proceed as the Government has committed to the construction of the Woodend Bypass, which would move traffic away from Woodend onto a new corridor to the east of the town.

Currently all access to SH1 in Woodend is via Give Way or Stop controlled intersections, except for Bob Robertson Drive which has a roundabout at the SH1 / Pegasus intersection.

Traffic volumes on State Highway One through Woodend are currently around 20,000 vehicles per day (vpd), making access onto the state highway extremely difficult, particularly at peak times. Safety improvement had been planned through Woodend, including signalling the

Woodend Rd / SH1 intersection. This is currently on hold due the commitment to build the Bypass. Not having controlled access out onto the state highway is likely to result in drivers instead choosing to access SH1 via Southbrook and SH71 Lineside Road.

### **Rangiora Woodend Road Improvements**

- Improvements to linkages between the east and north of Rangiora and SH1 at Woodend are also proposed, which will relieve pressure on Southbrook Road. Rangiora Woodend Road is an alternative route between SH1 and Rangiora. It is an attractive alternative as it avoids Southbrook Road and SH71 Lineside Road.

To cater for growth and improve safety along the existing corridor, proposed changes on the route include improvements to the Rangiora Woodend Road / Boys Road / Tuahiwi Road intersection, widening and roadside hazard removal. This is an important route to help distribute traffic and ease the pressure on Southbrook area.

### **Town Centres**

Increased population in the towns and visitors to the towns will continue to put pressure on town centre assets such as parking supply, footpaths and amenity areas. Town Centre Plans have been developed for Rangiora and Kaiapoi.

### **Other Key Infrastructure (Not delivered by WDC)**

While not projects which will be delivered by Waimakariri District Council, it is noted that the following proposed and existing roads will have a significant impact on the transportation network within Waimakariri district and as such it is critical that Council works closely with NZ Transport Agency (Waka Kotahi) to ensure that a wholistic approach which provides a best for network (both national and local roads) result is achieved.

This includes:

- Woodend Bypass – The alignment of the Woodend Bypass was designated in 2015 and is seen as critical infrastructure to address severance and access issues within Woodend, as well as to allow for effective freight movement along SH1, to address existing safety issues and allow for growth which is anticipated within the Greater Christchurch area.
- SH71 Lineside Road Safety Improvements – SH71 is a critical link between the town of Rangiora and SH1. There are safety issues which need addressing on the corridor however it is critical that this is done in conjunction with consideration of impacts to the local road network.

### **Other Ongoing and Future Potential Developments**

#### Ravenswood

This subdivision opposite Pegasus is expected to continue growing a number of years and will provide around 1200 additional properties. These will be a mix of residential and commercial use.



### Bellgrove Development

Work has begun on this development north-east of Rangiora. At completion around 2030, it is expected to provide 1400 additional residential properties.

### Townsend Fields

This development already contains around 30 private properties alongside a new primary school. Further growth is anticipated between 2024 - 2030 and will potentially account for an additional 600 residential properties.

### Daniel Smith's Development

This development at the intersection of Flaxton and Fernside Roads is proposed to include commercial activities such as a hotel, museum and café.

### Silverstream Development – Lime Living

Older persons housing / aged care developments in Silverstream.

### Somerset Development – South Belt

Older persons housing / aged care developments on South Belt next to Southbrook Sports Park.

### Waimak Junction

Commercial development with retail activities including a large supermarket etc.

### Beach Grove

This subdivision off Beach Road is expected to continue growing for a number of years and will ultimately provide around over 1000 residential properties once fully developed.

### Kaiapoi Mixed-Use Business Area

This land was previously red-zoned following the 2010 Canterbury Earthquakes however is now zoned for mixed-Use Business.

### Woodland Estates

This subdivision on the east side of SH1 in Woodend is expected to provide around over 1200 additional residential properties.

## **Other Towns**

Oxford and Woodend are the other main towns in the district. They have sufficient local road capacity to cater for the expected growth in traffic for the foreseeable future and so no growth-related works are planned in these towns.

However, State Highway 1 passes through Woodend. The Government have committed to construction of the Woodend Bypass, and this will require associated works on local roads, which there has been an allowance made for.

As noted above, the proposed safety improvement to SH1 through Woodend were planned, however due to commitment to Bypass, there is a risk these improvements may not proceed as previously planned.

## **Footpaths and Cycleways**

More people are walking and cycling for both travel and recreation. There is also an increasing expectation that dedicated infrastructure will be provided to allow for alternate modes such as cycling. This will put pressure on ensuring the facilities are being extended and improved, and that gaps in the network are addressed.

Funding in the Low-Cost Low-Risk Programme for walking and cycling has been difficult to secure in the past and Council has had to consider alternate forms of funding or doing some works unsubsidised to enable infrastructure to be delivered (as is the case for the New Footpath Programme).

Council was initially successful in securing Transport Choices funding for progressing a number of walking & cycling projects around the district, including the Kaiapoi to Woodend, Woodend to Ravenswood & Rangiora cycle connections. With this being a ministerial fund and the recent elections in October 2023 resulting in a change in government, NZ Transport Agency (Waka Kotahi) made the decision to put this fund on hold until such time as the new government has an opportunity to consider its priorities going forward.

On 20<sup>th</sup> December 2023 the new Government announced that all projects on hold in the Transport Choices Programme will not receive any further funding or proceed to implementation. This impacts the Kaiapoi to Woodend, Woodend to Ravenswood & Rangiora cycle connections, plus the new footpath programme. Council will give consideration to how these projects will be funded going forward.

## **Public Passenger Transport**

Across the Greater Christchurch area increasing the use of public transport is a means of reducing vehicle emissions and easing peak traffic demand on roads. While Environment Canterbury is responsible for providing public bus services, the Council is responsible for providing the infrastructure, such as bus stops, seats, shelters, and Real Time information displays, to support these services.

The increase in population in the district and move to provide improved services through the PT Futures Programme of works will increase the demand for these services. Providing good quality and convenient bus stops, seats and shelters will help encourage and manage that demand.

Park and Ride Facilities have been constructed at five locations across Kaiapoi and Rangiora, with further potential sites to be investigated in Woodend/Ravenswood, along existing PT corridors.

## **Bridges**

The majority of bridges in the district have adequate capacity to cater for the projected future loading and traffic volumes. Council has also made allowance in the Infrastructure Strategy for improvements to the Old Waimakariri River Bridge which is jointly funded with Christchurch City. This is not anticipated to be required until 2041.

There are no designated and separated pedestrian or cycle facilities on the Old Waimakariri River Bridge. NZTA have addressed this by including a combined walk and cycleway across the river as part of the CNC. Improvements to the existing timber rail on the Old Waimakariri River Bridge are planned in the short term, with these being replaced with vehicle compliant barriers.

In addition to changes to the Old Waimakariri Bridge it is proposed to replace Skew Bridge within the next 10 years (as outlined previously in this section). This is due to levels of service, safety, and constraint issues. There is increased demand on the route this bridge is located upon, and the bridge does not cater for HPMV vehicles, cyclist, or pedestrians. The bridge has an estimated seventeen-year remaining life however is a major constraint on the West-Rangiora Route.

Work is planned to improve the Mafeking bridge to better accommodate cyclists as it is a very narrow bridge on an arterial walking and cycling route within the district. This is not a road bridge.

## **General**

The management of the transport network to cater for future growth in the district will be by a combination of asset and non-asset solutions. The integration of land use planning and transport planning as envisaged by the Greater Christchurch Partners (formerly the Greater Christchurch Urban Development Strategy (UDS)) along with travel demand management, the increase in the provision of walking and cycling facilities and improved passenger transport will be key tools in reducing the reliance on the motor vehicle.

Creating more job opportunities in the district will reduce the need to travel to Christchurch for employment as will reducing the growth on key commuting routes to Christchurch. Roading improvements will be mainly focussed on ensuring adequacy of the existing network, and on safety improvements.

The general approach to be taken is as follows:

- Maintaining and using the existing transport infrastructure efficiently and effectively.
- Targeted investment in infrastructure improvements for both capacity and safety outcomes.
- Increased emphasis on walking, cycling and public passenger transport to provide greater transport mode choice, integration, flexibility and to promote good public health outcomes.

- Ensuring growth areas and development support modal choice and provide opportunities for people to travel less, especially by private motor vehicle.
- Continue to implement travel behaviour change initiatives in conjunction with the Greater Christchurch Partners, to encourage more efficient travel patterns.
- Funding the growth component of projects from development and financial contributions

This approach is consistent with the New Zealand Transport Strategy 2008 and Government legislation, mainly the RMA, LGA, Ministry of Transport Framework, and the LTMA which requires a more integrated approach to land use, transport planning, and funding to provide a sustainable land transport system that is supported by sustainable land use patterns and good urban form, and with the Regional Land Transport Strategy (RLTS). This is also consistent with the current GPS, however this may be subject to change as a new GPS is developed early in 2024.

The following strategies and implementation plans drive the programmes for managing growth:

- Greater Christchurch Urban Development Strategy and implementation plan
- Land Use Recovery Plan (LURP)
- Greater Christchurch Travel Demand Management Strategy and implementation plan
- Structure Plans and Outline Development Plans
- Rangiora Town Centre Plan (RTC 2020)
- Kaiapoi Town Centre Plan (New Foundations)
- Walking and Cycling Strategy, Implementation Plan & the Walking & Cycling Network Plan
- Road Safety Strategy and Road Safety Action Plans
- Metro Strategy and implementation plan, and Regional Passenger Transport Plan (Bus services)

## 5.7 Asset Projects to Meet Demand

Major programmes and costs to meet the demand described above are shown below. The full detail is shown in **Section 8- The Lifecycle Management Plan**.

*Table 5-4: Major projects to meet demand.*

Project	\$M	From
Kaiapoi to Woodend Cycle Connection	2.2	31/32-32/33
Ravenswood Park N Ride	1.5	26/27-27/28
North-West Arterial Rangiora – Lehmans Rd to River Rd	2.2	29/30-30/31
West Rangiora Route	14.2	24/25-33/34
Woodend Improvements in conjunction with Woodend Bypass (Note: may need to be moved depending on Bypass progress)	2	26/27-27/28 & 31/32-32/33
South Eyre / Giles / Tram Rd Roundabout	1.9	26/27-27/28

Tram Rd Route Improvements (widening, intersection improvements, delineation)	7.7	23/24-33/34
Rangiora / Woodend / Tuahiwi / Boys Rd Intersection Improvements	1.9	26/27 & 28/29
Robert Coup Drive/Ohoka Rd intersection Improvements	1.1	26/27-27/28
Skew Bridge Replacement	12	24/25-28/29
Southbrook Future Improvements	3.9	25/26-27/28 & 31/32-32/33
Northbrook / Ivory St intersection Improvements	1.5	27/28-28/29
New Rangiora Eastern Link Road	35.1	24/25-29/30
North South Collector Rd	6	24/25 & 28/29

Other capital works are identified via monitoring, community and Council input, and through statutory requirements. The condition of the network and its components are continually monitored, and council staff, contractors and consultants identify development opportunities. The concerns and desires of all stakeholders are also identified, considered, and taken into account through feedback and consultation.

## 5.8 Key Improvement initiatives

Key improvement initiatives relating to the future demand include the following:

*Table 5-5: Key Demand Improvement Initiatives*

	Improvement Action	Priority	Proposed Completion date	Owner and Key Staff
Section 5 Future Demand				
5.1	Investigate whether further modelling is required to accurately represent changed demands in Rangiora and Kaiapoi	Low	December 2024	STE
5.2	More in-depth analysis as to needs of the older demographic	Medium	June 2025	STE, APE
5.3	Populate One Network Framework future state		July 2024	STE, APE

# Transportation Activity Management Plan 2024

## Risk Management

June 2024



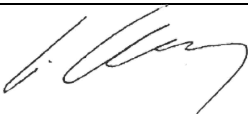


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Adopted by	Utilities & Roothing Committee			

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## 6 Risk Management

### 6.1 Introduction

While it is not possible to eliminate all risk, it is possible to be proactive in the management of risk to minimise adverse outcomes. Council addresses risk to the Transport activity in the following ways:

#### **Risk Register**

Risk has been classified through a Risk Register which identifies potential risks arising from the operation of the roading networks, the consequences and likelihood of those risks occurring, and the mitigations used to manage them. It also establishes responsibilities for the management of identified risks.

The methodology for the assessment is explained further in this section of the AMP, however, it is recognised there are a number of serious risks which are outside of Council control. Risk is managed through the development and ongoing review of the risk register,

There are four strategic risk areas which have been identified and are outlined in this Transportation Activity Management Plan. These four strategic risk areas align with our Problem Statements and include:

1. Safety
2. Resilience
3. Sustainability
4. Changing Land Use and Population Growth

#### **Problem Statements**

The key transport issues identified for Waimakariri District are:

- Problem Statement 1:  
*Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- Problem Statement 2:  
*Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting effects ranging from temporary disruption to potentially life-changing impacts.*
- Problem Statement 3:  
*Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.*
- Problem Statement 4:  
*Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur.*

## 6.2 Strategic Risk Areas

### Safety

- Problem Statement 2

*Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur.*

#### General

Road safety (or lack thereof) is a risk to the residents of our community on a number of levels. It has health, financial and quality of life implications, that is best solved with a multi-faceted, integrated approach.

#### What's happening in Waimakariri District?

On average around 4-500 crashes are reported to Police every year in Waimakariri. Of these, between 20 & 30 result in deaths or serious injuries. The social cost to Waimakariri of fatal and serious crashes on the local network for the period from 2018 to 2022 was calculated at just under \$215M, with another \$27M for minor injury crashes.

Increased traffic volumes mean more likelihood of an upwards trend in crashes unless mitigating measures are put in place.

Some initial analysis of crashes in the district shows a high level of intersection crashes, which is to be expected for this form of network, but also around half of all crashes involve loss of control, both on straight roads and bends. Where these involve a collision with an object, the most commonly hit objects in Waimakariri are fences, trees or poles. Nearly 30% all fatal and serious crashes were partially or fully caused by drivers aged between 15 and 24, while just two thirds of drivers had a full licence. 44% of fatal and serious crashes involved only one party, and over three quarters occurred on rural roads.

Just under 50% of all fatal and serious crashes in the district involved excess alcohol. Just over a third of fatal and serious crashes occur at night, but this is not significantly higher than for all injury crashes.

Figure 6-1. All recorded crashes in Waimakariri District 2013-2022

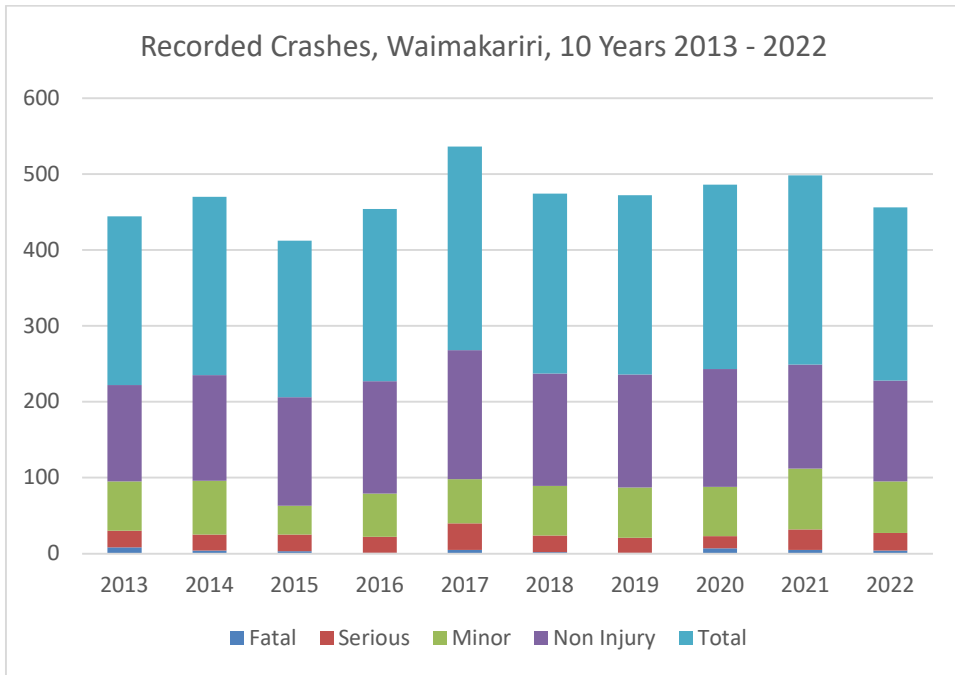
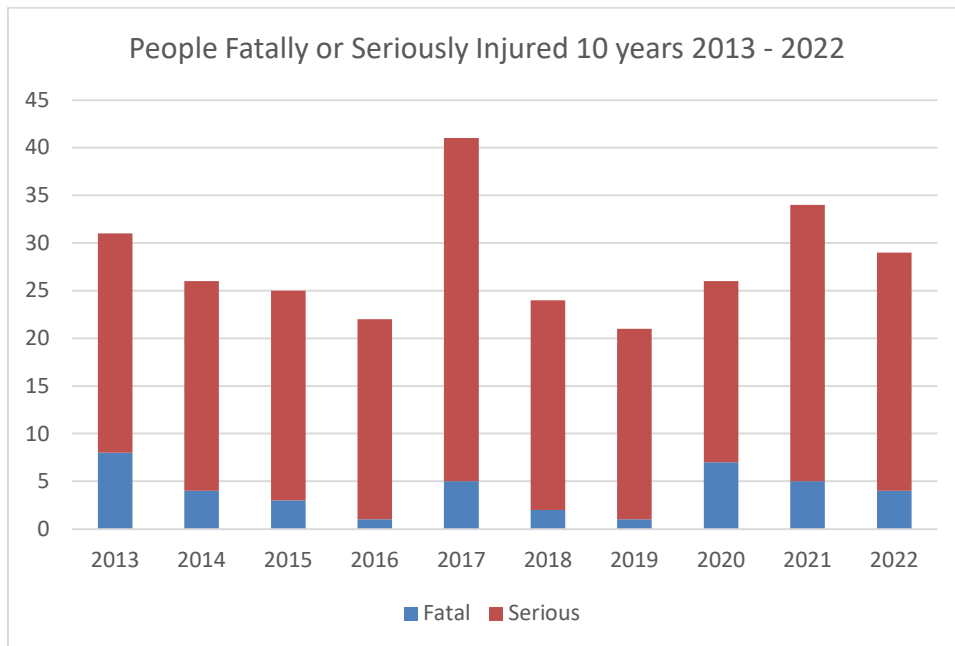


Figure 6-2: Fatal and serious crashes in Waimakariri District 2013-2022



Figure 6-3: Fatalities and Serious casualties in Waimakariri District 2013-2022



## Solutions

With regards Problem Statement 2, numerous parties are involved in the attempts to prevent fatal or serious injury in the event of a crash. Thus, Council can only commit to doing its best through the activities that lie within its scope, for example, Council does not have the legal ability to enforce illegal driving behaviour, however we can liaise with the NZ Police around joint campaigns. The key activities Council does engage in are summarised as follows.

- Preparation of a Road Safety Action Plan, which includes enforcement and education initiatives.
- Preparation and regular review of a Hazard Register
- Ongoing Safety Audits of individual projects, both before, during and post construction as appropriate.
- Development and implementation of a Speed Management Plan.
- Ongoing Network Safety inspections by staff and the contractor, both day and night-time – carried out annually on a percentage of the network, depending on hierarchy.
- Ongoing Crash investigations studies (black spot/route/crash type) – as required.
- Serious and Fatal Crash investigations (immediately following a serious crash or fatality).
- Engineering measures such as:
  - School safety improvements
  - Deficiency Database projects

- Route improvements, particularly key growth areas such as Flaxton / Fernside / Skewbridge Roads route, and Tram Road
- Proposed improvements on key routes through the Safety programme, including RIAWS (Rural Intersection Activated Warning Signs), and the lowering of speed limits where appropriate.

Table 6-1: Road Safety Action Plan Interventions:

Safety Area	Target Audience	Strategy	Intervention Type
Cycling	Cyclists	Continuing to use the North Canterbury Sports and Recreation Trust to deliver CycleSense in schools. Consider what can be done in terms of offering cycle training for adults. Possible information sharing on WK safe cycling for riders.	Education Programme
Cycle safety for drivers	General motoring population	Raising the awareness of drivers as to vulnerable road users.	Advertising information /
Licensing/ Training	Older Drivers	Continue to use Age Concern to deliver Staying Safe courses for residents. Council support to consist of promotion of courses to ensure high attendance rates.	Education Programme
	Young Drivers	RYDA to be delivered in Rangiora and Kaiapoi High Schools. Consider Leading Learners as an option for residents.	Education Programme
Motorcycling	Motorcyclists	Continue to promote Ride Forever as the focus for improving motorcycle safety. Primarily through the Kickstart series of events.	Event(s)
Restraints	General motoring population	Collaborate with Regional partners in promotion of restraint wearing. Work with Police where appropriate to support their enforcement focus on restraints. Child car seat checkpoints to be made available to parents.	Advertising information /
Impairment	General motoring population	Collaborate with Regional partners in promotion of responsible alcohol use in the driving context. Work with Police where appropriate to support their enforcement focus on breath testing as a deterrent.	Advertising information /

Distraction	General population motoring	Continue to improve public understanding of the hazards of driving while distracted. Regional wide messaging.	Advertising information /
Speed	General population motoring	Raising public awareness of the societal benefits of slower speeds near schools, and in neighbourhoods.	Advertising information /
Intersections	General population motoring	Raising public awareness of the risks associated with intersections across the district.	Advertising information /

## Sustainability

### Problem Statements:

- Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.
- Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.
- Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting effects ranging from temporary disruption to potentially life-changing impacts. (longer term sustainability issue)

Sustainability is the ability for an asset or activity to be maintained at a certain rate or level. In the transportation sector, it includes financial, environmental and asset sustainability.

It is widely recognised that climate change is a real issue which threatens society and which we should all be playing our part in mitigating. As a wider organisation, the Council is involved with understanding and preparing for climate change, across all its activities. The sustainability of our transport activity is a key part of this.

To assist in mitigation, WDC is endeavouring to provide greater access to alternative transport modes which in turn will lead to lower greenhouse gases. This includes improved public transport, improved walking and cycling facilities, provision of Park and Ride facilities and ensuring sustainability is considered in all future planning decisions.

However, it is also recognised that even with international change in behaviour that some form of sea level rise is inevitable and must be accommodated going forward. Waimakariri District Council has a number of coastal communities potentially affected by inundation, and also low-lying areas where ground water level rise will affect the liveability. This also affects ability for groundwater to drain away during and after a flood event. This in turn leads to pavements weakened or overtopped, and in extreme cases, washed away.

At this stage of the Council's maturity in this area, there is a large amount of uncertainty. The Council is actively involved with its regional neighbours to share information and experiences however this will not provide definitive answers in the short to medium term. Therefore, for the period of this AMP, Council proposes to investigate the extent of the problem, the risks posed and potential solutions. This will be done in conjunction with other departments so that there is a cohesive and consistent approach to long term land-use planning, and infrastructural planning (whether it be drainage, water or transportation).

In addition, WDC is participating in a research programme investigating and attempting to quantify the issue of ground water rise, which in turn will help determine effects on cost to the ratepayer, and potential mitigation methods.

## **Integration of Land Use Planning and Transport**

### **Problem Statements:**

- Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.
- Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.

Waimakariri has been one of the highest growing Districts in New Zealand over the past decade. Even as growth slows, it is still ranked 15<sup>th</sup> highest in the country. This growth has placed considerable strain on maintaining the network and providing safe and effective linkages for people wanting to move around the district. It is important that the whole transportation network (including cycling, walking and public transport) enhance the quality of life for its residents.

It is important to integrate district land use and transport to ensure that any future growth occurs in conjunction with the appropriate transportation infrastructure. This ensures that existing residents are not detrimentally affected by growth (due to congestion, loss of opportunity, and drop in Level of Service), and that future residents are properly catered for.

In order to ensure that this happens, Waimakariri is part of the Greater Christchurch Partnership (GCP) of Christchurch, Selwyn and Waimakariri which seeks to manage growth in a planned and logical manner and provide integrated regional-wide solutions to that growth. This includes ensuring alternative modes are catered for where possible in initial planning stages, so that residents have good access to safe cycling routes, and adequate and safe pedestrian facilities are provided, such as tactile markers, kerb cutdowns and traffic islands, and adequate lighting. Council also liaises with Ecan regarding its public transport provisions through the GCP.

In addition, the Council planning and roading departments maintain close working relationships as transportation strategies are prepared, new growth areas are planned, programmes are prepared, costs are allocated, and development occurs.



## Resilience

### Problem Statement:

- Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting effects ranging from temporary disruption to potentially life-changing impacts.

Emergency Events can have a significant effect on infrastructure, homes and lives Resilience is the capacity to recover quickly from difficulties, and in the transport context, refers particularly to recovery from natural hazard events, but also includes planning for events, and finding ways to mitigate or avoid some of the effects completely.

Large scale risks to the network include earthquakes, floods, snow events, fires and strong winds. WDC has proven its ability to deal with these through a high degree of planning and networking. Mitigation measures include the Civil Defence and Emergency Management structures, participation in the Canterbury Lifelines Group, the Council's Business Continuity Plan, and the maintenance contractor's Response Plan which includes a list of critical infrastructure to which access must be maintained, such as pump stations, Mainpower headquarters etc.

Apart from the impact on the community itself, the cost of repairing the transport infrastructure during this current NLTP period currently sits at around \$7.5M. This has a flow on effect to work planned in the community. Council has identified areas where the current infrastructure is inadequate to deal with major events, in particular heavy rainfall. Improved drainage and retaining walls will assist with maintaining connectivity and reducing future cost through ongoing reactive work.

Issues such as fire and wind are also likely to increase in future years. A severe wind event some years ago knocked over a number of trees which were likely to be a hazard going forward but this is an ongoing issue with mature shelterbelts in these events and are an ongoing risk for motorists.

Regarding fire, emergency services can and do close roads when smoke is a hazard to drivers.

It is acknowledged that there are recurring risks, many of which are unpredictable and unpreventable and Council must continue to improve its processes and planning to prepare for events, minimise the disruption and improve the recovery outcomes. An improvement for the next 3 years will be to compare the outcomes of the Lifelines group to the contractor list to determine if any assets have not been considered and plan for how they will be managed.

### 6.3 Transport Related Infrastructure Strategy interventions

The Infrastructure Strategy considers a range of interventions for various risk-scenarios. The following tables address these from a transport perspective and indicate progress on these.

#### Providing appropriately for growth

Table 6-2: Transport related IS interventions - Providing appropriately for growth.

Issue	Council's Response	Progress
Predicting level and distribution of growth and using this to inform infrastructure planning	Adopting a corporate growth model, including changing demographic projections, that informs Council decision making	Done
	Adopting strategies, such as the District Development strategy, that signal directions for growth and implementing these through the District Plan review	District Plan review still underway
	Integrating land-use planning and infrastructure provision, especially for transport services by adopting a multi-modal approach to deliver sustainable solutions	Some movement towards the multi-modal approach, however, may be influenced by Government direction
	Designing infrastructure on a minimum 50 year planning horizon.	Dependent on the type of infrastructure – bridges are designed for a minimum of 100 years.
	Preparing/refreshing strategies for community facilities, aquatics, walking and cycling, sports fields, access and Age Friendly to determine future requirements	Ongoing updates carried out. Includes consideration of transport-related access

#### Responding nimbly to a changing operating environment

Table 6-3: Transport related IS interventions - Responding nimbly to a changing environment

Issue	Council's Response	Progress
Addressing rates affordability	Keeping rates increases to a minimum by smoothing rates via a combination of loan funding, implementing austerity measures and deferring some large infrastructure projects to later years.	Ongoing, however must keep in mind other objectives and recognising the disbenefits of austerity measures and deferring projects.
Addressing changing funding environment	Ensure Waka Kotahi is kept informed of Council's needs and appropriate funding requests made; seek alternative funding sources where possible	Ongoing

## Changing government priorities and legislative environment (Environmental Sustainability)

Table 6-4: Transport related IS interventions - Changing Government priorities and legislative environment (Environmental Sustainability)

Issue	Council's Response	Progress
Meeting Land and Water Regional Plan requirements for urban stormwater discharge standards by 2025	Securing consents for all urban discharges	As required for roading projects
	Assessing the improvement programme (capital, operational and educational) required to enhance and improve discharges to waterways	As required for roading projects, also planting considered for some capital roading projects alongside waterways and other mitigations
	Develop and consult on a long-term plan of work and associated budget provision to give effect to the programme	Business As Usual
	Monitor and evaluate network and system performance and continue to work collaboratively with partners, particularly mana whenua, to develop affordable and viable solutions to meet the consent conditions	Continuing to work to improve on monitoring and developing innovative, affordable, and viable solutions
Expectations that higher standards of flood protection will be provided in high rainfall events	Extensive flood modelling work has been completed, and will continue to be refined, to identify at-risk areas and influence where further network upgrades should occur, and inform decisions about future development and building proposals	Ongoing – at risk areas identified, sumps cleaned ahead of flood events, and ongoing programme of upsizing drainage assets as required, bridge heights considered for flooding.
	Implementing an ongoing programme of flood improvement works storm events	Ongoing.

## Ensuring resilient infrastructure (Resilience)

Table 6-5: Transport related IS interventions - Ensuring resilient infrastructure (Resilience)

Issue	Council's Response	Progress
Adopting a risk-based renewals and investment strategy	Ensuring renewals investment is prioritised to the most vulnerable and critical infrastructure so that the overall resilience of the infrastructure networks is continually enhanced.	Part of the standard Optimised Decision Making Process
Identifying climate change and natural hazard risks	Preparing an annual stocktake of Council's climate change issues and response.	Stocktake refreshed in 2023
	Refining comprehensive flooding modelling carried out to assess potential flood impacts and where further land development should occur.	Done as part of BAU when processing resource consents. Flood overlays in PDP provide rules for developing in areas prone to flooding.
	Incorporating results from flood and reticulation network modelling into AMP's and the District Plan Review.	Latest flood modelling incorporated into PDP and AMPs.
	Completing and consulting on natural hazards risk assessment in 2020 as part of the District Plan review.	Natural hazards GIS layer & public portal
	Carrying out risk assessments for essential infrastructure.	Phase 1 of risk assessment completed for 3 waters assets in 2021
Setting a strategic framework in place for climate change mitigation and adaptation	Adopting a Sustainability Strategy in 2020.	
	Adopting a Climate Change Policy in 2020.	Draft adopted in 2020 for consultation
	Developing a WDC Climate Change Scenario Technical Report in 2022.	Done
	Developing a Climate Change Response Strategy in 2024/25.	
	Developing a community based sustainability strategy in 2024/25.	
	Adopting design and modelling standards for infrastructure that reflect the latest climate change	Been doing this since 2008. Any new design or modelling reflects

Issue	Council's Response	Progress
	<p>predictions (e.g. rainfall patterns) and are built using materials and best-practice technologies to improve resilience allowing for the implications of sea level rise and changing weather patterns in asset management planning.</p> <p>Allowing for the implications of sea level rise and changing weather patterns in asset management planning.</p> <p>Making appropriate District Plan provisions in relation to known active faults, flooding and sea level rise.</p>	<p>the latest available information from MfE</p> <p>Been doing this since 2008. Any new design or modelling reflects the latest available information from MfE and NIWA</p> <p>Natural Hazards provisions have been included in PDP</p>
Increasing the resilience of Council infrastructure and the wider community to natural disasters and climate change	Participating in the national and regional climate change forums to influence and ensure best practice is developed and implemented.	Ongoing
Increasing governance and collaboration	<p>Participating in the Canterbury Climate Partnership Plan.</p> <p>Utilising a Climate Change Coordination Group to ensure climate change response efforts are co-ordinated across Council.</p>	<p>Ongoing</p> <p>Ongoing</p>

## Transitioning to a sustainable future (Environmental Sustainability)

Table 6-6: Transport related IS interventions - Transitioning to a sustainable future (Environmental Sustainability)

Issue	Council's Response	Progress
Measuring and monitoring greenhouse gas emissions	Undertaking regular emission assessments, utilising the 2017/18 base-line assessment to enable the Council to set emissions targets and assess progress.	Carried out by Environment Canterbury, however difficult to assess vehicle emissions separate from other sources.
Reducing the organisation's carbon footprint	Implementing initiatives to embed sustainability practices in the organisation such as sustainable purchasing policies and practices, flexible working policies and investigating sustainable energy efficiency opportunities.	Policies allowing working from home implemented, support for staff to purchase e-bikes at discount.

Issue	Council's Response	Progress
Developing a more sustainable District	Introducing and maintaining sustainable solutions as kerbside recycling, electric vehicle charging stations, enabling and encouraging alternative transport solutions such public transport, cycling and walking alternatives.	Well underway but needs to be ongoing.

## 6.4 Operational Risk Management

### Objectives

Council strives to manage risk in a responsible manner to enable business objectives to be consistently met recognising social, cultural, environmental and economic impacts of its activities.

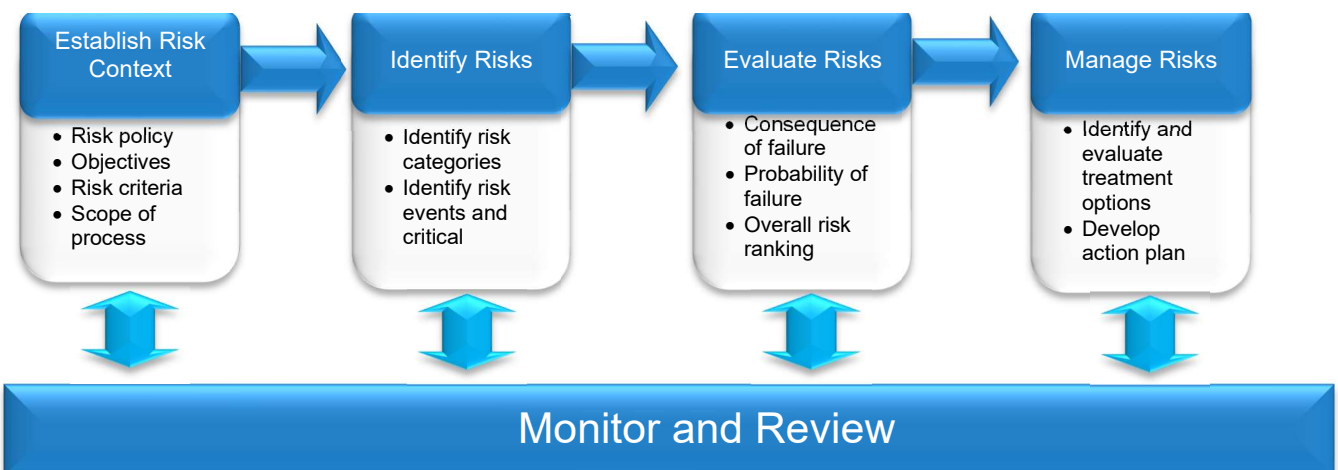
The overall objectives of a risk management process are to ensure that:

- All significant operational and organisational risks are understood and identified
- The highest risks that should be addressed in the short to medium term are identified
- Risk reduction treatments which best meet business needs are applied
- Responsibilities for managing risk are allocated to specific staff.

## 6.5 Risk Assessment Process

The adopted roading network risk management process is consistent with Australian New Zealand Standard AS/NZS ISO 31000:2009 and the IIMM (2011), to ensure that risks are managed on a consistent basis.

Figure 6-4: Risk Management Process



A series of risk identification workshops were initially conducted involving the Council roading team and Sicon, the network maintenance contractor, to develop and review the current roading risk register. These workshops included the whole of the roading infrastructure to:

- Identify the risk events relevant to each risk type using Table 6-7
- Evaluate of the likelihood of the risk event occurrence using Table 6-8
- Evaluate the consequence of the risk event using Table 6-9
- Determine the risk priority using Table 6-10
- Determine the treatment strategy using Table 6-11

These have since been reviewed by the current roading team, and ‘champions’ of various risks allocated by who is most appropriate to monitor and report back if a risk appears to be getting worse. Note that this risk and consequences method of assessment is a common methodology for assessment.

## 6.6 Risks Context

The key risk criteria adopted for WDC for assessing the consequences identified risks are:

- Health and Safety
- Environmental/ Sustainability
- Business/ economics
- Technological Image/ Cultural/ Spiritual

### Identify Risks

The Potential risk events were identified and categorised into four areas, as shown in the table below:

*Table 6-7: Risk Types*

Risk Type	Descriptions
Planning Risks	Events generated by events outside the control of the organisation such as the effects of natural events, either long term such as climate change or sudden (earthquakes), change in legislation, change in network demand where influenced by neighbouring councils growth and decision making
Management Risks	Events associated with incomplete planning information and processes, lack of resources, financial restraints.
Delivery Risks	Events largely caused by breakdown of operational processes such as inadequate inspection, lack of communication, inadequate quality system, health and safety.
Physical Asset Risks	Events mainly associated with the failure of the assets due to loading characteristics, material and equipment failure.

## Analyse Risks

The likelihood and impact ratings used to determine initial risk ratings are defined in the tables below:

*Table 6-8: Risk Likelihood Ratings*

Level	Likelihood	AS/NZS ISO 31000:2009 Definition
5	Almost certain	The event is expected to occur in most circumstances
4	Likely	The event will probably occur in most circumstances
3	Possible	The event would not be very surprised if the event was experienced
2	Unlikely	The event could occur at some time
1	Rare	The event may occur only in exceptional circumstances



Table 6-9: Measures of consequences of failure

Level	Consequences	AS/NZS ISO 31000:2009 Definition	Health & Safety (TNZ descriptors in bold)	Environmental/ sustainability	Business/ economic	Technological	Image/ cultural/ spiritual	Delays
5	Catastrophic	Death, toxic release off-site with detrimental effect, huge financial loss	<b>Multiple fatalities</b> and/or widespread serious acute or chronic health effects	Widespread irreparable environmental damage, national concern, high profile legal challenge	Loss of revenue or opportunity and working days lost in excess of \$10 million	Catastrophic failure of systems to perform as intended.	Major concerns at an <b>international media cover</b> , significant media attention, impact on reputation of industry as a whole	Several years
4	Major	Extensive injuries, loss of production capability, off-site release with no detrimental effects, major financial loss	<b>Multiple serious or a fatality</b> - Single fatality, some chronic health effects or localised serious acute health effects	Localised long lasting environmental damage, community outrage, potential for legal action	Loss of revenue or opportunity and working days lost \$1 million to \$10 million	High complex, extensive or novel buildability or operational requirements resulting in significant under performance of system.	Major concerns at a regional level, <b>sustained national adverse media coverage</b> , major implications within industry	Year
3	Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss	<b>Serious Injuries</b> - Serious health impacts to several people, requiring hospital attention	Significant rectifiable environmental damage or persistent small-scale effects, major local concerns, significant economic sanctions	Loss of revenue or opportunity and working days lost \$100,000 to \$1 million	Complex buildability or operational issues that result in failing to meet operational or performance targets.	<b>Regional media cover</b> or short term national - Significant local concerns and opposition, temporary loss of image.	Months

Level	Consequences	AS/NZS ISO 31000:2009 Definition	Health & Safety (TNZ descriptors in bold)	Environmental/ sustainability	Business/ economic	Technological	Image/ cultural/ spiritual	Delays
2	Minor	First aid treatment, on-site release immediately contained, medium financial loss	<b>Minor Injuries</b> - Single serious health effect and/or several minor health effects - requiring medical attention	Significant localised short-term effects, significant breach of consents, open to fines	Loss of revenue or opportunity and working days lost \$10,000 to \$100,000	Complex or significant buildability or operational issues that require special ways of working	Some <b>local media cover</b> , difficulties and concerns.	Weeks
1	Insignificant	No injuries, low financial loss	<b>Slight injuries</b> - Short term health effects - first aid attention only	Short term environmental effects, minor infringements of consent	Loss of revenue or opportunity and working days lost less than \$10,000	Minor technological issue that can be relatively easily overcome	<b>Possible local media cover</b> - No significant issues as regards image, cultural or spiritual aspects	Days

## Evaluate Risks

After the likelihood and consequence factors have been determined, the level of risk is calculated by multiplying the Likelihood of Occurrence (Table 4.3) and the Consequence Rating (Table 4.4).

Risk = the likelihood of an event occurring X the consequence of such an event.

The final outcome is a risk rating as shown in the table below. Four risk categories have been used: Extreme, High, Moderate, and Low risk.

Table 6-10: Risks Priority Rating Matrix

<b>Likelihood of Occurrence</b>	Almost Certain 5	5	10	15	20	25
	Likely 4	4	8	12	16	20
	Possible 3	3	6	9	12	15
	Unlikely 2	2	4	6	8	10
	Rare 1	1	2	3	4	5
		Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
	<b>Severity of Outcomes</b>					

This allows all assets and corporate risks to be compared and ranked. The risk policy specifies the following broad treatment strategy for the level of risks:

Table 6-11: Risk Evaluation and Treatment Strategy Summary

Risk Severity	Treatment Strategy
Low Risk	Manage by routine procedures
Medium Risk	Management responsibility must be specified, and risk control annually reviewed
High Risk	Treatment options must be reviewed, and additional action taken to manage risk
Extreme Risk	Immediate action required to reduce risk

## Manage Risks

Once the risks have been assessed and rated, along with the management option, they are compiled in a Risk Management Register.

The Risk Register for the roading and transport network is included in **Appendix E**. This identifies individual risk, description of the risk, the gross and net risk, current mitigation strategy, defines responsibility and management options.

## Monitor and Review

An process is to be developed to ensure that risk management is actioned, monitored, reported on and reviewed regularly. It is important to identify and constantly review the following:

- The nominated person responsible for ensuring that risks are managed and improvements carried out in accordance with the programme.
- The best practices that should ideally be carried out to manage risks to an acceptable level.
- The date of entries and revisions, target date for actions to be taken and actual task completion dates.

Most of the time, the risks identified will remain the same and reviews will occur in the context of these risks. However, it will be important to recognise when a new risk arises, or an existing risk may change in nature. In the latter case, the Initial risk also needs to be re-evaluated.

## 6.7 Key Improvement initiatives

Key improvement initiatives relating to the Risk Management include the following:

Table 6-12: Key Risk Management Improvement Initiatives

Section References	Improvement action	Priority	Proposed Completion date	Owner and Key Staff
Section 6 Risk Management				
6.1	Analyse effects of changes to key assumptions (from 2015 Peer review) (Section 8, Financial Summary)	Medium	2026	APE

# Transportation Activity Management Plan 2024 Life Cycle Management Plan

June 2024


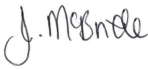



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## 7 Life Cycle Management Plan

### 7.1 Overview

Life Cycle Management Plans focus on options and strategies for managing assets, or components of assets, throughout their life, taking into consideration all relevant economic and physical consequences from initial planning through to disposal.

This section of the Activity Management Plan describes the life cycle management plans for the following key asset groups:

- Road Carriageways
- Bridges and Road Structures
- Footpaths and Cycleways
- Road Drainage
- Streetlights
- Traffic Services
- Public Transport Infrastructure
- Parking



The lifecycle management plans outline for each asset:

- The purpose of each asset group
- The key issues related to managing and using those assets
- The background data for each asset group including:
  - Physical Parameters
  - Asset Capacity/ Performance
  - Asset Condition
  - Asset Valuations
  - Historical Data

The management tactics to achieve the level of service, based on 'Optimised Decision Making' principles (ODM) include:

- Routine Operations and Maintenance Plan
- Renewal/ Replacement Plan
- Creation/Acquisition/Augmentation Plan
- Non-physical associated work (education, enforcement)

An important modification to the Activity Management Planning Process has been the incorporation of both the Business Case approach and the One Network Road Classification (ONRC), and now the One Network Framework (ONF).

The Business Case Approach is a philosophy used to guide planning, investment and project development processes. It is a principles-based approach that aims to clearly link a strategy to outcomes and works off the premise that problems and their consequences should be thoroughly defined and understood before solutions are considered. This approach ensures a shared view of problems and benefits early in the transport planning process giving wider scope to ensuring the best solutions are used, not that an existing solution is 'shoe-horned' to fit a problem.<sup>1</sup>

Reiterated throughout this document are the Problem Statements/Issues that have been considered most relevant to Waimakariri District Council at a strategic level taking into consideration local, regional and national needs, and the Benefits that could be achieved by introducing remediation, mitigation or elimination strategies, these provide a framework to the Why for the work we do. The Life Cycle Management Plan seeks to align the Problems and Solutions with the assets and programmes, by focusing not only on the basic philosophy of how to get best possible value for money in an asset's life, but also to ensuring those assets contribute to the overarching needs of the district.

**Waimakariri's key problem statements for the 24-27 NLTP are:**

- *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- *Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life- changing impacts.*
- *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.*
- *Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.*

---

<sup>1</sup> <https://www.nzta.govt.nz/planning-and-investment/planning/planning-process/business-case-approach/>

## One Network Road Classification

The One Network Road Classification (ONRC) was developed as a means by which local government and the Transport Agency could plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country.

It involved categorising roads based on the functions they perform, based primarily on traffic volumes. However, it was found this classification was too simplistic and did not allow for the primary use of the roading network with regards to land use. For example, a main street in the centre of a city or town may have low motor vehicle use because it has been pedestrianised but has a high importance due to its location and land use. This led to the development of a more land-use based classification.

## One Network Framework (ONF)

The successor to the ONRC is the ONF. Councils are now moving towards integrating the One Network Framework into their Activity Management Plans, and their general planning processes. This work is being introduced in the preparation period for this AMP. The new hierarchy still features traffic volume as part of the planning and decision making, but now incorporates Place classifications, for example Civic Spaces, Urban Connectors, Rural Roads, Rural Connectors, and others.

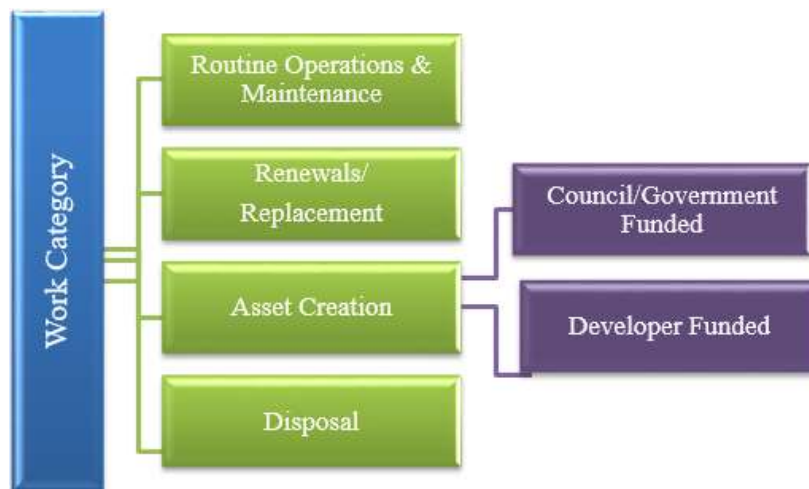
This hierarchy will require a different look at assets and how they relate in the network. This will provide consideration of the different customers and how all their needs can be catered for appropriately.

## Roading and Transport Work Categories

The Local Government Act 2002 requires that the Activity/Asset Management Plan (AMP) details all asset management activities undertaken to meet the community outcomes.

This AMP incorporates the lifecycle of the roading and transport asset activities as shown in Figure 7-1.

Figure 7-1 Asset Work Category



## **Programme and corridor coordination**

Road Controlling Authorities are not the only bodies who work within the road corridor. Other utilities, such as power companies and telecommunication companies, also utilise the corridor. Providing an interface ensures assets are maintained as best as possible and road users suffer the least possible disruption. The Council holds regular liaison meetings with other utility service providers, both in-house and external to co-ordinate planned works in terms of the National Code of Practice for Utilities Access to the Transport Corridors. Information about proposed projects is circulated prior to finalising future works programmes to determine what timing needs to be changed. A project is underway to post programmes on the Council GIS map to allow real time spatial planning.

## **State Highway interface**

Council's roading and transport network interacts with Waka Kotahi assets through SH 1 and SH71. The Council manages the street cleaning, street lighting power, maintenance and renewal of footpath and kerb and channel on behalf of Waka Kotahi. Council recognises that highway traffic can have a significant impact on the efficient and safe travel on adjoining roads, and vice versa, and has been working with Waka Kotahi through the following programmes:

- *SH 1 Christchurch Northern Corridor Improvements.*
- *SH 1 Saltwater Creek to Cam River Safety improvements.*
- *SH 71 Safety Improvements.*
- *SH 1 Woodend Bypass.*

Changes in government have meant however that the Saltwater Creek to Cam River and Speed Infrastructure safety improvements are on hold, and likely to not go ahead, while the Woodend Bypass has been endorsed by the Government and brought into the coming ten-year period, however details are not yet available on the timing of this.

## **Data Confidence and reliability**

Table 6-3 shows the confidence framework NAMS (IIMM) uses to determine the confidence in the transport asset data. Work is constantly underway to improve quality of data where this is feasible, useful, and/or economically worthwhile (refer Table 1.2).

The in-house Asset Information Team, in addition to inputting new assets, have taken on two additional tasks:

- Reviewing and updating older data as time allows
- Quality auditing of data entered by contractors.

In the past there has been considerable use of Pocket RAMM by the contractor to enter data. There is a move towards introducing an intermediate stage where all data is held when supplied by the contractor, checked, corrected as required and uploaded into RAMM. This is planned to allow for additional checking and confidence for new data. In time Pocket RAMM itself will be superseded by simply taking RAMM out into the field.

Table 7-1 Confidence

Confidence Grade	General Meaning
A	Highly Reliable: Data based on sound records, procedure, investigations and analysis which is properly documented and recognised as the best method of assessment.
B	Reliable: Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings.
C	Uncertain: Data based on sound records, procedures, investigation and analysis which is incomplete or unsupported, or extrapolation from limited sample for which grade A or B data is available.
D	Very Uncertain: Data based on unconfirmed verbal report and/or cursory inspection and analysis.

Table 7-2: Rating

Asset Type	Rating	
Formation	B	Only updates will be as new roads are built, or where dig-outs occur
Sealed Pavement Surface	A	Due to pavement renewals, minimal assets remain which have not been replaced and updated, other than on the more remote low volume roads.
Sealed Pavement Layers	A	Due to pavement renewals, minimal assets remain which have not been replaced and updated, other than on the more remote low volume roads.
Unsealed Pavements	B	Some updating required of widths and start/finish points, as these tend to vary due to grading practices and wear and tear, however more detailed information about renewal quantities is being added to the database, to enable easier prediction of renewal requirements.



Bridges and Bridge Culverts	B	Estimates of bridge ages has been carried out where these were not known. Some field checking of basic asset data such as location, length and width is also required, but occurring slowly.
Minor Structures	B	This is relatively up to date, however will need review at end of financial year to ensure new assets have all been included
Islands	B	Still requires checking, however there is confidence in islands added in last five years
Drainage (Culverts, Sumps and Subsoil Drains)	B	A desktop review of sumps has been carried out, and data on culverts and sumps has been updated for quantity and size, and assets are being condition rated.
Drainage (Under channel pipes)	A	Data captured through 3 Waters
Surface Water Channels	A	Quantities and locations complete, along with condition.
Footpath & Cycleway	A	Quantities and locations complete, along with condition.
Street Lights	B	Data captured by the Street Light Contractor and checked by Project Manager.
Traffic Facilities – Tactile Indicators	B	No review carried out prior to this review. Good capture of new assets however condition rating is to be carried out in the next 12 months.
Traffic Services- Road marking	B	Frequency of repainting means this does not incur depreciation therefore not needed for the valuation. Markings have recently been added into RAMM to assist with contract management
Traffic Services- Signs	C	Updated as replaced.
Traffic Services- other	B	Updated as replaced.
Railings	C	Best practice now separates these from Bridges into Railing table; this still needs to be carried out.

In addition, significant effort has gone into improving data quality by providing measurements against asset data reliability and accuracy, via the ONRC (now Insights) Data checking tool. As the Insights team roll out more tools for reviewing data reliability, Council asset staff implement additional error checks. Whilst there are still gaps in the data, the processes to update and improve data have enabled WDC to have more confidence in the RAMM database.

### **Policies, standards and guidelines**

The Council standards and specifications for maintenance and operational activities reflect the most appropriate current technologies, national standards, and legislative requirements. All work performed and materials used should be in accordance with the latest edition of the Waimakariri District Plan and the Council's Engineering Code of Practice, unless specifically instructed otherwise.

These in turn reference other documents including those produced by Austroads, Waka Kotahi the New Zealand Transport Agency and Standards New Zealand. The Engineering Code of Practice contains a full list of appropriate reference documents and standards.

The maintenance, repair and replacement of proprietary equipment is to be carried out in accordance with the manufacturer's recommendations.

### **Staffing**

Until recently Council had an extremely experienced roading team with an extensive knowledge of the district. There have been a number of changes to this since the last AMP and the majority of the team has joined this department in the last three years. There has been a strong emphasis on team fit and Council is confident that the new team is motivated and very capable of lifting Council performance further, through better performance monitoring and innovations.

In addition, the Maintenance contractor has a number of very experienced and senior staff with vast knowledge of the district and will pass this on to new Council staff. It is expected however that there will be a greater requirement for technology and external resources to assist in the transition.

### **Funding for the 2024-2027 Programme**

The period since the last AMP has seen a massive increase in inflation which will have a significant impact on the programme. Waka Kotahi is already indicating there may be some constraints in funding, particularly capital projects.

Overall, Council has provided funding for unsubsidised works where it sees these as being critical to providing and caring for appropriate infrastructure in order to meet Community Outcomes. This assistance reaches across the range of activities, from maintenance to new capital. It is likely that this will need to continue to be the case for the 24-27 programme.

## Key Improvement Initiatives

Key improvement initiatives relating to the Life Cycle Management Plan include the following:

Table 7-3: Key Improvement Initiatives

Section References	Improvement action	Priority	Proposed Completion date	Owner and Key Staff	Progress
7.1	Prepare Heavy Transport strategy for District	Medium	June 2023	APE, TE, R&TM	Incorporated into ITS
7.2	Undertake a sensitivity analysis to consider the impact of differing levels of growth on the funding requirements.	Medium	June 2023	APE, TE, R&TM, Planners, Accountant	Council has decided to only consider the high growth scenario
7.3	Develop systems and implement processes for collecting data for relevant ONRC performance measures not currently captured.	Medium	June 2021	APE, RE	Will potentially be superseded by ONF,.
7.4	Capital renewal and development project planning – develop plans and processes to utilise spatial analysis to improve the analysis of maintenance, construction date, condition and performance data for 1. identification and prioritisation of renewals and development projects, 2. optimisation of maintenance programmes (modified from 2015 Peer review)	High	June 22	APE, GIS Team	User Defined Tables currently being set up to allow spatial analysis of District. JunoViewer will allow view of defects and programmes in a continuous, integrated manner. This will also assist with optimising programmes through different scenarios

## 7.2 The Asset Lifecycle

### Operations

- Operational activity is work or expenditure that is necessary to provide or keep the asset functioning, but has no effect on asset condition, such as:
- Power costs for streetlights
- AM systems and database operations and maintenance, e.g.: RAMM
- Road opening procedures and utility liaison
- Street cleaning
- Vegetation control
- Customer service response
- Council overhead costs that have not been specifically allocated to activities.

### Maintenance

Routine Maintenance is the day-to-day work required to keep assets operating at required service levels, and falls into two broad categories:

- **Planned Maintenance:** Inspection and maintenance works planned to prevent asset failure.
- **Unplanned Maintenance:** Action to correct asset malfunctions and failures on an as-required basis (e.g. urgent repairs).

The Council sets its funding for roading and transport operations and maintenance three yearly through its Long Term Plan (LTP) process, and reviews it annually, between LTPs, with the Annual Plan. 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. Funding assistance from central Government is subject to Waka Kotahi approval through the three-year Land Transport Programme.

### Renewals/ Replacement

Renewal works occur when it becomes too expensive to maintain the asset or where the Levels of Service can no longer be met through maintenance,

These works include:

- The renewal and rehabilitation of existing assets to their original size, condition, and capacity,
- The replacement of the entire asset with the equivalent size or capacity,
- The replacement component of the capital works which restores the asset to original size and capacity.
- Renewal expenditure includes the following:

- Resurfacing of roads –chip seals and thin asphaltic surfacing
- Rehabilitation of roads – area wide pavement treatment, replacement of pavement structure and surfacing, and smoothing of roads
- Replacement of footpaths and kerb and channel
- Replacement of bridges, culverts, retaining walls, and cattle stops, replacement of traffic signs, streetlights, and bus shelters.

The main factor used in determining when to replace road and transport assets in Waimakariri is asset condition subject to the needs and priorities based on agreed levels of service unless the current LOS is seriously inadequate.

### **Asset Creation/Acquisition/Augmentation**

These are works that extend or upgrade the network or which are required to cater for new development and growth, or to achieve an improved LOS, and may include:

- Works which create an asset that did not previously exist in any shape or form, or
- Works which improve an asset beyond its original size or capacity

Asset creation works fall into separate categories as follows:

- 1. Council funded: works funded and constructed by WDC, some of which may attract financial assistance from the New Zealand Transport Agency (Waka Kotahi). Council contribution is usually funded through general rates although some work, such as sealing unsealed roads, may also require funding from local residents.*
- 2. Developer funded: works funded by developers as part of subdivision or other development or by way of contributions that are then vested in Council.*

### **Disposal**

Disposal is the retirement or sale of assets, whether surplus, or superseded by new or improved systems. Assets may become surplus to requirements for any of the following reasons:

- Underutilisation.
- 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.).

The significant disposals that have occurred to date have been associated with bridges and pavements bypassed where road realignments have occurred.

## **Supporting Services**

While managing the asset condition is a critical part of the lifecycle, asset consumption can often be impacted by how the asset is used. Thus, education of road users can be a valuable adjunct to the actual physical management. This can include Travel Demand Management, speed modification and other safety initiatives.

## **Optimised Decision Making (ODM) in Lifecycle Management**

The NAMS Group's Optimised Decision-Making Guidelines (published in November 2004) provides the framework for decision making for the maintenance, renewal and development of new assets, based on economic principles and multi-criteria objectives reflecting community well-being. It represents best practice, advanced asset management.

The Optimised Decision Making (ODM) process involves the consideration of different options for solving a particular problem, allowing for different trade-offs and financial outcomes.

This framework from the Guidelines, shown Figure 7-2 below, can be applied to single project or network level decision making processes. The process is closely linked to community outcomes and is particularly important for significant decisions.

Council regularly updates its roading procurement strategy to ensure that procurement planning reflects the Waimakariri District Council's corporate aims and priorities and is consistent with Council strategies and policies and Waka Kotahi funding and procurement rules. This has been reviewed against the Smart Buyer Self-Assessment. The last review was in 2022 and will be due for updating in 2025.

The primary use in Waimakariri District of Optimised Decision Making is the utilisation of the Net Present Value process for decision making for the timing of pavement renewals, as per NZTA requirements. ODM is also carried out for these new works. However, the general principle of deciding importance of work to be carried out, the timing, and the best means of doing so, are considered in all roading work carried out by Council.

It should be noted that while ODM provides an indication of the best timing for a project, in real life all programmes are a combination of competing needs. Within a transport budget are multiple budgets for multiple assets, and the criticality of one may outweigh the needs of another. Also requiring consideration in all of this is willingness or ability to pay. The overall budget available needs to be kept in mind at all times and although Asset Management Planning presents the ideal, at times this will not be affordable, and compromises may need to be made. This AMP will present ideal and recommended treatment plans and renewals recommendations, but these will be balanced, and the programme put forward is almost never that delivered.

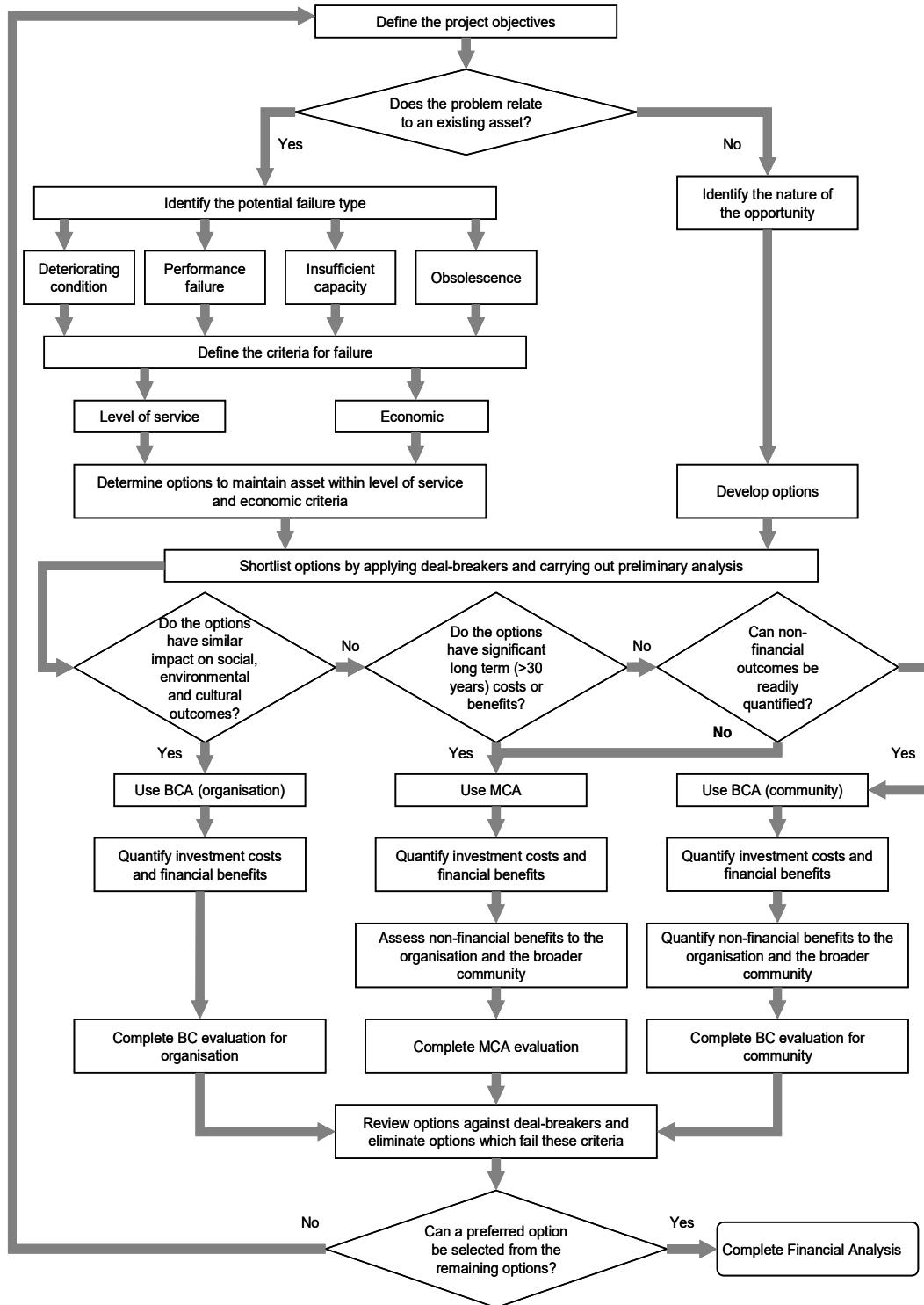
## **Prioritisation**

As part of this ODM, prioritisation processes are being developed for each of the programmes Council delivers. For road resurfacing and rehabilitation, programming through JunoViewer (previously DTIMs), with validation, provides guidance as to which roads require renewal, although decisions as to how much of the programme is affordable is decided as much by external factors such as degree of available funding. However, under JunoViewer, the weighting can be adjusted by Council, and this requires further investigation.

For many of the other assets, safety is the key priority. For example, the bridge renewals carried out over the last two years were prioritised because they were at point of failure, and other considerations such as HPMV needs, traffic volume/hierarchy, length of alternative routes, while also relevant, were not needed in these prioritisations but may well need to be employed for new renewals. Currently renewals of footpaths are currently decided by condition, but other aspects such as location (e.g. in the vicinity of schools or retirement homes), may influence the decision process.

For other assets, prioritisation processes have been developed to differing degrees and these will be further documented, refined and utilised in next programmes, with exceptions noted and justified.

Figure 7-2 ODM Process





## Sustainability

Council's most important decisions regarding sustainability used to be considering how sustainable alternatives to traditional processes could be incorporated in Council projects, where possible, and economically viable. Examples of this include:

- Crushed concrete being used in the base of a new road rather than carting it away and dumping, re-milling road surfaces and stabilising with cement rather than removing and replacing; and utilising swales to help filter ground water. Where feasible, sumps are fitted with filter bags to capture rubbish such as plastic and prevent it entering the ecosystem.
- Utilising river gravels for high end use products such as concrete products and sealing chip, and the use of lower quality products for road aggregate when using stabilisation methods, alternative pavement designs and a mix of aggregates in the pavements.
- Monitoring of maintenance chip sealing designs to ensure the optimal size and life is chosen for long term cost and least use of the high-quality product.

However, in recent times sustainability has taken on a new and much wider meaning.

The increased awareness and urgency of providing solutions to the problem of climate change, and the high priority placed on the issue by Government, have meant that it is a major consideration in planning for the future of the network.

Multi-modal transport and travel demand management initiatives are being progressed in conjunction with the Greater Christchurch Partners, with the intention of promoting behaviour change which will help alleviate pressure on the network, reduce emissions and fossil fuel usage, and reduce the quantity of new road building required. Better utilisation of infrastructure is being introduced through various initiatives.

Many new subdivisions (e.g. Silverstream, Beach Grove and Ravenswood) are achieving a much high housing density (as low as 350m<sup>2</sup> for stand-alone homes), and more apartment style housing. Initially this was in response to a need for lower cost sections during the Christchurch earthquake rebuild, however "Our Space" identified a need to evaluate and consider whether the minimum housing densities in the Canterbury Regional Policy Statement were appropriate and whether changes were required. "Our Space" states that it is expected that new urban housing in Rangiora will achieve a minimum net density of 12hh/ha, which does result in less infrastructure required per head of population, and a resulting environment which is more attractive for walking and cycling, and more opportunity for public transport.

As part of any funding application process for Waka Kotahi for new infrastructure, consideration must be given to all possible alternatives including non-asset demand solutions. For example, at Skew Bridge, where the asset is no longer considered fit for purpose from a demand and safety perspective, but still has an estimated 20 year's useful life remaining, the interim solution installed to improve safety is electronic warning signs. While still assets, the signs are considerably less costly than a new bridge and the main driver is to change behaviour.

## Physical Works and Professional Service Delivery

### Physical Works

All physical maintenance activities in the district are carried out by external contractors. The Council reached this decision after considering the options for the delivery of these services as required by the Transit NZ Act 1989 (since renamed as the Government Roadway Powers Act 1989). Despite the removal of this requirement (to consider tendering), the Council believes that the current arrangement provides the best solution for maintaining the roading network. The Council does not employ any physical works maintenance staff, either directly or through a CCO<sup>2</sup>, to carry out any road maintenance activities.

The current District Road Network Maintenance Contract was awarded to Sicon Ltd (now Corde) and commenced on 1 November 2020. This contract is managed on a network management basis under a term service contract, using a design and build delivery model and using NEC3 conditions of contract with a maximum five-year term. It is managed in a collaborative working environment by Council in-house staff and the Contractor. Supplier selection was by the Price Quality method.

The District Road and Drainage Maintenance contract includes all routine maintenance, and some renewals work for roads, bridges, footpaths, signs, street cleaning, road grading and remetalling, roadside mowing, emergency work etc., with the addition of road marking and resealing. Also included are the land drainage functions of the Council business. Including this work helps to ensure the contractor has a total network management focus leading to more responsive, better decision making and greater efficiency, resulting in lower costs.

The Maintenance Contractor has recently completed their Maintenance Management intervention Strategy, in conjunction with Council. This helps to document existing and improved construction processes, and seeks to introduce greater levels of efficiency, innovation, and consistency to the management of the network. This document will assist not only in 'raising the game' but also in providing much more data for monitoring and reporting on how the network is performing, and where work is best targeted.

This contract also includes footpath resurfacing, road resurfacing, and routine pavement rehabilitation on a design and build basis, excluding those rehabilitation projects that require more major associated work involving specific design, which are separately designed and tendered. It does not otherwise include new capital works projects, except for some minor improvement works. This type of work is more likely to be large scale, for example the Rangiora Eastern Route.

Street light maintenance and renewal work is managed on a network management basis under a term service maintenance contract combined with NZ Transport Agency (Waka Kotahi) street

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<sup>2</sup> Council Controlled Organisation. These were called LATEs (Local Authority Trading Enterprises) under previous legislation.

lighting on its North Canterbury Network and with Hurunui District Council, using a design and build delivery model with a maximum five year term. It is managed in a collaborative working environment by Council in-house staff with Waka Kotahi and Hurunui District Council representatives. Supplier selection is by the price quality method. This contract was competitively tendered in 2019 and awarded to Power Jointing Ltd. The contract cost increased from \$801,058 for 3 years to \$1,696,555 in 2019.

### **Professional Service Delivery**

Professional services for routine network management, programme management, routine investigations and reporting, asset management, project management and for delivering community road safety programmes are carried out in-house.

Specialist professional services such as bridge inspections and structural advice, road safety audits and advice, transport planning and traffic assessments, traffic counting, road condition rating and surveys, are provided by external consultants. A staged delivery model is used for external consultants under a price-quality based supplier selection process or by direct appointment for lower value appointments.

The Professional Services Contract was awarded in 2020 to WSP for a 3+1+1 period.

### **Routine Operations and Maintenance**

The general operations and maintenance strategies applied to the roading network include:

#### **Operations Plan**

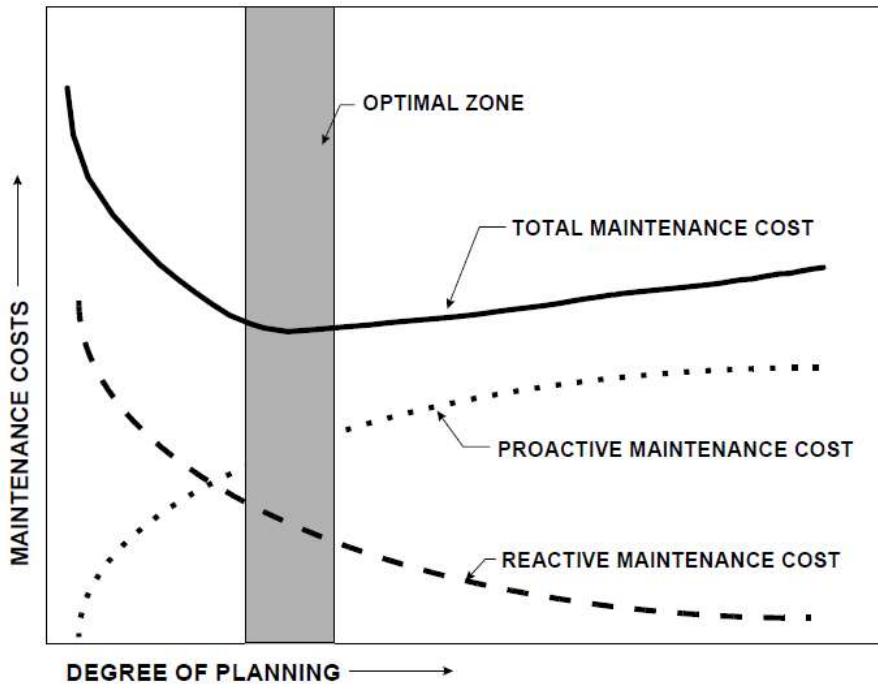
- Council manages the assets in a manner that minimises the long term overall total cost. Scheduled inspections are undertaken as justified by the consequences of failure on levels of service, costs, safety, i.e. the frequency of inspection is proportional to the importance in the hierarchy. Best value has been obtained by using the process as outlined in the procurement strategy and ensured by using competitively priced contract structures and NEC term service contracts, however Council is always open to varying this approach if this produces a better outcome.
- Contractors are required to use RAMM to ensure more efficient management of workflow, claiming, auditing, and asset data updating.
- Asset monitoring processes include RAMM rating of pavements, routine bridge inspections and periodic performance and condition assessments of specific assets.
- Customer enquiries and complaints are recorded on the “Customer Services” database, summarising data on the date, time, details, responsibility and action taken.

#### **Maintenance Plan**

The Council utilises two maintenance approaches / strategies: planned maintenance and unplanned maintenance. A key element of asset management planning is determining the

most cost-effective mix of planned and unplanned maintenance in order to minimise the total maintenance cost as illustrated in Figure 7-3. This is generally more proactive on arterial and primary collector (higher risk and higher cost) roads, and more reactive on access and low volume roads.

Figure 7-3: Balancing Proactive and Reactive Maintenance



### Planned Maintenance

The programme of planned asset maintenance is undertaken as necessary to deliver the required levels of service, minimise the risk of failure, and ensure safety at an appropriate level for the relevant classification, i.e. a higher level of service is required for roads which are more heavily trafficked and which provide the greatest support for the GPS, regional, and key local objectives.

Once a defect has been identified, remedial work is programmed before the risk and consequence of failure become unacceptable, with priority given to defects which:

- Compromise safety.
- Are likely to cause premature failure prior to the next inspection.
- Cause severe economic deterioration of an asset.
- Maximise value to the district, i.e. utilise the hierarchy in the decision making when prioritising against importance, as above.

## **Unplanned Maintenance**

The planning of non-critical maintenance (i.e., where risks associated with failure to perform are low) is the responsibility of the network maintenance contractors, who optimise the work activity required to meet specified minimum service standards. Such works include pothole repairs, replacement of missing signs and streetlight outages due to crashes.

For unplanned maintenance a suitable level of preparedness is maintained allowing prompt and effective response to emergencies and asset failures by ensuring the availability of suitably trained and equipped staff and service delivery contractors. The initial response to asset failures is to restore service as quickly as possible using the most economic method available. Temporary repairs will only be made if major repairs or renewals are required and cannot be carried out immediately.

The Council's maintenance contractors are required to:

- Maintain, at all times, an effective means of communication with their staff in the field.
- Act on notices from the Council's Service Manager.
- Receive and investigate complaints and service requests from the public and act on them where appropriate.
- Maintain a suitable level of preparedness for prompt and effective response to all reasonable requests.
- Initially respond to asset failures in a manner that will restore minimum acceptable levels of safety and environmental protection as quickly as possible and by the most economic method available. Temporary repairs are acceptable in these circumstances if major repairs or renewals are required to effect permanent restoration.
- Unplanned maintenance works are programmed in accordance with the following priorities:
  - Safety of road users or adjacent property owners is compromised.
  - Safety of road users or adjacent property owners may be compromised.
  - The structure or integrity of the road or road-component is or is likely to be compromised.

## **Maintenance Inspections/Monitoring**

The Council's operational maintenance strategy includes monitoring the condition and performance of assets, investigating any system deficiencies outside the parameters of the target level of service, and identifying the work required to correct defects. The Contractor then is responsible for putting processes in place to avoid repetition where possible.

The Council undertakes the following monitoring to determine trends and monitor performance:

- RAMM rating and roughness surveys of all sealed roads every two years starting in 2013 (previously RAMM rating and roughness survey of 100% of the strategic, arterial, collector routes and 50% of local sealed routes).
- One day and one night of external safety audit concentrating on strategic/arterial routes and surrounding areas, all arterial and primary collector roads being inspected annually, and 30% of secondary collector and low volume routes.
- Annual bridge and road structures inspection with inspection frequencies set by type of structure and condition at last inspection. All bridges are inspected at least every 3 years, with timber bridges and bridges identified as being at risk inspected annually.

It should be noted that Waka Kotahi is moving towards a nationally consistent condition rating framework which will govern what information is collected when, how often, and how. This is expected to be in place by mid-2024.

The Road Maintenance Contract sets out the inspection frequency for each asset type as outlined in the contract LOS Appendix C. This currently incorporates the One Network Road Classification categories but some consideration will need to be given to how to transition this to the One Network Framework.

In addition to the above, The New Zealand Transport Agency (Waka Kotahi) carries out audits to review the performance of Road Controlling Authorities in all aspects of their work on the road networks. In July 2011 Waka Kotahi carried out a Road Infrastructure Safety Assessment (RISA) for a sample of the District's rural sealed roads, and an Investment Audit in 2013. The latest Technical Audit was carried out in March 2021. Council has also carried out High Speed Data collection previously on key arterial roads. This programme was to be reviewed this year with an aim to increasing the quantity of data collected. Council is also moving to make use of JunoViewer, a RAMM based platform which will allow better real-time decision-making and more personalised renewals modelling.

## **Renewal / Replacement Plan**

Renewals are programmed with the objective of achieving:

- A net benefit to the national and/or local economy from the renewals.
- The lowest life cycle cost for the asset, i.e. it is uneconomic to continue repairing the asset through maintenance interventions.
- An affordable medium term cash flow.
- Other savings by co-ordinating renewal works with other planned works within the road reserve or adjacent to it.
- Reduced risk: The risk of failure and associated financial and social impact or potential failure can justify replacement or renewal of an asset, for example, the effect or impact

and extent of discontinuation of a service, the probable extent of property damage, an unacceptable increased risk of crashes or other health risk.

Generally, road renewal projects are subject to Net Present Value calculations to determine whether it is cheaper to replace /renew an asset (e.g. resealing, bridge renewal) or simply carry on with day to day maintenance.

### **Creation/Acquisition/Augmentation Plan**

New capital projects are identified by the Council as a response to growth and demand, to better meet customer needs, or to achieve target LOS. The major projects and roading assets groups are considered and prioritised through the development of the Council's Long Term Plan (LTP). The projects may be partially funded by external funding sources such as the NZ Transport Agency (Waka Kotahi), or through other third party contributions, such as from developers. In some cases where Council has been unable to source third party funding it has funded entirely from ratepayers, for example minor safety works such as Hazard Removal, (tombstone bridge ends, trees) or new footpaths

### **New / Upgraded Assets for Development Projects**

When new developments such as subdivisions are constructed, there are two types of road works that may be required:

- Construction of assets inside the subdivision or development.
- Upgrading of assets outside the subdivision to service the new demand.
- Construction of new assets within subdivisions is generally funded by developers and must be constructed in accordance with the Council's subdivision standards as set out in the Engineering Code of Practice. On completion, provided the roads and associated assets comply with the subdivision standards, they are vested in the Council.

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

The upgrading of assets external to the new development, required to service the new demand, is an asset creation issue. Because development is developer driven, the Council is limited in what measures it can take to support any development. The Local Government Act 2002 has introduced a mechanism for funding such growth costs by way of development contributions.

**Section 7: Financial Summary** of this plan explains in more details the type of contributions that are used.

Figure 7-4: History of Point asset creation (Council and Vested)

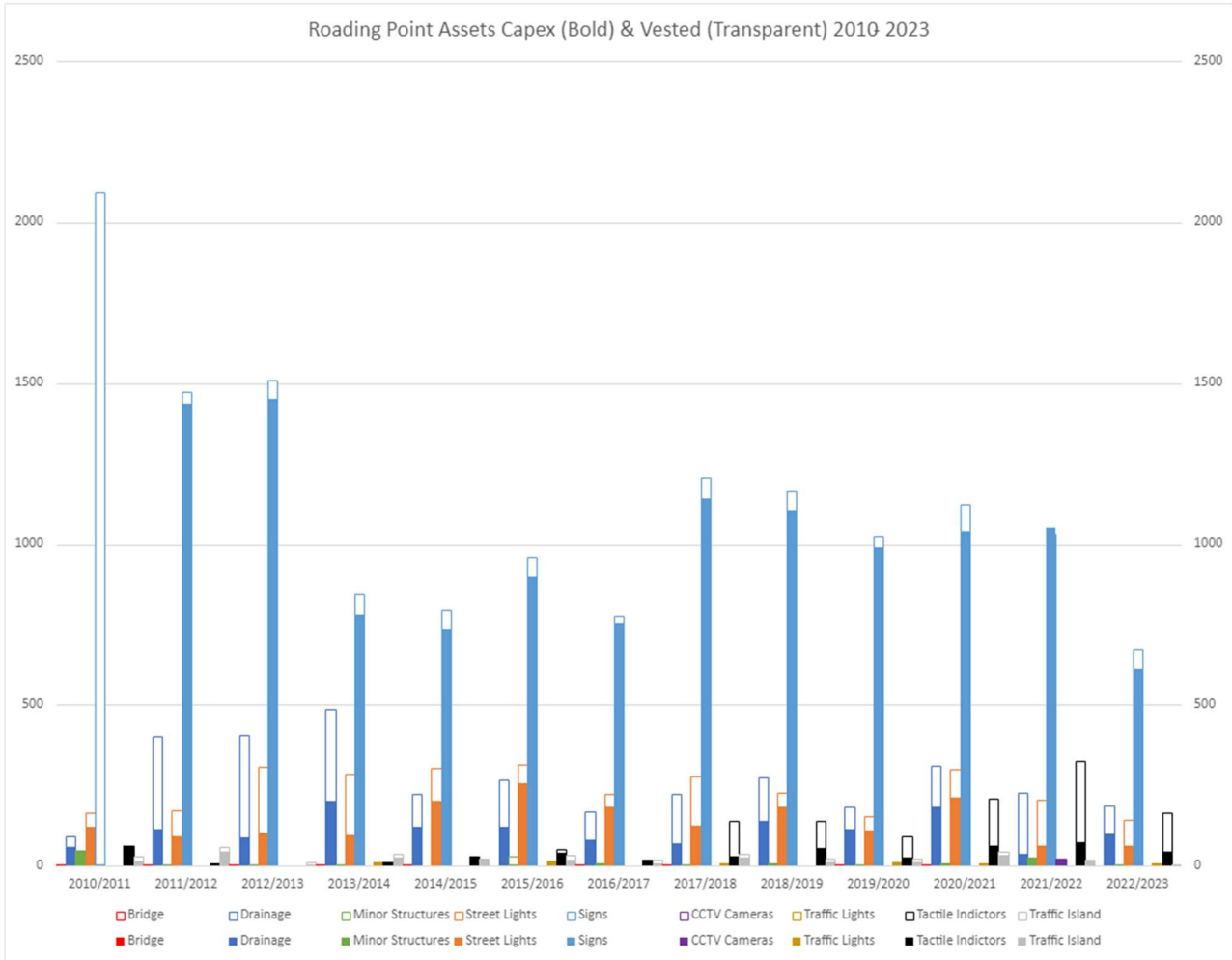
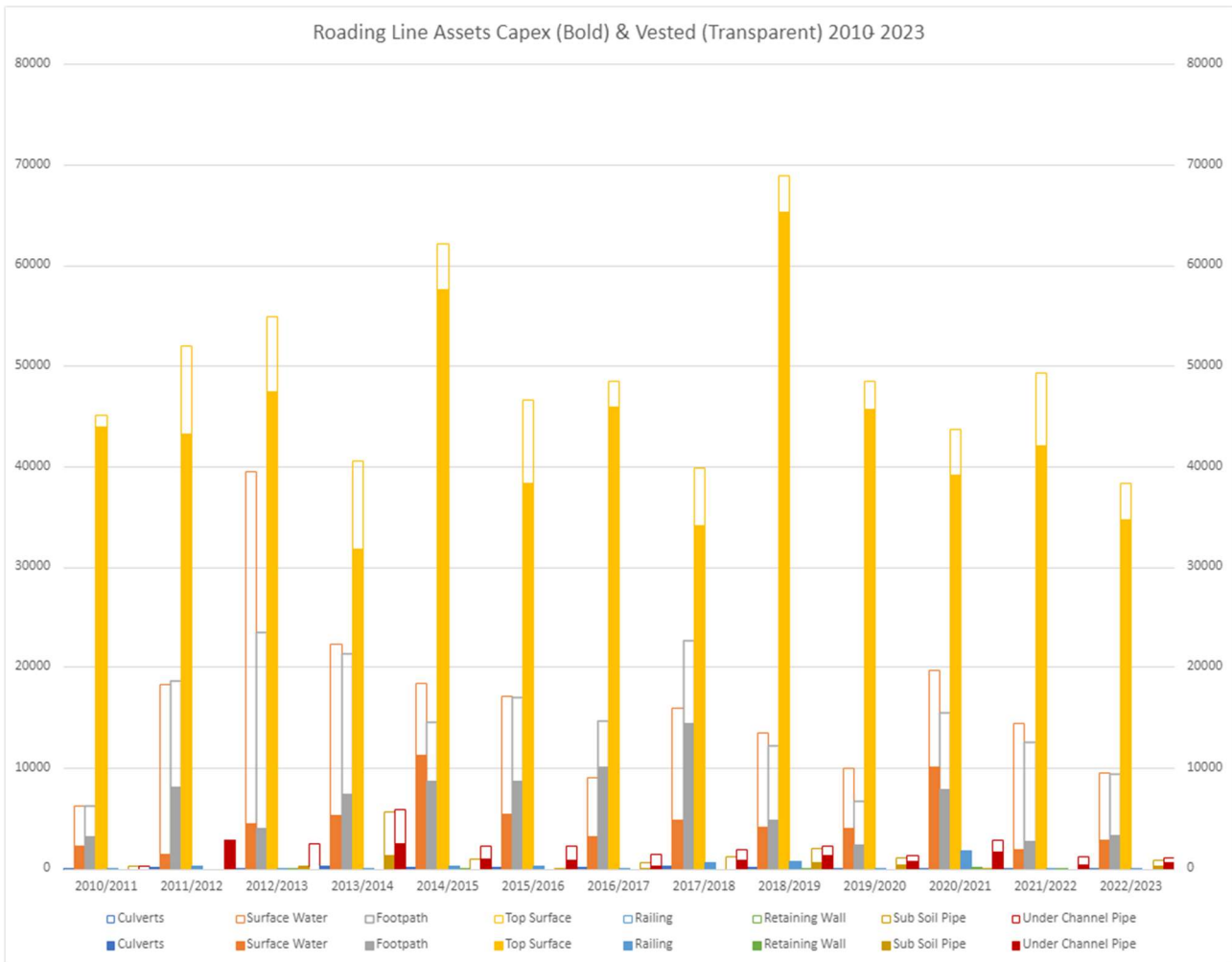




Figure 7-5: History of linear asset creation (Council and Vested)



### Low Cost/Low Risk Projects

- Low Cost/Low Risk projects (formally Minor Improvements) are described under NZ Transport Agency (Waka Kotahi) definitions as capital projects up to a maximum value of \$2,000,000. Examples of qualifying activities include:
  - isolated geometric road and intersection improvements.
  - roadside hazard removal.
  - traffic calming measures.
  - lighting improvements for safety.
  - installation of new traffic signs and pavement markings, or upgrading these to the current standard.
  - provision of guard-railing.

- sight benching to improve visibility.
- new bridges.
- stock access structures.
- walking and cycling facilities, and
- minor engineering works associated with community programmes.

Projects completed with co-funding during this period included (amongst others)

- Coldstream Rd Improvements at Sports Hub.
- Rangiora Woodend Rd Improvements.
- Ivory / Queen widening.
- Southbrook / Coronation / Torlesse St traffic lights
- Fernside / Flaxton Roundabout
- Kaiapoi to Belfast Cycleway

For the 21-24 AMP period, these were funded in different sub-categories. These included:

- Road to Zero
- Walking and Cycling
- Local Road Improvements
- Passenger Transport Infrastructure

For the 2024-27 NLTP, the Road to Zero activity class will be incorporated into Local Road Improvements activity class. The available funds for Road to Zero projects are expected to be less than for the 2021-24 NLTP.

### **Capital Investment Strategies**

Capital projects carried out by the Council are prioritised by considering the total benefits to road users and the land transport system.

Generally, Council will seek Waka Kotahi funding for projects, however where the project does not meet funding criteria, provided the project meets Council objectives, it may consider and choose to carry out the work solely funded by rate payers, such as a number of minor improvement projects which do not qualify as Low Cost Low Risk projects

Table 7-4: Ten Year Capital Projects Proposed Programme for 2024/25 - 3033/34 LTP, lists all Capital projects whether or not they may be co-funded by Waka Kotahi. To qualify for Waka Kotahi financial assistance the capital projects are assessed using the Investment Prioritisation Method, which consists of the three following assessment criteria.

- GPS Alignment - alignment with GPS strategic priority
- Scheduling - criticality or interdependency of the proposed activity or combination of activities with other activities in a programme or package or as part of a network.
- Efficiency - expected return on investment and considers the whole of life costs and benefits through cost-benefit analysis.

There have been occasions when funding is available from other sources, for example the Crown Funding for earthquake recovery, and recently, the Climate Emergency Response Fund. It has been indicated that there will be an increasing focus on seeking alternative funding sources rather than simply relying on NLTP share.

### **Disposal Plan**

When considering disposal options all relevant costs of disposal will be considered, including:

- Evaluation of options
- Consultation / advertising
- Obtaining resource consents
- Professional services, including engineering, planning, legal, and survey.
- Demolition / make safe.
- Site clearing, beautification.

The use of revenue arising from the sale of any assets will be credited to the respective operating account at the time of the asset's disposal.

Table 7-4: Ten Year Capital Projects Proposed Programme for 2024/25 - 3033/34 LTP

Project	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
New Kerb and Channel										
Major Towns	-	-	350,000	-	-	350,000	-	-	350,000	-
New Footpaths and Streetlighting										
New Footpaths Major Towns	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
New Streetlighting Major Towns	50,000	-	50,000	-	-	-	-	-	-	-
Tuahiwi Gritted Footpath Surfacing	100,000	-	-	-	-	-	-	-	-	-
Bridge Reconstruction										
Bridge Renewal & Widening Projects	-	-	-	500,000	-	-	500,000	-	-	500,000
Minor Improvements										
Minor safety - Lighting - LCLR LRI	25,000	25,000	25,000	30,000	30,000	30,000	35,000	35,000	35,000	40,000
Minor safety- Intersection Improvements	120,000	120,000	120,000	130,000	130,000	130,000	140,000	140,000	140,000	150,000
Minor Safety - School Safety Project	50,000	50,000	50,000	60,000	60,000	60,000	70,000	70,000	70,000	80,000
Minor Safety - Speed Treatments	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Minor Safety - Walking & Cycling improvements	100,000	100,000	100,000	110,000	110,000	110,000	120,000	120,000	120,000	130,000
Minor Works - other	50,000	50,000	50,000	60,000	60,000	60,000	70,000	70,000	70,000	80,000
Minor safety - Roadside Hazards Removal	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Minor safety- Delineation upgrades	-	100,000	-	-	100,000	-	-	100,000	-	-
Minor safety - High Risk rural Intersections Treatments - RTZ	200,000	200,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Flood Projects (Tram Rd, Depot Rd & Woodfields Rd) - RESILIENCE	300,000	700,000	-	-	-	-	-	-	-	-
Minor Improvements - Drainage (culverts)	-	-	-	100,000	-	-	100,000	-	-	100,000
Broad Road subsidised LCLR	50,000	-	-	-	-	-	-	-	-	-
School Safety Improvements	550,000	-	-	-	-	-	-	-	-	-
Mafeking Bridge Improvements	50,000	550,000	-	-	-	-	-	-	-	-
Town Centre Upgrades										
Town Centre Upgrades	295,000	-	-	300,000	-	-	300,000	-	-	300,000
Kippenberger Ave - Cenotaph Corner to Warehouse	-	-	-	-	-	-	-	-	-	-
Town Centre to North East	-	-	-	-	-	-	-	-	-	-
Car Parking Provision - Town Centre Parking	-	-	-	-	-	2,250,000	-	-	-	-
North of High St New Road Link	-	-	-	-	-	-	-	-	-	-
North East Subdivision area	-	-	-	-	-	50,000	200,000	-	-	-

Project	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
Streetlight upgrade High St from East Belt to King St	-	100,000	-	-	-	-	-	-	-	-
Streetlight upgrade Williams St Bridge to Cass St (Kaiapoi Town Centre	-	-	-	-	500,000	-	-	-	-	-
Improvements to Hilton/Williams St Pedestrian facilities (Linking Western Precinct to town)	-	-	37,500	250,000	-	-	-	-	-	-
Land - Blake St Extension	-	675,000	-	-	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	-	2,250,000	-	-	-	-	-	-
Keir St Land Purchase	-	-	-	-	-	-	-	-	-	-
Keir St Rd Connection - Rangiora Town Centre Improvements	-	-	-	-	-	-	-	-	-	-
Support for MUBA (Area directly adjacent to KTC) (LoS portion)	12,500	125,000	125,000	-	-	-	-	-	-	-
<b>Land Purchase</b>										
Land Purchase - improved LOS	100,000	-	-	100,000	-	-	100,000	-	-	100,000
Subdivision Contribution Projects - Council Share										
Direct payment to Developers	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608
Design Fees	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861	41,861
Cost of Council Performed Works	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608	418,608
Rangiora Airfield/Prior Rd Upgrade contribution	-	-	-	-	-	-	-	-	-	-
Rangiora Airfield/Prior Rd Upgrade	-	1,012,000	-	-	-	-	-	-	-	-
West Rangiora Route Improvement	-	-	-	-	-	350,000	-	-	-	-
Woodend East ODP	-	-	200,000	-	-	600,000	-	-	1,000,000	1,000,000
Gladstone Rd Rural section Upgrade	-	-	-	-	-	-	-	-	-	-
Kaiapoi Pa Rd Upgrade	-	-	-	-	-	-	-	-	-	-
<b>ODP Development Contribution Funded Projects</b>										
East Woodend ODP - north south road & widening existing	-	-	-	300,000	300,000	300,000	300,000	300,000	-	-
West Rangiora Growth ODP	0	0	0	684,888	228,296	456,592	228,296	228,296	228,296	228,296
Kaiapoi North Improvements - Smith St/Williams St, Smith St/Ranfurly St and other intersection improvements	-	-	-	-	-	-	-	600,000	-	-
Support for MUBA (Area directly adjacent to KTC)	37,500	375,000	375,000	-	-	-	-	-	-	-
North/South Collector Road	-	1,500,000	-	-	-	-	3,000,000	-	-	-
Shared Path (East/West Collector Road)	-	-	-	-	-	-	220,000	-	-	-
<b>TRIP Programme - (used for District Wide Development Contributions calculation)</b>										
New Passenger Transport Infrastructure	125,000	200,000	200,000	125,000	200,000	200,000	125,000	100,000	51,000	51,000
Skew Bridge Replacement	50,000	623,000	-	-	-	-	-	-	-	-
New Eastern Link Road	-	50,000	666,000	-	-	-	-	-	-	-
Minor safety - Roadside Hazards Removal	-	-	-	50,000	666,000	-	-	-	-	-
Lees Valley Willow Walls & culverts	-	-	-	-	50,000	712,000	-	-	-	-
Ashley Gorge Rd / German Rd	-	-	-	-	50,000	712,000	-	-	-	-
Realignment and Safety Improvements Oxford / Tram Road Intersection	350,000	-	-	-	-	-	-	-	-	-
Intersection Safety Improvements Two Chain Road / Tram Road Intersection	-	-	-	-	-	-	50,000	746,000	-	-

Project	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
Town Centre Upgrades	-	-	-	-	-	-	-	-	-	1,210,000
Flood Projects (Tram Rd, Depot Rd & Woodfields Rd) - RESILIENCE	-	-	-	-	100,000	1,400,000	-	-	-	-
Widen culvert on Townsend Rd	-	-	-	-	-	-	-	612,000	-	-
Fernside/Todds Intersection	-	-	-	-	-	-	-	600,000	-	-
Direct Payment to Developers	-	-	-	-	-	-	-	100,000	1,458,000	-
Council Performed Work	414,000	-	-	-	-	-	-	-	-	-
Walking and Cycling Projects	-	50,000	450,000	-	-	-	-	-	-	-
School Safety Improvements	-	-	-	-	-	-	-	-	-	514,000
28 Roundabout installation at Bradleys / McHughes / Tram Road Intersection	-	-	-	-	-	-	-	-	-	562,000
Sub Totals	-	-	-	-	-	-	-	-	-	318,000
Rangiora Airfield/Priors Rd Upgrade contribution	-	-	-	-	-	-	-	-	323,000	-
Marsh Rd / Railway Rd - Intersection	-	-	-	-	-	-	-	-	648,000	-
Fernside/Townsend Intersection	-	-	-	-	-	100,000	1,300,000	-	-	-
Intersection Upgrades Island Road / Greigs Road / Tram Road	50,000	150,000	-	330,000	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	500,000	500,000	-	-	-	-	-	-
Durham Land Purchase for Carparking	100,000	100,000	150,000	-	-	-	-	-	-	-
Widen Skewbridge Rd - Mulcocks to Threlkelds	-	50,000	450,000	-	-	-	-	-	-	-
Minor safety- Delineation upgrades	250,000	-	-	-	-	-	-	-	-	-
Streetlight upgrade High St from East Belt to King St	-	-	100,000	-	1,800,000	-	-	-	-	-
Mulcocks and Fernside Rd closure - Kiwirail & NZTA	250,000	-	-	-	-	-	-	-	-	-
Land - Blake St Extension	-	-	-	-	-	-	-	430,000	-	-
Land - Blake St Extension	-	-	-	-	-	-	-	486,000	-	-
East Mixed Business Use Development (Growth portion)	-	-	-	-	-	-	-	-	330,000	-
Kaipoi Roading improvements - Williams St south intersections.	-	-	-	-	480,000	-	-	-	-	-
Johns Road/Plasketts Road Improvements	-	-	-	-	-	-	840,000	-	-	-
Fernside Rd/Townsend Rd Roundabout	1,800,000	-	-	-	-	-	-	-	-	-
Minor Improvements - Drainage (culverts)	-	-	-	-	-	-	420,000	-	-	-
East Mixed Business Use Development (LoS portion)	-	-	-	-	420,000	-	-	-	-	-
Intersection Safety Improvements South Eyre Road / Giles Road / Tram Road Intersection	-	-	-	-	-	370,000	-	-	-	-
Rangiora Woodend Rd / Boys Rd / Tuahiwi Rd Intersection	-	-	-	-	-	-	570,000	-	-	-
Woodend East ODP – Council share of road upgrading	-	-	-	-	-	-	-	-	-	-
Robert Coup Dr/Ohoka Rd Implementation	-	-	-	-	-	-	-	-	-	-
New Kerb and Channel - Major Towns (unsub)	-	-	-	-	-	-	-	-	-	-
Woodend Improvements in conjunction with NZTA PBC and Woodend Bypass	-	-	-	-	-	-	-	-	150,000	-
Pegasus road connection to Gladstone Road	-	-	-	-	-	-	-	-	-	-
Southbrook ODP – new footpaths and road improvements	-	-	-	-	-	-	-	-	400,000	-
Kaipoi Park and Ride	-	-	-	223,000	290,000	-	-	-	-	-
Rangiora Park and Ride	-	-	-	476,000	360,000	-	-	-	-	-
Ravenswood Park and Ride	-	-	-	-	500,000	1,000,000	-	-	-	-

Project	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost	Projected Cost
Coldstream Rd/Golf Links Rd Improvements	-	-	-	-	330,000	-	-	-	-	-
Johns Rd/Plasketts Rd/Fernside Rd Improvements	-	-	-	-	200,000	-	-	-	-	-
Kaiapoi Rooding Improvements	-	-	-	-	-	-	-	-	-	1,500,000
West Rangiora Rooding Improvements - Lehman's to River Rd	-	-	-	-	-	200,000	2,000,000	-	-	-
Walking and Cycling Projects	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Land Purchase - growth	-	-	-	-	-	-	-	-	-	-
Rangiora Woodend Road Intersection Improvements	-	-	100,000	-	1,800,000	-	-	-	-	-
Ohoka/Island Road Implementation	-	-	-	-	-	-	-	-	-	-
Robert Coup Dr/Ohoka Rd Implementation	-	-	200,000	1,000,000	-	-	-	-	-	-
Skew Bridge Active Warning / Safety Improvements	-	-	-	-	-	-	-	-	-	-
Skew Bridge Replacement	180,000	1,220,000	400,000	10,150,000	50,000	-	-	-	-	-
Southbrook General Route - pre-implementation	-	-	-	-	-	-	-	-	-	-
Southbrook Rd/Torlesse St/Coronation St - Intersection Improvements - Traffic Signals	-	-	-	-	-	-	-	-	-	-
Southbrook Rd Future Improvements	50,000	50,000	50,000	-	-	-	-	-	-	-
Rangiora Woodend Rd Traffic Calming	-	-	-	-	-	150,000	-	-	-	-
River Rd - Ashely to Enverton - Associated with Park & Ride and includes shared path upgrade	-	-	-	-	-	-	-	-	-	-
Main North Rd / Wrights Rd Intersection - safety concerns, initiated by Park and Ride	-	-	-	-	-	-	-	-	-	-
Charles Upham Dr / Oxford Rd Roundabout	-	-	-	-	-	-	700,000	-	-	-
Oxford Rd / Lehman's Rd Roundabout	100,000	1,400,000	-	-	-	-	-	-	-	-
Fawcetts Rd / Cones Rd Intersection	-	100,000	400,000	-	-	-	-	-	-	-
North Eyre Rd / No. 10 Rd	-	-	-	-	-	200,000	-	-	-	-
Swannanoa Rd / Johns Rd	-	-	-	-	-	-	-	500,000	-	-
Ashley Gorge Rd / German Rd	250,000	-	-	-	-	-	-	-	-	-
Northbrook Rd / Ivory St Intersection	-	-	-	150,000	1,350,000	-	-	-	-	-
Lees Valley Willow Walls	200,000	200,000	280,000	-	100,000	-	-	100,000	-	-
Marsh Rd / Waikoruru Rd - Sealing of unsealed Rd	-	-	-	50,000	750,000	-	-	-	-	-
Marsh Rd / Railway Rd - Intersection	-	-	-	-	-	-	-	150,000	850,000	-
Kaiapoi to Woodend Cycle Connection	-	-	-	-	-	-	-	-	-	-
Mulcocks and Fernside Rd closure - Kiwirail & NZTA	-	200,000	-	-	-	-	-	-	-	-
Car Parking Provision - Town Centre Parking	-	-	-	-	-	750,000	-	-	-	-
North of High St New Road Link	-	-	-	-	-	-	-	-	-	-
Land - Blake St Extension	-	225,000	-	-	-	-	-	-	-	-
Durham Land Purchase for Carparking	-	-	-	750,000	-	-	-	-	-	-
Keir St Land Purchase	-	-	-	-	-	-	-	-	-	-
New Eastern Link Road	187,500	1,350,000	162,500	275,000	7,750,000	7,800,000	-	-	-	-
New Eastern Link Road	93,750	675,000	81,250	137,500	3,875,000	3,900,000	-	-	-	-
New Eastern Link Road	93,750	675,000	81,250	137,500	3,875,000	3,900,000	-	-	-	-
North/South Collector Road	-	500,000	-	-	1,000,000	-	-	-	-	-

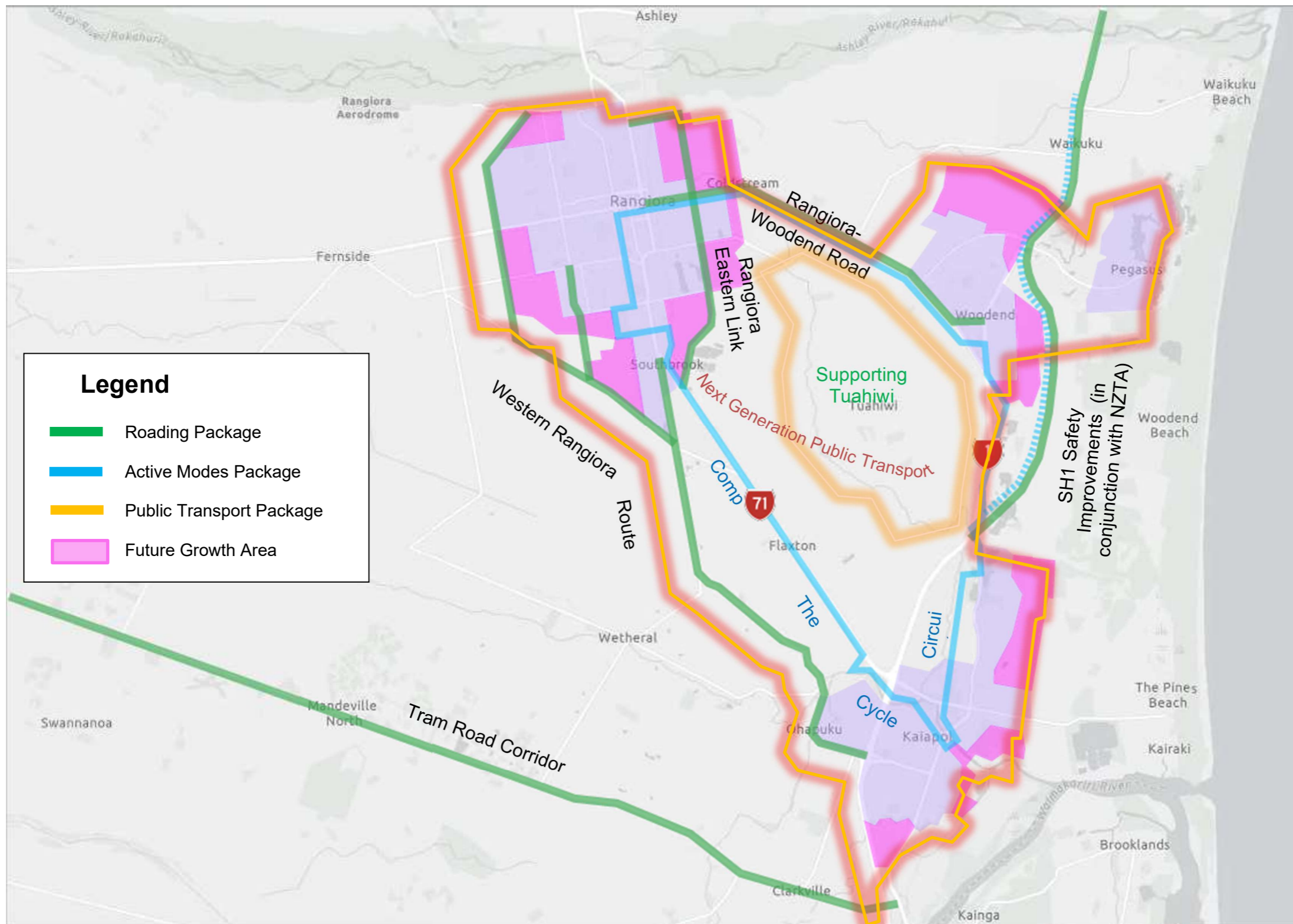


Figure 7-6: Strategic Context Map 21-33

- Programmes of Improvements**
- Strategic Infrastructure**
    - Rangiora Eastern Link Road
    - Woodend Bypass (NZ Transport Agency)
  - Growth Related Projects**
    - Kippenberger / MacPhail Roundabout*
    - North / South Collector Road
    - Gladstone Road connection to Pegasus
    - Woodend East North / South Road Collector Rd
  - Network & Resilience Management**
    - Lees Valley Willow Walls & Culverts
  - Completing the Walking & Cycle Circuit**
    - Passchendaele Memorial Path*
    - Rangiora-Woodend Path*
    - Woodend-to-Kaiapoi Path
    - Woodend-to-Pegasus Path
  - Supporting Public Transport**
    - Kaiapoi Park & Ride Facilities
    - Keir Street Connection
    - Rangiora Park & Ride Facilities*
    - Ravenswood Park & Ride Facilities
  - Rangiora-Woodend Road Corridor**
    - Rangiora-Woodend Path*
    - Rangiora-Woodend / Boys Roundabout
    - Widen Rangiora-Woodend Rd
  - Rural Safety Management**
  - Safety Improvements**
    - Northbrook / Ivory Intersection
    - Fawcetts / Cones Intersection
  - Tram Road Corridor Safety Improvements**
    - Tram / Poyntz Intersection
    - Tram / Two Chain Intersection
    - Tram / No 10 Intersection
    - Tram / McHughes / Bradleys Roundabout
    - Tram / Burgesses Intersection
    - Tram / S Eyre / Giles Intersection
    - Tram / Heywards Intersection
  - Western Rangiora Route Safety Improvements**
    - Widen Skewbridge Rd (Skew Bridge-Threlkelds)
    - Widen Flaxton Rd (Threlkelds-Fernside)
    - Skew Bridge Replacement
    - Fernside / Flaxton Roundabout*
    - Lehmans / Johns Intersection
    - Lehmans / Oxford Roundabout
    - Widen Lehmans (Fernside-Oxford)
    - Ohoka / Island Traffic Signal*
    - Widen Fernside Rd (Flaxton-Lehmans)
    - North-west Rangiora New Arterial Rd
  - Supporting Tuahiwi (MR873)**
    - To be Determined
- Note projects in *italics* are in progress or completed



## 7.3 Road Carriageway



### Purpose

- To provide a pavement network that is suitable for the effective and efficient movement of vehicles and people, has a suitable all-weather surface that is appropriate to its location and function in terms of skid resistance, noise reduction and smoothness, and has a structure suitable for legal traffic loading requirements.
- To protect public safety and property by providing a carriageway network that meets generally acceptable safety standards.
- To support business by providing a carriageway network that permits the efficient movement of agricultural, commercial, and industrial goods and produce.

### Problem Statements

- Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.
- Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting in disruption.
- Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.
- Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.

## Benefits for Pavements in Addressing these Issues.

- a. *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- Appropriate pavement management enables users to travel at optimum speeds safely and efficiently. Carrying out maintenance and renewals at the optimum time provides best value for money.
- b. *Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting in disruption.*
- Climate change issues will affect pavements in a number of ways.
- Coastal areas such as Pines Beach are already suffering from the effects of high groundwater but will in future need to be considered for permanent retreat. These areas are being identified through various studies and will be modelled to determine when is the most appropriate time to take action for optimum whole of life treatment.
- Some inland areas, such as Mandeville, also have issues with permanent high groundwater which is being exacerbated by increased adverse high rainfall events. Currently the effects of ongoing saturation are being investigated and these will be used to inform future pavement design and new road locations. Also under investigation are which areas will benefit from simple improvements such as replacing culverts with larger ones. This will be addressed further under Drainage Assets.
- Hill country, in particular Lees Valley, is prone to slippages in high rainfall events. There are a number of sites where resilience improvements such as larger culverts have already been identified and a funding request submitted under the Low Cost Low Risk Improvements category.
- c. *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.*
- The most obvious area for improvement in the district for mode choice is for cycling. While off-roads cycle lanes are the gold standard for cycling, much travel is still carried out on-road, and cyclists are relegated to the shoulders. These are often an issue with services, trenches, poor shoulder sweeping and steep crossfall. While it is recommended that cyclists should feel comfortable in taking the centre lane, this can lead to aggressive behaviour by motorists.
- d. *Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.*

- Carriageway width and surfacing are significant contributors to crashes. Inadequate shoulders for recovery, poor and inconsistent intersection design, inadequate camber, defects such as potholes and ruts, and flushed surfaces, all contribute to both occurrences of crashes and ability to recover. Waimakariri is 4th on the 2022 Risk register for rural intersection crashes, up from 9<sup>th</sup> in 2021. Short term Council is planning to carry out some low-cost improvements at its worst sites, but longer term it is planned to provide a no surprises environment by ensuring where possible the roading environment is consistent District wide for its ONF family.
- This will be addressed through the programme of works with evidence to better explain the problem.

## Improvements

- Work is planned to record all future dig-outs with photographs and information regarding the respective pavement layers in RAMM. This will be incorporated in the data capture process being carried out by the AIM team.
- Alternative transport modes will continue to be promoted, more predictive modelling carried out and trials of new materials and methodologies carried out wherever possible.

Issues identified specifically related to Pavements in the previous AMP were:

- Pavement Structure information within RAMM is limited
- Accelerated traffic growth on the network, particularly trucks
- High shoulders retaining water on road
- Loss of metal on unsealed roads
- Drainage issues

Most of these are within Council control and can be addressed, subject to available funding and resources to deliver, however traffic growth is an issue Council must manage as best it can.

## Background Data

The road carriageway assets account for 67%<sup>3</sup> of the total transport asset group, based on replacement cost. This includes the public car parks owned by the Council.

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<sup>3</sup> From 2023 valuation

## Network Summary

The Council manages 1,586 kilometres of roads (as at 30 June 2023)<sup>4</sup> split as below:

Table 7-5: Kilometres of Roads

	Urban	Rural	Total
Sealed	318	677	995
Unsealed	2.3	584	586.3
Bridge	0.57	1.85	2.41
Grand Total	320	1263	1586

The carriageway pavements are comprised of the following major asset components:

Table 7-6: Pavement Components

Pavement Asset Group	Description
Formation	Cutting or filling of the natural ground/terrain to establish a suitable surface (subgrade) upon which the road is constructed. It is considered to have an indefinite life because once constructed it does not deteriorate over time therefore is not depreciated.
Subbase	The compacted material (usually AP65) that sits above the subgrade. The thickness of this layer is determined by the strength of the subgrade.
Basecourse	The compacted granular material (AP40) that sits above the subbase.
Surfacing	Final layer of material over which vehicles pass, typically a chip seal or running course for unsealed roads.

## Pavement Surfacing

The primary purpose of pavement surfaces for sealed roads is to provide a smooth ride, waterproofing for underlying pavement, and to maximise the life cycle of the pavement. The type of pavement surface used generally depends on the traffic volume and mix of traffic using the road. Noise, dust, safety and appearance may also be significant factors for some roads

as the roading network must be maintained to a standard that meets the required levels of service. The main types of pavement surface used by Waimakariri District Council are:

**Sealed Road surface:**

**Chipseal:** A layer (or two layers in two coat seals) of sprayed bitumen with stone chips spread on the bitumen layer as a running surface. The life cycle for chipseal surfacing varies dependent on the chip size used (small chip means less bitumen that can be sprayed as the waterproofing membrane and so has a lower life but is quieter when driven on so more suitable in urban areas which do not justify asphaltic concrete) and by traffic volume (the higher the volume the lower the life).

**Asphaltic Concrete:** commonly known as hotmix, is a mix of graded aggregate and asphaltic binder heated to a specific temperature to provide a high-density binding. It is normally laid 30mm thick however 50mm may be used on high traffic volume roads. This is hard wearing and provides a quiet and smooth-running surface for main urban areas. Primarily used at roundabouts, busy intersections, cul-de-sac heads, and where high stresses and road noise can be an issue.

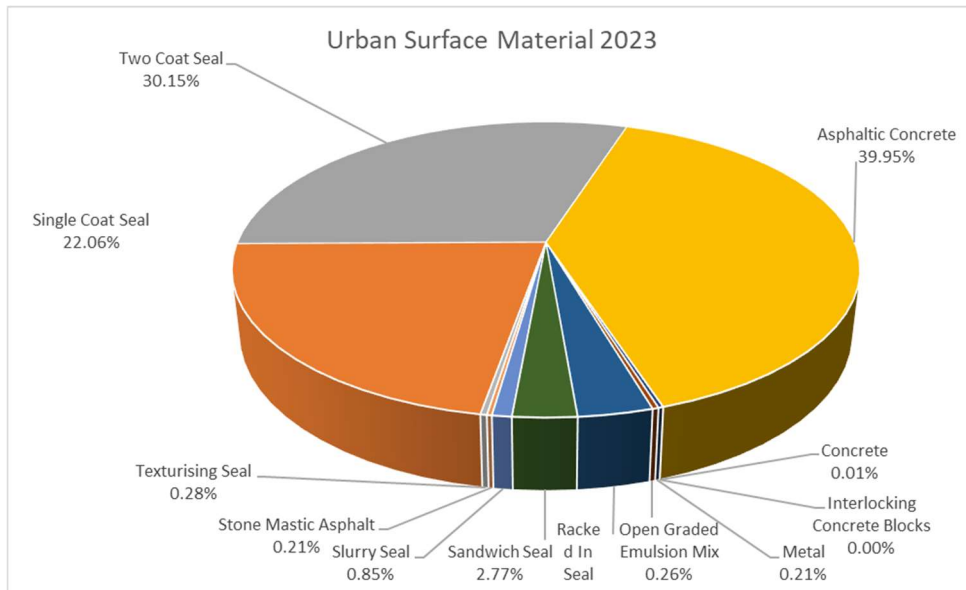
**Unsealed road surface**

**Graded metal (gravel)**

Unsealed roads are generally low volume rural roads where the cost to regrade and occasionally re-metal the surface is generally lower than the cost to fix issues such as edge-break and potholes, resurface and renew as per the lifecycle of a sealed road.

- e. *The breakdown of surface component for urban and rural network by pavement surface type is shown in the following two figures:*

Figure 7-7: Distribution of Urban Pavement Surface Types by Length (km)<sup>56</sup>



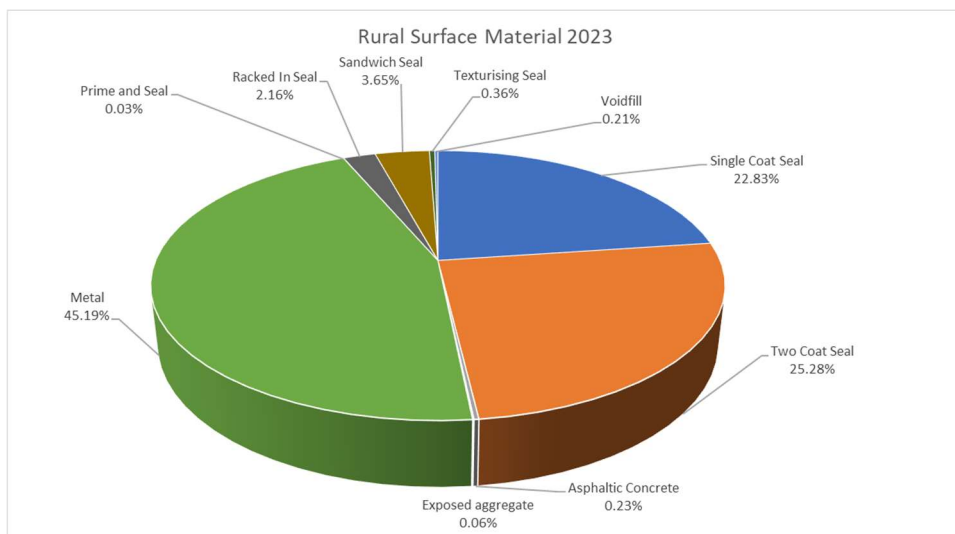
Traditionally, while asphalt has a longer life, its greater cost means it is rarely used by Council except in high traffic areas. Where it has been laid in new developments for aesthetic/increased LOS reasons, at the end of the Life Cycle of these roads, when they are due for resealing, the decision will need to be made as to whether re-laying AC is affordable.

Figure 7-8: Distribution of Rural Pavement Surface Types by Length (km)

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<sup>5</sup> Rooding Valuation 2023

<sup>6</sup> From RAMM



## Asset Capacity/ Performance

The road carriageway is the main transport asset that enables the movement of vehicles. Therefore, it is important that the carriageway provides for adequate capacity, good performance under the required conditions and is ensuring long term sustainability as per LOS requirements.

## Traffic Loading

The major factor in determining road construction requirements is an evaluation of the expected traffic volumes and loadings. Table 7-7 describes the expected traffic volumes relative to road hierarchy by year, as used in the valuation methodology.

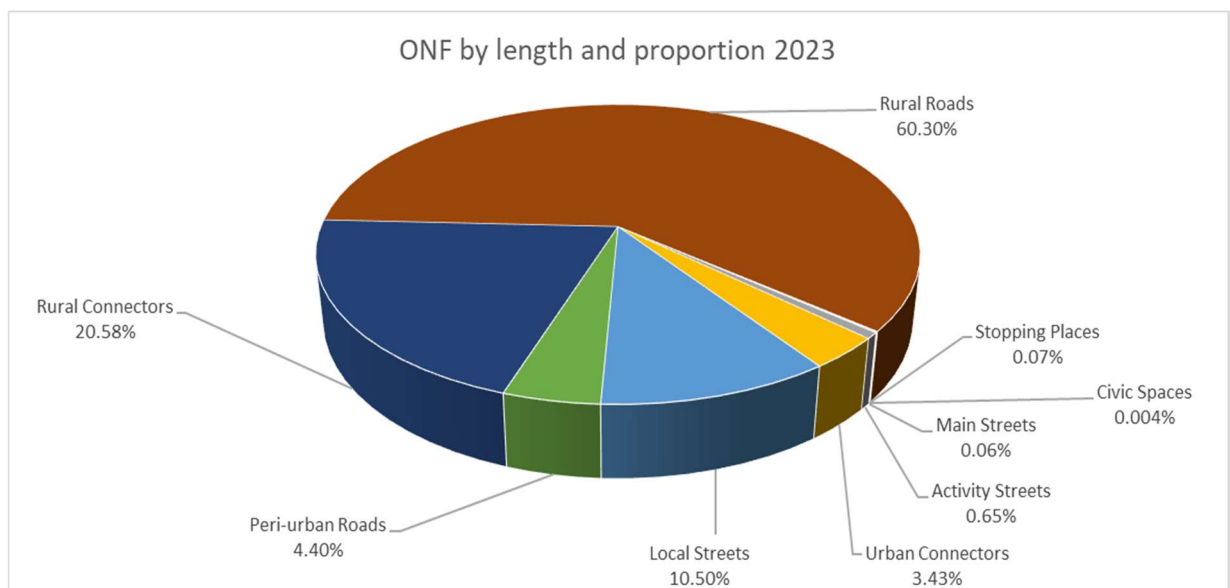
Table 7-7 Lengths of Roads by Traffic Loading and Hierarchy (km)

Pavement Use	2014	2017	2020	2023	Change 2014-2017	Change 2017-2020	Change 2020-2023
< 100 vpd	712.60	755.50	721.06	714.9	42.90	-34.44	-6.16
100 – 500 vpd	451.10	409.70	396.35	427.71	-41.40	-13.35	31.36
500 – 2,000 vpd	206.40	219.30	244.70	258.67	12.90	25.40	13.97
2,000 – 4,000 vpd	111.30	128.50	125.03	115.23	17.20	-3.47	-9.80
4,000 – 10,000 vpd	37.90	49.70	61.69	56.03	11.80	11.99	-5.66
10,000 – 20,000 vpd	7.50	7.70	8.42	12.78	0.20	0.72	4.36
>20,000 vpd	0.80	0.80	0.82	0.82	0.00	0.02	0.00

The above table shows changes to traffic patterns over the last six years. These are of relevance because they are sorted by traffic volume bins as per valuation calculations/best practice.

Although the table demonstrates that the majority of activity is on the low volume roads, there can be isolated periods or roads where this is not the case. For example, a small number of local roads are experiencing high traffic loadings due to isolated works. Examples include work on stop-banks by Environment Canterbury, which involved high cartage over a short period, or logging. This tends to be extremely damaging to both sealed and unsealed roads.

Figure 7-9: Road by One Network Framework Road Classification



While traffic volume is a good proxy for wear and tear on a road, this does not take into account road surface. Many of the new sealed low volume roads are asphalt due to being part of a subdivision and as such will not require renewal for many years. By contrast, unsealed low volume roads can deteriorate quickly due to even a small amount of extra traffic or heavy vehicles and also weather conditions.

Sealing of unsealed roads is considered under the following circumstances:

- maintenance costs exceed the cost of sealing, over the road’s lifetime,
- when financial contributions from subdivision activity reach 30% of the cost of sealing
- when local residents pay 50% of the cost.

Urban roads are likely to experience continued traffic growth, as the population increases and new development occurs. These impacts require specific strategies to be developed to enable the network to cope, including a decision on whether asphalt surfaces in subdivisions will be replaced like for like. Currently they are valued as such, which places an extra cost on depreciation which may not be warranted. Developers primarily seal with asphalt for amenity value when sealing however NZ Transport Agency (Waka Kotahi) may not be prepared to fund



replacements on this basis as they will be looking at whole of life and these roads do not receive enough wear and tear to warrant this treatment.

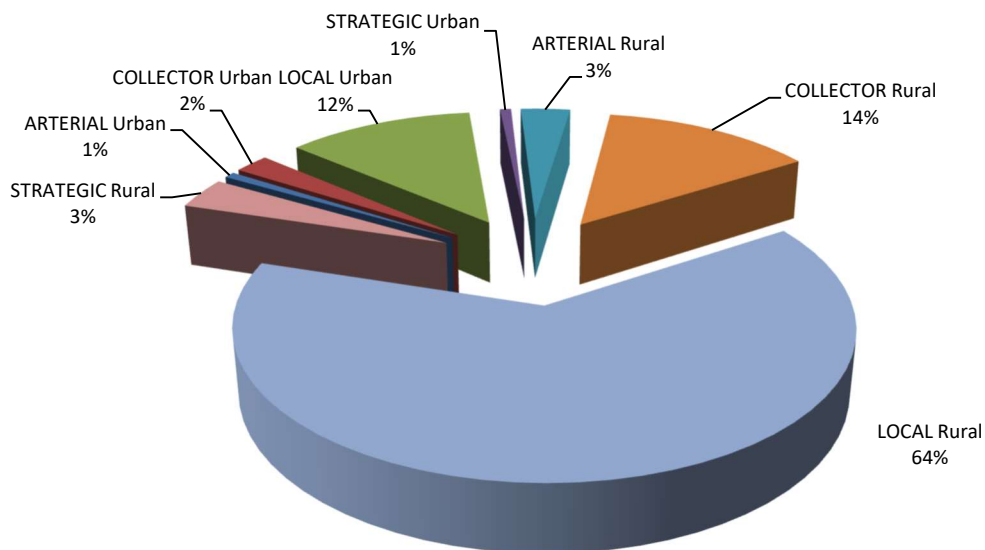
### District Plan Road Hierarchy

The Waimakariri District Council roading network is classified in the District Plan. The roads remain in their allocated category for the life of the plan, unless there is a plan change, and are not subject to change due to traffic volume or function change.

Figure 7-10 District Plan Roading Hierarchy

District Plan Hierarchy	Description
Strategic	Generally, a road that is a present, former, or proposed state highway serving as an inter-regional route.
Arterial	Generally, a road that is of major importance in the district serving significant populations and functioning as a prime access to other major centres inside and outside the District.
Collector	Generally, a road that is the preferred route for travel from within, and between, areas of population and principle activities and includes roads serving as prime egress from major production forests in the District and on its borders.
Local	Generally, means a road whose primary function is property access.

Figure 7-11: Network by District Plan Hierarchy



## Road Safety

“Road users on our network have little room for error or recovery from mistakes, which has resulted in fatal and serious injuries when crashes occur”.

Road safety continues to be an important component in managing the carriageway. A road in poor condition is more likely to lead to loss of control. The main source of information regarding crash history is maintained in the Crash Analysis System database. This data is monitored and used for a number of interventions including those listed below. The following charts show that there is no significant trend line to crash numbers in the district. Fatal and serious crashes continue to only make up a small percentage of total crashes, but their social cost is significantly higher. Conversely, many minor and non-injury crashes could have been significantly more serious if the crash had occurred in a slightly different place or time, and all crashes need to be treated as a potential indication of a problem which warrants addressing.

Figure 7-12: All Motor Vehicle Crashes 2013-2022

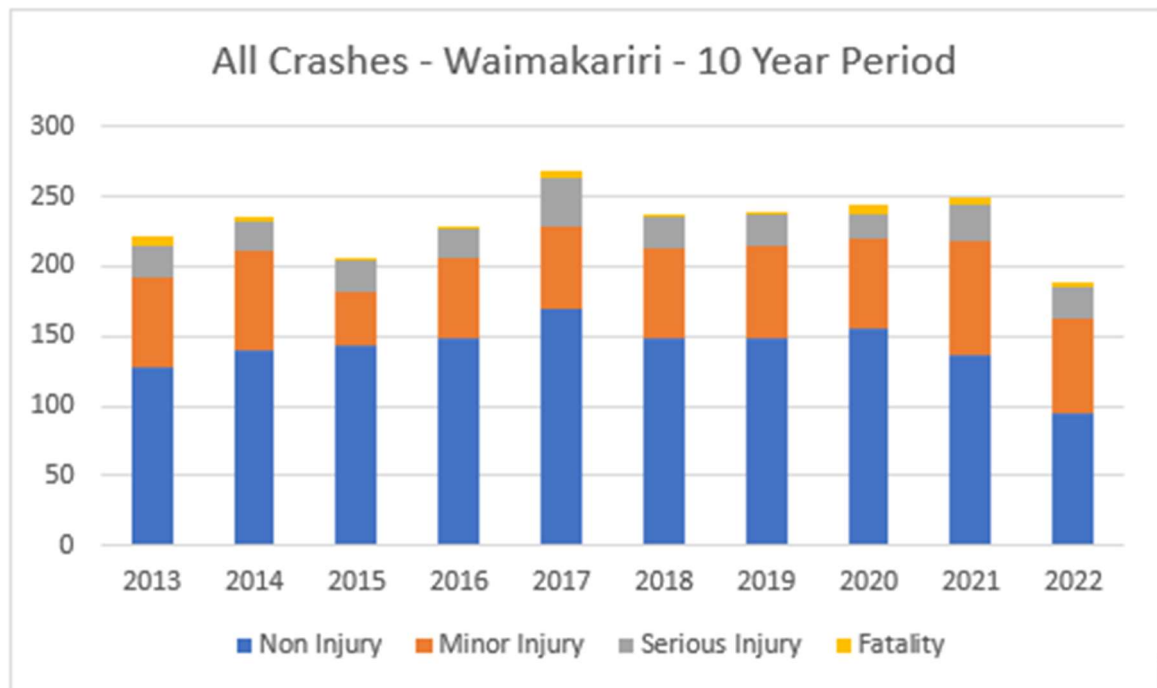


Figure 7-13: Fatal and Serious crashes and corresponding injury severity 2013-2022

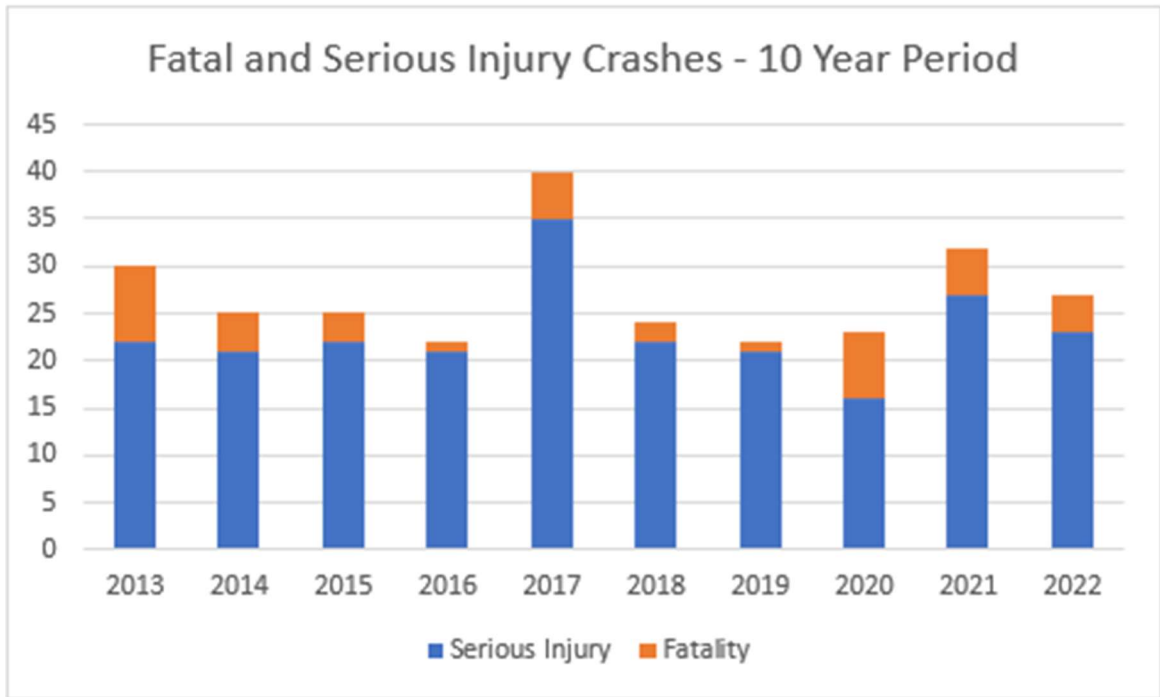
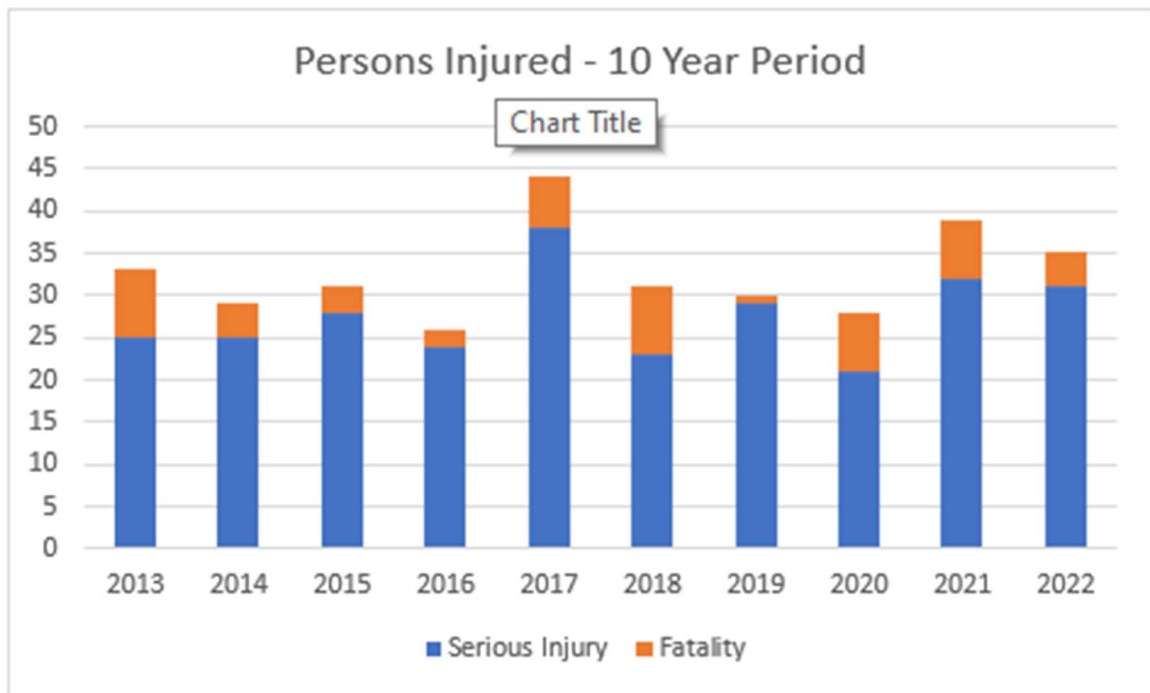


Figure 7-14: Fatalities and Serious Injuries 2013-2022



## Safety Interventions

There are many individual components to providing a safe network. Many of the interventions described below have been part of Council work programme for years, while others are innovations that are government led. While the first thought in providing for infrastructure is physical management of the asset, whether by maintenance or renewal., how the asset is used is becoming increasingly important, such as through Travel Demand Management. However, the use of 'soft' components of asset management such as education has long been a part of the safety practitioner's toolkit and many of the interventions listed below are as important as physical works in providing for a safe network. Included are the following:

- Road Safety Action Plan

This document is compiled by the Road Safety Coordinator in conjunction with the Road Safety Committee, a group of stakeholder representatives with a high interest in road safety. These include the NZ Police, representatives of the Heavy Transport industry, Engineers, including those from Waka Kotahi State Highways, Waka Kotahi funding representatives, and other agencies from time to time such as schools.

Much of the work carried out in this area includes education both with schools and with the wider public.

- Hazard Register

This list, maintained by the maintenance contractor, details hazards which cannot be easily removed and must be mitigated, or are being managed until such time as they can be dealt with, for example areas where ice is a problem in winter.

- Safety Audits

These include network audits, which review both compliance with levels of service in safety areas such as signage, and also potential areas of concern in design such as out of context curves or incorrect camber, and project audits. These are carried out both prior to and following design, and post-construction and are a funding requirement for Waka Kotahi.

- Deficiency Database.

These include potential hazards identified through Service Requests, and contractor or staff observations. They may involve changed signage, improved visibility, intersection changes or a variety of other projects. The Deficiency Database is revised bi-annually and proposals are evaluated and prioritised for inclusion in the Minor Improvements Programme.

- Speed Management Plan

This was a nationally led initiative which aimed to introduce consistent lower speeds around the country. Although Council has prepared a plan for the District, the change of government means that little of it is likely to be implemented, at least in the near future.

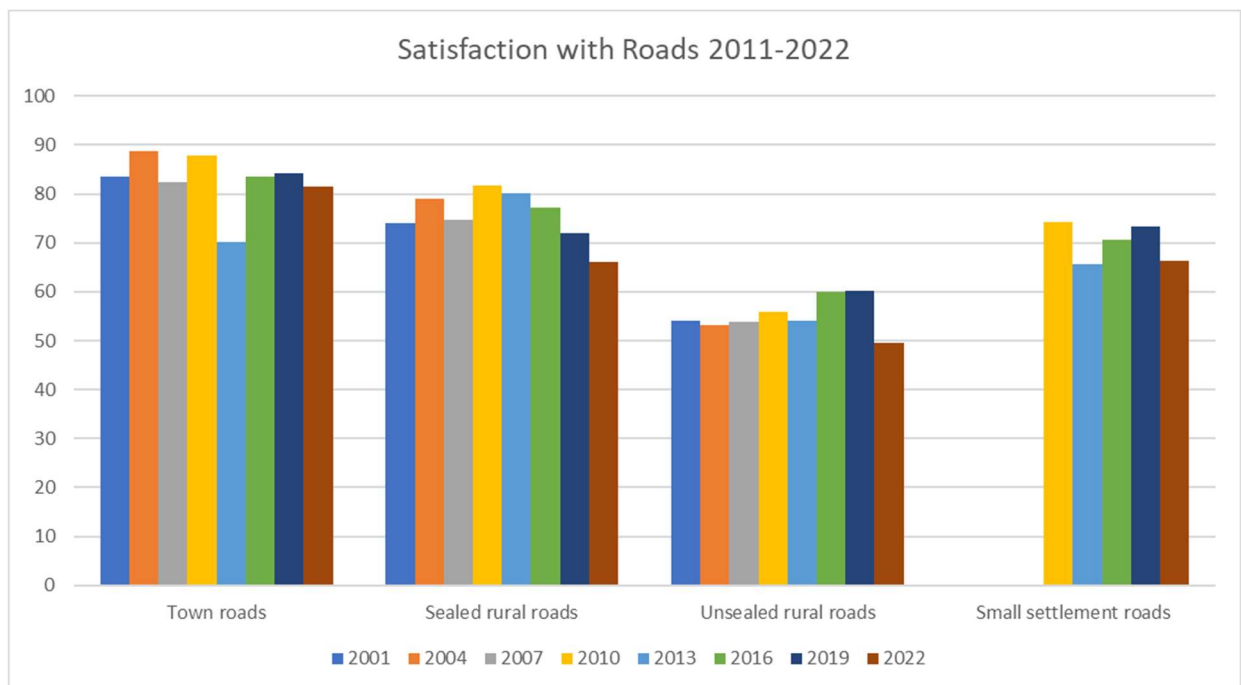
Also proposed, to improve safety in Waimakariri, is taking a route approach to roads such as Flaxton Road, Skewbridge Road, and Tram Road and applying safety interventions such as seal widening, intersection improvement and improved signage and delineation.

The full list of proposed Capital Projects is included in Table 7-4: Ten Year Capital Projects Proposed Programme for 2024/25 - 3033/34 LTP.

### Customer Satisfaction

The WDC conducts a customer satisfaction survey every three years. The following table sets out the percentages of respondents satisfied with the carriageway network from surveys in 2001, 2004, 2007, 2010, 2013, 2016, 2019 and 2022. There has clearly been a drop in satisfaction since the last customer satisfaction survey, particularly with rural roads.

Figure 7-15: Customer Satisfaction Survey



### Asset Condition

Asset condition can be measured in a variety of ways. The main performance measures used by Council to determine the condition and performance of the carriageway are Road Roughness and Surface Condition Rating, followed by maintenance costs.

This data has been collected over a number of years and is stored in the RAMM database.

NZTA requires that roughness and condition rating surveys of all sealed roads must be undertaken biennially, while condition rating surveys of all sealed roads carrying more than 500 vehicle per day are to be undertaken annually.

High speed data is collected by technology which can assess network condition continuously while driving the network at normal driving speed. It is extremely comprehensive but also

expensive. It was last utilised in Waimakariri in 2015 on a selection of Strategic and Arterial roads. This data will be provided to Council in future through the Consistent Condition Data Collection project, whereby high-speed condition rating is collected nationally. This is to be fully funded in the next collection cycle by NZTA. This funding support will allow Council to redirect resources to other data collection. Of particular interest to Council is the Falling Weight Deflectometer readings, which give an indication of pavement strength, and which were last carried out in 2017.

The roughness and condition rating data produce a number of indices from which trends in pavement performance can be determined. These include:

- Smooth Travel Exposure (STE)
- Pavement Integrity Index (PII)
- Surface Condition Index (SCI)

Of these, only NZTA reports provide information on PII and SCI. Only PII measures the subsurface faults. For performance the smoothness of travel is the measure by which most people judge their trip, along with safety, however the other two measures are critical as determinators for future work in extending the life of the asset.

## **Sealed Roads**

### **Roughness**

Road roughness count is defined in terms of NAASRA. As well as a measure of the road roughness which impacts on vehicle operating costs it is also used to calculate Smooth Travel Exposure.

The following figure shows the roughness trends for the sealed network since 2018/19.

Note: the higher the roughness value, the rougher the road

Figure 7 17:: Network Roughness per Roads Hierarchy 85th percentile by ONRC classification comparison with Selwyn and Ashburton

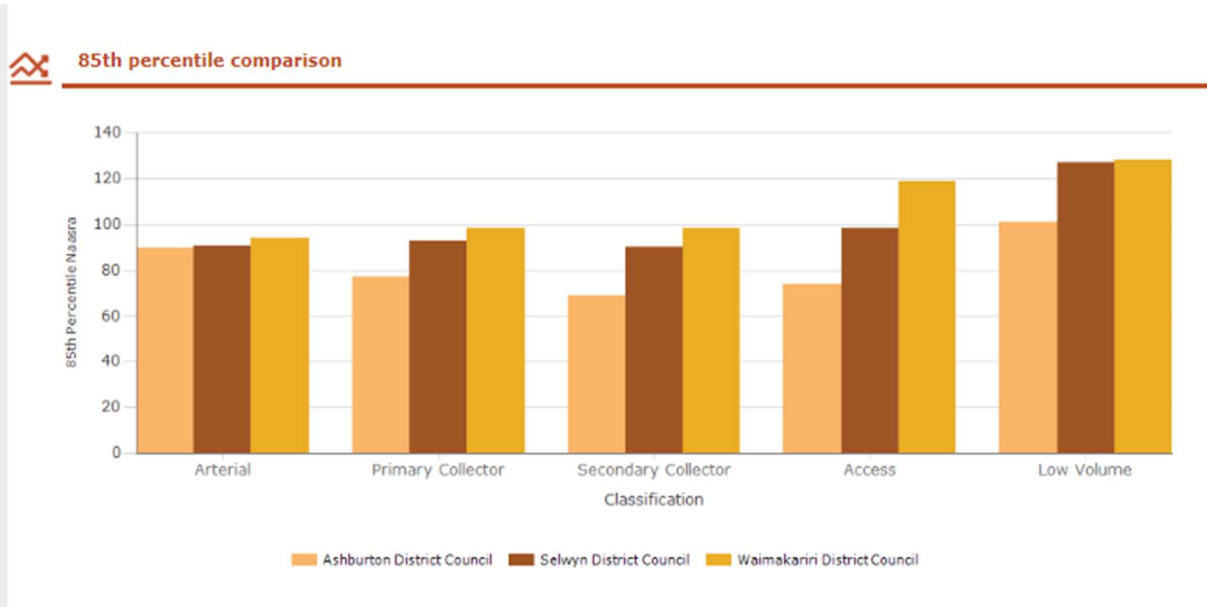
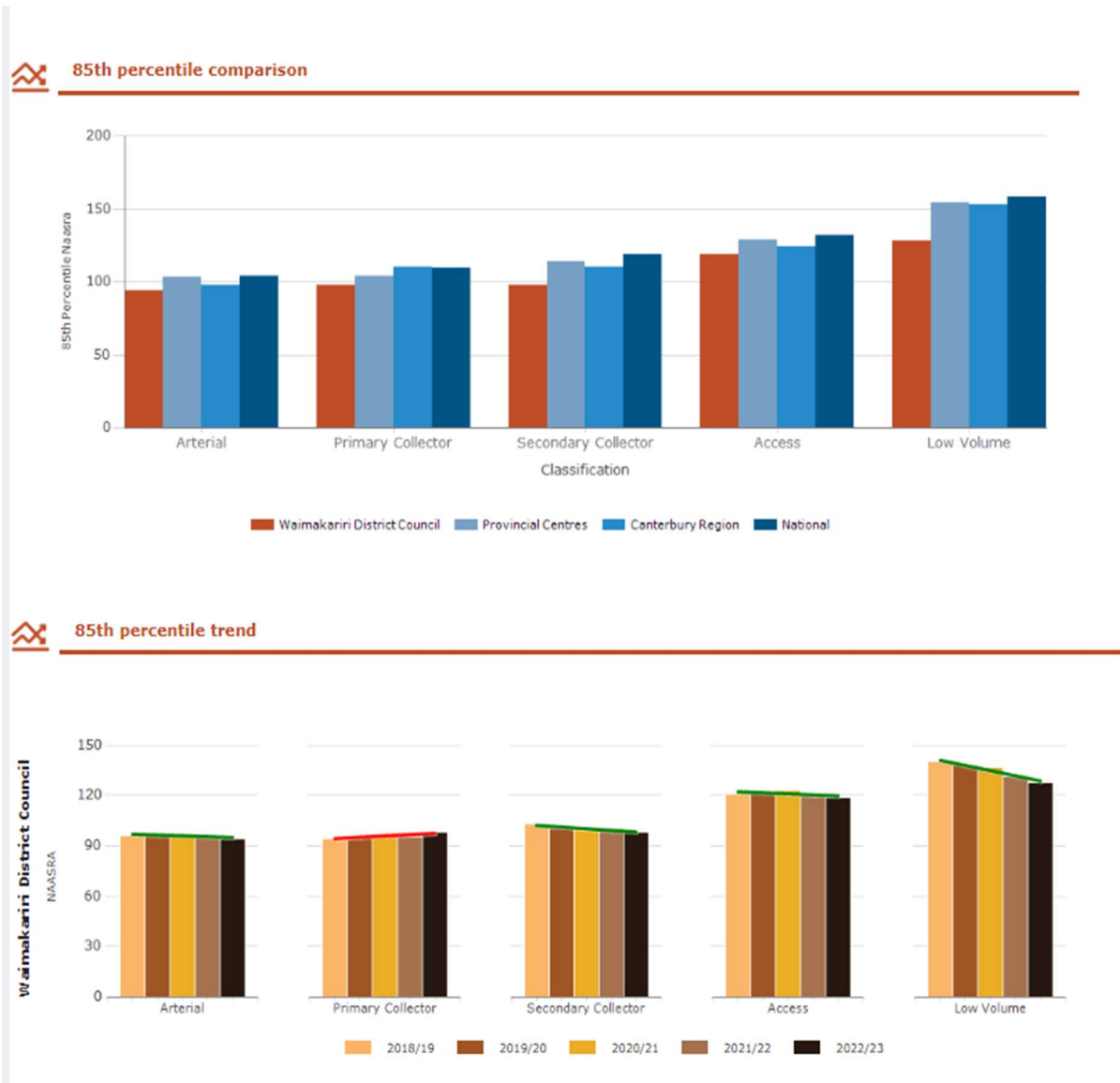


Figure 7-16: Network Roughness per Roads Hierarchy 85th percentile by ONRC classification and annual trend



The above graphs show minimal difference in road roughness apart from a slight peak for primary collector roads, The overall ride comfort is still within target levels as shown by the Smooth Travel Exposure (STE) index noted below. The STE index takes into account traffic volume and the fact that low volume roads are ‘allowed’ to be rougher than high volume roads. Waimakariri also has lower roughness than its peers. However, its roughness ratings are higher than for similar local networks, i.e. Selwyn and Ashburton.



Figure 7-17: Smooth travel exposure by ONRC annual trend – Urban.

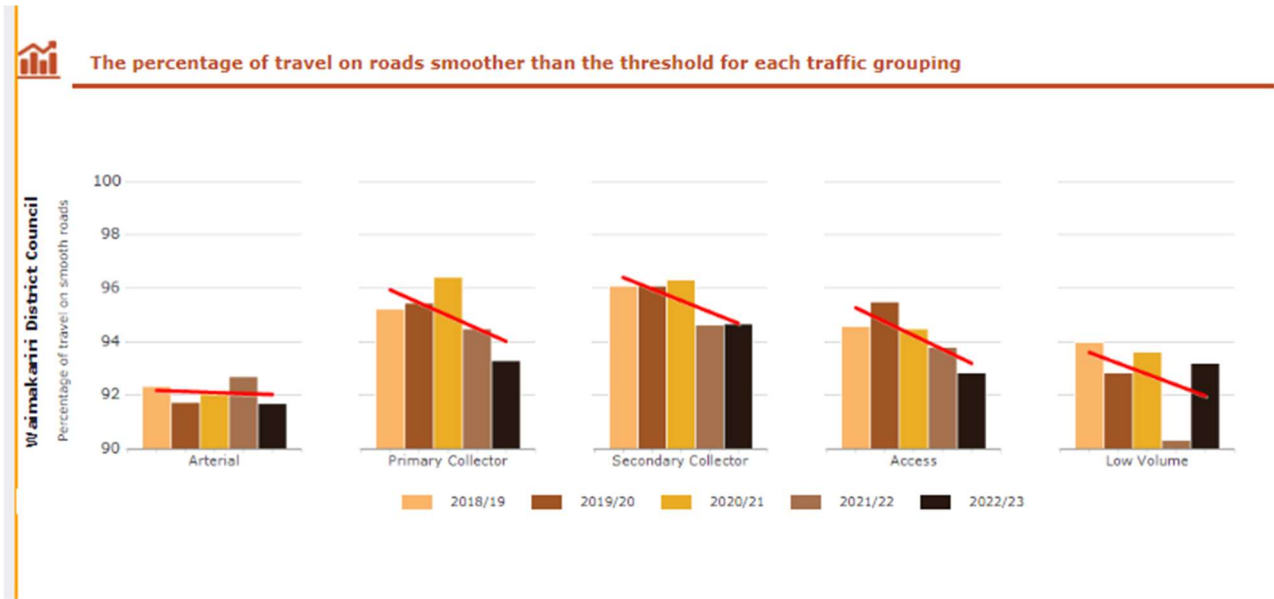
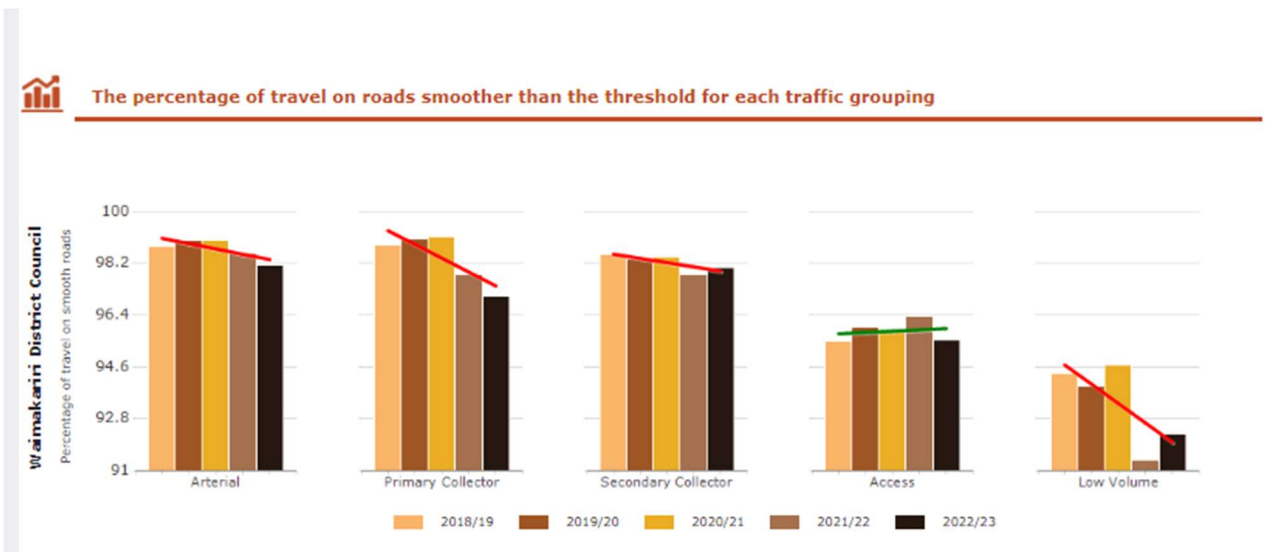


Figure 7-18: Smooth Travel Exposure by ONRC annual trend - Rural.



### Smooth Travel Exposure (STE)

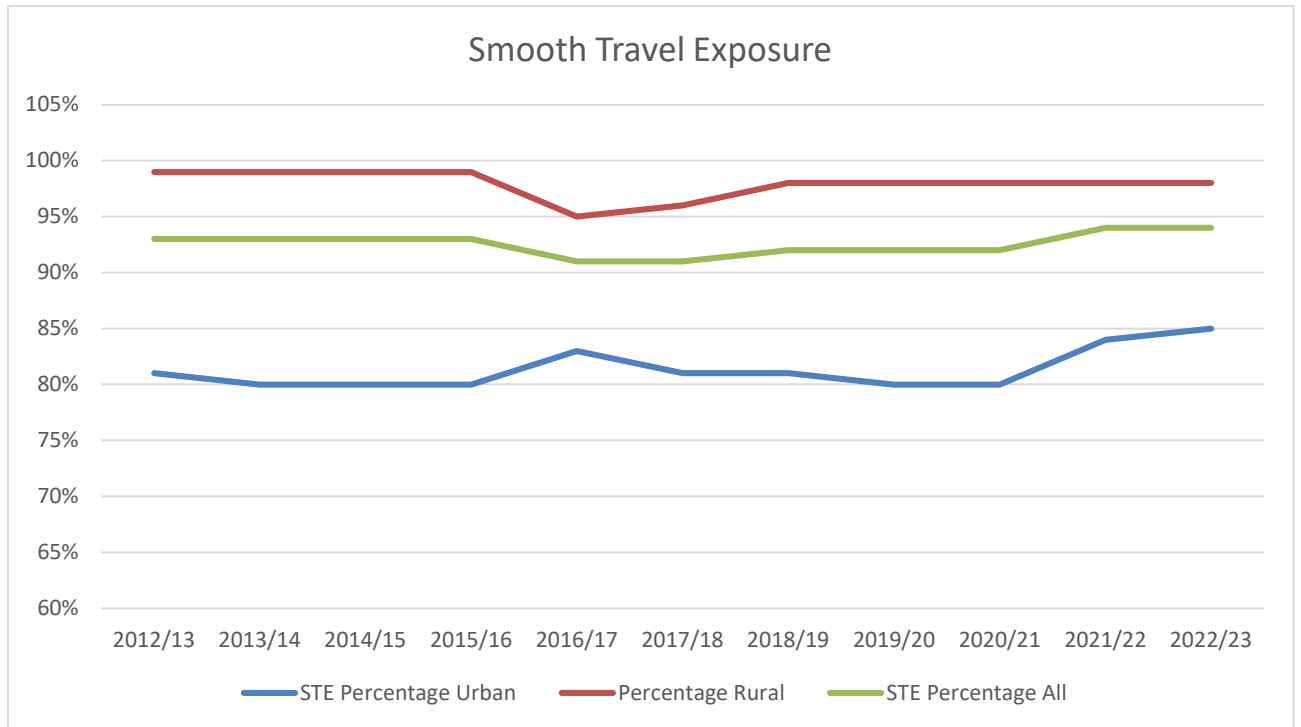
Smooth Travel Exposure (STE) index is used by Waka Kotahi to compare the roughness of the road network in relation to proportion of total travel on roads that are ‘smoother’ than a target level and is collected by use of a laser ‘profilometer’, which measures the bumps as the road is driven over.

The LOS measure in **Section 3** of this AMP is that at least 75% of the vehicle travel is on smooth roads in urban areas and at least 95% is on smooth roads in rural areas.

Data for STE can be analysed through the NZTA reports, which currently collect by historic traffic volume bins and are the groupings typically used for valuations, and by total road numbers, by ONRC classification, or by ONF classification.

The figure below illustrates the trend in STE from RAMM data collection from 2012 for the urban and rural sealed network as per NZTA reports.

Figure 7-19: Historical Trend in STE for Waimakariri District Sealed Roads



The above graph indicates that across all roads there is a slight improvement in smooth travel on urban roads, while rural STE has flattened off.

The 2023 survey indicated that urban roads have experienced an increase in smoothness from the previous AMP with around 85% of roads considered smooth against a target of 75%. Rural roads are sitting at around 98% compared with a target of 95%. Further analysis shows that this roughness is being experienced on urban arterial roads, while the rest of the network is still showing a positive trend.

### ONRC Comparisons with Peer Performance

Note: The higher the percentage, the smoother the network is performing. As can be seen below, the condition of arterial roads has plateaued, whereas other roads are showing a decline in STE, and to a lesser extent access roads is getting rougher, with an improvement in all other categories.

Figure 7-20: Trend of percentage of travel on roads smoother than ONRC threshold

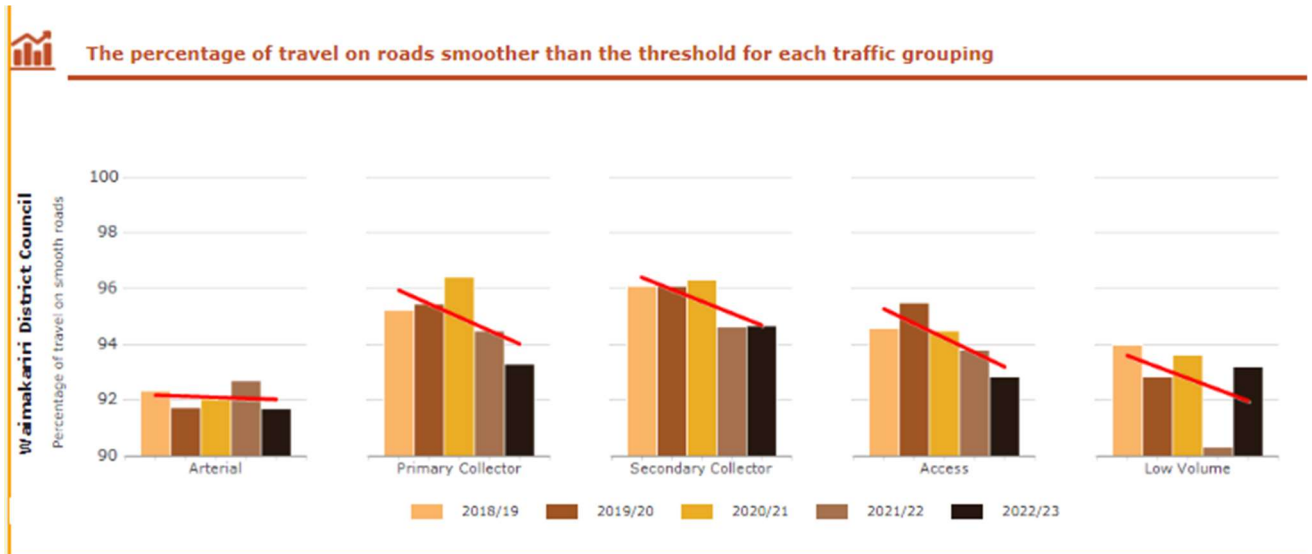


Figure 7-21: Smooth Travel Exposure by ONRC

**The percentage of travel on roads smoother than the threshold for each traffic grouping**

These graphs show the annual change of smooth travel on the roads in each ONF Street Category and the linear trend (green is improving, red is declining).

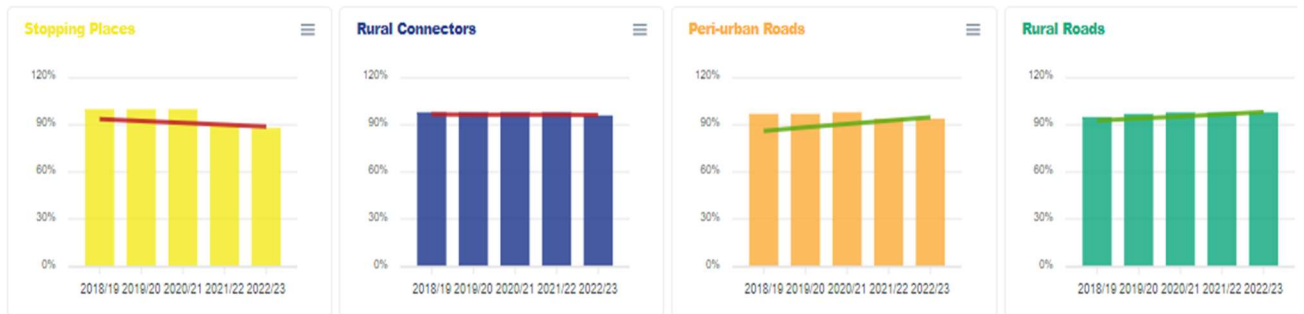
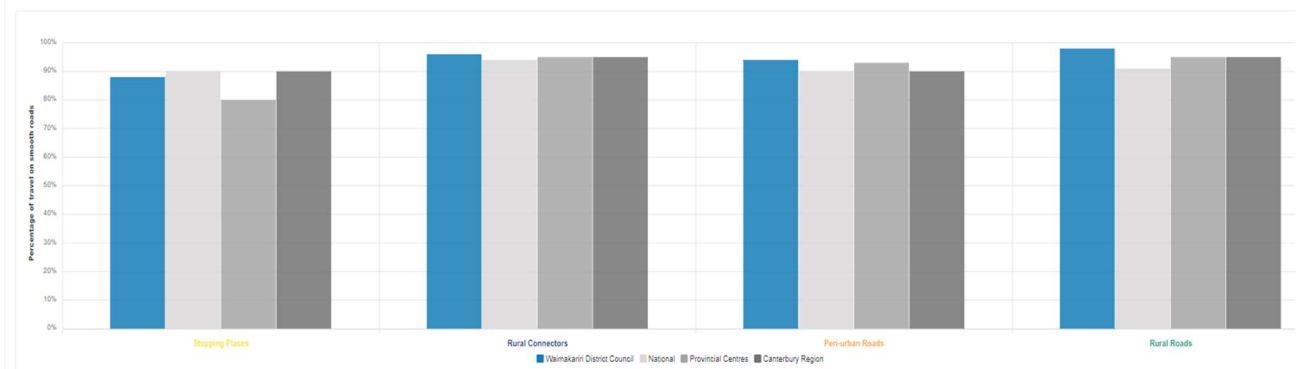


Figure 7-22: Performance against Peers, Region, and Nationally

**The percentage of travel on roads smoother than the threshold for each ONF Street Category**

This chart shows the percentage of travel on smooth roads for your network compared to other networks you choose. If no other networks are chosen, the chart compares your RCA with their peer group, region and the National figures.



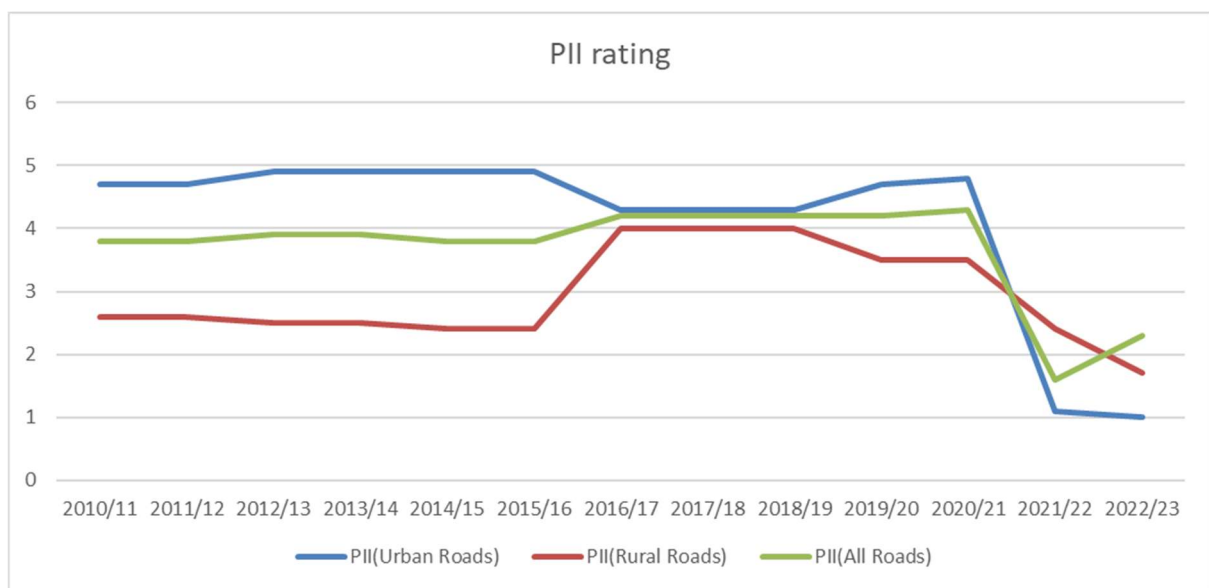
## Condition Rating

The RAMM condition rating surveys involve physical inspection of 10% of the sealed road network. This equates to an inspection length of 50m every 250m in urban areas and 100m in every 500m in rural areas (the length of the rating section). The survey assesses rutting, cracking, potholes, shoving, flushing, bleeding, and scabbing. These surface defects are used to calculate the pavement integrity Index (PII), and the Condition Index (CI) as detailed below.

## Pavement Integrity Index

Pavement Integrity Index (PII) is a performance indicator for the structural condition of a pavement, calculated by combining certain condition ratings, faults, and roughness.

Figure 7-23: Historical Trend in PII



The pavement integrity chart indicates that road conditions, particularly rural appear to have improved in the last couple of years. Observation of the network would say this is not the case, and the move to the Consistent Condition Data Collection surveys by NZTA are a welcome move to ensure consistency and reliability in results.

## Surface Condition Index

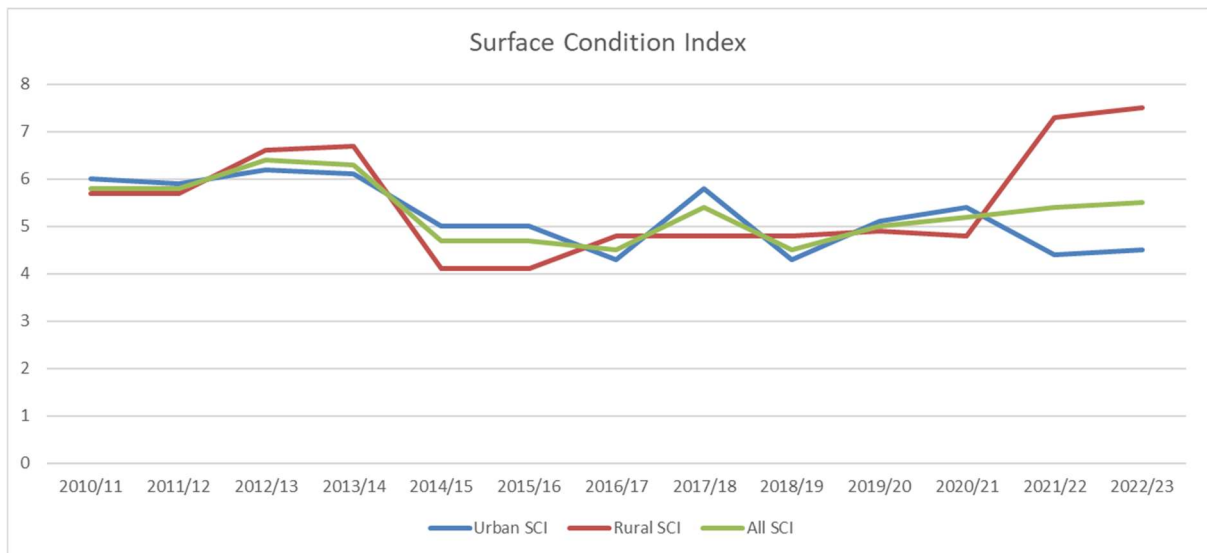
Surface Condition Index (SCI) is a composite index that describes the network surface condition and allows comparison of historical and future surface conditions. SCI has two key components, The Condition Index (CI) - based on RAMM condition rating data, and the Age Factor Index (AI) of the surface – using the surfacing remaining life held in RAMM.

The SCI triggers resurfacing or reseal treatments. Figure 7-25 shows the SCI for both the urban and rural networks, which is showing a decline for rural roads. This decline is most likely due to a combination of the increasing traffic growth on the network, and many roads exceeding an expected life due to the maintenance management decision making processes employed by the contractor in conjunction with council staff.

While RAMM sets a default for Seal Life, and WDC has a default for different categories tailored to local conditions, individual roads will invariably last for periods other than these defaults. New predicted lives have been allocated to all roads due for resealing within the next ten years.

Note: the higher the SCI value the better the network condition

Figure 7-24: Historical Trend in SCI



Like the PII, the SCI shows a fluctuating result. The changes in the last two years compared to previous, for both PII and SCI, can be attributed to two factors.

1. *Survey methodology changed, to collect data at closer intervals. This was a feature the contractor offered at minimal extra cost, and because it was going to provide a greater quantity of data, it was expected to be beneficial. However, in this case it meant also that the data was no longer consistent with previous years.*
2. *The other factor that had an impact was changes in Treatment Lengths, the lengths over which a particular type of work is to be, or has been applied. This was reviewed over the last two years, and the changes will have had an impact on the data year on year, even though the rating is only done every two years. Council intends to continue this improvement work this year, and it is then hoped that by the time the Consistent Condition Data Collection is rolled out, that there will be a limited number of changes required year on year.*

## Age Profile

A JunoViewer assessment of the network generally is in agreement with the assessment of network inspections showing the actual length of road requiring sealing is consistent with the previous plan of around 50km per year. That results in an average resealing age of 18 years, with variance for years when a greater quantity of asphalt surfacing is applied.

Figure 7-25: Top Surfacing Age profile (stackedd)

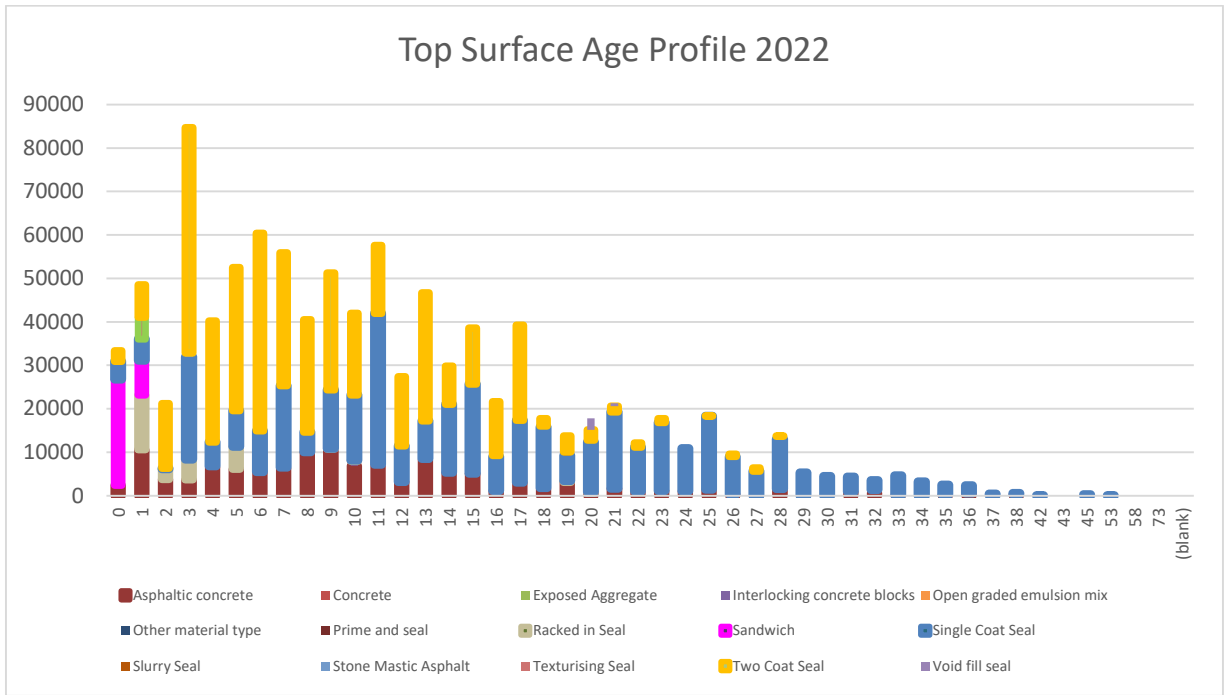
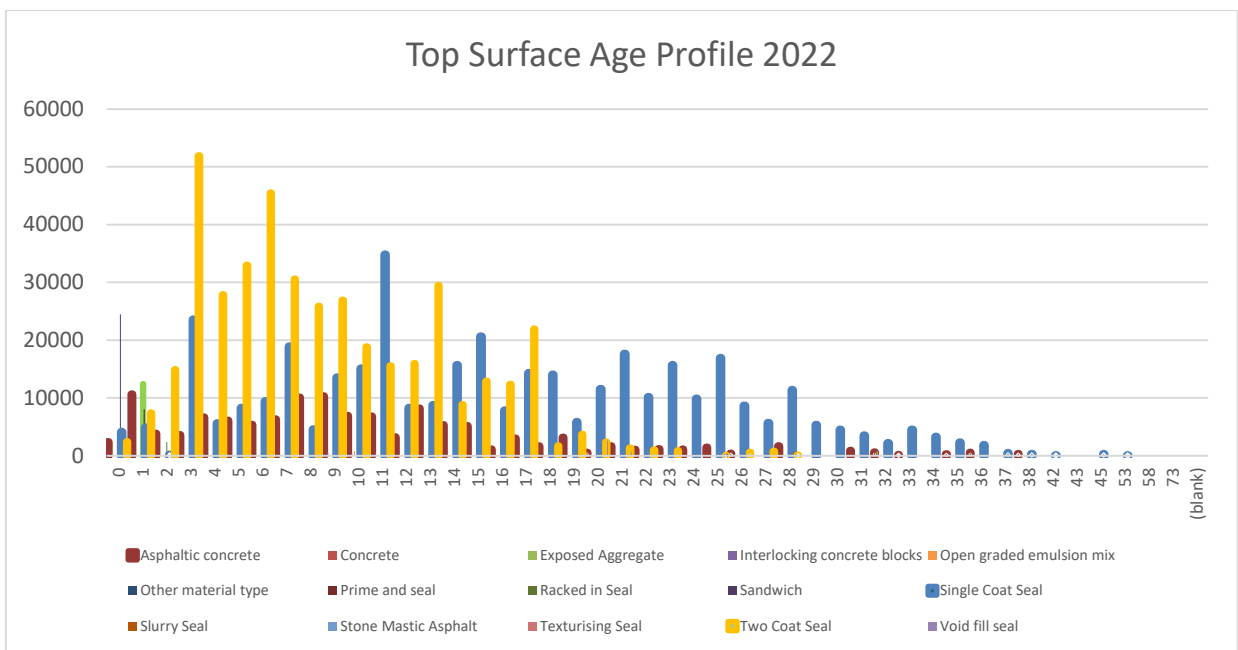


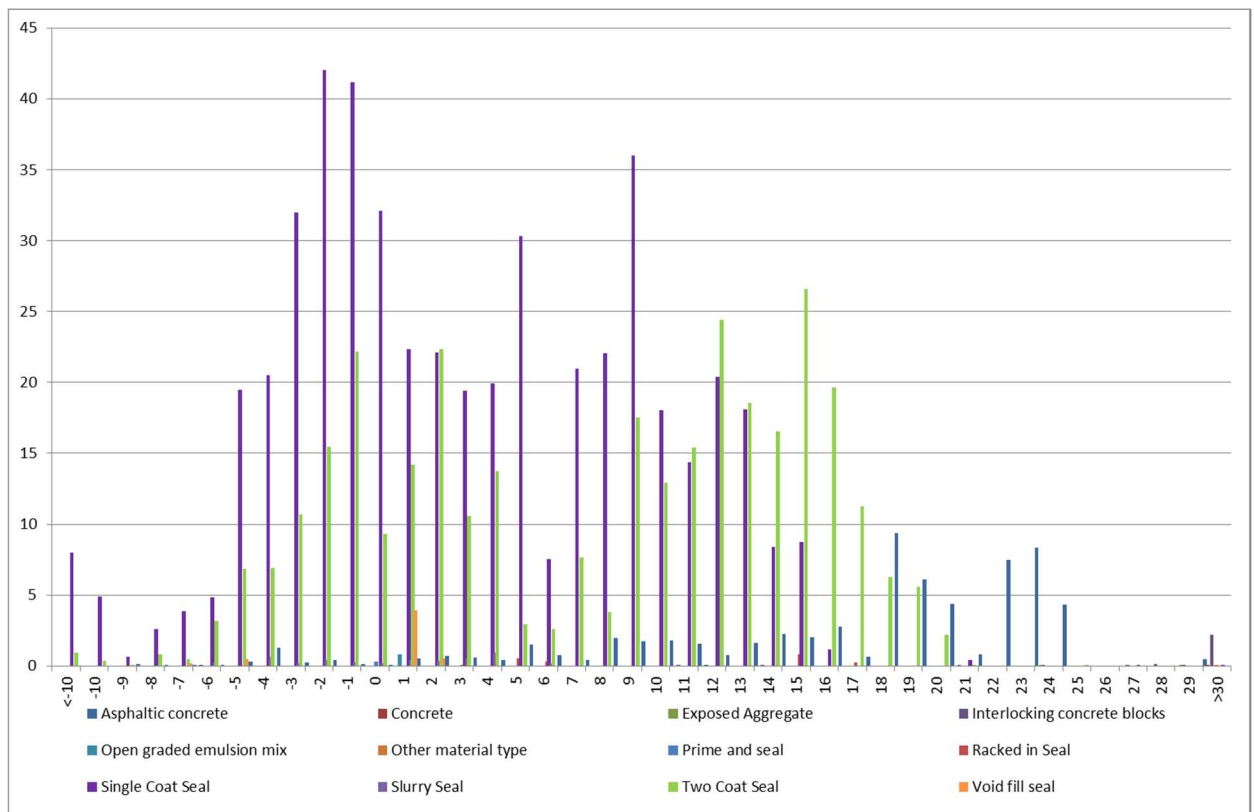
Figure 7-26: Top Surface Age Profile 2022



Seal lives are continually reviewed as part of the programme preparation process and expected lives are reviewed and amended as part of valuation validation to update assessed seal lives.

Seal types have changed over the years from single coat to two coat seals. Modelling of our roads has suggested that on low volume roads single coat seals may provide as long a life as two coat seals and therefore better value for money. More investigation of individual roads is required to determine the accuracy of this proposition and whether it might provide a new approach in managing the network.

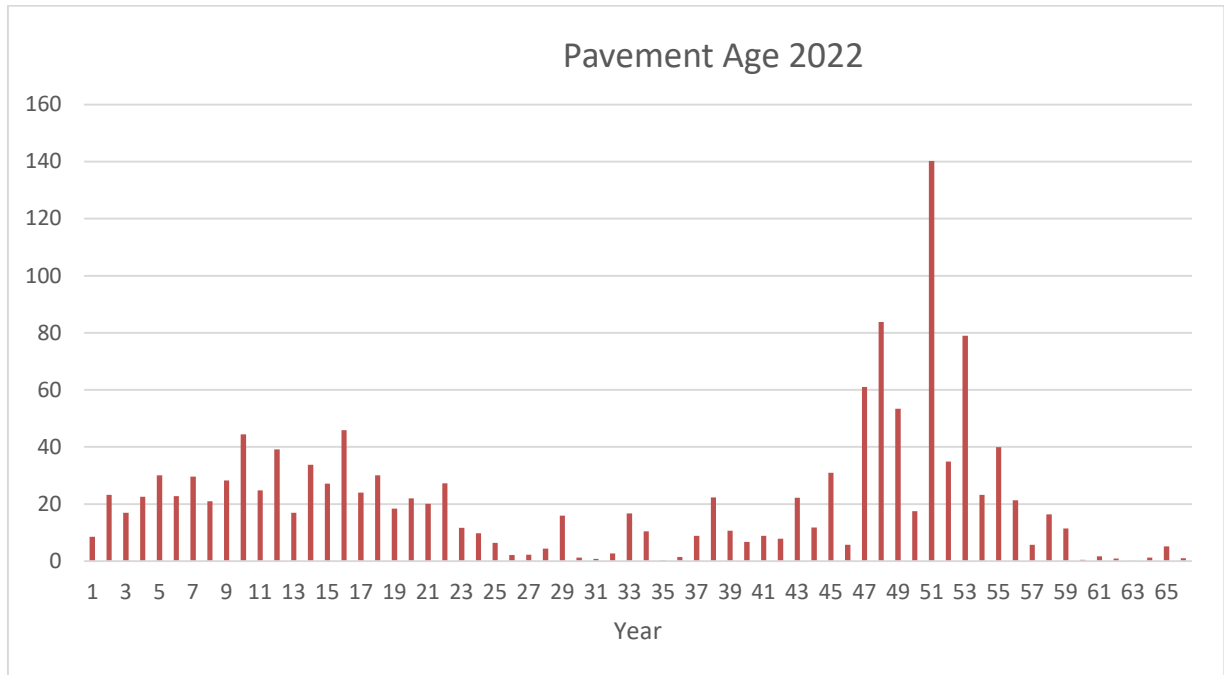
Figure 7-27: Top Surfacing Remaining Useful Life



### Surfacing Remaining Life

The surface remaining useful life chart above indicates a significant length of the network is holding its own past the expected useful life. These roads are regularly checked to determine whether they have actually reached that end point. Roads that condition rating has indicated are due for renewal are assessed prior to being programmed and a likely new life is added into RAMM if it is deemed that the road has some life left. This process is not complete, and some roads may be overly influencing the results.

Figure 7-28: Pavement Age Profile



### Pavement Structure Age profile

There is a lack of historical pavement information stored in RAMM therefore the depths of pavement layers used are estimated based on traffic load and the Council Engineer’s experience.

For previous valuations the pavement age was extracted from historic RAMM surfacing data. As part of the 2005 valuation these estimates were confirmed, and updated, where possible using the Council’s hard copy records from the seventies, eighties and early nineties.

The peak shown at 51 years represents the effects of assumed construction dates. As dig-outs are carried out information is gathered as to the type of material and construction underneath the surface throughout the network and in time this will allow a more reliable picture of the whole asset life.

### Unsealed Roads

Formal condition rating has not historically been undertaken on unsealed roads; condition is monitored through contractor and Council staff inspections as well as service requests received from road users. Based on this information unsealed roads are generally considered to be in average to poor condition. Increasing traffic can cause rapid surface deterioration producing potholes, poor drainage, corrugations, and a dust nuisance to adjacent properties and road users and this is managed by regular inspections and by adjusting maintenance frequencies such as grading to deal with the increased use. It does not compensate for a historic loss of metal due to poor drainage, higher traffic numbers and increased weather events.



The maintenance contractor plans to commence utilising Roadroid and JunoViewer shortly, to help better monitor roughness, and to enable easy on-site data analysis. Roadroid is a device which measures the roughness of the road, while JunoViewer provides an on-site report of expenditure, remedial work carried out, condition and forecast expenditure on site to enable real-time decision making with regards to maintenance. It is likely that this will be rolled out in future to sealed roads.

The customer satisfaction surveys (see Levels of Service) have shown a declining satisfaction with rural roads in the district.

## Asset Valuation

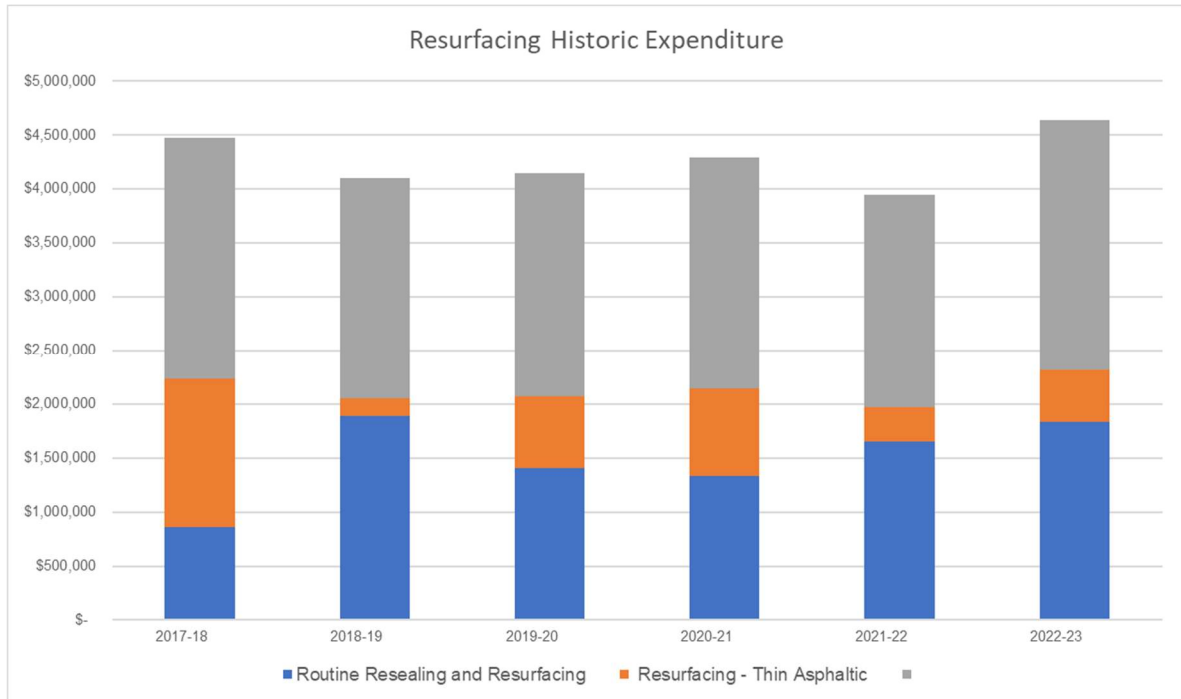
The following table presents a summary of the road carriageway valuation, refer to [Appendix C](#) for the full report.

*Table 7-8: Summary of Carriageway Asset Valuation as at 30 June 2023*

Description	Unit	Quantity	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (AD)
Formation	m <sup>2</sup>	29,138,073	\$461,875,841	\$461,875,841	-
Sealed Pavement Basecourse <small>(Note includes First Coat Seals)</small>	m <sup>3</sup>	1,212,356	\$139,527,526	\$73,572,049	\$1,721,593
Sealed Pavement Subbase	m <sup>3</sup>	1,556,876	\$98,844,396	\$98,844,396	
Sealed Pavement Surface	m <sup>2</sup>	10,171,848	\$85,995,417	\$46,364,349	\$3,844,220
Unsealed Pavement Subbase	m <sup>3</sup>	273,443	\$22,036,850	\$22,036,850	-
Unsealed Wearing Course	m <sup>3</sup>	163,684	\$3,430,974	\$1,771,520	\$394,502
<b>Total</b>			<b>\$811,711,004</b>	<b>\$704,465,005</b>	<b>\$5,960,315</b>

## Historical Data

The following graphs and table summarise the road carriageway expenditure over the past six years.



Note, information is extracted from capitalisation information so for new projects costs may be carried into following financial year as work in progress.

### Expenditure last six years

Table 7-9: Summary of Road Carriageway Historical Expenditure (Update) (Include Network and Asset management as a % of all)

Financial Year	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Maintenance &amp; Operations</b>	1,141,163	1,584,740	1,269,468	1,513,667	1,464,394	2,037,766
<b>Renewals</b>	3,064,280	2,966,345	2,746,971	3,217,242	2,669,260	3,475,502

## Infrastructure Risk Management Plan

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network (refer to SECTION 5 Risk Management).

The risk mitigation indicated is consistent with good asset management. The severity of each individual risk can depend on the particular activities being carried out.

Table 7-10: Infrastructure Risk Management

Risk Description	Risk Assessment	Current Mitigation
Poor design of carriageway geometry resulting in poor drainage leading to pavement deterioration and risk of crashes	Medium	Regular network inspections carried out to identify deficiencies, Analysing crashes for possible road effects, regular grading/ maintenance programme in place
Unplanned road closure due to crashes, spillages	Medium	Road maintenance contractor is required to respond to emergencies on the network
Roadside is used for stockfood storage thus presenting possible safety risk and damage to road surface	Medium	Identified through Contractor Inspection and reported to roading team, Complaints followed up with property owners who will be requested to stop the practice.
Crashes caused by poor skid resistance, surface condition, loose chip or metal	Medium	Regular network inspection, Biennial pavement condition rating, Contract level of service for detritus and loose metal well defined, Analysing crashes records for trends in crash causes
Pavements have insufficient strength to carry traffic loading, resulting in reduced pavement useful life	Medium	Network inspections, condition rating, early warnings system are in place to identify these issues. Adequate budget to carry out works is available
Poor reinstatement after utility installation resulting in deteriorating network pavement condition and reduced pavement useful life	Medium	New national code in place with the use of RAMM CAR Manager to manage trenching work, Road Compliance Engineer position has managing CARs as a specific responsibility
Rapid deterioration in pavement due to prolonged wet weather	Medium	Ensuring the road meets best practise standards in term of shape and drainage. Keeping ahead of regular inspection

## **Routine Operations and Maintenance Plan**

All pavement maintenance activities are currently carried out under a single District Road Network Contract 19/43. The Contractor is responsible for regularly inspecting the network, reporting all faults, programming maintenance works and obtaining the Engineer's approval on a monthly basis, quality assurance, completion of all specific/ or agreed works, unscheduled works and emergency works. The Contractor is required to use RAMM Contractor for programming, reporting, and claiming.

All the operations and maintenance activities on legal road are eligible for Waka Kotahi financial assistance except for amenity maintenance and off street car parking.

## **Operations and Maintenance Plan**

Routine maintenance is the ongoing day-to-day work activity that is required to keep assets serviceable and prevent premature deterioration of failure. Two categories of routine maintenance are carried out:

### **Planned Maintenance**

Network inspections, programming and reporting using RAMM.

Pavement evaluation and roughness survey

The maintenance of sealed road and car park pavements including:

- Repair of surface defects
- Repair of structural defects.
- Repair of minor surface deformations.
- Maintenance of unsealed shoulders.
- Adjusting surface covers
- Repair of edge break.
- Pre- reseal repairs.
- Carriageway cleaning.

The maintenance of unsealed road pavements including:

- Routine grading.
- Surface repairs.
- High shoulder removal.

### **Unplanned Maintenance**

- Repair of potholes.
- Emergency work, spillages, crash debris.

- Snow clearing.
- Frost and ice gritting.

## **Operations and Maintenance Strategies**

The following specific strategies are adopted, in addition to the general strategies discussed previously.

### **Service delivery**

Council has endeavoured to make its contracts as attractive to the market as possible so as to obtain best value. It has combined all road network maintenance, road marking, pavement rehabilitation, and the resealing and resurfacing into one contract which is the NEC term service contract. The reason for this is to gain a total network management focus and to provide full flexibility for decision making by the contractor. Efficiencies, clearer responsibility and better responsiveness result from this approach.

### **Maintenance priorities**

General maintenance work is classed as priority work where:

- The safety of road users may be compromised.
- It is likely that the areas of distress may expand or the method of repair change, such that the cost of any repair may increase.
- Subsequent maintenance or renewal works depends on the completion of the planned maintenance repair, such as pre-seal repairs.

### **Responsiveness and preparedness**

A suitable level of preparedness for prompt and effective response to asset failures and emergencies is maintained by ensuring the availability of suitably trained and equipped staff and service delivery contractors through the contract. Asset failures are responded to with the initial objective of restoring service as quickly as possible by the most economic method available, and making temporary repairs if major repairs or renewals are required.

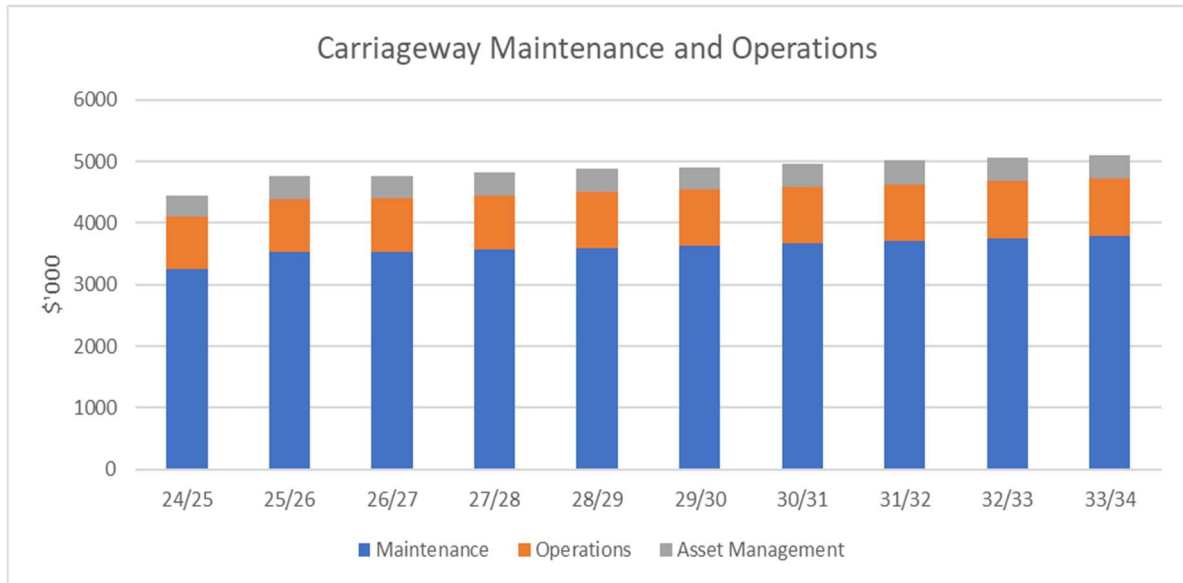
### **Summary of Future Cost**

Growth in the District and increasing inflation means the current level of expenditure is not keeping up with network needs. The balance between pavement maintenance, rehabilitation and resurfacing is adjusted constantly to meet the needs of the pavement, while the total overall spend on individual roads is a balance of pavement needs, service levels and other priorities such as the GPS and Regional needs.

Expenditure projection is shown in the figure below in 2024/25 dollars. Allowance has been made in the sealed pavement maintenance to cater for growth and increased flood events, leading to higher ground water levels. An underinvestment in drainage has exacerbated the problem. For some time expenditure was adequate for the network needs, however a

combination of network growth, weather events and high cost fluctuations has led to insufficient maintenance being able to be carried out.

Figure 7-29: Carriageway Maintenance Forecast Expenditure



## Renewal/ Replacement Plan

Renewal expenditure is work that restores an existing asset to its original capacity or condition. For pavements, both surfacing and pavement structural layer (basecourse and sub-base) must be considered separately as their lives and treatment options are quite different, although closely related.

The type of renewal works undertaken are summarised in Table 7-11:-11 below:

Table 7-11: Renewal Work Types

Work Type	Objective	Methods
Unsealed Road Remetalling	To maintain a waterproof road surface	Unbound aggregate spread on the road
Sealed Road Resealing/ Resurfacing	To maintain a waterproof and skid resistant road surface	Chip sealing Asphaltic concrete
Pavement Rehabilitation	Strengthen road (basecourse)	Rehabilitation: increases the strength of existing basecourse materials by: Adding a stabiliser (hydrated lime or cement) and re-compacting Constructing an additional layer of road metal on top of the existing pavement construction

## Renewal Plan

The Renewal Programme is identified through:

- Network inspections.
- Treatment selection report from RAMM.

The required level of renewal varies depending on:

- The age profile of carriageway surfacing and structure.
- The condition profile of the carriageway.
- The deterioration of the top surface.
- The level of ongoing maintenance demand.
- The differing economic lives of the materials used.

The Waimakariri District Network Road Maintenance contract includes:

- The metalling of unsealed roads including development of programmes, design and construction.
- The resealing and resurfacing of sealed pavements including development of programmes, surfacing design and construction of chip seals, asphaltic concrete surfacing, and slurry sealing.
- The rehabilitation of sealed pavements including economic justification, design and construction.

## Sealed Road resurfacing

The main surfacing treatment used in the Waimakariri district is chip seal with around 88% of all sealed roads surfaced with this material. This is the most appropriate treatment considering the type of roads and traffic volumes. Asphaltic concrete is used on strategic and arterial roads in the residential areas of Kaiapoi and Rangiora to reduce road noise, and in other areas to reduce wear and tear on the pavement in those areas subject to scuffing from turning vehicles, such as major intersections and cul de sacs.

The programme for sealed road resurfacing has been previously developed incorporating the recommendations from the RAMM Treatment Selection report. The treatment selection process uses data from the bi-annual road condition rating, seal age compared with seal life data, and includes maintenance cost. The RAMM Treatment Selection list is field validated by the Council's maintenance staff and professional service providers, and adjusted appropriately before the programme is finalised.

For roads on the Treatment Selection list not deemed to requiring sealing, staff assess the remaining useful life of the seal, and this is used to update RAMM thus improving the accuracy of the data.

In terms of utilising predictive modelling, Council has purchased a licence and had preliminary modelling carried out with JunoViewer

Falling Weight Deflectometer readings, which measure pavement strength, were carried out in 2017 on all Arterial and Collector Roads, and a selection of Access roads in the District and it is hoped to repeat this exercise in the next LTP. Results of this showed that most of the network is built on a strong base, as is expected for a District built on river gravels. The exception to this is the areas of Kaiapoi and Rangiora, and to some extent Oxford. The previous DTIMS model provided 3 spending scenarios for the next twenty years (\$2.5M, \$3M and \$3.5M / annum), with recommended reseal lengths ranging between 41.2 and 42.8 kilometres per annum for the first ten years, followed by 47.1 - 49.0 for the following ten, which put the the ten year reseal target slightly below the average length of road resurfaced annually over the last five years of 44km.

WDC has moved from utilising DTIMS for modelling to JunoViewer. An initial forecast has been developed, as shown below, which gives an estimated length of pavement renewals suggested are required to maintain the life of the network.

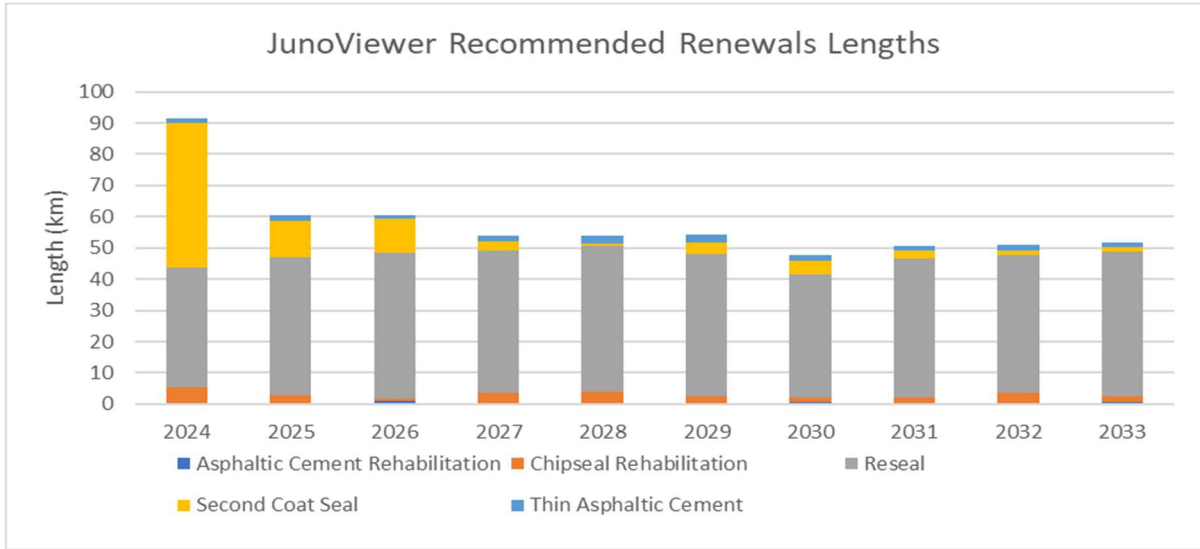
Figure 7-30: JunoViewer recommended renewals lengths

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 year average
<b>Asphaltic Cement Rehabilitation</b>	0.12	0.26	0.89	0.14	0.00	0.30	0.73	0.44	0.45	0.52	0.38
<b>Chipseal Rehabilitation</b>	5.14	2.67	0.97	3.64	4.14	2.38	1.33	1.62	3.00	1.89	2.68
<b>Reseal</b>	38.37	44.19	46.63	45.55	46.39	45.52	39.57	44.66	44.43	46.37	44.17
<b>Second Coat Seal</b>	46.36	11.49	10.71	2.67	0.97	3.64	4.14	2.38	1.33	1.62	8.53
<b>Thin Asphaltic Cement</b>	1.34	1.97	1.11	1.78	2.45	2.45	1.81	1.64	1.68	1.41	1.76

This are more easily visualised through a chart. It should be noted that this recommendation is primarily through desktop assessments and on-site validation still needs to be carried out.

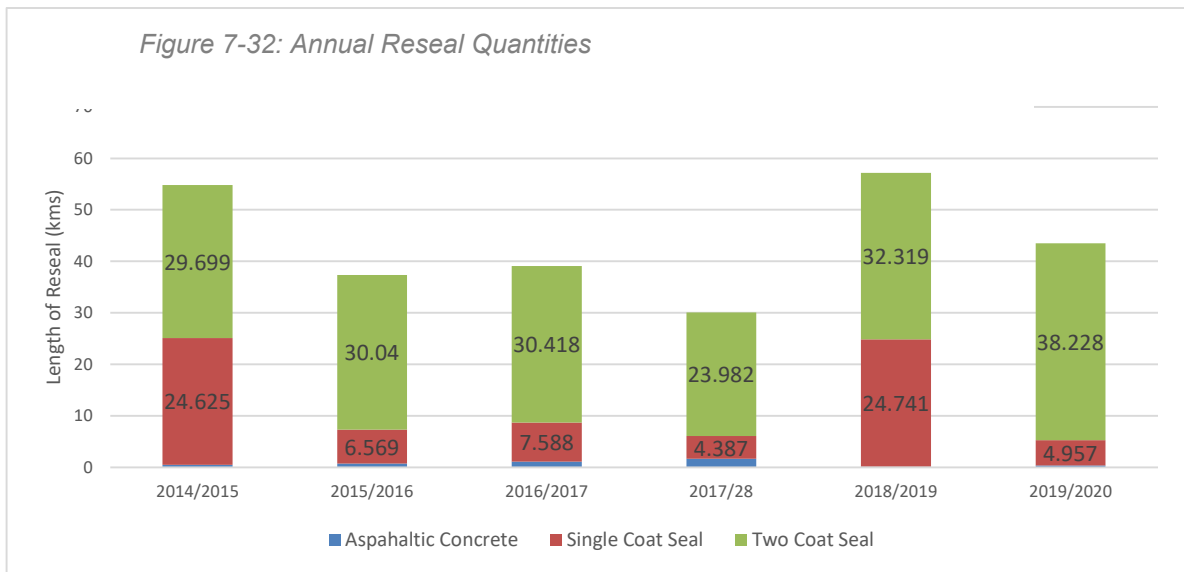


Figure 7-31: JunoViewer Renewals Chart.



The current length of annual resurfacing achieved across the sealed network is close to 4%. If the current annual resurfacing rate continues at 4%, then every sealed surface would need to achieve actual seal life of 25 years before it is resurfaced again. At this rate to ensure all sealed roads on the network are resurfaced at least once it would take 25 years to complete. This is an unrealistic achievable surface life for the sealed roads on this network especially with significantly increasing traffic volumes. The surfacing programme is driven by identified need and failure to keep the roads waterproof will lead to increased budgets for sealed pavement maintenance repairs.

With more investment a realistic and feasible achieved life for the sealed surfaces on this network would be 5% of the network per year. At this rate the sealed surfaces on the network would be resurfaced at least once in 20 years which is what has been achieved historically on the network. A further increase to address the backlog from the last 5 years of underinvestment may be necessary.



## **Pavement Rehabilitation**

Pavement rehabilitation is carried out when it is the “Least Maintenance Cost”<sup>7</sup> solution to pavements faults and is essentially the renewal of the pavements basecourse layer. Work carried out under this activity results in pavement renewal and the techniques employed include overlays, rip and remake and chemical stabilisation. Pavement rehabilitation is rarely used on metal roads in the district.

Forecasts of the need for pavement rehabilitation are based on a combination of road condition assessment, engineering judgement with all recommendations from the treatment selection report, and economic evaluation.

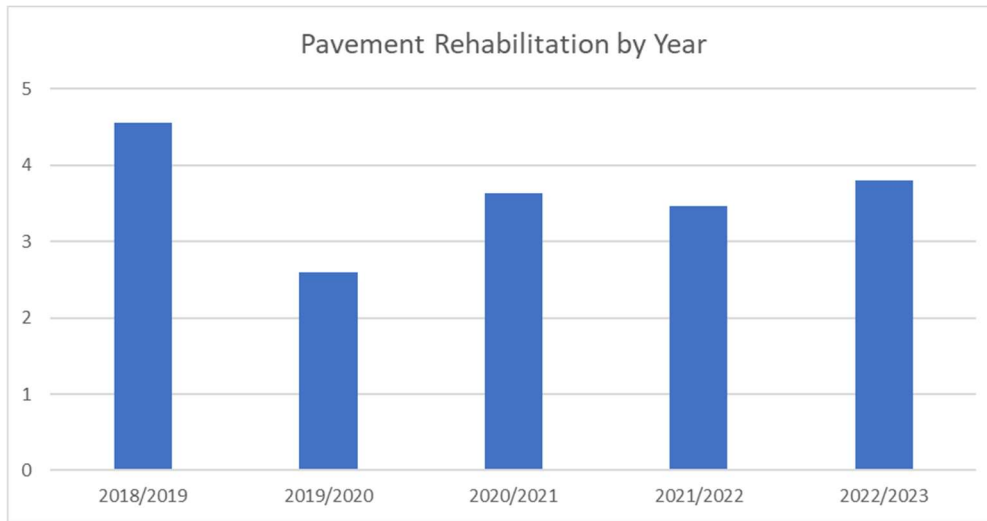
In the previous LTP period pavement rehabilitation needs and hence quantities had started to decline. However, increased pavement failures have seen this quantity creeping up again, particularly on Arterial and Primary Collector roads. An assessment of the balance of the amount of rehabilitation versus resurfacing (resealing) has been carried out based on pavement and condition trends and on observed pavement performance. The main condition trend relating to structural condition is roughness and roughness has been slightly improving over the years. This is backed up by the observed pavement condition where areas of failure justifying rehabilitation are not occurring and are not likely to occur as long as good maintenance and regular resurfacing is carried out.

The average rate of pavement renewal since 2014/2015 has averaged around 4.4 km/year. The exception to this was 2019/20 where Covid-19 lockdown prevented the full range of work required to be carried out.

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<sup>7</sup> To be the Least Maintenance Cost solution the cost of the work must, over a 25-year term, be cheaper for the Council, and NZ Transport Agency where appropriate, in terms of Net Present Value (NPV) than maintaining the existing asset over the same period. The Discount rate specified by NZTA for the NPV calculation is 8%.

Figure 7-33: Annual Pavement Rehabilitation Quantities



### Unsealed Roads Remetalling

Unsealed roads in the district have deteriorated during the period from May 2021 to July 2023. This is due primarily due to insufficient metal on the roads, both due to an ongoing lack of sufficient metal application for the growing traffic volumes, and several large flood events which washed the surface away on many of the unsealed roads. Council responded by carrying out work unsubsidised, but NZTA have since provided co-funding for this work.,

One area of unsealed road that deteriorates quickly is the unsealed fords. Discussions have been held as to the appropriate time to re-open these following flood events, which typically cause severe damage. As these are generally on lightly trafficked roads the cost to reinstate becomes harder to justify. This will be monitored.

Back in 2010 NZ Transport Agency completed a gravel loss study which monitored the deterioration rates of gravel roads. This study involved ten Councils, including WDC. The study indicated a loss of metal of around 10mm per year for roads carrying 100vpd. At a metal depth of 60mm this would indicate a life of 6 years for these roads; however, experience in the Waimakariri district is that the loss is higher due to a predominately dry climate and dry winds. Also not included in this study is the effect of larger percentages of heavy traffic and how these should be factored into the calculations. It is proposed that gravel loss be monitored during the period of the next AMP to ensure that Council is utilising an appropriate rate of renewal for the Waimakariri District.

Table 7-12: Remetalling Frequency

Traffic Volume	Years Between Remetalling	Roads	Length (m)	Road Width (m)	Depth of metal (mm)	Volume for road length	No. of Applications	Volume of material over 12 years (m <sup>3</sup> )	
300 to 375 vehicles per day	1	2	3000	6	100	1800	12	21600	
200 to 230 vehicles per day	2	5	7500	6	90	4050	6	24300	
150 to 200 vehicles per day	3	11	12500	6	80	6000	4	24000	
100 to 150 vehicles per day	4	39	53000	6	70	22260	3	66780	
80 – 99 vehicles per day	5	37	53000	6	70	22260	2	44520	
50 – 79 vehicles per day	8	134	155000	6	60	55800	1.33	74400	
<50 vehicles per day	12	224	303000	6	60	109080	1	109080	
								364680	
								Annually	30390
								Loose Measure	<b>36468</b>

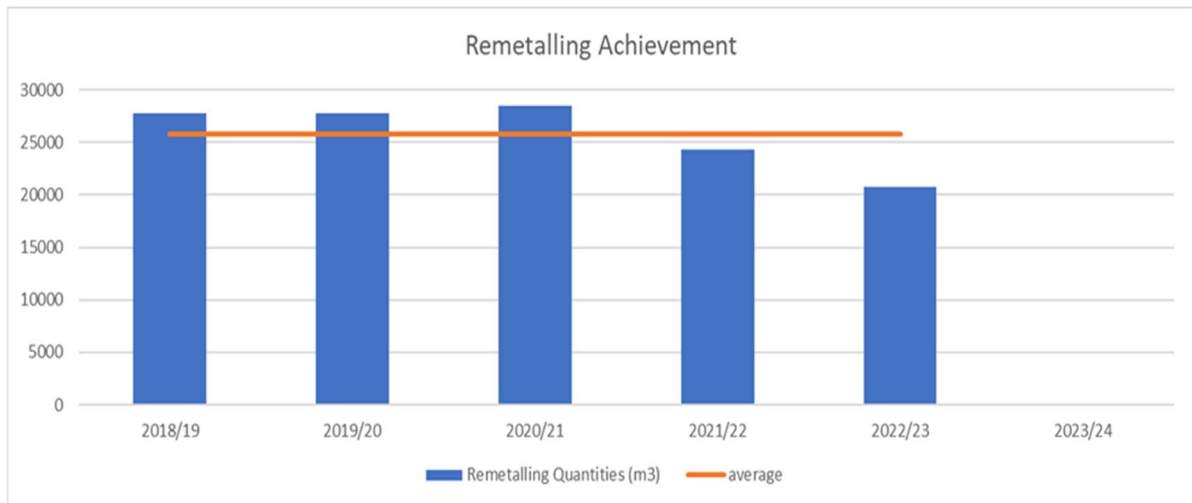
Based on this frequency, the metal depths and the traffic volumes, the length of remetalling required each year is 58km. This equates to approximately 36,500m<sup>3</sup> (loose) of metal per annum based on the latest traffic volumes. However, the quantity of remetalling carried out over the last three years has been around 27,000m<sup>3</sup> (loose measure) per annum.

It is noted that the area calculated is based on RAMM widths and these have not been recently validated, however the average width of the road at around 4.7m is not unlikely.

The remetalled roads programme is developed from maintenance inspections by the road maintenance contractor and Council roading staff. As the rate of deterioration can vary due to a number of factors this is the most reliable means of programming this work.

Actual quantities are shown in the figure below.

Figure 7-34 Remetalling achievement over time



## Renewal Strategies

The following specific strategies are adopted, in addition to the general strategies discussed previously.

- High Shoulder Removal
- Shoulder Reclaiming
- Increasing quantity of metal

## Problems

- Reseal pavements at intervals close to the maximum seal life cycles as confirmed by field validation, unless earlier intervention is warranted by the condition of the pavement such as:
  - Lack of water proofing
  - Loss of texture resulting in loss of skid resistance
  - There is evidence of crack initiation from binder condition and stone loss

## Solutions

- Applying the correct treatments at the optimum time so that the required level of service is delivered whilst minimising the total life cycle cost.
- Engage the Road Network Maintenance contractor recommendations on the type of renewal.

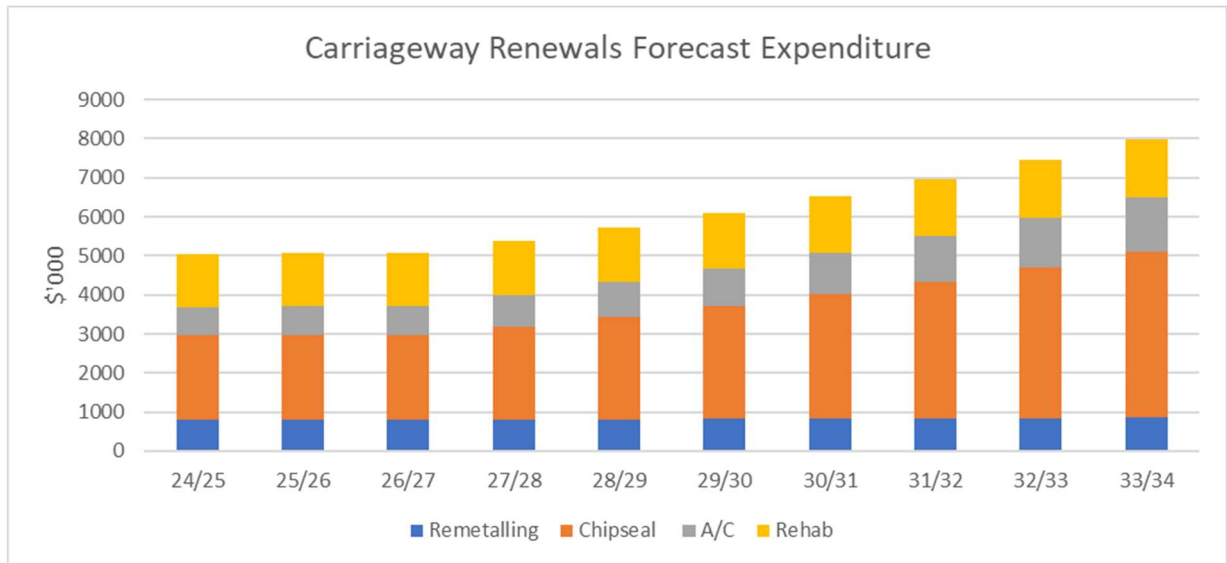
Although the length of unsealed roads has declined slightly as a result of seal extensions in areas becoming more extensively populated, this is offset by the extra traffic over the network, and it is becoming harder to meet expected levels of service within budget.

As with other aspects of the contract, experience has played a big part in ensuring good value for money, as shown in the ONRC comparison with our peers. However, as experienced grader drivers become harder to find, it becomes more important to use technology as a tool in better management. It is planned to monitor unsealed roads more closely in this AMP period, using Juno Viewer and Roadroid. These will not only allow the maintenance to be better tailored to conditions but will help target remetalling.

## Summary of Future Cost

The figure below shows the renewal cost, in 2023/24 terms for the next 10 years, which is relatively steady for the period of this plan with allowance for the cost of second coats on new seals in subdivisions, but will need to be increased in future to cater for the network growth, e.g. new subdivisions are predominantly AC which has a useful life of 25 years. Therefore in 25 years' time the renewal programme may need to be increased to allow for this, however, the 25-year figure is a theoretical one and in reality this is likely to be smoothed to an affordable programme.

Figure 7-35: Carriageway Renewal Forecast Expenditure



### Creation/Acquisition/Augmentation Plan

This section of the plan covers strategies for the creation of new assets (including those created through subdivision and other development) or works which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in traffic needs or customer expectations.

In summary, the types of projects which result in creating new assets are:

- Seal widening.
- New/ upgraded roads.
- Minor improvement projects.
- Seal extension.
- Intersection upgrades.

### Seal Widening

Seal widening of existing seals is carried out to overcome edge break or to reduce shoulder maintenance. Seal widening is dependent on Waka Kotahi funding approval. It is unlikely that any roads will meet Waka Kotahi criteria for seal widening.

### New / Upgraded Roads

New road construction mainly occurs through the subdivision process and the new roads are vested in the Council. 51.4 km of roads have been vested in Council in the last decade, compared with 78.6 in the decade prior, as shown in the graph below.

Figure 7-36: Carriageway Vested Assets since 2004

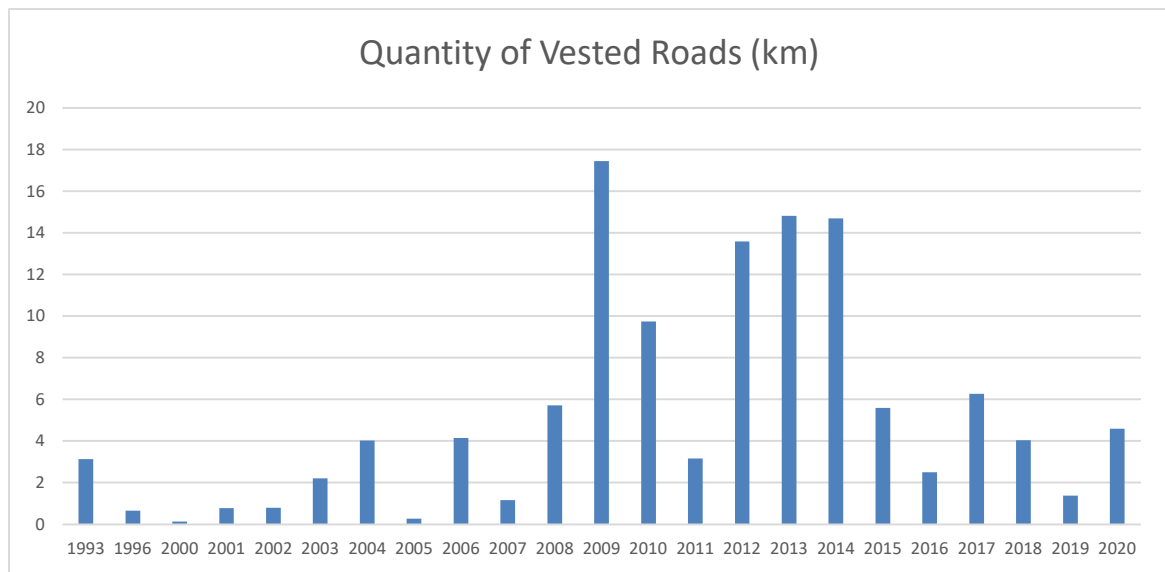


Table 5-1 in the Future Demand section of the AMP notes the projects that have been identified to improve LOS or respond to growth.

### Minor Improvement /Low Cost Low Risk Projects

This category of projects was originally designed to allow Councils to carry out lower value capital works to improve the levels of service for safety and for walking and cycling, without requiring the level of supporting detail required for more major projects. Low Cost Low Risk (formerly Minor improvements) projects are prioritised taking into account crash history, Waka Kotahi audits and assessments, community feedback and Council strategies. For walking and cycling projects an emphasis is on improving facilities at schools to encourage more children to walk and cycle and to improve safety, however planned projects have been expanded to include commuting cycling to link the main centres of Rangiora, Kaiapoi, Woodend, and on to Christchurch. These paths are predominantly off-road, to provide a safer environment and encourage more people to travel by modes other than the private car. In the rural areas the results of the Waka Kotahi Road Infrastructure Safety Assessment (RISA) provides input to the programme. The RISA identified roadside hazards as a priority area, and this is being addressed through Minor Improvements.

In 2013 this category was expanded to include bridges under \$300,000 replacement cost. The funding level for Minor Improvements was increased to \$1,000,000 in the 18/21 funding round. The Low Cost Low Risk category has been significantly changed for the 21-24 AMP. With a rise in funding to \$2 million comes a higher level of accountability and a requirement to demonstrate alignment with national and regional priorities as well as local. Projects will also be scrutinised and potentially ranked nationally. Some information has been received from Waka Kotahi regarding likely funding, but this is not sufficient to provide any certainty as to

what projects will receive funding. As occurs every three years, funding will officially be allocated in the new financial year at which time some certainty will be available for planning.

### **Seal Extension**

The Council has a large number of rural unsealed roads and there is ongoing pressure to seal them, predominantly by the rural lifestyle communities. Included in the plan is 1 km of sealing of unsealed roads annually, \$400,000 every 3 years from year 2018/19 for unsealed road sealing. Roads are also sealed on availability of financial contributions from subdivisions. The current Council Policy is to seal roads when 30% of the cost is available from financial contributions. Where there are no financial contributions available the cost share is 50% property owner and 50% Council.

### **Intersection Upgrades**

Intersection improvements are carried out to cater for growth and to improve the safety when the crash rate is high. \$120,000/annum has been proposed for miscellaneous intersection improvements for 2024/25 to 2026/27. In addition, a further \$580,000 is proposed for 27 high risk rural intersections where it is felt relatively low-cost measures can be undertaken which will provide a substantial risk reduction. Co-funding for this work has been more difficult to obtain in the last three years.

### **Selection Criteria**

Capital projects are mainly influenced by:

- Growth – projects focused on meeting increased traffic or changes in traffic patterns.
- Service Level – projects planned to improve the level of service.

### **Disposal Plan**

The disposal of the old pavement as result of the renewals programme will have an impact which has to be taken into account. There is also the practice of recycling and reuse where suitable. The unsuitable material for further use (cut to waste) shall be disposed in specific designated sites.



## 7.4 Bridges and Road Structures



### Purpose

To provide roading structures to ensure safe, reliable and continuous usage of the transport network.

### Problem Statements

- *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- This is particularly apparent on our single lane bridges on high volume routes, such as Skew Bridge and the Waimakariri Gorge Bridge, which is shared with Selwyn District. Appropriate funding has not been allocated to this work category in the past, leading to deterioration of the bridge stock. The process of remedying this was started in the 21-24 AMP, however more rigorous study of the WSP inspection reports indicated a significant increase in expenditure will be required to bring the stock up to fit for purpose, and the funding request reflects this.
- *Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting in disruption.*
- This is particularly important for bridges and large culverts which often form critical links, especially at end of roads, where they may be the only form of access. A particular concern with some of these going forward is that bridge heights may be too low, or culverts undersized as climate events become increasingly larger.
- *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.*

- Few bridges are designed for pedestrians and cyclists, and for these to share the road with motorised traffic in a corridor with no room to escape often results in this group choosing not to utilise walking or cycling due to the risk or choosing other less desirable routes. An example of this is Skew Bridge, which is on a high-volume route designed to provide an alternative to the main route through the centre of Rangiora. Skew Bridge is barely wide enough for two trucks to pass each other, and pedestrians and cyclists have been known to use the nearby rail bridge rather than cross on Skew Bridge.
- *Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.*
- Bridges are inherently dangerous due to lack of recovery room, and few of our structures either have modern guardrail, or appropriate end treatments, often terminate in concrete obstructions, or are only protected by sight-rails, many of which require significant maintenance.

## Other Issues

A number of issues were identified in the 21-24 AMP, and some progress made as below, however some aspects continue to be ongoing. Those issues include:

- Limitations to stored data related to bridges. Few construction plans for bridges are available and those that are, are stored in various locations. These should all be added into central repository when required in an emergency. As designs are completed these are attached to RAMM as well as stored in TRIM, Council's file system. This is still only a small portion of the total number of structures and cannot replace on site investigations.
- Insufficient funding to keep up with inspection recommendations. Most funding is directed to the most critical work identified, and many recommendations remain to be implemented long after the year they were identified, often due to emergency reactive work taking priority. Those renewals that were implemented in the 21-24 NLTP included the relining of several Armco culverts, which extended their lives by around 25 years. In terms of maintenance, the work was primarily reactive, including guardrail/handrail repairs.
- Damage to bridge handrails due to oversize agricultural vehicles. An ongoing issue, particularly since it is impossible to identify the parties causing the damage as vehicles are not required to be registered.

## Solutions

- Continue to build up data from inspections, both scheduled professional service inspections, and those carried out by in-house staff.
- Establish what is critical information to hold in RAMM and back capture where possible, beginning with the most critical, whilst eliminating the unnecessary. One impediment to

making major progress on this was the change to the bridge database which only allowed editing in the last year.

- Additional funding was applied for the 21-24 period in order catch up on recommended renewals and some progress has been made to renewals.

At this stage no one solution has been determined for oversized vehicles. As a trial, large bollards were installed at one bridge to deter the vehicles. These were in turn broken as well as the handrails. Further consideration could be given to a suitable education campaign.

## Background Data

This section includes bridges, bridge culverts (culverts which have a cross-sectional area greater than 3.4m<sup>2</sup> are considered bridges, this being an NZTA definition), underpasses, cattle stops, and retaining walls. These assets are held in RAMM tables.

There are two boundary bridges, i.e. bridges spanning the boundary between the District and neighbouring authority. They are:

- The Old Waimakariri River Bridge (Main North Road), shared with Christchurch City Council
- The Waimakariri Gorge Bridge (Depot Road), shared with Selwyn District Council

Bridges and road structures assets account for 11.4% of the total roading and transport asset group, based on replacement cost.

## Physical Parameters

The Council manages a total of 332 bridges and road structures, 79% of these bridges are in rural areas. The breakdown of these structures is shown in the table below:

Table 7-13: Summary of Structure Types

Structure Type	Unit	Quantity	Quantity	Quantity
Bridges	ea	153	157	155
Large Culverts	ea	132	131	134
Pedestrian underpass	ea	0	0	0
Stock underpass	ea	13	13	13
Cattle stops	ea	20	19	28
Retaining walls	ea	9 (826m)	12 (900m)	25 (1581m)

Bridges vary from high standard concrete structures to very low standard timber structures with severe restrictions placed upon them. The figures below summarise the bridges and large culverts by construction type:

Figure 7-37: Bridges by Construction Type

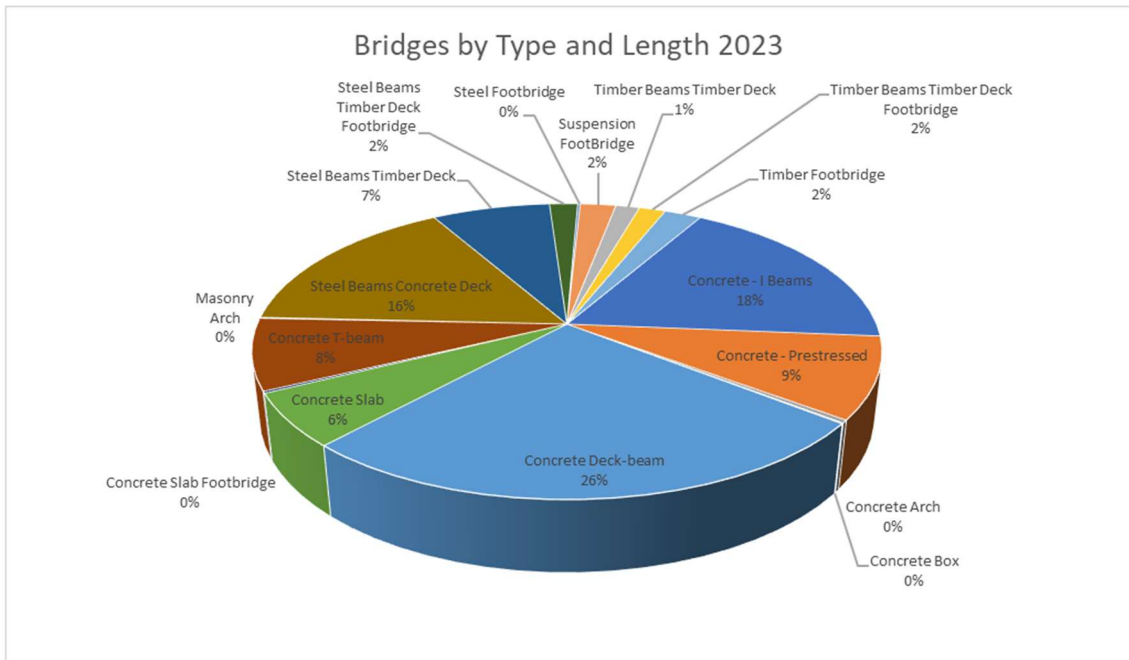
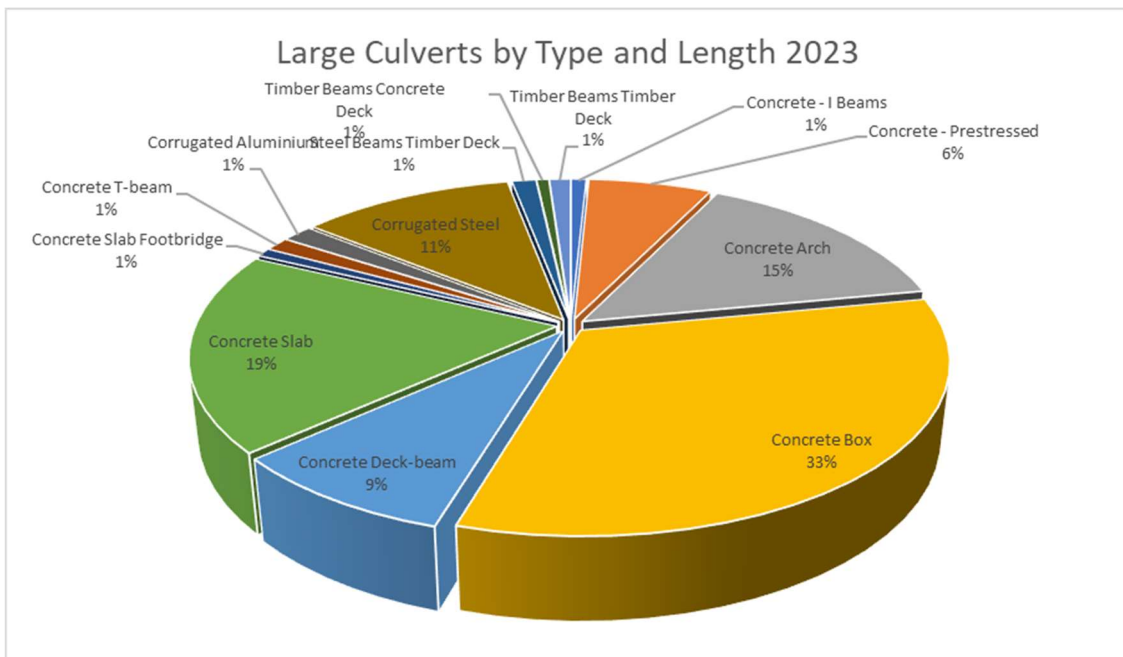


Figure 7-38: Large Culverts by Construction Type



### Asset Capacity/ Performance

There are several narrow bridges on the network that may require widening in the future as traffic volumes increase. This plan provides for some bridge widening when it is economic to do so based on road users' cost and safety. Other changes have been made to some narrow bridges, such as re-signing as one lane, as a means of improving safety.

All new bridges are constructed to carry HN-HO-72 traffic loadings.

## **Waimakariri Major Bridges**

### **Ashley River Bridge**

The Ashley River Bridge on Cones Road was replaced in 2014/15. The old bridge had reached the end of its economic life and because of the short pile length and scouring in high river flows the old bridge was required to be closed during high river levels. This caused major disruption to the local community. The old bridge was also very narrow and not suitable for the 10,000 vpd that cross the bridge and it had no walking or cycling provision. The new bridge caters for both cyclists and pedestrians. Its construction has virtually eliminated one of the Lifelines Risks, particularly as it provides an alternative route for times when the nearby State Highway route is impassable.

### **Old Waimakariri Bridge**

The Old Waimakariri Bridge is jointly owned by the Christchurch City Council and Waimakariri District Council.

The bridge has a narrow width which will limit its ability to carry future traffic volumes and provide sufficient facilities for cyclists. The Council, along with Christchurch City Council, budgeted for a “clip on” cycle path in the 2012-22 LTP and 2012-15 NLTP but the project did not gain Waka Kotahi funding approval. This need for this alteration has been mitigated by cycle lanes added to the Northern Motorway, as part of the Christchurch Northern corridor project.

Christchurch City Council has assessed that the Old Waimakariri Bridge will require replacement in 2051/52. Prior to that time some renewals of components will be required, including handrail replacement, concrete crack repairs, deck joint replacing, deck surface replacement and upgrading beam to pier fixings. These works are planned for the 24-27 AMP period.

### **Waimakariri Gorge Bridge**

The Waimakariri Gorge Bridge is jointly owned by the Selwyn District Council and Waimakariri District Council. Recently the bridge suffered rapid deterioration of the timber deck and road surface.

The deck has not achieved its expected life and a replacement deck is being constructed in the 2023/24 financial year, with funding from Waimakariri District, Selwyn District and NZ Transport Agency (Waka Kotahi). This is a laminated plywood deck.

## **Asset Condition**

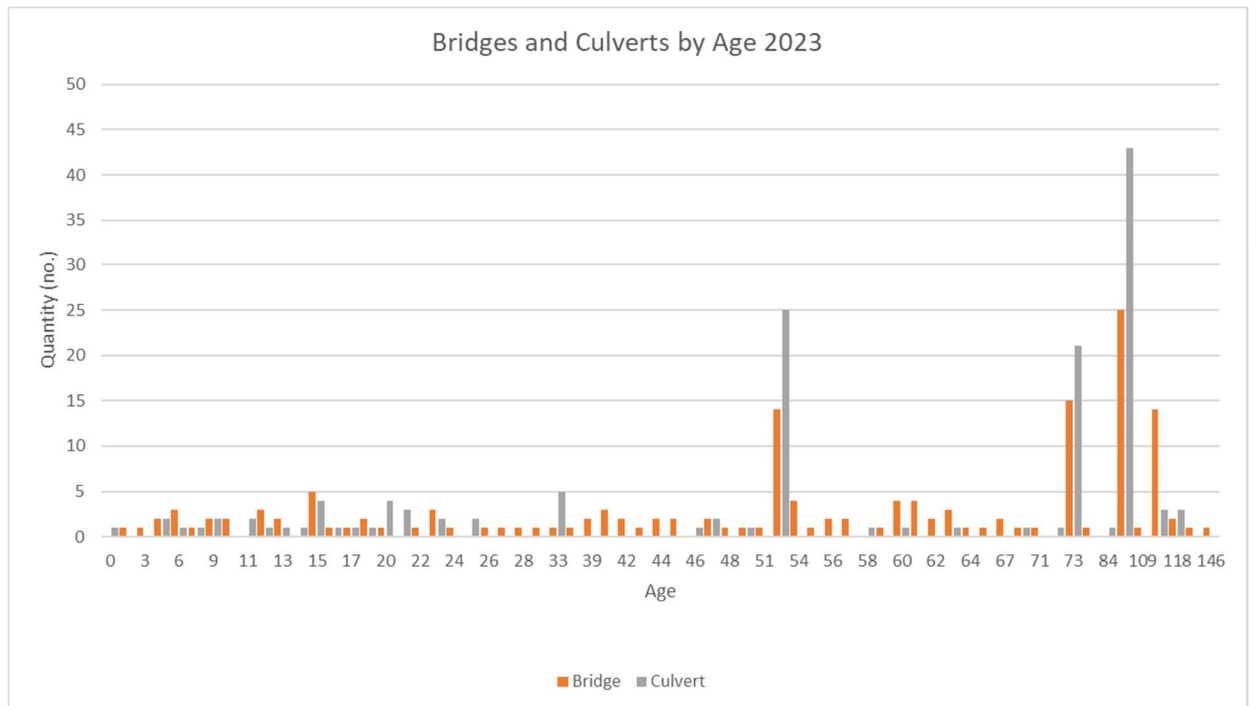
### **Age profile**

Ages of bridges and road structures vary in the district as indicated in the figure below. In September 2014 all bridges and large culverts were assessed to assess a) whether the entered construction dates are reasonable and likely to be correct, and b) assign construction dates

where either none was known or appeared incorrect. New dates were estimated based on construction types known to have occurred in particular eras.

As with all assets, this data provides a useful initial summary of likely replacement dates but more emphasis is placed on the condition of bridges to determine remaining useful life because the life of a bridge is more dependent on its condition and how well it is maintained than on the date it was built. However, age will still provide a high level indication of likely replacement date.

Figure 7-39: Bridges and Large Culverts Age Profile



### Condition

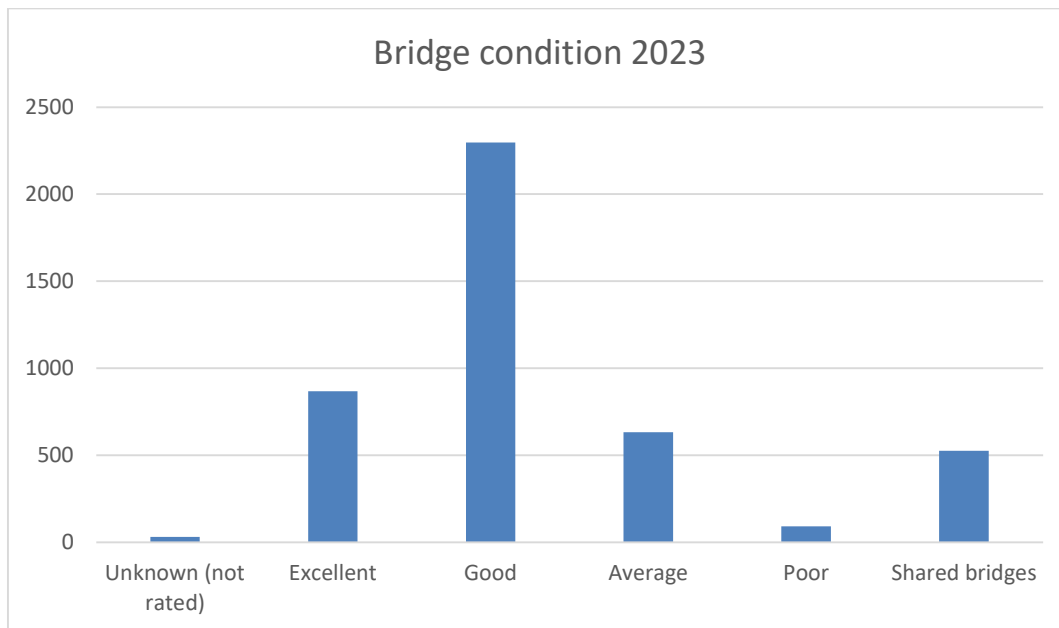
The Council engages WSP Ltd to carry out a detailed structural inspection of bridges and large culverts annually in accordance with Waka Kotahi guidelines. This inspection includes 100% of the timber bridges, 100% of all posted (weight or speed restricted) bridges, one third of all other bridges, and all other bridges flagged as requiring ongoing monitoring, with all bridges being inspected at least every 3 years.

The maintenance contractor inspects bridges on a regular basis to identify and correct routine maintenance items. This includes an inspection after every flood event to determine whether there has been any detrimental impact.

Weight and speed restrictions are placed on 8% of the district's bridges to advise heavy transport road users where it is safe to cross. This is dependent on axle loadings and is a key factor in determining which routes are not accessible by HPMV (High Productivity Motor Vehicles), and '50 max', as the name suggests, vehicles carrying up to 50 tonne. Usual maximum loading is 46 tonnes.

A 1-5 condition rating grade has been assigned to each bridge and large culvert based on the general condition, the superstructure condition, foundation and substructure condition, and the scouring and waterway. This assessment indicates that just 4% are rated as being in poor or very poor condition, while 19% are in average condition and 76% are in good to excellent condition. This assessment compares with 2% rated as being in poor or very poor condition, 16% average condition and 81% good to excellent condition back in 2020. This would indicate that despite some specific issues with some bridges, overall, their condition is holding fairly well. However, those few in the Poor to Very Poor category will need attention in the near future.

Figure 7-40: Bridge Condition by Quantity of Bridges



Over the last 5 years there has been a growing backlog of work identified by the annual inspections. While some recommendations have been dealt with, in other cases work arising from emergency events, crashes or simply over-width vehicles damaging handrails or guardrails has led to insufficient funding to complete these planned works. Additional funding was received for the current NLTP and this has enabled some catch up works, however there is still a substantial amount of general maintenance that requires attention and funding has been requested to address this.

### Asset Criticality

Critical bridges were identified through the Lifeline Disaster Resilience Assessment in 2009. Criticality was determined for structures based on traffic volume, road function, availability of alternative routes, and impact of bridge failure in isolating communities. Seismic assessments have been completed on priority 1 bridges and will be carried out on remaining bridges when funding allows.

The following bridges have been identified as critical assets:

Table 7-14: List of Critical bridges

Bridge Number	Bridge Name	Road Name
Priority 1		
149 A	Ashley Bridge	Cones Rd (149)
178 B	Eyre River Bridge	Depot Rd (Ex Sh72) (178)
178 D	Waimakariri Gorge Bridge	Depot Rd (Ex Sh72) (178)
183 A	Makerikeri Bridge 1	Dixons Road West (854)
23 A	Ashley Gorge Bridge	Ashley Gorge Rd (23)
399 A	Old Waimakariri Bridge	Main North Rd, Old Waimakariri Bridge (565)
487 A	Stoke Bridge	Oxford Rd (Ex SH72) (487)
59 A	Garry River Bridge	Birch Hill Rd (59)
59 C	Bullock Creek	Birch Hill Rd (59)
708 A	Kaiapoi River Bridge	Williams St (708), Kaiapoi
Priority 2		
373 B	Gillespies Bridge	Lees Valley Rd (373)
373A	Middle Bridge	Lees Valley Rd (373)
373D	Five Gullies	Lees Valley Rd (373)
721 A	Coopers Creek	Woodside Rd (721)
286 A	Sauleys Bridge	Harmans Gorge Rd (286)
386 C	Grey Bridge	Loburn Whiterock Rd (386)



## Asset Valuation

Valuation table as at 30 June 2023, full valuation is included in Appendix C

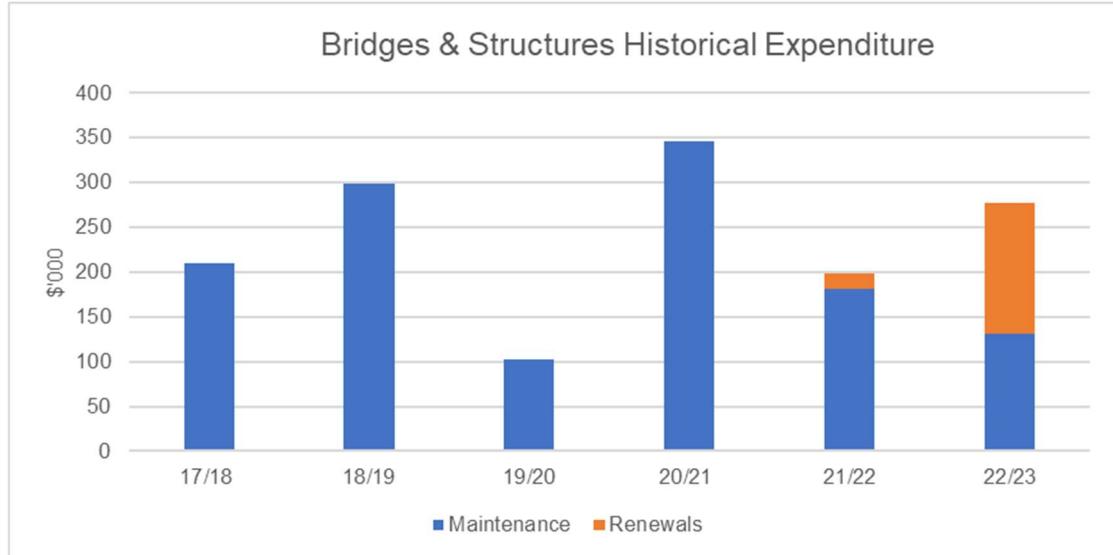
Table 7-15: Summary of Road Structures Asset Valuation as at 30 June 2023

Description	Unit	Quantity	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (AD)
Bridges	m	3,809	\$130,314,306	\$72,227,666	\$935,892
Bridge Culverts	m		\$18,906,793	\$11,432,422	\$200,999
Cattle Stop	ea	27	\$794,815	\$367,970	\$9,935
Retaining Wall	ea(m)	26(1285)	\$675,484	\$528,667	\$13,495
Total					

## Historical Data

The following figure summarises the total expenditure for the bridges and road structures over the past 6 years:

Figure 7-41: Bridges & Road Structures Historical Expenditure



The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Table 7-16: Risks Associated with Bridges

Risk Description	Risk Assessment	Current Mitigation
Bridge damage caused by over dimension vehicles.	Medium	<ul style="list-style-type: none"> <li>• Overweight and dimension permit system in place</li> <li>• Police enforcement,</li> <li>• Public feedback</li> </ul>
Damage or collapse of structures in adverse event	High	<ul style="list-style-type: none"> <li>• Annual bridge inspection, regular maintenance programme, lifelines Disaster Resilience Assessment, and bridge seismic assessment</li> </ul>
Under designed culverts resulting in surface flooding and possible crashes	Low	<ul style="list-style-type: none"> <li>• Robust maintenance and renewal programme,</li> <li>• Regular detailed inspections during and following flood events</li> </ul>
Vandalism to footbridges leading to personal injury	Medium	<ul style="list-style-type: none"> <li>• Customer feedback through Service Request,</li> <li>• Regular inspections</li> </ul>
Crashes due to narrow bridges	Low	<ul style="list-style-type: none"> <li>• Monitoring and identifying narrow bridges,</li> <li>• advance warning signs, sight lines, sight distance,</li> <li>• Convert to one way if required</li> </ul>

### Routine Operations and Maintenance Plan

Bridges and road structures maintenance works are carried out under the Road Network Maintenance Contract 19/43. Maintenance works are identified through contractor routine maintenance inspections and through the annual detailed inspections carried out by WSP.

Maintenance provides for all work which contributes to life extension of a structure without replacing significant components, such as cleaning, painting, patching, bolt tightening.

Structures Component Replacement is a renewals activity which extends the life of the structure without replacing the total asset, e.g. deck or pier replacements

All routine operations and maintenance on bridges and road structures qualify for Waka Kotahi financial assistance. Replacing an asset will require a cost benefit analysis.

## **Operations and Maintenance Plan**

Operations and maintenance activities include:

### ***a.* Planned Maintenance**

- Regular bridge inspections by the road maintenance contractor
- Annual detailed bridge inspections by Stantec
- Cleaning and clearing bridge joints and drainage channels.
- Repairs to handrails.
- Replacement of timber blanks.
- Replacement of damaged or deteriorated structural members,
- Sand blasting and painting of structural members,
- Foundation scour protection,
- Repair of retaining walls,
- Stream clearing and debris removal to maintain water courses under bridges.

### ***b.* Unplanned Maintenance**

- Immediate response emergency work on bridge and road structures.
- Special inspections after specific events such as earthquakes and severe floods

## **Operations and Maintenance Strategies**

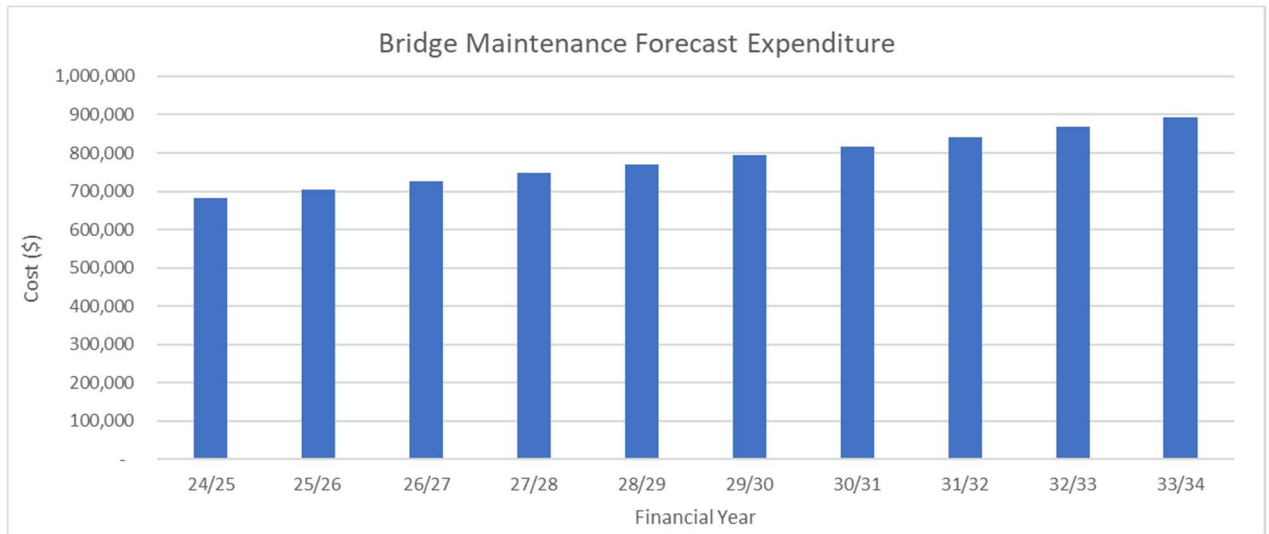
Maintenance programmes are developed from the schedules of defects identified during the annual and regular inspections, with priority given to repairing defects which constitute a risk to public safety. Repair treatments and priorities are determined by considering the impact on:

- Public safety.
- Traffic movement.
- Future costs if the work is not done.

## **Summary of Future Costs**

The following graph shows a steady maintenance cost forecast in 23/24 dollars for the next 10 years. There has been a significant increase in identified scour holes requiring attention, and more work is also required to address vegetation in waterways. Also likely to impact maintenance costs is the reletting of the current contract one year into the next LTP, and the lump sum expenditure will be very dependent on how that particular item is loaded.

Figure 7-42: Bridge and Road Structures Maintenance Forecast Expenditure



### Renewal Plan

Asset renewal is undertaken when the structure has reached the end of its economic life. The type of renewal work undertaken includes:

- Entire replacement of bridges/road structures.
- Partial components replacement e.g. deck, piers.

During the last five years there has been an increasing occurrence of unplanned reactive maintenance required, such as when a bridge approach collapses during scouring. There has also been an increase in the damage done to hand and guardrails due to over-width farm vehicles. Due to these not requiring a registration plate it is very difficult to find the driver to recover the cost. This has meant that much of the identified renewals have been postponed due to funding constraints. It is hoped that the increased funding requested will allow some of the backlog of identified work to be addressed before the repairs worsen and repairs move into renewals work.

### Renewal Strategies

- Renewal needs are identified following the planned inspection programme, or after some unforeseen event causes damage which has resulted in previously planned work needing to be postponed. Other than in these cases, prioritisation is based on consideration of which require immediate attention for safety reasons. However, to date renewals have all been in cases where a critical component has failed and requires urgent attention, such as the loss of the base steel in Armco culverts. In addition, in order to qualify for funding, renewals require an economic evaluation to qualify for co-funding consideration. Other considerations in prioritising repairs or replacement include:
  - Distance for alternative routes in case of closure.
  - Number of vehicles affected by the closure.

- Age profile of the structures.
- Condition profile of structures.
- Level of ongoing maintenance.
- Economic lives of the materials used.
- HPMV need

And consideration of either component or total replacement.

Of these currently condition is the dominant criterion for work. Age is a factor when applying for funding for replacement but prior to that condition helps determine whether a structure is approaching its end date or is unsafe.

The average economic life for structures is assessed at:

- Concrete and steel constructed bridges 150 years.
- Timber 75 years.
- Other (e.g. Steel Armco culverts) 50 years

The guidelines and principles contained in the Waka Kotahi Bridge Manual are used to determine standards. All anticipated costs over the life of an asset are considered when evaluating designs and construction materials.

### **Timber Bridges**

Not including the five (5) footbridges, there are ten (10) bridges with structural timber components remaining in the district. Seven (7) of these have load and/or speed restrictions and the remaining three (3) bridges are adequate for normal Class 1 vehicle loadings. It is unlikely that replacement of these bridges will meet current criteria for NZ Transport Agency requirements for subsidy, therefore they will be maintained as timber bridges until their replacement can be justified or they are replaced with fords or closed. Some of these are historic footbridges and as such are subject to additional requirements for their maintenance to retain existing form wherever possible.

In addition to regular repairs, these bridges require regular timber drilling to ensure they are still structurally sound, and a new round of timber drilling will be required in the coming NLTP period.

### **Armco Culverts**




A number of these culverts were identified early in the 2021-24 NLTP as being at risk and requiring further investigation. The table below shows the outcome of the investigation.

Table 3-1: Summary of Structural Maintenance Recommendations

Culvert ID	Road Name	Condition	Est. Remaining Life (yrs.)	Recommendations	Est. Remaining Life After Repair (yrs.)	ROC \$000s	Timing
183 B	Dixons Rd East	Severe surface corrosion to a height of 400mm above invert. Invert completely corroded through in places.	1	Culvert invert at end of life. Construct reinforced concrete invert within 1 year.	30	30	< 1 yrs
053 A	Beatties Rd	Severe surface corrosion to a height of 1.8m above invert.	1	Culvert invert at end of life. Construct reinforced concrete invert within 1 year.	30	150	< 1 yrs
614 B	Southbrook Rd	Severe surface corrosion to a height of 0.4m above sediment level.	2	Culvert invert at end of life. Assess waterway capacity and explore remedial options.	Dependent on solution	TBC	< 2 yrs
073 A	Boys Rd	Moderate surface corrosion both barrels to a height of 1.0m above invert.	50	Continue to monitor corrosion and take steel samples in 2028.	N/A	2.5	6 yrs
229 A	Factory Rd	Moderate surface corrosion to a height of 1.43m above the sediment level.	50	Continue to monitor corrosion and take steel samples in 2028.	N/A	2.5	6 yrs
300 B	Hicklans Rd	Minor surface corrosion to a height of 0.18m above the sediment level.	50	Continue to monitor corrosion and take steel samples in 2028.	N/A	2.5	6 yrs
109 A	Camside Rd	Minor surface corrosion to a height of 0.95m above invert.	50	Continue to monitor corrosion and take steel samples in 2028.	N/A	2.5	6 yrs
497 A	Park Tce	No corrosion noted.	50+	Continue to monitor invert for corrosion.	N/A	N/A	N/A

From this report, two culverts were identified as requiring renewal work within a year, in addition to three other culverts which had been previously identified and had reached the stage of requiring urgent repairs. These culverts have now all been relined and have an estimated extended useful life of 25 years. The remaining culvert requiring work in the near future is Middlebrook Culvert, Southbrook Road.

As part of the investigation process, samples were taken to determine remaining thickness of the culvert steel. The findings are summarised as follows:

Sample 1 – True RHS barrel 310mm above sediment level	Sample 2 – True LHS barrel 290mm above sediment level	Sample 3 – True RHS barrel 500mm above sediment level
		
Steel thickness: 1.08mm	Steel thickness: 2.41mm	Steel thickness: 3.68mm

### Discussion

The steel samples obtained from the culvert invert (1.08mm minimum) suggest that 100% of sacrificial steel has been lost, and structural steel is starting to be lost. The culvert is nearing its end of life and requires intervention.

As well as the issue of minimal remaining useful life is Southbrook Road's status as the busiest road in Waimakariri District (25-26,000 vpd). It is the main route through Rangiora, provides access to schools, businesses and residences, and having to repair this reactively would be a major disruption to Rangiora. The favoured option from the recommended short list of possible repair methods was also the cheapest, at an estimated \$1.1 Million., and it was recommended that it be replaced within 3-5 years. From report date of 2022 this places replacement date between 2025 and 2027. It is proposed to begin design in 2024/25, with culvert replacement in 2025/26 in line with this recommendation.

The other bridge requiring replacement is the Lees Valley Bypass Bridge. This was a bridge posted at 10%, and served to maintain access for the community at times of floods (light vehicles only). However, at some point a truck attempted to cross and the bridge was irreparably damaged. Work is currently underway on assessing options, and the cost put into the funding application is indicative only.

### **Summary of Future Costs**

The 21-24 NLTP period has seen a large increase in Renewals expenditure. Several bridges/large culverts had declined significantly and required urgent repair. This has led to a substantially increased budget, both currently and what will be required in future. The only bridge actively planned to be replaced in the foreseeable future other than for end of life purposes is Skew Bridge.

It is currently included in the RLTP as an indication of Council commitment to this project, as it is seen as a key component in an integrated approach to providing a safe network for all users and accommodating growth in the district along a key transport corridor. However, it is very low in the regional prioritisation list and would require a major shift of direction from the Agency to support this replacement.

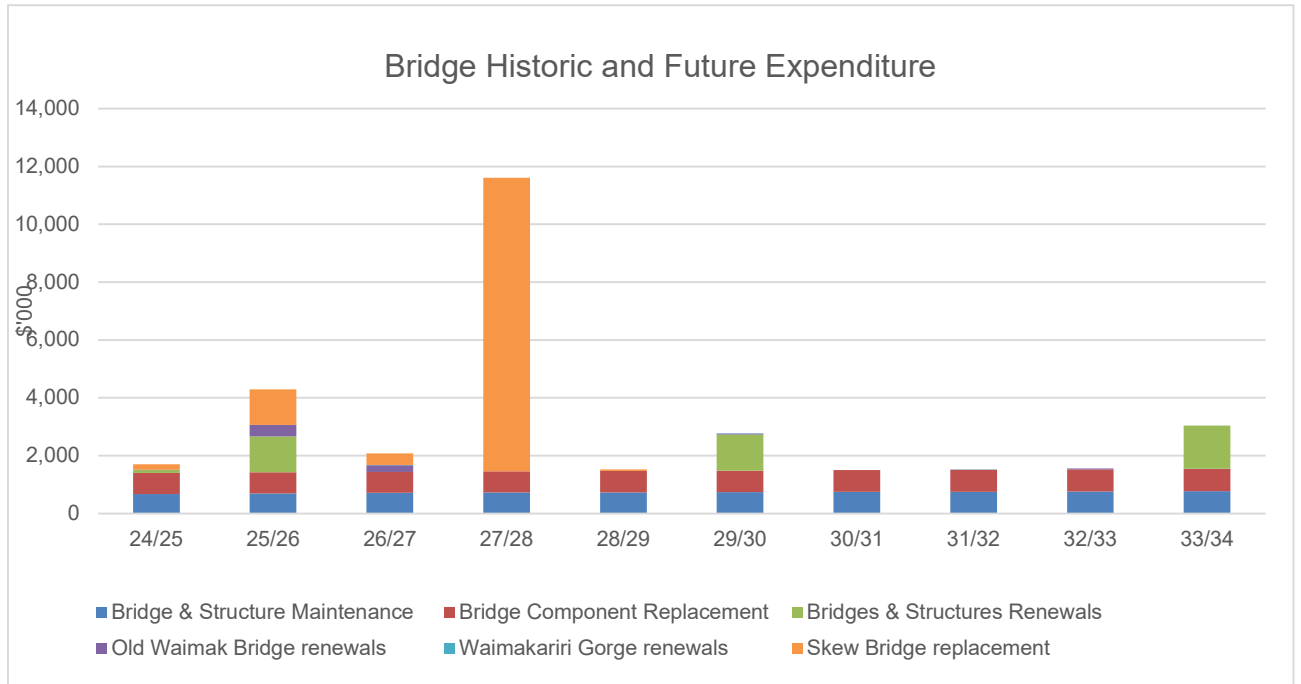
It is currently proposed to carry out pre-implementation work in the early years of the LTP, with construction occurring in 2028/29. at an estimated cost of around \$12 million, provided funding is available, either subsidised or without Agency funding.

An average of just over \$750,000 has been requested per annum to catch up on component replacement, and a further \$1.4M for Structures Renewals as described above. The component renewals annual expenditure forecast has been extended for the remaining 7 years of the LTP, plus an allowance for further bridge replacements in 29/30 and 33/34 however, revisiting this will be a key feature of the 24-27 Transport AMP.

Also required in the near future is funding for both the Old Waimakariri Bridge and the Waimakariri Gorge Bridge. Previously maintenance work was funded completely by both Christchurch City and Selwyn District respectively, however due to increased activity in these areas, and the fact that both bridges are 50/50 share, Christchurch City has officially requested Waimakariri District formally sign up to a Memorandum of Understanding and agreement for a half share in local share cost.

Other future expenses will include additional repairs and component replacement for some identified concrete bridges, and timber bridges, including a number of historic footbridges.

Figure 7-43: Bridge Financials



## Creation/Acquisition/Augmentation Plan

### Selection Criteria

- Development works include:
- Construction of new structures to allow land development.
- Upgrading the dimensions, structural capacity or waterway capacity of existing bridges.

### Disposal Plan

There are no bridges and road structures intended for immediate disposal.



## 7.5 Footpaths & Cycleways

### Purpose

To provide a safe and efficient network of footpaths and cycleways catering for pedestrians and cyclists (including mobility scooters).



### Background Data

The footpath inventory is maintained in the RAMM database. This allows continual maintenance and updating of asset information and more accurate predictions of component lives and renewal needs.

Footpaths on State Highways are included in this asset as they are owned and managed by Waimakariri District Council.

Footpaths identified in this AMP are those located within the road reserve or serve as a direct walking connection between two roads, as opposed to providing access to a recreational space. Those footpaths located in parks and reserves and whose primary function is to facilitate access to recreational properties are included in the Greenspaces AMP.

### Relationship to Problem Statements

- *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- Increased motor vehicle usage results in more situations where vulnerable users and motor vehicles can collide, usually resulting in some injury to the non-motorised network user.
- *Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, resulting in disruption ranging from minor to potentially life-changing impacts.*

- All the aspects that affect a motorist will affect pedestrians and cyclists, not only during emergency events but also potentially needing to relocate infrastructure away from low-lying areas.
- *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, and social disconnect.*
- Provision of appropriate facilities will continue to encourage travel by more environmentally friendly means.
- *Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.*
- Consideration for safety must take into account all users, not only car drivers.

### **Physical Parameters**

The Council manages a total of 395<sup>8</sup> km of footpaths and cycleways. This is split to approximately 349 km of footpath and 44 km of shared footpath and cycleway. Most of the footpath is within urban areas with a relatively small amount of footpath within the rural areas.

The graph and table below show the breakdown of footpath by surface material type. Concrete is the predominant material type, comprising 49% of all footpaths, asphaltic concrete footpaths comprise 42%, and the remaining is a mix of metal, seal, interlocking block, exposed aggregate, and cobblestone paving. This is much the same as the previous AMP, with a 1% increase in asphalt (approximately 4 km). This reflects the increase in concrete footpaths balanced by increased cycle/shared path construction. The average width of footpaths in the district's network is 1.73m.

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<sup>8</sup> As at 30 June 2023

Table 7-17: : Footpath Surface Material by length (km)

Material	Length (km) 2011	Length (km) 2014	Length (km) 2017	Length (km) 2020	Length (km) 2023
Asphaltic concrete	133.089	135.34	138.21	150.67	164.03
Concrete	112.321	146.96	164.74	177.25	195.29
Metal	6.882	8.02	18.33	18.92	17.95
Seal	7.646	7.05	7.15	8.64	8.95
Interlocking blocks	1.019	1.08	1.07	1.75	1.76
Covacrete Cobblestone Paving	0.675	0.74	0.75		
Exposed Aggregate	0.508	3.89	5.08	5.35	3.87
Timber		0.19	0.19	0.18	0.19
Crusher Dust					2.77
<b>Total</b>	<b>262.14</b>	<b>303.60</b>	<b>335.69</b>	<b>362.76</b>	<b>394.81</b>

Figure 7-44: Footpath Type by Length (km)

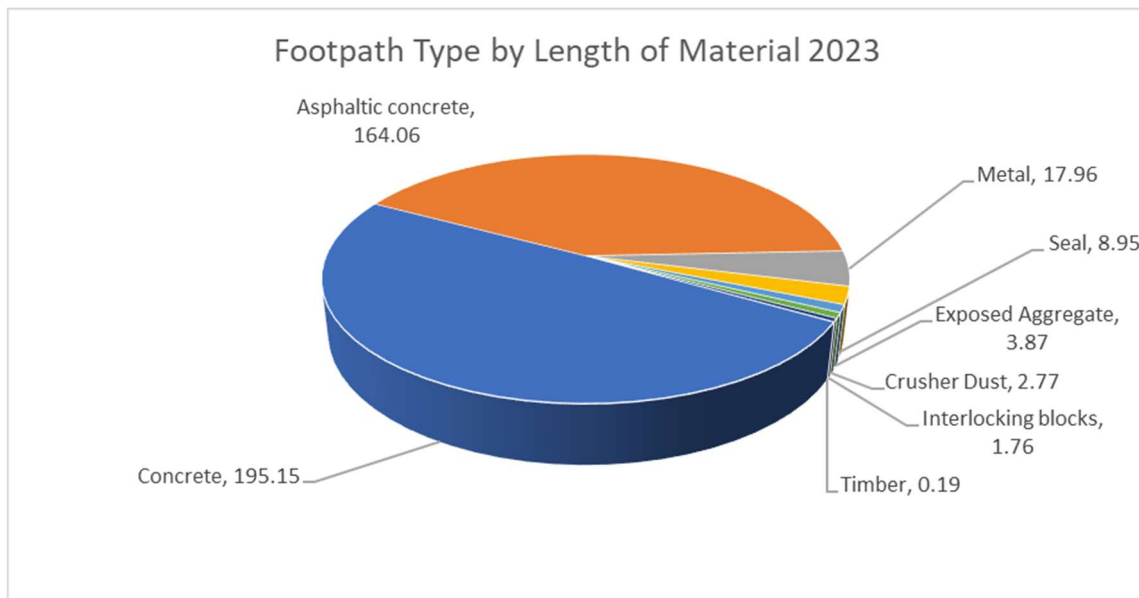
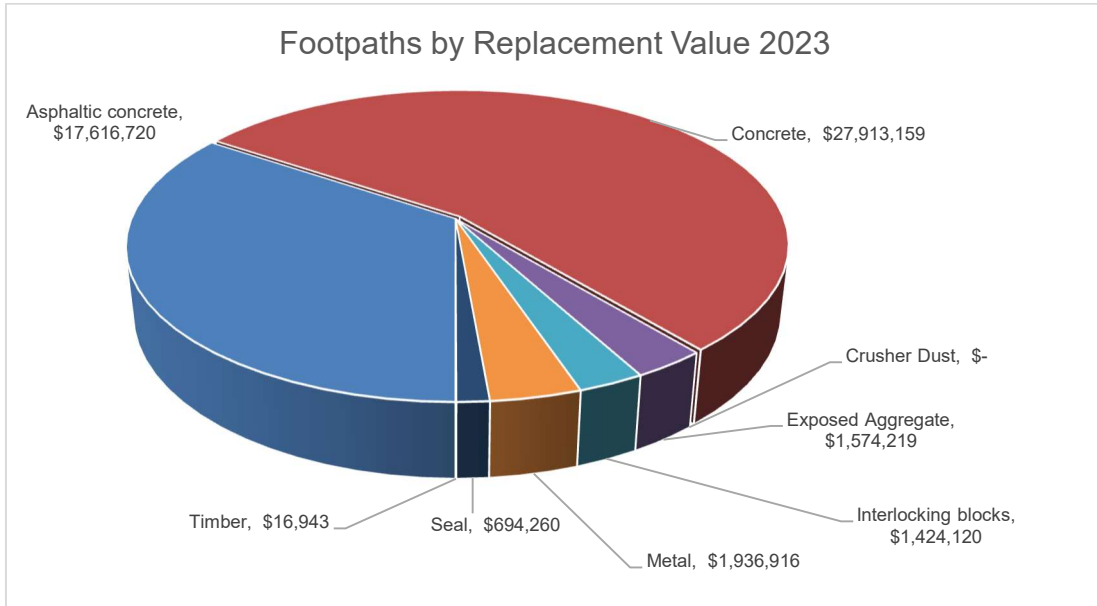


Figure 7-45: Footpath Type by Replacement Cost 2023



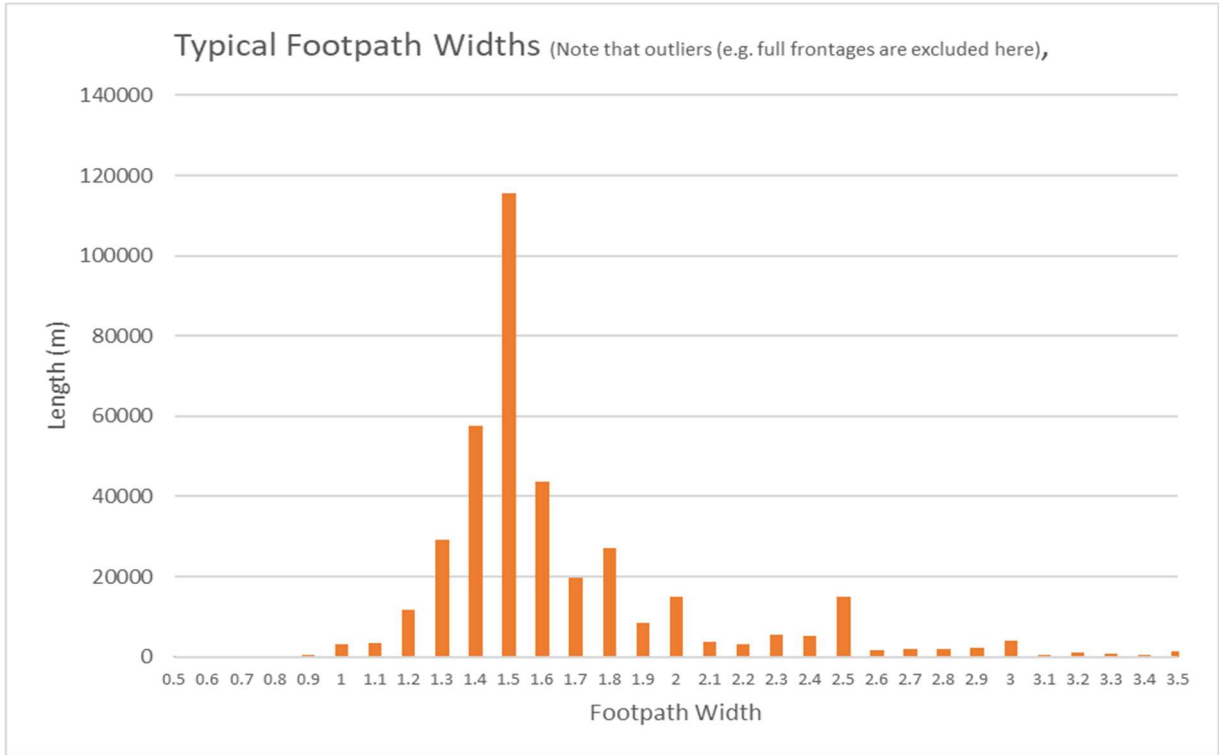
Total Replacement Cost for footpaths in 2023 was \$51.2M compared with \$42.1M in 2020.

### Asset Capacity/ Performance

The footpath is the transport asset which enables the movement of pedestrians, and the cycleway is the transport asset which enables the movement of cyclists, therefore, it is important that the footpaths and cycleways perform well under the required conditions to ensure the agreed level of service are met. The provision of safe and convenient footpaths and cycleways will encourage more people to use these modes of transport thus reducing the demand of motorised traffic.

New footpaths are designed to Council’s Engineering Code of Practice, which the new draft specifies an absolute minimum of 1.8m width for new residential and industrial area, 2.5m for cycle paths, and minimum of 2.5m width for town centre paths. Shared paths are required to be a minimum of 2.2m, however where there a high pedestrian demand this will need to be increased. As can be seen below most footpaths are 1.5m wide, however the length of the network which is greater than this width is slowly increasing. This is especially important with the increasing volume of users, and with other vehicles such as electric scooters choosing to travel off-road. These can travel much faster generally than non-motorised methods of travel, and there is a potential for harm in the case of a collision.

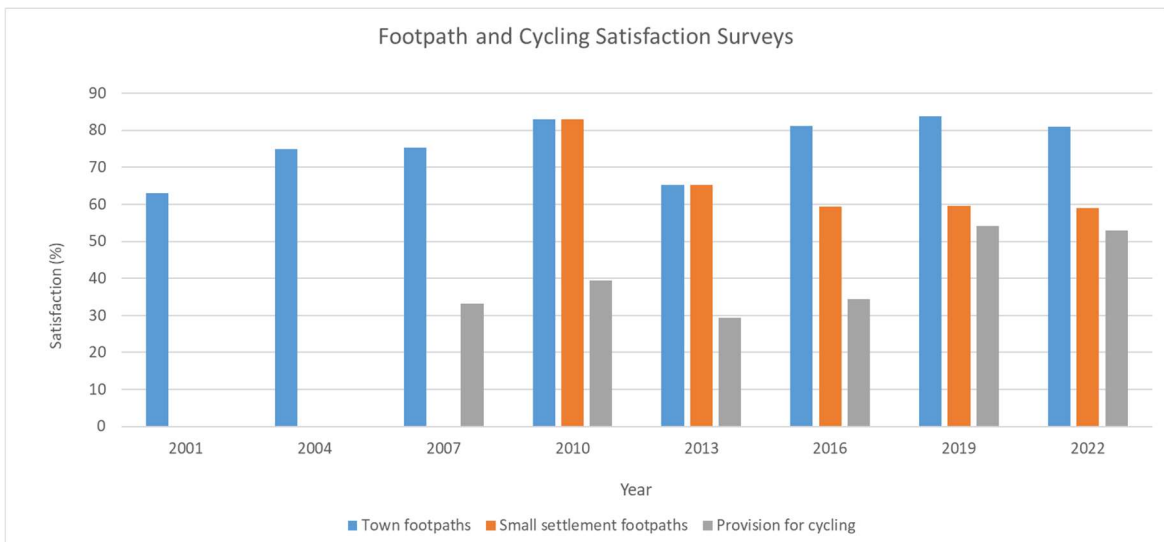
Figure 7-46: Typical footpath widths.



### Customer Satisfaction

The WDC conducts a Customer Satisfaction Survey every three years. The following chart sets out the percentages of respondents satisfied with the footpath network from surveys in 2001, 2004, 2007, 2010, 2013, 2016, 2019, and 2022.

Figure 7-47: Footpath and Cycling Satisfaction



Overall, the main reasons given by survey respondents for dissatisfaction in general in this asset area are more footpaths and cycleways needed, tripping hazards, and footpath maintenance.

Satisfaction is generally high for Town footpaths, which reflects the renewals programme, while the lower satisfaction in settlement footpaths is indicative of the growing desire for residents of small towns to walk and a need to ensure there is at least one footpath for each road. Despite appearing to be a lower level of satisfaction with cycle facilities residents have indicated they are extremely happy with the new cycleways; they just want to see more.

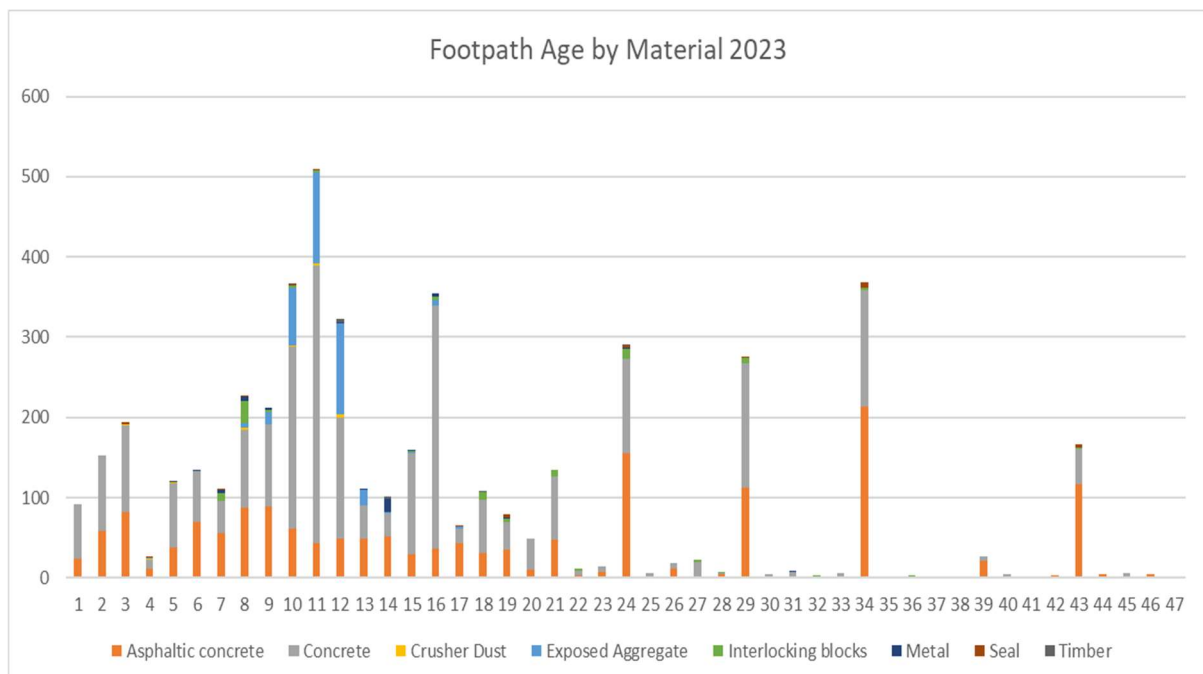
The Cycle Network Plan provides a direction going forward as budget and policies allow. How far this will proceed under new government policies.

## Asset Condition

### Age Profile

The age profile of footpaths is summarised in the figure below and shows an increase in the length of footpaths built during the last 10 years, indicative of the development which has been occurring over recent times. The average age of footpaths in the network has reduced to 7.2 years. Outer lying spikes tend to occur with older assets which are given a nominal age (in this case most likely 1/1/1980 and 1/1/1990, which was when much of the current asset data collection began). These footpaths will be updated through the condition-based renewals programme.

Figure 7-48: Footpath Age Profile



## Condition

Condition rating of footpaths in urban area is undertaken every three years.

The condition rating survey is based on a rating system which includes health and safety factors, structural defects, and visual amenity of the assessed footpath section. Through condition rating information, the broad condition of the footpath can be determined, ranging from Very Poor to Excellent, as shown below.

Details of the full footpath rating system are shown in Table below:

Table 7-18: Footpath Rating System

Grade	Condition	Footpath
1	Excellent	Fully functional (i.e. walking surface comfortable with no trip hazard), No evidence of deterioration, No defects and/or previous repairs.
2	Good	Fully functional (i.e. walking surface comfortable with no trip hazard), Showing some aging or wear and tear, Minor deterioration, No obvious defects and/or previous repairs.
3	Average	Functionally sound (i.e. generally a reasonable walking surface with some uneven surface). Moderate deterioration, Some defects and/or previous repairs.
4	Poor	Functionally useable (i.e. generally adequate walking surface with uneven sections of footpath) Significant deterioration, Several defects and/or previous repairs.
5	Very Poor	Barely functioning (i.e. defective walking surface with mostly uneven surface) Extensive deterioration High number of defects and/or previous repairs Due for replacement

The outcomes of the footpath condition rating process drive the development of the footpath renewal work programme. The graph below indicates that 97.7% (307 km) of the footpath network is in average to excellent condition, with just 2.3% (9 km) poor or very poor. This does not seem to be reflected in the large quantity of trip defects appearing due to tree roots, and may be due to differing understanding of the rating system,

Figure 7-49: Footpath Condition Rating

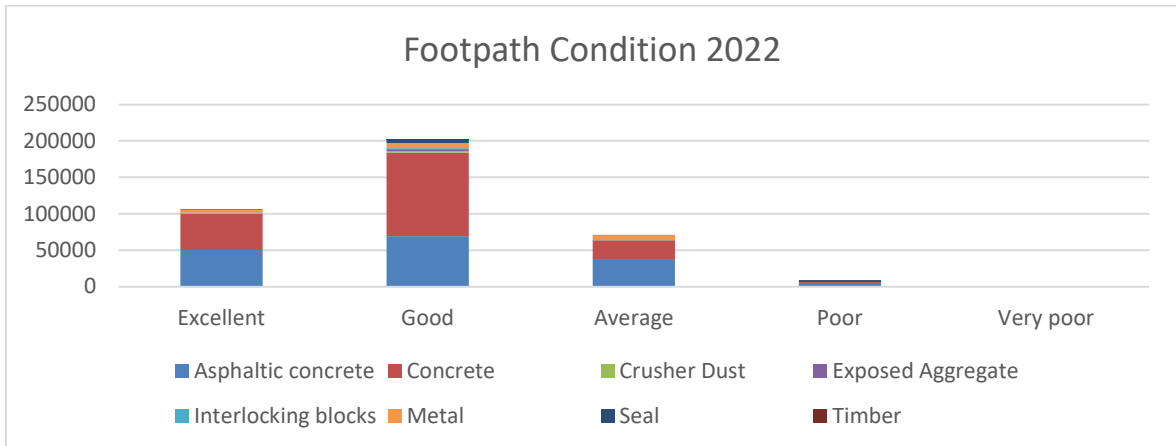
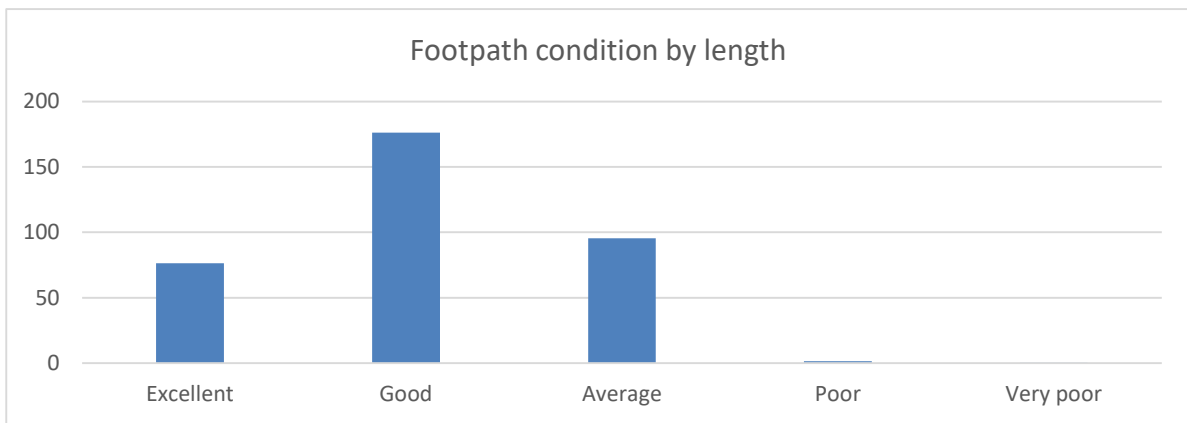


Figure 7-50: Footpath Condition by length



## Asset Valuation

Valuation table as at 30 June 2023, Refer to Appendix C for the full valuation report.

Table 7-19: Summary of Footpath Asset Valuation as at 30 June 2023

Footpaths Asset Description	Unit	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Asphaltic Concrete	m <sup>2</sup>	289,684	\$18,411,742	\$9,618,861	\$695,919
Concrete - Exposed Aggregate	m <sup>2</sup>	7,116	\$1,649,753	\$1,499,389	\$14,996
Concrete - Plain	m <sup>2</sup>	309,038	\$29,247,433	\$26,151,321	\$227,258
Timber	m <sup>2</sup>	248	\$15,762	\$10,114	\$525



Interlocking Block	m <sup>2</sup>	5,653	\$1,492,505	\$1,157,785	\$29,850
Metal	m <sup>2</sup>	32,716	\$2,029,922	\$909,579	\$80,949
Seal	m <sup>2</sup>	14892.3	\$727,626	\$290,538	\$27,811
Total		659,347	\$53,574,742	\$39,637,587	\$1,077,309

## Historical Data

Footpath maintenance, reconstruction, and augmentation expenditure over the past six years is summarised in the graph below. This expenditure does not cover the cost of new footpaths constructed as part of sub-divisional works and vested in the Council.

## Infrastructure Risk Management Plan

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Table 7-20 Risks related to Footpath Infrastructure

Risk Description	Risk Assessment	Current Mitigation
Inadequate Footpath & cycleway quality – caused by poor design, construction materials, utilities reinstatement etc. resulting in inaccessibility and pedestrians tripping and injury.	Medium	Regular inspections, customer feedback through Service Requests, management of utilities, annual replacement programme, condition rating
Inadequate accessibility for wheelchairs, walkers, prams, mobility scooters, visual impaired	Medium	Upgrade footpaths to meet current standards as part of footpath renewal programme, include improvements in minor improvement programme. Monitor feedback from the community, Council has adopted a disability strategy
Heavy vehicles damaging footpath	Low	Customer feedback (Service Request), vehicle crossing policy in place, regular inspection programme
Lack of footpath resulting in people walking on the roads	Low	Minor improvement programme prioritises the footpath where safety is an issue New footpaths programme

## Routine Operations and Maintenance Plan

The footpath and cycleway maintenance is carried out under the Road Network Maintenance Contract 19/43. Identification of footpath maintenance needs is identified through public complaints and routine maintenance inspections.

### Operation and Maintenance Plan

Operations and maintenance activities include:

#### a. Planned Maintenance

- Footpath inspection by the contractor and Council roading staff
- Repair of surface defects prior to footpath resurfacing
- Removal of tree roots
- Replacing footpath battens
- Scrubbing (removal of moss/ lichen)
- Filling cracked area
- Repair/ replace sections of footpath < 10m length
- Footpath cleaning

#### b. Unplanned Maintenance

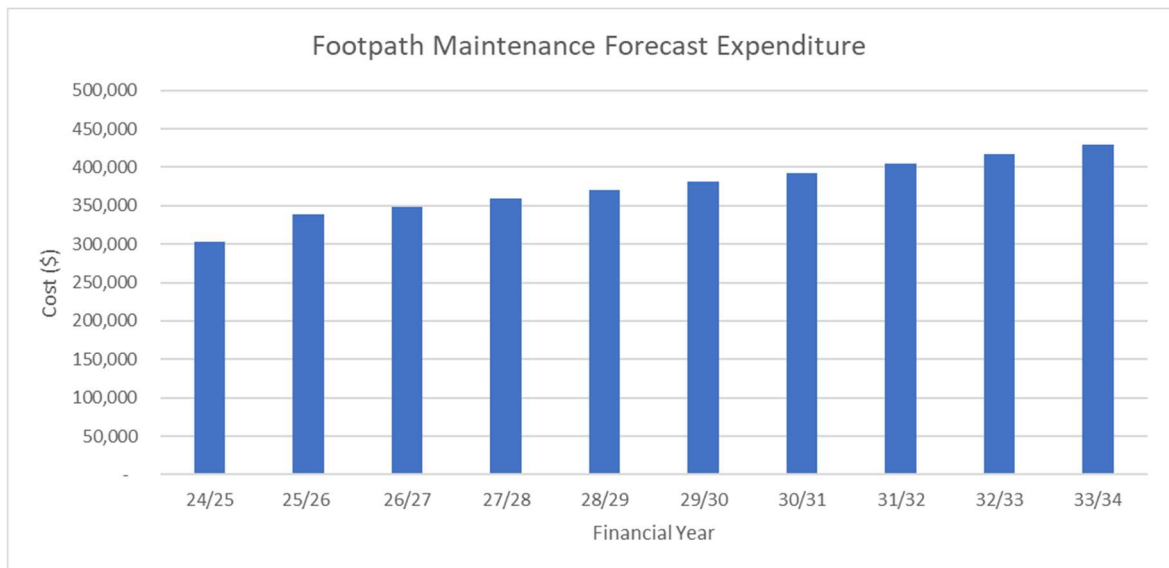
- Urgent Response
- Emergency Response
- Potholes repairs

### Operations and Maintenance Strategies

The overall strategy for footpath maintenance is to undertake general maintenance in order to retain the integrity of the footpath and to promptly repair defects that are hazardous. This may mean, for example that panel replacement (of concrete) or patching (of asphaltic concrete or seal) is carried out to prevent the defect from causing a pedestrian to trip and fall.

## Summary of Future Costs

Figure 7-51: Footpath Maintenance Forecast Expenditure



### Renewal/ Replacement Plan

Renewals include the replacement of damaged sections of footpath when replacement is more economic than repair. Generally this is described as any repair over 10 metres in length or outside the scope of general maintenance.

The annual renewal programme is developed using information from a combination of condition rating data followed by roading staff field inspection, routine inspections, and public feedback records. A high emphasis is placed on field inspections to confirm and finalise the programme. Special consideration is given to areas with a high

Footpaths in Waimakariri are generally renewed on a condition basis. Repairs are carried out as necessary to maintain acceptable functionality for as long as possible, however when they reach a state where cracking is excessive and forming a hazard for pedestrians (rated poor/very) these footpaths are considered for renewal, particularly in areas of higher than average pedestrian activity, such as in the vicinity of schools or older person's homes.

The overall condition of the footpaths and cycleways in the district is satisfactory. This assessment is based on observations during regular inspections, the number of service requests and the recently completed condition assessment.

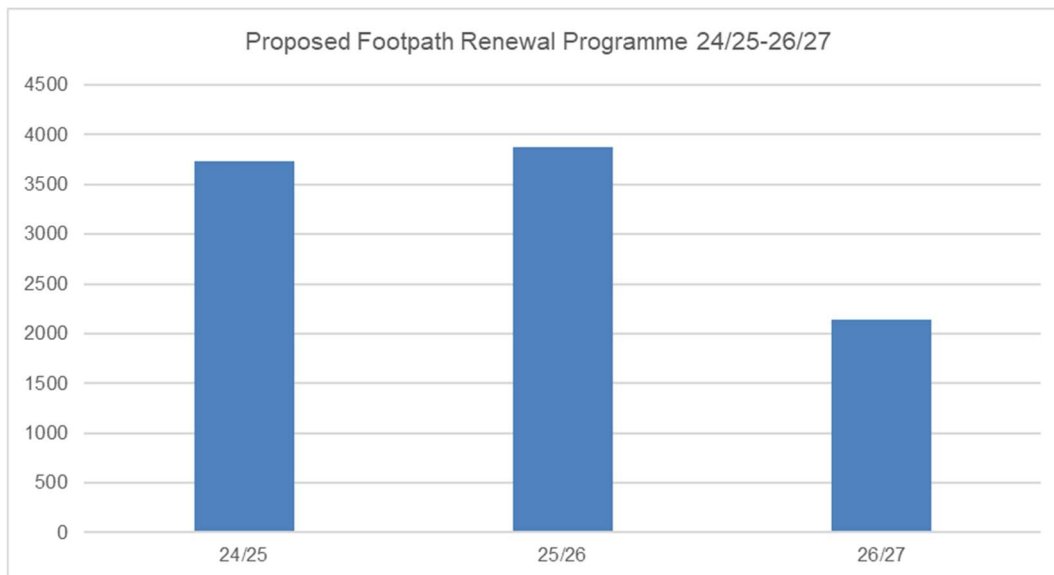
One recurring issue is causing an increased cost in footpath maintenance. A new process has been implemented with jointed slabs over tree roots allowing for movement of the slab without separation, causing the trip hazard. With a number of older trees intruding into the footpath, some means had to be found to reduce the trip hazard risk.

The following graph illustrates the actual and projected length of footpath renewal. This shows target lengths are being met and an appropriate level of renewal being achieved.

Due to the increase in lengths of off-road cycleways being constructed, a slight increase in maintenance cost has been allowed for over and above a 1% increase for inflation.

Footpath condition rating is carried out every three years. Currently the footpath rating indicates fewer footpaths in the lowest condition rating than previously, with only around 0.5% poor or very poor.

Figure 7-52 Footpath Renewal length 24/25-26/27



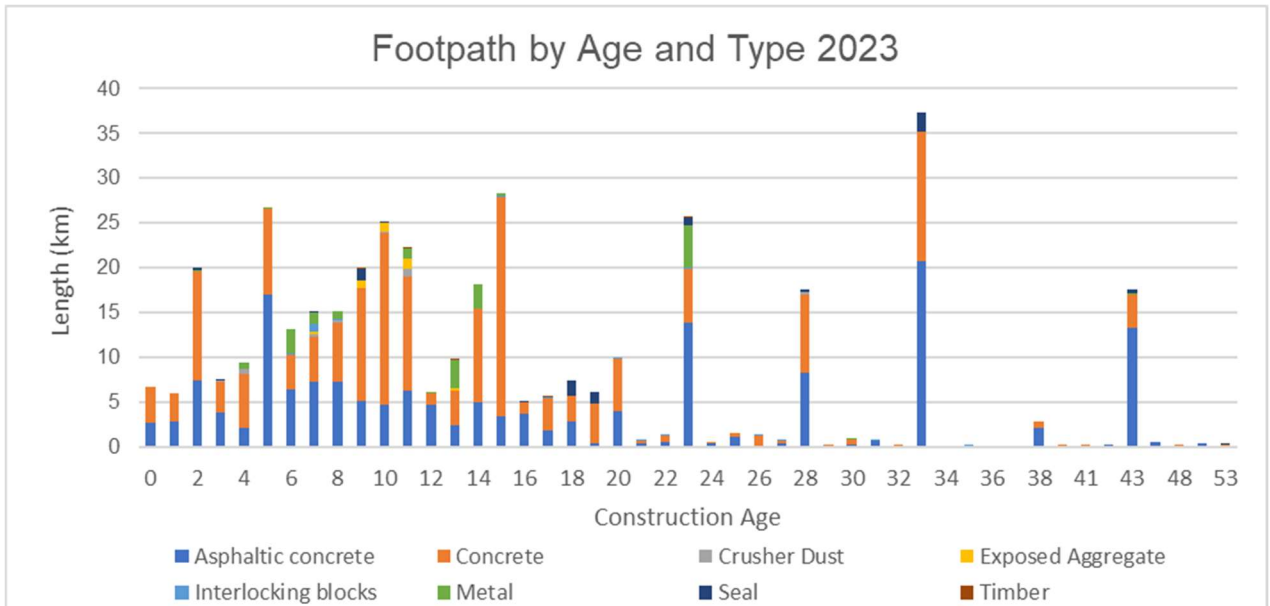
### Asphaltic Concrete Paths

The life of asphaltic concrete surfacing is approximately 23 years and the life of the basecourse is approximately 80 years. The basecourse life is normally determined by the life of the adjoining kerb and channel. The base layer of paths not adjoining kerb and channel will have a longer life.

Footpaths are renewed on a cyclic basis. The plan is that on average after 23 years the new footpath will be resurfaced and at this time the base will still be in good condition and the level will not be a problem. Repairs will be undertaken as necessary prior to the resurfacing. After 46 years the existing surface will generally have to be removed, the base layer repaired and re-compacted, and a new surface layer applied. After 69 years the footpath will be repaired and resurfaced if required to align its remaining life to the remaining life of the kerb and channel. After 80 years the footpath, including the base layers will be fully renewed and this will normally be done in conjunction with the kerb and channel renewal. This is of course a theoretical life cycle, and individual circumstances will dictate actual construction lives.

There is currently approximately 169 km of asphalt footpaths in the district. At a 23-year life about 7.35 km should be resurfaced each year. Current condition rating indicates 5.3 km is in poor or very poor condition. The current budget allows for 7km of footpath renewal, annually. This renewal plan should be adequate to enable the footpath network to meet the defined

levels of service however this may vary depending on the quantity of associated kerb and channel work



### Concrete Paths

The life of a concrete footpath is assessed at 80 years. This is conservative considering the long-term strength and durability of concrete. There are no concrete footpaths in the district older than 53 years so there are no plans to renew significant lengths of concrete paths within the 10 year period of this plan.

Some of the older concrete footpaths built in developments through to the early 1980's has little or no metalled foundation. In these cases, there was an expectation that the concrete would be strong enough to carry the pedestrian traffic and they were built without significant foundations. While the concrete is generally performing adequately there are a number of cases where there is differential settlement between adjacent slabs, causing lips and ledges on the walkways. These irregularities can present safety problems for pedestrians. These are identified and assessed through routine inspections and repaired or reconstructed as required.

Currently the older concrete paths are generally replaced with asphaltic concrete (hot-mix), as concrete presents too many difficulties when used to replace existing paths in fully developed residential streets.

### Renewal Strategies

The strategy is based on the need to maintain the assets in a safe, efficient and cost-effective manner. Works identified are priorities based on:

- Condition profile of footpaths
- Co-ordination with other works, such as kerb and channel replacement, storm water upgrading and water main replacement, and underground utility renewal.

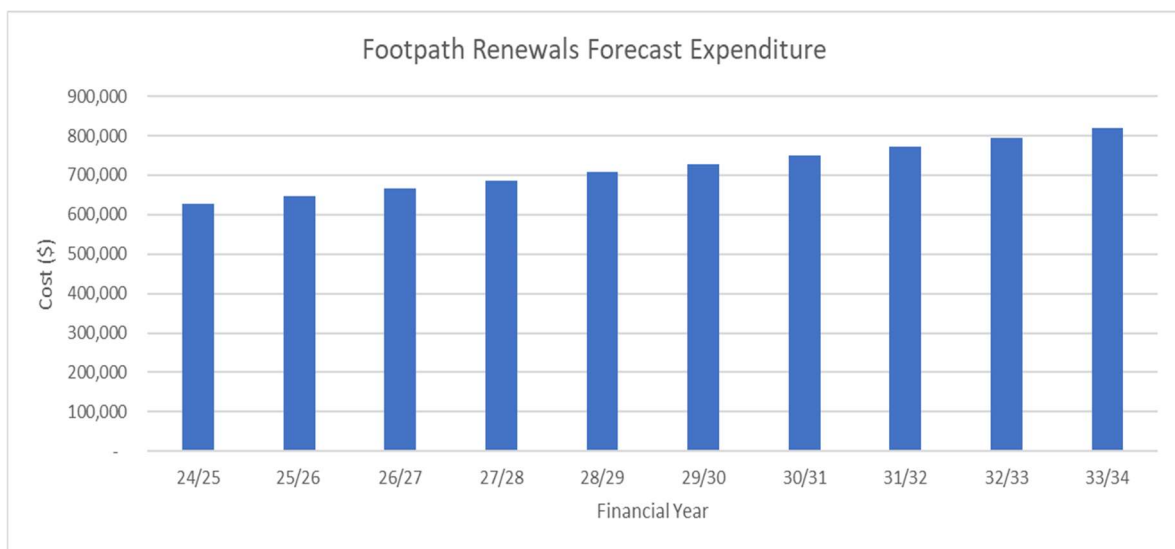
- Level of service deficiencies including safety issues- cracks, potholes
- Level of on-going maintenance

The types of renewal work undertaken to restore footpaths to the required condition are:

- **Resurfacing:** Overlaying the existing surface with Asphaltic Concrete
- **Light reconstruction:** Removal of the existing surface only and laying a new surface.
- **Full reconstruction:** Full replacement for the surface and base metal.

## Summary of Future Costs

Figure 7-53: Footpath Renewal Forecast Expenditure



## Creation/Acquisition/Augmentation Plan

The majority of the new footpath assets are created through new subdivisions, however a number of new footpaths and cycleways have been constructed through Low Cost Low Risk or other subsidised programmes. These will assist in providing an attractive safe alternative to cycling on-road and should encourage a greater uptake of cycling, for both commuting and recreational purposes. A connection between Kaiapoi and Woodend was planned to be built through the Transport Choices Fund, but this funding has now been cancelled and Council will need to decide whether to proceed with this unsubsidised.

## Selection Criteria

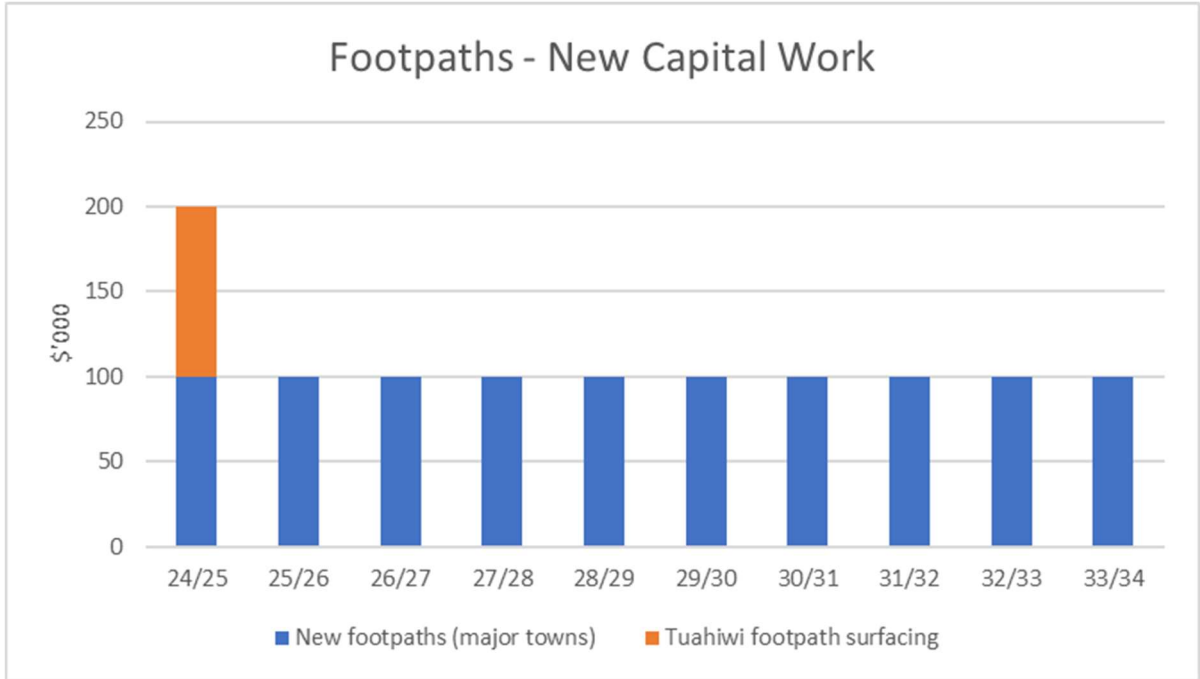
The addition to the footpath network and cycleway occurs in one of the following ways:

- Extensions constructed by Council where no footpath previously existed.
- Taking over new footpaths constructed with subdivisional development.
- Requests from Community Boards, Councillors, Public, and Staff.

- Safety improvements.
- Pedestrian Demands.

### Summary of Future Costs

Figure 7-54: New Footpath Forecast Expenditure



Individual asset forecast will be completed once a full breakdown of new capital works for the next ten years is completed, including funding. The forecast expenditure for this work is \$100,000 which allows for new footpaths in small communities where none currently exist, for example in Oxford, plus surfacing the gritted footpath constructed in Tuahiwi.

Council also applied for funding through the Transport Choices Fund for walking and cycling projects but some of this has been put on hold until a formal decision has been made as to whether or not these activities can progress.

### Disposal Plan

The Waimakariri District Council has no plans to dispose of any of its footpath assets.

## 7.6 Road Drainage

### Purpose

To protect the road edge and substructure from storm water erosion and damage, and to divert runoff into the main stormwater system.



### Strategic Issues -

#### Relationship to Problem Statements

- *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*

Increasing densification can lead to issues of flooding where stormwater runoff exceeds ability of the stormwater system to cope, whether by pipe, kerb and channel and sumps, or roadside drains. This in turn can cause safety issues whenever there is heavy rainfall.

- *Climate change is expected to result in increasing numbers of extreme weather events, rising groundwater and coastal inundation, leading to effects ranging from temporary disruption to potentially life- changing impacts.*

Culverts are going to increasingly require upsizing to cope with these extreme events.

- *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.*

Kerb and channel helps to better separate different transport modes where it is not possible to have them intermingle.

### Infrastructure Issues

The Key issues relating to road drainage are:

- Incomplete data and lack of asset condition data especially for culverts
- Ineffective drainage
- Size of pipes
- High shoulder maintenance



## Solutions

- Continue to update data as more culverts are repaired or replaced.
- Investigate potential areas likely to need upgrades where lack of drainage is an issue.
- Increase programme of high shoulder work.

## Background Data

The road drainage data is held in the surface water channel table and in the drainage table in RAMM. The road drainage network consists of:

- Kerb and channel, dish channel, and mountable kerbs.
- Swales.
- Sumps.
- Soak Pits.
- Sub soil drains.
- Culverts with end areas less than 3.4m<sup>2</sup> (those greater are classified as bridges).

Also included in this category are stormwater pipes where they are part of the Council's reticulated stormwater system and are identified as roading assets, i.e. they are predominately required for road drainage. The balance of the system is included in the Drainage Activity Management Plan. Information on these assets is not detailed in RAMM but is instead held in the Councils GIS system with the asset 'owner' of Drainage or Roading identified against each asset.

The surface water channels, and other drainage assets account for 15.7 % of the total roading and transport asset group, based on replacement cost.

## Physical Parameters

The Council manages a total of 410.8 km of Kerb and Channel (K&C). A breakdown of the road drainage network is summarised below:

Table 7-21: Surface Water Channel by Type

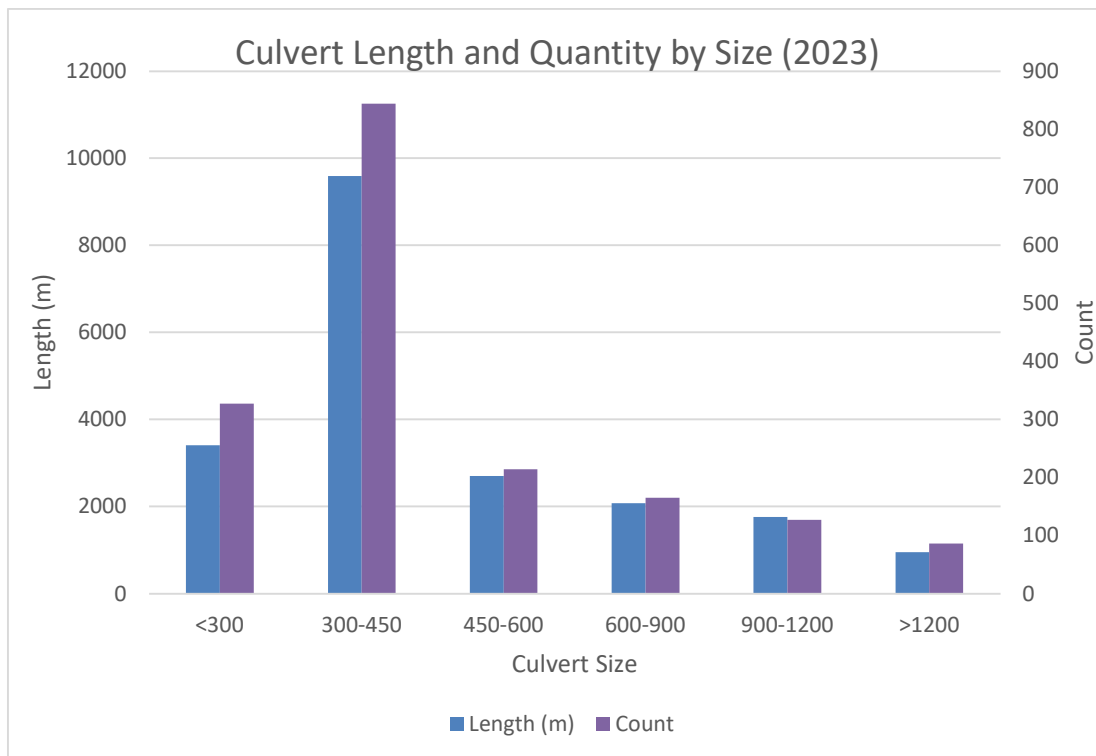
Figures from 2014, 2017 and 2020 valuations	2017	2020	2023
Dished Channel	9.5	8.913	11.95
Engineered Swale - Surface	30.2	29.99	30,,31
Kerb and Channel	313.5	338.79	384.50
Kerb and Deep Dished Channel (rep. Kerb and Channel)	21.9	19.75	17.71
Kerb Only	13.9	16.66	18.59

Mountable Kerb and Channel	18.0	18.18	18,38
Mountable Kerb Only	3.3	2.29	2,38
Precast Mountable Kerb Blocks (rep. Mountable Kerb)	0.4	0.42	0.57
<b>TOTAL</b>	<b>410.8</b>	<b>434.99</b>	<b>484.36</b>

Table 7-22: Drainage Comparative quantities

Type	Number	Length (km)	Number	Length (km)	Number	Length (km)
	2017		2020		2023	
Culverts		21.15		19.29		26.61
Sumps	4141			4107		4843
Subsoil drains		5.85		0.411		22
Soak pits	507		574		617	626
Aquacells	23.4			23.4		23.4

Figure 7-55: Culvert Length and Quantity by Size



## Asset Capacity/ Performance

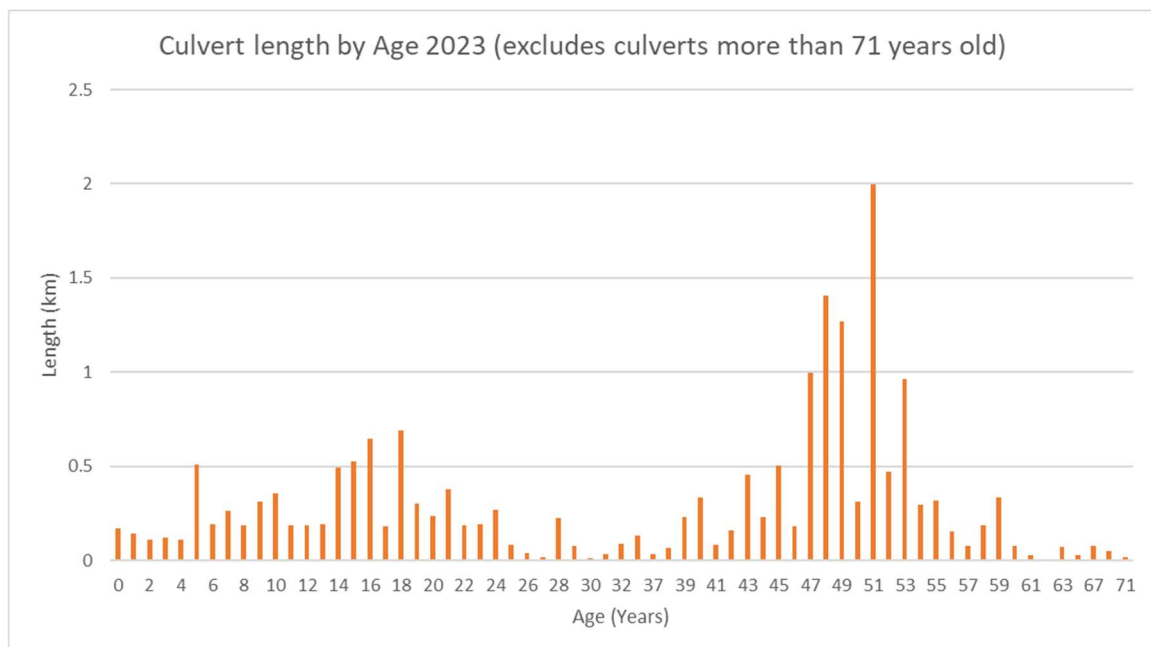
The existing drainage systems have until recently been regarded as generally adequate. With the increasing number of heavy rainfall events in recent times, and a growing density in house construction, there is less available opportunity for stormwater to soak away. While many of the small rural town roads do not have concrete kerb and channels, they do have adequate swale systems.

## Asset Condition

### Age profile

The road drainage network age profiles are shown in the figures below. The age of the surface water channel asset is relatively new with the majority (85%) less than halfway through its expected 80-year life.

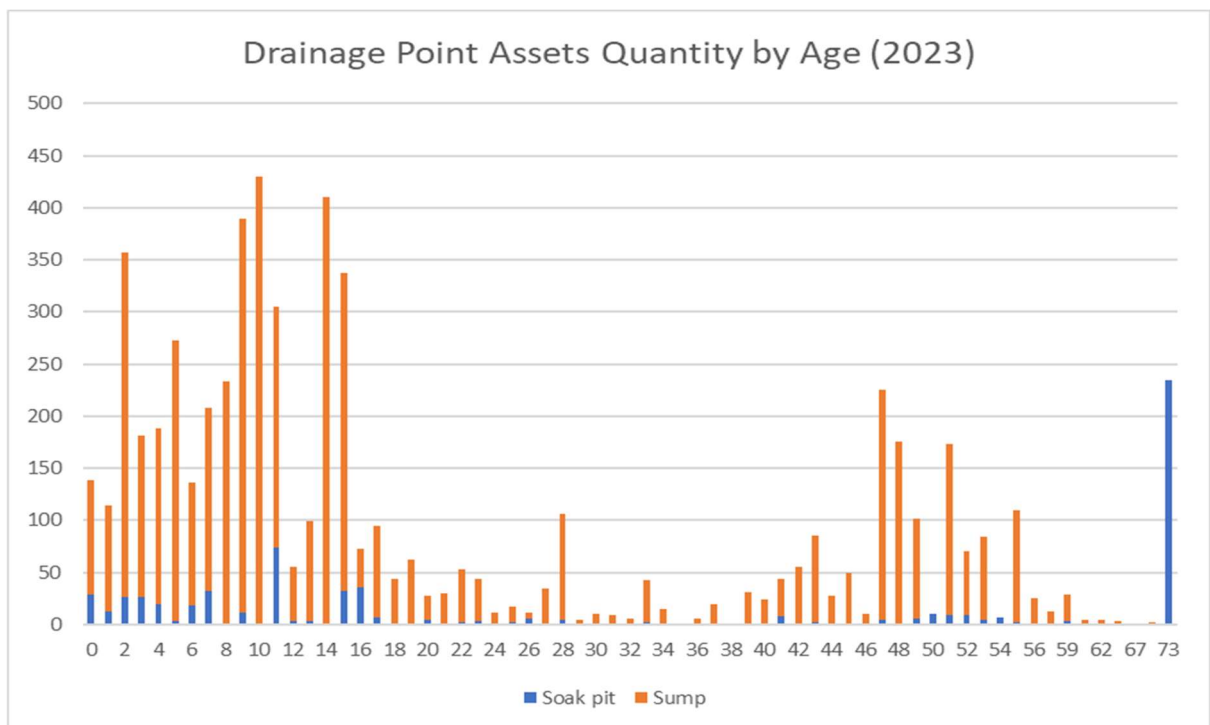
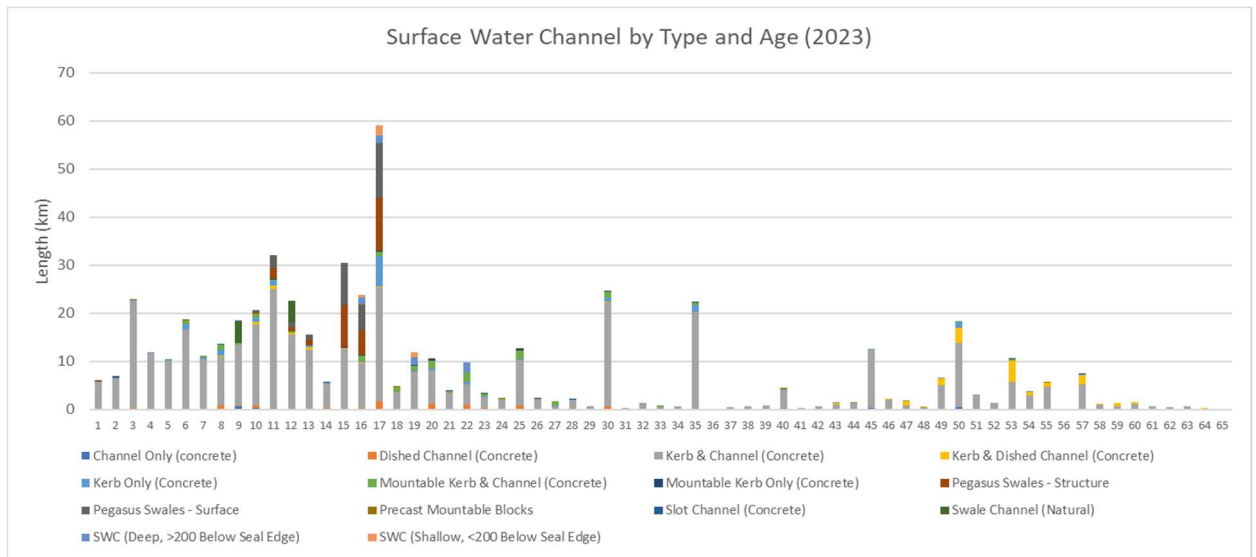
Figure 7-56: Culvert Age Profile



There is a large quantity of culverts with construction date 1/1/1950 (approximately 8.5 km) While 1/1 is normally assigned to assets where the day and month are unknown, in this case the large number with the same birthday suggests that the construction date is completely unknown for these culverts. There is also a large proportion of these which are unreinforced concrete which would be indicative of an older pipe, and a number where no date is known. With the increase in high rainfall events, it is becoming increasingly more important to understand our drainage network. Camera technology has improved significantly in recent years, and it should be easier and less expensive now to examine these. However, at this point no funding has been set aside for this and the period of the coming AMP will be used to best determine the most critical areas for this work.

The majority of the surface water channel has been constructed in the last 20 years. There are clearly two major periods of construction in Waimakariri, around 50 years ago, and a larger quantity starting with a peak 17 years ago, reflecting the construction of Pegasus and the start of the growth we see now. This means that currently there is not huge replacement programme required, however there will be a much larger wave of replacement required in the longer term. The challenge now is to understand what the true life of some of these assets, rather than the more simplistic reliance on age.

Figure 7-57: Surface Water Channel (SWC) Age Profile



## Condition

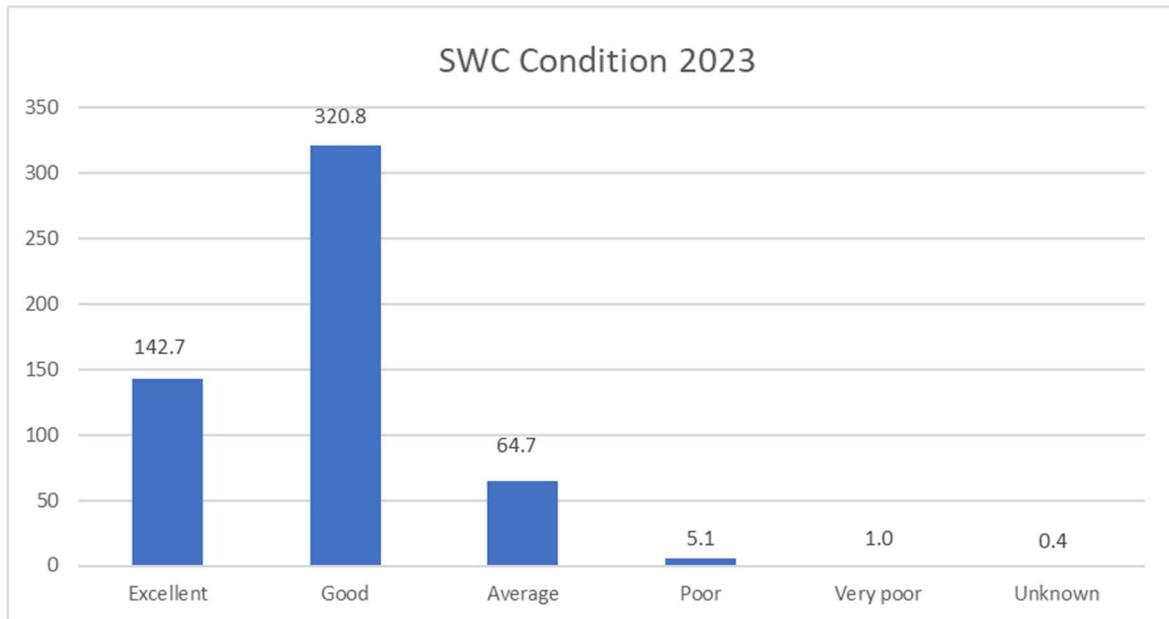
Condition rating of the surface water channel (SWC) is undertaken every 3 years in conjunction with the footpath condition rating. The survey covers 100% of the SWC in the major towns excluding the swales. A 1-5 condition grading system, similar to that used for footpath, has been developed for SWC. The information gathered from the condition rating is used to assist in the objective prioritisation of drainage maintenance/ renewals works.

Formal condition rating is not undertaken on the remaining drainage assets, however they are inspected regularly through maintenance inspections and based on these inspections they are considered to be in a good condition. Details and results of the full SWC rating system are shown as follows:

*Table 7-23: SWC Condition Rating System*

Grade	Condition	Kerb & Channel
1	Excellent	No evidence of deterioration, No defects and/or previous repairs.
2	Good	Showing some aging or wear and tear. Minor deterioration No ponding and only minor cracking
3	Average	Moderate deterioration Some ponding and minor cracking
4	Poor	Significant deterioration. Areas of ponding and cracking
5	Very Poor	Extensive deterioration. Badly cracked and extensive ponding Due for replacement

Figure 7-58: Surface Water Condition 2023



Around 6 km of surface water channel is rated as unsatisfactory (poor/very poor). Just over half of this is dish channel. Under NZTA rules, co-funding is only available where the carriageway is affected by the drainage failure, and this is the main driver for replacement, along with steady replacement of deep dish channels, which are a hazard for cars and cycles getting too close to the edge of the road

## Asset Valuation

The information provided below is a summary of the 2023 roading valuation:

Table 7-24: Summary of Surface Water Channel Asset Valuation as at 30 June 2023

Description	Unit	Quantity	Unit Cost (Incl Fees)	Total Useful Life	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Dished Channel	m	11,952	182.76	80	\$2,621,830	\$2,023,821	\$32,773
Engineered Swale - Surface	m	30,131	45.30	30	\$1,768,629	\$954,625	\$58,954
Kerb and Channel	m	384,496	204.00	80	\$93,692,409	\$70,846,203	\$1,171,155
Kerb and Deep Dished Channel	m	17,710	204.00	80	\$4,315,500	\$1,914,857	\$53,944
Kerb Only	m	18,585	144.23	80	\$3,522,383	\$2,701,219	\$44,030
Mountable Kerb and Channel	m	18,379	230.35	80	\$5,032,663	\$3,873,886	\$62,908
Mountable Kerb Only	m	2,538	202.02	80	\$612,689	\$450,056	\$7,659
Precast Mountable Kerb Blocks	m	566	202.02	80	\$136,636	\$106,505	\$1,708
<b>TOTAL</b>		<b>484,357</b>			<b>\$111,702,739</b>	<b>\$82,871,173</b>	<b>\$1,433,131</b>

## Infrastructure Risk Management Plan

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Table 7-25: Drainage Infrastructure Risks

Risk Description	Risk Assessment	Current Mitigation
Flooding affecting roads due to under capacity drainage, poorly located, or blocked drainage assets	Low	<ul style="list-style-type: none"> <li>○ <i>Regular inspection,</i></li> <li>○ <i>Customer feedback (Service Request), maintenance programme</i></li> </ul>

## Routine Operations and Maintenance Plan

The operations and maintenance of the road drainage network are undertaken as part of the Road Network Maintenance Contract 19/43. The maintenance of the drainage facilities is subsidised by Waka Kotahi. However, only 30% of the cost of kerb and channel cleaning is subsidised by the Waka Kotahi to reflect the part that is draining the road as opposed to the footpath and adjacent properties.

### Operation and Maintenance Plan

Operations and maintenance activities include:

#### a. Planned Maintenance:

- Cleaning of kerbs and channel, and sumps by mechanical broom and suction as part of the street cleaning operations
- Repair/replacement of damaged kerb and channel < 10m length
- Inspecting and cleaning of culverts
- Minor culvert repair

#### b. Unplanned Maintenance

- Urgent response
- Emergency Response

### Operations and Maintenance Strategies

The maintenance works are undertaken to:

- Ensure safety of the public
- Correct flooding problems

- Prevent significant further deterioration.
- Improve the visual impact.

The Maintenance Contractor is required to regularly inspect drainage assets and identify and rectify defects to ensure the specified level of service is met.

- All urban kerb and channel is swept regularly to keep it free of debris and reduce the probability of blockages during rain. The interval between sweeps varies, depending on the function of the road and the required LOS. For example central business areas are swept more frequently than residential streets.

## **Renewal/ Replacement Plan**

The kerb and channel renewal programme is largely derived from the condition rating and network inspection. The annual programme will be co-ordinated with renewals of footpath, and capital projects where appropriate. This programme is prioritised within the available annual budget.

Renewal work activities include:

- Replacement of whole sections of kerb and channel.
- Replacement of sumps, culverts or significant culvert components ( i.e. headwall and wing wall structure).
- Upgrading of existing culverts to increase capacity.
- All Renewals of drainage assets attracts Waka Kotahi subsidy.

## **Renewal Plan**

The old-style kerb and dished channels are being progressively replaced along with the poor condition older kerb and flat channels. The 2023 condition rating confirmed that just under 99% of the SWC network is in average to excellent condition and that the renewal programme is keeping up with the deterioration.

The annual programme provides for the replacement of approximately 2km of kerb and channel. Currently there is approximately 18 km of kerb and dished channel so replacement will take up to 12 years to complete. With the recent condition rating indicating that just 6 km of kerb and channel is in poor or very poor condition including 1 km of kerb and dished channels the priority in the next 10 years programme will be replacing those assets.

Kerb and Flat Channel was first constructed in the 1960's so this will theoretically not be due for renewal until around 2040. However, the actual condition, the effect of tree roots, and other failure modes will mean renewal will need to take place earlier in some cases. This will have the effect of smoothing out the peaks.

Culverts are renewed when they are unable to perform their functions safely and satisfactorily to the agreed level for service. The need for replacement is determined by regular maintenance inspection and the monitoring of performance during heavy rainfall period.



Engineering swales located in Pegasus town have a useful life of 30 and 60 year for surface and structure, therefore renewal of these assets will fall outside the 10-year period of this plan.

### Renewal Strategies

The renewals programme is planned based on condition rating information and field inspections to confirm the condition.

Renewals are undertaken when:

- The asset has reached the end of its economic life.
- It is economic to replace the kerb and channel in association with adjacent footpath renewal.
- The deterioration of the pavement adjacent to the kerb and channel is such that the kerb and channel needs to be replaced.

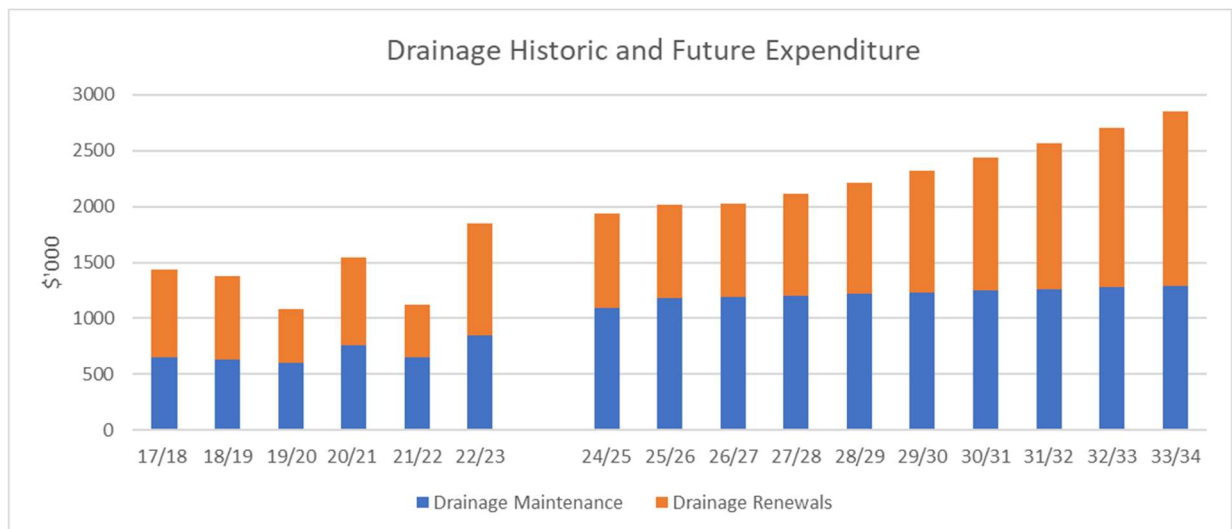
Renewal programmes are prioritised taking into account activities of utility operators to avoid the risk of the new assets being dug up in the future.

### Expenditure

The graph below summarises the drainage activities over the past 6 years and proposed maintenance and renewals future cost. The nominal increases every year is to cater for network growth.

The Drainage renewal expenditure covers, replacement surface water channels and culverts, whereas maintenance covers cleaning and minor repairs.

Figure 7-59: Drainage Past & Future Expenditure



The first years of the new programme (24/25-26/27) show a minor increase. Beyond this the effects of cumulative growth and inflation begin to creep in.

## **Creation/Acquisition/Augmentation Plan**

The majority of the drainage assets are created through new subdivisions.

Individual asset forecast will be completed once a full breakdown of new capital works for the next ten years is completed.

### **Selection Criteria**

The development of drainage assets results from:

- *Taking over new assets constructed with subdivision development*
- *Extensions constructed by the Council where no kerb and channel previously existed (usually related to footpath extensions).*
- *New Kerb and/ or channel associated with traffic improvements*

Although new drainage is a key component of new works, for the purpose of this plan projects are not broken down into their individual asset components, and no new drainage (i.e. kerb and channel) is planned for the next ten years'.

### **Disposal Plan**

The Waimakariri District Council has no plans to dispose of any of its surface water channel assets.

## 7.7 Streetlights



### **Purpose**

To provide adequate lighting in the streets for the safe and efficient movement of motor vehicles, cyclists and pedestrians.

### **Key Issues**

- Obtain accurate asset installation dates for each streetlight component.
- Condition rating to confirm remaining useful life.
- Energy efficiency – reduction of long term power costs by energy efficient lighting.
- Obsolescence of existing lights – continuing to upgrade older type lights.
- High inspection costs.
- Unmetered lights which do not measure consumption.

### **Solutions**

- Continue LED replacement programme.
- Central Management System which monitors each light and allows central data analysis.

### **Background Data**

The street light inventory is maintained in the RAMM database. This allows continual maintenance and updating of asset information and more accurate predictions of component lives and renewal needs.

Power Jointing Ltd under the maintenance contract carries out street light maintenance and renewals. State Highway lights through the district are owned separately by NZ Transport Agency, but the maintenance and renewal work are included in a joint contract with Waimakariri District Council and Hurunui District Council.

Power to operate the streetlight is supplied by Simple Energy based on the rated consumption of each light in the network and the hours the lights are operating. This contract includes lights on State Highways and Waka Kotahi reimburses the Council for all associated costs.

Streetlight operations, maintenance, and renewals are funded by Waka Kotahi subsidy and ratepayers funding.

The Streetlight assets account for 1.3% of the total roading and transport asset group, based on replacement cost.

### Physical Parameters

The Council currently manages 6,847 poles, 6,139 brackets, and 6,853 lights in its database, with 5,580 poles, 6,139 brackets and 5,414 lights related to the roading network, which covers carriageway lighting, car park lighting, flag lighting and pedestrian crossings but does not include lights on private rights of way. The Waimakariri District Council has no responsibility for any aspect of such lights.

Lights in reserves and other Waimakariri District Council facilities are maintained under their respective financial allocations.

The Council owns all dedicated light poles (lamp posts). Where a streetlight is supported by a utility company’s pole (electricity) or a building, the light and its bracket are owned by the Council and included in RAMM, but not the pole or building.

The street lighting is comprised of the following components:

- **Lamp** – the replaceable unit (‘bulb’) which is the source of the light.
- **Light** – the fitting that houses the lamp and controlling the light distribution. Note: This only applies to older fittings. Lights and Lamps are an integrated unit for LED lights.
- **Bracket** – the structural member used to attach the lantern to the pole.
- **Pole** – the vertical supporting structure used to raise the lantern above the road.

Figure 7-60: Streetlight Poles Quantities by Road Hierarchy



## Asset Capacity/ Performance

The streetlight capacity and performance information is very limited. The Contractor does not currently measure lighting levels, so there is no quantitative measure of levels of service for light intensity on the ground as used in the AS/NZS 1158. Waimakariri District Council will liaise with the lighting contractor to review existing lighting levels against current standards. However, where upgrading to LED lights is carried out pole spacings are checked for suitability.

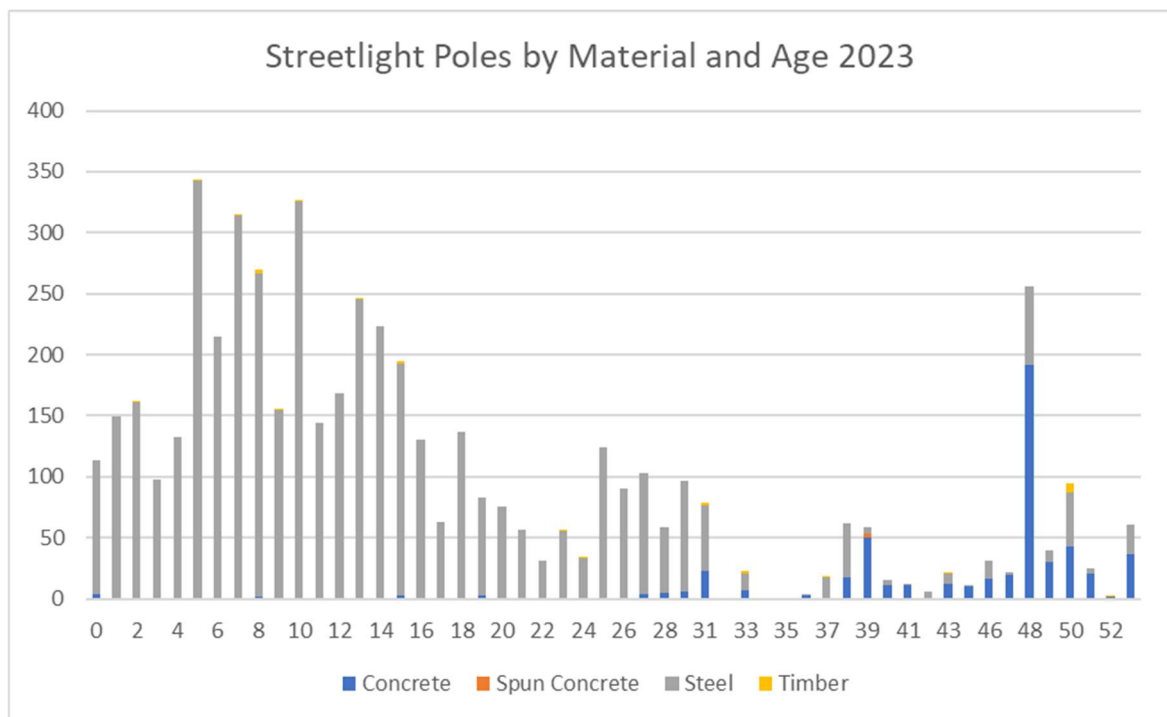
It is acknowledged that the majority of the older street light installations do not perform to the current standard, which was adopted in 1997. All new installations carried out by the council or vested in the Council by private developers, are required to meet current AS/NZS1158 standards, the latest version dated 2021.

However, the levels of complaints are low which indicate that community is generally satisfied with the service levels provided and there are no identified safety issues.

## Age profile

Age profiles for poles and lamps are shown in the following figures:

Figure 7-61: Poles Age profile



Concrete poles have been widely used in the past for economic reasons; however these are no longer available and steel poles are now more common for safety reasons (frangible poles) or where decorative lighting is preferred.

## Condition

The streetlight Contractor updates the street light condition at each maintenance visit using RAMM Map. All lights are now condition rated and this is being continually updated by the Maintenance Contractor with each inspection.

The overall condition of the street light assets is still considered satisfactory based on maintenance inspections, RAMM data and the number of service requests. The main cause of deterioration is age of asset.

Condition rating of all concrete poles more than 35 years old was initially carried out in 2014 and is reassessed on an ongoing basis. This was done as it was considered the useful life of 35 years was low for all concrete poles. This condition rating is now used to drive the renewal programme and almost all very poor poles have now been replaced. Others will be replaced when their condition determines the need, generally when these are assessed as being rated as Poor or Very Poor.

Condition will continue to be the main driver for pole replacement, however for lamp replacement energy efficiency is likely to become the main driver once all the obsolete lamps have been replaced.

## Asset Valuation

Valuation table as at June 2023

Table 7-26 Summary of Streetlights Asset Valuation at 30 June 2023.

Components	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
SUBTOTAL - SL POLES	5,580	\$10,234,031	\$6,659,914	\$205,859
SUBTOTAL - SL BRACKETS	6139	\$2,613,446	\$1,692,547	\$52,180
SUBTOTAL - LIGHTS	5414	\$4,548,437	\$2,904,299	\$127,947
<b>TOTAL</b>		<b>\$17,395,914</b>	<b>\$11,256,760</b>	<b>\$385,986</b>

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Figure 7-62: Streetlight Infrastructure Risk

Risk Description	Risk Assessment	Current Mitigation
Poorly lit roads resulting in accidents to motorist / pedestrians caused by bulb failure, vandalism, collision from vehicles, power cuts, lack of lights.	Medium	<ul style="list-style-type: none"> <li>Regular inspection to identify issues.</li> <li>Replacement programme in place</li> </ul>
Power cost increases	High	<ul style="list-style-type: none"> <li>Using more efficient lights option in place</li> </ul>
LED streetlights do not perform as expected	Medium	<ul style="list-style-type: none"> <li>Monitor the performance of LED lights</li> </ul>

## Routine Operations and Maintenance Plan

This covers the maintenance and power costs associated with the operation of lighting on Council roads.

The basic outcome of the street light maintenance contract is to ensure the street lighting system is maintained in a reliable working and safe condition and the asset is protected against premature deterioration.

The maintenance needs are identified through regular inspections and proactive maintenance activities, and service requests from the public. All complaints are responded to within the specified response time, and where appropriate (e.g. bulb outage etc.). There is no known backlog of reactive maintenance work, however the pole replacement programme is limited by available resources, i.e. contractors are not able to carry out programmed work in the desired timeframe, or work programme has to be spread to meet available funding (Council or Waka Kotahi).

Operations and maintenance activities include:

### **a. Planned Maintenance**

- Undertaking programmed three monthly inspections of lighting on all routes within the contract area, to identify lights that are not working.
- Visual inspection of all lighting equipment in conjunction with maintenance visits.
- Bulk replacement of lamps
- Maintaining RAMM Database for street lighting

### **b. Unplanned Maintenance**

- Provide an immediate response to emergencies
- Repair on demand and within the specified response time frames faulty, accident damaged or vandalised lanterns, lamps, control gear, poles and associated equipment.
- Provide information to assist the Council in recovering the cost of crash damage from those responsible for the damage.

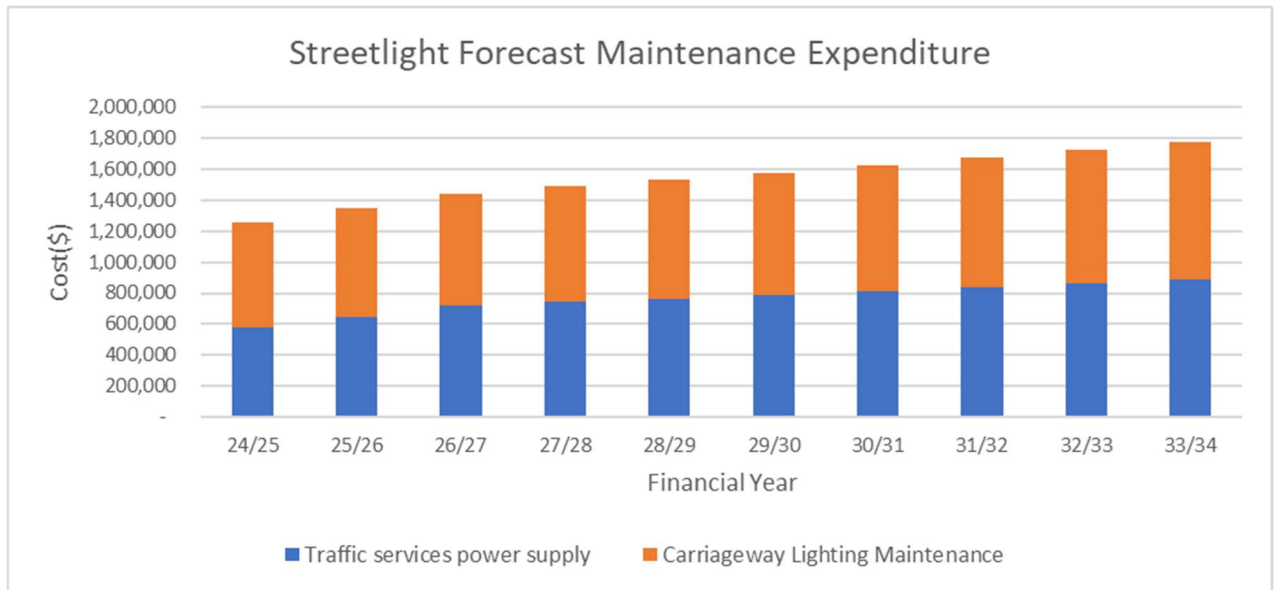
## Operations and Maintenance Strategies

- Gradually improving capacity for compliance with lighting policies and standards, through patrol inspections to determine both planned and unplanned maintenance activity
- Reducing long term energy cost by energy efficient lighting.
- Monitoring the asset condition by undertaking planned inspections in conjunction with lamp replacement.

## Summary of Future Costs

An annual cost increase has been allowed to cater for network asset growth and energy cost increases. The saving in energy costs will result from replacing obsolete lamps with LED's. This will be partially offset by the new assets that will be vested during this time.

Figure 7-63: Streetlight Maintenance Forecast Expenditure



### Renewal/ Replacement Plan

Renewal is undertaken when streetlight or key components of a light have reached the end of their economic life. Renewal requires replacement of either the complete installation or individual components of the installation, e.g. lantern, brackets, or pole. This also Renewal Plan

Approximately 1% of the streetlights in the District, are of types that are becoming harder to support, because they have been out of production for many years. These fittings also tend to be less efficient in terms of both energy consumption and light output. The latter are characterised by their bluish light. Most of these fittings were installed over a 20-year period up to the mid-late 1980's.

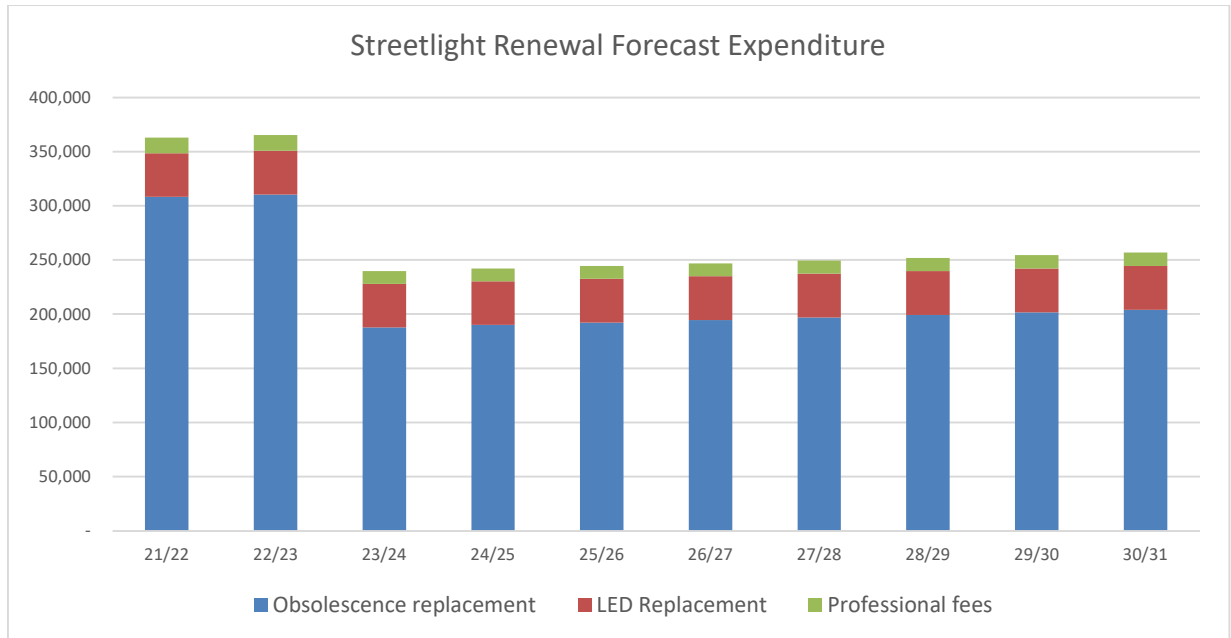
High-pressure sodium (HPS) lights were the most commonly used lighting in NZ prior to 2017 due to their long-rated life 24,000 hour lamp life and high efficiency relative to other options, prior to LEDs becoming viable for street lighting application. However, the downside of HPS is high-energy cost, maintenance cost, and the yellow light with poor colour rendering resulting in reduced visibility and reduced perception of safety and security.

Power saving by using LED lights could be as high as 50% to maintain the same light levels on streets. The savings are likely to further increase in the future as the energy and lighting performance of LED streetlights continue to improve. The LED lights have other advantages such as longer rated life 55,000 hour lamp life, better light distribution, lower maintenance cost, lower light pollution and provide white light. It is widely accepted that white light provides improved visibility as well as greater levels of safety & security compared to the yellow light of HPS. The dimming ability of LEDs will offer additional energy savings through control strategies that can brighten, and dim based on the time of day, traffic volume, or any other control parameters desired.



The option of replacing older lamp types with more energy efficient LED lights has been investigated. Work planned for 2017/18 should have had a five year pay-back period, i.e. after 5 years replacement costs will have been recovered by energy savings. Discussions with the power companies indicates that as more lights are converted to LED it will be necessary for electricity providers to increase costs to compensate, therefore the primary savings are in reduced maintenance costs.

Figure 7-64: Streetlight Renewal Forecast Expenditure



### Renewal Strategies

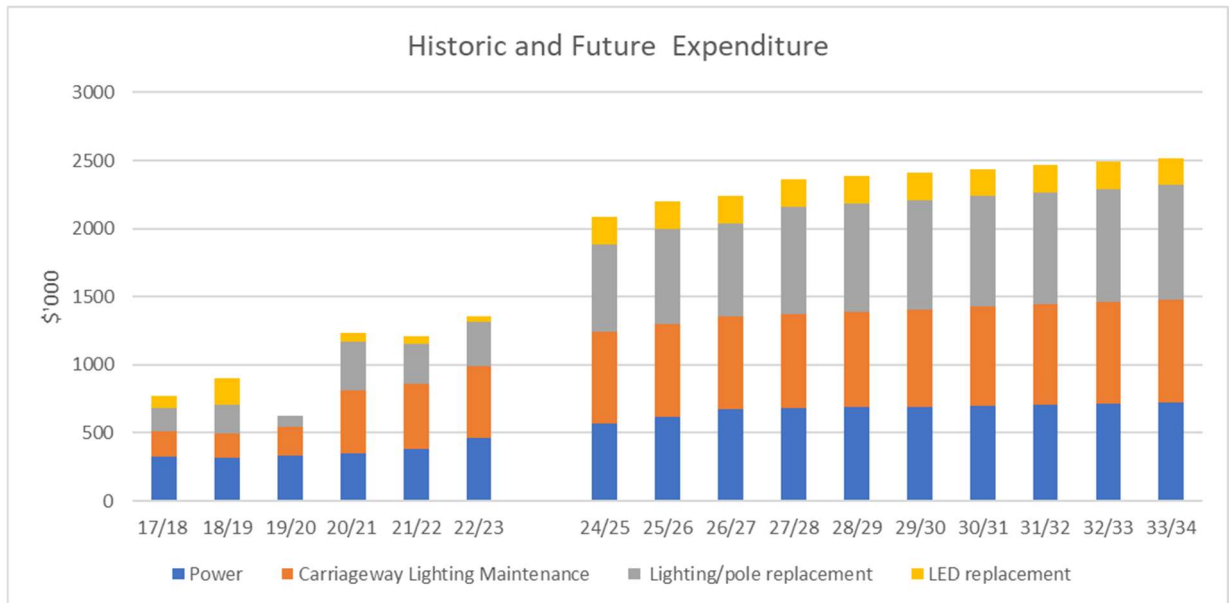
- Renew faulty or damaged lanterns that cannot be repaired because of obsolescence or replacements parts being unobtainable.
- Renew faulty or damaged equipment when replacement is more economic than repair.
- Replacement LED programme – no stock of HPS to replace HPS when they fail.

The Renewal Programme is based on benefit/cost savings (e.g. power efficiencies), the level of ongoing maintenance, and if there are opportunities to co-ordinate the work with other projects or planned upgrades, such as underground overhead power cables, and pole replacement. In terms of streetlighting, the highest priority has been the replacement of Mercury Vapour and fluorescent lights as a priority, with the next major replacement being that of replacing High Pressure Sodium with LED. This is being driven by energy efficiency and the need to reduce energy costs rather than by the condition of the lamps. Pole renewal is driven by condition and the need to optimise this programme with the lamp replacement programme.

### Historical Data

Street light expenditure for the past five years is summarised in Figure below:

Figure 7-65: Streetlight Expenditure



### Financial Summary

Maintenance costs increased sharply in 2020/21 with the re-letting of the contract. This is due to be renewed again in 2025/26. At this stage it is difficult to predict what effect this will have on future costs.

The renewals focus over the last few years has been on replacing poles in Pegasus which had been weakened at the base, and other posts which were in poor condition. The damaged streetlight poles in Pegasus have now been replaced. The main renewals focus going forward will be updating lights to LED, saving on both power and maintenance costs. In addition to LED replacement, it is planned to introduce controllers which will allow light dimming (and hence power savings)

Investigations are also being carried out on a sample of steel poles to determine whether they have been affected by premature failure due to corrosion below ground. To date no issues have been discovered.

### Creation/Acquisition/Augmentation Plan

#### Selection Criteria

Streetlights are acquired or upgraded through the following:

- Vesting new streetlights installed as part of subdivision development (constructed at the developer’s expense)
- Upgrading work and new lights to improve the level of service
- In association with power undergrounding of overhead utility reticulation, usually this involves new poles and replacing the existing lamp.

Council has adopted AS/NZS 1158: 2021 (New Zealand Street Lighting Standard) as a standard for new subdivisions and upgrades. Generally, arterial routes would be illuminated to

V4 level, whilst collector and local streets would be illuminated to P3NZ level. New lighting is generally developer installed to AS/NZS 1158:2005.

All new lighting is now required to be LED.

### **Disposal Plan**

Currently there are no proposals or plans to dispose of any lighting installations.

## 7.8 Traffic Services



### Purpose

To provide signs, markings and traffic controls that are easy to see, understand and that contribute to the safety and efficiency of the road system.

### Key Issues

Some of the key issues related to the life cycle management of the traffic services assets are:

- Historical traffic facilities installation dates are not well recorded in RAMM.
- Ensuring that markings meet safety standards and visibility levels of service at minimum life cycle cost.
- Edge marker post, RRPM's, and marking details are not recorded in RAMM.
- Theft and vandalism of signs resulting in on going replacement cost and reduced life spans.
- Reflectivity of signage.

## Solutions

- Continue updating signs information as signs replaced.
- Set up inspection process for visibility and reflectivity.
- Consider whether details of items that have a potential life of less than a year should be included in RAMM.
- Utilisation of graffiti guard on signs as appropriate.

## Background Data

The traffic services assets include all road furniture and traffic control devices that promote a safe and efficient transport system. This includes the provision and maintenance of:

- Signs
- Edge Marker Posts (EMP)
- Road marking
- Raised reflective pavement markers (RRPM's)
- Guardrails and sight rails (where they are not attached to bridges)
- Traffic Islands (including roundabouts)
- Tactile Indicators
- Bollards
- Active Warning Signs

These assets, except for road markings and RRPM's, are stored in the appropriate tables in RAMM. There is no asset register of road markings and RRPM's. As road markings and RRPM's are replaced over a short time period the cost and effort required to keep an accurate asset record cannot be justified.

All traffic facilities are designed and located to meet the requirements of the Waka Kotahi Manual "Traffic Control Devices Manual"

Traffic services operation, maintenance, and renewals qualify for Waka Kotahi subsidy.

## Physical Parameters

Asset types are summarised in the tables and graphs below:

### Signs and Edge Marker Posts

There are approximately 19,500 road signs (including 399 km of edge marker posts) owned by the Council. Due to the lack of reliable post information, it is assumed that each sign has one post. This is conservative as it is common for a post to have more than one sign on it.

Edge marker posts are used to delineate the alignment of the roadway ahead and are primarily used for night- time guidance.

Figure 7-66: Percentage of Respective Sign Types

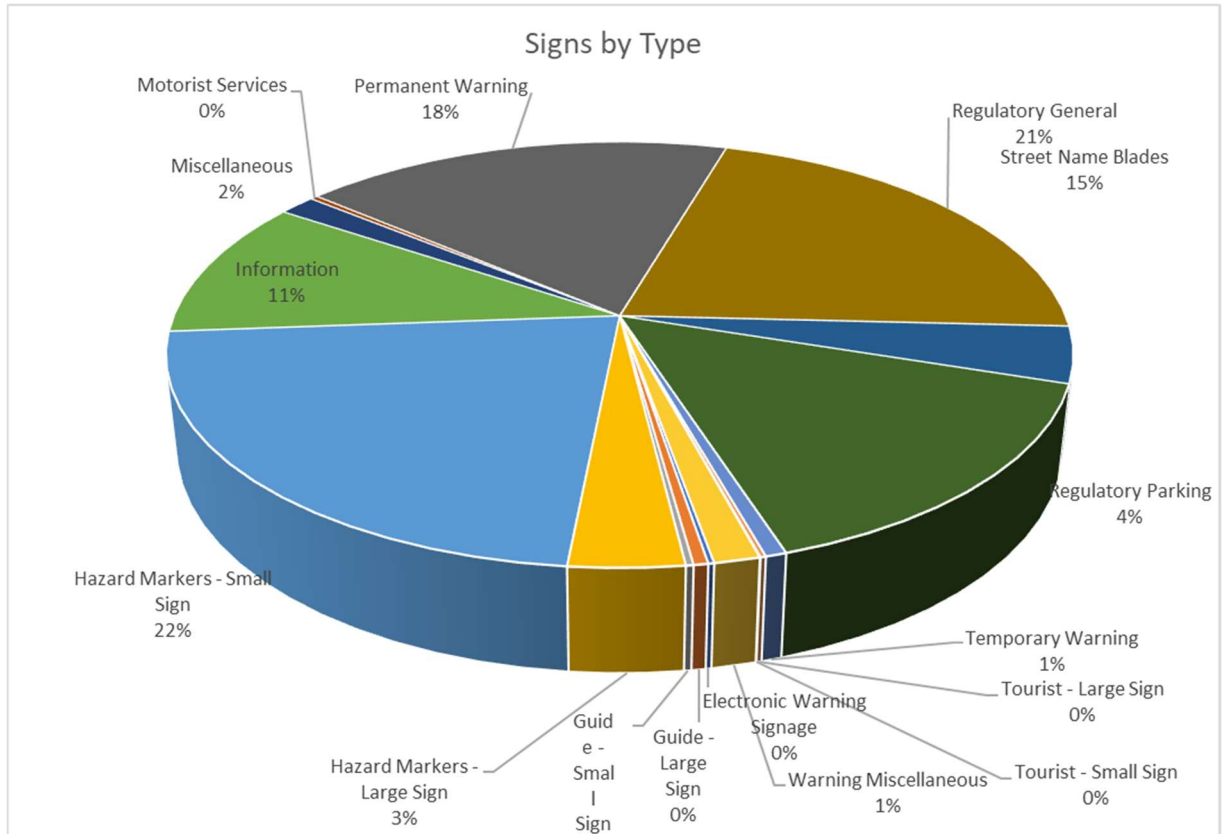


Figure 7-2767: Railing Types by length.

Railing Type	Length (m) (2011)	Length (m) (2014)	Length (m) (2017)	Length (m) (2020)	Length (m) (2023)
Steel Wire Rope barrier	1,749	1,749	1,749	3,142	2,515
Barrier Arm	25	117	117	0	
Sight rail	757	876	1,044	1,557	2,099
W Section Guard rail	694	1,050	1,373	1,899	3,715
Timber	27	4	52	0	0
Guard rail (laminated timber)	311	337	311	459	535
Handrail	198	337	393	574	679
Cable	0	0	900	0	0
Other	0	46	181	225	0
<b>Total</b>	<b>3,761</b>	<b>4,486</b>	<b>6,120</b>	<b>7,856</b>	<b>9,543</b>

## Road Marking and RRMP's

The road markings are the most changeable of all sealed road assets due to their relatively short life, which is typically 2 years between re-marks. The estimated replacement cost for road markings is approximately \$330,000 based on the marking contract.

RRPM's are valuable for road delineation both for nighttime visibility and during wet weather when water enhances their reflectivity, there are approximately 15,000 RRMP's within the district. These are a short-lived assets on certain roads, frequently being damaged by oversize vehicles and agricultural equipment.

## Railing

The Council manages approximately 9.76km of railing. The breakdown per type is shown in the graph below and Table 7-27 above.

Figure 7-70: Change in quantity of guardrail assets.

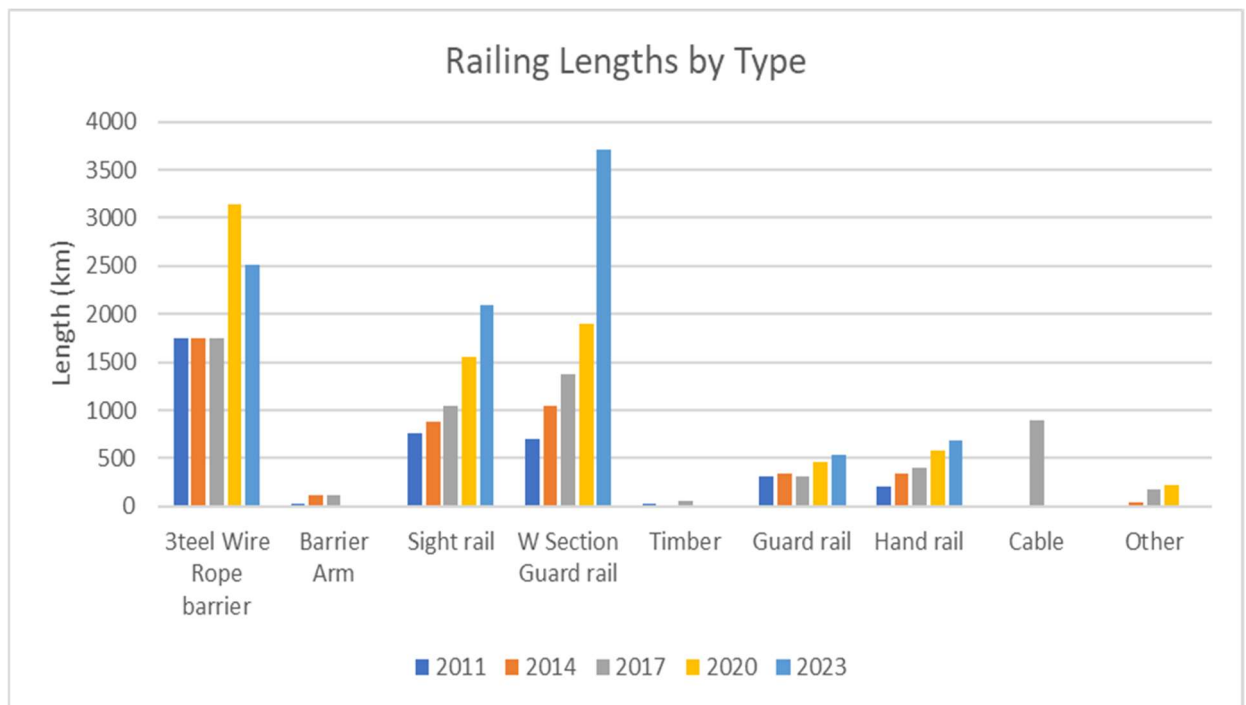
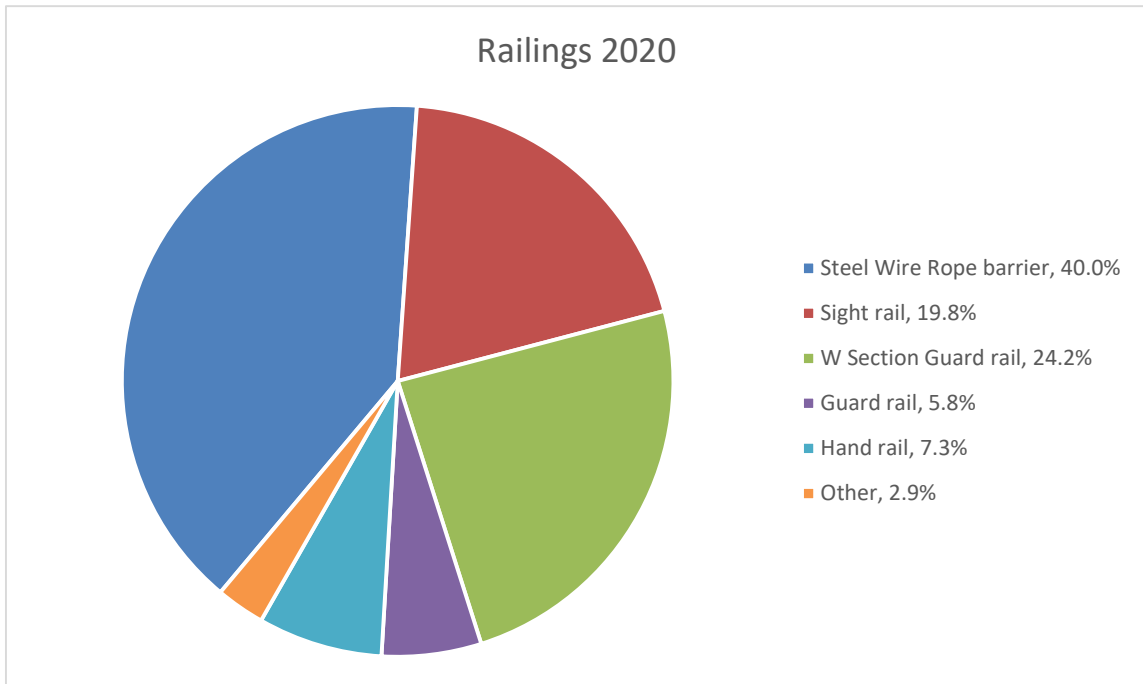


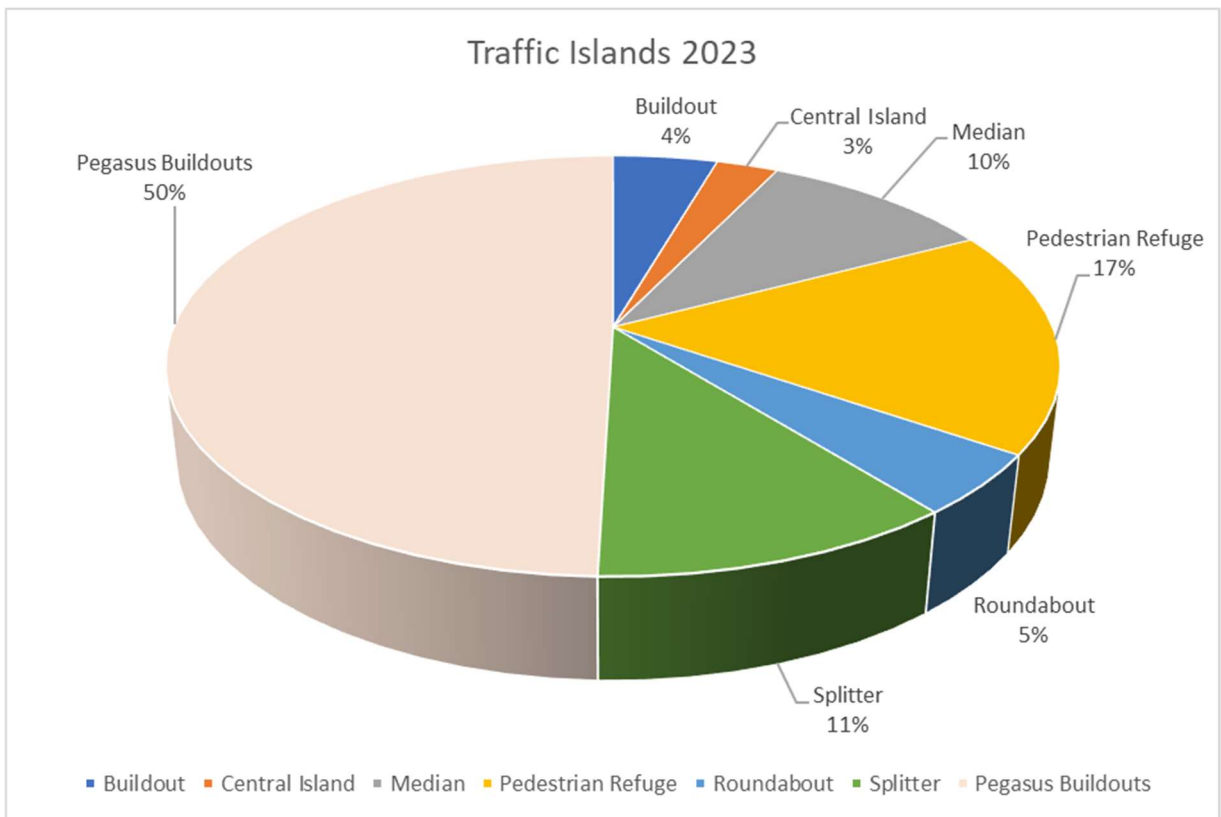
Figure 7-68: Percentage of Respective Railing Types



### Traffic Islands

The Council owns 1088 traffic islands, kerb build outs, and roundabouts. The breakdown of type is shown below:

Figure 7-69: Traffic Island Quantities 2023





## Traffic Controls

Table 7-27: Miscellaneous Traffic Furniture and signs

Description	Unit	Quantity 2011	Quantity 2014	Quantity 2017	Quantity 2020	Quantity 2023
Edge Marker post	km	399	399	399	399	399
Bollards	Ea.	52	335	265	326	358
Tactile Indicators- Directional	m	62	80	100	123	841
Tactile Indicators- Warning	m	315	352	423	501	1674
Active Warning Signs	Ea.	8	12	17	31	33

### Asset Capacity/ Performance

Indicators of the performance of existing traffic services can come from road users, crash data, safety audits and road inspections.

#### Signs

In general signage is at an adequate level based on the above indicators. Accident and vandalism damage to signs is an ongoing problem which consumes a reasonable proportion of traffic signs renewal expenditure with the remainder being used to replace signs in poor condition. Improvements to the asset data system will enable the extent of accident and vandalism damage to be identified as data accuracy improves.

All new and replacement signs use high intensity reflective material (except for street name blades). Ongoing repairs and replacement have resulted in the majority of signs now being high intensity reflective. RAMM data has been partially updated to reflect this but is still under review.

#### Road Marking

The performance of road markings is influenced by the type of materials used, the quality of both materials and application and the accuracy of placement. Deterioration is caused primarily by traffic and environmental factors. Remarking is carried out on a regular basis to keep the markings at acceptable standards.

The roadmaking contract was changed at last contract retender from a performance-based contract to measure and value. This led to an initial significant improvement in marking quality but was also much more expensive.

## Asset Condition

### Age profile

As signs are replaced their age data is entered into RAMM. Due to the large number of signs in the network the reliability of data will be relative to the frequency with which the signs are inspected and replaced. Information on Regulatory signs is up to date, however signs on remote roads which are visited infrequently and only replaced when damaged or removed, may still be missing an installation date. Currently 33% of all signs are older than the 12-year assumed life of signs, while 23% are 16 years or older (up from 29% and 12% respectively three years ago).

Figure 7-70: Signs by Class

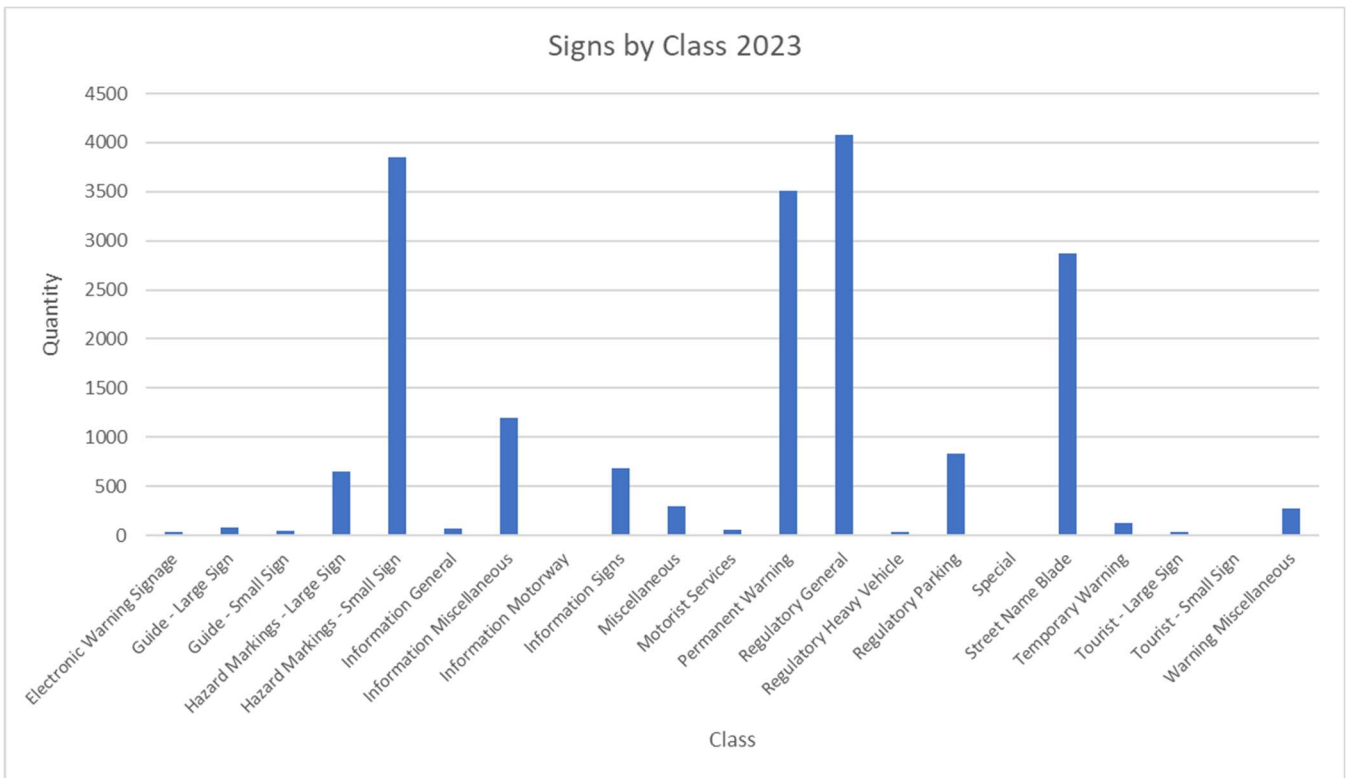
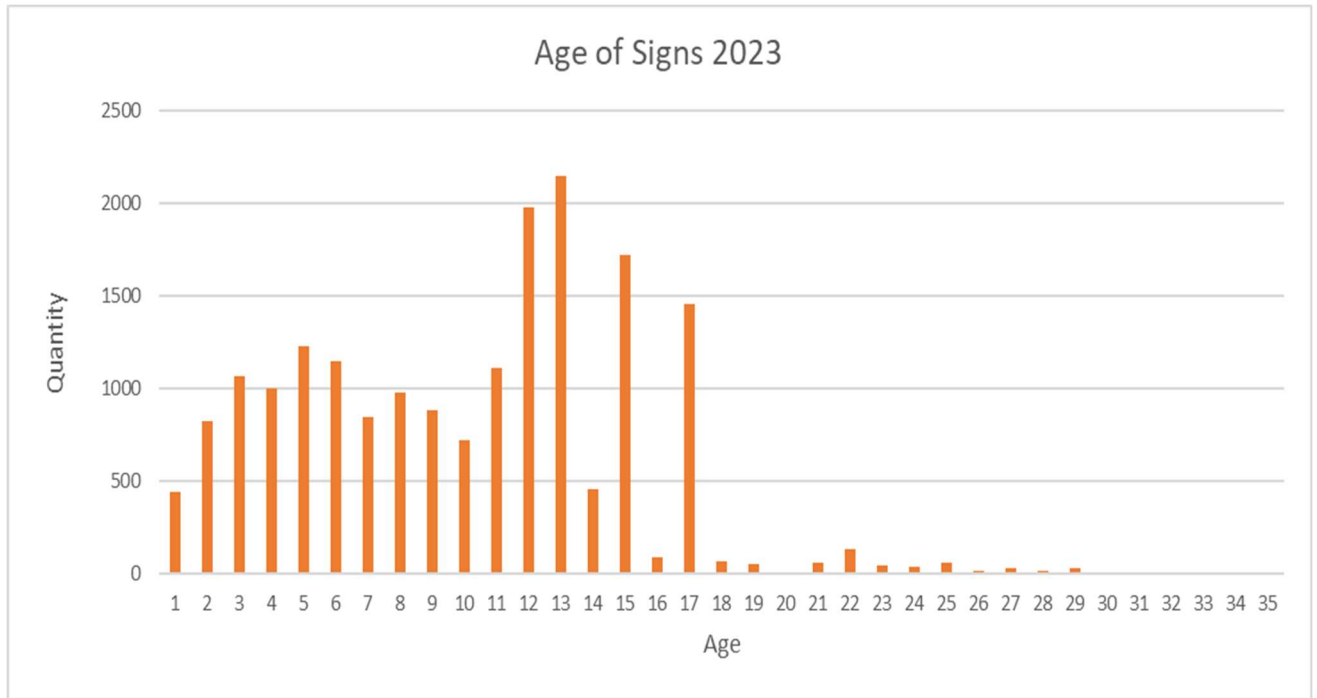


Figure 7-71:: Signs Age Profile



**Condition**

There is no formal condition rating system for the traffic services assets. However, the condition of these assets is assessed through the routine inspections undertaken by the road network maintenance contractor and the annual day and night safety inspections carried out with input from an external consultant with safety expertise.

**Signs**

Generally, signs are in a good condition based on these inspections. Vandalism and theft rather than age and condition are the major factors determining renewal needs.

**Marking and RRPM's**

The extent of deterioration of road markings depends on age, traffic volumes, the materials used and the condition of the road (oil and grit reduce adhesion). Road markings were previously managed through a performance-based contract. This has been replaced by a measure and value contract and has been found to provide better condition of the road markings, although there has been a substantial cost increase.

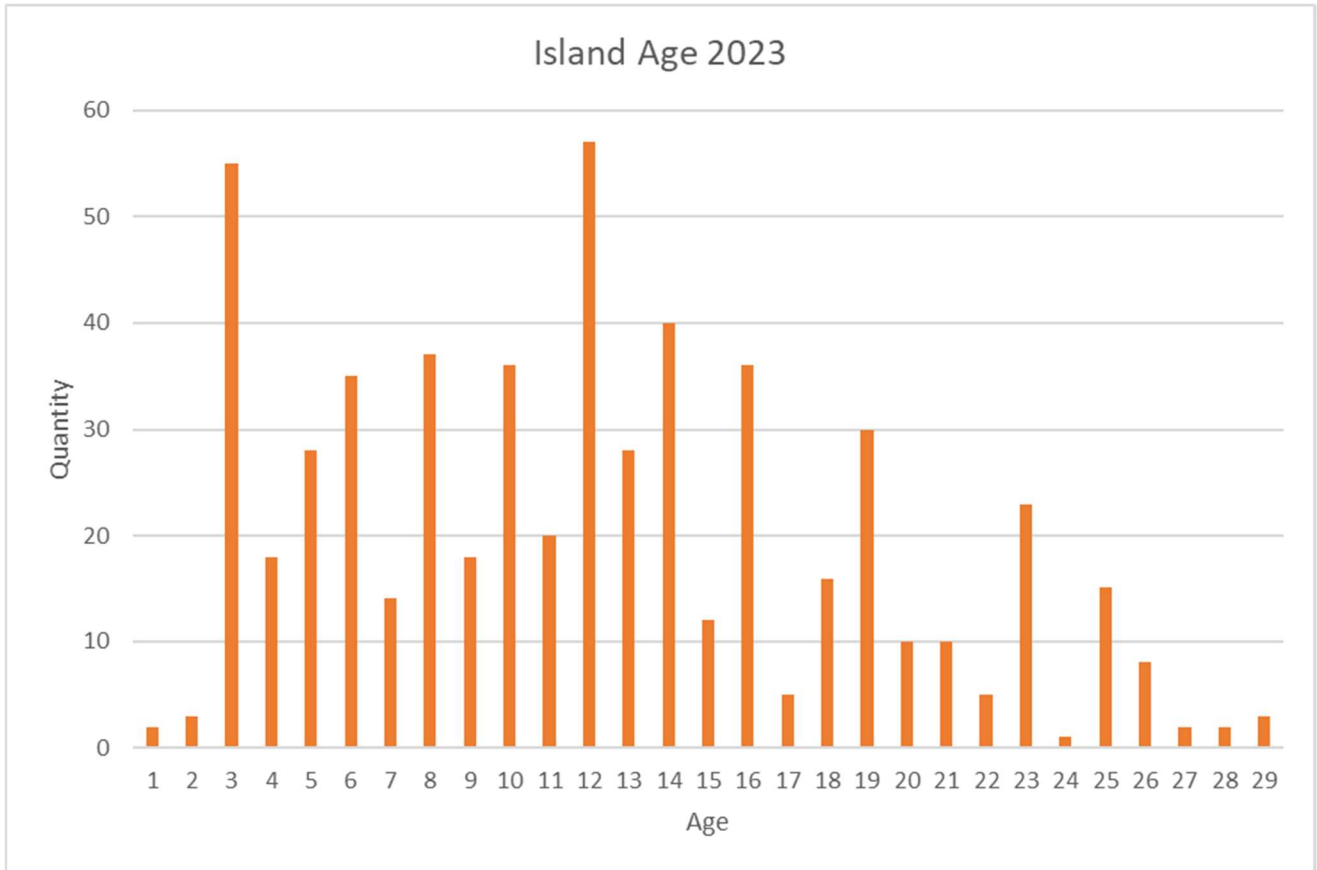
**Railing**

Railings are generally in a good structural condition; however some painting will be required in the short to medium term. With the increase in environmental protection requirements painting costs have increased considerably.

**Traffic Islands**

The kerbing component of traffic islands is kept with other kerbing in the surface water channel table. Most of the island assets were constructed in the last twelve years.

Figure 7-72: Islands Age profile.



### Tactile Indicators

Tactile indicators are generally in a variable condition, however those on main routes are generally well maintained.

### Active Warning Signs

Active warning signs have been installed at Southbrook School, Sefton School, North Loburn School, and St Patricks School, and variable speed limit signs have been installed at Ashley School, Swannanoa School and Loburn School. Further installations will occur according to need.

### Asset Valuation

The following tables summarise the asset valuation for the traffic services as at 30 June 2023. The full report details are included in Appendix C. Road marking is not depreciated due to the short life cycle.

## Signs

Table 7-28 Summary of Signs Asset Valuation at 30 June 2023

Description	Unit	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Electronic Warning Signage	Ea.	34	\$314,608	\$138,406	\$24,865
Guide - Large Sign	Ea.	85	\$296,361	\$78,308	\$22,012
Guide - Small Sign	Ea.	44	\$25,696	\$10,430	\$1,881
Hazard Markers - Large Sign	Ea.	675	\$394,200	\$130,916	\$29,615
Hazard Markers - Small Sign	Ea.	4,324	\$424,145	\$120,894	\$30,312
Information	Ea.	2,054	\$1,199,535	\$544,427	\$93,899
Miscellaneous	Ea.	302	\$176,368	\$27,067	\$10,516
Motorist Services	Ea.	60	\$35,040	\$10,543	\$2,400
Permanent Warning	Ea.	3,547	\$2,071,446	\$723,021	\$155,383
Regulatory General	Ea.	4,126	\$2,797,323	\$1,252,759	\$219,002
Regulatory Parking	Ea.	828	\$161,995	\$68,750	\$12,560
Street Name Blades	Ea.	2,903	\$567,962	\$183,880	\$42,042
Temporary Warning	Ea.	124	\$72,416	\$32,429	\$5,897
Tourist - Large Sign	Ea.	32	\$111,571	\$24,821	\$8,198
Tourist – Small Sign	Ea	4	\$2,336	\$1,752	\$195
Warning Miscellaneous	Ea.	269	\$52,629	\$28,064	\$4,266
<b>TOTAL</b>		<b>19,411</b>	<b>\$8,703,631</b>	<b>\$3,376,467</b>	<b>\$663,043</b>

## Railings

Table 7-29: Summary of Railings Asset Valuation as at 30 June 2023

Railings					
Asset Description	Unit	Length	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Guard Rail (Laminated timber)	m	535	\$130,895	\$59,257	\$5,236
Hand Rail (timber)	m	679	\$220,289	\$129,838	\$8,812
Sight Rail	m	2,099	\$301,047	\$91,155	\$15,731
Steel Wire Rope Barrier	m	2,515	\$438,666	\$328,384	\$8,773
W Section Guard Rail	m	3,715	\$1,559,582	\$1,295,750	\$31,192
<b>Total</b>		<b>9,543</b>	<b>\$2,650,480</b>	<b>\$1,904,385</b>	<b>\$69,744</b>

## Traffic Islands

Table 7-30: Summary of Traffic Islands Asset Valuation as at 30 June 2023

Standard Replacement Cost Description	Unit	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Buildout	Ea.	49	\$320,742	\$264,694	\$4,009
Central	Ea.	29	\$231,674	\$181,944	\$2,896
Median	Ea.	110	\$934,885	\$748,333	\$11,686
Pedestrian Refuge	Ea.	188	\$922,809	\$774,141	\$11,535
Roundabout	Ea.	51	\$491,557	\$405,173	\$6,144
Splitter	Ea.	122	\$1,243,559	\$1,019,820	\$15,544
Pegasus Buildouts	Ea.	539	\$861,212	\$718,988	\$10,765
<b>TOTAL</b>		<b>1,092</b>	<b>\$5,006,437</b>	<b>\$4,113,093</b>	<b>\$62,580</b>

## Traffic Control

Table 7-31: Summary of Traffic Control Asset Valuation as at 30 June 2023

Standard Replacement Cost Description	Unit	Length or Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Bollard	Ea.	358	\$78,965	\$21,565	\$7,265
Edge Marker posts	Km	399	\$309,623	\$154,811	\$19,351
Tactile Indicators- Directional	m	898	\$414,461	\$323,760	\$18,018
Tactile Indicators- Warning	m	1886	\$798,016	\$592,269	\$34,694
<b>TOTAL</b>			<b>\$1,601,065</b>	<b>\$1,092,405</b>	<b>\$79,328</b>

## Historical Data

Historical expenditure on traffic services over the last 6 years is summarised in the figure below.

Figure 7-73: Traffic Services Historical Maintenance Expenditure

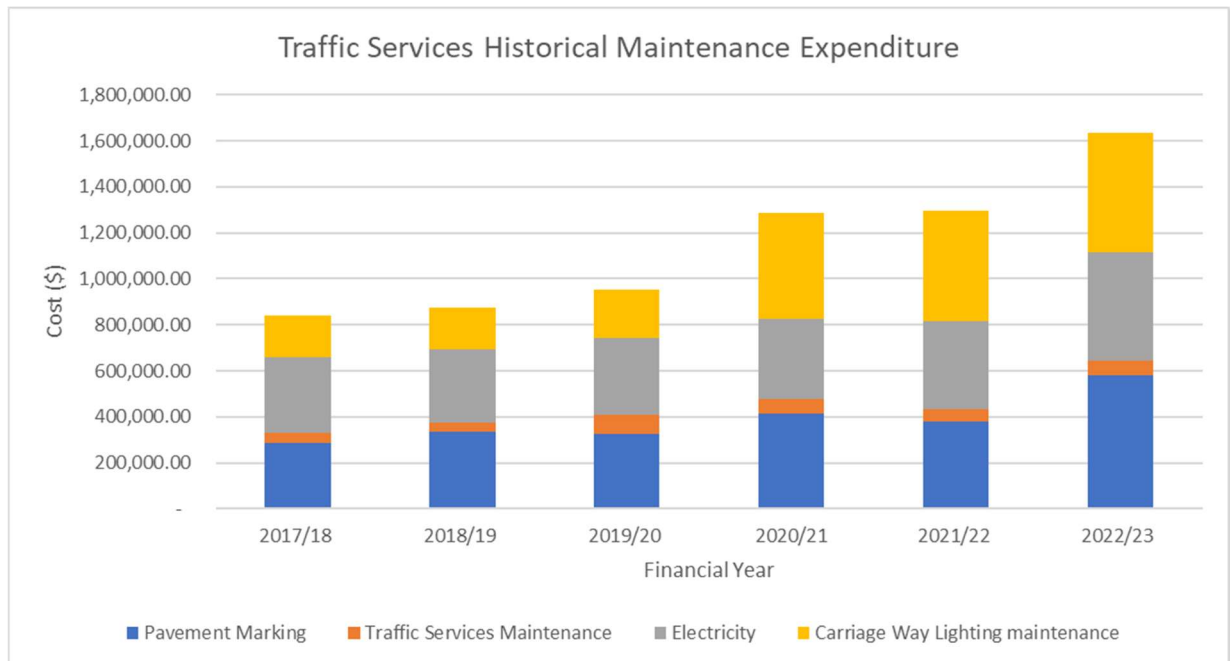
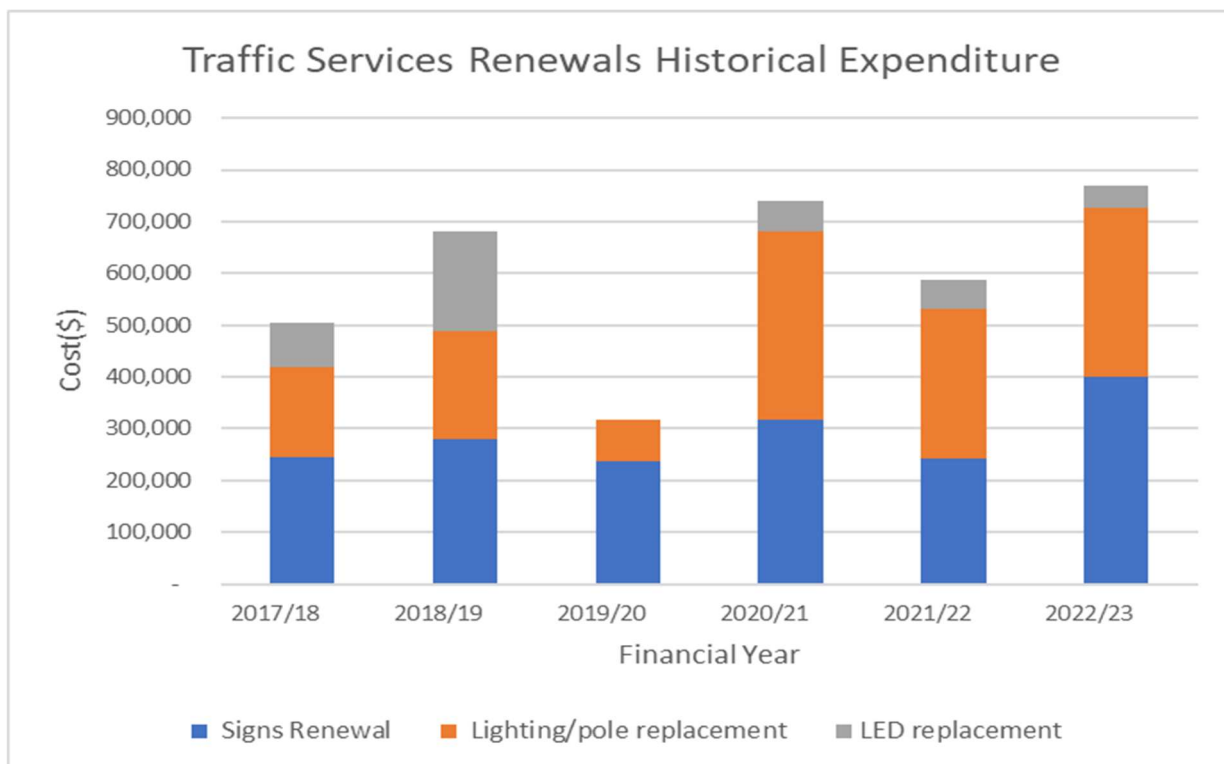


Figure 7-74: Traffic Services Historical Renewals Expenditure



The new works are a mixture of school safety projects, pedestrian refuge islands, and speed limit thresholds.

Resealing programmes have a significant effect on remarking. However, re-marking immediately after sealing is a resurfacing cost.

### Infrastructure Risk Management Plan

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Table 7-32: Signs Infrastructure Risk

Risk Description	Risk Assessment	Current Mitigation
Damage to signs as a result of vandalism, collision, and theft resulting in crashes and increased cost	High	Customer feedback (Service Request) police reports, regular inspections, regular awareness campaigns through the media, using vandal proofing techniques without making it dangerous
Inappropriate management of signage with potential to result in accidents e.g. lack of warning of sudden changes in speed environment or topography, deterioration of signs	Medium	Experienced road management staff and contractor manage the network, regular inspections, Customer feedback (Service Request) Robust renewal programme



		adequate maintenance and renewal funding available
Lack of delineation after winter e.g., ice gritting removing road markings	Medium	Maintenance contractor inspections and treatment as required
Lack of Edge marker post due to damage, wear and tear.	Medium	Identified through Contract regular inspection programme

## Routine Operations and Maintenance Plan

Traffic services maintenance provides for the normal care and attention of roading furniture and traffic control devices that promote a safe and efficient transport system.

All traffic services maintenance work, including road signs, road marking, RRPM's, edge marker post, traffic islands, and bollards are carried under the Road Maintenance Contract 19/43. Maintenance is carried out in response to faults that are identified by the public through service requests, by routine inspections by the contractor and by Council road maintenance staff.

### Operation and Maintenance Plan

Operations and maintenance activities include:

#### Planned Maintenance

- Routine inspections of signage and markings.
- Repairs to damaged signage.
- Routine remarking of road markings.
- Maintenance of guard-rails and sight rails where not associated with bridges.
- Maintenance of RRPM's

#### Unplanned Maintenance

- Response to vandalism and crash damage
- Emergency Response

### Operations and Maintenance Strategies

Maintenance of traffic signs and markings is undertaken as part of the District wide Maintenance contract. The condition of signs and road marking will be assessed visually against the relevant Waka Kotahi Standards in routine inspections undertaken by the Contractor, with the results reported to Council. All traffic services will be inspected at the following frequency:

- All Strategic and Arterial roads: Weekly intervals
- All Collector and Local roads: Monthly intervals
- All unsealed roads: in conjunction with grading frequency

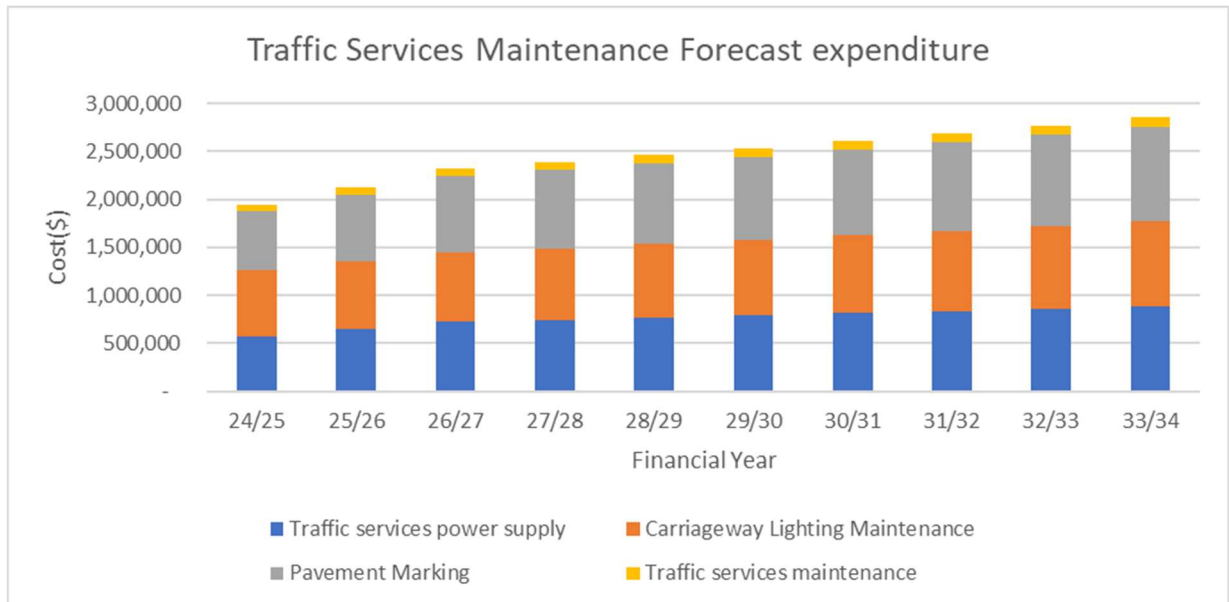
- All roads: 5% of the pavement marking every four months

Pavement marking is considered a maintenance item as it is carried out as required based on the reflectivity of the markings. Generally the whole district is remarked every 2 years.

### Summary of Future Costs

An increase in maintenance costs is planned throughout the 10-year planning period to allow for growth in traffic services. All costs are in 2019/20 dollar values.

Figure 7-75: Traffic Services Maintenance Forecast Expenditure



### Renewal / Replacement Plan

The traffic services programme is developed from the routine maintenance inspection and the annual daytime and night-time inspection, which is carried out by the maintenance contractor on all strategic, arterial and a proportion of the other roads, following training by suitably qualified instructors. The most common failure mode of signs is accident or vandal damage, and so replacement is immediate and forward programming is not possible.

#### Renewal Plan

The trigger for renewals work include replacement of obsolete, damaged, sub-standard and non-conforming signs identified during routine inspections are programmed for replacement according to the following priority:

- Public safety
- Traffic volumes
- Convenience of road users
- The condition of the asset
- The economic/useful lives of the materials used.

## Renewal Strategies

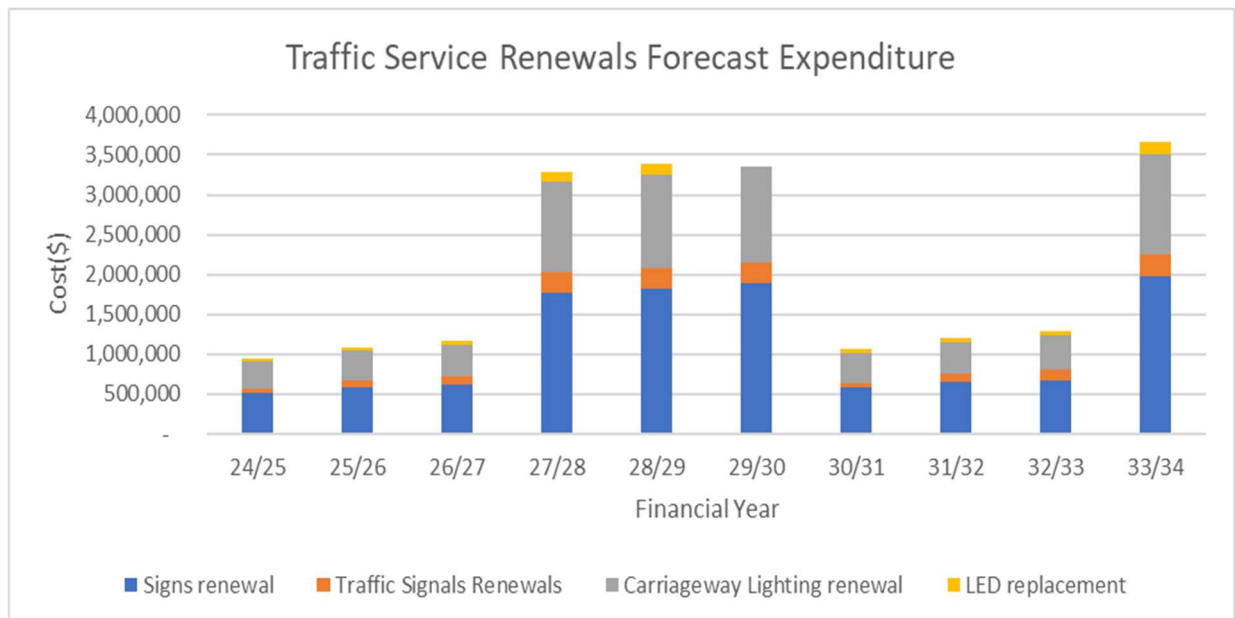
Signs are relatively short-life assets, with effective lives of around 12 years. Street name blades are replaced as required based on field inspections based on condition and compliance with the standards.

Road markings are renewed on a regular basis and the decision on when remarking is done is based on reflectivity measurements of the markings. The road marking contractor is responsible for ensuring road markings meet the required standards at all times. Regular audits are carried out to check this is achieved.

## Summary of Future Costs

The future expenditure forecasts for traffic signs for the 10 years period has been determined by analysing historic expenditure. This analysis shows current annual expenditure is at the optimal level, and sign replacement is occurring at a rate suitable to maintain signs at an acceptable level. Therefore, there is no significant increase in capital expenditure as shown in the figure below.

Figure 7-76: Traffic Services Renewal Forecast Expenditure



There is no programme for renewing traffic controls such as islands, roundabouts, railing, and tactile indicators as they will fall outside the 10-year period of this plan

## Creation/Acquisition/Augmentation Plan

### Selection Criteria

Traffic Facilities are acquired through the following:

- Installation of new assets where there are currently none.
- Needs defined through Crash Reduction Studies and Safety inspections.
- Taking over new assets constructed with subdivision development.

## **Summary of Future Costs**

New traffic services are part of the overall minor improvements projects and have not yet been fully allocated for the year as this budget covers a wide range of projects not yet broken down by asset.

## **Disposal Plan**

There are no plans for disposal of any traffic services assets in the next three years.

## 7.9 Passenger Transport



### **Purpose**

To provide on street facilities that support the use of passenger transport as a viable and convenient transport mode.

### **Background**

Public transport is primarily managed by Environment Canterbury. Ownership of signs, seats and shelters, who are responsible for maintenance, renewals, new assets and relocations, but the decisions on routes themselves are part of a collaborative process with ECan in charge. Future direction for public transport is governed by the PT Futures.

**Vision for Public Transport** - Public transport is innovative and successful and sits at the heart of a transport network that supports a thriving, liveable greater Christchurch. The public transport system is accessible and convenient, with high quality, zero emission vehicles and facilities. The system gets people where they want to go – as a result it is well used and valued by the people of greater Christchurch.

### **Problem Statement addressed by this Asset Group**

- *Population growth and changing land use is resulting in increased motor vehicle use, making it harder to maintain safe and appropriate levels of service.*
- *Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.*
- *Road users on our network have little room for error or recovery from mistakes, which results in fatal and serious injuries when crashes occur.*

Public transport addresses most of the above issues, provided it is sufficiently utilised. As such providing the appropriate supporting infrastructure will assist with removing some of the real and perceived shortcomings of public transport

- Good uptake of public transport will lead to fewer single occupancy vehicles and hence reduce demands on the current facilities.
- Emissions per person are far less from a full bus than if those occupants all drove, and with the transition to electric public transport this is even more true.
- It also provides more mode choice and allows the less able to get out into the Community.
- Even without the safety features such as seatbelts, travelling by public transport is significantly safer than by private motor vehicle.

### **Key Technical Issues**

- Locations of bus shelters and seats along the frontage of properties.
- Graffiti on the bus shelters and seats.

### **Solutions**

- Where possible locate stops where they will not affect local owners, i.e. obscured by fence or vegetation.
- Investigate security cameras.
- Paint shelters with graffiti guard.

### **Background Data**

Public transport assets include bus shelters, seats, and bus stop signs. The bus shelters and seats are stored in the Minor Structure table in RAMM and covered in this section, whereas bus stop signs are stored in the Signs table and are covered under **Section 6.7 Traffic Services**.

Decisions on location and extent of bus routes are determined by Environment Canterbury who manages the passenger transport services. The Council is responsible for installing the necessary infrastructure to support the bus services. The maintenance, operations, and renewals of these assets are co-funded by Waka Kotahi through Environment Canterbury.

The Passenger Transport assets account for 0.3% of the total transport asset group, based on replacement cost.

### **Physical Parameters**

The Council owns 32 shelters and 24 seats valued at \$631,997.

### **Asset Capacity / Performance**

The introduction of a High Occupancy Vehicle Lane (T2) on the Christchurch Northern Corridor has opened up further opportunities for encouraging bus services. To make the most of this new facility, express bus services have been implemented during the morning and afternoon

peak, to help make Public Transport a quick and cost-effective means of commuting to Christchurch City and resulting in an increase in the uptake of passenger transport.

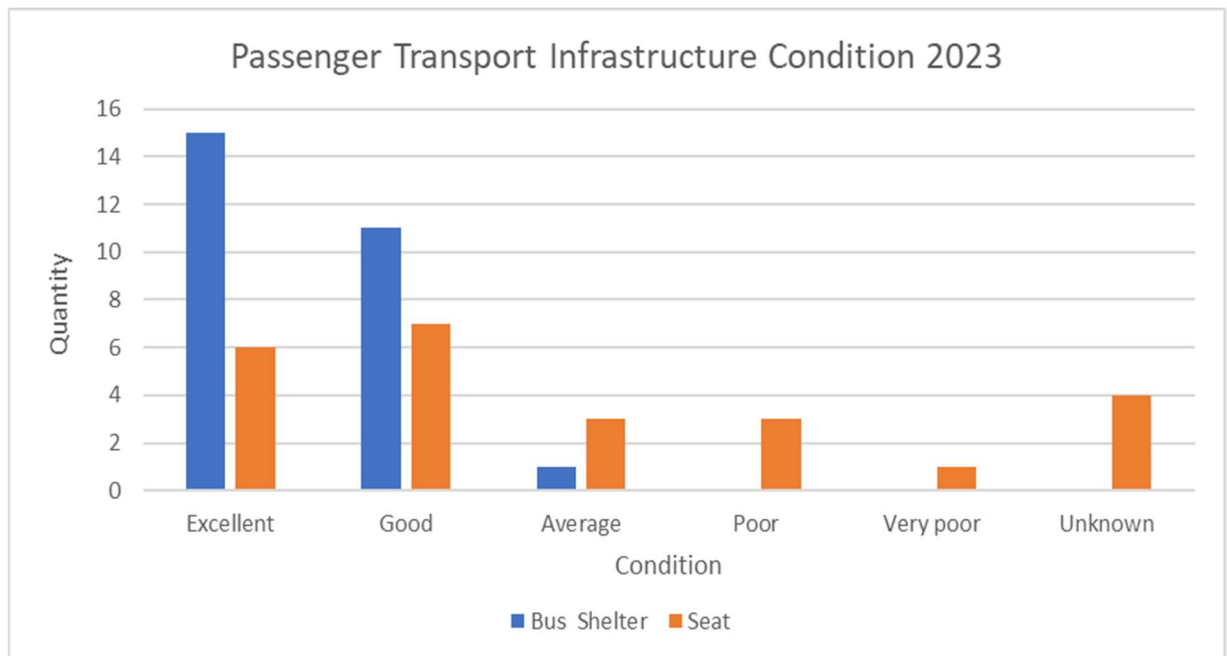
Park and ride facilities have been constructed in Rangiora and Kaiapoi, with further expansion of existing sites predicted in the future as demand increases, as well as a potential Park and Ride to be implemented in the Woodend / Ravenswood area in 2028/29.

There has also been additional funding allowed for over the next 10 years for further investment in infrastructure, particularly bus shelters and seats, to make public transport a more attractive travel option. This plan provides for those assets and changes.

### Age profile/ Condition

Most of the existing bus shelters and seats have been installed over the last 15 years. Shelters are generally in good condition, however a more detailed condition assessment is planned for the next three year period. The biggest maintenance concern is ongoing graffiti.

Figure 7-77: Passenger Transport Infrastructure Condition Profile



Passenger Transport assets are generally well maintained to the same standard as the main asset groups making up the road network. Their main issue continues to be vandalism.

### Asset Valuation

Asset valuations are summarised below as at 30 June 2023. The full report details are included in **Appendix C**.

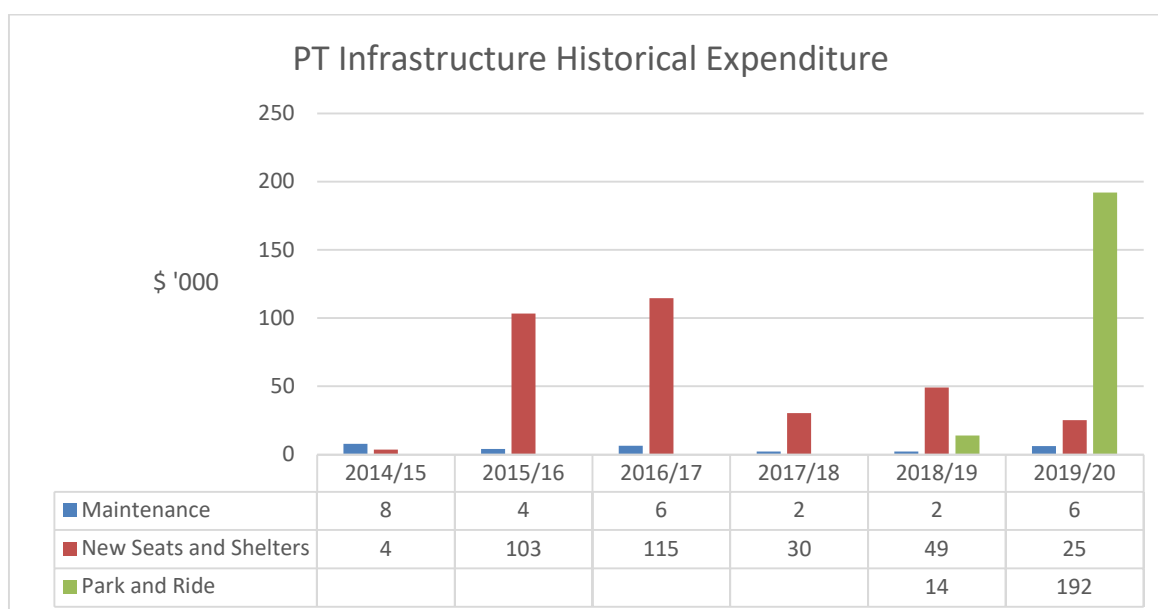
Table 7-33: Summary of Passenger Transport Asset Valuation at 30 June 2023

Standard Replacement Cost Description	Unit	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Bus Shelters	Ea.	32	\$592,505	\$470,301	\$11,850
Seats	Ea.	26	\$39,494	\$12,896	\$1,929
TOTAL			\$631,999	\$483,197	\$13,779

## Historical Data

Historical expenditure on public transport infrastructure over the last 6 years is summarised in the figure below.

Figure 7-78: Passenger Transport Historical Expenditure



## Infrastructure Risk Management Plan

The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:



Table 7-34: Public transport infrastructure Risks

Risk Description	Risk Assessment	Current Mitigation
Bus Shelter vandalism leading poor image and increased costs	Low	<ul style="list-style-type: none"> <li>• Using a vandal proof materials.</li> <li>• regular inspections</li> </ul>
Lack of or poor passenger transport infrastructure resulting in reduced patronage	Low	<ul style="list-style-type: none"> <li>• Regular Communication with ECAN to assess needs.</li> <li>• Regular inspections of existing infrastructure.</li> </ul>

### **Routine Operations and Maintenance Plan**

Passenger transport assets are maintained and cleaned under the Road network Maintenance Contract 19/43. These assets are generally well maintained to the same standard as the main asset groups making up the road network.

#### **Operation and Maintenance Plan**

Operations and maintenance activities include:

##### **Planned Maintenance**

- Cleaning bus shelters weekly.
- Cleaning seats as required.
- Repairing structural damage.

##### **Unplanned Maintenance**

- Replacing broken components.
- Removing graffiti.

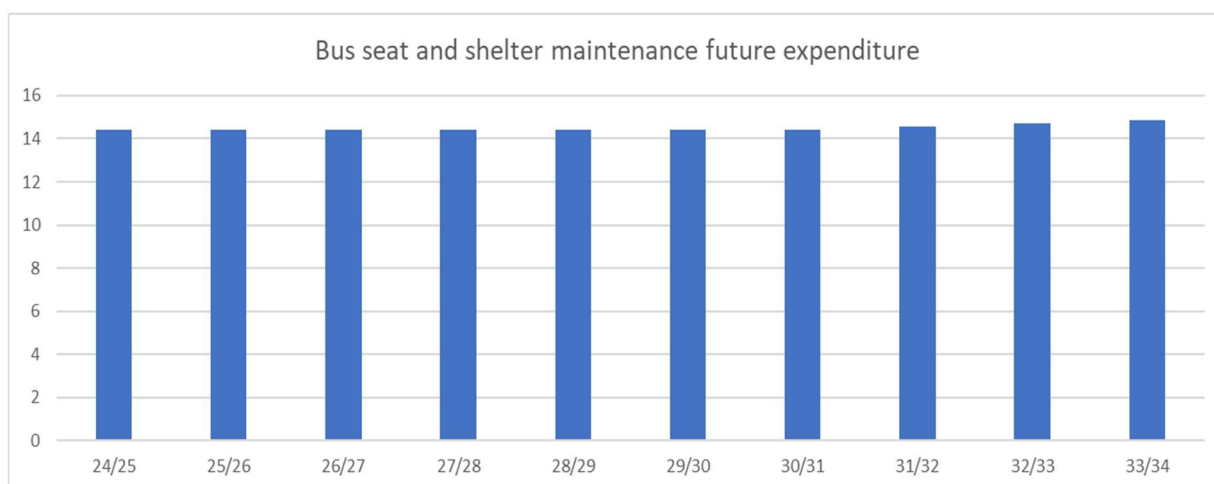
#### **Operations and Maintenance Strategies**

Maintenance of these assets is undertaken as part of the district wide Maintenance Contract No 19/43. All new bus shelters that have been installed recently are made of aluminium to reduce the risk of vandalism.

#### **Summary of Future Costs**

The Council allows just under \$14,500/annum for maintenance, which currently seems sufficient.

Table 7-35: Passenger Transport Future Maintenance Expenditure



### Renewal/ Replacement Plan

Bus shelters and seats will be renewed due to structural failure or obsolescence. The expected useful life of the shelters is 50 years, and a seat is 20 years. The majority of seats and shelters are relatively new, with only three seats currently flagged as potentially requiring replacement due to age.

### Creation/Acquisition/Augmentation Plan

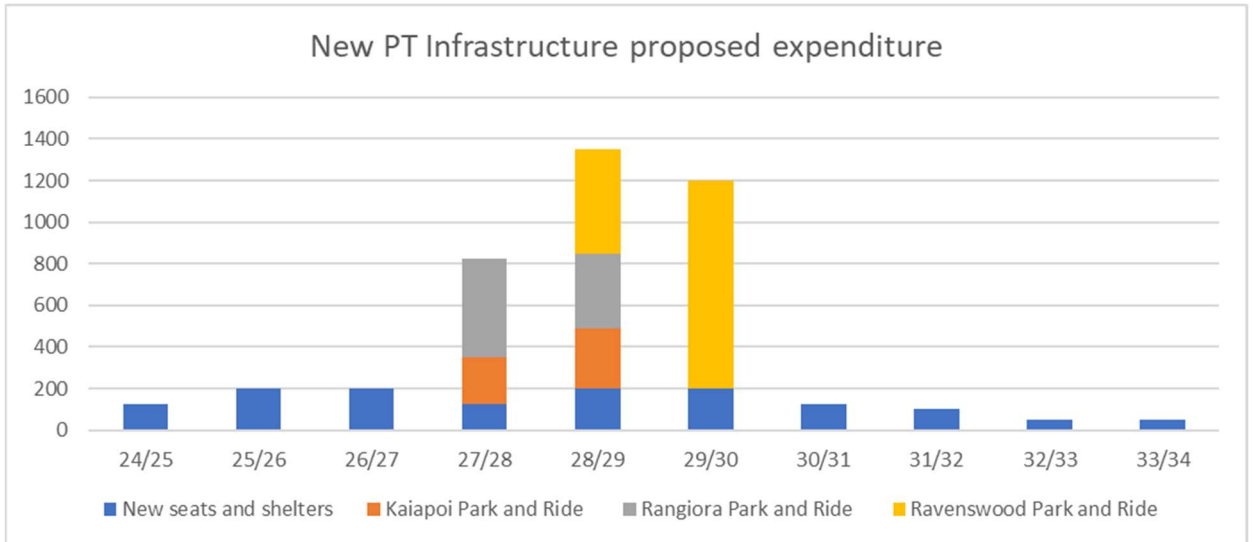
#### Selection Criteria

The development of passenger transport results from Environmental Canterbury introducing new routes or making changes to the existing routes as required, or when there is a demand for new bus shelters.

### Summary of Future Costs

The Council has increased proposed expenditure on new bus shelters and seats from 51,000 per annum to 125,000 over the next ten years. The biggest issue with this infrastructure is agreeing placement of shelters with residents. There is also increased expenditure on Park and Ride which is designed to encourage more use of Public Transport.

Figure 7-79: New Passenger Transport Expenditure



### Disposal Plan

No public transport or minor structures are considered surplus to requirements and no disposals are anticipated within the 10-year planning period.

## 7.10 Parking



### **Purpose.**

To provide convenient places to allow motorists easy access to public and private facilities.

### **Problem Statement Relevant to Parking**

- Lack of mode choice leads to environmental impacts due to vehicle emissions, lack of opportunity for safe and healthy activity, inefficient use of existing infrastructure, and social disconnect.

For those who are less able, good parking provides opportunities to interact with the community. In addition, lack of adequate parking has been shown to drive shoppers further afield, which has the perverse outcome of increasing vkts and emissions. Growth in electric vehicles will lessen this, but may increase the need for road building/widening.

Park and Ride also falls within this category, however there is an overlap with Public Transport facilities and for the purpose of this document Park and Ride has been grouped with Public Transport.

Parking facilities are a small but growing group of assets in WDC. Included in this asset group are on and off-street parking areas, parking buildings, and park and ride facilities. Some work has been carried out to assist with understanding the needs of the community in this area, and a detailed analysis of parking needs for the entire district will be carried out over the course of the preparation of the next AMP.

Council is planning on increasing its own off-street parking to assist with the increasing demand, and to ensure these facilities are optimally located.

### **Key Issues specific to parking**

- Supply of sufficient parking to meet growing needs of the community.
- Ensuring on-street parking does not conflict with pedestrians and cyclists.

### **Solutions**

- Supply of parking is regularly reviewed by Town Centre team and has been included in future planning.
- All new cycle facilities undergo safety audits.

## Background Data

Council has traditionally owned only a small area of car parking as the availability of on-street parking has been sufficient. With the increasing population and a desire to provide an environment which supports business, Council is investigating other off-street options. In addition, it will be providing facilities to encourage Park and Ride to alleviate congestion between Christchurch and Waimakariri.

## Physical Parameters

Council currently owns 5 off-street car parks, with a combined area of just under 40,000 m<sup>2</sup>, plus 4 park and ride sites.

Table 7-36: Council Carpark Locations and Quantities

Locality Name	Total Area (m)
Blake St car park	7,895
Fire Station car park	3,712
Good St car park	9,020
Percival St car park	13,904
Raven Quay car park	4,368
<b>Total</b>	<b>38,899</b>

## Asset Capacity/Performance

A parking framework for Rangiora Town Centre has been developed to build on the Parking Management Strategy and Implementation Plan developed as part of the Rangiora Town Centre 2020 project. The framework provides transport planning guidance on the criteria applicable to centralised parking provisions and is developed as a parking demand model spreadsheet intended to be used by the Waimakariri District Council.

Consideration of facilities, such as allowance for cycles at Park and Ride, and more EV charging stations, also need to be factored in to planning. Currently these are mainly provided by the private sector.

## Asset Condition

The condition of these ranges from poor/average to very good for more recently constructed parks. Some isolated repairs are required to be followed with a waterproofing seal within the next three years.

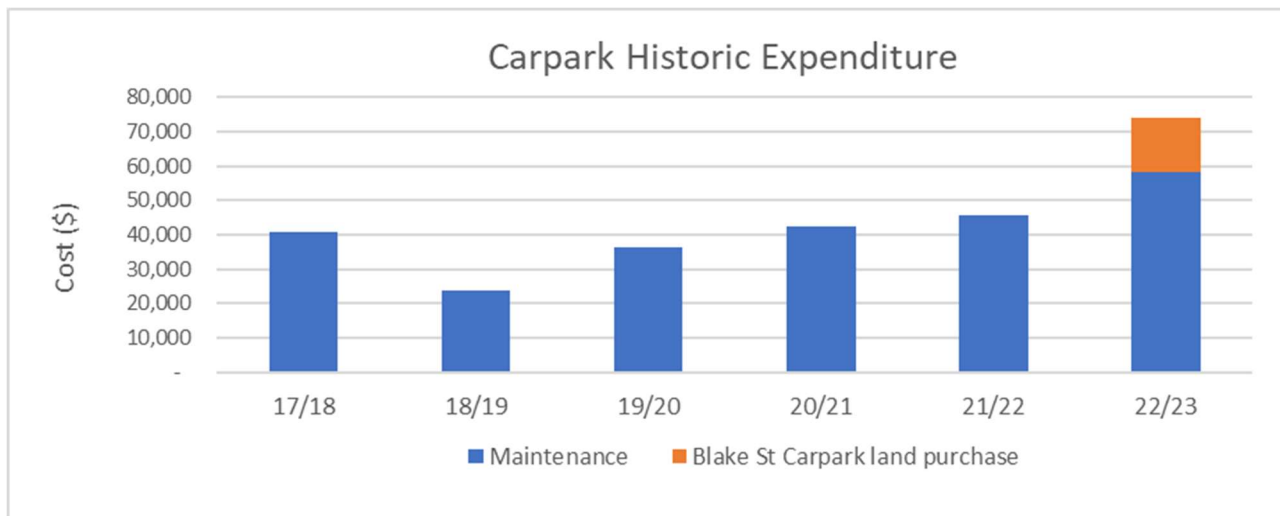
## Valuation

To date car parks have not been valued as a separate item however as the assets associated with this particular activity increase in value this will need to be introduced.

## Historical Data

Historical expenditure on car parks over the last 3 years is summarised in the figure below.

Figure 7-80: Carpark Historical Expenditure



The Risk Management section in this AMP outlines the formal review relating to the roading and transport network. The following risks were identified:

Table 7-37: Car Parking Infrastructure Risks

Risk Description	Risk Assessment	Current Mitigation
Sealed areas poorly maintained, may lead to cracks and potholes, increased maintenance costs longer term.	Low	<ul style="list-style-type: none"> <li>Apply good asset management practices to maintain at appropriate LOS</li> <li>regular inspections</li> </ul>
Lack of or parking leads to residents choosing to shop elsewhere, potentially impacting on the local economy	Low	<ul style="list-style-type: none"> <li>Traffic modelling, ongoing dialogue with businesses and residents</li> </ul>

## Routine Operations and Maintenance Plan

Carparks are maintained and cleaned under the Road Maintenance Contract 19/43. These assets are generally well maintained to the same standard as the main asset groups making up the road network.

## Operation and Maintenance Plan

Operations and maintenance activities include:

### Planned Maintenance

- Sweeping
- Pothole and crack repairs

### Unplanned Maintenance

- Removing rubbish

## Operations and Maintenance Strategies

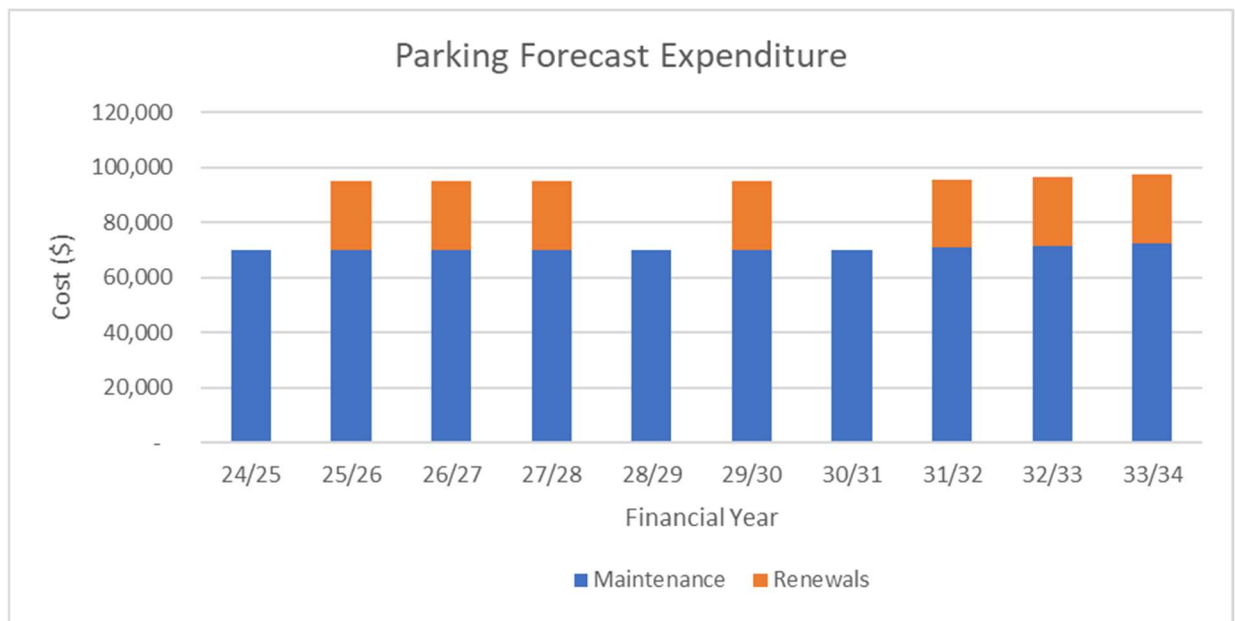
Maintenance of these assets is undertaken as part of the District wide Maintenance Contract No 19/43.

## Summary of Future Costs

Table 7-38: Carpark future costs

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Maintenance	69,980	69,980	69,980	69,980	69,980	69,980	69,980	70,680	71,387	72,100
Renewals	-	25,000	25,000	25,000	-	25,000	-	25,000	25,250	25,503
Capital	-	-	-	3,000,000	500,000	3,000,000	3,375,000	125,000	1,000,000	1,125,000

Figure 7-81: Car Park Future Maintenance, Operations and Renewals Costs



## Renewal/ Replacement Plan

Carpark surfaces are subject to similar wear patterns as a road and will be renewed over a similar cycle. The only carpark planned for resurfacing over the next three years is the 'Good St' carpark, which runs between Ashley and Good Streets.

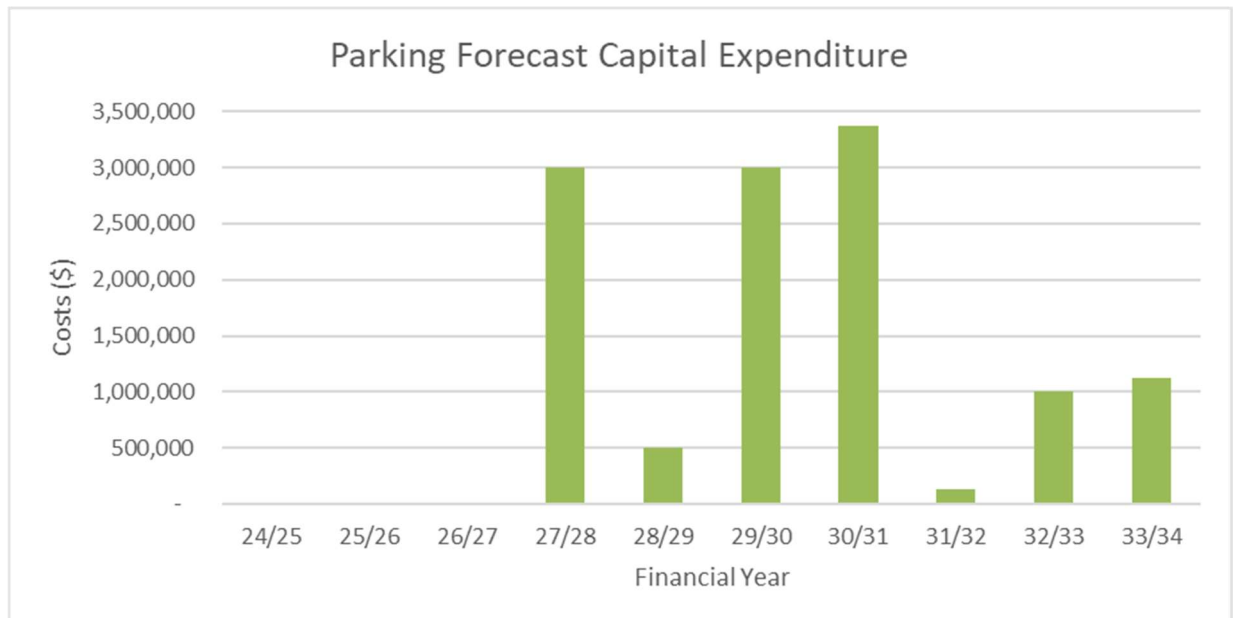
## Creation/Acquisition/Augmentation Plan

### Proposed Works

There are plans for a new car parking building to be constructed in the 2028/29 to 2030/31 period, in conjunction with retail construction on Council owned land in Rangiora, plus additional land purchase for car parking is allowed for in 2025/26, however, this will be revisited in the next AMP period.

### Summary of Future Costs

Figure 7-82: New Parking Expenditure



### Disposal Plan

There are no plans to dispose of any parking assets in the near future.



# Transportation Activity Management Plan 2024

## Financial Summary

June 2024



**Prepared by**

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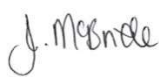

**New Zealand**

[waimakariri.govt.nz](http://waimakariri.govt.nz)

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**Document Acceptance:**

Action	Name	Role	Signed	Date
Prepared by	Yvonne Warnaar	Asset Planning Engineer (Roding)		14/04/2024
Reviewed by	Joanne McBride	Roding & Transport Manager		24/06/2024
Approved by	Gerard Cleary	General Manager, Utilities and Roding		24/06/2024
Adopted by	Utilities & Roding Committee			

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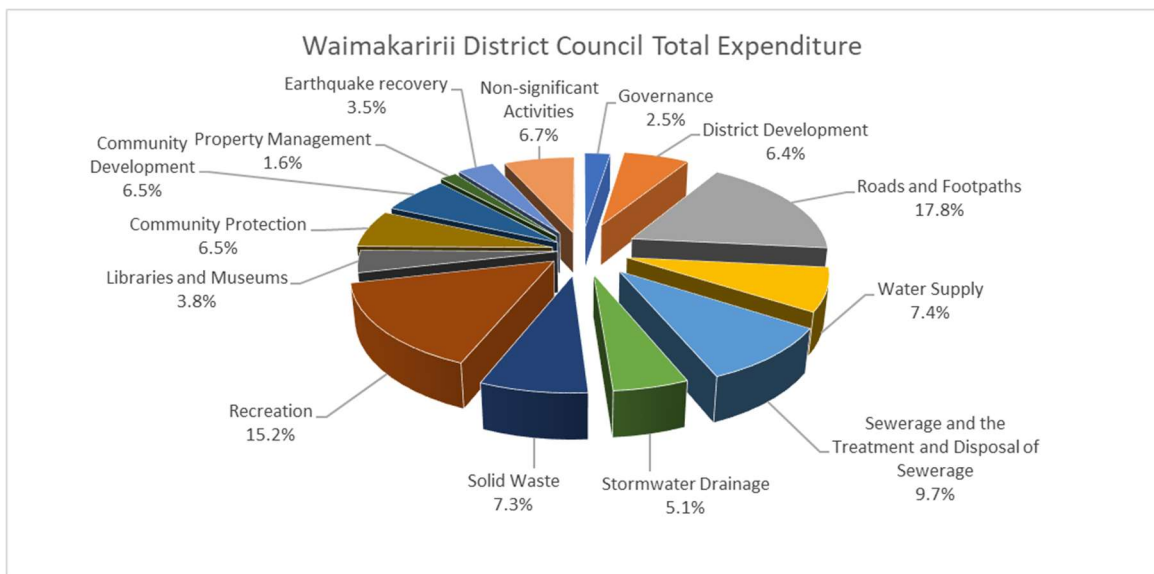
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# Financial Summary

## Financial Summary Overview<sup>1</sup>

This section of the Roothing Activity Management Plan outlines the long-term operations, maintenance and capital financial requirements for the operation, maintenance, renewals and development of the roading network based on the long-term strategies outlined earlier in the plan. The roading network accounted for 17.8% of the council's total expenditure in 2022/23 as shown in following graph, compared with 24% in 2016/17.

Figure 8-1: All of Council Expenditure 2022/23



## Financial Statements and Projections

The aim of the ten-year financial forecast is to demonstrate financial discretion in the management of the roading assets to provide the target LOS defined in Section 3.

All financial forecasts presented in this plan are based on 23/24 dollars and will need to be adjusted each year to reflect cost fluctuation. However, Council is required by the Local Government Act to provide a ten-year plan adjusted for inflation as summarised in Table 8-2.

Table 8-2 presents the expected forecast with inflation over the next ten years. These figures have been derived from those recommended to the Local Government from Business and Economic Research Limited (BERL) Price level adjustments have been

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<sup>1</sup> Note that the Long Term Plan submissions occurred well after the Activity Management Plan was largely complete. This section of the AMP has been amended to reflect those changes, however they were minor and did not materially affect the totals. A summary of the changes approved as a result of the submissions to the Long Term Plan is included in Appendix E.

applied and are based on 23/24 dollars. The BERL inflation figures are not necessarily in line with roading inflation due to construction specific costs plus the effects of the cost of oil on bitumen-based work.

These figures are prior to the Long Term Plan Finalisation. Some changes may need to be made following consultation and Council deliberation. In addition, due to funding constraints not all requests for financial assistance from NZTA may be approved and this may require adjustments to the planned works. In order to accommodate NZTA funding and to reflect Asset Management recommendations, the original recommendations have been left in this AMP. The amendments are included in Schedule 8.1 LTP Amendments.

Table 8-1: Uninflated Roading Summary

REVENUE	Long Term Plan Budget									
	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/22	33/34
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Targeted Roading Rates	16,025	16,911	17,763	18,727	19,256	19,776	20,546	21,359	21,697	22,184
Fees and Charges	1,358	1,848	1,238	1,238	1,238	1,238	1,239	1,238	1,238	1,238
Subsidies	13,251	15,665	13,163	18,764	20,111	18,323	13,799	13,618	13,822	15,566
Interest	72	132	168	247	182	20	-	-	-	-
Contributions	9,858	8,551	7,629	6,328	5,014	4,911	4,062	3,855	3,770	5,916
Gains	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUE</b>	<b>40,564</b>	<b>43,107</b>	<b>39,961</b>	<b>45,304</b>	<b>45,802</b>	<b>44,268</b>	<b>39,646</b>	<b>40,071</b>	<b>40,528</b>	<b>44,904</b>
<b>OPERATING EXPENDITURE</b>										
<b>Subsidised Maintenance</b>	<b>5,062</b>	5,457	5,478	5,533	5,588	5,644	5,700	5,757	5,815	5,873
Structural Maintenance	3,175	3,359	3,538	3,579	3,621	3,664	3,706	3,749	3,792	3,836
Corridor Maintenance	2,063	2,334	2,236	2,258	2,387	2,295	2,318	2,453	2,362	2,389
Other Maintenance										
<b>Unsubsidised Expenditure</b>										
General Maintenance	1,415	1,374	2,168	1,429	1,340	1,396	1,343	1,372	1,398	1,382
Management Costs	1,219	1,192	1,217	1,265	1,291	1,316	1,344	1,368	1,394	1,420
Loan Interest	1,389	1,419	1,497	1,483	1,500	1,831	2,392	2,559	2,529	2,532
Depreciation	13,984	14,483	15,015	15,614	16,427	17,336	18,067	18,614	19,131	19,664
Indirect Expenditure	2,519	2,646	2,793	2,820	2,887	3,014	3,051	3,156	3,214	3,283
Total	30,839	32,277	33,955	33,994	35,054	36,509	37,934	39,041	39,649	40,392
Internal Interest Elimination	205	209	221	219	222	270	353	378	374	374
<b>TOTAL OPERATING EXPENDITURE</b>	<b>30,634</b>	<b>32,068</b>	<b>33,734</b>	<b>33,775</b>	<b>34,832</b>	<b>36,239</b>	<b>37,581</b>	<b>38,663</b>	<b>39,275</b>	<b>40,018</b>
<b>OPERATING SURPLUS (DEFICIT)</b>	<b>9,930</b>	<b>11,039</b>	<b>6,227</b>	<b>11,529</b>	<b>10,970</b>	<b>8,029</b>	<b>2,065</b>	<b>1,408</b>	<b>1,253</b>	<b>4,886</b>

<b>CAPITAL EXPENDITURE</b>										
Renewals	8,579	10,233	8,805	9,361	8,949	10,319	9,629	9,226	9,337	11,405
New Works	15,139	16,219	8,572	18,898	29,494	28,119	12,977	7,477	8,222	9,568
- to meet additional demand										
- to improve level of service										
Loan Repayments										
<b>TOTAL CAPITAL EXPENDITURE</b>	<b>24,849</b>	<b>27,676</b>	<b>18,721</b>	<b>29,688</b>	<b>39,954</b>	<b>40,131</b>	<b>24,555</b>	<b>18,783</b>	<b>19,736</b>	<b>23,332</b>
<b>FUNDED BY</b>										
Loans	2,386	3,614	1,711	2,423	9,411	12,916	5,829	2,901	3,817	4,477
Reserves	631	-	-	341	3,368	2,121	-	-	-	-
Cash From Operating	21,832	24,062	17,010	26,924	27,175	25,094	18,726	15,882	15,919	18,855
<b>TOTAL FUNDING</b>	<b>24,849</b>	<b>27,676</b>	<b>18,721</b>	<b>29,688</b>	<b>39,954</b>	<b>40,131</b>	<b>24,555</b>	<b>18,783</b>	<b>19,736</b>	<b>23,332</b>
<b>RATES MOVEMENT (%)</b>	<b>7.1%</b>	<b>5.5%</b>	<b>5.0%</b>	<b>5.4%</b>	<b>2.8%</b>	<b>2.7%</b>	<b>3.9%</b>	<b>4.0%</b>	<b>1.6%</b>	<b>2.2%</b>
<b>Operating Expenditure includes:</b>										
Interest	1,389	1,419	1,497	1,483	1,500	1,831	2,392	2,559	2,529	2,532
Depreciation	13,984	14,483	15,015	15,614	16,427	17,336	18,067	18,614	19,131	19,664
Depreciation not funded	1,877	1,401	926	-	-	-	-	-	-	-
Indirect Expenditure	2,519	2,646	2,793	2,820	2,887	3,014	3,051	3,156	3,214	3,283

Table 8-2: Inflated Roothing Financial Summary

Roothing (inflation adjusted)										
Long Term Plan Budget										
	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>REVENUE</b>										
Targeted Roothing Rates	16,025	17,283	18,587	20,047	21,068	22,092	23,434	24,849	25,746	26,823
Fees and Charges	1,358	1,889	1,294	1,324	1,353	1,382	1,410	1,438	1,465	1,493
Subsidies	13,251	16,010	13,775	20,089	22,006	20,470	15,740	15,845	16,404	18,824
Interest	72	135	176	264	199	22	-	-	-	-
Contributions	9,858	8,665	7,844	6,619	5,317	5,280	4,442	4,287	4,324	7,059
Gains	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUE</b>	<b>40,564</b>	<b>43,981</b>	<b>41,675</b>	<b>48,343</b>	<b>49,943</b>	<b>49,246</b>	<b>45,026</b>	<b>46,419</b>	<b>47,939</b>	<b>54,199</b>
<b>OPERATING EXPENDITURE</b>										
Subsidised Maintenance	5,062	5,577	5,733	5,923	6,114	6,305	6,502	6,699	6,901	7,102
Structural Maintenance	3,175	3,433	3,702	3,832	3,962	4,093	4,227	4,362	4,501	4,639
Corridor Maintenance	2,063	2,385	2,340	2,418	2,612	2,563	2,644	2,854	2,803	2,889
Other Maintenance										
Unsubsidised Expenditure										
General Maintenance	1,415	1,374	2,168	1,429	1,340	1,396	1,343	1,372	1,398	1,382
Management Costs	1,219	1,218	1,274	1,354	1,413	1,471	1,533	1,592	1,654	1,718
Loan Interest	1,389	1,450	1,565	1,586	1,640	2,043	2,723	2,971	2,992	3,053
Depreciation	13,984	14,802	15,375	15,973	16,789	17,700	18,447	18,986	19,513	20,037
Indirect Expenditure	2,519	2,646	2,793	2,820	2,887	3,014	3,051	3,156	3,214	3,283
	30,839	32,898	34,964	35,349	36,772	38,599	40,485	42,007	42,991	44,119
Internal Interest Elimination	204	213	230	233	241	300	400	436	439	448
<b>TOTAL OPERATING EXPENDITURE</b>	<b>30,635</b>	<b>32,685</b>	<b>34,734</b>	<b>35,116</b>	<b>36,531</b>	<b>38,299</b>	<b>40,085</b>	<b>41,571</b>	<b>42,552</b>	<b>43,671</b>
<b>OPERATING SURPLUS (DEFICIT)</b>	<b>9,929</b>	<b>11,296</b>	<b>6,941</b>	<b>13,227</b>	<b>13,412</b>	<b>10,947</b>	<b>4,941</b>	<b>4,848</b>	<b>5,387</b>	<b>10,528</b>
Long Term Plan Budget										
	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>CAPITAL EXPENDITURE</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>	<b>\$' 000</b>
Renewals	8,579	10,458	9,214	10,022	9,792	11,528	10,984	10,734	11,081	13,792
New Works	15,139	16,576	8,971	20,232	32,272	31,415	14,803	8,699	9,758	11,570
Loan Repayments	1,131	1,251	1,407	1,530	1,653	1,891	2,223	2,420	2,584	2,853
<b>TOTAL CAPITAL EXPENDITURE</b>	<b>24,849</b>	<b>28,285</b>	<b>19,592</b>	<b>31,784</b>	<b>43,717</b>	<b>44,834</b>	<b>28,010</b>	<b>21,853</b>	<b>23,423</b>	<b>28,215</b>
<b>FUNDED BY</b>										
Loans	2,386	3,694	1,790	2,594	10,297	14,430	6,649	3,376	4,530	5,414
Reserves	631	-	-	223	3,460	2,057	-	-	-	-
Cash From Operating	21,832	24,591	17,802	28,967	29,960	28,347	21,361	18,477	18,893	22,801
<b>TOTAL FUNDING</b>	<b>24,849</b>	<b>28,285</b>	<b>19,592</b>	<b>31,784</b>	<b>43,717</b>	<b>44,834</b>	<b>28,010</b>	<b>21,853</b>	<b>23,423</b>	<b>28,215</b>
<b>RATES MOVEMENT (%)</b>	<b>7.1%</b>	<b>7.9%</b>	<b>7.5%</b>	<b>7.9%</b>	<b>5.1%</b>	<b>4.9%</b>	<b>6.1%</b>	<b>6.0%</b>	<b>3.6%</b>	<b>4.2%</b>
<b>Operating Expenditure includes:</b>										
Interest	1,389	1,450	1,565	1,586	1,640	2,043	2,723	2,971	2,992	3,053
Depreciation	13,984	14,802	15,375	15,973	16,789	17,700	18,447	18,986	19,513	20,037
Depreciation not funded	1,877	1,401	926	-	-	-	-	-	-	-
Indirect Expenditure	2,519	2,646	2,793	2,820	2,887	3,014	3,051	3,156	3,214	3,283



## Expenditure

Each of the transport activities costs are divided into two categories: operational expenditure (OPEX) and capital expenditure (CAPEX).

OPEX is directly funded by the way of revenue and CAPEX is funded via appropriations, which includes contributions and commercial loans, as well as revenue.

### Operating Expenditure

Operating costs relate to all of the costs associated with the operational function of the roading activities. Areas highlighted in Section 6: Life Cycle related to OPEX are management, operations and maintenance. In addition to those already mentioned, depreciation (Section 7.2.1.3) is considered operational expenditure.

For operating costs, it is considered that targeted rates are the most equitable form of funding this activity. Historically road maintenance, being such a large budget item, has been seen by many local authorities as an area where savings can be made when there is pressure to reduce rates. The Waimakariri District Council recognises that such decisions are rarely in the best long-term interests of the transport network. A separate roading rate was therefore established in the mid 1990's to secure the finance required for long-term maintenance of the road network. This rate, which is differentiated between rural and urban properties, meets the Council's share of all roading expenditure.

In determining how targeted rates are collected, the Council views the roading network to be 'one asset', which benefits the entire community and therefore the base roading infrastructure should be funded on the same basis across the district. The only variation to this approach is in respect of kerb and channel, footpaths and street lighting, which are provided predominantly in four main urban areas. While the Council recognises that some of these services are provided in some other parts of the District, the Council considers that until it has reviewed the levels of service required outside the four main urban areas, ratepayers in these urban areas would fund these activities.

The following figure and table show the breakdown of the operations spend by working category.

Figure 8-2: Maintenance and Operations Forecast 2024-2034 by work category (subsidised).

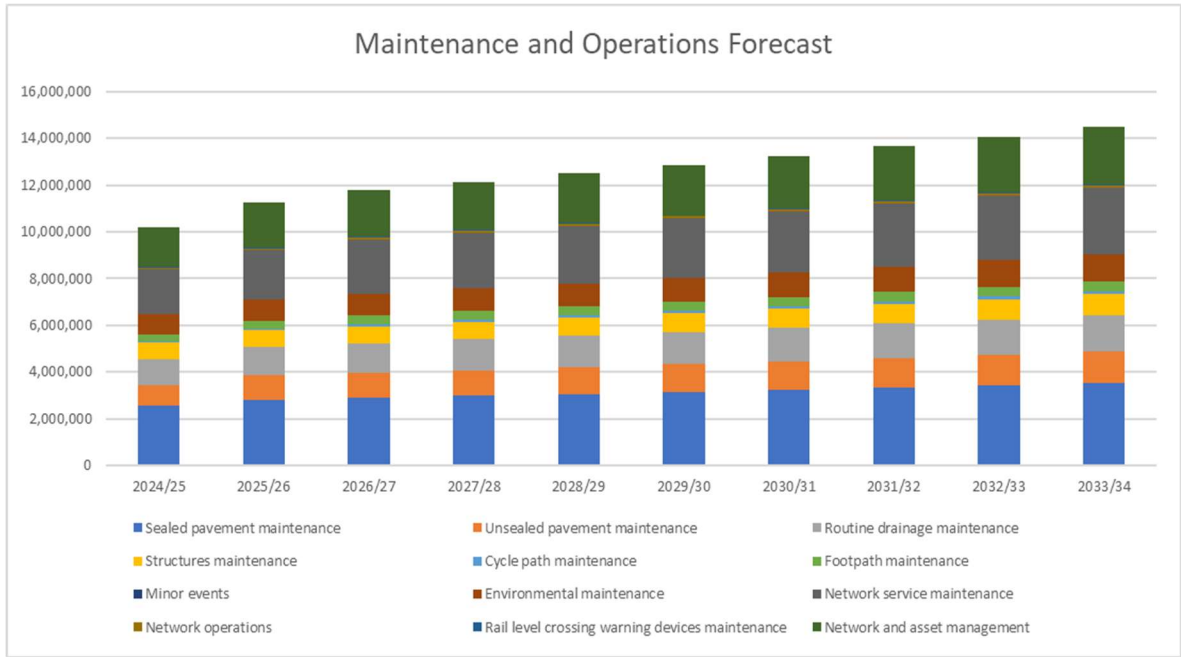
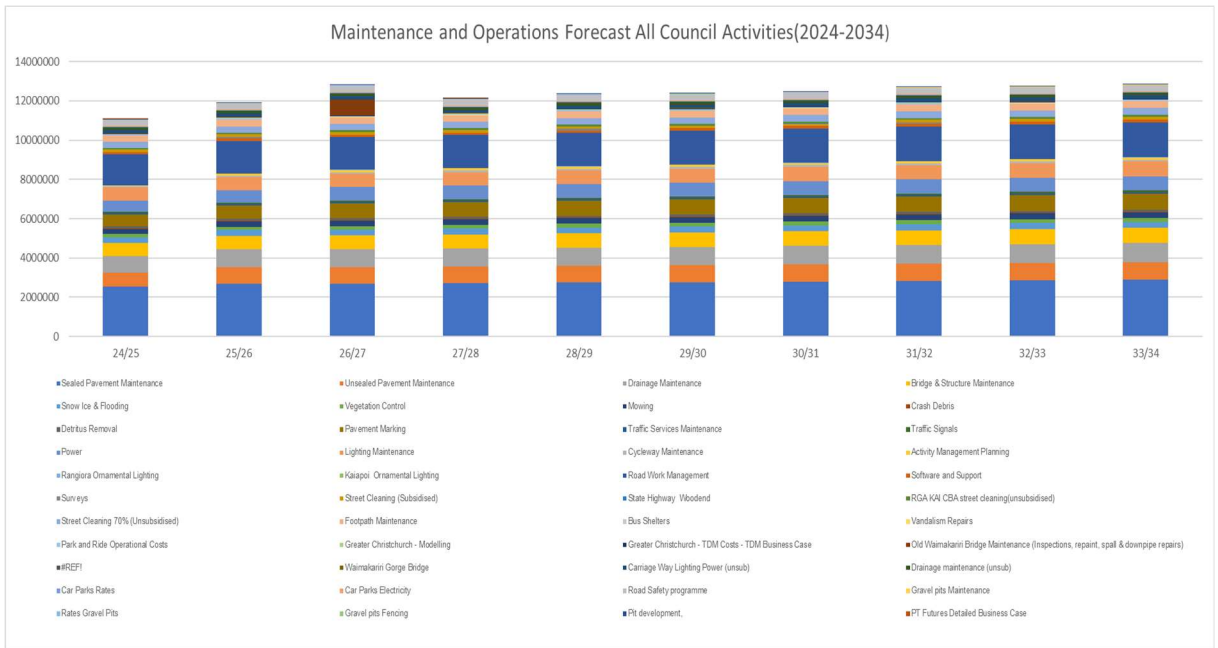


Figure 8-3: Maintenance and Operations Forecast All Council Activities



## Capital Expenditure

Capital expenditure (CAPEX) consists of renewals and augmentation. The renewal of an asset means to replace or renew the asset, so it performs the same function to the same level of service. Augmentation is the creation of a new asset or extends an existing asset beyond its current capacity. CAPEX is funded by way of the development

contributions received for growth-related projects, financial contributions, commercial loans, and depreciation.

The following figures show the breakdown of the CAPEX Renewal and Augmentation spend by work category.

Figure 8-4: Renewals Forecast 2024-2034 by work category (subsidised).

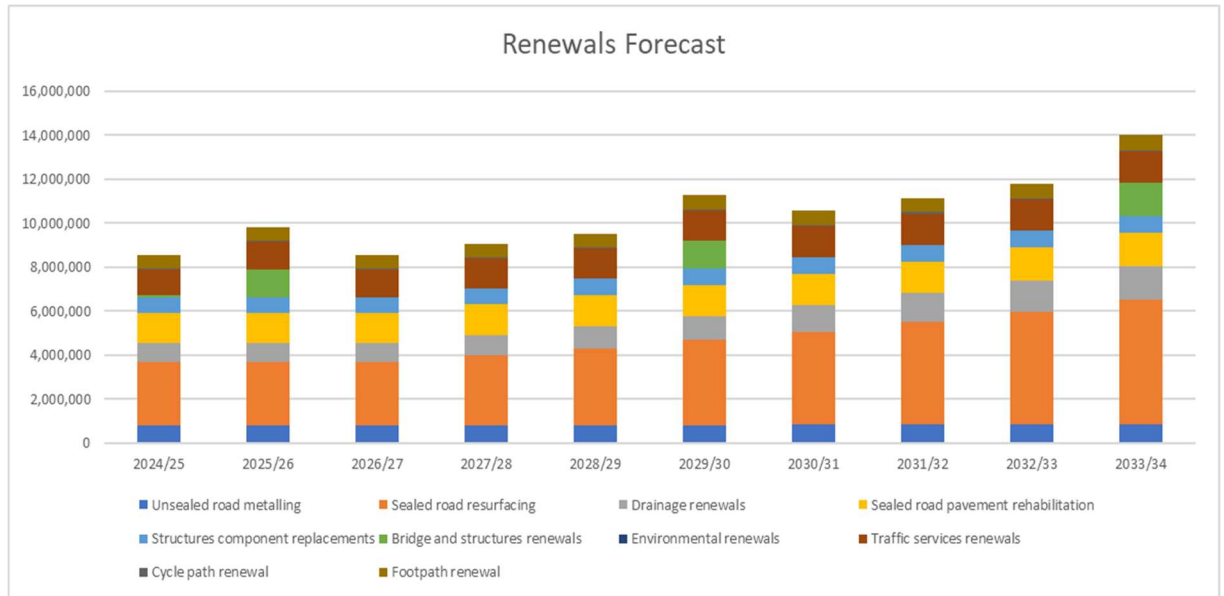


Figure 8-5: Renewals by Council Activity 2024-2034

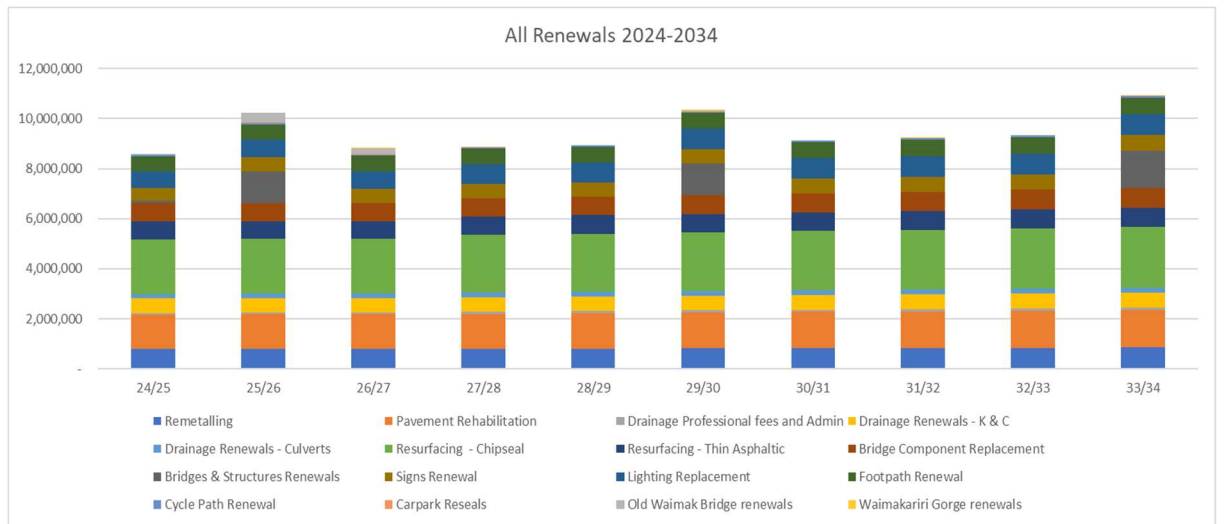


Figure 8-6: New Capital Projects Forecast 2024-2034

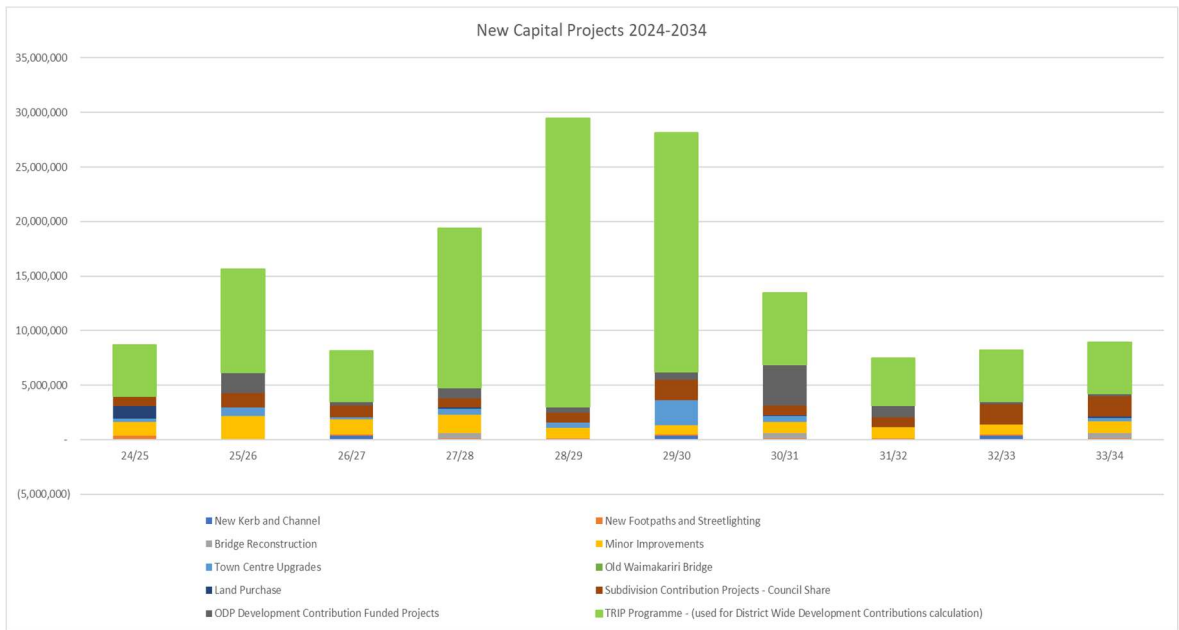


Table 8-3: Ten Year Maintenance and Operational Forecast (\$) by GL

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
Sealed Pavement Maintenance	\$2,536,222	\$2,687,206	\$2,687,206	\$2,714,078	\$2,741,219	\$2,768,631	\$2,796,318	\$2,824,281	\$2,852,524	\$2,881,049
Unsealed Pavement Maintenance	\$718,026	\$842,678	\$842,678	\$851,105	\$859,616	\$868,212	\$876,894	\$885,663	\$894,520	\$903,465
Drainage Maintenance	\$833,175	\$907,178	\$907,178	\$916,249	\$925,412	\$934,666	\$944,013	\$953,453	\$962,987	\$972,617
Bridge & Structure Maintenance	\$674,741	\$694,984	\$715,833	\$722,991	\$730,221	\$737,524	\$744,899	\$752,348	\$759,871	\$767,470
Snow Ice & Flooding	\$289,800	\$289,800	\$289,800	\$292,698	\$295,625	\$298,581	\$301,567	\$304,583	\$307,629	\$310,705
Vegetation Control	\$155,250	\$170,775	\$186,300	\$188,163	\$190,045	\$191,945	\$193,865	\$195,803	\$197,761	\$199,739
Mowing	\$274,275	\$274,275	\$274,275	\$277,018	\$279,788	\$282,586	\$285,412	\$288,266	\$291,148	\$294,060
Crash Debris	\$31,050	\$31,050	\$31,050	\$31,361	\$31,674	\$31,991	\$32,311	\$32,634	\$32,960	\$33,290
Detritus Removal	\$98,325	\$98,325	\$98,325	\$99,308	\$100,301	\$101,304	\$102,317	\$103,341	\$104,374	\$105,418
Pavement Marking	\$610,650	\$671,715	\$738,887	\$746,275	\$753,738	\$761,275	\$768,888	\$776,577	\$784,343	\$792,186
Traffic Services Maintenance	\$67,275	\$72,450	\$77,625	\$78,401	\$79,185	\$79,977	\$80,777	\$81,585	\$82,401	\$83,225
New Traffic Signals at Red Lion, Pak n Save and South Belt (Network Operations)	\$62,100	\$72,450	\$82,800	\$83,628	\$84,464	\$85,309	\$86,162	\$87,024	\$87,894	\$88,773
Power	\$569,250	\$621,000	\$672,750	\$679,478	\$686,272	\$693,135	\$700,066	\$707,067	\$714,138	\$721,279
Routine Maintenance	\$672,750	\$676,890	\$681,030	\$691,840	\$702,759	\$713,786	\$724,924	\$736,173	\$747,535	\$759,010
Cycleway Maintenance	\$51,750	\$72,450	\$93,150	\$94,082	\$95,022	\$95,973	\$96,932	\$97,902	\$98,881	\$99,869
Activity Management Planning	\$50,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Rangiora Ornamental Lighting	\$10,538	\$10,538	\$10,538	\$10,538	\$10,538	\$10,538	\$10,538	\$10,643	\$10,749	\$10,857
Kaiapoi Ornamental Lighting	\$3,513	\$3,513	\$3,513	\$3,513	\$3,513	\$3,513	\$3,513	\$3,548	\$3,583	\$3,619
Road Work Management (10.270.586.2500)	\$1,555,605	\$1,659,105	\$1,659,105	\$1,675,696	\$1,692,453	\$1,709,378	\$1,726,471	\$1,743,736	\$1,761,173	\$1,778,785
Software and Support (10.270.587.2360)	\$129,375	\$129,375	\$129,375	\$130,669	\$131,975	\$133,295	\$134,628	\$135,974	\$137,334	\$138,708
Surveys (10.270.587.2502)	\$0	\$69,345	\$0	\$0	\$72,507	\$0	\$0	\$74,704	\$0	\$0
Street Cleaning (Subsidised)	\$119,025	\$130,928	\$130,928	\$132,237	\$133,559	\$134,895	\$136,244	\$137,606	\$138,982	\$140,372
State Highway Woodend	\$3,367	\$3,435	\$3,504	\$3,575	\$3,648	\$3,721	\$3,797	\$3,912	\$4,030	\$4,152
RGA KAI CBA street cleaning (unsubsidised)	\$90,734	\$90,734	\$90,734	\$90,734	\$90,734	\$90,734	\$90,734	\$91,641	\$92,558	\$93,483

Street Cleaning 70%	\$311,893	\$321,796	\$323,392	\$325,930	\$328,502	\$331,110	\$333,753	\$338,817	\$343,975	\$349,230
Footpath Maintenance	\$300,150	\$324,990	\$324,990	\$328,240	\$331,522	\$334,838	\$338,186	\$341,568	\$344,983	\$348,433
Bus Shelters	\$1,517	\$1,517	\$1,517	\$1,517	\$1,517	\$1,517	\$1,517	\$1,532	\$1,548	\$1,563
Vandalism Repairs	\$12,919	\$12,919	\$12,919	\$12,919	\$12,919	\$12,919	\$12,919	\$13,048	\$13,179	\$13,311
Park and Ride Operational Costs	\$56,105	\$56,105	\$56,105	\$56,105	\$56,105	\$56,105	\$56,105	\$56,666	\$57,233	\$57,805
Greater Christchurch - Modelling	\$5,625	\$43,875	\$5,625	\$5,625	\$43,875	\$5,625	\$5,625	\$43,875	\$5,625	\$5,625
Greater Christchurch - Travel Demand Management Costs - TDM Business Case	\$15,367	\$15,367	\$15,367	\$20,000	\$20,000	\$20,000	\$25,000	\$25,000	\$25,000	\$30,000
Old Waimakariri Bridge Maintenance	\$30,552	\$24,745	\$803,311	\$12,740	\$13,353	\$12,740	\$13,353	\$12,740	\$18,870	\$12,740
Waimakariri Gorge Bridge	\$0	\$0	\$15,000	\$0	\$0	\$30,000	\$0	\$0	\$15,000	\$0
Carriage Way Lighting Power	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000
Drainage maintenance (unsubsidised)	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Car Park Maintenance (Unsubsidised)	\$69,980	\$69,980	\$69,980	\$69,980	\$69,980	\$69,980	\$69,980	\$70,680	\$71,387	\$72,100
Road Safety programme	\$307,500	\$316,725	\$326,227	\$326,227	\$326,227	\$326,227	\$326,227	\$329,489	\$332,784	\$336,112
Gravel Pits Total Maintenance	\$20,812	\$20,812	\$20,812	\$20,812	\$20,812	\$20,812	\$20,812	\$21,014	\$21,218	\$21,424
Pit development,	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340	\$12,340
PT Futures Detailed Business Case	\$65,000	\$0	\$0	\$65,000	\$0	\$0	\$0	\$0	\$0	\$0

Table 8-4: Renewals Works Forecast (\$) by GL

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
Remetalling	786,600	796,950	796,950	804,920	812,969	821,098	829,309	837,602	845,978	854,438
Sealed Road Pavement Rehabilitation	1,366,200	1,386,900	1,386,900	1,400,769	1,414,777	1,428,924	1,443,214	1,457,646	1,472,222	1,486,945
Professional fees and Admin	83,760	86,273	88,861	91,527	94,273	97,101	100,014	103,014	106,105	109,288
Drainage Renewals - K & C	589,950	569,250	569,250	574,943	580,692	586,499	592,364	598,287	604,270	610,313
Drainage Renewals - Culverts	168,705	175,950	175,950	177,710	179,487	181,281	183,094	184,925	186,774	188,642
Resurfacing - Chipseal	2,173,500	2,173,500	2,173,500	2,299,770	2,322,768	2,345,995	2,369,455	2,393,150	2,417,081	2,441,252
Resurfacing - Thin Asphaltic	724,500	724,500	724,500	731,745	739,062	746,453	753,918	761,457	769,071	776,762
Bridge Component Replacement	724,500	724,500	724,500	731,745	739,062	746,453	753,918	761,457	769,071	776,762
Bridges & Structures Renewals	103,500	1,242,000	-	-	-	1,250,000	-	-	-	1,500,000
Signs Renewal	517,500	569,250	569,250	574,943	580,692	586,499	592,364	598,287	604,270	610,313
Lighting Renewal	641,700	697,967	683,100	788,670	796,557	804,522	812,567	820,693	828,900	837,189
Footpath Renewal	621,000	621,000	621,000	627,210	633,482	639,817	646,215	652,677	659,204	665,796
Cycle Path Renewal	51,750	51,750	51,750	52,268	52,790	53,318	53,851	54,390	54,934	55,483
Carpark Reseals		25,000	25,000	25,000		25,000		25,000	25,250	25,503
Old Waimakariri Bridge renewals	14,700	404,495	228,046	-	-	25,000	-	-	25,000	-
Waimakariri Gorge renewals	-	-	5,000	-	-	5,000	-	6,000	-	-

Table 8-5: Ten Year New Capital Works Forecast (\$) by GL

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>Description</b>										
New Kerb and Channel										
Major Towns	\$0	\$0	\$350,000	\$0	\$0	\$350,000	\$0	\$0	\$350,000	\$0
<b>New Kerb and Channel</b>	<b>\$0</b>	<b>\$0</b>	<b>\$350,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$350,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$350,000</b>	<b>\$0</b>
<b>New Footpaths and Streetlighting</b>										
New Footpaths Major Towns	\$200,000		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
New Streetlighting Major Towns	\$50,000	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Tuahiwi Gritted Footpath Surfacing	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>New Footpaths and Streetlighting</b>	<b>\$350,000</b>	<b>\$0</b>	<b>\$150,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>
<b>Bridge Reconstruction</b>										
Bridge Renewal & Widening Projects	\$0	\$0	\$0	\$500,000	\$0	\$0	\$500,000	\$0	\$0	\$500,000
<b>Bridge Reconstruction</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$500,000</b>
<b>Minor Improvements</b>										
Minor safety - Lighting - LCLR LRI	\$25,000	\$25,000	\$25,000	\$30,000	\$30,000	\$30,000	\$35,000	\$35,000	\$35,000	\$40,000
Minor safety- Intersection Improvements	\$120,000	\$120,000	\$120,000	\$130,000	\$130,000	\$130,000	\$140,000	\$140,000	\$140,000	\$150,000
Minor Safety - School Safety Project	\$50,000	\$50,000	\$50,000	\$60,000	\$60,000	\$60,000	\$70,000	\$70,000	\$70,000	\$80,000
Minor Safety - Speed Treatments	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Minor Safety - Walking & Cycling Improvements	\$100,000	\$100,000	\$100,000	\$110,000	\$110,000	\$110,000	\$120,000	\$120,000	\$120,000	\$130,000
Minor Works - other	\$50,000	\$50,000	\$50,000	\$60,000	\$60,000	\$60,000	\$70,000	\$70,000	\$70,000	\$80,000
Minor safety - Roadside Hazards Removal	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000



	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>Description</b>										
Minor safety- Delineation upgrades	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0
Minor safety - High Risk rural Intersections Treatments - RTZ	\$200,000	\$200,000	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000	\$180,000
Flood Projects (Tram Rd, Depot Rd & Woodfields Rd) - RESILIENCE	\$300,000	\$700,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minor Improvements - Drainage (culverts)	\$0	\$0	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000
Broad Road subsidised LCLR	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
School Safety Improvements	\$550,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mafeking Bridge Improvements	\$50,000	\$550,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Luminaire Management system & LED replacements	\$100,000	\$50,000	\$50,000	\$70,000	\$70,000	\$70,000	\$80,000	\$80,000	\$90,000	\$90,000
<b>Minor Improvements</b>	<b>\$1,845,000</b>	<b>\$2,195,000</b>	<b>\$825,000</b>	<b>\$990,000</b>	<b>\$990,000</b>	<b>\$890,000</b>	<b>\$1,045,000</b>	<b>\$1,045,000</b>	<b>\$955,000</b>	<b>\$1,100,000</b>
<b>Town Centre Upgrades</b>										
Town Centre Upgrades	\$295,000	\$0	\$0	\$300,000	\$0	\$0	\$300,000	\$0	\$0	\$300,000
Car Parking Provision - Town Centre Parking	\$0	\$0	\$0	\$0	\$0	\$2,250,000	\$0	\$0	\$0	\$0
North-East Subdivision area	\$0	\$0	\$0	\$0	\$0	\$50,000	\$200,000	\$0	\$0	\$0
Streetlight upgrade High St from East Belt to King St	\$0	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Streetlight upgrade Williams St Bridge to Cass St (Kaiapoi Town Centre)	\$0	\$0	\$0	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0
Improvements to Hilton/Williams St Pedestrian facilities (Linking Western Precinct to town)	\$0	\$0	\$37,500	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0
Land - Blake St Extension	\$0	\$675,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Durham Land Purchase for Carparking	\$0	\$0	\$0	\$2,250,000	\$0	\$0	\$0	\$0	\$0	\$0
Support for MUBA (Area directly adjacent to KTC) (LoS portion)	\$12,500	\$125,000	\$125,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$307,500</b>	<b>\$900,000</b>	<b>\$162,500</b>	<b>\$2,800,000</b>	<b>\$500,000</b>	<b>\$2,300,000</b>	<b>\$500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$300,000</b>

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>Description</b>										
<b>Land Purchase</b>										
Land Purchase - improved LOS	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$100,000</b>
<b>Subdivision Contribution Projects - Council Share</b>										
Direct payment to Developers	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608
Design Fees	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861	\$41,861
Cost of Council Performed Works	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608	\$418,608
Rangiora Airfield/Prior Rd Upgrade	\$0	\$1,012,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pegasus road connection to Gladstone Road	\$0	\$0	\$0	\$0	\$0	\$350,000	\$0	\$0	\$0	\$0
Woodend East ODP	\$0	\$0	\$200,000	\$0	\$0	\$600,000	\$0	\$0	\$1,000,000	\$1,000,000
<b>Total</b>	<b>\$879,077</b>	<b>\$1,280,704</b>	<b>\$1,079,077</b>	<b>\$879,077</b>	<b>\$879,077</b>	<b>\$1,829,077</b>	<b>\$879,077</b>	<b>\$879,077</b>	<b>\$1,879,077</b>	<b>\$1,879,077</b>
<b>ODP Development Contribution Funded Projects</b>										
East Woodend ODP - north south road & widening existing	\$0	\$0	\$0	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$0	\$0
West Rangiora Growth ODP	\$0	\$0	\$0	\$684,888	\$228,296	\$456,592	\$228,296	\$228,296	\$228,296	\$228,296
Kaiapoi North Improvements - Smith St/Williams St, Smith St/Ranfurly St and other intersection improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$600,000	\$0	\$0
Support for MUBA (Area directly adjacent to KTC)	\$37,500	\$375,000	\$375,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
North/South Collector Road	\$0	\$1,500,000	\$0	\$0	\$0	\$0	\$3,000,000	\$0	\$0	\$0
Shared Path (East/West Collector Road)	\$0	\$0	\$0	\$0	\$0	\$0	\$220,000	\$0	\$0	\$0
<b>Total</b>	<b>\$37,500</b>	<b>\$1,875,000</b>	<b>\$375,000</b>	<b>\$984,888</b>	<b>\$528,296</b>	<b>\$756,592</b>	<b>\$3,748,296</b>	<b>\$1,128,296</b>	<b>\$228,296</b>	<b>\$228,296</b>

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
<b>TRIP Programme - (used for District Wide Development Contributions calculation)</b>										
New Passenger Transport Infrastructure	\$125,000	\$200,000	\$200,000	\$125,000	\$200,000	\$200,000	\$125,000	\$100,000	\$51,000	\$51,000
Widen Skewbridge Rd - Skew Bridge to Mulcocks	\$50,000	\$623,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Widen Skewbridge Rd - Mulcocks to Threlkelds	\$0	\$50,000	\$666,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Widen Flaxton - Threlkelds to Camwell Park	\$0	\$0	\$0	\$50,000	\$666,000	\$0	\$0	\$0	\$0	\$0
Widen Flaxton - Camwell Park to Fernside Rd	\$0	\$0	\$0	\$0	\$50,000	\$712,000	\$0	\$0	\$0	\$0
Flaxton/Camwell park Right turn bay	\$0	\$0	\$0	\$0	\$50,000	\$712,000	\$0	\$0	\$0	\$0
Widen culvert on Townsend Rd	\$0	\$700,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Widen Townsend Rd (South Belt to 100m N of Fernside Rd)	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000	\$746,000	\$0	\$0
Fernside/Townsend Intersection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,210,000
Lehmans/Johns intersection	\$0	\$0	\$0	\$0	\$100,000	\$1,400,000	\$0	\$0	\$0	\$0
Lehmans Widening - Oxford Rd - Johns Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$612,000	\$0	\$0
Lehmans Widening - Johns Rd to Fernside Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$600,000	\$0	\$0
Lehmans/Fernside Intersection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000	\$1,458,000	\$0
Fernside/Todds Intersection	685000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Flaxton/Fernside Rd east	\$0	\$50,000	\$450,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fernside Rd/Easterbrook Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$514,000
Fernside Rd Widening - Lehmans Rd to Easterbrook	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$562,000
Fernside Rd Widening - Easterbrook to Townsend Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$318,000
Fernside Rd Widening - Townsend Rd to Todds Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$323,000	\$0
Fernside Rd Widening - Todds Rd to Flaxton Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$648,000	\$0
Fernside Rd/Townsend Rd Roundabout	\$0	\$0	\$0	\$0	\$0	\$100,000	\$1,300,000	\$0	\$0	\$0
Rangiora Woodend Road Improvements including Boys Road	\$50,000	\$150,000	\$0	\$330,000	\$0	\$0	\$0	\$0	\$0	\$0

Woodend Improvements in conjunction with NZTA PBC and Woodend Bypass	\$0	\$0	\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0
Travel Demand MGMT/Modelling (NOT CAPITAL) - proposed by Regional Council	\$100,000	\$100,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Realignment and Safety Improvements No 10 / Tram Road Intersection	\$0	\$50,000	\$450,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Realignment and Safety Improvements Oxford / Tram Road Intersection	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Intersection Safety Improvements South Eyre Road / Giles Road / Tram Road Intersection	\$0	\$0	\$100,000	\$0	\$1,800,000	\$0	\$0	\$0	\$0	\$0
Intersection Safety Improvements Two Chain Road / Tram Road Intersection	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Shoulder / Lane Widening – Burgesses to Swannanoa School and Localised Areas	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$430,000	\$0	\$0
Extra over to widen an additional 0.5m including linemarking to install wide centreline	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$486,000	\$0	\$0
Intersection Upgrades Island Road / Greigs Road / Tram Road	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$330,000	\$0
Intersection Upgrades Heywards Road / Tram Road	\$0	\$0	\$0	\$0	\$480,000	\$0	\$0	\$0	\$0	\$0
Intersection Upgrades Whites Road / Tram Road	\$0	\$0	\$0	\$0	\$0	\$0	\$840,000	\$0	\$0	\$0
28 Roundabout installation at Bradleys / McHughs / Tram Road Intersection	\$1,800,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Intersection Turning Treatments Northwood Road / Tram Road	\$0	\$0	\$0	\$0	\$0	\$0	\$420,000	\$0	\$0	\$0
Intersection Turning Treatments Poyntzs Road / Tram Road	\$0	\$0	\$0	\$0	\$420,000	\$0	\$0	\$0	\$0	\$0
Intersection Turning Treatments Raddens Road / Tram Road	\$0	\$0	\$0	\$0	\$0	\$370,000	\$0	\$0	\$0	\$0
Intersection Turning Treatments Burgesses Road / Tram Road	\$0	\$0	\$0	\$0	\$0	\$0	\$570,000	\$0	\$0	\$0
Additional Delineation - Install RRPM's and additional marker posts.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000	\$0
Additional Delineation Install ATP Centreline (assumed one centreline)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$400,000	\$0

Kaiapoi Park and Ride	\$0	\$0	\$0	\$223,000	\$290,000	\$0	\$0	\$0	\$0	\$0
Rangiora Park and Ride	\$0	\$0	\$0	\$476,000	\$360,000	\$0	\$0	\$0	\$0	\$0
Ravenswood Park and Ride	\$0	\$0	\$0	\$0	\$500,000	\$1,000,000	\$0	\$0	\$0	\$0
Coldstream Rd/Golf Links Rd Improvements	\$0	\$0	\$0	\$0	\$330,000	\$0	\$0	\$0	\$0	\$0
Johns Rd/Plasketts Rd/Fernside Rd Improvements	\$0	\$0	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0
Kaiapoi Roding Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,500,000
West Rangiora Roding Improvements - Lehmans to River Rd	\$0	\$0	\$0	\$0	\$0	\$200,000	\$2,000,000	\$0	\$0	\$0
Walking and Cycling Projects	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Land Purchase - Growth	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0	\$100,000
Rangiora Woodend Road Intersection Improvements	\$0	\$0	\$100,000	\$0	\$1,800,000	\$0	\$0	\$0	\$0	\$0
Robert Coup Dr/Ohoka Rd Implementation	\$0	\$0	\$200,000	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$0
Skew Bridge Replacement	\$180,000	\$1,220,000	\$400,000	\$10,150,000	\$50,000	\$0	\$0	\$0	\$0	\$0
Southbrook Rd Future Improvements	\$50,000	\$50,000	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rangiora Woodend Rd Traffic Calming	\$0	\$0	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0
Charles Upham Dr / Oxford Rd Roundabout	\$0	\$0	\$0	\$0	\$0	\$0	\$700,000	\$0	\$0	\$0
Oxford Rd / Lehmans Rd Roundabout	\$100,000	\$1,400,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fawcetts Rd / Cones Rd Intersection	\$0	\$100,000	\$400,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
North Eyre Rd / No. 10 Rd	\$0	\$0	\$0	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0
Swannanoa Rd / Johns Rd	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500,000	\$0	\$0
Ashley Gorge Rd / German Rd	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Northbrook Rd / Ivory St Intersection	\$0	\$0	\$0	\$150,000	\$1,350,000	\$0	\$0	\$0	\$0	\$0
Lees Valley Willow Walls	\$200,000	\$200,000	\$280,000	\$0	\$100,000	\$0	\$0	\$100,000	\$0	\$0
Marsh Rd / Waikoruru Rd - Sealing of unsealed Rd	\$0	\$0	\$0	\$50,000	\$750,000	\$0	\$0	\$0	\$0	\$0
Marsh Rd / Railway Rd - Intersection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000	\$850,000	\$0
Mulcocks and Fernside Rd closure - KiwiRail & NZTA	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Car Parking Provision - Town Centre Parking	\$0	\$0	\$0	\$0	\$0	\$750,000	\$0	\$0	\$0	\$0
Land - Blake St Extension	\$0	\$225,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Durham Land Purchase for Carparking	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0
New Eastern Link Road	\$187,500	\$1,350,000	\$162,500	\$275,000	\$7,750,000	\$7,800,000	\$0	\$0	\$0	\$0
New Eastern Link Road	\$93,750	\$675,000	\$81,250	\$137,500	\$3,875,000	\$3,900,000	\$0	\$0	\$0	\$0
New Eastern Link Road	\$93,750	\$675,000	\$81,250	\$137,500	\$3,875,000	\$3,900,000	\$0	\$0	\$0	\$0
North/South Collector Road	\$0	\$500,000	\$0	\$0	\$1,000,000	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$5,144,000</b>	<b>\$8,318,000</b>	<b>\$4,771,000</b>	<b>\$14,954,000</b>	<b>\$26,496,000</b>	<b>\$21,894,000</b>	<b>\$6,605,000</b>	<b>\$4,324,000</b>	<b>\$4,710,000</b>	<b>\$4,755,000</b>

## Depreciation

Depreciation or Decline in Service Potential is the wearing out, consumption or any other decrease in value of an asset arising from either use, the passing of time or obsolescence through changes to technological and market changes and requirements. Expressed in another way, depreciation is the amount that must be charged over the useful life of property, plant and equipment. It is accounted for, on an annual basis, by the allocation of the cost price (or re-valued amount) of the asset less its residual value over its useful life. This allocation is treated as expenditure during the preparation of annual budgets to ensure that the current service capacity and integrity of the Council's assets is maintained.

Infrastructure assets are fully depreciated on a straight-line basis with the exception of land and road formation. This method ensures that the useful life of the asset is divided evenly into the value to be depreciated over its useful life. (The basis for calculation of depreciation is detailed in the Valuation Report Appendix D).

The Waimakariri District Council does not directly fund any renewals; rather, roading renewals are funded from depreciation charged on roading assets. Capital works in progress are not depreciated. The total cost of a project is transferred to the relevant asset class on completion and then depreciated. Government share of funding by contrast is fully funded at time of project commencement.

The latest review of the carriageway lives shows that renewal work is falling behind optimal timeframes, which in turn will eventually lead to more expensive renewals work and a more rapidly deteriorating network. The proposed programme proposes an increase in expenditure which will help return the renewals programme to a more sustainable level.

All depreciation of the Council Plant, Property and Equipment must comply with the NZ Infrastructure Asset Valuation and Depreciation Guidelines – Version 2.0, International Accounting Standards 16 and 36, and the Local Governmental Act 2002. Under IAS 16 a component is a part of an asset that has a different useful life to the rest of the asset or provides benefits to the Council in different ways to the rest of the asset, and hence may be depreciated differently to the rest of the asset or other components.

The following figures show the depreciation provision vs. renewals expenditure.

Figure 8-7: Depreciation Provision Versus Renewals Expenditure 2024-2034

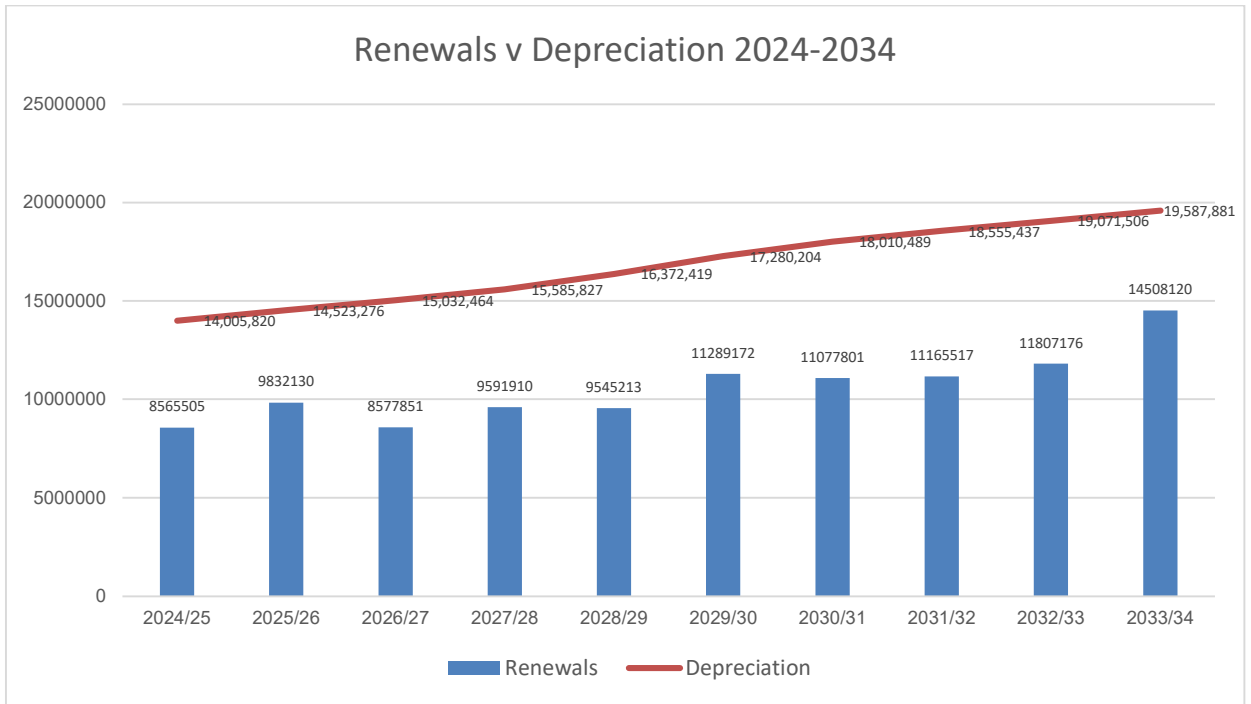
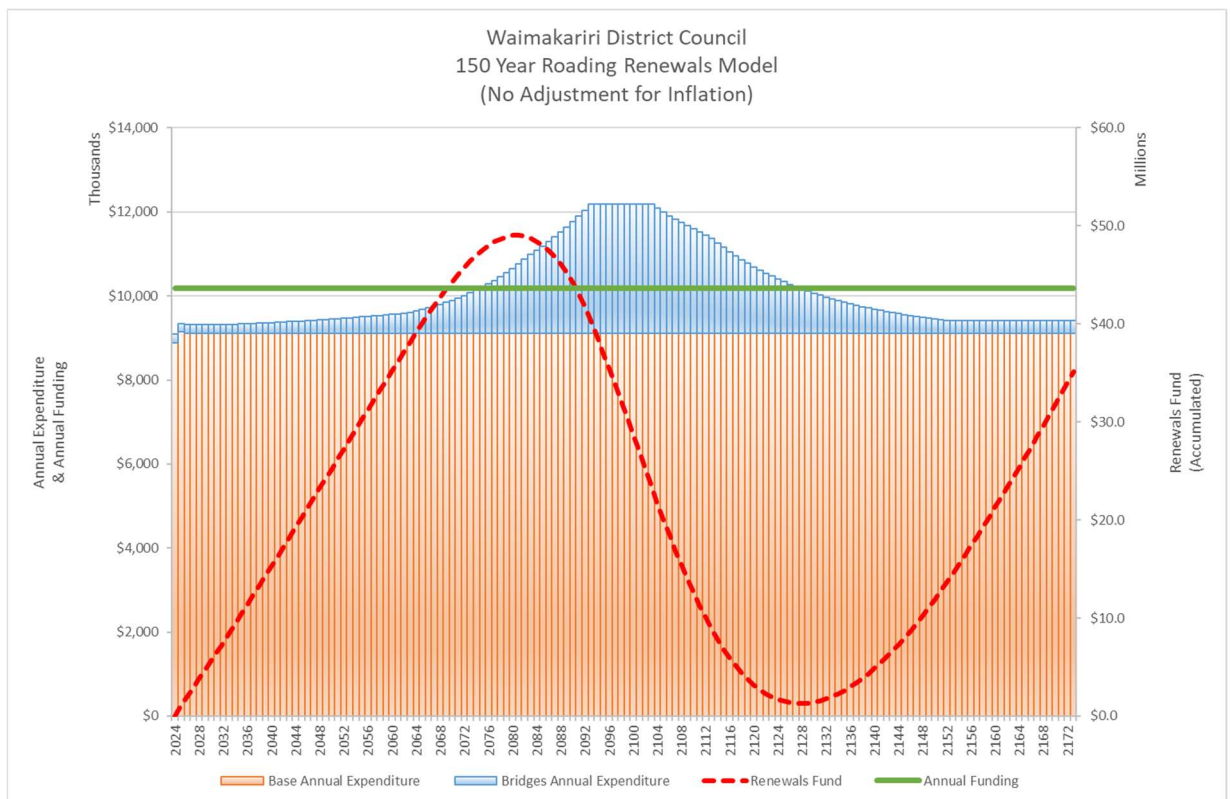


Figure 8-8: 150-year roading Renewals Model





A long-term view of Roothing renewals is shown above. The peak in blue represents an apparent bow wave of bridge construction. This could be due to one of two likely reasons:

- 1) A number of bridges had an assumed date allocated due to lack of data.
- 2) A large number of bridges and culverts were constructed around a similar time.

In this case, Councils professional service provider at the time made use of Ministry of Works documents which showed particular bridge styles from particular eras. While it was not possible to pinpoint to the year, in this case within a decade was considered sufficient for asset management purposes where the actual construction date was unknown. This has been noted in RAMM as an estimate, however we have sufficient confidence to use for financial purposes. In actual fact when it comes to 3 to 10-year planning, condition will play a large part in replacement and, as for most roading assets, the programme will be able to be smoothed out to enable management of assets while also keeping a consistent budget. The only exception is where a larger or more complex bridge replacement is required, for example Skew Bridge, or the replacement of the Ashley Bridge which was constructed 6 years ago.

Also noted is the difference between renewals and depreciation. This is due mainly to the proposed renewal of the Old Waimakariri Bridge in 2052.

## Options Funding Considerations

Maintenance, operations and renewals work always has to be carried out in some form, particularly if LOS is to be maintained. Some analysis has been carried out in the current LTP period to identify deficiencies, and this is ongoing. These are further discussed in the Life Cycle Management Plan, however in summary there has been a general underfunding over most assets in the last few years, and the 24-27 AMP proposed programme is a first step in bringing the maintenance work and asset condition back to a manageable state, ensure that optimum lives are achieved, and expected customer outcomes delivered. It should be noted however that the key priority will always be on safety, therefore pavement marking is regarded as a key activity to be sufficiently funded. Following that Council is focusing on a programme of improvements to drainage, however if funding were reduced the timeframe for these improvements might need to be revisited.

New capital work seeks to improve on deficiencies (such as safety improvements) and address other changes in the network to accommodate new demographics and customer needs/wants. Included in this are items such as new footpaths and cycleways, and potential new roads (Rangiora Eastern Link Road). This work is more likely to be delayed or cancelled than maintenance as it is seen as an 'extra', i.e. the jam on the bread and butter, even though failure to carry this out can have a detrimental effect on road users. Council has always on focused on safety delivery and continues to include projects for safety improvement even where central government funding is no longer available.

## Funding Strategy

Councils are required to have a Revenue and Financing Policy to show who pays for the services it delivers. There is a list of principles relating to the funding of expenditure needs in the Local Government Act, which the Council must take into consideration when it adopts its Revenue and Financing Policy.

A Transport programme was developed in 2007 to ensure that the transportation network would be able to cope with the increased demand due to the high growth in the district. This plan formed part of the Transport Regional Implementation Plan (TRIP), which was approved by the Environment Canterbury in 2008. In light of new growth projections and the development of structure plans for the urban growth areas in the district a new roading capital programme (the District Transport Strategy) (DTS) was developed to replace TRIP. The Council resolved to fund the growth portion of the works detailed in this programme from Development Contributions. The remainder of these works are met from rates to reflect the benefit to the existing population.

Funding for capital development and maintenance of the roading network comes from the following:

- Targeted Roothing Rates
- NZTA Subsidies
- Development and Financial Contribution
- Fees and Charges
- Debt and Lending Servicing

### Targeted Roothing Rates

Rates funding for roads is based on two components:

- **Fixed Annual Charge:**

All properties in the district incur a fixed charge that in total raises 20% of the Council's share of roading costs. Properties within the urban areas of Rangiora, Kaiapoi, Woodend and Oxford pay a higher fixed charge that reflects the higher level of service associated with providing kerb and channel, footpaths and street lighting, which are features of these towns and are less common in the smaller towns of the district.

- **General Rates:**

General rates are based on land value, which forms the remaining 80% of the roading rate.

## NZ Transport Agency Subsidies

Many transport activities receive financial assistance from the Crown, through New Zealand Transport Agency (Waka Kotahi) co-funding. The Agency funds are essentially a user charge and are gathered by the Crown from road user charges, petroleum taxes and similar charges and fees.

The Financial Assistance Rate (FAR) is the percentage that NZTA pays to subsidise road asset maintenance and road asset renewal work within Waimakariri District Council.

The FAR for maintenance work used to vary considerably from one territorial roading authority to another based on an 'ability to pay' formula which took into account the base programme size and the net equalised land value of the territorial local authority. The standard FAR for activities in the Waimakariri District which qualify for assistance from the Agency is 51% of total cost, however at times special projects may attract a higher FAR.

## Development Contributions and Financial Contributions

### Introduction

Over the last fifteen years the Waimakariri District has experienced a high level of growth. The population is expected to reach 81,742 by 2033, compared with a predicted 77,100 by 2030 (2021 AMP), and a predicted \$101,791 by 2053.

Much of the growth is expected to occur in the eastern part of the district, although in the last few years there has also been significant development to the west. This growth will affect transport infrastructure and in order to ensure that this population growth does not adversely affect residents the Council has initiated a number of strategies to assess the likely infrastructural developments needed to cope with this growth.

Councils can require contributions from developers to offset the costs or adverse effects of growth, however, to do so the mechanisms must be stipulated in a Development Contributions Policy and the District Plan must contain rules providing for Financial Contributions. The Council cannot take Development Contributions for the same purpose that it has also levied Financial Contributions for.

The Waimakariri District Council has decided that growth in the district will be funded from three main sources:

1. Development Contributions, levied under the Local Government Act 2002 (the LGA) for growth related projects that are identified in the Council's Long Term Plan.
2. Financial Contributions, levied under the Resource Management Act 1991 (the RMA). The policies to offset adverse effects of a particular development are identified in the Waimakariri District Council's District Plan.
3. Existing residents through rates and loans.

## **Development Contributions**

The Local Government Act 2002 introduced powers to levy “Development Contributions”. These are contributions of land or money paid by developers toward the cost of providing new or increased capacity in existing infrastructure required because of growth in the district. The power to require contributions is set out in section 198 of the Act.

The Council levies Development Contributions to ensure that the growth- related future and past capital expenditure identified in the LTP is appropriately recovered from those who are directly benefiting from it, rather than existing ratepayers bearing all of the costs. Development Contributions will be levied when the effect of the development, or the cumulative effects of developments, contributes to the need for the development of physical works or the Council services and when these works or services have been allowed for in the LTP.

Development Contributions are applied to two types of roading development. They are projects required for growth across the whole district and there is a district wide development contribution that applies to all new development to cover this. There are also projects related to specific Outline Development Plan areas and the development contributions for these are applied to the Outline Development Plan area only.

More detail is available in the Councils Development Contribution Policy.

## **Financial Contribution**

Financial contributions are contributions levied under the RMA. Section 5 of the RMA states that the purpose for which Financial Contributions may be taken is the sustainable management of natural and physical resources. Section 108(10) of the RMA allows a Financial Contribution to be imposed on resource consent.

Financial Contributions can be taken to address environmental effects other than those resulting from growth, for example, to pay the costs of services that must be developed to address adverse effects on the environment. Financial Contributions can also be taken to offset adverse environmental effects that may result from a development, as environmental compensation. For roading this commonly applies to upgrades on adjoining roads or of local intersections.

Financial contributions will be used when the effect of development directly contributes to the need for physical works on the Council services and when the effect of the development has not been foreseen in the LTP. Financial contributions are based on actual expenditure, further information is available in the Council’s District Plan.

## **Fees and Charges**

This is the purest form of the user paying directly for the benefit or service they receive. The following table details the charges associated with roading in the Waimakariri District.

Figure 8-9: Fees and charges 2023.

Charge	Current Charge (GST inclusive)
Standard vehicle entrance application	\$225.00
Standard vehicle crossing application fee for retrospective applications (where work has commenced before the application is made). For applications that do not comply with the Vehicle Crossing Bylaw	\$285.00
Standard vehicle crossing re-testing fee (where an onsite test fails and clearly would not have passed)	\$112.00
Traffic Management Plan (TMP)	\$100.00
TMP Extension / Road Space Booking	\$25.00
Generic TMP	\$300.00
Non-Excavation Corridor Access Request	\$0
Minor Excavation Corridor Access Request	\$150.00
Major Excavation Corridor Access Request	\$300.00
Project Excavation Corridor Access Request	\$600.00
Global Excavation Corridor Access Request	\$1,500.00
Re-Inspections	\$100.00
Non-approved works within the road reserve	\$850.00
Abandoned Cars - Recovery fee per vehicle	Full cost recovery including administration charges
Stock crossing permit - per stock crossing	\$742.00
Royalties on shingle - per cubic metre, loose measure from Council pits used for Council works	\$2.00 per m <sup>3</sup>

## Debt and Lending Servicing

The Council does not borrow on a project-by-project basis. If there is a funding shortfall, the Council funds the difference through raising a loan on a corporate basis. Projects then 'borrow' through internal lending. The cost of borrowing is thus allocated to the overall budget, rather than specific projects.

## Valuation Forecasts

### Introduction

The Council undertakes a full independent valuation of its Roading assets annually. These assets were revalued using the asset register as at 30 June 2023. This was from RAMM with the exception of drainage under channel pipes which are stored in the Council's GIS system.

There is a high level of confidence in the completeness and accuracy of the dimensional data held in the RAMM database. The Council utilises the Asset Valuation Module (RAVM) to value those components with a high level of completeness.

The valuations summarised below have been completed in accordance with the following standards:

1. NZ Infrastructure Asset Valuation and Depreciation Guidelines – Version 2.0.
2. International Accounting Standards 16 and 36, and.
3. The Local Governmental Act 2002.

The following Table summarises the valuation of the transport network assets as at 30 June 2023.

*Table 8-6: 2023 Valuation*

Asset Description	Replacement Cost	Total Accumulated Depreciation	Depreciated Replacement Cost	Annual Depreciation
Formation	\$461,875,841	\$0	\$461,875,841	\$-
Sealed Pavement Surface	\$85,995,417	\$39,631,068	\$46,364,349	\$3,844,220
First Coat Seals	\$73,167,148	\$32,427,824	\$40,739,324	\$840,863
Sealed Pavement Basecourse	\$139,527,526	\$65,955,477	\$73,572,049	\$1,721,593
Sealed Pavement Subbase	\$98,844,396	\$0	\$98,844,396	\$-
Wearing Course	\$3,430,974	\$1,659,454	\$1,771,520	\$394,502
Unsealed Pavement Subbase	\$22,036,850	\$0	\$22,036,850	\$-
Drainage	\$75,659,370	\$22,138,062	\$53,521,308	\$1,042,434
Surface Water Channels	\$111,702,739	\$28,831,566	\$82,871,173	\$1,433,131
Footpath	\$53,574,742	\$13,937,155	\$39,637,587	\$1,077,309
Traffic Facilities	\$2,022,465	\$701,442	\$1,321,023	\$103,336
Signs	\$8,703,631	\$5,327,164	\$3,376,467	\$663,043
Railings	\$2,650,480	\$746,095	\$1,904,385	\$69,744
Street Lights	\$17,395,913	\$6,139,154	\$11,256,759	\$385,985

Minor Structures	\$2,181,262	\$779,863	\$1,401,399	\$44,474
Islands	\$5,006,437	\$893,344	\$4,113,093	\$62,580
Bridges and Bridge Culverts	\$149,279,836	\$65,594,277	\$83,685,559	\$1,139,099
Traffic Signals	\$1,620,943	\$274,922	\$1,346,021	\$54,031
Total	\$1,314,675,971	\$285,036,869	\$1,029,639,102	\$12,876,345

The 2023 revaluation detailed report can be found in Appendix C Road Asset Revaluation.

### Methodology and Assumptions

The significant assumptions made in preparing the valuation relating to the asset registers are noted in the valuation report included in Appendix C.

### Key Assumptions made in Financial Forecast

In developing each Activity Management Plan, the Council makes a number of assumptions concerning uncertainties around factors such as asset condition, remaining asset life and population growth, to name just three. This section was used to identify these assumptions and to describe the potential impact if the assumption is not realised. Additionally, this section highlights the major risks identified with managing the transport activity, as well as the Council's plan to manage these risks.

The following table details the key assumptions and uncertainties that trigger the financial estimates detailed in other sections:

*Table 8-7: 2024 Significant Forecasting Assumptions and Uncertainties*

Ref. No	Assumptions and Uncertainties	The 'Degree' of the Assumption and Uncertainty, and the Likely Impact if the Assumption is not Realised	Confidence Rating
01	Inflation has not been allowed for in producing this Plan. All future figures are quoted in 2024 dollars, other than Table 8-2.	Any adjustments will be made at a corporate level in the LTP.	B
02	The useful lives of the network described in the asset valuation are assumed to be an accurate representation. Annual depreciation is established from the asset valuation and the useful lives specified in that document.	An incorrect assumption relating to useful life would impact on the asset valuation and depreciation calculations, which further impact on the depreciation recovery portion of rates. The Council is confident in the accuracy of the current figures; however, these are continually under review to ensure ongoing accuracy.	B
03	Asset condition and performance is as described in the relevant asset databases.	Incorrect assessment of condition or performance could lead to incorrect useful life, with knock on effect to depreciation and rates.	B

Ref. No	Assumptions and Uncertainties	The 'Degree' of the Assumption and Uncertainty, and the Likely Impact if the Assumption is not Realised	Confidence Rating
04	New Zealand Transport Agency (NZTA) is facing financial constraints, and this is likely to impact funding	Will impact on ability to complete projects and also on which projects will get done.	C
05	All of the proposed new and upgraded transport works agreed by Waka Kotahi will continue to be eligible for subsidy of not less than 51% of the actual total capital cost	Loss of or change in subsidy rate will require a reprioritisation of projects and could result in the inability of the Council to complete some projects on the forward programme.	A
06	The Council has assumed there will be no changes to legislation that will incur significant increases in compliance costs.	No budget provision has been made for any increased costs in this area. Increases in compliance costs will impact on the ability of the Council to deliver the forward programme.	C
07	It is assumed that costs forecast in forward programmes will not vary.	No contingency in budget to allow for increases. If costs increase over budget amount, insufficient budget could impact levels of service. Costs in this plan are quoted in 2024 dollars. Costings of major projects still in initial stages and will require further refinement for certainty. NZTA funding less certain this NLTP due to uncertainty of effect of election	C
08	It is assumed that the only increases in Operations and Maintenance costs associated with the network are related to growth of the network.	Weather events are proving difficult to predict. Increases in other costs could compromise the Council's ability to deliver the maintenance programmes. Failure to consider age and condition will lead to inaccurate maintenance and renewals programmes	B
09	Population growth forecasting has been based on Statistics New Zealand data. It is assumed this reasonably reflects the likely growth in the district.	Incorrect forecasting could result in incorrect prioritisation of projects in the forward programme.	B
10	The Council will continue to be involved in the provision of land transport services within the district	If Council ceases to be involved, the rate structure will need a complete review.	A
11	There will be no sudden changes in network demand caused by unforeseen changes in land use	Sudden changes in network demand could require reprioritisation of forward work, resulting in the rescheduling of projects.	B
12	The Council will be able to obtain resource consents, where applicable, for the right to build any proposed new works in the location and in the manner currently intended, subject to conditions	Failure to obtain consents could result in delays to work as well as unrecoverable costs associated with project cancellation or rescheduling.	B



Ref. No	Assumptions and Uncertainties	The 'Degree' of the Assumption and Uncertainty, and the Likely Impact if the Assumption is not Realised	Confidence Rating
	that do not cause it to incur a significant capital cost.		
13	The Council will receive development contributions or financial contributions from sub-dividers and developers at the level, and at the time, shown in this activity plan.	If not the case, some programmed capital works may not be necessary (because development will not be occurring at the rate or perhaps in the manner envisaged) and may be deferred.	B

## Forecast Reliability and Confidence

### Forecast Reliability

The maintenance and renewal forecast is considered to be a reliable estimate based on a known quantum and scope of work and a good historical cost database. There is some increasing uncertainty of forecasts over the long term due to lack of knowledge about real price changes of individual components.

### Forecast Confidence

The confidence in the asset data used as a basis for the financial forecasts has been assessed using the grading system (refer Table 8-8) from the NZWWA NZ Guidelines for Infrastructure Asset Grading Standards.

Table 8-8: Confidence Rating

Confidence Grade	General Meaning
A	<b>Highly Reliable:</b> Data based on sound records, procedure, investigations and analysis which is properly documented and recognised as the best method of assessment.
B	<b>Reliable:</b> Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings.
C	<b>Uncertain:</b> Data based on sound records, procedures, investigation and analysis which is Incomplete or unsupported, or extrapolation from limited sample for which grade A or B data is available.
D	<b>Very Uncertain:</b> Data based on unconfirmed verbal report and/or cursory inspection and analysis.

The average confidence level is 'B- Reliable'.

## Key Improvement initiatives

Key improvement initiatives relating to the financial summary include the following:

Table 8-9: Key improvement initiatives

Section References	Improvement action	Priority	Proposed Completion date	Owner and Key Staff
Section 7 Financial Summary				
7.1	Implement recommendations in 2023 Valuation as appropriate and achievable, and programme remainder for completion before next valuation	High	May 2024	APE

# Transportation Activity Management Plan 2024

## Asset Management Practices

June 2024



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## 9 Asset management Practices

### 9.1 Overview

This section outlines the decision-making tools Waimakariri District Council currently uses to manage the transportation activity.

Delivery of the relevant outcomes, including those externals relevant to the Waimakariri District, and the district's own Community Outcomes requires relevant and robust systems, data, and processes as detailed below. Advanced management is achieved by using the right mix of the three input components to create knowledge and intelligence, and then applying these to decision-making processes and management tactics to ensure that the assets deliver the services as intended.

This plan is prepared as part of a longstanding 3 years' view cycle linked to the LTP cycle

Figure 9-1: Key Asset Management Inputs and Outputs



### 9.2 Management Process

The key elements needed to support good asset management practices are:

- **Analysis:** The necessary processes, analysis and evaluation techniques needed for life cycle 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 outputs required for effective decision-making.
- **Processes:** Council has produced guides to how various tasks are to be carried out through ProMap. This process allows repeatability and standardisation of procedure

of tasks, and helps inform new staff as to what processes are required for particular tasks.

- **Communications and Engagement:** The means by which the Roding department seeks input into and feedback regarding, its policies and planned works. It also involves the means by which externals are kept informed of ongoing work, issues and opportunities with regards the Transport Activity.

## 9.3 Processes

### Key Information Flows

The key information flows into this Activity Management Plan are:

- Staff knowledge of the network
- Comments from contractors and consultants
- Periodic inspections and audits
- RAMM
- Inventory
- Condition Rating
- Treatment selection
- New Zealand Transport Agency Crash Analysis System
- The Council financial and other records
- Customer Satisfaction Surveys
- Results of specific consultation
- Submissions to the Long Term Plan and Annual Plans
- Resolutions and suggestions from the Council and its committees
- Comments from the public and ad-hoc bodies
- Roding Safety Management System
- Regional Land Transport Plan
- Kaiapoi Traffic Study
- Rangiora Transport Study
- Rangiora Link Roads Scheme Assessments
- Rangiora Heavy Traffic Routes Study and Scheme Assessments
- Waimakariri District Plan
- Waimakariri District Council Code of Engineering Practice
- Waimakariri Integrated Transport Strategy



- National and Regional Strategies, Policies and Plans as appropriate.

The key information flows out of this Activity Management Plan are:

- Council's Long Term Plan including Financial Forecasts
- Council's 30 Year Infrastructure Strategy
- Land Transport Programme
- Contract standards and specifications
- Performance standards and guidelines
- Inspection and audit regimes

Potential renewal or replacement projects are considered on an asset-by-asset basis, but cognisance is taken of the network needs including increasing network development and growth, and other means of managing assets, such as travel demand management.

### **Work Programme Determination**

Works programmes are developed by considering potential candidate's ranking and relative need. These are determined based on the assets':

- Condition
- Required maintenance
- Rate of deterioration
- Safety record and implications
- Lifecycle costs
- Hierarchy

The following are also taken into account:

- Risk
- The optimum time for asset renewal
- The difference between the actual and intended Level of Service
- Proximity of other programmed works
- Availability of financial assistance
- Legal obligation
- Council's policies.
- Community needs

The available budget is then allocated against the projects. The programmes are then reviewed for cross-effects to other projects and programmed maintenance that may or may not be recommended for funding under other budget sections.

## 9.4 Information Systems

### **Road Assessment and Maintenance Management system (RAMM)**

The RAMM system is the core database system used in the management of the roading and transport assets at the Council. RAMM is used nationally to manage state highway and local authority roading networks, thus allowing direct benchmarking of road condition and performance. The use of RAMM or an equivalent asset management system is a prerequisite of the New Zealand Transport Agency for obtaining Government funding for roading work.

Access to RAMM is restricted to approved staff. The system is hosted for the Council by RAMM Software Ltd (RSL) in Auckland under a contractual agreement; data is accessed via the internet.

RAMM has the following functionalities:

- Asset register; inventory of roading assets, including bridges.
- Asset valuation.
- Traffic Count data
- Condition database; recording of condition survey information.
- Treatment selection process: determining the optimum or best treatment for a particular section of road based on current performance and condition information.
- Priority formulation: ranking of treatment options based on cost benefit calculations.
- Input for prediction modelling.
- Provide a range of standard reports
- Various mapping tools which allow utilisation of data for planning and reporting

The Council is in the process of implementing a new “business management system” for integration of financial, asset and customer service systems. However, RAMM will remain the key information management system for Roading. There have been a number of improvements to the RAMM suite of products including its own GIS, and the ability to add User Defined Tables, allowing a wider range of data to be captured in forms suited for individual needs.

### **RAMM HTML**

RAMM Contractor/ Pocket RAMM were introduced to manage the maintenance, operations and renewal works, and for compiling claims. The introduction of RAMM Contractor significantly improved the quality and timeliness of data available for asset maintenance decisions and management, in particular financial records.

CAR Manager is utilised to manage the Corridor Access Requests and Work Approval Permits. A key improvement being worked on is extending the use of RAMM to link to the Customer Service system through the new business system, “Technology One”. The first improvement

has been to allow seamless integration of the Service Request system, between Council and the contractor. Still to be developed is the middleware which will allow RAMM Contractor to interface with the new business system.

RAMM HTML is a move to provide an improved map based /GIS system rather than a spreadsheet based one. Old RAMM, which required Citrix, is in the final stages of being phased out. RAMM Contractor itself has been integrated into RAMM HTML, with tables allowing dispatches, financials, and other maintenance contract activities to be able to be mapped along with asset information to provide an integrated view of the District. The next stage will be the phasing out of Pocket RAMM and simply enabling RAMM to be accessed in the field.

The 'new' (HTML) RAMM is allowing considerably more decision making being made spatially, as various layers are combined to assist with analysis, including use of hierarchies such as ONRC and ONF which helps with prioritisation of work, particularly maintenance work, however it also allows more information to be accessed regarding assets while viewing them spatially.

### **JunoViewer (JunoViewer)**

JunoViewer is a software package designed to assist roading practitioners in better decision making.

In addition to the programme developed for day-to-day decision making, JunoViewer also replaces the previous Treatment Selection Algorithm with Candidate Selection Algorithm. It also provides a longer-term renewals model with outcomes similar to DTIMS and is used to predict pavement deterioration and thus develop forward expenditure profiles for various user-defined scenarios.

The national Roding Information Management System (RIMS) group has developed policies, specifications and development plans to provide advanced asset management capability including lifecycle costing, pavement performance models and risk assessment.

The latest JunoViewer information has been utilised for this AMP.

### **Geographical Information System (GIS)**

Council's own GIS system contains layers of information also useful for roading purposes. It includes property information, locations of other Council assets such as three waters pipes, and flood layers, amongst others. Future Roding programmes are now available to be accessed through WaiMap via a GIS viewer, which allows 3 Waters and Roding forward works programmes to be viewed simultaneously, to assist in work planning.

### **Accounting/ Financial Systems**

Long term financial decisions are based on the development of 10-year financial plans. These 10-year plans are updated every three years on a cycle linked to the development of this AMP.

As a result, the 10-year forecasts developed in this Plan correspond to the latest financial projects presented to the Council.

The Council Accounting and Financial systems currently utilises the HPE/ 'Technology One' suite of business software, however is currently in the process of moving to a new supplier and package (Datascap). It is expected that this will at a minimum provide the current functions and is hoped that this will provide a more user-friendly, 'intuitive' programme than currently in use.

### **Customer Service Requests**

Customer Service Requests have also been incorporated into Technology One "One Line of Business" and will also need to be reviewed as part of the potential transition to the new system.

### **Total Record and Management System (TRIM)**

The Council uses TRIM as the official records and electronic document management system. This was implemented in 2006. This enables the Council to comply with regulations and corporate policies. There was historic discussion several regarding transitioning to a new product, however this has not eventuated.

## 9.5 Asset Management Data Practices

A summary of the asset data management practices is tabulated below:

Table 9-1: Asset Data Management Practices

Data	Data collection process	Comments
Asset Inventory data	As required	Data is either uploaded in the office, out in the field directly, or added to spreadsheets and uploaded
Maintenance Data	Daily	RAMM Dispatches (a form of purchase/task order) are used to plan and implement all planned and unplanned road network maintenance works.
Maintenance Cost	Daily	Likewise, dispatches capture all known faults with treatment cost estimates, filter and programme selected faults for treatment, and record actual treatment cost.
Condition survey data	Dependent on the asset type - refer to lifecycle section for detail	These include RAMM Condition Surveys, High Speed Data, Assets Condition Rating (e.g., Footpath and Kerb and Channel condition rating).
Traffic Volume Count	Annual and regular traffic count, frequency of counts informs the road hierarchy and is detailed in the contract.	The Council engages an external contractor to carry out the traffic counting
Crash Data (CAS)	Updated daily by NZTA and is accessible through the NZTA database.	This data held by NZTA. It includes all crashes on New Zealand public roads that have been reported to the police. Currency of data is dependent on when police supply crash reports to NZTA.

## 9.6 Implementation Processes

### Procurement

Council has in place a Procurement Strategy which was endorsed by Waka Kotahi in 2022. The strategy is consistent with the Waimakariri District Council Procurement Policy and with Section 17 of the Local Government Act.

Road network maintenance and portions of the renewal management is carried out under a single road maintenance contract covering the whole district. The contract model is a collaborative model with Council staff and the contractor working as 'one team' focussing on best for network outcomes. The contractor is responsible for network inspections, programming and carrying out the work. Some minor improvement works are also included in the maintenance contract for greater efficiency, otherwise open tendered. There is a comprehensive performance management process in place for the contract. The contract was let, following open tender, in November 2020 for a 3+1+1 period to the incumbent contractor.

Kerb & channel renewals are open tendered in line with the procurement strategy as are any larger projects or specialist works.

Street light maintenance and renewals is carried out under a similar, but separate, contract. This contract was let in November 2019 as a 3+1+1 contract.

Projects are procured through a range of options from lowest price conforming tender processes to short listing and selected tender processes, depending on the type and complexity of the project. Very small one-off projects such as safety improvements at an intersection, may be carried out directly through the maintenance contract where this is shown as the best price option.

## 9.7 Engagement & Communications (Internal and external)

### What We Consult About

- Planning
- Major projects construction – 6-12 months
- Speed limits
- Specific engagement, e.g., with heavy transport representatives
- Operations
- General
- Specific Projects

It should be noted that Council have an ongoing internal communication process with other asset managers, both internally and externally. In particular with internal partners, the location of Utilities and Roading in the same building allows constant update of projects, in particular for timing of projects to ensure maximum synergies are achieved. The Forward Works Programme is also captured on council's internal GIS system to allow each asset group's programme to be reviewed spatially.

Regular discussions are also held with external providers such as Enable and Mainpower to try to align work programmes, and regular meetings held to monitor progress and identify issues that require addressing.

### How We Communicate

- Face to face
- Email
- Variable Message Sign Boards (VMS)
- Static warning signs – road closures 7 days before
- Letter drops – pre work start, night works, restricted.
- Event road closures
- Social Media
- Council website
- Newspapers

Table 9-2: Council's Relationship with others

Organisation or Body	Nature of Special Relationship	How the Council Intends to Work With them
<p><b>Central Government Departments &amp; Organisations / Agencies</b></p>		
<p>Waka Kotahi  (New Zealand Transport Agency)</p>	<p>Waka Kotahi (New Zealand Transport Agency) co-funds a large proportion of the Roothing network maintenance, renewals and new works. This is normally up to 51% of approved works but may be higher in special cases. Amenity street planting and off street car parking areas are not eligible for funding assistance</p> <p>Waka Kotahi has a series of rules and policies that limit and control the levels of financial support available.</p> <p>The Agency does not take an active role in the management of the district road network. Its influence is managed through application of its rules, policies and guidelines.</p> <p>It is also responsible for managing the State Highway network. There are two State Highways in the District, SH1 and SH71. The nature of the special relationship revolves around management of the network at the points at which they meet, i.e., road intersections, and where development directly impacts on the state highway network.</p>	<p>Continual and frequent personal contact and appropriate formal contact where required.</p>
<p>NZ Police</p>	<p>Police undertake a critical role in road safety within the wider Waimakariri District through both education and enforcement. The Police are a member of the Road Safety Coordinating Committee and involved in developing Road Safety Action Plans</p>	<p>Personal contact with key staff. Attendance at meetings.</p>
<p>KiwiRail</p>	<p>KiwiRail is responsible for level crossings and managing the rail corridor.</p>	<p>Personal contact and correspondence.</p>
<p>The Accident Compensation Commission (ACC)</p>	<p>ACC are a member of the Road Safety Coordinating Committee and involved in developing Road Safety Action Plans.</p>	<p>Personal contact with relevant staff. Attendance at meetings.</p>
<p>Regional Organisations</p>		
<p>Environment Canterbury (ECan)</p>	<p>Ecan are responsible for developing Regional Land Transport Plans. They are also responsible for public passenger transport planning and service provision.</p>	<p>Personal contact with relevant staff. Membership of the regional Transport Officers Group (TOG). Elected representative on the Regional Transport Committee.</p>

Organisation or Body	Nature of Special Relationship	How the Council Intends to Work With them
<b>Local Government Organisations</b>		
Hurunui District Council	Hurunui District borders the Waimakariri on the north. The Roading aspect of the special relationship relates to management, maintenance and funding of boundary roads.	Personal contact with relevant staff. Formal liaison of elected representatives at CEO levels.
Christchurch City Council	Christchurch City borders the Waimakariri on the southeast. Christchurch City along with Selwyn District, NZ Transport Agency, Ecan and Waimakariri District are partners in the greater Christchurch Urban Development Strategy (UDS). The Roading aspect of the special relationship relates to management maintenance and funding of the Old Waimakariri River Bridge, which crosses our mutual border.	Personal contact with relevant staff. Membership on the Greater Christchurch Transport Managers Group. Formal liaison of elected representatives at CEO and senior manager levels.
Selwyn District Council	Selwyn District borders the Waimakariri on the south and west. Christchurch City along with Selwyn District, NZ Transport Agency, Ecan and Waimakariri District are partners in the greater Christchurch Urban Development Strategy (UDS). The Roading aspect of the special relationship relates to management maintenance and funding of the Waimakariri Gorge Bridge, which crosses our mutual border.	Personal contact with relevant staff. Membership on the Greater Christchurch Transport Managers Group. Formal liaison of elected representatives at CEO and senior manager levels.
Te Ngāi Tūāhuriri Rūnanga	Tuahiwi is the home of Ngāi Tūāhuriri and has played a vital role in Ngāi Tahu history. The takiwā (district) of Te Ngāi Tūāhuriri Rūnanga centres on Tuahiwi and extends from the Hurunui to the Hakatere river and inland to the Main Divide. Nearby the famous Kaiapoi Pā was established by the first Ngāi Tahu ancestors when they settled Te Wai Pounamu	Liaison meetings with the Runanga as required and updates to the Mahi Tahī Committee.  WDC has particular relationships and protocol which inform iwi engagement.



Organisation or Body	Nature of Special Relationship	How the Council Intends to Work With
<b>Non-Government Organisations</b>		
The Automobile Association (AA)	The AA is a member of the Road Safety Coordinating Committee and involved in developing Road Safety Action Plans.	Regular contact at road safety co-ordination meetings.
The Road Transport Association of NZ and the NZ Trucking Association	The Road Transport Association and the NZ Trucking Association are members of the Road Safety Coordinating Committee and involved in developing Road Safety Action Plans.	Regular contact at road safety co-ordination meetings.
Federated Farmers		Occasional correspondence.
The Farm Forestry Association		Occasional correspondence.
The Private Sector		
Network Utility Operators	<p>The following Network Utility Operators use parts of the District Road Network as routes for their reticulation. In most instances there are legislative rights to use the road in this manner. Network Utility Operators in the District are:</p> <ul style="list-style-type: none"> <li>• Chorus</li> <li>• Telstra</li> <li>• Enable Networks</li> <li>• Amuri Net</li> <li>• MainPower</li> <li>• Waimakariri District Council</li> <li>• Hurunui District Council</li> <li>• Waimakariri Irrigation Ltd</li> <li>• Loburn Irrigation Company</li> </ul>	Approving Corridor Access Requests (CARS's) and Work Access Permits (WAP's), as well as working with Utility providers to coordinate programmes to avoid conflict.

## ProMap

Council has an in-house process for recording its processes for carrying out its work, with the following advantages:

- Providing continuity in processes in how work is carried out.
- ‘Reducing the likelihood of errors due to not being sure of how to replicate standard work.
- Ensuring regulations are met in a timely fashion.
- Ensuring that institutional knowledge is not lost and provides a framework for new staff to carry out their positions appropriately.

An adjunct to this will be bringing in electronic checks and balances to ensure the processes are followed.

## 9.8 Organisational and People

Roading is one of four divisions reporting to the Utilities and Roding Manager who reports directly to the Chief Executive (refer to organisation chart in Section 2 - Introduction). The roading team consists of:

*Table 9-3: Roding Staff*

Position	Current Employee
Transport and Roding Manager	Joanne McBride
Roding Operations Team Leader	Carl Grabowski
Asset Planning Engineer (Roding)	Yvonne Warnaar
Roding Contracts Engineer	Tim Donaldson
Road Maintenance Engineer	Angie Keys
Roding Compliance Officer	Shaun Maxwell
Senior Transportation Engineer	Shane Binder
Transportation Engineer	Nithin Puthupparambil
Journey Planner/Road Safety Co-ordinator	Pete Daley
Roding Auditor	Danika Turnbull
Roding Cadet	Amelia Hemmings

Road network management is largely delivered by the roading team with support from the Council’s Project Delivery Unit (PDU). Specialist professional services such as bridge inspections and structural advice, road safety audits and advice, transport planning and traffic assessments, traffic counting, road condition rating and surveys are delivered by external consultants.

All roading staff have a Personal Development Plan (PDP), which identifies personal development needs and goals. The PDP’s are set annually and reviews and updated regularly.

## 9.9 Asset Management Status Review

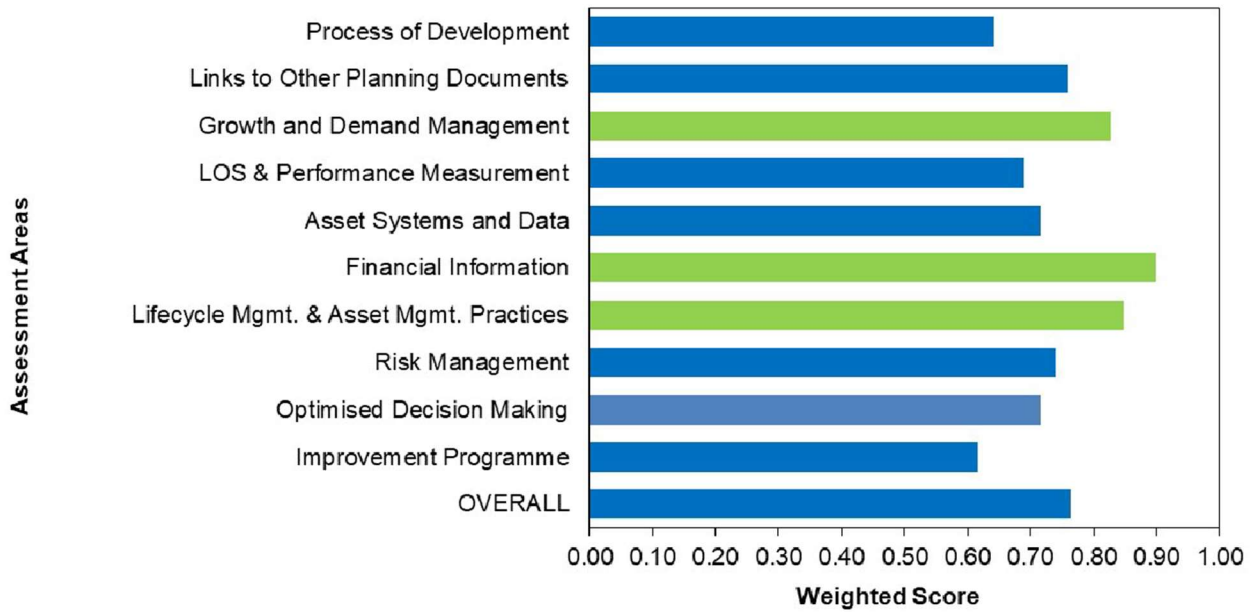
The AMP is currently peer reviewed every three years, and this includes an assessment as to whether the status has changed considerably. The current status is shown below.

### Peer Review 2021-2024 Assessment

Table 9-4: Peer Review Assessment

<b>0.00 - 0.40</b>	<b>Minimum</b>	AMP is considered to be poorly developed and at a Minimum level of maturity. The AMP doesn’t outline the basic asset management practices, systems, or information necessary to manage the assets.
<b>0.41 - 0.60</b>	<b>Core</b>	AMP is considered to be at a Core level. Although the AMP outlines asset management practice systems and information it does so in a perfunctory way indicating there is no depth to the analysis. There is limited confidence in the robustness of long term financial forecasts and the decision-making analysis.
<b>0.61 - 0.80</b>	<b>Intermediate</b>	AMP is considered to be at an Intermediate level. There is a clear articulation of most asset management practices. There is reasonable confidence that long term financial forecasts are robust and decision making is sound.
<b>0.81 - 1.00</b>	<b>Advanced</b>	AMP is considered to be Advanced. The AMP information is strong and convincing in all aspects. There is high confidence in long term financial forecasts and the way options are analysed and decisions made.

Figure 9-2: Peer Reviewer Assessment – Results



The overall assessment for Waimakariri places the district at intermediate level, which is considered appropriate for this District, however the district is approaching Advanced Level for the AMP.

## 9.10 Key Improvement initiatives

Key improvement initiatives relating to the asset management practices include the following:

Table 9-5 Improvement initiatives

Reference	Description	Priority
8-1	Include simple analysis covering suitability of the systems used	Low
8.2	Review procurement methodology prior to re-letting of maintenance contract	High

# Transportation Activity Management Plan 2024

## Improvement and Monitoring

June 2024



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Approved by	Gerard Cleary	General Manager, Utilities and Rooding		24/06/2024
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## 10 Plan Improvement and Monitoring

### 10.1 Overview

This section outlines the proposed improvements to the Roding Activity Management Plan to meet the asset best practices and the proposed monitoring and review procedures.

Most decisions relating to renewal or replacement of assets are based on objective, rather than subjective, decisions. Further improvements in objective decision making are planned, or in progress, with use of deterioration modelling and other treatment selection recommendation algorithms (e.g. RAMM) being refined and increased.

There will always be ways in which we can continue to improve our business processes. Particularly as data, analysis, and technologies evolve and improve over time, rich knowledge and understanding will be available to better inform decision-making.

### 10.2 Improvements achieved since the 2021 AMP

The Roding team has committed itself to progressively review and improve the Roding Activity Management Plan to raise the level of advancement in the AMP. Since the 2021 AMP two major changes have been made:

- Incorporation of the Business Case Approach and;
- Utilising the One Network Road Classification (ONRC) classification

The introduction of the Business Case Approach has resulted in a more comprehensive review and understanding of the issues affecting the district and how best to address them, which in turn has led to more informed engagement with key stakeholders.

The ONRC will provide a consistent framework allowing work to be prioritised according to need in accordance with the desired Customer Levels of Service as per the hierarchy. The ONRC allows Levels of Service appropriate to a road's position in the hierarchy to be identified. This in turn assists in identifying work and setting priorities.

The One Network Framework (ONF) will allow consideration of Place and Function, which in turn will allow a more targeted approach to planning for customers' needs. The current network has had classifications allocated to it, but this is a work in progress, and future improvements arising out of this change to classifications can be incorporated as they arise.

In addition to these changes in management, the decision was made to change the traditional IIMM style of Improvement Plan to that advocated by NZTA through the Road Efficiency Group (REG), now known as Te Ringa Maimoa, and also to simplify and concentrate on key improvements. Previous improvement plans have promoted too many improvements which despite prioritisation have not been realistically achievable.



This Improvement Plan is instead built around the REG Pillars, and presents a more focussed and targeted list of improvements. It should be noted that the decisions on Improvements was not aimed this time at covering all the Pillars but instead focusing on the Improvements themselves.

## 10.3 Previous Improvement Plan 2021 - 2024

Table 10-1: Previous Improvement Plan 2021-2024

Task category	Task number	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Status Update / Notes	% complete	Risk Level	Risk Management Plan
SYSTEMS	1	AMP structure, content and updating process review	Review the plan structure that reflects the appropriate level of maturity, incorporates the most recent Waka Kotahi guidance, and reflects a cross-organisational picture, and provides assurance of a robust planning environment.	The current plan structure is based on earlier versions, and has not been updated to reflect either changed practices, or the increase in expected level of asset management planning.  The current updating process has taken place late in the 3 year cycle, with insufficient time for consideration given to critical issues.	A robust, evidence-based, cross-organisational asset management plan that reflects 'best practice'.	Prepare project plan, identify key roles, times, resources required and actions for management.  Review other AMPs, discuss what can be taken from each that would be of most use to WDC, and agree on a revised format.  Review the AMP update process including timeframes for each element, key cross-department linkages and deliverables.  Establish the resourcing needs to properly implement the Project plan, and ensure appropriate budget is available.	HIGH	By June 2021	Asset Planning Engineer  Roothing Manager	Largely achieved, identifying resourcing to be carried though into next improvement plan .	95%		
SYSTEMS	2	Financial Systems review	Review various sources of financial reporting and forecasting to ensure 'one source of truth', such that budgets can be easily managed to meet forecasting and reporting requirements	Various spreadsheets plus different reporting needs and categories of expenditure make quick and accurate reporting challenging	Project names are consistent, financial information is easily monitored and reported on for Council and NZTA, and forecasting can easily be adjusted to allow good budget management	Roothing department to work with Finance to determine methodology, resources and timeframe.  Consider alternative 'budget' and 'cost' spreadsheets (including reviewing "RoadsData")	HIGH	By December 2021	Asset Planning Engineer  Roothing Manager	Largely achieved – some issues remain with naming conventions	95%		
SYSTEMS	3	Risk Management	Ensuring risk is kept front of mind in Council Roothing activities	Risk register developed but not regularly monitored & updated	Risks regularly monitored and problem escalated if unable to be dealt with through the assigned plan and responsibility	Risk register revised to reflect a more current view.  Correlation between the Roothing Risk Register and the Corporate Risk Register checked for consistency.  Owners assigned to risk and reporting back timeframe established	MEDIUM	By March 2022	Asset Planning Engineer  Roothing Manager	Largely complete, owners allocated in next 6 months	95%		

Task category	Task number	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Status Update / Notes	% complete	Risk Level	Risk Management Plan
EVIDENCE	4	Begin capturing necessary supporting data	Determine the additional information that is required to be gathered to support a robust understanding of capital, renewals and maintenance needs	Current programmes are not well supported by good sound evidence	Strong field-based evidence to support the Councils planned expenditure in capital renewals and maintenance	Consider all areas of expenditure that require a more evidence-based approach.  Develop data that would provide this evidence, where it is practical to capture.  Amend the maintenance contract to include this data capture.  Establish data collation, storage, and analysis needs	HIGH	By August 2021	Asset Planning Engineer  Roothing Engineer	Largely achieved.	95%		
EVIDENCE	5	Strengthen One Network Roothing classification and RAMM database	ONF criteria applied to network.  Develop systems and implement processes for collecting data for relevant ONRC performance measures not currently captured.	Have identified areas missing but need to reconcile against internal audits currently being carried out	Future status is that all useful and appropriate data is collected in time for next AMP	Engage with NZTA to obtain assistance to classify network.  Audit RAMM database asset groups and identify gaps. Develop and implement prioritised action plan.  Determine prioritised programme and timeframe for any uncaptured assets.	HIGH	ONF network classified by June 2023	Asset Planning Engineer  Roothing Engineer	Currently collecting sufficient ONRC measures for our needs- more will be collected through ONF	100%		Achieved
EVIDENCE	6	Renewals Forecasting	Renewals forecasting to support IS using Useful lives plus replacement cost to compare with depreciation and current renewals practice of smoothing based on condition and available budget	Current Renewals forecasting based primarily on keeping the work within budget	Confidence in accuracy of longer term forecast versus depreciation allowing better long term planning	Once sufficient data captured as part of Task 4:  Determine whether additional tools are necessary to assist with deterioration modelling.  Implement any agreed additional tools.  Analyse the deterioration outputs and review the current level of renewals funding.  Discuss impacts with Finance to understand effects, and funding options.  Include a longer term (30-50 year) depreciation forecast to support the Infrastructure Strategy and to anticipate long term renewal needs	MEDIUM	December 2022	Asset Planning Engineer	Largely achieved	90%		
COMMUNICATING	7	LOS Review	Review of LOS options	Have not been formally reviewed for some time	Good understanding by community as to what their	Consider the possible areas that might benefit from a community debate on LOS.	MEDIUM	By December 2022	Asset Planning Engineer	Achieved. Was considered along with other departments	100%		

Task category	Task number	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Status Update / Notes	% complete	Risk Level	Risk Management Plan
					rates buy, and when	Discuss options for co-operation with other departments.  Report to Council and seek mandate (to either consult or not)  If agreed that needs consultation, begin planning for method, timeframe etc.			Roading Manager	and determined this AMP period was not the right time for whole of Council review.			
SERVICE DELIVERY	8	Monitoring	Investigate what changes/improvements in monitoring could improve management decision making and performance throughout the year	Much decision making is short term and reactive. Need more information to either verify current decisions or improve if need be	Full range of monitoring processes	Understand what is currently monitored.  Consider what should be monitored in accordance with best practice (including discussing with other Road Controlling Authorities)  Gap analysis to determine what still required.  Develop and implement a monitoring methodology and programme	MEDIUM	By December 2021	Asset Planning Engineer  Rooding Engineer	Good improvements have been made in terms of programmes for high shoulder improvement and culvert investigations.	100%		
DECISION-MAKING	9	Spatial analysis of network	Utilisation of spatial analysis to improve the Capital renewal and development project planning, including analysis of maintenance, construction date, condition and performance data	Spatial analysis has not been utilised much in past	All programmes and associated information in layers on RAMM to assist with understanding of network needs	Consider possible options for spatial analysis of information that would most benefit decision making and prioritise.  Discuss with 3W to make sure any cross-area efficiencies can be recognised  Meet with GIS team to understand issues, resourcing, timeframes etc.  Incrementally roll out GIS layers	MEDIUM	Get agreement on first priority with GIS – by December 2021  Roll out all agreed information into spatial format by March 2023	Asset Planning Engineer	Achieved. Layers set up in RAMM with information being collected from inspections to help determine programmes of work	100%		Done
DECISION-MAKING	10	Optimisation / prioritisation	Explain the options considered in the development of optimal solutions. Explain how the favoured option was chosen, including any tools used in the process, in particular any cost-benefit or	Prioritisation and optimisation largely done in a manual way	Clear and defensible decisions	Consider better use of the Justification Form process.  Consider and implement a robust and defensible prioritisation matrix	MEDIUM	By March 2022	Asset Planning Engineer  Senior Engineering Advisor	Largely achieved. Some refinement of prioritisation process required but good progress made in establishing a methodology,	90%		

Task category	Task number	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Status Update / Notes	% complete	Risk Level	Risk Management Plan
			multi-criteria analysis.  Develop prioritisation processes to assist in decision making for capital projects and maintenance.						Roading Manager				
PEOPLE/CULTURE	11	Internal AMP decision making	Communicating AMP value and individual part in process to team	Team have some understanding of what Activity Management Planning is about but not where they fit into the overall scheme of things and how they contribute through their work	Staff work together for the good of the network and share ideas and information which can be used in the AMP process for evidence gathering and improvement	Hold progressive workshops with roading staff.	MEDIUM	Begin by June 2021  Ongoing communication	Asset Planning Engineer  Roading Manager	Achieved. Some workshops held but more useful progress made with ongoing improvements being discussed and implemented.	100%		

## 10.4 Improvement Plan 2024 - 2027

The last Improvement Plan was very much about putting processes in place that were needed for better management of the network. The 2024-2027 Improvement Plan has focused on key improvements which build on improvement made from the last AMP. These have targeted the areas where the highest value can be returned and right sized to ensure the plan is achievable, as well as embedding or complete improvements from the 2021-2024 AMP.

### Council Driven Improvements

Table 10-2: Improvement Plan 2024-2027 Council Driven Improvements

Task category	Task No.	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Risk Level	Risk Management Plan
SYSTEMS	1	AMP resourcing	Establish external support required to make improvements to and deliver a quality AMP	A project plan was put in place for the 2021 – 2024 AMP, but more work is required up front to establish external support required to help deliver improvements to the AMP.	A robust, evidence-based asset management plan that reflects 'best practice delivered through a process that is optimally resourced.	Prepare the project plan, identify key roles, times, resources required and actions for management.  Review the AMP update process including timeframes.  Establish the external support required to support delivery of improvements to the AMP.	High	By August 2024	Asset Planning Engineer	High	Review with Project Control Group
EVIDENCE	2	Gravel Loss Study	Determine the optimum renewals level for remetalling our unsealed roads	It has been a number of years since the last gravel loss study, and the suggested Remetalling quantities calculated then may not be appropriate for current Waimakariri conditions and materials.	Strong field-based evidence to support the Councils planned expenditure this area	Determine what the outcomes are that this information is required for.  Establish desired outputs.  Determine a timeline and methodology for achieving this	MEDIUM	By March 2026	Asset Planning Engineer  Roding Contracts Engineer  Roding Operations Team Leader	Medium	Ensure outcome and methodology properly framed
DECISION MAKING	3	Renewals Forecasting	Validating and reviewing Total Useful Lives to ensure current modelling is fit for purpose, set up models for other assets deemed appropriate.	Modelling has been completed for pavements and bridges but require validation of base information. Some other assets could potentially benefit from a basic model.	Confidence in accuracy of longer-term forecast versus depreciation allowing better long-term planning	Once sufficient data captured and model set up, analyse the deterioration outputs and review the current level of renewals funding.  Discuss impacts with Finance to understand effects, and funding options.  Include a longer term (30-50 year) depreciation forecast to support the Infrastructure Strategy and to anticipate long term renewal needs	MEDIUM	March 2025	Asset Planning Engineer	Medium	Enlist assistance of others within organisation with expertise in this area.

## Improvements from Peer Review

Table 10-3: Improvement Plan 2024-27 from Peer Review

Task category	Task No.	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Risk Level	Risk Management Plan
PEOPLE AND COMMUNICATING	4	AMP document readability review	<p>Review AMP for readability.</p> <p>Determine where there is potential for incorporating more pictorial means to display information, such as maps and charts, rather than too much text.</p>	Large document, difficult to wade through and large amount of technical information.	Improved AMP would be smaller and key points feeding into decisions would be presented by a means that is easier to digest	Review AMP, including purpose and outcomes sought, and identify what would be better condensed or displayed by other means.	High	Dec 2024	<p>Asset Planning Engineer</p> <p>Roading &amp; Transport Manager</p>	Low	Have peer reviewed by other members of the team to ensure the AMP is useful to the roading team as a whole
DECISION MAKING	5	Levels of Growth Sensitivity Analysis	Undertake a sensitivity analysis to consider the impact of differing levels of growth on the funding requirements.	Currently occurs informally by reviewing state of network and adding increases in overall costs based on deterioration of network. Would benefit from a greater understanding of impact of growth on different assets, in particular carriageways.	Impact of growth understood, allowing for a more exact understanding of funding required, while being adaptable with regards to growth not occurring as planned. Different strategies identified for maintenance, operations, renewals and new capital asset needs	This impacts on maintenance as well as new assets so would require nuanced and targeted planning. This is quite a complex project and requires careful consideration of the benefits versus costs for this evaluation. Maintenance/ operations/ renewals will require input from the operations team and potentially the contractor. Changes in capital requirements will need to be considered in relation to population growth, which is relatively easy to determine short term, and strategic network needs. This requires further consideration .	Medium	March 2026	Asset Planning Engineer	Medium/High  Dependent on available resources and growth information being available in a timely manner	Proper scoping of methodology and expected outputs essential
EVIDENCE	6	Performance Measures review	Ensure that measures cover the entire network including parking and cycling, and further measures such as travel time etc	Currently some measures included, but need to be reviewed to ensure these are aligned with ITS and Strategic Business Plan, and gaps filled.	Suitable measurable and useful measures defined and monitored.	Review ITS for incorporation in next Strategic Business Plan, and determine what measures would be appropriate to achieve future status	Medium		<p>Asset Planning Engineer</p> <p>Senior Transportation Engineer</p> <p>Roading &amp; Transport Manager</p>	Medium  Danger that measures are inappropriate or not measurable or useful	Test sample of measures to ensure their suitability.

Task category	Task No.	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Risk Level	Risk Management Plan
SYSTEMS	7		Addressing Local Government Act 2002 Amendment Bill (No 3)	While AMP process includes and addresses these considerations, it does not specifically address the legislation	Include section/paragraph addressing how components of the LGA are addressed.	Check work programme against LGA to ensure all addressed appropriately.  Document the outcomes in AMP	High	December 2026	Asset Planning Engineer	Medium –	Ensure the requirements of the LGA fully understood and addressed within the Project Plan
EVIDENCE	8	Levels of Service investment review	Incorporate discussion into the document on options to increase or decrease service levels, and costs and risks associated with differing levels of investment.	Preliminary work carried out, but needs to be reviewed for best way to incorporated into the AMP supporting evidence	Current thinking needs to be documented and presented in a readable manner	Incorporate in the AMP.	Medium	March 2026	Asset Planning Engineer	Medium	Scope work, including resources to carry this out.



## 10.5

### 10.5 Monitoring and Review Procedures

The AMP is a living document which is relevant and integral to daily AM activity. To ensure the plan remains useful and relevant the following on-going process will be undertaken:

*Table 10-4 : AMP Process*

Action	Timing
Formal adoption of the plan by the Council	Three-yearly
Review and reporting against key performance indicators	Quarterly
Revise the Activity Management Plan to incorporate new knowledge resulting from the Improvement Plan	Annually
Formally review to assess adequacy and effectiveness	Three-yearly
Tracking progress of implementation of the Improvement Plan quarterly	Quarterly
Review condition assessment information (dependent on asset category this varies from 1 to 4 years)	Varies

## 10.6 Performance Measures

The following indicators will be monitored to measure the effectiveness of this AM plan.

*Table 10-5: AMP Performance Indicators*

Indicators	Measure	Source of Information
Compliance with legislative requirements	Unqualified Audit opinion relating to Activity Management Plan outputs	Audit NZ reports
Quality of service delivered	100% compliance with LOS targets	Annual Plan reporting