



RANGITIKEI
DISTRICT COUNCIL

Roading Activity Management Plan

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1 EXECUTIVE SUMMARY

1.1 Introduction

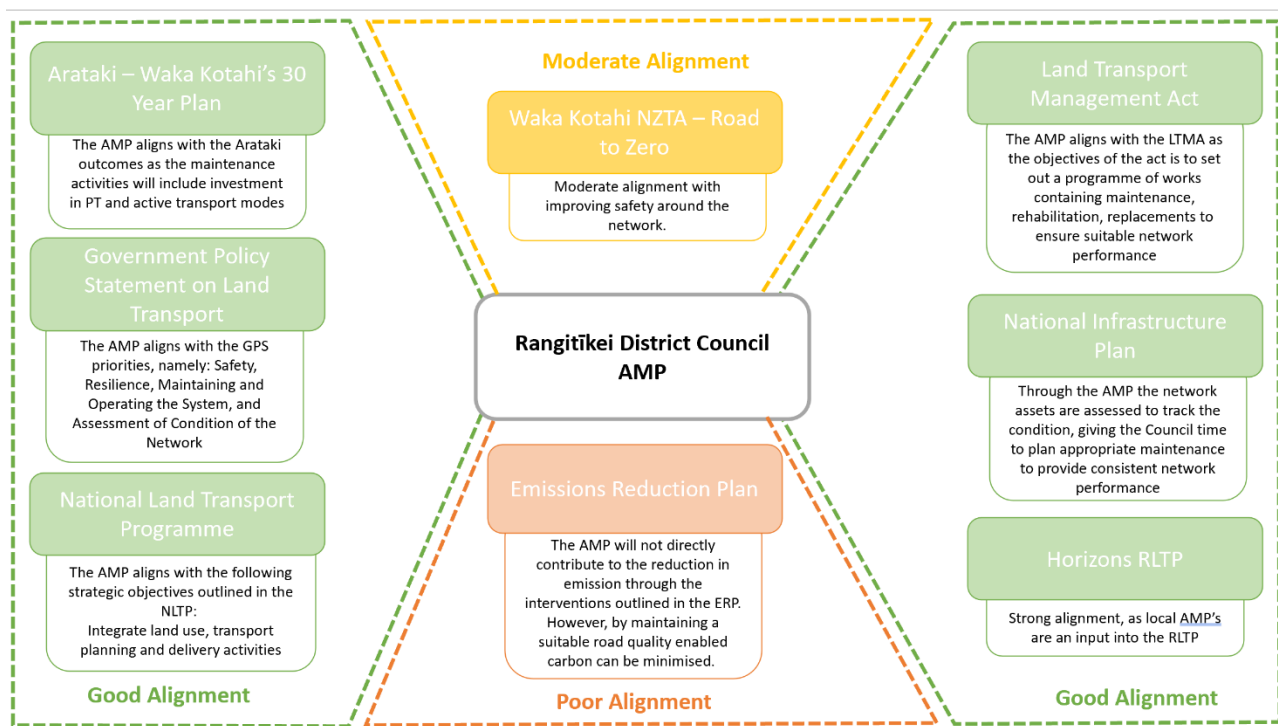
The Rangitikei District Council (RDC) is committed to investing in transport infrastructure based on robust evidence to sustain the transport network in the long term; by targeting the right treatments, to the right places, at the right times and for the right costs.

PURPOSE

This AMP follows a business case approach to determine the desired level of service in the most cost-effective manner, while demonstrating responsible stewardship for present and future customers. The AMP underpins the Long-Term Plan (LTP) and consultative processes that have been put in place to engage the community. The primary purpose of this document is to determine the investment required on the network over the next funding period, identify key risks and determine interventions and cashflow, performance monitoring and improvement priorities for the future.

STRATEGIC ALIGNMENT

To verify funding is being allocated appropriately, investigations into the network condition and performance are undertaken to ensure that all items of programme development and implementation align with the strategic direction. The figure below shows alignment with key policies.



1.2 What we have

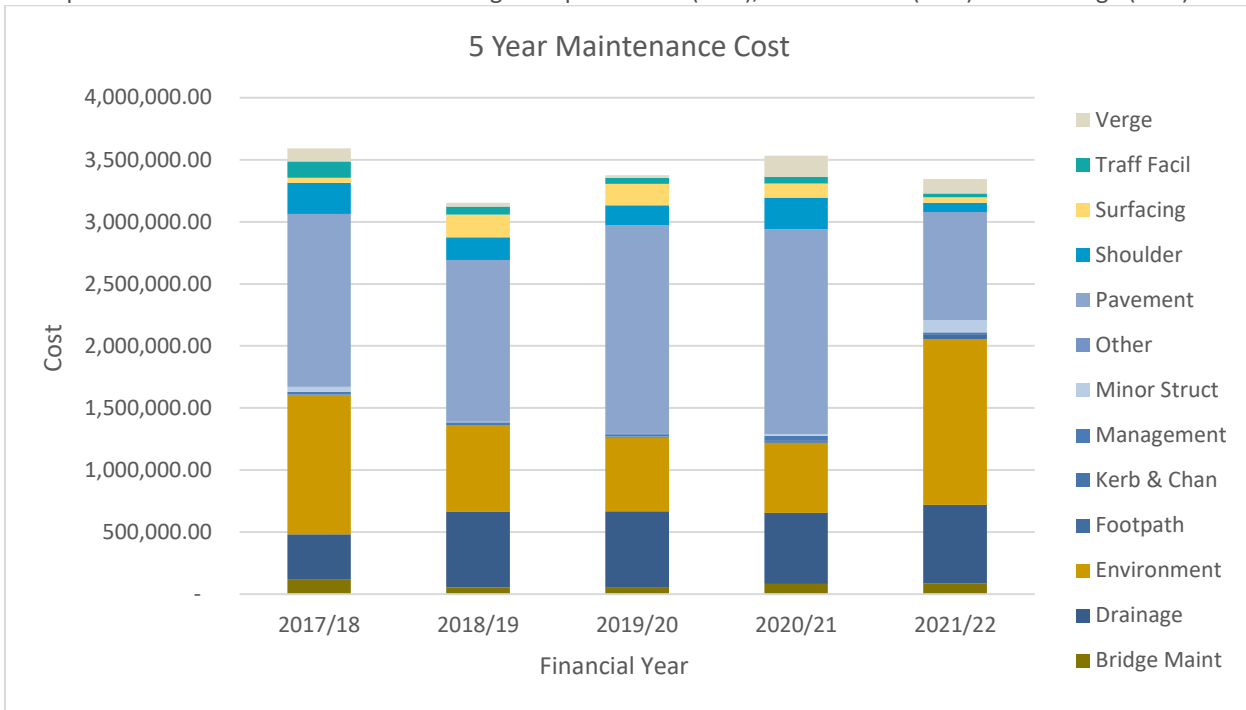
EXISTING ASSETS

In the Rangitikei District, the road network is approximately 1,300km and comprises three main ORNC road classifications, including Low Volume (46%), Access (30%), Secondary Collector (14%). Approximately 93% of these roads are rural and 7% are urban, with 66% of the network sealed.

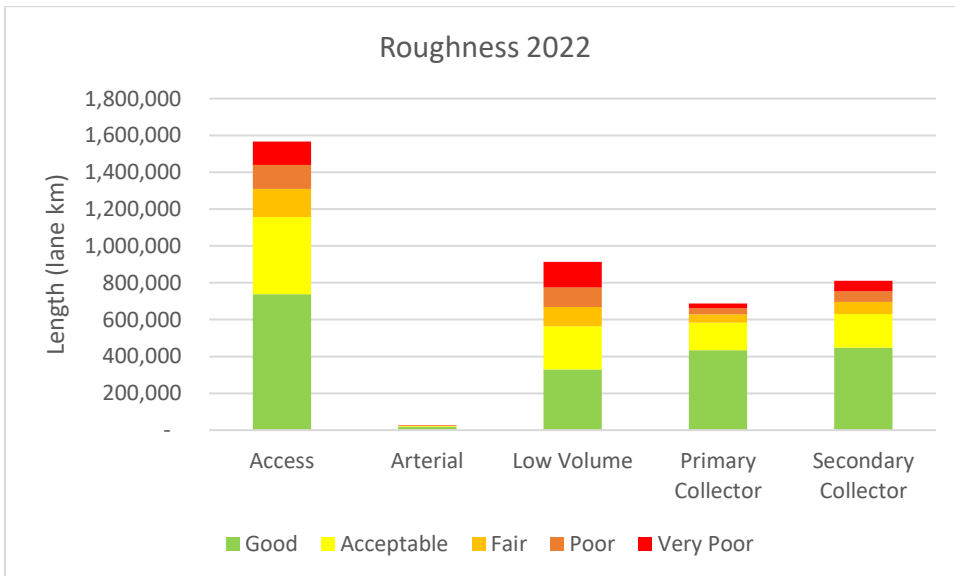
The network is composed of a range of assets such as bridges, pavements, signage, and streetlights. The Valuation of Council Assets in 2022 showed that transport (road) the three assets with the highest Optimised Replacement Cost (ORC) are formations, bridges and culverts and pavement layers which represents just under 70% of the network replacement costs. This demonstrates the importance and quantum of transport assets in the District and why effective management of these assets is critical.

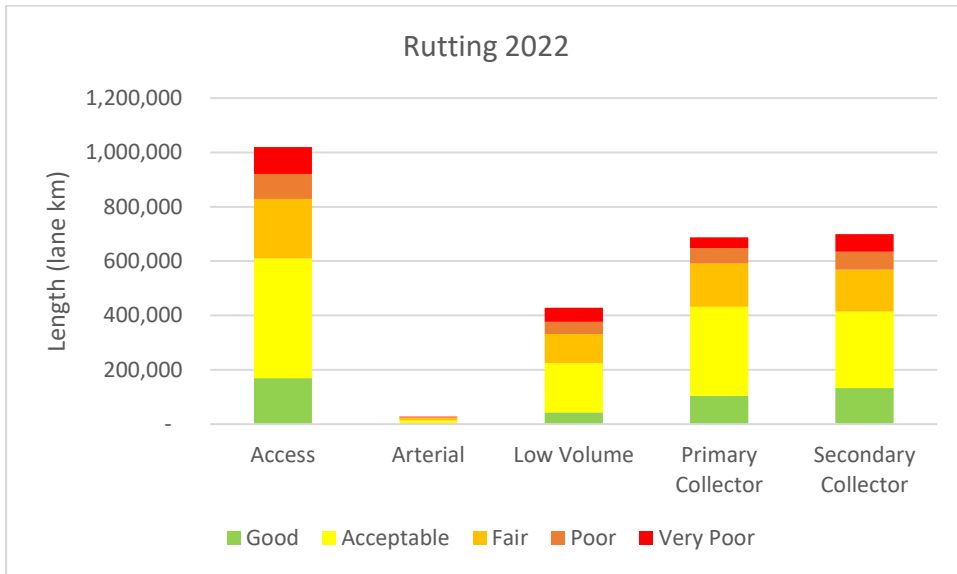
CONDITION & PERFORMANCE

Based on the information assessed on existing assets, the overall condition of RDC’s roads remains consistent. In terms of maintenance spend, pavements and landslips are the two focus areas for the Council going forward. Data analysis showed that over the last 5 years, RDC spent over 80% of the maintenance budget on pavements (41%), environment (25%) and drainage (17%).

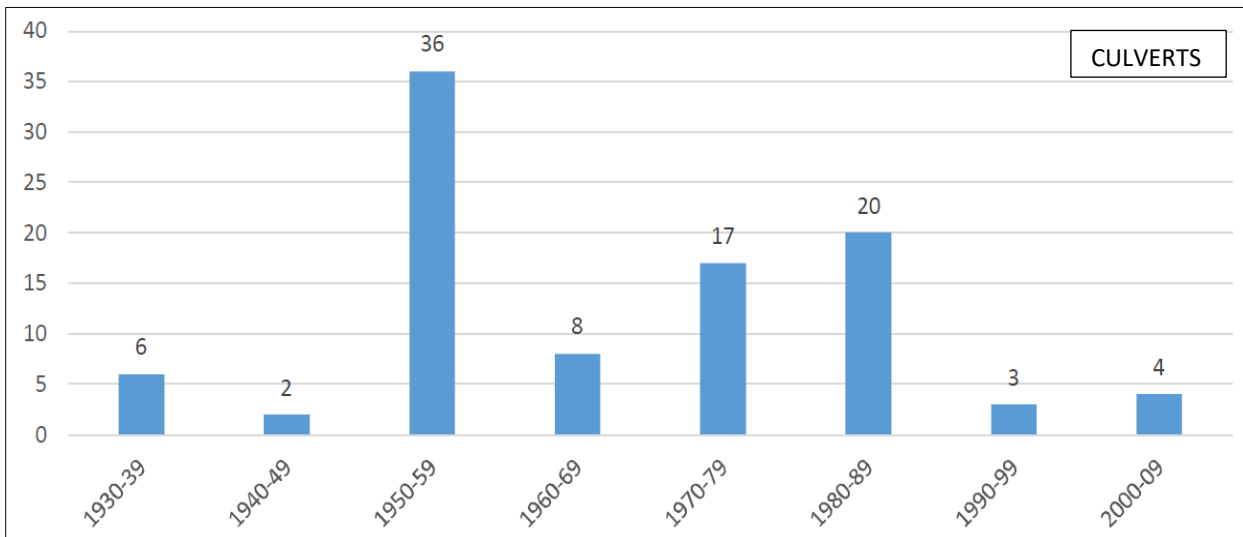
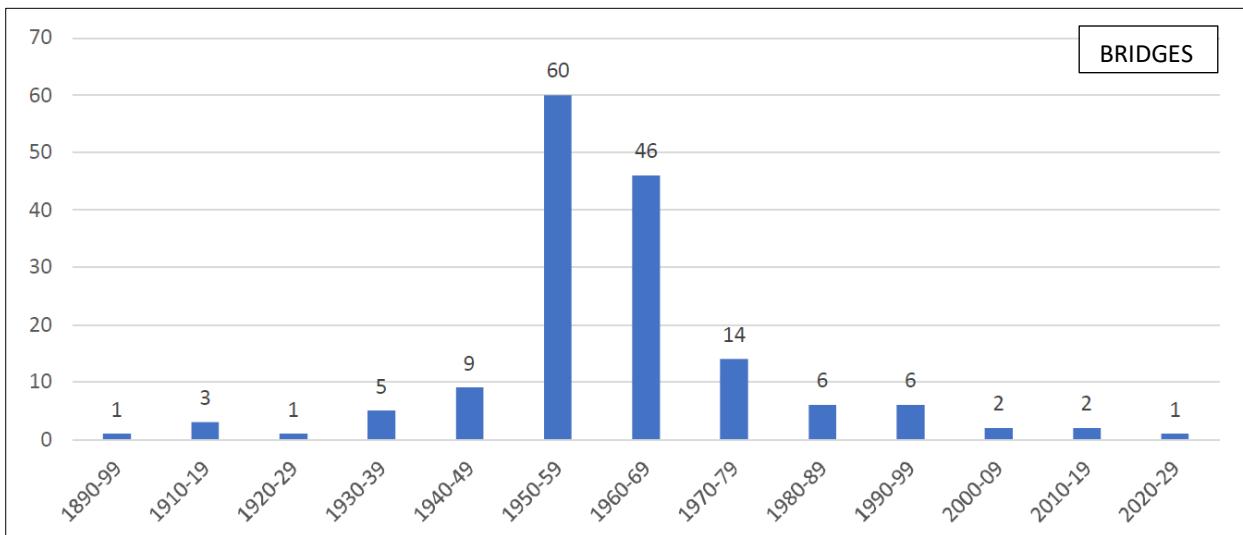


The network condition data showed that overall, RDC’s biggest asset, pavements are in acceptable condition, with pavement roughness assessment showing that less than 10% of the surveyed network is in poor condition, while the rutting assessment shows that over 80% of the surveyed network is in an acceptable condition or better. These statistics indicate that the network is performing at an acceptable level and is being appropriately maintained. Maintenance and rehabilitations appear to be delivering value in terms of cost.





A continuous programme of bridge replacements is required to ensure a backlog of replacements build up. The replacement programme should prioritise condition over age in line with the existing recommendations. The figure below shows the age of major structures on RDC's network in 2023.



DEMAND

In terms of traffic volumes, the available RAMM data shows an average increase of 9% across the network between 2018 and 2022. Furthermore, the traffic demand associated with forestry activities on the network is predicted to increase, peaking between 2024 and 2029. In order to respond to future traffic demand, it is important to maintain the condition of the network, Parewanui Road, Santoft Road, Kie Kie Road, Murimotu Road, Watershed Road, West Road, Turakina Valley Road 3 and Ongo Road are particularly at risk of requiring heavy maintenance.

1.3 Problems

Using the Waka Kotahi recommended investment logic mapping framework as well as available evidence, the following Problem Statements for this AMP were identified:

- Legacy Network:** Deteriorating condition and changing demands on Access, Low Volume and Secondary Collector roads are resulting in decreased Levels of Service and increasing reactive interventions on these roads.
- Low Network Resilience:** The Rangitikei District is susceptible to increasingly severe climatic events resulting in significant reactive expenditure at a relatively limited number of locations, reducing accessibility and increased road safety risks.
- Safety:** There are a high numbers of injury crashes on roads in Rangitikei District which is resulting in safety concerns for users.

PROBLEM 1 – LEGACY NETWORK

Analysis of maintenance costs (2017 – 2022) revealed that spend on pavements was the largest cost group amounting for 41% of the budget. Further investigations revealed that aggregate loss, deformation and shear failure. The analysis also revealed that Access, Low Volume and Secondary Collector roads account for over 80% of maintenance spend and they together make up almost 90% of the network. Aggregate loss primarily occurs on Low Volume roads, with both deformation and shear failures primarily occurring on Access roads. The table below shows the roads likely to require maintenance interventions.

| Roads | Aggregate Loss (2017-2022) | Depression (2017 -2022) | Shear Failure (2017-2022) |
|------------------------|----------------------------|-------------------------|---------------------------|
| Pohonui Road | Y | | |
| Turakina Valley Road 4 | Y | | |
| Watershed Road | Y | Y | |
| Turakina Valley Road 2 | Y | | |
| Turakina Valley Road 3 | Y | Y | Y |
| Ohaumoko Road | Y | | |
| Mangatipona Road | | Y | Y |
| Taihape-Napier Road 2 | | Y | Y |
| Whales Line | | Y | |
| Ongo Road | | Y | |
| Waiaruhe Road | | Y | |
| Santoft Road | | | Y |
| Mangahoe Road | | | Y |

Based on analysis, the following haul routes should be further investigated prior to when major harvesting begins in Rangitikei to identify whether they need to be fortified:

- Turakina Valley Road
- Mangahoe Road
- Murimotu Road
- Santoft Road

In addition to the above haul roads, the analysis highlighted the following problematic roads which should also be investigated: Primary Collectors (high expenditure, forming only 10% of the network)

- Makuhou Road
- Papakai Road

PROBLEM 2 – LOW NETWORK RESILIENCE

Further investigations into the maintenance cost revealed that over the past 5 years environment accounted for 25% of total maintenance spend and has been the highest spend item year on year between 2017/18 and 2021/22. Landslips amounted to 66% of total environmental maintenance spend, the top-ten highest spend corridors is shown below.

Given the frequency of landslide treatment, it is likely that exposure to increased personal road safety risk exists along these routes. Closer inspection of these roads also reveals little in the way of road protection measures, hence potentially serious consequences if road users encounter landslips or landslide debris. The roads in the table below should be investigated.

| Row Labels | No of landslip events | Access | Low Volume | Secondary Collector |
|-----------------------------------|-----------------------|--------------|--------------|---------------------|
| Turakina Valley Road 3 | 1209 | \$97,190.51 | \$202,725.06 | \$180,649.56 |
| Turakina Valley Road 2 | 694 | \$118,093.37 | \$109,928.27 | |
| Watershed Road | 656 | | \$197,775.96 | |
| Upper Kawhatau Valley Road | 222 | \$90,398.41 | \$72,006.00 | |
| Kawhatau Valley Road | 255 | \$150,469.93 | | |
| Mt Curl Road | | | \$137,425.09 | |
| Okirae Road | | | \$129,867.40 | |
| Otuarei Road | | \$108,807.67 | | |

Maintenance spend on drainage activities, the third largest cost group, has been analysed to identify drainage concerns on the network. The analysis shows that between 2017/2018 and 2021/2022, the highest costs relating to drainage infrastructure were associated with drain clearance, and new culvert construction.

PROBLEM 3 – SAFETY

Analysis showed Collective Risk on Arterials has been notably higher than other rural districts, but comparable on other road types. Personal Risk however has consistently been higher in Rangitikei compared to its peers, the wider region, and the country. This is especially true for Low Volume roads and could be linked to the large volume of this type of road on the network.

Investment in arterial roads on the network will improve safety for users in the district and will lead to RDC achieving better alignment with Road to Zero. In addition, investment would minimise the risk and consequences of crashes, resulting in:

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

This 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 and well as meet level of service requirements for safety.

CASE FOR CHANGE

Without the appropriate funding, the problems outlined in the AMP will compound over time and become more difficult for the Council to manage or resolve. This will have major impacts for the wider community and how it functions. Further, traffic demand (related to forestry) and climate change will continue to impact the network. These risks will make the network vulnerable to decreasing performance and increasing safety risk. These events will impact the distribution of limited Council funds, with money originally allocated to other parts of the network maintenance, rehabilitation or reseals. With increasing climate change events and Waka Kotahi's Emergency Fund having a lengthy turnaround period, if the fundamental network issues are not addressed the Council will continue to have to put planned work on the hold to prioritise remedial work on the network in order to provide access to residence.

The Rangitikei road network is a critical part is sustaining the growth the economy. Forecasts show that over the next 10 years there will be increasing pressure on the forestry routes. Currently forestry routes are performing at an acceptable level, but they will be particularly susceptible to heavy vehicle damage in the near future.

Landslides are frequent in the Rangitikei, with some of the more vulnerable roads not having an alternative route. This puts the Council under significant pressure as a large portion of the maintenance budget is being reallocated to comparatively few locations across the

network. With climate change impacts increasing, road closures are becoming more frequent¹. This has implications for customers and the wider economy, as people may be isolated or delayed.

Without adequate funding for maintenance, road assets will exponentially deteriorate, negatively impacting user access safety and experience within the community, particularly sections of the network that has already been identified as underperforming.

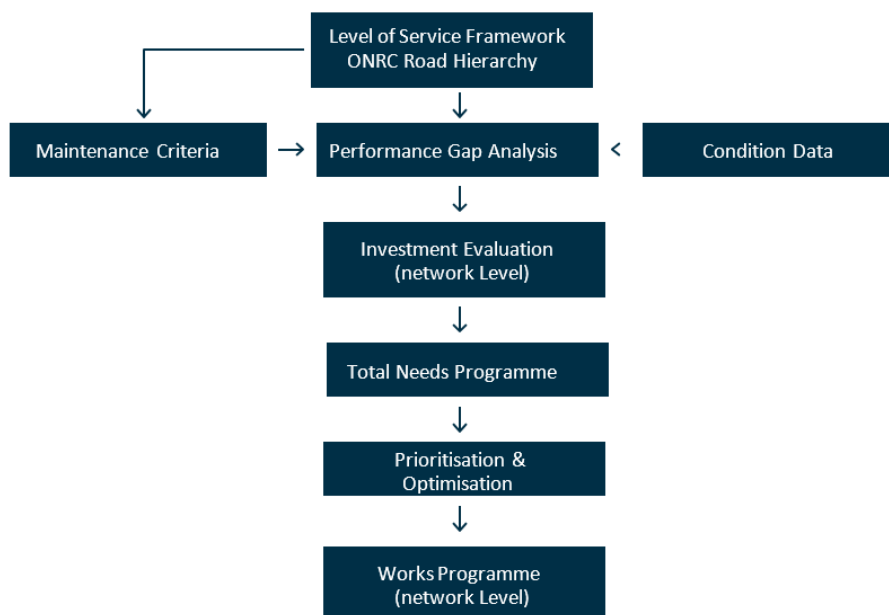
1.4 Programme

The Programme sets out the strategic response of the planned future state, identifies a programme of works or activities that deliver on the strategic case, with asset management information that identifies maintenance, operations, renewals and improvement/ new works programmes. In order to address the strategic issues and problems stated, the preferred programme must address the problems relating to Legacy Network, Resilience and Safety.

DEVELOPING THE PROGRAMME

Through the 2024-27 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 2024-27 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 2024-27 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 of works programme development at the network level is shown below:



OPTIMISING THE PROGRAMME

An MCA evaluation using the investment objectives and other project criteria was undertaken to evaluate the relative priority of maintenance, renewals, and improvement projects. The chosen criteria are meant to consistently score the programme options across all the things that are important to Rangitikei District Council. The following four MCA criteria were identified:

- Resilience
- Condition
- Safety
- Service Delivery
- Financial Impacts

¹ Further evidenced by the impact to the network by cyclone Gabrielle in February 2023

The MCA process was undertaken separately for each funding category that make up a forward works plan. These include:

- Maintenance
- Renewals
- Road Improvements
- Walking and Cycling
- Public Transport

The MCA is a qualitative analysis using specialist judgement and was undertaken in two stages:

- Stage 1 assessed the Baseline Forward Works Plan against the existing network condition (essentially a Do-Nothing scenario) this assessment allows the value of the baseline investment to be shown.
- Stage 2 of the assessment compares the FWP Options (10% increase and decrease in funding) to the Baseline FWP, this provides a better understanding of the funding level and will provide the best value for money and overall outcomes for the Council.

OPTIONS ASSESSMENT

For the MCA, the 2024-2027 Forward Works Plan developed by RDC has been used as the baseline, a list of alternative options has been developed to determine the appropriate level of investment required. The options are:

- **Baseline Programme: 2024-2027 Forward Works Plan** – This programme focuses on business-as-usual operations and maintenance, cyclic renewals, and rehabilitation. It ensures that critical work is completed to meet minimum compliance standards.
- **Enhanced Investment Programme: 2024-2027 Baseline Forward Works Plan plus 10% increased investment** – This programme will increase investment outlined in the Forward Works Plan by 10% to determine the impact on the network.
- **Low-Cost Investment Programme: 2024-2027 Baseline Forward Works Plan minus 10% more investment** – This programme will decrease investment outlined in the Forward Works Plan by 10% to determine the impact on the network.

1.5 Preferred Programme

RDC identified a 3-Year Programme which will address the immediate challenges faced by the transport network and deliver the District’s Strategy and Investment Outcomes. Three options were assessed, Baseline, the Enhanced and the Low-Cost, which verified funding by 10%. The assessment revealed that the optimum programme will be combination of the Baseline and the Enhanced work categories. The recommended programme has increased to deliver the network required performance.

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|---|---|------------------|------------------|------------------|-------------------|-------------------|------------------|-----------|
| 111 | Sealed Pavement Maintenance | 1,514,231 | 1,548,800 | 1,593,867 | 4,656,898 | 4,259,744 | 397,154 | 9 |
| 112 | Unsealed Pavement Maintenance | 514,703 | 531,967 | 554,157 | 1,600,827 | 1,368,238 | 232,589 | 17 |
| 113 | Routine Drainage Maintenance | 1,199,072 | 1,234,614 | 1,294,064 | 4,100,525 | 3,602,882 | 497,643 | 14 |
| 114 | Structures Maintenance | 327,679 | 315,995 | 323,602 | 967,276 | 681,493 | 285,783 | 42 |
| 121 | Environmental Maintenance | 1,521,072 | 1,650,438 | 1,732,959 | 4,904,469 | 4,205,519 | 698,950 | 17 |
| 122 | Traffic Services Maintenance | 499,677 | 525,187 | 551,444 | 1,576,308 | 1,282,955 | 293,353 | 23 |
| 123 | Operational Traffic Management | 12,566 | 12,566 | 12,566 | 37,698 | 2,693 | 35,005 | 1,300 |
| 124 | Cycle Path Maintenance | 0 | 0 | 0 | 0 | 3,154 | -3,154 | -100 |
| 125 | Footpath Maintenance | 150,000 | 157,500 | 165,375 | 472,875 | 387,855 | 85,020 | 22 |
| 131 | Rail Level Crossing Warning Devices Maintenance | 25,000 | 26,250 | 29,562 | 80,812 | 70,808 | 10,004 | 14 |
| 140 | Minor Events | 500,000 | 524,998 | 551,249 | 1,576,247 | 989,440 | 586,807 | 59 |
| 151 | Network & Asset Management | 1,449,664 | 1,454,395 | 1,517,115 | 4,421,174 | 3,787,473 | 633,701 | 17 |
| Operations & Maintenance Sub-total | | 7,833,571 | 8,106,171 | 8,455,366 | 24,395,109 | 20,642,254 | 3,752,855 | 18 |
| 211 | Unsealed Roads Metalling | 575,000 | 603,750 | 633,938 | 1,812,688 | 1,371,921 | 440,767 | 32 |
| 212 | Sealed Roads Resurfacing | 2,273,710 | 2,714,877 | 2,847,369 | 7,835,956 | 4,062,040 | 3,773,916 | 93 |

| | | | | | | | | |
|---|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------|
| 213 | Drainage Renewals | 750,000 | 787,000 | 826,350 | 2,363,350 | 2,272,620 | 90,730 | 4 |
| 214 | Sealed Road Pavement Rehabilitation | 1,451,375 | 1,243,125 | 1,191,275 | 3,885,775 | 4,082,330 | -196,555 | -5 |
| 215 | Structures Component Replacements | 597,000 | 622,500 | 556,500 | 1,776,000 | 1,573,396 | 202,604 | 13 |
| 216 | Bridge and structures renewals | 0 | 150,000 | 950,000 | 1,100,000 | 263,430 | 836,570 | 318 |
| 222 | Traffic Services Renewal | 262,445 | 270,947 | 278,831 | 812,223 | 964,590 | -152,367 | -16 |
| 225 | Footpath Renewals | 231,624 | 243,580 | 255,681 | 730,885 | 730,885 | 0 | 0 |
| Renewals Sub-total | | 6,141,154 | 6,635,779 | 7,539,944 | 20,398,099 | 15,321,212 | 5,076,887 | 33 |
| Local Road Maintenance (Activity Class) - Totals | | 13,974,725 | 14,741,950 | 15,995,310 | 44,711,986 | 35,963,466 | 8,748,520 | 24 |

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|--|---------------------------------------|------------------|------------------|------------------|-------------------|------------------|------------------|-----------|
| 322 | Replacement of bridges and structures | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 324 | Road Improvements | 2,861,746 | 2,849,029 | 2,840,007 | 8,550,782 | 5,907,281 | 2,643,501 | 45 |
| 325 | Seal Extension | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 357 | Resilience improvements | 528,000 | 495,000 | 550,000 | 1,573,000 | 1,748,285 | -175,285 | -10 |
| Road Improvements (Activity Class) - Totals | | 3,389,746 | 3,344,029 | 3,390,007 | 10,123,782 | 7,655,566 | 2,468,216 | 32 |

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|--|---------------------------------|----------------|----------------|----------------|------------------|------------------|-------------------|------------|
| 341 | Road to Zero | 621,500.00 | 387,123.00 | 408,430.00 | 1,417,053 | 4,269,871 | -2,852,818 | -67 |
| 451 | Walking and Cycling | 200,000.00 | - | - | 200,000 | 924,600 | -724,600 | -78 |
| 514 | Public transport Infrastructure | 5,600.00 | 6,000.00 | 6,500.00 | 18,100 | 17,346 | 754 | 4 |
| Low Cost Low Risk (Activity Class) - Totals | | 827,100 | 393,123 | 414,930 | 1,635,153 | 5,211,817 | -3,576,664 | -69 |

| | | | | | | | |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------|
| TOTAL | 18,191,571 | 18,479,102 | 19,800,247 | 56,470,921 | 48,830,849 | 7,640,072 | 16 |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------|

1.6 Funding

The RDC Financial Strategy guides decision-making from the outset and provides guidance for resolving the complex issues that need to be addressed during preparation of the roading infrastructure programme.

For the 2021-24 National Land Transport Funding (NLTF) period, Rangitikei District Council received a Financial Assistance Rate (FAR) of 63% and the FAR will increase to 66% for the 2024-2027 funding period. In terms of the total value of proposed works in the 2024-2027 Forward Works Plan, the investment request is 17% higher compared to the previous funding period.

1.7 Delivery & Procurement

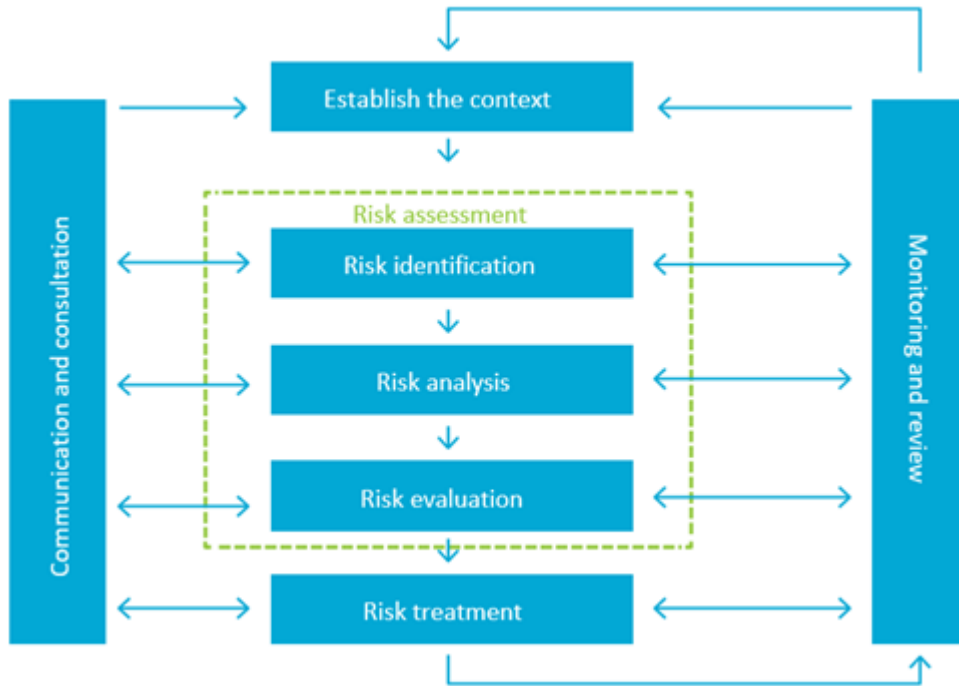
Council's proposed programme and related activities is aligned and integrated with the procurement programmes of other approved organisations and other entities. The 3-year programmes are routinely co-ordinated on a regional level with other roading authorities in Manawatū, Horowhenua and Palmerston North.

Council maintains ownership and responsibility for managing the land transport activity and the associated infrastructure. In order to maximise efficiencies and long-term value for money, RDC has taken a holistic approach to service delivery. RDCs approach to the market and contracting align with procurement best practices and demonstrates that Council is open, transparent, and accountable.

1.8 Risk Management

Council is confident that the programme can be delivered, and risks managed. Council has a proven track record of sound delivery with previous investment in the continuous programme and related activities (particularly in terms of timing, alignment, and 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.

The figure below summarises the key steps of the risk management process:



1.9 Plan Monitoring and Improvement

Risk owners will be responsible for ongoing monitoring and review of risks, the conduct and effectiveness of associated treatments and currency of related data. Council will be responsible for monitoring the content of the risk register to ensure currency of data and the identification and notification of risk owners needing to update their data. Contract risk reviews will be conducted to ensure the ongoing validity of risks identified, exposure levels, and progress and effect of associated treatment actions. Risk reviews will be attended by members of the delivery team deemed appropriate by the activity management team to maximise outcomes.

The Transport Activity Management Improvement Programme has been developed using the Transport Insights Group 6 pillars:

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

Part A – Strategic Case

2. Introduction

The Rangitikei District Council (RDC) is committed to investing in transport infrastructure based on robust evidence to sustain the transport network in the long term; by targeting the right treatments, to the right places, at the right times and for the right costs.

This is the first business case Activity Management Plan (LTAMP), prepared for the road assets owned and operated by the Rangitikei District Council on behalf of its community and ratepayers. This plan has been produced and reviewed as required by legislation set out in Local Government Act (LGA) 2002. Under the Act, Council must deliver revised Plans to its community on a three-yearly cycle.

This Activity Management Plan acts as a road map for the future by providing the context behind how we maintain, operate, renew, and improve Rangitikei's land transport network. Activity management involves the balancing of costs, opportunities, and risks against the desired performance of assets, to achieve the organisational objectives, desired outcomes and benefits for our customers and represent value for money. It is also important that we show how we will meet regulatory requirements and environmental protection.

Activity management also enables Council to examine the need for, and performance of, assets and asset systems at different levels. Additionally, it enables the application of analytical approaches towards managing an asset over the different stages of its life cycle (which can start with the conception of the need for the asset, through to its disposal, and includes the managing of any potential post disposal liabilities).

The maintenance strategy and proposed capital projects included in this document 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 will aid the development of 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.

2.1 Purpose

The key objective of this AMP is to provide a desired level of service in the most cost-effective manner while demonstrating responsible stewardship for present and future customers. Activity Management Plans are a key component of the strategic planning and management of Council, with links to the 10 Year Plan and service contracts.

The AMP underpins the 10 Year Plan and consultative processes that have been put in place to engage the community.

Rangitikei's roading group of activities consists of seven activities that contribute towards the community outcomes, those are pavements, drainage, structures, street lighting, traffic services, footpaths, and environmental management. Key issues² for the roading group of activities highlighted in the Long-Term Plan are – maintenance, low resilience of the network, forestry harvest and safety.

The AMP delivers a range of benefits to the community as well as to the provider of the services, the Long-Term Plan key issues will be addressed through this AMP by:

- Delivering an optimised maintenance programme to improve the reliability and cost effectiveness of the road network.
- Improving resilience of the road network by identifying risks and implementing action plans to reduce the magnitude and impact of natural hazard events.

² <https://www.rangitikei.govt.nz/files/general/LTP-2021-31/Framing-our-Future-Long-Term-Plan-2021-2031-Adopted-8-JulyWeb.pdf> (page 54)

- Developing a strategy for road maintenance and rehabilitation to minimise the impact of forestry harvest on the roading network.
- Improving the safety of the road network through installing, upgrading or amending signage, removing roadside hazards, improving sightlines, traffic calming in schools, intersection upgrades, seal widening and safety barriers.

Figure 1 highlights the asset management best practice process followed by Rangitikei District Council.

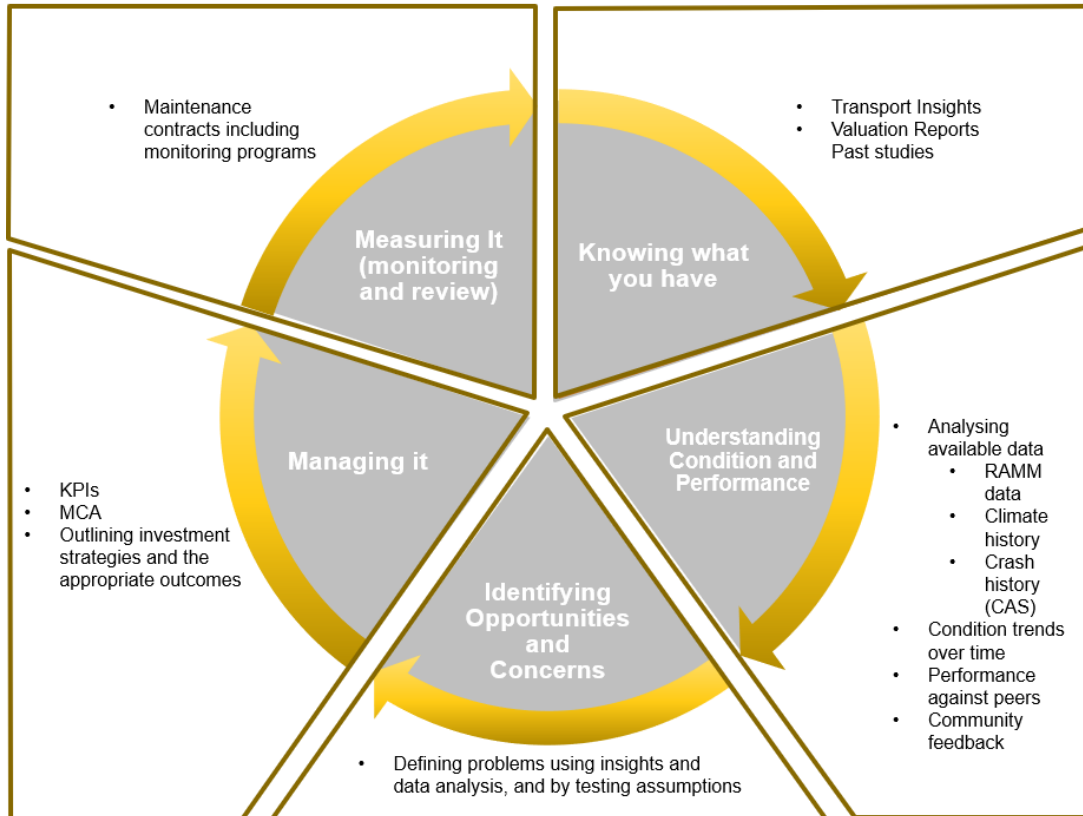


Figure 1: Asset Management Process

2.2 Asset Management

Council has identified Strategic Goals to guide investment in the land transport. These goals link the ‘strategic’ element with the ‘operational’ aspects. Council has chosen to update its priorities in 2020 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 deliver to guide Waka Kotahi when it compiles the National Land Transport Programme (NLTP).

Council’s priorities under the strategic framework for the 10 Year Plan 2021-31 are as follows:

- Healthy and resilient communities
- Partnership with iwi
- Healthy and improving environment
- Prosperous economy

This AMP covers all land-based transportation activities that Council pays for either fully or with assistance from Waka Kotahi. It considers how Council assets can best be managed to deliver the required transportation activities to meet our community outcomes, the four well-beings, Transport Outcome Framework, and the GPS strategic priorities, the Transport Insights Pillars of Success. Table 1 below demonstrates how our transport activity helps to deliver these outcomes, as well as how these activities align with the RLTP’s and Council’s Strategic Goals.

Table 1: Key Services and Alignment of Council Strategic Goals to Regional and National Objectives

| Community Outcomes ³ | Key Services we Provide ³ | Well beings ⁴ | Indicative GPS Strategic Priorities ⁵ | National Transport Outcomes ⁶ | Pillars of Success ⁴ |
|-----------------------------------|--|--------------------------|--|--|--|
| Healthy and resilient communities | Maintenance and renewal of: pavements, drainage, structures, street lighting, traffic services, footpaths, environmental management. | Social | <ul style="list-style-type: none"> Sustainable urban development Safety Maintaining and operating the system | Healthy and safe people | Communication Quality improvement |
| Partnership with iwi | Council will engage with Iwi to align AMP, including the schedule of capital and renewal works, major programmes, policy review development and so on | Cultural | <ul style="list-style-type: none"> Sustainable urban development Safety Integrated freight system Maintaining and operating the system Resilience | Inclusive access | Systems Communication Benefit delivery |
| Healthy and improving environment | Environmental management including: Stock crossing/droving, cattle stop, litter detritus, street cleaning, vegetation control and roadside berms and Spatial Plan | Environmental | <ul style="list-style-type: none"> Sustainable urban development Resilience | Environmental sustainability | Evidence |
| Prosperous economy | Periodic reassessment of problems and robust assessment of the FWPS | Economic | <ul style="list-style-type: none"> Sustainable urban development Integrated freight system Maintaining and operating the system Resilience | Economic prosperity | Decision Making Service delivery |

2.3 Plan Framework

To achieve the purpose and objectives, our activity management process is divided into three key parts as shown in Figure 2 below:

³ [Framing-our-Future-Long-Term-Plan-2021-2031-Adopted-8-JulyWeb.pdf \(rangitikei.govt.nz\)](#)

⁴ [Transport insights | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](#)

⁵ [Signalling-GPS24-Indicative-strategic-priorities-Engagement-Paper-FINAL.pdf \(transport.govt.nz\)](#)

⁶ [Transport-outcomes-framework.pdf \(cwp.govt.nz\)](#)

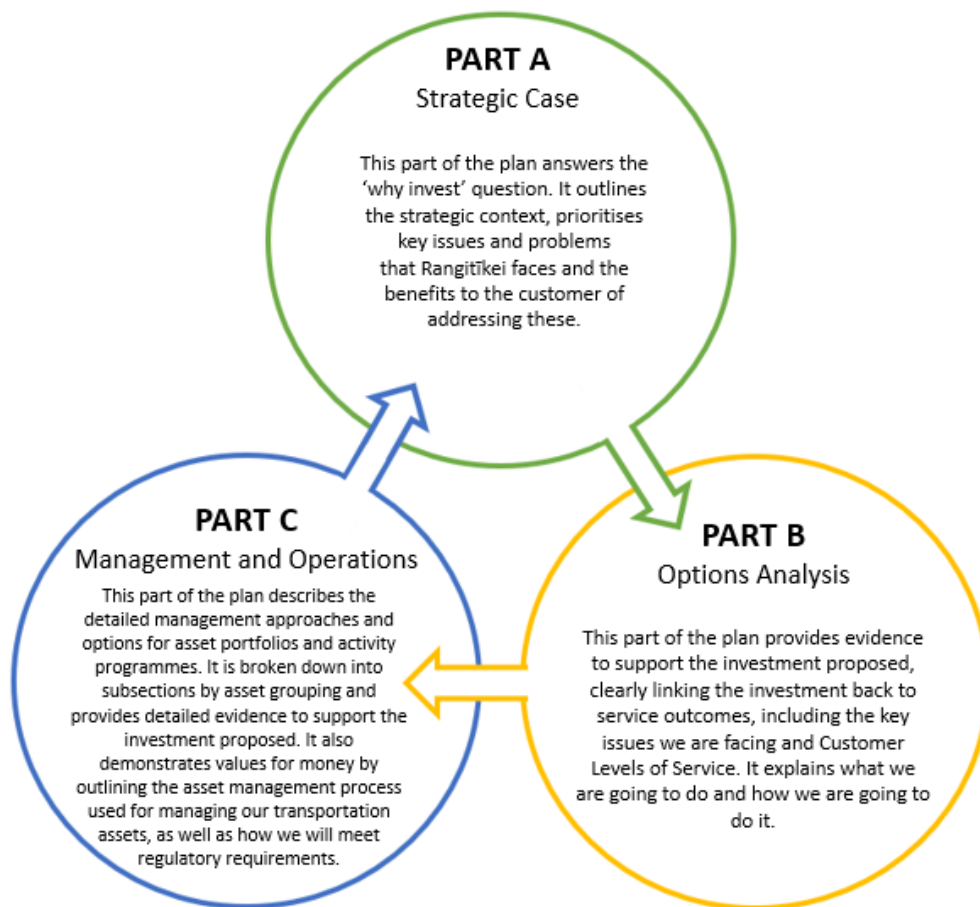


Figure 2: Activity Management Process

3. Our Key Partners and Stakeholders

Our key partners and stakeholders all have information and knowledge to help us make better decisions. In terms of setting the strategic context and direction for the AMP our key partners and stakeholders are described below.

3.1 Ministry of Transport

The Ministry of Transport (MOT) is the Government's principal transport adviser, providing policy advice and support to Ministers.

By providing advice MOT aim to:

- Improve the overall performance of the transport system.
- Improve the performance of transport crown entities.
- Achieve better value for money for the government from its investment in the transport system.

The Ministry of Transport help the Government give effect to its policy by supporting the development of legislation, regulations, and rules. We also manage and account for funds invested in transport. The delivery of the transport functions is by the New Zealand Transport Agency.

3.2 Waka Kotahi NZ Transport Agency (Waka Kotahi)

Waka Kotahi is both a co-investor and manages the state highway operations. The Council, together with other approved Road Controlling Authorities (RCA's), has a very important ongoing relationship with Waka Kotahi, a funding partner to most land transport activities across New Zealand. Waka Kotahi ensures that equitable and nationally consistent levels of service are achieved over the network, and this is funded in a long-term sustainable manner. On average Waka Kotahi funds, through a subsidy, 50% of the cost of the Land Transport Programme for all RCA's in New Zealand.

3.3 Horizons Regional Council

Changes to the Land Transport Management Act 2003 have given a lead role to Regional Councils in regional transport planning. The Regional Land Transport Programme (RLTP) 2021-31 contains all land transport activities of the District Councils in our Region (Whanganui, Manawatū, Rangitikei, Horowhenua, Ruapehu and Taranaki) and Palmerston North City Council, the Waka Kotahi NZ Transport Agency (state highway division) and Horizons itself. This sets out the transport activities of the region, for the purposes of obtaining funding from Central Government.

The programme is made up of prioritized activities and encompasses:

- Maintenance and operation of local roads and state highways
- Roading improvements (local roads and state highways)
- Public transport services and infrastructure
- Road safety activities
- Walking and cycling facilities
- Transport planning

3.4 Our Neighbours

Manawatū District Council, Palmerston North City Council and Horowhenua District Councils are neighbouring Road Controlling Authorities. Agreements exist with these authorities which outlines who has specific responsibilities to maintain assets, on various boundary roads. Waka Kotahi is responsible for the State Highways 1, 3, 54 and 56 that traverse through the Rangitikei District. A memorandum of understanding exists with Waka Kotahi over responsibilities and obligations.

4. Strategic Alignment

To verify funding is being allocated appropriately, investigations into the network condition and performance are undertaken to ensure that all items of programme development and implementation align with the strategic direction. This is also done by;

- Setting maintenance intervention criteria for the different road assets depending on their roading classification
- Using condition and level of service to measure performance.
- Aligning the programme with the strategic direction and outcomes
- Optimising the intervention options when developing the total needs programme
- Selecting the types of treatments, materials and construction techniques when implementing the program
- Ensuring that the activity management plan (AMP) follows the strategic direction.

4.1 Policy Alignment

The Land Transport Management Act 2003 states that Council has a statutory obligation to maintain a roading network within the district. Central Government provide a high level of direction and regulation into the transportation sector through Strategies, Plans, Policy Statements and Legislation. A large proportion of these documents are delivered through the Waka Kotahi NZ Transport Agency (Waka Kotahi). Regionally there is a suite of Plans and Strategies, many of which link with the Horizons Land Transport Strategy. To help fulfil community outcomes, Council have adopted a systematic approach to the long-term management of its assets by preparing this Activity Management Plan.

This section 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. This AMP has been developed to be consistent with and contribute towards achieving wider national and regional land transport priorities and objectives through the GPS, Arataki and the Regional Land Transport Plan (RLTP). Problems, issues, and opportunities are identified and used to determine the forward works plan for the Rangitikei District Council.

The alignment with the key documents listed below is illustrated in Figure 3. An alignment table can be found in Appendix A.

- Overarching Strategic Drivers⁷ - Land Transport Management Act
- Government Policy Statement on Land Transport (GPS)⁵

⁷ [Land Transport Management Act 2003 No 118 \(as at 23 February 2022\), Public Act Contents – New Zealand Legislation](#)

- Arataki – Waka Kotahi’s 30 Year Plan (2023)⁸
- National Land Transport Programme (NLTP)⁹
- National Infrastructure Plan
- Horizons Regional Land Transport Plan 2021 – 2031 (RLTP)¹⁰
- Waka Kotahi New Zealand Transport Agency Road to Zero 2020 - 2030¹¹
- Emissions reduction Plan¹²

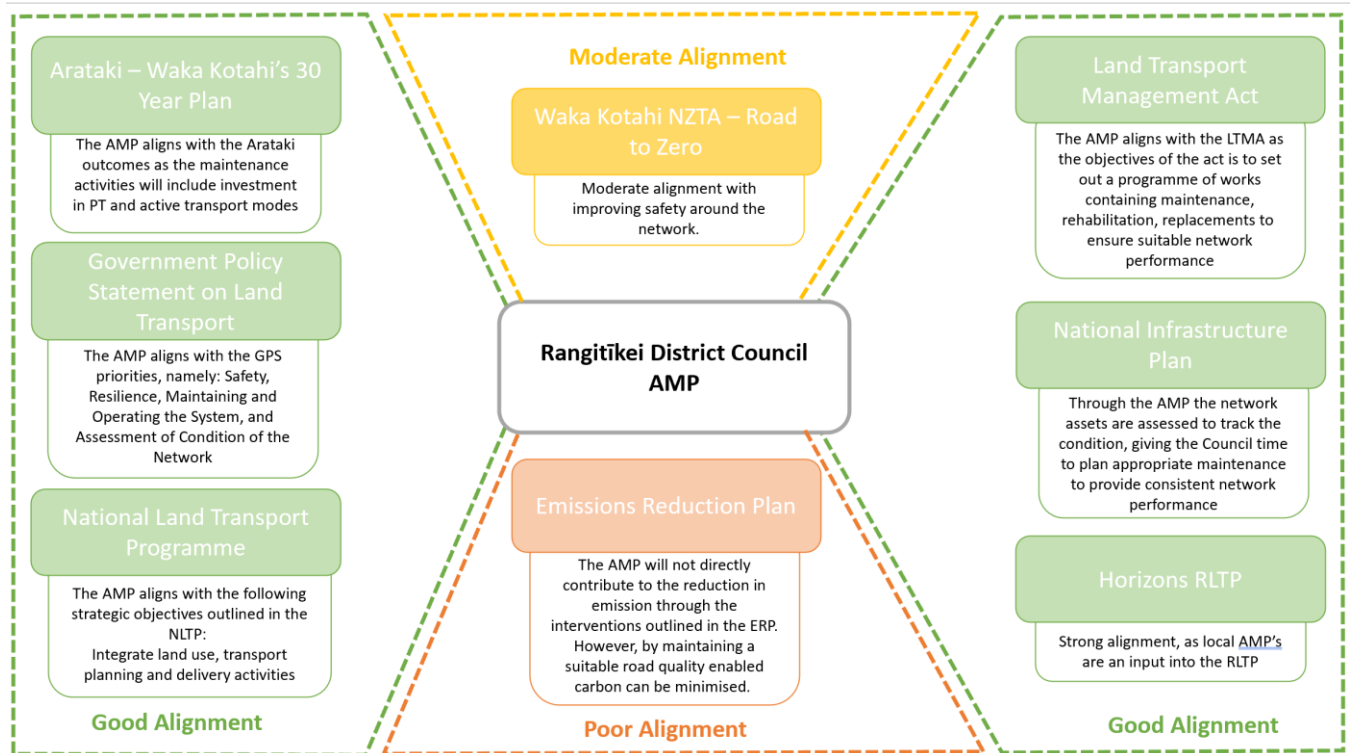


Figure 3: Strategic Alignment

4.2 Relationship with other Documents

This AMP is one of a number of key Council strategic documents that detail Council’s activities with respect to how Council intends to deliver on the requirements of the Local Government Act. It provides detailed supporting information for the Council’s Long-Term Plan.

It also outlines how Council will contribute to the objectives of:

- The Land Transport Management Act 2003
- The Land Transport Management Amendment Act 2013
- The Local Government Act 1974, and Local Government Act 2002
- The Local Government Act 2002 Amendment Act 2015
- The Health and Safety at Work Act 2015
- The Government Policy Statement on Land Transport 2024 -25
- Horizons Regional Land Transport Plan 2021 – 2031 (RLTP)
- Waka Kotahi New Zealand Transport Agency Road to Zero 2020 – 2030
- Other Council Transportation strategies, policies and bylaws

⁸ <https://www.nzta.govt.nz/planning-and-investment/planning/arataki/about-arataki/>

⁹ [About the NLTP | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](https://www.nzta.govt.nz/about-the-nltp/)

¹⁰ [2021-31-Regional-Land-Transport-Plan.pdf \(horizons.govt.nz\)](https://www.horizons.govt.nz/2021-31-Regional-Land-Transport-Plan.pdf)

¹¹ [Road-to-Zero-strategy_final.pdf \(transport.govt.nz\)](https://www.transport.govt.nz/road-to-zero-strategy-final.pdf)

¹² [Aotearoa New Zealand's first emissions reduction plan | Ministry for the Environment](https://www.mfe.govt.nz/emissions-reduction-plan/)

4.3 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 2021-2026
- Waka Kotahi’s Statement of Performance Expectations 2022-2023
- Waka Kotahi’s Rules, Policies and Guidelines (including published manuals)
- Waka Kotahi’s Transport Insights and One Network Road Classification (ONRC) Guidelines¹³
- International Infrastructure Management Manual (IIMM)
- Ministry of Transport: New Zealand Rail Plan

5. Why is transport important for Rangitīkei?

Council is committed to working for, with, and on behalf of the Rangitīkei community and the individual communities that make up the district to ensure that the district offers a high quality of life for all residents. To help achieve this, Council aims to promote economic, cultural, social, and environmental wellbeing in the present and the future.

Table 2 below outlines how the Rangitīkei transport network specifically contributes to the community wellbeing and outcomes, as set out by Council’s 10 Year Plan 2021 – 2031¹⁴

Table 2: Community Wellbeing and Council Priorities

| Community Wellbeing | Council priorities applying to the road network ¹⁴ | Land Transport’s Contribution ⁵ |
|---------------------|--|---|
| Economic | <p>A prosperous economy</p> <p>We aim to facilitate growth and support commercial and industrial investments and the visitor sector.</p> <p>Value the rural economy and support primary sector productivity</p> | Enabling a well-designed and efficient transport network to support productive economic activity |
| Cultural | <p>Partnership with iwi</p> <p>Aim to work with iwi on projects and plans that are important to them before carrying out public engagement.</p> <p>Work with the tangata whenua to identify and protect areas of cultural importance and help tanagta whenua tell their stories of the land and history</p> | Preparing for the changing needs of our diverse communities and involving partnership with hapū, iwi and national organisations to reflect Māori aspirations in future transport initiatives |
| Social | <p>Healthy and resilient communities</p> <p>Ensure our infrastructure services are appropriate and affordable and we aim to reduce the risk from earthquake-prone buildings.</p> <p>Support and manage events, activities and facilities that meet the needs of our</p> | <p>Ensuring that our roads and footpaths are safe to use, while encouraging the community to drive, walk, or cycle for business or pleasure.</p> <p>Implementing the National Adaption Plan to manage impacts of climate related impacts on critical infrastructure</p> |

¹³ Whilst Council continues to use ONRC for a number of measures at present, we are also transitioning to the One Network Framework (ONF), with a view to fully embedding the ONF to measure performance, manage differential Levels of Service and subsequent programming.

¹⁴ [Framing-2021-2031-Annual-Plan-Year-3-2023_24-A4-Doc-Web1.pdf \(rangitikei.govt.nz\)](https://www.rangitikei.govt.nz/assets/Uploads/Framing-2021-2031-Annual-Plan-Year-3-2023_24-A4-Doc-Web1.pdf), Rangitikei District Council, 2021

community and make people proud to live here.

Environmental

Healthy and improving environment

Aim to reduce our carbon footprints, reduce waste to landfill and plan for the projected impacts of climate change.

Protecting and enhancing the natural, cultural, and built environment.

More travel by low-emissions travel modes, such as active modes and public transport reducing greenhouse gas emissions.

6. One Network Road Classification & One Network Framework

It is acknowledged that the One Network Road Classification (ONRC) has been replaced by the One Network Framework (ONF), however, data, such as the Transport Insights tool still reports statistics of the network in ONRC classifications. In addition, the Differential Level of Service performance assessment approach proposed under the ONF is still in development, therefore Council is transitioning to ONF process. Therefore, the assessment and reporting using ONRC have been continued for this AMP period. Supporting information for the AMP is transitioning towards the ONF system, so it is expected that the next AMP update will use the ONF exclusively.

6.1 Future state assessment – One Network Framework

The ONF is a road classification tool which uses place and movement functions to categories roads on the network, with a stronger emphasis on place. It classifies the network into rural or urban (based on land use) and assigns a place (based on activity and physical form) and movement (based on traffic volume) function to the network by section, shown in Figure 4. As such, a length of road can have multiple classifications based on its place and movement function. This allows for targeted design, and better planning and delivery of a modern transport system that meets the increasing needs of people, businesses, communities, and our climate.

It is anticipated the ONF will form the basis of the next AMP, as well as its performance measurement system DLoS, the successor of the CLoS system. It is important to reiterate that the DLoS performance measures are still under development and will be incorporated into the next funding period.



Figure 4: Street categories (Waka Kotahi's One Network Framework)

To help translate the old system to the new, Waka Kotahi have released the graphic below in Figure 5 as high-level guidance.

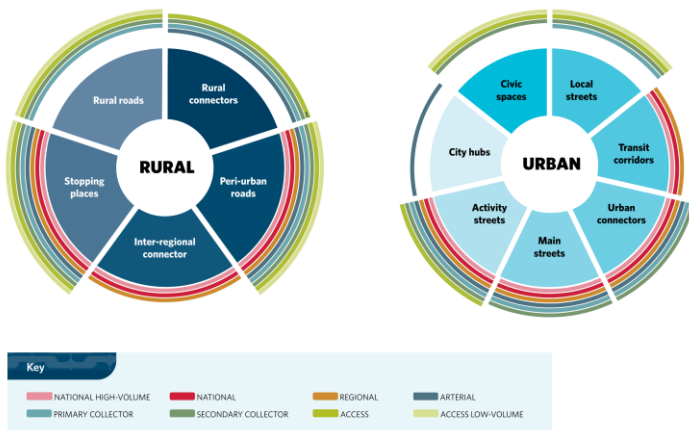


Figure 5: ONRC to ONF: translation of ONRC to ONF

6.2 Current state assessment

The ONRC classification and available tools (i.e., Transport Insights) have made it easier for Rangitikei District Council to compare the state of roads to the national and regional road networks, as well as performance compared against peer groups, to understand performance and value of current investment areas. This comparison aids in ensuring RDC and their ratepayers get the right level of investment in the road infrastructure where it is needed.

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 below.

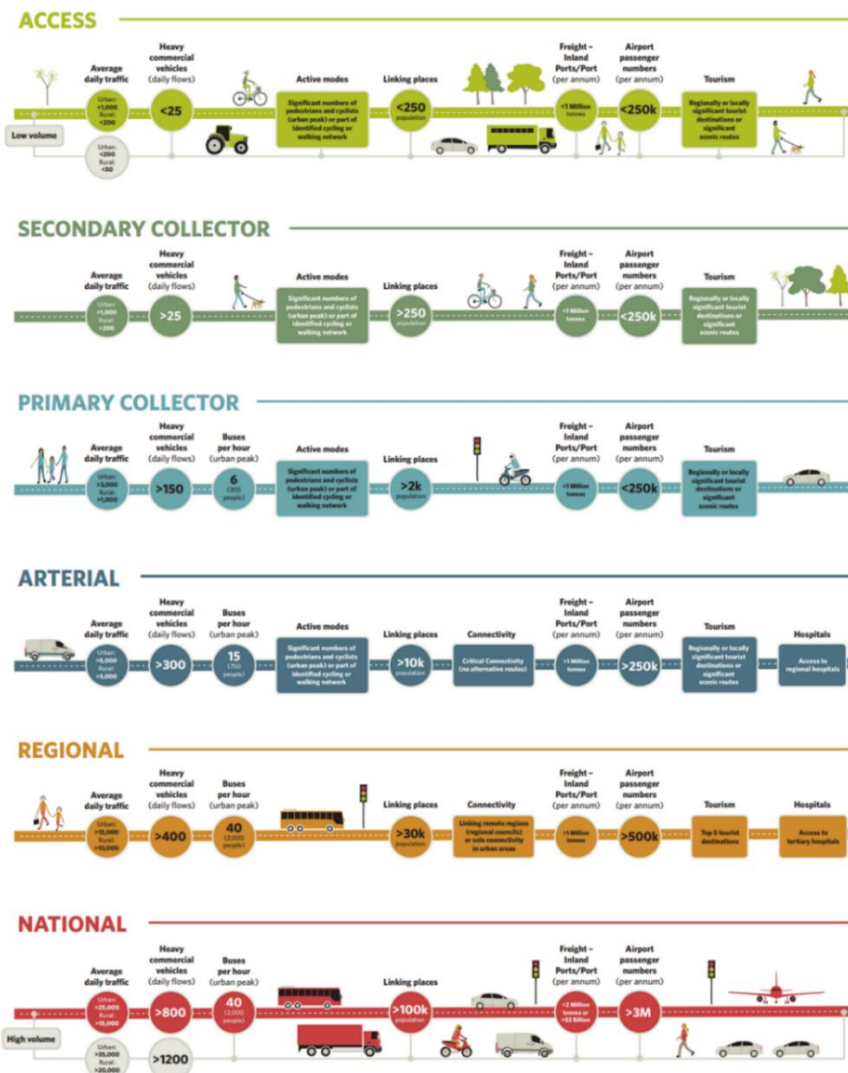




Figure 6: One network road classification thresholds

The ONRC Customer Level of Service (CLoS)¹⁵ Performance Measures are as follows:

| | |
|---|-------------------------|
|  | Efficiency |
|  | Safety |
|  | Resilience |
|  | Amenity |
|  | Travel Time Reliability |
|  | Accessibility |

The current ONRC CLoS hierarchy has been developed by Transport Insights to define what class of asset is required. Transport Insights 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.

6.3 Customer Research and Expectations (2021-2024)

In previous years the community outcomes were shaped by the community. However, amendments to the Local Government Act in 2010 changed the definition of community outcomes from outcomes belonging to and achieved by the community, to “outcomes that a local authority aims to achieve”. This is a significant change in emphasis from a community wish-list to a set of outcomes owned – and actively worked towards – by Council. Council believes it is also helpful for the public to understand what Council does and why, and for other stakeholders, including the private sector who both benefit from and contribute to Council activity.

Outcomes and Levels of service are developed to reflect the expectations of the community and regulators. Targets are established which indicate the standard that should be met. Outcomes are relevant across the Transportation activity while Levels of Service statements are more specific.

Statutes that require Council to undertake consultation for Transportation include:

- Local Government Act 2002
- Resource Management Act 1991
- Land Transport Management Act 2003.

6.4 Assessing Current Level of Service and Gaps

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

- Transport Insights 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 ‘Pipeline Development Tool’ (PDT)
- 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 Infrastructure Strategy
- Council’s growth and development strategies
- Council’s walking & cycling strategy

¹⁵ Council is committed to transitioning from the ONRC to ONF and the CLoS to the DLoS during the next funding period.

- Council’s annual resident satisfaction survey
- Road Assessment and Maintenance Management (RAMM)
- Road Structures Life Cycle Management Plan 2023

RAMM software is used by Council to record Road Inventory Assets and Conditions for the Network. RAMM is a database that logs maintenance activities by asset type, location, maintenance undertaken and cost. The database is used by Council to store condition and spend information on the network, the analysis of this data, together with other studies is used to develop the Forward Work Plan.

Data from RAMM is used to analyse the large volume of 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.

It is acknowledged that Client Satisfaction Surveys are not currently undertaken by RDC and is a clear gap which will be addressed in the next AMP cycle.

7. What we have

Transport assets are an important part of any district and is a key component to enable the daily flow of people and commerce across the region. Understanding these assets is vital to determining current and future performance. Rangitikei District Council covers a sizeable land mass, as shown in Figure 7, with a transport network comprising of a broad range of assets that support economic activity within the district, the wider region, and the Country.

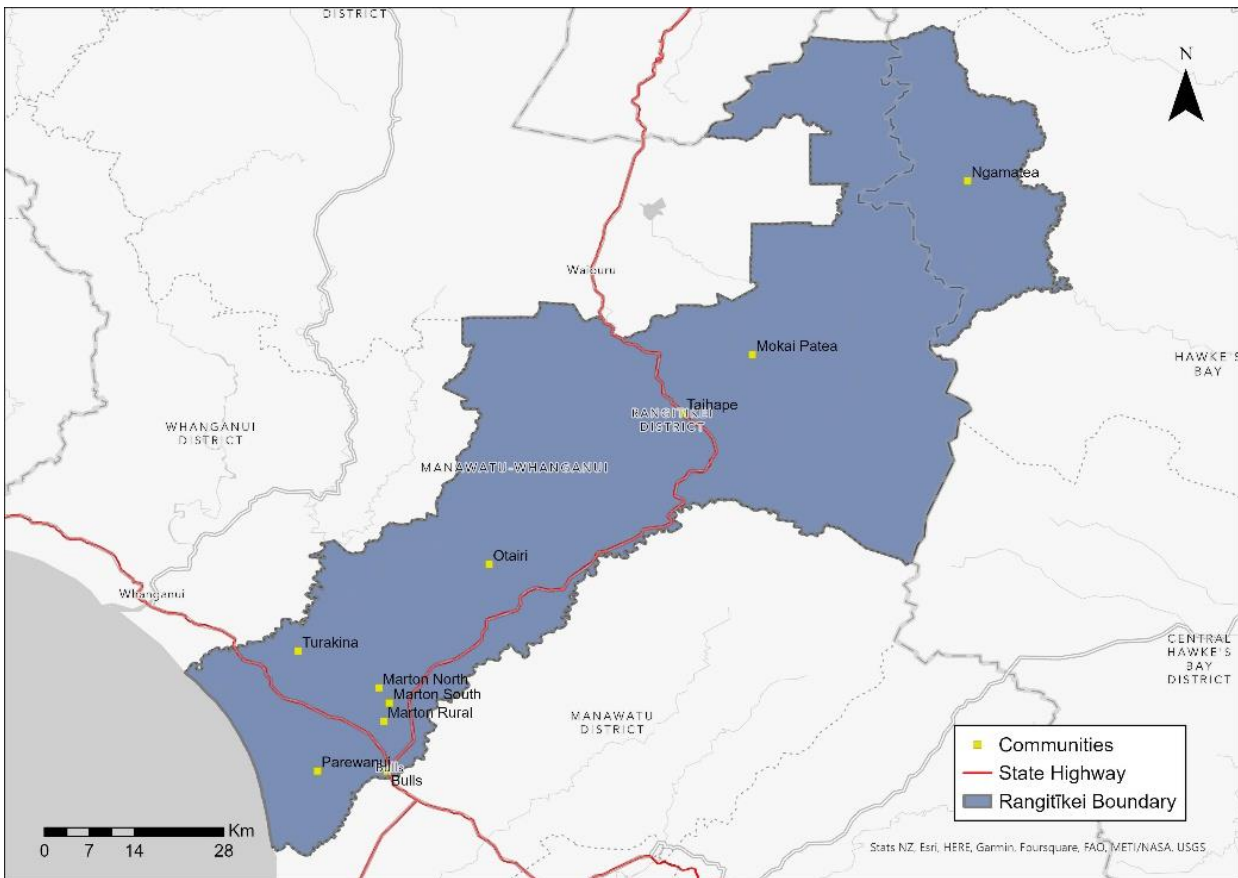


Figure 7: Rangitikei District

The combined RDC road network is summarized in Table 3. The table shows that the network is made up of three main ONRC road classifications:

- Low volume – 46%
- Access – 30%
- Secondary Collector – 14%

In line with the classifications, the table shows that approximately 93% of the network is rural, with only 7% of road network classified as urban. Figure 8 shows the sealed and unsealed areas of the network, with approximately 66% of the network falling into the sealed category.

Table 3: Network Classification and Characteristics

| ONRC | Total Length (Km) | Network % | Urban (Km) | Rural (Km) | Sealed (Km) | Unsealed (Km) | Lane (Km) | Urban Journeys (M VKT) | Rural Journeys (M VKT) |
|----------------------|-------------------|-------------|------------|--------------|-------------|---------------|--------------|------------------------|------------------------|
| Arterial | 5.0 | 0.4 | 1.8 | 3.1 | 5.0 | | 11 | 3.2 | 2.9 |
| Primary Collector | 123 | 10.1 | 9.3 | 113 | 123 | | 246 | 6.2 | 26.6 |
| Secondary Collector | 176 | 14.4 | 20 | 156 | 176 | | 353 | 5.5 | 16.6 |
| Access | 362 | 29.6 | 18 | 344 | 306 | 56 | 705 | 2.1 | 12.2 |
| Low Volume | 557 | 45.5 | 38 | 519 | 193 | 365 | 864 | 1.4 | 5.1 |
| Total Network | 1,223 | 100% | 88 | 1,136 | 802 | 421 | 2,179 | 18.5 | 63.3 |

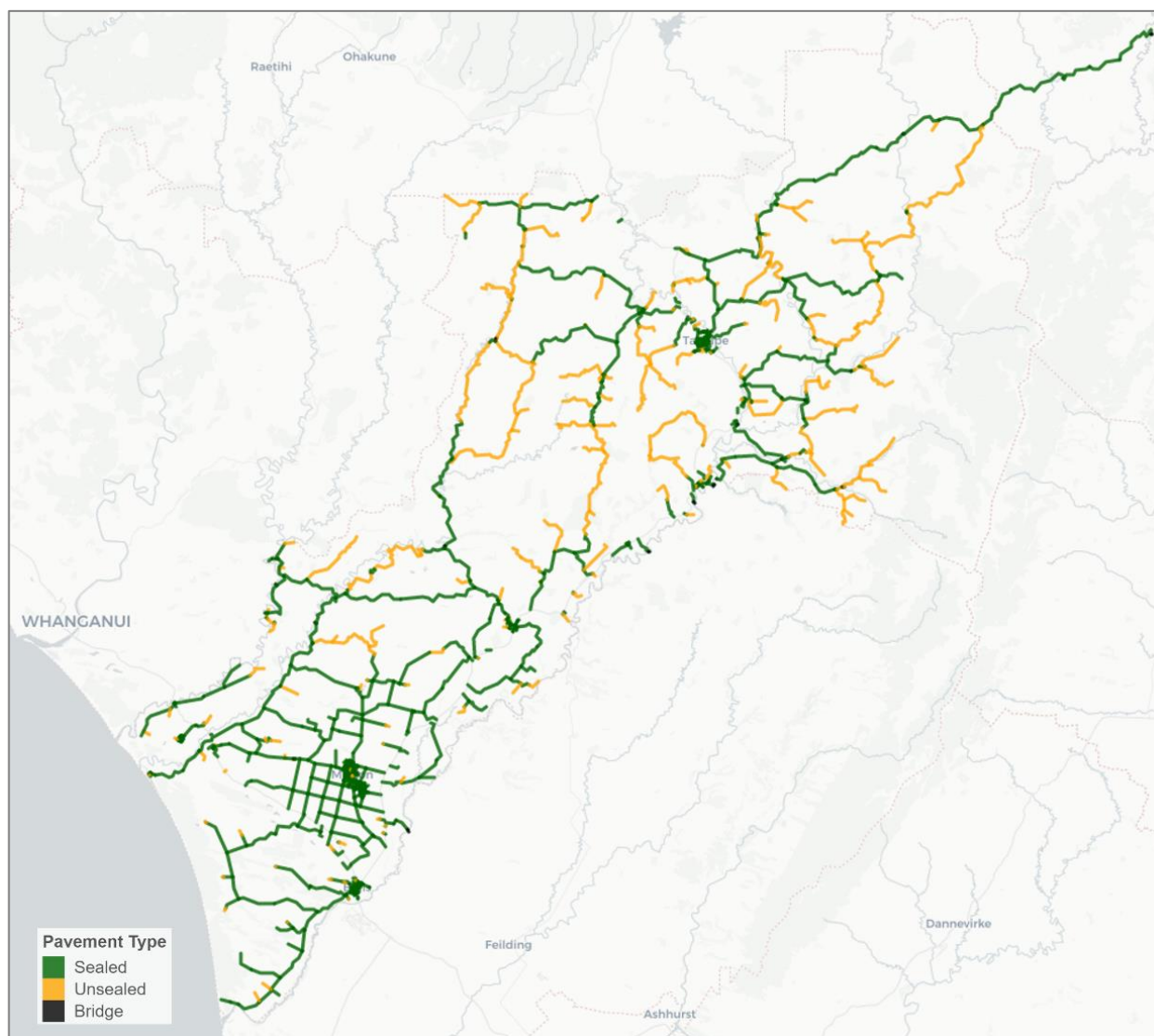


Figure 8: Rangitikei District Sealed and Unsealed Road network.

The network comprises of various assets ranging from bridges and pavements to signage and streetlights. Each of these assets has its own lifecycle which can be managed through application of the systematic and cyclical processes.

7.1 Value of Assets

Valuations of Council assets are undertaken on a three yearly cycle with a recent update completed in 2022. The different costs from this assessment are shown in Table 4.

- Optimised Replacement Cost (ORC) refers to the cost of building the asset today. It is assumed that modern construction techniques, design codes and modern equivalent materials are used but that the physical result replaces the asset as it exists.
- Optimised Depreciated Replacement Cost (ODRC) is the current replacement cost less allowance for physical deterioration and optimisation for obsolescence and relevant surplus capacity.
- Annual Depreciation (AD) is the amount the asset depreciates in a year. It is defined as the replacement cost minus the residual value divided by the estimated total useful life for the asset.

Table 4: Asset Costs

| | Year | ORC (\$) | ODRC (\$) | AD (\$) |
|---------------------------|------|---------------|---------------|--------------|
| All infrastructure | 2022 | \$888,396,261 | \$562,485,861 | \$10,241,581 |

Table 4 reinforces the importance of the transport assets and why effective management of these assets is critical. Table 5 is an extract from the 2022 Infrastructure Valuation report and shows the cost of replacement for the district's transport assets.

Table 5: Asset Replacement Costs

| Asset | Replacement Cost |
|-------------------|------------------|
| Berm | \$9,172,864.11 |
| Bridge (Culvert) | \$188,968,324.83 |
| Crossings | \$8,699,135.94 |
| Drainage | \$64,854,962.37 |
| Formation | \$246,712,848.38 |
| Footpath | \$20,209,005.57 |
| Pavement Surface | \$48,954,257.36 |
| Pavement Layers | \$154,161,519.75 |
| Retaining Walls | \$53,947,670.64 |
| Surface Structure | \$37,479,158.55 |

More details about asset costs, how they have been calculated and inclusions/exclusions can be found in the 2022 Rangitikei District Council Valuations Report.

Table 6 shows Rangitikei District Council's spend on maintenance, rehabilitations, reseals, and renewals between 2018/2019 to 2021/2022. The historic spend during this period was largely consistent year on year across all activities, the table also shows the investment split between maintenance and capital work. The average difference in actual spend between maintenance activities and rehabs/renewals has been roughly 17% year on year and has been steadily increasing. A greater focus on expenditure of the budget has been on maintaining rather than renewal of the network.

Although maintenance is an essential part of preserving the standard of roads, it doesn't entirely prevent degradation and therefore rehabilitation and renewals, are important to maintain the overall condition of the network and prevent an ever-increasing maintenance backlog.

Table 6: Expenditure 2018/19 to 2021/22

| Activity | 18/19 | | 19/20 | | 20/21 | | 21/22 | |
|----------------|-------------|-------|-------------|-------|-------------|-------|-------------|-------|
| Maintenance | \$4,146,022 | 50.5% | \$4,599,689 | 55.5% | \$4,977,896 | 58.5% | \$5,759,251 | 59.7% |
| Rehabilitation | \$1,326,098 | 16.1% | \$1,135,899 | 13.7% | \$1,048,597 | 12.3% | \$864,790 | 9.0% |

| | | | | | | | | |
|-----------------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|
| Reseal | \$1,434,883 | 17.5% | \$1,425,807 | 17.2% | \$1,302,646 | 15.3% | \$1,370,963 | 14.2% |
| Unseal Metaling | \$660,958 | 8.0% | \$376,598 | 4.5% | \$432,659 | 5.1% | \$315,697 | 3.3% |
| Renewals | \$649,237 | 7.9% | \$750,000 | 9.0% | \$750,000 | 8.8% | \$1,336,624 | 13.9% |
| TOTAL | \$8,217,198 | 100.0% | \$8,287,993 | 100.0% | \$8,511,798 | 100.0% | \$9,647,325 | 100.0% |

Note: Renewals refers to the total cost / budget whereas other categories refer to the actual spend. Data for actual Renewals spend is not available. This could be due to missing data, or simply because the Renewals budget has been spent on other work.

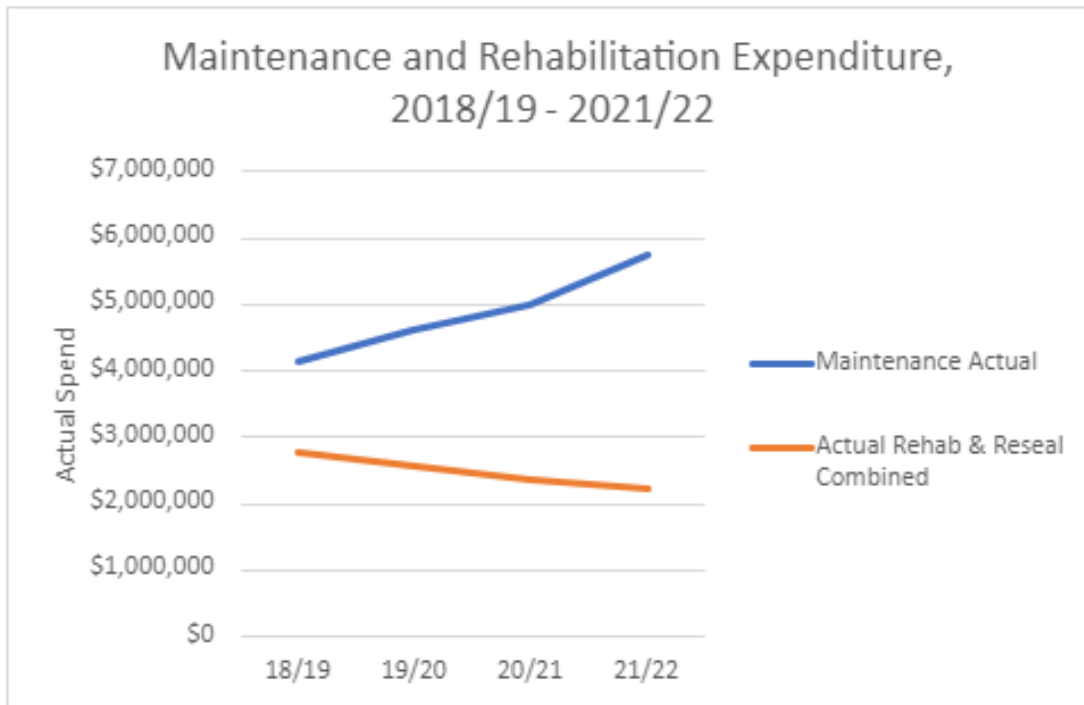


Figure 9: Maintenance and Renewals Expenditure 2018/18 - 2021/22

Trends in budgeted and actual spend are shown in Figure 10. The figure shows that budgeted vs actual expenditure is very similar for maintenance throughout the analysis period. Asset renewals (rehabilitations, reseals and renewals) expenditure compared to allocated budget was also very similar for every year except 2021/22, during this year the expenditure dropped to just 16% of the budgeted. This indicates that budgets for replacement of assets over that year were not maximised. If this continues over multiple years this can result in an increasing maintenance backlog.

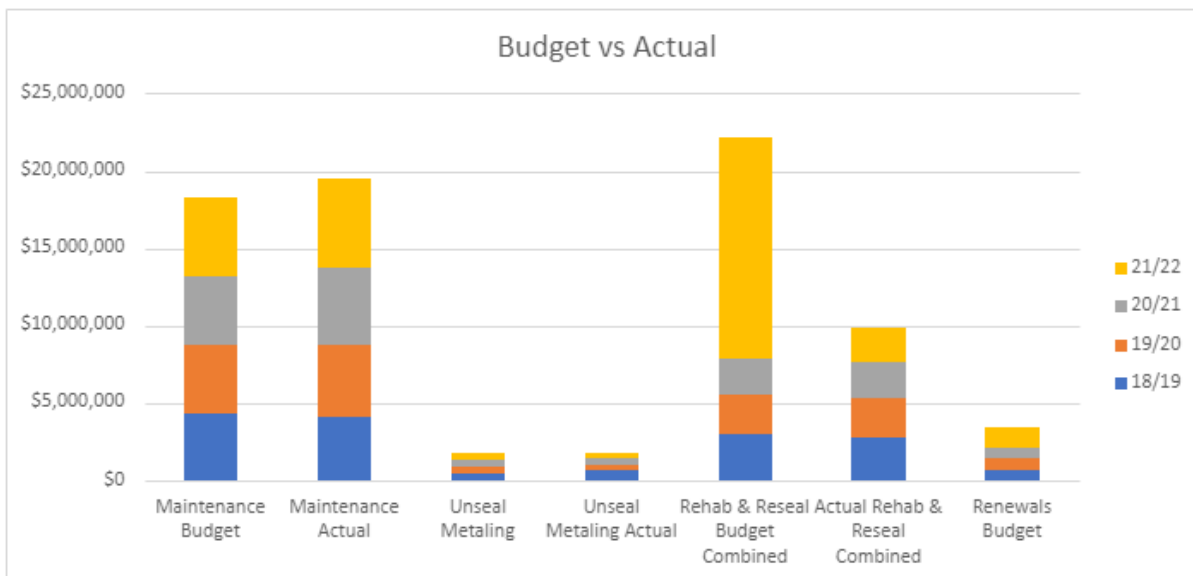


Figure 10: Budget vs Spend 2017/18 - 2021/22

8. Understanding Condition and Performance

8.1 Network Condition

Information from Transport Insights¹⁶ and analysis of RAMM data¹⁷ have been used to assess the overall condition of the Network. Smooth travel exposure, roughness and rutting trend information can provide insights about the network condition. This information can provide an indication whether the network is improving (through targeted maintenance and renewals, or deteriorating, due to traffic loads and environmental exposure.

Smooth Travel Exposure provides an indication of ride quality. It is indicated as a percentage of vehicles kilometres travelled with a roughness below a defined upper threshold. The Smooth Travel Exposure trends from Transport Insights are shown in Figure 11. The data shows that travel on smooth roads (over a threshold) is reducing year on year, this may indicate that the condition of using the district's roads is declining. Low Volume roads appear to be deteriorating much quicker than other road classes.

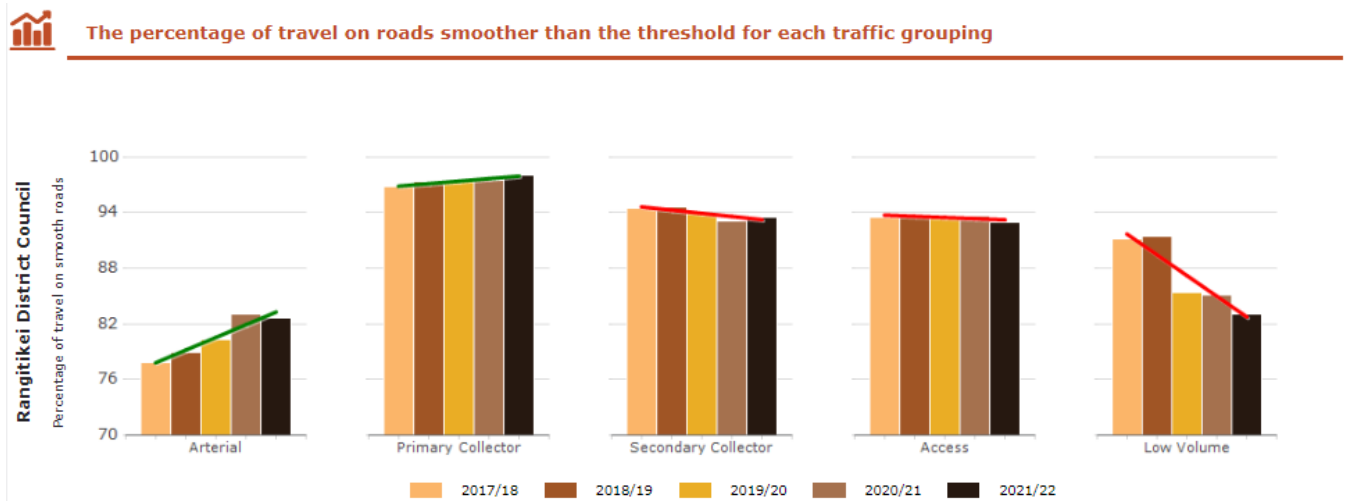


Figure 11: The percentage of travel on roads smoother than the threshold for each traffic grouping¹⁸

Road roughness can provide an indication of ride quality as it accounts for the variations in the road surface. The variations in road sections are measured using the percentiles of National Association of Australian State Road Authorities (NAASRA) values. Figure 12 shows the road roughness for road classifications in the Rangitikei District between 2017/18 and 2021/22.

¹⁶ It is unclear how the trend graphs from Transport Insights have been produced given the partial HSD surveys completed on the network.

¹⁷ RAMM analysis results have a low to medium confidence level due to the partial HSD surveys completed.

¹⁸ Source: Transport Insights



85th percentile trend

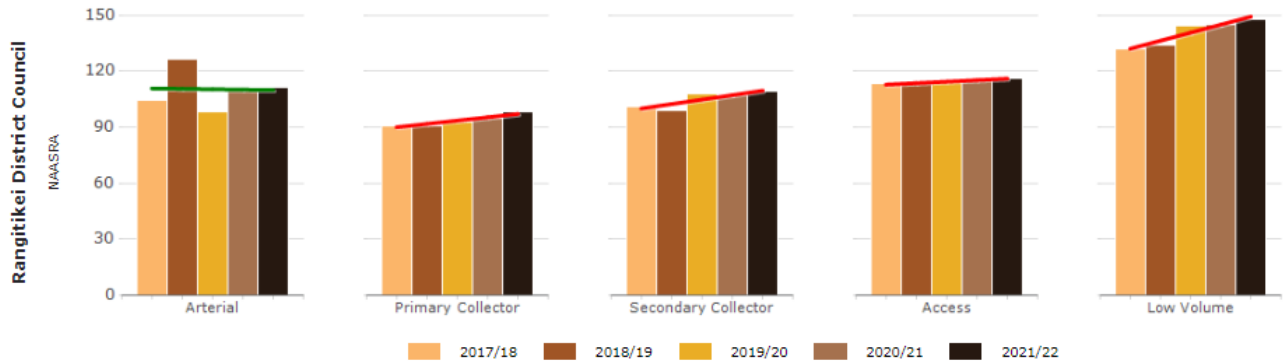


Figure 12: 85th percentile trend of road roughness (Source: Transport Insights)

To understand the trend data better RAMM - High Speed Data (HSD) has been analysed. NAASRA values are shown in Table 7, indicating the different condition categories.

Table 7: Roughness NAASRA Categories

| Roughness (measured in NAASRA counts/km): | |
|---|------------|
| 150 – 200 (or greater) | very poor |
| 120 – 150 | poor |
| 100 – 120 | fair |
| 70 – 100 | acceptable |
| 0 – 70 | good |

The roughness analysis in Figure 13 shows the road roughness between 2018 and 2022. Although the condition fluctuates year on year, the figure generally suggests that majority of Rangitikei road network is in fair to good condition.

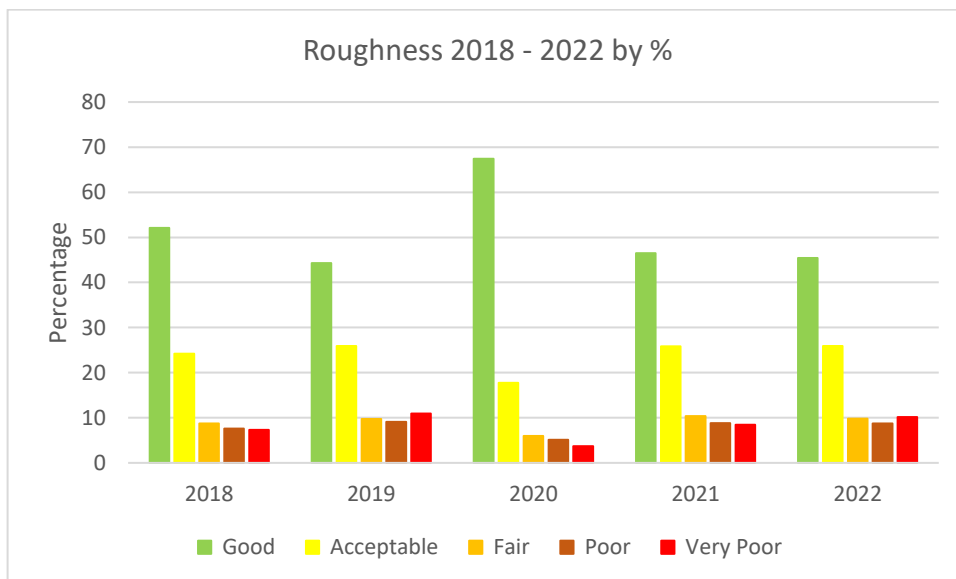


Figure 13: RAMM Condition data (Roughness) for all roads in RDC

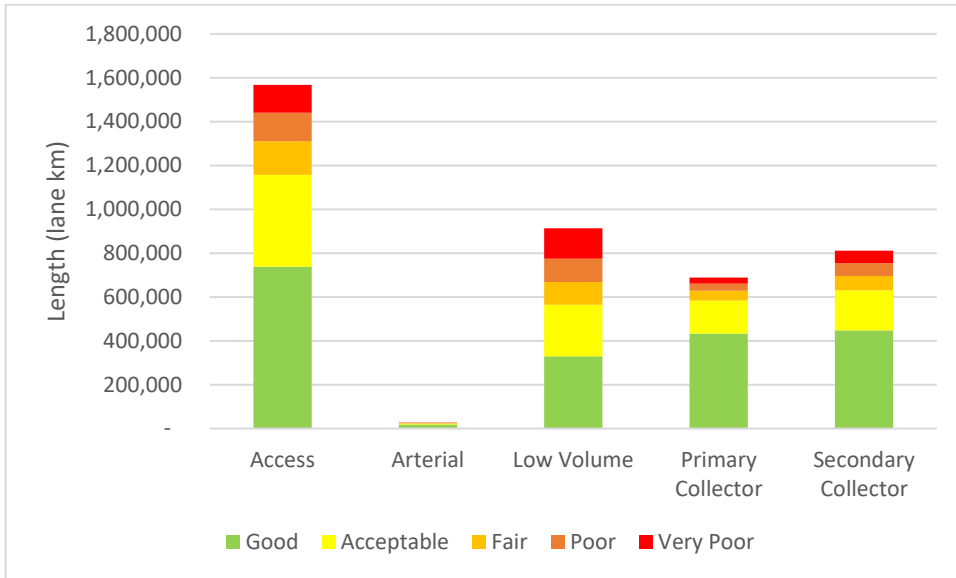


Figure 14: Pavement Roughness by Classification – 2018 to 2022

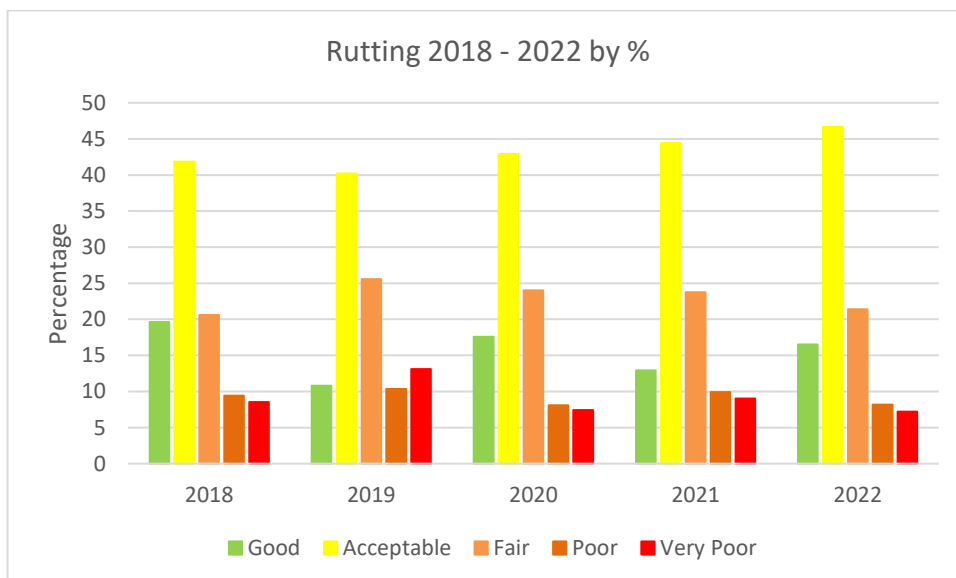
Figure 14 shows further details regarding roughness in the district on the different road classifications. The 2022 high speed data indicates that 10% of the roads evaluated have very poor roughness and 9% have a poor roughness. This accounts for roughly 20% of the network which will require rehabilitation or renewal over the new funding period. Both figures indicate that the network is generally in good condition.

Pavement rutting is a surface depression which can negatively impact ride quality. Rutting also has condition indicators that have been categorised in Table 8.

Table 8: Rutting Condition Categories

| Rutting criteria: | |
|----------------------------|------------|
| 20 mm – 25 mm (or greater) | very poor |
| 15 mm – 20 mm | poor |
| 10 mm – 15 mm | fair |
| 5 mm – 10 mm | acceptable |
| 0 mm – 5 mm | good |

Figure 15 shows the length of pavement rutting by road classification in the Rangitikei District between 2018-2022.



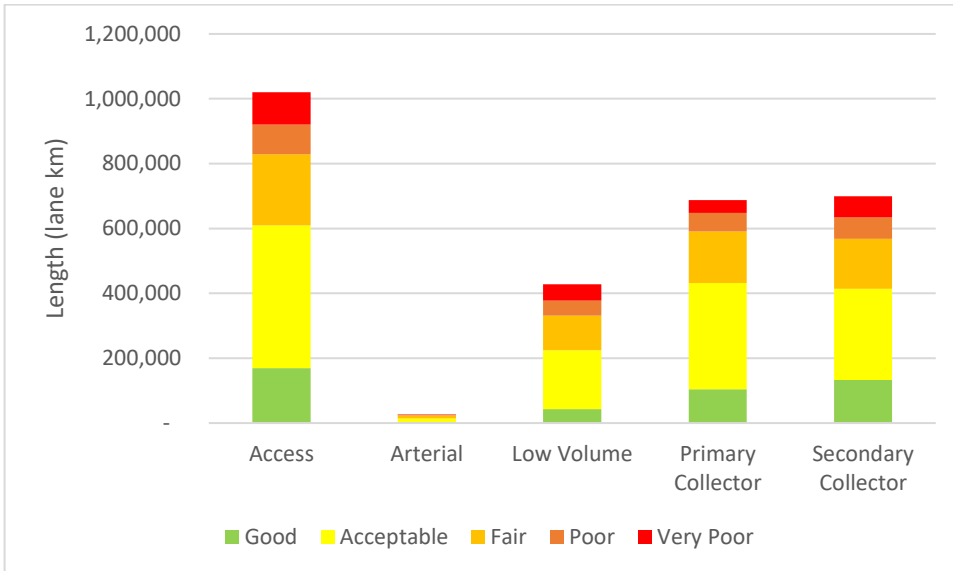


Figure 15: Pavement Rutting 2022 by Classification

The 2022 data revealed that 7% of the roads evaluated had rutting in the very poor category (20mm or greater) and 8% in the poor category (between 15mm and 20mm). Similar to the roughness trend, most of the network at 63% provides acceptable to good service, with an additional 21% assessed as fair in 2022, totaling 84% of the network, which is in reasonable condition, indicating that road maintenance is effective in preserving pavement condition.

MAINTENANCE EXPENDITURE

RAMM data has been analysed to understand the maintenance expenditure and highlight potential problem areas on the road network. Figure 16 shows the maintenance expenditure on various items in the pavements cost group in the Rangitikei District between 2017/18 and 2021/22.

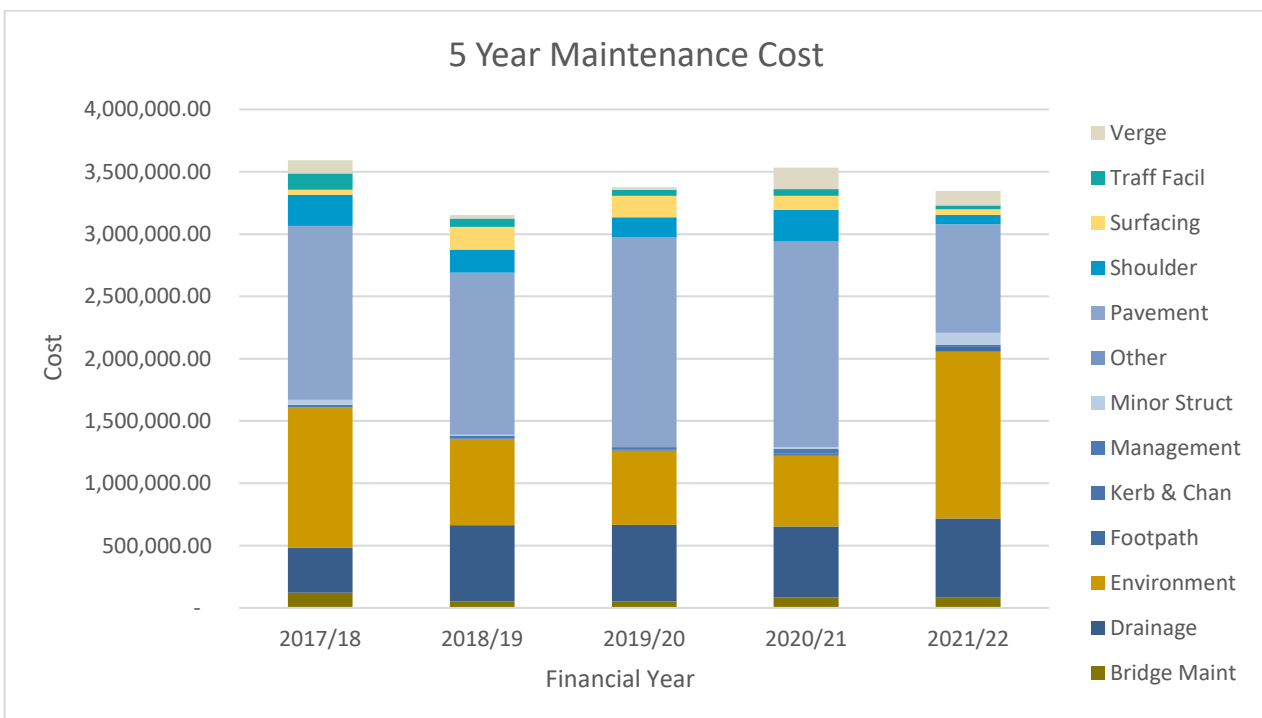


Figure 16: Maintenance expenditure per pavement cost group items 2017/18 – 2021/22

Over the five-year period, Rangitikei District spent a total of \$17,000,000 on maintaining various items in the pavements cost group. The largest maintenance expenditure was required on pavements (\$6,900,000), followed by environment (\$4,320,000) and drainage (\$2,790,000).

Further analysis of the RAMM data showed that pavement expenditure was mainly attributed to dig outs (34% of the total

pavement costs), unsealed road maintenance (26%) and in-situ stabilisation (25%). For dig out treatments, the most prevalent faults in the five-year period were shear failure (43%), deformation (23%), and depressions (20%). Overall, the fault with the highest spend over the past 5 years was aggregate loss (24%).

Historically pavement spend has dominated RDC maintenance budgets. However, in 2021/22 spend on environmental maintenance was the highest, hence a reduction in pavement expenditure.

Figure 17 shows the proportion of the total maintenance expenditure on the various items in the pavements cost group between 2017/18 and 2021/22.

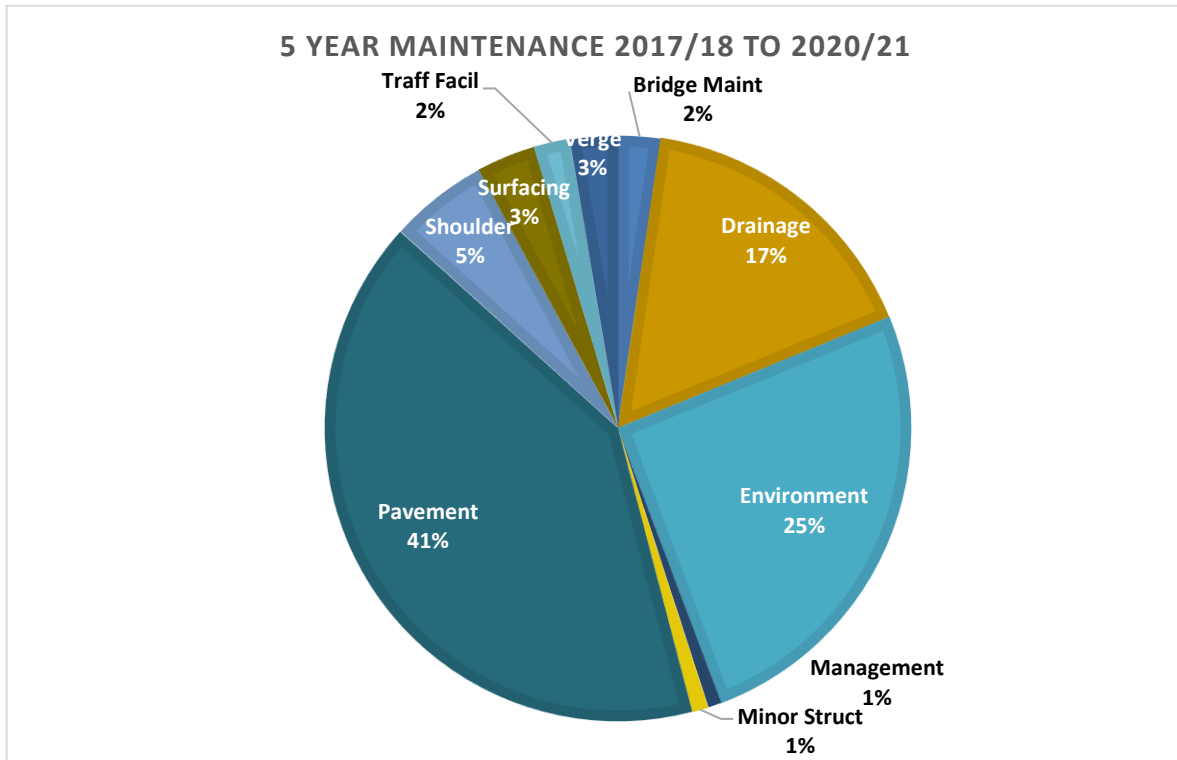


Figure 17: Proportion of total maintenance expenditure per pavement cost group (2017/18 – 2021/22) item maintenance activity group

As shown in the figure above, pavements attributed to 41% of the total maintenance expenditure between 2017/18 and 2021/22. Environment and drainage also contributed significantly to yearly spend at 25% and 17% respectively. Although the pavements seem to be in acceptable condition, there is a large portion of expenditure being spent on pavement maintenance, and a more permanent solution must be investigated.

REHABILITATION

Figure 18 shows the rehabilitation by road classification undertaken in the Rangitikei District between 2018 and 2021. Although the graph shows limited data, Secondary Collector roads appear to have been the focus of pavement rehabilitation in 2020/2021. For context, Secondary Collectors make up approximately 14% of the network, the third largest classification after Low Volume, and Access roads.



Time series of the length of sealed pavement rehabilitation by classification

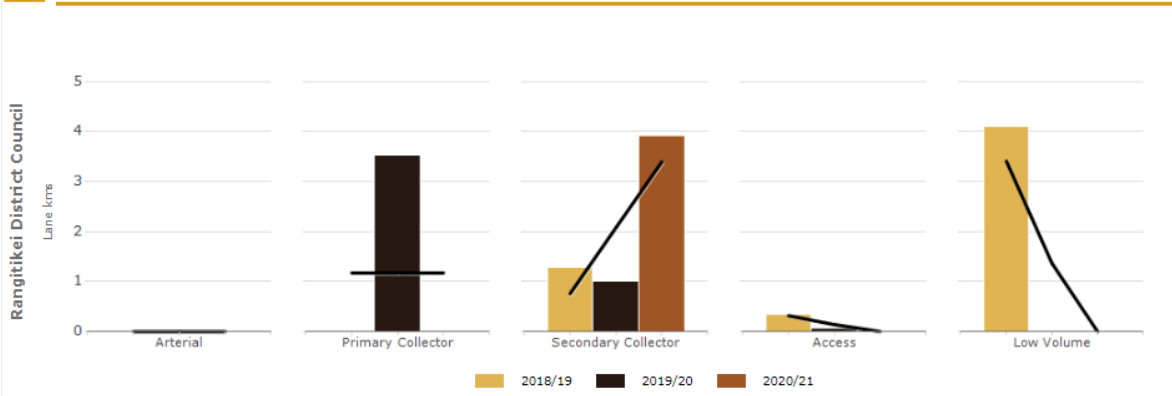


Figure 18: Lane kms of pavement rehabilitation in the Rangitikei District, 2018/19 - 2020/21¹⁹

CHIPSEAL RESURFACING

Figure 19 shows the resurfacing undertaken on the network between 2017/2018 to 2021/2022. Over the past five years, resurfacing has been undertaken on all road classifications, with the largest proportion Access roads were the primary focus of resurfacing in the Rangitikei District, despite the reduction in resurfacing between 2017/2018 and 2021/2022. They are the second largest category, making up approximately 30% of the network. The resurfacing trend shows a reduction on Low Volume roads, and a marginal increase on Primary and Secondary Collectors over the five-year period.



Time series of the length of sealed road chipseal resurfacing by classification

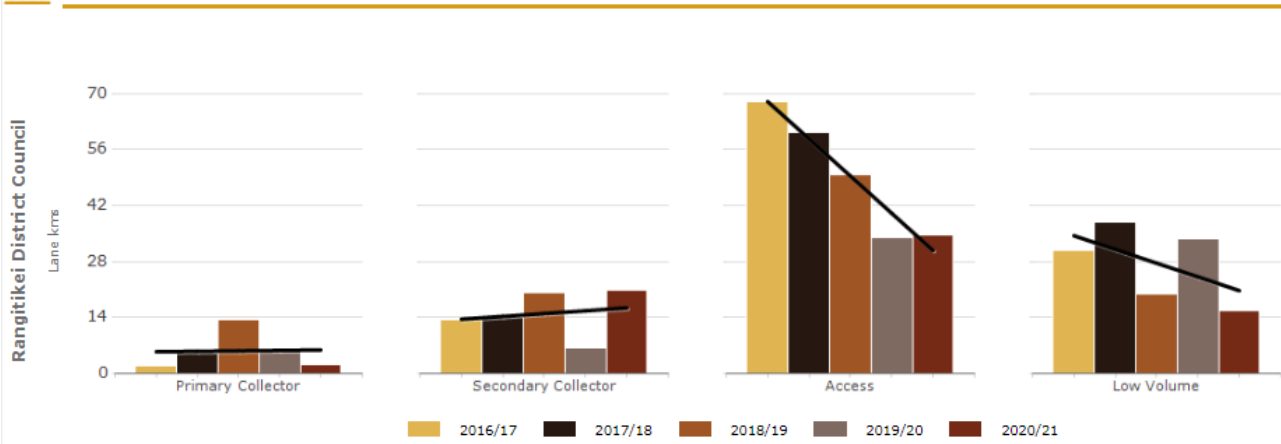


Figure 19: Lane kms of chipseal resurfacing in the Rangitikei, 2017/18 - 2021/22²⁰

RANGITĪKEI DISTRICT VS OTHER RURAL DISTRICTS

Rehabilitation

The analysis below assumes that peer groups in the Transport Insights tool have similar network characteristics and composition as Rangitikei and can therefore be compared.

Figure 20 shows the comparative time series of pavement rehabilitation between 2018/19 to 2020/21.

¹⁹ Source: Transport Insights

²⁰ Source: Transport Insights



Comparative time series of pavement rehabilitation renewed annually from 2018/19 to 2020/21

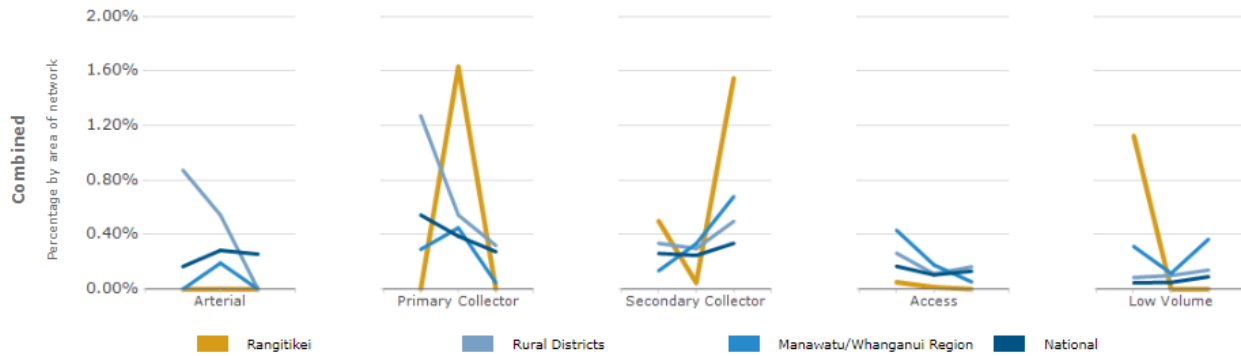


Figure 20: Pavement Rehabilitation Renewed Annually from 2018/19 to 2021/22

In 2020/21, pavement rehabilitation was higher on Secondary Collectors in the Rangitikei District (approximately 1.5%) compared to other rural districts (0.5%), regionally (0.7%) and nationally (0.3%). In contrast, pavement rehabilitation on Arterial and Access roads have consistently been lower between 2018/19 and 2021/21. Arterial roads have not been a focus for rehabilitation across the network. Except for Secondary Collectors, rehabilitation has followed a downwards trend in 2021/22. It is important to note that the percentages represented in Figure 20 are all below 2% and represent a very small portion of the overall network.

Chipseal Resurfacing

Figure 21 shows the comparative chipseal surfacing renewed annually between 2016/17 and 2020/2021.



Comparative time series of chipseal surfacing renewed annually from 2016/17 to 2020/21

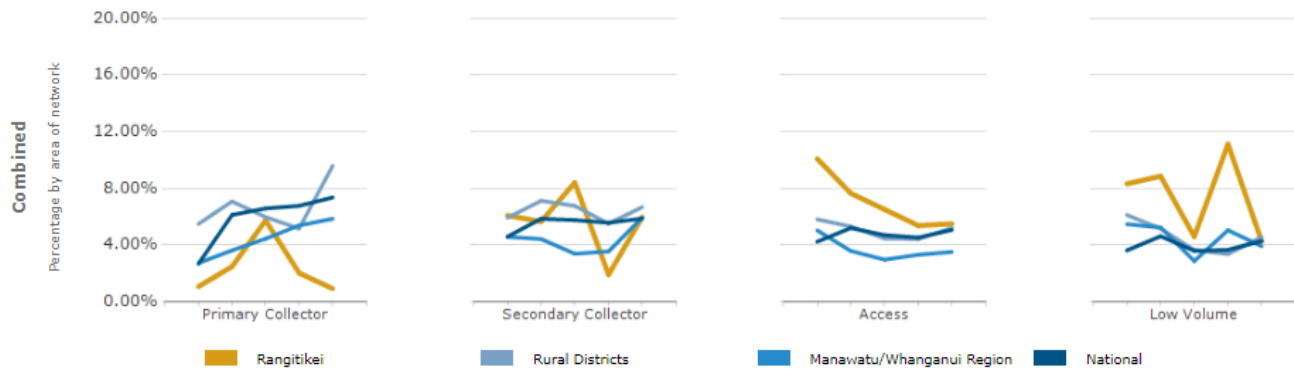


Figure 21: Percentage of the network rehabilitated, 2016/17 to 2021/22 (source: Transport Insights)

The above graph shows that Rangitikei had very different spend profiles for the different road classifications over the analysis period. Overall, Rangitikei spends more than their peers, the Region and National on Access and Low Volume roads, while spend on Primary and Secondary Roads followed similar trends to others.

Figure 22 below shows the total cost of chipseal resurfacing undertaken in the Rangitikei District in 2021/22.



The total cost of chipseal resurfacing undertaken over the selected Financial Year

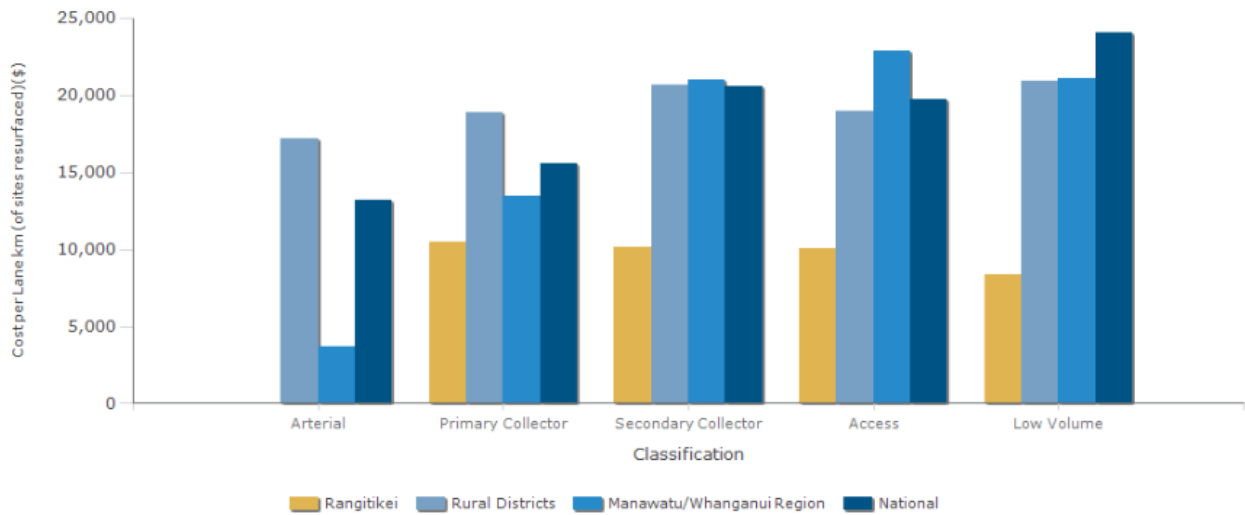


Figure 22: Total cost of chipseal resurfacing in 2021/22 (source: Transport Insights)

Overall, the graph above demonstrates that Rangitikei District Council achieved a lower cost per km on chipseal resurfacing than other rural districts, across most road categories. The Transport Insights tool defines Average Life as

“...the average difference in years between the layer date and the removed date, for pavement layers with a Work Category of 214 that have been removed in the last four years.”

Figure 23 shows that Rangitikei reported a slightly lower average life of approximately one to two years, in the four years to 2021/2022 on Primary Collectors, Access, and Low Volume roads than its peers. This may indicate an issue with quality that is resulting in a shorter life, or that intervention is occurring before the full life of the surfacing has been achieved. It is recommended that this is further investigated. Arterials and Secondary Collectors however appear to be achieving longer lives with resurfacing.



Chipseal resurfacing average life achieved, four year average to 2021/22

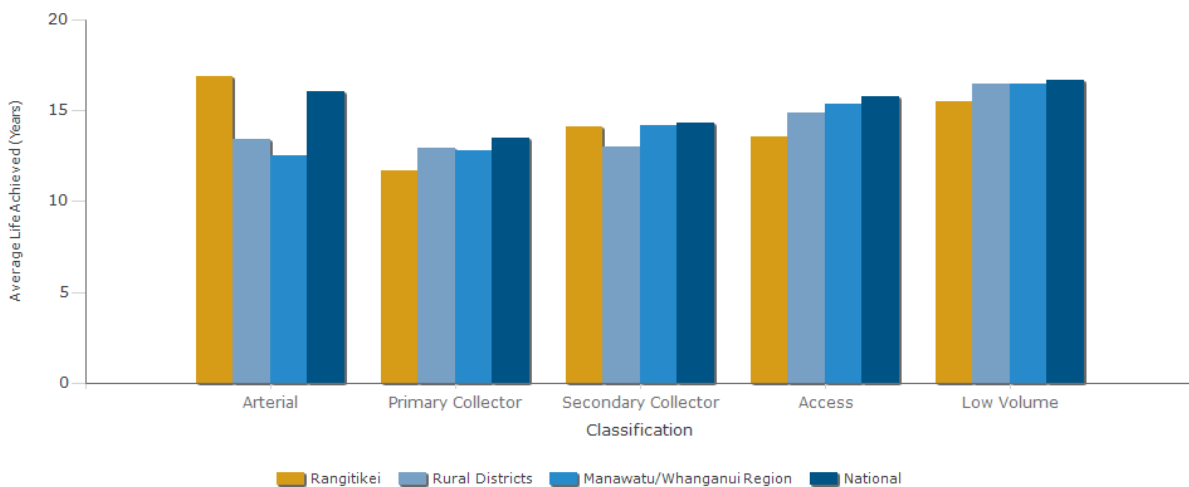


Figure 23: Average life achieved with chipseal resurfacing, four-year average to 2021/22²¹

²¹ Source: Transport Insights

BRIDGES

In 2023, WSP was commissioned by RDC to prepare a Road Structures Life Cycle Management Plan (LCMP). The report stated that there are 269 road structures with a total replacement value of \$128,963,461 (valuation excludes stock underpasses).

The average age of bridges and major road culverts is 61 and 55 years respectively. Stock underpasses are significantly younger with an average age of 18 years., shown in Figure 24 and Figure 25. This is representative of the wider New Zealand bridge stock with a typical expected service life of 120 years for bridges.

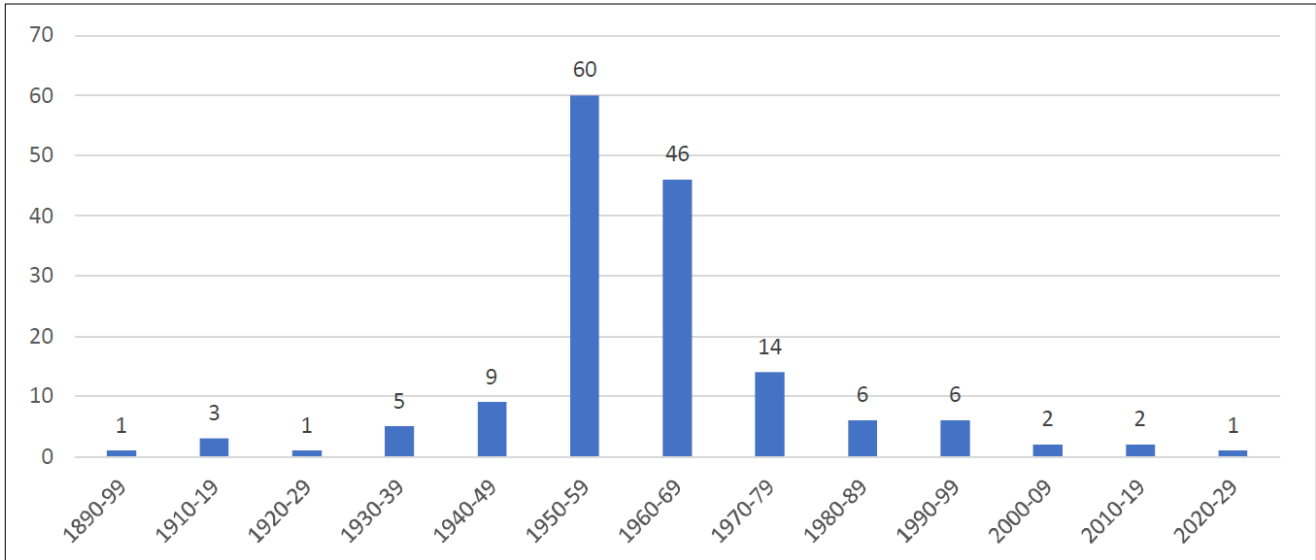


Figure 24: Age Profile of Bridge Stock (Source: Road Structures Life Cycle Management Plan 2020, WSP)

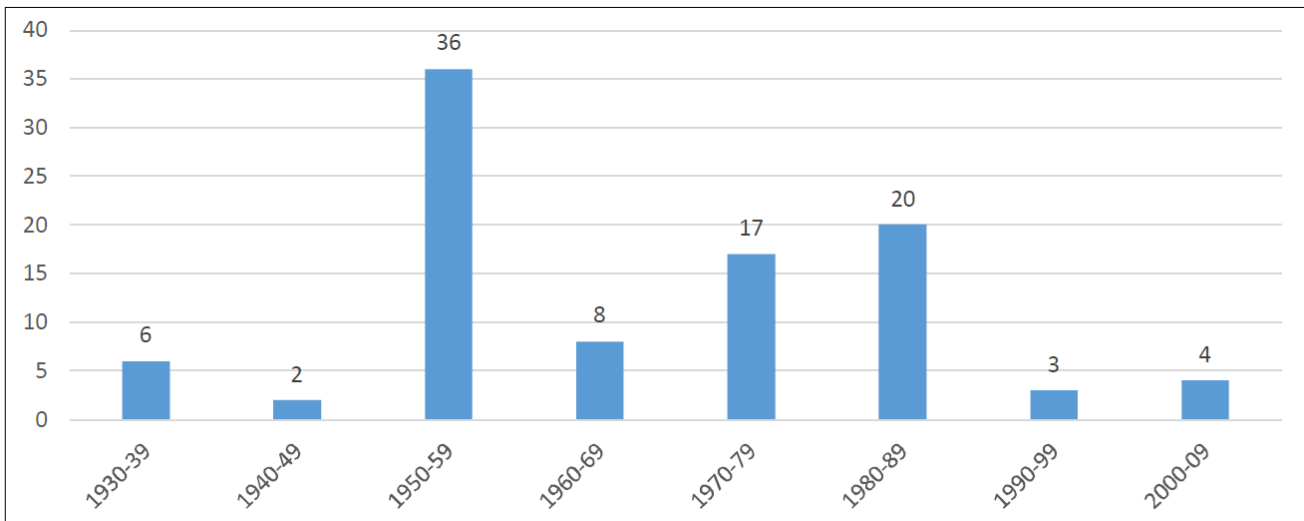


Figure 25: Age Profile of Culvert Stock (Source: Road Structures Life Cycle Management Plan 2020, WSP)

Based on the most recent inspections captured in RAMM, structures over the previous three years are considered to be in 'moderate' condition. However, a review of the replacement programme should be scheduled to verify actual performance of road structures.

The future forecasting demand for maintenance and renewals has found that there are no major works (>\$500K) programmed within the next five years. Finer future forecast details for maintenance and component replacements can be found in the bridge report. The report concludes by providing a structures improvement plan.

8.2 Data Confidence

It is important to note that the underpinning data, used and maintained in available databases, can include some degree of error and uncertainty. This is mostly due to the origin of some data from less robust, often historic sources. To understand the level of confidence that can be placed on the data used to inform this assessment two data confidence measures have been used. The first being the Data Quality assessment obtained from the Transport Insights website. This tool measures the reliability of recorded data against on-site conditions. Despite quality dropping compared to the previous year, data captured

for RDC can still be used with a high degree of confidence, with the data score (percentage) shown below. Further information about data quality measurements can be found on the Waka Kotahi Transport Insights portal²².



Figure 26: Transport Insights - RDC Data Quality Score 2021/22

The second investigation considers data completeness. Assets from available RAMM data were quantified year on year to help understand how much of the network was being assessed over time. Table 9 shows that over the past five years (2017 to 2021) condition information has fluctuated across bridges, drainage, and footpaths. This inconsistency in data makes it difficult to draw meaningful trend conclusions. RDC acknowledge that this is a gap that needs to be closed and will be added to the Improvement Plan.

Note: some assets assessed do not have an associated condition date and have therefore been removed from the table below.

Table 9: Assets assessed between 2017 – 2021 in the RAMM data base.

| Asset Type | Total Assets Assessed per Year | | | | |
|------------------------------|--------------------------------|-------|-------|-------|--------|
| | 2017 | 2018 | 2019 | 2020 | 2021 |
| Bridge Area | - | | 1 | 3 | - |
| Drainage (catchpit, culvert) | 79 | 54 | 89 | 88 | 66 |
| Drainage (other) | 27 | 32 | 59 | 31 | 38 |
| Footpath Area | 1113.2 | 712.9 | 853.4 | 928.4 | 1462.4 |

Another key source of information used to help assess the condition on the network is the High-Speed Data Surveys (HSD) held in the RAMM database. These surveys collect information that can be used to assess key performance criteria such as rutting and roughness present on sealed roads. Figure 27 and Figure 28 shows how much of the network was surveyed for roughness and rutting over the last five years. Although the quality of data collected from these surveys is expected to be good, the use of these surveys to provide insights into network trends is questionable. Insights into data trends rely on being able to compare similar data sets year on year, however, due to budget restraints this is not always the case. For example, if 30% of the arterial roads were surveyed in one year, and a different 30% surveyed the following year, limited trends can be determined from these different sets.

²² [Data Quality Dashboard - Transport Insights](#)

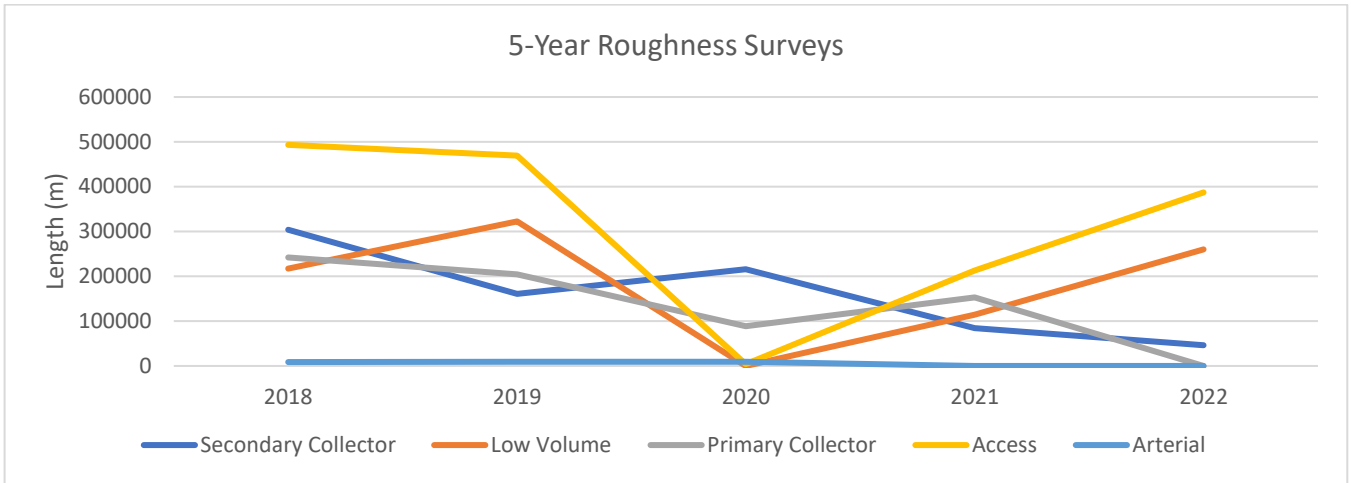


Figure 27: HSD Surveys for roughness - 2018 – 2022

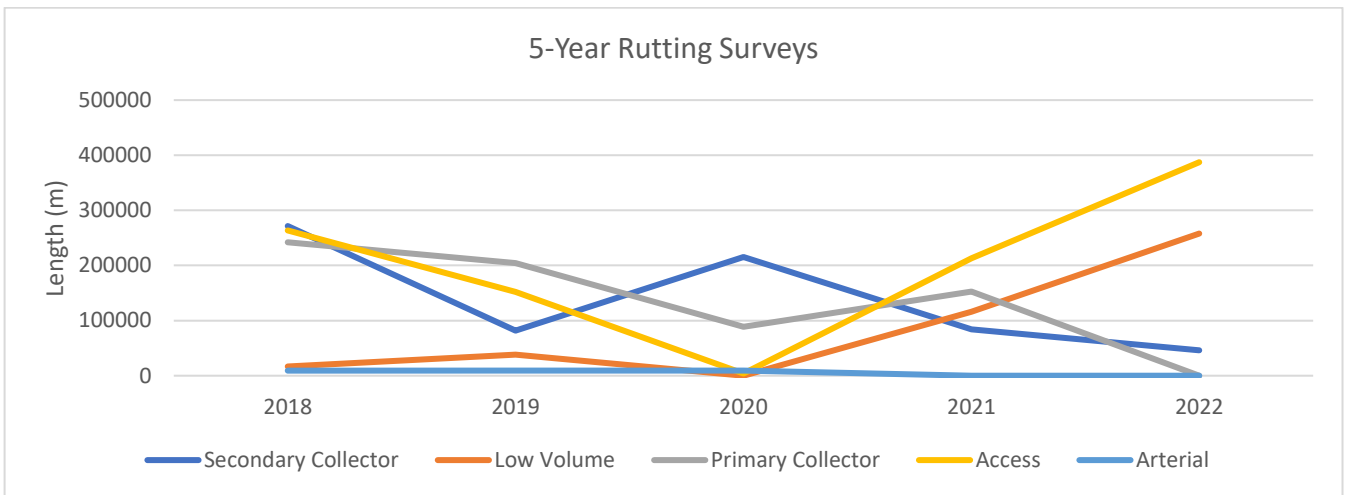


Figure 28: HSD Surveys for rutting - 2018 – 2022

8.3 Overall Condition and Performance

There is a low to medium confidence that the network condition data is providing meaningful results in terms of condition trends as the percentage of the network surveyed is unknown. To provide greater confidence in network condition trends it is recommended that full network surveys or complete road classification surveys are completed on a regular basis (3 to 5 years) to ensure that any data comparisons are meaningful.

Based on the information assessed, the overall condition of RDC’s roads remains consistent. Based on maintenance spend, pavements and landslips are the two focus areas for the Council going forward. With the recent storms and flooding across New Zealand investment in slope stabilising is becoming more and more crucial.

Pavement maintenance and renewals (rehabilitations) are distributed across the network, although a future focus on access and secondary roads may be required. Generally, asset renewals (rehabilitation, reseals, and renewals) were less of a focus during this period, with rehabilitation declining across the network between 2018/19 to 2020/21 according to Transport Insights.

Overall, RDC’s biggest asset, pavements are in acceptable condition, with pavement roughness assessment showing that less than 10% of the surveyed network is in poor condition, while the rutting assessment shows that over 80% of the surveyed network is in an acceptable condition or better. These statistics indicate that the network is performing at an acceptable level and is being appropriately maintained. Rehabilitations appear to be delivering value in terms of cost.

A continuous programme of bridge replacements is required to ensure a backlog of replacements build up. This replacement programme should prioritise condition over age in line with the existing recommendations.

9. Demand

9.1 General Traffic Demands

The available RAMM data was used to understand the overall demand changes in the district over the past five years (2018 to 2022) across the network. The data revealed that on average there has been a 9% increase in traffic volumes across the network. It is important to note that the available data is not year on year, therefore the compound growth formula was used to determine growth over a period. Table 10 shows the roads which had changes in traffic demand over 50%²³. Some of the corridors highlighted below had very large increases, this is partly attributable to these roads having low traffic volumes to begin with. Although these percentages appear significant, they do not necessarily translate into unmanageable growth. The increases on Williamsons Line and Pukekoa Road however are notable²⁴. Overall, the analysis showed that traffic on Low Volume roads is increasing more than other road categories, with an average growth in demand of approximately 6 percent²⁵. The data also indicated that Arterials and Secondary Collectors had a 5 and 2 percent increase, respectively.

Table 10: Roads with the highest traffic growth on the network between 2017 and 2022

| Road Type | Road Name | Percentage Increase | Absolute Increase | Growth over (Years) |
|---------------------|-----------------------------|---------------------|-------------------|---------------------|
| Secondary Collector | Ferry Road | -56% | -125 | 4 |
| Secondary Collector | Williamsons Line | 84% | 4088 | 5 |
| Low Volume | Kawakawa Street (Mangaweka) | 142% | 134 | 4 |
| Low Volume | Owhakura Road | 57% | 30 | 4 |
| Low Volume | Makopua Road | 63% | 30 | 4 |
| Low Volume | Pukekoa Road | 187% | 1926 | 5 |
| Low Volume | Omanu Street | 163% | 59 | 2 |
| Low Volume | Te hou hou Road | 567% | 34 | 1 |
| Low Volume | Beamish Road | 88% | 76 | 2 |
| Low Volume | Auputa Road | 68% | 35 | 4 |

9.2 Future Traffic Demands

While looking at current traffic demand, it is important to understand where future funding may be required. Rangitikei is known for its forestry activities which was established in the 1990s. Large-scale harvesting of this resource commenced in 2018-19, with initial predictions showing the peak in the 2027-30 period, refer Figure 29²⁶.

²³ When looking at the road network, different road classifications had increases and decreases in traffic demand over the five-year period. The table only shows the increases over 50% as this may result in increased maintenance and expenditure. It is noted that the decrease in traffic demands could reduce expenditure. These have not been reported.

²⁴ It should be noted that these are two-way traffic volumes.

²⁵ It is important to note that this percentage is a mix of high increases on lower volume roads and low increases on high volume roads.

²⁶ Source: 'Wood availability and related roading implications on Rangitikei District roads 2018-2047; A forecast study prepared for RDC' (Moore and Associates, February 2017)

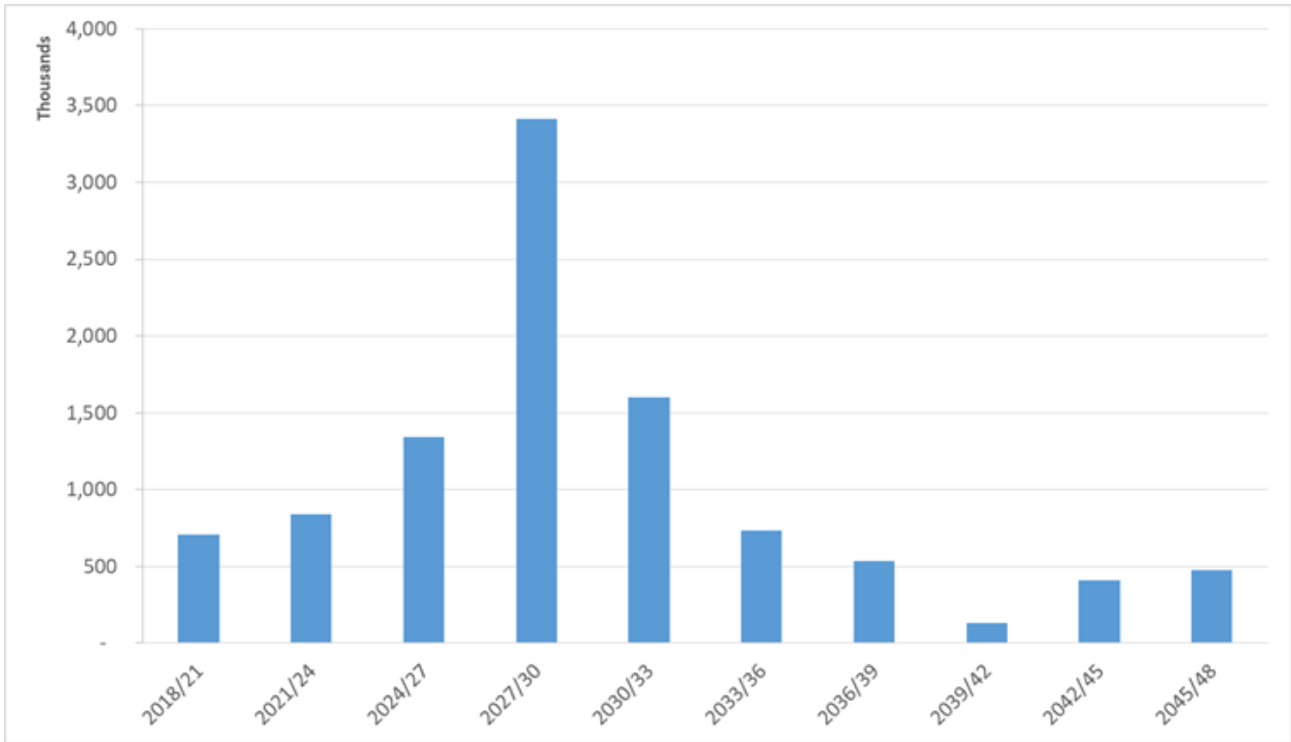


Figure 29: Forecast Wood Supply (*P.radiata*) for the Rangitikei District 2018-2047

Figure 30 shows the top 10 harvest sites by yield (from a total of 140 identified harvest sites), amounting to 56% of the total tonnage predicted for extraction within the Rangitikei district.

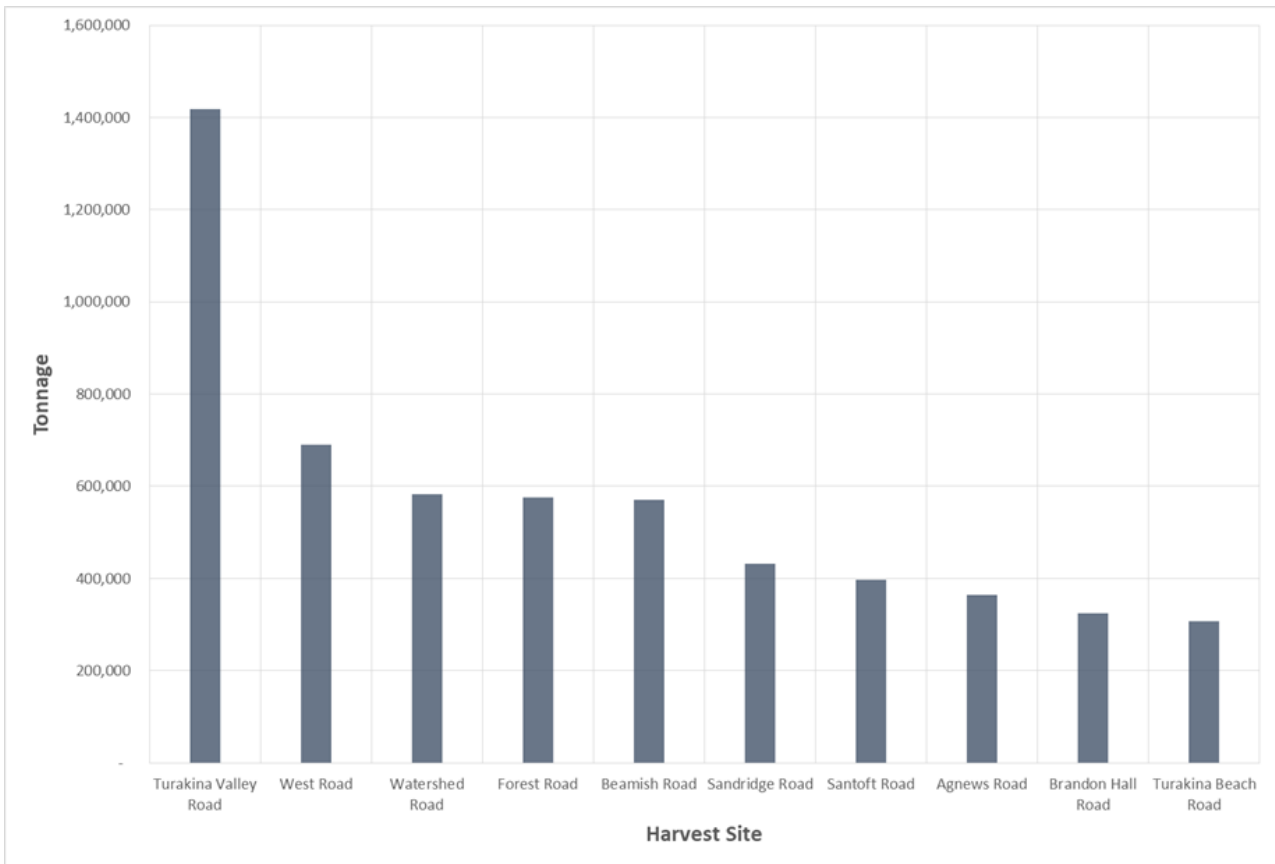


Figure 30: Extraction Tonnage by Site (10 No Highest Yield Locations)

These harvest sites all have routes associated with the movement of forestry products between Rangitikei and the rest of the country. The potential haul roads for the top 10 harvest locations are shown in Table 11 and Figure 31. These routes comprise a mix of road classifications, ranging from Access Roads to Primary Collectors.

Table 11: Potential Haul Roads for the 10 Highest Yield Harvest Sites

| Potential Haul Routes | |
|-----------------------|----------------------|
| Classification | Roads |
| Route 1 | |
| Secondary Collector | Turakina Valley Road |
| Access | Mangahoe Road |
| Secondary Collector | Ongo Road |
| State Highway | SH 1 |
| Route 2 | |
| Secondary Collector | Turakina Valley Road |
| Access | James Road |
| Secondary Collector | Ongo Road |
| State Highway | SH 1 |
| Route 3 | |
| Access | West Road |
| Access | Murimotu Road |
| State Highway | SH 1 |
| Route 4 | |
| Low Volume | Watershed Road |
| Access | Kie Kie Road |
| State Highway | SH 1 |
| Route 5 | |
| Access | Forest Road |
| Secondary Collector | Parewanui Road |
| State Highway | SH 3 |
| Route 6 | |
| Access | Beamish Road |
| Secondary Collector | Santoft Road |
| State Highway | SH3 |
| Route 7 | |
| Low Volume | Sandridge Road |
| Secondary Collector | Parewanui Road |
| State Highway | SH 3 |
| Route 8 | |
| Secondary Collector | Santoft Road |
| State Highway | SH 3 |
| Route 9 | |
| Low Volume | Agnews Road |
| Access | Murimotu Road |
| State Highway | SH 1 |
| Route 10 | |
| Secondary Collector | Brandon Hall Road |
| Secondary Collector | Parewanui Road |

| Potential Haul Routes | |
|-----------------------|---------------------|
| Classification | Roads |
| State Highway | SH 3 |
| Route 11 | |
| Secondary Collector | Turakina Beach Road |
| State Highway | SH 3 |

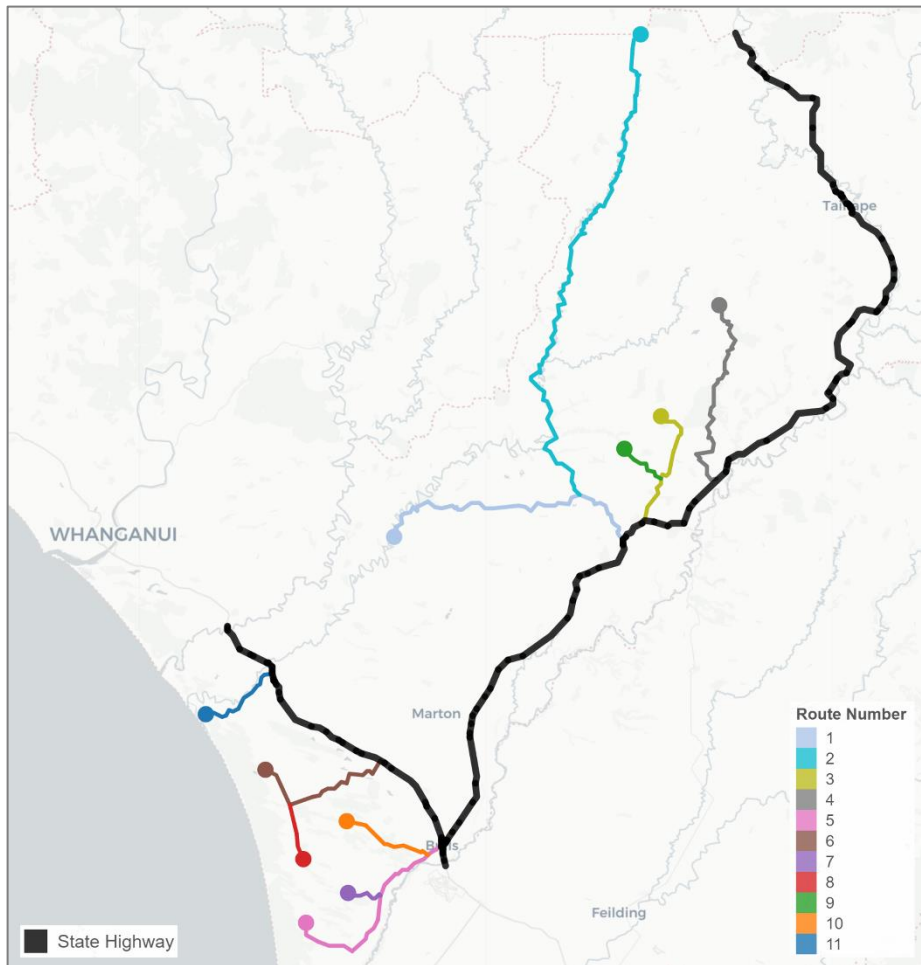


Figure 31: Transport Routes for High Volume Forestry Roads

Forest harvest schedules are expected to be most intense between 2018-2030 during which the majority will reach harvestable age. It is predicted that 62% (6.24 mega-tonnes) of the harvest will be extracted by 2029-30.

Past harvest reports detailed expected harvest timeframes and potential egress points. It was found that high volume egress points will potentially influence Low Volume roads in the following areas:

- Agnews Road (Low Volume) – This road has around 148,00 tonnes reaching harvestable age in the 2027-2030 period. This equates to approximately 7% of the total yield from the ten highest yield locations. Notably within this same period, Turakina Valley Road (Secondary Collector) is expected to transport 764,000 tonnes of harvest, a staggering 36% of the total yield.
- In the 2024-2030 period, Watershed Road (Low Volume) will experience an increase in forestry related heavy traffic as approximately 560,000 tonnes of wood reach maturity, 20% of the total yield in this period.

Based on the above, the future demands on specific Low Volume and Secondary Collector roads are expected to be high, with historic data showing an already increased demands on these road types – particularly on Low Volume roads.

Understanding these upcoming demands on the network, detailed investigations and analysis of these routes is recommended to address any existing defects and reduce future reactive maintenance.

9.3 Demand Drivers

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

- Location population trends
- Accuracy of predicted future populations
- Local economic trends and the diversity of industries
- Predicted traffic growth
- Changing technology
- Changing legislation requirements
- Changing regional and district planning requirements
- Climate and climate change
- Land use change

All the above factors / influences impact demand and by extension the required development of supporting infrastructure (increasing or decreasing asset capacity to cater for forecasted demand). The role these factors play in influencing demand in the future transport landscape needs to be understood to generate an accurate expectation of demand which can then be used to inform and develop reasonable infrastructure objectives.

Specific demand influences within the Rangitikei district are listed and briefly described below (further detail is provided in Appendix B):

- Forestry – Within the Rangitikei District, forest establishment trends peaked in the early 1990s and have fluctuated since then. Due to these phases of large-scale forest establishment, forest harvest schedules will coincide, changing road usage patterns and placing pressure on rural road maintenance schedules. The size and remote locations of some major forest lots will require road maintenance and harvest regimes that maintain both public use and harvest sustainability. Due to the nature of the forestry industry, usage will highly variable and thus road usage quality during peak harvest periods will rely on proactive road maintenance schedules and effective communication between RDC asset managers, forest managers and public users. Consultation with major forest owners is required to determine key egress points prior to harvest operations. This information will feed into road maintenance schedules, engineering, and design.
- Dairy Conversion – Conversion of land use to dairying has a direct effect on the road network, specifically with pavement widths, pavement loadings and safety under all pressures. Conversion to other intensive land uses not currently known or anticipated may have similar effects, which is potentially one of the risks to the Council from climate change problems.
- Agriculture - Farming has, and is expected to continue to have, a significant impact on the district's economy. Many of the roads servicing these land blocks were not constructed to handle the high level of loading they are currently facing. Consequently, the dairying and logging truck routes are likely to be a key driver of the rehabilitation forward work programme.
- Meat Processing e.g., ANZCO.
- Small to medium industry e.g., Malteurop and Hautapu Pine.
- Commercial and Industrial Opportunities e.g., Gallagher Fuel Systems.

9.4 Demand Forecast

Generating a demand forecast to inform future infrastructure investment decisions carries some inherent risk due to the significant assumptions that need to be made. Scenario testing assumptions and the alternative outcomes are listed below together with their relative risk to planned future investment. More information about demand forecasting can be found in Appendix B.

| | | | | | |
|---------------------|---|--|---|---|--|
| Assumption | Residents aged 65 and over will increase from 3,240 (19.9% of the total population) in 2021 to 4,235 (22.5% of the total population) by 2051 | | The demographics of the Rangitikei District will follow the Statistics New Zealand forecasts to 2051 (extrapolated from 2044 to 2051). | That the population of the Rangitikei District will increase from 15,750 residents in 2021 to 17,708 in 2051. | |
| Alternative | Residents aged 65 years and over in the Rangitikei District will be significantly more than forecast. | Residents aged 65 years and over in the Rangitikei District will be significantly less than forecast. | The demographics of the Rangitikei District will differ significantly from the Statistics New Zealand forecasts to 2051 | Number of households in the Rangitikei District in 2051 will be more than forecast | Number of households in the Rangitikei District in 2051 will be significantly less than forecast |
| Impact | Moderate | Minor | Minor | Moderate | Minor |
| Likelihood | Unlikely | Unlikely | Likely | Possible | Unlikely |
| Overall Risk | Moderate | Low | Moderate | High | Low |
| Assumption | The intensity and frequency of extreme weather events, such as flooding, drought, or heavy snowfall, will increase as a result of climate change, in line with projections released by NIWA following the IPCC Fifth Assessment Report. | | Current land uses will not change significantly over the next 3 years. However, some changes in land use are anticipated between years 4 and 10 of the 10 Year Plan, and significant land use change is expected in the district between 2032 and 2051. | The Rangitikei District Council is prepared to respond to emergency events over the life of this 10 Year Plan. However, a catastrophic event, such as a major earthquake, will exceed Council's financial provision to respond. | |
| Alternative | Climatic changes in RDC, including the intensity and frequency of extreme weather events, are more extreme than predicted by NIWA. | Climatic changes in RDC, including the intensity and frequency of extreme weather events, are less extreme than predicted by NIWA. | Current land use in the district will change more rapidly, or in different locations or ways than anticipated | Current land use in the district will persist or that land use change will occur at a much slower rate or in fewer locations or ways than forecast. | An emergency event occurs that exceeds councils' financial ability to respond |
| Impact | Major | Minor | Moderate | Minor | Major to Catastrophic |
| Likelihood | Likely | Unlikely | Unlikely - likely | Unlikely | Unlikely |
| Overall Risk | Moderate (8) | Low | Moderate | Low | Moderate (12) to High (24) |

9.5 Demand Impact on Assets

DEMAND FORECASTING

Traffic counts provide the basic information to support capacity planning. Council has a comprehensive traffic count programme in place which is managed through the RAMM. The predicted traffic growth for the district is approximately 1.7% per annum, which is typical for a rural roading network and is generally in line with growth rates regionally.

Some individual roads and routes in the district, however, may experience a higher growth rate due to increased localized residential, and commercial development. The main arterial and collector roads connecting Feilding to Palmerston North will similarly have increasing demands placed on them to cater for increased traffic growth from those who wish to live outside the main metropolitan area of Palmerston North, but still rely on daily trips to Palmerston North for work and other requirements.

ASSET CONDITION

In accordance with the Land Transport Management Act 2003, Council is required to maintain and provide a safe and efficient road network within its district. By providing access and mobility to people, goods and services, an effective road network will also ensure the economic and social wellbeing of a community.

The National Land Transport Programme is a supporting document of the LTMA which contains all types of transport activities, such as public transport services and road construction and maintenance. These programmes are all expected to receive allocated funding from Waka Kotahi to target investments that will help address the important challenges facing land transport. Challenges such as improving transport efficiency, improving public transport, improving safety, and upgrading important freight and tourism routes. It will provide funding from Waka Kotahi to progress and improve the district roading network.

Roading service levels and programmes must be continuously reviewed and improved to meet the increasing expectations of the community. The factors that could force the need for change on the assets or management of roading assets are:

- Increasing population - An increase in population will increase traffic volumes along the roading network. This will increase congestion and the level of service provided from the road. Maintenance costs and renewal frequencies will then continue to rise.
- Changes in the way the road is used - The development of new subdivisions or community developments will affect the way the road is used and its ONF classification. This will then result in an upgrade to accommodate for the changing use.
- Changes in the level of service demanded by the road users - Over time, communities tend to expect improving service from their assets, with the community expecting maintained rural roads for use by more than local farmers, safe cycling alternatives, and off-road pathways, more affordable and sustainable transport solutions for the district's residents. This may require additional public transport services, and an investment in walking and cycling infrastructure to cater for short trips.
- Changes in the strategic management of the assets - The Council's policies and management strategies are continually evolving to keep pace with the changing needs of the community, statutory requirements, funding organisations and central government's requirements. Changes to policies and management strategies can also have a significant effect on how assets are managed.

9.6 Demand Management Plan

The demand plan includes several items that can affect the operation of the network. The demand management plan considers how these risks can be managed to ensure the network does not become overloaded and service levels decline.

The demand management plan considers a range of items that impact ongoing operations of the network and how to manage these risks to ensure the network does not become overloaded with a declining level of service.

Supply side demand management plan - Outline Development Plans (ODPs) have been developed for inclusion into the District Plan as part of the plan change process. These seek from the outset to achieve good urban design and sustainable outcomes by establishing how each block will spatially develop across all infrastructural assets, and how these developments will link to existing and other new areas.

Minor Improvements - The funding of improvements is catered for in the subsidised Land Transport Programme as Activity Class 5 – Improvement of Local Roads. Activity Class 5 includes Waka Kotahi Work Categories 322 to 325 and 341. Individual projects generally have to meet assessment criteria under Waka Kotahi's Project Evaluation Manual to be eligible for funding.

New Improvements Planning - The Council operates a Projects Database that lists potential individual improvement projects from sources such as township committees or community boards, staff and councillors.

Local Priorities - As part of the development of LTP, the District's communities, via their respective Community Committees, are provided the opportunity to rank proposed improvement projects in order of their preferences. These preferences are then considered by the Council in the preparation of the LTP and Annual Budgets. A Hazard and Deficiency Database is used to evaluate and rank projects based on a risk reduction, traffic and cost basis.

Subdivision Commitments - Subdivision commitments can only be determined on a case-by-case basis once applications are lodged and approved. Consent conditions, under the Resource Management Act 1991, requiring financial contributions for

roading upgrades conditions can be contested by the developer.

Development Contributions - Development contributions are contributions required from developers to help offset the effects of growth they have induced on the network. They are levied under the Local Government Act 2002 and Council's Development Contribution Policy. Financial Contributions are levied for specific works that need to be carried out on roads adjacent to new developments. The costs of these works are shared with the Council, based on projected traffic volumes.

Subdivision Approvals and Commitments - If the zoning status of land changes, through the Rangitikei District Plan or private plan changes, this can result in areas being subdivided and developed for residential, rural residential, business/commercial and industrial purposes. This can drive the requirement for existing roads and streets to be upgraded and new infrastructure to be constructed and vested in the Council. Developers usually pay the full cost of roading, and development works within new subdivisions.

Subdivision Development - Developers pay the full cost of development within new subdivisions, with new assets being vested in Council upon completion and the issuing of subdivision titles. However, on-going maintenance and renewal of the new roads and associated assets built in these developments is the responsibility of the Council. The policy for development contributions that may be charged for future subdivisions is established at a Council wide level, as provided for under the Local Government Act 2002 and Development Contribution Policy.

Township Improvements - Township improvement works are carried out mainly at the request of the local township committees. The Council operates a Projects Database that lists potential individual improvement projects from sources such as township committees or community boards, staff and councilors. Township and roading projects have been a significant part of the Council discretionary spend in recent years. There is also a need to be financially prudent on what funding can be provided to the township/roading programme to ensure future rates movements minimised. The simplest way to minimise rate movements (increases) is to minimise the capital spend on items that are discretionary in nature. Accordingly, there is no discretionary funding included in the LTP at this draft stage. Once we know what the core on general rates/funds Council may be able to provide some form of discretionary project funding.

Programming Level of Service Improvements - The new improvement programmes reflect a balance between what is affordable and what is achievable with the funding currently, or expected to be, available. Most road network level of service gaps are known and are relatively small in the context of the whole network. These are compensated for in the day-to-day administration of the asset. When this cannot occur, additional funding is sought to address the gap. This normally occurs when the Council's Land Transport Programmes is compiled and submitted to the Waka Kotahi for approval. However, the Waka Kotahi usually requires any such requests to be "evidence based" before approving any additional funding. The Council intends to maintain its awareness of these issues and plans to provide a roading network which meets the communities' expectations. This may involve more seal extension, better ways to provide and maintain unsealed roads, and possible widening of some arterial and collector roads in the district. Modest funding of all these developments has been recognised in the AMP.

9.7 Summary

Traffic growth is not the main challenge facing the roading network. Across the network there is considerable spare capacity to cater for additional traffic flows. The challenges relate more to:

- Old roading network which was not built to handle heavy traffic
- Long term funding from Waka Kotahi for the current budgeted proportion of maintenance and renewal costs (not considered an issue in the medium term)
- The One Network Framework (ONF) recently incorporation into the AMP
- Delayed Emergency Funding from Waka Kotahi

Demand for new or upgraded facilities arises from the needs of the existing population i.e. meeting the level of service standards, changing habits, and population growth. This may cause demand for:

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

- Appropriate urban facilities in closely settled areas, e.g. streetlights, kerb and channel, footpaths

The Council intends to maintain its awareness of these issues and plans to provide a roading network which meets the communities' expectations. This may involve more seal extension, better ways to provide and maintain unsealed roads, and possible widening of some arterial and collector roads in the district.

10. Problems and Evidence

This section reexamines the network condition and performance to determine if the problems faced by Rangitikei District Council as outlined in the 2018-2021 Activity Management Plan have persisted as below:

- Existing Problem 1: Deteriorating condition and changing demands on Access, Low Volume and Secondary Collector roads are resulting in decreased Levels of Service and increasing reactive interventions on these roads.
- Existing Problem 2: The Manawatū-Whanganui region (encompassing the Rangitikei District) is susceptible to increasingly severe climatic events resulting in significant reactive expenditure at a relatively limited number of locations and increased road safety risks. Expenditure at these sites is impacting on the budgets available for other proactive maintenance interventions.
- Existing Problem 3: There are a high numbers of injury crashes on roads in Rangitikei which is resulting in safety concerns for users.

After analysing updated evidence and data to determine if the problems highlighted by RDC remain valid for this funding period, it was concluded that Problems 1 and 2 required updating, however showed Problem 3 remains. The renewed Problem Statements and associated evidence are outlined in the sections below.

10.1 Problem 1: Legacy Network

Deteriorating condition and changing demands on Access, Low Volume and Secondary Collector roads are resulting in decreased Levels of Service and increasing reactive interventions on these roads.

HISTORIC COSTS

When analysing maintenance costs (2017/18 – 2021/22) for the district, refer Figure 32, spend on pavements was the largest cost group. Investigations into the pavement costs revealed that spend has been focused on aggregate loss, deformation and shear-failure, the first of which falls into the unsealed maintenance activity class, with the last two falling within the, hence digouts account for 34% and unsealed pavement maintenance account for 26% of the pavement maintenance cost over the past five years. The data shows that spend on pavements peaked in the 2019/2020 (\$1,690,000) period and has since been declining. Spend was particularly low in 2021/22 (\$880,000).

Depressions and deformations refer to changes in the road surface profile and are associated with rutting. Rutting is caused by vehicular traffic, indicating localised pavement strength issues for the demand / vehicle types on the network. Shear failure is caused by heavy vehicles accelerating and decelerating, resulting in shoving of the surface.

The analysis revealed that Access, Low Volume and Secondary Collector roads account for over 80% of spend on these faults, together making up almost 90% of the network. Notably, Primary Collectors account for the same portion of the spend as Secondary Collectors at 18%, despite Primary Collectors only making up 10% of the network.

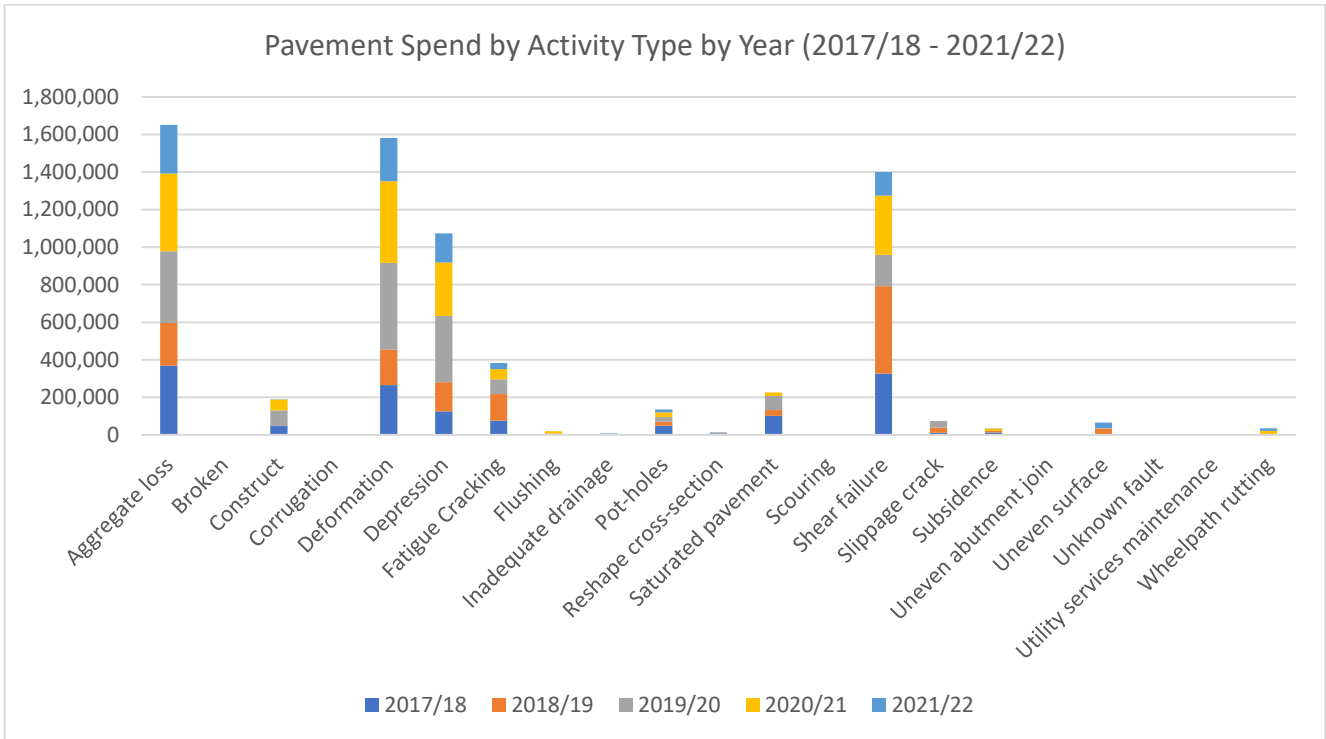


Figure 32: Pavement Spend by Activity Type by year (RAMM)

As expected Figure 33 shows that aggregate loss primarily occurs on Low Volume roads. This is not unexpected given that Low Volume roads form the largest portion of the network, with over 65% of this road type being unsealed. Note that in the 2020/21 period, spend on aggregate loss was higher than other years.

The distribution of this expenditure across the network is shown in Figure 34, the thicker the line the higher the spend. There are some defined hotspots identified and the monitoring of these hot spots should be included in the forward work plan to determine if further intervention will be required.

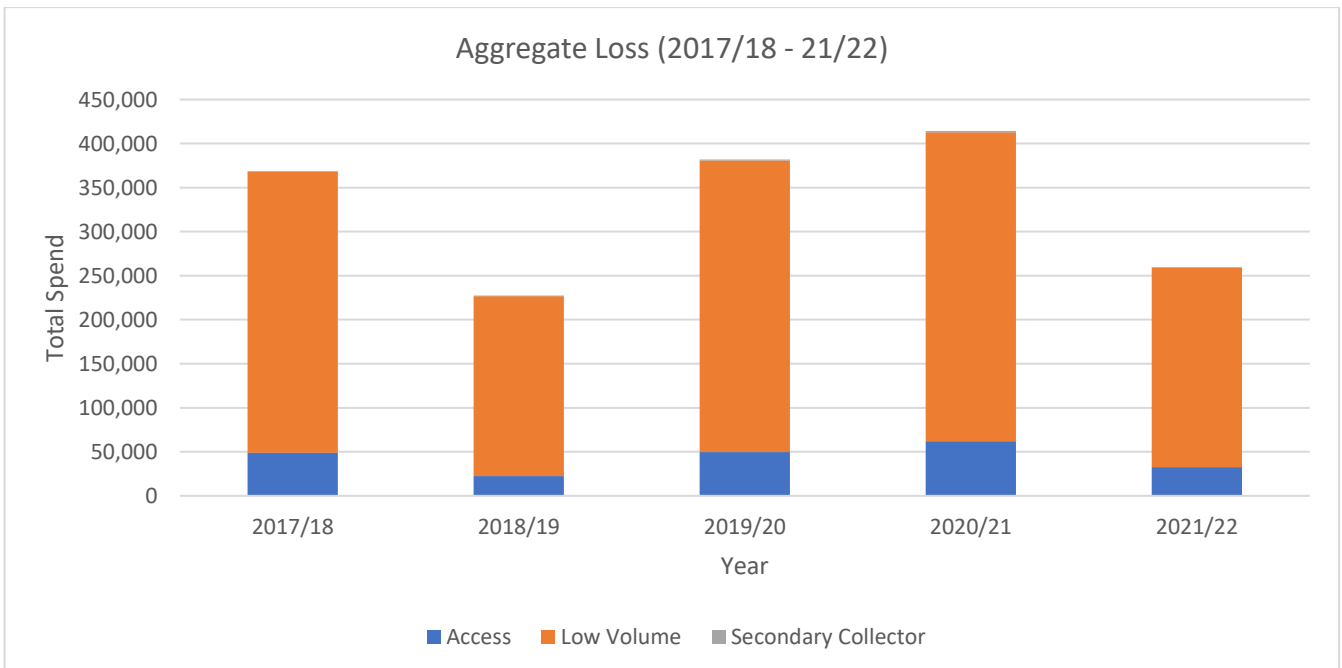


Figure 33: Aggregate Loss spend across the network between 2017 – 2022.

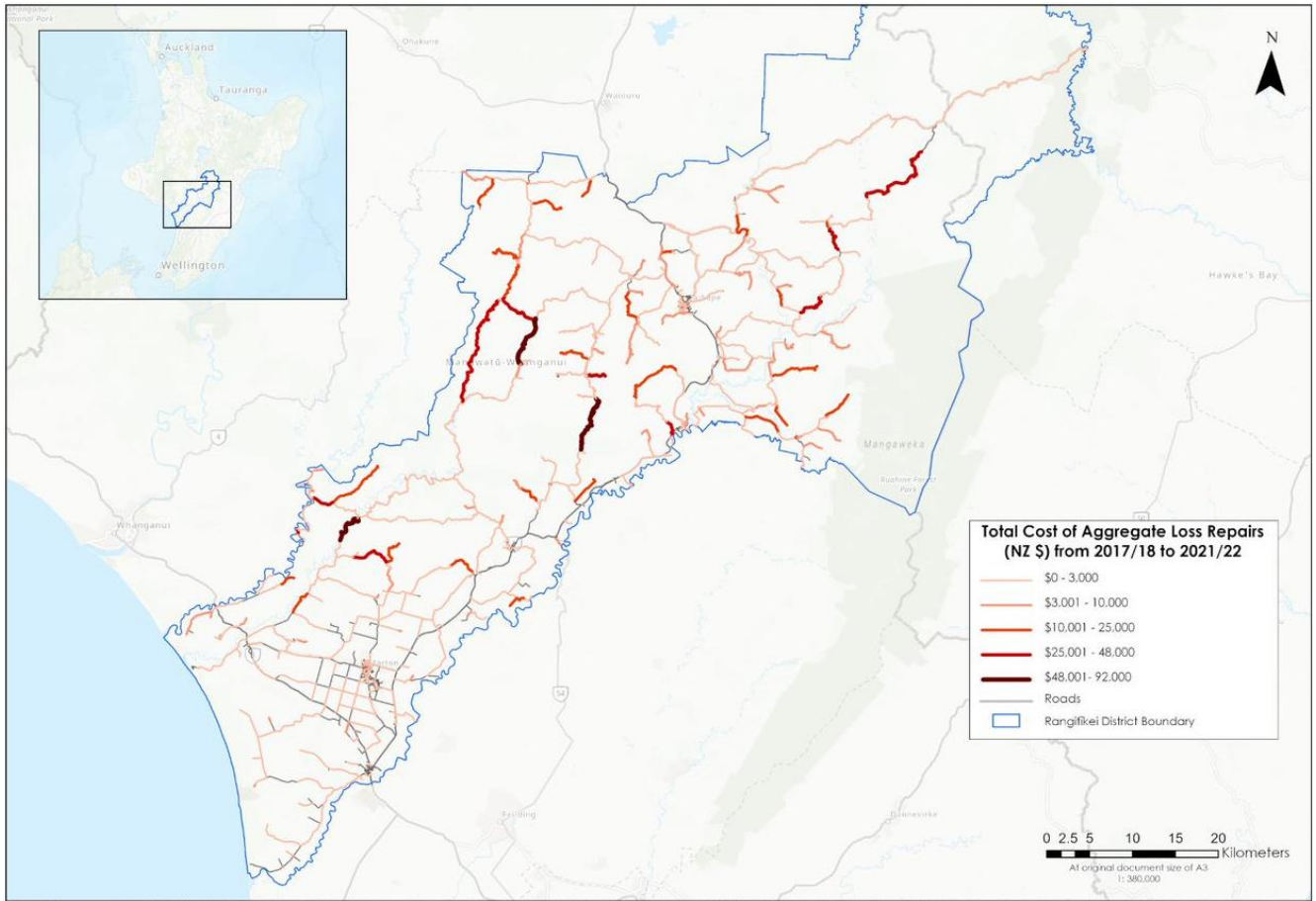


Figure 34: Location of spend on aggregate loss across the network between 2017 – 2022

Figure 35 shows that deformation primarily occurs on Access roads. This is not unexpected given that Access roads form the second largest network within the district. The increase in spend suggests that more of the network is deforming and that interventions other than maintenance may be required.

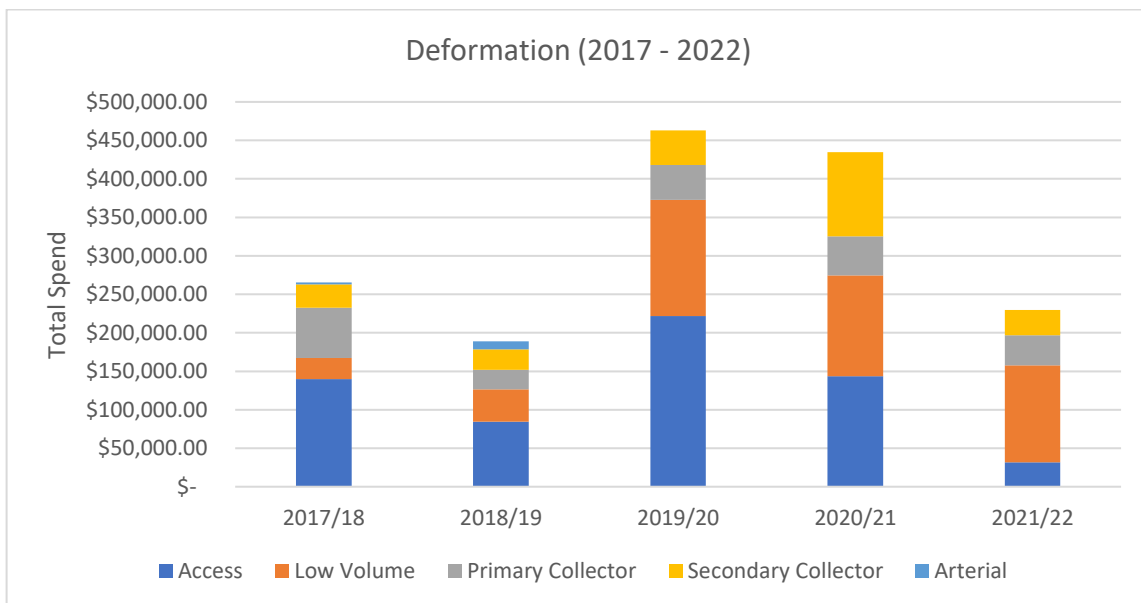


Figure 35: Deformation spend across the network between 2017 – 2022

The distribution of this expenditure across the network is shown in Figure 36, the thicker the line the higher the spend. There are some defined hotspots identified and the monitoring of these hot spots should be included in the forward work plan to determine if further intervention will be required i.e., deformation associated with poorly performing drainage.

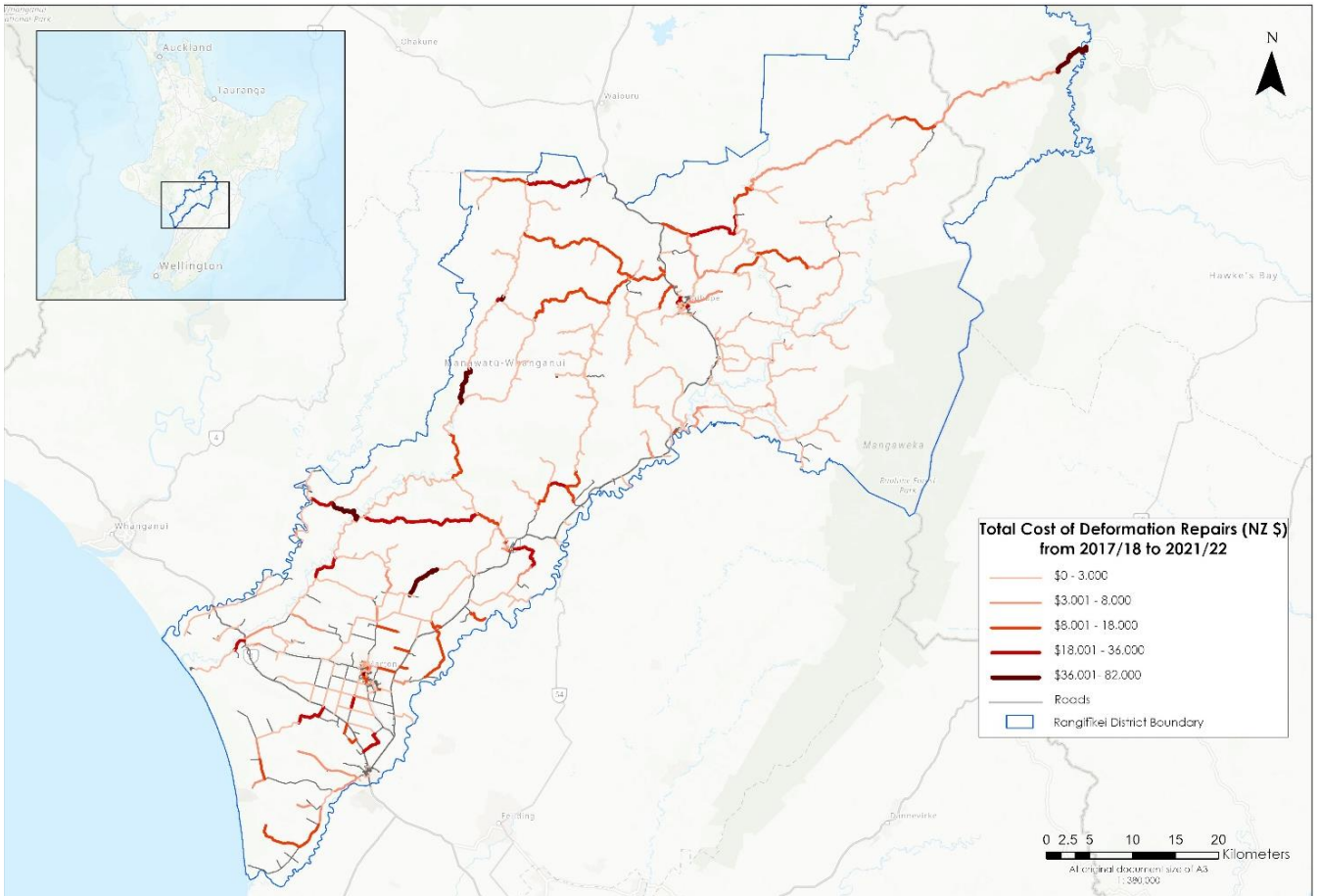


Figure 36: Location of spend on deformation across the network between 2017 – 2022

Figure 37 shows that shear failure predominantly occurs on Access Roads, this is expected since this road type is the largest sealed network component. According to the data, spend on shear failure has decreased over the past years, indicating that either spend on this maintenance type has decreased due to reprioritisation of funds or that the road is performing better.

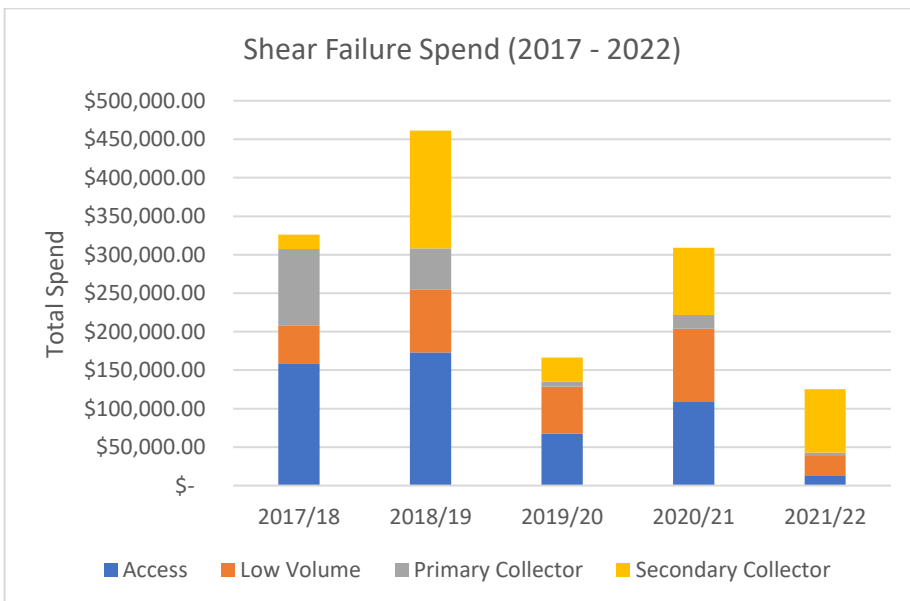


Figure 37: Depression spend across the network between 2017 – 2022

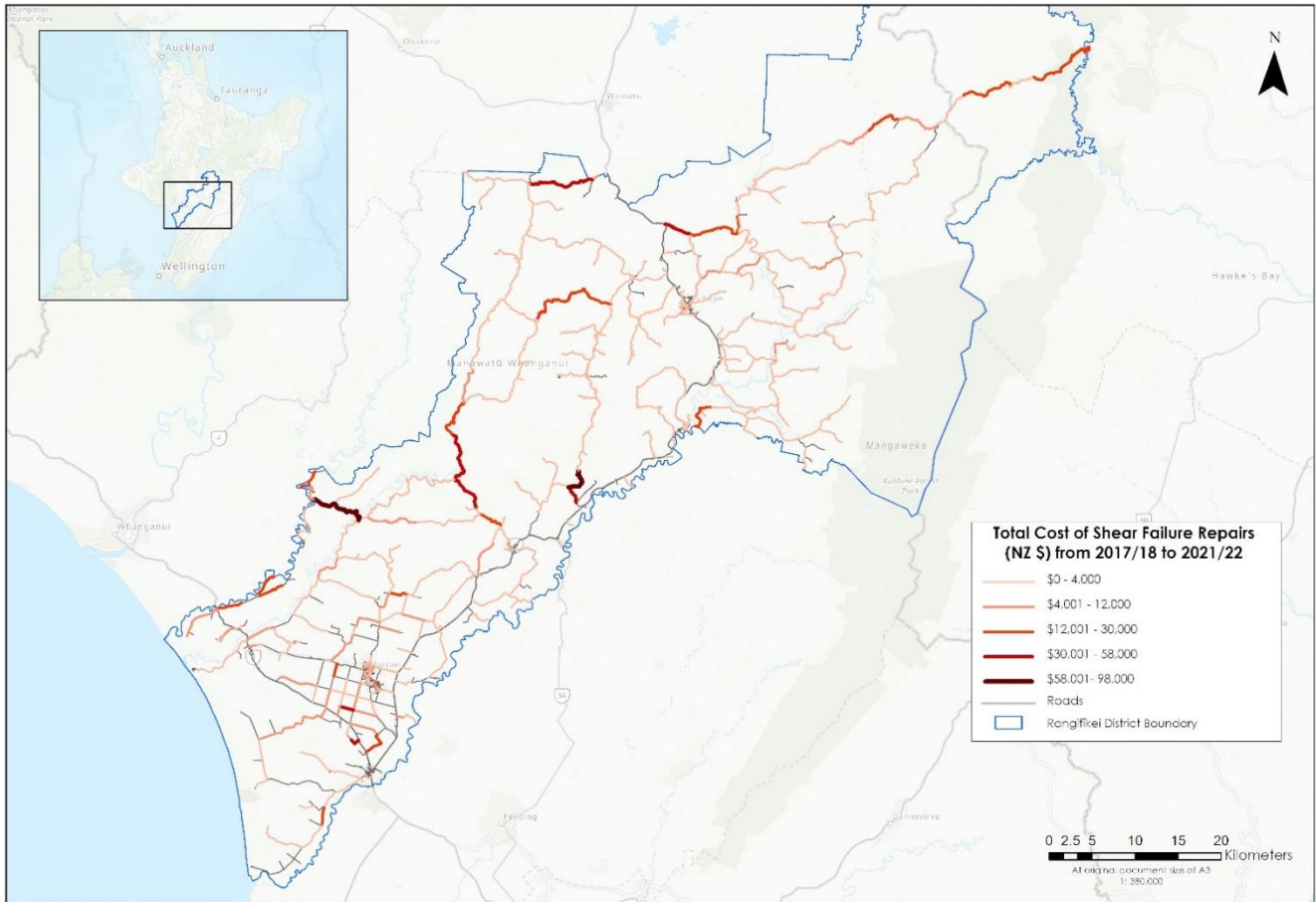


Figure 38: Location of spend on shear failure across the network between 2017 – 2022.

Table 12 shows the roads likely to require future maintenance interventions i.e. those with pavement condition concerns which have a correlated high spend on deformations and depressions, and shear failure of any activity over \$50,000. Mangatipona Road showed spend of over \$100,000 for both depressions and shear failure.

Table 12: High maintenance spend on aggregate loss, depression, and shear failure.

| Roads | Aggregate Loss (2017-2022) | Depression (2017 -2022) | Shear Failure (2017-2022) |
|------------------------|----------------------------|-------------------------|---------------------------|
| Pohonui Road | Y | | |
| Turakina Valley Road 4 | Y | | |
| Watershed Road | Y | Y | |
| Turakina Valley Road 2 | Y | | |
| Turakina Valley Road 3 | Y | Y | Y |
| Ohaumoko Road | Y | | |
| Mangatipona Road | | Y | Y |
| Taihape-Napier Road 2 | | Y | Y |
| Whales Line | | Y | |
| Ongo Road | | Y | |
| Waiaruhe Road | | Y | |
| Santoft Road | | | Y |
| Mangahoe Road | | | Y |

FUTURE PERFORMANCE

Table 13 shows the pavement condition for the potential forestry haul routes. The condition analysis was undertaken in 2018, as the most data was collected in this period within the last five years. The data shows that in general these routes are in good condition with a high percentage of the total length in good to acceptable condition. A focus on continued maintenance

of these roads will be required to help keep their condition good. Turakina Valley Road and Murimotu Road also appear to be worsening. This will need to be further investigated.

Table 13: Potential Forestry Route Condition – Rutting Depth

| LWP Maximum Rutting Depth for Road Lengths on Route | | | | | | |
|---|----------------------|------|------------|------|------|-----------|
| Classification | Roads | Good | Acceptable | Fair | Poor | Very Poor |
| Route 1 | | | | | | |
| Secondary Collector | Turakina Valley Road | 18% | 37% | 22% | 10% | 13% |
| Access | Mangahoe Road | 23% | 39% | 15% | 11% | 12% |
| Secondary Collector | Ongo Road | 21% | 48% | 17% | 8% | 5% |
| Route 2 | | | | | | |
| Secondary Collector | Turakina Valley Road | 18% | 37% | 22% | 10% | 13% |
| Access | James Road | - | - | - | - | - |
| Secondary Collector | Ongo Road | 21% | 48% | 17% | 8% | 5% |
| Route 3 | | | | | | |
| Access | West Road | - | - | - | - | - |
| Access | Murimotu Road | 17% | 35% | 25% | 11% | 12% |
| Route 4 | | | | | | |
| Low Volume | Watershed Road | - | - | - | - | - |
| Access | Kie Kie Road | 23% | 36% | 19% | 12% | 9% |
| Route 5 | | | | | | |
| Access | Forest Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 27% | 40% | 18% | 8% | 8% |
| Route 6 | | | | | | |
| Access | Beamish Road | - | - | - | - | - |
| Secondary Collector | Santoft Road | 29% | 35% | 19% | 11% | 7% |
| Route 7 | | | | | | |
| Low Volume | Sandridge Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 27% | 40% | 18% | 8% | 8% |
| Route 8 | | | | | | |
| Secondary Collector | Santoft Road | 29% | 35% | 19% | 11% | 7% |
| Route 9 | | | | | | |
| Low Volume | Agnews Road | - | - | - | - | - |
| Access | Murimotu Road | 17% | 35% | 25% | 11% | 12% |
| Route 10 | | | | | | |
| Secondary Collector | Brandon Hall Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 27% | 40% | 18% | 8% | 8% |
| Route 11 | | | | | | |
| Secondary Collector | Turakina Beach Road | 19% | 35% | 25% | 7% | 14% |

Table 14: Potential Forestry Route Condition – Roughness

| NAASRA Roughness for Road Lengths on Route | | | | | | |
|--|----------------------|------|------------|------|------|-----------|
| Classification | Roads | Good | Acceptable | Fair | Poor | Very Poor |
| Route 1 | | | | | | |
| Secondary Collector | Turakina Valley Road | 55% | 22% | 8% | 8% | 7% |

| | | | | | | |
|---------------------|----------------------|-----|-----|-----|-----|-----|
| Access | Mangahoe Road | 66% | 14% | 6% | 6% | 7% |
| Secondary Collector | Ongo Road | 55% | 23% | 9% | 7% | 7% |
| Route 2 | | | | | | |
| Secondary Collector | Turakina Valley Road | 55% | 22% | 8% | 8% | 7% |
| Access | James Road | - | - | - | - | - |
| Secondary Collector | Ongo Road | 55% | 23% | 9% | 7% | 7% |
| Route 3 | | | | | | |
| Access | West Road | - | - | - | - | - |
| Access | Murimotu Road | 38% | 30% | 12% | 10% | 9% |
| Route 4 | | | | | | |
| Low Volume | Watershed Road | 28% | 30% | 16% | 13% | 13% |
| Access | Kie Kie Road | 43% | 38% | 10% | 5% | 3% |
| Route 5 | | | | | | |
| Access | Forest Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 71% | 19% | 5% | 3% | 2% |
| Route 6 | | | | | | |
| Access | Beamish Road | - | - | - | - | - |
| Secondary Collector | Santoft Road | 62% | 25% | 6% | 5% | 2% |
| Route 7 | | | | | | |
| Low Volume | Sandridge Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 71% | 19% | 5% | 3% | 2% |
| Route 8 | | | | | | |
| Secondary Collector | Santoft Road | 62% | 25% | 6% | 5% | 2% |
| Route 9 | | | | | | |
| Low Volume | Agnews Road | 0% | 24% | 29% | 29% | 18% |
| Access | Murimotu Road | 38% | 30% | 12% | 10% | 9% |
| Route 10 | | | | | | |
| Secondary Collector | Brandon Hall Road | - | - | - | - | - |
| Secondary Collector | Parewanui Road | 71% | 19% | 5% | 3% | 2% |
| Route 11 | | | | | | |
| Secondary Collector | Turakina Beach Road | 71% | 16% | 5% | 4% | 4% |

The tables below show the length of the potential haul roads considered to be in very poor condition. Both 2018 and 2022 data were assessed, with 2018 being the most complete data and 2022 being the most recent.

Table 15 below shows the haul roads and district roads (with longest lengths of underperforming pavement) and corresponding lengths categorised as 'very poor' relating to roughness i.e., NAASRA values over 150, surveyed in 2018. Note that not all haul roads were in this condition, hence their exclusion. In 2018, potential haul roads Ongo Road, Mangahoe Road, and Turakina Valley Road were also amongst these roads requiring the most roughness treatment.

Table 15: Very poor roughness condition on haul routes and other roads by length in 2018

| Haul Routes | Length considered 'Very Poor' (m) in 2018 | Top 10 Roads | Length considered 'Very Poor' (m) in 2018 |
|----------------------|---|----------------------|---|
| Turakina Valley Road | 5042 | Taihape-Napier Road | 5500 |
| Mangahoe Road | 4600 | Turakina Valley Road | 5042 |
| Ongo Road | 1620 | Mangahoe Road | 4600 |
| Murimotu Road | 1300 | Otuarei Road | 2820 |
| Watershed Road | 860 | Okirae Road | 2000 |
| Kie Kie Road | 360 | Papakai Road | 1960 |
| Parewanui road | 820 | Spooners Hill Road | 1640 |
| Santoft Road | 720 | Toe Toe Road | 1620 |
| Agnews Road | 120 | Ongo road | 1620 |
| Turakina Beach Road | 620 | Makuhou Road | 1360 |

Table 16 shows very poor roughness as surveyed in 2022 on the haul roads and district roads (with longest lengths of underperforming pavement). Very poor roughness on the haul roads has dropped compared to 2018, although this is likely due to fewer roads surveyed.

Results for district roads also show an improvement in condition, likely due to the same reason. Makuhou Road, Papakai Road, and Turakina Valley Road remain among the worst ten, as they were in 2018. The length of very poor roughness increased on both Makuhou Road and Papakai Road in 2022. Turakina Valley Road, the only haul road in the ten, reduced, however there is still a large section of the road performing unacceptably.

Table 16: Very poor roughness condition on haul routes and other roads by length in 2022

| Haul Routes | Length considered 'Very Poor' (m) in 2022 | Roads with the longest sections considered 'Very Poor' in 2022 | Length considered 'Very Poor' (m) in 2022 |
|----------------------|---|--|---|
| Turakina Valley Road | 2516 | Koeke Road | 4460 |
| Mangahoe Road | 40 | Ruanui Road | 4120 |
| Murimotu Road | 40 | Tiriraukawa Road | 2700 |
| Forest Road | 220 | Turakina Valley Road | 2516 |
| Parewanui Road | 360 | Papakai Road | 2020 |
| Beamish Road | 80 | Ruru Road | 1960 |
| Santoft Road | 820 | Makuhou Road | 1660 |
| Sandridge Road | 40 | Torere Road | 1260 |
| Agnews Road | 120 | Gorge Road | 1188 |
| Brandon Hall Road | 20 | Omatane South Road | 1160 |

Table 17 below shows the haul roads and corresponding lengths categorised as 'very poor' relating to rutting i.e., rutting depth > 20mm, surveyed in 2018. Turakina Valley Road is in the top ten for very poor rutting. Three other haul roads, Turakina Beach Road, Parewanui Road, and Mangahoe Road, were also identified as being among the worst across the district.

Table 17: Very poor rutting condition on haul routes and other roads by length in 2018

| Haul routes | Length (very poor) | Road name | Length (very poor) |
|----------------------|--------------------|----------------------|--------------------|
| Turakina Valley Road | 6480 | Turakina Valley Road | 6480 |
| Mangahoe Road | 3620 | Taihape-Napier Road | 5540 |
| Ongo Road | 1180 | Pungatawa Road | 3800 |

| | | | |
|---------------------|------|---------------------|------|
| Murimotu Road | 1660 | Torere Road | 3680 |
| Kie Kie Road | 960 | Mangahoe Road | 3620 |
| Parewanui Road | 3200 | Tiriraukawa Road | 3500 |
| Santoft Road | 1940 | Ruanui Road | 3360 |
| Turakina Beach Road | 2180 | Parewanui Road | 3200 |
| | | Spooners Hill Road | 2380 |
| | | Turakina Beach Road | 2180 |

As shown in Table 18, Turakina Valley Road and Santoft Road still appear to have a significant rutting problem in 2022. Four of the ten worst roads in 2018 remain in the worst 10 in 2022 (acknowledging more of the network was surveyed in 2018). Turakina Valley Road and Santoft Road are particularly susceptible to further rutting damage as they form part of several haul routes.

Table 18: Very poor rutting condition on haul routes and other by length in 2022

| Haul routes | Length (very poor) | Road name | Length (very poor) |
|----------------------|--------------------|----------------------|--------------------|
| Turakina Valley Road | 2292 | Ruanui Road | 3220 |
| Forest Road | 280 | Koeke Road | 3220 |
| Parewanui Road | 580 | Torere Road | 2980 |
| Beamish Road | 140 | Turakina Valley Road | 2292 |
| Santoft Road | 1000 | Kawhatau Valley Road | 1800 |
| Sandridge Road | 80 | Tiriraukawa Road | 1560 |
| Agnews Road | 140 | Makuhou Road | 1240 |
| Brandon Hall Road | 40 | Santoft Road | 1000 |
| | | Papakai Road | 980 |
| | | Omatane South Road | 900 |

In addition, haul routes have been checked against the maintenance spend over the past 5 years, the data showed that Watershed Road, Santoft Road and Kie Kie Road have all been identified to have high depression, deformation and shear failure spend and Mangahoe Road, a high deformation spend, this can be seen from the listed Table 10.

INVESTMENT BENEFITS

RDCs 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 GPS 2024. In addition, this investment will align with achieving the mobility and accessibility level of service criteria.

CONSEQUENCE OF REDUCED INVESTMENT

Overall, the road network is in good condition; with some sections of Access, Low Volume and Secondary Collector roads performing unacceptably – requiring additional attention immediately. Ongoing road maintenance is essential to preserve the road asset, protect user safety, and provide efficient and convenient travel along the route. If maintenance is neglected or improperly performed there will be a deterioration of the road and eventual failure from both climatic and vehicle-use impacts.

Heavy vehicles are a major cause of pavement damage, particularly shear failure. The pavement damage attributable to a specific vehicle depends on several factors including the weight and axle configuration of the vehicle, and the design of the roadway. The potential haul routes currently operate at an acceptable level with majority considered to be good to fair in regard to rutting and roughness. Routine maintenance along these routes will help prevent the road performance from deteriorating because of forestry harvesting.

Based on analysis, the following haul routes should be further investigated prior to when major harvesting begins in Rangitikei

to identify whether they need to be fortified:

- Turakina Valley Road
- Mangahoe Road
- Murimotu Road
- Santoft Road

In addition to the above haul roads, the analysis highlighted the following problematic roads which should also be investigated:

- Primary Collectors (high expenditure, forming only 10% of the network)
- Makuhou Road
- Papakai Road

If the investment was reduced, the pavement condition would be a more patched and rougher, with the network likely to degrade further, particularly on Access and Low Volume roads. With these road classifications making up the majority of the network, decreasing performance would likely reduce network safety, lower travel speeds, and have economic impacts, as well as attract increased complaints from the community and negative media coverage.

STRATEGIC RESPONSE

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

Non-fiscal

- Communicate to the public 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

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

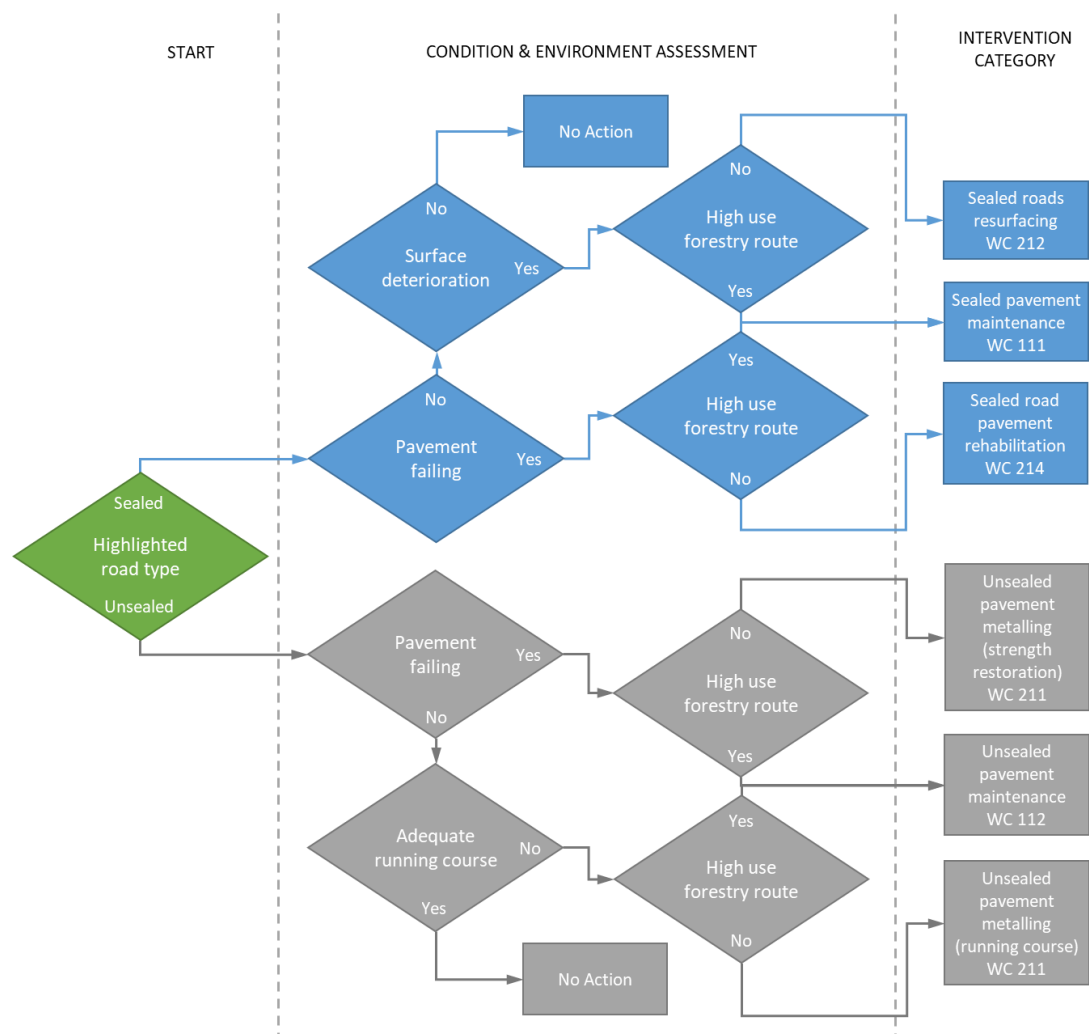


Figure 39: INTERVENTION WORKFLOW, MANAGEMENT OF PAVEMENT AND SURFACES

Table 19: Strategic Response, Problem 1: Legacy network

| Issue | 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% (2,130,000 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 | 40% |
| | | 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 | |

10.2 Problem 2: Low Network Resilience

The Manawatū-Whanganui region (encompassing the Rangitīkei District) is susceptible to increasingly severe climatic events resulting in significant reactive expenditure at a relatively limited number of locations and increased road safety risks. Expenditure at these sites is impacting on the budgets available for other proactive maintenance interventions.

CLIMATE CHANGE

Figure 40 shows the primary climate change impacts for the Nation and Rangitīkei (inset).

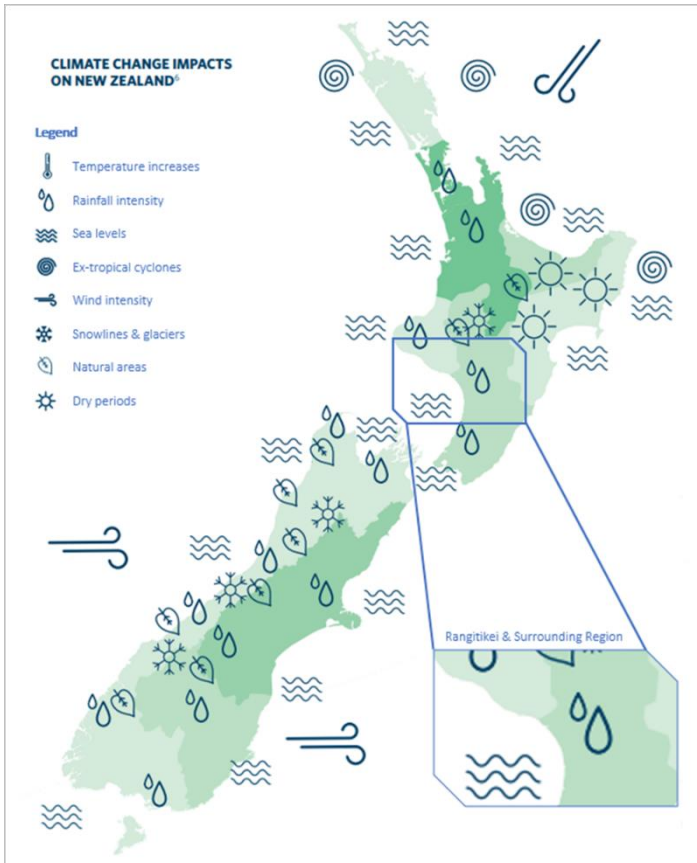


Figure 40: Climatic change impact Map of New Zealand (source: Arataki, NZTA)

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
 - Increased soil erosion
- Sea level change, leading to:
 - Increased storm surges:
 - Coastal inundation.
 - Increased coastal erosion.

Accurate climate change data for the Rangitikei District has been difficult to find, therefore as a proxy RAMM cost data has been used to understand spend on maintenance relating to natural events. The environmental cost category represents the second highest maintenance cost on the network, as seen in Figure 41.

5 YEAR MAINTENANCE 2017/18 TO 2020/21

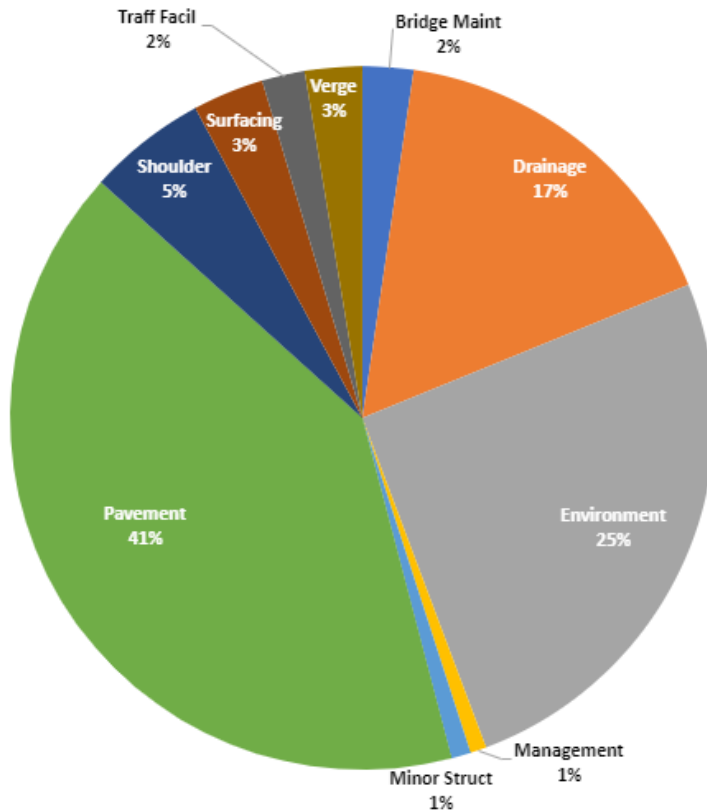


Figure 41: Maintenance cost breakdown, 2017/18-2021/22

LANDSLIDES

Further investigations into the maintenance cost revealed that over the past 5 years, landslips amounted to 66% of total environmental maintenance spend and has been the highest spend item year on year between 2017 and 2022 (except for the 2019/20 period, during which the high expenditure related to weather). Figure 42 shows that over the last 5 years the cost under the environmental cost group was predominately related to landslips.

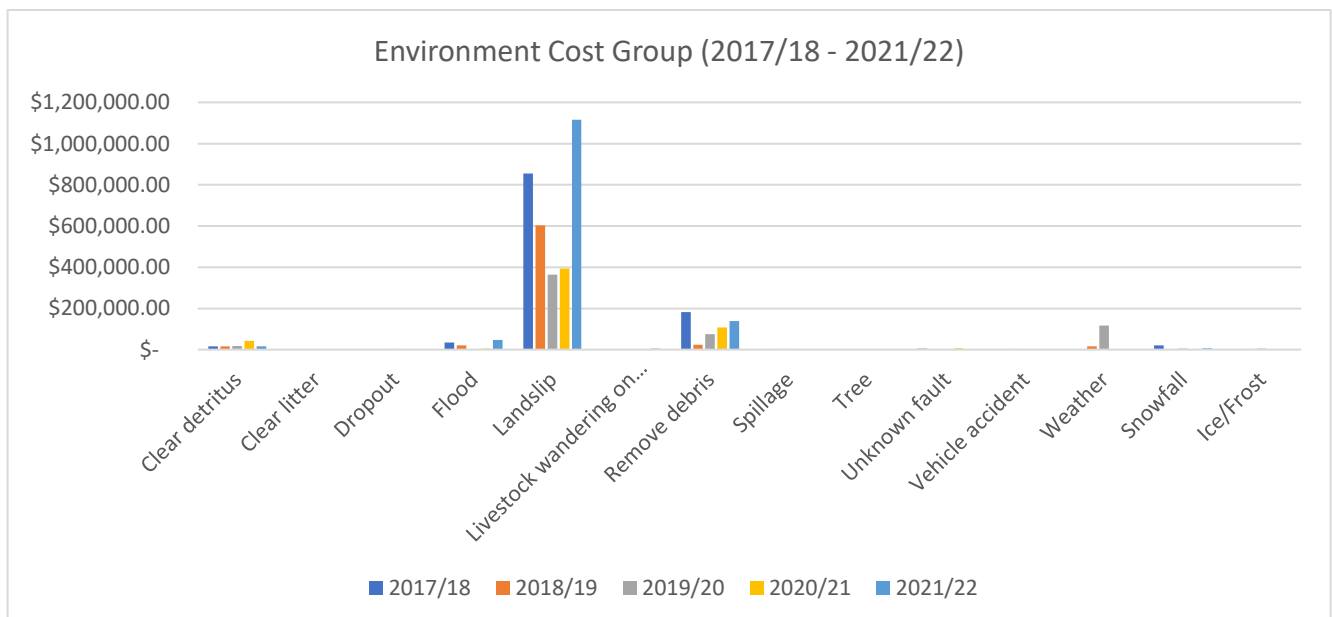


Figure 42: RAMM maintenance cost for Environmental Cost Group

Table 20 shows the roads on the network with the highest expenditure²⁷, all of which are either Access or Low Volume roads.

Table 20: Top ten highest-spend corridors for landslide maintenance between 2017-2022

| Row Labels | Access | Low Volume | Secondary Collector |
|----------------------------|--------------|--------------|---------------------|
| Turakina Valley Road 3 | \$97,190.51 | \$202,725.06 | \$180,649.56 |
| Turakina Valley Road 2 | \$118,093.37 | \$109,928.27 | |
| Watershed Road | | \$197,775.96 | |
| Upper Kawhatau Valley Road | \$90,398.41 | \$72,006.00 | |
| Kawhatau Valley Road | \$150,469.93 | | |
| Mt Curl Road | | \$137,425.09 | |
| Okirae Road | | \$129,867.40 | |
| Otuarei Road | \$108,807.67 | | |

Two individual roads, Turakina Valley Road (21%) contribute to almost a quarter of the expenditure associated with landslide maintenance which accounts for 77% of the environmental cost group spend.

Given the frequency of landslide treatment as shown in Table 21, it is likely that exposure to increased personal road safety risk exists along these routes. Closer inspection of these roads also reveals little in the way of road protection measures, hence potentially serious consequences such as road users encountering landslips or landslide debris.

Table 21: Number of landslip events (based on spend) between 2017 and 2022.

| Roads | No of landslip events (based on spend) |
|----------------------------|--|
| Turakina Valley Road 3 | 1209 |
| Turakina Valley Road 2 | 694 |
| Watershed Road | 656 |
| Pohonui Road | 296 |
| Potaka Road | 258 |
| Kawhatau Valley Road | 255 |
| Mangahoe Road | 230 |
| Upper Kawhatau Valley Road | 222 |
| Manui Road | 219 |

Figure 43 and Figure 44 show typical sections of Turakina Valley Road and Watershed Road (respectively) that are vulnerable to landslides encroaching on the road corridor. Note the obscured delineation and lack of roadside protection.

²⁷ Several of the roads in the table are also those identified as have pavement issues.



Figure 43 : Turakina Valley Road



Figure 44: Watershed Road

The geographic location of these roads is shown in Figure 45. Mt Curl Road and Okirae Road in the top right-hand corner of this map clearly stand out as areas of high investment. Other individual locations can also be identified from this plan.

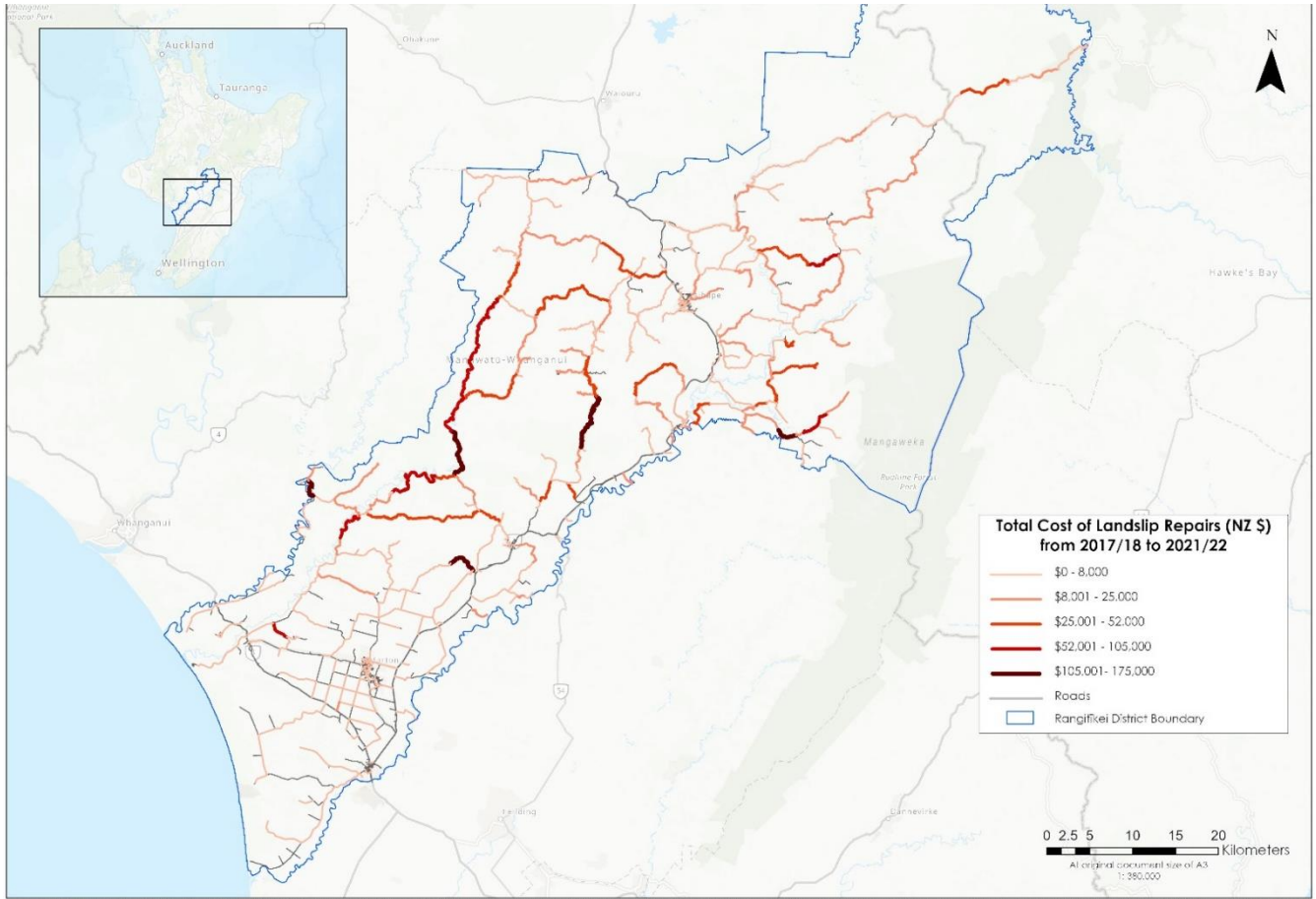


Figure 45: Five-year average maintenance spend on the environmental cost group by road type

Investing in safety improvements such as edge barriers or focused geotechnical improvements, such as slope stability treatments should be investigated and tested against the ongoing maintenance costs associated with some of these individual sites. If suitable alternative routes are present, retirement of these roads could be considered.

DRAINAGE

Maintenance spend on drainage activities, the third largest cost group, has been analysed to identify drainage concerns on the network. The analysis shows that between 2017/2018 and 2021/2022, the highest costs relating to drainage infrastructure were associated with drain clearance, and new culvert construction, refer Figure 46. If reoccurring sites are requiring clearance this may indicate the need for drainage improvements at these locations.

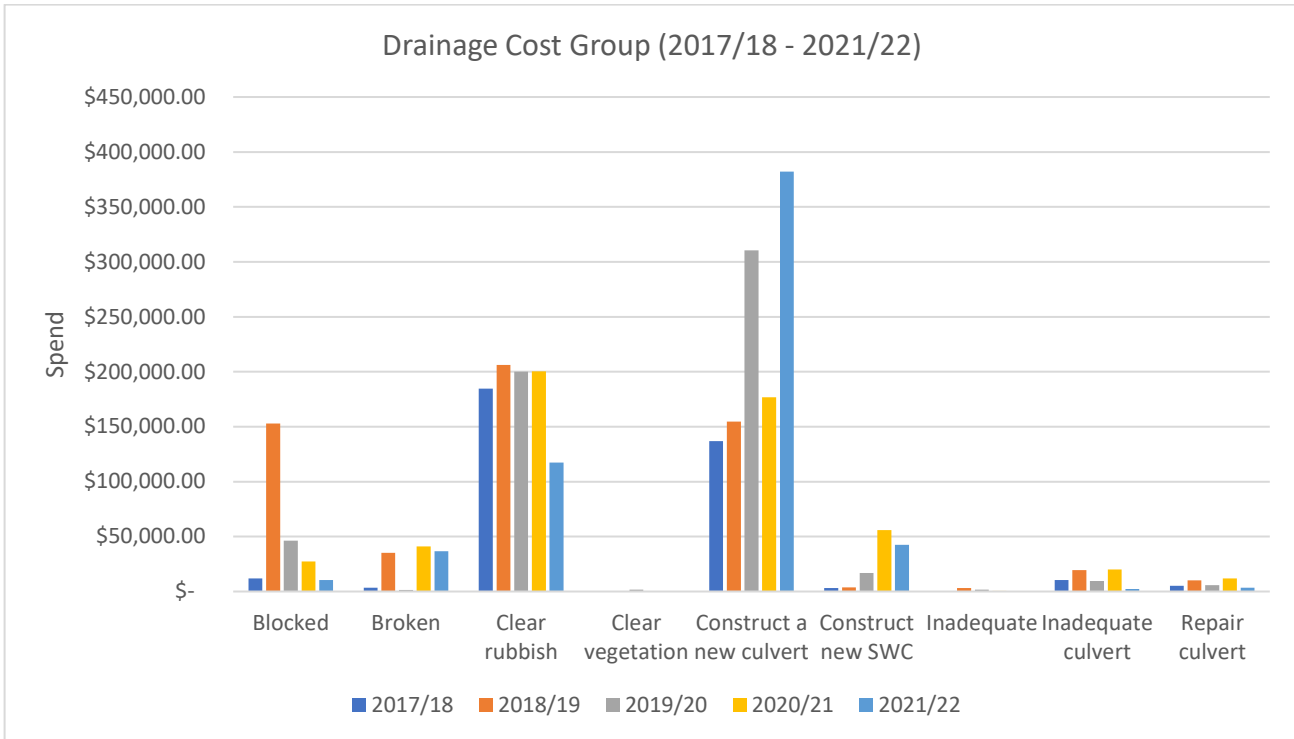


Figure 46: RAMM maintenance cost for Drainage Cost Group

Drainage (17%) is the third largest cost group after Pavement (41%), and Environment (25%), Figure 46 shows that culvert construction (42%) and rubbish removal (33%) are the two highest spend categories for this activity.

Table 22 shows the roads with the highest spend on rubbish clearing rubbish between 2017 -2022. The data shows that Pohonui Road had the highest total spend over the past few years, however, on average, these costs seem reasonable across the network.

Table 22: Top ten highest-spend corridors for drainage maintenance between 2017-2022

| Row Labels | Access | Low Volume | Primary Collector | Secondary Collector |
|------------------------|--------|------------|-------------------|---------------------|
| Pohonui Road | | 180,094 | | |
| Turakina Valley Road 2 | 70,490 | 26,623 | | |
| Parewanui Road | 1,279 | | 67,169 | 5,413 |
| Watershed Road | | 70,934 | | |
| Rangatahi Street | 65,836 | 3,782 | | |
| Feltham Street | | 68,996 | | |
| Kie Kie Road | 68,060 | | | |
| Wanganui Road | | | 66,632 | |
| Makopua Road | | 54,194 | | |
| Santoft Road | 4,557 | | | 48,239 |

INVESTMENT BENEFITS

Several roads around the Rangitīkei connect the forestry industry to the local, national and international markets. Addressing the identified issues on the network will deliver on the priorities defined in the GPS 2024 as well as achieve the amenity, mobility and accessibility level of service criteria.

CONSEQUENCE OF REDUCED INVESTMENT

The number of landslides on the network is high, with some of the more vulnerable roads not having an alternative route. This is creating a heavy burden on the Council, with a large portion of the maintenance budgets associated with reactive maintenance at a relatively small number of locations. In addition to Turakina Valley Road and Watershed Road, the roads

highlighted in dark red on Figure 45 should be further investigated, with the purpose of identifying whether increased short-term investment will reduce whole of life costs at these sites.

With increasing climate change impacts there is 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, increased safety concerns, reduced access, and the associated detrimental effect on the economy.

STRATEGIC RESPONSE

- Continue to develop operational systems, capabilities, and immediate action plans
- Identify risks and reduce magnitude of their impact and likelihood of occurring
- Minimise the consequence to customers and the likelihood of unplanned events on route availability

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

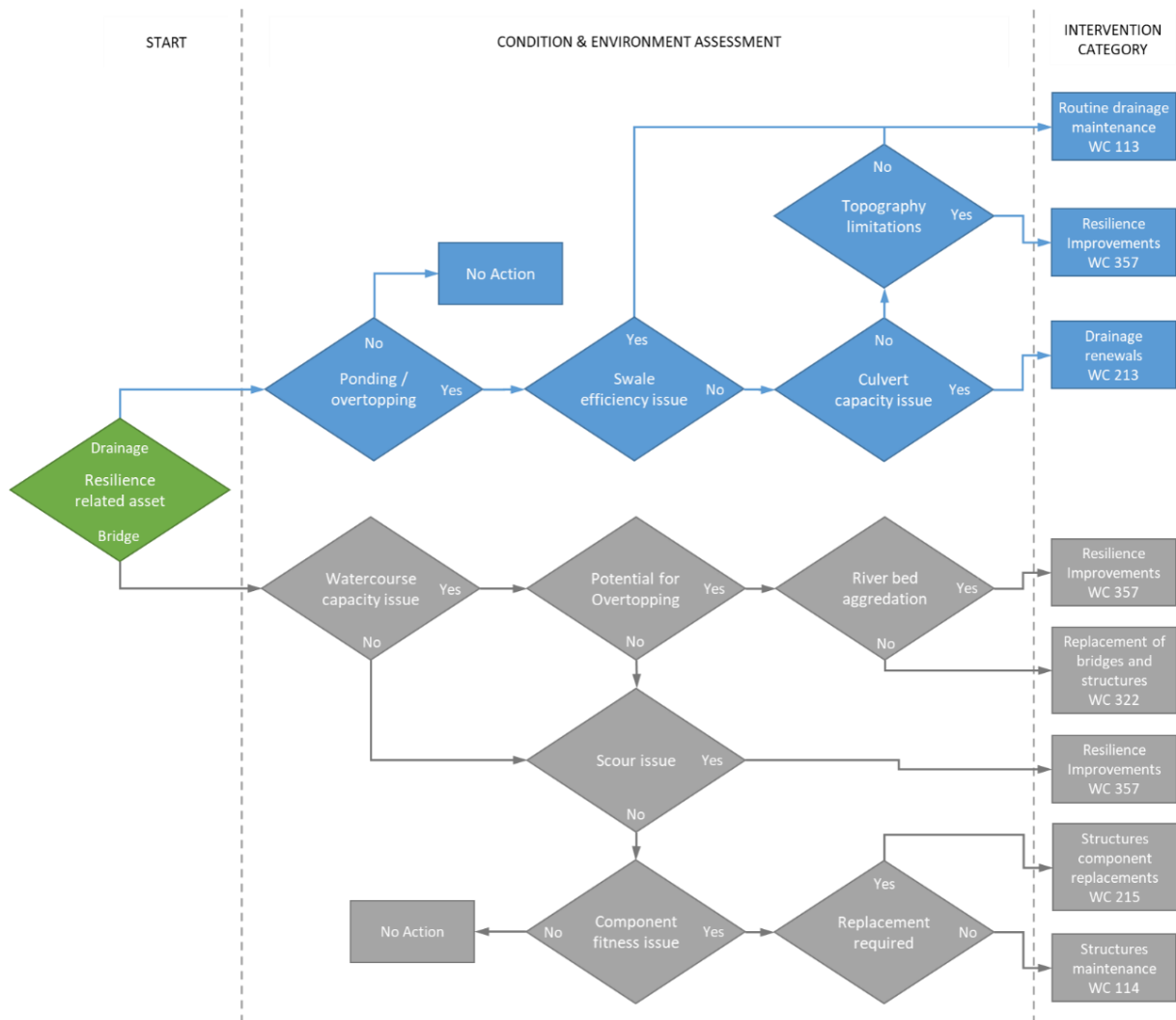


Figure 47: INTERVENTION WORKFLOW, MANAGEMENT OF DRAINAGE AND STRUCTURAL ASSETS

Table 23: Strategic Response, Problem 2: Low network resilience

| Issue | Findings / Status | Strategic Response | Priority | Focus |
|-------|-------------------|--------------------|----------|-------|
|-------|-------------------|--------------------|----------|-------|

| | | | | |
|--------------------|---|--|--------|-----|
| Network resilience | Increasing frequency and severity of storm events are causing disruption to travel reliability and increasing Emergency Reinstatement costs | Replace compromised / missing bridge structures to reinstate network connectivity | HIGH | 40% |
| | | Focus routine drainage maintenance and renewals programmes to mitigate road closures to vulnerable portion(s) of the network | HIGH | |
| | | Maintain bridge renewals and component replacement programmes to maintain capacity and route availability | MEDIUM | |

10.3 Problem 3: Safety

There are a high numbers of injury crashes on roads in Rangitikei which is resulting in safety concerns for users.

There are an increasing number of injury crashes on roads in the Rangitikei District. In the latest five-year period, there were 337 injury crashes compared to 268 in the five years prior to that. The two years with the highest number of recorded injury crashes since 2000 were 2019 and 2022.

SAFETY METRICS

Waka Kotahi provides a tool called MegaMaps that allows us to compare safety metrics in the Rangitikei District to other areas in the country. The latest Road to Zero Edition of MegaMaps has a focus on safe and appropriate speeds. Figure 48 below highlights the corridors where the greatest benefit could be achieved by lowering the speed limit. Within Rangitikei these roads are almost entirely state highways.

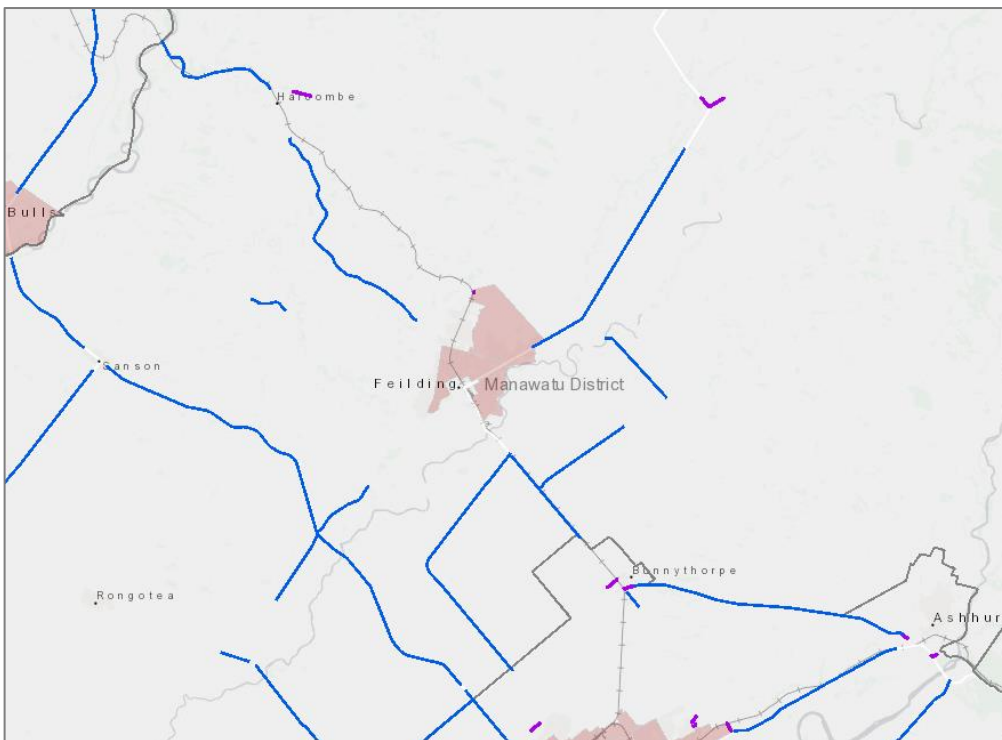


Figure 48: MegaMaps High Benefit Corridors

MegaMaps also shows the performance of the network via the Collective and Personal risk. Collective risk is a measure of the total estimated DSI casualty equivalents per km for a road segment. It is effectively a measure of the number of deaths and serious injuries per km that can be expected on a road segment over the next five years. Figure 49 shows the latest MegaMaps output.

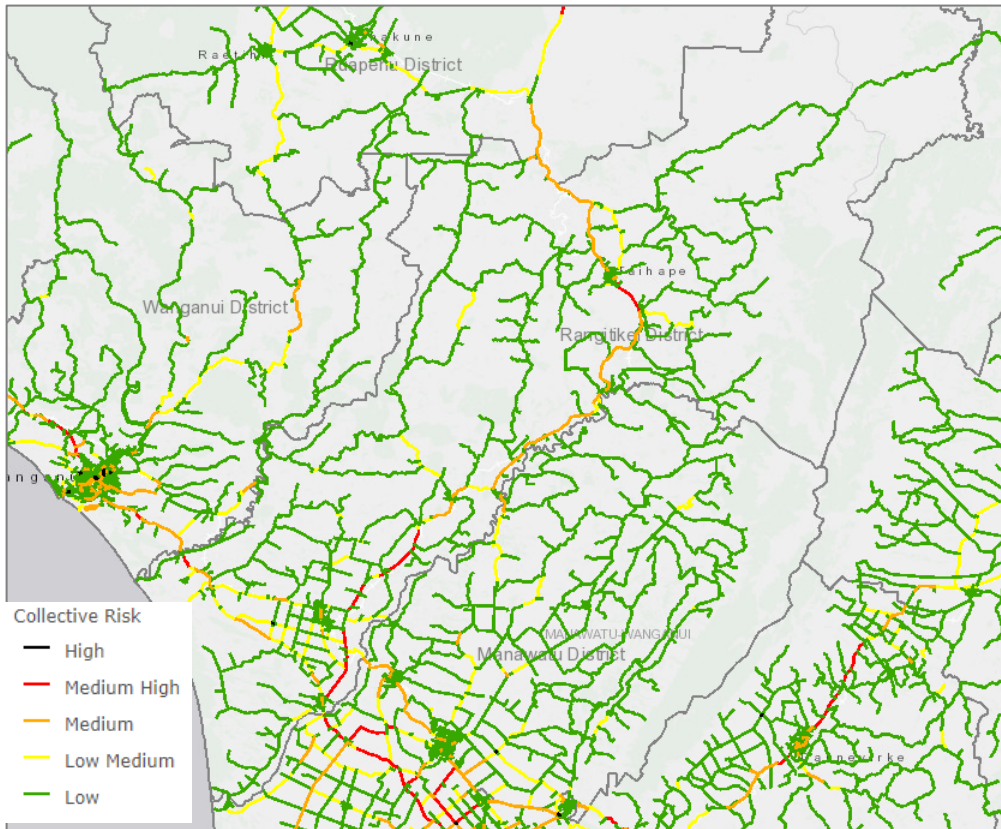


Figure 49: MegaMaps Collective Risk

Personal Risk is a measure of the risk of an individual dying or being seriously injured on a road corridor. It is calculated by dividing the Collective risk by traffic volume exposure, Figure 50 shows that this results in some local roads considered to be high risk.

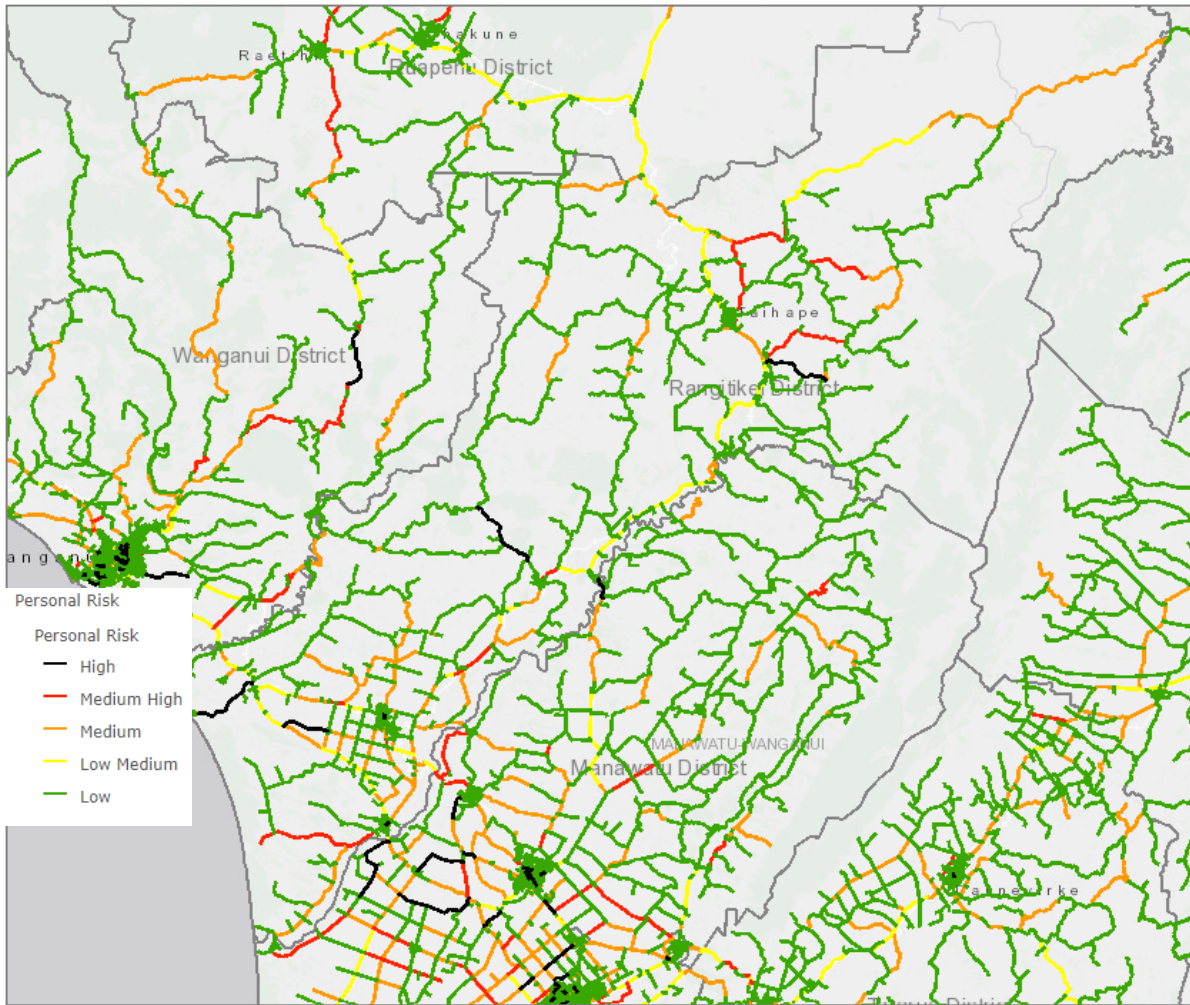


Figure 50: MegaMaps Personal Risk

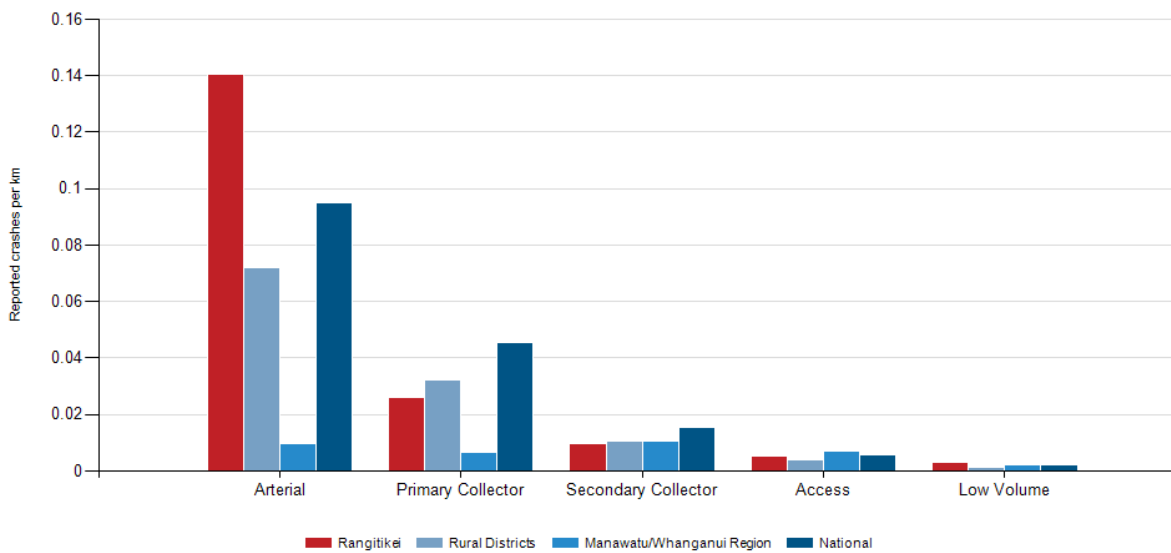


Figure 51: Collective Risk: total number of reported crashes per kilometre over the past 10 years on the network (year 2021/22)

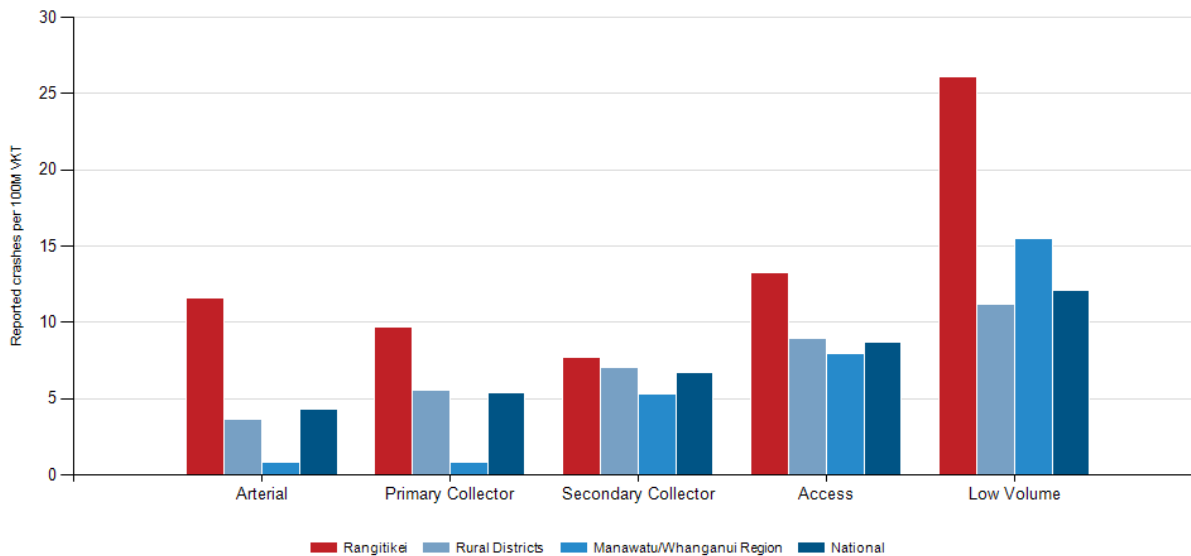


Figure 52: Personal Risk: total number of reported crashes by traffic volume over the past 10 years on the network (year 2021/22)

Figure 51 and Figure 52 show the Collective and Personal Risk across the network over the past ten years to 2021/22, compared to peers and beyond. Historically, Collective Risk on Arterials has been notably higher than other rural districts, but comparable on other road types. Personal Risk however has consistently been higher in Rangitikei compared to its peers, the wider region, and the country. This is especially true for Low Volume roads and could be linked to the large volume of this type of road on the network.

CAS

There are an increasing number of injury crashes on roads in the Rangitikei District. In the latest five-year period, there were 337 injury crashes compared to 268 in the five years prior to that. The two years with the highest number of recorded injury crashes since 2000 were 2019 and 2022.

Road to Zero focuses on a reduction in deaths and serious injuries (DSI) on our roads. Over the last ten years an average of 18 people per year have been killed or seriously injured on our roads in the district however last year it was 24, second only to the 27 in 2019 so nearly one every two weeks.

Just over half of the injury crashes in the last five years occurred on the state highway network, however seven people died and 40 people received serious injuries on the local road network. Figure 53 shows the location of all DSI crashes on local roads in that five-year period.

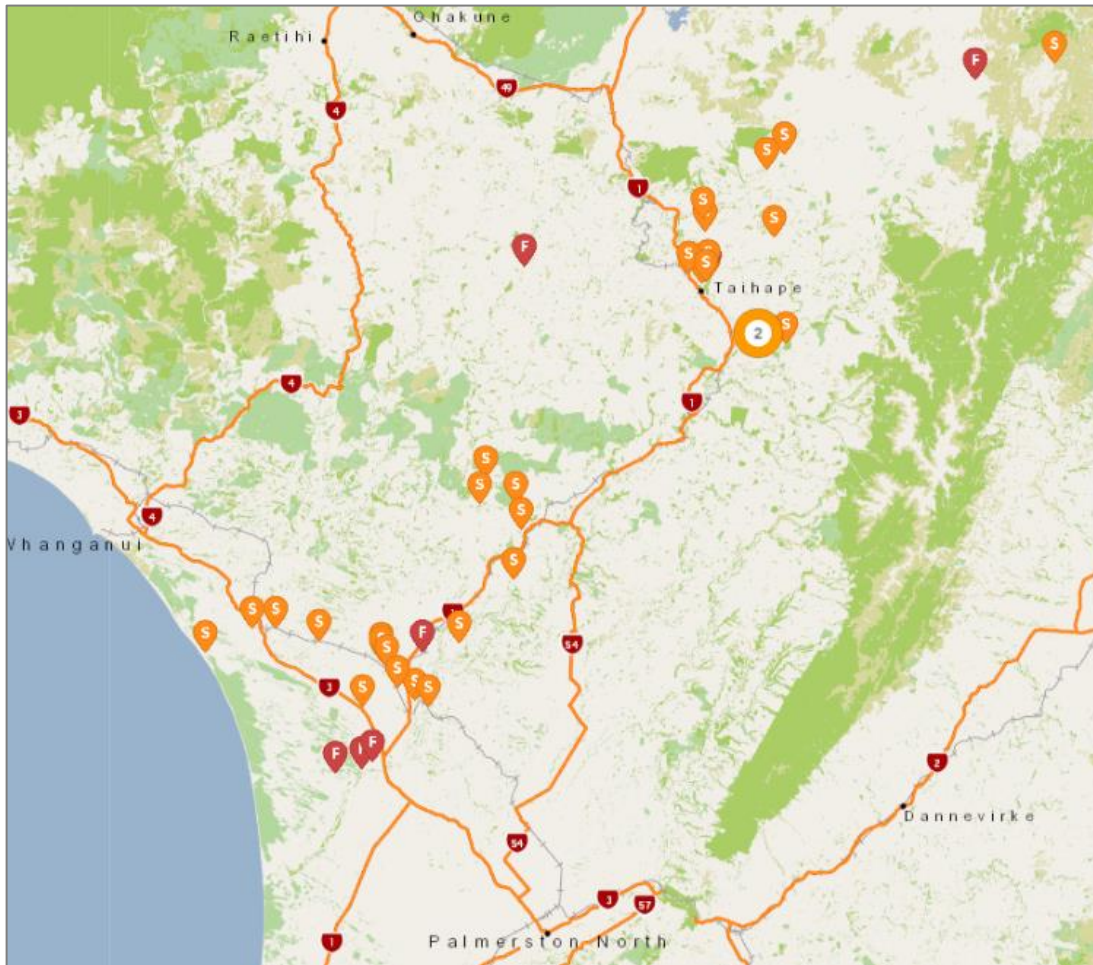


Figure 53: Death and serious injury crashes (DSI) 2018 to 2022 on local road network

Two thirds of the injury crashes on local roads took place on roads with speed limits greater than 70km/h, reflecting the rural nature of the network. Higher speeds result in higher severity crashes which is shown by the fact that all the fatal crashes and three quarters of the serious injury crashes in the last five years occurred on rural roads.

There were 99 crashes on rural local roads that resulted in injury over the last five years. Nearly one quarter of these occurred when the road was wet. The quality of the road surface is a factor in wet road crashes due to the reduced skid resistance when braking and steering. This is borne out by the fact that nine out of ten of these wet road crashes were single vehicle loss of control crashes. Nearly 40% of all injury crashes occurred at night with a high proportion again being single vehicle of the loss of control type.

One quarter of the DSI crashes on rural roads involved motorcycles. Across the district 23% of those killed or seriously injured in the last five years were motorcycle riders.

Of the 45 injury crashes on urban roads, eight resulted in serious injuries. These were a mix of crash types and included two pedestrians being hit by vehicles, one deliberately, in Marton and in Taihape. The majority of urban crashes do occur in Marton, accounting for 31 of the 45 in the last five years. Seven crashes were recorded in Taihape and two in Bulls.

Based on the 2018-2022 CAS data there are three local roads that are particularly concerning: Spooners Hill Road, Whanganui Road, and Wellington Road with the latter being shown in Figure 54. These three roads accounted for almost 30% of local injury crashes in RDC within this period.

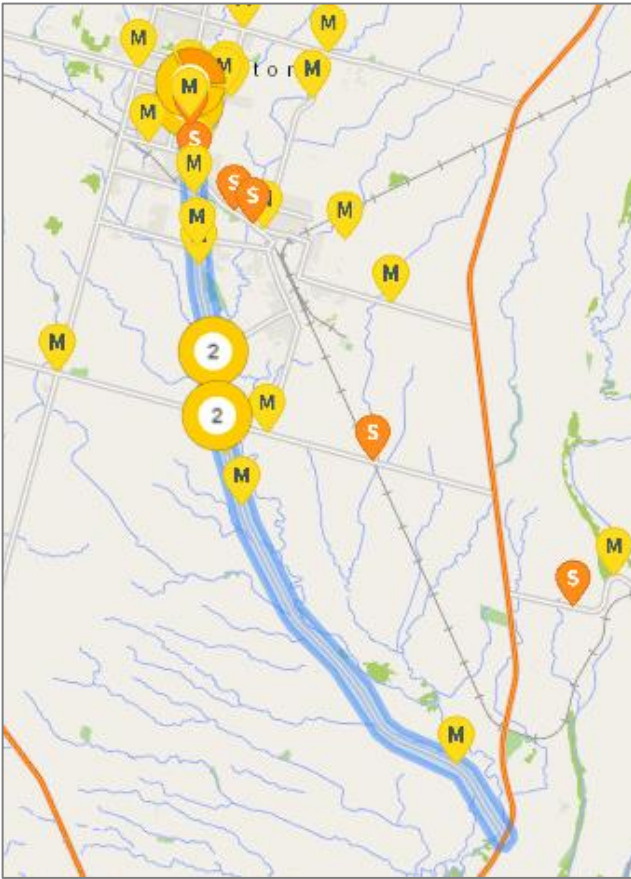


Figure 54: Five-year CAS data for Wellington Road from Marton to State Highway 1

GENERAL CRASH RATE TREND

It is noted that there are more crashes in the latest five-year period than in the period prior. Within this five-year period, several patterns can be seen.

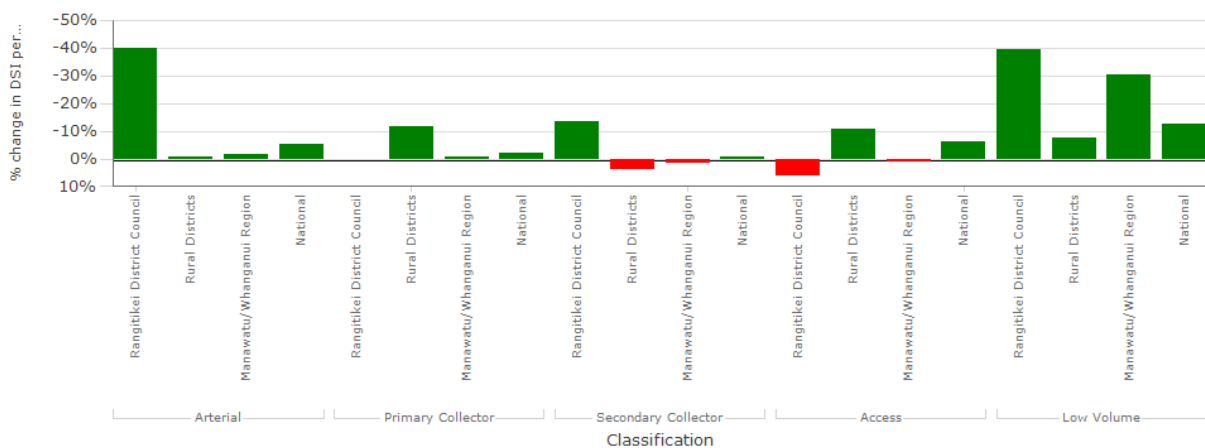
For rural crashes, loss of control on bends will always be the most common crash type. Of the 144 injury crashes on local roads within Rangitikei, approximately 50% were of this type. The number of these crashes dipped in 2020 in line with the Covid-19 pandemic, however increased again in 2021. In 2022, these crashes appeared to be on a downward trend. Straight road loss of control / head-on was the second most common injury crash type, accounting for approximately 24% of collisions between 2018 and 2022. This crash type peaked in 2021. Note that in 2022, loss of control crashes on straight roads was the most common type on local roads, unlike previous years where these usually occurred on bends. Other crash types have remained relatively low.

Loss of control crashes dominated across the district, including State Highways, reflecting local crash trends. Further, majority of injury crashes within Rangitikei occurred during the day, at 60%. Approximately 77% of these crashes happened in dry conditions, and usually along midblock sections. Alcohol was suspected to be a factor in 35% of injury crashes.

Most vulnerable user crashes occurred on local roads on midblock sections, all of which resulted in injury including one fatal. Of the 12, ten involved pedestrians.

PEER GROUP COMPARISON

Figure 55 is a comparison of Rangitikei District Council with its peer groups, the region and nationally, it shows the trend in serious injuries and fatalities over the last five years as a percentage of the average. Worsening trends are shown in red, while improving trends are in green.



| Trend (Percentage of DSI per year) | Arterial | Primary Collector | Secondary Collector | Access | Low Volume |
|------------------------------------|----------------|-------------------|---------------------|----------------|----------------|
| Rangitikei District Council | -40.00% | 0.00% | -13.64% | 6.25% | -39.29% |
| Rural Districts | -0.91% | -11.89% | 3.80% | -10.70% | -7.50% |
| Manawatu/Whanganui Region | -1.60% | -0.53% | 1.70% | 1.02% | -30.23% |
| National | -5.26% | -2.14% | -0.74% | -6.36% | -12.43% |

Figure 55: Comparative trend in DSIs, 2017/18 - 2021/22

The figure shows that only Access roads within RDC’s jurisdiction have worsening DSIs when compared to other rural districts, the Manawātū-Whanganui region, and the national percentages. Contrarily, Arterials and Low Volume roads are significantly improving compared to the rest of the country. From a safety perspective, RDC roads are generally performing better than other rural districts, therefore Access roads should be the focus of safety improvements in the next funding period.

INVESTMENT BENEFITS

Investment in arterial roads on the network will improve safety for users in the district and will lead to RDC achieving better alignment with Road to Zero. In addition, investment would minimise the risk and consequences of crashes, resulting in:

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

This 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 and well as meet level of service requirements for safety.

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 individual(s).

Continuing the delivery of these programmes will aid in achieving the desired outcome of reducing deaths and serious injuries on our rural roads.

Where crashes occur and there are no obvious road factors, drivers are often blamed. Road to Zero looks at road safety from a different perspective and acknowledges that people are human and make mistakes, but also that these mistakes should not result in them being killed or seriously injured. While the ongoing investment in our maintenance programmes will result in a higher standard of road, crashes will continue to occur for a variety of reasons.

10.4 Summary

The key findings and conclusions from the problem and evidence gathering process are highlighted below:

- Pavements attributed to 41% of the total maintenance expenditure between 2017/18 and 2021/22. Environment and drainage also contributed significantly at 25% and 17% respectively.
- Within the pavements cost group, deformations, depressions, and shear failure faults were the costliest.
- Historically, RDC has focused on maintenance, while asset renewals have generally declined. This has implications for the future the network. Although it is currently in good condition, the amount of pavement maintenance occurring indicates a low-level service across the network.
- Turakina Valley Road is identified as a potential haul route. It is expected to transport a large portion of Rangitikei's harvest, particularly in the 2027 – 2030 period. Rutting and roughness on this road appears to be worsening as a significant portion of it is in the fair to very poor category. In 2022, both roughness and rutting were still a problem, putting Turakina Valley Road in the ten worst roads in the district.
- Agnews Road is one of three haul roads classified as Low Volume. It is expected that yield transported on this road will also spike between 2027 – 2030, although this is only 7% of the total yield, its Low Volume status might make it susceptible to pavement damage. Additionally, 2018 data suggests that its roughness condition is declining, with majority of the surveyed road considered fair to very poor.
- 2018 roughness and rutting data on Murimotu Road, another haul road, also showed a worsening condition with almost half of the surveyed section in the fair to very poor category.
- Makuhou Road and Papakai Road both appeared in the worst ten roads for roughness in 2018 and 2022. Further, despite less road surveyed in 2022, longer sections of both corridors were categorised as very poor compared to 2018. Makuhou Road and Papakai Road were also identified in the worst ten for rutting in the district in 2022.
- Rutting data for Ruanui Road, Tiriraukawa Road, and Torere Road revealed these roads were among the ten worst in the district for both 2018 and 2022.
- In 2022, Santoft Road was also identified in the ten worst roads for very poor rutting. This should be further investigated given its potential haul road status.
- Within the environmental cost group, the highest expenditure between 2017/18 and 2021/22 related to landslides. Almost half of this landslide maintenance occurred on just two roads: Mt Curl Road and Okirae Road.
- The third largest maintenance cost group in the most recent five-year period was drainage. Drainage costs appear to be more distributed across the RDC network compared to environmental costs, however Pukepapa Road alone accounted for a 21% of the costliest fault within the drainage spend, clearing rubbish.
- Over the last 30 years, DSIs have trended downwards in Rangitikei. Although these have increased in recent years.
- Excluding on Arterials, Collective Risk in the district is comparable to other rural districts, regionally, and nationally. Personal Risk however is generally higher across the network.
- Between 2018 and 2022, two thirds of the injury crashes on local roads took place on roads with speed limits greater than 70km/h.
- Loss-of-control on bends was the most common crash factor on rural roads. In 2022, these were most common on straight roads. Mitigation through seal widening on road corridors that are of insufficient width for the volume of traffic carried in the district could address some of the rural road crashes.
- Upon analysis further crash analysis, Spooners Hill Road, Whanganui Road, and Wellington Road were of particular concern.
- RDC roads are generally performing better than other rural districts. Except for Access which are comparatively worse. Therefore, Access roads should be the focus of safety improvements in the next funding period.

10.5 Investment Logic Mapping

Using the Waka Kotahi recommended investment logic mapping framework, the following problem statements for this AMP were agreed by Council in 2022. Based on the evidence, the problems identified fall under three key themes: Legacy Network, Resilience, and Safety.

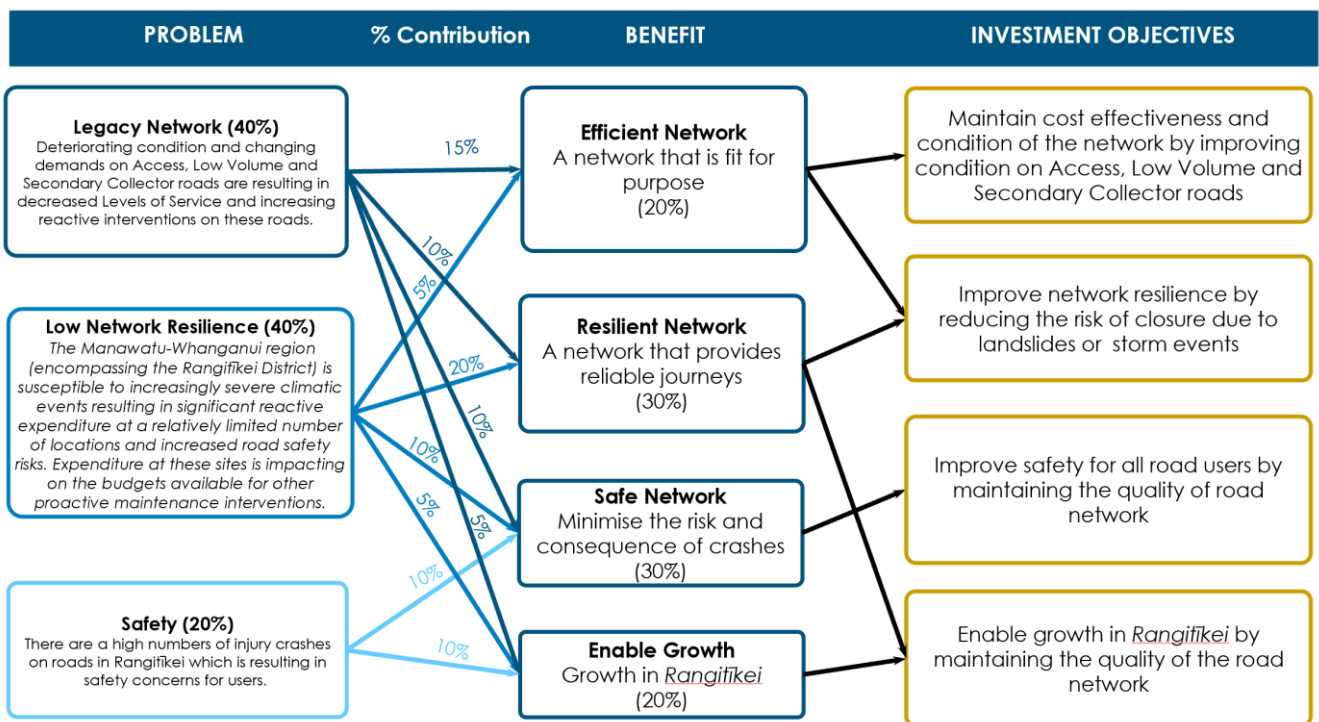


Figure 56: Investment Logic Maps

11. Case for Change

Without the appropriate funding, the problems outlined in Figure 56 will compound over time and become more difficult for the Council to manage or resolve. This will have major impacts for the wider community and how it functions. Further, traffic demand (related to forestry) and climate change will continue to impact the network. These risks will make the network vulnerable to decreasing performance and increasing safety risk. These events will impact the distribution of limited Council funds, with money originally allocated to other parts of the network maintenance, rehabilitation or reseals. With increasing climate change events and Waka Kotahi’s Emergency Fund having a lengthy turnaround period, if the fundamental network issues are not addressed the Council will continue to have to put planned work on the hold to prioritise remedial work on the network in order to provide access to residence.

The Rangitikei road network is a critical part is sustaining the growth the economy. Forecasts show that over the next 10 years there will be increasing pressure on the forestry routes. Currently forestry routes are performing at an acceptable level, but they will be particularly susceptible to heavy vehicle damage in the near future.

Landslides are frequent in the Rangitikei, with some of the more vulnerable roads not having an alternative route. This puts the Council under significant pressure as a large portion of the maintenance budget is being reallocated to comparatively few locations across the network. With climate change impacts increasing, road closures are becoming more frequent²⁸. This has implications for customers and the wider economy, as people may be isolated or delayed.

Without adequate funding for maintenance, road assets will exponentially deteriorate, negatively impacting user access safety and experience within the community, particularly sections of the network that has already been identified as underperforming.

²⁸ Further evidenced by the impact to the network by cyclone Gabrielle in February 2023

Part B – Developing a Programme

12. Developing the Programme

The Programme sets out the strategic response of the planned future state, identifies a programme of works or activities that deliver on the strategic case, with asset management information that identifies maintenance, operations, renewals and improvement/ new works programmes. In order to address the strategic issues and problems stated, the preferred programme must address the problems relating to Legacy Network, Resilience and Safety.

Funding for Rangitikei District local 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 indicative GPS 2024 strategic priorities, released by the Ministry of Transport in January 2023 proposes to continue the themes similar those in the 2021 GPS, focusing on the following strategic priorities:

Sustainable urban development

- Safety
- Integrated freight system
- Maintaining and operating the system
- Resilience

Furthermore, the GPS will have a primary focus on reducing Emissions across the country to align with the National ERP. In essence, the GPS proposes investment decisions be based on the following overarching focuses:

- Inclusive access
- Healthy and safe people
- Resilience and security

12.1 Forming the Programme

Through the 2024-27 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 2024-27 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 2024-27 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 (Problems identified in Part A – Strategic Case).
- Identifying where we can make the greatest difference to improving journeys (Data Collection, Condition Surveys and RAMM).
- Identifying the best programme of activities, we can implement to close the level of service gap (Multi Criteria Analysis).

IDENTIFICATION OF ASSET REQUIREMENTS

The identification of asset requirements dictates the standards of performance, condition and capacity and the consequential funding requirements. It requires knowledge of existing asset performance and performance targets to identify the gaps in asset performance. The analysis on existing assets is detailed in sections 6 and 7.

MAINTAINING A SOUND NETWORK CONDITION

The Local Road network is generally in acceptable condition. In conclusion:

- Surface measures are holding in the long term.
- Roughness is holding on more than 80% of the network.
- Rutting is continuing to hold on roughly 85% of the network. There is a 15% deterioration across the bulk of the network.
- Landslides/slope stability is increasingly becoming a maintenance issue for parts of the network.
- Structures across the network are old and reaching the end of its useful life.
- Council is to continue monitoring and report trends.
- Council should focus investment strategies to minimise the risk of further deterioration due to pavement deterioration and slope stability.
- Council should implement a continuous programme of bridge replacements. This replacement programme should prioritise condition over age in line with the existing recommendations.

WORKING THE ASSET

By using 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 Secondary and Low Volume roads. Notwithstanding this, road conditions are continually monitored to ensure safety is not compromised.

CONDITION MONITORING

Asset inventory and current condition data is a central aspect of road asset management. Inventory data such as reference number to road segments, road name, road category, road length, lane width and other dimensions, road location, road traffic (lane or overall), pavement age, seal age, shoulder and table drainage, are important for locating the asset and are used for predicting the asset performance over time and determining the cost of closing performance gaps.

A High-Speed Data Survey²⁹ will be carried out every two years on Arterial, Collector (Primary and Secondary) and Access Roads with traffic counts greater than 500 AADT. The data collected and reported on includes:

- Skid Resistance (both left & right wheel paths in 10m averages)
- Texture (left, right & Mid wheel paths in 10m averages)
- Rutting (both left & right wheel paths expressed in 20m averages)
- Roughness (left, right & Land IRI and NAASRA in 20m and 100m averages)
- Alignment Gradient, Crossfall and curvature (in 10m averages)
- GPS NZMG & NZTM (in 10m averages)
- Digital HD Widescreen Video (5m frames)
- Associated reports, including Skid Resistance & Texture Exception report.

Council aims to continue improving the condition monitoring of pavements and assets, as well as forecasting remaining lives of assets on the network. We plan to do this through our maintenance and other contracts (such as the cyclic structural maintenance contract), together with cyclic monitoring (High Speed Data) and any other the Waka Kotahi **specified network** monitoring. The road maintenance contract stipulates the requirements, specifications and level of monitoring required on the network to ensure that adequate condition is maintained and that repairs are undertaken to a minimum standard. These contracts are the primary mechanism we have for understanding and monitoring road condition.

²⁹ Te Ringa Maimoa is leading the Consistent Condition Data Collection (CCDC). The aim is to establish a consistent approach to collecting pavement condition data for all local authority sealed roads starting 1 July 2024 through the 'Centre of Excellence' delivery model.

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 2021-22 has been extracted from Waka Kotahi’s website³⁰ and collated into graphical format to allow easy visual comparison.

Comparison has been made between the 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)
- Manawatū-Whanganui Region (& NZ)

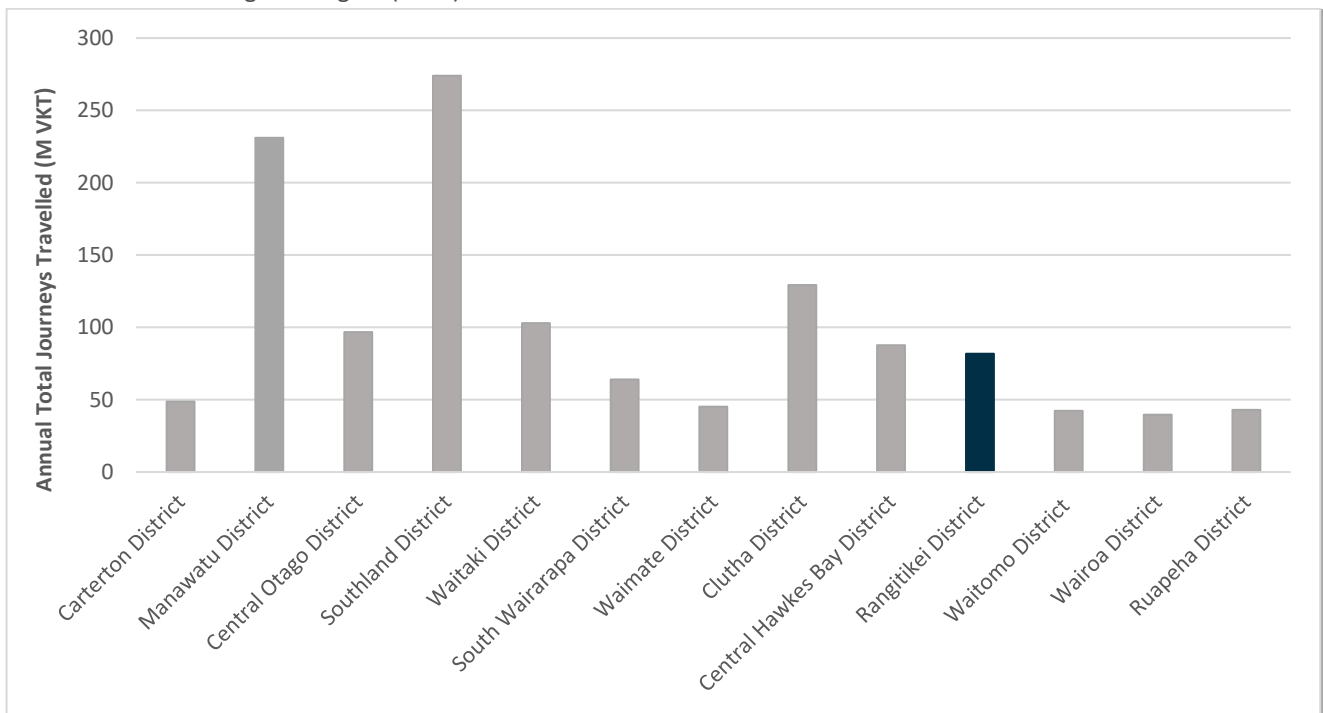


Figure 57 - (Equivalent) Cost per 100 million VKT, NZ Rural Districts – 2021/22

³⁰ <https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/>

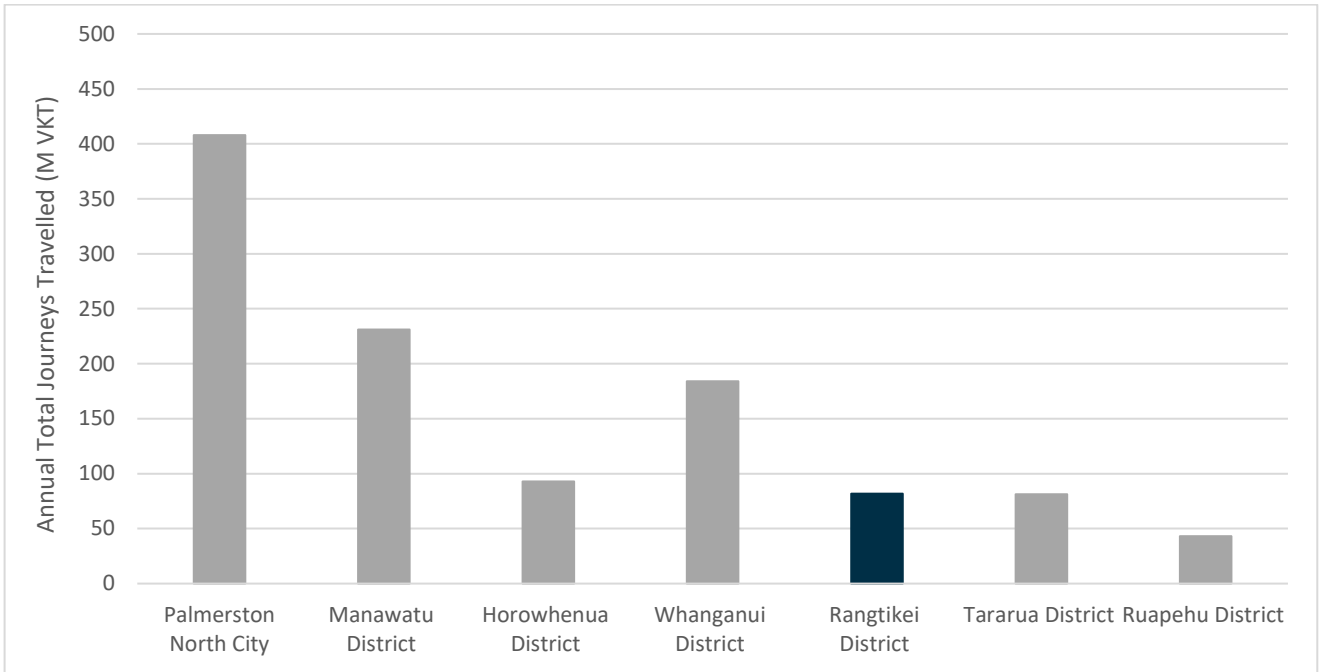


Figure 58 - (Equivalent) Cost per 100 million VKT, Peer Group (D) – 2021/22

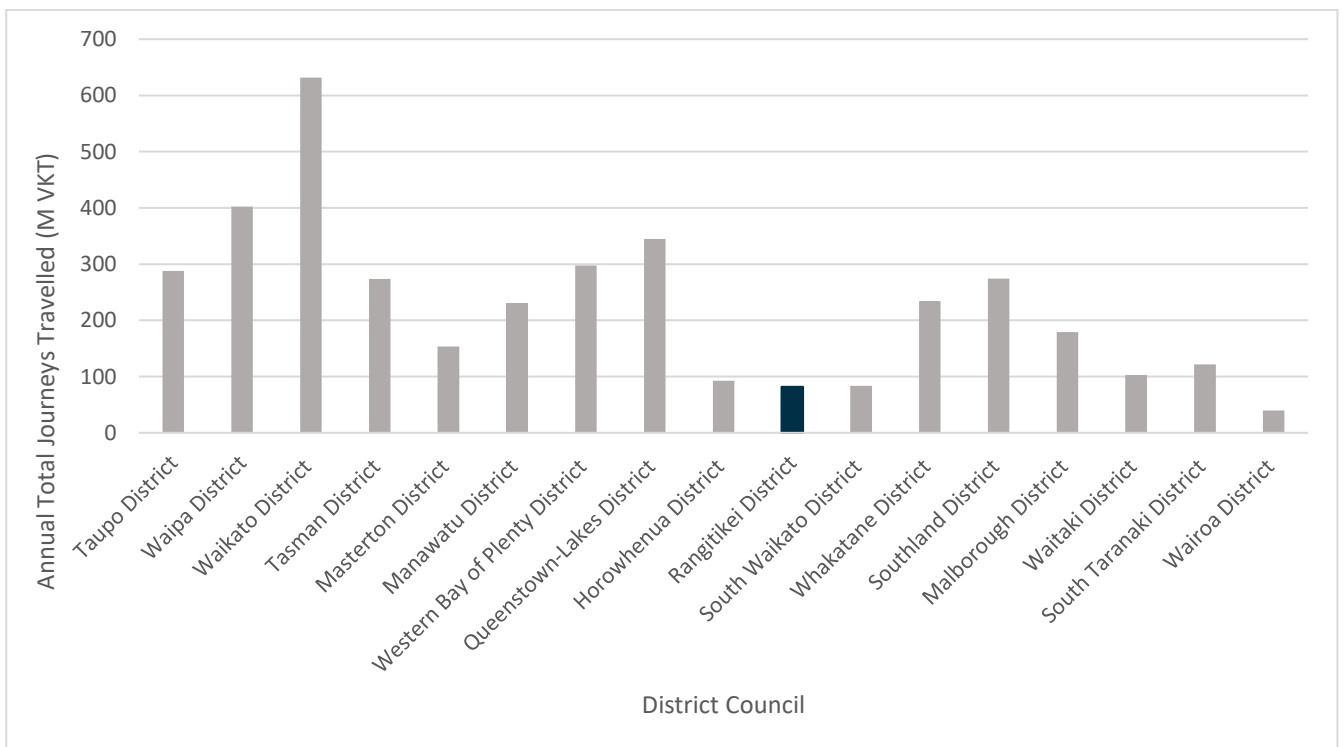


Figure 59 - (Equivalent) Cost per 100 million VKT, Manawatū-Whanganui Region (& NZ) – 2021/22

It can be seen in Figure 57, Figure 58 and Figure 59 that the Rangitikei District compares favorably within its rural, peer, regional and national grouping, indicating effective traffic volume related spend beneath the median in all comparative instances.

FUNDING POLICY

The ultimate limiting factor governing decisions on which projects can be included in Council’s Long-Term Plan, the Regional Land Transport Plan and the National Roding Programme is the level of available funding. Setting this level of funding is a complex matter requiring numerous iterations of the process. When seeking Waka Kotahi subsidies Council has to ensure that it can meet the local share before submission.

Council’s Financial Strategy guides decision-making from the outset and provides guidance for resolving the complex issues that need to be addressed during preparation of the roading infrastructure programme.

The 2024-27 AMP has been developed for maintenance, renewal, operational and infrastructure improvement activities using the business case approach. The main factors that are having an impact on costs are:

Demand changes: Growth in vehicle kilometres travelled (VKT) and HPMV impacts adding wear and tear on the network, along with increased transport due to high urban growth areas and industrial developments. Figure 61 below shows the increase in VKT observed to the local road network between 2018 and 2022, while Figure 61 shows the 20-year VKT trend:

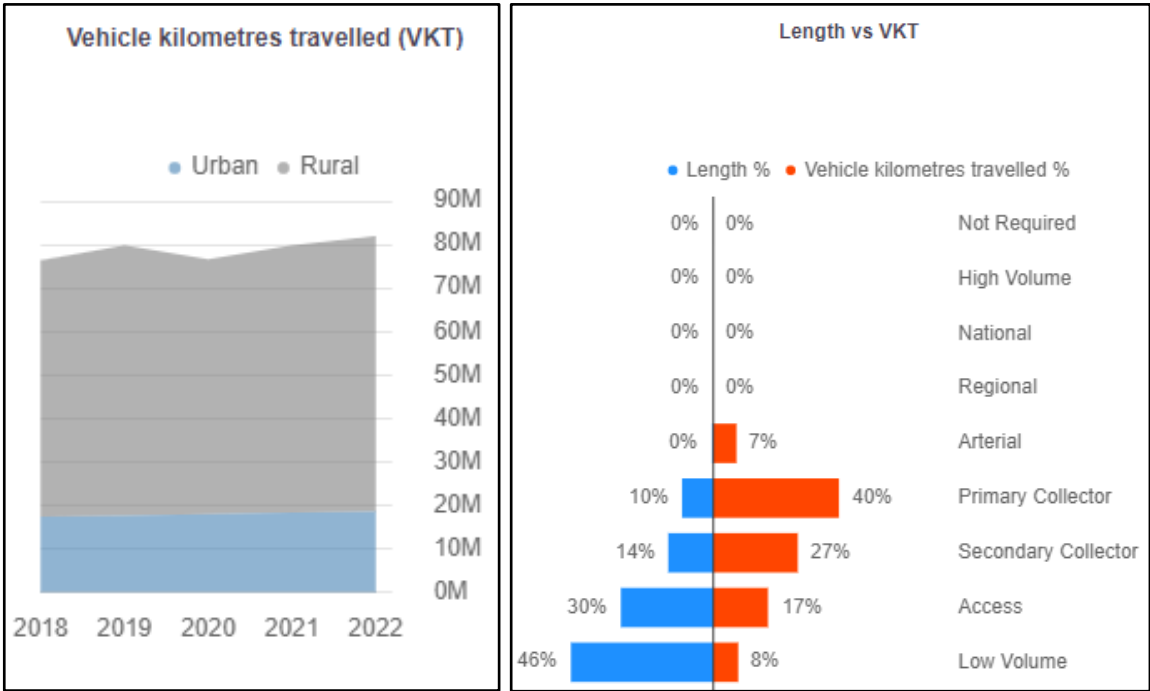


Figure 60 - Vehicle Kilometres Travelled, Rangitikei District³¹

³¹ <https://portal.transportinsights.nz/performance/dashboard/road-network-use>

RD086 - Vehicle kilometres travelled by region (billion km)

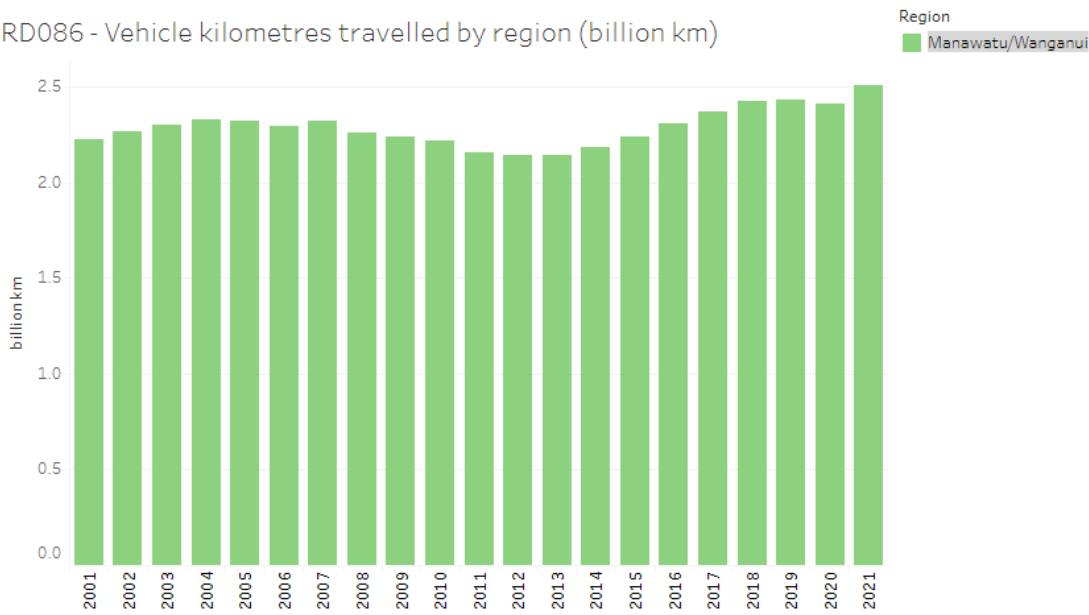
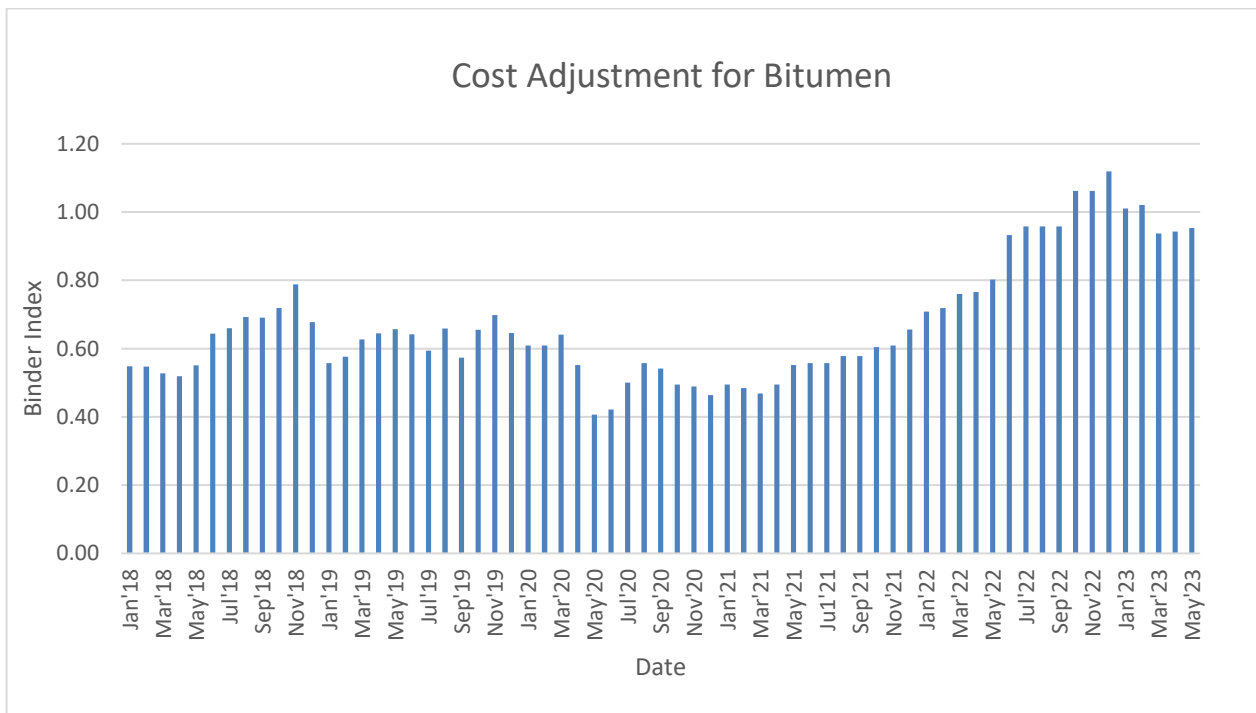


Figure 61 - Vehicle Kilometres Travelled, Rangitikei Region³²

Input prices increases: Rising bitumen and construction costs due to market supply pressures & international currency matters. Figure 62 below shows the change in cost adjustment for bitumen index between Jan 2018 and May 2023³³ and construction index between March 2018 and Dec 2022:



³² <https://www.transport.govt.nz/statistics-and-insights/road-transport/sheet/vehicle-kms-travelled-vkt>

³³ <https://opendata-nzta.opendata.arcgis.com/datasets/infrastructure-and-public-transport-contract-price-adjustment/about>

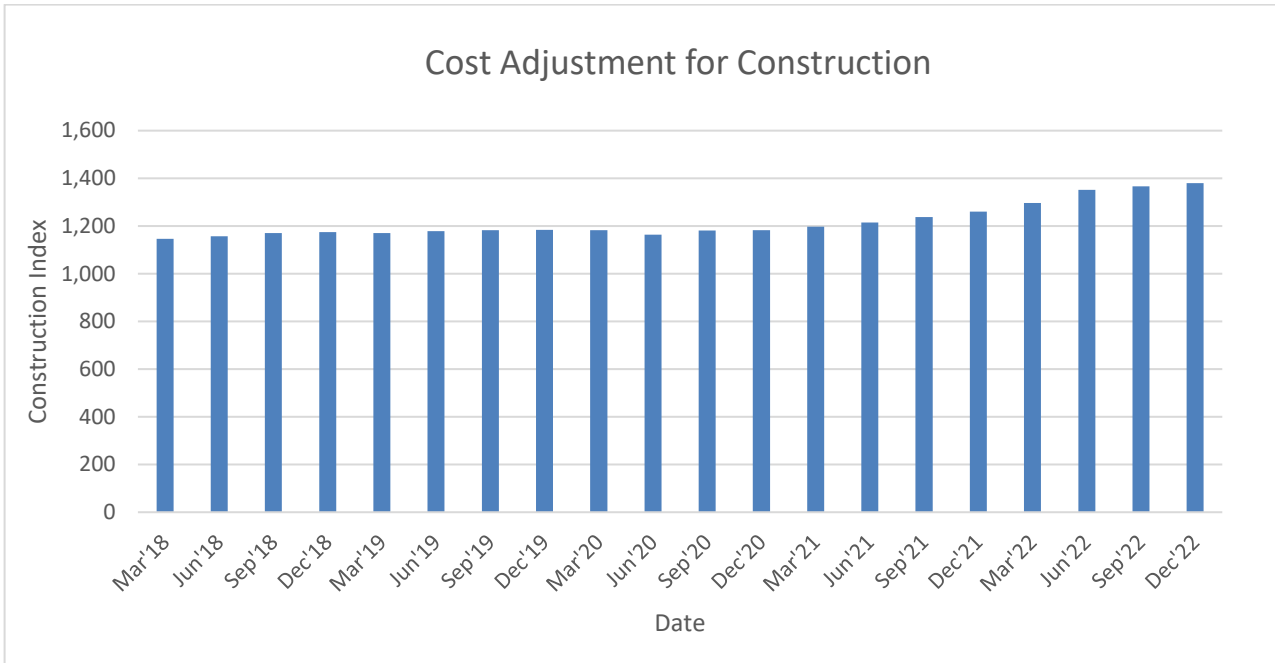








Figure 62 - Cost Adjustment for Bitumen & Construction Indices

12.2 Performance Measures

In order to understand the networks maintenance and renewals requirements, the network is assessed against defined measures. While the ONF is being incorporated into the asset management processes, the ONRC Customer level of Service (CLoS) guide the performance measurement criteria defined in Councils maintenance contracts and understand the network conditions. The CLoS principles are outlines hereafter:

Table 24: CLoS DESCRIPTIONS

| CLoS | Description |
|--|--|
|  Efficiency | Measures “Value for Money” and the optimisation of whole of life costs, with the intention to programme works to maximise existing asset. |
|  Safety | <p>Minimise the risk of crashes by mitigating hazards along road infrastructure.</p> <p>Minimise the consequence of crashes by maintaining bridge side rails, guardrails, wire rope barriers and crash cushions, etc.</p> <p>Minimise the risk of driver behaviour related crashes.</p> <p>Reduce the consequence of crashes by maintaining appropriate road standards and identify and manage noncompliant road sections.</p> <p>Reduce the risk of crashes at night by maintaining lighting to facilitate safe movement.</p> <p>Reduce the risk of loss of control crashes by reducing maintenance related faults (rutting / depressions, shoving, potholes, corrugated length, bleeding, ponding water, etc) and mitigate areas with surface friction deficiencies.</p> <p>Minimise risk of crashes to active road users by maintaining footpaths to acceptable levels and minimising the number of maintenance related hazard.</p> |
|  Resilience | <p>Mitigation to avoid route closure where appropriate by treating high risk slopes and maintaining road network and put in place a resilience plan.</p> <p>Provide Alternative Routes where appropriate.</p> <p>Inform customers of route availability and travel choice and restore connectivity as soon as possible</p> |
|  Amenity | Maintain the road environment and facilities that support an appropriate level of comfortable ride for sealed and unsealed roads. |

| | |
|---|--|
| | Maintain the road corridor compatible with the urban context of the road use experience |
|  Travel Time Reliability | <p>Manage the impact of activities and demand on the network through planning activities and events to minimise customer impacts.</p> <p>Operate the network to maximise its effective capacity by balancing competing demand for road space</p> |
|  Accessibility | <p>Provide guidance so people can navigate around the District Network</p> <p>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</p> <p>Provide infrastructure that meets an appropriate level of accessibility to users to perform their role</p> <p>Manage the network to ensure it is accessible for different uses where appropriate</p> |

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

Table 25 - 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 | | | | | | ✓ | | | ✓ |

13. The Programme Development

Separate funds are allocated to the different programmes including investment, rehabilitation and periodic maintenance. To ensure efficient utilisation of Council’s resources and funds, the activities under these programmes are coordinated. The reasons for separating out maintenance are as follows:

- A large proportion of road maintenance work is of a routine and fixed nature and is not subjected to assessment and appraisal.
- Periodic maintenance, e.g. resealing, is usually a case of timing and treatment selection with the aim of minimising the whole of life cycle costs, including road user costs, for the whole road network.
- Major rehabilitation projects are appraised to identify the rehabilitation needs using a whole of life cycle cost minimisation. For each identified maintenance project, Net Present Value (NPV) calculations are carried out to rank the selection and timing of rehabilitation treatments.
- Growth projects are appraised and developed using the Business Case Approach.

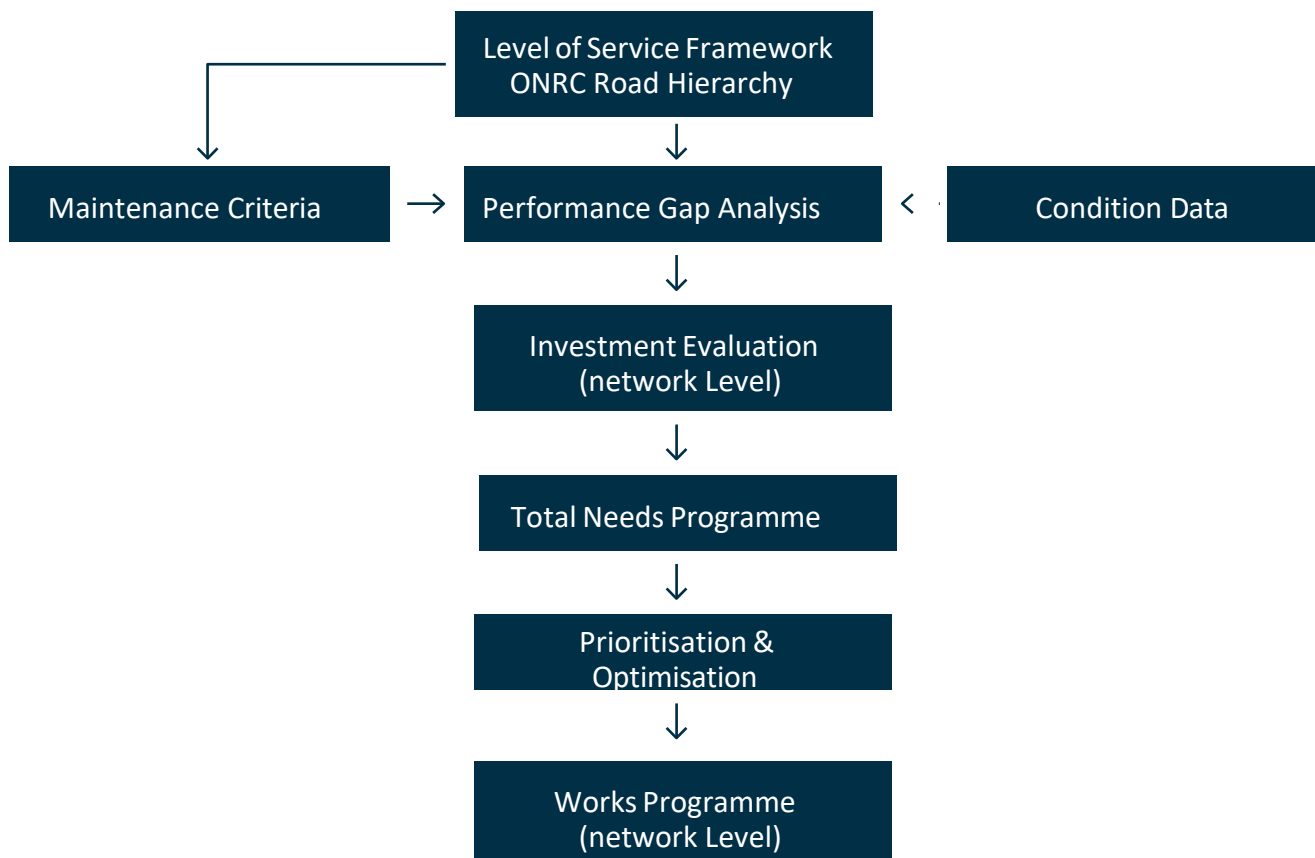


Figure 63: Process of Works Programme Development at the Network Level

Figure 63 shows the process of works programme development at the network level.

The needs are then evaluated to identify optimal intervention options (maintenance and rehabilitation treatments) to close the asset performance gap and establish budgetary requirements. In a generic sense, the options that minimise Council and road user costs, in a life cycle cost context, are considered to be optimal. These intervention options comprise the total needs programme.

To ensure an equitable allocation of resources and to achieve Council’s desired outcomes, prioritisation and optimisation techniques are used to identify the optimum combination of projects that could be achieved under different funding scenarios. As well as aiming at minimising life cycle costs, the process of optimising and prioritising includes consideration of strategic network requirements and strategic corridor improvements.

The result of prioritisation and/or optimisation leads to the identification of the works programme. The final works programme includes the funding required for the different maintenance programmes, together with details of the specific works.

The three-year rolling programme for road network maintenance management facilitates the preparation of medium-term budgets and the planning of resources and maintenance activities. The three-year programme is reviewed annually considering deferred projects from the first year’s programme, the backlog of needs and the availability of resources.

13.1 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. For the programme optimisation Council chose to use Waka Kotahi’s framework and guidance to ensure we achieve value for money, while achieving the key outcomes required from our land transport.

WAKA KOTAHI INVESTMENT DECISION MAKING FRAMEWORK

Waka Kotahi has various investment assessment tools including Multi-Criteria Analysis (MCA). Appropriate criteria can be selected on a case-by-case basis, but investment objectives and critical success factors need to be included as part of all assessments. As part of this framework, decision making criteria include:

- Investment Objective and Relevant Transport Outcome: Aligned with National Transport Outcomes, including the Government Policy Statement on land transport (GPS), which sets out the government’s priorities for expenditure over a 10-year period
- Critical Success Factors: Practical considerations that will dictate whether a project can be successfully implemented, including: - Achievability/ Feasibility - Potential affordability - Potential value for money - Supplier capacity and capability - Urgency
- Opportunities and Impacts: these can include: - Environmental effects - Social and cultural effects - Climate change mitigation or adaption - Cumulative impacts - Impacts on Te Ao Māori - Property Impacts
- Economic Assessment: Benefit–cost ratio (BCR) or end-of-life net present value (NPV)

COUNCIL'S PROJECT PRIORITISATION CRITERIA

In the past RDC have based the forward works plan on known network issues, customer feedback and cyclic maintenance, renewals, and rehabilitation. Transport Insights highlighted that a noticeable gap in the previous AMP is an assessment of value for money. Considering this, an MCA evaluation using the investment objectives and other project criteria was undertaken to evaluate the relative priority of maintenance, renewals, and improvement projects. The chosen criteria are meant to consistently score the programme options across all the things that are important to Rangitikei District Council. The criteria were also chosen since based on the likelihood of that criteria providing some differentiation³⁴ between options to aid decision makers to prioritise projects for the next three-year period of the AMP. The following criteria have been identified:

Table 26: MCA Criteria

| Criteria | Questions Answered | Key Factors Assessed |
|--------------------|--|---|
| Resilience | How strongly does the programme align with this Council investment objective? | Reliability, the structures durability and resilience against natural disasters |
| Condition | How strongly does the programme align with this Council investment objective? | The physical condition of the road |
| Safety | How strongly does the programme align with this Council investment objective? | Impact on road user safety |
| Service Delivery # | How important is this programme in contributing to the delivery of Council’s core activities and services? | Ability of contractor and the construction industry to deliver the resources and material in the current market |
| Financial Impacts | What is the return on investment or financial benefit? Does the project provide value for money? | Ability of the investment to provide Value for Money i.e., improve overall network performance |

*It is acknowledged that the dLoS is being progressed, due to the developmental nature of this tool, a generic MCA framework is being used. The dLoS process will be applied during the next funding period.

ASSESSMENT AND SCORING

The MCA process outlined in the previous section was undertaken separately for the funding categories that make up an AMP, namely:

- Maintenance

³⁴ The Customer Level of Service measures have been incorporated into the Criteria where possible. For an AMP Travel Time Reliability, Optimal Speed, Amenity and Accessibility will not be key differentiators and was therefore excluded from the MCA.




- Renewals
- Road Improvements
- Walking and Cycling
- Public Transport

The MCA is a qualitative analysis using specialist judgement and was undertaken in two stages:

- **Stage 1** assessed the Baseline Forward Works Plan against the existing network condition (essentially a Do-Nothing scenario) this assessment allows the value of the baseline investment to be shown.
- **Stage 2** of the assessment compares the FWP Options (10% increase and decrease in funding) to the Baseline FWP, this provides a better understanding of the funding level and will provide the best value for money and overall outcomes for the Council.

The following assessment framework has been established for this analysis:

Table 27: MCA Scores

| Score | Symbol | Key Factors Assessed |
|---------|---|--|
| Good |  | Will result in improvement of criteria |
| Neutral |  | Criteria will remain unchanged |
| Poor |  | Will result in deterioration of criteria |

OPTIONS ASSESSMENT

For the MCA, the 2024-2027 Forward Works Plan developed by RDC has been used as the baseline, a list of alternative options has been developed to determine the level of investment required to allow the network to perform adequately. The options are:

- **Baseline Programme:** 2024-2027 Forward Works Plan – This programme focuses on business-as-usual operations and maintenance, cyclic renewals, and rehabilitation. It ensures that critical work is completed to meet minimum compliance standards.
- **Enhanced Investment Programme:** 2024-2027 Baseline Forward Works Plan plus 10% increased investment – This programme will increase investment outlined in the Forward Works Plan by 10% to determine the impact on the network.
- **Low-Cost Investment Programme:** 2024-2027 Baseline Forward Works Plan minus 10% more investment – This programme will decrease investment outlined in the Forward Works Plan by 10% to determine the impact on the network.

For each of the Options, the 10% cost was converted into a quantitative value, where possible, to be used during the analysis. The quantitative values were either; number of, length, area etc., these were used as the comparator, e.g. 10% more funding for bridges equates to maintenance on 40 bridges. These quantities will then be assessed against the criteria to determine the impact the increased or decreased funding would have on the overall road performance.

The results of the MCA are shown below, in some cases more than one option received the same overall score. The overall scores highlighted are the preferred options. The full MCA scoring and justifications can be found in Appendix C.

Table 28: Maintenance MCA

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|-------------------------------------|-----------|-----------------|------------|-----------|--------|------------------|-------------------|---------|
| WC 111 Sealed Pavement maintenance: | Baseline | \$ 4,656,898.00 | Neutral | Neutral | Good | Good | Good | Good |
| | Enhanced | \$ 5,122,588.00 | Neutral | Neutral | Good | Poor | Good | Neutral |
| | Low cost | \$ 4,191,208.00 | Neutral | Neutral | Poor | Good | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---------------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 112 Unsealed Pavement Maintenance: | Baseline | \$ 1,600,827.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 1,760,910.00 | Good | Good | Good | Neutral | Good | Neutral |
| | Low cost | \$ 1,440,744.00 | Good | Poor | Neutral | Good | Poor | Poor |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 113 Routine Drainage Maintenance: | Baseline | \$ 3,727,750.00 | Neutral | Neutral | Neutral | Good | Good | Good |
| | Enhanced | \$ 4,100,525.00 | Good | Good | Neutral | Poor | Good | Good |
| | Low cost | \$ 3,354,975.00 | Poor | Poor | Neutral | Neutral | Poor | Poor |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|-------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 114 Structure Maintenance: | Baseline | \$ 967,276.00 | Neutral | Neutral | Neutral | Good | Good | Good |
| | Enhanced | \$ 1,064,004.00 | Neutral | Neutral | Good | Good | Neutral | Neutral |
| | Low cost | \$ 870,548.00 | Neutral | Neutral | Neutral | Good | Neutral | Poor |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|-----------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 121 Environmental Maintenance: | Baseline | \$ 4,904,469.00 | Good | Good | Neutral | Good | Good | Good |
| | Enhanced | \$ 5,394,916.00 | Good | Good | Neutral | Good | Good | Good |
| | Low cost | \$ 4,414,022.00 | Neutral | Neutral | Neutral | Good | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|-------------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC122 Traffic Services Maintenance: | Baseline | \$ 1,576,308.00 | Neutral | Neutral | Neutral | Good | Good | Good |
| | Enhanced | \$ 1,733,939.00 | Neutral | Neutral | Neutral | Poor | Good | Neutral |
| | Low cost | \$ 1,418,677.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|-------------|-----------|----------------|------------|-----------|--------|------------------|-------------------|---------|
|-------------|-----------|----------------|------------|-----------|--------|------------------|-------------------|---------|

| | | | | | | | | |
|--|----------|--------------|---------|---------|---------|------|---------|---------|
| WC123 Operational Traffic Management: | Baseline | \$ 37,698.00 | Neutral | Neutral | Neutral | Good | Good | Good |
| | Enhanced | \$ 41,468.00 | Neutral | Neutral | Neutral | Good | Neutral | Neutral |
| | Low cost | \$ 33,928.00 | Neutral | Neutral | Neutral | Good | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|----------------------------------|-----------|----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC125 Footpath Maintenance | Baseline | \$ 472,875.00 | Neutral | Good | Good | Good | Good | Good |
| | Enhanced | \$ 520,163.00 | Neutral | Good | Neutral | Poor | Neutral | Neutral |
| | Low cost | \$ 425,588.00 | Neutral | Neutral | Neutral | Good | Neutral | Good |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---|-----------|----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC131 Rail level crossing warning devices maintenance: | Baseline | \$ 80,812.00 | Neutral | Neutral | Good | Neutral | Good | Good |
| | Baseline | \$ 88,893.00 | Neutral | Neutral | Good | Good | Neutral | Neutral |
| | Baseline | \$ 72,731.00 | Neutral | Neutral | Neutral | Good | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC140 Minor Events: | Baseline | \$ 1,576,247.00 | Good | Neutral | Neutral | Neutral | Good | Good |
| | Enhanced | \$ 1,733,872.00 | Good | Neutral | Neutral | Good | Neutral | Good |
| | Low cost | \$ 1,418,622.00 | Neutral | Neutral | Neutral | Good | Neutral | Good |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC151 Network and Asset Management: | Baseline | \$ 4,421,174.00 | Neutral | Neutral | Neutral | Good | Neutral | Good |
| | Enhanced | \$ 4,863,291.00 | Poor | Neutral | Neutral | Poor | Neutral | Poor |
| | Low cost | \$ 3,979,057.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

Table 29: Renewals MCA

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--|-----------|-----------------|------------|-----------|--------|------------------|-------------------|---------|
| WC211 Unsealed Road metaling: | Baseline | \$ 1,812,688.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 1,993,957.00 | Good | Good | Good | Poor | Good | Good |
| | Low cost | \$ 1,631,419.00 | Good | Good | Good | Good | Good | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------------------|-----------|-----------------|------------|-----------|--------|------------------|-------------------|---------|
| WC212 Sealed Road Resurfacing: | Baseline | \$ 7,835,956.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 8,619,552.00 | Good | Good | Good | Neutral | Good | Good |

| | | | | | | | | |
|--|----------|-----------------|---------|---------|------|---------|------|---------|
| | Low cost | \$ 7,052,360.00 | Neutral | Neutral | Good | Neutral | Good | Neutral |
|--|----------|-----------------|---------|---------|------|---------|------|---------|

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC213 drainage renewals: | Baseline | \$ 2,363,350.00 | Neutral | Good | Neutral | Good | Good | Good |
| | Enhanced | \$ 2,599,685.00 | Neutral | Good | Neutral | Poor | Good | Good |
| | Low cost | \$ 2,127,015.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--|-----------|-----------------|------------|-----------|--------|------------------|-------------------|---------|
| WC214 sealed road pavement rehabilitation: | Baseline | \$ 3,885,775.00 | Good | Good | Good | Neutral | Good | Good |
| | Enhanced | \$ 4,274,353.00 | Good | Good | Good | Neutral | Good | Good |
| | Low cost | \$ 3,497,198.00 | Good | Good | Good | Neutral | Good | Good |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC215 structures component replacements | Baseline | \$ 1,776,000.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 1,953,600.00 | Good | Good | Neutral | Poor | Good | Neutral |
| | Low cost | \$ 1,598,400.00 | Neutral | Neutral | Neutral | Neutral | Good | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC216 bridge and structures renewals | Baseline | \$ 1,100,000.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 1,210,000.00 | Neutral | Neutral | Neutral | Poor | Neutral | Poor |
| | Low cost | \$ 990,000.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|----------------------------------|-----------|----------------|------------|-----------|--------|------------------|-------------------|---------|
| WC222 traffic services renewals: | Baseline | \$ 812,223.00 | Neutral | Neutral | Good | Neutral | Good | Good |
| | Enhanced | \$ 893,445.00 | Neutral | Neutral | Good | Neutral | Neutral | Neutral |
| | Low cost | \$ 731,001.00 | Neutral | Neutral | Good | Neutral | Neutral | Neutral |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------|-----------|----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC225 footpath renewals: | Baseline | \$ 730,885.00 | Good | Good | Good | Good | Good | Good |
| | Enhanced | \$ 803,974.00 | Neutral | Good | Good | Good | Neutral | Neutral |
| | Low cost | \$ 657,797.00 | Neutral | Good | Neutral | Neutral | Neutral | Neutral |

Table 30: Road Improvements

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 324 road improvements: | Baseline | \$ 8,550,782.00 | Good | Good | Good | Neutral | Good | Good |
| | Enhanced | \$ 9,405,860.00 | Good | Good | Good | Neutral | Neutral | Neutral |
| | Low cost | \$ 7,695,704.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Poor |

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 357 Resilience Improvements | Baseline | \$ 1,430,000.00 | Good | Good | Neutral | Neutral | Good | Good |
| | Enhanced | \$ 1,573,000.00 | Good | Good | Neutral | Neutral | Good | Good |
| | Low cost | \$ 1,287,000.00 | Good | Neutral | Neutral | Neutral | Neutral | Neutral |

Table 31: Road to Zero MCA

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---------------------|-----------|-----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 341 Road to Zero | Baseline | \$ 1,288,230.00 | Neutral | Neutral | Good | Good | Neutral | Good |
| | Enhanced | \$ 1,417,053.00 | Neutral | Neutral | Good | Poor | Good | Good |
| | Low cost | \$ 1,159,407.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

Table 32: Public Transport MCA

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|---|-----------|----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC 514 Low-Cost Low Risk Infrastructure | Baseline | \$ 18,100.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |
| | Enhanced | \$19,910.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |
| | Low cost | \$16,290.00 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral |

Table 33: Low-Cost Low Risk MCA

| Asset Group | Variation | Asset Quantity | Resilience | Condition | Safety | Service Delivery | Financial Impacts | Overall |
|--------------------------|-----------|----------------|------------|-----------|---------|------------------|-------------------|---------|
| WC451 Walking Facilities | Baseline | \$ 200,000.00 | Neutral | Good | Good | Good | Good | Good |
| | Enhanced | \$ 220,000.00 | Neutral | Good | Neutral | Good | Good | Good |
| | Low cost | \$ 180,000.00 | Neutral | Neutral | Neutral | Good | Neutral | Neutral |

14. Preferred Programme

14.1 Subsidised Roding Activities

Council has identified the following programme over the next 3 years which will address the immediate challenges faced by the transport network and deliver the District's Strategy and Investment Outcomes. The options assessment revealed that the optimum programme will be combination of the Baseline, the Enhanced and the Low-Cost options. The recommended

programme has re-focused and increased to deliver the required network performance. The programme below has been broken down into work categories which assist the preparation of maintenance contracts, road safety action plans and procurement strategies. A summary of the 3-year budget for the preferred programme is detailed in Table 34 below.

Table 34: Preferred Programme and Justification – 3-year totals

| Maintenance | | | |
|--|-----------|------------------|--|
| Work Category | Variation | 2024-2027 Budget | Explanation |
| WC 111: Sealed pavement | Baseline | 4,656,898.00 | General investment into sealed pavements will maintain a reliable structural network, while a larger focus on investment can be placed into renewals and rehabilitation of pavements |
| WC 112: Unsealed Pavement | Baseline | 1,600,827.00 | Overall, the baseline budget for unsealed pavement maintenance will contribute to identifying problem 1 of targeting forestry traffic routes and upkeeping the condition of these networks |
| WC 113: Routine drainage | Enhanced | 4,100,525.00 | Landslides and drainage structures are one of RDC's highest forward works budgets. Increasing funds will provide the network with more resilient drainage systems, preventing the high numbers of landslide throughout the district |
| WC 114: Structures | Baseline | 967,276.00 | baseline investment in structural maintenance will produce sufficiently maintained infrastructure to service the people of Rangitikei. |
| WC 121: Environmental | Baseline | 4,904,469.00 | Both baseline and enhanced investment score well in the environmental maintenance category. However, baseline funds should cover the estimated costs to keep the network up and running, focus should be placed on renewals and rehab to further improve the network |
| WC 122: Traffic services | Baseline | 1,576,308.00 | Baseline traffic services will provide sufficient and value for money works to improve the likes of carriageway lighting while also reducing power consumption |
| WC 123: Operational traffic management | Baseline | 37,698.00 | Any investment into operational traffic maintenance will contribute to the facilities of the network, however baseline will provide the estimated work |
| WC 125: Footpath maintenance | Baseline | 472,875.00 | Baseline FWP will provide sufficient funding to maintain footpaths to an appropriate LOS |
| WC 131: Level crossing warning devices | Baseline | 80,812.00 | Baseline level crossing maintenance is the preferred option, but funded estimated works, the network will keep in standard condition |
| WC 140: Minor events | Baseline | 1,576,247.00 | Any of the FWP budgets will provide efficient minor works, however baseline works will enable the estimated 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 |
| WC 151: Network and asset management | Baseline | 4,421,174.00 | Baseline funds will provide for the general management and control of the road network and management of road assets |
| Renewals | | | |
| Work Category | Variation | 2024-2027 Budget | Explanation |

| | | | |
|---|----------|--------------|--|
| WC 211: Unsealed roads metalling | Baseline | 1,812,688.00 | Baseline unsealed road metaling will provide the network with estimated works on the renewal of pavement layers improving the networks resilience, condition and safety - as well as contributing to solving the problem statement 1 |
| WC 212: Sealed Roads Resurfacing | Baseline | 7,835,956.00 | Both the Baseline and Enhanced FWP score well. However, the baseline FWP will sufficiently contribute to strengthening the roading network through planned periodic sealed resurfacing and reducing short term maintenance requirements |
| WC 213: Drainage renewals | Baseline | 2,363,350.00 | Baseline or enhanced FWP will decrease the districts largest issue, land slips and flooding. In the future, maintenance costs will be reduced, making the network more resilient to severe weather events. |
| WC 214: Sealed Road pavement rehab | Baseline | 3,885,775.00 | All options score well. Rehabilitation for sealed road pavements will provide sufficient structures to provide long term benefits for the network |
| WC 215: Structures component replacements | Baseline | 1,776,000.00 | The Baseline FWP will provide the correct level of investment for structural component rehab to ensure optimal performance of the network. |
| WC 216: Bridge and Structure renewals | Baseline | 1,100,000.00 | Renewals of bridges and structures will provide long term benefits, With the latest safety measures and a higher quality facility improving overall network performance |
| WC 222: Traffic services renewals | Baseline | 812,223.00 | Both baseline and enhanced traffic service renewals provides treatments for three important safety measure of the network - signage, lighting, and road marking. This will contribute to an overall safer network |
| WC 225: Footpath renewals | Baseline | 730,885.00 | Baseline footpath renewals will provide sufficient works to upkeep and improve networks footpath for both walking and cycling pedestrians. Installation of footpaths will also allow children to walk and cycle to school, reducing the need for vehicle use for drop offs |

Local Road Improvements

| Work Category | Variation | 2024-2027 Budget | Explanation |
|--------------------------------|-----------|------------------|---|
| WC 324 road improvements: | Baseline | 8,550,782.00 | Baseline road improvements funds will provide upgrades to existing roads, freight connections and infrastructure, this will improve the likes of intersections and safety within the overall network |
| WC 357 Resilience Improvements | Enhanced | 1,573,000.00 | Both the Baseline and Enhanced FWP score well. The enhanced FWP will provide increased investment to support resilience improvements such as toe weighting of unstoppable slopes which will benefit the council |

Road to Zero

| Work Category | Variation | 2024-2027 Budget | Explanation |
|---------------|-----------|------------------|-------------|
|---------------|-----------|------------------|-------------|

| | | | |
|--|----------|-------------------------|--|
| WC 341: Low-Cost Low Risk Programme | Enhanced | 1,417,053.00 | Both baseline and enhanced asset funds will provide sufficient works. However, to improve safety and have the highest customer satisfaction, enhanced funds will provide the largest return and value for money. |
| WC 514 Public transport infrastructure | Baseline | 18,100.00 | Baseline funds for the management and operation of off-vehicle public transport services will be sufficient to maintain |
| WC451 Walking Facilities | Baseline | 200,000.00 | Baseline funds will provide the implementation of new walking facilities, increasing the networks active mode sector |
| TOTAL: | | \$ 56,470,921.00 | |

14.2 Subsidised Roading Activities – Summary

Table 35 shows the yearly investment required for the 2024-2027 funding period, as well as the previous 2021-2024 budgets. Although the 2024-2027 Forward Works Plan will largely align with previous investment breakdowns, changes in priority, impacts of climate change and budget restrictions have meant some restructuring in funding allocation between activity classes structure for the 2024-207 period. Changes in investment levels compared to 2021-2024 highlighted below:

- Maintenance and Operations Activity Class – 16% increase, with funds primarily allocated to WC 114 and WC 123
- Renewals Activity Class – 33% increase, with funds primarily allocated to WC 212
- Road Improvements Activity Class – 32% increase, funding allocated to Road and Resilience Improvements.
- Road to Zero Activity Class – 67% decrease, funding allocated to Safer Journey to School and Speed Management activities.
- Walking and Cycling Activity Class – 78% decrease funding allocated to this activity class, with funds only allocated to walking facilities in the first investment year.
- Public Transport Activity Class – 4% increase, with funds primarily allocated to WC 514

The biggest changes in budget allocation are the reduction in funding for walking and cycling interventions and the increased budget for Road Improvements and Renewals. Based on the analyse of the network, routine maintenance and renewals will be sufficient to maintain the performance of the network for the next three years.

Table 35: 2024-2027 Forward Works Plan – 3 Year Funding Requirements

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|---|---|------------------|------------------|------------------|-------------------|-------------------|------------------|-----------|
| 111 | Sealed Pavement Maintenance | 1,514,231 | 1,548,800 | 1,593,867 | 4,656,898 | 4,259,744 | 397,154 | 9 |
| 112 | Unsealed Pavement Maintenance | 514,703 | 531,967 | 554,157 | 1,600,827 | 1,368,238 | 232,589 | 17 |
| 113 | Routine Drainage Maintenance | 1,199,072 | 1,234,614 | 1,294,064 | 4,100,525 | 3,602,882 | 497,643 | 14 |
| 114 | Structures Maintenance | 327,679 | 315,995 | 323,602 | 967,276 | 681,493 | 285,783 | 42 |
| 121 | Environmental Maintenance | 1,521,072 | 1,650,438 | 1,732,959 | 4,904,469 | 4,205,519 | 698,950 | 17 |
| 122 | Traffic Services Maintenance | 499,677 | 525,187 | 551,444 | 1,576,308 | 1,282,955 | 293,353 | 23 |
| 123 | Operational Traffic Management | 12,566 | 12,566 | 12,566 | 37,698 | 2,693 | 35,005 | 1,300 |
| 124 | Cycle Path Maintenance | 0 | 0 | 0 | 0 | 3,154 | -3,154 | -100 |
| 125 | Footpath Maintenance | 150,000 | 157,500 | 165,375 | 472,875 | 387,855 | 85,020 | 22 |
| 131 | Rail Level Crossing Warning Devices Maintenance | 25,000 | 26,250 | 29,562 | 80,812 | 70,808 | 10,004 | 14 |
| 140 | Minor Events | 500,000 | 524,998 | 551,249 | 1,576,247 | 989,440 | 586,807 | 59 |
| 151 | Network & Asset Management | 1,449,664 | 1,454,395 | 1,517,115 | 4,421,174 | 3,787,473 | 633,701 | 17 |
| Operations & Maintenance Sub-total | | 7,833,571 | 8,106,171 | 8,455,366 | 24,395,109 | 20,642,254 | 3,752,855 | 18 |

| | | | | | | | | |
|---|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------|
| 211 | Unsealed Roads Metalling | 575,000 | 603,750 | 633,938 | 1,812,688 | 1,371,921 | 440,767 | 32 |
| 212 | Sealed Roads Resurfacing | 2,273,710 | 2,714,877 | 2,847,369 | 7,835,956 | 4,062,040 | 3,773,916 | 93 |
| 213 | Drainage Renewals | 750,000 | 787,000 | 826,350 | 2,363,350 | 2,272,620 | 90,730 | 4 |
| 214 | Sealed Road Pavement Rehabilitation | 1,451,375 | 1,243,125 | 1,191,275 | 3,885,775 | 4,082,330 | -196,555 | -5 |
| 215 | Structures Component Replacements | 597,000 | 622,500 | 556,500 | 1,776,000 | 1,573,396 | 202,604 | 13 |
| 216 | Bridge and structures renewals | 0 | 150,000 | 950,000 | 1,100,000 | 263,430 | 836,570 | 318 |
| 222 | Traffic Services Renewal | 262,445 | 270,947 | 278,831 | 812,223 | 964,590 | -152,367 | -16 |
| 225 | Footpath Renewals | 231,624 | 243,580 | 255,681 | 730,885 | 730,885 | 0 | 0 |
| Renewals Sub-total | | 6,141,154 | 6,635,779 | 7,539,944 | 20,398,099 | 15,321,212 | 5,076,887 | 33 |
| Local Road Maintenance (Activity Class) - Totals | | 13,974,725 | 14,741,950 | 15,995,310 | 44,711,986 | 35,963,466 | 8,748,520 | 24 |

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|--|---------------------------------------|------------------|------------------|------------------|-------------------|------------------|------------------|-----------|
| 322 | Replacement of bridges and structures | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 324 | Road Improvements | 2,861,746 | 2,849,029 | 2,840,007 | 8,550,782 | 5,907,281 | 2,643,501 | 45 |
| 325 | Seal Extension | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 357 | Resilience improvements | 528,000 | 495,000 | 550,000 | 1,573,000 | 1,748,285 | -175,285 | -10 |
| Road Improvements (Activity Class) - Totals | | 3,389,746 | 3,344,029 | 3,390,007 | 10,123,782 | 7,655,566 | 2,468,216 | 32 |

| WC | Work Category Name | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|-----|--------------------|------------|------------|------------|---------------|---------------|-----------|-----|
| 341 | Road to Zero | 621,500.00 | 387,123.00 | 408,430.00 | 1,417,053 | 4,269,871 | 2,852,818 | -67 |

| | | | | | | | | |
|--|---------------------------------|------------|------------|------------|------------|------------|-----------|-----|
| 451 | Walking and Cycling | 200,000.00 | - | - | 200,000 | 924,600 | -724,600 | -78 |
| 514 | Public transport Infrastructure | 5,600.00 | 6,000.00 | 6,500.00 | 18,100 | 17,346 | 754 | 4 |
| Low Cost Low Risk (Activity Class) - Totals | | 827,100 | 393,123 | 414,930 | 1,635,153 | 5,211,817 | - | -69 |
| TOTAL | | 18,191,571 | 18,479,102 | 19,800,247 | 56,470,921 | 48,830,849 | 7,640,072 | 16 |

14.3 Capital Programme - Investment Summary

Capital works programme outlines planned network interventions that will be funded by organisations other than the Council. This capital works expenditure can be funded from Waka Kotahi, subsidies, reserves (for example depreciation reserve), and development contribution. Where possible the first source of funding for non-subsidised capital expenditure that will be third party sources i.e. development contributions. Table 36 shows a comparison of funding compared to the 2021-2024 period for Capital works projects, the table indicates an overall reduction in investment of the network, this is largely due to the decrease funding allocations for the low cost low risk work category.

Table 36: Capital Works Programme Comparison

| WC | Work Category | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|---|---|-----------|-----------|-----------|---------------|---------------|------------|-----|
| 322 | Replacement of bridges and structures | 0 | 0 | 0 | 0 | 0 | 0 | - |
| 324 | Road Improvements | 2,861,746 | 2,849,029 | 2,840,007 | 8,550,782 | 5,907,281 | 2,643,501 | 45 |
| 357 | Resilience improvements | 528,000 | 495,000 | 550,000 | 1,573,000 | 1,748,285 | -175,285 | -10 |
| Sub-total for Local Road Improvements | | 3,389,746 | 3,344,029 | 3,390,007 | 10,123,782 | 7,655,566 | 2,468,216 | 24 |
| 341 | Low cost, low risk roading improvements | 621,500 | 387,123 | 408,430 | 1,417,053 | 4,269,871 | -2,852,818 | -67 |
| Sub-total for Road to Zero Investment | | 621,500 | 387,123 | 408,430 | 1,417,053 | 4,269,871 | -2,852,818 | -67 |
| 451 | Walking facilities | 200,000 | 0 | 0 | 200,000 | 0 | 200,000 | - |
| 452 | Cycling facilities | 0 | 0 | 0 | 0 | 0 | 0 | - |
| Sub-total for Walking and cycling improvements | | 200,000 | 0 | 0 | 200,000 | 0 | 200,000 | - |
| Total Capital Investment | | 4,211,246 | 3,731,152 | 3,798,437 | 11,740,835 | 11,925,437 | -184,602 | -2 |

14.4 Non-Subsidised Roding Activities

This is the cost related to the asset management of all non-subsidised maintenance and operations, renewals, and road improvements. Table 37 shows the 2024-2027 Non-subsidised Forward Works Plan, this portion of the FWP did not go through an MCA process.

Table 37: Non -Subsidised Forward Works Plan 2024-2027

| Activity | 2024-25 | 2025-26 | 2026-27 | Total 2024-27 | Total 2021-24 | Change | % |
|------------------------------------|----------------|----------------|----------------|------------------|------------------|------------------|-------------|
| Maintenance & Operations | 520,068 | 551,742 | 583,084 | 1,654,894 | 1,201,714 | 453,180 | 37.7 |
| Renewals | 150,000 | 154,650 | 0 | 304,650 | 0 | 304,650 | - |
| Road Improvements | 220,000 | 176,320 | 240,847 | 637,167 | 302,400 | 334,767 | 110.7 |
| Paths & Structures | 0 | 0 | 0 | 0 | 0 | 0 | - |
| Total Non-subsidised Budget | 890,068 | 882,712 | 823,931 | 2,596,711 | 1,504,114 | 1,092,597 | 72.6 |

Part C – Actioning the Programme

15. Financial Strategy

14.1 Introduction

The Local Government Act 2002 requires Council to prepare a Financial Strategy as part of its Long-Term Plan. This Strategy outlines how the Council intends to manage its finances prudently. This means the Council will act with careful deliberation and will always consider the financial implications of decisions on the community. Council must make adequate and effective provision to meet expenditure needs identified in Annual and Long-Term Plans.

The Financial Strategy provides a financial framework for making decisions. Simply, it enables Council to assess proposed spending against rates and borrowing requirements over the whole ten years of the Long-Term Plan 2021-31 (LTP). The provision of services and projects comes at a cost. Council aims to spend within its means, achieving a balance between meeting the needs of the community with its ability to pay.

14.2 Life cycle

Council makes decisions on the acquisition and ongoing use of many different assets. The initial capital outlay cost is usually clearly defined and is often a key factor influencing the choice of asset given a number of alternatives from which to select.

The initial capital outlay cost is, however, only a portion of the costs over an asset's life cycle that needs to be considered in making the right choice for asset investment. The process of identifying and documenting all the costs involved over the life of an asset is known as Life Cycle Costing (LCC). A life cycle cost analysis involves the analysis of the costs of a system or a component over its entire life span. Typical costs for a system may include acquisition, operating and maintenance costs.

Road asset valuations are undertaken each year. This helps ensure there is an understanding of any significant changes to the asset stock or contractor rates. Significant changes in input parameters, that may have a material effect, may result in an earlier revaluation of assets. The valuation is subject to Audit. Asset quantities used for the valuations are those detailed in the Council's asset registers and databases. The valuation calculates the following items are calculated for the subject year:

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

More information about Asset Valuation can be found in Appendix D.

14.3 Funding

FUNDING POLICY

The ultimate limiting factor governing decisions on which projects can be included in Council's Long-Term Plan, the Regional Land Transport Plan and the National Roding Programme is the level of available funding. Setting this level of funding is a complex matter requiring numerous iterations of the process. When seeking Waka Kotahi subsidies Council must ensure that it can meet the local share before submission.

Council's Financial Strategy guides decision-making from the outset and provides guidance for resolving the complex issues that need to be addressed during preparation of the roading infrastructure programme.

FUNDING SOURCES

The funding sources for New Zealand's transport infrastructure and services funded through the NLTP are:

- Funds from the National Land Transport Fund (NLTF)
- Funds managed on behalf of the Ministry of Transport
- Funds from approved organisations (the local share³⁵)
- Funds from supplementary sources.

Funds from approved organisations - the local share

Land transport activities managed or delivered on a regional basis by approved organisations are part-funded from the NLTF according to the relevant funding assistance rate³⁶. The local share may come from rates or other sources, such as developer contributions, borrowing and investments.

Supplementary funding sources

Supplementary funding sources for transport activities can include:

- Development and financial contributions from land developers, recognising the benefits to their developments arising from transport infrastructure improvements.
- Betterment³⁷ contributions from landowners who benefit from road improvements.
- Other contributions from approved organisations, community groups or other entities, such as funding from the Accident Compensation Corporation (ACC)
- Funds generated from road tolls for new land transport infrastructure.

Council Contribution

Rates are a property tax set annually by Council. Rates are one source of income the Council uses to fund projects and operating services.

Council considers the affordability of the proposed rate requirements both for the Council and ratepayers. When setting rates Council considers:

- The levels of service provided.
- Intergenerational issues
- Other sources of funds
- Legislative requirements
- External factors
- What our ratepayers can afford.

³⁵ The local share is the portion of the total cost of an activity that is provided by an approved organisations.

³⁶ The funding assistance rate is the percentage of the total cost of an approved activity that the NZTA pays.

³⁷ 'Betterment' is the increased value of land arising from improved access.

A minimal amount of investment income is generated by Council’s investment in forestry assets, and this is used to offset general rates.

14.4 Cash Flow and Escalation

Where activities within Council’s proposed Roothing Programme are eligible for financial assistance, Waka Kotahi previously provided a subsidy of 63% towards this expenditure, known as the Financial Assistance Rate (FAR).

For the 2021-24 National Land Transport Funding (NLTF) period, Rangitikei District Council received a FAR of 66% and is expected to remain constant for the 2024-2027 funding period. Other assumptions for the FWP are:

- An approximate 3.1% inflation figure per annum for the next 10 years,
- No more than a 6% increase funding from Council per annum, and

The table below details the total value of proposed work, split by eligibility for subsidised funding (based on the updated FAR). The table summarises the total investment demand for each party over the 2024-27. The table also shows that the investment request is 17% higher compared to the previous funding period.

Table 38: 2024-2027 Forward Works Plan – Investment Summary

| Programme | 2024 -25 | 2025-26 | 2026-24 | Total 2024-27 | Total 2021-24 | Change | % |
|----------------|------------|------------|------------|---------------|---------------|-----------|-----|
| Subsidised | 18,191,571 | 18,479,102 | 19,800,247 | 56,470,921 | 48,830,849 | 7,640,072 | 16% |
| Non-subsidised | 890,068 | 882,712 | 823,931 | 2,596,711 | 1,504,114 | 1,092,597 | 73% |

| Proportional Investment | 2024 -25 | 2025-26 | 2026-24 | Total 2024-27 | Total 2021-24 | Change | % |
|-------------------------|------------|------------|------------|---------------|---------------|-----------|-----|
| Waka Kotahi | 12,006,437 | 12,196,208 | 13,068,163 | 37,270,808 | 30,763,435 | 6,507,373 | 21% |
| Approved Organisation | 7,075,202 | 7,165,607 | 7,556,015 | 21,796,824 | 19,571,528 | 2,225,296 | 11% |

| | | | | | | | |
|-------------------------|------------|------------|------------|------------|------------|-----------|-----|
| Total Investment | 19,081,639 | 19,361,814 | 20,624,178 | 59,067,632 | 50,334,963 | 8,732,669 | 17% |
|-------------------------|------------|------------|------------|------------|------------|-----------|-----|

14.5 Funding Risk

The key funding risks to the Forward Works Programme are:

- Waka Kotahi reducing FAR and overall funding
- Council funding sources are reduced
- Higher than budgeted escalation
- Cost increases

16. Delivery & Procurement

16.1 Management

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 coordinated on a regional level with other roading authorities in Manawatū, Horowhenua and Palmerston North. 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.

RDC share a number of boundary roads with Palmerston North City Council, Manawatū, Tararua and Horowhenua 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 Manawatū and Rangitikei District Council’s shared water services department (water supply and wastewater) 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.

Council has considered its Roading Programme thinking about ongoing and rescheduled³⁸ project and has adjusted planned interventions to minimise conflicts with resource (e.g. selecting pavement stabilisations where possible, as opposed to overlays, to reduce material demand when carrying out rehabilitations). External activities will need to be monitored and local operations adjusted accordingly.

ENVIRONMENTAL MANAGEMENT

| Item: | Mitigation: | Standards to be Followed: |
|-------------------------------|---|---|
| Stock Crossing/Droving | <ul style="list-style-type: none"> -Farmers must obtain consent in advance when droving or crossing activity will exceed normal conditions. -The council will need to balance the needs and rights of road users and farmers use of the public roads to uphold road safety requirements | Council’s Traffic Safety and Road Use Bylaw 2015, Part Five – Stock on Roads. Road Controlling Authorities, Best Practice Guidelines for Stock Crossings 2014 NZ Transport Agency’s Code of Practice for Temporary Traffic Management – Section I - Stock under control (crossing and droving). |
| Consent Applications | <ul style="list-style-type: none"> -Stock droving permit is required, for regular or one-off movement of stock on arterial, collector and strategic roads -Stock crossing permit is required for the movement of stock on or across the road for farming requirements | Application must be renewed five yearly or when a change of farm ownership occurs. |
| Maintenance | Consents for the regular droving of dairy cows across roads requires farmers to take all reasonable and practicable steps to clean, scrape or sweep the road. | Conditions may be imposed to implement methods to minimise fouling and damage to road surface |
| Underpasses | The 14 stock underpasses in the district are constructed to an agreed standard and each required a building consent. Councils’ policy for stock underpasses contains specific details regarding construction and maintenance requirements of stock underpasses. | Upon completion of an underpass’s construction, it is inspected by a Council Engineer who must approve the structure before the Code of Compliance Certificate is issued. |

³⁸ Projects from the current FWP have been rescheduled due the reprioritisation of allocated funding to repair portions of the network that had been damaged during recent weather events.

| | | |
|---|---|---|
| Surface Detritus | Surface detritus removal is managed by the road maintenance contract | |
| Litter | Litter and disposal of litter is managed under the road maintenance contract | |
| Roadside Rubbish | Council is responsible to utilise their services to collect and dispose of roadside rubbish. The cost of collecting and disposing of this type of rubbish is transferred to the Councils Solid Waste Management budget. | Rubbish (over 40kg) deposited on road sides, referred to as fly tipping, comes under the responsibility of Council's Solid Waste Management Contract. |
| Street Cleaning | The street cleaning activity covers the inspection, reporting, programming. Cleaning is done by mechanical sweeping. Approximately 117km of kerb and channels are cleaned. | A proportion of funding for this work is budgeted under the Waka Kotahi NZ Transport Agency (Waka Kotahi) Work Category 113 – Routine Drainage Maintenance in Council's Land Transport Programme. |
| Abandoned Vehicles | Abandoned vehicles are the responsibility of Council's Environmental Services Department. Identification, removal, and disposal of abandoned vehicles is undertaken by the Council's Animal Control Officers, who have the necessary dual-purpose vehicle | The processes are contained in Section 356 of the Local Government Act 1974, Removal of Abandoned Vehicles from Roads |
| Vegetation Control | Vegetation control is managed under the road maintenance contract. The Contractor is to ensure that the work carried out on legal roads reserves is such that: | |
| Sealed and Unsealed Shoulders | Vegetation height is maintained in accordance with the contract specifications for the category of road. | |
| Edge Marker and Signposts | The area surrounding edge marker posts and signposts, including culvert marker posts, is to be treated to provide vegetation control. Vegetation shall not exceed 150mm in height in the control area. | |
| Bridge End Markers | The area surrounding bridge end markers at bridge abutments is to be treated to ensure clear driver visibility of the markers. | |
| Guardrails, Sight trails and Culvert Headwalls | Area surrounding guardrails, sight rails and culvert headwalls is to be treated to provide vegetation control. | |
| Surface Water Channels, Side Drains and Culvert Waterways | All surface water channels, side drains, cut-out drains, and culvert waterways are to be treated to ensure the free flow of water, with growth height not exceeding 150mm | All culvert inlet and outlet drains are to be treated to the adjacent fence line or to a minimum of five metres from the culvert, whichever is the lesser. |
| Kerb and Channel, Road Furniture, Fence lines, Footpaths and Paved Areas | Any vegetation encroaching on, over, or around the key infrastructure shall be removed. | |
| Visibility and Road Hazards | Any vegetation which presents a safety hazard to road users or operators of all vehicle types, by restricting visibility are to be removed. | Control of vegetation using chemicals is carried out in accordance with all relevant Acts, regulations and Bylaws. |
| Berm Moving | It is expected that property owners will mow berms in urban areas (70 and 50 kph) so these are a specific exclusion noted in the maintenance contract. | The mowing and trimming of berm areas, embankments and amenity areas is to |

| | | |
|---------------------------|---|---|
| | | conform to the standards detailed in the contract specifications. |
| Vegetation Hazards | Trees planted in the berm areas of urban streets are covered under the Parks and Reserves Maintenance Contract, administered by Council's Community Facilities Group. | Vegetation control is budgeted under Waka Kotahi Work Category 121 – Environmental Maintenance in the Council's Land Transport Programme. |
| Roadside Berms | There are no formal maintenance or renewal programmes associated berm assets. Berm maintenance occurs on an as needed basis and is carried out under the road maintenance contract. It is generally accepted that residents will mow and keep berms in a tidy condition, most residents are happy with this approach. | |

DISPOSAL PLAN

This section describes how to identify and actively manage assets, which are no longer fit for purpose, and then to programme the most cost-effective disposal or removal of those assets.

Disposal activities are associated with the removal from service of a redundant or surplus asset. Assets may become surplus for any of the following reasons:

- Under utilisation
- Obsolescence
- Provision exceeds required level of service
- Uneconomic to upgrade or operate
- Policy change
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social, vandalism, etc.)
- Advancements in technology which provide more cost-effective options.

Table 39: Disposal Plan

| Item: | Mitigation: | Standards to be Followed: |
|--------------------------|---|--|
| Disposal of Roads | The Council is not free to dispose of roading assets as it wishes. The principal controls on its ability to do so are: -Section 342 of the Local Government Act 1974. This gives The Council authority to remove a road from the network and for title to be granted to the Council. The Council may then retain or dispose of the title. -If a road is diverted or realigned, rather than being removed from the network, the provisions around road stopping may not apply. | Council Policy Road Stopping – Disposal of Surplus, which outlines the Council's minimum requirements for consideration of a request to stop a road. |
| Uneconomic Roads | Unformed legal roads are not maintained by the Council for roading purposes. Some roads have been classified as limited maintenance roads, and therefore receive only sufficient maintenance to provide a minimal level of service. The Council may agree on a case-by-case basis to maintain a road if it has been upgraded to a suitable standard by others at their cost, with its prior permission. | Waka Kotahi Planning, Programme and Funding Manual determines the provision of financial support for "uneconomic roading facilities". |
| Surplus Land | Land is usually declared surplus when: -It has been Purchased under the Public Works Act for future road development -Land designated as legal road is not required for roading purposes now or in the future | |

| | | |
|--|--|--|
| | -When this process is requested, a case-by-case evaluation determines if there is strategic value in keeping the land for another transport purpose | |
| Disposal of Bridges Disposal Strategy | No decisions have been made on disposal of bridges. These will be considered when the need arises for substantial renewal works or replacement, considering all which are defined as “uneconomic” bridges as discussed earlier. | These sale processes must comply with the Local Government Act 1974. |
| Disposal of Footpath Disposal Plan Strategy | Before committing to the removal of any of path the Council will: -Consult the people in the affected street or streets -Consult the relevant communities -Consider the recommendations of the relevant township committees. There are no current plans to dispose of any footpaths. | |

16.2 Work Quality

Council’s performance targets/intervention criteria are set by legislative requirements, Council’s investment objectives including equity, the ONRC and ONF, associated LoS³⁹ 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 outcomes.

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 have been developed.

ROUTINE MAINTENANCE

Intervention criteria are more specific than the approach taken in developing infrastructure preservation programmes. 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 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.

³⁹ CLoS and aligning with the new DLoS

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 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.

16.3 Procurement Strategy

Council maintains ownership and responsibility for managing the land transport activity and the associated infrastructure. In order to maximise efficiencies and long-term value for money, the Council has taken a holistic approach to service delivery. RDCs approach to the market and contracting align with procurement best practices and demonstrates that Council is open, transparent, and accountable. The Procurement Strategy for RDC is reviewed every 3 years and lays out the requirements for procurement (at any value) to be made by Council. RDC has had a 9-year contract in place for the past funding periods which will be up for re-tender in 2024.

The 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.

In addition to the internal review and compliance with procurement rules, Transport Insights has developed tools to assist road controlling authorities making procurement and service delivery decisions. The aim is to improve road maintenance delivery decisions, affirming value for money and understanding a RCA's ability to procure the services they require in the best possible way.

RDC has conducted the Transport Insights Groups 'Smart Buyer Principles' assessment tool, shown in Table 40. This indicates that RDC is a 'developing' buyer with good core values and expertise.

Table 40 – TRANSPORT INSIGHTS SMART BUYER PRINCIPLES ASSESSMENT TOOL

| Assessment statement - Our Organisation | Score | | | | |
|---|-------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1. Fully understands the different contracting models available | | | | | ü |
| 2. Holds meetings that updates the contracting industry on the forward works programme and any changes it is taking in approach and proactively engages with the contracting industry to ensure that gains optimal value out of any changes being implemented | | | | ü | |
| 3. Has sufficient robust data (or is in the process of gathering robust data) on our networks that enables optimal integrated decision-making | | | | ü | |
| 4. Has access to expertise that fully enables best use of the data available | | | | ü | |
| 5. Is open to alternative solutions to those proposed in the contract documents | | | | ü | |
| 6. Understands risk and how to allocate and manage it | | | | ü | |
| 7. Has a Council that is prepared to pay more now to achieve a lower whole of life cost | | | | | ü |

| | | | | | |
|---|-----------|----|----|----|----|
| 8. Actively pursues value for money & does not always award contracts to the lowest price | | | | | ü |
| 9. Is able to manage supplier relationships / contracts to ensure that expenditure is optimal and sustains infrastructural assets at appropriate levels of service | | | | ü | |
| 10. Supports ongoing skill and competency training and development for its staff | | | | ü | |
| 11. Actively participates in gatherings to share and gain knowledge within the sector | | | | ü | |
| 12. Is effective in keeping up with best practice in procurement including best practice RFP / contract documentation | | | | | ü |
| 13. Regularly seeks and receives candid feedback from suppliers on its own performance as a client and consistently looks to improve its performance | | | | ü | |
| 14. Explores opportunities for collaboration by either sharing in-house resources with neighbours, or by procuring together or tendering together. That exploration could be through an LGA s17A evaluation of transport function delivery options. | | | | ü | |
| Number of ticks in each column | | | | 10 | 4 |
| Multiplying factor | x1 | x2 | x3 | x4 | x5 |
| Total Score in Column | | | | 40 | 20 |
| Total Score | 60 | | | | |

Score: Interpretation

65 to 70: A smart buyer: Our organisation is a smart buyer. We help to minimise rate increases by maximising the value created for our community.

55 to 64: Developing: Our organisation has embraced the principles of being a smart buyer but can still create further improved value for our communities.

30 to 54: Limited: Our organisation currently has limited capability to maximise the value created from being a smart buyer.

0 to 29: Basic Our organisation is focused on tender process and compliance. We have not developed the capability to realise any of the value created for our community from being a smart buyer.

In addition, a “Smart Buyer Self-Assessment Tool” was created for RCAs to self-assess their targeted vs actual procurement performance. A summary of Councils recent self-assessment is shown in Figure 64.

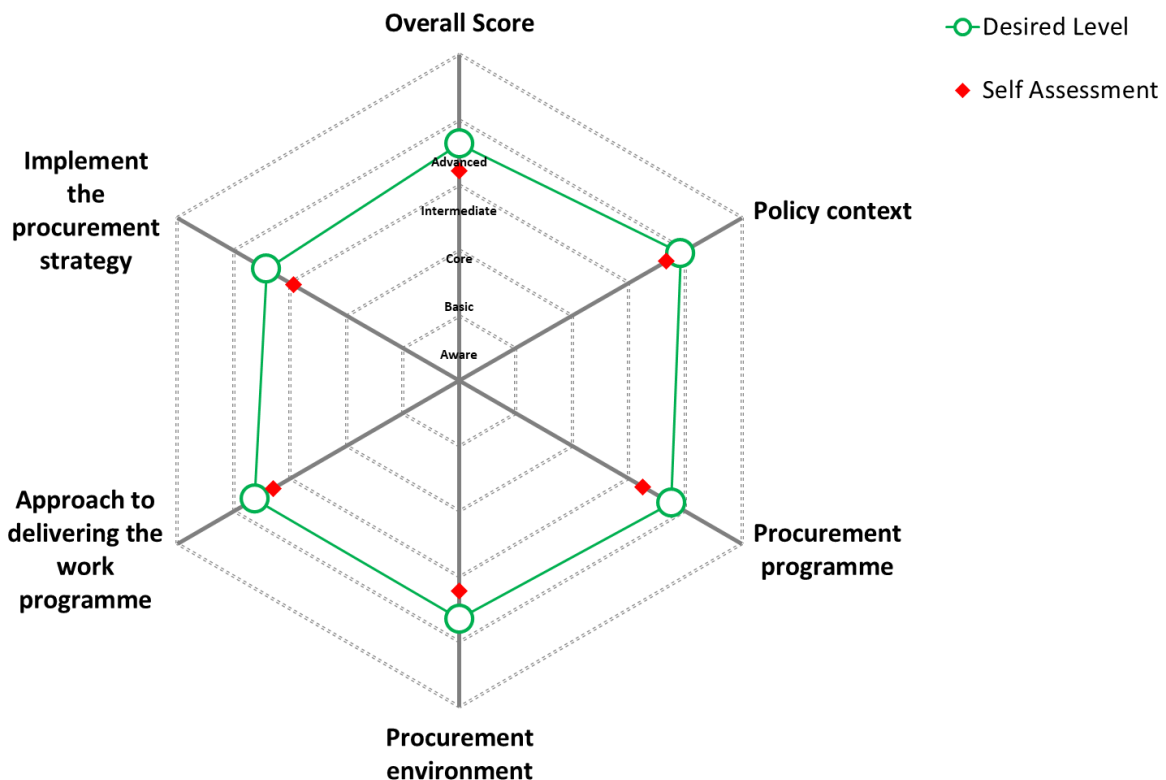


Figure 64: REG Smart Buyer Principles Assessment Tool

17. Risk Management

Council is confident that the programme can be delivered, and risks managed. Council has a proven track record of sound delivery with previous investment in the continuous programme and related activities (particularly in terms of timing, alignment, and 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.

17.1 Introduction

The Council is exposed to several risks arising from the operation of the road network. A Risk Register and Treatment Plan have been developed in alignment with AS/NZS ISO 31000:2009 Risk Management, Council's Corporate Risk Policy, and the RIMS Best Practice Guideline for Risk Management on Road Networks. The framework for transportation risk management considers the risk topics shown below.

Planning Risks

- Strategic planning
- Activity management planning
- Levels of service
- Natural event and environmental

Management Risks

- Systems/information
- People
- Financial

Delivery Risks

- Procurement
- Project management
- Contract management
- Communication.

Physical Asset Risks

- Risks common to all assets.
- Risks associated with specific asset types.

17.2 The Risk Management Context

Establishing the context for risk management is fundamental to its effective management. The context against which risks may be identified is likely to exist in the following:

- Political, economic, social, technological, legal and environmental change
- Client/contract objectives
- Client or supplier-initiated contract change
- Delivery programme
- Potential for failure to achieve Performance Indicators (PIs)
- Estimating assumptions or uncertainties
- Business, process, design or construction change
- Design outputs and assumptions
- Construction working methods
- Outputs from review/audit

17.3 Risk Identification

The following risk identification techniques are utilised:

- Checklists: review of generic and/or activity specific risk themes
- Workshops/reviews: formal multi-disciplinary forums that take the form of either 'blue sky' thinking or focused review of existing data. Participants are selected based on attendance requirements relative to maximising outcomes from the degree of involvement and time spent.
- Interviews: used on a selective basis to elicit information from specialist personnel
- Experience-based reviews: review of previous projects and/or contracts undertaken.
- Ad-hoc: delivery team identification of risks during contract execution.

Demand Forecasts

Growth and demand forecasting is inherently uncertain and involves many assumptions. The Rangitikei District is expected to continue to experience steady growth between now and 2051. The high level of forestry traffic is and will continue to cause network deterioration. The current level of funding is adequate to sustain an adequate network performance, however the forecast forestry harvesting rate is expected to increase, and the risk of funding not keeping up is real. Parewanui Road, Santoft Road, Kie Kie Road, Murimotu Road, Watershed Road, West Road, Turakina Valley Road 3 and Ongo Road are particularly at risk of requiring heavy maintenance.

The forecasts for households, residential development, community demographics, and land use changes will vary if the growth that occurs is different to the forecast, as will the impact assumed based on these forecasts. Council regularly reviews demographic and development trends as part of their 10-Year Plan process, through regular monitoring and reporting, as well as using various resources including data from Statistics NZ. This will enable Council to respond to changes in the demographics to meet the needs of the community.

Climate Change and Emergency Events

For this AMP, it is assumed that the intensity and frequency of extreme weather events, such as flooding, drought or heavy snowfall, will increase as a result of climate change, in line with projections released by NIWA following the IPCC Sixth Assessment Report.

Future climate change is unpredictable as the factors that influence the climate are unpredictable. It is difficult to make a definitive prediction on what the future climate will look like. It is possible that climatic changes in the Rangitikei District are more extreme than predicted by NIWA based on the IPCC Fifth Assessment Report. The financial impacts of more extreme climate change will be mitigated by ensuring adequate insurance cover and undertaking appropriate maintenance as a preventative measure.

Emergency Funding

Cyclone Hale and Gabrielle have caused significant damage in recent months within the district. Such events make the network vulnerable to closures and put communities at risk of isolation and injury. Due to the impact these unpredictable events have on the community, immediate action is required by Council. Council is responsible for emergency work and must reprioritise pre-allocated Asset Management funding to execute this emergency work. If council maintenance or renewal budgets are continuously spent on emergency works the existing infrastructure is at risk of deteriorating below the acceptable level of service, increasing risk to the community and the Council.

It is acknowledged that Waka Kotahi has an Emergency Fund which councils can apply for in an emergency event however, recently emergency funding applications to Waka Kotahi are taking months, and in some cases years, to be paid. Decisions and reimbursement of claims are still outstanding and impacting funding for other maintenance activities such as renewals that was previously allocated.

Overall Forecast Assumptions

Cost increases caused by inflationary pressures such as oil price increases can affect the ability to carry out all necessary work and stay within budget. Cost increases resulting from inflation cannot be written out of contracts, so all the Council's period contracts include them. Cost escalation adjustments are regularly applied to contract rates and prices.

NZTA Co-investment

Council assumes that it will receive 63% of the cost of roading maintenance and renewal projects from Waka Kotahi NZTA over the year to June 2024:

- Emergency works, which may attract a higher subsidy dependent on qualifying criteria.
- State highway street cleaning and some components of the urban drainage maintenance programme, which are subsidised at a co-investment rate of 30% of the total expenditure of street cleaning within 2m of the edge of carriageway is eligible for funding. The remaining 70% has to be fully funded by the Council. This is included in the financial forecasts.
- The programme of work and the financial plan to fund this work have been prepared based on the indicative 2024 Government Policy Statement. This recognises that Waka Kotahi NZTA is operating in a constrained funding environment. The maintenance and renewals programmes have been held at minimum levels and linked to the ONRC levels of service to reduce the risk of work not being funded by Waka Kotahi.

Asset Data Knowledge

It is important to note that the underpinning data, used and maintained in available databases, can include degrees of error or uncertainty. This is mostly due to the origin of some data from less robust, often historic data sources. The Data Quality assessment obtained from the Transport Insights website shows that the data captured for RDC can be used with a high degree of confidence, shown in the Strategic Case.

However, there are gaps and lower levels of confidence within Council’s asset register (RAMM) for roading assets which could influence financial forecasts. This increases the risk over/under budgeting for the funding period as accurate information about the RDC assets are unknown.

17.4 Risk Evaluation Process

Risk evaluation is the process of comparing the results of the risk analysis with the risk criteria to determine whether the risk and/or magnitude is acceptable or tolerable. The Council will draw on the best practice principles outlined by Waka Kotahi to identify, analyse, evaluate, and treat risks. The Risk Management Process will develop a Risk Matrix of Likelihood (L) versus Consequence (C) which will allow the prioritisation of identified risk.

Likelihood (L) Scale

The likelihood scale describes how likely or often an event is expected to occur. For physical assets, the likelihood of some events can be estimated by condition assessments. For other events such as natural disasters or political risks the likelihood of occurrence is more difficult to determine and probably even more difficult for non-technical people to understand e.g. the 1 in a hundred-year flood.

The likelihood of occurrence and severity of consequences should be based on as much real data as possible; for example, local knowledge or recorded events such as maintenance records, weather events etc. Some analysis may be required for verification.

The prime objective of this process is to apply a set of likelihood criteria which are also reasonable within the context of land transport activities. The likelihood scales help identify how often a particular event is expected to occur.

The descriptors shown in Table 41 are provided as a guide to help rank the likelihood of occurrence of each risk.

Table 41: Likelihood scale

| Score | Likelihood | Descriptor |
|-------|----------------|--|
| 5 | Almost Certain | The event is expected to occur e.g. 80% chance within the next 12 months |
| 4 | Very Likely | The event will probably occur e.g. 25% chance within the next 12 months or once in 4 years |
| 3 | Likely | The event might occur e.g. 10% chance within the next 12 months or once in 10 years |
| 2 | Unlikely | The event will probably not occur e.g. 4% chance within the next 12 months or once in 25 years |
| 1 | Rare | The event is not expected to occur e.g. 1-2% chance within the next 12 months or once in 50+ years |

Consequence (C) Scale

Consequences of an event are the impacts that it has on the social, environmental, or economic wellbeing of the community or Council. The scale of consequence is focused on a quantitative approach. Each of these risk areas are then assessed using the standard consequence levels of:

- Negligible
- Minor
- Moderate
- Major
- Catastrophic

Table 42 is a series of qualitative descriptors for levels of consequence for the key areas. They are not exhaustive but will help when considering the correct level with the view that Council is the Risk Owner.

Table 42: Consequence Scale

| Score | Likelihood | Descriptor |
|-------|--------------|--|
| 5 | Catastrophic | Death and/or catastrophic effect on environment that may take longer than a year to restore and cost more than \$1,000,000. Regulator notification mandatory. |
| 4 | Major | Life threatening injury or multiple injuries requiring admission to hospital and/or significant effect on environment that may take up to a year to restore and cost up to \$1,000,000. Regulator notification mandatory. |
| 3 | Moderate | Injury requiring admission to hospital and/or effect on environment that may take 1-2 months to restore and cost up to \$20,000. Regulator notification mandatory. |
| 2 | Minor | Minor illness or injury requiring medical treatment (e.g. first aid) and/or minor effect on environment that can be cleaned up. Any potential damage remediation likely to cost less than \$5,000. Regulator notification unlikely to be required. |
| 1 | Negligible | Illness or injury that doesn't require medical attention. No adverse effect on environment and regulator notification not required. |

Risk Matrix

After the likelihood and consequence factors have been determined, the level of risk is calculated by multiplying the Likelihood of Occurrence and Consequence Rating together.

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

The seriousness of risk is best categorised as a function of Consequence and Likelihood and involves selecting the most appropriate combination determined using the most current information. Risk categories from Low to Extreme are shown using a 'traffic light' system in Table 43 below.

Council's risk management process requires an initial and revised risk assessment to determine the risk rating. The matrix below shows how the Likelihood and Consequence scores are combined to yield a total risk score for an event.

Table 43: Risk rating matrix

| Likelihood | Consequence | | | | |
|-------------------|--------------|-----------|--------------|-------------|----------------|
| | 1 Negligible | 2 - Minor | 3 - Moderate | 4 - Major | 5 Catastrophic |
| 5 -Almost certain | Low | Moderate | High | Significant | Significant |
| 4 - Very Likely | Low | Moderate | High | Very High | Significant |
| 3 -Likely | Low | Moderate | High | High | Significant |
| 2 - Unlikely | Low | Low | Moderate | Moderate | Moderate |
| 1 - Rare | Low | Low | Low | Low | Low |

When the assessment of risk is done without regard for any current risk mitigation or control method it produces the raw, untreated, or gross risk.

Once the gross risk has been established an assessment of the risk is completed to understand the existing mitigation / control methods. The risk is then re-assessed for likelihood and consequence, taking the current mitigation / control methods into account. This helps quantify the effectiveness of the controls and provide a residual risk rating.

Risk Register

The Council is exposed to a number of risks arising from the operation of the road network. A Risk Register and Treatment Plan have been developed in alignment with AS/NZS ISO 31000:2009 Risk Management, Council’s Corporate Risk Policy, and the RIMS Best Practice Guideline for Risk Management on Road Networks. The risks identified are shown in Table 44:

Table 44: Risks

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|---------------|--|---|---|--|------------|-------------|----------------|--|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R1 | Planning Risk | Observed population growth is slower than demand forecasts predicted | Demand forecast based on inaccurate assumptions | Impact on financial ability to maintain infrastructure. Lower population will increase cost per property of delivering LOS. | Service Delivery Financial Decision Making | 3 | 2 | Moderate Risk | Council regularly reviews census data and monitor population growth, adjust investment accordingly Develop a spatial plan to map population growth. | 2 | 1 | Low Risk |
| R2 | Planning Risk | Observed population growth is more rapid than forecasts predicted | Demand forecast based on inaccurate assumptions | Reduced LOS as additional demand is placed on infrastructure. Increased funding to service excess capacity | Financial Decision Making Service Delivery | 3 | 3 | High Risk | Council regularly reviews census data and monitor population growth, adjust investment accordingly Develop a spatial plan to map population growth. | 2 | 1 | Low Risk |
| R3 | Planning Risk | The impact of climate change will be more severe than predicted | Climatic changes in the Rangitikei District are more extreme than predicted | Increased Infrastructure repair costs Decreased LOS and safety Impact on wellbeing and satisfaction of the community | Financial Decision Making Health and Safety | 4 | 4 | Very High Risk | Ensuring adequate insurance cover. Identify and mitigate high risk areas. Undertaking appropriate maintenance as a preventative measure. | 2 | 4 | Moderate Risk |

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|-----------------|--|--|---|---|------------|-------------|----------------|---|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R4 | Management Risk | The council will not receive emergency fund in a timely manner causing council to reprioritize budgets | Recently requests to Waka Kotahi for emergency funds are taking months, even years to be paid. | Without timely processing of emergency event funding, council will be required to reprioritize budget at the cost of maintenance which will result in a drop of LOS Reduced safety due to declining asset conditions | Financial Decision Making Service Delivery | 4 | 4 | Very High Risk | Anticipate extreme weather events and therefore request an increased overall funding requests to provide a safeguard. | 3 | 3 | High Risk |
| R5 | Management Risk | Cost escalations affecting affordability of necessary work. | Inflationary pressures such as material (steel, aggregate, etc) can affect the price of work | Increased cost to Councils Unable to complete all necessary maintenance, renewals or rehabilitations I the FWP Decreasing LOS Increasing safety concerns | Financial Decision Making Service Delivery | 3 | 4 | High Risk | Budget monitoring and regular reporting Careful contract (project) planning | 2 | 3 | Moderate Risk |
| R6 | Management Risk | The total level of Waka Kotahi NZTA funding is reduced. | Changes to the Waka Kotahi funding model | Reduction in the level of funding will have a major impact of the council budgets and thus affordability of required maintenance and LOS. Decreasing ability to maintain and renew assets on the network will increase risk to Council Increased customer dissatisfaction | Financial Decision Making Service Delivery | 2 | 5 | Moderate Risk | The Council intends to maintain its awareness of any issues that impact on the level of Waka Kotahi NZTA funding. Funding for the changing needs and expectations of the community has been recognized in the 10-year plan. | 1 | 5 | Low Risk |

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|---------------------|---|--|--|---|------------|-------------|----------------|---|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R7 | Management Risk | Freight traffic reducing road performance | High levels of forestry traffic on RDC network will continue to cause significant deterioration | Increased maintenance on freight routes Future funding not keeping pace with maintenance or renewals requirements ⁴⁰ Reduced safety for commuters Reduced service delivery | Asset Management Service Delivery | 4 | 3 | High Risk | Condition assessments for freight route carried out to inform mitigations required. Maintenance rate needs to keep pace with the deterioration rate | 2 | 3 | Moderate Risk |
| R8 | Physical Asset Risk | Remaining useful life. | Due to limited data - useful life of an asset is more closely related to construction date rather than condition | Increased risk of over/under budgeting for the funding period as remaining useful life is unknown. Assets with declining LOS Reprioritising funding to undertake unforeseen rehab/maintenance leaving less funding for FWP | Asset & Project Management Service Delivery | 4 | 4 | Very High Risk | Include condition assessments in as the key indicator of remaining useful life where possible. | 2 | 4 | Moderate Risk |

⁴⁰ Parewanui Road, Santoft Road, Kie Kie Road, Murimotu Road, Watershed Road, West Road, Turakina Valley Road 3 and Ongo Road are particularly at risk of requiring heavy maintenance.

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|---------------------|--|--|--|---|------------|-------------|----------------|---|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R8 | Physical Asset Risk | Retaining wall condition | Due to limited funding - retaining wall condition not assessed | Increased risk of over/under budgeting for the funding period as remaining useful life is unknown. Assets with declining LOS Reprioritising funding to undertake unforeseen rehab/maintenance leaving less funding for FWP | Asset & Project Management Service Delivery | 4 | 4 | Very High Risk | Include condition assessments in as the key indicator of remaining useful life where possible. | 2 | 4 | Moderate Risk |
| R9 | Physical Asset Risk | Collapse of bridge or retaining wall, sink hole, landslide | Due to a lack of maintenance / inspections or an extreme weather event | Reprioritising funding to undertake unforeseen rehab/maintenance leaving less funding for FWP Increased risk of over/under budgeting for the funding period as remaining useful life is unknown. | Asset & Project Management Service Delivery | 2 | 4 | Moderate Risk | 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 | 2 | 3 | Moderate Risk |
| R10 | Management Risk | General labour shortage, maintaining skills and abilities, maintaining local knowledge | Difficulty in attracting, remunerating, and retaining key staff | Cost Impact Impact on continuity of planning decisions making | Service Delivery | 3 | 4 | High Risk | Monitor labour market and work to maintain or enhance the working environment at RDC | 3 | 4 | High Risk |

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|---------------|-----------------------------------|---|--|--|------------|-------------|------------------|--|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R11 | Delivery Risk | Maintenance Contract Renewal | 9 year Maintenance Contract ending – new contract July 2024 | Increase costs Delays in planned projects Economic impact Increase in safety risks Disruption to journeys Community Dissatisfaction | Financial Decision Making Leadership and Governance | 3 | 3 | High Risk | Undertake a rigorous tender process Go to market early Budget monitoring and regular reporting | 2 | 4 | Moderate Risk |
| R12 | Planning Risk | Road closure due to incidents | Climate change events Accidents | Delays in planned projects Costs to emergency fund Environmental damage Economic impact Social Impact Increase in safety risks Disruption to journeys Community Dissatisfaction | Environment Asset & Project Management Service Delivery Management Leadership and Governance Reputation | 4 | 5 | Significant Risk | Biennial review of agreed detours Identify key routes, roads and areas prone to slips Emergency response plan and process in place with contractors so community impact is reduced. Work with Waka Kotahi on accident hot spots Design of reseals taking into account modern safe road design Safety through maintenance and renewals | 2 | 5 | Moderate Risk |
| R13 | Planning Risk | Not replacing depreciating assets | Funding | Reduction in asset value Reduction in condition of asset Reduction in service levels | Asset & Project Management Financial Decision Making | 3 | 5 | Significant Risk | Monitor impact on road roughness and condition Investigate other external funding sources Budget for condition assessments Plan and undertake renewals | 2 | 5 | Moderate Risk |

| Risk Reference Number | Risk Category | Risk with current Controls | | | | | | | | | | |
|-----------------------|---------------|----------------------------|--|---|---|------------|-------------|-------------|--|------------|-------------|---------------|
| | | Risk | Source "Caused by" | Expected Consequences Impact "Consequences" | Risk Area | Likelihood | Consequence | Risk Rating | Controls | Likelihood | Consequence | Risk Rating |
| R14 | Operational | Changing vehicle needs | Increased usage of VDAM, 50 Max and HPM vehicles | Impact on bridges and road use and loads Cost of upgrading bridges and key roads | Asset & Project Management Service Delivery Financial Decision Making | 3 | 4 | High Risk | Monitor changing requirements of SH Regulate permitting through NZTA. Consolidate HV traffic to key routes | 2 | 4 | Moderate Risk |

IDENTIFYING CRITICAL ASSETS

Risk management provides the foundation for critical infrastructure protection. The ability to effectively identify critical assets is a crucial first step to any risk management process. Ensuring that a critical infrastructure asset identification methodology is complete, reproducible, documented, and defensible it is essential to enable cross-sector comparisons. The scope, approach and evaluation method are variables that can contribute to meeting these requirements. While several methodologies have been proposed in literature, no current methodology meets all the requirements. A multi-criteria analysis decision making model that combines the strengths of existing methodologies is a promising approach as it can provide systematic solutions that address the gaps and challenges associated with critical infrastructure asset identification.

MANAGING THE RISKS

The figure below summarises the key steps of the risk management process specified in AS/NZS ISO 31000:2009 and as applied within this contract. This process is a systematic approach applicable to all aspects of Council's Roading Activity delivery, from governance to task level activity.

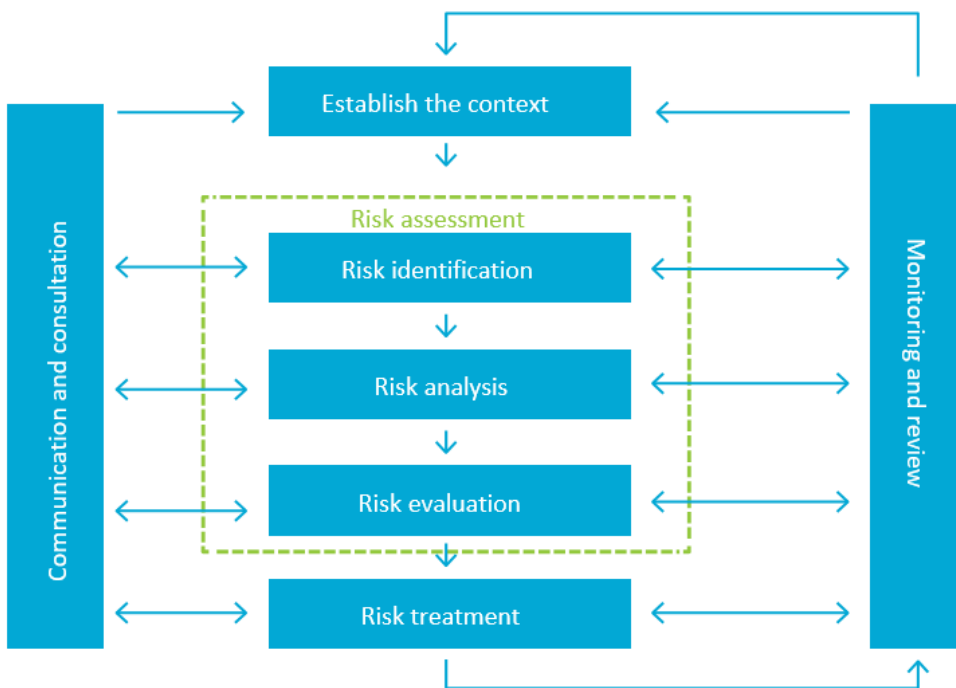


Figure 65: Risk Management Process

18. Plan Monitoring and Improvement

18.1 Monitoring and Review

The activity management team will monitor contract delivery and the identified risks on the register (in accordance with Waka Kotahi's minimum standard Z/44 – Risk management, Table 3.2). Risk owners will be responsible for ongoing monitoring and review of risks, the conduct and effectiveness of associated treatments and currency of related data. Council will be responsible for monitoring the content of the risk register to ensure currency of data and the identification and notification of risk owners needing to update data. Contract risk reviews will be conducted to ensure the ongoing validity of risks identified, exposure levels, and progress and effect of associated treatment actions. Risk reviews will be attended by members of the delivery team deemed appropriate by the activity management team to maximise outcomes.

18.2 Assessing Infrastructure Resilience

IMPACTS ON THE ROADING NETWORK

The Region is a major corridor for road and rail transportation networks. There is an extensive network of both state highways and local roads throughout the area, the road network has been identified as being one of the most critical. The main causes of large-scale failure are earthquake and river flooding, with severe storms and landslides causing most site-specific failures. The consequences are primarily social and economic, with isolation and restricted access being the main

issues. Despite this, there is arguably more redundancy within the road network than any of the other lifeline utilities. Plans to deal with a large-scale failure are detailed in the CDEM Plans. Bridges, culverts and structures are at risk from natural hazard events such as earthquakes, floods, and the failure of attached and adjacent services e.g. water mains. It is only in recent times that adequate earthquake resistance has been incorporated into bridge designs.

LIFELINE SERVICES – RISKS OF NATURAL HAZARDS

A report undertaken by the Manawatū-Wanganui Lifelines Advisory Group examined the effects of direct damage by known major natural hazards to lifeline services. The report:

- Assessed the vulnerability of lifeline services to damage from hazards,
- Identified interdependencies amongst the lifeline services,
- Identified practical strategies for reducing risk, and
- Helped project participants identify and implement mitigation and response strategies for their own networks and co-ordinate these with the plans of other lifelines.
- Assessed risk scores were determined and a summary of the key risks for the Rangitikei District Transportation Infrastructure is summarized below. A high score indicates high risk and dependency of other utilities.

IMPROVEMENT PLAN

The Transport Activity Management Improvement Programme has been developed using the Transport Insights Group 6 pillars:

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

Table 45 lists the current improvement projects and service or data gaps, allocated to the relevant pillar:

Table 45: Improvement Plan

| Project | Title | Activity | Current Status | Future Status and Identified Improvements | Improvement approach | Priority | Timeframe | Responsibility | Resources |
|----------------|--------------------------------------|--|---|---|--|----------|-----------|-----------------|---|
| SYSTEMS | | | | | | | | | |
| S1 | Differential Level of Service (dLoS) | Incorporate the dLoS to Improve national alignment and value for money linked to business systems. | dLoS to be incorporated into the next round of RDC assessment frameworks. dLoS has been issued but is still under development as some of the metrics have not been quantified. | Business / AMP systems fully integrated with dLoS definitions and use of performance measures. | Work collaboratively with other regional RCAs and Waka Kotahi. Review data sources to determine when information related to dLoS is available. | High | Ongoing | Roading Manager | Programme Development Engineer, Asset Team Leader |
| S2 | One Network Framework integration | Incorporate the ONF over and above the existing ONRC system to Improve link to business systems. | ONRC incorporated into RDC data and is currently being used to report Transport Insights statistics ONF not formally issued; currently being developed. | Business / AMP systems fully integrated with ONF classification, levels of service, and use of performance measures. All carriageways / other assets assigned ONF. | Work collaboratively with other regional RCAs and Waka Kotahi. Maintain snapshot capability of Network's pavement and surfacing condition. Review data sources to determine when information related to ONF is | High | Ongoing | Roading Manager | Programme Development Engineer, Asset Team Leader |

| | | | | | | | | | |
|-----------------|-------------------------|--|---|---|---|--------|---------|------------------------------|--|
| | | | | | available. | | | | |
| S3 | Footpath Installation | Implementation appropriate facilities to allow children to walk and cycle to school to reduce individual vehicle drop-offs | Limited data available about condition and connectivity of active mode facilities around schools | Investigations and investment into improving current active mode facilities | In- house asset inspections to achieve a consistent data quality and periodically baseline. Align findings with other, potentially conflicting programmes | High | Ongoing | Roading manager | Programme development engineer |
| S5 | Road Improvements | Road improvements to be carried out to improve freight connections on the RDC network | Periodic condition data available for different sections of the network over multiple roads making it difficult to understand the mitigations required on high volume freight routes. | More consistent data collection, leading to road improvements/ maintenance / renewals programming in alignment with other activities to improve both efficiency and future demand | Waka Kotahi is adopting a new national pavement assessment over the next year – this can be used to improve data collection | High | Ongoing | Roading manager | Project engineer |
| EVIDENCE | | | | | | | | | |
| E1 | Asset condition status | Improve investment in work categories. | Identification of condition and programming of structures and other asset renewals limited by historical short term external contracting of activity. | Development and maintenance of a robust structures, footpaths, drainage and other maintenance and renewal programme. | Manage, gather and adapt funding to provide total network coverage on a rolling 30 year programme. | Medium | Ongoing | Roading Manager | Programme Development Engineer, Project Engineer |
| E2 | Active transport demand | Encourage greater usage of active transport mode(s). | Limited and non-cohesive data available for Condition and re-purposing of assets to encourage active transport. RDC Walking & Cycling | An identified, objectively prioritised programme related to provision of walking and cycling facilities; relevant to findings of | Development of a 'Walking and Cycling Strategy' prioritisation matrix to identify and collate | Medium | Ongoing | Community Facilities Manager | External Consultancy, Programme Development |

| | | | | | | | | | |
|----|---------------|---|--|--|--|------|---------|-------------------|----------------------------------|
| | | | Strategy developed and reviewed by Community Facilities & Roading representatives. | latest Resident Satisfaction Survey, which highlights lack of adequacy cycling facilities. | demand against service gaps within the district. Work collaboratively with other RCA's and Waka Kotahi. Where necessary. | | | | Engineer |
| E3 | RAMM database | Increasing and maintenance the accuracy and completeness of the Districts RAMM database | 2017/18 data quality score 47. Several major data quality issues have been presented and primary issue raised comprise: <ul style="list-style-type: none">- 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 utilize data. | Audit RAMM database and identify gaps. Develop and implement prioritized action plan. Assess options for future management of RAMM databases | High | Ongoing | Asset team leader | Asset engineer, roading engineer |

COMMUNICATING

| | | | | | | | | | |
|----|---|---|--|--|---|--------|---------|-------------------------------|--|
| C1 | Customer Survey | Undertake an annual customer satisfaction survey | No current customer satisfaction being undertaken by RDC | Undertake an annual customer satisfaction survey to understand issues and highlight the benefits of the network | Engage service provider to undertake annual survey | High | ongoing | Communities' facility manager | External consultants |
| C2 | Using 'Story Maps' as part of consultation for RDC Long | Details Council's LTP as part of legislative requirements, aligned with all department activities and desire of | LTP consultation 'Story Maps' engaging with public via RDC Strategy Manager across Council. Roading related | 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 | Assess growth areas and quantity of affected residences. Conduct NPV | Medium | Ongoing | Strategy Manager | Roading Manager, Programme Development Engineer, Policy Adviser, |

| | | | | | | | | | |
|------------------|------------------------|---|--|--|---|--------|---------|--------------------------------|--------------------------------|
| | Term Plan | Rangitikei residents. | portion Testing viability of ongoing and transparent seal extension / dust mitigation programme with public. | District. | analysis to determine economic viability. Determine likely burden on ratepayer and portray through future Story Maps for public consultation. | | | | Communications Officer |
| DECISION MAKING | | | | | | | | | |
| DM1 | Emergency Funding | Increasing Councils Emergency Fund reserve | Council does not have an emergency fund reserve. Emergency works are undertaken using funding allocated to other work categories | Identify areas vulnerable to climate change events. Reserve funding for emergency events, particularly climate change events | Include Emergency funding in forward works plan. Obtain internal approvals and approvals from Waka Kotahi | High | Ongoing | Programme Development Engineer | Programme Development Engineer |
| SERVICE DELIVERY | | | | | | | | | |
| SD1 | Maintenance contract | Procurement of new transport / roading contract(s). | Current contract period ends at the end of the final 3-year period (2021-2024) | New Contract to be procured for the next funding period (2024-2027) | Develop programme of tasks required for the new Maintenance Contract. Obtain internal approvals and develop communications plan | Medium | Dec-23 | Roading Manager | Roading team |
| PEOPLE / CULTURE | | | | | | | | | |
| P1 | Regional collaboration | Regional collaboration is continued to be developed and new opportunities | Collaboration and development of combined AMP occurred in the 2021 – | Continue to work together with shared improvement opportunities for AMP development. Identify further | Participating in regional transport meetings / | High | Ongoing | Roading Manager | Programme Development Engineer |

| | | | | | | | | | |
|----|--------------------|--|---|--|--|--------|---------|--------------------|---|
| | | identified. | 2024 NLTP. NOF/NOP completed with PNCC/ Waka Kotahi. | collaborative opportunities | workshops / forums to promote collaboration. Involve both RCAs and Waka Kotahi. | | | | |
| P2 | Capability plan | Development of a staff capability and succession 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 | Ongoing | Roading Manager | HR department, Roading team, Asset team |

