RANGITIKEI
DISTRICT COUNCIL

2021-24 Roading Programme Business Case

DRAFT v4

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Document Status

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Adoption			Rangitikei District Council

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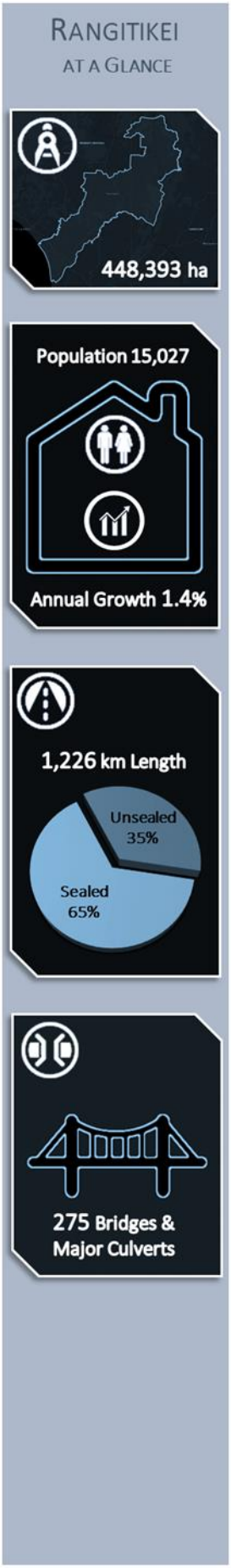
1.0 Executive Summary

1.1 Our District

Rangitikei District is uniquely place in its central location as the gateway to four other regions: Manawatu, Whanganui, Ruapehu and Hastings. Three hours from Napier, two and half hours from New Plymouth, two hours from Wellington and Mount Ruapehu, Rangitikei residents have easy access to provinces offering some of the best beaches, vineyards and adventure playgrounds this country has to offer.

More importantly, Rangitikei's central location gives the region huge economic advantages. With easy access to four seaports, seven airports and major Defence Force bases, it is a highly strategic cargo, transport and business hub for the lower North Island and the country.



1.2 Purpose of the Programme Business Case

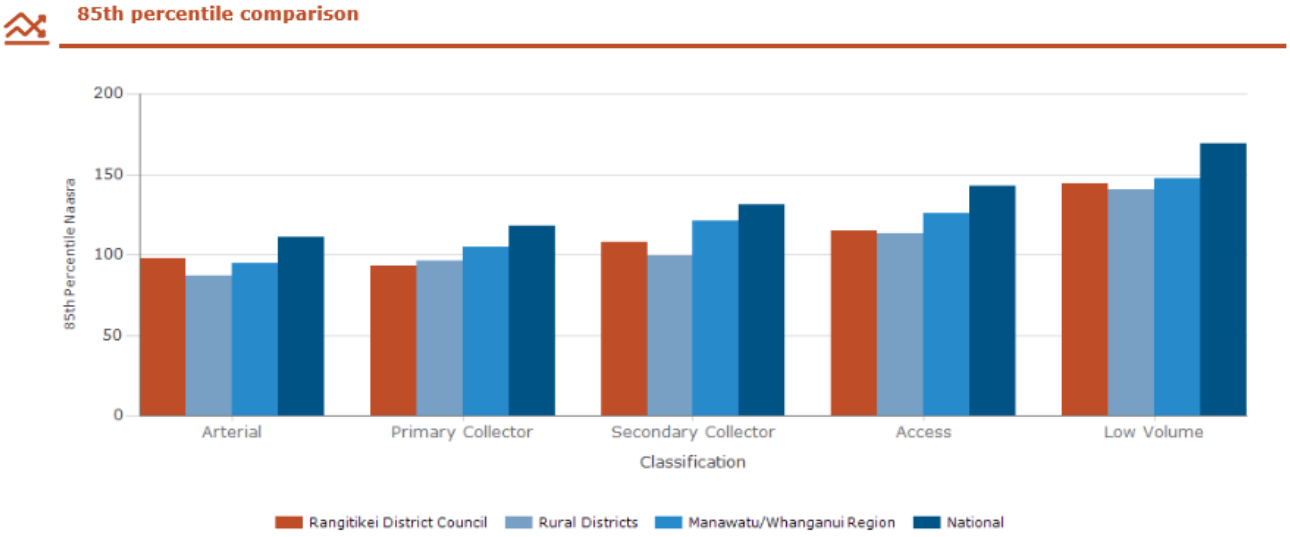
The Programme Business Case (PBC) outlines the strategic context and case for Rangitikei District Council's investment in Roading activity. It draws on the evidence provided in the Activity Management Plan (AMP), which prioritises and addresses key transportation issues and illustrates how assets are intended to be managed.

1.3 Strategic Context

The proposed maintenance strategy and capital projects are consistent with, and contribute towards, achieving the wider national and regional land transport priorities and objectives. These priorities and objectives are guided by the Government Policy Statement on Land Transport (GPS), New Zealand Transport Agency's 10 year plan, Arataki, the Regional Land Transport Plan (RLTP) and One Network Road Classification (ONRC). By ensuring alignment with these high-level strategic processes, the Council will not only realise its local strategic vision, but will also play its role in achieving a sound regional, fit for purpose land transport network.

1.4 Network Condition & Current Trend

Figure 1 below highlights the 85th Percentile roughness measure throughout the sealed network. This measure shows that the Rangitikei District road network enjoys smoother roads in general than those of other NZ rural districts, the Manawatu- Whanganui Region and the Nation as a whole (source: ONRC performance measures reporting tool):



The most recent 'smooth travel exposure' data for the District is presented in Figure 2 below, and exhibits a slight downward trend across all road classifications over time. This general deterioration is as a result of increasing traffic volume(s) and recent changes in usage (source: ONRC performance measures reporting tool):

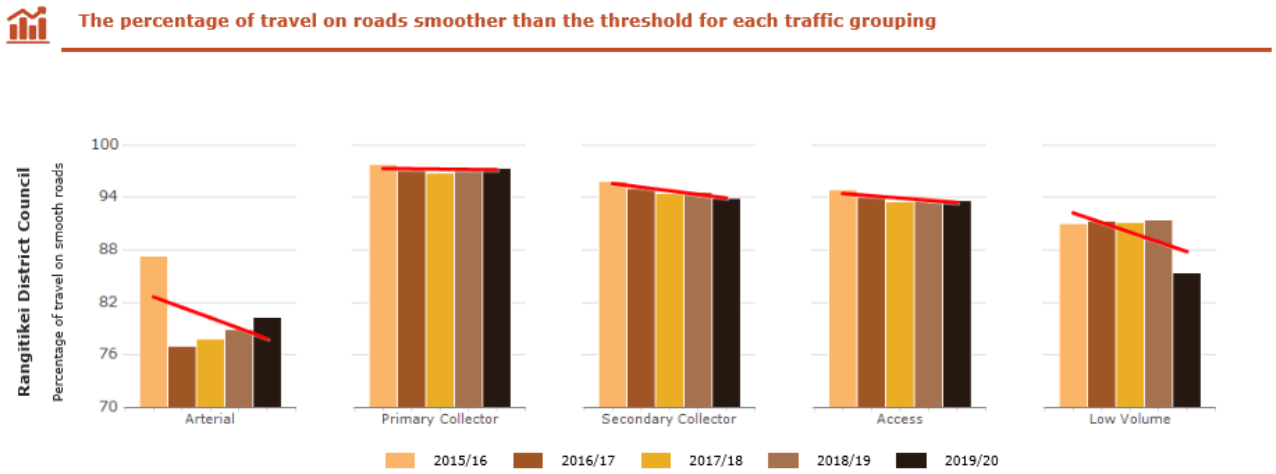


FIGURE 2 – ROAD SMOOTHNESS TREND OF THE SEALED ROAD NETWORK

1.5 Current Cost Efficiency

The current cost efficiency for the District is shown in Figure below and compares favourably with its regional neighbours and at a national level, in both cost per km and cost per 100 million vehicle kilometres travelled (VKT) over the previous 3 years:

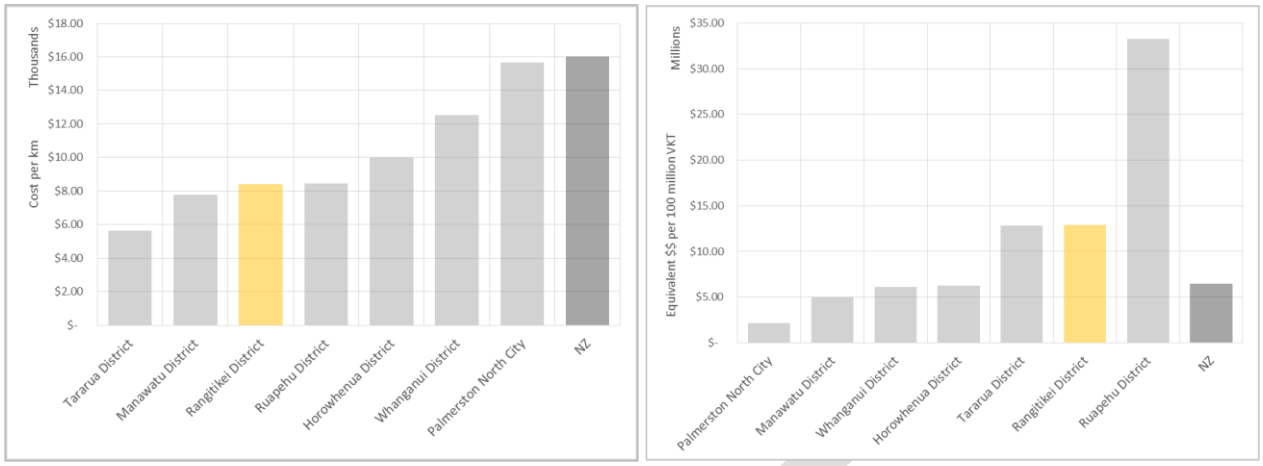


FIGURE 3 - COST PER KM AND COST PER 100 MILLION VKT

Given the proposed expenditure for the 2021-24 period, the demonstrated balance in maintaining the condition of the network, cost efficiency and providing 'value for money' is expected to continue.

1.6 Current Problems and Strategic Response

Problem 1: Legacy network

The form and function of the road network are not meeting the changing demands and needs, resulting in increasing reactive interventions, primarily due to forestry activity.

Problem 2: Low network resilience

During periods of intense rainfall the low lying Southern area of the network and its coastal settlements are prone to flooding. In addition, mudslides, debris flows and rock slides occur in the rural hinterland, particularly to Central area of the network.

Problem 3: Safety

There is a high level of Serious and Fatal crashes for the level of traffic the District experiences. This is resulting in high social and economic cost.

Problem 4: Population growth

Rangitikei's growth rate has been observed at 1.40% per annum between 2013 and 2018. Placing this in perspective, population growth in Palmerston North was 1.14% and 2.07% at the national level over the same period. Hence the District is continuing to experience moderate growth.

Council's investment will address the problems within the context of the direction set out in the GPS, Arataki, RLTP and ONRC. Table 1 below summarises the findings, intended strategic response(s) and the priority / focus intended to address each problem:

TABLE 1 - PROBLEM, STATUS, STRATEGIC RESPONSE AND PRIORITY SUMMARY

Problem	Findings / Status	Strategic Response	Priority	Focus
Legacy network	Forest harvest schedules are expected to be most intense in the period 2018-2030 with the majority of the District's forest estate reaching harvestable age. 62% (6.24 mega-tonnes) of the District's total expected yield will be extracted by 2030.	Engage with logging companies to manage route demand, minimise nuisance and mitigate pavement damage.	HIGH	55%
		Continue pavement repairs to mitigate deterioration during high forestry activity.	MEDIUM	
		Plan rehabilitation of pavements prior to starting - or coinciding with completion of - high forestry route use.	MEDIUM	
		Plan surfacing treatments around periods of high forestry use.	MEDIUM	
Low network resilience	Increasing frequency and severity of storm events causing disruption to travel reliability and causing Emergency Reinstatement costs to increase. Current investment levels have seen the beginnings of a trend reversal.	Focus routine drainage maintenance and renewals programmes to mitigate road closures to vulnerable portion(s) of the network.	HIGH	20%
		Maintain bridge component replacement programme to retain capacity and route availability.	MEDIUM	
		Manage resilience of structures interfacing with watercourses to prevent road closures.	MEDIUM	
Safety	Users of the road network experience a high personal risk (i.e. the rate of crashes resulting in serious injury or death is high). Loss of car control and crossing/turning at intersections are the primary contributing crash types. Current programmes have seen a slight improvement in crash rates.	Improve safety at lowest performing intersections.	HIGH	15%
		Improve driver information (e.g. curve signage) to lowest performing sealed road corridors.	MEDIUM	
		Provide sealed shoulders on road corridors that are of insufficient width for the volume of traffic carried.	MEDIUM	
		Develop a prioritised network speed management programme to mitigate crash severity.	LOW	
Population growth	Increasing population, sub-division activity and traffic volumes are placing increased demand on the form and function of the road network. Regional development is a key desired outcome for the District.	Engage with Land Development / Planning to co-ordinate and integrate residential growth and industrial roads.	HIGH	10%
		Improve walking and cycling infrastructure, targeting urban centres and routes in proximity to schools.	MEDIUM	

1.7 Proposed Investment Level & Forecast

The proposed programme contained within this document has been developed to address the above problems whilst giving confidence that cost efficiency will be maintained.

The proposed expenditure for subsidised Maintenance, Operations and Renewals activities for the Rangitikei District over the next 3 years is outlined in Figure below, along with the prior and future funding cycles in 3 year blocks.

The proposed 2021-24 Subsidised Roading Programme is estimated at ***$48.13 million***, an increase of ***$8.55 million***, equating to a ***+/21% change*** in comparison with the previous 2018-21 funding cycle.

The proposed 2021-24 Non-subsidised Road Programme is estimated at ***$2.12 million,*** an increase of ***$0.35 million***, equating to a ***+19.77% change*** in comparison with the previous 2018-21 funding cycle.

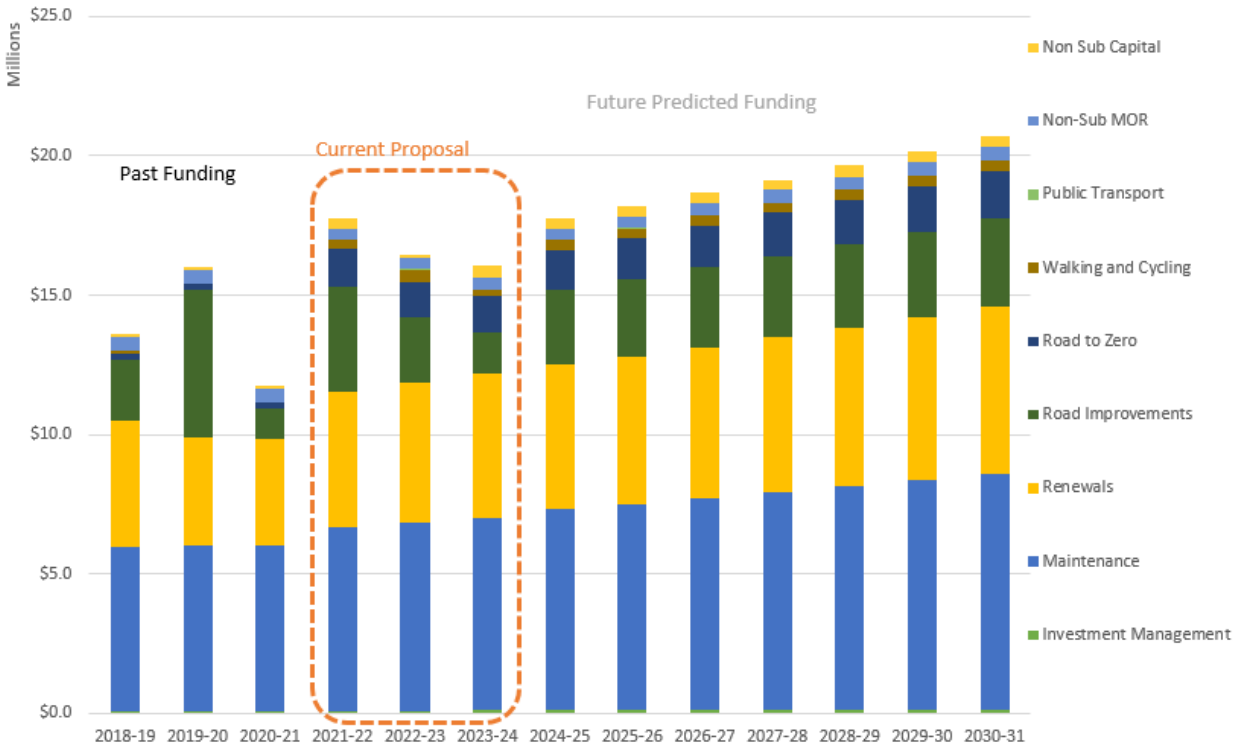


FIGURE 4 – MAINTENANCE, OPERATIONS, RENEWAL & CAPITAL WORKS EXPENDITURE

The anticipated investment level for each year from 2021-22 onwards (summarised in the vertical bar chart in Figure 4 above) has been subjected to inflation adjustment (based on the 10 year prediction for inflation rate(s) in New Zealand, published by the 'Business and Economic Research Ltd' (BERL) organisation).

1.8 2021-24 Subsidised Roading Budget

		3 Year Block 2021-24		
Subsidised Roading Budget		**2021-22**	**2022-23**	**2023-24**
Investment Management				
003	Investment Management Planning	50,000	51,550	53,050
004	Programme Business Case Development	50,000	51,550	53,050
	Sub-total - Investment Management	100,000	103,100	106,100
Maintenance				
111	Sealed Pavement Maintenance	1,377,666	1,420,374	1,461,704
112	Unsealed Pavement Maintenance	442,509	456,227	469,502
113	Routine Drainage Maintenance	1,157,619	1,193,505	1,251,758
114	Structures Maintenance	219,655	226,980	234,858
121	Environmental Maintenance	1,326,300	1,418,965	1,460,254
122	Traffic Services Maintenance	413,260	431,226	438,469
123	Operational Traffic Management	871	898	924
124	Cycle Path Maintenance	1,020	1,052	1,082
125	Footpath maintenance	125,239	129,425	133,191
131	Level Crossing Warning Devices	22,440	23,598	24,770
140	Minor Events	320,000	329,920	339,520
151	Network & Asset Management	1,217,366	1,278,482	1,291,625
	Sub-total - Maintenance	6,623,945	6,910,651	7,107,657
Renewals				
211	Unsealed Roads Metalling	443,700	457,455	470,766
212	Sealed Roads Resurfacing	1,360,692	1,329,723	1,371,625
213	Drainage Renewals	735,000	757,785	779,835
214	Sealed Road Pavement Rehabilitation	1,292,000	1,328,882	1,461,448
215	Structures Component Replacements	453,500	597,813	522,083
216	Bridge and Structures Renewals	75,000	87,635	100,795
222	Traffic Services Renewal	295,000	324,765	344,825
225	Footpath Renewals	231,624	243,580	255,681
	Sub-total - Renewals	4,886,516	5,127,637	5,307,057
Road Improvements				
322	Replacement of Bridges and Structures	365,053	0	0
324	Road Improvements	3,193,278	1,923,726	790,277
325	Seal Extensions	0	0	0
357	Resilience Improvements	610,000	443,330	694,955
	Sub-total - Road Improvements	4,168,331	2,367,056	1,485,232
Road to Zero				
341	Low Cost - Low Risk Programme	1,504,588	1,338,238	1,427,045
	Sub-total - Road to Zero	1,504,588	1,338,238	1,427,045
Walking and Cycling				
451	Walking Facilities	300,000	412,400	212,200
452	Cycling facilities	0	28,868	0
	Sub-total - Walking and Cycling	300,000	441,268	212,200
Public Transport				
514	Public transport facilities O & M	5,610	5,784	5,952
	Sub-total - Public Transport	5,610	5,784	5,952
Total Subsidised Roading Budget		17,588,991	16,293,734	15,651,244

1.9 2021-24 Non-subsidised Roading Budget

		3 Year Block 2021-24		
Non-subsidised Roading Budget		2021-22	2022-23	2023-24
Maintenance and Operations				
	Street cleaning (local share)	123,000	131,968	140,052
	Street furniture repairs and maintenance	15,360	15,836	16,297
	Under-veranda lighting (power)	32,000	32,992	33,952
	Festive lighting and banners	65,600	67,634	69,602
	Carpark maintenance	22,500	23,713	24,934
	Vehicle Crossings	20,000	20,620	21,220
	Noxious weeds (Taihape Trust)	25,000	25,775	26,525
	Professional services	13,500	14,434	15,385
	Parades and Events Traffic Management	20,000	20,620	21,220
	Access Roads	20,000	20,620	21,220
	Roadside tree maintenance	39,500	42,271	45,093
	Berm mowing	28,608	30,415	32,891
	External contractor	5,300	5,980	6,578
	Survey costs	15,000	15,465	15,915
	Sub-total Maintenance and Operations	445,368	468,342	490,882
Renewals				
	Roading Renewals	0	0	0
	Sub-total Renewals	0	0	0
Road Improvements				
	Urban Reconstructions	150,000	154,650	0
	Paths & Structures	20,000	0	0
	Subdivisional Roads - Construction	100,000	103,100	106,100
	Mitigation Sealing	120,000	125,782	134,747
	Sub-total - Road Improvements	390,000	383,532	240,847
Total Non-subsidised Roading Budget		835,368	851,874	731,729

1.10 2021-24 Roading Budget Summary

	3 Year Block 2021-24		
Total Subsidised Roading Budget	17,588,991	16,293,734	15,651,244
Total Non-subsidised Roading Budget	835,368	851,874	731,729
TOTAL TRANSPORTATION ACTIVITY	18,424,359	17,145,608	16,382,973

2.0 Strategic Case

2.1 Introduction

The Strategic Case describes the objectives to be achieved by the programme, by stating the overarching strategic drivers and objectives of the proposed investment in the road maintenance programme.

The maintenance strategy and proposed capital projects included in this business case have been developed to be consistent with, and contribute towards, achieving wider national and regional land transport priorities and objectives. These priorities and objectives are guided by the Government Policy Statement on Land Transport (GPS) and the Regional Land Transport Plan (RLTP). By ensuring alignment with these high level strategic documents, the Council will not only realise its local strategic vision, but will also play its role in achieving a sound regional and strategically integrated land transport network.

Problems, issues and opportunities are identified in terms of any gaps to the customer levels of services in the One Network Roading Classification (ONRC). The strategy progresses national, regional and Government priorities by taking cognisance of the RLTP and the Transport Agency's new 10 year plan, Arataki.

A summary is provided of the problems, issues, risks and/or opportunities, level of service gaps etc. that are proposed to be addressed, these include safety and resilience improvements through specific maintenance activities. The benefits and performance measures have been identified to demonstrate the problems, issues & opportunities and appropriate responses. Transport benefits and / or performance measures, which are quantifiable and can be measured, are described using benefits mapping from an Investment Logic Map (ILM) and other benefits / outcomes modelling.

2.2 Strategic Alignment

The proposed programme considers and progresses the Government priorities, regional priorities and the One Network Road Classification (ONRC) outcomes & measures. The strategic drivers are aligned to the 2021 GPS and Waka Kotahi's 10 year plan, Arataki.

The Business Case:

- supports and aligns to government priorities,
- takes account of regional priorities,
- is informed by Waka Kotahi's 10 year plan, Arataki and
- responds to the ONRC customer levels of service (CLoS) and performance measures framework.

The associated Activity Management Plan (AMP) has been developed to be consistent with, and contribute towards achieving wider national and regional land transport priorities and objectives. These priorities and objectives are guided by the GPS, Arataki and the Regional Land Transport Plan (RLTP). By ensuring alignment with these high level strategic

documents, the Council will not only realise its local strategic vision, but will also play its role in achieving a fit for purpose, regionally and locally integrated land transport network.

2.2.1 Overarching Strategic Drivers

The overarching strategic drivers and objectives of the proposed investment in the road maintenance programme are as follows.

- Improve public confidence and demonstrate greater value from the land transport network.
- Focus all levels of transport planning and delivery on the goals, strategy and expectations of the GPS and Council.
- Work collaboratively with other Road Controlling Authorities (RCA's) to build capability, enable innovation and develop customer-focused systems.
- Understand Council's contribution to the wider transport system.
- Collaborate with other RCA's to standardise systems.
- Understand the importance of Council's role in planning and delivering community outcomes.
- Improving investment decision making.

Customer focused investment

- Deliver a step change in customer focused investment through quality governance, leadership and collaboration.
- Build a trusting relationship with the community, governance and funding partners to demonstrate that funds are being used to achieve the right outcomes at the right CLoS.

Activity management excellence

- Deliver a step change in Council's ability to deliver fit for purpose activity management.
- Develop and maintain an AMP that shifts the focus from activities and assets to customer outcomes.
- Promote performance and efficiency.

Evidence based decision making

- Understand and use data to deliver transparent, evidence based investment.
- Compare the performance of Council's network, by classification, with peers, regionally and nationally, with a customer focus.
- Over time, the ONRC will inform the district plan and integrate thinking on how the transport network, place and space influence each other.

Data acquisition, analysis and use

- Using improved network benchmarking metrics to identify and target opportunities for improvement.
- Aim to enhance the modelling of asset condition and the maintenance and renewal works required to meet service level targets for the least long-term cost.
- Increase confidence that the current and planned renewals programmes will be sustainable.
- Use information and systems across the sector to enable the future transport system.

- It is vital that quality data is collected, stored and used to enable quality decision making.
- Analyse the data to provide evidence that supports infrastructure investment decisions that are aligned with the GPS and community outcomes.

Service delivery excellence

- Requires changes in the supply chain (governors, clients, consultants, contractors) to improve delivery.
- Connect with other Councils facing similar issues to develop greater efficiencies.

2.2.2 Government Policy Statement on Land Transport

The Government has a strong focus on driving improved performance from the land transport system and investing in new transport infrastructure. This is primarily articulated through the GPS. The GPS sets out the direction for land transport in New Zealand and outlines the results the Government wishes to achieve from allocation of transport funds from the National Land Transport Fund (NLTF). The AMP must be consistent with the GPS.

2.2.2.1 Strategic priorities

The 2021 GPS considers that investment will be guided by 4 strategic priorities, shown in Figure 1, and described in greater detail below:

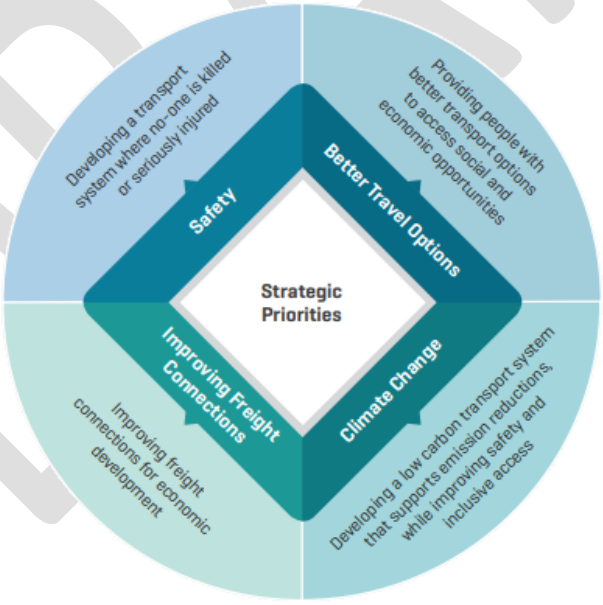


FIGURE 1 – GPS 2021 STRATEGIC PRIORITIES

Safety

The primary focus of this priority is to develop a transport system that advances New Zealand's vision that no-one is killed or seriously injured while travelling. New Zealand roads will be made substantially safer.

Better travel options

The primary focus of this priority is to improve people's ability to get to places where they live, work and play and to make sure our major cities have transport networks that are fit for purpose and fit for the future.

Improving freight connections

Well-designed transport corridors with efficient, reliable and resilient connections will support productive economic activity.

Climate change

Investment decisions will support the rapid transition to a low carbon transport system, taking account of the ICCC target recommended to Cabinet (until emissions budgets are released in 2021), and contribute to a resilient transport sector that reduces harmful emissions, taking account of the emissions reduction target recommended to Cabinet (until emissions budgets are released in 2021).

2.2.2.2 Principles for investing

The 2021 GPS – currently in draft form - states that:

> *'Transport investment decisions need to be transparent and provide the best possible impact and value to New Zealanders'*.

In essence, the GPS proposes investment decisions are based on the following principles:

Alignment

The case for investment shows alignment to the key deliverables expected in the GPS.

Effectiveness

The case for investment shows meaningful contributions to the identified results and that alternatives have been considered.

Efficiency

The case for investment should achieve the best possible outcome for the total cost of ownership (or whole-of-life cost). This includes considering the appropriate funding source and the whole life costs and benefits (both short and long-term, and monetised and non-monetised). An established technique supporting this is cost benefit analysis.

Making the most of our existing land transport network

The case for investment should incorporate a mode neutral approach, integrated planning, demand management and optimisation of existing networks.

Increasing benefits through innovation

The case for investment supports value for money by providing alternatives or better choices in the way investments are made and used.

2.2.2.3 Measuring outcomes

Factors to assess the success of investments are based on the Transport Outcomes Framework, developed by the Ministry of Transport (MoT) and shown in Figure 2 below:

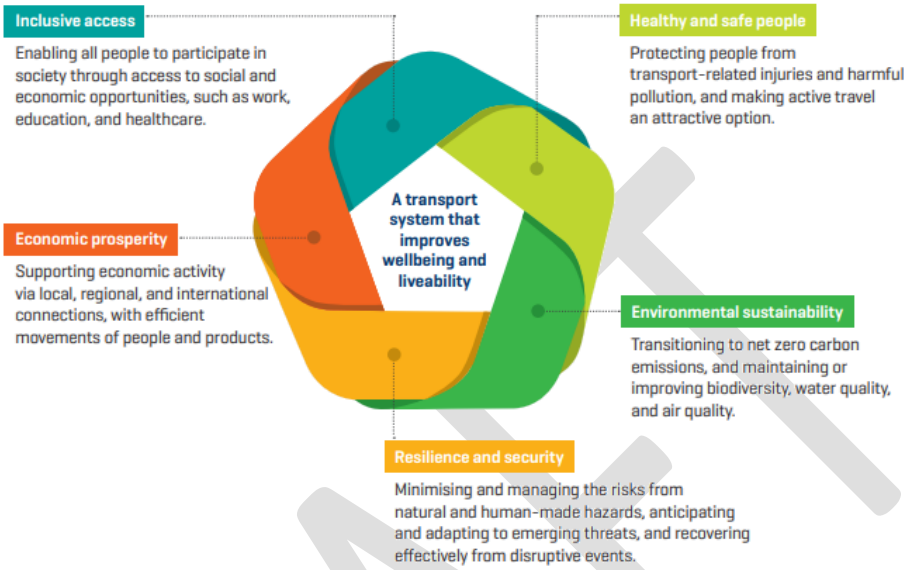


FIGURE 2 - TRANSPORT FRAMEWORK OUTCOMES

The relationship showing alignment of the Transport Outcomes Framework with the GPS Strategic Priorities and associated indicators of success is summarised in Table 2:

TABLE 2 - STRATEGIC PRIORITY ALIGNMENT TO TRANSPORT OUTCOMES FRAMEWORK

Desired result	Transport Outcome(s)					Proposed indicator(s)
	Healthy and safe people	Inclusive access	Economic prosperity	Resilience and security	Environmental sustainability	
Strategic priority 1: Developing a transport system where no-one is killed or seriously injured						
1. Reduction in road deaths and serious injuries	✓		✓			A. Road deaths and serious injuries
						B. Hospitalisations from road crashes
						C. Deaths and serious injuries where alcohol, drugs, speed, fatigue or distraction was a contributing factor
2. Safer land transport network	✓	✓		✓		D. % of state highway and local road networks modified to align with a safe and appropriate speed
						E. % of road network covered by automated safety cameras
						F. Number of dedicated road policing staff
Strategic priority 2: Better transport options to access social and economic opportunities						
3. Improved access to social and economic opportunities		✓	✓			G. % of jobs that are accessible (within a reasonable travel time) by mode
						H. % of people with access to essential services (i.e. shopping, education and health facilities) by mode
4. Public transport and active modes are more available and/or accessible	✓	✓			✓	I. % of population with access to frequent public transport services
5. Increased use of public transport and active modes	✓	✓			✓	J. Mode share for people (i.e. % of travel by mode)
						K. Number of passenger boardings using urban public transport services (by region)
Strategic priority 3: Improved freight connections to support economic development						
6. Freight routes that are more reliable			✓	✓	✓	L. Predictability of travel times on priority routes
						M. Mode share for domestic freight (i.e. % of freight moved by road, rail, and coastal shipping)
						N. Number of affected travel hours that priority routes are unavailable
7. Freight routes that are more resilient				✓		O. % of priority routes that have viable alternative routes
						P. Kilometres of road and rail infrastructure susceptible to coastal inundation with sea level rise
Strategic priority 4: Reduced greenhouse gas emissions from land transport						
8. Reduced greenhouse gas emissions from land transport					✓	Q. Tonnes of greenhouse gases emitted per year from land transport
9. Reduced air and noise pollution	✓				✓	R. Tonnes of harmful emissions emitted per year from land transport
						S. Number of people exposed to elevated concentrations of land transport-related air pollution
						T. Number of people exposed to elevated levels of land transport noise

2.2.3 Arataki – New Zealand Transport Agency's 10 Year Plan for the Land Transport System

2.2.3.1 National overview

The New Zealand Transport Agency has released its 10 year plan for the land transport system (2021-2031), named **Arataki**, which provides direction at a National, Pan-regional (by Upper North, Lower North & South Island) and Regional level to transition from historical short-term, isolated and reactionary programme setting to more cohesive, long-term and proactive programme setting.

This is envisaged through 5 Step Changes and 6 Levers (shown in Figure 3 below) to achieve the Government's desired outcomes:

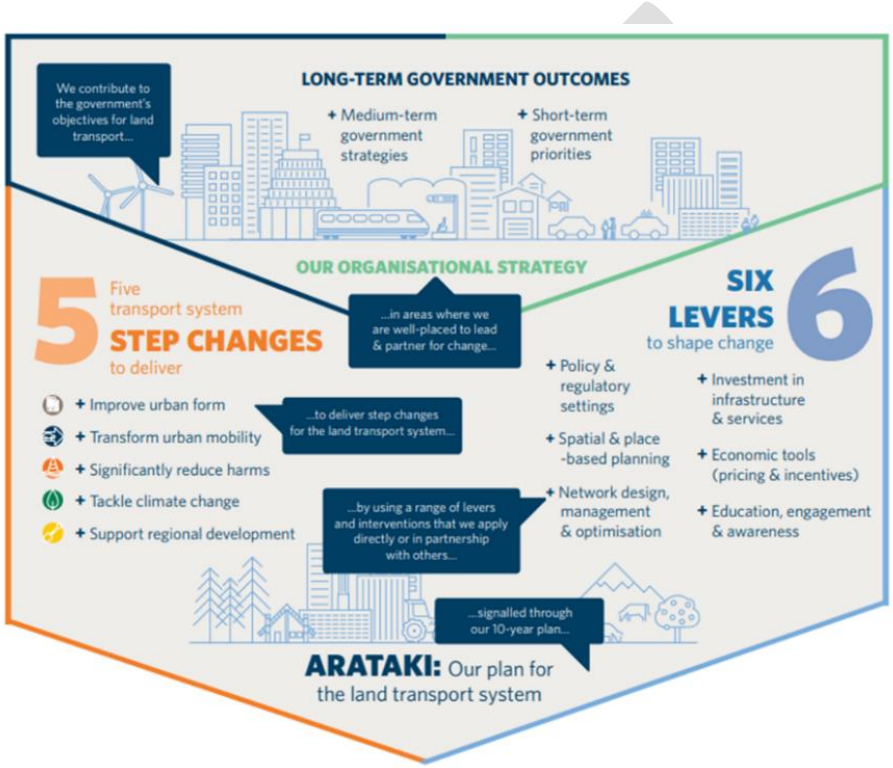


FIGURE 3 – ARATAKI 10 YEAR PLAN, STRATEGIC APPROACH

The 5 Step Changes are expanded upon below and are seen to reflect the Transport Outcomes Framework (described in Section 2.2.2 Government Policy Statement on Land Transport):

Improve urban form

Use transport to improve connections between people, product and places.

Transform urban mobility

Shift from our reliance on single occupancy vehicles to more sustainable transport solutions for the movement of people and freight.

Significantly reduce harms

Transition to a transport system that reduces deaths and serious injuries and improves public health.

Tackle climate change

Support the transition to a low-emissions economy and enhance communities' long-term resilience to the impacts of climate change.

Support regional development

Optimise transport's role in enabling regional communities to thrive socially and economically.

To deliver the vision and targets of the Strategy, key components (referred to as the 6 levers) have been identified for government intervention and facilitation by means of:

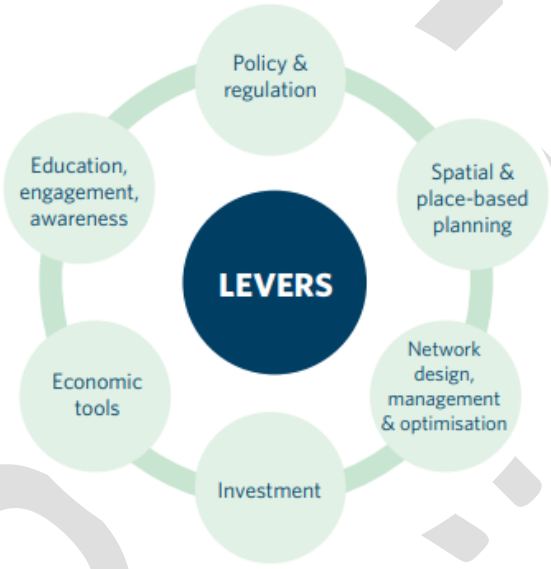


FIGURE 4 - ARATAKI 10 YEAR PLAN, SIX LEVERS TO SHAPE CHANGE

2.2.3.2 Identified Regional Issues and Desired Outcomes

The issues and desired outcomes for Manawatu-Whanganui have been summarised in the Waka Kotahi Arataki Regional Statement (and reflected in Figure 5, displaying the step change to be prioritised) below:

> *'[The] focus … is on supporting urban growth and regional development initiatives. [We] will work with partners to encourage increased use of public transport, walking and cycling, particularly in Palmerston North, manage the impacts of climate change, deliver safe and reliable inter-regional journeys and provide appropriate levels of service across all transport networks.'*

FIGURE 5 - PRIORITY STEP CHANGES FOR MANAWATŪ-WHANGANUI

Following from this statement, it is expected that Council should engage in - and prioritise - activities that help deliver these benefits. The Step Changes for Manawatu-Whanganui (listed in order of priority) are to:

1. Support regional development,
2. Reduce harm,
3. Improve urban form,
4. Transform urban mobility and
5. Tackle climate change.

The Arataki 10 year plan and the 2021 GPS on land transport funding are part of a raft of changes to the transport sector and are the driving force behind achieving an affordable, integrated, safe, responsive and sustainable transport system.

2.2.4 National Land Transport Programme

To achieve the Government's strategic priorities for the land transport system, the Council is guided by the strategic objectives in the 2021 GPS and Arataki, which set out how the Government intends the priorities will be delivered.

The Council will be working with others to:

- apply a mode neutral approach to transport system investment
- use technology and innovation to achieve improved performance
- integrate land use, transport planning and delivery activities.

From the Council's investment perspective, key strategic shifts are:

- a step-change in reducing deaths and serious injuries
- an increased focus on environmental outcomes and greater parity across economic, social and environmental outcomes
- a proactive modal shift in urban areas from roads to public transport and active modes
- a new emphasis on the role of transport infrastructure in 'urban place-making', to support liveable towns
- a substantial increase in local road improvements, safety improvements, and resilience (including climate change adaptation)
- increased investment in optimising the efficiency of the system across modes.
- keeping maintenance and resilience treatments at an optimal level.

The Transport Agency has developed a new Investment Decision Making Framework (IDMF) - replacing the previous Investment Assessment Framework (IAF) - to give effect to the Government's transport priorities, which provides guidance to Council on how investment proposals will be prioritised. The IDMF is part of the Transport Agency's investment decision-making system, and is used to assess and prioritise NLTF funding for projects and programmes proposed for inclusion in the NLTP.

2.2.5 National Infrastructure Plan

A new independent infrastructure body, the New Zealand Infrastructure Commission - Te Waihanga, has been established to ensure that New Zealand gets the quality infrastructure investment needed to improve our long-term economic performance and social wellbeing.

The 2015 National Infrastructure Plan sets the vision that by 2045 New Zealand's infrastructure is resilient and coordinated, and contributes to economic growth and increased quality of life. The plan provides the framework for infrastructure development over the next 30 years and is focused on ensuring better use of existing infrastructure and allocating new investment to meet long-term needs. The strategy indicates that:

> '*…the first plan will be reported to government by the end of 2021 and thereafter at least every 5 years…*' and that '*…the strategy will cover the ability of existing infrastructure to meet community expectations; current and future infrastructure needs and priorities; as well as any barriers which could impede the delivery of infrastructure or services arising from it…*'

2.2.6 Horizons Regional Land Transport Plan

The RLTP provides the strategic direction and policy framework for developing and investing in the region's land transport network and sets out how the region proposes to invest to achieve its objectives. The RLTP must contribute to the purpose of the LTMA which seeks '*an effective, efficient, and safe land transport system in the public interest*'. The RLTP is also required to be consistent with the GPS.

The LTMA (amended October 2019) requires RLTPs to be issued every 6 years and reviewed every 3 years. The RLTP is prepared by the Regional Transport Committee (RTC), which is comprised of representatives from Horizons Regional Council, mayors from each of the local councils in the region, and New Zealand Transport Agency.

The current 2015-2025 (reviewed 2018) RLTP is comprised of 3 key parts:

Part One sets out the strategic direction for the region. It identifies the key transport issues (problems) that face our regional land transport system over the next 30 years. Objectives (benefits) have been formulated in response to these issues and are the outcomes being sought for the transport network. Also in Part One are the strategic priorities for the region. The strategic priorities are the key areas of focus and will guide investment in the land transport network for the duration of the Plan. Below the strategic priorities are a suite of policies that outline how each strategic priority will be achieved.

Part Two identifies the key programmes that will deliver on the overarching strategic direction of the Plan. The detailed programmes and specific projects within Part Two link to the strategic direction and priorities of the Plan. Significant programmes are ranked according to their level of significance and alignment with the strategic direction of the Plan. The programmes have been formulated in collaboration with the region's territorial authorities and the NZ Transport Agency. They take a regional holistic view to seek an integrated land transport system as well as focussing on respective local issues.

Part Three incorporates the significant inter-regional activities, plan monitoring and appendices. The appendices include legislative requirements, statistical information, further information on key projects, and the significance policy that provides guidance on the threshold for a significant activity and consultation requirements.

While much of the vision and strategic policy direction is set at the regional level, the project of works to physically deliver improving the regional land transport network is actioned by much of the programmed works contained within the local AMP's. Therefore, by achieving the specific projects and objectives in this AMP, this will contribute towards solving the problems and realising the benefits identified in the RLTP, and ultimately achieving an effective, efficient and safe regional land transport system, while also maximising economic benefits and opportunities for the regional growth.

2.2.7 Council's Strategic Goals

The identified Strategic Goals guide investment in the land transport network for the duration of the AMP. These goals link the 'strategic' element with the 'operational' aspects. Council has identified its priorities to provide a clear direction of where the District wishes to invest over the next 10 years. This also provides a clear picture of the District's wishes to the Transport Agency when it compiles the National Land Transport Programme (NLTP).

Council's vision is for 'A Thriving District'. To make this vision a reality, Council has set 9 community outcomes, as follows:

	Council's Strategic Goals	Targeted outcome
1	Infrastructural service levels	Ensuring services meet appropriate standards and are affordable
2	Economic development	Facilitating growth through infrastructure investment, an enabling regulatory framework and collaboration
3	Future looking community facilities	Ensuring community facilities are future-fit and appropriately managed
4	Earthquake prone buildings	Reducing the people-risk from Council-owned earthquake-prone buildings and providing a leadership/support role for other earthquake-prone buildings
5	Communication & engagement	Ensuring communities are well-informed and engaged in decision-making, and productive partnerships are established/maintained
6	Rates affordability & value	Ensuring rate levels are prudent and value to ratepayers demonstrated
7	Environment & climate change	Responsiveness to expectations from the community and Government for more sustainable use of resources, a reduced carbon footprint, and planning for projected impacts in weather and sea-level changes
8	Regulatory performance	Implementing an enabling regulatory framework which is explicit on whether (and how) Council will exercise any statutory discretion available to it
9	Community resilience	Advocating for, working in partnership and supporting groups which are concerned with the well-being of the District's communities

The above priorities find themselves highly aligned with the objectives identified by the RLTP and are henceforth representative of Council's goals within the land transport function of Local Government:

Effective and efficient road maintenance and delivery

- ensure the road network provides suitable access to business, educational, defence, social and recreational services for the District's residents, visitors and businesses.
- ensure continuous improvement in District road safety

Improve connectivity, resilience and the safety of strategic routes to and from key destinations linking north-south and east-west, while factoring in demographic changes and impacts on land use

- maintain and as necessary improve the strategic transport network to ensure safe, efficient, resilient intra- and inter-regional accessibility and links with national transport corridors.
- support the provision of effective connections to the District / Region's principal economic growth and productivity areas.
- support the efficient and effective movement of freight within and through the District.
- to ensure land use planning recognises potential impact on existing transport systems.
- encourage effective integration of transport and land use planning in growth areas of the District.

Integrated walking and cycling network

- encourage the uptake of walking and cycling as transport modes and for recreation.

Appropriate network of tourism routes

- cater for the provision of clearly defined tourism routes.

Alignment between the RLTP's and Council's Strategic Goals is summarised in Table 3 below:

TABLE 3 - COUNCIL STRATEGIC GOALS

Council's Strategic Goals	Infrastructural service levels	Economic development	Future looking community facilities	Earthquake prone buildings	Communication & engagement	Rates affordability & value	Environment & climate change	Regulatory performance	Community resilience
Effective & efficient road maintenance & delivery • suitable access to business, educational, defence, social and recreational services • continuous improvement in District road safety	✓	✓			✓	✓	✓		✓
Improving connectivity • improve the strategic transport network • efficient and effective movement of freight • effective integration of transport & land use	✓	✓		✓	✓	✓		✓	✓
Walking & cycling network	✓		✓		✓	✓	✓		✓
Tourism network	✓	✓	✓		✓	✓			✓

2.2.8 Other References

The following documents are periodically published / updated in reference to updated Government strategic direction, priorities and objectives and consequently influence management of transportation activity:

- Waka Kotahi's Statement of Intent 2018-2022 (current revision; June 2019)
- Waka Kotahi's Statement of Performance Expectations 2019-20
- Waka Kotahi's Rules, Policies and Guidelines (including published manuals)
- The Road Efficiency Group (REG): One Network Road Classification (ONRC) Guidelines
- International Infrastructure Management Manual (IIMM)
- Ministry of Transport: New Zealand Rail Plan

2.2.9 One Network Road Classification

Programmed works in this AMP are consistent with the One Network Road Classification (ONRC), which ensures the delivery of the right infrastructure and services to the right level and at the best cost. Consistency with the ONRC also contributes towards the Government's core priority of a land transport system that

'*…provide(s) the best possible impact and value to New Zealanders*'.

The ONRC was developed by local government and the NZ Transport Agency as a joint initiative. Through this simple classification, RCA's and the Transport Agency can now compare the state of roads across the country, and focus investment where it is needed most. Overall, RCA's and their ratepayers will get the right level of road infrastructure where it is needed, determined by a robust, impartial, nationally consistent tool.

2.2.9.1 Current state assessment

The ONRC Customer level of Service (CLoS) Performance Measures require an understanding of the changing context and environment. The CLoS continues to challenge systems that have been in place for a long time; as a result Council periodically reviews its previous assumptions and sets the new frameworks for the future. The ONRC supports investment in a fit for purpose level of service consistently across the country. Council can still choose to invest more to obtain a higher CLoS if it desires to do so, but this will require a conversation with the Transport Agency about how fitness for purpose is established.

The current ONRC CLoS hierarchy has been developed by the Roading Efficiency Group (REG) to define what class of asset is required. The REG has taken the view that uniformly high operating conditions across all roads in the network are too costly to achieve and would not present an economic return on investment. On the other hand, it is impossible to manage an infinite number of standards and performance levels across the network. For this reason, and for reasons of equity and transparency, all roads meeting a specific range of functional criteria should achieve a uniform CLoS. The criteria 'bins' to which road sections are assigned are the Road Classifications.

The ONRC currently divides New Zealand's roads into 6 classifications (with additional sub-categories of Low volume and High volume at the extreme ends), shown in Figure 6 on the following page.

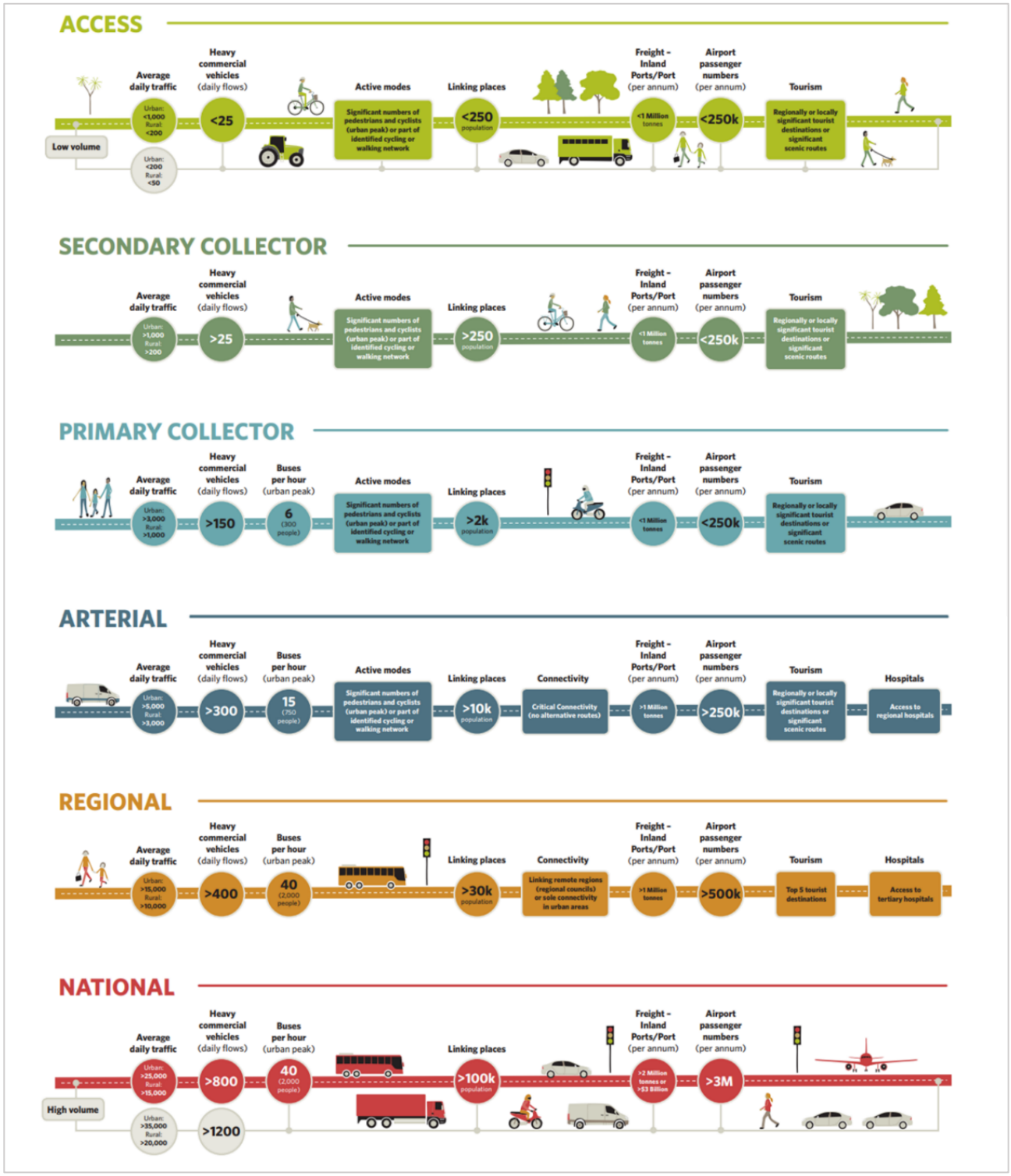


FIGURE 6 - ONE NETWORK ROAD CLASSIFICATION THRESHOLDS

2.2.9.2 Future state assessment

Currently being developed is the successor to the ONRC, the One Network Framework (ONF). The ONF is an evolution of the ONRC, enhanced to better include people that are walking, riding a bike or taking public transport. It will also reflect

that transport corridors are not just for travelling through. They are also places where people stop, socialise, enjoy and do business.

2.2.10 ONRC Performance Measures Framework

The ONRC framework is divided into 6 Performance Measures; these performance measures have been summarised below in Table 4, and matched with the objectives and measures defined in the 2021 GPS and Arataki to show their alignment:

TABLE 4 - ONRC PERFORMANCE MEASURES, ALIGNED TO GPS & ARATAKI

			GPS Strategic Priority				Arataki Step Changes				
ONRC Performance Measures			S	T	F	C					
Safety	e.g. number of fatal and serious injuries each year on the network		✓					✓	✓		
Amenity	e.g. smoothness of the sealed road network		✓	✓				✓	✓	✓	
Travel Time Reliability	e.g. network capacity to meet demand			✓	✓		✓		✓		
Resilience	e.g. journeys impacted by unplanned events				✓	✓	✓				✓
Accessibility	e.g. length of network not available to all vehicle classes				✓		✓				
Overarching											
Efficiency	e.g. cost of pavement related maintenance and renewal activities on network		The case for investment should achieve the best possible outcome for the total cost of ownership								

The ONRC Performance Measures framework has been adopted by Council to assess its effectiveness in the implementation of road maintenance and renewal activities.

Council has access to wide range of data that can be used to provide a baseline assessment of the existing or possible future problems. Some resources are shown below:

- REG Performance Measures Reporting Tool (PMRT)
- Waka Kotahi Monetised and Non-monetised Benefit and Cost Manuals (formerly the Economic Evaluation Manual)
- Waka Kotahi Crash Analysis System (CAS)
- Waka Kotahi 'MegaMaps' – Geographical Information System
- Waka Kotahi 'Communities at Risk' register
- Ministry of Transport Freight Demands Study
- Ministry of Transport Household Travel Survey
- Census / NZ demographic / NZ business surveys
- Council's growth and development strategies

- Council's walking & cycling strategy
- Council's annual resident satisfaction survey
- Road Assessment and Maintenance Management (RAMM) software

The maintenance work programs for road assets are developed using the RAMM software. This software is used by Council to manage Road Inventory Assets and Condition for the Network. RAMM is the complete package for asset maintenance, valuation, assessment, Forward Work Planning as well as inventory-based asset management. It also includes a range of report and analysis applications which complement the management functions.

RAMM is a tool for organising all the activities that go into providing and operating assets, ranging from the collection, processing and analysis of data, the identification of current and future needs and the development of rehabilitation and maintenance programs to implementation of the programs.

RAMM is used to analyse the high volume of detailed information required for a variety of asset management functions. RAMM has connectivity with other proprietary information software (e.g. Intramaps and Ozone) that Council has at its disposal, allowing information to be easily transferred and interrogated. GIS enables identification of an asset from the office or in the field, as well as facilitating the scheduling, reporting and co-ordination of maintenance activities.

3.0 Problems, Issues and Opportunities

3.1 Investment Logic Mapping

A facilitated Investment Logic Map (ILM) workshop was held to review, confirm and update understanding of current issues and business needs. The ILM process and subsequent summation of key identified problems are detailed in Figure 7 and Table 5 on the following page(s).

The relevant ONRC Performance Measure icons described in Table 4 have been allocated to each strategic response, to indicate how the effectiveness in addressing the problem will be assessed.

More detailed evidence and the proposed strategic response(s) to address these key problems, issues and opportunities have been developed in terms of:

- the Customer Levels of Service in the ONRC,
- national, regional and local priorities to progress Government priorities and
- Waka Kotahi's Arataki strategic plan.

These proposals can be found in Sections 3.2 to 3.5.

INVESTMENT LOGIC MAP | Rangitīkei District Council — **UPDATED FEBRUARY 2020**

PROBLEM	BENEFIT	STRATEGIC RESPONSE	SOLUTION: CHANGES	SOLUTION: ASSETS
LEGACY NETWORK Ageing network that is not meeting changing demands from increased traffic volumes & needs, resulting in decreasing Customer Level of Service (CLoS) and increasing reactive interventions. **55%**	**EFFICIENT NETWORK** A network that is efficient, supports economic activity, is fit for purpose and meets CLoS. Outcome Measures (OM's) KPI 1 : Safety KPI 2 : Accessibility KPI 3 : Efficiency KPI 4 : Amenity KPI 5 : Time Travel Reliability (TTR)	**IMPROVE:** ▶ reliability & cost effectiveness of the network	**DELIVER:** Optimised programmes that are affordable and consistent in cost within like classifications across NZ (ONRC)	▶ Resurfacing ▶ Rehabilitation ▶ Whole of Life (WoL) Costs
LOW NETWORK RESILIENCE Key routes at risk of closure due to increasing frequency and intensity of storm events. Flooding, rock & mud slides, snow and other storm damage is requiring significant and increasing emergency response. Forest harvests have a sudden and significant impact on the road network. **20%**	**RESILIENT NETWORK** An increasingly consistent accessible, fit for purpose network that meets CLoS. Outcome Measures (OM's) KPI 1 : Emergency Work Costs KPI 2 : Accessibility KPI 3 : Efficiency KPI 4 : TTR	**MINIMISE:** ▶ consequence of unplanned events to customers ▶ likelihood of unplanned events on route availability ▶ the number of journeys not made due to unplanned events ▶ the number of journeys impacted by unplanned events	**REDUCTION:** Identify risks and reduce magnitude of their impact and likelihood of occurring. **READINESS:** Develop operational systems and capabilities. **RESPONSE:** Immediate actions.	▶ Pavement ▶ Surfacing ▶ Drainage ▶ Road Structures ▶ Environment
SAFETY There is a high level of Serious and Fatal (S & F) crashes per Vehicle Kilometre Travelled (VKT). This results in high social and economic cost. **15%**	**SAFE NETWORK** Minimise the risk and consequences of crashes. Outcome Measures (OM's) KPI 1 : Serious & Fatal crashes KPI 2 : Collective Risk (Crash Density) KPI 3 : Personal Risk (Crash Rate)	**MINIMISE:** ▶ risk of crashes ▶ consequence of crashes ▶ risk of driver behaviour related crashes ▶ risk of crashes due to driver confusion **REDUCE:** ▶ consequences of crashes ▶ risk of crashes at night ▶ risk of loss of control crashes ▶ risk of crashes to active road users ▶ risk of crashes due to driver confusion	**REDUCTION:** ▶ Reduce annual S & F crashes per km ▶ Reduce annual S & F crashes per VKT and Risk Rating	▶ Resurfacing ▶ Rehabilitation ▶ WoL Service Costs ▶ Delineation ▶ Carriageway lighting ▶ Signs ▶ Edge markers ▶ RRPM's ▶ Pavement Marking ▶ Level Crossing Devices ▶ Network controls ▶ Vegetation Control ▶ Guardrails & Barriers ▶ Safety Management ▶ Minor Improvements
POPULATION GROWTH The district's population has grown over the past 10 years with growth currently at 1.4%. Increased housing and industrial development will require additional non-subsidised investment to upgrade / provide new infrastructure. **10%**	**ENABLE GROWTH** Growth in the Manawatū. Outcome Measures (OM's) KPI 1 : Growth statistics KPI 2 : Uptake of industrial land KPI 3 : TTR	**PROVIDE:** ▶ A "Programme Business Case" of economically justified projects that will enable housing and industrial development.	**CREATE:** New Infrastructure **UPGRADE:** Existing Infrastructure	▶ Industrial Areas ▶ Residential Areas

FIGURE 7 - INVESTMENT LOGIC MAP

For the issues identified in the ILM in Figure 7, Table 5 below further indicates the scale of each problem, and gives some indication of the relative importance and urgency of the issues:

TABLE 5 - INVESTMENT LOGIC MAP OUTCOMES & COMMENT

Problems	Key Impact(s)	Source(s)	Comment	Focus
Legacy Network	Forestry Harvest	Wood availability and related roading implications on Rangitikei District roads 2018-2047; A forecast study prepared for RDC (Moore and Associates, February 2017)	Forest harvest schedules are expected to be most intense in the period 2018-2030 with the majority of the District's forest estate reaching harvestable age. The prediction that **62%** (6.24 mega-tonnes) of harvest will be extracted by 2029-30 stands.	**55%**
Low Resilience of the Network	Emergency Reinstatement	Available Waka Kotahi Resources: Expenditure tables, Transport Investment Online (TIO) output	The 3 yearly rolling mean annual cost for Emergency Reinstatement has peaked at **$4.1 million** (in 2017-18). Recent reductions in Emergency Reinstatement costs are as a result of: a) increased investment from 2018 onwards and b) a lack of recent severe weather events indicates that sustaining investment at this level is currently combatting the issue.	**20%**
Safety	Fatal and Serious (F & S) crash frequency on the District's road network	REG Performance Measures Reporting Tool Crash Analysis System MegaMaps	Whilst Collective Risk is below or comparable with the peer group in all Road Categories and is classified as Low to Low-Medium, the Personal Risk is above the peer group for Low Volume, Access & Secondary Collector roads and is classified as **High**.	**15%**
Population Growth	Demand on new infrastructure	Stats NZ Census Data Infometrics Analysis RDC traffic count programme	Growth rate for the district is **1.40%** per annum for the period 2013 to 2018 (population growth in PN is 1.14% and 2.07% at the national level). Traffic volumes have increased from 70.7 million VKT to **79.8 million VKT** between 2015 and 2019. Hence we are experiencing moderate growth with forecasts (both economic and population) anticipating this to continue, based on existing economic/financial, affordability and labour market conditions.	**10%**

3.2 Problem 1: Legacy Network

The form and function of the road network are not meeting the changing demands and needs, resulting in decreasing Levels of Service and increasing reactive interventions, primarily due to forestry activity.

Forestry Harvest Impact

As a result of large scale forest establishment during the 1990's, harvesting has commenced from 2018-19 and initially predicted to peak during the 2024-25 to 2029-30 period. This has begun to change road usage patterns and place pressure on rural road maintenance schedules. The size and remote locations of some major forest lots have required road maintenance and harvest regimes that maintain both public use and harvest sustainability. Figure 8 below shows the initial prediction at the start of the 2018-19 period, denoting tonnage extraction in 3 year blocks:

Source : 'Wood availability and related roading implications on Rangitikei District roads 2018-2047; A forecast study prepared for RDC' (Moore and Associates, February 2017)

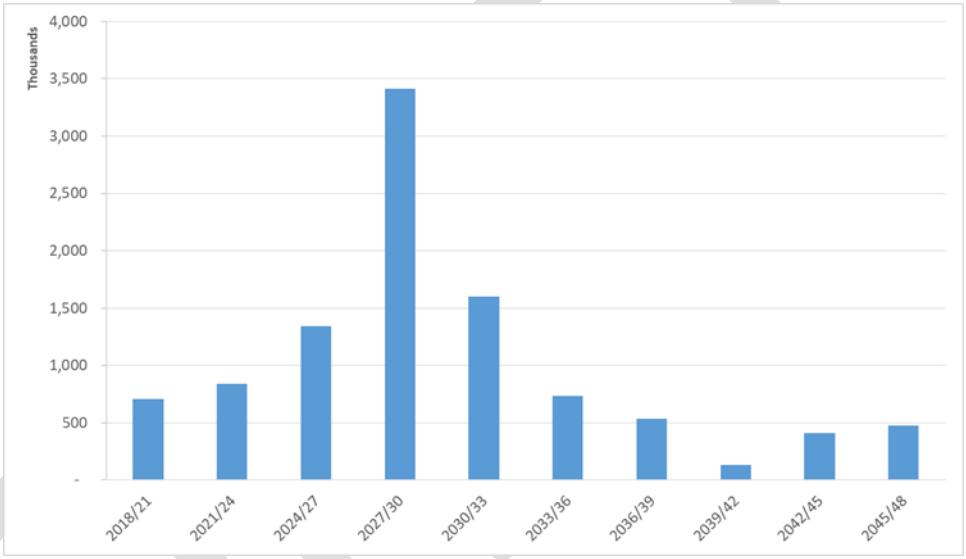


FIGURE 8 - FORECAST WOOD SUPPLY (*P.RADIATA*) FOR THE RANGITIKEI DISTRICT 2018-2047

3.2.1 Evidence

Since the initial prediction displayed above, tonnage extraction was immediately seen to increase in 2019, primarily from sites not expected to be harvested until the 2027-30 block. This acceleration was due to highly favourable markets, redefining the boundaries of profitability for timber suppliers.

To date, the impact of logging trucks has been constrained to a small number of routes servicing larger scale harvest operations; significant deterioration has been observed to affected pavements and reacted to in an ongoing manner. These reactive works have had moderate success in managing the impact so far.

As of early 2020, a hiatus in logging activity throughout New Zealand has been observed; the result of global efforts to prevent a pandemic viral event from taking hold (namely the Coronavirus, or Covid-19). Although the outcomes of these efforts are in their infancy, it is – at this time – prudent to expect that logging will regain momentum toward originally predicted levels by 2030.

The graphs below show the updated predicted extraction tonnage and cumulative percentage of harvested yield by 3 year block (including the preceding 2018-21 period). At present, the original prediction that 62% of all tonnage will be extracted by 2029-30 stands.

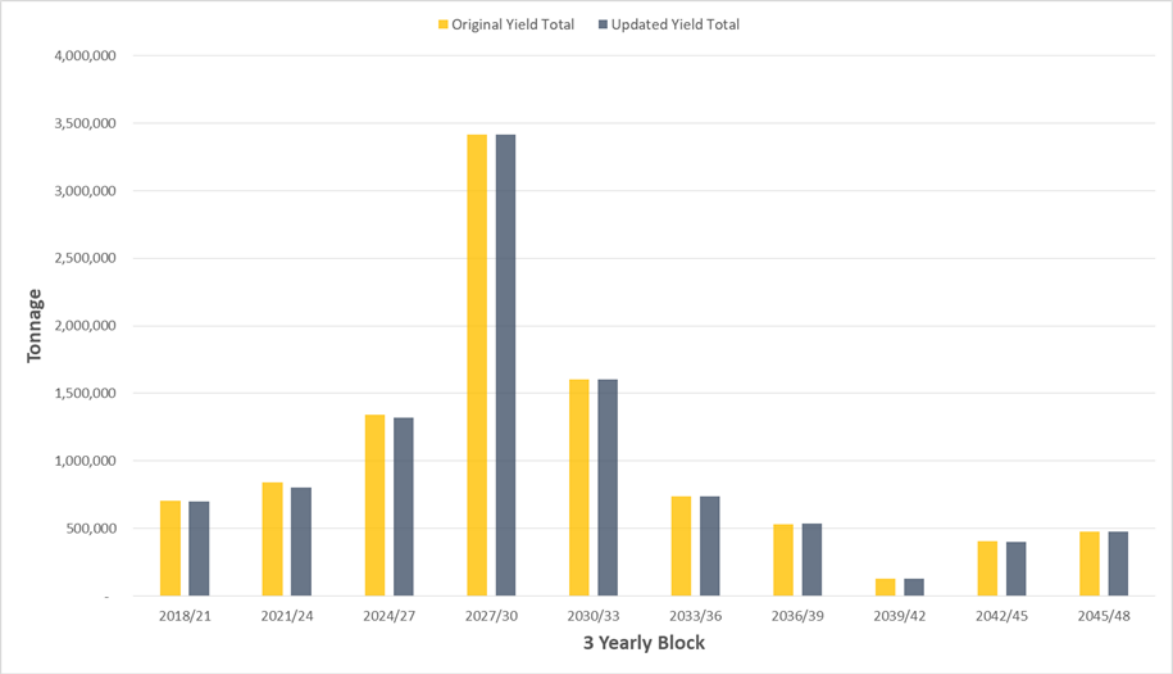


FIGURE 9 - UPDATED ESTIMATED EXTRACTION TONNAGE BY 3 YEARLY BLOCK (ALL HARVEST SITES)

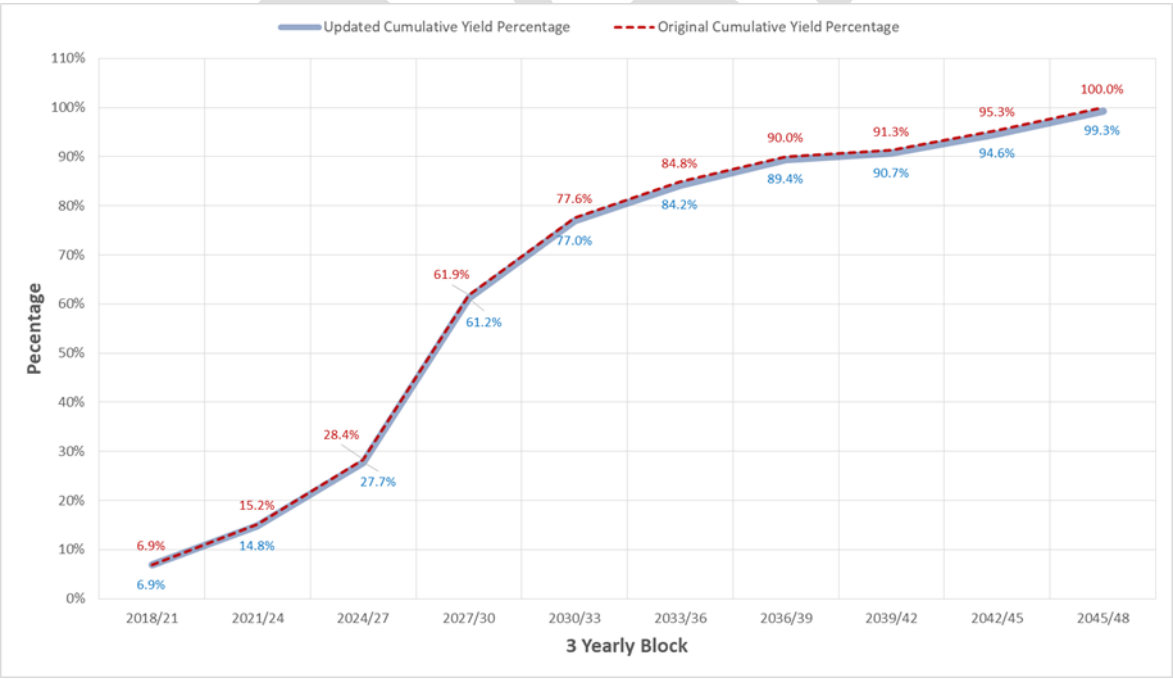


FIGURE 10 - UPDATED CUMULATIVE EXTRACTION TONNAGE BY 3 YEARLY BLOCK (ALL HARVEST SITES)

Therefore, as can be seen from the above graphs, predicted yields will likely be sustained for the next decade, placing continued (if slightly deferred) pressure on the road network.

The graph below shows the top 10 harvest sites by yield (from a total of 140 identified harvest sites), amounting to 56% of overall tonnage predicted for extraction within the Rangitikei district.

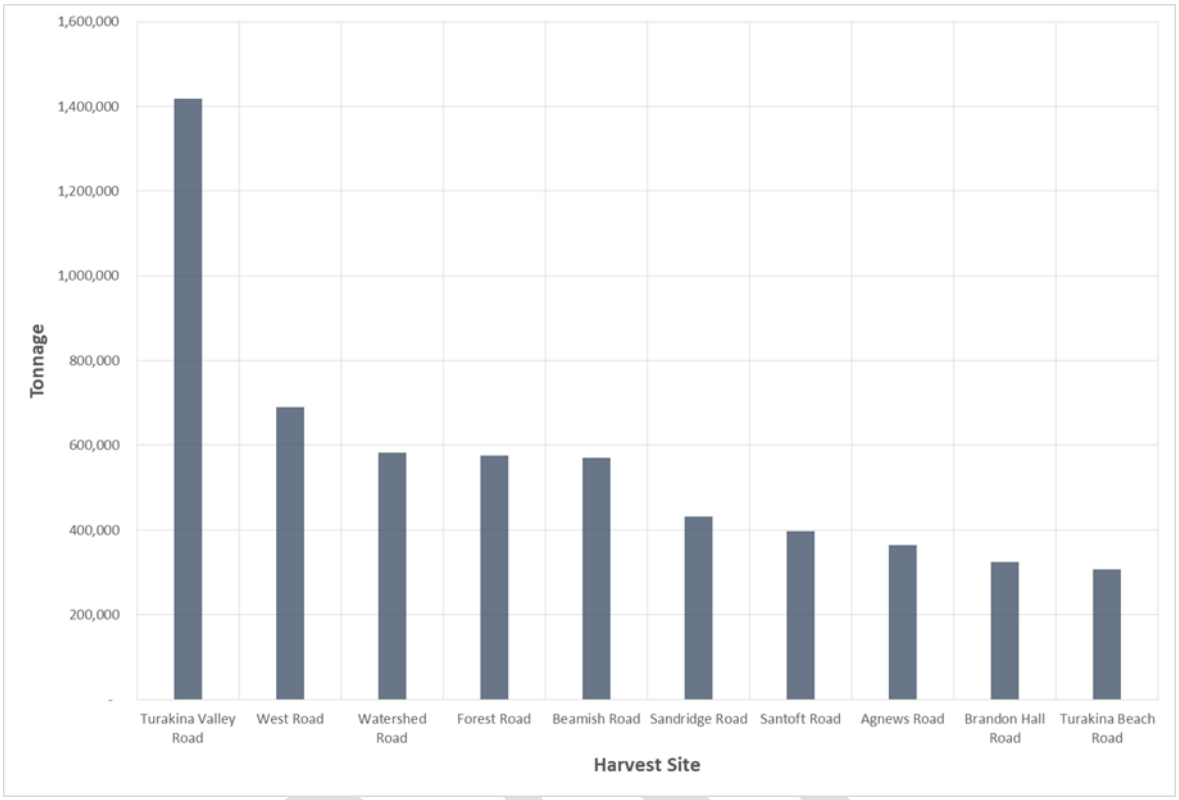


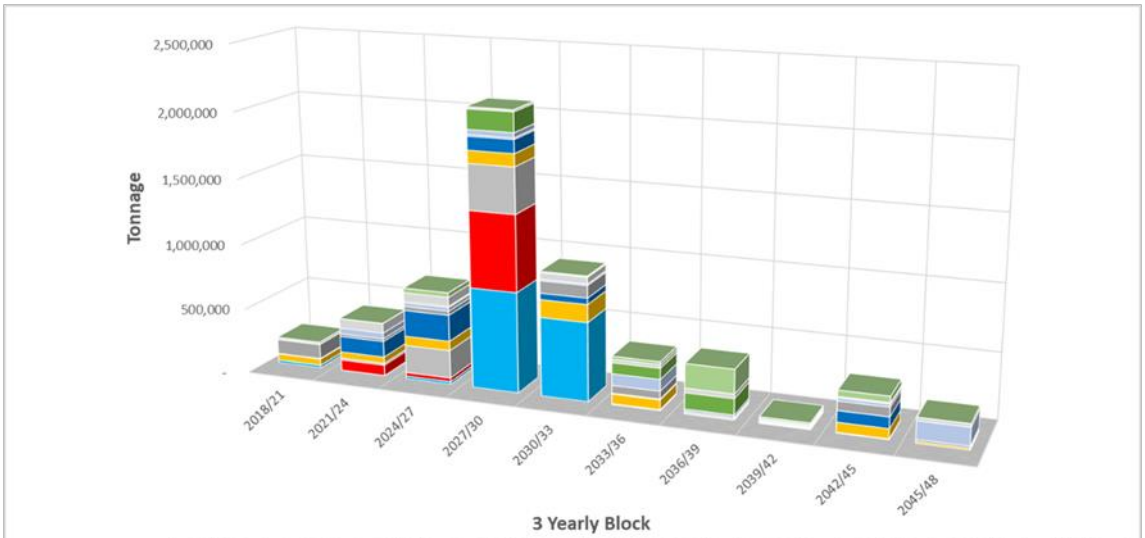
FIGURE 11 - EXTRACTION TONNAGE BY SITE (10NO HIGHEST YIELD LOCATIONS)

Table 6 below shows the potential haul roads for the top 10 harvest locations:

TABLE 6 - POTENTIAL HAUL ROADS FOR THE 10 HIGHEST YIELD HARVEST SITES

Route 1 (Source Road)	Route 2	Route 3	Route 4
Turakina Valley Rd	Mangahoe Rd	Ongo Rd	SH 1
Turakina Valley Rd	James Rd	Ongo Rd	SH 1
West Rd	Murimotu Rd	SH 1	
Watershed Rd	Kie Kie Rd	SH 1	
Forest Rd	Parewanui Rd	SH 3	
Beamish Rd	Santoft Rd	SH3	
Sandridge Rd	Parewanui Rd	SH 3	
Santoft Rd	SH 3		
Agnews Rd	Murimotu Rd	SH 1	
Brandon Hall Rd	Parewanui Rd	SH 3	
Turakina Beach Rd	SH 3		

The combined graph/table in Figure 12 below shows the tonnage (by 3 year block) to be extracted from the 10 highest yield harvest sites:



	2018/21	2021/24	2024/27	2027/30	2030/33	2033/36	2036/39	2039/42	2042/45	2045/48
Turakina Beach Road	-	1,007	34,344	1,537	9,381	21,465	182,161	12,243	44,944	-
Brandon Hall Road	14,628	73,723	67,840	13,356	48,442	26,659	33,973	10,971	10,335	24,486
Agnews Road	-	-	9,805	148,559	-	82,945	122,377	-	-	-
Santoft Road	4,134	44,944	27,878	36,570	11,607	87,927	17,702	9,010	22,207	134,408
Sandridge Road	110,823	21,465	31,959	11,978	92,962	58,989	11,130	7,950	69,748	15,317
Beamish Road	4,558	122,854	200,234	101,866	48,389	6,625	-	636	85,489	-
Forest Road	49,078	49,131	72,716	95,983	133,984	73,723	8,904	5,459	73,352	13,674
Watershed Road	1,219	15,370	213,325	346,249	424	5,936	-	-	-	-
West Road	-	81,567	28,567	579,979	-	-	-	-	-	-
Turakina Valley Road	19,610	2,968	20,246	763,730	597,310	2,544	-	3,710	7,473	-

FIGURE 12 - EXTRACTION TONNAGE BY SITE & 3 YEARLY BLOCK (10 HIGHEST YIELD LOCATIONS)

3.2.1.1 Sealed Pavement Performance

Increased pavement maintenance activity was experienced in the 2018-19 period, easing back to historic quantities in 2019-20. Figure 13 below shows sealed pavement repairs - by area - since 2015-16:

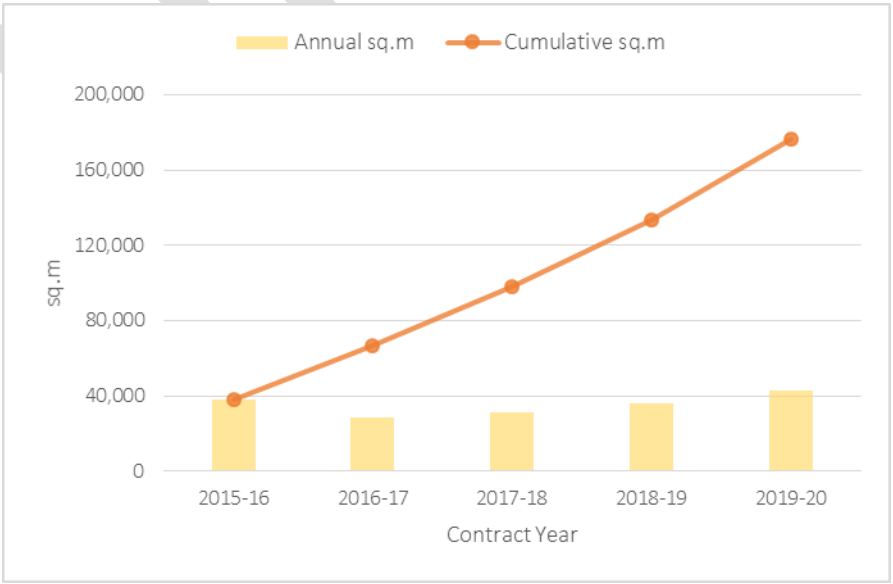


FIGURE 13 - AREA OF PAVEMENT TREATMENT BY CONTRACT YEAR

After consistent quantities of pavement repairs between 2015-16 and 2017-18, a slight increase in the area of sealed pavement repair was observed and addressed in the 2018-19 and 2019-20 years. This increase coincided with the commencement of logging operations in the district.

Logging quantities are estimated to increase by 14% from that experienced between 2018-21, resulting in an anticipated extra 1,348m2 of pavement repairs (per annum) above the quantity experienced during the 2019-20 year.

3.2.1.2 Unsealed Pavement Performance

It can be seen that substantial unsealed pavement deterioration occurred in 2017-18 and 2019-20, given the significant increase in 'pothole' and 'dig-out' type repairs being carried out respectively. This deterioration (and subsequent repair) occurred prior to the Covid-19 lockdown, instigated by Central Government in February 2020. Figure 14 below shows the recorded and treated area of potholes and dig-outs from 2015-16 onwards:

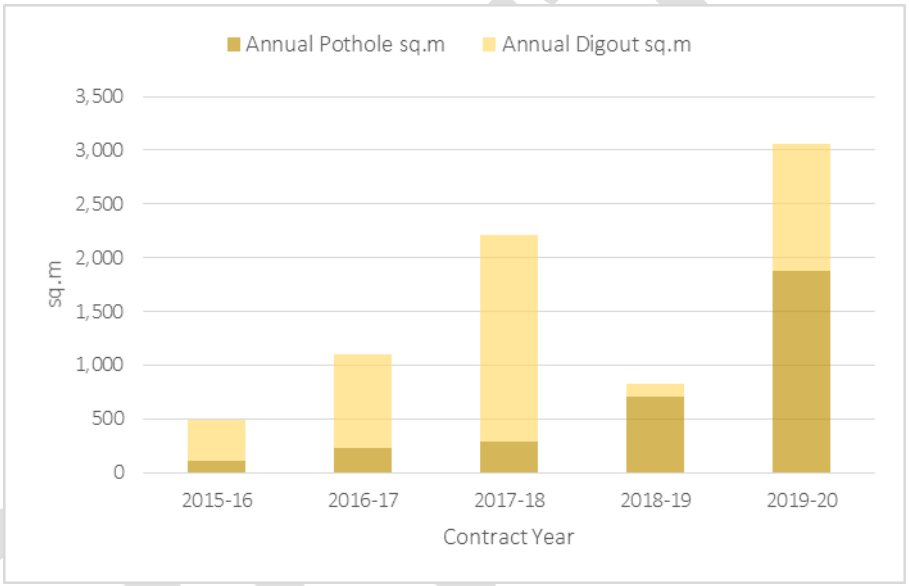


FIGURE 14 - UNSEALED PAVEMENT 'DIG-OUT' TYPE REPAIRS BY CONTRACT YEAR

Logging quantities are estimated to increase by 14% above that experienced throughout 2018-21, resulting in an anticipated 294m2 of 'dig-out' type repairs (per annum) above the quantity experienced during the 2019-20 year for unsealed pavements.

Given that substantial logging is expected to continue for the next decade with a rapid acceleration and peak in the 2027-30 period), the increased demand on both sealed and unsealed pavements will require management through the strategic response (described in Section 3.2.4), utilising an optimised mix of reactive and pro-active maintenance and renewal activities.

3.2.2 Consequence of Reduced Investment

The network is in a relatively stable condition, however road maintenance is essential in order to (1) preserve the road asset, (2) protect adjacent resources and user safety and (3) provide efficient, convenient travel along the route. If

maintenance is neglected or improperly performed there will be a rapid deterioration of the road and eventual failure from both climatic and vehicle use impacts.

If the investment is reduced the result would be a more patched and rougher network, particularly on Access and Low Volume roads. There would also be a risk of occasional complete failure of the pavement if maintenance treatments fall below the base preservation levels. This would likely attract increased complaints from road users in the community and negative media coverage.

Heavy vehicles are a major cause of pavement damage. The pavement damage attributable to a specific vehicle depends on a number of factors including the weight and axle configuration of the vehicle and the design of the roadway. Heavy truck traffic results in pavement damage many times that of traffic by passenger vehicles:

- Unsealed roads that have increased forest traffic are likely to will require the use of more coarse grades of aggregate to achieve the life expected between re-metalling runs.
- Aggregate will degrade on steep road gradient (especially on tight uphill corners).
- Harvest activity during wet weather events will increase pavement damage.
- Carriageway widths, visibility and passing areas will be inadequate, increasing the potential for traffic accidents.
- Public traffic interaction with logging traffic will increase the potential for traffic accidents.
- Road fences may limit road width.

3.2.3 Investment Benefits

The District road network connects business with customers, suppliers and the workforce, helps people access places of employment and education, and helps move goods from point of production to local, national and international markets. There is no single indicator of how roads contribute to economic and social outcomes, however Council considers that the local road network delivers on the priorities defined in the draft GPS 2021.

A network that is efficient (including value for money), supports economic activity, is fit for purpose and meets the ONRC CLoS. Investment benefits are summarised in Table 7 below, :

TABLE 7 - INVESTMENT BENEFIT ALIGNMENT, PROBLEM 1

Council's Strategic Goals							GPS Priorities	Aratkai Outcomes
Effective & efficient road maintenance & delivery • suitable access to business, educational, defence, social and recreational services • continuous improvement in District road safety	✓					✓	S T F	
Improving connectivity • improve the strategic transport network • efficient and effective movement of freight • effective integration of transport & land use		✓		✓	✓			
Walking & cycling network								
Tourism network								

3.2.4 The Strategic Response

The strategic response will require a combination of interventions, including:

Non-fiscal

- Communicate to the public (via the Long Term Planning consultation phase) the proposed changes to the maintenance strategy and what the likely benefits and consequences may be.
- Communicate with forest owners and logging contractors to discuss solutions such as agreements on harvest programmes and 'fit for purpose' maintenance regimes.

Fiscal (subsidised intervention activities)

- Improve: the reliability and cost effectiveness of the road network.
- Deliver: Optimised programmes that are affordable and consistent in cost within like classifications (ONRC).

The flow chart in Figure 15 below describes the mix of interventions, based on pavement performance and likely usage affecting portion(s) of the network:

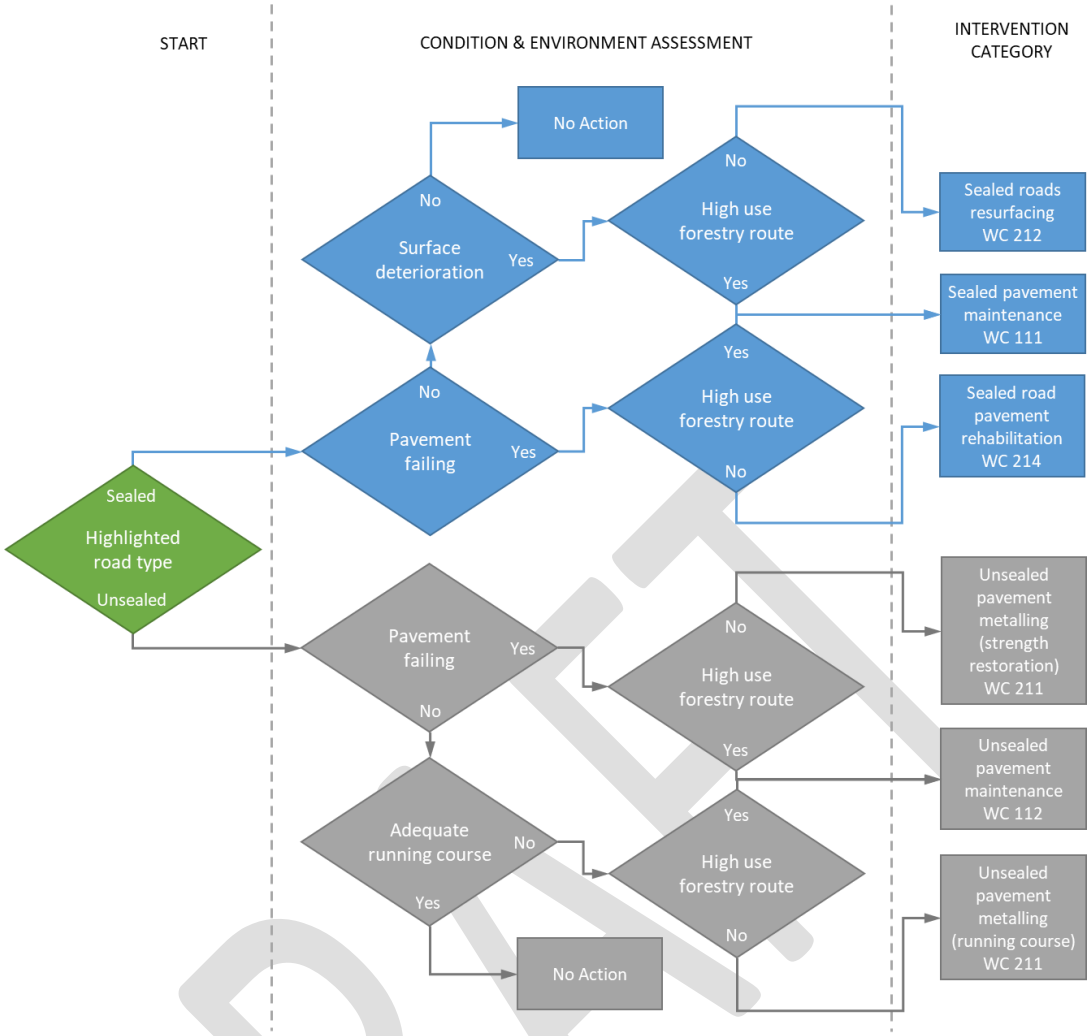


FIGURE 15 - INTERVENTION WORKFLOW, MANAGEMENT OF PAVEMENTS AND SURFACES

Table 8 below summarises the intended strategic response:

TABLE 8 - STRATEGIC RESPONSE, PROBLEM 1

Problem	Findings / Status	Strategic Response	Priority	Focus
Legacy network	Forest harvest schedules are expected to be most intense in the period 2018-2030 with the majority of the District's forest estate reaching harvestable age. 66% (2.06 mega-tonnes) of the District's total expected yield will be extracted by 2030.	Engage with logging companies to manage route demand, minimise nuisance and mitigate pavement damage.	HIGH	55%
		Continue pavement repairs to mitigate deterioration during high forestry activity.	MEDIUM	
		Plan rehabilitation of pavements prior to starting - or coinciding with completion of - high forestry route use.	MEDIUM	
		Plan surfacing treatments around periods of high forestry use.	MEDIUM	

3.3 Problem 2: Low Network Resilience

The Manawatu-Whanganui region (encompassing the Rangitikei District) has been identified as being susceptible to increasingly severe climatic events. Figure 16 below shows the primary climate change impacts for the Nation and Rangitikei (inset):

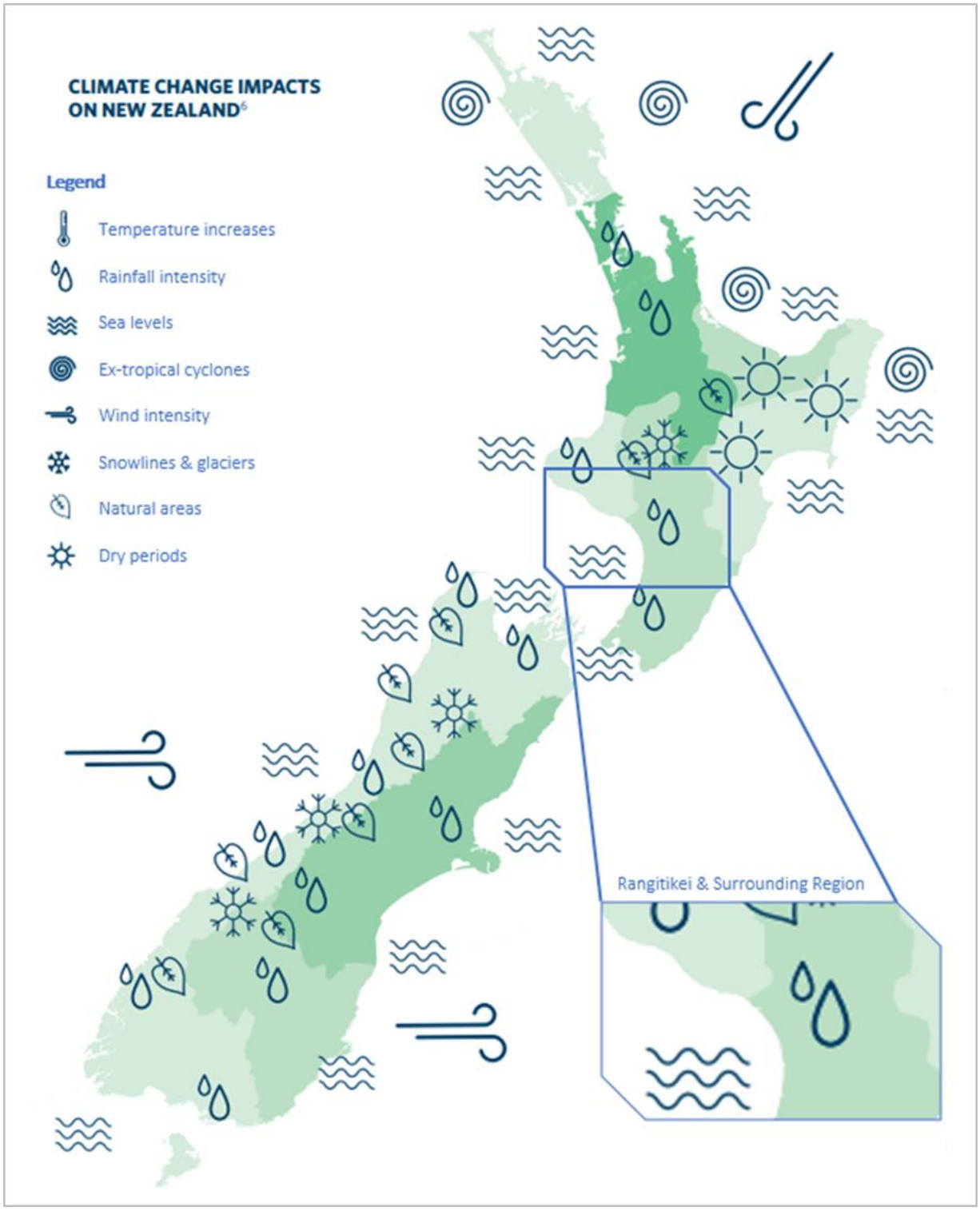


FIGURE 16 - CLIMATIC CHANGE IMPACT MAP OF NEW ZEALAND (SOURCE: ARATAKI)

The two primary climatic impacts identified for the Rangitikei District to mitigate will be:

Wet weather events, resulting in:

- Increased precipitation,
- increased intensity of precipitation,
- increased flooding (particularly in already flood-prone areas),
- increased slips and
- increased soil erosion

Sea level change, leading to:

- increased storm surges,
- coastal inundation and
- increased coastal erosion

3.3.1 Evidence

During periods of intense rainfall the low lying, coastal areas are prone to flooding. In addition, mudslides, debris flows and rock slides occur in the rural hinterland, particularly to the Turakina Valley and Central area of the District. The map below is an historical record of the slips and dropouts in the District and highlights the more vulnerable sections of the network to storm events:

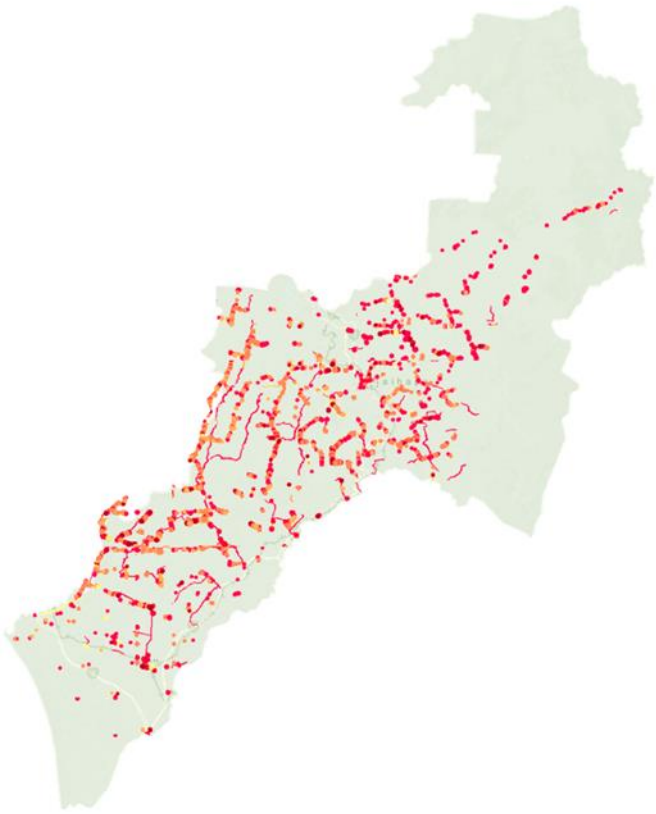


FIGURE 17 - HEAT MAP OF RECORDED DROP OUTS AND SLIPS FROM 2010

As can be seen in Figure 18 below, the annual cost has increased significantly from $1.2 million in 2013-14 to $3.4 million in 2017-18:

FIGURE 18 - 3 EMERGENCY REINSTATEMENT COSTS AND TREND LINE

The recent reduction in costs (2018-19 & 2019-20) can be attributed to the following factors:

- Instigation of mitigation measures in the previous 2018-21 AMP (through increased Routine Drainage Maintenance and Renewals budgets) and
- A fortunate lack of severe weather events in the past 18 months.

Notwithstanding the recent lack of severe weather events, the forecast line in Figure 18 indicates that the mean annual Emergency Reinstatement cost is trending toward $5.3 million by 2024.

3.3.2 Consequence of Reduced Investment

Between 2015-16 and 2017-18, the mean annual investment in Routine Drainage Maintenance and Renewals was increased to approximately $755,000. This was shown to be insufficient in relation to the mean Emergency Reinstatement cost of $3.4 million per year over the same period.

From 2018-19 onwards, Routine Drainage Maintenance and Renewals annual investment was increased to approximately $990,000. This increased investment has shown to have positive effect on mitigating Emergency Reinstatement costs (See Figure 18). However, given that an increasing frequency of high intensity rainfall and severe storm events is predicted, an increased level of investment is required to mitigate Emergency Reinstatement expenditure and associated impacts.

An increased level of investment of approximately $1.89m per annum is required for continued Drainage Maintenance and Renewals. In addition, investment in Resilience Improvements (i.e. non-routine work required to protect the serviceability of roads and bridges from damage) and to minimise the threat of road closure arising from natural phenomena. For example;

- new works that protect existing roads and bridges from river damage
- new drainage to drain incipient slips
- toe-weighting of unstable slopes, and
- work to overcome changes in a river's course or bed level that threaten roads, bridges or other road-related structures, but which is not attributable to one climatic event.

If the investment in Routine Drainage Maintenance and Renewals is reduced, the mean annual cost of Emergency Reinstatement is likely exceed $5.3 million within 5 years.

There will also be an increased likelihood of unplanned events on route availability and the number of journeys not made due to unplanned events. The consequences being an inconvenience to customers and the associated detrimental effect on the economy.

This will attract increased complaints from road users in the community and negative media coverage.

3.3.3 Investment Benefits

An increasingly consistent accessible, fit for purpose network that meets ONRC CLoS:

TABLE 9 - INVESTMENT BENEFIT ALIGNMENT, PROBLEM 2

Council's Strategic Goals							GPS Priorities	Aratkai Outcomes
Effective & efficient road maintenance & delivery • suitable access to business, educational, defence, social and recreational services • continuous improvement in District road safety			✓	✓		✓	F C	
Improving connectivity • improve the strategic transport network • efficient and effective movement of freight • effective integration of transport & land use			✓	✓	✓			
Walking & cycling network								
Tourism network			✓					

3.3.4 The Strategic Response

- Develop operational systems and capabilities and immediate action plans.
- Identify risks and reduce magnitude of their impact and likelihood of occurring.
- Minimise the;
  - consequence of unplanned events to customers
  - likelihood of unplanned events on route availability
  - the number of journeys not made due to unplanned events
  - the consequence of unplanned events to customers
  - the number of journeys impacted by unplanned event

To this end, Council has developed a flowchart to assist in determining the mix of interventions required in delivering the above strategy:

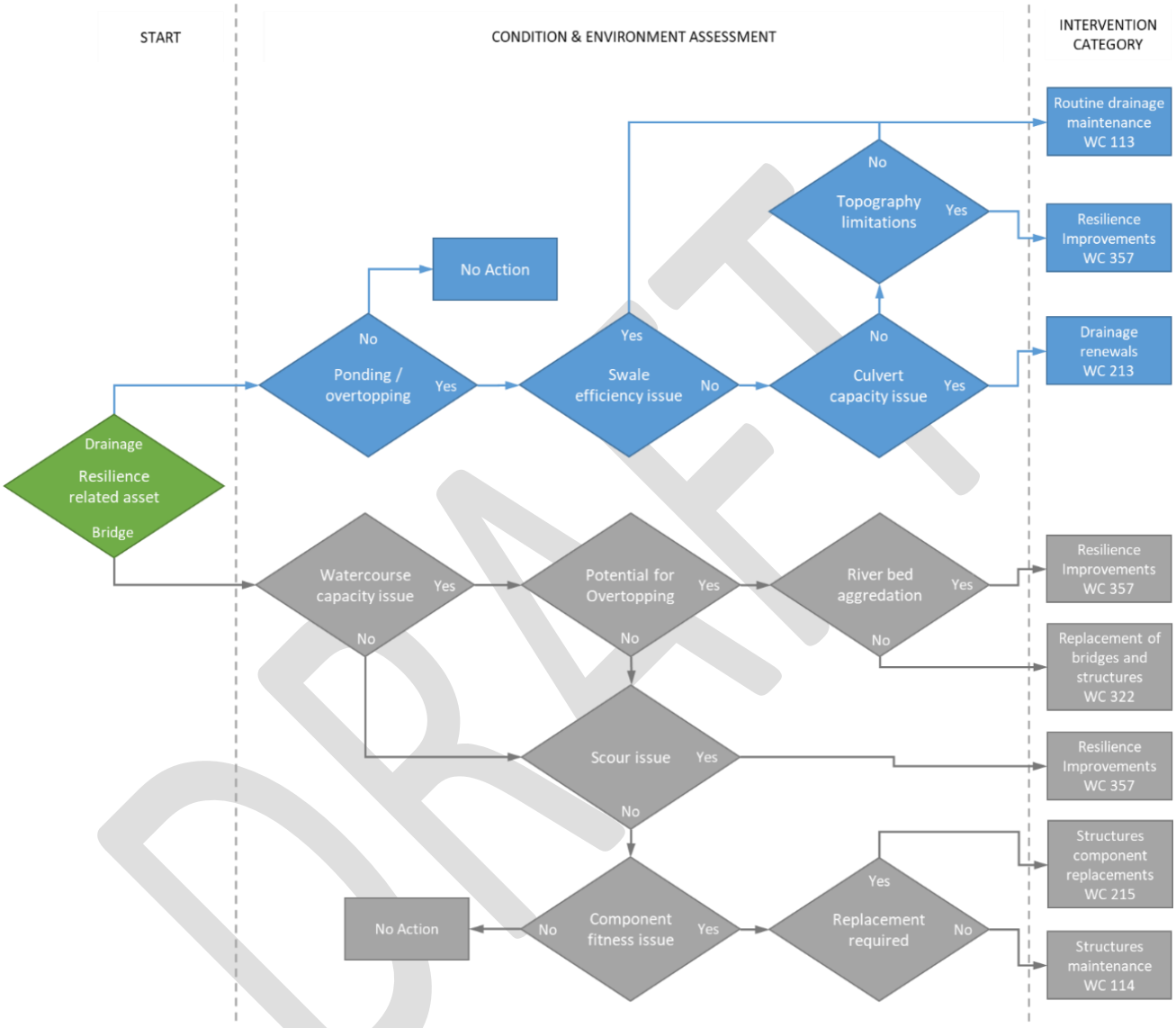


FIGURE 19 - INTERVENTION WORKFLOW, MANAGEMENT OF DRAINAGE AND STRUCTURAL ASSETS

Table 10 on the following page summarises the intended strategic response:

TABLE 10 - STRATEGIC RESPONSE, PROBLEM 2

Problem	Findings / Status	Strategic Response	Priority	Focus
Low network resilience	Increasing frequency and severity of storm events causing disruption to travel reliability and causing Emergency Reinstatement costs to increase. Current investment levels have seen the beginnings of a trend reversal.	Focus routine drainage maintenance and renewals programmes to mitigate road closures to vulnerable portion(s) of the network.	HIGH	20%
		Maintain bridge component replacement programme to retain capacity and route availability.	MEDIUM	
		Manage resilience of structures interfacing with watercourses to prevent road closures.	MEDIUM	

3.4 Problem 3: Safety

There is a high level of Serious and Fatal (S&F) crashes per Vehicle Kilometre Travelled. This results in high social and economic cost. Figure 20 below shows the crash locations throughout the district over the previous 10 years (1st January 2010 to 31st December 2019):

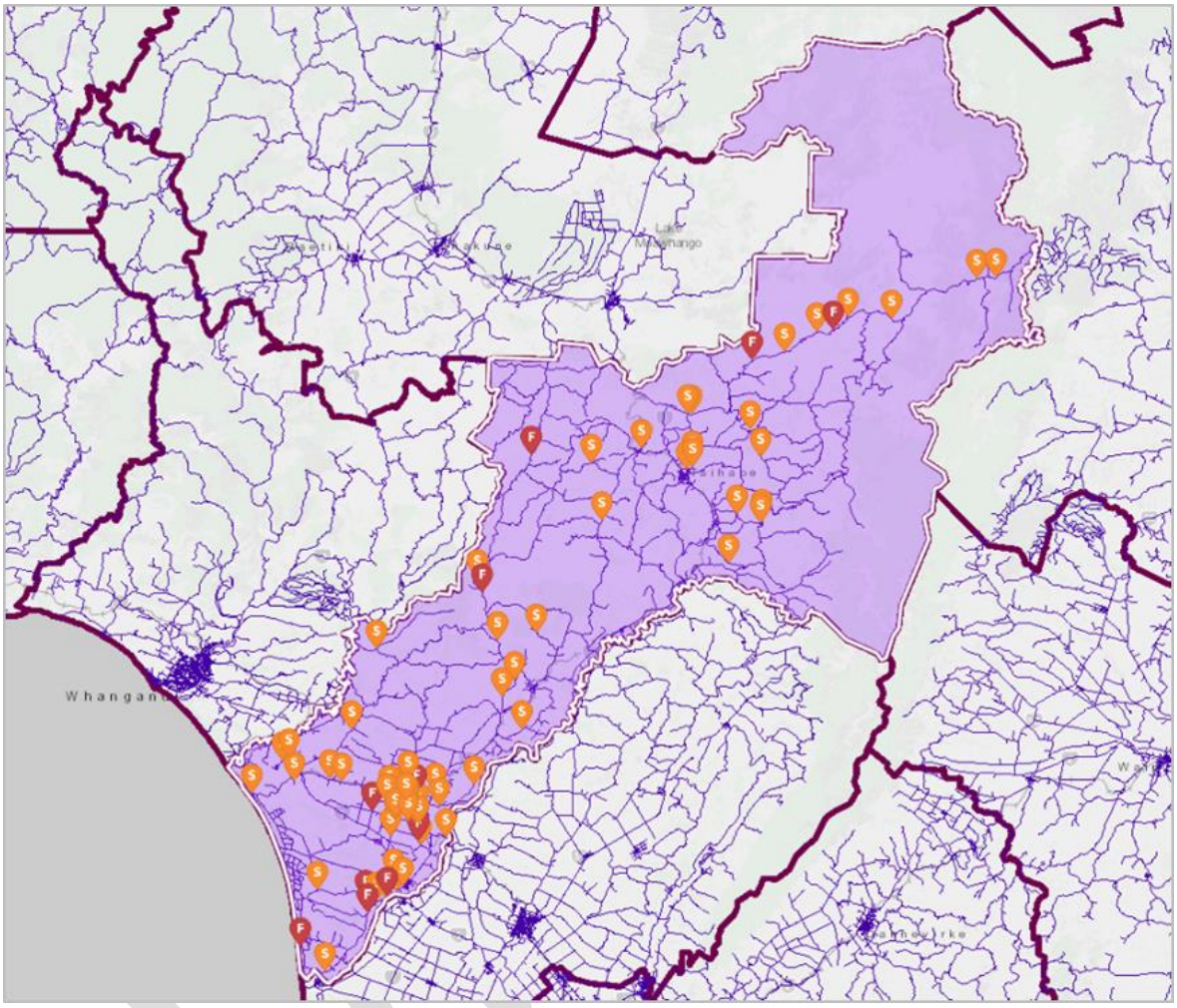


FIGURE 20 - SERIOUS & FATAL CRASH LOCATIONS ON THE RANGITIKEI DISTRICT LOCAL ROAD NETWORK

A motor vehicle collision occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or pole. Traffic collisions may result in injury, death and/or property damage.

A number of factors can contribute to the risk of collision, including (but not limited to):

- vehicle design,
- speed of operation,
- road design,
- road environment,
- driver skill,
- impairment due to alcohol or drugs and
- behaviour

3.4.1 Evidence

3.4.1.1 ONRC Performance Measures Reporting Tool

The prevalence of crashes by ONRC hierarchy is reflected in the following graphs for Collective Risk (Figure 21) and Personal Risk (Figure 22), as identified in the ILM and provided by the ONRC Performance Measures Reporting tool:

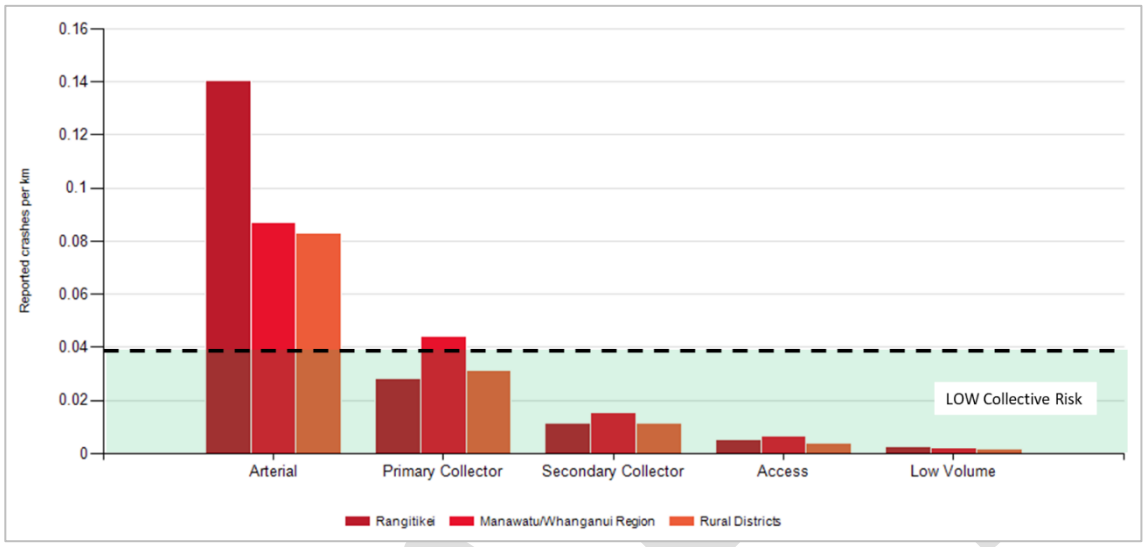


FIGURE 21 - COLLECTIVE RISK FOR 10 YEARS DATA (UP TO 2019-20, IN COMPARISON WITH REGIONAL AND PEER GROUP DISTRICTS)

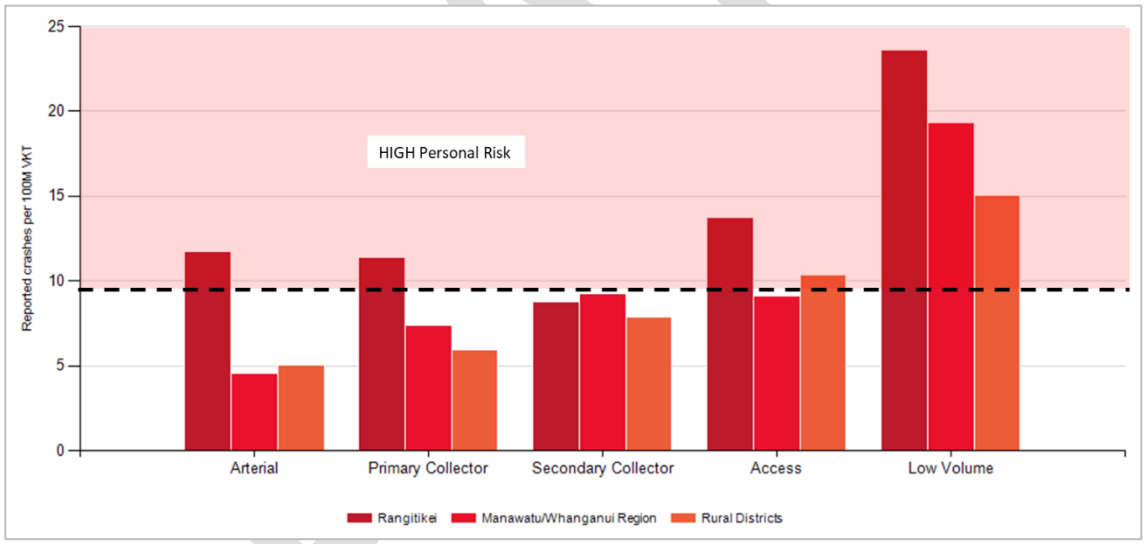


FIGURE 22 - PERSONAL RISK FOR 10 YEARS DATA (UP TO 2019-20, IN COMPARISON WITH REGIONAL AND PEER GROUP DISTRICTS)

Although the Rangitikei District shows a relatively favourable LOW COLLECTIVE risk profile, the same cannot be said for personal risk. In particular, the Low Volume, Access, Primary Collector and Arterial level roads exhibit a **HIGH PERSONAL** risk, based on the latest 10 years of data.

3.4.1.2 MegaMaps

Waka Kotahi's MegaMaps system collates evidence from multiple sources and identifies corridors and locations that would benefit from intervention at some degree. Figure 23 shows a snapshot of the system, highlighting the road corridors where

the greatest benefit could be achieved (known as High Benefit Management) - in red / green (white bounded corridors are State Highways):

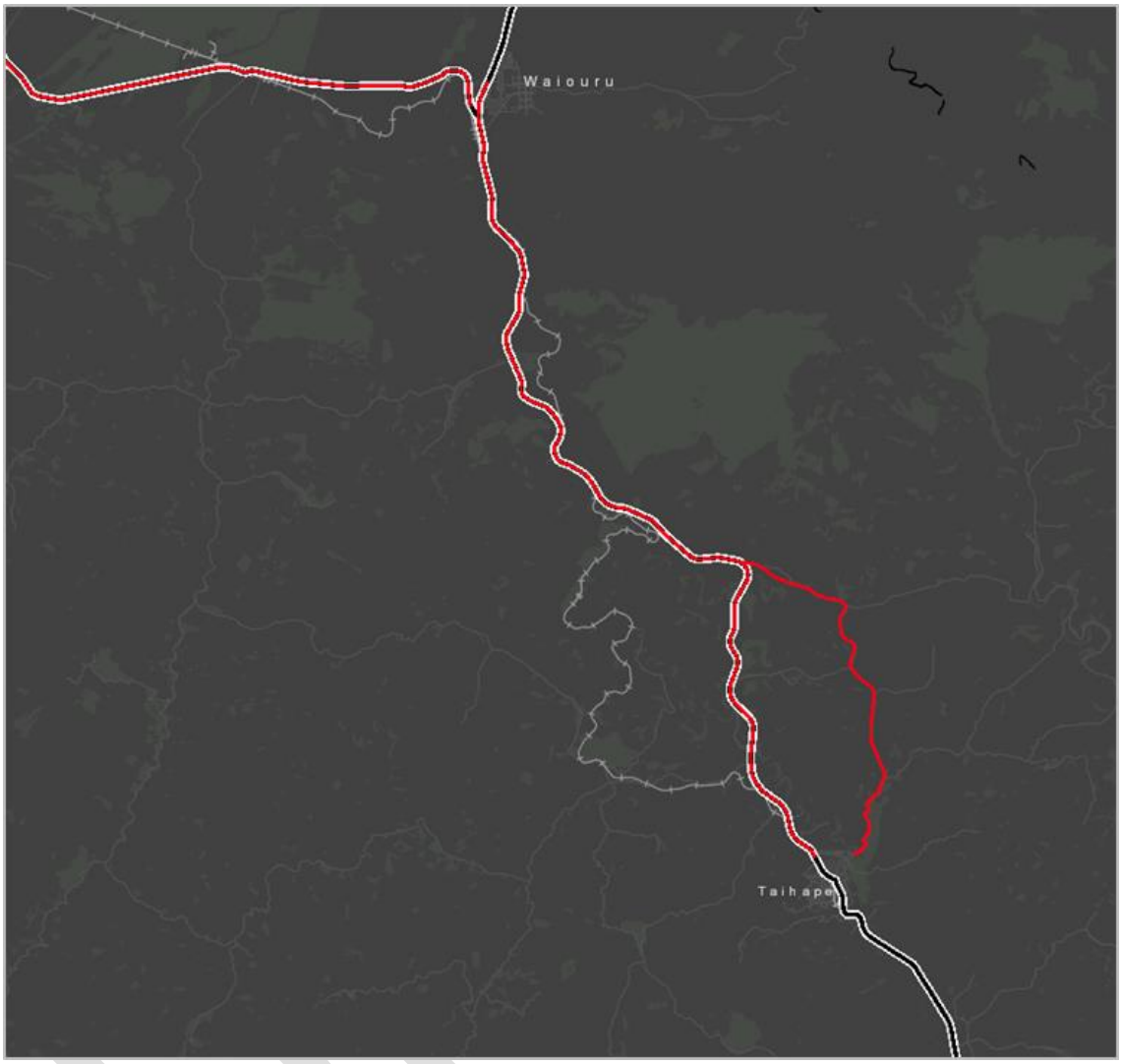


FIGURE 23 - MEGAMAPS OUTPUT EXEMPLAR, HIGHLIGHTING ROAD CORRIDORS OF INTEREST

3.4.1.3 General Crash Rate Trend

In addition to the high level information provided by MegaMaps, Council monitors individually reported crashes, their severity, movement & causal factor(s) and records this information in tabular and graphic form. The following charts show the **rate of crashes per 100 million VKT** for the last 5 years, by the following metrics:

- the injury severity of crashes by year
- overall injury rates by year
- whether the crash occurred during the day or night,
- whether the crash occurred in wet or dry conditions,
- where a driver has lost control of the vehicle (either on a bend or on the straight) and
- where a crash has occurred when crossing or turning, striking an obstruction (rear ending) or overtaking.

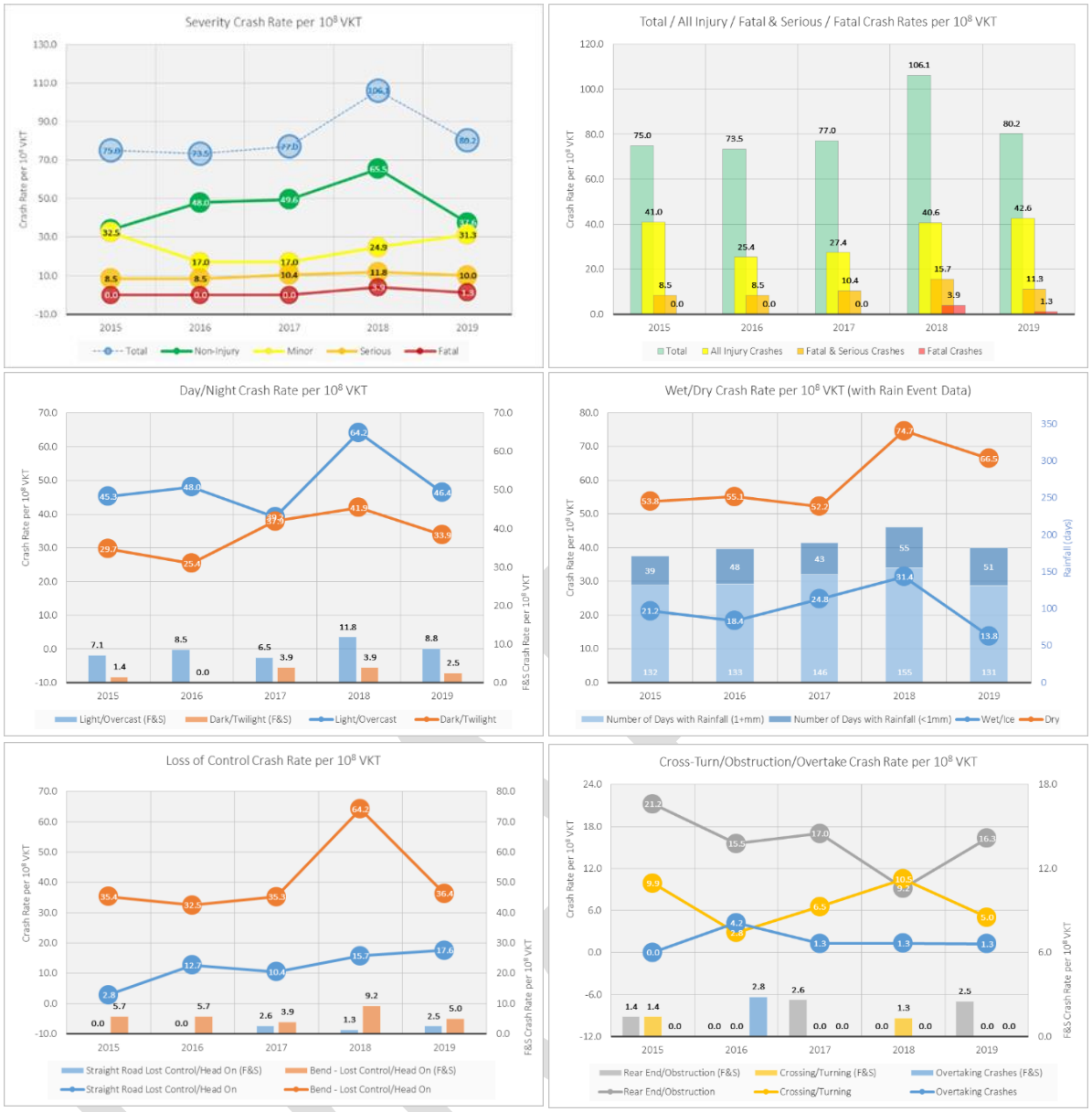


FIGURE 24 - RDC CRASH METRIC TREND GRAPHS

Current Status

It can be seen that there is an upward trend in the number of reported crashes between 2016 and 2019 (and in particular, a significant spike in reported crashes in 2018). This 2018 spike appears to primarily consist of dry, day-time 'Loss of Control on Bend' and 'Crossing / turning' crashes (as evidenced in the middle-right, middle left, bottom left and bottom right charts respectively).

There is an upward trend in minor injury crashes since 2016, whilst serious injury events have gradually increased between 2016 and 2018, with a drop in 2019. Fatal injury crashes have been reported in the 2018 and 2019 years, having remained at 0 (zero) for the preceding 3 years.

'Crossing/turning' crashes have seen a general upward trend between 2016 and 2018, albeit experiencing a drop in 2019, replaced with 'Rear end/obstruction' crashes. (bottom right chart). Similarly, 'Loss of Control on Straight' crashes have increased moderately between 2015 and 2019 (bottom-left chart). Narrow roads on Rangitikei's network are likely to be

the primary environmental contributor to this crash type, in combination with an increasing proclivity for road users to breach licence conditions such as:

- driving whilst under the influence of alcohol or drugs,
- potentially defective vehicles (expired WoF/CoF),
- restricted & learner licence holders carrying passengers,
- restricted & learner licence holders driving outside of allowable hours and
- restricted & learner licence holders riding non-LAMS approved motorcycles.

These breaches are considered to be significant causal factors that require mitigation through:

- seal widening on road corridors that are of insufficient width for the volume of traffic carried and
- barrier installations at higher risk locations.

3.4.2 Consequence of Reduced Investment

Restriction of investment to mitigate causal factors will likely result in an increased frequency of crashes, leading to increased death and disability and culminating in continued significant financial cost to both society and the individual(s) involved.

3.4.3 Investment Benefits

Investment would minimise the risk and consequences of crashes, resulting in:

- Reduced Collective Risk (Crash Density)
- Reduced Personal Risk (Crash Rate)

which will reflect in reduced social and economic cost to the District (& NZ as a whole) and deliver the following benefits in line with local, regional and national strategic goals:

TABLE 11 - INVESTMENT BENEFIT ALIGNMENT, PROBLEM 3

Council's Strategic Goals							GPS Priorities	Aratkai Outcomes
Effective & efficient road maintenance & delivery • suitable access to business, educational, defence, social and recreational services • continuous improvement in District road safety	✓					✓	S F	
Improving connectivity • improve the strategic transport network • efficient and effective movement of freight • effective integration of transport & land use				✓	✓			
Walking & cycling network								
Tourism network								

3.4.4 The Strategic Response

Council has developed the following flowchart to assist in selection of safety interventions for various types of crash, along with prioritising said interventions.

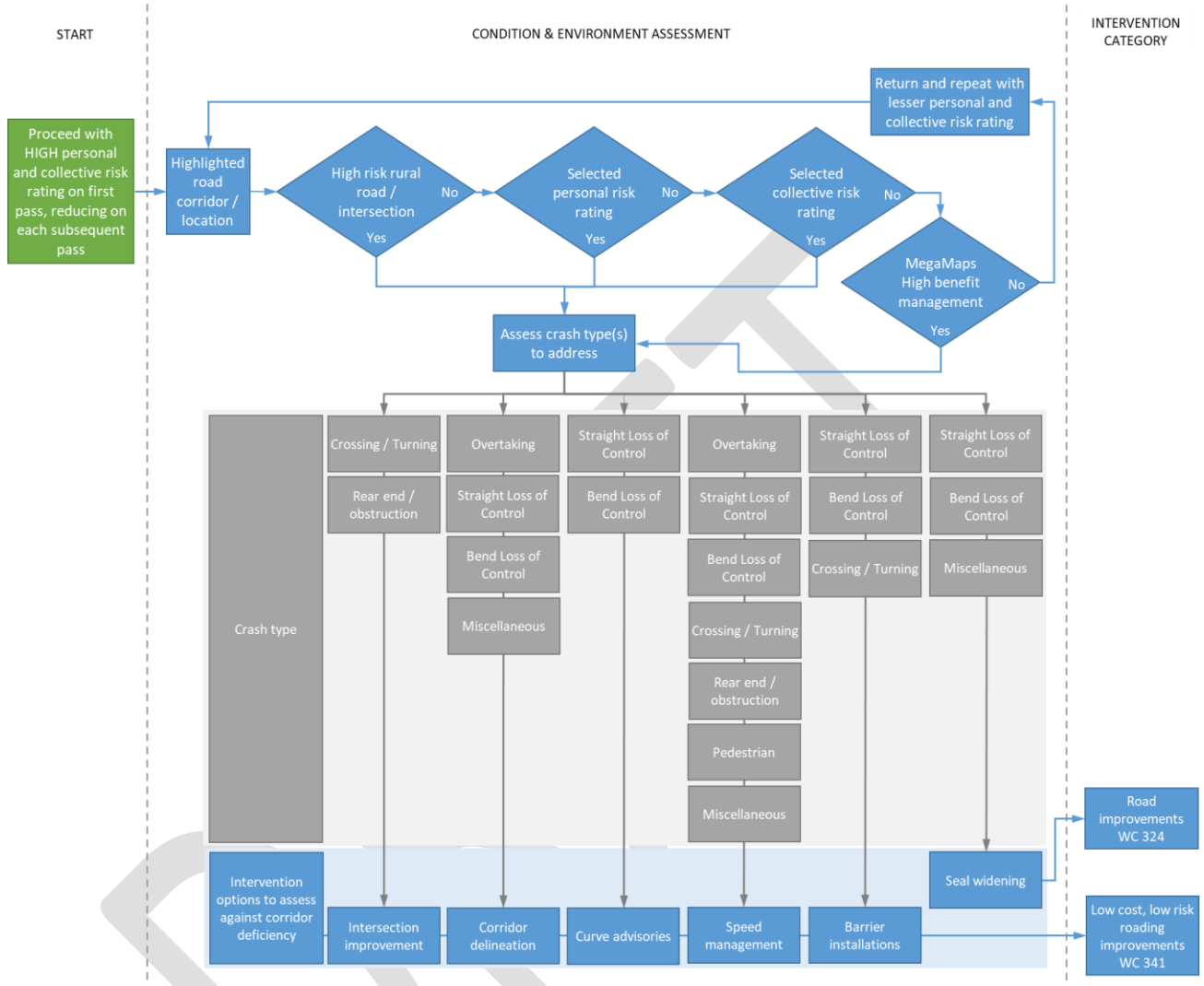


FIGURE 25 - INTERVENTION WORKFLOW, SAFETY MANAGEMENT & PRIORITISATION

In interrogating the available information, combatting the following crash types will likely yield the greatest benefit:

- Crashes at intersections
- Loss of control at bends
- Loss of control on straights

Table 12 on the following page summarises the intended strategic response:

TABLE 12 - STRATEGIC RESPONSE, PROBLEM 3

Problem	Findings / Status	Strategic Response	Priority	Focus
Safety	Users of the road network experience a high personal risk (i.e. the rate of crashes resulting in serious injury or death is high). Loss of car control and crossing/turning at intersections are the primary contributing crash types. Current programmes have seen a slight improvement in crash rates.	Improve safety at lowest performing intersections.	HIGH	15%
		Improve driver information (e.g. curve signage) to lowest performing sealed road corridors.	MEDIUM	
		Provide sealed shoulders on road corridors that are of insufficient width for the volume of traffic carried.	MEDIUM	
		Develop a prioritised network speed management programme to mitigate crash severity.	LOW	

3.5 Problem 4: Population Growth

Growth rate for the district has been observed at 1.40% per annum between 2013 and 2018. Placing this in perspective, population growth in Palmerston North was 1.14% and 2.07% at the national level. Hence the District is continuing to experience moderate growth with forecasts (both economic and population) anticipating this to continue based on existing economic/financial, affordability and labour market conditions. This will require additional non-subsidised investment for new infrastructure and upgrade of existing urban and peri-urban roads.

3.5.1 Evidence

3.5.1.1 Population Growth

The following graphs, sourced from Stats NZ, show the latest trends relating to the District's population growth: https://www.stats.govt.nz/tools/2018-census-place-summaries/rangitikei-district

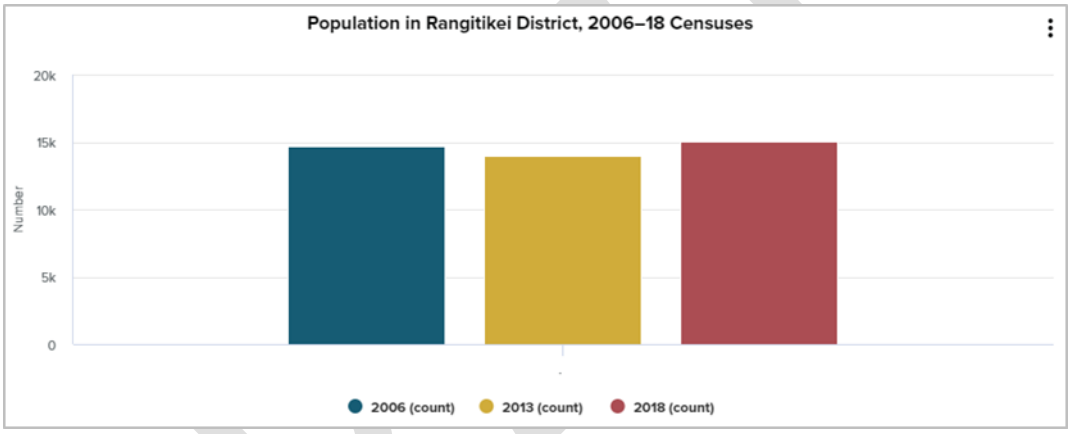


FIGURE 26 - POPULATION TREND BETWEEN 2006 & 2018

In reviewing the previous two censuses (2013 & 2018), there has been a steady increase in population to the Rangitikei District. Table 13 below shows the growth between 2013 and 2018, expressed as total percentage and mean annual percentage, and compared to selected neighbouring District, Regional and National levels:

TABLE 13 - COMPARISON OF POPULATION GROWTH AGAINST LOCAL, REGIONAL & NATIONAL LEVELS

	2013 Population (count)	2018 Population (count)	Total Growth (%)	Mean Annual Growth (%)
Rangitikei District	14,019	15,027	+7.19	**+1.40**
Horowhenua District	30,096	33,261	+10.52	+2.02
Manawatu District	27,459	30,165	+9.85	+1.90
Palmerston North City	80,079	84,639	+5.69	+1.14
Manawatu-Whanganui	222,672	238,797	+7.24	+1.41
New Zealand	4,242,048	4,699,755	+10.79	+2.07

3.5.1.2 Age Demographic

Figure 27 and Table 14 below show that the population of the Rangitikei District continues to increase in age. In particular, the population above 65 years of age increasing by 1.2% (in comparison with the neighbouring districts, the Region and the Nation at 0.9% to 2.2%) is worthy of note. This will place increased pressure to provide and maintain a 'fit for purpose' transportation network in the future.

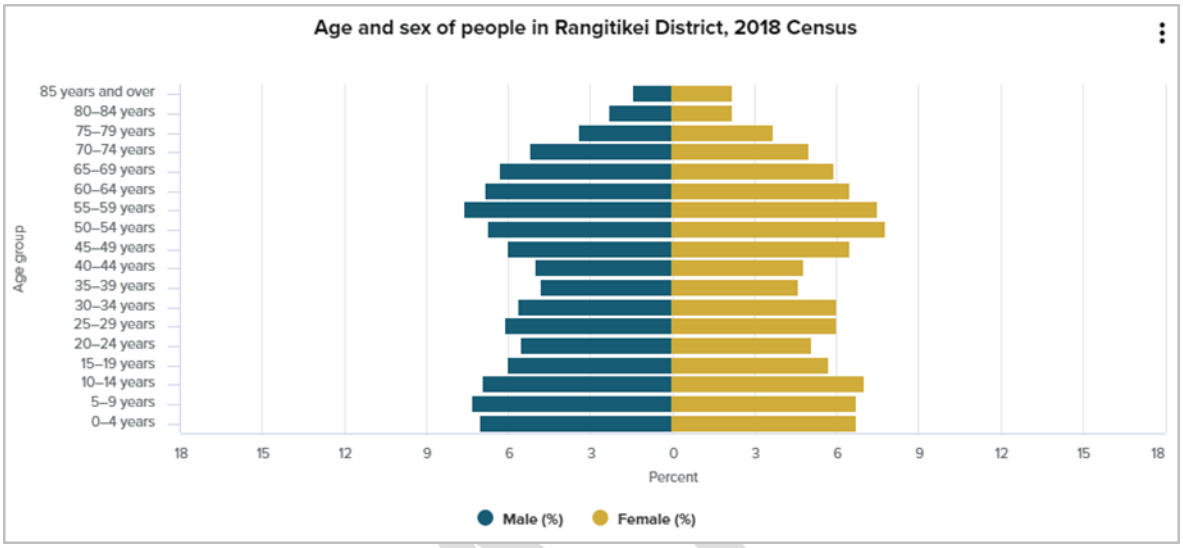


FIGURE 27 – RANGITIKEI DISTRICT 2018 POPULATION DEMOGRAPHIC BY AGE BAND AND SEX

TABLE 14 - COMPARISON OF MEDIAN AGE & PERCENTAGE OF 65+ YEARS AGAINST LOCAL, REGIONAL & NATIONAL LEVELS

	2013 Median Age (years)	2018 Median Age (years)	Change (years)	2013 65+ years (%)	2018 65+ years (%)	Change (%)
Rangitikei District	41.8	41.4	-0.4	17.6	18.8	**+1.2**
Horowhenua District	46.1	46.8	+0.7	23.7	24.7	+1.0
Manawatū District	41.0	41.3	+0.3	15.8	18.0	+2.2
Palmerston North City	33.8	34.0	+0.2	13.3	14.2	+0.9
Manawatu-Whanganui	39.3	39.4	+0.1	16.7	18.1	+1.4
New Zealand	38.0	37.4	-0.6	14.3	15.2	+0.9

3.5.1.3 Travel Mode

Figure 28 and Figure 29 on the following page evidences the mode of travel for work and educational purposes for the Rangitikei District in 2018 (latest census data), comparing the percentages for each mode against the national average.

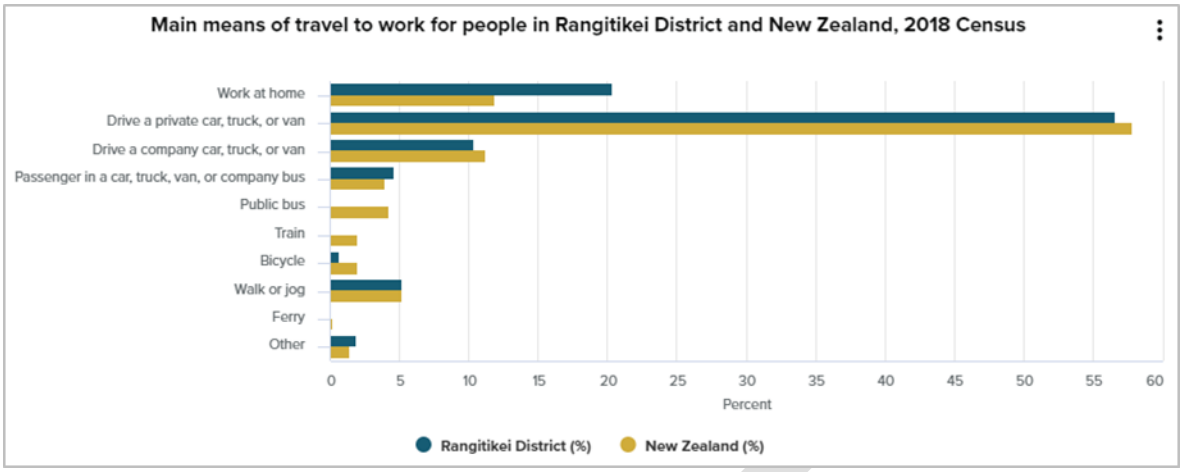


FIGURE 28 – RANGITIKEI DISTRICT 2018 MODE OF TRAVEL TO WORK (COMPARISON WITH NZ)

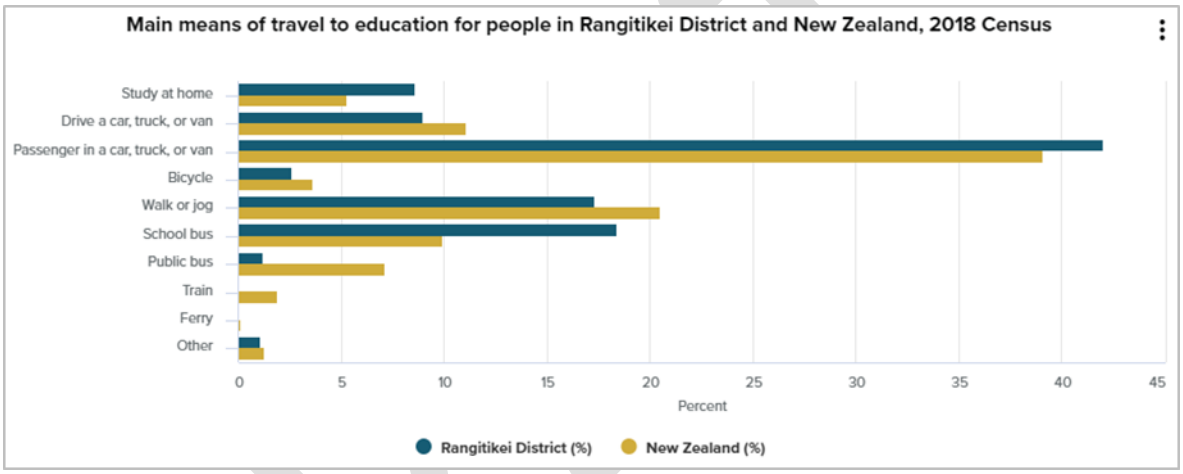


FIGURE 29 – RANGITIKEI DISTRICT 2018 MODE OF TRAVEL FOR EDUCATION (COMPARISON WITH NZ)

Due to the rural nature and dispersed placement of residences, farming settlements and businesses around the Rangitikei district, a high level of private vehicle usage is evident as the primary / preferred means of transport, whilst uptake of public transport is shown to be significantly lower (to the point of negligible) than national levels.

The percentage of those walking to work matches the national average, whilst cycling is significantly lower for both travel to work and travelling to educational establishments. There is a high proportion of residents working from home, likely as a result of agricultural activity within the Rangitikei District, along with a higher proportion studying from home than at the national level.

3.5.1.4 Residential Growth Indicator: Sub-division Concentration

There have been numerous sub-division consents granted in the District, with Marton and Bulls in particular.

3.5.1.5 District Population and Dwelling Forecast

Projections for the coming 30 years show a potential for significant increase in both population and household numbers, irrespective as to whether the projection trend follows the high or medium profile:

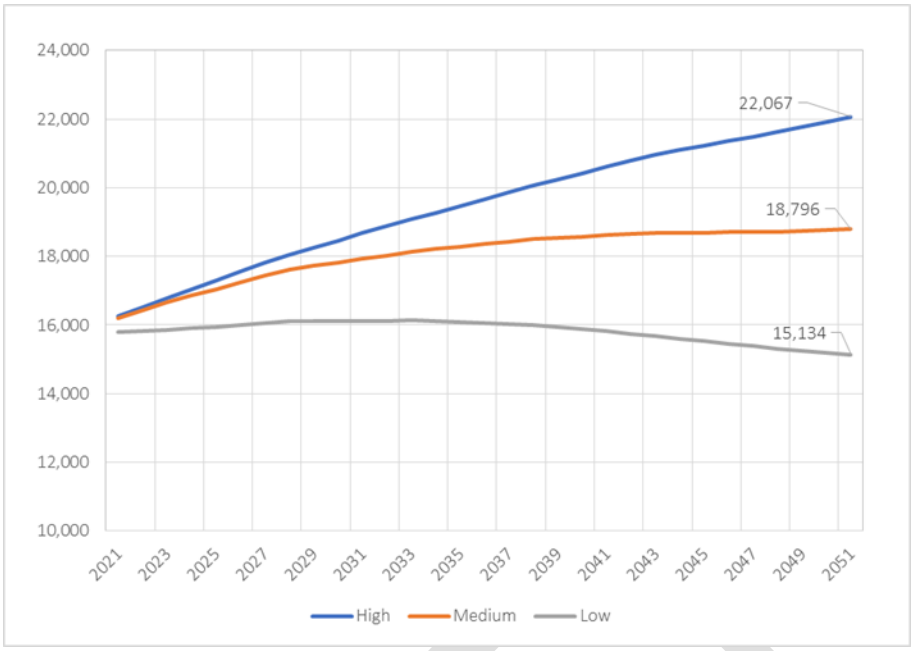


FIGURE 30 - RANGITIKEI DISTRICT POPULATION PROJECTION: 2021 TO 2051 (SOURCE: INFOMETRICS)

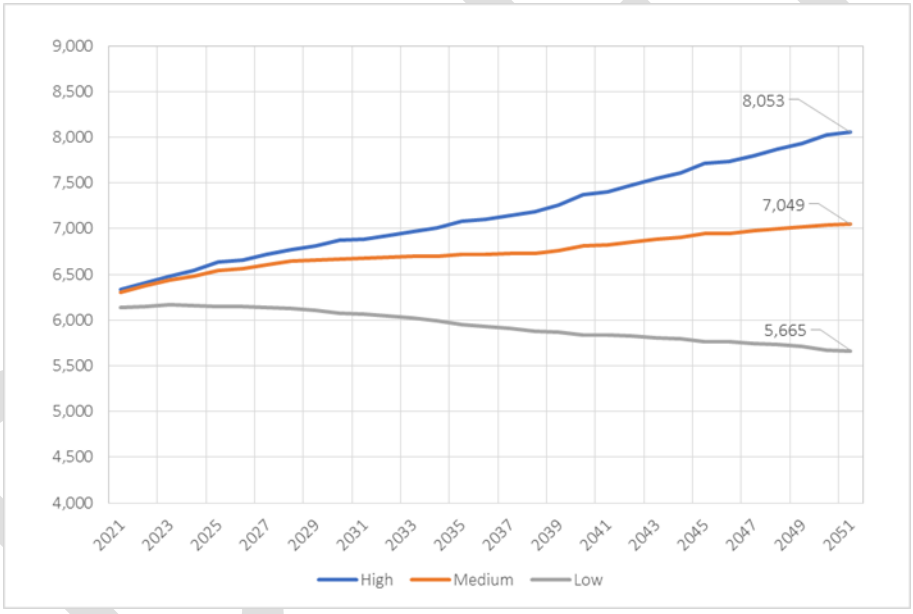


FIGURE 31 - RANGITIKEI DISTRICT HOUSEHOLD PROJECTION: 2021 TO 2051 (SOURCE: INFOMETRICS)

This indicates that growth is likely to continue, given the current sub-division / consent applications being received by Council). At worst, the population and household numbers would remain stable for the foreseeable future (notwithstanding the 'low' profile indicating a slight downward trend in the least optimistic scenario).

3.5.1.6 Other Influences

Ōhakea Air Force Base Expansion

Five squadron is expected to relocate from Whenuapai to Ōhakea between 2022 and 2023. The base is expanding to include 4 new hangers, office space, operations and training centres, along with upgrades to existing taxiways. It is forecast that

more than 2,000 jobs would be sustained during the construction phase and on-base staff will increase by 275. Some of the relocated families are expected to settle in Marton and Bulls.

KiwiRail Multi-Modal Freight Hub

KiwiRail has announced its intention to construct a new multi-modal freight hub between Palmerston North and Feilding (https://www.kiwirail.co.nz/what-we-do/projects/regional-freight-hub/).

The project is aligned with Horizons & PNCC growth plans and will tie in with other freight transport projects in the region. It also aligns with the recently announced 'New Zealand Rail Plan', Government's vision to increase and improve NZ's rail network (https://www.transport.govt.nz/assets/Import/Uploads/Rail/The-Draft-NZ-Rail-Plan-December-19.pdf).

The planning, design, designation and land purchase is expected to take up to 3 years, and will generate a significant increase in employment during the construction phase. KiwiRail staffing levels are not expected to be affected, but there is potential for more jobs once the hub is in operation.

The Freight Hub will also encourage more distribution companies to move into the area, which is likely to grow employment.

Te Araroa Trail

Increasing tourism throughout New Zealand, particularly the 'great walks' has led to increased focus on upgrading and providing attractive and suitable route(s) through the Region as a whole.

The Te Araroa Trail enters the District's local network at the SH3 intersection with Whangaehu Beach Road, travelling along:

Whangaehu Beach Road, then along the shoreline to Santoft Forest, re-connecting with the road network at Raumai Road. The trail then travels along Raumai Road and Parewanui Road into Bulls, leaving Bulls via SH1/3 to the MDC boundary at the Rangitikei River Bridge:

FIGURE 32 - TE ARAROA TRAIL (RDC PORTION)

The current facility for users of this route is primarily limited to walking on the road or shoulder (outside of the shoreline section and within Bulls). Most of these roads have historically enjoyed very low traffic volumes, limiting conflict between walkers and motor vehicles. However, with the population growth (evidenced and predicted), this conflict will increase and make the trail less desirable, potentially limiting the benefits of tourism spend for the District.

The New Zealand Cycle Trail – Cycling the Country Road

Increasing tourism throughout New Zealand, particularly the 'New Zealand Cycle Trail has led to increased focus on upgrading and providing attractive and suitable route(s) through the Region as a whole.

The New Zealand Cycle Trail enters the Rangitikei at several locations:

- Whanganui to Hunterville – Three Rivers Trail
- Marton to Hunterville – Mt Curl Trail
- Northern end of Turakina Valley Road via Taihape to Hastings – The OT Trail, The Gentle Annie Trail
- Mangaweka to Ohotu – Omatane Trail
- Marton to Tangimoana – Tangimoana Trail

Details of the route can be found at www.nzcycletrail.com

The current facility for users of this route is cycling on the road. Most of these roads have historically enjoyed very low traffic volumes, limiting conflict between cyclists and motor vehicles. However, with the population growth (evidenced and predicted), this conflict will increase and make the trail less desirable, potentially limiting the benefits of tourism spend for the District.

3.5.2 Consequence of Reduced Investment

Growth

Rangitikei District is a moderate growth area, particularly to the Southern reaches of the district in proximity to the State Highway network. It has an ample supply of land and few impediments to obtaining consents. However, financial investment is a constraint to providing infrastructure for housing development and industrial areas. Council is reaching its limit on how much it can borrow for infrastructure.

As a direct consequence, Council will have difficulties releasing the economic potential of the District and Region as a whole if sufficient and fit-for-purpose infrastructure is not provisioned in a timely manner.

Active Mode Transportation

Lack of investment to provide integrated and usable walking and cycling networks will negatively impact both the health and wellbeing of residents and limit tourism spend.

3.5.3 Investment Benefits

Provide for journeys that support economic growth and productivity for:

TABLE 15 - INVESTMENT BENEFIT ALIGNMENT, PROBLEM 4

Council's Strategic Goals							GPS Priorities	Aratkai Outcomes
Effective & efficient road maintenance & delivery • suitable access to business, educational, defence, social and recreational services • continuous improvement in District road safety		✓		✓	✓	✓	S T F C	
Improving connectivity • improve the strategic transport network • efficient and effective movement of freight • effective integration of transport & land use					✓			
Walking & cycling network	✓				✓			
Tourism network	✓				✓			

3.5.4 The Strategic Response

Urban Growth

Residential and industrial growth zones have been identified in Marton, as seen in Figure 33 below:

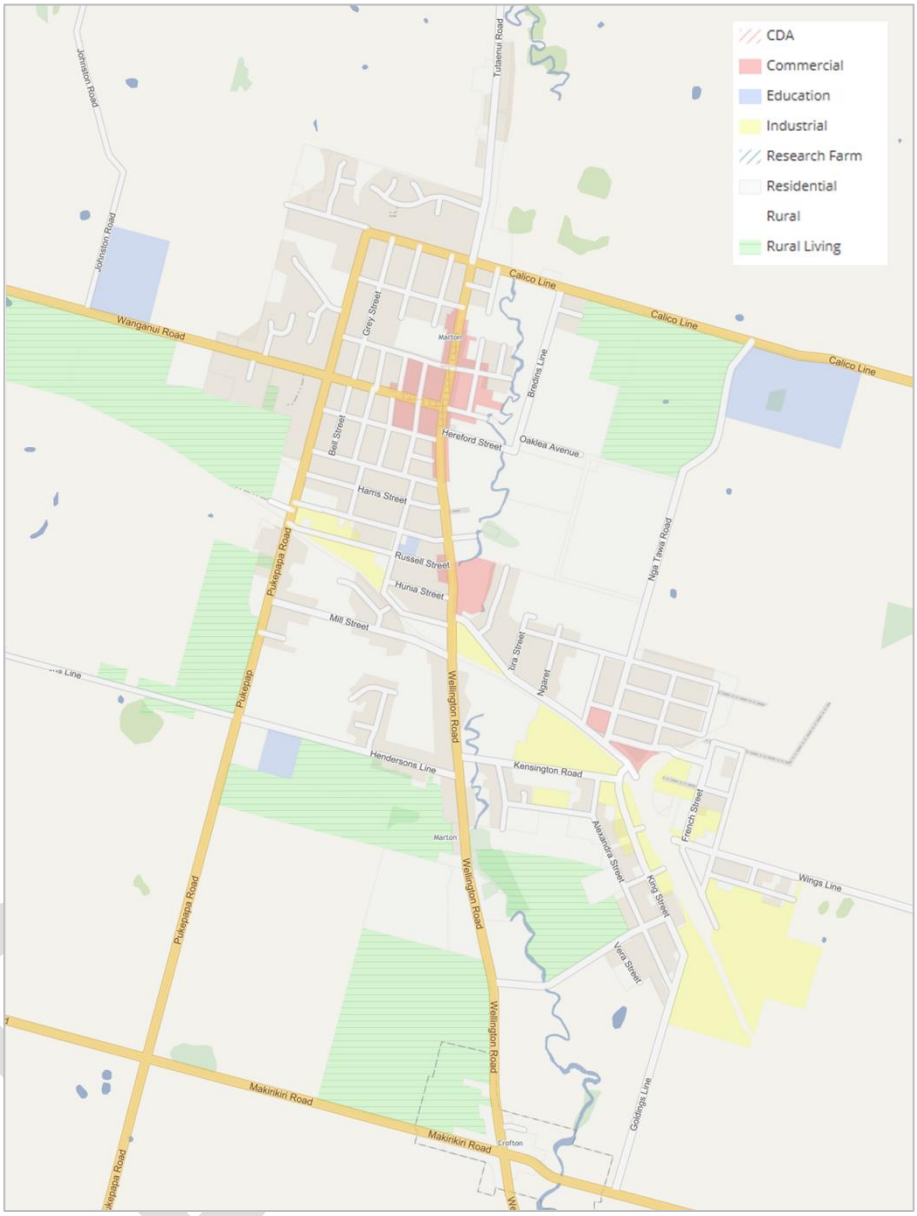


FIGURE 33 - RESIDENTIAL AND INDUSTRIAL ZONES, MARTON

Accessibility & Active Mode Infrastructure

Lower than average walking and cycling numbers in the Rangitikei District to be addressed; provision of facilities to increase the uptake of active transport modes (walking & cycling) is required. This will result in:

- improved health and wellbeing of residents and
- minimising the impact of increased demand on the existing network.

Focussing on connectivity between areas in urban settings and prioritising routes linked to community facilities will likely yield the greatest immediate benefit, improving transport choice when accessing:

- Recreational facilities,
- Schools and
- Commercial centres / workplaces (commuting).

Provision of improved walking facilities to peri-urban and rural locales where such facilities will serve both tourist related and District growth areas would yield longer term benefits.

To this end, Council has developed a flowchart to assist in determining the mix of interventions required in delivering the above strategies:

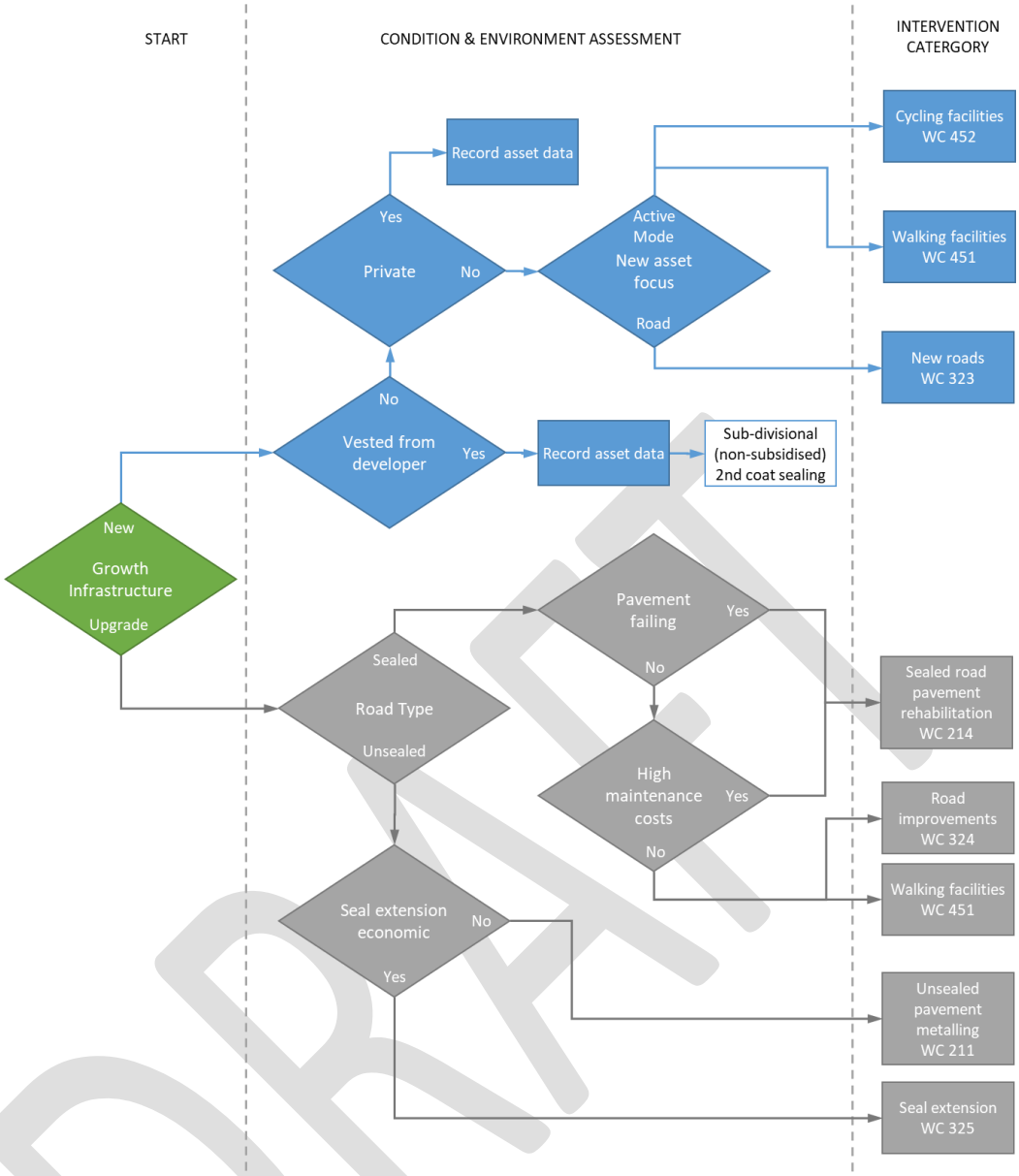


FIGURE 34 - INTERVENTION WORKFLOW, DISTRICT GROWTH AND ACCESSIBILITY

Table 16 below page summarises the intended strategic response:

TABLE 16 - STRATEGIC RESPONSE, PROBLEM 4

Problem	Findings / Status	Strategic Response	Priority	Focus
Population growth	Increasing population, sub-division activity and traffic volumes are placing increased demand on the form and function of the road network. Regional development is a key desired outcome for the District.	Engage with Land Development / Planning to co-ordinate and integrate residential growth and industrial roads.	HIGH	10%
		Improve walking and cycling infrastructure, targeting urban centres and routes in proximity to schools.	MEDIUM	

3.6 Key Performance Indicators and Measures

3.6.1 Performance Measures and Outcomes Alignment

Throughout all stages of the transport planning and project delivery process, it is essential to consider how performance will be measured. In particular under the business case approach, early identification of measures for the expected benefits is a key step in planning an investment.

The following benefits, and their Key Performance Indicators (KPI's) have been identified in Table 17 below to demonstrate how the outcomes from strategic response(s) to the problems are to be assessed:

TABLE 17 - IDENTIFIED BENEFITS AND KEY PERFORMANCE INDICATORS

Benefit	Investment KPI & Outcome Measures	Description of successful outcome(s)
Efficient Network	KPI 1: Safety	Maintains the current form and infrastructure in safe condition.
	KPI 2: Accessibility	Provides guidance so people can navigate around the Network.
	KPI 3: Efficiency	Delivers optimised programmes that are affordable and improves service productivity.
	KPI 4: Amenity	Maintains the road environment and facilities to an appropriate CLoS.
	KPI 5: Travel Time Reliability	Manages the impact of activities and demand on the network.
Resilient Network	KPI 1: Emergency Work Costs	Protects the network from damage and minimises road closures, resulting in reduced Emergency Work costs.
	KPI 2: Accessibility	Provides guidance so people can navigate around the Network.
	KPI 3: Efficiency	Delivers optimised programmes that are affordable and improves service productivity.
	KPI 4: Travel Time Reliability	Manages the impact of activities and demand on the network.
Safe Network	KPI 1: Serious & Fatal crashes	Reduces Serious & Fatal crash events on the network
	KPI 2: Collective Risk	Reduces Collective Risk
	KPI 3: Personal Risk	Reduces Personal Risk
Enable Growth	KPI 1: Growth statistics	Monitors population growth
	KPI 2: Uptake of industrial land	Monitors Building and Resource Consent Applications.
	KPI 3: Travel Time Reliability	Manages the impact of activities and demand on the network.

The ONRC has been adopted by Council to ensure national consistency around the levels of service delivered by its network. The Transport Agency and the Roading Efficiency Group (REG) developed a framework for investment performance measurement to support the next phase of implementing ONRC in the 2021-24 National Land Transport Programme (NLTP).

Once the activity has been implemented, the Outcome Measures (OM's) will be used to review the performance of the investment. This will show whether the investment is a success and will help to shape future investments.

Table 18 shows how the ONRC Performance Measures for each Work Category will aid delivery of the outcomes prioritised in the 2021 GPS and Arataki:

TABLE 18 - PERFORMANCE MEASURES & OUTCOMES ALIGNMENT

		Performance Measure					Outcomes Realised								
WC	Work Category	ONRC					GPS				Arataki				
Influences							S	T	F	C					
Investment Management															
003	AMP Improvement	Overarching Activity													
004	PBC Development	Overarching Activity													
Local Road Maintenance															
111	Sealed Pavement Maintenance	✓		✓											
112	Unsealed Pavement Maintenance	✓		✓											
113	Routine Drainage Maintenance		✓	✓											
114	Structures Maintenance	✓													
121	Environmental Maintenance	✓	✓	✓	✓										
122	Traffic Services Maintenance	✓		✓		✓									
123	Operational Traffic Management	✓													
124	Cycle Path Maintenance	✓				✓									
125	Operational Traffic Management	✓			✓										
131	Level Crossing Warning Devices	✓													
140	Minor events		✓												
141	Emergency Works	Reactive Activity													
151	Network & Asset Management	Overarching Activity													
211	Unsealed Roads Metalling	✓		✓											
212	Sealed Roads Resurfacing	✓													
213	Drainage Renewals	✓	✓	✓											
214	Sealed Road Pavement Rehabilitation	✓		✓											
215	Structures Component Replacements	✓													
222	Traffic Services Renewal	✓		✓		✓									
Local Road Improvements															
322	Bridge Replacements	✓	✓	✓	✓	✓									
324	Road Improvements	✓	✓	✓	✓	✓									
325	Seal Extensions		✓	✓											
357	Resilience improvements		✓												
Road to Zero															
341	Low Cost – Low Risk	✓		✓		✓									
Walking and Cycling Improvements															
451	Walking facilities	✓		✓	✓	✓									
452	Cycling facilities	✓		✓	✓	✓									
Public Transport Infrastructure															
514	Public transport facilities O & M			✓		✓									

4.0 Programme Development

4.1 Overview

Funding for Rangitikei District Local Roads Network is planned and allocated within three-yearly cycles through the National Land Transport Programme, allowing medium-term certainty and avoiding costly resource reallocation.

The draft GPS 2021, released for sector engagement by the Ministry of Transport on the 10 March 2020 (https://www.transport.govt.nz/multi-modal/keystrategiesandplans/gpsonlandtransportfunding/gps-2021/) proposes to continue the themes from GPS 2018, focussing on the following strategic priorities:

- Safety
- Better travel options
- Improving freight connections
- Climate change

Furthermore the GPS strategic priorities highlighted above are to be delivered by taking into account the following principles:

- Alignment
- Effectiveness
- Efficiency
- Making the most of our existing land transport network
- Increasing benefits through innovation

4.2 Forming the Programme

Through the 2021-51 AMP, Council aims to maximise the benefit derived from investment in maintaining, operating and improving the local road network as part of the transport system, to grow the Regional economy in a safe and sustainable manner. The 2021-51 AMP aims to achieve the right outcomes by targeting the right treatment or activity, in the right place, at the right time, and for the right cost.

In developing the 2021-51 AMP Council ensures that the expenditure associated with the programme of work fits within its allocated budgets. To do this, Council have implemented a rigorous programme development process to extract maximum value for money from our operations, maintenance and improvements programmes.

The process has involved:

- targeting the most important issues for our customers
- identifying where we can make the greatest difference to improving journeys
- identifying the best programme of activities we can implement to close the level of service gap.

The 2021-51 AMP has been developed from maintenance, renewal, operational and infrastructure improvement activities already underway, together with new activities that have been prioritised and programmed using the business case approach.

Council prioritises activities (or groups of activities) for inclusion in the National Land Transport Programme through the application of the ONRC intervention hierarchy and the Transport Agency's Investment Decision Making Framework.

The main factors that are having an impact on costs are:

Demand changes: Growth in vehicle kilometres travelled (VKT) and HPMV impacts which add to wear and tear on the network, along with increased transport due to high urban growth areas and industrial developments. Figure 35 below shows the increase in VKT observed to the local road network between 2015 and 2019:

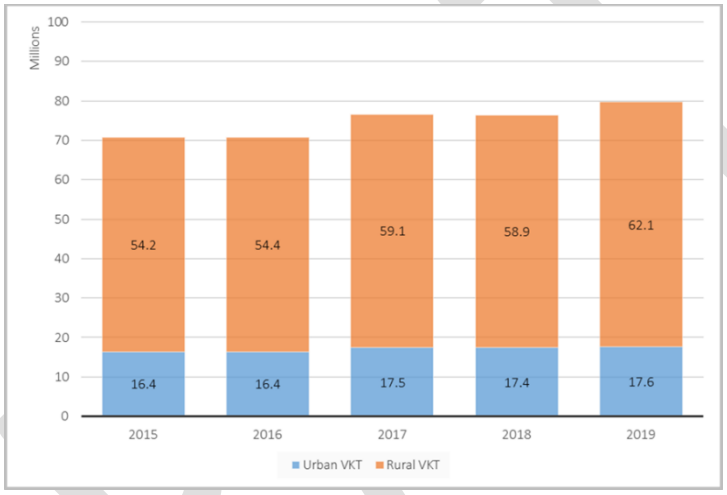


FIGURE 35 - VEHICLE KILOMETRES TRAVELLED, RANGITIKEI DISTRICT

Input prices increases: Rising bitumen and construction costs due to market supply pressures & international currency matters. Figure 36 below shows the change in cost adjustment for bitumen and construction indices between April 2015 & March 2020 (most recent published figures):

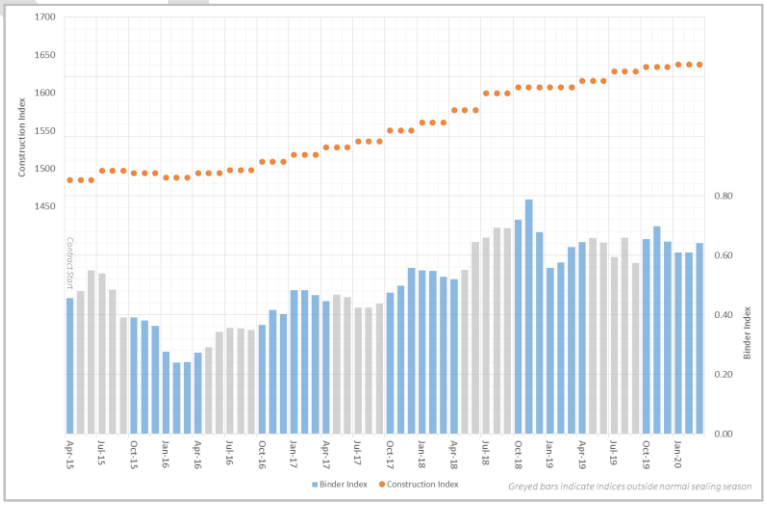


FIGURE 36 - COST ADJUSTMENT FOR BITUMEN & CONSTRUCTION INDICES

The aim is to counterbalance these trends through:

Improved effectiveness

Constructing and renewing assets so they are fit for purpose having regard to an appropriate level of service for the road in question.

Improved efficiency

Optimally maintaining, repairing and renewing assets to minimise whole-of-life costs.

Improved economy

Smarter procurement that reduces the costs of delivering the programme while maintaining competitive markets, and risk transfer to Council for renewal investment decisions.

4.3 Pavement Condition Status

The condition of the District network pavement(s) and surfacing(s) is represented by the following measures:

Roughness	Distribution by road classification, percentage above threshold levels and smooth travel exposure (percentage of assessed network length where roughness is under the relevant threshold)
Texture	Percentage of assessed network where texture is less than 0.5mm mean profile depth
Rutting	Percentage of assessed network in each wheel path, where; rutting is between 10mm & 20mm depth and rutting is greater than 20mm depth
Skid Resistance	Percentage exceeding the skid reporting threshold and adequate skid exposure (where skid resistance exceeds the relevant threshold value by site category)
Condition Index	The average index score - utilising visual rating of surface condition defects - distributed by road classification

Council uses High Speed Survey Data to monitor and project over time the network condition. The projected condition is based on collected data which includes: texture, roughness, rutting and location co-ordinates.

A Pavement Condition Index (PCI) Score is applied for each CLoS. This is based on a linear scoring system between lower and upper bounds for each measure, as demonstrated in Figure 37 and Table 19 on the following page:

FIGURE 37 - PAVEMENT CONDITION CLOS SCORING SYSTEM

TABLE 19 - PAVEMENT CONDITION CLOS THRESHOLD LIMITS

CLoS	Lower Limit	Upper Limit	CI Score
Texture Depth (mm)	0.7	0.4	0 to 75
Rutting (mm)	10	20	0 to 80
Roughness (NAASRA)	110	160	0 to 100
	Combined PCI Score		255 (max)

Subsequently, the overall PCI score can be assessed using a 'traffic light' grading system shown in Table 20 below:

TABLE 20 - PAVEMENT CONDITION INDEX TRAFFIC LIGHT CLASSIFICATION

PCI Score	Condition	Classification
Less than 50	Satisfactory, No action	GREEN
Between 50 and 75	Minor deterioration, observe	AMBER
Greater than 75	Increasing deterioration, investigate	RED

This 'traffic light' grading system can be plotted by road length and on GIS mapping software, allowing easy identification of sections that warrant either:

- Observation at the onset of pavement degradation or
- Investigation of more significant pavement issues that will assist with programming and application of effective maintenance solutions.

Figure 38 below shows an exemplar summary table of a sealed road with long-section plot beneath (Figure 39), providing a visual reference of deteriorating location(s):

Pavement Condition Index Score

Roadname:	OTARA ROAD				
Survey Date / Date Range :	22/02/2019				
Length Assessed :	2080	m		No of Data Points :	104

	Mean PCI	Counts where 50 > PCI > 75	%'age where 50 > PCI > 75	Counts where PCI > 75	%'age where PCI > 75
Overall Combined	32.14	11	10.6%	18	17.3%
	Mean Element Score	**Counts**	**% Btn Lower & Upper T'hold**	**Counts**	**% Exc Upper Threshold**
Roughness	17.38	29	27.9%	5	4.8%
Rutting	14.77	42	40.4%	5	4.8%
Texture	0.00	0	0.0%	0	0.0%

FIGURE 38 – EXEMPLAR PAVEMENT CONDITION INDEX, SUMMARY TABLE

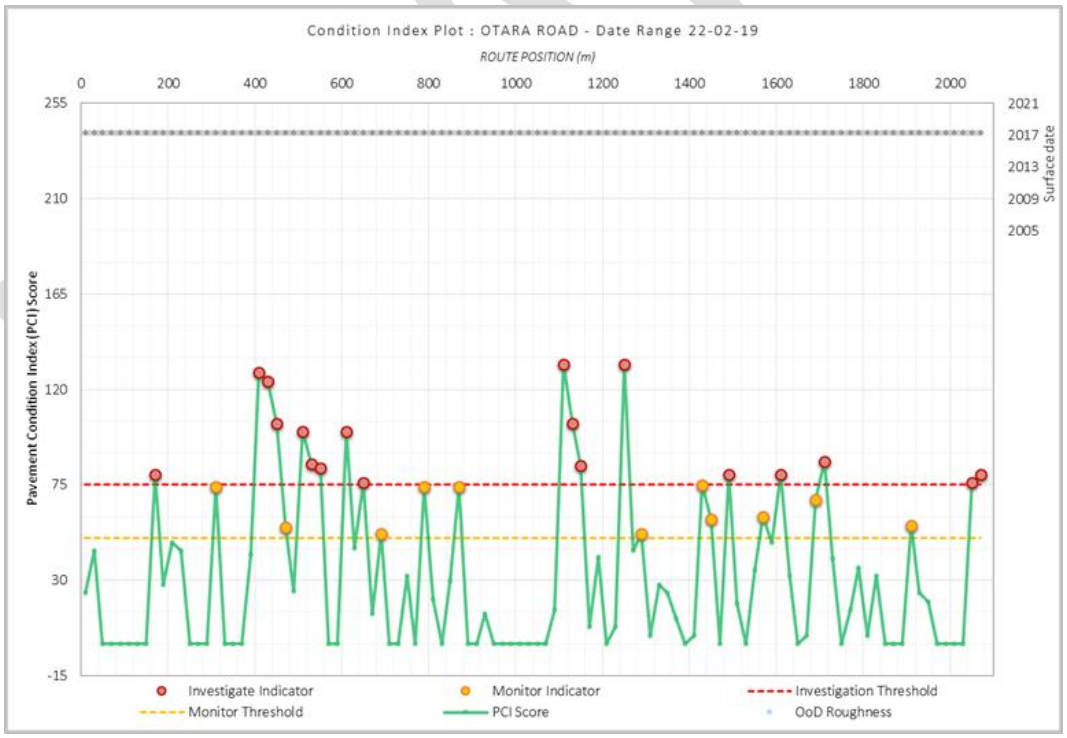


FIGURE 39 - EXEMPLAR PAVEMENT CONDITION INDEX, LONG-SECTION PLOT

Further to the long-section plot, charts for each measure on the selected road can be produced to allow an Engineer to see the primary failure mechanism(s) that require investigation or action. Figure 40 below shows the constituent CLoS measures (from top to bottom): through-section (showing the variance in each measure), roughness, rutting and texture depth.

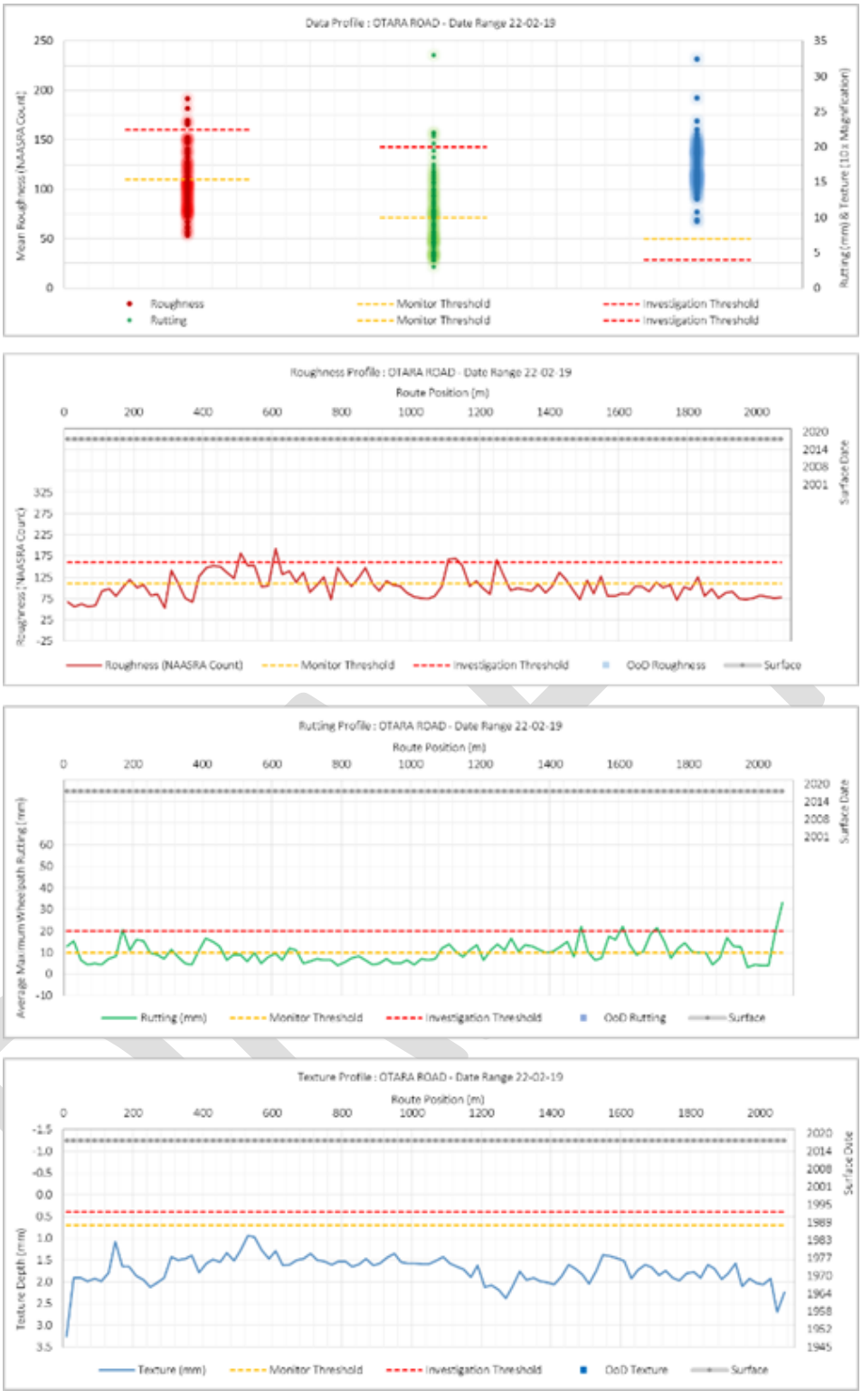


FIGURE 40 - CONSTITUENT CLOS MEASURE PLOTS

Every sealed road subject to the collection of either High Speed Data or Low Volume Roughness is assessed on a regular basis, subsequent to receipt of new survey data. The results are then collated to produce summary charts for:

a) the overall sealed network and

b) by ONRC hierarchy.

4.3.1 Overall Sealed Network

The data for all sealed roads is collated to assess the whole sealed road network. Figure 41 below shows the latest 3 years of data for the overall network, highlighting the trend in the percentage of network within (green), approaching (amber) and beyond (red) acceptable parameter thresholds:

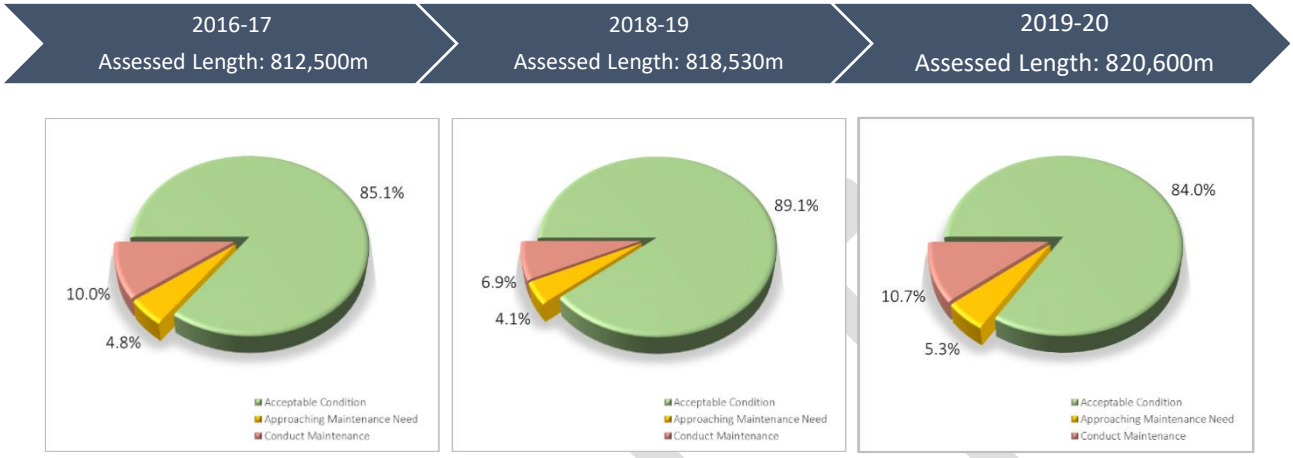


FIGURE 41 - PAVEMENT CONDITION PERFORMANCE TREND, NETWORK LEVEL

However, between the 2016-17 and 2018-19 assessments, the following circumstances must be acknowledged as having an effect on the observed trend:

a) high roughness readings as a result of the survey vehicle traversing speed humps have now been omitted from the analysis and
b) sections of roads where a renewal has occurred (i.e. resurfacing or rehabilitation) **after** the latest survey have also been omitted (since the data is no longer valid).

4.3.2 ONRC Hierarchy

Figure 42 below displays data split by ONRC hierarchy.

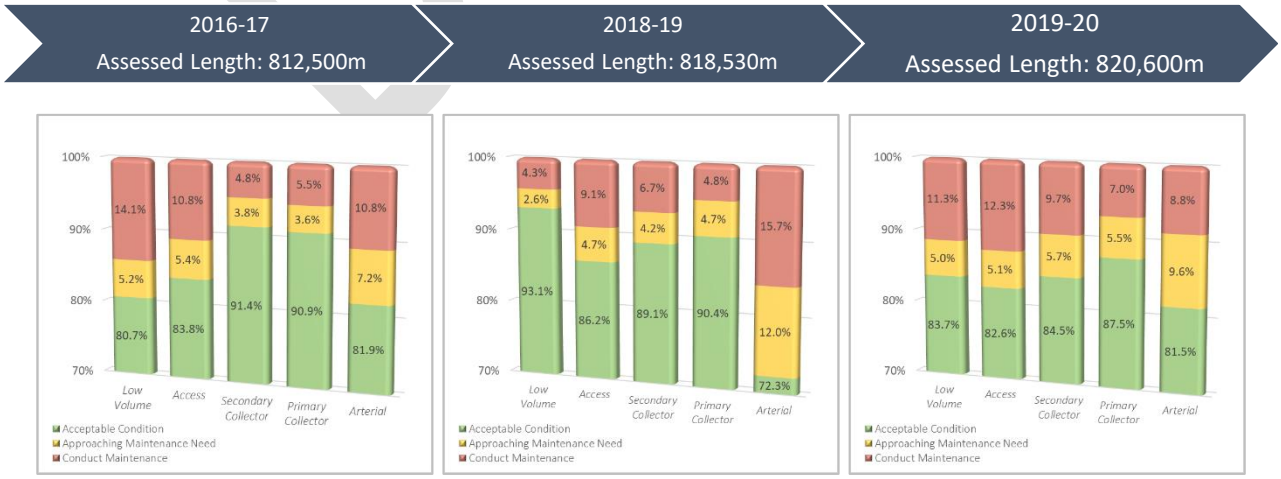


FIGURE 42 - PAVEMENT CONDITION PERFORMANCE TREND, ONRC LEVEL

Improvement can be seen in the consistency of pavement performance across the differing road hierarchies, reflecting the recent - and significant - ONRC re-evaluation that took place in mid-2020.

This re-evaluation resulted in a five-fold increase in Arterial road length (from 1km to 5km) and reallocation of a number of Access level roads to Low Volume classification. This re-classification of road hierarchy - in tandem with the caveats described above - has resulted in a more consistent and accurate representation of the network's pavement condition and current performance.

4.3.3 Summary

Table 21 below shows the individual CLoS Measures for the sealed network, recording the number of readings (and percentage of network length) where the measure has been identified as AMBER or RED in the latest two analyses:

TABLE 21 - PAVEMENT CONDITION PERFORMANCE, INDIVIDUAL CLOS TREND

	2018-19	2019-20		2018-19	2019-20	
CLoS	AMBER	AMBER	Change	RED	RED	Change
Texture	119 (0.3%)	189 (0.5%)	+ 0.2%	0 (0.0%)	1 (0.0%)	n/c
Rutting	5,987 (14.8%)	6,653 (16.3%)	**+ 1.5%**	10,682 (26.4%)	1,845 (4.5%)	- 21.9%
Roughness	4,483 (11.1%)	6,038 (14.8%)	**+ 3.7%**	723 (1.8%)	1,299 (3.2%)	**+ 1.4%**

Although the overall performance trend is seen to be static in the case of texture depth and exhibiting a significant improvement in rutting above the upper threshold, the remaining primary indicator of pavement life expiry (roughness) has seen a substantial increase of **3.7%** between the lower and upper bounds (AMBER) and **1.4%** above the upper boundary (RED). This increase has more than offset the improvement in treatment of rutting at the extreme end (beyond the upper boundary). This indicates that pavements are – in general – consistently deteriorating and will be increasingly reaching the end of their useful life. This will require suitable and timely intervention in future funding cycles.

At a higher resolution than at the network / road level described above, Treatment lengths (TL's) within individual roads are also subject to monitoring and review. Using the same data, each TL can be plotted and ranked for performance. Appendix B: Pavement and Surfacing Treatment Selection details the process and includes an exemplar summary report.

For overall performance in relation to peer group, regional and national network levels, the ONRC PMRT is interrogated for comparative performance (See Appendix A: ONRC Performance Measures Reporting Tool). The evaluation methodology of this system can be found at the following location:

http://www.nzta.govt.nz/assets/Road-Efficiency-Group-2/docs/NZTA160801-The-ONRC-Performance-Measures-Final-Published.pdf.

4.4 Approach to Maintenance and Renewals

4.4.1 ONRC Customer Levels of Service

The ONRC Customer level of Service (CLoS) Performance Measures require an understanding of the changing context and environment. The CLoS continues to challenge systems that have been in place for a long time; as a result Council periodically reviews its previous assumptions and sets the new frameworks for the future. Where applicable, condition measures are reported in terms of the ONRC.

4.4.1.1 Efficiency

The outcome Council is seeking is "Value for Money" and the optimisation of whole of life costs in its delivery of affordable customer levels of service (CLoS). Council will deliver optimised programmes that are affordable and improves service productivity. The intention is to programme works to maximise existing asset benefits while being mindful of minimising service risk i.e. not too early and not too late.

4.4.1.2 Safety

Minimise the risk of crashes

- Permanent hazards are identified and mitigated in a consistent and fit for purpose manner so that a driver's expectation about the standard of these are a major factor in his or her ability to negotiate the road environment safely (RTS 5/MOTSAM).
- COPTTM requirements implemented at every work site and temporary hazard as soon as practical.
- Rural Road Sight distance (including hazard warning devices) are not obscured by vegetation.
- Sight distance (including hazard warning devices) is not obscured by unauthorised obstructions (advertising signage, etc).

Minimise the consequence of crashes

- All traffic restraining devices such as bridge side rails, guardrails and wire rope barriers are maintained in an effective operating condition.
- Roadside safety zones are maintained free from unauthorised obstructions and the development of new hazards.

Minimise the risk of driver behaviour related crashes

- A targeted programme is in place to address identified needs (e.g. Waka Kotahi Communities at Risk Register).

Reduce the consequence of crashes

- Develop strategies to achieve appropriate KiwiRAP star rating, and identify and manage noncompliant sections and high risk sites or for lower rural classifications.
- Develop strategies to identify and manage non-compliant sections and high risk sites over time.

Reduce the risk of crashes at night

- Provide and maintain lighting in a consistent and fit for purpose manner to support the facilitation of safe movement.

Reduce the risk of loss of control crashes

- Reducing Trend of Loss of control, wet road and night time crashes.
- Number of maintenance related faults (such as rutting / depressions, shoving, potholes, corrugated length, edge break (in lane), bleeding, detritus (in lane), ponding water) that are likely to affect driver behaviour, e.g. requiring a reduction in speed or evasion.
- Areas with surface friction deficiencies are identified and remedied appropriately and efficiently.

Minimise risk of crashes to active road users

- 95% of the district's footpaths are within acceptable defect levels, for example cracking, breaks, high lips, trip hazards.
- Minimise the number of maintenance related hazards (such as detritus, ponding water, potholes, broken glass) on cycleways requiring evasive action by rider.
- Provide and maintain lighting in a consistent and fit for purpose manner to support the facilitation of safe movement, and personal security.
- Warning of hazards on the trip.
- Guidance on safe use.
- Maintain the current form and infrastructure in a safe condition.

4.4.1.3 Resilience

Prepare for Emergencies and Incidents that could disrupt travel

- An Emergency Procedures and Preparedness Plan (EPPP) is in place and actionable.

Mitigation to avoid route closure where appropriate

- Network Resilience Maintenance, Monitoring and Improvement Plan in place and actionable.
- Number of journeys lost where road closure occurs due to proactive maintenance not taking place.

Provide Alternative Routes where appropriate

- A plan is in place that details an alternative route available or the current route is robust in case of route closure.

Inform customers of Route Availability and Travel choice

- Customers are informed prior within an hour of Council being informed of change in travel conditions and/or route choice, via appropriate prior-to-travel mediums as stated in EPPP.
- Customers are informed on route within an hour of Council being informed of change in travel conditions and/or route choice, via appropriate on-route mediums as stated in the EPPP.

- Passenger transport customers are informed within the agreed timeframe of a significant change in travel times, via appropriate on-route mediums.

Restore connectivity as soon as circumstances allow

- Customers will be informed of the estimated time access will be restored and when the next update will be. Customers will be informed through notified channels within an hour of Council receiving notification of an incident.

4.4.1.4 Amenity

Maintain the road environment and facilities that support an appropriate level of comfortable ride

Sealed roads

- Peak roughness: At least 95% of the sealed road network meets specified levels of ride comfort.
- Truck ride: Areas with truck ride deficiencies are identified and remedied appropriately.

Unsealed Road Roughness

- The average ride comfort level of the unsealed road network meets specified levels.

Maintain the road corridor compatible with the urban context of the road use experience

- Meet specified levels of service for the management of aesthetic maintenance related faults (such as litter, damaged or non-functioning equipment or furniture, graffiti, vegetation, etc.) that are likely to detract from the customer's experience.
- Provide and maintain lighting in a consistent and fit for purpose manner to support the facilitation of safe movement, and personal security.

4.4.1.5 Travel time reliability

Manage the impact of activities and demand on the network

- Council will coordinate planned activities and events minimising customer impact, taking into account road function and any changes in priority by mode that may occur.
- Delays due to planned activities shall be kept to a minimum where feasible.
- Delays due to unplanned activities is covered in Resilience.

Operate the network to maximise its effective capacity

- Council has a network/corridor operating framework in place to ensure operation of the network focusses on moving people and goods, balancing the competing demands for limited road space.

4.4.1.6 Accessibility

Council will provide guidance so people can navigate around the District Network

- Council provides information on way finding in advance of intersections, at intersections and beyond intersections to reassure road users that they are travelling on the correct route.
- When a sign is provided, it will comply with MOTSAM, RTS2 and the Traffic Control Devices Manual.

Council will provide access to adjoining land to support the role in the transport network where it does not affect others and the function of the road

- Access to adjoining land for new customers shall not be restrictive but balanced against minimising impact to the existing CLoS Outcomes.

Council will provide infrastructure that meets an appropriate level of accessibility to users to perform their role

- Council identifies and manages (through prioritisation and mitigation) sections of the network unable to carry Class 1 traffic HPMV and/or 50 Max vehicles.
- Physical state of the network, is maintained in an economically sensible manner (allowing safe travel at a sensible and appropriate speed).

Council will manage the network to ensure it is accessible for different uses where appropriate

- Council has a strategy in place to demonstrate it is managing active road user demands and ensuring new assets are consistent with ONRC guidelines.
- Council manages Corridor Access Requests, ensuring all utility access to the network complies with the NZUAG code, COPTTM, and the activity's impact on CLOS outcomes is minimised.
- Council manages access to the transport corridor to minimise the impacts to the customer in line with the CLoS Outcomes.

Table 22 on the following page shows how the approaches relate to the ONRC performance measures, either directly or indirectly:

TABLE 22 - DIRECT AND INDIRECT IMPACT ON PERFORMANCE MEASURES BY WORK CATEGORY

WC	Work Category	Safety		Resilience		Amenity		Travel Time Reliability		Accessibility	
Influences		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
Investment Management											
003	AMP Improvement		✓		✓		✓		✓		✓
004	PBC Development		✓		✓		✓		✓		✓
Local Road Maintenance											
111	Sealed Pavement Maintenance	✓				✓	✓				
112	Unsealed Pavement Maintenance	✓				✓					
113	Routine Drainage Maintenance				✓		✓				
114	Structures Maintenance	✓									
121	Environmental Maintenance	✓		✓	✓	✓		✓			
122	Traffic Services Maintenance	✓				✓				✓	
123	Operational Traffic Management	✓							✓		
124	Cycle Path Maintenance	✓									✓
125	Operational Traffic Management		✓						✓		
131	Level Crossing Warning Devices	✓									
140	Minor events				✓						
141	Emergency Works										
151	Network & Asset Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
211	Unsealed Roads Metalling	✓				✓					
212	Sealed Roads Resurfacing	✓									
213	Drainage Renewals		✓		✓		✓				
214	Sealed Road Pavement Rehabilitation	✓				✓	✓				
215	Structures Component Replacements	✓									
222	Traffic Services Renewal	✓				✓					✓
Local Road Improvements											
322	Bridge Replacements		✓	✓			✓		✓	✓	
324	Road Improvements	✓			✓		✓		✓		✓
325	Seal Extensions				✓	✓					
357	Resilience improvements			✓							
Road to Zero											
341	Low Cost – Low Risk		✓				✓				✓
Walking and Cycling Improvements											
451	Walking facilities	✓				✓			✓	✓	
452	Cycling facilities	✓				✓			✓	✓	
Public Transport Infrastructure											
514	Public transport facilities O & M						✓				✓

4.4.2 Maintaining a Sound Network Condition

The Local Road network is generally in good condition (see Section 4.3 Pavement Condition Status for more detailed condition analysis). In conclusion:

- Surface measures are holding in the long term
- Roughness is slightly improved
- Rutting continues to deteriorate across the bulk of the network
- Council is to continue monitoring and report trends
- Council should focus investment strategies to minimise the risk of further deterioration due to roughness

4.4.3 Data Acquisition, Analysis and Use

Council continues to use improved network benchmarking metrics to identify and target opportunities for improvement (primarily by continuing to engage with the Roading Efficiency Group, REG). Council's aim is to continually improve the modelling of asset condition and the maintenance and renewal works required to meet service level targets for the least long-term cost to increase its confidence that the current and planned renewals programmes will be sustainable.

Data quality is assessed by the REG, producing the following charts for each RCA to measure performance:

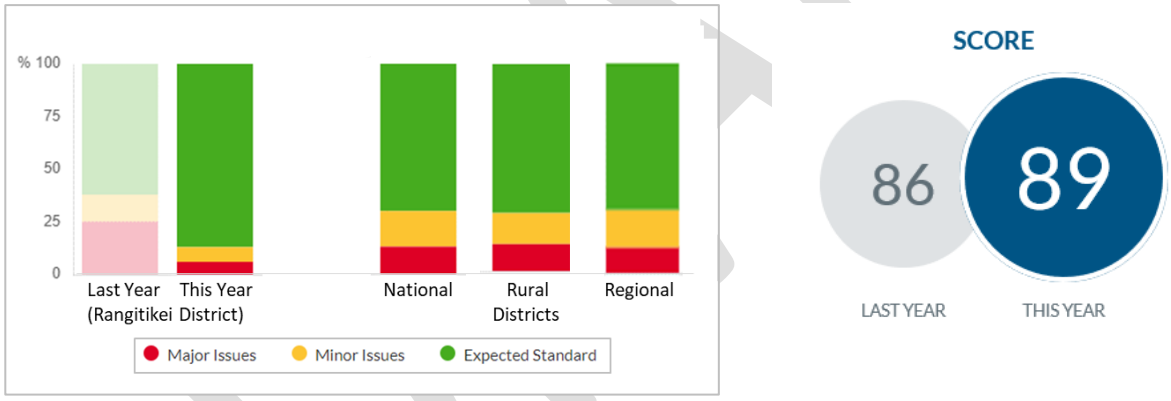


FIGURE 43 - REG DATA QUALITY MEASURE FOR RANGITIKEI DISTRICT WITH COMPARATORS TO NATIONAL, PEER & REGIONAL GROUPS

Figure 43 above shows the level of data quality from the previous year to this year for the District (the left-hand columns) and compares this years' performance against National, Peer and Regional Groups (right-hand columns). It can be seen that management of Council's data has improved from the previous year.

Rangitīkei District's data quality is currently outperforming the National, Peer and Regional group average, but improvement is still to be made through continued investment throughout this and future programmes.

4.4.4 Working the Asset

By moving to ONRC levels of service and - in some parts of the network - replacing our assets later in their lifecycle, the local road network may be less frequently renewed. This could result in more patched roads and a less smooth journey for

customers, particularly on Access and Low Volume Roads. Notwithstanding this, road conditions will be monitored to ensure safety is not compromised.

4.4.5 Condition Monitoring

Council aims to continue improving the condition monitoring of pavements and forecasting remaining lives by implementing techniques and lessons learnt from past condition metrics.

4.4.6 Roading Activity Management Plan

The Activity Management Plan (AMP) provides comprehensive guidance on how Council's assets should be maintained and renewed in order to deliver the maintenance and renewal programme proposed here. The plan documents a clear link between service level, infrastructure condition, lifecycle management needs and costs, and has been seen and reviewed from an investment perspective.

The AMP contains individual lifecycle asset management plans for the different asset classes. These will be updated over 2021-51 as Council reviews each service area and whenever any other significant improvement opportunity arises. The AMP will provide the benchmark requirements for asset management planning for the network. This will increase the consistency of approach across the network and the implementation of improved practices as these are developed.

4.4.7 Cost Effectiveness of Maintenance, Operations and Renewals

As part of the strategy described above, Council is able to demonstrate cost efficiency per vehicle kilometre travelled (VKT) when compared with other local road networks.

Maintenance, Operations and Renewals expenditure (excluding Emergency Reinstatement) for the 3 years data up to 2018-19 has been extracted from Waka Kotahi's website:

https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/

and collated into graphical format to allow easy visual comparison.

Comparison has been made between Rangitikei District and other RCA's, comprising 3 assessment groups, by measuring the (equivalent) mean annual cost per 100 million VKT over the last 3 years. The assessment groups comprise:

- NZ Rural Districts,
- Waka Kotahi defined Peer Group (D) and
- Manawatu-Whanganui Region (& NZ)

Comparison 1: NZ Rural Districts

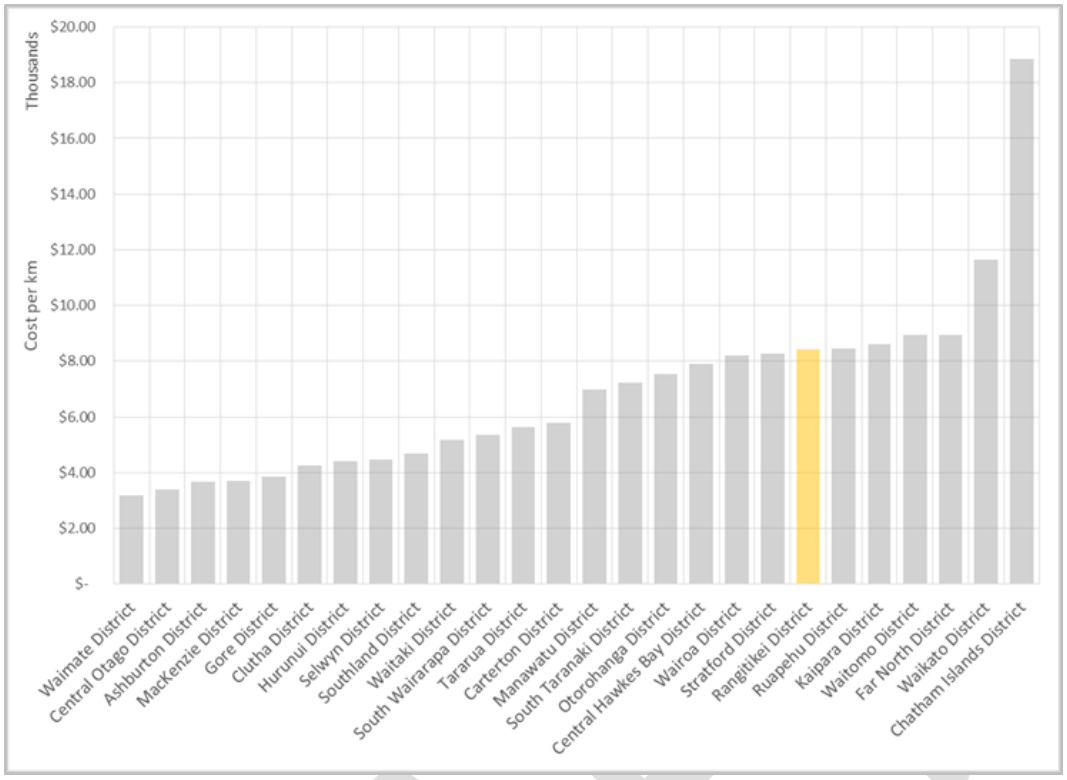


FIGURE 44 - (EQUIVALENT) COST PER 100 MILLION VKT, NZ RURAL DISTRICTS

Comparison 2: Peer Group (D)

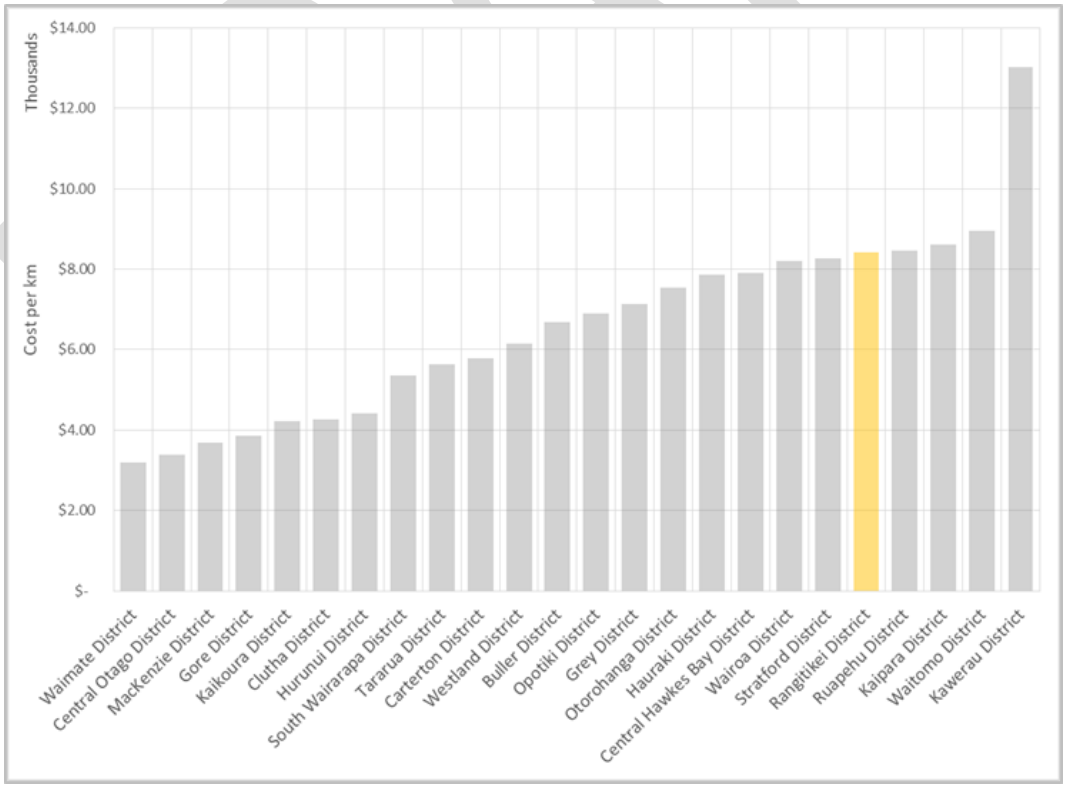


FIGURE 45 - (EQUIVALENT) COST PER 100 MILLION VKT, PEER GROUP (D)

Comparison 3: Manawatu-Whanganui Region (& NZ)

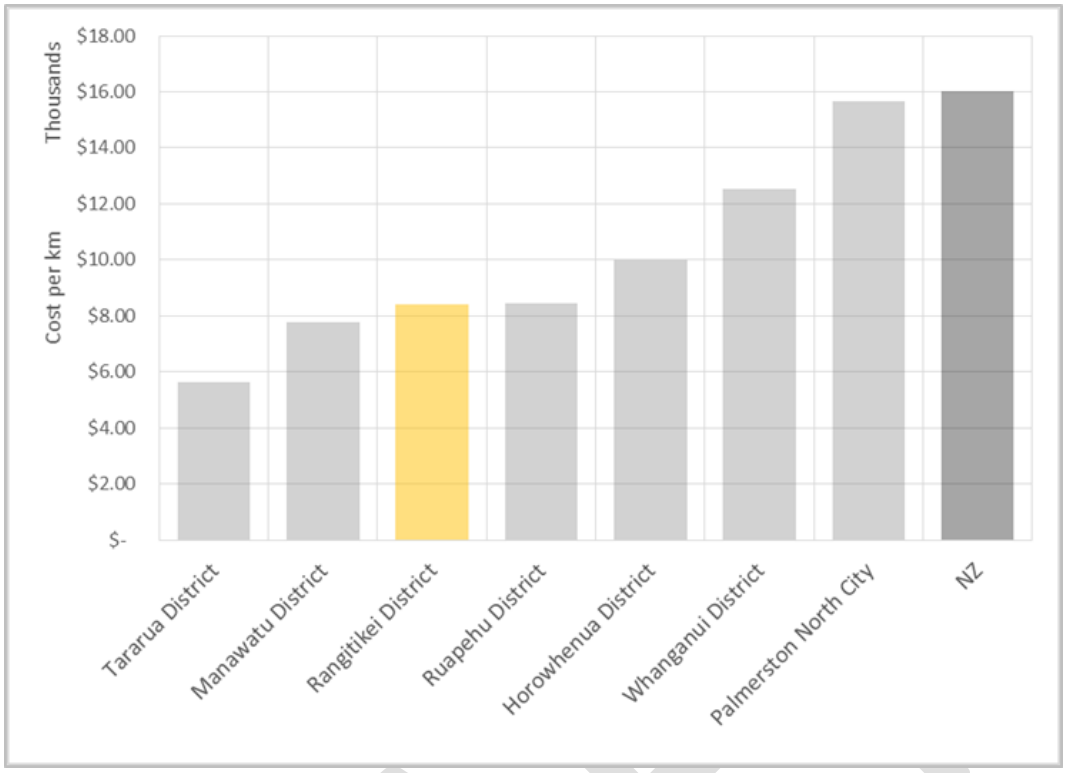


FIGURE 46 - (EQUIVALENT) COST PER 100 MILLION VKT, MANAWATU-WHANGANUI REGION (& NZ)

It can be seen in Figure 44, Figure 45 and Figure 46 that the Rangitikei District compares favourably within its rural, peer, regional and national grouping, indicating effective traffic volume related spend.

5.0 The Programme: Subsidised Roading Activities

5.1 Programme Format

The 2021-24 Roading Programme has been separated into Activity Classes, as defined in the GPS 2021, and further categorised by Waka Kotahi Work Category.

The Programme was developed using the ONRC Performance Measures to support investment in a fit for purpose level of service, consistently across the country. To meet these measures Council has:

- analysed the changing context and environment,
- reviewed it's the current practices and thinking,
- changed some systems that have been in place for a long time and
- revisited assumptions to set the new frameworks for the future.

The ONRC Performance Measures, and how they are impacted by the following work categories, have been summarised in Table 22 - Direct and Indirect Impact on Performance Measures by Work Category on page 72.

Further detail of the measures used can be found in Appendix A: ONRC Performance Measures Reporting Tool and at http://www.nzta.govt.nz/assets/Road-Efficiency-Group-2/docs/NZTA160801-The-ONRC-Performance-Measures-Final-Published.pdf.

In addition to the ONRC Measures, the network condition and trends (as detailed in Sections 3.0 and 4.0) have been reviewed against the previous funding cycle to determine whether particular work category investment and subsequent performance is on a favourable or unfavourable trajectory. This provides confidence that the proposed programme delivers on:

- increasing the benefits of already positively trending interventions,
- arresting and/or reversing negative trends,
- delivering the desired outcomes of Local, Regional & National priorities and
- maintaining or improving cost efficiency.

5.2 Programme Optimisation

The programme has been optimised for both the mix and timing of interventions and there is an appropriate procurement approach to deliver value for money in the short, medium and long term. See Section 8.0 Delivery, Risk & Procurement for further detail.

Overall level of service performance and cost efficiency against peers has been sufficiently demonstrated in Sections 4.3 Pavement Condition Status, 4.4.7 Cost Effectiveness of Maintenance, Operations and Renewals and Appendix A: ONRC Performance Measures Reporting Tool.

The following charts in Figure 47 indicate expenditure for the previous 3 years to 2018-19, examining the annual cost per km of the network against regional neighbours (and at national level), which combines inter-related work categories into 4 key parameters (Network Management, Corridor, Pavement & Seal and Environment & Drainage):

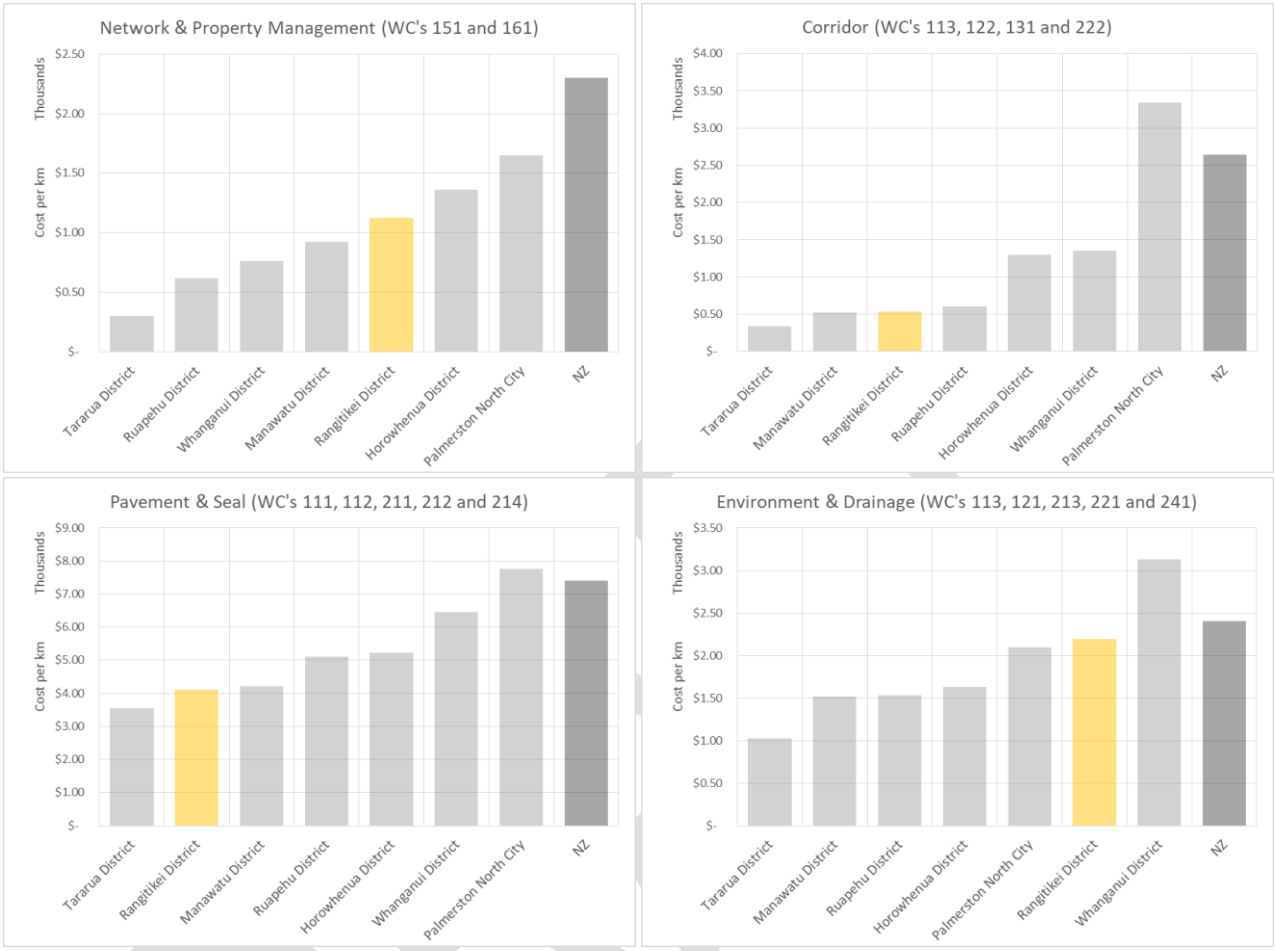


FIGURE 47 - COST PER KM AGAINST REGIONAL PEERS (& NZ), COMBINED CATEGORIES

As can be seen, the annual average cost by each parameter shows that the Rangitikei District compares favourably with its regional neighbours, located close to - or below - the median in all instances.

The mixture of interventions and the subsequent budgets are driven by:

- the strategic responses to the problem statements located in Section 3.0 Problems, Issues and Opportunities and
- previous expenditure profile, evidencing sufficient or insufficient:
  - investment against network performance,
  - intervention selection or
  - intervention timing

The mix of interventions is determined, based on the intervention workflows referred to in each of the problem statements in Sections 3.2 through 3.5.

Where a renewal or replacement intervention is recommended, either a:

- Net Present Value (NPV) analysis or
- theoretical Benefit to Cost Ratio (utilising the Waka Kotahi Monetised and/or Non-monetised Benefit and Cost Manuals)

is performed to ensure that the renewal (upgraded or new asset) option is more economic / acceptable than:

- doing nothing,
- continuing maintenance,
- downgrading the level of service or
- retiring the asset

5.3 Investment Management (Activity Class)

5.3.1 Activity management planning improvement (Work category 003)

This work category provides for the preparation and improvement of land transport AMP's, road safety action plans and procurement strategies.

This the core programme for 2021-24 and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Activity management planning improvement	50,000	51,550	53,050
WC 003 Total	50,000	51,550	53,050

5.3.2 Programme business case development (Work category 004)

This work category provides for the preparation of a Programme Business Case, including supporting evidence collection and model application.

The Transport Agency expects that proposals for funding assistance for a Programme Business Case will be justified using a fit for purpose Strategic Case which:

- outlines the case for change and the need for the potential investment
- identifies the strategic context and fit of the proposed investment
- provides stakeholders with a high degree of confidence that the investment aligns with strategic priorities.

This the core programme for 2021-24 and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Programme business case development	50,000	51,550	53,050
WC 004 Total	50,000	51,550	53,050

5.3.3 Summary: Investment Management Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
003	Activity management planning improvement	50,000	51,550	53,050
004	Programme business case development	50,000	51,550	53,050
Investment Management (Activity Class) - Totals		100,000	103,100	106,100

5.4 Local Road Maintenance (Activity Class)

This Activity Class contains the Operational, Maintenance, Renewals (and Emergency) activities required to ensure a continued level of service is sustained throughout the Rangitikei District Roading network.

5.4.1 Sealed pavement maintenance (Work category 111)

This work category provides for the routine care of sealed pavements to maintain their structural integrity and serviceability.

This an enhanced programme to address pavement damage caused by increased traffic associated with logging, as identified in Section 3.2 Problem 1: Legacy Network, equating to an additional 1,348m2 per annum of pavement repairs.

Description	2021-22	2022-23	2023-24
Routine Pavement Repairs	596,666	615,163	633,063
Pre-seal repairs	500,000	515,500	530,500
Logging activity mitigation	100,000	103,100	106,100
Lump Sum Activities	181,000	186,611	192,041
WC 111 Total	1,377,666	1,420,374	1,461,704

5.4.2 Unsealed pavement maintenance (Work category 112)

This work category provides for the routine care of unsealed pavements to maintain their structural integrity and serviceability.

This is an enhanced programme for the 9 year period 2021 through to 2030, required to cope with the continuing forestry harvest. The maintenance will be targeted at the haul routes, as identified in Section 3.2 Problem 1: Legacy Network. The programme will be managed in close consultation with forestry owners and logging contractors. Estimate based on Lump Sum activities plus an estimated additional 294m2 of dig-out and pothole repairs.

Description	2021-22	2022-23	2023-24
Ordered works	86,805	89,496	92,100
Forestry activity mitigation	50,000	51,550	53,050
Grading	248,412	256,113	263,565
Lump Sum Activities	57,292	59,068	60,787
WC 112 Total	442,509	456,227	469,502

5.4.3 Routine drainage maintenance (Work category 113)

This work category provides for the routine care of drainage facilities to maintain their function.

This an enhanced programme to aid reduction in Emergency Reinstatement expenditure. The goal is to make the network more resilient to severe weather events, as identified in Section 3.3 Problem 2: Low Network Resilience. Estimate based on Lump Sum activities plus 300km of water-table and high shoulder removal, mainly within re-seal sites.

Description	2021-22	2022-23	2023-24
Street Cleaning	23,000	23,713	24,403
Drainage Maintenance	825,182	850,763	899,043
Lump Sum Activities	309,437	319,030	328,313
WC 113 Total	1,157,619	1,193,505	1,251,758

5.4.4 Structures maintenance (Work category 114)

This work category provides for the routine work necessary to maintain the functional, structural integrity and appearance of the following:

- road bridges
- retaining structures
- guardrails
- stock access structures
- cattle stops
- footpaths on road structures

This is an enhanced programme and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Barrier Maintenance	14,500	17,733	3,183
Concrete Repairs	61,700	65,262	46,684
Drainage Control	9,500	4,846	2,759
Joint Maintenance	10,000	10,310	29,708
Pavement Repairs	0	0	1,592
Miscellaneous	1,000	0	0
Structure Cleaning	8,000	5,155	4,032
Vegetation Control	4,000	9,279	29,178
Watercourse Clearance	18,000	18,558	19,098
Lump Sum Activities	92,955	95,837	98,625

WC 114 Total	219,655	226,980	234,858

5.4.5 Environmental maintenance (Work category 121)

This work category provides for the routine care and attention of the road corridor to maintenance safety, aesthetic and environmental standards.

This is the core programme and is on a par with the average costs for the preceding 3 years. This programme includes the removal of trees that are considered roadside hazards, in order to mitigate the 'High Personal Risk' on the rural network. The programme also provides for improved Temporary Traffic Management for winter road closures on the Taihape Napier Road to maintain and acceptable level of public safety.

Description	2021-22	2022-23	2023-24
Ordered works	150,000	154,650	159,150
Mowing (4 rounds)	294,300	303,423	312,252
Winter Maintenance Activities	25,000	25,775	26,525
Safety Vegetation Removal	200,000	257,750	265,250
Lump Sum Activities	657,000	677,367	697,077
WC 121 Total	1,326,300	1,418,965	1,460,254

5.4.6 Traffic services maintenance (Work category 122)

This work category provides for the routine care and attention of: road furniture, markings, and carriageway and pedestrian crossing lighting.

This is the core programme and is on par with the average costs for the preceding 3 years. This level of funding is required to maintain the current level of service. Installing LED streetlights has reduced power consumption by approximately 50%. Increased costs of signs maintenance and cost adjustment factors that applies to this work category has consumed the saving in power costs.

Description	2021-22	2022-23	2023-24
Ordered works	70,000	72,170	74,270
Te Araroa Trail Signage		5,155	
Cycling the Country Road Signage	5,000	5,155	5,305
Carriageway Lighting Power	85,500	88,151	90,716
Carriageway Lighting Contractors	52,000	53,612	55,172
Lump sum activities	200,760	206,984	213,006

WC 122 Total	413,260	431,226	438,469

5.4.7 Operational traffic management (Work category 123)

This work category provides for the operation, maintenance and power costs of traffic signals and other traffic management equipment and facilities, including advanced traffic management systems, variable message signs, area-wide traffic control systems (including update of software) or local area traffic management schemes (including speed control devices).

Exclusions are:

- staff time for the operation of closed-circuit television systems
- the reinstatement of facilities maintained under this work category, following a renewal or construction / implementation activity

This is a new core programme for the ongoing operation of advanced traffic management systems (adopting new technology in the form of 'active' signage installations throughout the District), related to the expectations surrounding the Government's 'Tackling Unsafe Speeds' programme. We have programmed active signage installation for South Makirikiri School and these are the running costs associated post installation.

Description	2021-22	2022-23	2023-24
Operational traffic management	871	898	924
WC 123 Total	871	898	924

5.4.8 Cycle path maintenance (Work category 124)

This work category provides for the operation, maintenance and renewal of the pavement and facilities associated with cycle paths, including the operation of associated lighting. This includes cycle and combined walk-cycle paths and facilities, provided the facilities are consistent with a relevant cycling or walking and cycling strategy or plan.

Exclusions are:

- cycle paths and facilities used for purely recreational purposes – these are not eligible for funding assistance
- pedestrian only walk paths and facilities - these are funded under Work category 125: Footpath maintenance
- construction/implementation of new cycle facilities or capital work on existing facilities, such as the provision of new lighting – these are funded under Work category 452: Cycle facilities

This is the core programme.

Description	2021-22	2022-23	2023-24
Cycle path maintenance	1,020	1,052	1,082
WC 124 Total	1,020	1,052	1,082

5.4.9 Footpath maintenance (Work category 125)

This work category provides for the operation, maintenance and renewal of the pavement and facilities associated with footpaths, including the operation of associated lighting. This includes footpaths and facilities, provided the facilities are consistent with a relevant walking strategy or plan.

Exclusions are:

- footpaths and facilities used for recreational purposes (e.g., paths which do not connect to the wider footpath network)
- footpaths and facilities that are not in public ownership or to which the public does not have full access at all times of the day, e.g. footpaths in parks that are closed to the public at night
- maintenance of shared pedestrian cycling paths and facilities – these are funded under Work category 124: Cycle path maintenance
- vegetation control, mowing of berms, and sweeping – these are funded under Work category 121: Environmental maintenance
- construction/implementation of new or improved shared pedestrian and cycle paths and walking facilities – these are funded under Work category 451: Walking facilities, and Work category 452: Cycling facilities.

This is the core programme.

Description	2021-22	2022-23	2023-24
Footpath maintenance	110,500	113,926	117,241
Lump Sum Activities	14,739	15,499	15,950
WC 125 Total	125,239	129,425	133,191

5.4.10 Rail level crossing warning devices maintenance (Work category 131)

This work category provides for Council to share in the costs associated with the maintenance and renewal of rail level crossing warning devices carried out by the relevant rail track authority.

This is the core programme for 2021-24. KiwiRail has indicated inspection and maintenance costs which are an increase in the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Rail level crossing warning devices maintenance	22,440	23,598	24,770
WC 131 Total	22,440	23,598	24,770

5.4.11 Minor events (Work category 140)

This work category enables funding from the National Land Transport Fund (NLTF) for the response to minor, short duration, natural events that reduce service levels on part of the transport network.

With climate change there is an increase in the amount of rocks and minor slips that have to be removed following severe weather events. Estimate based on Lump Sum vegetation control, debris pick up and slip removal and approximately 4,500m3 per year of <2m3 slip clearance.

This is the core programme for 2021-24 and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Minor events	320,000	329,920	339,520
WC 140 Total	320,000	329,920	339,520

5.4.12 Network and asset management (Work category 151)

This work category provides for the general management and control of the road network and management of road assets.

As demonstrated in Section 4.4.3 Data Acquisition, Analysis and Use, data improvement has been achieved at the current level of investment. Continuation of investment with a continued emphasis on high speed data capture, traffic counts, RAMM data collection, bridge inspection/asset management and footpath inspection/asset management is proposed.

This is the core programme and is on a par with average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Internal network and asset management	985,041	1,015,577	1,045,129
External Consultants	74,025	99,698	78,541
Data Management	84,000	86,604	89,124
Traffic Counting	34,000	35,054	36,074
Contractor (lump sum) network and asset management	40,300	41,549	42,758
WC 151 Total	1,217,366	1,278,482	1,291,625

5.4.13 Unsealed road metalling (Work category 211)

This work category provides for the planned periodic renewal of pavement layers, including metal, on unsealed roads.

Investment is required to accommodate increased traffic volumes and for the replacement of - or restoration of strength - to pavements that are being consumed by forestry harvest, as identified in Section 3.2 Problem 1: Legacy Network. The

programme will be managed in close consultation with forestry owners and logging contractors. It is likely that the increase in heavy traffic will require the use of more coarse grades of aggregate, for example crushed AP65, to achieve the expected life between metal spreading runs. The result of changing the aggregate size will be a reduction in comfort for passengers of light vehicles.

This programme will also support the growth projections for the Rangitikei District as outlined in Section 3.5 Problem 4: Population Growth where seal extensions (work category 325) are deemed uneconomic.

This is the core programme and remains on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Unsealed roads metalling	368,700	380,130	391,191
Forestry routes metalling	75,000	77,325	79,575
WC 211 Total	443,700	457,455	470,766

5.4.14 Sealed road resurfacing (Work category 212)

This work category provides for the planned periodic resurfacing of sealed roads.

This is the core programme and is an increase on the average costs for the preceding 3 years as a result of realignment of the Forward Works Programme undertaken in 2018, increasing construction & binder costs and increasing traffic volumes (see Section 4.2, Figure 35 and Figure 36).

The individual candidate sites are maintained in the RAMM forward works database. The following table details the 2021-24 Programme:

Sealed road resurfacing				
Treatment Type	**Area (sq.m)**	**Length (m)**	**% length**	**Cost ($)**
Chipseal	295,713.0	49,499.0	5.90	1,233,123
AC	1,522.0	182.0	0.00	99,569
Pavement Marking				20,000
Internal Costs				8,000
2021-22 Totals	297,235.0	49,681.0	5.90	1,360,692

Treatment Type	Area (sq.m)	Length (m)	% length	Cost ($)
Chipseal	292,607.0	49,859.0	6.30	1,257,996
AC	666.0	87.0	0.00	44,920
Pavement Marking				20,620
Internal Costs				6,186

2022-23 Totals	293,273.0	49,946.0	6.30	1,329,723

Treatment Type	Area (sq.m)	Length (m)	% length	Cost ($)
Chipseal	274,396.0	45,936.0	5.60	1,214,029
AC	1,844.0	199.0	0.00	127,993
Pavement Marking				23,236
Internal Costs				6,366
Totals	276,240.0	46,135.0	5.60	1,371,625

Sealed road resurfacing	2021-22	2022-23	2023-24
WC 212 Total	1,360,692	1,329,723	1,371,625

5.4.15 Drainage renewals (Work category 213)

This work category provides for the renewal of drainage facilities that is not routine in nature, but that will reduce future maintenance costs.

The goal is to make the network more resilient to severe weather events, as identified in Section 3.3 Problem 2: Low Network Resilience.

This an enhanced programme and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Kerb & Channel Renewals	135,000	139,185	143,235
Drainage renewals	600,000	618,600	636,600
WC 213 Total	735,000	757,785	779,835

5.4.16 Sealed road pavement rehabilitation (Work category 214)

This work category provides for the replacement of, or restoration of strength to, sealed pavements where other forms of maintenance and renewal are no longer economic.

This is the core programme. The following table details the 2021-24 Programme:

Sealed road pavement rehabilitation	Route Position (km)			
Road Name	Start	End	Length	Cost ($)
Ruatangata Rd	230.000	525.000	295.000	125,375
Pukepapa Rd	3280.000	3583.000	303.000	128,775
Santoft Rd	8010.000	9737.000	1727.000	733,975
Okirae Rd	19.000	737.000	718.000	303,875

2021-22 Totals			3043.000	1,292,000

	Start	End	Length	Cost ($)
Bond St	95.000	250.000	155.000	127,844
Neumans Line	2837.000	4338.000	1501.000	657,701
Mangatipona Rd	280.000	1520.000	1240.000	543,337
2022-23 Totals			2896.000	1,328,882

	Start	End	Length	Cost ($)
Okirae Rd	737.000	1520.000	783.000	353,074
Union Line	3884.000	4404.000	520.000	234,481
Union Line	4404.000	4800.000	396.000	178,566
Williamsons Line	2232.000	3774.000	1542.000	695,326
2023-24 Totals			3241.000	1,461,448

Sealed road pavement rehabilitation	2021-22	2022-23	2023-24
WC 214 Total	1,292,000	1,328,882	1,461,448

5.4.17 Structures component replacements (Work category 215)

This work category provides for the renewal of components of

- road bridges
- tunnels
- retaining structures
- guardrails
- stock access structures / cattle stops and
- footpaths (on road structures) & pedestrian over-bridges / underpasses.

This is the core programme and is on a par with the preceding 3 years.

Description	2021-22	2022-23	2023-24
Guardrails	92,500	193,313	378,883
Joint Refurbishment	3,000	42,500	
Inverts and Soffits	70,000	30,000	
Sight Rails			
Delineation Markers		4,500	12,100
Steel Protection	33,000	60,000	93,100
Deck Components		25,000	

Scour Protection	142,500	39,000	33,000
Strengthening Trusses		149,500	
Special Inspections	112,500	54,000	5,000
WC 215 Total	453,500	597,813	522,083

5.4.18 Bridge and Structures Renewals (Work category 216)

This is a new work category for 2021-24, providing for the renewal of bridges and structures on a 'like-for-like' basis, as opposed to provision of new or upgrading of existing assets, covered under Replacement of bridges and structures (Work Category 322).

Examples of qualifying activities include, but may not be limited to:

- replacing a structurally inadequate bridge
- replacing retaining structures, including sea walls, that support a road
- replacing tunnels
- replacing culverts having a cross-sectional area of 3.4 square meters or greater

This is the core programme moving forward.

Description	2021-22	2022-23	2023-24
Large Culvert Replacement	75,000	87,635	100,795
WC 216 Total	75,000	87,635	100,795

5.4.19 Traffic services renewals (Work category 222)

This work category provides for the renewal of existing:

- road furniture, lighting, signs and markings and
- traffic management equipment and facilities.

This is the core programme and is an increase on the average costs for the preceding 3 years as a result of the requirement to maintain fit-for-purpose road-marking assets, applied to address safety issues (see Section 4.4.1.2 Safety on page 68) in accordance with the Road and Traffic Standards (RTS), Manual of Traffic Signs and Markings (MOTSAM) and Traffic Control Devices (TCD) manuals.

Description	2021-22	2022-23	2023-24
Road sign renewals	75,000	77,325	79,575
Street lighting renewals	20,000	20,620	21,220
Road-marking renewals	200,000	226,820	244,030
WC 222 Total	295,000	324,765	344,825

5.4.20 Footpath Renewals (Work Category 225)

This work category provides for the renewal of the pavement and facilities associated with footpaths.

Exclusions are:

- Footpaths and facilities used for recreational purposes (e.g., paths which do not connect to the wider footpath network).
- Footpaths and facilities that are not in public ownership or to which the public does not have full access at all times of the day, e.g., footpaths in parks that are closed to the public at night.
- Renewal of shared pedestrian cycling paths and facilities – these are funded under Work Category 224: Cycle path renewals.
- Construction / implementation of new or improved shared pedestrian and cycle paths and walking facilities – these are funded under Work category 451: Walking facilities and Work category 452: Cycling facilities.

This is the core programme for 2021-24 and is on a par with the average costs for the preceding 3 years.

Description	2021-22	2022-23	2023-24
Footpath Renewals	231,624	243,580	255,681
WC 225 Total	231,624	243,580	255,681

5.4.21 Summary: Local Road Maintenance Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
111	Sealed Pavement Maintenance	1,377,666	1,420,374	1,461,704
112	Unsealed Pavement Maintenance	442,509	456,227	469,502
113	Routine Drainage Maintenance	1,157,619	1,193,505	1,251,758
114	Structures Maintenance	219,655	226,980	234,858
121	Environmental Maintenance	1,326,300	1,418,965	1,460,254
122	Traffic Services Maintenance	413,260	431,226	438,469
123	Operational Traffic Management	871	898	924
124	Cycle Path Maintenance	1,020	1,052	1,082
125	Footpath Maintenance	125,239	129,425	133,191
131	Rail Level Crossing Warning Devices Maintenance	22,440	23,598	24,770
140	Minor Events	320,000	329,920	339,520
151	Network & Asset Management	1,217,366	1,278,482	1,291,625
Operations & Maintenance Sub-total		6,623,945	6,910,651	7,107,657

211	Unsealed Roads Metalling	443,700	457,455	470,766
212	Sealed Roads Resurfacing	1,360,692	1,329,723	1,371,625
213	Drainage Renewals	735,000	757,785	779,835
214	Sealed Road Pavement Rehabilitation	1,292,000	1,328,882	1,461,448
215	Structures Component Replacements	453,500	597,813	522,083
222	Traffic Services Renewal	295,000	324,765	344,825
Renewals Sub-total		4,579,892	4,796,422	4,950,581
Local Road Maintenance (Activity Class) - Totals		11,203,838	11,707,073	12,058,238

5.4.22 Maintenance, Operations and Renewals Programme – Investment Summary

WC	Work Category	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
111	Sealed Pavement Maintenance	1,377,666	1,420,374	1,461,704	4,259,743	3,590,000	669,743	18.7
112	Unsealed Pavement Maintenance	442,509	456,227	469,502	1,368,238	1,137,100	231,138	20.3
113	Routine Drainage Maintenance	1,157,619	1,193,505	1,251,758	3,602,882	2,970,000	632,882	21.3
114	Structures Maintenance	219,655	226,980	234,858	681,492	487,400	194,092	39.8
121	Environmental Maintenance	1,326,300	1,418,965	1,460,254	4,205,520	2,700,000	1,505,520	55.8
122	Traffic Services Maintenance	413,260	431,226	438,469	1,282,955	1,200,000	82,955	6.9
123	Operational Traffic Management	871	898	924	2,693	0	2,693	-
124	Cycle Path Maintenance	1,020	1,052	1,082	3,154	3,000	154	5.1
125	Footpath Maintenance	125,239	129,425	133,191	387,854	1,049,600	-661,746	-63.0
131	Rail Level Crossing Warning Devices Maintenance	22,440	23,598	24,770	70,808	45,000	25,808	57.4
140	Minor Events	320,000	329,920	339,520	989,440	1,110,000	-120,560	-10.9
151	Network & Asset Management	1,217,366	1,278,482	1,291,625	3,787,474	3,444,000	343,474	10.0
Sub-total for M & O		6,623,945	6,910,651	7,107,657	20,642,253	17,736,100	2,906,153	16.4
211	Unsealed Roads Metalling	443,700	457,455	470,766	1,371,920	1,305,000	66,920	5.1
212	Sealed Roads Resurfacing	1,360,692	1,329,723	1,371,625	4,062,040	4,458,700	-396,660	-8.9
213	Drainage Renewals	735,000	757,785	779,835	2,272,620	1,800,000	472,620	26.3

214	Sealed Road Pavement Rehabilitation	1,292,000	1,328,882	1,461,448	4,082,330	3,411,800	670,530	19.7
215	Structures Component Replacements	453,500	597,813	522,083	1,573,396	718,500	854,896	119.0
222	Traffic Services Renewal	295,000	324,765	344,825	964,590	490,000	474,590	96.9
Sub-total for Renewals		4,579,892	4,796,422	4,950,581	14,326,895	12,184,000	2,142,895	17.6
Total MOR Budget		11,203,838	11,707,073	12,058,238	34,969,149	29,920,100	5,049,049	16.9

5.5 Local Road Improvements (Activity Class)

5.5.1 Replacement of bridges and structures (Work category 322)

This work category provides for the upgrade or replacement of existing bridges and other road structures, where this is the main purpose of the work.

Replacements of assets on a "like-for-like' basis is now covered under the new Work Category for 2021-24, Bridges and structures renewals (Work category 216).

Examples of qualifying activities includes, but may not be limited to:

- Modifying and existing bridge to increase its structural capacity to a level higher than originally provided
- Widening an existing bridge
- Sealing bridge approaches on unsealed roads

Note: The Mangaweka Bridge on Ruahine Road was determined to be nearing the end of its useful life during the 2015-18 funding cycle. A significant weight restriction (imposing a maximum weight limit of 6 tonnes) was applied, whilst various options were considered for the future of the bridge; these included refurbishment, heavy maintenance or complete replacement.

A Detailed Business Case was submitted and accepted, with replacement as the chosen option. The replacement bridge was expected to be installed by 2020-21, but delays have meant construction could not start until 2020-21 and will not be completed until 2021-22. The entry in the table below accounts for the remainder of work anticipated for 2021-22 (over and above the funds already obtained and carried forward from the previous funding cycle).

This is the core programme and is less than the average costs for the preceding 3 years.

Road Name / Location	RP	Bridge	Description	2021-22	2022-23	2023-24
Ruahine Road	1219	69	New Mangaweka Bridge (50% MDC Share)	365,053		

WC 322 Total	365,053	0	0

5.5.2 Road improvements (Work category 324)

This work category provides for improvements to or upgrading of existing roads within the existing or widened road reserve, and deviations onto a new road reserve, where the original road is closed, including any associated new road structures.

Examples of qualifying activities includes, but may not be limited to:

- Road realignment, re-grading or widening, including seal widening
- Improvements to intersections
- Passing lanes or slow vehicle bays
- Safe system infrastructure, such as median and side barriers, roundabouts and speed management devices
- Approaches to bridge replacements costing in excess of $50,000
- Retaining structures, culvert and replacement cattle stop
- Stock underpasses
- All traffic signs, pavement markings, traffic signals, lighting (including under-grounding), etc, necessary to bring the improved facility into service
- Reinstatement of footpaths and vehicular crossings that are part of the improvement project

This is an enhanced programme for 2021-24 and is an increase in the average costs for the preceding 3 years.

Road Name / Location	Start	End	Description	2021-22	2022-23	2023-24
Turakina Valley Road 3	2.050	3.785	Improve geometry, repair the deteriorated pavement and installation of guardrail LHS	750,000		
Ruahine Road	0.350	0.600	Retreat to move road away from very high bluff to provide a safe zone for the road.	350,000		
Ruanui Road	0.936	1.478	Improve geometry and realign road. Legalise road that is on DOC land.	140,000		
Parewanui Road	3.500	4.100	Fill shoulder with material from intersection (corner removal) to widen shoulder so sight rails may be removed	20,000	515,500	
Fernflats Road	5.200	5.500	Improve geometry to remove tight blind bend		103,100	
Toe Toe Road	2.390	3.680	Seal widening to achieve consistent pavement widths and safe shoulders		103,100	

Spooners Hill Road - Stage 1	10.990	11.775	Safety improvements including curve enhancements identified by Corridor Management Plan.	1,633,278		
Spooners Hill Road - Stage 2	9.475	10.895	Safety improvements including curve enhancements identified by Corridor Management Plan.		1,202,026	
Te Moehau Road	0.330	3.050	Road widening, signage, barrier installation identified by Corridor Management Plan.			206,727
Wanganui Road	3.080	3.480	Right turning bay Williamsons Line	300,000		
Wanganui Road	3.899	4.299	Right turning bay Union Line			318,300
Makirikiri Road	2.217	2.617	Right turning bay Goldings Line			265,250
WC 324 Total				3,193,278	1,923,726	790,277

5.5.3 Resilience improvements (Work category 357)

This work category provides for non-routine work required to protect the serviceability of the following from damage:

- Roads
- Road structures
- Eligible walking and/or cycling facilities

This category also provides for non-routine work to minimise the threat of road closure arising from natural phenomena.

Examples of qualifying activities includes:

New works to protect existing roads from sea or river damage

New drainage for incipient slips

Toe-weighting of unstable slopes

Protection planting designed to arrest the slumping or displacement of a road platform

Work to overcome changes in a river's course or bed level that threaten roads, bridges of other road-related structures, but which is not attributable to one climatic event.

This is the core programme for 2021-24 and is an increase in the average costs for the preceding 3 years.

Road Name	RP	Bridge	Description	2021-22	2022-23	2023-24
Abattoir Road	0.614	0.642	Train stream away from bridge and place rock	120,000		

Rangitane Road	0.693	3.696	Installation of extra culverts to protect slip sites.	50,000		
Pohonui Road	8.814	6.787	Installation of extra culverts to protect slip sites.	50,000		
Okirae Road	1.600	1.900	Stabilisation investigation	30,000	30,930	31,830
Various locations			Stream channel rock protection	160,000	103,100	106,100
Various Roads			Multiplate and light weight culvert invert repair	100,000	103,100	318,300
Moawhango Valley Road	2.308	7.113	Installation of extra culverts to protect slip sites.			53,050
Potaka Rd	0.713	3.906	Installation of extra culverts to protect slip sites.			53,050
Mortons Road	0.010	0.041	Stabilise abutment to Puketoi bridge	50,000	154,650	26,525
Okirae Road	1.600	1.900	Installation of extra culverts to protect slip sites.	50,000	51,550	53,050
Otuarei Road	8.100	8.300	Stabilise shoulder			53,050
WC 357 Total				610,000	443,330	694,955

5.5.4 Summary: Local Road Improvements Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
322	Replacement of bridges and structures	365,053	0	0
324	Road Improvements	3,193,278	1,923,726	790,277
325	Seal Extension	0	0	0
357	Resilience improvements	610,000	443,330	694,955
Road Improvements (Activity Class) - Totals		4,168,331	2,367,056	1,485,232

5.6 Road to Zero (Activity Class)

5.6.1 Low cost, low risk roading improvements (Work category 341)

This work category provides for the construction/implementation of low-cost, low-risk improvements to the transport system to a maximum total cost for approval per project of $2,000,000. Candidate projects will be advanced if they are affordable and economically justified.

Although the District shows a relatively favourable LOW COLLECTIVE risk profile, the same cannot be said for personal risk. In particular, the Low Volume, Access and Secondary Collector level roads exhibit a HIGH PERSONAL risk, based on the latest 10 years of data, as identified in Section 3.4 Problem 3: Safety.

The core programme is on a par with the average costs for the preceding 6 years. The detailed programme is shown in the tables below.

Road / Location	Start	End	Description	2021-22	2022-23	2023-24
Safer Journeys for Schools						
South Makirikiri School / Makirikiri Road	9.200	9.800	Active Signage	50,000		
Whangaehu School / Ruatangata Road	0.320	0.400	Adjust the geography of the footpath to remove the hill and corner	60,000		
James Cook School / Mill Street	0.580	0.875	Extend box culvert and install safety footpath	25,000	206,200	
Marton School / Hereford Street	0.000	0.300	Installation of safety footpath including clip on to bridge	25,000	51,550	212,200
Hunterville School / Ongo Road	0.076	0.302	Installation of safety footpath	50,000		
			Sub-total	210,000	257,750	212,200
Road Corridor Safety						
Parewanui Road	7.500	8.300	Shoulder widening to be consistent with adjacent road sections	160,000		
Swan Street	0.900	0.140	New foopath, kerb and channel and road safety barrier.	85,000		
Mt Curl Road	5.087	6.001	Removal of corners prior to seal extension	80,000		
Spooners Hill Road	11.347	11.631	Installation of guardrail on tight corners	45,000		
Kilkern Road	1.665	1.805	Fill deep drains with rock	75,000		
Koeke Road	4.680	4.850	Shift road away from unsafe corner.		82,480	
Taihape Napier Road 1	3.400	3.550	Retreat at dropout site as road is very narrow	200,000		
Whaka Road	0.713	7.400	Remove corners to make road safe for trucks	40,000		

Koeke Road	8.652	9.611	Corner improvements			63,660
Taihape Napier Road 1	13.793	13.843	Shift road away from unsafe corner and extend existing culvert.		30,930	
Watershed Road	13.650	13.760	Retreat road from collapsing retaining wall		61,860	
Ratana Road	0.870	1.100	Installation of guardrail on corners recommended after safety review	50,000		
Taihape Napier Road 1 & 2			Intersection enhancements as identified by the Corridor Management Plan.	25,088		
Murimotu Road	4.450	5.930	Seal widening to achieve consistent width and safe shoulders		25,775	159,150
			Sub-total	760,088	201,045	222,810
Speed Management (Urban)						
Ratana Road	1.552	1.845	Reduce speed limit from 50kph to 40kph	5,000		
			Sub-total	5,000	0	0
Speed Management (Rural)						
Taihape Napier Road			Speed limit review as recommended by Corridor Management Plan.	40,000	20,620	
Pukepapa Road	1.699	3.441	Reduce speed limit from 100kph to 80kph or 60kph		5,155	5,305
Makirikiri Road	2.236	4.901	Reduce speed limit from 100kph to 80kph or 60kph		5,155	5,305
Ratana Road	0.020	1.552	Reduce speed limit from 100kph to 80kph or 60kph	5,000		
Kakariki Road	0.040	3.141	Reduce speed limit from 100kph to 80kph or 60kph			10,610
			Sub-total	45,000	30,930	21,220
Bridge Related Safety Improvements						
Makirikiri Road / Schultz	13.919	13.934	Install compliant guard railing	52,500		
Turakina Valley Road 3 / Hautawa	2.990	3.000	Install compliant guard railing		56,705	
Turakina Valley Road 3 / Concrete Ford	5.998	6.040	Install compliant guard railing	90,000		
Mangaohane Road / Mangaohane	12.764	12.854	Install compliant guard railing		121,143	
Spooners Hill Road / Taihape	11.843	11.900	Install compliant guard railing		121,143	
Turakina Valley Road 3 - Otiwhiti	2.061	2.085	Install compliant guard railing		56,705	

Makino Road - Colenso	0.375	0.394	Install compliant guard railing		87,635	
Waikakahi Road - Pokaka	0.278	0.310	Install compliant guard railing			90,185
Various roads			Bridge capacity assessments	50,000	128,875	132,625
Makino Road - Colenso	0.375	0.394	Sealing bridge approaches		8,248	
Dalgety Road - Dalgety	1.853		Sealing bridge approaches			10,610
Dalvey Road - Dalvey	0.104		Sealing bridge approaches			10,610
Gleesons Road - Ben Nevis	0.050		Sealing bridge approaches	10,000		
Koukoupo Road - Koukoupo No2	2.887		Sealing bridge approaches	10,000		
Makokomiko Road West - Batleys No1	1.446		Sealing bridge approaches			10,610
Mangakukeke Road - Mangakukeke	2.531		Sealing bridge approaches			10,610
Ngaruru Road - Ngaruru No2	2.825		Sealing bridge approaches			10,610
Taheke Road - Teheke - Smalls	1.230		Sealing bridge approaches			10,610
Tiriraukawa Road - Mangaone	11.904		Sealing bridge approaches	10,000		
Waikakahi Road - Birds	1.155		Sealing bridge approaches	12,000		
Wairepu West Road - O'Callaghans	4.687		Sealing bridge approaches		10,310	
Mokai Road / Broughs	10.215	10.217	Assessment and strategic need for strengthening			159,150
Toe Toe Road / Toe Toe	0.725	0.806	Assessment and strategic need for strengthening			265,250
Taihape Napier Road 1 / Springvale	23.176	23.264	Assessment and strategic need for strengthening		257,750	
Te Moehau Road / Moawhango	8.198	8.240	Assessment and strategic need for strengthening	250,000		
Makirikiri Road / Makirikiri No3	13.061	13.065	Install compliant guard railing			50,398
Turakina Valley Road 3 / Nations	19.361	19.363	Install compliant guard railing			21,220
Moawhango Valley Road / Moawhango Valley	10.751	10.764	Install compliant guard railing			68,965
Station Road Marton / Station	0.041	0.060	Install compliant approach terminals			15,915
Hawkestone Road / Hawkestone	0.220	0.238	Install compliant guard railing			37,135
Taihape Napier Road 1 / Unnamed	5.120	5.135	Install compliant guard railing			66,313
			Sub-total	484,500	848,513	970,815
WC 341 Total				1,504,588	1,338,238	1,427,045

5.6.2 Summary: Road to Zero Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
341	Low cost, low risk roading improvements	1,504,588	1,338,238	1,427,045
Road to Zero (Activity Class) - Totals		1,504,588	1,338,238	1,427,045

5.7 Walking and Cycling Improvements (Activity Class)

5.7.1 Walking facilities (Work category 451)

This work category provides for the construction/implementation of new or improved walking facilities.

Examples of qualifying activities may include:

- new or improved footpaths, including on an existing bridge
- pedestrian crossing features, including kerb crossings, kerb protrusions, central refuges and pedestrian platforms
- pedestrian crossing controls, including zebra crossings, kea crossings and pedestrian traffic signals
- signage
- altering kerb lines to improve pedestrian access
- pedestrian shelters (excluding shelters that are primarily provided for passenger transport)
- pedestrian overbridges/underpasses
- pedestrian crossings of railways
- all markings, traffic signals, lighting, etc. necessary to bring the facility into service

This work category excludes:

- shared walking and cycling facilities - these are funded from Work Category 452: Cycle facilities.

This is an enhanced programme, targeting urban locales lacking footpath facility, as identified in Section 3.5 Problem 4: Population Growth and GPS 2021 Strategic Priority 'B*etter Travel Options*' (see Section 2.2.2 Government Policy Statement on Land Transport). The aim is to improve accessibility, health and wellbeing. There is limited walking facilities is the peri-urban area of townships in the District. Marton has the highest demand for improving walking facilities as a result of Nga Tawa School pupils walking to the Wilson Park sports fields and students walking to Crofton. There is a growing number recreational walkers using the circuit Wellington, Nga Tawa, Calico/Bond, Skerman/Pukepapa, Makirikiri Roads. The urban area within the town boundary generally has a footpath and is safe to use. The portion of the circuit that is in the peri-urban area has higher speed limits and no footpath, narrow road shoulder and is not so safe for users. Modest forecasted population growth will only increase the need for walking facilities.

Roadname / Location	Start	End	Description	2021-22	2022-23	2023-24
Wellington Rd	2.657	3.445	Extend box culverts and install safety footpath from Hawkestone Rd to Crofton	50,000	154,650	212,200
Nga Tawa Rd	0.000	1.602	Widen shoulder and install safety footpath for exercise trail	100,000	103,100	
Pukepapa Rd	1.619	3.231	Widen shoulder and install safety footpath for exercise trail	75,000	77,325	

Makirikiri Rd	2.964	4.662	Widen shoulder and install safety footpath for exercise trail	75,000	77,325	
WC 451 Total				300,000	412,400	212,200

5.7.2 Cycling facilities (Work category 452)

This work category provides for the construction/implementation of new or improved cycle facilities, and shared pedestrian and cycle paths.

The construction of on road interventions required to improve the safety and amenity value of cycling, for example a wider carriageway, vehicle parking configurations, pinch points or kerb structure is eligible for funding assistance.

Examples of qualifying activities include, but may not be limited to:

- shared pedestrian and cycle paths
- bicycle parking/racks
- kerb crossings
- signage
- new or improved cycle lanes, including on existing bridges
- separate cycle paths

This work category excludes:

- all mountain biking trails
- facilities that are not available to the general public at all times.

This is an enhanced programme, targeting urban locales with connection to community facilities (schools, recreational areas, halls, etc) as identified in Section 3.5 Problem 4: Population Growth and GPS 2021 Strategic Priority 'B*etter Travel Options*' (see Section 2.2.2 Government Policy Statement on Land Transport). The aim is to improve accessibility, health and wellbeing of Rangitikei District's residents. There is limited cycling facilities in the towns of the District due to either size or topography. The town with the highest demand for cycling facilities is Marton and will only increase as the town grows. We aim to provide cycle lane markings radiating from schools in Hereford Street and Bredins Line. Roads to be marked include; Wellington Road – High Street to the Rail underpass.

The Tutaeporoporo Action Trail links playgrounds using streets and trails. The objective of this project is to use signage to identify the route using quiet back streets and safe places to cross roads.

The rural cycle trail that is being promoted is Taihape Napier Road that is used by only advanced adult cyclists, this has been identified by the Corridor Management Plan.

Roadname / Location	Start	End	Description	2021-22	2022-23	2023-24
Urban Marton Tutaeporoporo Action Trail			Cycle way signage		3,093	
Urban Marton Tutaeporoporo Action Trail			Cycle way markings		5,155	0
Taihape Napier Road			Cycle way signage		20,620	0
WC 452 Total				0	28,868	0

5.7.3 Summary: Walking and Cycling Improvements Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
451	Walking facilities	300,000	412,400	212,200
452	Cycling facilities	0	28,868	0
Walking and Cycling Improvements (Activity Class) - Totals		300,000	441,268	212,200

5.8 Public Transport Infrastructure (Activity Class)

5.8.1 Public transport facilities Operations and Maintenance (Work category 514)

This work category provides for the management, operation and maintenance of off-vehicle facilities and equipment associated with the delivery of public transport services separately identified by mode or for multi-modal use.

An example of qualifying activity includes the maintenance and general security of public transport facilities and infrastructure, including bus stops. An allowance of $5,600 per annum has been made for the maintenance upkeep of bus shelters in the Rangitikei district.

This is the core programme.

WC	Work Category Name	2021-22	2022-23	2023-24
514	Public transport facilities O & M	5,610	5,784	5,952
Public Transport Facilities O & M (Activity Class) - Totals		5,610	5,784	5,952

5.8.2 Summary: Public transport infrastructure Activity Class

WC	Work Category Name	2021-22	2022-23	2023-24
514	Public transport facilities O & M	5,610	5,784	5,952
Public Transport Facilities O & M (Activity Class) - Totals		5,610	5,784	5,952

5.9 Capital Programme – Investment Summary

WC	Work Category	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
322	Replacement of bridges and structures	365,053	0	0	365,053	6,173,300	-5,808,247	-94.1
324	Road Improvements	3,193,278	1,923,726	790,277	5,907,282	2,033,200	3,874,082	190.5
357	Resilience improvements	610,000	443,330	694,955	1,748,285	409,600	1,338,685	326.8
Sub-total for Local Road Improvements		4,168,331	2,367,056	1,485,232	8,020,620	8,616,100	-595,480	-6.9
341	Low cost, low risk roading improvements	1,504,588	1,338,238	1,427,045	4,269,871	597,500	3,672,371	614.6
Sub-total for Road to Zero Investment		1,504,588	1,338,238	1,427,045	4,269,871	597,500	3,672,371	614.6
451	Walking facilities	300,000	412,400	212,200	924,600	120,000	804,600	670.5
452	Cycling facilities	0	28,868	0	28,868	6,500	22,368	344.1
Sub-total for Walking and cycling improvements		300,000	441,268	212,200	953,468	126,500	826,968	653.7
Total Capital Investment		5,972,919	4,146,562	3,124,477	13,243,959	9,340,100	3,903,859	41.8

5.10 Subsidised Roading Programme – Investment Summary

Activity	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
Investment Management	100,000	103,100	106,100	309,200	300,000	9,200	3.1
Maintenance & Operations	6,623,945	6,910,651	7,107,657	20,642,253	17,736,100	2,906,153	16.4
Renewals	4,579,892	4,796,422	4,950,581	14,326,895	12,184,000	2,142,895	17.6
Capital	5,972,919	4,146,562	3,124,477	13,243,959	9,340,100	3,903,859	41.8
Public Transport (O&M)	5,610	5,784	5,952	17,346	16,500	846	5.1
Total Subsidised Budget	17,282,367	15,962,519	15,294,768	48,539,653	39,576,700	8,962,953	22.6

6.0 The Programme: Non-subsidised Roading Activities

The following activities are not eligible for funding assistance from the Transport Agency.

6.1 Maintenance and Operations

6.1.1 Maintenance

Non-subsidised activities include;

- Aesthetic treatments (such as flower gardens) on berms, shoulders, medians and traffic islands.
- Maintenance of the area between the kerb and the road reserve in urban areas.
- Control of noxious plants declared in terms of the Biosecurity Act 1993 within the road reserve
- The construction, maintenance or renewal of off-street parking areas is not eligible for funding assistance.

6.1.2 Street cleaning (local share)

The Waka Kotahi policy is that funding assistance will be provided for 30 percent of the total cost of cleaning channels, sumps and cesspits in urban areas, as an approximation of the benefit to the road and its users, as shown in Figure 48.

The remaining 70 percent balance will remain Council's amenity cost with no funding assistance.

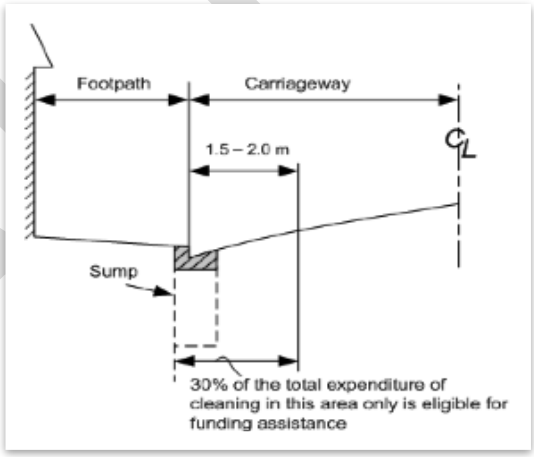


FIGURE 48 - STREET CLEANING (LOCAL SHARE)

6.1.3 Traffic services

Non-subsidised activities include costs related to amenity lighting, which includes the lighting of:

- Buildings,
- property and reserves,
- under-veranda lighting,
- festive lighting and
- any other lighting not directly related to the operation of a road.

6.1.4 Network and asset management

This is the cost related to the asset management of all non-subsidised maintenance and operations.

6.1.5 Summary: Non-subsidised maintenance and operations

Activity	2021-22	2022-23	2023-24
Street cleaning (local share)	123,000	131,968	140,052
Street furniture repairs and maintenance	15,360	15,836	16,297
Under-veranda lighting	32,000	32,992	33,952
Festive lighting and banners	65,600	67,634	69,602
Carpark maintenance	22,500	23,713	24,934
Vehicle Crossings	20,000	20,620	21,220
Noxious weeds (Taihape Trust)	25,000	25,775	26,525
Professional services	13,500	14,434	15,385
Parades and Events Traffic Management	20,000	20,620	21,220
Access Roads	20,000	20,620	21,220
Roadside tree maintenance	39,500	42,271	45,093
Berm mowing	28,608	30,415	32,891
External contractor	5,300	5,980	6,578
Survey costs	15,000	15,465	15,915
Non-subsidised Maintenance & Operations Totals	445,368	468,342	490,882

6.2 Road Improvements

6.2.1 Overview of current network growth and conditions

Urban growth around Marton has been progressing with a large three stage sub-division in Marton as well as numerous other smaller sub-divisions.

6.2.2 Urban Reconstructions

There are two urban street reconstruction projects proposed in 2021-24.

Activity	Start	End	Length	2021-22	2022-23	2023-24
Edward Street, Bulls	0.085	0.141	0.056	0	0	79,575
Cobber Kain Avenue	0.010	0.163	0.153	150,000	154,650	0
Non-subsidised Urban Reconstruction Totals				150,000	154,650	0

6.2.3 Mitigation sealing

The sealing of isolated sections within the unsealed road network to mitigate dust nuisance, reduce maintenance costs, provides an alternative access route enhancing network resilience, but does not meet the threshold for funding assistance.

	Route Position (km)			2021-22	2022-23	2023-24
Road Name	Start	End	Length			
Mt Curl Road	5.087	6.001	0.914	120,000	0	0
Mt Curl Road	4.173	5.087	0.914	0	125,782	0
Tennants Road	1.219	2.039	0.820	0	0	113,527
Turakina Valley Road 2	27.269	27.419	0.150	0	0	21,220
Non-subsidised Mitigation Sealing Totals				120,000	125,782	134,747

6.2.4 Sub-divisional (new) roads

The construction of sub-divisional roads is not eligible for funding assistance, which includes second coat sealing (see Section **Error! Reference source not found. Error! Reference source not found.**). Generally the cost of connecting to th e existing network is paid by the developer. An allowance is being made for extraordinary costs for connecting to the existing network.

Potential areas suitable for sub-divisional development are:

- Industrial subdivision, between Makirikiri Road and Wings Line.
- Hendersons Line (urban) residential subdivision.
- Wanganui / Johnson / Milne Street residential subdivision.

Scope and time of construction are not known at the time of compiling the Programme Business Case.

	Route Position (km)			2021-22	2022-23	2023-24
Road Name	Start	End	Length			
Subdivision 1			50.000	100,000		
Subdivision 2			50.000		103,100	
Subdivision 3			50.000			106,100
Non-subsidised Sub-Divisional Roads - Construction Totals				100,000	103,100	106,100

6.2.5 Non-subsidised paths & structures

The construction of footpaths or cycle paths unconnected to the wider network and/or recreational in nature are not eligible for funding assistance, including structures associated with such projects.

	Route Position (km)			2021-22	2022-23	2023-24
Road Name	Start	End	Length			
Swan Street - #3 Driveway Retaining wall	0.083	0.100	0.017	20,000		
Non-subsidised Paths & Structures Totals				20,000	0	0

6.2.6 Summary: Non-subsidised road improvements

Activity	2021-22	2022-23	2023-24
Urban reconstructions	150,000	154,650	0
Mitigation sealing	120,000	125,782	134,747
Sub-divisional roads : construction	100,000	103,100	106,100
Paths & structures	20,000		
Non-subsidised Road Improvements Totals	390,000	383,532	240,847

6.3 Non-Subsidised Roading Programme – Investment Summary

Activity	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
Maintenance & Operations	445,368	468,342	490,882	1,404,592	1,476,450	-71,858	-4.9
Renewals	150,000	154,650	0	304,650	0	304,650	-
Road Improvements	220,000	228,882	240,847	689,729	302,400	387,329	128.1
Paths & Structures	20,000	0	0	20,000	0	20,000	-
Total Non-subsidised Budget	835,368	851,874	731,729	2,418,971	1,778,850	640,121	36.0

7.0 Total Roading Programme – Investment Summary

Where activities within Council's proposed Roading Programme are eligible for financial assistance, Waka Kotahi currently provides a subsidy of 63% towards this expenditure.

The following tables detail the total value of proposed work, split by eligibility for subsidised funding. The tables also show the total budget demand for each party and the change from the previous (2018-21) funding cycle:

Programme	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
Subsidised	17,282,367	15,962,519	15,294,768	48,539,653	39,576,700	8,962,953	22.6
Non-subsidised	835,368	851,874	731,729	2,418,971	1,778,850	640,121	36.0

Proportional Budget	2021-22	2022-23	2023-24	Total 2021-24	Total 2018-21	Change	%
NZTA	10,887,891	10,056,387	9,635,704	30,579,982	24,933,321	5,646,661	22.6
Council	7,229,844	6,758,006	6,390,793	20,378,643	16,422,229	3,956,414	24.1
Total Budget	18,117,735	16,814,393	16,026,497	50,958,625	41,355,550	9,603,075	23.2

8.0 Delivery, Risk & Procurement

8.1 Management

8.1.1 Integration / Partnering

Council's proposed programme and related activities is aligned and integrated with the procurement programmes of other approved organisations and other entities. The 3 year programmes are routinely co-ordinated on a regional level with other roading authorities in Manawatu, Ruapehu and Whanganui. The level of impact these authorities have on Council's transport procurement is minimal, but opportunities for packaging or integrating to provide better value for money is constantly discussed.

Council shares a number of boundary roads with Whanganui, Manawatu, Hastings and Ruapehu District Councils; a very co-operative relationship exists to deliver appropriate levels of service on these roads.

A more significant impact on procurement activities (and budget) is between Council and the numerous utility organisations, where co-ordination of the various programmes and acknowledgement of the commercial imperatives of the utilities can reduce customer and network interruption and disruption. Council has therefore adopted protocols with the service providers to ensure better budget provisions to achieve best value for money. The Rangitikei and Manawatu District Council's shared water services department (water supply and waste water) is a key utility where close co-operation and forward work programme alignment is a strong focus.

Private property development is managed through resource consent and land use regulation processes and impacts on the transport corridor are managed appropriately. Where there are significant impacts on the network, special conditions or agreements are arranged between the parties.

As with most RCA's, the local road network also interacts with State Highway roads (owned and operated by Waka Kotahi). Continuous liaison is undertaken with Waka Kotahi to aid co-ordination of transport related activities. The most significant activity may have impact on local RCA's to deliver their anticipated programme(s) in the 2021-24 period will be the 'Te Ahu a Turanga' highway. This new highway is the replacement for the permanently closed Manawatu Gorge (SH3) between Ashhurst and Woodville. Construction commenced in 2020 and is expected to take 4 years to complete; this major infrastructure project will have an impact on local resource (labour, plant and material) for a number of seasons.

8.2 Work Quality

Council's performance targets/intervention criteria are set by legislative requirements, Council's goals and objectives including equity, the ONRC, associated CLoS and Performance Measures, road user requirements (e.g. comfort, economy and general ease of use), engineering and safety standards, economic analysis, existing road standards, historical performance trends and budgetary limitations. As a consequence, Council has developed strategies and makes policy choices regarding the degree to which an equity objective should be pursued to complement an economic efficiency objective when defining road CLoS outcomes.

8.2.1 Maintenance Intervention Criteria

These are based on features that are measured in an objective and repeatable manner. Further, as the intervention criteria apply across the entire network, they must be affordable from a network funding level perspective. Setting of affordable intervention criteria for a 30 years' time horizon for a network can be difficult given future funding uncertainties. Therefore different funding scenarios with different sets of intervention criteria have been developed.

8.2.2 Routine Maintenance

Intervention criteria are more specific than the approach taken in developing infrastructure preservation programs. Setting routine maintenance intervention criteria involves establishing, for different classes of asset (roads, structures, roadsides, traffic signals and on-road electrical assets), the maximum acceptable routine maintenance inspection periods, severity and extent (intervention levels) of condition parameters that can be tolerated and times within which condition parameters are to be repaired (response times).

- Intervention levels are specified in Council's Road Maintenance Contract and define the value (extent and severity) of a condition parameter, which triggers either maintenance investigation or maintenance activity. An intervention level will identify a defect as either acceptable or unacceptable. The latter will require further consideration of the defect in relation to its location with respect to the asset, safety issues, the possibility of continuing deterioration and increased repair cost and the economics of not undertaking repairs.
- Response times are specified in the Road Maintenance Contract stating the maximum period between the time the defect/condition parameter was detected and the maintenance action was undertaken. Response times are based on the severity and extent of the defect/condition parameter and the level of asset usage.

8.2.3 Periodic Maintenance and Rehabilitation

Intervention levels are established for combinations of condition parameters to trigger investigation into major infrastructure preservation activities. For example, intervention levels are set for road surface roughness to trigger investigation into pavement rehabilitation. The optimum intervention level for road roughness is determined using a whole of life cycle costing analysis which includes ONRC Performance Measures (Amenity).
On the other hand, pavement resealing operations are usually triggered using a number of criteria/condition parameters, which may include seal age, extent of surface distress (cracking and patching), rutting and roughness.

8.3 Confidence & Risk Management

Council is the confident that the programme can be delivered and risks managed. Council has a proven track record of sound delivery with previous investments in the continuous programme and related activities (particularly in terms of timing and alignment/management of the funding allocation). Council has the capability and the capacity to deliver and manage the future programme and related activities, particularly in terms of adequacy of resourcing and skillsets available.

Council has identified its key risks for the type / complexity of the network (and/or related activities) and has a sound risk mitigation strategy in place.

8.3.1 Key Risks

Council faces a range of risks in all that it does as the stakeholders include all components of the community both residents and visitors to the District. The **Roading AMP Section 6 RISK MANAGEMENT PLAN** addresses those risks that are pertinent to transport activities. Staff ensure that appropriate monitoring is provided and that any changes to the risk profile is updated and reported to the Council's Risk Manager. Reporting is a requirement on all significant risk areas including Health and Safety performance.

TABLE 23 - ACTIVITY PROCUREMENT CHARACTERISTICS AND RISK SCHEDULE

Activity	Key Characteristics	Key Risks	Procurement Method *
Transport planning	Investigations, scheme plans, planning applications, expert evidence at Hearings. Concept development Business cases	Project scope definition. Technical skills for analysis. Understanding of strategic context.	Supplier Quality Premium Direct Appointment Purchaser Nominated Price
Project design development and construction management	Analysis, road geometry (vertical and horizontal), draughting, specifications, scheduling, construction management, quality control.	Availability of skills, and experience. Understanding of stakeholder expectations. Understanding of market capability.	Supplier Quality Premium Direct Appointment Purchaser Nominated Price
Asset management	Funding applications, Forward Work Programmes, regulatory functions and corridor access data management, Condition assessments and analysis.	Experience. Whole of life approach understanding of asset. Management procedures and practices.	Supplier Quality Premium Direct Appointment Purchaser Nominated Price
Maintenance management	Understanding of network size. Road classifications, Condition and renewal programmes, Understanding of customer service expectations. Various activities actioned together.	Customer dissatisfaction. Quality of maintenance work. Selection of treatments (short verses long term options).	Supplier Quality Premium Direct Appointment Purchaser Nominated Price

** Procurement method(s) are determined in compliance with Rangitikei District Council (RDC) Procurement Policy, the Government Procurement Rules and NZTA Procurement Manual (see Section 8.4 Procurement)*

The Council's contract managers are also vigilant in their auditing of contract works as a means of quality assurance and to highlight observations of high risk situations. The Key risks include:

TABLE 24 - KEY RISK EXEMPLARS

Risk	Example
Reputation of the Council	The reputation of Council can be enhanced or reduced through any project or programme and at any time. Communications with the community, especially those directly affected, along with the impacts of the physical works both during and after completion can also affect people's lives and opinions.

	While this is not a specific risk it is an outcome of the work maintenance and capital work activity and can affect the Communities confidence in the Council.
Safety of the Public	Roads are open to all members of the community at all times and Council infrastructure works can be a risk to the health and safety of people who come into contact with the works. The danger can be from equipment, excavations, pollution.
Environment	Noise, air pollution and discharge of contaminants to natural watercourses are the main risks. The weather can influence outcomes.
Failure of Infrastructure elements	Collapse of bridge or retaining wall, sink hole, landslide.
Operational (Work Practices)	Operational risks include equipment use, lifting, staff resource, materials storage on site, storage and use of flammable materials, vehicles, equipment.
Health and Safety	Work Place Health & Safety compliance.

The above identified risks are listed below with the core mitigation actions or processes.

TABLE 25 - MITIGATION OF KEY RISKS

Risk	Mitigation
Reputation of the Council	Appropriate communication before, during and after the work.
Safety of the Public	Council request and audit designs for safety. Council review construction methodologies for identification of risks and ensure that agreed processes or practices are followed on site. Traffic safety audits are carried out at various stages of a project as fitting the size and complexity of the project. Council require compliance with all safety procedures and Codes (e.g. CoPTTM); adequate signage for guidance of the public (road users); warning devices; barriers and fences excluding access as appropriate, speed restrictions. We require the development of a Health & Safety Plan for all contracted projects and works and we regularly audit and record matters arising. We require all activities in the street to apply for consent through the Corridor Access Request (CAR) and Works Approval Permit (WAP) system – this particularly applies to utility operators and their agents.
Environment	Fit for purpose vehicles and plant (noise, emissions). Barriers for spills. Council include restrictions of work times to reduce disruption or nuisance to the nearby residences. Contractor takes responsibility to manage its work to reduce impacts of poor weather events.
Failure of Infrastructure elements	We have a programme of regular inspections of bridges and retaining walls combined with maintenance and renewal programmes to keep assets in fit for purpose condition. We engage appropriate expertise in both design and construction activities
Operational (Work Practices)	We require contractors to be adequately trained and skilled. Our auditors and inspectors are also suitably trained.

	All vehicles, plant and equipment are required to be fit for purpose with clearly marked certification as required. Contractors develop effective methods and processes to follow for best practice. Staff conditions and practices take tiredness, fatigue and mental state into account. Larger contractors have drug and alcohol free sites and carry out regular testing for impairment. Overview and inspection of work sites is carried out by Council staff or independent consultants to check and audit the contractors work, methods and on-site practices.
Health and Safety	With the introduction of the new legislation for Workplace Health and Safety in April 2016, there have been a number of changes to methods, practices, behaviours and accountabilities for all of the various suppliers, consultants, contractors and their staff. This has resulted in similar impacts on the staff of Council. With these changes came risks and the obligation to manage those risks. Council continues to arrange training of its staff and ensures that all suppliers, contractors and consultants have appropriate measures in place to satisfy Council that they are operating fully in compliance with the latest legislation. All bids for contracts must contain requirements for tenderers to provide evidence regarding Health and Safety to verify the systems, practices and processes that the tenderers ascribe to. Any tenderer that does not meet Council's requirement would not be awarded work.

8.4 Procurement

The RDC rules for planning procurement, approaching the market and contracting provide the foundation of best practice procurement and demonstrates that Council is open, transparent and accountable.

The rules help to design processes that are robust and build confidence in Council procurement practices. This builds and maintains public trust and confidence that Council spending is well planned and well executed. Smart public procurement will deliver better public services and provide value for money to the ratepayers of the Rangitikei District.

The RDC Procurement Policy is reviewed every 3 years and lays out the requirements for procurement (at any value) to be made by Council. It also stipulates the approval thresholds for Council officers of increasing seniority/management tiers, in addition to the regulations surrounding acceptable procurement methods at particular monetary thresholds.

The Rangitikei District Council (RDC) Procurement Policy is based on - and complements - the 'Government Procurement Rules':
(https://www.procurement.govt.nz/procurement/principles-charter-and-rules/government-procurement-rules/

whilst paying particular attention to Waka Kotahi's 'Procurement manual for activities funded through the National Land Transport Programme':
(https://www.nzta.govt.nz/resources/procurement-manual/)

Council has an 'open' supplier selection process as its default position. Direct appointments and 'closed contest' processes may be considered for low value contracts. Council's transportation procurement procedures will be based

on a selection of the procedures as documented in the latest edition of Waka Kotahi's Procurement Manual (see Table 23).

Council procures transport activities that are predominantly of a small to medium scale. However there is opportunity to transition towards a more collaborative style, where risks are distributed in line with the party most appropriate to carry the risk; this is would be most useful in regard to the maintenance, operations and renewal functions. Due consideration will be given to the use of the most appropriate type and style of contract to achieve Council outcomes and best value. However, Council does not expect to undertake 'Advanced Delivery Model' procurements (as defined in Clause 10.5, Waka Kotahi Procurement Manual for activities funded through the National Land Transport Programme).

8.5 Improvement Plan

The Transport Activity Management Improvement Programme (which also informs **Roading AMP Section 8 PLAN IMPROVEMENT & MONITORING**) has been developed by the Road Efficiency Group (REG), comprising 6 pillars:

- Systems
- Evidence
- Communicating
- Decision Making
- Service Delivery
- People / Culture

Figure 49 lists the current improvement projects and service or data gaps, allocated to the relevant pillar:

Project	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Resources
SYSTEMS									
S1	Improvement framework	Adopting regional improvement framework.	AMP Imrpovement Plan updated on a bi-monthly basis.	Agreed framework adopted and signed off by NZTA and RCAs. Regular meetings and monitoring. Supports continuous improvement and NLTP funding conditions. Preparing RCA for 2021 NLTP.	Partnership workshop to discuss approach and framework.	High	Jul-20	Roading Manager & NZTA IA	Programme Development Engineer
S2	Line of sight	Improve the use of the PBC and line of sight connection in Activity Management Plan and programme of works.	Forthcoming AMP/PBC has been developed with updated regional problem statements.	Monitoring identified problem statements. Better understand the scale of regional problems at local level. Improve link of local programme delivery to high level strategy. Improve use of PCB in AMP for next NLTP.	Work collaboratively with other regional RCAs. Ensure individual ownership and how this applies within each individual RCA.	High	Jul-20	Roading Manager	Programme Development Engineer
S3	ONRC integration	Improve how the ONRC is linked to business systems.	2018-21 AMP had been developed incorporating the ONRC as defined at the time; 2021 NLTP has ONRC at core - places & spaces integration outstanding. Most carriageways have ONRC assigned ONF on horizon to replace ONRC.	Business / AMP systems fully integrated with ONRC classification, levels of service, and use of performance measures. All carriageways / other assets assigned ONRC. Future ONF to be monitored and incorporated in place of ONRC.	Work collaboratively with other regional RCAs and NZTA. Maintain snapshot capability of Network's pavement and surfacing condition. Review ONRC thresholds against assigned, then adjust for impending ONF.	High	Jul-20	Roading Manager	Programme Development Engineer, Asset Team
S4	Structural Asset Management	Improve capability of internal staff knowledge / asset condition and maintenance demand.	Early identification of condition issues and subsequent programming of structures maintenance / renewals limited by historical short term external contracting of activity. Structures Lifecycle Mgmt Plan issued April 2020.	More consistent data collection, leading to improved maintenance / renewals programming in alignment with other activities to improve both efficiency and future demand	In-house structure asset inspections to achieve a consistent data quality and periodicity baseline. Align findings with other, potentially conflicting, programmes	High	Jul-20	Roading Manager	Project Engineer
S5	Network Speed Management	Adopting and implementing best practice Speed Management Policy	MDC Urban Speed Management Proposal maps in development	Adaptive Speed management programme developed for multiple 'zones', consistent with - and in collaboration with - peer RCA's, NZTA and GPS alignment NEW Speed Mgmt Plan requirement proposed by Gvmt.	Review and incorporate Government policy / directives, consult and implement in alignment with latest legislation	Medium	Jun-21	Roading Manager	Programme Development Engineer
EVIDENCE									
E1	RAMM database	Increasing and maintaining the accuracy and completeness of the District's RAMM database.	2017/18 Data Quality score 47. A number of major data quality issues have been presented and primary issues raised comprise: ► *Pavement and surfacing data (Timeliness)* ► *Drainage assets (Completeness)* ► *Visual road rating (Completeness)*	Accurate, complete and timely RAMM data to better inform investment decisions and facilitate performance management. Improved capability to utilise data	Audit RAMM databases and identify gaps. Develop and implement prioritised action plan. Assess options for future management of RAMM databases	High	Jun-20	Asset Team Leader	Asset Engineer, Roading Engineer
E2	ONRC measures	Collection and reporting of ONRC customer performance and technical output measures.	A number of ONRC performance measures are not being collected and/or monitored Issues raised as part of Data Quality comprise: ► *Traffic estimates (Timeliness)* ► *Original costs of surfacing work (Accuracy)* ► *Excessive Treatment Length Dimensions*	Collect/review data to better understand network performance indicators, comparative measures and guide investment.	Draft ONRC data collection plan, collect and store data, analyse and report Review existing data for suitability against expected metrics	High	Jun-20	Asset Team Leader	Asset Engineer, Programme Development Engineer
E3	2020 Resident satisfaction survey	Collection and analysis of customer and stakeholder satisfaction with the road networks.	Council obtains an annual 'Resident Satisfaction Survey', encapsulating performance measures for transport related services. 2019 Survey results received. Results show a 2% decrease in overall satisfaction of the District's roads, footpaths and cycleways from 81% to 79%	Review individual aspects of the 'Resident Satisfaction Survey' questions relating to roading on an annual basis, determine factors to address and feed into FWP's and align with Council strategies	Annual extraction and review/analysis of pertinent data, better identifying service gaps and ability to manage customer expectations	Low	Dec-20	Communications Dept People & Culture Dept	External Consultancy, Roading Manager
E4	Footpath condition status	Collection and analysis of footpath condition throughout the District to identify maintenance and renewal demand.	Rating assessment of footpaths complete. Data to be analysed and programme to be developed.	Development and maintenance of a robust footpath renewals programme.	Review latest assessment findings to determine data completeness and general condition	Medium	Jun-20	Asset Team Leader	Asset Engineer, Roading Technician
E5	Structures condition status	Improve Structures AMP with other renewals programme(s).	Identification of condition and programming of structures renewals limited by historical short term external contracting of activity. Road Structures Lifecycle Management Plan (RSLCMP) issued April 2020 (see DM4).	Development and maintenance of a robust bridge and retaining wall maintenance and renewal programme.	In-house structure asset inspections to achieve a consistent data quality and periodicity baseline. Align findings with other, potentially conflicting, programmes	Medium	Jun-20	Roading Manager	Project Engineer, Programme Development Engineer
E6	Active transport demand	Increase usage of active transport mode(s).	Limited and non-cohesive data available for development or re-purposing of assets to encourage active transport. MDC Walking & Cycling Strategy developed and reviewed by Community Facilities & Roading representatives.	An identified, objectively prioritised programme related to provision of walking and cycling facilities; relevant to findings of latest Resident Satisfaction Survey, which highlights lack of adequacy for rural cycling facilities in particular	To develop a 'Walking and Cycling Strategy' to identify and collate demand against service gaps within the District. Work collaboratively with other RCA's and NZTA.	Medium	Jun-20	Community Facilities Manager	External Consultancy, Programme Development Engineer

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Project	Title	Activity	Current Status	Future Status and Identified Improvements	Improvement approach	Priority	Timeframe	Responsibility	Resources
COMMUNICATING									
C1	Activity Management Plan	Details the technical asset management methodology in alignment with the Programme Business Case.	Existing AMP 2018-21 in place but will expire in June 2021. Updated AMP (in alignment with PCB) required for 2021-24 funding block. Documents development underway as of Jan-2020.	Integrated NZTA standards, GPS directives and Community demands, detailing anticipated ONRC / Council Levels of Service for current and anticipated assets. Written in recommended IIMM format.	Adopt and integrate continuing REG guidance. Incorporate GPS directives. Write document(s) suited for multiple levels of interrogation. Discuss approach with NZTA IA.	High	Oct-20	Programme Development Engineer	Asset Management Team, Road Engineering Team, Communications Officer
C2	Programme Business Case	Provides a cohesive investment story in alignment with the AMP.	Existing PCB 2018-2021 in place but will expire in June 2021. Updated PCB (in alignment with AMP) required for 2021-24 funding block. Document development underway as of Jan-2020.	Integrated Forward Work Programmes, asset maintenance demand and risks in line with AMP anticipated Levels of Service and NZTA / ONRC Performance Measures.	Adopt and integrate continuing REG guidance. Incorporate GPS directives. Write document(s) suited for multiple levels of interrogation. Discuss approach with NZTA IA.	High	Oct-20	Programme Development Engineer	Asset Management Team, Road Engineering Team, Communications Officer
C3	Using 'Story Maps' as pre-consultation for MDC Long Term Plan	Details Council's LTP as part of legislative requirements, aligned with all department activities and desire of Manawatū residents.	LTP pre-consultation 'Story Maps' being developed to engage with public by MDC Strategy Manager across Council. **Roading related portion** | Testing viability of ongoing and transparent seal extension / dust mitigation programme with public	Identify long term programme of seal extensions and/or mitigation seals to combat increased maintenance costs and dust nuisance as a result of growth within the District.	Assess growth areas and quantity of affected residences. Conduct NPV analysis to determine economic viability. Determine likely burden on ratepayer and portray through Story Maps for public consultation.	Medium	Jun-20	Strategy Manager	Roading Manager, Programme Development Engineer, Policy Adviser, Communications Officer
DECISION MAKING									
DM1	Surfacing FWP	Programme Development.	Adaptive 30 year Surfacing Renewal Programme active.	Robust, evidenced prioritisation of surfacing programmed for renewal in a balanced manner.	Liaise with Asset team to identify / minimise data collection gaps and comply with PMRT data quality measures.	Medium	Jun-20	Roading Manager	Programme Development Engineer
DM2	Pavement FWP	Programme Development.	Pavement Condition Index assessment tool(s) developed and active. Renewals programme updated to account for latest forestry activity.	Robust, evidenced prioritisation of pavements programmed for renewal in a balanced manner.	Co-ordinated approach to data collection, review of strategic problems and priorities, develop and assess programme options for 2021-24 bid	Medium	Jun-20	Roading Manager	Roading Operations Manager, Programme Development Engineer, Contractor
DM3	Footpath Maintenance FWP	Programme Development.	Lack of data and evidence base to develop robust Forward Work Programme. Initial minor works repair programme developed for 2021-24 funding cycle.	Use of comprehensive data, improved from addressing identified evidence gaps. Subsequent development of a robust, long term Renewal Programme.	Co-ordinated approach to data collection, review of strategic problems and priorities, develop and assess programme options for 2021-24 bid	Low	Jun-20	Roading Manager	Asset Team Leader, Asset Engineer, Roading Technician
DM4	Structures FWP	Programme Development.	30 year programme developed by previous incumbent currently in use. Road Structures Lifecycle Management Plan (RSLCMP) issued April 2020.	Updated renewal programme taking into account GPS directives and commercial pressures (forestry) on asset capacity, resilience and longevity.	Analyse latest bridge condition / inspection findings. Draft adjusted programme Review and incorporate RSLMCP 2019 Report	Medium	Jun-20	Roading Manager	Project Engineer Asset Team Leader
DM5	Capital/Renewals Active Mode Transportation Network FWP	Programme Development.	Initial findings indicate moderate demand for walking/cycling routes. Achievability based on scope, constraints and funding unknown at present.	Identified, scoped and costed multi-year Walking & Cycling Infrastructure Programme, integrated with FWP's and other Council Departments / Council activities.	Adhere to and update the MDC Walking & Cycling Strategy with pertinent information, prioritising schemes based on demand, constraints, achievability and funding	Medium	Jun-20	Roading Manager	Programme Development Engineer Community Facilities
SERVICE DELIVERY									
SD1	Procurement strategy	Review of procurement strategies	Current procurement strategy will expire prior to 2021-2024 AMP. The June 2019 NZTA Audit has identified that other Council Department's procurement policies are not fully aligned with NZTA Rules. New 'whole of organisation' MDC Procurement policy in development as of March 2020.	Reviewed, updated and endorsed procurement strategy with overarching Council Procurement Policies aligned with Transport Agency (and any other authority) requirements	Identify what is being purchased, extent of competition in the market, capacity and capability of market and internal staff, purchase selection methods, collaboration opportunities, ensure alignment with all relevant agency rules	High	Jun-21	General Manager - Infrastructure	Programme Development Engineer, Team Leader - Utilities, Communications Officer
SD2	Maintenance contract	Procurement of new transport / roading contract(s)	3+3+3yr Maintenance Contract (2015-2024) active. Current (mid-term) 3yr period concludes in July 2021 with opportunity to activate final 3yr term, ending July 2024.	Extension of current Maintenance Contract into final 3yr period (2021-2024) expected at this time.	Develop programme of tasks required to extend Maintenance Contract into final term. Obtain internal approvals and develop communications plan	Medium	Jun-21	Roading Manager	Roading team
PEOPLE / CULTURE									
P1	Regional collaboration	Regional collaboration is continued to be developed and new opportunities identified	Collaboration and development of combined AMP occurred in 2018 NLTP. NOF/NOP completed with PNCC/NZTA.	Continue to work together with shared improvement opportunities for AMP development. Identify further collaborative opportunities	Reinstating regular collaboration meetings. Involve both RCAs and NZTA.	High	Jul-20	Roading Manager	Programme Development Engineer
P2	Capability plan	Development of a staff capability and success plan	No plan in place.	Review individual RCA plans (if available) and identify any gaps.	Individual RCA capability matrix of core competencies developed. Gaps identified and Action plan developed.	Medium	Jun-21	Roading Manager	HR department, Roading team, Asset team

FIGURE 49 - TRANSPORT ACTIVITY IMPROVEMENT PROGRAMME

Appendix A: ONRC Performance Measures Reporting Tool

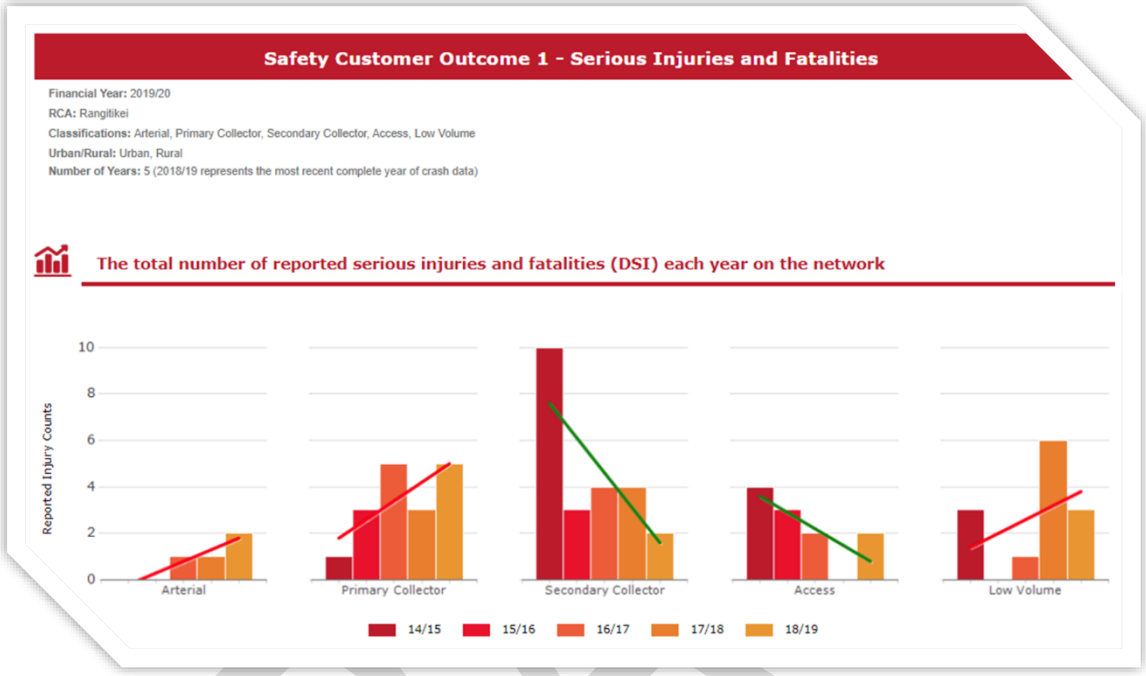
The ONRC PMRT provides information about the performance of the road network managed by this Council and is broadly split into the following categories:

- Safety (customer outcomes and technical outputs)
- Amenity (customer outcomes and technical outputs)
- Cost efficiency (renewals and maintenance)

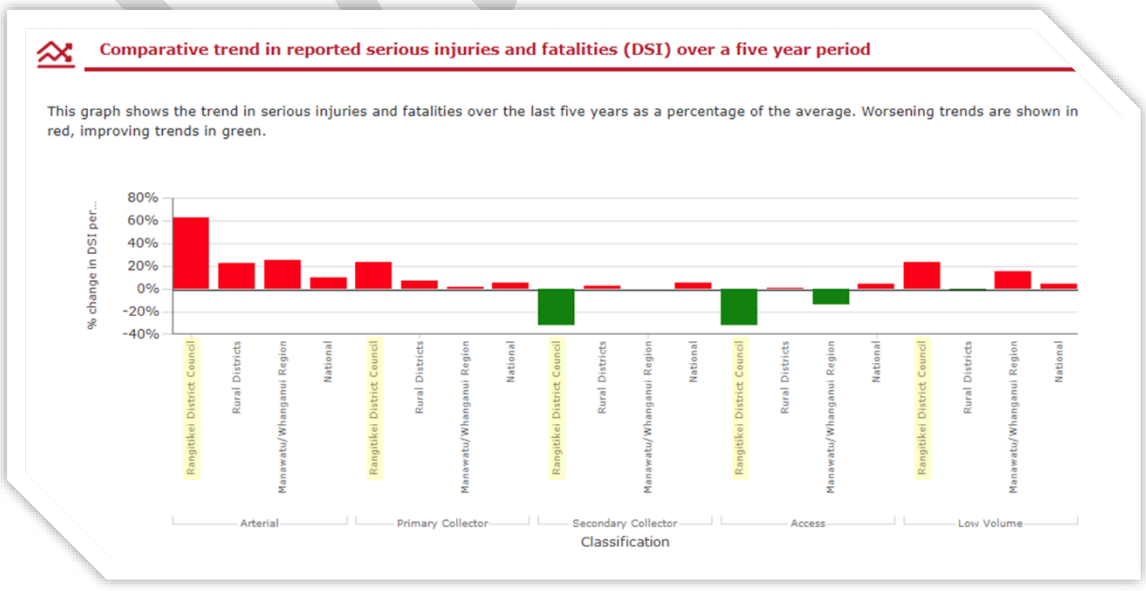
The following pages show the latest performance graphs and tables for each of the above categories, detailing trends and/or comparative analyses against other networks (comprising rural districts in New Zealand, the local Manawatu-Whanganui region and National totals).

Safety Customer Outcome 1 – Serious Injuries and Fatalities

The aim of this measure is to ensure that roads and roadsides are becoming safer for road users. The injuries data comes from the Crash table, which includes reported crashes. The classifications come from the Carriageway Section table and ONRC Category table. Crashes are allocated to carriageways based on the location of the crash. The data is grouped by Financial Year beginning 1 July:



The comparative trend graph expresses the serious injuries and fatalities trend as a percentage of the average for the 5 financial years. This report ignores incomplete years of Crash data, providing a comparable view of the rate of progress in reducing serious injuries and fatalities. This trend is shown for Council's network against its Peer Group, Region and the Nation. Negative values, shown in green, indicate a decreasing or improving trend. Positive values, shown in red, indicate an increasing or worsening trend.



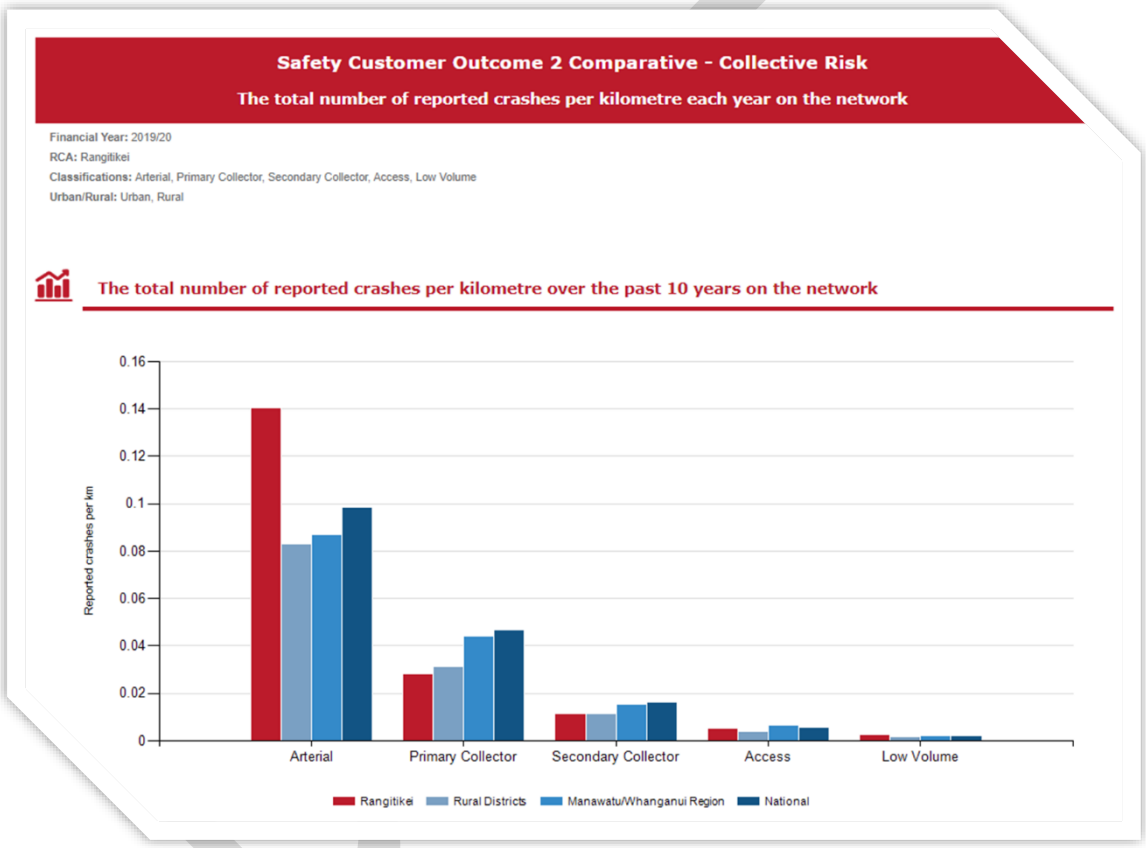
Safety Customer Outcome 2 (Comparative) – Collective Risk

The aim of this measure is to ensure that roads and roadsides are becoming safer for road users.

The report determines the number of crashes with reported Fatal and Serious Injuries from the Crash data for the previous 10 financial years for Council's network, Peer Group, Region and the Nation.

The previous 10 financial years of crash data starts with the last complete Financial Year for each RCA included in the report or groups (Peers, Region, Nation). The data is grouped by financial years beginning 1 July.

The number of crashes with serious & fatal injuries within the classification is divided by the number of years of data (the difference between the first crash in the classification and the last up to a maximum of 10 years) to get a number per year. This is then divided by the Length of Network within the classification to calculate the Collective Risk:



The Collective Risk range (for rural roads) from the KiwiRAP programme are:

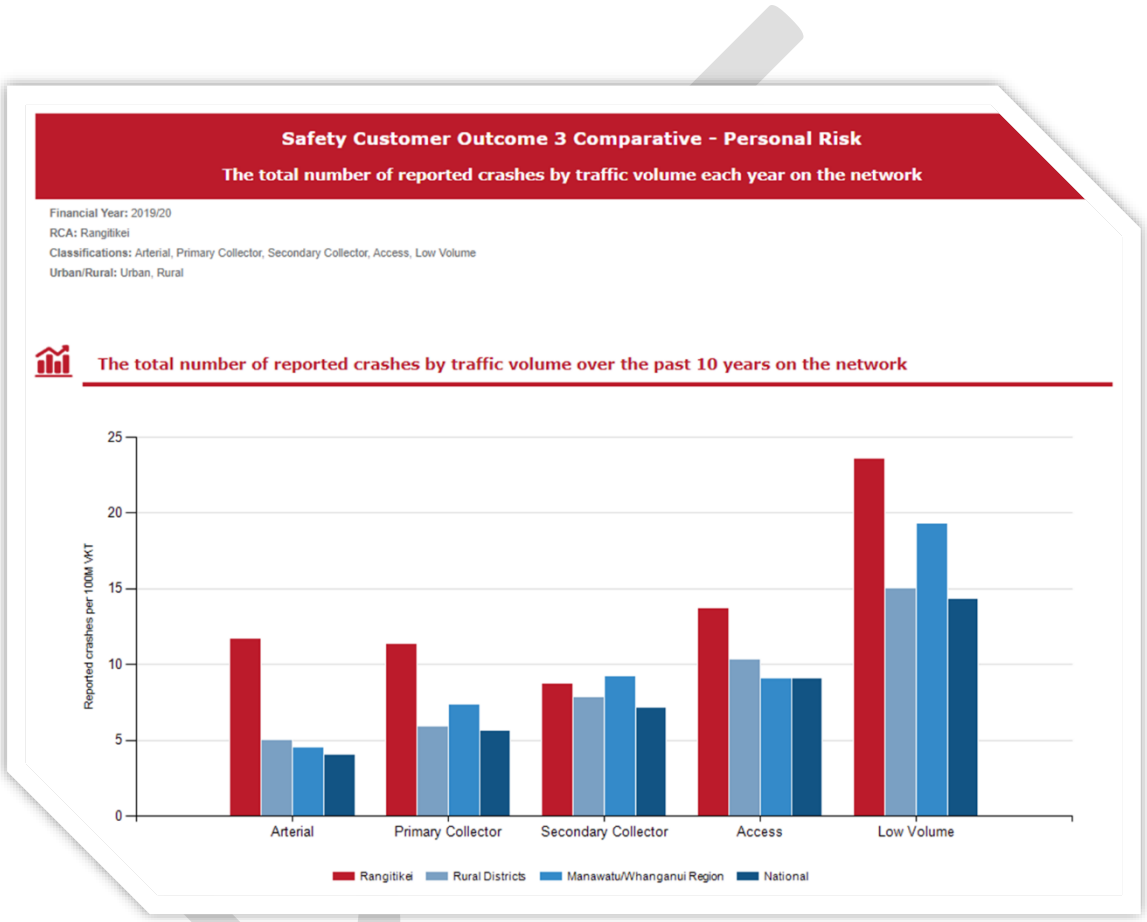
	Reported Crashes Per Kilometre	
Risk	Lower Threshold	Upper Threshold
Low		0.039
Low-Medium	0.040	0.069
Medium	0.070	0.100
Medium-High	0.101	0.189
High	0.190	

Safety Customer Outcome 3 (Comparative) – Personal Risk

The aim of this measure is to ensure that roads and roadsides are becoming safer for road users.

The report determines the number of crashes with reported Fatal and Serious Injuries from the Crash data for the previous 10 financial years on Council's network, Peer Group, Region and the Nation.

The number of crashes with serious injuries and fatalities on the network within the classification is divided by the number of years of data (the difference between the date of the first crash in the classification and the last up to a maximum of 10 years) to get the number per year. This is then divided by the VKT and multiplied by 100,000,000 to get the numbers within range:

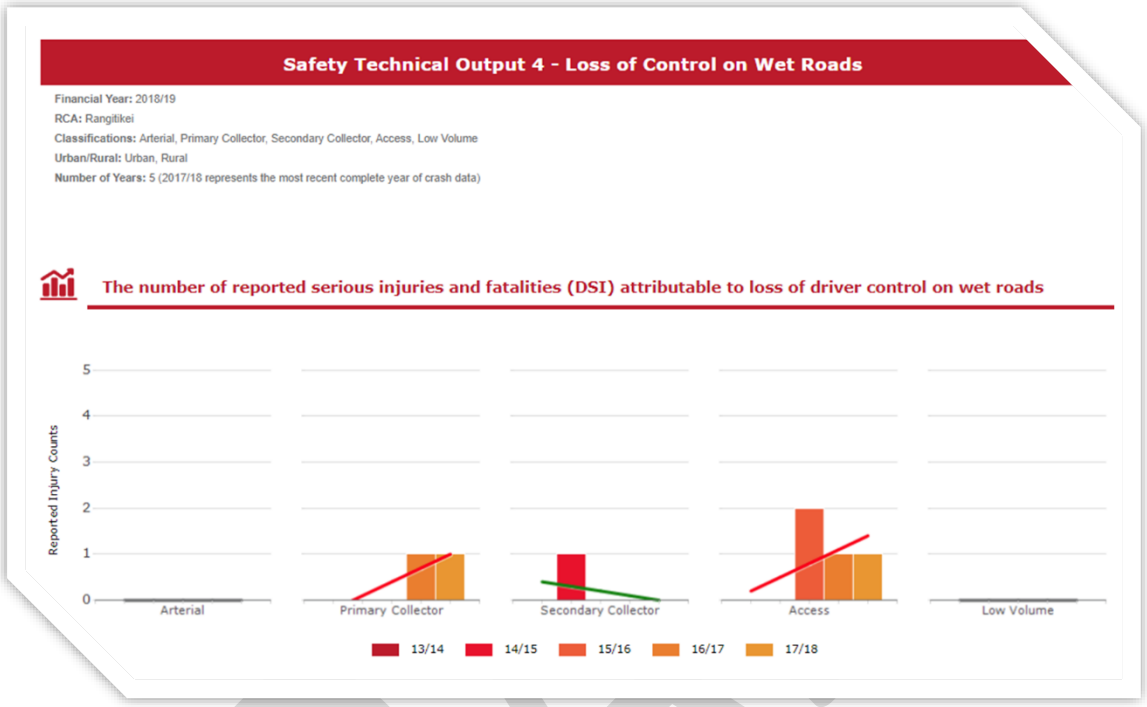


The Personal Risk range (for rural roads) from the KiwiRAP programme are:

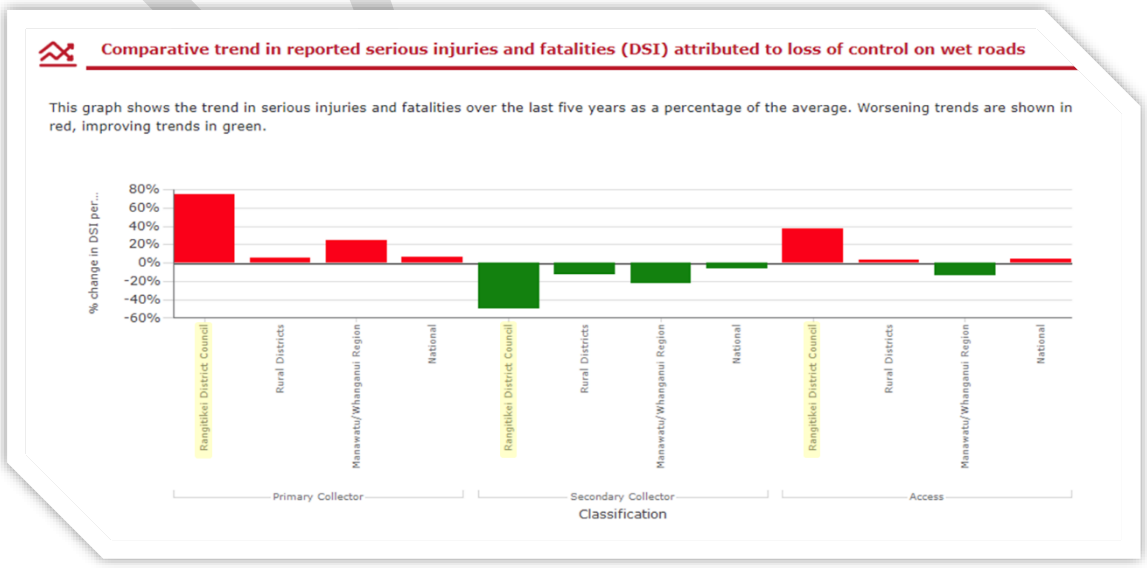
	Reported Crashes per 100,000,000 VKT	
Risk	Lower Threshold	Upper Threshold
Low		<4
Low-Medium	4	<5
Medium	5	<7
Medium-High	7	<9
High	9	

Safety Technical Output 4 – Loss of Control on Wet Roads

The aim of this measure is to reduce the number of serious and fatal injuries due to loss of control in the wet. Injuries are recorded in the Crash table containing reported crashes and the report groups the data for the previous 5 financial years, beginning July 1.

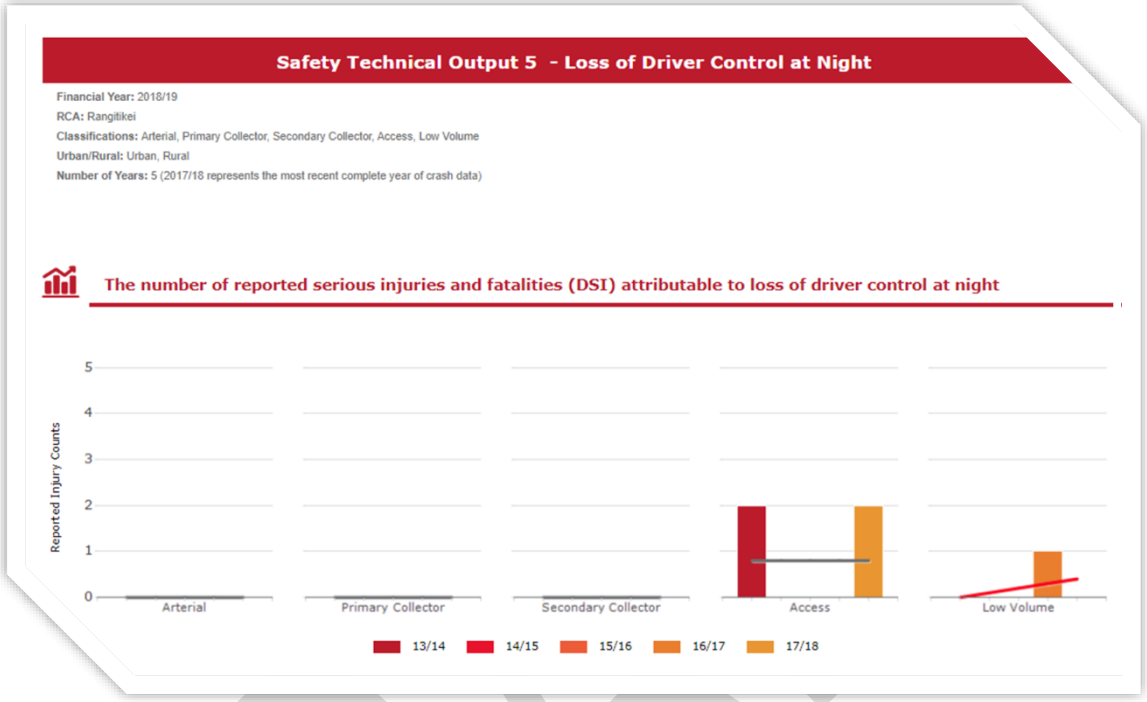


The comparative trend graph expresses the loss of control on wet roads trend as a percentage of the average crash rate for the previous 5 financial years, ignoring the current incomplete year. This creates a trend value that is based on the change in crash rate relative to the size of network (average crash rate). This allows comparison between large and small networks. This trend is shown calculated for Council's network, Peer Group, Region and the Nation. Negative values, shown in green, indicate a decreasing or improving trend. Positive values, shown in red, indicate an increasing or worsening trend:

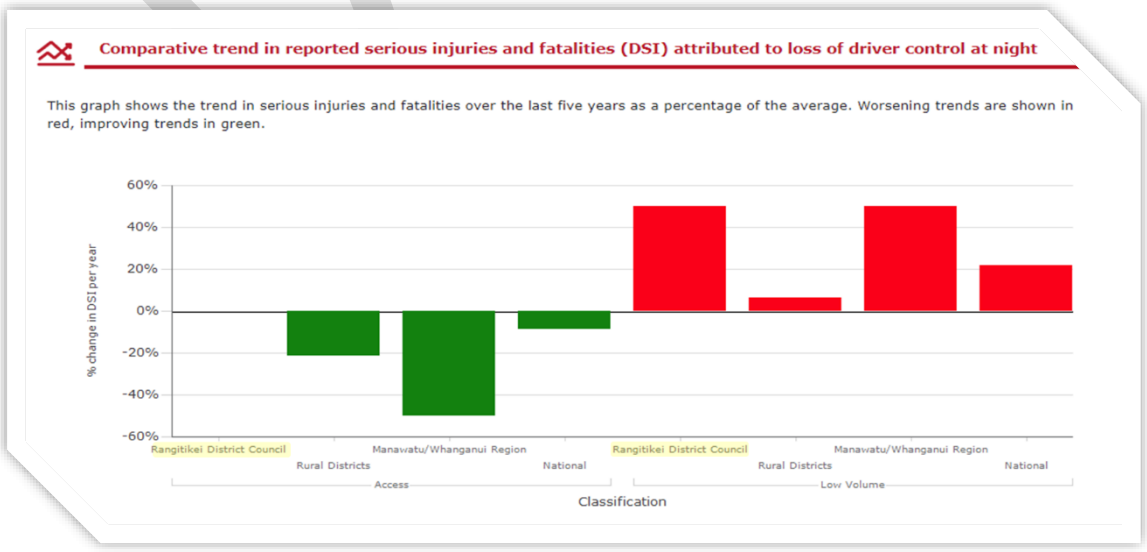


Safety Technical Output 5 – Loss of Driver Control at Night

The aim of this measure is to reduce the number of serious & fatal injuries due to loss of driver control at night. In the context of this measure "Night" is defined as Crashes where the Light Flag is set to Dark. Injuries are recorded in the Crash table containing reported crashes and the report groups the data for the last 5 financial years, beginning July 1:

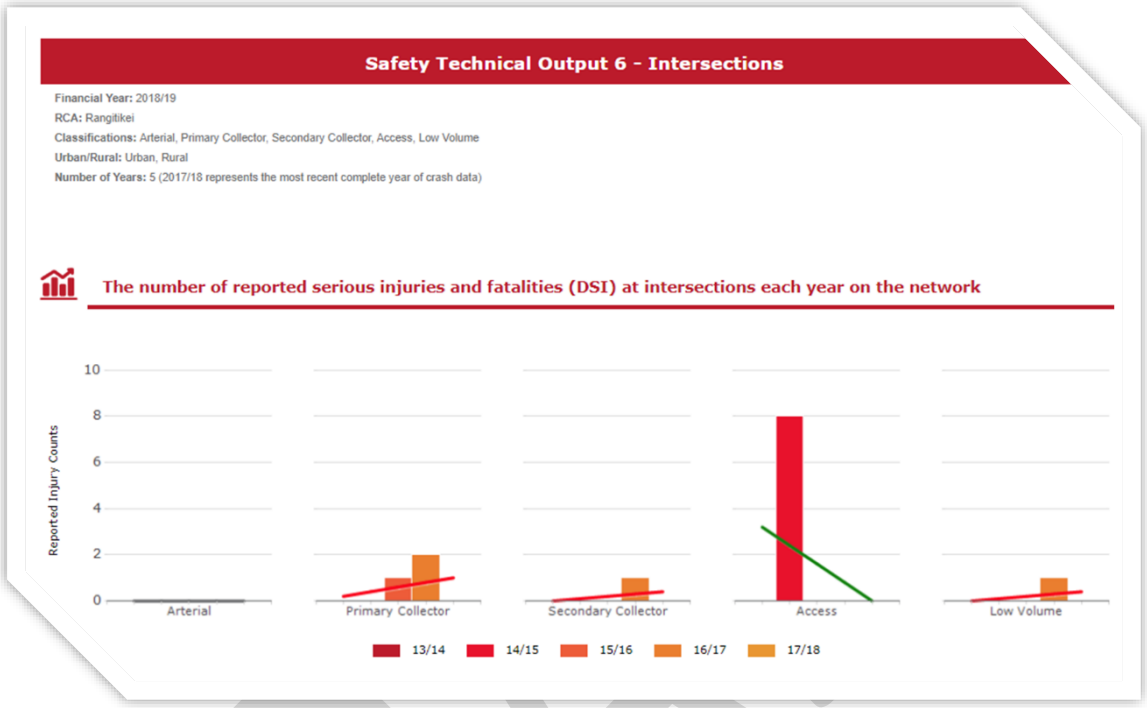


The comparative trend graph expresses the loss of driver control at night trend as a percentage of the average crash rate for the previous 5 financial years, ignoring the current incomplete year. This creates a trend value that is based on the change in crash rate relative to the size of network (average crash rate). This allows comparison between large and small networks. This trend is shown calculated for Council's network, Peer Group, Region and the Nation. Negative values, shown in green, indicate a decreasing or improving trend. Positive values, shown in red, indicate an increasing or worsening trend:

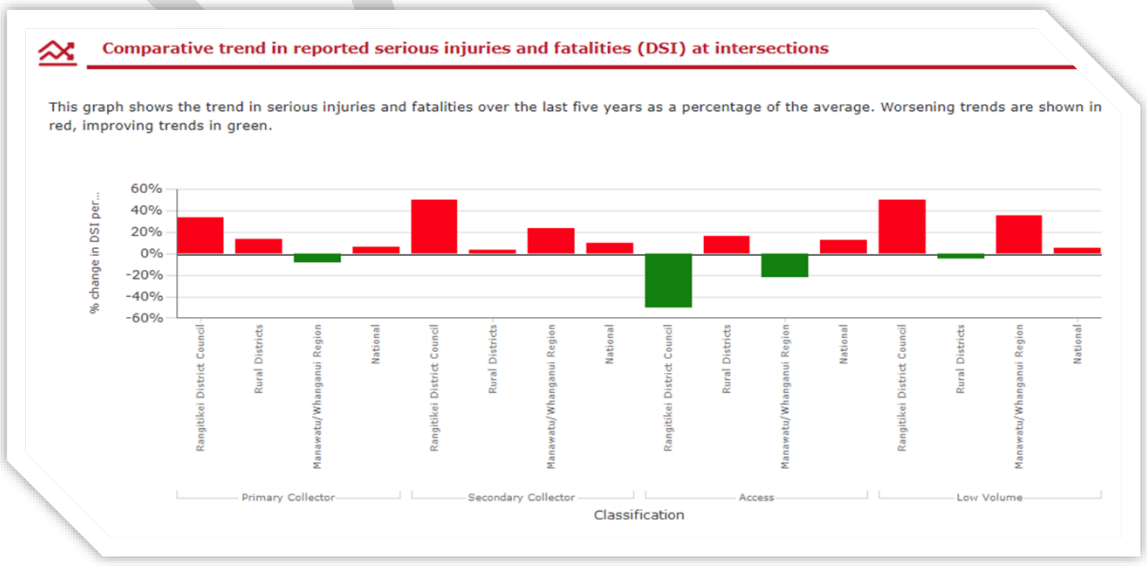


Safety Technical Output 6 – Intersections

The aim of this measure is looking for a reducing trend in the number of serious and fatal injuries due to loss of driver control at intersections. The injuries data comes from the Crash table of reported crashes which is being filtered by Intersections:

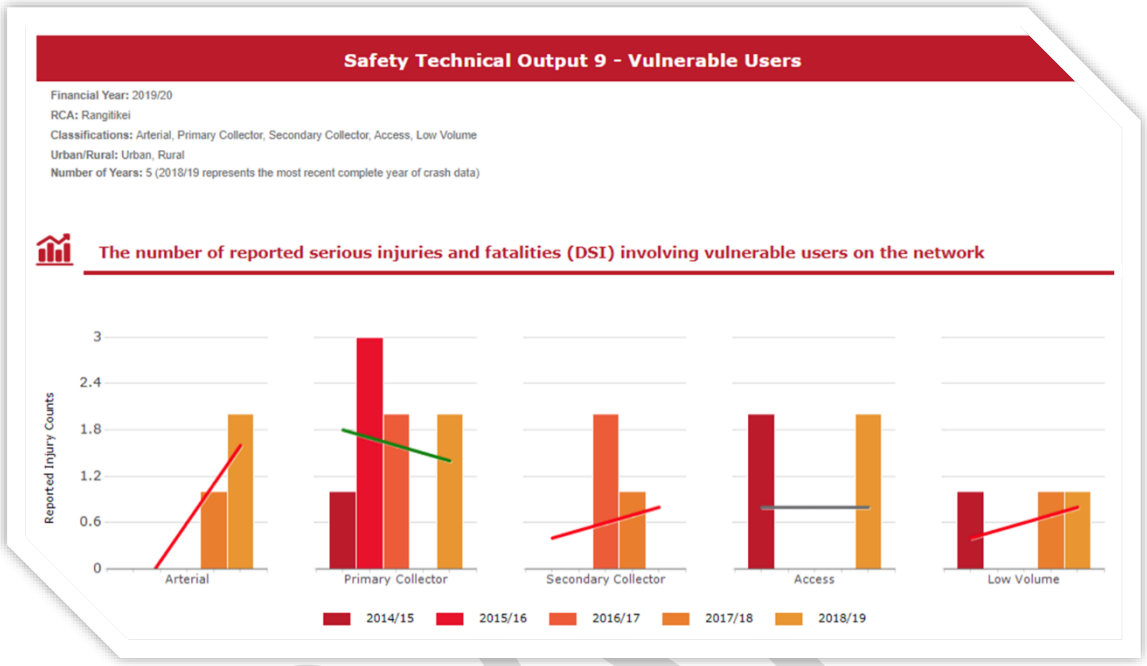


The comparative trend graph expresses the intersections trend as a percentage of the average crash rate for the previous 5 financial years, ignoring the current incomplete year. This creates a trend value that is based on the change in crash rate relative to the size of network (average crash rate). This allows comparison between large and small networks. This trend is shown calculated for Council's network, Peer Group, Region and the Nation. Negative values, shown in green, indicate a decreasing or improving trend. Positive values, shown in red, indicate an increasing or worsening trend:

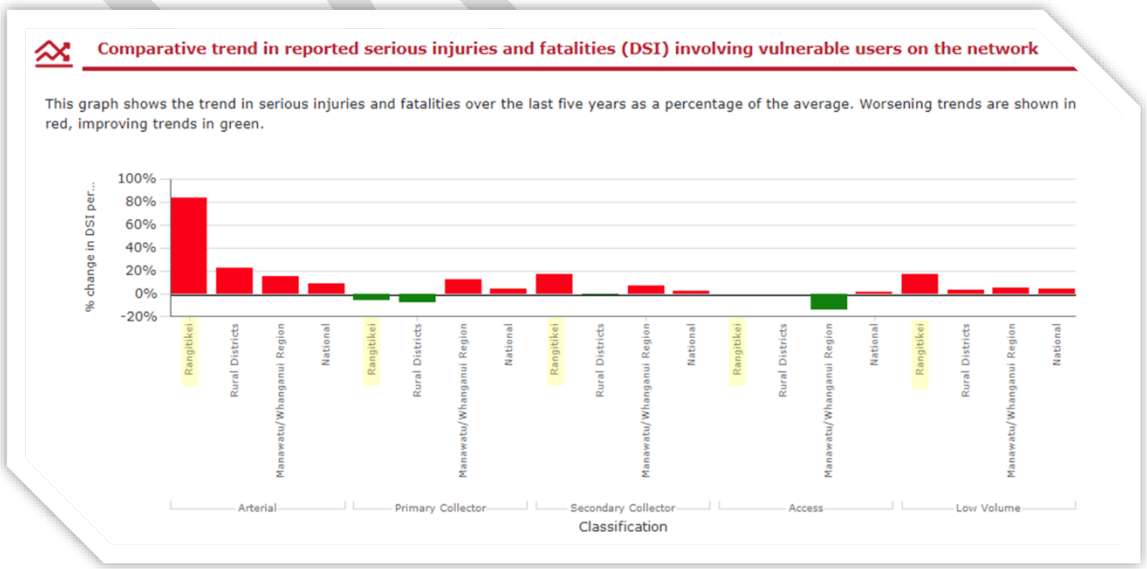


Safety Technical Output 9 – Vulnerable Users

The aim of this measure is looking for a reducing trend in the number of serious and fatal injuries to vulnerable road users (comprising motorcycles, cyclists, pedestrians and wheeled pedestrians) for the previous 5 financial years, beginning 1 July:

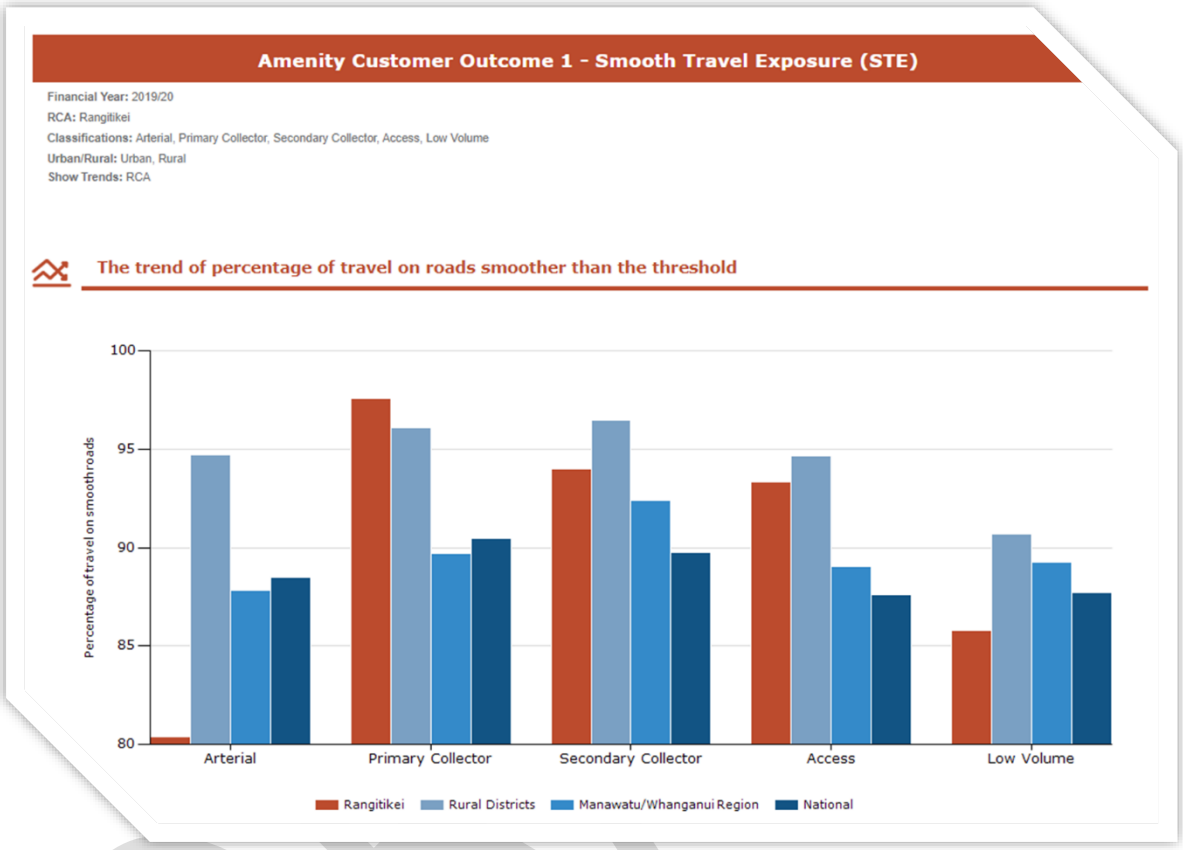


The comparative trend graph expresses the vulnerable users trend as a percentage of the average crash rate for the previous 5 financial years, ignoring the current incomplete year. This creates a trend value that is based on the change in crash rate relative to the size of network (average crash rate). This allows comparison between large and small networks. This trend is shown calculated for Council's network, Peer Group, Region and the Nation. Negative values, shown in green, indicate a decreasing or improving trend. Positive values, shown in red, indicate an increasing or worsening trend:

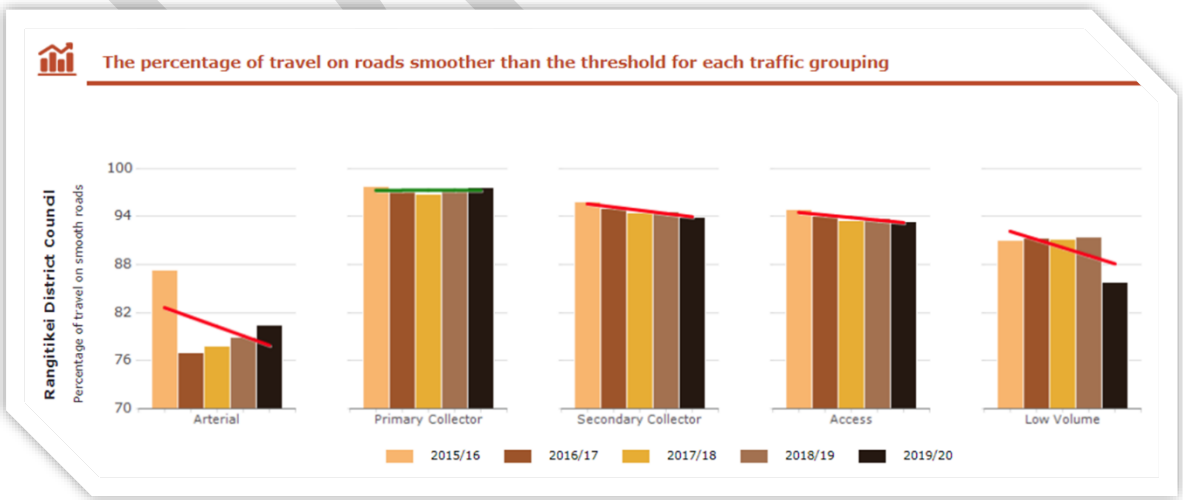


Amenity Customer Output 1 – Smooth Travel Exposure

The aim of this measure is to display the smoothness of the journeys experienced by road users. Smooth Travel Exposure (STE) is the percent of travel on roads smoother than the threshold for each traffic grouping, reported by ONRC classification, for Council's network, Peer Group, Region and the Nation for the selected financial year:

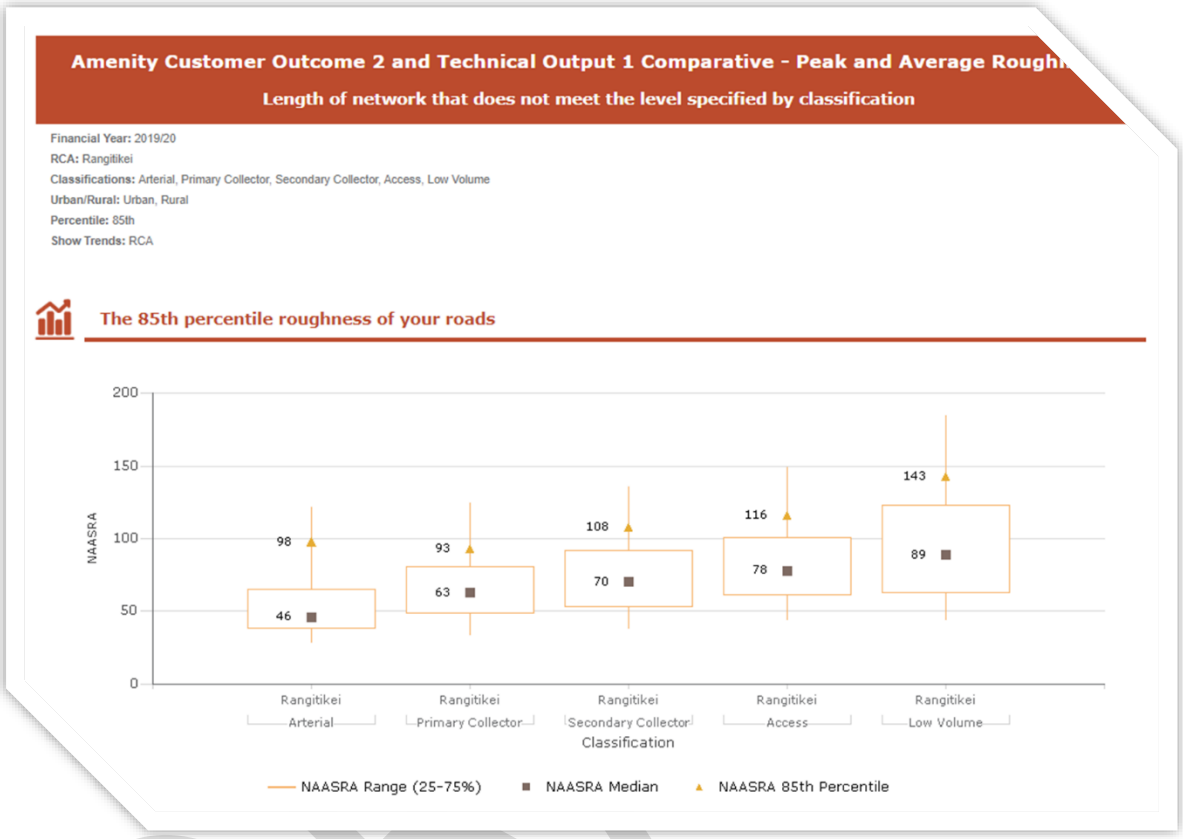


The trend graph shows Council's network performance over the previous 4 years. Increasing values indicate improvement whilst decreasing values indicate deterioration:

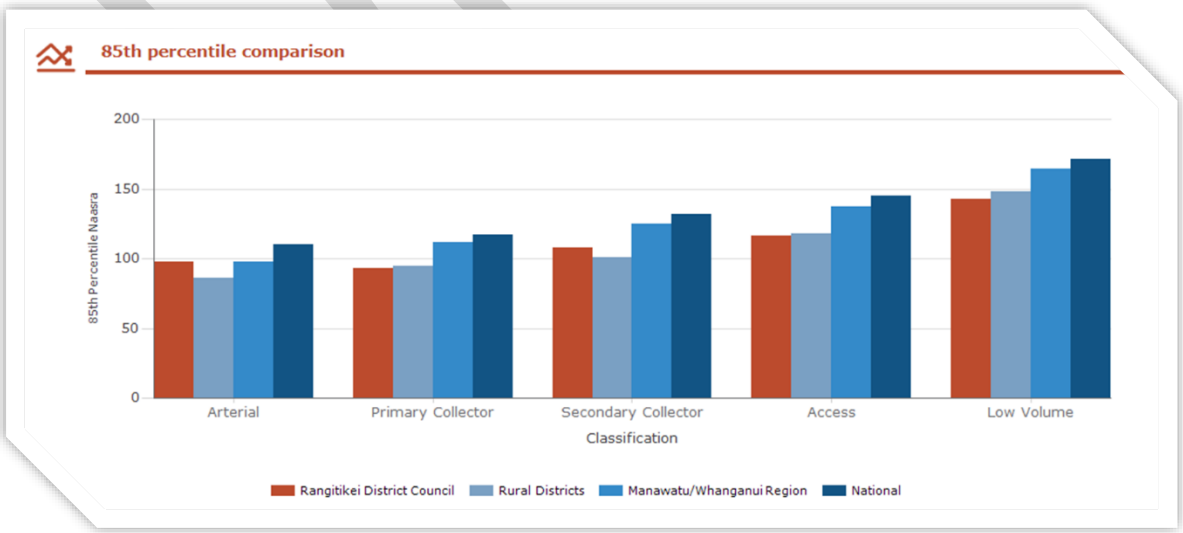


Amenity Customer Output 2 & Technical Output 1 (Comparative) – Peak & Average Roughness

This measure shows the roughness of your roads, using percentiles to describe the variation in road sections. The classification table returns the NAASRA values for various percentiles and the average within the ONRC classification. The data comes from the Roughness table:

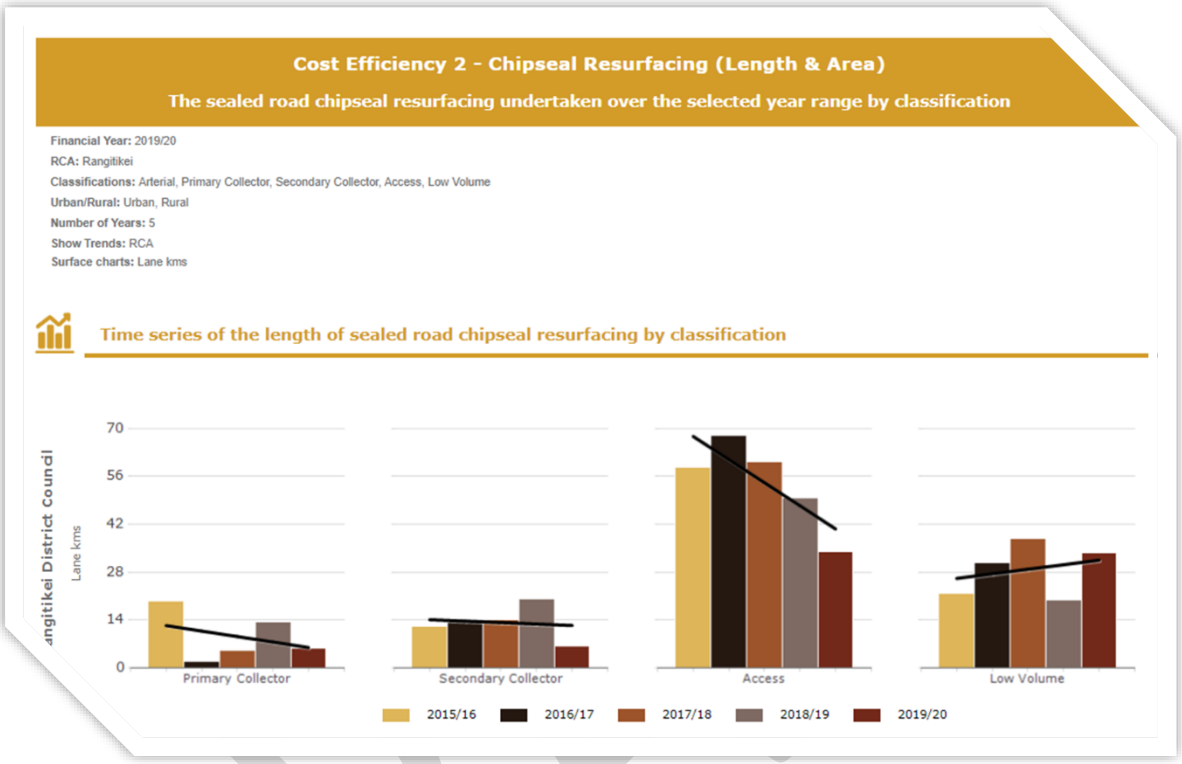


The 85th percentile comparison graph shows Council's network performance against its Peer Group, Region and the Nation. The higher the value the rougher the 85th percentile road roughness:

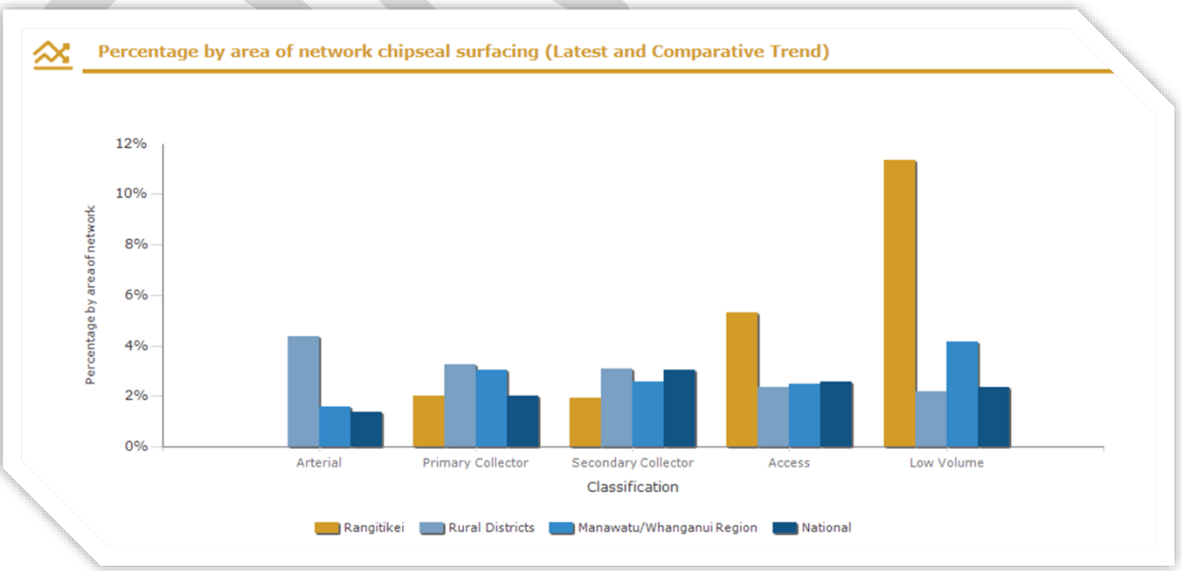


Cost Efficiency 2 – Chipseal Resurfacing (Length & Area)

This measure shows the total length and area of sealed road chipseal resurfacing undertaken over the selected year by ONRC classification, for Council's network. The trend graph shows lane kilometres achieved for the previous 4 years:

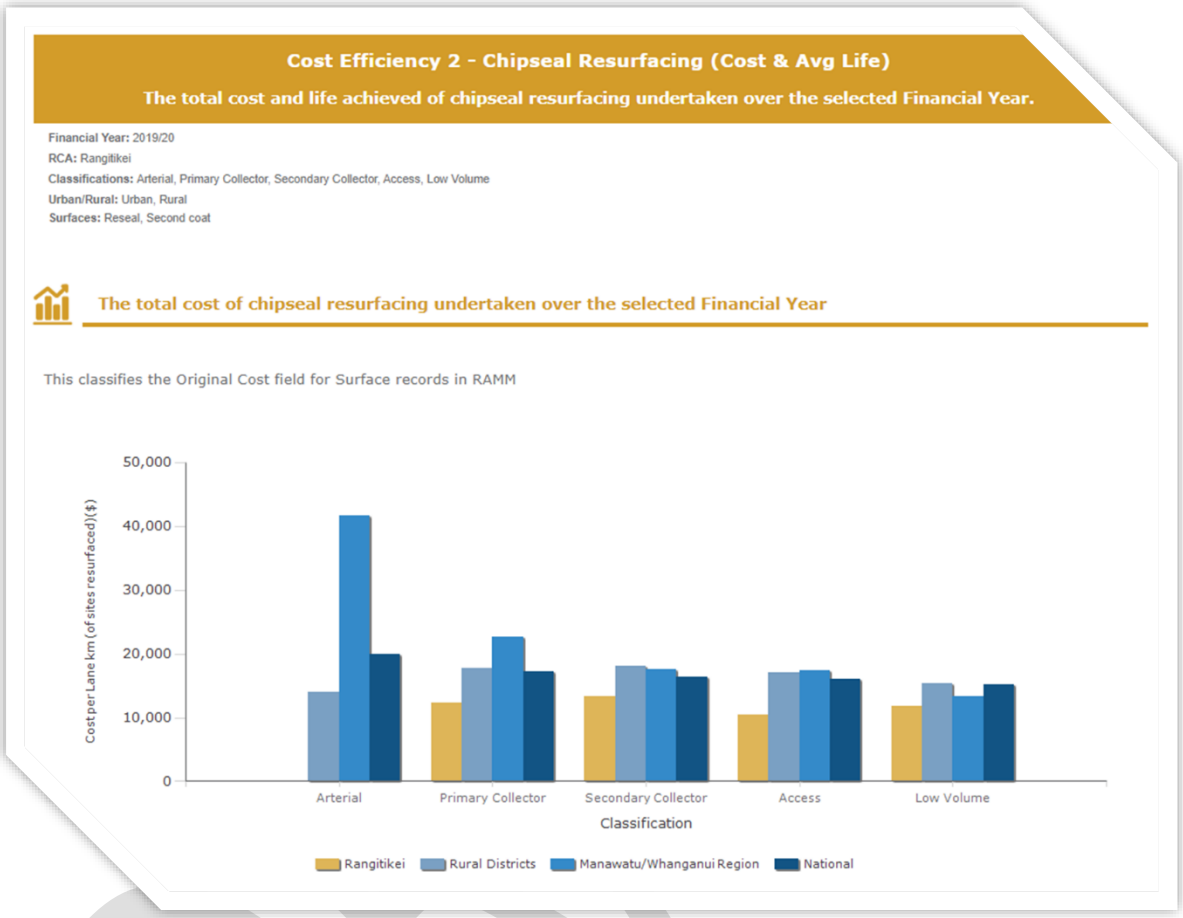


The comparative graph shows the percentage, by area of network, of chipseal surfacing renewed over the selected year by Council's network, Peer Group, Region and the Nation:

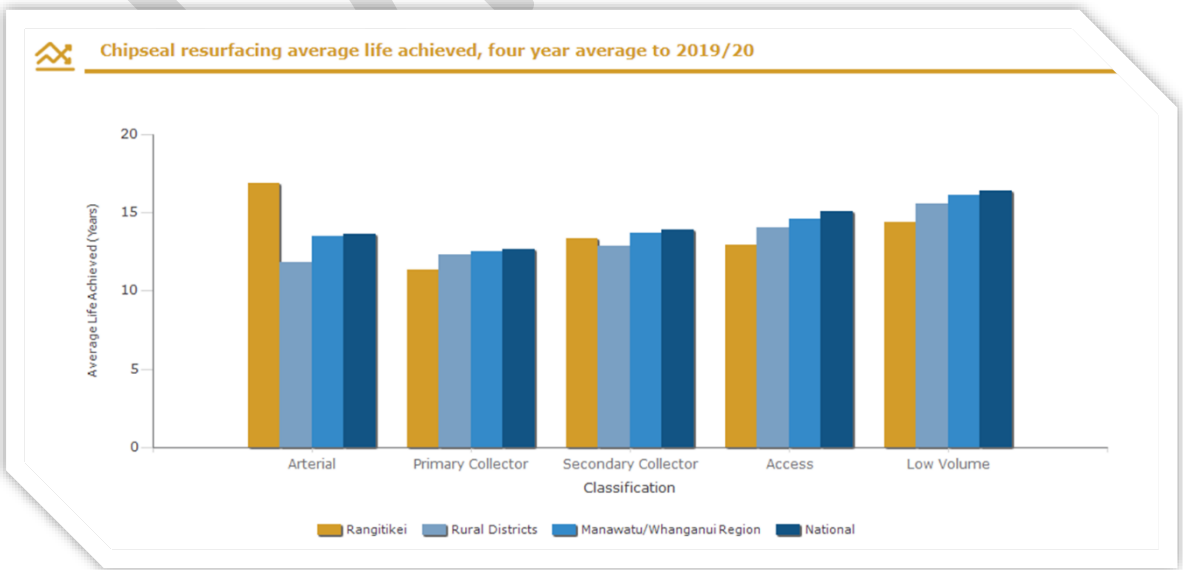


Cost Efficiency 2 – Chipseal Resurfacing (Cost & Average Life)

This measure shows the total cost and life achieved of chipseal resurfacing for Council's network, Peer Group, Region and the Nation. The cost is represented per lane kilometre over the selected year, by ONRC classification:

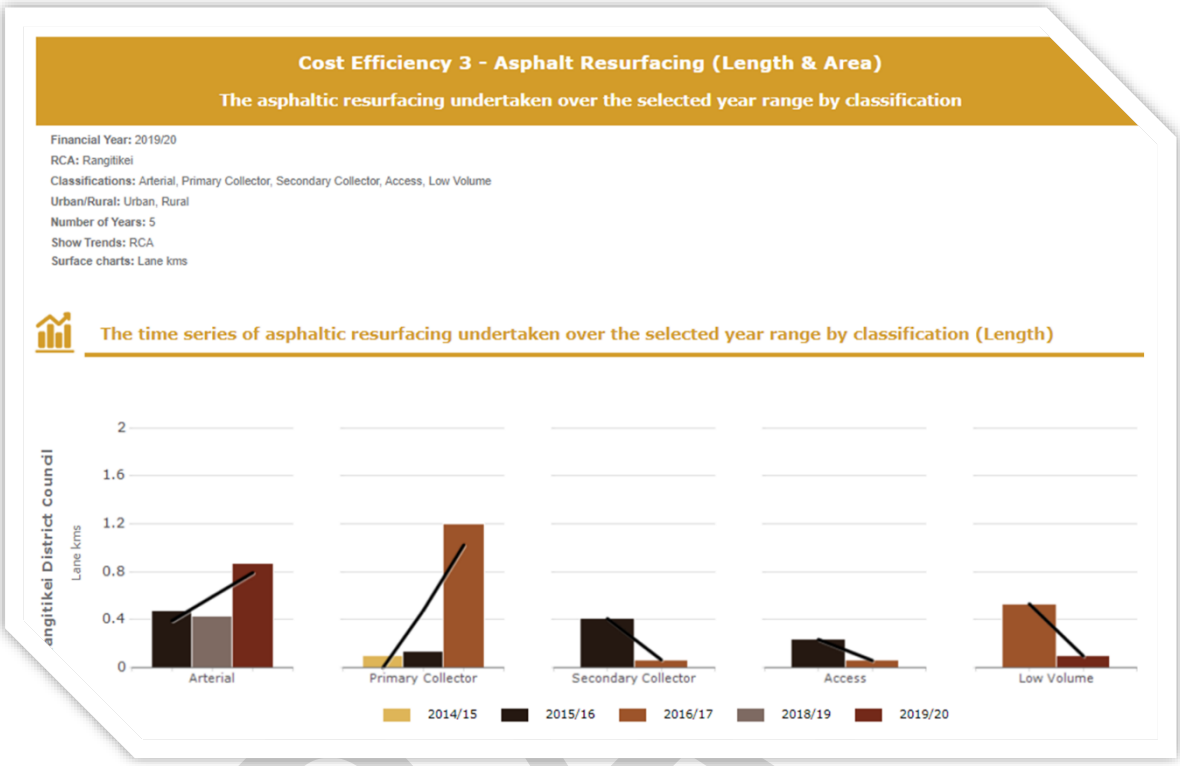


The comparative graph shows the life achieved across Council's network, Peer Group, Region and the Nation, averaging the previous 4 years data of the age of surface(s) when resurfaced:

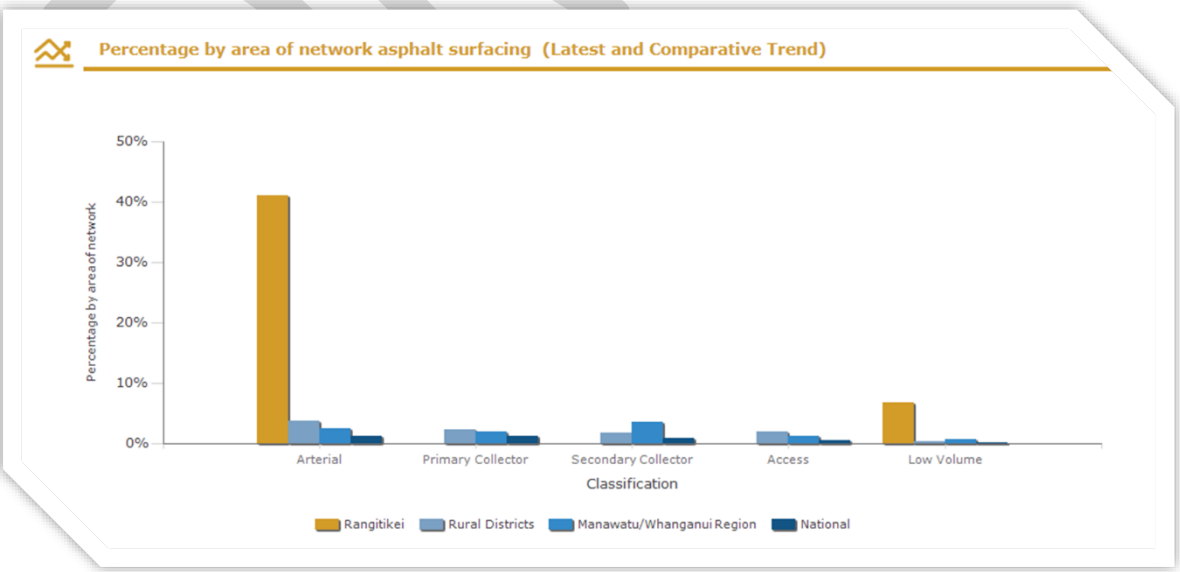


Cost Efficiency 3 – Asphalt Resurfacing (Length & Area)

This measure shows the total length and area of asphalt resurfacing undertaken over the selected year by ONRC classification, for Council's network. The trend graph shows lane kilometres achieved for the previous 4 years:

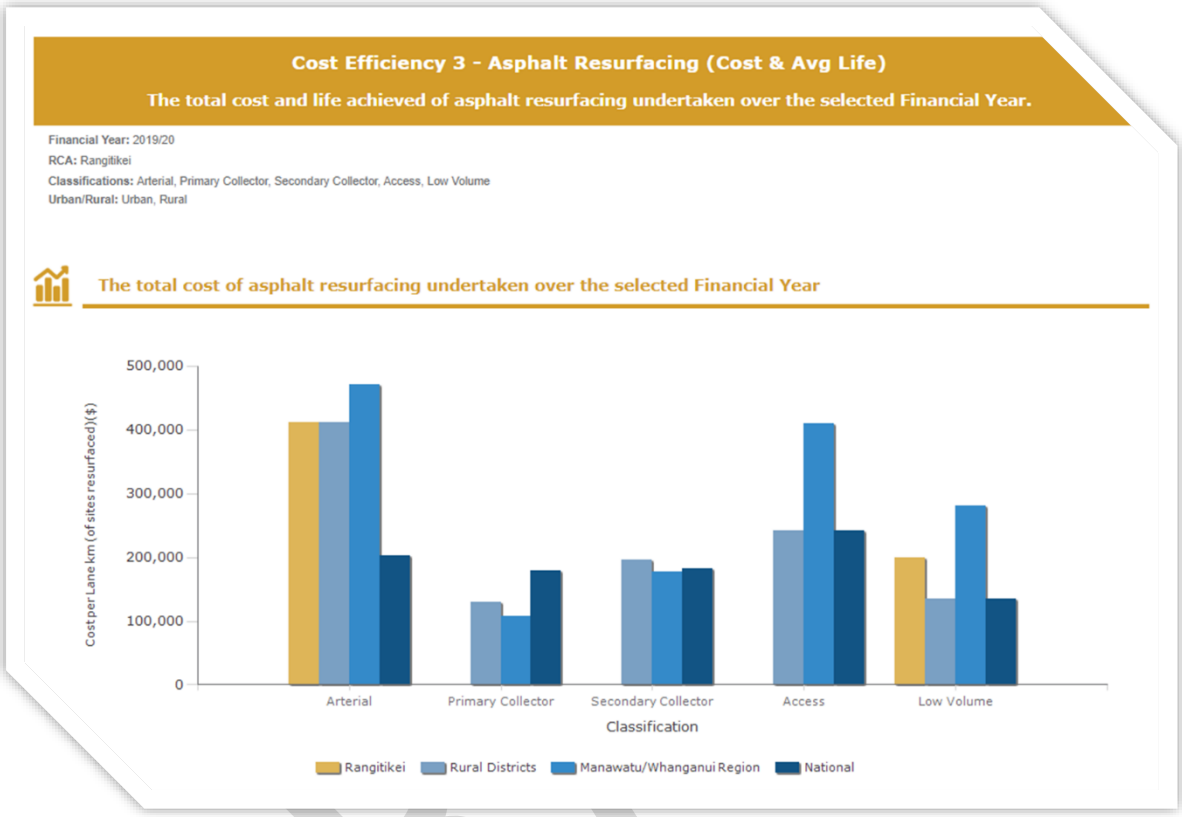


The comparative graph shows the percentage, by area of network, of asphalt surfacing renewed over the selected year by Council's network, Peer Group, Region and the Nation. The Percentage by Area total is calculated by summing the ONRC classifications, then given as a percentage of the total area:

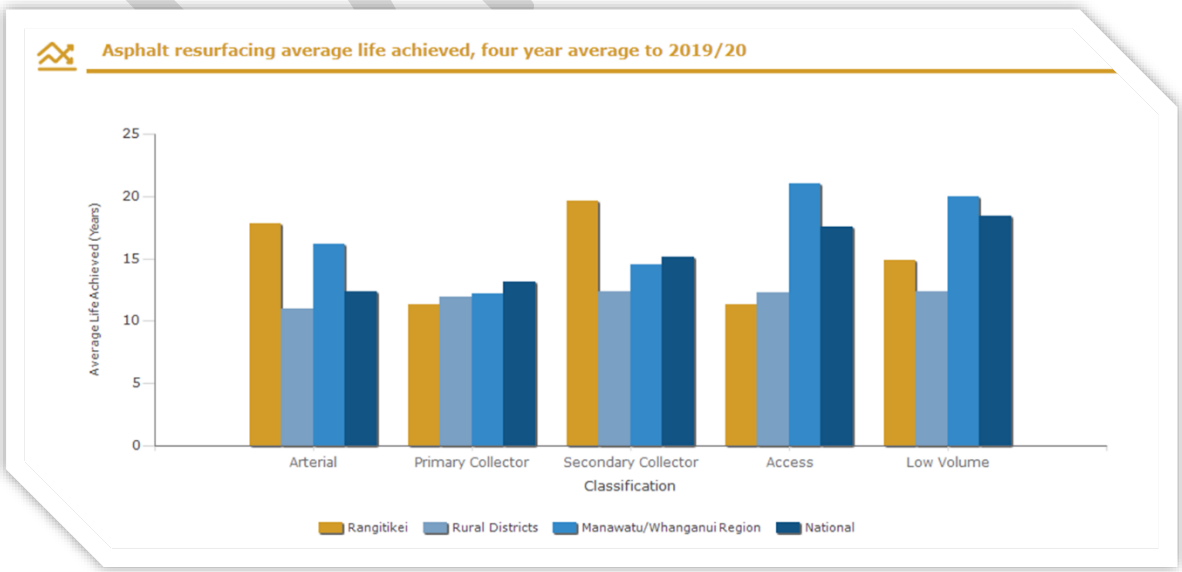


Cost Efficiency 3 – Asphalt Resurfacing (Cost & Average Life)

This measure shows the total cost and life achieved of asphalt resurfacing undertaken for Council's network, Peer Group, Region and the Nation. The cost is represented per lane kilometres over the selected year, by ONRC Classification:



The comparative measure shows the average life achieved of asphalt resurfacing undertaken for Council's network, Peer Group, Region and the Nation. The life achieved is the average over the previous 4 years of the age surface(s) were resurfaced:



Cost Efficiency EM10 – Routine Pavement Maintenance

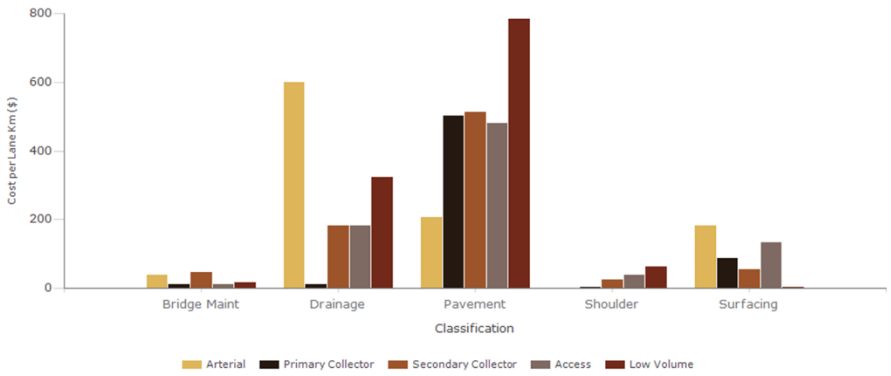
The aim of this measure is to show the service level across like classifications becomes consistent across the country as should the cost of service provision (for all activities) with reasonable variation for local factors:

Cost Efficiency 10 - Maintenance Costs

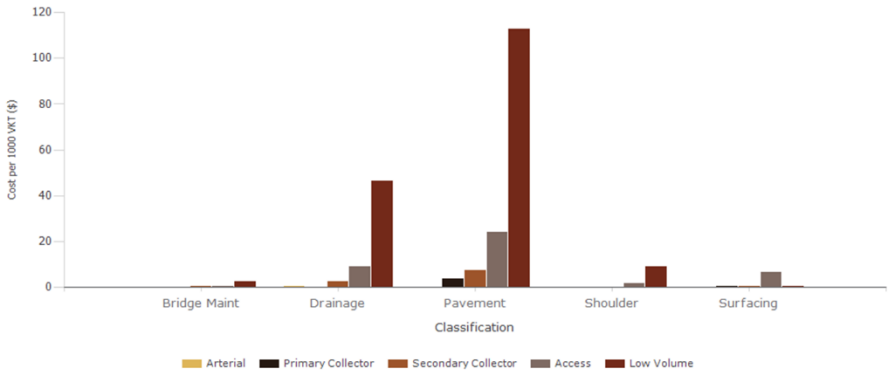
The maintenance costs recorded against Cost Groups, per Lane km and network VKT, for each classificati

Financial Year: 2019/20
RCA: Rangitikei

Maintenance costs per Lane km by Cost Group



Maintenance costs per 1000 VKT by Cost Group



Network statistics

RCA	Classification	Urban/Rural	Network length (km)	Lane kms
Rangitikei	Arterial	Urban	1.8	3
		Rural	3.1	6
		Total	5.0	9
	Primary Collector	Urban	8.9	17
		Rural	110.9	222
		Total	119.8	239
	Secondary Collector	Urban	19.8	39
		Rural	137.9	275
		Total	157.7	314
	Access	Urban	18.8	37
		Rural	331.4	660
		Total	350.2	697
	Low Volume	Urban	37.8	73
		Rural	553.1	840
		Total	590.9	913

Appendix B: Pavement and Surfacing Treatment Selection

Selection of surfacing or pavement treatment is based on assessment of multiple factors, primarily filtered using High Speed Data and Low Volume roughness surveys. These surveys are focussed on the roughness, rutting and texture of the pavement / road surface.

High speed data collection also obtains a skid resistance measure of the roads subjected to higher traffic volumes.

In addition, visual rating surveys supplement the above data collection methods by reporting on surface defects including, but not limited to, flushing, cracking and evidence of potholes.

This data is collated and associated with each Treatment Length (TL) on the network (of which there are approximately 1,740 sealed surface TL's at present). The extent of each metric exceeding a defined threshold (roughness, rutting, texture, skid resistance or aspects of visual rating, where available) is identified and assessed against every other TL to create a ranking.

This ranking for each metric is used to highlight those TL's most in need of intervention. The ranking also provides information as to the most likely intervention. Other pertinent information, including sealed surface layer depth, overall traffic volume, Heavy Commercial Vehicle (HCV) quantity, crash history and anticipated forestry haulage is reviewed to adjust the intervention.

The following interventions are generally recommended, along with the 'sense test' for inclusion:

- Rehabilitation
  as a result of excessive roughness or rutting being reported, a Net Present Value (NPV) analysis is undertaken to confirm that renewal of the pavement is more economic than continued maintenance.
- Resurfacing
  based on a sufficient quantity of surface defects being reported or that the skid resistance and/or texture depth has been identified as substandard, resurfacing is recommended to retain either pavement integrity, skid resistance of the surface or prevent ravelling / loss of surfacing material

If none of the metrics rank highly enough to warrant an intervention through Maintenance or Renewals, no action is deemed necessary.

The figure on the following page shows an exemplar Treatment Length summary report with associated High Speed Data and 10 year crash history.

Date of Report : 20 May 2020

RANGITĪKEI DISTRICT COUNCIL
Making this place home

Road Identification Data

TL No : **7201**

Name : **HAUTAPU STREET** *Urban* *ONRC :* **Primary Collector**

RP Start : **20** *m* *RP End :* **350** *m* *Length :* **330** *m*

Current Surface Data

Surface Type : **R 4/6** *Date of Seal :* **14-Mar-05**

Current Function : **Reseal** *Surface Depth (mm) :* **16** *Current Seal Age (Years) :* **15**

Visual Rating Data

Surface Condition Index (S.C.I.) **0.49** *Ranking :* **360**

Defect	*Quantity*	*Unit*	*%*
Alligator Cracks	*2*	*m*	*0.1%*
Potholes	*0*	*No*	*0.0%*
Pothole Patches	*0*	*No*	*0.0%*
Rutting	*0*	*m*	*0.0%*
Shoving	*0*	*m*	*-*
Scabbing	*16*	*sq.m*	*0.3%*
Flushing	*0*	*m*	*0.0%*

Assessment Dimension	*Quantity*	*Unit*
Length	330.00	*m*
Width	16.46	*m*
Area	5431.80	*sq.m*
% of Treatment Length Assessed	100.00	*%*

Treatment Selection Algorithm (TSA) Recommendation	-

Cumulative Defect %	0.4%

High Speed Data / Crash History / Road Risk

Date of Latest HSD Rating : **22-Feb-19**

10 Year Crash History	Fatal	Serious	Minor	No Injury
	0	0	0	0

	Roughness		Rutting	
	Mean	% Exc.	Mean	% Exc.
Left Lane	152	75.00%	10.2	*0.00%*
Right Lane	163	93.75%	9.0	*0.00%*

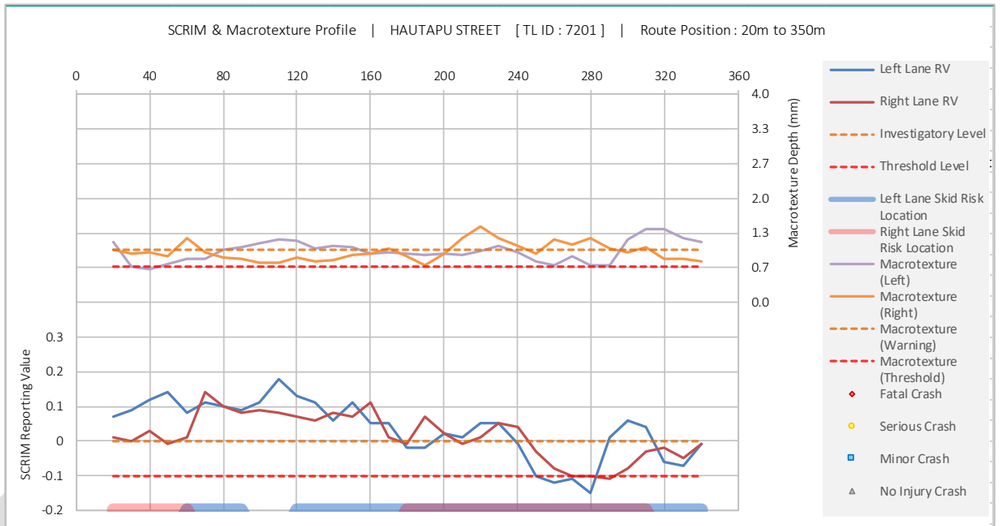
	Mean Readings		Rating Category
	SCRIM	Texture	
Left Lane	0.04	0.98	A
Right Lane	0.01	0.97	

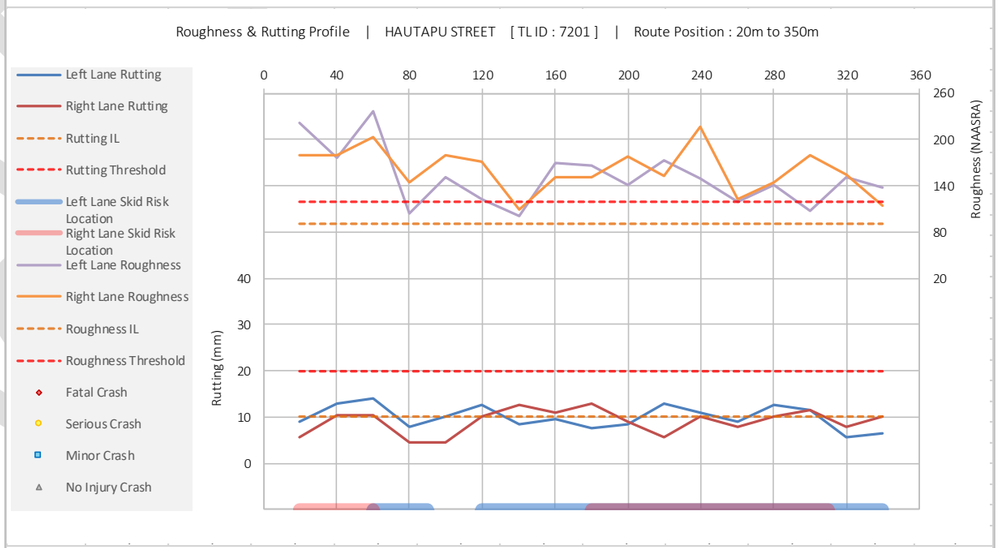
Pavement Condition Index (P.C.I.) **82.28** *Ranking :* **5** *Date of SCRIM Rating :* **22-Feb-19**

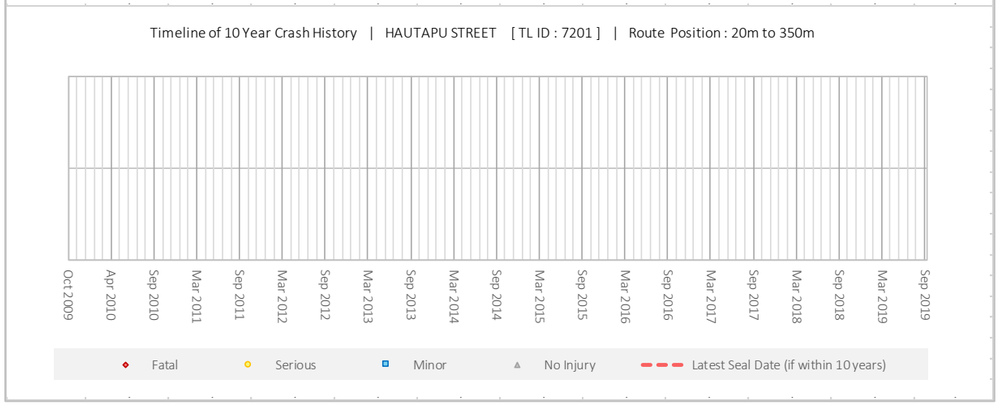
Details / Reason for Treatment

Roughness and Texture Depth

Expected Treatment : Pavement Rehabilitation







Appendix C: Network Statistics

Network Statistics	Measure
Maintained Roads -Centreline length (km) - Urban	112.4
Maintained Roads -Centreline length (km) - Rural	1,258.9
Sealed Roads -Centreline length (km) - Urban	109.4
Sealed Roads -Centreline length (km) - Rural	834.1
Maintained Roads -Lane km - Urban	222.5
Maintained Roads -Lane km - Rural	2,272.1
Sealed Roads -Lane km - Urban	217.6
Sealed Roads -Lane km - Rural	1,682.0
Unsealed Roads -Lane km - Urban	4.9
Unsealed Roads -Lane km - Rural	590.1
Total network (including motorway), centreline length (km)	1,371.3
Unsealed network, centreline length (km)	427.7
Total network (including motorway), lane-km	2,494.5
Unsealed network, lane-km	595.0

Extracted from RAMM database using the Graph function for Carriageway; filtered on Local Authority owned roads and split by urban / rural designation ('bridge' and 'concrete' surface types omitted)

Appendix D: Forecast Works

WC	Work Category Name	Statistic	Forecast 2021-22	Forecast 2022-23	Forecast 2023-24
111	Sealed pavement maintenance	Area of water-cutting (m2)	0.0	0.0	0.0
211	Unsealed road metalling	Unsealed road metalling and rehabilitation (km)	90.0	90.0	90.0
211	Unsealed road metalling	Unsealed road metalling and rehabilitation (m3)	10,500.0	10,500.0	10,500.0
212	Sealed road resurfacing	Sealed road resurfacing (lane-km)	99.0	99.7	97.7
212	Sealed road resurfacing	Sealed road resurfacing (m2)	297,235.0	293,273.0	276,240.0
212	Sealed road resurfacing	Resurfacing - chip seals (m2)	295,713.0	292,607.0	274,396.0
212	Sealed road resurfacing	Resurfacing - thin asphaltic surfacings (m2)	1,522.0	666.0	1,844.0
212	Sealed road resurfacing	Resurfacing - thin asphaltic surfacings (lane-km)	0.4	0.2	0.4
212	Sealed road resurfacing	Resurfacing - other surfacings (m2)	0.0	0.0	0.0
213	Drainage renewals	Drainage renewals - Length culverts (m)	680.0	680.0	680.0
213	Drainage renewals	Drainage renewals - Length kerb and channel (m)	250.0	250.0	250.0
213	Drainage renewals	Drainage renewals - Length other drainage renewals (m)	0.0	0.0	0.0
214	Sealed road pavement rehabilitation	Pavement rehabilitation (lane-km)	6.1	5.8	6.5
214	Sealed road pavement rehabilitation	Pavement rehabilitation (m2)	18,127.3	16,036.5	18,623.1
214	Sealed road pavement rehabilitation	Structural AC rehabilitation (lane-km)	0.0	0.0	0.0
214	Sealed road pavement rehabilitation	Structural AC rehabilitation (m2)	0.0	0.0	0.0
214	Sealed road pavement rehabilitation	Granular pavement rehabilitation (lane-km)	6.1	5.8	6.5
214	Sealed road pavement rehabilitation	Granular pavement rehabilitation (m2)	18,127.3	16,036.5	18,623.1

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