



ROTORUA LAKES COUNCIL

Te kaunihera o ngā roto o Rotorua

Land Transport Activity Management Plan 2021 - 2031

Document control

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SECTION 1: Executive Summary

1.1 Land Transport Activity

Rotorua Lakes Council is responsible for management of the land transport activity, excluding the state highways, within the Rotorua District. Provision and maintenance of these facilities ensures a safer physical environment and enhances quality of life in our local communities. It enables economic activity and growth by allowing for the efficient transport of goods and services and by promoting access into and across the Rotorua network. It also provides access for utilities, supports facilitation of events and other activities, promotes road safety and encourages the use of sustainable forms of travel.




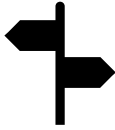



This Activity Management Plan outlines how Rotorua Lakes Council will deliver the land transport activity to provide the services road users need to go about everyday life. The plan has been structured into three key parts to communicate the infrastructure requirements utilising the business case approach as recommended by the Road Efficiency Group. The plan has combined the major asset classes into three core functional areas:

- Pavements including pavements, surfaces, road drainage, vegetation control
- Structures including bridges, large culverts, underpasses, retaining walls
- Traffic Services including traffic signs, road markings, streetlighting, traffic signals.

1.2 Assets at a Glance

Rotorua Lakes Council owns and manages \$569 million of land transport assets (replacement value as at October 2020). A snapshot of the land transport assets is shown in Table 1.

Table 1 Asset summary

Sealed Roads		Environmental	
	886km of sealed roads		Environmental activities including management of roadside vegetation, street cleaning, and removal of litter and detritus
Unsealed Roads		Traffic Facilities	
	122km of unsealed roads		10,555 signs, 3 sets of traffic signals, 4,845 streetlights, road markings and 140 bus shelters
Drainage		Footpath and Cycling	
	525km of kerb and channel and 54km of culverts		385km of Footpaths and 49 km cycling routes (includes shared path, cycle lane and cycle path)
Structures			
	82 bridges, 33 large culverts / underpasses and 2,663m of retaining walls		

Source: RLC Revaluation FY20 CPI

1.3 About Rotorua

Rotorua's volcanic landscape of lakes, calderas and geothermal features is unique. The compact size of the city, the geothermal features and the ready access to parkland, lakes, forests, and rural landscapes, are popular destinations for residents and visitors alike. Rotorua has an estimated permanent population of about 76,200, making it the country's tenth largest urban area and the Bay of Plenty's second largest urban area after Tauranga.

Rotorua is in the heart of the North Island and its transport system plays a key role in connecting the central and upper North Island. Rotorua has key routes that connect primary industry with the Port of Tauranga, is a tourist destination, and provides tourism links to Taupo, Waikato and Auckland. Rotorua Airport is regionally significant and serves both the district's tourism and business sectors.

1.4 Strategic Context

The strategic context for the land transport activity at national, regional and local levels as conceptualised in Figure 1. It is influenced by a range of factors including:

- global trends such as climate change
- national drivers and legislation changes such as the Government Policy Statement, Road to Zero Strategy, Arataki Ten Year Plan
- external requirements such as New Zealand Transport Agency funding, Road Efficiency Group capability guidance
- internal requirements such as levels of service and growth planning.

Figure 1 Strategic linkages

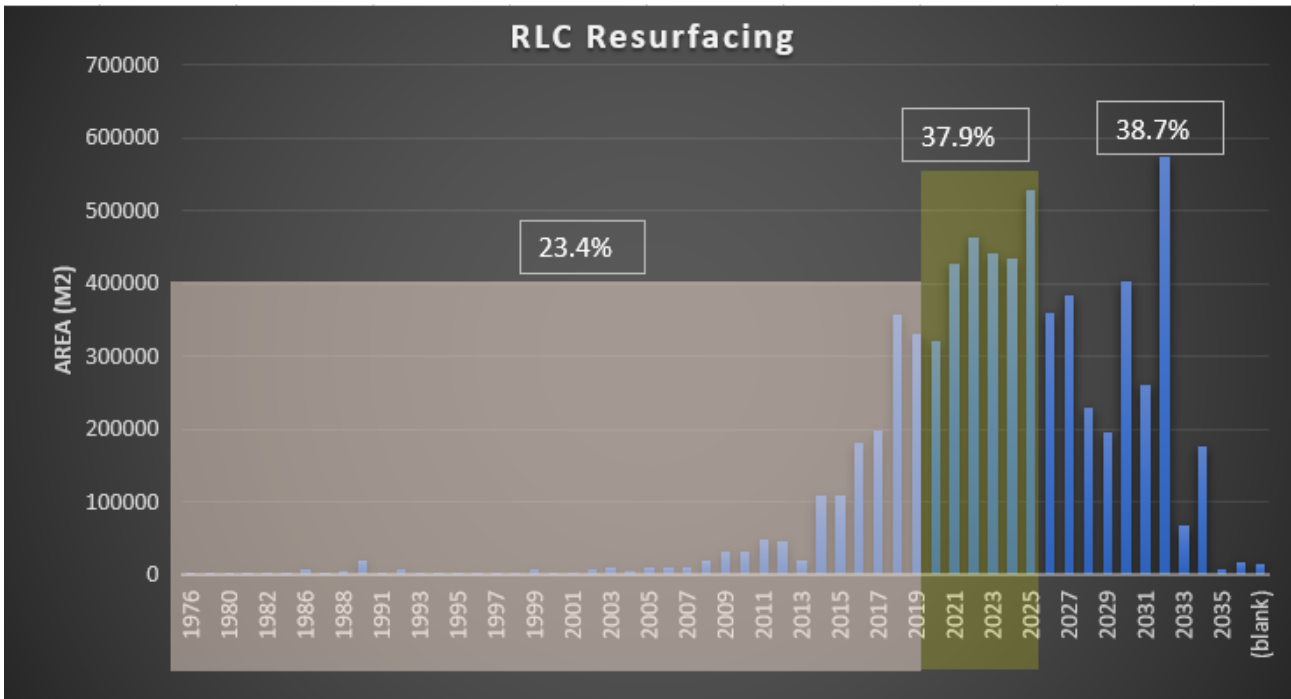


1.5 How our Network is Performing

Pavements

As our assets continue to age, they also deteriorate and require replacement to be kept in a fit for purpose condition. Lifecycle management of pavements is key to ensuring sustainable outcomes. The majority of assets are resurfaced within the optimal time (7 to 8% per year). Some assets have exceeded their predicted design life but generally are performing adequately. A proactive regime is in place to ensure the proper balance between maximising pavement life and risking pavement failure, this is achieved through analysis of the data then site verification.

Figure 2 Resurfacing age profile

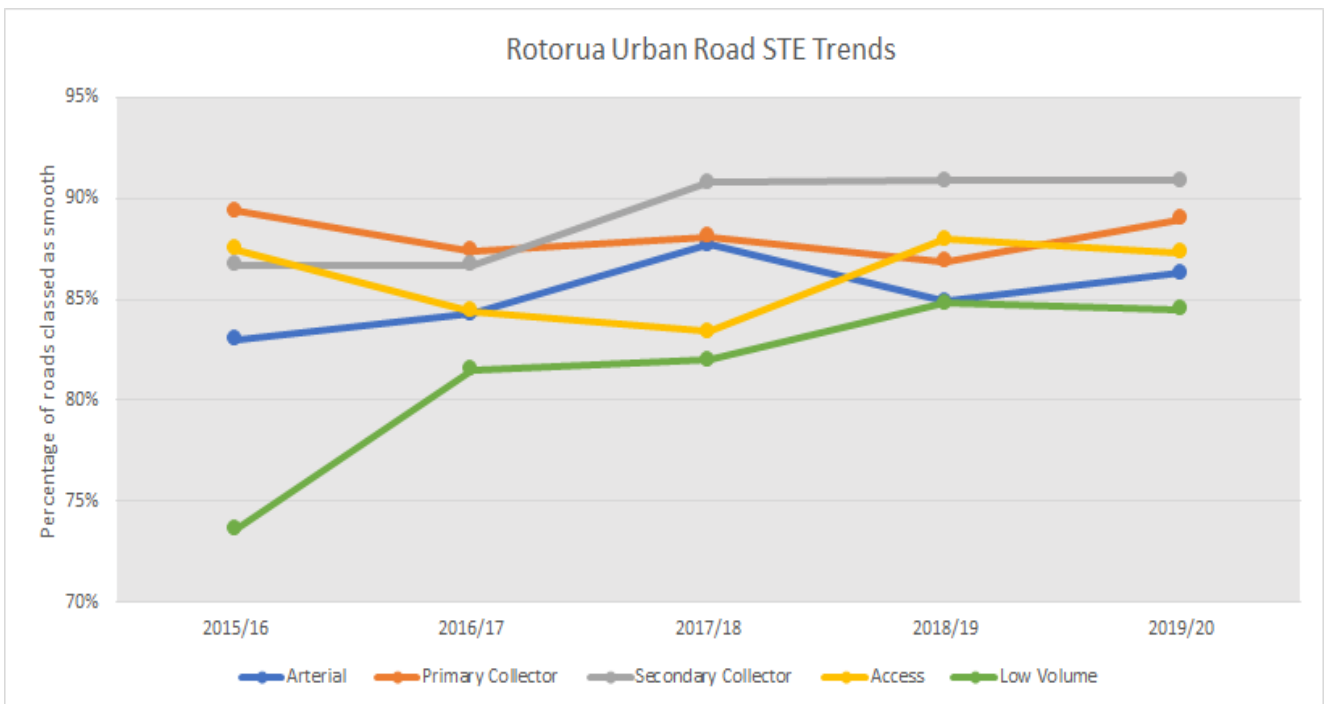


Source: RLC RAMM database (as of June 2020)

The histogram graph above shows age distribution verse default design life. 23% of our roads that are lightly loaded achieve a life exceeding that of the theoretical life.

The average quality of roads is measured in terms of Smooth Travel Exposure. In this area Rotorua Lakes Council performs well when benchmarked against our peer groups (Grey, South Waikato, New Plymouth and Queenstown Lakes District Councils). The trends show an improvement year on year as shown in Figure 3 by the road classification categories.

Figure 3 Ride quality trends



Source ONRC Reporting Tool

Bridges

- Bridge condition – Over half of the bridge stock (55%) are over 50 years old (oldest being 88 years old), a further 19% is between 21 and 49 years old and the remainder less than 20 years old.
- Bridge performance – It is important that Council’s bridge network is accessible to heavy vehicles that support the district’s economy. Changes in legislation allows heavier vehicles on New Zealand roads and need to ensure the resilience of our infrastructure meets these new mass limit rules. Currently Rotorua Lakes Council has nine bridges that are inadequate for the new mass limit rules on roads (known as 50Max High Productivity Motor Vehicles).

1.6 Problems Facing Rotorua

The key problem statements identified for Rotorua’s land transport activity are summarised in Table 2.


Table 2 Problem statements

No	Problem	Problem Statement	Benefits Statement
1	Safety	Safety of the transport network.	Increased safety for users of the district’s transport network and reduce DSI’s.
2	Sustainable infrastructure	Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity.	Appropriate level of investment that maintains transport assets in perpetuity and has minimised environmental footprint.
3	Efficiency	Managing future traffic growth, interaction with the state highway network and revocation of SH30a.	Improved economic performance.
4	Mode demand	Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand.	Increased share for various modes and reduced demand for car journeys.
5	Resilience	Providing long-term provision for accessibility and availability of alternative routes particularly state highway alternatives.	Improved journey reliability and functionality of the network.

1.7 Preferred Programme Summary

Over the last Long-Term Plan cycle (2018 to 2021), these key problems continue to be addressed. A high-level summary of progress on addressing these issues show that trends are steady. Continued investment is vital to ensure positive progress can continue to be made. Our preferred investment programmes are generally continuing with our current programmes as data supporting outcomes shows steady trends.

Our preferred investment programmes by the key problems are:

No	Problem	Proposed investment programme	Investment Priorities
1	Safety	<ul style="list-style-type: none"> – Maintenance – All maintenance work categories contribute to delivering a safe network and ultimately to the target service level of zero DSIs. – Renewals – The asset renewal programme is also a key activity to ensure the land transport network is in required condition to deliver on safety targets. – Low Cost Low Risk (LCLR) Programmes – Some of the LCLR projects are driven primarily from safety considerations. The key LCLR initiatives are: <ul style="list-style-type: none"> ○ Road to Zero ○ Traffic Management Intervention ○ Minor Safety Programme ○ Safe and Sustainable Journeys ○ Ngongotaha Village Study 	Safety 

No	Problem	Proposed investment programme	Investment Priorities
2	Sustainable Infrastructure	<p>Financial sustainability: We propose the following investment programmes for ensuring the preservation and sustainability of the pavements:</p> <p>Maintenance and Renewals: Appropriate levels of investment for both maintenance and renewals across all categories is essential to deliver on all strategic responses addressing the identified problems. Funding priority should be for both operational and renewal expenditure to ensure will keep pace with the rate of asset deterioration.</p> <p>Environmental sustainability: LCLR: Investment in Council’s cycling strategy not only meets demands for various other forms of alternative transport, e.g. mobility transport, by rolling out a programme of shared path development. Passenger Transport Infrastructure: A substantial increase in investment for passenger transport infrastructure is proposed to upgrade facilities and maintenance response. Drainage Maintenance: An increase in budget is sought to increase frequency of sweeping to further reduce contaminants from the transport network and reduce impact on receiving environment.</p>	<p>Climate change</p> <p>Investing in the environment</p>
3	Efficiency	<p>Operational Traffic Management: RLC will see over the NLTP period an increasing demand on operational traffic management as a result of the SH30A revocation. RLC will set benchmarks for efficiency, including the state highway network, and monitor performance going forward.</p> <p>LCLR: The impact of SH30 upgrades on the local road network are being investigated as this NZTA (Waka Kotahi) project develops. However, it is likely that some interventions on local roads are necessary to manage this impact.</p>	<p>Better travel options</p> <p>Improved freight connections</p>
4	Mode Demand	<p>Maintenance: Continued investment in the maintenance and renewals of the footpath network with interventions guided by a programme of condition rating.</p> <p>LCLR: Implementation of Council’s Urban Cycling Strategic Plan which is the strategic framework for developing an interconnected series of shared paths to support increased cycling. Demand for other modes also exists and the current strategic plan will be reviewed to incorporate all alternative modes inclusive of passenger transport. It is imperative however that funding is available to support alternative modes of transport.</p> <p>Passenger Transport Infrastructure: In conjunction with the Regional Council and NZTA, RLC will develop Rotorua Modeshift Plan, a new multi-mode shift plan, (including cycleways) to be implemented over the next period. RLC will invest additional funding into infrastructure both with maintenance and upgraded series of bus shelters.</p>	<p>Better travel options</p>
5	Resilience	<p>We proposed the following investment programmes for strengthening our infrastructure resilience:</p> <ul style="list-style-type: none"> – Replace our large culverts assessed in poor and very poor condition over ten years – Increase level of drainage maintenance to reduce risk of system failure – Undertake bridge assessments and strengthening seven bridges (where practical). 	<p>Safety</p> <p>Improved freight connections</p>

1.8 Financial Summary

Our preferred programme to address these problems through our strategic responses and core maintenance programmes is shown in Table 3. The overall funding request including Low Cost Low Risk Improvements for the preferred programme for 2021-24 is \$31 million. Future details are included in the Financial Summary, Section 11 of this plan.

Table 3 Financial summary

Expenditure Summary (\$000)				
Description	2021/22	2022/23	2023/24	Total
Opex	\$ 8,965	\$ 8,985	\$ 8,985	\$ 26,935
Renewals	\$ 7,397	\$ 7,397	\$ 7,397	\$ 22,191
Capex	\$ 4,956	\$ 5,141	\$ 5,091	\$ 15,188
CBD	\$ 1,335	\$ 1,335	\$ 1,335	\$ 4,005
Total	\$ 22,653	\$ 22,858	\$ 22,808	\$ 68,319

1.9 Future Improvements

Our key improvement focus areas over the next three years will be:

	Forecasting demand	Get better at forecasting demand and changing behaviour. This will be achieved by developing the Rotorua Modeshift Plan collaboratively with Bay of Plenty Regional Council, Waka Kotahi New Zealand Transport Agency and Rotorua Lakes Council. This will ensure increased share for various transport modes and not just public transport and will reduce demand for car journeys.
	Asset data	Implement the various asset data improvements identified with the Road Efficiency Group Data Quality Reports. This will ensure there is sound data to make investment decisions.
	Capital Works Planning	Get better at the business as usual work programmes for our community. This will be achieved by developing the multi-year forward works programmes for footpath and kerb and channel replacements within RAMM utilising condition complaints (service requests information) and risk. Review alongside the proposed projects for efficiencies and reducing disruption to the public by these activities.

STRATEGIC CASE

SECTION 2: Introduction

2.1 Land Transport Activity

Rotorua Lakes Council (RLC) is responsible for management of the transport activity, excluding the state highways, within the Rotorua District (district).

As such, the RLC is responsible for the planning, provision, development, operations and maintenance of the district's land transportation network and facilities. Provision and maintenance of these facilities promotes a safer physical and enhances quality of life in our local communities. It enables economic activity and growth by allowing for the efficient transport of goods and services and by promoting access into and across the Rotorua network. It also provides access for utilities, supports facilitation of events and other activities, promotes road safety and encourages the use of sustainable forms of travel.

The land transport activity covers the traditional maintain, operate and renew roading assets. It also equally covers control and operational activities such as controlling road corridors, road safety action programmes and subsidising regional public transport. This Activity Management Plan (AMP) outlines how RLC will deliver the transportation activity to provide the services road users need to go about everyday life.

The objective of the plan is to:

- describe how RLC will implement the expectations that the community has about the management of its road assets through setting and delivering service levels within budget constraints, while also meeting the vision of its funding partner the Waka Kotahi NZ Transport Agency (NZTA)
- provide clear linkages to the Government Policy Statement (GPS), the Regional Land Transport Programme, One Network Road Classification (ONRC) framework, Council Infrastructure Strategy, Long Term Plan (LTP), and all other key planning processes and documents
- provide a ten-year indication of management requirements and work programmes from 1 July 2021 to 30 June 2031 based on proposed levels of service (LOS)
- to comply with the Local Government Amendment Act (LGA) 2010 specifically in relation to activities, services and assets.

2.2 Purpose of the Plan

The purpose of this plan is to improve the stewardship of assets by RLC on behalf of its customers and stakeholders and achieve compliance with statutory obligations.

This plan specifically does that by:

- demonstrating responsible stewardship of transportation assets
- identifying minimum lifecycle (long term) costs to agreed LOS
- defining of service level standards and what this means to its customers
- assisting with an integrated approach to asset management (AM) throughout the organisation
- focusing on customer satisfaction
- supporting long term financial planning of RLC
- clearly justifying forward works programmes
- improving decision-making based on data driven evidence and decision making, including assessment of risks, costs and benefits for possible options.

This plan has been written to provide the information required for good AM planning as set out in:

- LGA 2002 Schedule 10 and amendments
- Office of the Auditor General industry advice notes and reports
- International Infrastructure Management Manual (IIMM) 2015, published by New Zealand Asset Management Support (NAMS)
- Road Efficiency Group (REG) guidance notes
- NZTA's Business Case Approach Activity Management Planning guidelines.

2.3 Plan Hierarchy

Our framework includes our Strategic AMP, AM Policy and technical AMPs. There are separate activity management plans / AMPs for each activity including land transport. The Strategic AMP provides the framework and asset management planning approach for managing our assets and directs the technical AMPs including the future improvement actions such as asset information management and reviewing the levels of service to meet future demand. The AMPs are technical in nature and contain the latest asset information, risks, work programmes and user requirements, and informed by the Strategic AMP as shown in Figure 4.

This Land Transport AMP has interrelationships with the open space and stormwater asset classes.

Figure 4 AM document hierarchy



2.4 Asset Management Planning

The goal of infrastructure AM is to meet a required level of service in the most cost-effective manner through the management of assets for present and future customers. The key elements of AM are:

- Taking a lifecycle approach
- Developing cost-effective management strategies for the long-term
- Providing a defined level of service and monitoring performance
- Understanding and meeting the impact of growth through demand management and infrastructure investment
- Managing risks associated with asset failures
- Sustainable use of physical resources
- Continuous improvement in AM practice.

The purpose of developing an AMP is to ensure that the creation, operation, maintenance, rehabilitation and replacement of assets is managed in the most cost-effective manner and provides the appropriate level of service to meet the needs of present and future consumers. The AMP provides a means through which the Council can demonstrate its responsible management of the community assets. This then enables Council to determine the funding that is required to ensure that the assets continue to cater for the needs of the community, now and in future years.

The AMP process ensures that Council manages assets responsibly. The AMP process is used to identify optimal life cycle management strategies and providing details of the associated costs. This identification of future needs, management options, and cash flows, provides the ability to manage funding demands and account for asset depreciation loss of service potential.




The benefits of AM planning are:

- establishment of service levels and associated maintenance costs
- optimum lifecycle (long term) costs are identified
- better understanding and forecasting of asset related management options and costs
- management of the risk of asset failure
- improved decision making based on costs and benefits of alternatives
- clear justification of forward works programmes and funding requirements
- improved accountability over the use of public resources
- improved customer satisfaction and organisational image.

2.5 Assets at a Glance

RLC owns and manages \$569 million of land transport assets (replacement value as of June 2020).

Table 4 Asset summary

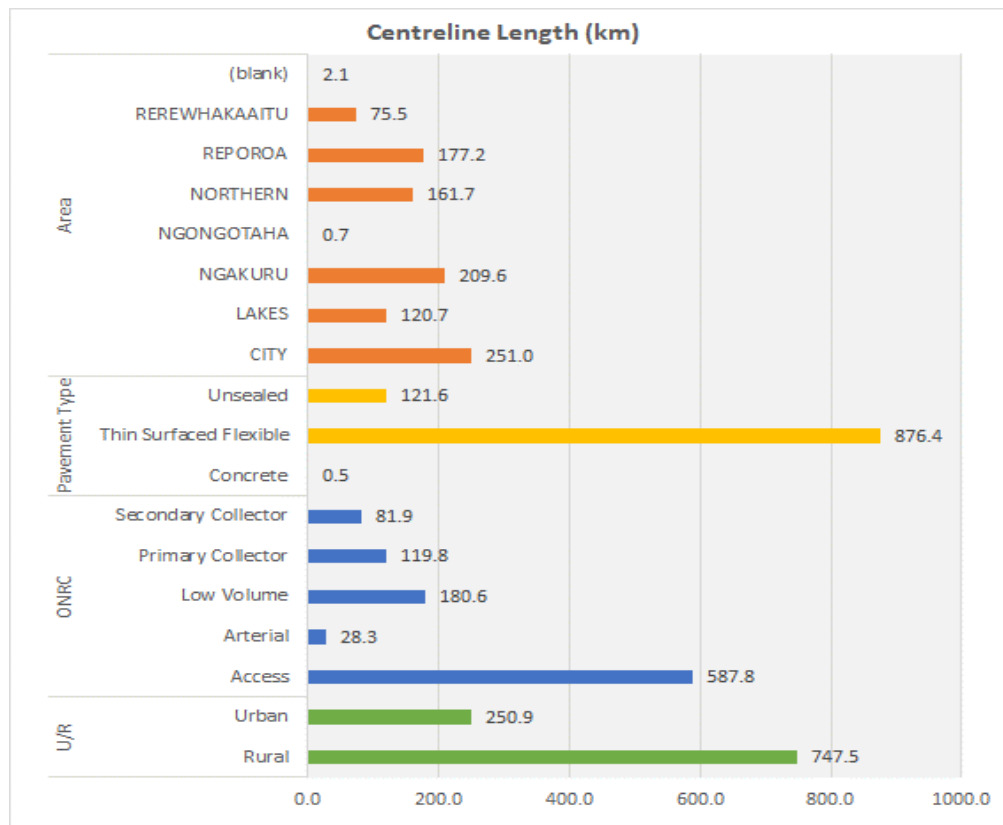
<p>Sealed & Unsealed Roads</p>	<p>Council maintains 886km of sealed roads, the breakdown of urban/rural road is 251km is urban roads and 635km rural. The sealed roads are classified against ONRC (Arterial, Primary Collector, Secondary Collector, Access and Low Volume categories). Council’s Parks roading network is also managed under this AMP, this is however funded separately. There is an additional 34km of sealed roads.</p> <p>Council maintains 122km of unsealed roads (12% of the total road network). There is an additional 6km of unsealed roads as part of Council’s Parks roading network.</p>
	
<p>Drainage</p>	<p>Council maintains 525km of kerb and channels, 54km of culverts as well as 5,565 other drainage assets, such as catchpits and flumes.</p>
	
<p>Structures</p>	<p>Council maintain 82 bridges, 25 large culverts/underpasses, 2,663m of retaining walls and 7,600m of various railings. There is also range of pedestrian bridges, bus shelters and speed humps structures that Council manages.</p>
	

Environmental	
	<p>Environmental activities include those that provide for the routine care and attention of the road corridor to maintain safety, amenity and environmental standards. This includes management of roadside vegetation, street cleaning, and removal of litter and detritus. It also includes response to minor events, not considered Emergency Works.</p>
Traffic Facilities	
	<p>Council maintain 10,555 signs, 3 sets of traffic signals, 5,061 streetlights, road markings and 140 bus shelters.</p>
Footpath and Cycleways	
	<p>Council maintain 385km of footpaths (and further 3km for parks), 43 km of shared paths, 4.8km of cycle lanes and 1.3km of cycle paths.</p>

Source: Revaluation FY20 CPI

The network can be categorised in a number of ways, as illustrated in Figure 5.

Figure 5 Network summary



Source: RLC's RAMM database (as of June 2020)

2.7 Plan Structure

The Land Transport AMP has been structured into three key parts to communicate the infrastructure requirements in the business case approach, shown in Table 5, as recommended by REG, as well as the traditional AMP sections recommended by the IIMM.

Table 5 Plan structure

Business case	Description	AMP section
Strategic case	This part outlines the key issues and problems that RLC faces and the benefits to stakeholders and customers of addressing these.	<ul style="list-style-type: none"> - Introduction - Strategic Context - Strategic Case - Levels of Service - Growth and Future Demand
Programme case	This part provides evidence to support the investment proposed, clearly linking the investment back to the key issues we are facing and Customer LOS.	<ul style="list-style-type: none"> - Lifecycle Management Plan - Management and Delivery - Programme Case - Preferred Programme Summary - Risk Management - Financial Summary - AM Practices
Supporting appendices	These are the supporting evidence to support the investment proposed.	Appendices covering: <ul style="list-style-type: none"> - Full LOS for Council’s performance measures and ONRC results - Activity risk register - Supporting REG sheets for Programme Business Case

The plan has combined the major asset classes into three core functional areas to match how they are managed. This is to ensure that they are assessed collectively rather than separately. In this way a strategic response is adopted due to the inter-relationship of the activities. e.g. repairing of pavement faults and assessing drainage at the same time may address the root cause leading to an integrated approach.

	Core functions	Asset classes	Function activities
1	Pavement Function	Pavements, surfaces, road drainage, vegetation control	Maintenance and renewal of the road pavement and surface (including cycle paths) and associated drainage assets. Includes vegetation control, street sweeping, incident response and winter maintenance.
2	Structures Function	Bridges, large culverts (>3.2m ²), underpasses, retaining walls, protective structures, guardrails	Maintenance and renewal of bridges, large culverts, underpasses, retaining walls, protective structures, guardrails.
3	Traffic Services Function	Traffic signs, road markings, streetlighting, traffic signal	Maintenance and renewal of traffic signs, EMPs, RRPMS, road markings, streetlighting, traffic signals (including CCTV and operating systems).

2.7.1 Pavement function

Pavements are the major asset of RLC’s transport network, and their cost-effective management is key to providing a safe, sustainable and functional transport system that meets organisational objectives. RLC practice has been construction of flexible pavements this has proven cost-effective and resilient.

Management of pavement assets involves a whole range of activities that address both the root cause of potential failures along with direct maintenance and renewal programmes.

Table 6 Pavement function

Pavement Function			
Work Categories		Function	Example Activities
Sealed Pavement Maintenance	111	Direct remedy of defects	Digouts, pothole repairs, pre-reseal repairs, crack sealing
Unsealed Pavement Maintenance	112	Direct remedy of defects	Grading, flanking, pothole repairs, spot metalling
Routine Drainage Maintenance	113	Addressing causes of failures	Channel sweeping, sump cleaning, channel repairs/re-grading
Environmental Maintenance	121	Addressing causes of failures	Vege mowing/clearing/spraying, litter, graffiti and abandoned vehicle removal, carriageway sweeping
Traffic Management	123	Restoration of functionality	Signs, roadmarking, streetlights, traffic signals
Cycle Path Maintenance	124	Direct remedy of defects	Cycle path pothole repairs, cracking repairs, lighting repairs, sweeping
Minor Events	140	Restoration of functionality	Slip removal, cycle path repairs (all <\$100k)
Emergency Works	141	Restoration of functionality	Large slip/s initial response, traffic management, clean-up, protection
Network and Asset Management	151	Overall Planning	Maintenance contract doc prep, tender, management, inspections, condition surveys
Unsealed Road Metalling	211	Replacement of Assets	Replacing wearing course, restoring pavement strength
Sealed Road Resurfacing	212	Replacement of Assets	Chip sealing, AC resurfacing (for waterproofing or skid resistance)
Drainage Renewals	213	Replacement of Assets	Culvert renewals, K&C replacement
Sealed Road Pavement Rehabilitation	214	Replacement of Assets	Granular overlays, rip and re-make, stabilisations, structural AC
Associated Improvements	231	Increasing capacity, functionality etc.	Sight benching, seal widening, small geometric improvements.

2.7.2 Structures function

Structures include those specialist assets that are necessary to support, link and provide unique functions essential for a safe and resilient transport network. Structures include bridges, culverts, retaining walls and guardrails.

Table 7 Structures function

Structures Function			
Work Categories		Function	Example Activities
Structures Maintenance	114	Direct remedy of defects	Guardrail repairs, Handrail repairs, bridge painting, bridge deck spalling repairs, bridge abutment clearing.
Structures Components Replacements	215	Replacement of Assets	Bridge and structure replacement, bridge deck replacement, large culvert replacement, guardrail component replacement.
Network and Asset Management	151	Overall Planning	Structures inspections, asset management, work programming.
Passenger Transport Infrastructure	LCLR	Increasing capacity, functionality etc.	Upgrades, improvements, address safety issues.

2.7.3 Traffic services function

Traffic Services are those specialist activities that are necessary to ensure the transport network functions in a safe and regulated manner and users comply with expected behaviours to ensure both safety for all users and the network functions efficiently. The activities involve signage and road marking that provide sufficient information for users and regulate behaviour to ensure compliance with road rules, streetlighting that provides safety for users and traffic signals that both regulate the use of and maximise efficiency of intersections. Management of traffic services is both an asset and service driven activity.

Table 8 Traffic services function

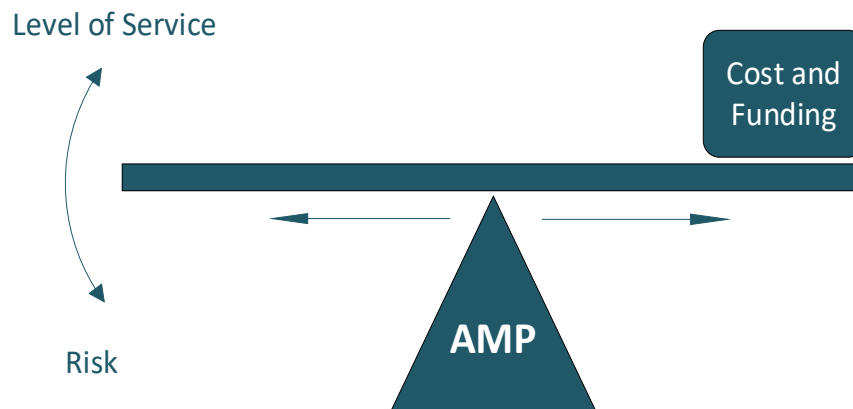
Traffic Services Function			
Work Categories		Function	Example Activities
Traffic Services Maintenance	122	Direct remedy of defects	Signs maintenance. Street lighting maintenance and operations. Pavement marking.
Operational Traffic Management	123	Restoration of functionality	Traffic signals maintenance.
Cycle Path Maintenance	124	Direct remedy of defects	Cycle path signage and cycle path markings.
Network and Asset Management	151	Overall Planning	Contracts management. Condition surveys. Database management.
Traffic Services Renewals	222	Replacement of Assets	New street lighting, signs, markings traffic signals
Minor Improvements	231	Increasing capacity, functionality etc.	Small, isolated geometric road and intersection. Traffic calming. Lighting improvements for safety. Cycleway Development
Road Safety Promotion	432	Ensuring network Safety	Safety education in schools and communities, driver education and information, walking and cycling safety. Advertising.
Passenger Transport Infrastructure	LCLR	Maintenance of bus shelters	Cleaning of shelters. Repairs to damaged shelters.

2.8 Approach to Asset Management

Rotorua's approach to AM planning is to achieve organisational goals and objectives for the optimal whole of life cost. Most transportation asset deteriorate throughout their life either due to environmental effects or traffic loading impacts. We know to achieve our goals and objectives assets require to be maintained and ultimately renewed to achieve optimum whole of life cost. Striking a balance between minor intervention (routine, proactive and reactive maintenance) and major intervention where asset components are essentially replaced (renewals) that achieves our goals and objectives for the optimum whole of life cost is a key element of our strategy.

The AM approach is to apply the principles to achieve the objectives as defined in the AM Policy. Figure 7 shows that AM is the balance between levels of service, risk and cost.

Figure 7 AM Balancing concept



RLC is committed to managing infrastructure assets effectively to deliver services that improve the wellbeing of its community and contribute to the Community Outcomes (2030 Goals) as set out in the Rotorua 2030 Vision Statement, as set out in our AM Policy.

Council is committed to:

“Delivering sound infrastructure and sustainable community services that improve the quality of life for residents and ensure a world-class experience for visitors.”

RLC’s assets are an essential element in delivering services for our community. Prudent management of these assets and facilities is a core Council function and critical to maximising the quality of life and financial sustainability of Council and its community. Sound management of assets is paramount to enable Council to meet its responsibility under various statutory regulations for stewardship of infrastructure to:

- ensure that infrastructure assets serve the community for current and future generations
- provide sustainable management of community infrastructure
- encourage and support the sustainable social, economic, environmental and cultural well-being development of the district
- ensure that asset management practices in council establish the long-term plan and the infrastructure strategy
- ensure that the needs and expectations of stakeholders are considered.

SECTION 3: Strategic Context

3.1 Overview

The strategic context for the land transport activity is influenced by a range of factors including:

- global trends such as climate change
- national drivers and legislation changes such as the GPS, Road to Zero Strategy, Arataki Ten Year Plan
- external requirements such as NZTA funding, REG capability guidance
- internal requirements such as LOS.

Good industry practice for investment decision making is based on a hierarchy of asset information and alignment to the overarching strategic direction. Asset information, knowledge and evidence are the foundations for enabling most asset management functions. The AMP is directed in terms of levels of service, financial investment, and the strategic direction, by national plans and legislation and Council’s other strategic documents.

This section sets out the strategic context for the land transport activity at national, regional and local levels as conceptualised in Figure 8.

Figure 8 Strategic linkages

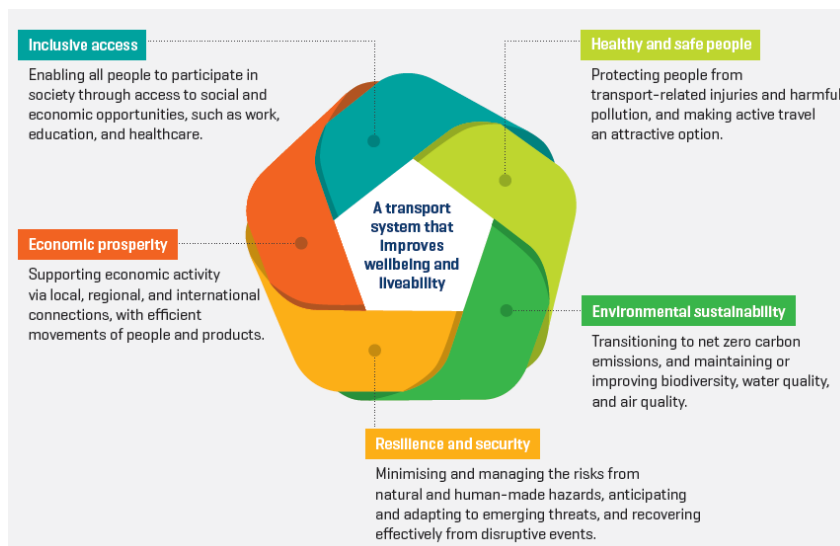


3.2 National Context

The strategic objectives at a national level that directs the land transport activity, and this AMP are outlined below.

Living Standards Framework: The Transport Outcomes Framework in the draft GPS aligns with the Treasury Living Standards Framework to provide a transport system that improves wellbeing and liveability by contributing to five key principles.

Figure 9 Transport Outcomes Framework (draft GPS 2021)



GPS: Within the national policy context, the strategic direction in the GPS on Land Transport (GPS 2021) (final September 2020) and the framework established by the ONRC play a key role in the development of AMPs.

The GPS sets out the Government's strategic and policy goals for land transport, as well as the funding direction necessary to contribute to the purpose of the Land Transport Management Act.

The overall strategic direction in the GPS is to drive improved performance from the land transport system. The key priority for GPS 2021 is:

Table 9 GPS key priorities

Strategic Priorities	Description
Safety	Developing a transport system where no one is killed or seriously injured.
Better travel options	Providing people with better transport options to access social and economic opportunities.
Climate change	Developing a low carbon transport system that supports emissions reductions, while improving safety and inclusive access.
Improving freight connections	Improving freight connections for economic development.

ONRC: ONRC is a framework to standardise the performance of roads throughout New Zealand and promote economic growth. It was developed in collaboration between Local Government New Zealand and NZTA. The ONRC classifies New Zealand roads into six categories based on the functions they perform as part of an integrated national network, how busy they are, whether they connect to important destinations, or are the only route available. The ONRC reporting tool is also used for calculating the performance measures.

ONF: The One Network Framework (ONF) is being developed nationally to provide a common language to reflect the role transport corridors play in the movement of people and freight across all land transport modes, the social spaces they provide and their role in providing access to adjacent land.

The resulting framework is a toolbox to support the identification of gaps in customer service levels. It will classify multimodal networks based on their role in moving people and their importance to the community. The network under this framework will be classified under a movement and place dimensions.

The Movement dimension is described as the level of people and goods movement the transport corridor is intended to support, and the mix of modes supported within that corridor to achieve that outcome. The Place dimension considers activities undertaken within the road/street space to attract and entertain people, access to adjacent land and off-street activity places / destinations.

This AMP is based on the ONRC and ONF will be adopted with the next plan version as it is implemented nationally.

Road to Zero Strategy: There is an increased focus on road safety nationally and the New Zealand Government has recently released its proposal for the new road safety strategy, Road to Zero. The proposed Vision Zero is based on a world leading approach that says no death or serious injury while traveling on our roads is acceptable. The focus areas that will have the greatest impact include infrastructure improvements and speed management, vehicle safety, work related road safety, road user choices and system management. The Road to Zero Strategy is consistent with RLC's strategic direction for road safety.

Arataki Ten Year View: Arataki is NZTA's ten-year view of what is needed to deliver on the Government's current priorities and long-term outcomes for the land transport system. It is a national story with three pan-regional summaries (upper North Island, lower North Island, South Island) and 14 regional summaries.

The work already underway with a national response to make the step changes required cover the following areas:

- Improve urban form
- Transform urban mobility
- Significantly reduce harms
- Tackle climate change
- Support regional development.

NLTP: The NLTP (2018-2021) is a three-year programme of planned activities and a ten-year forecast of revenue and expenditure prepared by the NZTA to give effect to the GPS. The NLTP is a partnership between NZTA, which invests NLTF funding on behalf of the Crown, and local government, which invests local funding on behalf of ratepayers. The NLTP is composed of locally led activities put forward by Regional Transport Committees in their Regional Land Transport Plans and activities included in the Transport Agency Investment Proposal.

The investment signals (November 2020) flag a successful NLTP that:

- delivers – on the Government’s transport priorities
- invests – in a multi-modal land transport system that is safer, more accessible and that reduces harm to people and the environment.
- supports – the government’s COVID-19 recovery plan
- provides – the platform for future investment in the land transport system.

3.3 Regional Context

Roads: The Bay of Plenty (BOP) road network forms part of the wider Upper North Island and national land transport network. Important inter-regional connections are to the Waikato and Auckland (State Highway 29 and State Highway 2), Gisborne (State Highway 2) and Taupo (State Highway 5). State Highways also provide intra-regional connections between the main urban centres and Port of Tauranga. Arterial corridors, particularly in Tauranga and Rotorua, move significant volumes of people and goods.

Ports (Sea and Air): The Port of Tauranga is New Zealand’s largest port by volume (26.9 million tonnes of throughput in 2018/19) and container port (1,200,000 TEUs (twenty-foot equivalent unit) in 2018/19). It is currently capable of hosting container ships with a capacity exceeding 5,000 TEUs. Commercial airports operate in Rotorua, Tauranga and Whakatāne.

Rail: The East Coast Main Trunk (ECMT) line is a major link for freight movements between Auckland, Hamilton and Tauranga, and from Kawerau and Murupara to the east. The ECMT carries over a third of New Zealand’s rail traffic and is the most densely utilised sector of the national network.

Public Transport: Urban transport networks in Tauranga and Rotorua provide transport options for commuting, education and other daily travel needs. Services linking small settlements to larger centres enable regular access to essential goods and services.

REG: It is a collaboration initiative between the NZTA, Local Government New Zealand and the Road Controlling Authorities (RCAs) of New Zealand. The REG programme supports the transport sector to deliver a modern integrated system to align with the objectives of local, regional and central government. Rotorua form part of the BOP regional transport forum.

Rotorua Multi-Modal approach: Collaboration between RLC and Bay of Plenty Regional Council to develop infrastructure and programmes that supports multi-modes of transport. The Rotorua Modeshift Plan is being developed collaboratively with Bay of Plenty Regional Council, NZTA and RLC. This is a shift away from a focus on public transport in isolation to a mode shift approach incorporating walking, cycling and micro mobility. This new approach is consistent and aligned with national direction and priorities.

Bay of Plenty Lifelines: RLC is member of the Bay of Plenty Lifelines Group. It is a group of public and private utilities working together to contribute to joint initiatives to mitigate our natural hazards and threats, thereby reducing risk to Bay of Plenty infrastructure and communities. Transport is classified as a lifeline utility.

3.4 Local Context

Rotorua Integrated Network Strategy: The objective of the Rotorua Integrated Network Strategy (May 2013), prepared jointly by Waka Kotahi, RLC and Bay of Plenty Regional Council is:

“support economic growth, safety and accessibility with an affordable, integrated, safe, responsive, and sustainable land transport system.”

The strategy recognises the strategic nature of Rotorua’s transport network, particularly its state highways that interconnect North Island regional centres and pass through the district. This connectivity draws traffic in and around the Rotorua Urban Area. The key issues and opportunities of the strategy for RLC focus on:

- city centre vitality
- public transport, walking and cycling
- freight
- safety
- traffic flows and network performance.





District-wide, the strategy seeks to provide safe and reliable access for users consistent with their role in the road hierarchy. Corridors serve competing demands including convenient access to and across the corridor, efficient through movement, facilities for different road users and managing potential impacts on surrounding activities.

Council’s Vision 2030

RLC’s Vision 2030, the Rotorua way, seeks to continue developing the Rotorua district in a way that responds to growth but at the same time retains and works to enhance the unique character of our place that is special to us all. Supporting this vision are seven goals:

Figure 10 Seven Goals, Vision 2030 The Rotorua Way

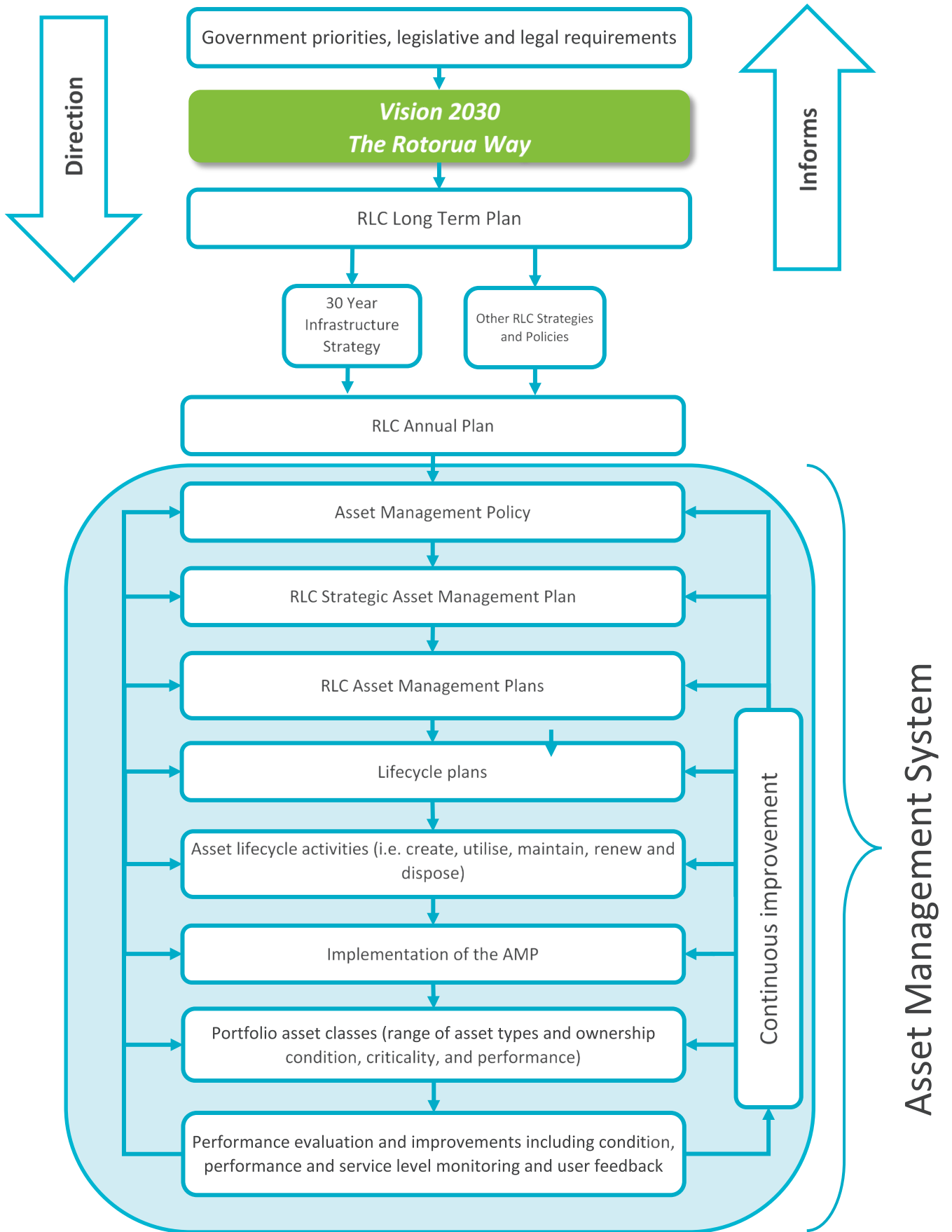
	Papa whakatipu - outstanding places to play
	Waahi pūmanawa - vibrant city heart
	Whakawhanake pākihi – business innovation and prosperity

	<p>Kāinga noho, kāinga haumarū - homes that match needs</p>
	<p>He hāpori pūmanawa - a resilient community</p>
	<p>He huarahi hou - employment choices</p>
	<p>Tiakina to taiao - enhanced environment</p>

We consider these 2030 goals as part of our decision-making processes. A resilient community, business innovation and prosperity and vibrant city heart are the most relevant for the land transport activity.

The link between our strategic vision and goals, Vision 2030, and our AM framework are illustrated in Figure 11. Importantly, this link is two ways. Our strategic documents direct our infrastructure planning and the nature and level of our AM investment. Our asset management system provides key information and inputs that inform our strategic thinking.

Figure 11 Relationship between RLCs strategic documents and Asset Management System



3.5 Strategic Linkages

The table below show the strategic linkages between the national, regional and RLC’s goals.

Table 10 Strategic linkages

Central Government	National		Regional	Rotorua Lakes District		REG
Transport Outcomes	Arataki – Step Changes	Investment Signals	Regional Objectives (draft October 2020)	2030 Goals (Community Outcomes)	Council’s Land Transport Problem Statement	ONRC Customer Outcomes
<p>Healthy and safe people – Protecting people from transport-related injuries and harmful pollution and making active travel an attractive option.</p>	<p>Significantly reduce harms - transition to a transport system that reduces deaths and serious injuries and improves public health.</p>	<p>Safety – developing a transport system where no-one is killed or seriously injured</p>	<p>Healthy people and safe networks</p>	<p>A resilient community</p>	<p>Safety of the transport network</p>	<p>Safety Amenity</p>
<p>Environmental sustainability – Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality</p>	<p>Tackle climate change - support the transition to a low-emissions economy and enhance communities’ long-term resilience to the impacts of climate change.</p>	<p>Climate change – developing a low carbon transport system that supports emission reductions, while improving safety & inclusion</p>	<p>Healthy people and safe networks</p> <p>Environmental sustainability</p>	<p>Business innovation and prosperity</p> <p>A resilient community</p>	<p>Sustainable Infrastructure - Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity</p>	<p>Safety Accessibility Cost efficiency</p>
<p>Economic prosperity – Supporting economic activity via local, regional, and international connections, with efficient movements of people and products</p>	<p>Support regional development - optimise transport’s role in enabling regional communities to thrive socially and economically.</p>	<p>Better travel options – providing people with better transport options to access social and economic opportunities</p> <p>Improving freight connections – improving freight connections for economic development</p>	<p>Economic prosperity</p>	<p>Business innovation and prosperity</p> <p>A resilient community</p> <p>Employment choices</p>	<p>Efficiency - Managing future traffic growth, interaction with the State Highway network and revocation of SH30a.</p>	<p>Accessibility Cost efficiency</p>
<p>Inclusive access – Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.</p>	<p>Transform urban mobility - shift from our reliance on single occupancy vehicles to more sustainable transport solutions for the movement of people and freight.</p>	<p>Better travel options – providing people with better transport options to access social and economic opportunities</p>	<p>Resilience and security</p>	<p>Outstanding places to play</p> <p>Vibrant city heart</p>	<p>Mode Demand - Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand</p>	<p>Accessibility Amenity</p>
<p>Resilience and security – Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.</p>	<p>Improve urban form - use transport’s role to provide connections between people, product and places.</p>	<p>Championing freight efficiencies – ensuring our network is reliable and resilient</p> <p>Better travel options – providing people with better transport options to access social and economic opportunities</p>	<p>Inclusive access</p> <p>Resilience and security</p>	<p>A resilient community</p>	<p>Resilience - Providing long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives</p>	<p>Resilience</p>

SECTION 4: Strategic Challenges


4.1 Council's Local Challenges and Opportunities

The key problem statements identified for Rotorua's land transport activity are summarised in the table below. These are additional to the business as usual (BAU) challenges of managing the network.

Table 11 Problem statements

No	Problem	Problem Statement	Benefits Statement
1	Safety	Safety of the transport network.	Increased safety for users of the district's transport network.
2	Sustainable infrastructure	Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity.	Appropriate level of investment that maintains transport assets in perpetuity.
3	Efficiency	Managing future traffic growth, interaction with the State Highway network and revocation of SH30a.	Improved economic performance.
4	Mode demand	Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand.	Increased share for various modes and reduced demand for car journeys.
5	Resilience	Providing long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives.	Improved journey reliability.

4.2 Problem Statements

 Problem Statement 1: Safety	Benefit Statement
Safety of the transport network	Increased safety for users of the district's transport network

Current situation

Safety of road users is a key element of road network performance and it continues to have an increasing focus both nationally and locally. ONRC reporting suggests that there is a trending increase in crash rates in some road groups. While the baseline is low, RLC is a partner in the Road to Zero Strategy and supports the philosophy of this strategy.

Statistics for the last five years (refer to Figure 12) highlight that our crash trends are increasing. The 2019/20 results show an increase across all classifications and the need to keep investing in safety activities and initiatives and investments to drive these results downwards.

Completed safety initiatives

RLC through the Low Cost, Low Risk programme has focused on safety initiatives. Other programmes include the new Speed Limit Bylaw with lower speeds on Hamurana Road and many other district streets, new cycleway/shared path between Ranolf and CBD, Long Mile Road/Tarawera Road intersection upgrade, rural school zone road safety/speed review and continuation of engagement with high risk groups.

Which ONRC customer levels of service outcomes does this affect?

Safety, Amenity

Our strategic responses (categorised by REG categories):

Implementation of safety initiatives include:

- Programme adjustment
 - Targeting programmes to address safety issues with a risk-based approach.
- Legislative
 - Implementing a speed management programme
- Risk based
 - Addressing safety risk as part of maintenance and renewals programmes
- Relationship approach
 - Providing community safety education programmes

Figure 12 RLC crash injury trends (RLC RAMM Database)

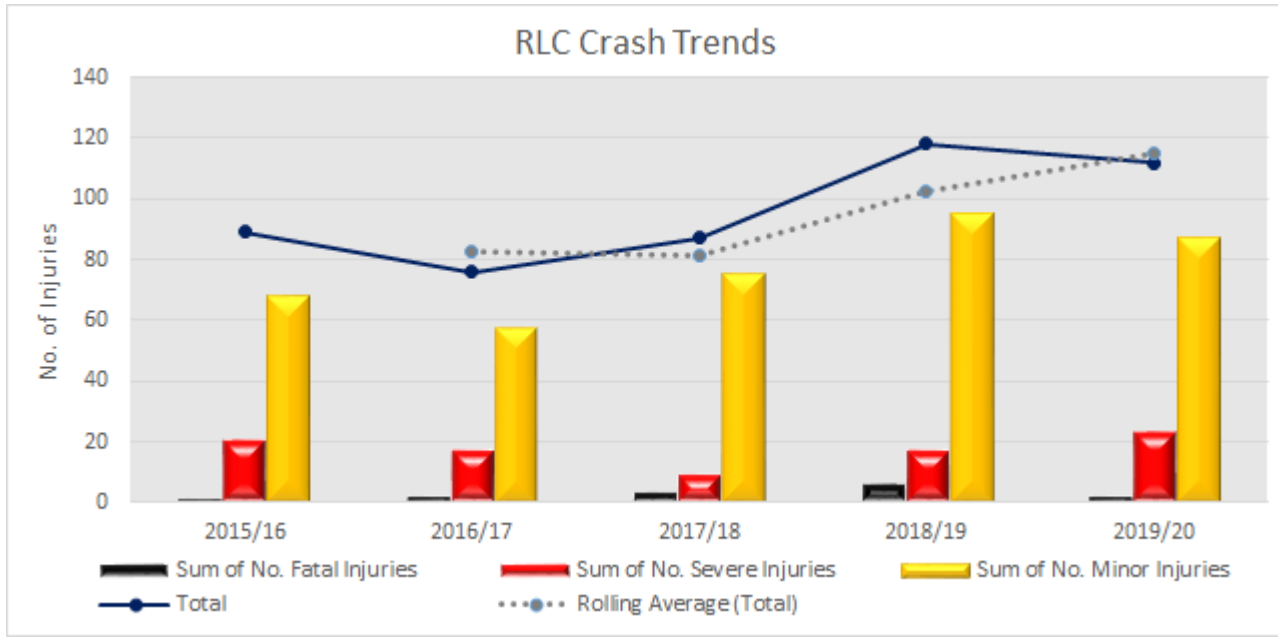
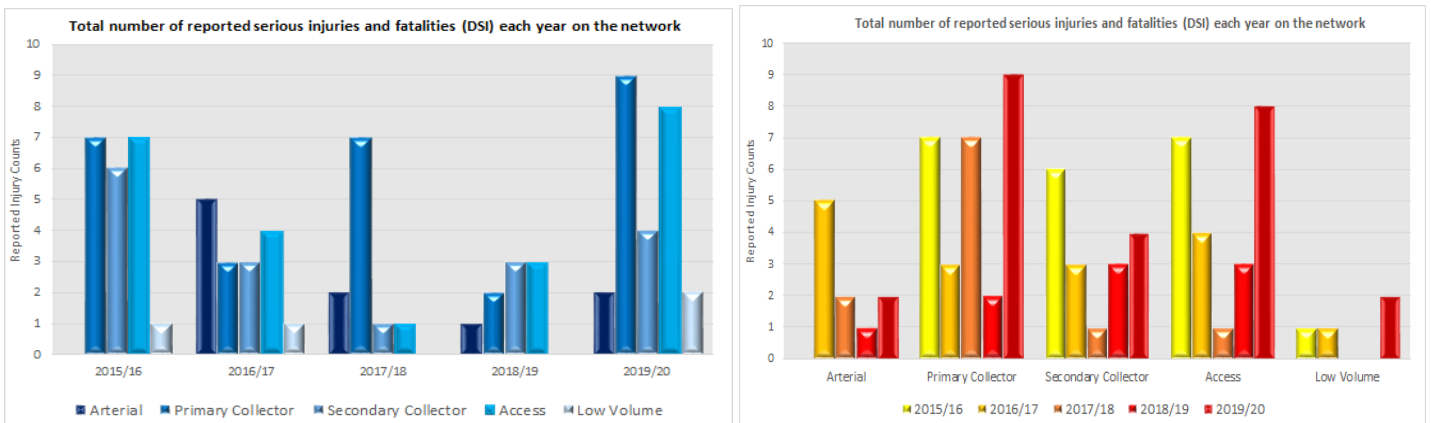


Figure 13 Crash trends (ORNC reporting data)



Managing community expectations

While the intention of reducing speed limits is to improve road safety, RLC is aware such initiatives have a trade-off against the LOS and needs to be carefully balanced with community expectation. Community have concerns with a reduction in perceived comfort, increase in noise and prolonged travel time associated with the implementation of road safety initiatives such as traffic calming. Community consultation/engagement will continue, and a balance approached taken to achieve goals while satisfying customers concerns.

Consequences of not investing

- Fatal and serious crash numbers are likely to increase with associated costs and impacts on the health system.
- Not meeting key strategic direction set by the GPS.
- Negative perception of RLC and its road management.

Problem Statement 2: Sustainable infrastructure

Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity

Benefit Statement

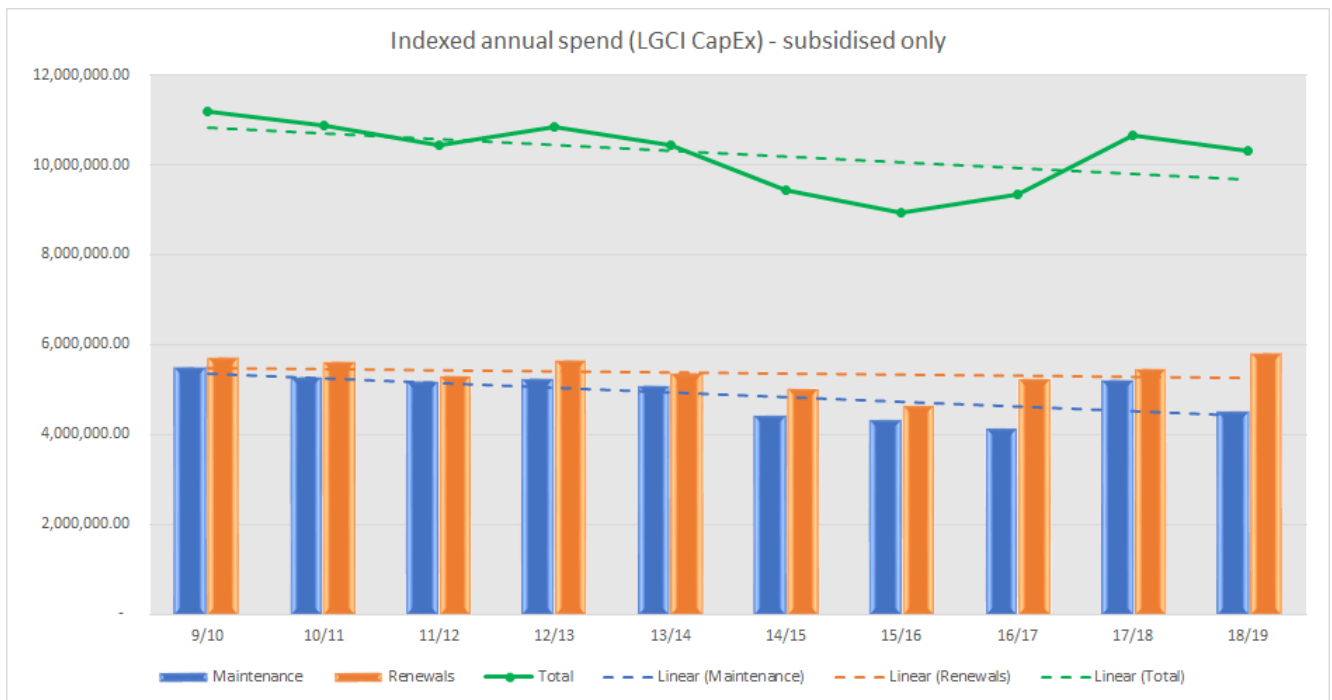
Appropriate level of investment that maintains transport assets in perpetuity

Current situation

With budgets being tightened at both national and local levels, there is increasing pressure and risk that funding will not be sufficient to maintain the transport assets to agreed level of service and at a sustainable level. Funding priority should be for both operations and renewals. Reduction in funding puts both maintenance and renewal programmes at levels that will not keep pace with the rates of deterioration, and this compounds overtime.

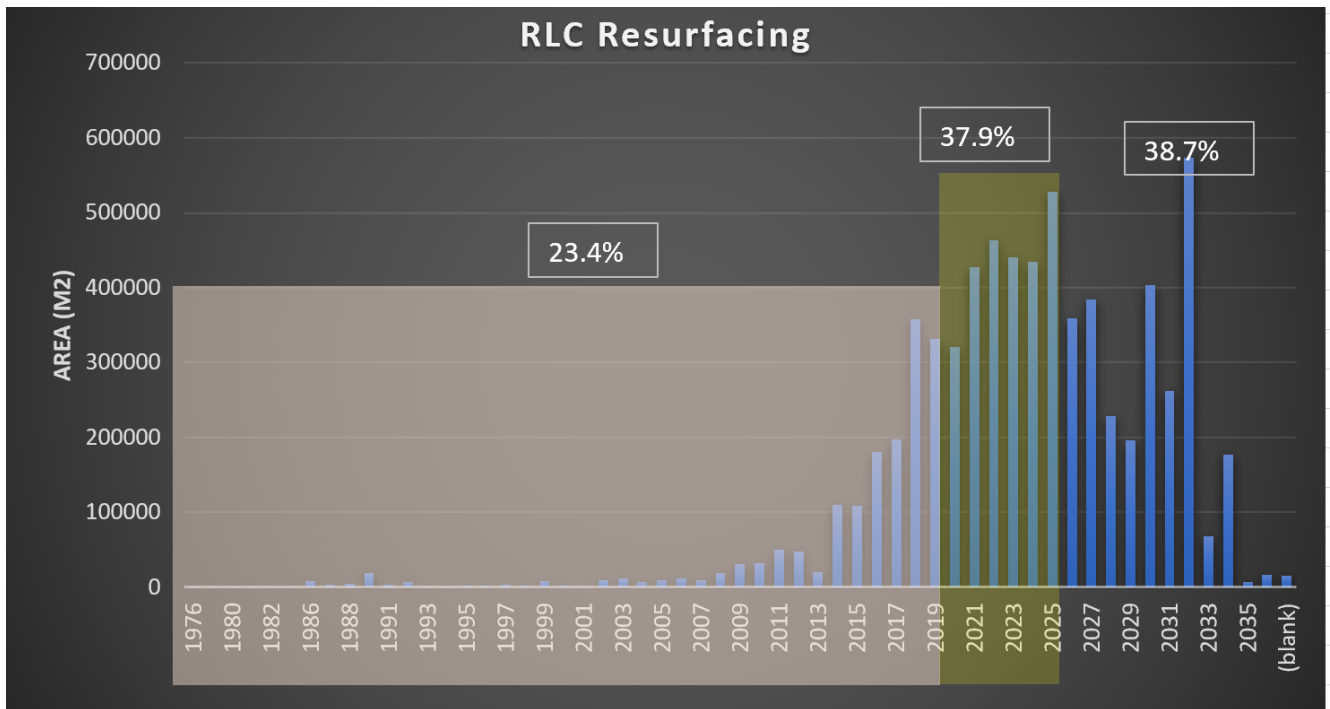
There has been continued downward pressure, particularly on operational costs, over the last period. These have been embedded into subsequent Annual Plans to the point that current operational funding levels are unsustainable. A reset for the 2021 to 2031 NLTP is critical. Note that the increases in 2017/18 and 2018/19 financial years are related to increases in power charges and did not contribute to improving the network.

Figure 14 Expenditure trends, RLC financials



As our assets continue to age, they also deteriorate and require replacement to be kept in a fit for purpose condition. In regard to the road surfacing, 23.4% of the network sealed area has exceeded the theoretical asset life and 37.9% due to be resealed within the next five years, as shown in Figure 15. This shows that most assets are resurfaced within the optimal time (7 to 8% per year). Some assets have exceeded their predicted design life but generally are performing adequately. Most of the network is performing adequately but cannot sustain reduction in investment levels.

Figure 15 Resurfacing age profile



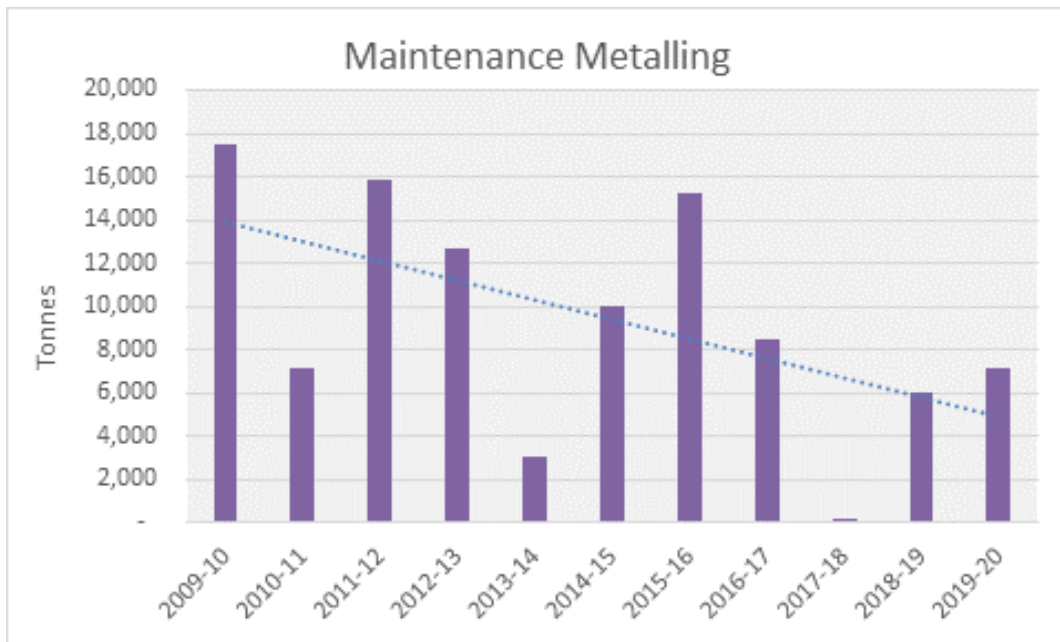
Source: RLC RAMM database (as of June 2020)

Council owns 123km of unsealed roads. An estimated 16,000 tonnes of aggregate is lost each year through metal migration, scouring and dust (10% aggregate loss per year is widely accepted by industry). Maintenance metalling requirements are determined by the aggregate attrition rate. Therefore 16,000 tonnes of aggregate per year is required just to maintain Council’s existing unsealed pavements. In 2009/10, 17,457 tonnes of aggregate was applied to the unsealed network. However, since then there has been a declining trend in the application of maintenance aggregate, brought about by the accumulative effects of budget cuts, ‘normalisation’ of reduced successive LTP budgets and ongoing pressures to reduce Opex expenditure. Significant budget cuts in 2017/18 resulted in a mere 223 tonnes of maintenance metalling carried out that year. As a consequence of accumulative underinvestment, our unsealed network has deteriorated over the last 10 years.

Unsealed pavement layers should be at least 100mm thick in order to sustain low volume traffic loads. Some pavements are now barely 1 stone thick which not only makes them problematic to maintain (grade) but also prone to failure. Pavement failures are now commonplace and are particularly evident during winter months requiring the reactive application of aggregate to repair the failure.

Increasing logging activity over the last few years has also had a significant adverse impact on our unsealed roading network not designed to carry heavy traffic loads again resulting in accelerated pavement failures. In order to address the deteriorated condition of our unsealed pavements, an accelerated metalling programme should be considered to help rectify the problem. It is therefore recommended that 18,000 tonnes per year is budgeted for over the 2021/24 LTP period.

Figure 16 Remetalling trends



Sustainability is also about improved environmental as well as financial outcomes as describe above. The Zero Carbon Act is driving major change to reduce greenhouse gas emissions. This particularly impacts the land transport sector to change behaviour and get people to change travel modes.

Environmental sustainability is also about reducing the runoff from roads and the degradation of receiving environments. It is recognised that stormwater runoff from the transport network pollutes the waterways. Our street sweeping operations are important for improving the quality of stormwater runoff from our roads.

Which ONRC customer levels of service outcomes does this affect?

Safety, Accessibility and Cost efficiency

Our strategic responses follow good AM practices:

- Programme adjustment
 - Funding systems that prioritise operational and renewal programmes
 - Maintenance and renewal programmes that targets interventions at appropriate levels consistent with good industry practice and meeting agreed LOS
 - Responding to current and future compliance requirements
- Risk based:
 - Managing environmental effects of transport network

Consequences of not investing

- Deterioration of the network and ultimately increased costs.
- Not meeting the agreed levels of service
- Assets are deteriorated to a point that the community cannot afford to pay for
- Investment burden is shifted to the next generation to pay for
- Compromises safety and resilience.

 Problem Statement 3: Efficiency	Benefit Statement
Managing future traffic growth, interaction with the State Highway network and revocation of SH30a	Improved economic performance

Current situation

Some local network roads are subject to high traffic demands with moderate levels of growth and are required to cater for multi modal transport. The impact of changes and upgrades of State Highways on the local road networks also needs to be understood. Revocation of State Highway 30A (Amohau Street) will place additional demand on RLC to meet expectations of the community for an optimised level of service.

High demands affect a small percentage of the network and in general an adequate LOS can be provided over most the network. Council roads are categorised into ONRC groups, this aids in determining routes, level of service and prioritisation in the movement of traffic. RLC also needs to ensure the transport network supports development proposals, such as Kainga Ora housing regeneration programmes.

For the small sections of roads, the LOS may be reduced. An increased reliance on intelligent traffic management systems will be required as increased capacity is simply not possible or economic to provide.

RLC is establishing benchmarks for travel time across the transport network.

Figure 18 shows the five indicative routes in both directions (ten in total) that will be used to assess network performance measures. It is being developed by Tauranga City Council’s traffic operations office through the agreement to manage traffic operations at a regional level.

It is proposed to measure travel time using the following measures:

- Average free flow speed (10pm to 6am)
- All day average speed
- Congestion measured less than half the free flow speed.

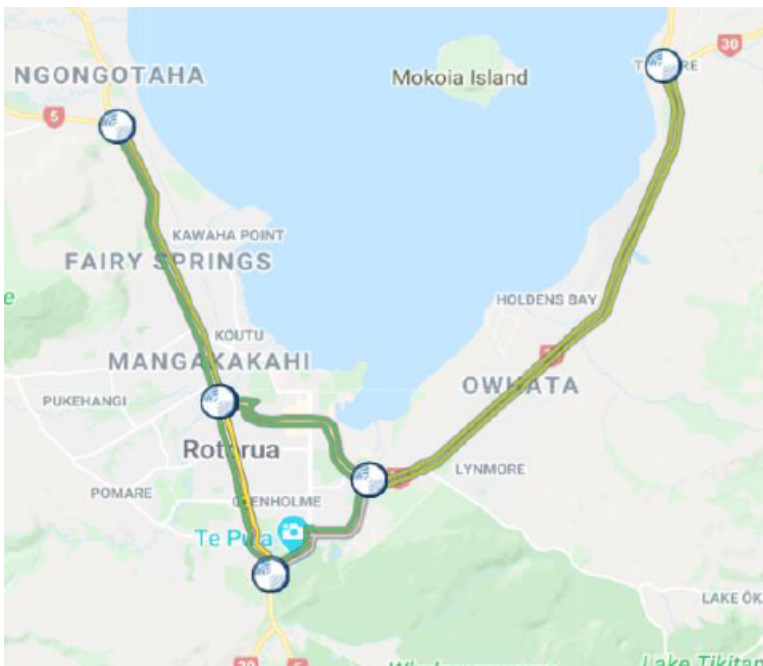
Once the benchmarks for travel time are established, RLC will monitor these to understand the effectiveness of various programmes. Initial results for September and October 2020 are summarised in the following table.

Table 12 Monthly travel time results

Month	Average free flow - travel time	Average free flow speed	All day average speed - speed	% Free flow for all day average speed
September 2020	59 minutes and 23 seconds	53 kph	41.6kmh	92%
October 2020	59 minutes and 23 seconds	53 kph	45.2kmh	85%

Source: Tauranga City Council Traffic Operations Office (October 2020)

Figure 17 Routes for measuring network reliability



Source: Tauranga City Council (October 2020)

Meeting demands of the commercial vehicle fleet, particularly in rural areas with the new mass limits along with 50MAX and HPMV, is an issue that needs to be managed to increase goods transport efficiency. The Rotorua transport network is largely capable of allowing for increased mass limits apart from a small number of structures.

Which ONRC customer levels of service outcomes does this affect?

Safety, Accessibility, Cost efficiency


Our strategic responses

Current initiatives involve:

- Policy
 - Undertake strategic growth planning
- Demand management
 - Ensure Rotorua Traffic Model is updated and calibrated
 - Review ONRC categories to ensure they match use
 - Understanding impacts of State Highway changes on local road network (integration of design between the state highway system and local roads).
- Relationship approach
 - Negotiate terms of revocation for State Highway 30A with NZTA.

Consequences of not investing

- Not providing adequate infrastructure for economic prosperity.
- Not meeting key strategic direction.
- Longer travel times throughout the city.
- Ongoing weight restrictions on bridges.
- Loss of network resilience.

 Problem Statement 4: Mode demand	Benefit Statement
Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand	Increased share for various modes and reduced demand for car journeys.

Current situation

There is considerable demand for providing transport infrastructure for multi modes especially cycling facilities and mobility access. This comes directly from community groups representing these interests. It is also aligning with the step changes outlined in Arataki through 'Transform urban mobility'. In addition, passenger transport services provide a key transport option for both students and public, and targets for non-car travel have been adopted by RLC. Specific strategic programmes support mode share including RLC Passenger Transport and Cycling Strategies.

Considerable emphasis has been placed on developing an Urban Cycleway network associated with funding from the Urban Cycleway Fund which has contributed to associated benefits for improved infrastructure for walking and mobility needs. The Urban Cycleway programme has a strategic focus to cater for new users rather than development of a network for existing users. As such cycleways that are generally separated from road traffic are being constructed dependant on ONRC hierarchy the cycleway is located on. On-road cycle lanes are acceptable on local access roads but for roads with higher traffic demand separated cycle paths are required consistent with RLC's Bike Rotorua Strategy. Recent investment in cycle network construction is presented Figure 18.

The full cycle network is shown in the map below. The cycle network consists of shared paths, cycle lanes (on road) and cycle paths).

Our strategic responses

- Programme adjustment
 - Improved LoS for passenger transport infrastructure
 - Development of an urban cycleway network
- Demand management
 - Upgrading of the footpath network to cater for full range of users
 - Development of the Rotorua Modeshift Plan with NZTA and Bay of Plenty Regional Council.

Investment in cycling is aimed at the following benefits:

- Improved cyclist safety.
- Increasing cyclist numbers, reducing demand for private vehicle usage. The 2020 Annual Cycle monitoring survey shows a 36% increase on the 2019 results and 81% increase on the 2016 results.
- A more healthy, active and connected community.
- Increased contribution from cycling to economic growth.
- Improved air quality with less private vehicles used.

Investment in passenger transport is aimed at:

- Increasing patronage
- More efficient transport network.

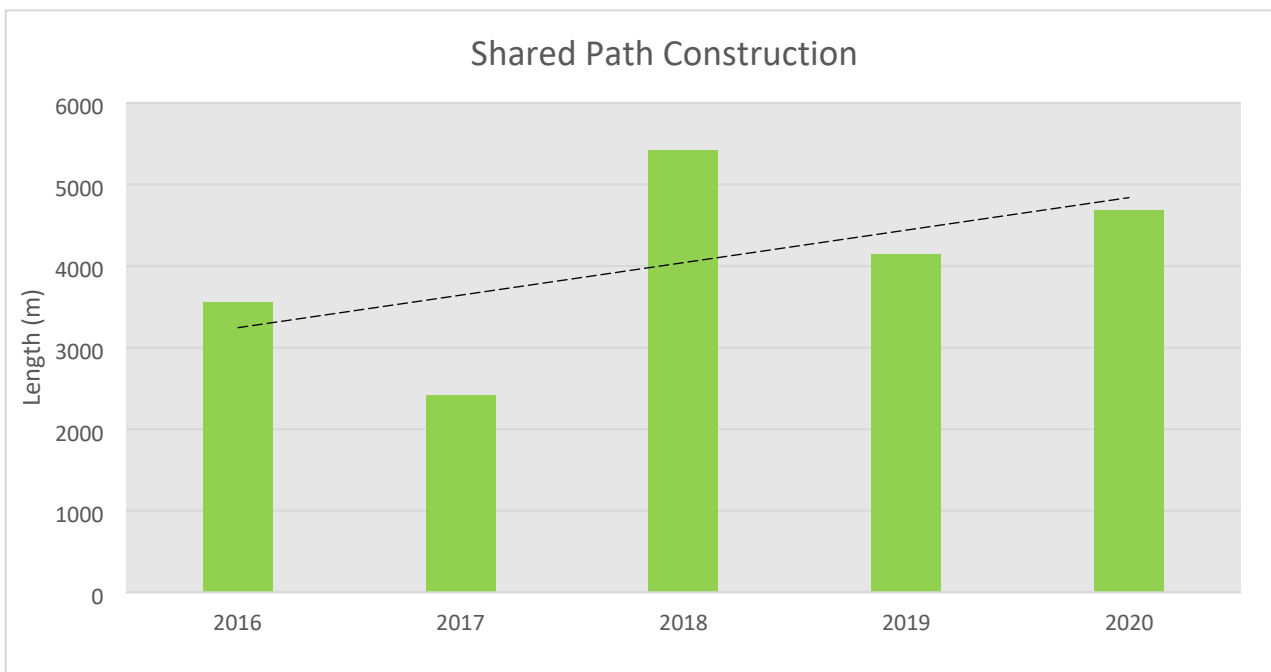
Footpaths

RLC undertakes independent specialist audits of its footpath and walking networks to ensure network renewals are targeted at most appropriate locations. The historic footpath designs do not meet the needs of an aging population nor meet current standards for disability access. This is likely to be a significant programme over the coming years and there is opportunity to co-ordinate with the cycleway development programme to efficiently implement the improvement programme.

Investment in improved mobility is aimed at the following benefits:

- Improved safety for all users.
- Increasing pedestrian numbers, reducing demand for road space.
- A more healthy, active and connected community.

Figure 18 Historic investment into multi-mode transport options

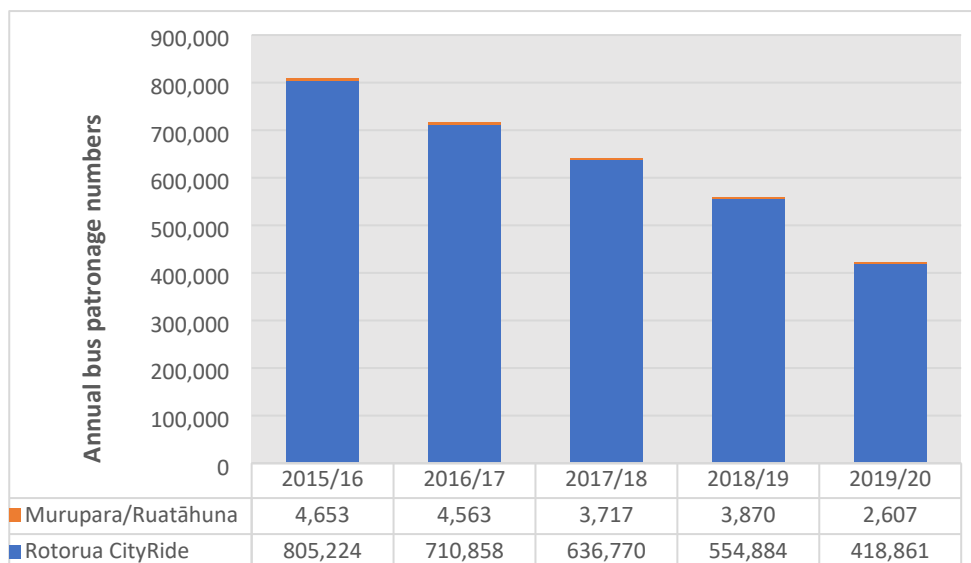


Source: RLC’s RAMM database

Passenger transport

Passenger transport infrastructure plays a key role in supporting bus and other transport services. For RLC both regional and local services are vitally important supporting the key tourism sector and providing for the local community, respectively. The Regional Council is reviewing its bus routes, looking to develop a loop route for buses that allows an easy hop-on hop-off system around the CBD.

Figure 19 Annual bus patronage trends



Source: Bay of Plenty Regional Council

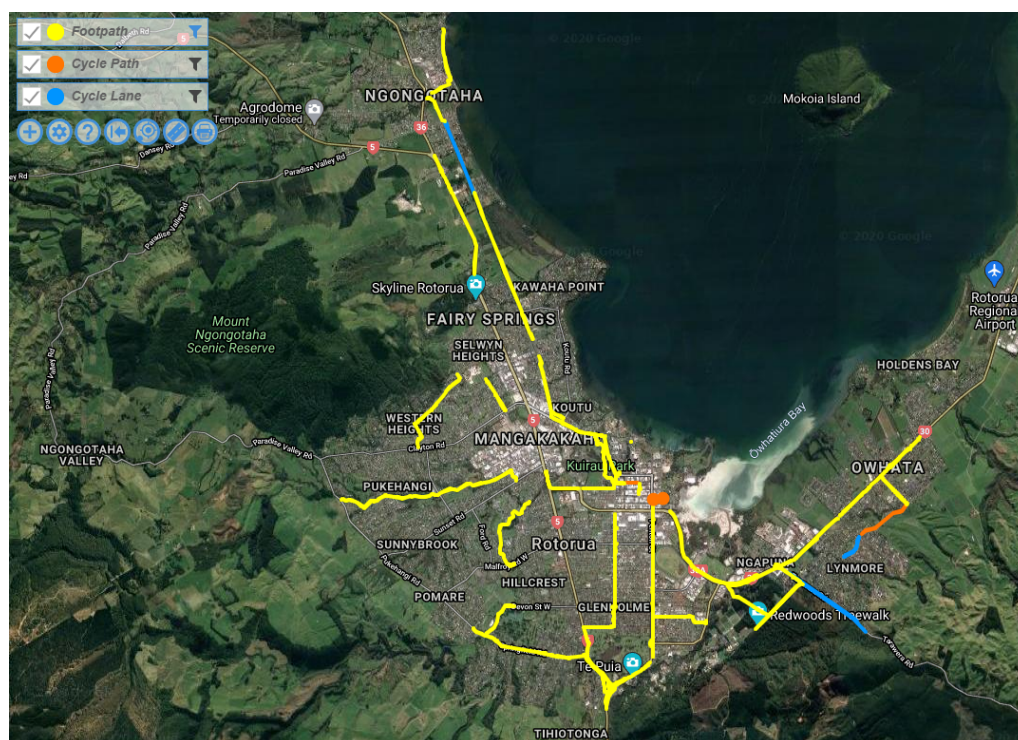
Which ONRC customer levels of service outcomes does this affect?

Safety, Accessibility, Cost efficiency

Consequences of not investing

- Do not meet community requirements around mode demand.
- Do not meet government objectives of alternative transport modes.

Figure 20 Map of RLC cycling network (transport)



Source: RLC RAMM Database

- Private vehicle usage will increase.
- Will result in a less efficient transport network.



Problem Statement 5: Resilience

Providing long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives

Benefit Statement

Improved journey reliability and functionality of the network.

Current situation

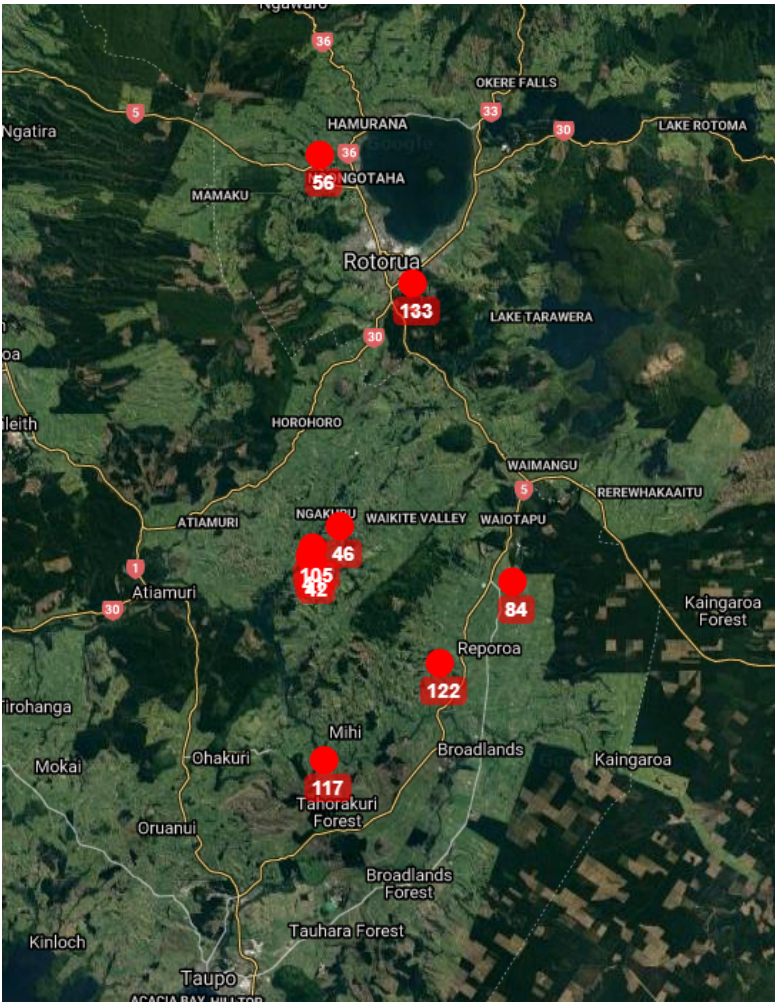
Rotorua's transport network is critical for movement of people, goods and services and for the daily operation and management of utility networks that support the people's wellbeing and the economy. In addition, the local road network provides a key detour route for State Highways when they are not available. RLC has, in general, a resilient network that provides alternative transport corridors should an incident or event result in road closure. The one corridor with no alternative route, that potentially could impact on a significant number of people, is Tarawera Road serving Lake Okareka and Lake Tarawera communities.

The Rotorua district has the potential to be affected by several types of natural hazards which need to be considered to ensure resilience is built into our transport routes and increase their reliability. The major hazards that occur fall into two categories of occurrence:

1. **High probability events** include storms which result in road closures due to flooding, slips and tree fall. These events can compromise access and services.
2. **Low probability events** include earthquakes and volcanic activity, which while infrequent, have potential to cause significant transport disruption.

Ongoing monitoring of the network is critical to address stability issues and where possible and justified to undertake work to manage this risk. There is also an ongoing programme to manage existing structures is in place to ensure they continue to meet performance expectations. Assessing the capacity of these structures and undertaking improvements, where practical and those not meeting current mass limit rules will be upgraded over time. The map below shows the bridges with weight limit restrictions.

Figure 21 Location of bridges with weight restrictions

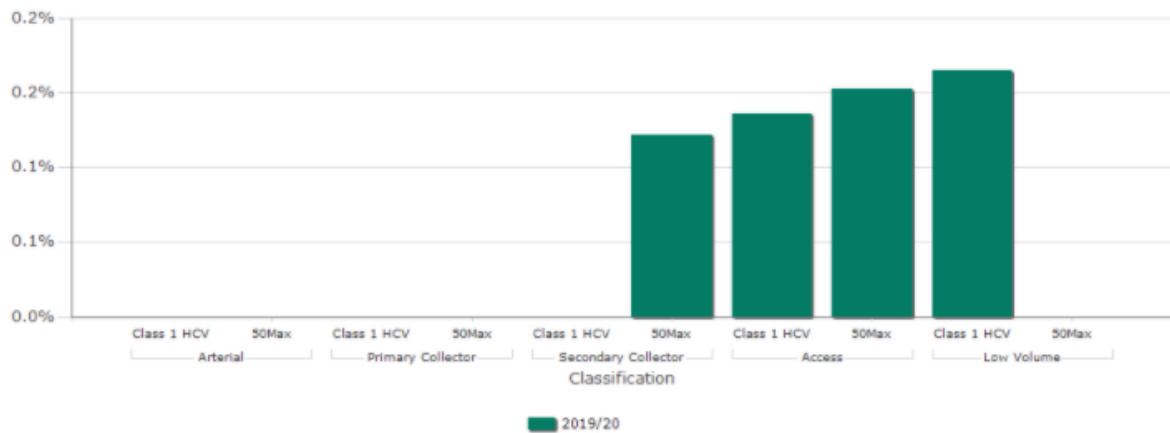


Source: RLC RAMM Database

Figure 22 Proportion of network not accessible by heavy vehicles



The proportion of each road classification that is not accessible to Class 1 Heavy Vehicles and 50MAX Vehicles



Source: ONRC Reporting Tool

Which ONRC customer levels of service outcomes does this affect?

Resilience, Cost efficiency

Our strategic response

- Programme adjustment
 - Address stability issues where risk is high
 - Resilience assessment with planning capital projects
- Demand management
 - Ensure appropriate network monitoring in place
- Risk based:
 - Maintaining Emergency Management Planning
- Relationship approach
 - Collaborate with NZTA on suitability of diversion routes

Risk based approach

More frequent event types will be targeted principally with preventative measures, such as increase drainage maintenance, while planning for major events is the primary focus so that Council can respond appropriately should such an event occur.

Consequences of not investing

- Lack of investment in resilience programmes will make the network more vulnerable to both high and low probability events.
- Increased delays in the ability for the network, businesses and communities to recover from events.
- Not meeting community outcomes and risk of isolating communities.
- Bridge damage resulting in network disconnection.
- Impact on the safety of road users.
- Ongoing weight restrictions.
- Limitation to the type of freight vehicles able to use Council roads.

SECTION 5: Levels of Service

RLC aims to manage the transport assets to deliver the agreed LOS in a sustainable manner over the long term. This section defines the LOS or the qualities of the service that RLC intends to deliver, and the measures used for monitoring. The adopted LOS supports RLC's strategic goals and is based on user expectations and statutory requirements as well as integration with national and regional strategies.

The LOS in this section cover the performance measures required for ONRC reporting to NZTA and for RLC's LTP purposes.

5.1 Customers and Stakeholders

Good knowledge of stakeholder values and drivers is essential for an effective, efficient, and safe land transport activity. Table 13 shows the key customers and main stakeholders involved in the land transport activity and their specific areas of interest.

Table 13 Customers and stakeholders

Segment	Area of interest
Customers	
The community - citizens and ratepayers	Interested in safe and sustainable transport network. They are interested in access to properties and businesses from the road corridor.
Resident ratepayers	These customers and are focused on retaining current levels of service and where possible to make savings to minimise rating impacts. They are interested in access to their property from the road corridor.
Industry and commercial	Industrial zones support the local economy. Interested in network efficiency and reliability, and access to properties.
Transport network users (including pedestrians, motorists, cyclist, tourists, visitors, and emergency services)	Network performance and safety.
Freight operators	Network efficiency and reliability, and access to properties.
External Stakeholders	
NZTA/Waka Kotahi	Planning for land transport needs, network performance and safety outcomes, network standards, subsidy funding levels, deliver government policy statement outcomes, and provide value for money.
BOP Regional Council	Collaboration with around Mode-Shift Strategy, network connectivity.
REG	Partnership is focused on delivering change that will transform the transport sector as the New Zealand transport network transitions from private-vehicle/freight centric to a modern integrated system that includes all modes and available technologies and aligns the objectives of local, regional and central government. REG exists to support RCAs as they work to understand the changes upon them and as described in NZTA's strategy and GPS.
Kainga Ora	Housing development and supporting connected infrastructure.
Iwi	Partnership with Te Tatau o Te Arawa guardianship of the land, cultural direction and long-term vision for Rotorua.

Segment	Area of interest
Neighbouring councils	Network services alignment, standards and protocols, shared services opportunities.
Government agencies (Office of the Auditor General, Audit New Zealand, Ministry of Local Government, Department of Internal Affairs, Ministry of Civil Defence and Emergency Management (CDEM), Ministry of Transport, Ministry for the Environment, Climate Change Commission)	Interested in the prudent and sustainable management of the activity.
Internal Stakeholders	
Mayor and councillors	Strategic outcomes and rates impact, LTP budget, service levels, and KPIs for monitoring service delivery, and customer satisfaction.
Executive management	Long term financial sustainability of RLC's largest infrastructural asset. Implementation of RLC's strategic direction through the delivery of programme and services. Customer satisfaction.
Other council departments	Interested in the coordination of the capital programmes in the road corridor. Management of the Parks and Reserves Transport network.

5.2 Legislative Framework

The key legislation affecting the levels of service provided by the land transport activity are summarised in Table 14. RLC has a legal obligation to form and maintain roads (with the exception of state highways) within the district. The legislative context in which we operate has a bearing on the services we provide. We have some influence over the LOS at which roads are maintained however there are certain activities we must do to fulfil our statutory obligations.

Table 14 Legislation requirements

Legislation	Requirements
Local Government Act (LGA) 2002	<p>This Act requires local authorities to:</p> <ul style="list-style-type: none"> - describe the activities of the local authority - provide a long-term focus for the decisions and activities - prepare an LTP, at least every three years. <p>A key purpose of the LGA is the role of local authorities in meeting the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses.</p> <p>AMPs are the main method of demonstrating Schedule 10 requirements.</p> <p>The 30-year Infrastructure Strategy is a requirement of section 101B of the LGA. This strategy requires Council to take a long term look at the delivery of its services to assess where there are hidden investment gaps or affordability issues beyond the ten-year horizon. This strategy provides the strategic direction and context for the AMP. The AMP informs the Infrastructure Strategy of the asset issues and provides the technical information and evidence for the long-term investment programmes.</p> <p>Section 17A requires that councils review the cost effectiveness of the way they deliver their services to ensure they meet the needs of communities. This service delivery review looks at the governance, funding and delivery of infrastructure, services or regulatory functions, and requires consideration of alternative delivery models including (but not limited to) in-house by council, by another local authority, by a council-controlled organisation, or by another person or agency.</p>

Legislation	Requirements
	<p>These reviews are an ongoing requirement and must be undertaken at least every six years.</p> <p>Although RLC completed a rigorous service delivery review as part of procuring the new Roding Network Maintenance and Management Contract, a formal S17A was not completed. This has been identified as an improvement action (as noted in Section 4.3).</p>
The Land Transport Management Act 2003 (and LTMA Amendment Act 2008)	<p>The purpose of this Act is to contribute to the national aim of achieving an integrated, safe, responsive and sustainable land transport system, an approach reflected in the GPS. The draft 2021 GPS is currently under consideration and will be finalised in late 2020 by the Ministry of Transport. In adopting the GPS, the Government has confirmed the following strategic priorities for the land transport system:</p> <ul style="list-style-type: none"> - Safety – a safe system, free of death and serious injury. - Access – a system that provides increased access to economic and social opportunities, enables transport choice and access, and is resilient. - Environment – a system that reduces greenhouse gas emissions, as well as adverse effects on the local environment and public health. - Value for money – a system that delivers the right infrastructure and services to the right level at the best cost.
Land Transport Act 1998	<p>Defines the responsibilities of participants in the land transport system and allows Road Controlling Authorities to make certain bylaws related to control of activities in the road reserve.</p>
CDEM Act 2002	<p>The CDEM requires lifeline utilities to function at their fullest possible extent during and after an emergency and to have plans for such functioning (business continuity plans).</p>
Climate Change Response (Zero Carbon) Amendment Act	<p>Climate Change Response (Zero Carbon) Amendment Act includes a target of reducing methane emissions by 24 to 74% below 2017 levels by 2050, and an interim target of 10% by 2030. It also has a target of reducing net emissions of all other greenhouse gases to zero by 2050. This will impact our asset portfolios including land transport.</p>
Health and Safety at Work Act 2015	<p>The Health and Safety at Work Act 2015 (HSWA) is New Zealand’s workplace health and safety law. The Act sets out the principles, duties and rights in relation to workplace health and safety.</p> <p>Under HSWA, a person conducting a business or undertaking must look after the health and safety of its workers and any other workers it influences or directs. The business or undertaking is also responsible for the health and safety of other people at risk from its work including customers, visitors, or the general public. This is called the ‘primary duty of care’.</p> <p>The new legislation impacts Council’s roading contracts in particular.</p>
Resource Management Act (RMA) 1991	<p>This Act establishes the planning framework for activities that affect the environment. It covers the process by which land is designated and the provision of resource consents. The RMA Simplification and Streamlining Amendment 2010 has simplified and streamlined the consent application and appeal processes.</p>
Public Works Act 1981	<p>This Act enables compulsory land purchases – it defines the procedural and informational requirements.</p>
Utilities Access Act	<p>The Utilities Access Act 2010 requires utility operators and corridor managers to comply with a national code of practice that regulates access to transport corridors.</p>

5.3 Relevant Strategies and Plans

These strategies and plans are additional from the ones outlined in Section 3. The primary documents that guide the service standards for the land transport activity are summarised in Table 15.

Table 15 Key strategies and plans

Strategy / Standard / Guideline	Description
New Zealand Policy Framework on Walking and Cycling	New Zealand Policy Framework on Walking and Cycling - The Ministry of Transport launched "Getting There – On Foot, By Cycle". Its purpose is to provide a policy framework to make walking and cycling more accessible, safe and popular.
AM Policy 2021	This policy defines the principles and responsibilities that Council applies when managing the infrastructure assets that Council is responsible for. It sets the strategic objectives for the management of assets and outlines the Council's commitment to continually improve the way it manages its infrastructure assets. The policy covers land transport, three waters, waste, property, Sports, Recreation and Environment. It was updated in 2021 with the Strategic AMP as part of the LTP process.
Engineering Standards	<p>The Civil Engineering Industry Standards are the Code of Practice for managing works and services constructed for RLC including vested assets. It includes roading and utility assets.</p> <p>The Regional Infrastructure Technical Specifications is a document that sets out how to design and construct transportation, water supply, wastewater, stormwater and landscaping infrastructure for the Waikato region. RLC is considering adopting these standards so there is consistency in the market. It is also an opportunity to adopt standards that are recognised best industry practise.</p> <p>RLC has adopted the Regional Infrastructure Technical Specifications as a means of compliance. A Plan Change needs to be undertaken so the District Plan refers to it rather than RLC's Civil Engineering Industry Standards.</p>
Sustainable Living Strategy	Council objectives around climate change and carbon reduction.
Climate Action Plan (2021)	<p>The Climate Action Plan was developed to meet our responsibility to the community to plan for the expected local impacts of climate change. It also forms an important part of our commitment to the Global Covenant of Mayors for Climate and Energy. Emissions reduction, mitigation and adaptation approaches have been taken in response to climate change.</p> <p>Refer to Section 10.7 for further details on the Climate Action Plan for the land transport activity.</p>
He Papakāinga, He Hāpori Taurikura Homes and Thriving Communities Strategic Framework (2020)	<p>Te Arawa and RLC's Homes and Thriving Communities Strategic Framework sets out the collective community vision for homes in Rotorua district communities. It describes the challenges the district faces and the strategies that will be used to ensure everyone can enjoy a good quality of life, now and into the future. This strategy belongs to the communities of the Rotorua district, and is overseen by the critical partnership between Te Arawa, the wider community and RLC.</p> <p>In 2019, RLC and the Ministry of Housing and Urban Development worked together to understand the challenges which inform the strategy. RLC's infrastructure asset groups including land transport need to be aligned to this strategic framework for future demand planning.</p>

5.4 Customer Satisfaction Trends

Customer satisfaction surveys by RLC are currently not undertaken. It will be considered in future to inform how RLC is going on the delivering the LOS.

5.5 Road Safety

There is an increased focus on road safety nationally and the New Zealand Government has recently released its proposal for the new road safety strategy, Road to Zero. There is also a greater awareness of road safety in our community and a strong drive to reduce fatalities and serious injuries on our local road. It is important to note that road safety generally covers four elements:

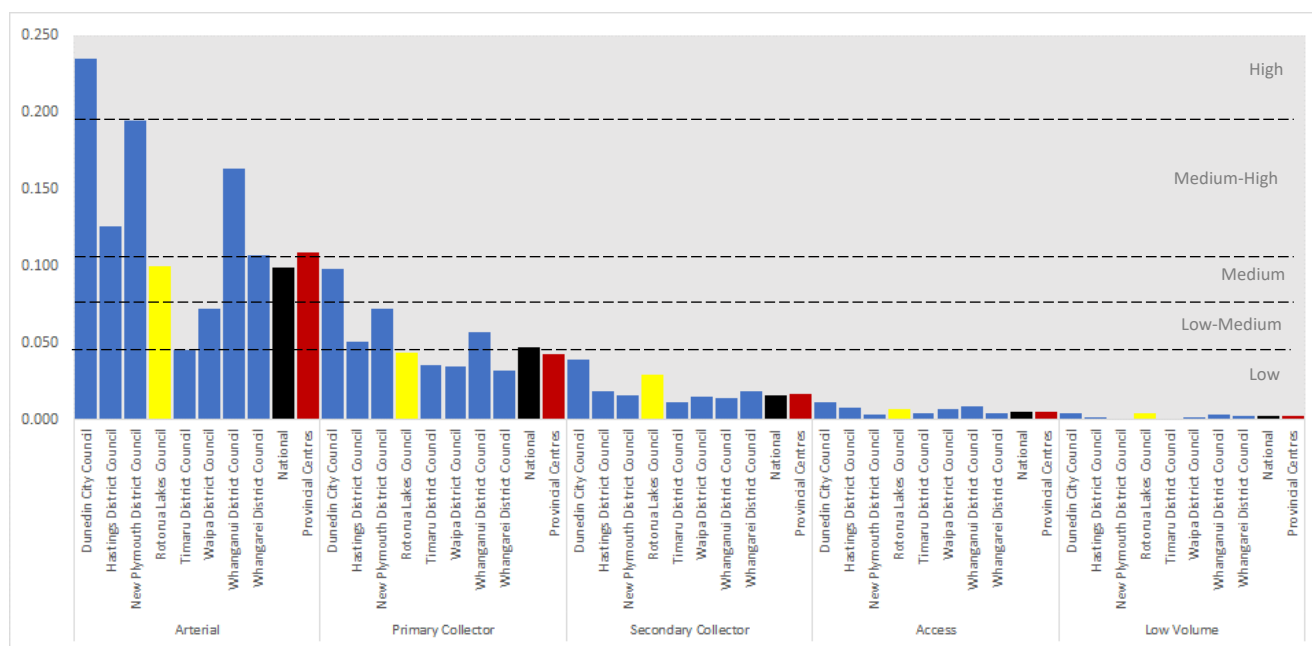
- Physical engineering of assets
- Driver behaviour
- Regulations
- Education

The design, condition and performance of the pavement can impact significantly on road safety in general. Road safety is of high importance to RLC, and safety performance of the network is constantly monitored, analysing crash data within the District forms the basis of this monitoring.

RLC uses the Crash Analysis System to store crash data, which is managed by NZTA. The ONRC performance measures reporting tool provides standards reports for collective and personal risk, including a comparison with Provincial Centres and National.

Collective risk is a measure of the number of crashes per year per km of road. Figure 23 shows RLC's benchmarking results of collective risk and they are lower than other groups across all ONRC categories. The reported crashes all fall in the medium or below category. Secondary Collector roads are higher compared to the similar councils as well as nationally.

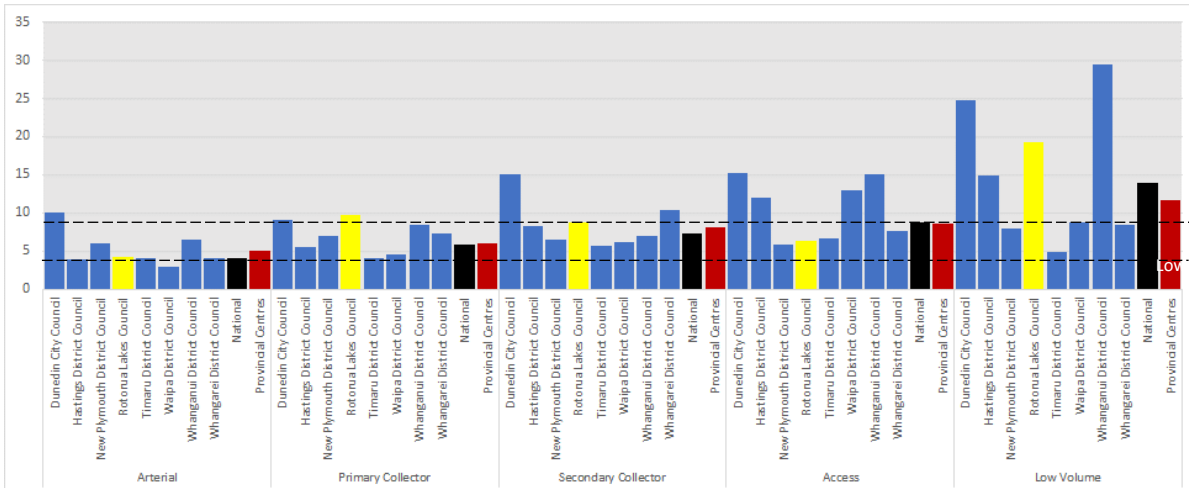
Figure 23 Collective risk comparison



Source: PMRT reporting tool

Personal risk is a measure of the number of crashes per vehicle kilometre travelled. Figure 24 shows RLC's benchmarking results of personal risk. The results are mixed, favourably for arterial and access roads but unfavourably in primary, secondary collector and low volume roads.

Figure 24 Personal risk comparison



Source: PMRT reporting tool

We will continue to implement programmes to address safety issues, address safety risk as part of renewals and maintenance programmes, implement speed management programmes through policy changes and provide community safety education programmes. Refer to Section 4.2 on Problem Statement 1: Safety for further detail.

5.6 ONRC Performance Measures

RLC have adopted some of the key ONRC customer levels of service outcomes developed by industry through REG. These have been established for each road classification and RLC have set targets for travel time reliability, resilience, safety, amenity, and accessibility outcomes. Comparison against initial targets set by REG and against peer group councils suggest Rotorua is currently delivering mid-range service levels overall.

The full set of ONRC performance measures and latest results are detailed in Appendix B. The key performance measures to understand the current performance of our transport network, ride quality and roughness, are discussed below.

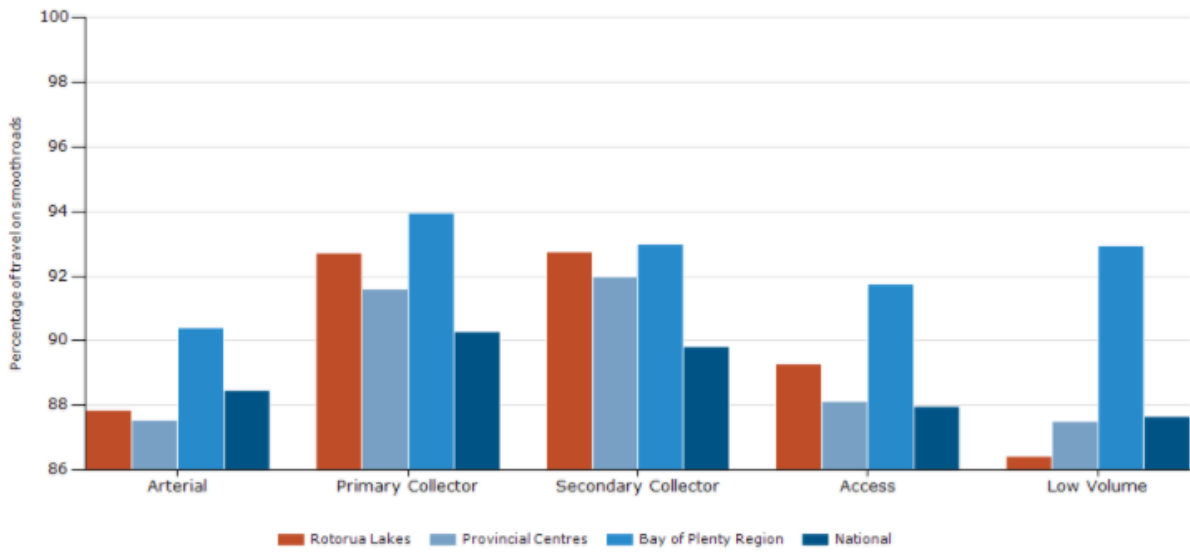
Amenity – Smooth Travel Exposure (STE)

RLC’s rural roads are performing well with 89% achievement overall for 2018/19, and on all classifications with results 94% or better. Urban roads although have seen an improvement results still sit between 85-90% (refer to Figure 25 and Figure 26). Overall STE compliance is 89%, RLC has a target STE of above 75%.

Figure 25 STE comparison for 2019/20

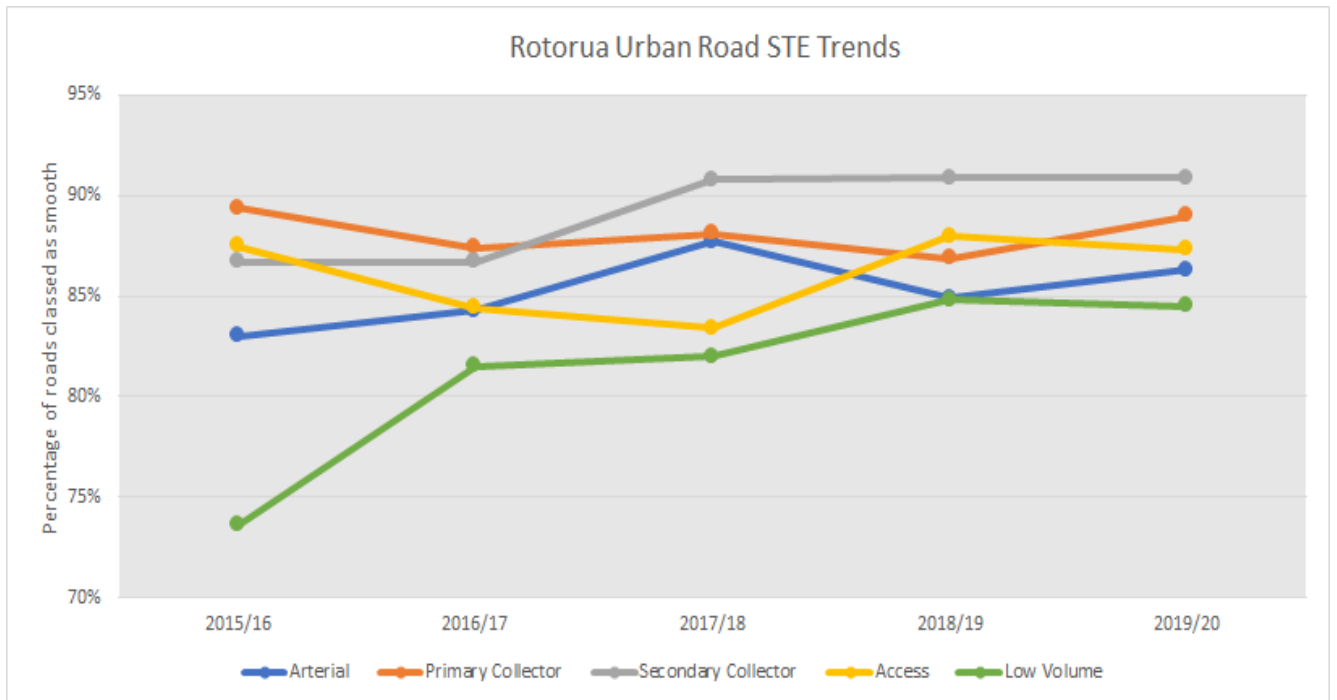


The trend of percentage of travel on roads smoother than the threshold



Source PMRT Reporting Tool

Figure 26 Urban STE trends 2019/20



Source ONRC Reporting Tool

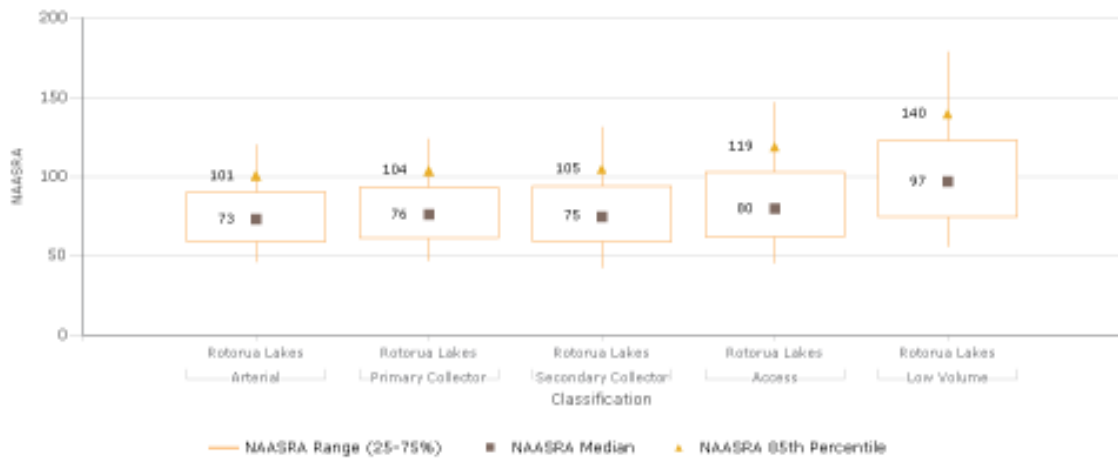
Amenity – Peak and Average Roughness

The trends indicate that the investment in renewal expenditure is maintaining the network at an appropriate level of service. The trends in roughness have been steady and showing improvement year on year, as shown in Figure 27. Rotorua is generally performing better than its peer group and in line with RLC target levels of service.

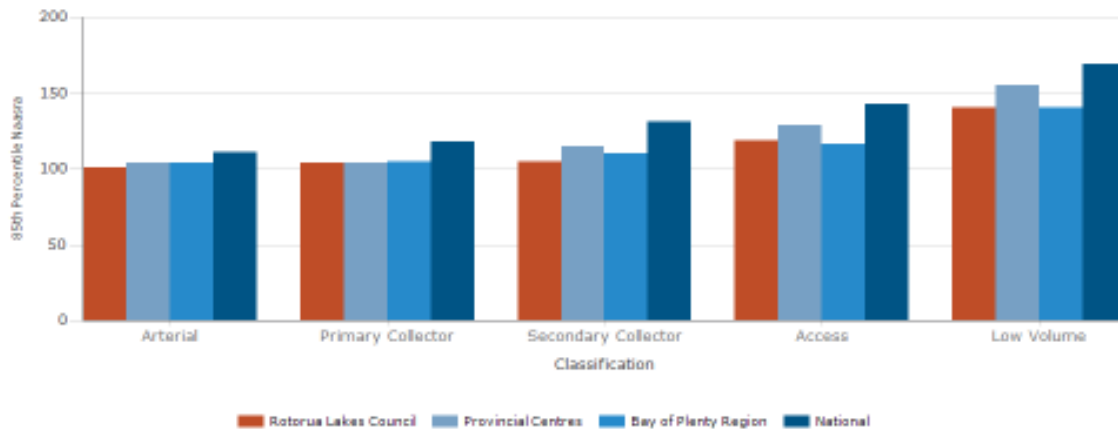
Figure 27 Peak and average roughness 2019/20



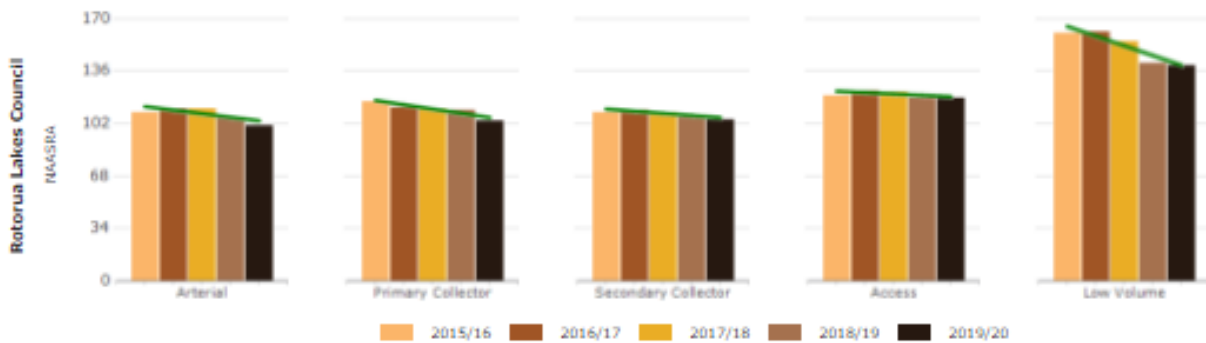
The 85th percentile roughness of your roads



85th percentile comparison



85th percentile trend



Source ONRC reporting tool

RLC’s performance against the ONRC performance measure for 2018/19 is presented in Table 16. Note that this table will be updated with 2019/20 results as these are uploaded into the reporting tool. The full table is in Appendix B.

Table 16 Current ONRC performance

Customer Outcomes	How we will measure our performance	Performance measure type	2019/20 Results										Performance for 2019/20	2020/21 Target
			Arterial		Primary Collector		Secondary Collector		Access		Low Volume			
Safety	Customer Outcome 1 - Serious Injuries and Fatalities	ONRC	2		9		4		8		2		Increase in number of crashes	Decrease trend
	Customer Outcome 2 - Collective Risk	ONRC	0.01		0.008		0.007		0.002		0.001		Risk reduced	Risk reduced
	Customer Outcome 3 - Personal Risk	ONRC	0.446		1.852		2.218		1.274		4.735		Risk reduced	Risk reduced
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
	Technical Output 1 - Permanent Hazards	ONRC	0	0	0	3.57	0	6.803	0.237	0	0	0	Increase in hazards	Risk reduced
	Technical Output 2 - Temporary Hazards	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No data	Collect data
	Technical Output 3 - Sight Distances	ONRC	0.341	2.647	0.217	2.265	0	1.42	0.458	1.092	0.998	2.232	No change	Maintain or Improve
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
	Technical Output 4 - Loss of Control on Wet Roads	ONRC	0		2		0		0		0		Increase	Reduce
	Technical Output 5 - Loss of Driver Control at Night	ONRC	1		0		0		0		1		Increase	Reduce
	Technical Output 6 - Intersections	ONRC	1		2		2		2		0		Increase	Reduce
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
Technical Output 7 - Hazardous Faults	ONRC	0	n/a	0	2.564	0	4.167	0.179	1.575	0	0	Constant	Maintain or Improve	
Technical Output 8 - Cycle Path Faults	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	0.769	n/a	n/a	n/a	Reduction	Reduce	
Technical Output 9 - Vulnerable Users	ONRC	1		4		2		3		0		Increase	Reduce	
Technical Output 10 - Roadside Obstructions	ONRC	n/a		n/a		n/a		n/a		n/a			Collect data	
Resilience	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Closure	Affected	Closure	Affected	Closure	Affected	Closure	Affected	Closure	Affected		
	Customer Outcome 1 - Unplanned Closures with a Detour Provided	ONRC	0	0	0	0	0	0	0	0	0	0	Improvement	Maintain
Customer Outcome 2 - The Number of Instances Where Road Access is Lost	ONRC	0	0	0	0	0	0	0	0	0	0	Improvement	Maintain	
Amenity	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
	Customer Outcome 1 - Smooth Travel Exposure (STE)	ONRC	87.9%		92.7%		92.8%		89.3%		86.4%		Maintained	Maintain
	Customer Outcome 2 and Technical Output 1 - Peak Roughness (85%ile NASSRA)	ONRC	100.9		104		105		119		140		Improvement	Maintain or Improve
Customer Outcome 2 and Technical Output 1 - Average Roughness	ONRC	77		79		78		86		104		Improvement	Maintain or Improve	

	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
	Technical Output 2 - Aesthetic Faults	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		Collect data
Accessibility	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Class 1 HCV	50Max	Class 1 HCV	50Max	Class 1 HCV	50Max	Class 1 HCV	50Max	Class 1 HCV	50Max		
	Customer Outcome 1 - Proportion of Network not Available to Heavy Vehicles	ONRC	0%	0%	0%	0%	0%	0.1%	0.1%	0.2%	0.2%	0%	Increase	Maintain or Improve
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
			Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural		
	Technical Output 1 - Wayfinding	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		Collect data
Cost Efficiency	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
	Cost Efficiency 2 - Chipseal Resurfacing (% by sealed area)	ONRC	0.2%		8.5%		10.5%		6.5%		7.5%		Large AC programme undertaken in 19/20	7-9% (5-year roll average)
	Cost Efficiency 2 - Chipseal Resurfacing (Avg Life)	ONRC	10.6		9.3		12.1		12.3		13.7			
	Cost Efficiency 3 - Asphalt Resurfacing (% by sealed area)	ONRC	33.2%		83.2%		2.4%		3.2%		0.6%			
	Cost Efficiency 3 - Asphalt Resurfacing (Avg Life)	ONRC	10.3		7.3		12.3		12.3		15.6			

5.7 Service Level Summary

The LOS and performance measures for the land transport activity are summarised in Table 17. The LOS statements are aligned to the 2030 Goals and categorised by Customer Outcomes. The performance measures include ONRC, mandatory, LTP and AMP.

Table 17 LOS summary for land transport

2030 Goals (Community Outcomes)	Customer Outcomes	Levels of service	Performance measure	Performance measure type	Baseline results (2018/19)	2020/21 Target (year 1)
Resilient community	Safety	Provides safe network for users and community to use	The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number	DIA Mandatory	Not achieved - 3 more fatal and 4 more serious injury crashes during the financial year	The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number (<-1)
			Collective risk	ONRC	Decreasing from previous year	Decreasing from previous year
			Personal risk	ONRC	Decreasing from previous year	Decreasing from previous year
			Loss of control on wet roads	ONRC	Decreasing trends*	Decreasing from previous year
			Loss of driver control at night	ONRC	Decreasing trends*	Decreasing from previous year
			Intersections	ONRC	Decreasing trends*	Decreasing from previous year
Resilient community Business innovation and prosperity	Quality / Amenity	Provide an effective and good quality transport network	The average quality of ride on a sealed local road network, measured by smooth travel exposure (STE)	DIA Mandatory / ONRC	Achieved - 89%	>75%
			The average roughness of your roads:	ONRC	Achieved in all categories	
			Arterial		80	<100
			Primary collector		82	<101
			Secondary collector		79	<110
			Access		87	<120
			Low volume		106	<140
			Peak Roughness – 85 th %ile:	ONRC	Achieved in all categories	
			Arterial		107	<130
			Primary collector		111	<140
			Secondary collector		107	<140
			Access		119	<150
			Low volume		142	<170
			The percentage of the sealed local road network that is resurfaced	DIA Mandatory	Not achieved -7.6%	7-9%
The percentage of the sealed local road network that is resurfaced (based on 5 year rolling average)	AMP	Average 7.5%	7-9%			
Footpath assets are fit for purpose	DIA Mandatory	Achieved -98%	>98%			
Resilient community Enhanced community	Resilience	Access is provided to the network of local roads	Number of journeys impacted by unplanned events	ONRC	1	1
			Number of instances where road access is lost	ONRC	1	1
Resilient community Business innovation and prosperity	Accessibility	Community has access to a range of travel choices	Number of cycleways users (average daily use) steadily increasing	LTP	NA in 2019 (establishing baseline)	Equal or greater than baseline
			Proportion of the population living within 500m of a bus stop and 1km from a rail or bus rapid transit station by ONRC Classification	ONRC		TBC

2030 Goals (Community Outcomes)	Customer Outcomes	Levels of service	Performance measure	Performance measure type	Baseline results (2018/19)	2020/21 Target (year 1)
		The land transport network is managed in a manner that assists the economic development of the district	Proportion of network not available to Class 1 heavy vehicles and 50MAX vehicles	ONRC	3% (1.3% Primary Collector and 1.7% Access)	3% (1.3% Primary Collector and 1.7% Access)
Business innovation and prosperity	Reliability	Provide reliable travel times in and around the city	Number of minutes journey takes	ONRC	NA (setting baseline in 2020/21)	To be determined
			Provide reliable journey travel times for PT users	ONRC	N/A	To be determined
Business innovation and prosperity	Responsiveness	That customer service requests are dealt with promptly and appropriately	The percentage of customer service requests relating to roads and footpaths which are responded to within five (5) working days	DIA Mandatory	Not achieved- 75% (YTD average)	>90%

Key:

	Achieved
	Did not achieve
N/A	No data
*	2018/19 data incomplete

5.8 LOS Gap

From the review of the ONRC performance outcomes compared to targets, the significant areas where RLC are looking to improve are set out in the table below.

Table 18 Summary of performance outcomes LOS gaps

LoS	Measure	Council Outcome		Peer Group Comparison <small>(South Waikato, Taupo, Western BOP, Whakatane)</small>	LoS Response
Safety	Crash trends	Accident trends increasing	✘	High on arterial, secondary and access roads.	Implement more safety works.
	Collective Risk	Risk higher than provincial centres but in line with national results	✘	Generally higher	Secondary Collector road focus
	Personal Risk	Significantly high on Low Volume and Primary Collector Roads	✘	Either on par or above	Investigate issues
Accessibility	% Network not available to Class 1 & 50Max vehicles	0% - Class 1 HCV 3% - 50Max 8x Bridges restricted	-	Not Accessed	Improve resilience over time

SECTION 6: Growth and Future Demand

6.1 Growth and Demand Trends

Population and visitor projections for the Rotorua District were developed in March 2020 in preparation for the 2021 LTP. The study has projected the District's population growth with three different scenarios being high growth, baseline and low growth. The study was prepared before the global pandemic event.

Under the baseline scenario, the district population is projected to grow from 76,200 in 2020 to 90,800 in 2051. This is a rise of 14,600 people and an annual average rate of 0.6% per annum. Under the low growth scenario, the population is projected to grow by 3,900 people to 80,000 in 2051. Under the high growth scenario, the population is projected to grow by 28,900 people to 105,200 in 2051.

Moreover, the Rotorua population is expected to age under all scenarios. The proportion of the population aged 65 years or above is projected to increase from 15% in 2020 to 23% under the baseline scenario, to 22% under the low growth scenario and to 25% under the high growth scenario. The projections also suggest that the proportion of the Rotorua population that identifies as European will rise from 57% in 2020 to 60% in 2051 and the proportion of the population that identifies as Māori is projected to fall from 31% in 2020 to 29% in 2051. The proportions of the population that identify as Pacific Peoples and Asian will remain at 4% and 5% respectively.

6.2 Visitor Growth

In addition to its resident population, Rotorua is projected to experience strong growth in the number of visitors. Overnight visits (both domestic and international) are expected to grow from around 2.8 million in 2019 to approximately 4.5 million in 2051. While domestic day visits are expected to grow from just over 3.1 million in 2019 to just under 4.3 million by 2051.

In 2018, Australians made up the greatest proportion (22%) of international overnight visitors to Rotorua. Consequently, the number of Australian overnight visitors to Rotorua is projected to grow more than any other country. Under the baseline scenario, an additional 232,000 Australians are expected to visit Rotorua for an overnight stay by 2051. Additional visitors from the USA, China, the rest of Asia and the rest of Europe are also expected to be well above 100,000 by 2051.

Both domestic and international visitor numbers can vary with changes to flight patterns, the exchange rate, tourist preferences and tastes, and attitudes towards air travel in the context of climate change and pandemic. While the number of New Zealand population and international visitors are expected to grow, the recent COVID-19 pandemic has resulted governments around the world imposing international travel restrictions in multiple countries, due to the spread of virus. In March 2020, the New Zealand Government introduced further measures to protect New Zealanders from the COVID-19, effectively limiting travel to New Zealand and travel within New Zealand. While these restrictions have reduced the recreation opportunities in the short-term from international visitors, the long-term impact of COVID-19 on our district still needs to be assessed.

6.3 Current Travel Demand

- Cycling - Since 2016 RLC have been progressively building infrastructure to enable other modes of transport such as cycling within Rotorua. RLC have been carrying out monitoring programmes to evaluate the uptake of alternative wheeled (cycle, scooter, skateboard, bike, scooter) transport options over time. The survey in March 2020 counts showed an 36% increase from the 2019 results and an 81% increase on the 2016 results.

- Vehicle traffic– the predominant traffic growth comes via the State Highway network feeding onto the local roads. Ongoing traffic counting will monitor the changes in use and as Rotorua grows as a district. RLC has an established annual traffic counting programme (refer to Section 7.1) to understand current vehicle demand. The travel time reliability is also being established across five routes (refer to Section 4.2, Problem Statement Efficiency).
- Freight - A large majority of freight movements are international with connecting primary industry with the Ports of Tauranga. Freight volumes have increased but the Rotorua transport network is well configured and serviced by a number of State Highways so helps ease congestion, particularly in the CBD.

Economic trends

The main industry in the district remains tourism. Rotorua has a diverse economy including key sectors such as forestry, wood processing, agribusiness, research and manufacturing. Tourism is its largest employer. The potential impact of the 2020 COVID-19 pandemic on our economy is not yet fully understood and is evolving rapidly. In the short term, COVID-19 may impede our rate of growth, given the immediate impact of closed borders on international tourism and the flow on effect on employment. However, increased domestic tourism may somewhat ameliorate any anticipated downturn in our tourism related activity. The roading sector and the work it undertakes plays a role in stimulating the economy.

The forestry sector uses our unsealed road network. Harvesting will continue to negatively impact our roads over the next few years. Harvest plans indicate the following logging activity over the next three years and shown in the following map:

- 275,000 tonnes forecasted to come out of Pongakawa Valley Rd and Rotoehu Rd
- 100,000 tonnes forecasted to come out of Northern Boundary Rd
- 50,000 tonnes forecasted to come out over Highlands Rd

Figure 28 Map of tonnage forecast from major forestry blocks



6.4 Future Demand

In planning the 30-Year Infrastructure Strategy, RLC has considered what the district and community may look like in the future and developing trends, and what that might mean for its infrastructure. At a high-level from an infrastructure service delivery lens, RLC anticipates that:

- Modes of transport will continue to change. Although building from a low base, an increasing proportion of our community is already moving to the use of bikes, electric bikes and electric scooters as their preferred mode of transport. In thirty years, autonomous cars may be the dominant transport type, with significantly reduced traffic volumes. Our transport corridors will be repurposed and segmented to provide for a broader range of transport modes.
- Patterns of use and the volume of traffic using our roads may change. Following the COVID-19 pandemic, more people may permanently shift to home-based working. We anticipate this trend may continue.
- New communities have developed and are thriving in our greenfield areas.
- Roothing infrastructure will need to support growth in housing requirements and contribute by connectivity to the district and its services, to align with Te Arawa and RLC's Homes and Thriving Communities Strategic Framework.

NZTA has completed a study (October 2020) on the potential implications of COVID-19 downturn on the land transport network, particularly on regional economies and communities. The impact on the Bay of Plenty Region has been identified as:

- Bay of Plenty may be significantly impacted by the pandemic
- The region's population growth is highly reliant on net migration, which will be impacted by border restrictions
- Tauranga's economy is dominated by construction and retail. Both sectors are expected to suffer from a slowing of population growth
- The strength of Port of Tauranga and the region's horticulture sector are positives, but their contribution to the economy hinge on a relatively quick global recovery.
- Rotorua has a heavy reliance on tourism and will be impacted disproportionately by border closures. Domestic tourism may increase, particularly in the short-term, due to Rotorua's proximity to the three largest upper North Island population centres.

6.5 Demand Management

Managing transport demand is not only about managing increasing future needs and expectations by building new roads but is also about changes in behaviours and philosophy. Through this multifaceted approach, we can reduce the use of vehicles and the environmental impacts of the land transport activity. Our current demand management programme is summarised in the following table.

Table 19 Transport demand management programme

Programme	Description
Public education and awareness	RLC has a dedicated Safe and Sustainable Journeys team to support NZTA's strategic goals. The key areas of work are: <ul style="list-style-type: none"> - Road safety education. - Sustainable Journeys education. - Public Transport Operations (in partnership with the Bay of Plenty Regional Council). - Accessibility (in partnership with CCS Disability). - Urban Cycle Network Infrastructure programme (known as the CyWay).
Planning activities	Various planning activities are undertaken to understand the changes in demand as well as growth forecasts. Our focus is the development of the Rotorua Modeshift Plan is being developed collaboratively with Bay of Plenty Regional Council, NZTA and RLC as noted above.
Bylaws	Bylaws are a mechanism to change behaviour. Lowering speed in certain areas improve road safety as well as the liveability of the community. The Rotorua District Speed Limit Bylaw 2014 is the current bylaw for lowering speeds on public roads within the District.

6.6 Assumptions

The key growth and demand assumptions are as follows:

- Population data based on Infometric Rotorua 30-year projections, March 2020.
- The impact of the COVID-19 pandemic was not considered with RLC's population projections (due to timing issues).
- NZTA's assessment on implications of COVID-19 for the Bay of Plenty Region indicates Domestic tourism may increase in Rotorua in the short term.
- Cycling demand will continue to grow.
- Patterns of use will continue to change post the pandemic lockdown.

PROGRAMME CASE

SECTION 7: Lifecycle Management Plan

This section outlines exactly what is planned in order to manage and operate the assets at the agreed levels of service while optimising lifecycle costs. In particular, asset condition and performance, routine maintenance, renewal, creation/acquisition/upgrade, and disposal plans.

7.1 Asset Condition

It is critical that Council has a clear knowledge of the condition of assets that comprise the network and how they are performing. Compiling condition data against the asset register will enable Council to understand and forecast future expenditure patterns and management decisions regarding maintenance, replacement and renewals.

The development and continued use of condition assessment data will allow preparation of verifiable predictive decay curves for particular asset types and hence permit prediction of remaining life. The Council undertakes condition survey assessments to ensure the land transport assets are maintained, replaced or developed over the long term to meet required delivery standards and foreseeable future needs at minimal cost.

We are surveying our large culverts (greater than 600mm in diameter) to assess the condition grades. This latest data is still being uploaded into RAMM as inspections are completed and not reflected in the data below. One zone is being inspected per month with 12 zones in total.

The current asset condition for the major asset classes is summarised in Table 20, from RAMM. This table is misleading as condition data is currently held outside of RAMM. RLC is in the process of reconciling the condition ratings back into RAMM as this also directly impacts on the PMRT Data Quality scoring.

Table 20 Asset condition

Asset class	C1	C2	C3	C4	C5	Unknown
Footpath	12%	28%	4%	1%	0%	55%
Culverts	1%	8%	17%	1%	0%	73%
Bridges	7%	64%	28%	1%	0%	0%
Retaining walls	21%	14%	8%	2%	0	55%
Signage	31%	4%	64%	1%	0%	0%
Railings	45%	13%	30%	10%	2%	0%

Source RAMM database September 2020

The average asset age for the major asset classes can be summarised in Table 21 and shows most assets are about midway through their useful life.

Table 21 Average asset age

Asset class	Average age (years)
Footpath	35.2
Culverts	18.6
Bridges	44
Retaining Walls	22
Signage	6.9
Railings	35.1

Source RAMM database September 2020

The current state of our assets in terms of age is summarised in the following table for the land transport activity at major asset class level. This has been assessed as the percentage of design life expended and remaining useful life (median). The current state of our assets in terms of condition and performance is detailed in the following sections for the land transport activity.

This shows that most major assets classes are quarter to halfway through their design life. There are no asset classes in very poor categories (based on age analysis only). These asset classes need to be monitored to ensure the future renewal programmes are adequate including bridges, road drainage, and streetlighting brackets.

The specific action for the transport asset class identified to increase renewal investment is:

- Complete the survey of large culverts and we will replace the assets assessed in very poor condition. This will contribute to strengthening our transport network resilience.

It is intended to complete this analysis with future Infrastructure Strategies and through the activity / asset management plans. This will ensure we keep our core infrastructure within acceptable industry benchmarks to ensure sustainable future investments.

Table 22 Total remaining useful lives based on age

Activities	Major asset class	Median across asset class		Renewal investment
		% of design life expended	% of remaining useful life	
Land transport 	Bridges	53%	47%	↑
	Footpaths	38%	62%	-
	Street lighting – poles	47%	53%	-
	Street lighting – brackets	63%	37%	↑↑
	Street lighting – lights	37%	63%	-
	Drainage	56%	44%	↑
	Surface water channels	35%	65%	-
	Minor structures	32%	68%	-
	Railings	54%	46%	↑
	Retaining walls	18%	82%	-
	Islands	20%	80%	-
	Signals	33%	67%	-
	Traffic facilities	40%	60%	-
	Pavement – basecourse	54%	46%	↑
	Pavement – surfaces	50%	50%	-

The grades for categorising the percentage of the remaining useful lives are:

Table 23 Grades for remaining useful lives

Grade	Grade description	% of remaining useful life
1	Excellent Fit for future	% of RUL ≥ 85%
2	Good Adequate for now	85% > % of RUL ≥ 60%
3	Fair Continue with normal monitoring	60% > % of RUL ≥ 40%
4	Poor At risk	40% > % of RUL ≥ 10%
5	Very poor Unfit for sustained service	% of RUL < 10%

The grades for categorising the percentage of the total design lives expended are:

Table 24 Grades for design lives expended

Grade		Renewal investment	% of design life expended
1	-	Business as usual	% of design life expended ≤ 40%
2	-	Continue with normal monitoring and renewals	40% < % of design life expended ≤ 50%
3	↑	Start planning for renewal investment	50% < % of design life expended ≤ 60%
4	↑↑	Asset at risk, accelerate investigation and increase investment	% of design life expended > 60%

Data on road condition is collected through road roughness and condition rating surveys.

Roughness surveys are undertaken annually on 10% of the network. These are a measure of the quality of ride experienced by motorists when travelling on the road. The measurements are obtained using a vehicle mounted response meter which records the vertical displacement or roughness of each 100 metres of traffic lane. These measurements are then converted to NAASRA counts which are the standard measure of road roughness and stored on the RAMM database.

Condition rating surveys involve a visual assessment of road pavement surface condition and are generally undertaken annually on Arterial and Collector roads, and every second year on Local roads. They involve a detailed walkover and identification of defects on the carriageway over the representative sections of each road.

The defects recorded include the number of potholes and the area or length of other defects such as rutting, shoving, flushing, scabbing, cracking, edge break and inadequate shoulders and surface water channels.

These surveys enable trends in the condition of the network to be determined, comparisons made between the condition of roads in different areas and assist in identifying sections of road that should undergo closer inspection for maintenance and renewal treatments. The trends in regard to roughness are a useful indicator of how effectively the pavement maintenance strategies are meeting the demands of increased traffic loadings and the network increasing in age. It is important to note that road pavements are always in a state of decay and that as they age their condition deteriorates at a higher rate and the cost of maintenance increases more rapidly. The rate of deterioration is a function of the initial pavement strength, traffic loading and the maintenance effort applied.

The data shows that the condition of the Rotorua network is steady and generally consistent with peer group indices, indicating that the level of investment and the intervention decisions currently being made are at the right level.

It is however important to note and effectively manage the delicate balance between systematic resurfacing and key carriageway condition indices. As the overwhelming majority (90%) of reseals are based on chipseal, a small deviation from timely treatment can disproportionately affect key condition indices such as roughness, integrity and smoothness.

7.2 Network Performance

Overall, the network delivers to the LOS expected. The identified weight restriction bridges limit access to a small proportion of the network to vehicle under 50 tonnes.

Traffic counts and travel time surveys are regularly carried out to provide information relating to traffic volumes and journey times. Structural analysis of bridges provides information on vehicle load limiting of the network.

The overall performance of the vehicle network is measured through four key technical measures. Each of these technical measures is outlined in the respective tables below.

1. Smooth Travel Exposure
2. Roughness
3. Pavement Integrity Index
4. Surface Condition Index.

Smooth Travel Exposure (STE) is a NZTA National Measure. It measures the percentage of vehicle km's travelled within a predetermined measure. The performance target is <75% (refer to Section 5.7). RLC's current performance above in each ONRC classification.

Table 25 Smooth travel exposure trends

	Year	Arterial	Primary Collector	Secondary Collector	Access	Low Volume
Rotorua Lakes	2015/16	85.0%	93.2%	90.6%	89.6%	80.0%
	2016/17	86.2%	91.7%	90.1%	87.3%	83.9%
	2017/18	89.3%	92.1%	93.0%	86.9%	84.8%
	2018/19	86.6%	91.6%	92.9%	89.9%	87.3%
	2019/20	87.9%	92.7%	92.8%	89.3%	86.4%

Source ONRC Reporting Tool

Road Roughness – NAASRA Counts roughness on each road. Each ONRC classification has a different threshold but the 85 percentile in each classification has reduced.

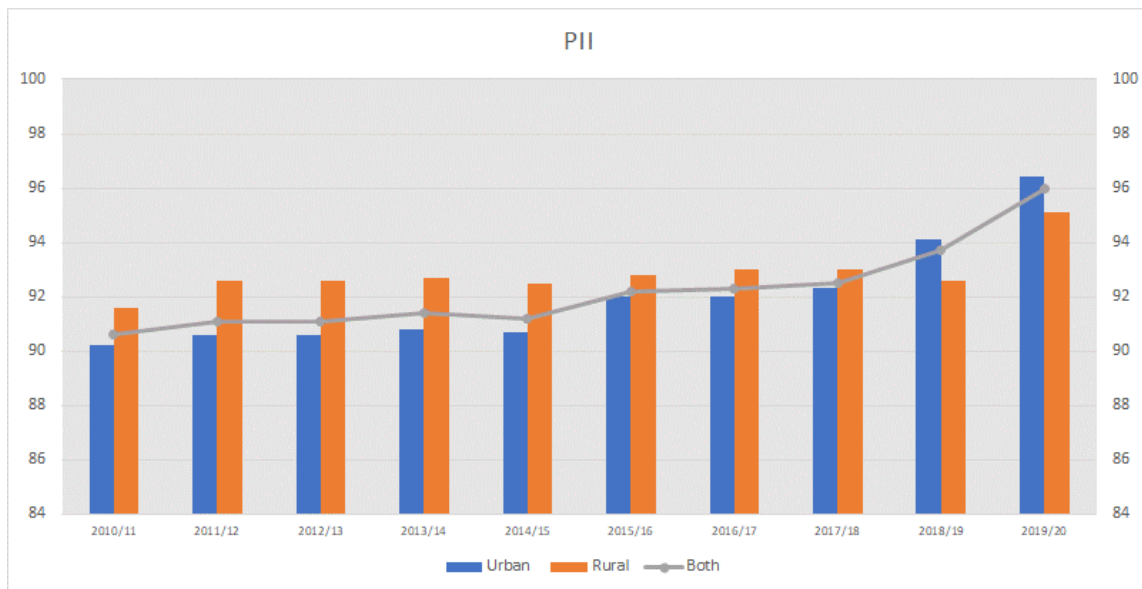
Table 26 Roughness trends

Classification	Year	Urban / Rural	5%	25%	Median	Average	75%	85%	95%
Arterial	2015/16	Both	46.1	60	75	80	96	110.0	131.0
	2016/17	Both	48.0	61	78	82	98	112.0	130.7
	2017/18	Both	48.0	65	81	84	102	112.0	132.0
	2018/19	Both	47.2	61	76	80	94	107.0	128.9
	2019/20	Both	46.7	59	73	77	90.5	100.9	120.0
Primary Collector	2015/16	Both	48.0	65	81	86	104	117.0	142.0
	2016/17	Both	46.0	62	78	83	99	113.0	137.0
	2017/18	Both	47.0	62	78	83	99	112.0	135.0
	2018/19	Both	46.0	62	78	82	98	111.0	133.0
	2019/20	Both	47.0	61	76	79	93	104.0	124.0
Secondary Collector	2015/16	Both	44.0	59.75	76	81	96	110.0	137.0
	2016/17	Both	44.0	60	77	82	97	111.0	138.4
	2017/18	Both	44.0	61	77	82	97	110.0	137.0
	2018/19	Both	43.0	58	74	79	94	107.0	132.0
	2019/20	Both	43.0	59	75	78	94	105.0	131.0
Access	2015/16	Both	46.0	62	79	87	104	121.0	156.0
	2016/17	Both	46.0	63	80.5	88	106	124.0	158.0
	2017/18	Both	46.0	63	81	88	106	123.0	155.0
	2018/19	Both	47.0	63	81	87	104	119.0	147.0
	2019/20	Both	45.4	62	80	86	103	119.0	147.0
Low Volume	2015/16	Both	55.0	76	99	113	136	161.5	216.5
	2016/17	Both	57.0	80	103	115	138	162.0	217.3
	2017/18	Both	56.0	78	99	112	134	156.0	211.0
	2018/19	Both	56.0	78	98	106	124	142.0	181.4
	2019/20	Both	56.0	75	97	104	123	140.0	179.0

Source ONRC Reporting Tool

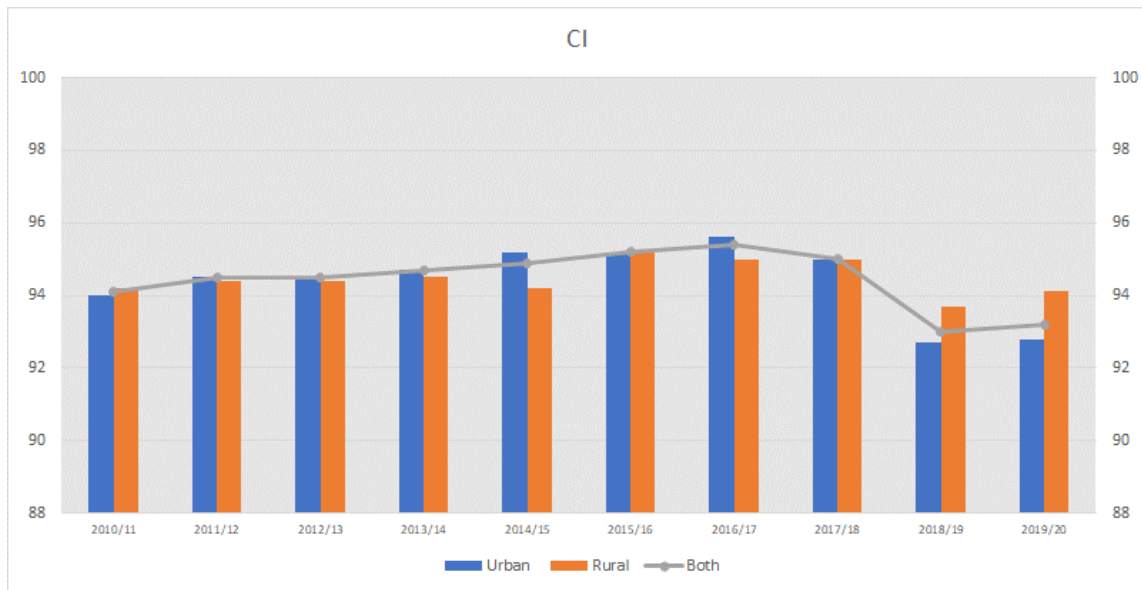
Pavement Integrity Index (PII) - The Pavement Integrity Index (PII) is a performance indicator for the structural condition of a pavement. It is calculated by combining condition ratings, faults and roughness.

Figure 29 Trends in pavement integrity



A Surface Condition Index (CI) is an overall condition value that reports an aggregation of a number of surface defects over a specified length of road pavement. The purpose of the surface condition index is to summarise and report the overall health of a road network. This indicator can also be used to monitor the performance of maintenance and construction activity completed on a road network.

Figure 30 Trends in surface condition



7.3 Critical Assets

Critical assets are those that cannot fail as their failure would result in unacceptable consequences. Criticality is used in our decision making for operational activities as well as with our renewal planning.

The following criteria have been used to determine criticality:

- ONRC
- Lifeline
- Road safety.

RLC’s general approach to critical roads is to follow the hierarchy of ONRC, that is, a road with higher classification is more critical than roads with lower classification (i.e. an arterial will be more critical than a primary collector). Rotorua is well configured that it is also serviced by a number of State Highways (5, 30, 30a, 33 and 36). However, the Tarawera and Okareka communities are dependent on the local roads, Tarawera Road, for access.

In response to climate change and growth in the district, RLC intends to further refine the criticality of roads with contingency planning for emergency events, as part of the scenario planning across the district. The critical infrastructure is identified, such as:

- Bridges
- Major culverts
- Retaining walls.

This information will assist in the update of Council’s Civil Defence Emergency Management (CDEM) plan and its Business Continuity Plans (BCP).

Roads with a high number of crashes are also considered critical from a safety perspective. The high crash sites will be assessed regularly as safety improvements are put in place to either manage or eliminate the risk(s). This is being undertaken through the Road to Zero Strategy.

7.4 Traffic Data Collection

An annual traffic counting programme is in place to monitor traffic volumes on the network and to ensure that the information held on the RAMM database is accurate. The annual traffic programme surveys five high volume priority sites within the city.

Regular traffic counts are undertaken on the main traffic routes (arterials and collectors) to identify trends in road usage and seasonal effects. Classified traffic counts also identify the composition of the traffic carried, which is necessary for pavement design purposes. These counts are also used to monitor the speed of vehicles.

The Tauranga Traffic Centre also monitors and tracks travel times on the State Highway networks into Rotorua which assist with effectiveness of traffic flow.

7.5 Routine Maintenance Plan

Physical works to sustain the asset is broken down into three sub-areas as shown in the table below.

Table 27 Asset maintenance categories

Routine Maintenance	Routine maintenance is the regular on-going day-to-day work that is necessary to keep assets operating (serviceable), including instances where portions of the asset fail and need immediate repair to make the asset safe and/or operational again.
Proactive Maintenance	Proactive inspection and maintenance works planned to prevent asset failure.
Reactive Maintenance	Reactive action to correct asset malfunctions and failures on an as-required basis

7.5.1 Routine maintenance

The routine maintenance plan relates to day-to-day running and upkeep of the asset. It supports the level of service required of the asset. Operations and maintenance expenditure can be a significant proportion of the asset's total lifecycle cost.

Routine maintenance can be divided into planned (proactive) maintenance and unplanned (reactive) maintenance.

7.5.2 Proactive maintenance

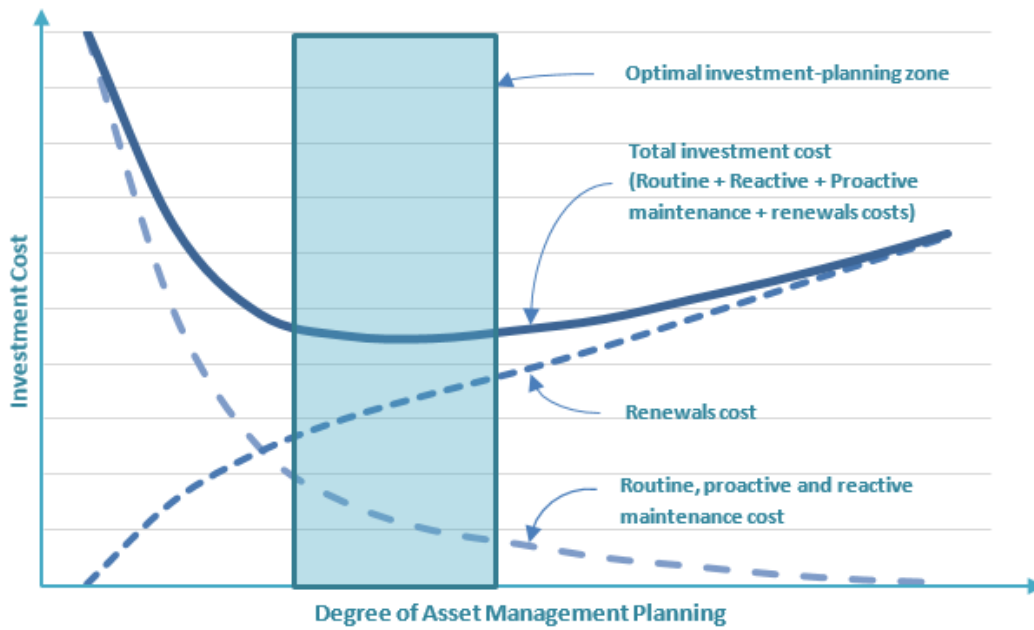
Planned Maintenance is the proactive inspection and programmed maintenance work to support asset reliability and quality and to prevent costly failures of associated assets.

7.5.3 Reactive maintenance

Reactive maintenance attends to urgent or unplanned maintenance work which is required to remove a hazard or to repair a fault. This work is required in the short term to restore the asset to working condition and it is generally undertaken in response to inspections, complaints, or notification.

A key element of asset management planning is determining the most cost-effective blend of planned and unplanned maintenance as illustrated in the figure below.

Figure 31 Optimal maintenance planning



With the new Roding Network Maintenance and Management Contract in place (1 July 2020), a key focus is to measure the reactive versus planned maintenance expenditure. RLC wishes this balance to trend downwards over time.

7.6 Renewal/Replacement Plan

7.6.1 Lifecycle analysis

The RAMM Treatment Selection Module is used to undertake lifecycle analysis for the Pavement and Surface assets on the network. The RAMM Treatment Selection Module utilises the asset condition data along with maintenance cost, age and crash data to recommend the timing for the replacement of the asset. RAMM Treatment Selection can summarise the forecast lifecycle rates at Network level so that the asset managers can identify any areas of concern and investigate those asset lifecycles in more detail.

All programmes are field validated by RLC staff to ensure that the data and system recommendations align with the onsite conditions. This is based on engineering knowledge, local knowledge and experience.

For the other assets that are replaced as part of proactive maintenance, lifecycle analysis is completed as follows:

Table 28 Asset lifecycle analysis

Asset	Lifecycle Analysis
Stormwater Culverts	Evaluation of Contractor recommended replacement programme Vs RAMM Inventory Data
Bridges	Undertaken by Network Bridge Consultant
Traffic Signals	Undertaken by TTOC
Street Lighting	Undertaken using RAMM Data Vs recommended replacement programme

7.6.2 Renewal programming

The above Lifecycle Analysis is used to assist with the annual Pavement and Surface renewal programming completed at the start of each year. The methodology for undertaking the renewal programming inspection, balancing and loading into RAMM is as follows:

1. Drive to start of each treatment length according to RAMM and check pavement & surface data and extents is consistent with actual road. Any inconsistencies were adjusted and noted in a “notes” column in the treatment length table.
2. Check to see if TSA had assigned Treatment Length with Resurfacing or Rehab for Year 1.
3. Drive along treatment length at 30kph approx. while observing condition.
4. If renewal treatment was assigned for by TSA for Year 1, detailed data analysis and onsite condition analysis was undertaken to see if treatment is justified, otherwise treatment was forecast for a later year. If no treatment flagged by TSA, check to see if actual condition warrants renewal in Year 1 otherwise programme accordingly.
5. Repeat process for next treatment length on road.
6. On completion of inspection the 20-year FWP was balanced in the office and then loaded into RAMM FWP table.

The renewal programming of other assets that are maintained proactively on the network is completed by the following methods.

Table 29 Asset renewal process

Asset	Renewal Programming
Stormwater Culverts	Annual inspection of condition of all assets by maintenance contractor. Programme priority based on worst condition and budget.
Bridges	Annual inspection of condition of all assets by Network Bridge Consultant. Programme priority based on worst condition and budget.
Traffic Signals	Continual inspection and analysis of condition of all assets by TTOC. Programme priority based on worst condition/performance and budget.
Street Lighting	Programme derived from RAMM Inventory and Dispatch data. Priority to replace oldest technology and hazardous poles.

Renewal expenditure includes renewal or rehabilitation of assets to restore an asset to its original level of service i.e. capacity or the required condition. Required levels of expenditure on the cyclic asset replacement programme will vary from year-to-year and will reflect:

- The age profile of the assets
- The condition /performance profile of the assets
- The ongoing maintenance demands
- The differing economic/useful lives of individual assets comprising the overall system of assets.

Physical works to sustain the asset is broken down into three sub-areas as shown in the table below.

Table 30 Asset replacement categories

Renewal	Renewal strategies are designed to provide for progressive replacement of individual assets that have reached the end of their useful life. This is managed at a rate that maintains the standard and value of the network.
Rehabilitation	Rehabilitation strategies allow existing assets to be restored to their original service potential through reconditioning, rehabilitation or refurbishment of component parts.

Failure to maintain an adequate cyclic renewal programme will be reflected in a decline in the overall standard of the network and an observed demand for increased reactive maintenance.

The renewal or replacement of an asset restores the asset to an equivalent performance capability.

The Council, when renewing or replacing an asset, strives to comply with industry best practice. In general, and where appropriate, the Council:

- Evaluates all other alternatives to confirm that the need is justified
- Uses an optimised decision-making process for evaluating costs and benefits
- Ensures construction of the asset meets all relevant standards and specifications
- Ensures that acquiring the asset will serve to minimise lifecycle costs
- Ensures the asset will provide specified, satisfactory levels of service.

Renewal needs are assessed in terms of the level of service provided, asset condition and a comparison between the ongoing maintenance costs and the costs of renewal.

Total ongoing maintenance costs may, in the long term, exceed the initial high costs of renewal of the asset.

The timing of renewal is set to balance:

- The most economic time for replacement versus maintenance requirements.
- The least disruptive time or most opportune time. In some cases, upgrading or other significant works may be planned for the area. In these instances, deferred renewal and continued maintenance for the short-term may be proposed. Similarly, opportunities to undertake other works in the area may be identified which can be coordinated with the renewal works.

Renewal works may include a component of capital development or upgrade works should such works increase the performance capability of the existing asset. Upgrades or capital development works may be in response to customer expectation of increased level of service, growth or other increased demand on the asset, or for statutory, legal or environmental reasons.

Renewal intervention guidelines have been developed and implemented for the following key asset groups. These identify trigger points, prioritise renewals, and contribute to development of annual programmes:

Renewal intervention process diagrams have been completed for all major transport assets. Each process diagram sets out the renewal planning process and intervention trigger point based upon:

1. Routine Engineering Inspections
2. Condition Grading Surveys
3. Condition Data
4. Renewal Analysis using RAMM Prioritisation Algorithm (formula).
5. Risk Profiling; and
6. Economic Constraints.

Intervention guidelines are reviewed and updated by the respective asset manager.

7.6.3 Treatment selection process

The RAMM system contains a treatment selection programme which utilises the condition data and other road inventory data to make recommendations as to preferred treatments on the network. The outputs from the treatment selection are utilised at a network level and also at an individual treatment section level.

At a network level the treatment selection summary report identifies the length of the network recommended for resealing in the current and following year and also makes recommendations as to the length of the network to undergo more major treatments such as pavement smoothing or strengthening. The treatment selection programme undertakes an economic analysis of the maintenance options for each road section so as to identify the most cost-effective treatment option based on the ongoing cost of maintenance and the unit costs of the various maintenance and renewal treatments.

The Treatment Summary Report is a useful tool in assessing the effectiveness of the maintenance and renewal strategies being followed and is an indicator of the future maintenance needs of the network. The treatment selection outputs are also used to identify sections of road with various faults and make recommendations as to which specific road sections should undergo resealing or rehabilitation. These outputs, followed by a physical inspection, are used in the preparation of the annual resurfacing and rehabilitation programmes.

The treatment selection programme is run following the updating of the RAMM database to reflect the physical work completed in the previous year. It is then used in the preparation and confirmation of the roading programme alongside good engineering judgement.

7.7 Creation/Acquisition/Upgrade Plan

Capital works involve the creation of new assets, or works, which upgrade or improve an existing asset beyond its current capacity or performance in response to demand or increased service delivery.

It is important to note that the purpose of asset renewal is to ensure the service potential of assets meets the target service levels and hence Council's objectives.

Asset renewal is concerned with maintaining the service potential of assets and to meet level of service targets.

Asset development is concerned with the service improvements, measured by asset performance.

Table 31 Capital works categories

Growth in service Demand	Any asset development that is required because of growth or increased demand.
Enhancing Service Delivery	Any asset development that is required because of a change in service levels.

Capital works resulting from an increase in demand or an enhanced level of service could be funded by contribution of private developers.

7.7.1 Vested assets

A significant proportion of new assets (and much of the vehicle network new assets) is developer funded, and when complete, vested in the Council.

Each year, new transport, water, stormwater and wastewater assets are created and vested in the Council. These assets are required to be constructed in compliance with the Council's Code of Practice for Land Development and are only taken over once cleared by the Council and when a 224c certificate has been issued.

The assets are valued at current unit rates for entry onto the Council's asset register. Other management systems, including RAMM and Infor, are also updated to record the new asset.

7.8 Disposal Plan

Once an asset becomes uneconomical to maintain or replace, the Council may dispose of it. For transport, renewal or upgrade will often consume the original asset (e.g. pavement resurfacing consumes the existing surface).

Where assets are not consumed in the renewal or upgrade process, the Council's processes for considering the disposal/retirement of assets comply with industry best practice.

The process considers the following:

- All options for correcting the failure of assets that are not performing are evaluated.
- If a sale goes ahead, the Council seeks to receive a maximum return on its investment.
- The Council takes account of legal, environmental and social barriers to disposal.
- Gross under-utilisation.
- Obsolescence.
- Undeveloped (e.g. paper roads).
- Provision exceeds the current and anticipated required level of service.
- Uneconomic to upgrade or continue to operate.
- Policy changes no longer require the asset.
- Service provided by other means (e.g. private sector involvement).
- Potential risk of ownership (financial, environmental, legal, social, vandalism).

7.9 Management and Delivery

7.9.1 Service delivery

RLC delivers its land transport activity through a mixture of in-house delivery, long term contracts with physical works contractors, and some projects by project professional services. Four existing contracts were combined into a single integrated contract as part of the procurement process in 2019 to optimise service outcomes and to ensure best value for ratepayers. The procurement process undertaken is outlined below.

A robust procurement process was undertaken for determining the Rooding Network Maintenance and Management Contract. The new Rooding Network Maintenance and Management Contract started on 1 July 2020.

Contract Performance Appraisals are undertaken at defined periods throughout the contract to ensure that the contractor is still performing and delivering to agreed levels of service.

7.9.2 Procurement

The rooding delivery services have for many years (since the early 1990s) been procured through contestable processes as required by our main funding partner NZTA.

In accordance with the agreed procurement plan (by NZTA) and RLC's procurement policy, a contestable process has been applied for these services. The tender and tender evaluation process clearly identified a preferred supplier which is again Fulton Hogan.

The new contract was designed to allow RLC optimum reliability of services required, certainty of supply and maximum flexibility to tailor the required works. The proposed term is for a maximum of ten years based on a 5+3+2 phasing. The contract contains all the core maintenance and renewal outputs, as best can be estimated, based on unit rates and measure and value principles. It also makes provision for foreseeable CCPI escalations over the term of contract. It allows for “preferred supplier” allocation of currently funded capital works and provisionally enables the expedient response to emergency events repairs (if and when these maybe required). Finally provides for some modified levels of service changes subject to RLC’s LTP deliberations in the term of the contract.

The tender outcome indicates that our current LTP’s provision for these services is slightly out of step with emerging market trends at a national level but the variance rests in the lower quadrant of cost escalations experienced by other Local Authorities, at 13%.

Contract Scope

As an on-going effort to optimise service outcomes and to ensure best value for ratepayers the combining of multiple contracts into a single integrated contract was identified in the May 2019 update to RLC’s Procurement Manual:

“It is anticipated that there will continue to be a highly competitive market of potential suppliers for all Council activities and, particularly the transport procurement activity. There are no physical environmental barriers that affect the local supplier market. The local market is limited particularly with professional services. The market is augmented by a stronger, competitive industry in the wider Waikato / Bay of Plenty. Rotorua is currently participating in a Waikato Local Authority Shared Services professional services panel process that will supply services for routine and some specialist requirements over the next three years. For transport professional services to access a wider market council has reviewed its current contract methodology and will split operational and capital as capital can be delivered by the wider consulting industry. However operational services must be delivered locally.

To achieve this, RLC will combine operational professional services with the next network maintenance contract, a model based on the Network Operating Contracts. Capital professional services will be delivered separately. Discussions with the industry have identified that the inclusion of the resealing programme into the maintenance contract has some distinct advantages particularly with the pre-seal repair programme. It is therefore intended to include reseals with maintenance

A longer timeframe than five years is also under consideration for these contracts and will require discussion with NZTA because this will require a variation to the NZTA Procurement Rules.” (NZTA approval received, 10 February 2020).

The range of services to be delivered in the new contract are:

- Maintenance of all road pavements including Parks roads and other private roads e.g. Māori road lines.
- Maintenance of all associated structures e.g. bridges, retaining walls etc.
- Maintenance of cycleways and footpaths.
- Maintenance of associated drainage systems.
- Response to and management emergency events under direction from Council’s CDEM.
- Maintain the asset database i.e. RAMM.
- Develop the capital forward work programmes i.e. targeted AM.
- Manage the specialist maintenance programmes i.e. traffic services, vegetation control etc.

- Deliver the annual resealing programme (about 6-7% of the whole network).
- Provision for delivery of some selected capital works and subject to performance (as measured by contract KPIs).

Contract Outcomes

The outcomes that RLC is seeking to achieve through the Contract are:

- A high degree of reliability and efficiency of all services, systems, and management of assets.
- Through effective procurement demonstrable best value to the ratepayer.
- High levels of customer and public satisfaction in response to requests for services.
- Assets are maintained to a stable condition and meet specified regulatory requirements, RLC KPI targets and the ONRC LOS (as per NZTA guidelines).
- Introduce innovations and best practice that add value to the overall outcomes.
- Less requirement for works monitoring and streamlined administration (auditing still required).
- Accurate and timely reporting to Contract targets so Council is regularly updated.
- Up-to-date and accurate asset information in Council's asset management systems.
- Capacity, capability and resource flexibility to adjust scope to meet changing demands and budgets including the ability to respond to and repair damage following emergency events.
- High level of transparency and understanding of the actual costs of each aspect of the work scope.
- Demonstrable awareness and application of positive employee wellbeing practices.
- Operate in meaningful partnership as an agent of Council under a no surprises approach.
- A mutually beneficial collaborative relationship.

Through the Contract, RLC has aligned itself with a partner skilled in AM, contract management, and in-house maintenance delivery to enable the network to be proactively operated within set budgets.

Contract Collaboration

The RLC roading team work collaboratively with Kāinga Ora, other council departments, NZTA State Highways teams and their contractors, and utility companies including Chorus to ensure programmes of work have minimal customer disruption and that scheduling and alignment occur when possible, especially around renewals and capital works. The Rotorua Operations Liaison Meeting is every three months, and the collated works programme is discussed to ensure coordination. RLC's roading team and NZTA and their state highway service provider meet six-monthly to coordinate works programmes.

Smart Buyer

RLC have undertaken the assessment based on the Smart Buyer Principles. RLC scores 55 out of 70, which places us in the 'Developing' band.

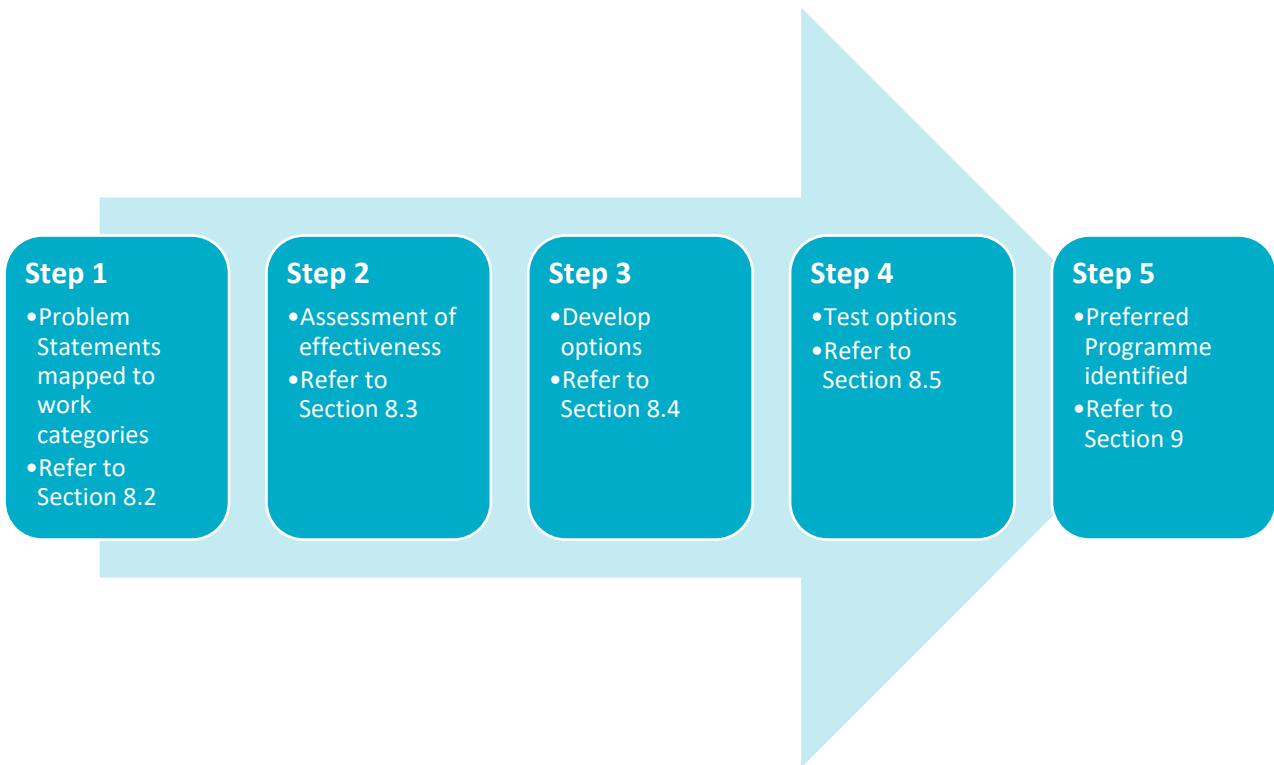
Developing: "our organisation has embraced the principles of being a smart buyer but can still improve value for our communities". Details of the assessment can be found in Appendix H of this report.

SECTION 8: Programme Case

8.1 Process Overview

The process undertaken to identify the preferred programme is outlined in Figure 32 and follows the REG guidance.

Figure 32 Programme case process overview



8.2 Line of Sight

A summary of the problem statements is shown below including alignment to key activity / work category.

Table 32 Problem statements - line of sight

Problem Statement	Benefits	Current Trend	Strategic Responses	Activity / work category
1. Safety - Safety of the transport network	Increased safety for users of the district's transport network	Overall downward trend but upward in some ONRC categories	<ul style="list-style-type: none"> Programme adjustment: <ul style="list-style-type: none"> Implementing programmes to address safety issues, including Road to Zero and speed management. Policy: <ul style="list-style-type: none"> Implementing a speed management programme Risk based: <ul style="list-style-type: none"> Addressing safety risk as part of maintenance and renewals programmes Relationship approach: <ul style="list-style-type: none"> Providing community safety education programmes 	Pavement Maintenance Road safety promotion Low cost low risk Operational Traffic Management Pavement Renewals Environmental Maintenance
2. Sustainable infrastructure - Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity	Appropriate level of investment that maintains transport assets in perpetuity	Pressure to reduce budget	<ul style="list-style-type: none"> Programme adjustment: <ul style="list-style-type: none"> Systems that prioritise renewal programmes Maintenance and renewal programmes that targets interventions at appropriate levels consistent with good industry practice and meeting agreed LOS Responding to current and future compliance requirements Risk based: <ul style="list-style-type: none"> Managing risks to transport network Emergency response 	All work categories
3. Efficiency - Managing future traffic growth, interaction with the State Highway network and revocation of SH30a	Improved economic performance	Maintain	<ul style="list-style-type: none"> Policy: <ul style="list-style-type: none"> Undertake strategic growth planning Demand management: <ul style="list-style-type: none"> Ensure Rotorua Traffic Model is updated and calibrated Review ONRC categories to ensure they are appropriate Understanding impacts of State Highway changes on local road network (integration of design between the state highway system and local roads) 	Operational Traffic Management Network and Asset Management Low Cost Low Risk Traffic Services Maintenance Traffic Services Renewals

Problem Statement	Benefits	Current Trend	Strategic Responses	Activity / work category
			<ul style="list-style-type: none"> Relationship approach: <ul style="list-style-type: none"> Negotiate terms of revocation for State Highway 30A with NZTA 	
<p>4. Mode demand - Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand</p>	<p>Increased share for various modes and reduced demand for car journeys</p>	<p>Could improve</p>	<ul style="list-style-type: none"> Programme adjustment: <ul style="list-style-type: none"> Development of an urban cycleway network that is multi-modal Upgrade passenger transport infrastructure Demand management: <ul style="list-style-type: none"> Upgrading of the footpath network to cater for full range of users 	<p>Bus shelter maintenance and upgrades</p> <p>Footpath upgrades and renewal</p> <p>Network AM</p> <p>Low Cost Low Risk</p> <p>Cycling maintenance</p> <p>Operational traffic management</p>
<p>5. Resilience - Providing long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives</p>	<p>Improved journey reliability</p>	<p>Could improve</p>	<ul style="list-style-type: none"> Programme adjustment: <ul style="list-style-type: none"> Resilience assessment with planning capital projects Demand management: <ul style="list-style-type: none"> Ensure appropriate network monitoring in place Risk based: <ul style="list-style-type: none"> Maintaining Emergency Management Planning Relationship approach: <ul style="list-style-type: none"> Collaborate with NZTA on suitability of diversion routes 	<p>Routine Drainage Maintenance</p> <p>Minor Events</p> <p>Emergency Works</p> <p>Network and Asset Management</p> <p>Low Cost Low Risk</p> <p>Structures Maintenance</p> <p>Structures Components</p> <p>Replacements</p> <p>Drainage Renewals</p>

8.3 Top-Down Review of Strategic Case

The effectiveness of the Problem Statement with the current programmes was assessed using a Top-Down review of our Strategic Case as shown in Appendix D.

The following conclusions can be made from the top-down review of our strategic case:




1. Pavement investment is generally having a good effect on addressing the Problem Statements
2. Structures maintenance programme is not achieving:
 - asset preservation - whole of life costs may not be optimal
 - environmental factors in the efficiency and resilience areas
3. Further work is required to ensure traffic services meets customer outcomes and technical outputs.


Based on this top down assessment, there is no need to further review the pavement categories. Problem Statements 1, 3 and 5 are taken forward for further assessment and optioneering the Programme Business Case with a view to optimising the programme.

8.4 Develop Options

High level options were identified for the critical work categories / functions as part of the Programme Business Case (PBC) optioneering and the results are summarised in the table in Appendix E. The preferred strategic responses are listed below:

Table 33 High level options

Work function	Problem Statements	Preferred Strategic Responses
Traffic services	<p>1. Safety - Safety of the transport network</p> 	<p>Programme adjustment:</p> <ul style="list-style-type: none"> • Implementing programmes to address safety issues <p>Policy:</p> <ul style="list-style-type: none"> • Implementing a speed management programme <p>Risk based:</p> <ul style="list-style-type: none"> • Addressing safety risk as part of maintenance and renewals programmes <p>Relationship approach:</p> <ul style="list-style-type: none"> • Providing community safety education programmes (PBC options assessed for this response only)
Pavements	<p>2. Sustainable infrastructure - Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity</p> 	<p>Programme adjustment:</p> <ul style="list-style-type: none"> • Systems that prioritise renewal programmes • Maintenance and renewal programmes that targets interventions at appropriate levels consistent with good industry practice and meeting agreed LOS <p>(PBC options assessed for this response only)</p> <ul style="list-style-type: none"> • Responding to current and future compliance requirements <p>Risk based:</p> <ul style="list-style-type: none"> • Managing environmental effects of transport network
Traffic services	<p>3. Efficiency - Managing future traffic growth, interaction with the State Highway network and revocation of SH30a</p> 	<p>Demand management:</p> <ul style="list-style-type: none"> • Ensure Rotorua Traffic Model is updated and calibrated • Review ONRC categories to ensure they match use • Understanding impacts of State Highway changes on local road network (integration of design between the state highway system and local roads) (PBC options assessed for this response only)

Work function	Problem Statements	Preferred Strategic Responses
Structures	<p>5. Resilience - Providing long-term provision for accessibility and availability of alternative routes</p> 	<p>Programme adjustment:</p> <ul style="list-style-type: none"> Resilience assessment with planning capital projects) (<i>PBC options assessed for this response only</i>) <p>Demand management:</p> <ul style="list-style-type: none"> Ensure appropriate network monitoring is in place

8.5 Testing Options

A high level multi criteria process was undertaken to compare the top three PBC options for the critical work categories. The following criteria was used for evaluating all PBC options and weighting was adjusted to reflect the strategic response:

- Community outcomes achieved.
- Improved environmental outcomes.
- Value for money.
- Achieving Customer and ONRC performance measures.
- Asset preservation and sustainability.
- COVID 19 effects.

Details of the MCA can be found in Appendix F. The following conclusions were identified from the MCA process:

- **Safety** - MCA process suggests that targeting the risks with safety improvements will achieve higher outcomes. Implementing the Road to Zero Strategy assesses and prioritises safety risks across the network.
- **Sustainable infrastructure** - MCA process suggests that need sound AM processes in place supported with adequate funding for good asset stewardship.
- **Efficiency** - MCA process suggests that all three options are important. It is good practice to start with understanding the demand, then negotiate with collaborative relationship approach before implementing any solution with hard assets.
- **Resilience** - MCA process suggests that proactive assessment and monitoring of the network is the preferred option. This would need an increase in Network and AM budget and may result in additional low-cost low risk projects.

SECTION 9: Preferred Programme Summary

9.1 Rotorua’s Investment Story


RLC’s land transport network functions and operates in accordance with the strategic direction of the current AMP, addressing the key problems of the network. These are in line with national and regional drivers. These are:

- Safety
- Environmental and financial sustainability
- Efficiency
- Mode demand
- Resilience.

Over the last LTP cycle (2018 to 2021), these problems continue to be addressed. A high-level summary of progress on addressing these issues show that trends are steady. Continued investment is vital to ensure positive progress can continue to be made. Our preferred investment programmes are generally continuing with our current programmes as data supporting outcomes is positive.

This section outlines our preferred programmes to address the five Problem Statements set out in our Strategic Case (refer to Section 4) through our strategic responses and business as usual programmes.

9.2 Preferred Programme for Safety



Problem Statement 1: Safety

Safety of the transport network

This programme mostly addresses challenges in the pavement and traffic services functions.

Safety investment element	Description
The problem	<p>Safety continues to be a key strategic investment that RLC will continue to support. Safety is multi-faceted from maintenance programmes to ensure pavements are fit for purpose through to education programmes that target driver behaviour change.</p> <p>The New Zealand Government has recently released its proposal for the new road safety strategy, Road to Zero. We will need to implement this new strategy for assessing risks across our network and this may change how we invest in safety programmes.</p>
Evidence	<p>Statistics for the last six years using a rolling average (refer to Figure 12) highlights that although our baseline is low, the total injury crashes have been starting to trend upwards.</p> <p>Statistics based on DSI (reported number of serious injuries and fatalities each year) shows decreasing trends from 2015/16 to 2018/19 (refer to Figure 13 using ONRC reporting tool). However, there was an increase in DSIs for 2019/20, particularly for the Primary Collectors and Access ONRC categories. We report on safety performance through:</p> <ul style="list-style-type: none"> • Our Annual Report against our LTP targets (refer to Section 5.7). We did not achieve our DIA target in 2018/19. • Against ONRC performance measures to NZTA as our funding partner (refer to Section 5.6). We did achieve our ONRC targets for collective and personal risks in 2018/19.
Our strategic approach	<p>We consider safety elements with all our programmes for managing the land transport activity from road marking, capital improvements at intersections to community education programmes. We will continue to implement our multi-faceted programmes to address safety issues (detailed below). We will start to implement the Road to Zero Strategy to assess and prioritise safety risks across the network in a holistic manner. From our PBC analysis (refer to Section 8), this showed that implementing the Road to Zero Strategy will achieve higher outcomes.</p>
Proposed investment programmes	<p>We proposed the following investment programmes for improving the safety of our network:</p> <ol style="list-style-type: none"> 1. Maintenance – All maintenance work categories contribute to delivering a safe network and ultimately to the target service level of zero DSIs. Pavements, signage, road marking along with structural and drainage maintenance programmes are essential to deliver on our safety targets. 2. Renewals – The asset renewal programme is also a key activity to ensure the land transport network is in required condition to deliver on safety targets. For example, SCRIM analysis (to measure skid resistance) with subsequent resealing where roads do not meet a threshold are driven primarily by safety considerations. 3. Low Cost Low Risk (LCLR) Programmes – Some of the LCLR projects are driven primarily from safety considerations. The key LCLR initiatives are: <ol style="list-style-type: none"> a. Road to Zero – The Road to Zero Strategy is a national programme seeking to reduce the DSIs to zero which RLC endorses. The LCLR programme has direct investment into the higher risk routes identified in the Road to Zero Strategy along with commitment to speed reduction to help advance achieving the strategy targets. b. Traffic Management Intervention (Council Policy) – RLC receives many requests for intervention on urban streets where speeding in particular is a concern to local residents.

Safety investment element	Description
	<p>RLC has developed a policy to prioritise any interventions such as speed reduction platforms based on risk factors. Investment in the traffic management programme is required to manage the actual risks and also meet an expected response to resident’s concerns.</p> <ul style="list-style-type: none"> c. Minor Safety Programme (Council Policy) – RLC maintains a database of safety issues that is driven by actual crash data, public concerns, or actual identified problems. These are also prioritised with priority given to inclusion in any one year a safety improvement associated with road section falling into another programme, for example road rehabilitation. Investment in RLC’s Minor Safety Programme also contributes to the overall safety outcomes including the Road to Zero Strategy. d. Safe and Sustainable Journeys – Complementary to engineering and regulatory interventions, key to improving safety outcomes is the education programme run by RLC’s Safe and Sustainable Journeys Team. This programme targets behaviour change and increased safety awareness particularly with high risk groups. Investment in these programmes is essential to have a well-rounded and robust safety programme all with the ultimate goal of zero DSIs. e. Ngongotaha Village Study – RLC has completed a specific study for improved accessibility and safety within Ngongotaha Village on SH 36. Over the NLTP period, RLC and NZTA collectively will look to implementing these improvements through the LCLR Programme.

9.3 Preferred Programme for Sustainability



Problem Statement 2: Sustainable Infrastructure

Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity

This programme mostly addresses challenges in the pavement function.

Sustainability investment element	Description
<p>The problem</p>	<p>Financial and environmental sustainability are key drivers that impact on our long-term outcomes. Financial sustainability will ensure that the transport assets with a valuation of \$569 million continue to perform over the full lifecycle of the asset. Loss of functionality due to under-investment will only cost more at some future date to bring the asset to its required level of service. Our sealed and unsealed networks have generally maintained condition but need to invest at a sustainable level and cannot accommodate funding reductions. Less than optimum funding levels may result in higher long-term costs.</p> <p>There has been constant pressure over time to reduce funding particularly operational funding. This will potentially be aggravated by COVID-19. The reduction in funding puts both maintenance and renewal programmes at levels that will not keep pace with the rates of deterioration which will compound over time.</p> <p>The transport network inherently has environmental impacts, and in particular direct atmospheric carbon emissions and contaminants including nutrients that impact on land and water bodies. These impacts need to be managed through investment in programmes that ensure sustainable environmental outcomes.</p>
<p>Evidence</p>	<p>Financial sustainability:</p> <p>Expenditure trends - There has been a reduction in total renewal and maintenance expenditure for the last ten years as shown in Figure 15. The greatest reduction has been in operational budgets which results in deferred maintenance.</p> <p>Sealed network - The five-year average trend in resurfacing of the sealed network is 7.5% (refer to Figure 16 and Section 5.6 ONRC Performance Measures). This is within industry accepted investment levels of 7 to 9 % per annum. Most of the network is performing adequately but cannot sustain reduction in investment levels. In addition, our operational costs have increased with the new contract rates (refer to Section 7.9 Management and Delivery).</p> <p>Unsealed network - We have estimated that 16,000 tonnes of aggregate per year is required just to maintain our existing unsealed pavements. There were 17,457 tonnes of aggregate applied to the unsealed network in 2009/10. Then there has been a declining trend in the application of maintenance aggregate brought about by the accumulative effects of budget cuts as shown in Figure 16. Significant budget cuts in 2017/18 resulted in only 223 tonnes of maintenance metalling carried out that year, or 1.4% of the basic asset requirement. Pavement failures are now commonplace and particularly evident during the winter months requiring the reactive application of aggregate to repair the failure. The unsealed network has been subject to under expenditure in response to the corporate driver of operational expenditure reductions.</p> <hr/> <p>Environmental sustainability:</p> <p>It is recognised that road-deposited sediment is a major source of stormwater contaminants. RLC's street sweeping programmes were independently reviewed by NIWA (2013) based on industry best practice, rainfall patterns and actual sweeping removal rates. They provided recommendations for optimising environmental outcomes (i.e. contaminant removal) from their sweeping network. It was found that RLC sweeping frequencies are most likely:</p> <ul style="list-style-type: none"> - Too low in rural and local areas - About right in arterial/collectors/shopping, industrial and state highway areas - Excessively high in the CBD.

Sustainability investment element	Description
	<p>It was acknowledged that sweeping in the CBD is undertaken for aesthetic reasons. This programme is funded 100% by RLC.</p>
<p>Our strategic approach</p>	<p>Financial sustainability: The transport asset with a replacement cost of \$569 million and annual depreciation of around \$7 million requires the appropriate level of ongoing investment for both maintenance and renewals. RLC optimises operational and renewal expenditure to ensure appropriate timing of investments in renewals. This is achieved by utilising the Treatment Selection Algorithm in RAMM. It predicts renewal interventions required utilising condition, rating, age and maintenance costs, followed by confirmation in the field.</p> <hr/> <p>Environmental sustainability: Investment in addressing carbon emissions to meet Council’s Strategic Climate Change Action Plan is specific in the following work categories (with detail below).</p> <ul style="list-style-type: none"> - LCLR Programme - Passenger Transport Infrastructure - Drainage Maintenance.
<p>Proposed investment programmes</p>	<p>Financial sustainability: We propose the following investment programmes for ensuring the preservation and sustainability of the pavements:</p> <p>Maintenance and Renewals: Appropriate levels of investment for both maintenance and renewals across all categories is essential to deliver on all strategic responses addressing the identified problems. Funding priority should be for both operational and renewal expenditure to ensure will keep pace with the rate of asset deterioration.</p> <p>Sealed network – We will continue with our sound road pavement management programme as we know that it works. The asset data trends indicate a stable network, but it is imperative it stays that way. We need to keep ahead so there is not an unsustainable deficit that is unaffordable for our future ratepayers. We do not want to shift the investment burden to the next generation to pay for.</p> <p>Unsealed network – We need an accelerated metalling programme to rectify the problem of deteriorated condition of our unsealed pavements. It is recommended that 18,000 tonnes per year is budgeted for over the 2021-24 LTP period.</p> <hr/> <p>Environmental sustainability: LCLR: Investment in Council’s cycling strategy not only meets demands for various other forms of alternative transport, e.g. mobility transport, by rolling out a programme of shared path development. This programme reduces private vehicle use, while meeting current demands for various alternative modes. The strategic direction is for long term gains as the target groups are vulnerable, less confident users, by providing safe facilities that lead to long term uptake of alternative modes of transport.</p> <hr/> <p>Passenger Transport Infrastructure: A substantial increase in investment for passenger transport infrastructure is proposed to upgrade facilities and maintenance response. This will provide facilities that arrest current decline in passenger numbers and over time have higher numbers on passenger services. This will have a number of positive outcomes:</p> <ul style="list-style-type: none"> - Reduce private vehicle use - Help meet Council’s Climate Change Action Plan - Reduce demand on parking facilities - Contribute to greater efficiency of the transport system.

Sustainability investment element	Description
	<p>Drainage Maintenance:</p> <p>Council has undertaken studies that show street sweeping and maintenance of drainage facilities contribute significantly to reduction in contaminants that enter the environment (as noted above). The Rotorua urban area is located in a water shed with sensitive receiving waterways and an overarching strategy for the Te Arawa Lakes to improve water quality. Cyclic maintenance activities can contribute to improved water quality with increased sweeping frequency in particular.</p> <p>An increase in budget is sought to increase frequency of sweeping to further reduce contaminants from the transport network.</p> <p>Additional investment in maintenance of drainage systems is proposed to ensure pavements are properly drained hence are at less risk of premature failure.</p>

9.4 Preferred Programme for Efficiency



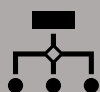
Problem Statement 3: Efficiency

Managing future traffic growth, interaction with the State Highway network and revocation of SH30a

This programme mostly addresses challenges in the traffic services function.

Efficiency investment element	Description
The problem	<p>Rotorua has key routes that connect primary industry with the Port of Tauranga, is a tourist destination, and provides tourism links to Taupo, Waikato and Auckland. Our land transport network supports the national economy.</p> <p>Network efficiency is essential to support economic activity and passenger transport services in particular. Rotorua District is a key service corridor for commercial traffic and while this is concentrated on state highways, the interaction with local roads is critical and this can have both positive and negative effects.</p> <p>Over this NLTP period SH30A will be revoked to RLC. This is a key transport corridor with interactions between the Rotorua CBD and its commercial activity and commercial traffic utilising the state network. The NZTA project of upgrading SH30 (Te Ngae Road) will also likely impact on the adjacent local road network.</p> <p>We also need to ensure the transport network supports development proposals, such as the significant Kainga Ora housing regeneration programme.</p>
Evidence	<p>RLC is establishing the benchmarks for travel time across the transport network (refer to Section 4.2 for initial results).</p>
Our strategic approach	<p>Network efficiency affects all of our programmes and we therefore incorporate it into all projects as good practice, especially where impacting on the state highway corridor.</p> <p>Our strategic approach is to start with understanding the demand, then negotiate with NZTA as part of the collaborative relationship approach before implementing any solution with hard assets. We will ensure the Rotorua Traffic Model is updated and calibrated.</p>
Proposed investment programmes	<p>Operational Traffic Management:</p> <p>RLC will see over the NLTP period an increasing demand on operational traffic management as a result of the SH30A revocation. RLC will set benchmarks for efficiency, including the state highway network, and monitor performance going forward. This will include updating and calibrating the Rotorua Traffic Model.</p> <p>LCLR:</p> <p>The impact of SH30 upgrades on the local road network are being investigated as this NZTA project develops. However, it is likely that some interventions on local roads are necessary to manage this impact.</p>

9.5 Preferred Programme for Mode Demand



Problem Statement 4: Mode Demand

Meeting the expectations of various users of the transport network and an ageing population and increasing cycling demand

This programme mostly addresses challenges in the traffic services function.

Mode share investment element	Description
The problem	<p>There is strong demand for providing transport infrastructure for multi modes especially cycling facilities and mobility access. Coupled with our aging population and increasing cycle demand as the urban network develop. We need to reset how we approach mode demand and align with national direction.</p> <p>Patronage numbers for Rotorua CityRide and Murupara/Ruatāhuna bus services has been steadily reducing over time. Users are put off buses as they are perceived to be unreliable and journey times take longer than private vehicles. This adds to the traffic congestion in our city.</p>
Evidence	<p>Our population is aging. Currently, 15% of our population is aged 65 years or above, which is projected to increase to 23% by 2051.</p> <p>The step changes in mode demand are outlined in NZTA’s Arataki through ‘Transform urban mobility. The 2020 Annual Cycle monitoring survey shows a 36% increase on the 2019 results and 81% increase on the 2016 results.</p> <p>Annual patronage numbers for the Rotorua City Ride and Murupara/Ruatāhuna bus services have reduced from 809,877 in 2015/16 to 421,468 in 2019/20 (refer to Figure 19.</p>
Our strategic approach	<p>Mode share is one of the key strategic responses that RLC will invest in over the next NLTP period. The outcomes of such investments are multi-faceted:</p> <ul style="list-style-type: none"> - Improved efficiency - Reduced carbon emissions - Improved public health. <p>We are developing the Rotorua Modeshift Plan in collaboration between NZTA, and Bay of Plenty Regional Council. We will continue to invest in expanding our cycle network.</p>
Proposed investment programmes	<p>Proposed investments in mode share over the next NLTP period include:</p> <p>Maintenance: Continued investment in the maintenance and renewals of the footpath network with interventions guided by a programme of condition rating.</p> <p>LCLR: Implementation of Council’s Urban Cycling Strategic Plan which is the strategic framework for developing an interconnected series of shared paths to support increased cycling. Demand for other modes also exists and the current strategic plan will be reviewed to incorporate all alternative modes inclusive of passenger transport. It is imperative however that funding is available to support alternative modes of transport.</p> <p>Passenger Transport Infrastructure: Passenger transport has been declining and it is essential that investment in this area is made to arrest this decline but also to stimulate increasing patronage. The Regional Council provides the service but RLC provides the infrastructure to support the service. In conjunction with the Regional Council and NZTA, RLC will develop Rotorua Modeshift Plan, a new multi-mode shift plan, (including cycleways) to be implemented over the next period. RLC will invest additional funding into infrastructure both with maintenance and upgraded series of bus shelters.</p>

9.6 Preferred Programme for Resilience



Problem Statement 5: Resilience







Providing long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives


This programme mostly addresses challenges in the pavement and structures functions.

Resilience investment element	Description
The problem	<p>Infrastructure resilience is important for all network providers particularly core infrastructure such as land transport. Infrastructure resilience is tested further in Rotorua as it is exposed to a variety of natural hazards including earthquake, landslides, flooding, volcanic eruption and storms. Part of the transport network is susceptible to weather related events. Systems are in place to respond to incidents such as closed roads due to road slips or under slips.</p> <p>To strengthen our infrastructure resilience, we have the following problems to address:</p> <ul style="list-style-type: none"> - Increased investment in drainage maintenance to reduce risk of failures - We need long-term provision for accessibility and availability of alternative routes particularly State Highway alternatives. Our local road network provides a key detour route for the State Highways when they are not available. - Some lakeside communities have one corridor with no alternative route. - Some bridges need further investigation and strengthening to cope with new mass limit rules.
Evidence	<p>Alternative routes – Drainage maintenance and renewals is a vital influencer ensuring the ongoing performance and resilience of our pavements and network is effective to deal with natural hazards and impacts of climate change. We are improving knowledge of our large culverts (greater than 600mm in diameter). We are surveying these large culverts to assess the condition grades. We will use this condition information once survey is completed to inform our renewal programmes to ensure our infrastructure is resilient.</p> <p>Lakeside communities - Tarawera Road serving Lake Okareka and Lake Tarawera communities has one corridor with no alternative route.</p> <p>Capacity of bridges - Nine bridges were identified of not capable of taking 44 tonnes based on a desktop screening. The location of bridges with weight restrictions are shown in the map in (refer to Figure 22).</p>
Our strategic approach	<p>Alternative routes – We will continue to accommodate emergency diversions from State Highway routes in collaboration with NZTA. We will invest in risk mitigation on vulnerable sections of the transport network.</p> <p>Lakeside communities - We will continue to utilise emergency planning for potentially isolated communities. We will explore capital investment options for strengthen resilience for the isolated lakeside communities where practical and affordable.</p> <p>Capacity of bridges - We will continue to aim for network that meets mass limit rules. Our focus will be to further investigate and strengthen the identified bridges where practical to cope with new mass limit rules.</p>
Proposed investment programmes	<p>We proposed the following investment programmes for strengthening our infrastructure resilience:</p> <ul style="list-style-type: none"> - Replace our large culverts assessed in poor and very poor condition over ten years - Continue to undertake street sweeping and kerb and channel replacement in urban areas - Undertake bridge assessments and strengthening seven bridges (where practical). - Increased maintenance of drainage systems will result in lowered risk of failure of pavements during storm events.

9.7 Summary of Preferred Programmes

Our preferred investment programmes summarised by the key problems are:

No	Problem	Proposed investment programme	Investment Signals
1	Safety	<ul style="list-style-type: none"> – Maintenance – All maintenance work categories contribute to delivering a safe network and ultimately to the target service level of zero DSIs. – Renewals – The asset renewal programme is also a key activity to ensure the land transport network is in required condition to deliver on safety targets. – Low Cost Low Risk (LCLR) Programmes – Some of the LCLR projects are driven primarily from safety considerations. The key LCLR initiatives are: <ul style="list-style-type: none"> o Road to Zero o Traffic Management Intervention o Minor Safety Programme o Safe and Sustainable Journeys o Ngongotaha Village Study 	<p>Safety</p> 
2	Sustainable Infrastructure	<p>Financial sustainability: We propose the following investment programmes for ensuring the preservation and sustainability of the pavements:</p> <p>Maintenance and Renewals: Appropriate levels of investment for both maintenance and renewals across all categories is essential to deliver on all strategic responses addressing the identified problems. Funding priority should be for both operational and renewal expenditure to ensure will keep pace with the rate of asset deterioration.</p> <p>Environmental sustainability: LCLR: Investment in Council’s cycling strategy not only meets demands for various other forms of alternative transport, e.g. mobility transport, by rolling out a programme of shared path development. Passenger Transport Infrastructure: A substantial increase in investment for passenger transport infrastructure is proposed to upgrade facilities and maintenance response. Drainage Maintenance: An increase in budget is sought to increase frequency of sweeping to further reduce contaminants from the transport network and reduce impact on receiving environment</p>	<p>Climate change</p>  <p>Investing in environment</p> 
3	Efficiency	<p>Operational Traffic Management: RLC will see over the NLTP period an increasing demand on operational traffic management as a result of the SH30A revocation. RLC will set benchmarks for efficiency, including the state highway network, and monitor performance going forward.</p> <p>LCLR: The impact of SH30 upgrades on the local road network are being investigated as this NZTA project develops. However, it is likely that some interventions on local roads are necessary to manage this impact</p>	<p>Better travel options</p>  <p>Improved freight connections</p> 
4	Mode Demand	<p>Maintenance: Continued investment in the maintenance and renewals of the footpath network with interventions guided by a programme of condition rating.</p> <p>LCLR: Implementation of Council’s Urban Cycling Strategic Plan which is the strategic framework for developing an interconnected series of shared paths to support increased cycling. Demand for other modes also exists and the current plan accommodates alternative modes inclusive of passenger transport. It is imperative however that funding is available to support alternative modes of transport.</p>	<p>Better travel options</p> 

No	Problem	Proposed investment programme	Investment Signals
		<p>Passenger Transport Infrastructure: In conjunction with the Regional Council and NZTA, RLC will develop Rotorua Modeshift Plan, a new multi-mode shift plan, (including cycleways) to be implemented over the next period. RLC will invest additional funding into infrastructure both with maintenance and upgraded series of bus shelters.</p>	
5	Resilience	<p>We proposed the following investment programmes for strengthening our infrastructure resilience:</p> <ul style="list-style-type: none"> - Replace our large culverts assessed in poor and very poor condition over ten years - Increase level of drainage maintenance to reduce risk of system failure - Undertake bridge assessments and strengthening seven bridges (where practical). 	<p>Improved freight connections</p> 

SECTION 10: Risk Management

10.1 Risk Management Approach

Our approach to risk management is defined in our Risk Management Policy (2018). We are committed to organisation wide risk management principles, framework and processes that ensure consistent, efficient and effective assessment of risk in all planning, decision making and operational processes.

RLC considers risk management to be an essential management function in its operations. It recognises that risk management responsibility lies with the person who has the responsibility for that function, service or activity that gives rise to that risk.

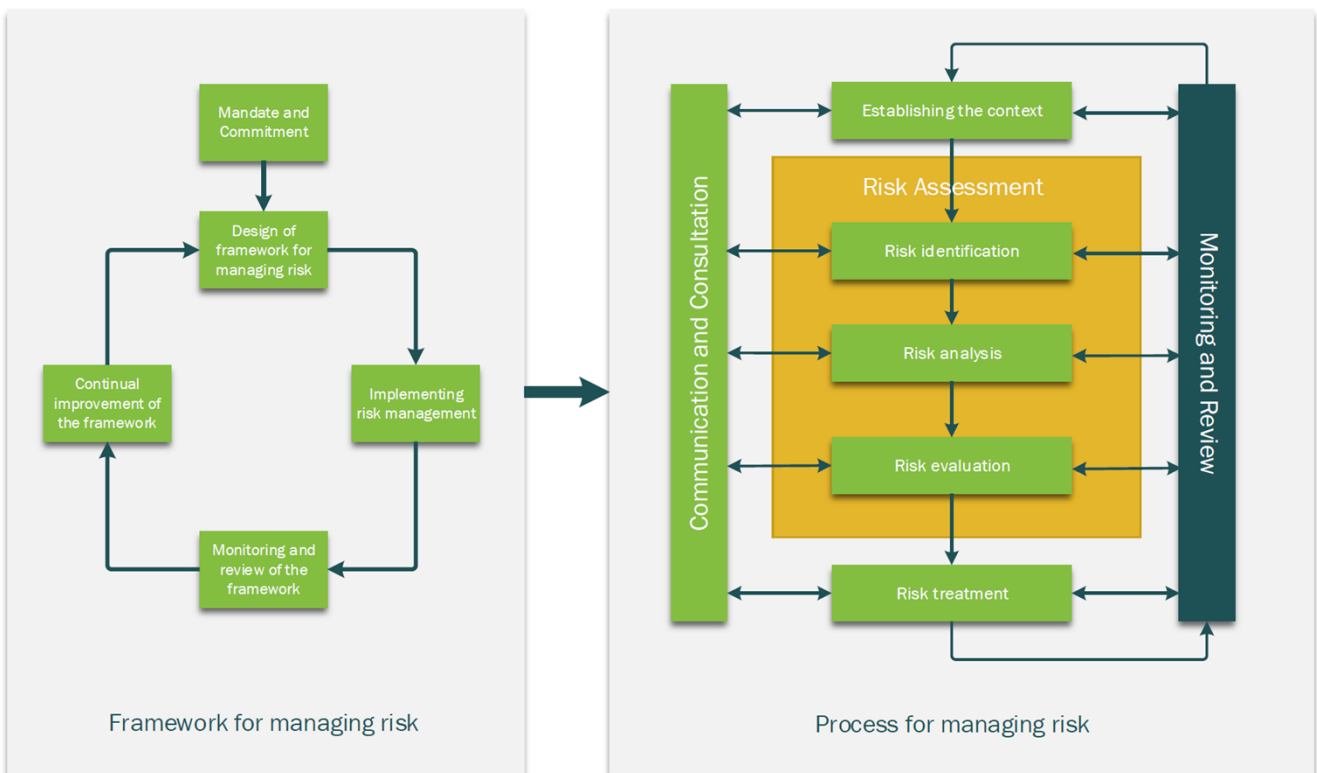
The risk management objectives are:

- the achievement of organisational goals and objectives
- the ongoing health and safety of all employees and contractors at the workplace
- ensuring public safety within Council jurisdiction is not comprised
- limited loss or damage to property and other assets
- limited interruption to business continuity
- positive public perception of Council and the district.

10.2 Risk Management Framework

RLC is committed to the principles, framework and process of managing risk as outlined in AS/NZS ISO 31000:2009. RLC manages risks continuously using a process involving the identification, analysis, evaluation, treatment, monitoring and review of risks. It will be applied to decision making through all levels of the organisation in relation to planning or executing any function, service or activity. The risk management framework and process we follow are presented below.

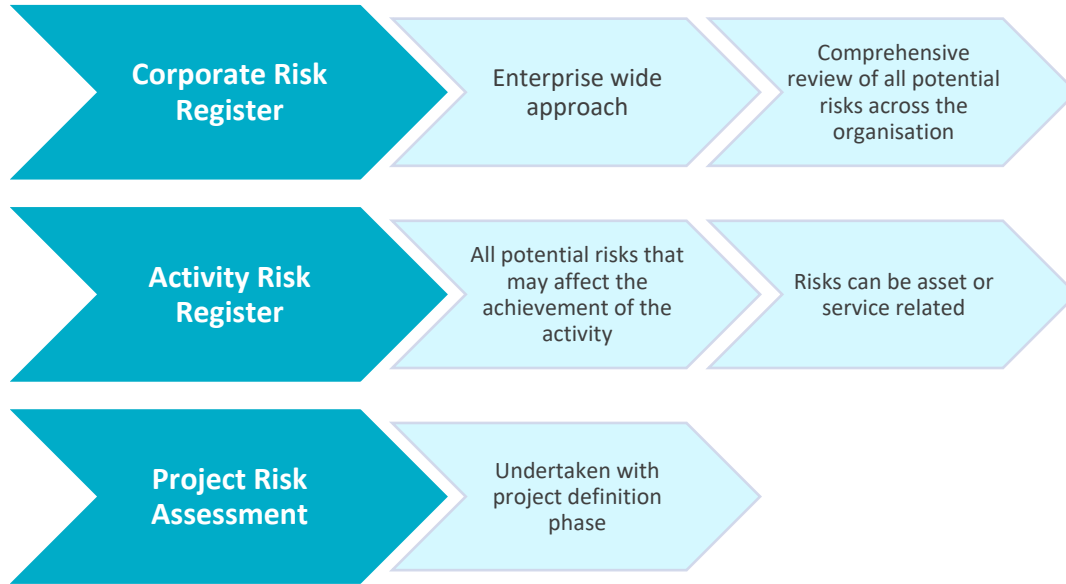
Figure 33 Framework and process for managing risk



10.3 Risk Hierarchy

Our risk management approach is underpinned by the following risk hierarchy (decreasing order):

Figure 34 Risk hierarchy



10.4 High Risk Events

A risk register for the land transport activity was completed as part of the AMP development. The matrix of consequence and likelihood ratings was used to assess the level of risk, ranking events as very low, low, medium, high or very high risk, as set out in our risk management framework. Asset risks have then been compared, ranked and mitigation options assessed for all risk events identified.

RLC has assessed the transport infrastructure and highlighted eight current risks, a summary of which is provided in the table below. The full risk register is detailed in Appendix C.

Table 34 Transport risk register summary

Risk	Risk cause	Initial risk	Mitigation options
Insufficient funding for sustainable managements of assets.	Underfunding leading to the deterioration of the transport assets.	High	Prioritisation of funding for operational and renewal programmes. Robust AMP built from basics. Continue to present evidence-based business cases.
Failure of safety management systems	Onsite crashes or accidents due to poor Traffic Management.	High	Ensuring appropriate safety and traffic management plans are in place for each project and undertaking minimum of 10 random audits of sites each month
Infrastructure resilience.	Severe damage to infrastructure, resulting in the community with no access.	Medium	Enhance Civil Defence capability, build community resilience, ensure RED CCO letter of intent includes climate change opportunities e.g. costal refugees & land use change, work with BOPRC on joint stream management. Consider building capacity and resilience during replacements/ renewals. Ensure Emergency Response procedure are kept up to date and contractors have the ability to effectively aid in opening services back to isolated communities.

Risk	Risk cause	Initial risk	Mitigation options
Contractual conflicts	Legal action over contractual issues.	Medium	Robust procurement policies, appointment of appropriate contract supervisors
Inaccurate data/information	Poor decision making in preparing forward works programmes.	Medium	Keeping up to date with data measurement, reporting improvements through ONRC
Failure to appoint appropriate service providers	Appointment of contractor incapable of undertaking the task.	Medium	Ensuring procurement methodologies for each project
Inability to deliver service due to environmental impact	Quality of surface road run-off into lakes not meeting standards.	Medium	Work with BOPRC on joint stream management. Work with Contractor on runoff controls.
Failure to maintain assets at the required level of service	Poor asset condition resulting in failure or crash incidents.	Low	Ensure internal processes for asset management are robust, staff are adequately trained and feedback through performance monitoring is maintained

10.5 Emergency Risk Planning

Business Continuity Plans (BCP) are developed to coordinate efforts for keeping Council business operating through emergency events. At a corporate level, RLC has a BCP for response processes to be implemented for any major interruption to business operations and service delivery. This was tested with the recent global pandemic event with people working at home (except for essential workers).

Land transport emergency risk events occur when they escalate from a routine event affecting an isolated section of Council's road network and before it is declared needing Civil Defence control. RLC has existing communications plans and procedures specific to managing emergency events affecting the road transport corridor. RLC collaborates with NZTA to identify and develop appropriate detour routes that can be implemented in the situation of road closures.

RLC is a member of the Bay of Plenty Lifelines Group as noted above.

10.6 COVID-19

The potential impact of the COVID-19 pandemic on our economy is not yet fully understood and is evolving rapidly. In the short term, COVID-19 may impede our rate of growth, given the immediate impact of closed borders on international tourism and the flow on effect on employment. However, increased domestic tourism may somewhat ameliorate any anticipated downturn in our tourism related activity. Long term impacts on the economy are still being assessed at a national level in collaboration with local government.

Government initiatives are also expected to mitigate the impact of the pandemic on our local economy. For example, the construction of social houses as part of the Kāinga Ora initiative.

Long term projections are that Rotorua will continue to experience strong growth in tourism, with approximately 60% growth in overnight visitor numbers predicted by 2051. We are continuing to master plan for growth, ensuring we understand and plan for what new infrastructure or capacity we will need, where and when.

RLC continues to monitor the effects of COVID-19 on the region and adapt as needed.

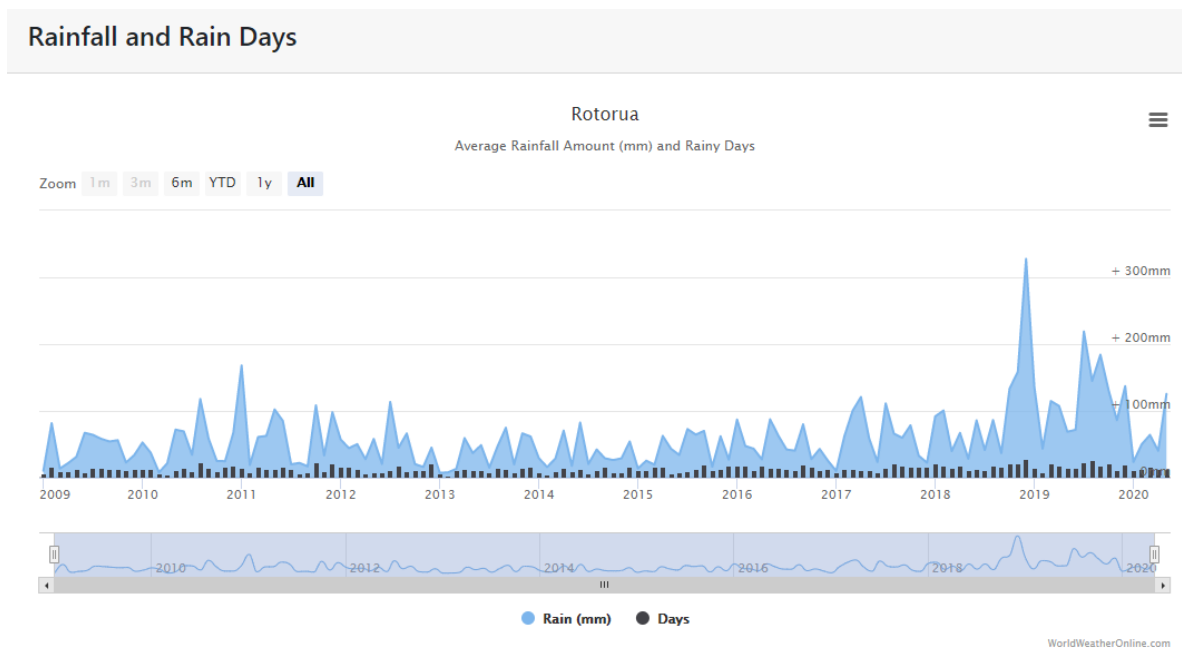
10.7 Climate Change, Network Resilience and Zero Carbon

Climate change is a major management issue facing all infrastructure providers and the built environment. The major changes expected to be as a result of climate change are:

- a change in frequency of extreme events – such as storm intensity, heavy rainfall, drought, wind extremes and thunderstorms rather than a change in average conditions locally
- higher temperatures
- a change in rainfall patterns.

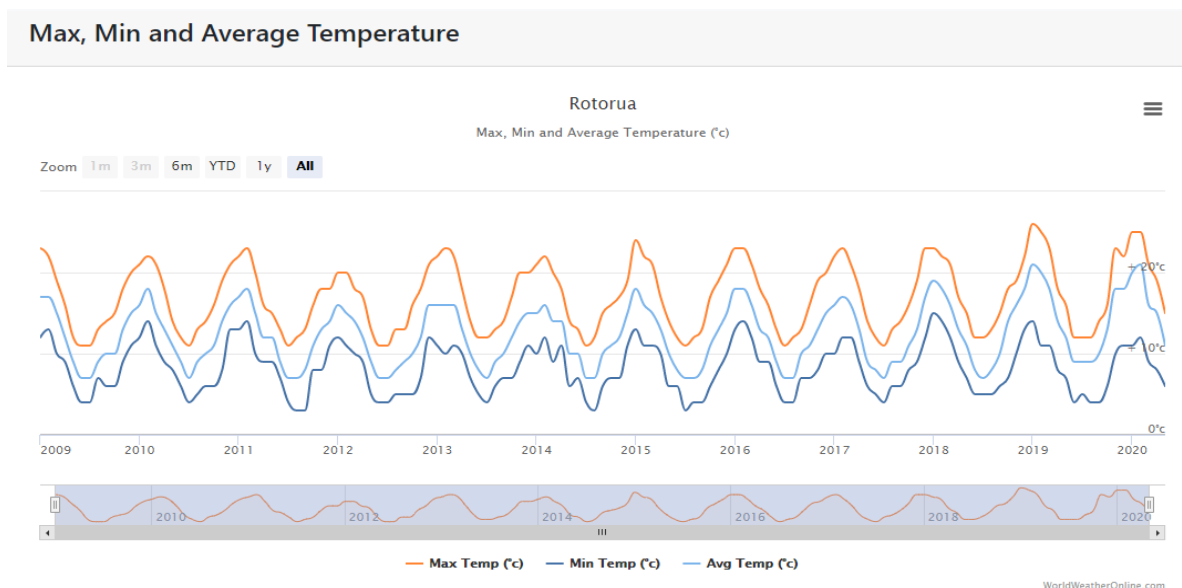
We are developing our infrastructure resilience for the impacts of climate change on the infrastructure assets. Trends in rainfall are seeing higher rainfall with more intensity as shown in the following two graphs.

Figure 35 Rainfall trends



Source: worldweatheronline.com

Figure 36 Temperature trends



Source: worldweatheronline.com

A National Climate Change Risk Assessment (August 2020) has recently been released by the Ministry for the Environment. The setting of the framework for effective adaptation is required by the Climate Change Response (Zero Carbon) Act. The risk assessment is a national overview of how New Zealand may be affected by climate change related hazards. Risks to linear transport networks, due to changes in temperature, extreme weather events and ongoing sea level rise, was identified a priority risk. At a local level, we need to understand what this means on our land transport activity

We have implemented or have a number of initiatives in planning for climate change as follows:

- Adopt a proactive maintenance approach before storm events and being ready to respond.
- Building our knowledge based on latest thinking nationally, central government guidance, and participating in forums where appropriate.
- Increased our awareness of our transport network risks in relation to flooding and identify susceptible road sections.
- New infrastructure planning is undertaken under the climate change policy for design.
- Developed a climate action plan on a pathway through Global Covenant of Mayors for Climate and Energy.

As part of our Climate Action Plan, we have taken the following approaches as a response to climate change:

- Emissions reduction - Adopting an emissions reduction target that aligns with the New Zealand national target
- Mitigation - Identified five priority themes to shape our actions for the next ten years. This includes Transportation and urban form, and Leadership, advocacy and economic opportunity themes.
- Adaptation – Identified key areas where we need to reduce our vulnerability to the impacts of climate change.

Resilience refers to the capacity to recover quickly from difficulty; the concept applies to major disruption events including those associated with climate change.

Infrastructure resilience is tested further in Rotorua as it is exposed to a variety of natural hazards including earthquake, landslides, flooding, volcanic eruption and storms. These natural disasters can cause considerable damage to infrastructure assets and affect delivery of service.

Most of the transport network is not susceptible to weather related events, unlike other districts. However, we know how important it is to respond to incidents such as closed roads due to road slips or under slips, as well as keeping the road drains fully maintained.

Preventing adverse effects of climate change and natural hazards, such as geothermal, through careful planning of future development areas is significantly more cost effective than trying to retrofit / mitigate later. With this approach we do not locate new communities and supporting infrastructure in areas at significant risk from hazards. This will affect where our district grows in the future and the form and affordability of development.

We have taken two methods, first to build our people resilience, second to build capacity and strength into our infrastructure. This approach has allowed us to build asset knowledge and develop consistent decision-making processes. We have done this by the following initiatives:

- Specify more resilient design and materials for replacement programmes.
- Seismic risk study undertaken and used to inform infrastructure planning.
- Enhanced Civil Defence capability.
- Enhance collaboration with road maintenance contractor to have robust communication protocols and procedures, and appropriate signage for keeping network resilient.

Zero Carbon

The Zero Carbon Act and recent Council direction mean that RLC will be considering opportunities for reducing the carbon emissions it generates. Preliminary opportunities identified with the current technology available include:

- Participating in national forums for transport managers.
- Linking carbon emission reductions to our Land Transport AMP.
- Smart procurement to reward less transport movement between regions.
- Developing the Modeshift Plan with NZTA and BOP Regional Council to incorporate walking, cycling and micro mobility as well as public transport options.

SECTION 11: Financial Summary

11.1 Financial Summary Overview

This section contains the financial statements, financial strategy, valuation forecast, key assumptions, and requirements resulting from all the information by means of subsidies. Council also funds an unsubsidised programme mainly of parks roads and has programmes of supporting various capital presented in the previous sections. This section provides information on the financial controls and systems surrounding the transport assets.

The Council funds its transport expenditure through rates revenue and borrowing. NZTA also contributes 56% towards the subsidised work activities (from 2021/22).

The introduction of the Land Transport Management Act 2003 (LTMA) and the Government Policy Statement on Land Transport Funding 2015-25 including the FAR policy review have set further controls in the way that NZTA now allocates funding for transport activities.

A breakdown of the financial forecasts for Transport projects/programmes for the next ten years is included in this AMP.

The key features of the financial projections are:

- Operations – Maintenance expenditure remains reasonably constant over the planning period (this reflects the effort to maintain asset condition at a sustainable level through appropriate renewal investment on the depreciated portion of the network).
- Renewal funding is based on the lifecycle methodologies set out in this AMP. Some smoothing of expenditure between years is undertaken for practical purposes.
- Capital development expenditure (capital programmes are based on the Rotorua Integrated Network Strategy or from policy allocation of funding by Council).

Expenditure on infrastructure assets can be categorised into four main areas:

- Maintenance and Operations
- Renewals
- Capital Works
- Disposal.

A breakdown of the financial forecasts in these areas are shown in this section. All expenditure is stated in dollar values as at 1 July 2020.

11.2 Financial Statements and Projections

The following table shows the projected operational and capital expenditure and the income for the ten years of the transport activity.

Table 35 Projected expenditure

Description	Projected Expenditure (\$000)				LTP 10 year TOTAL
	Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Years 4 to 10 2024/25 to 2030/31	
Operating Expenses	\$ 8,965	\$ 8,985	\$ 8,985	\$ 62,895	\$ 89,830
Income	-\$ 4,577	-\$ 4,588	-\$ 4,588	-\$ 32,120	-\$ 45,873
Total Operating Expenses	\$ 4,388	\$ 4,397	\$ 4,397	\$ 30,775	\$ 43,957
Capital Projects Renewals	\$ 7,397	\$ 7,397	\$ 7,397	\$ 51,779	\$ 73,970
Capital Projects Upgrades (Growth and LOS improvement)	\$ 4,956	\$ 5,141	\$ 5,091	\$ 37,937	\$ 53,125
Capital Projects Income	-\$ 5,604	-\$ 5,707	-\$ 5,679	-\$ 41,044	-\$ 58,034
Total Capital Projects	\$ 6,749	\$ 6,831	\$ 6,809	\$ 48,672	\$ 69,061
CBD Programme	\$ 1,335	\$ 1,335	\$ 1,335	\$ 9,345	\$ 13,350
Total CBD	\$ 1,335	\$ 1,335	\$ 1,335	\$ 9,345	\$ 13,350
Grand Total	\$ 12,472	\$ 12,563	\$ 12,541	\$ 88,792	\$ 126,368

11.3 Operational Expenditure Summary

The table below outlines the Transport network road maintenance operating expenditures for the next ten years (2021 to 2031).

Table 36 Maintenance opex expenditure

NZTA Work Category	Maintenance Programme	Projected Operational Expenditure (\$000)				Gaps/Options Comment	NZTA CO-FUNDS
		Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Years 4 to 10 2024/25 to 2030/31		
111	Sealed Pavement Maintenance	\$ 1,852	\$ 1,852	\$ 1,852	\$ 12,964		✓
112	Unsealed Pavement Maintenance	\$ 180	\$ 180	\$ 180	\$ 1,260		✓
113	Routine Drainage Maintenance	\$ 1,128	\$ 1,128	\$ 1,128	\$ 7,896	Includes increased LOS	✓
114	Structures Maintenance	\$ 116	\$ 116	\$ 116	\$ 812		✓
121	Environmental Maintenance	\$ 529	\$ 529	\$ 529	\$ 3,703		✓
122	Network Services Maintenance	\$ 915	\$ 935	\$ 935	\$ 6,545		✓
123	Operational Traffic Management	\$ 164	\$ 164	\$ 164	\$ 1,148	Allowance for SH30A revocation	✓
124	Cycle Path Maintenance	\$ 47	\$ 47	\$ 47	\$ 329		✓
125	Footpath and Verge Maintenance	\$ 346	\$ 346	\$ 346	\$ 2,422		
131	Level Crossing Warning Devices	\$ 10	\$ 10	\$ 10	\$ 70		✓
140	Minor Events	\$ 107	\$ 107	\$ 107	\$ 749		✓
151	Network and Asset Management	\$ 1,356	\$ 1,356	\$ 1,356	\$ 9,492		✓
211	Unsealed Road Metalling	\$ 799	\$ 799	\$ 799	\$ 5,593		✓
432	Road Safety Promotion	\$ 545	\$ 545	\$ 545	\$ 3,815		✓
514	Public transport facilities and infrastructure - O&M	\$ 125	\$ 125	\$ 125	\$ 875	Increased LOS	
	Vegetation Control	\$ 40	\$ 40	\$ 40	\$ 280		
	Unsubsidised Drainage	\$ 186	\$ 186	\$ 186	\$ 1,302		
	Amenity Lighting	\$ 134	\$ 134	\$ 134	\$ 938		
	Unsubsidised Traffic Services	\$ 22	\$ 22	\$ 22	\$ 154		
	Parks Roading Maintenance	\$ 248	\$ 248	\$ 248	\$ 1,736		
	Planning Services and Control	\$ 116	\$ 116	\$ 116	\$ 812		
	TOTALS	\$ 8,965	\$ 8,985	\$ 8,985	\$ 62,895		

Above table does not include provision for:

- Inner city buildings and facilities (public toilets, car parking building, City Focus)
- Assets supporting events (night market, banners etc.)
- Allowance for NZTA administration claim not included.

Table 37 Renewal expenditure

NZTA Work Category	Renewals Programme	Projected Renewal Expenditure (\$000)				Gaps/Options Comment	NZTA CO-FUNDS
		Year 1	Year 2	Year 3	Years 4 to 10		
		2021/22	2022/23	2023/24	2024/25 to 2030/31		
212	Road Pavement Reseals	\$ 3,796	\$ 3,796	\$ 3,796	\$ 26,572		✓
214	Road Pavement Rehabilitations	\$ 1,984	\$ 1,984	\$ 1,984	\$ 13,888		✓
213	Drainage Systems (Culverts, kerbs and sumps)	\$ 410	\$ 410	\$ 410	\$ 2,870		✓
215	Structures (Bridges, Retaining Walls, guardrail)	\$ 350	\$ 350	\$ 350	\$ 2,450		✓
222	Streetlights	\$ 80	\$ 80	\$ 80	\$ 560		✓
225	Footpaths Renewals	\$ 500	\$ 500	\$ 500	\$ 3,500		✓
	Parks Roads Renewals	\$ 196	\$ 196	\$ 196	\$ 1,372		
534	Public transport facilities and infrastructure - renewals	\$ 81	\$ 81	\$ 81	\$ 567		✓
	Total Renewal	\$ 7,397	\$ 7,397	\$ 7,397	\$ 51,779		

11.4 Capital Expenditure Summary

The table below contains the transport projects / programmes which represents the capital expenditure for the next ten years (2021-2031):

Table 38 Capex expenditure

NZTA Work Category	Capital Programme	Projected Capital Expenditure (\$000)				Gaps/Options Comment	NZTA CO-FUNDS	Growth %	Renewal %	LOS %
		Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Years 4 to 10 2024/25 to 2030/31					
	All Renewal projects (i.e. Resurfacing chip etc).	\$ 7,397	\$ 7,397	\$ 7,397	\$ 51,779	Reflects new contract Rates	Partial			
341	Minor Improvements (includes cycleways)	\$ 2,806	\$ 2,991	\$ 2,941	\$ 20,587		Yes			100
	Rural Street Improvements	\$ 350	\$ 350	\$ 350	\$ 2,450		No			100
	Rural Seal extensions	\$ 800	\$ 800	\$ 800	\$ 5,600		No			100
	Urban Street improvements	\$ 350	\$ 350	\$ 350	\$ 2,450		No			100
324	Malfroy/Old Taupo Rd				\$ 2,300		Yes	100		
	Support for Growth	\$ 500	\$ 500	\$ 500	\$ 3,500		No	100		
	Māori Roadlines and Unformed Roads	\$ 100	\$ 100	\$ 100	\$ 700		No			100
	Land Acquisition	\$ 50	\$ 50	\$ 50	\$ 350		Partial			
	TOTALS	\$ 4,956	\$ 5,141	\$ 5,091	\$ 37,937					

Table 39 CBD expenditure

CBD Programme	Projected CBD Expenditure (\$000)				Gaps/Options Comment
	Year 1 2021/22	Year 2 2022/23	Year 3 2023/24	Years 4 to 10 2024/25 to 2030/31	
Eat Street Maintenance	\$ 65	\$ 65	\$ 65	\$ 455	
CBD Cleaning Operations	\$ 1,270	\$ 1,270	\$ 1,270	\$ 8,890	
TOTALS	\$ 1,335	\$ 1,335	\$ 1,335	\$ 9,345	

11.5 Consequences of Funding Constraints

It is recognised that there is a financial discrepancy between Council's approved 2021 LTP budget as identified in the Financial Strategy and the capital expenditures identified in this AMP based on asset needs. The implications of the funding constraints on the service delivery for the land transport activity are summarised in the following table. Council will continue to monitor to ensure that there are no significant service gaps due to funding constraints.

Table 40 Summary of consequences of budget change

Expenditure Programme	Project / Programme Description	Comment	Consequences of budget change
Operational – Maintenance programme	Maintenance Expenditure across all transport assets	Some reduction in NZTA funding at a national level.	Allowance was made in original AMP to maintain SH30A but this did not get funding in NLTP so reduced overall funding neutralised by this decision to some extent.
Renewal expenditure	Renewal of existing assets	Some reduction in Resealing Programme as a result of budget limitations. Asphaltic Concrete programme is mainly affected.	Reseals will be delayed which will increase risk of failure.
Capital expenditure	Programme to address identified safety issues.	Some projects not approved in the NLTP.	This will delay implementation of some projects until the next NLTP period as a minimum.
CBD expenditure	Capital development in CBD.	Funded as planned.	No effect.

11.6 Financial Policies and Funding

RLC has adopted the following Financial Policies in 2021/2023 LTP:

Table 41 Financial policies

Policy	Description
Revenue and Financing Policy	This policy identifies how the Council allocates the costs of its activities against available sources of funds, including rates and user charges
Funding Impact Statement	The Funding Impact Statement details the rating system and rating mechanisms. The Rating Policy includes the rates set for the planning period
Liability Management Policy	The Liability Management Policy explains the Council's approach to managing its liabilities and the ways in which associated risks are managed
Investment Policy	The Investment Policy outlines the Council's approach to managing investments

Policy on Determining Significance	This policy outlines the Council's general approach to determining the significance of proposals and/or decisions. The policy includes details on the criteria, thresholds and procedures to be followed in determining significance. It also includes details of the Council's strategic assets and significant activities
Policy on Partnerships between the Council and the Private Sector	This policy outlines under what circumstances the Council will enter into partnership arrangements with private businesses, what conditions will be imposed and what consultation will take place
Remissions and Postponement Policies	These Policies cover a number of issues and address how and when the Council may consider it appropriate to assist by providing rates relief through remission of rates.
Policy on the Remission and Postponement of Rates on Māori Freehold Land	This policy outlines how the Council will deal with applications for the remission and postponement of rates on Māori freehold land

11.7 Asset Values and Depreciation

The valuation of assets is a fundamental part of the asset management cycle. It provides the critical link between asset management and financial management. The Transport assets were valued in 2018 and then had an inflation index adjustment in 2020 (6.3%).

Depreciation is provided on a straight-line basis on all tangible fixed assets at rates calculated to allocate the assets' cost or valuation less estimated residual value over their estimated useful lives.

The summary of the land transport activity values is shown in the following table.

Table 42 Asset valuation results 2020

Asset Class	Replacement Cost	Annual Depreciation	DRC
Bridges	\$28,131,436	\$288,801	\$13,296,399
Footpaths	\$47,532,858	\$536,133	\$28,361,332
Street Lighting	\$9,099,196	\$268,045	\$4,234,823
Drainage	\$31,598,224	\$304,024	\$13,690,974
Surface Water Channels	\$25,557,485	\$316,139	\$13,229,267
Minor Structures	\$2,378,416	\$71,685	\$1,367,776
Railings	\$5,563,712	\$348,470	\$4,123,125
Retaining Walls	\$3,402,286	\$36,032	\$2,500,014
Islands	\$466,109	\$14,608	\$354,393
Signals	\$434,580	\$20,520	\$215,243
Traffic Facilities	\$214,854	\$13,365	\$99,657
Pavement- Subbase	\$101,434,545	\$0	\$94,973,484
Pavement - Basecourse	\$206,603,246	\$1,310,410	\$146,909,750
Pavement Surface - Reseals	\$55,238,281	\$2,908,839	\$22,270,674
Pavement Surface - Second Coat	\$9,586,855	\$585,469	\$4,240,684
Land Under Roads	\$41,517,655	\$0	\$41,517,415
TOTAL	\$568,759,739	\$7,022,541	\$391,385,010

Source: RLC AV report and spreadsheet (June 2018 inflation adjusted to 2020)

The methodology will be reviewed from a first principles approach before the next full valuation.

Table 43 Asset valuation terminology

Term	General Meaning
Replacement cost (RC)	The cost of constructing a new infrastructure asset using the present-day technology, and maintaining the original service potential
Optimised Replacement Cost (ORC)	The cost of the modern equivalent asset that would be used to replicate the existing asset. The asset cost is 'optimised' down to allow for surplus capacity or technical obsolescence
Optimised Depreciation Replacement Cost (ODRC)	The optimised replacement cost after deducting the wear of an asset to reflect the remaining useful life of the asset. Calculated on the gross replacement cost of modern equivalent assets (MEA).

The comparison with annual depreciation, historical and forecast renewal expenditure at major asset class level is shown below. The renewal programme generally matches the annual depreciation with variances at asset class level.

Table 44 Renewal expenditure versus depreciation

Asset Class	Annual Depreciation	2018/19 Actual renewals	3-year renewal forecast (average per year)
Sealed & Unsealed Roads	\$ 4,805		\$ 5,780
Drainage	\$ 620		\$ 410
Structures	\$ 760		\$ 350
Traffic Services	\$ 302		\$ 80
Foopath	\$ 536		\$ 500
Total	\$ 7,023		\$ 7,120

11.8 Assumptions and Confidence Levels

The basis for the financial forecasts is founded on the asset lifecycle predictions made in this plan which in turn define asset depreciation and required renewal profiles. Operational (maintenance) forecasts are founded on historical trends, market contract rates and the premise that assets will not be allowed to deteriorate outside the prudent condition framework of their criticality.

The following general assumptions have been made in preparing the ten-year expenditure forecasts:

- The Council has set its projected operating revenue (including rates) at a level sufficient to meet the projected operating expenditure, except where the Council has resolved that it is financially prudent not to do so.
- Pavement renewal programmes have been based on available condition and performance information and treatment lengths from RAMM.
- The renewal programme aims to maintain the current condition of the network and minimise life cycle costs. The programme recognises the addition of any new assets.
- Development works are based on anticipated sub-divisional development and traffic growth in accordance with the growth model.
- Forecasts have been based on historic trends, present work programmes, and where possible forecasting models using all available information.
- Some assumptions have been made as to the average useful lives and average remaining lives of the asset groups, these are reviewed, and accuracy improved based on actual asset deterioration.
- Future financial forecasts will be based on improved knowledge of assets and more sophisticated modelling and data analysis improving the accuracy of projections.

- The future estimates are developed to project level in the first three years and in outline for at least the next seven years.
- The application and level of user charges are all determined by the Council's Revenue and Financing Policy.
- The Government will continue to pay NZTA subsidy at advised levels. The actual amount is determined by the level of expenditure attracting NZTA subsidy.

The forecasts have been based on current NZTA funding thresholds and subsidy levels. Significant potential changes to the forecasts may result from:

- Changes in contract rates due to market pressures
- Changes in contracting policy and service delivery agreements
- Changes in NZTA's minimum intervention criteria and subsidy levels
- Anticipated traffic growth and development being exceeded
- Better information on condition and performance trends
- Minimum remaining useful life (RUL) has been set at 2 years
- Asset information being as complete as possible by June 2020. This is based on the RAMM and asset data.
- The determination of asset replacement value, depreciated value, and renewal projections are based on the valuation data as of 30 June 2017. Updated CPI only for 2020.
- Maintenance and operations allocations are based on maintaining current service levels
- The depreciation has been calculated on a straight-line basis
- Where significant cost variations may be forecast outside the range of this plan, procurement levers will be utilised to moderate the impact of such variations on the overall plan.
- It is assumed that regulations relating to transport will remain essentially the same over the planning period (i.e. 10 years to June 2031).

SECTION 12: Asset Management Practices

12.1 Overview

RLC is committed to good industry practices as a sustainable standard for its land transport activity. A key feature in our AM framework is to continue to improve practices, processes, and tools.

Through the initiatives presented in this section, RLC is committed to appropriate AM practices. This practice is being developed in keeping with the NAMS practice as presented in their suite of AM tools and systems. Council is committed to delivering the most appropriate levels of service balanced with affordability and good industry practice.

12.2 AM Policy

RLC has committed through its 2021 AM Policy to manage the infrastructure assets effectively to deliver services as outlined in Section 5.7. This will improve the wellbeing of its community and contribute to the Community Outcomes set out in the Rotorua 2030 Vision Statement.

To achieve these outcomes, RLC is committed to the following principles that guide the management of the infrastructure assets for which it is responsible:

Our people, our community:

- We build our resilience by developing and strengthening the capability of our people
- In collaboration with mana whenua, we embed cultural values in the way we manage our infrastructure, safeguarding the life supporting capacity of air, water, soil and ecosystems
- We co-govern, co-design and manage with mana whenua our long-term infrastructure solutions
- We engage with iwi, community and stakeholders to ensure our levels of service and long-term planning reflect their needs and expectations
- We work within the financial parameters our community can afford
- We manage our assets with focus on community safety.

Our strategic context

- We comply with all relevant legislation
- Our asset management practices support improved social, economic, environmental, and cultural wellbeing for our community
- We plan for the impacts of climate change on our infrastructure assets, supporting the sustainable growth of our city.

Our practices

- Asset management principles are integrated within our existing planning and operational processes
- We collect and manage comprehensive, quality data and information on our critical infrastructure assets to inform our strategic decision making
- Our asset management planning informs the Long Term Plan and forms the basis for the Infrastructure Strategy
- We have no unforeseen critical asset failures
- We integrate optimised decision making into our infrastructure planning so that it is agile and responsive
- We use whole of life costs as the basis of our long-term decisions to ensure we deliver value for money

- We keep our infrastructure within acceptable industry benchmarks to ensure sustainable future investment
- Asset-based risk is effectively balanced with financial trade-offs to ensure the ongoing resilience of our core infrastructure to meet our agreed levels of service
- We seek continuous improvement in our asset management activities whilst keeping abreast of trends.

12.3 AM Maturity

The AM Policy was updated as part of the 2021 LTP process. This included setting an appropriate maturity level for AM practices for the land transport activity. This considered the scale, value and risk for this activity.

12.4 AM Practices

REG Pillars of Success

REG has established a Pillars of Success Improvement Framework which RCAs are able to categorise their improvement plans. The Pillars of Success allows NZTA and RCAs to agree on priorities of focus, identify and address any gap, and provide a nationally consistent framework to monitor and report on progress. The framework will help to promote collaborative outcomes between NZTA and RCAs to ensure desired improvement activities are delivered.

The Improvement Programme outlined in Section 12.6 details how each of the improvement actions supports the relevant REG Pillars.

Current practices

The 2018/21 Land Transport AMP was recently assessed against the REG Pillars of Success. The AMP was benchmarked against other plans in the region and nationally. The general comments from this review were:

- Overall mixed document with a lot of focus into building the framework.
- Good information with ONRC integration and linkages to Problem Statements.
- Areas of improvement include:
 - clarifying the problems and benefits more clearly
 - building a more explicit investment story
 - expanding on the optioneering
 - reducing the explanations of AMP section / rationale.

The Improvement Programme is based on the REG assessment and the opportunities identified through this plan's development.

12.5 Data, Systems and Processes

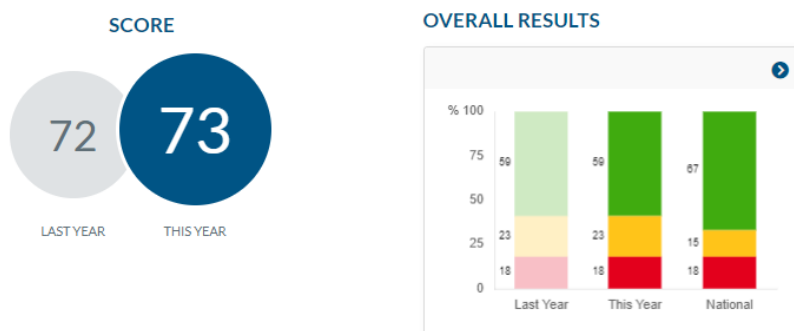
Data

Data quality is important for end-users so that they can have confidence in making analysis using that data. The data accuracy, completeness and timeliness of land transport assets are shown in the following table with full results in Appendix I. RLC have scored an annual score of 73/100, a slight improvement on last year. RLC is just below the national average score of 78. An item in the Improvement Programme looks to address the low scoring issues.

Table 45 Summary of PMRT results 2019/20

Quality Dimension			Importance			Data Category						Overall Score
Accuracy	Completeness	Timeliness	High	Moderate	Low	Network	Asset Inventory	Condition	Maintenance Activity	Demand	Crash	
64	52	63	52	63	71	73	54	75	43	52	100	73

Figure 37 ONRC Data Quality Report 2019/20



Source: ONRC Reporting Tool October 2020

The table below illustrates the changes in the metric results from last year. Full details of the PMRT metric results are found Appendix H of this plan.

Table 46 ONRC Performance Metric Results

Sub-Cat	Metric Reference	Dimension	Metric Results 18/19	Metric Results 19/20
Carriageway	CWAY1	Accuracy	Expected Standard	Expected Standard
	CWAY2a	Accuracy	Expected Standard	Expected Standard
	CWAY2b	Accuracy	Minor Issues	Minor Issues
	CWAY3	Completeness	Major Issue	Expected Standard
	CWAY4	Completeness	Minor Issues	Expected Standard
	CWAY5	Accuracy	Expected Standard	Expected Standard
	CWAY6a	Accuracy	Expected Standard	Expected Standard
	CWAY6b	Accuracy	Expected Standard	Expected Standard
Treatment Length	CWAY7	Accuracy	Expected Standard	Expected Standard
	TREAT1	Accuracy	Minor Issues	Minor Issues
	TREAT2a	Accuracy	Expected Standard	Expected Standard
	TREAT2b	Accuracy	Minor Issues	Minor Issues
	TREAT3	Accuracy	Expected Standard	Expected Standard
Surfacing	TREAT5	Timeliness	Expected Standard	Minor Issues
	SURF1a	Timeliness	Minor Issues	Expected Standard
	SURF1b	Timeliness	Minor Issues	Major Issue
	SURF2	Accuracy	Minor Issues	Minor Issues
	SURF3	Accuracy	Expected Standard	Expected Standard
	SURF4	Completeness	Major Issue	Major Issue
	SURF5	Completeness	Minor Issues	Minor Issues
Pavement	SURF6	Accuracy	Expected Standard	Expected Standard
	PAVE1	Timeliness	Expected Standard	Expected Standard
	PAVE2	Accuracy	Major Issue	Major Issue
	PAVE3	Completeness	Major Issue	Major Issue

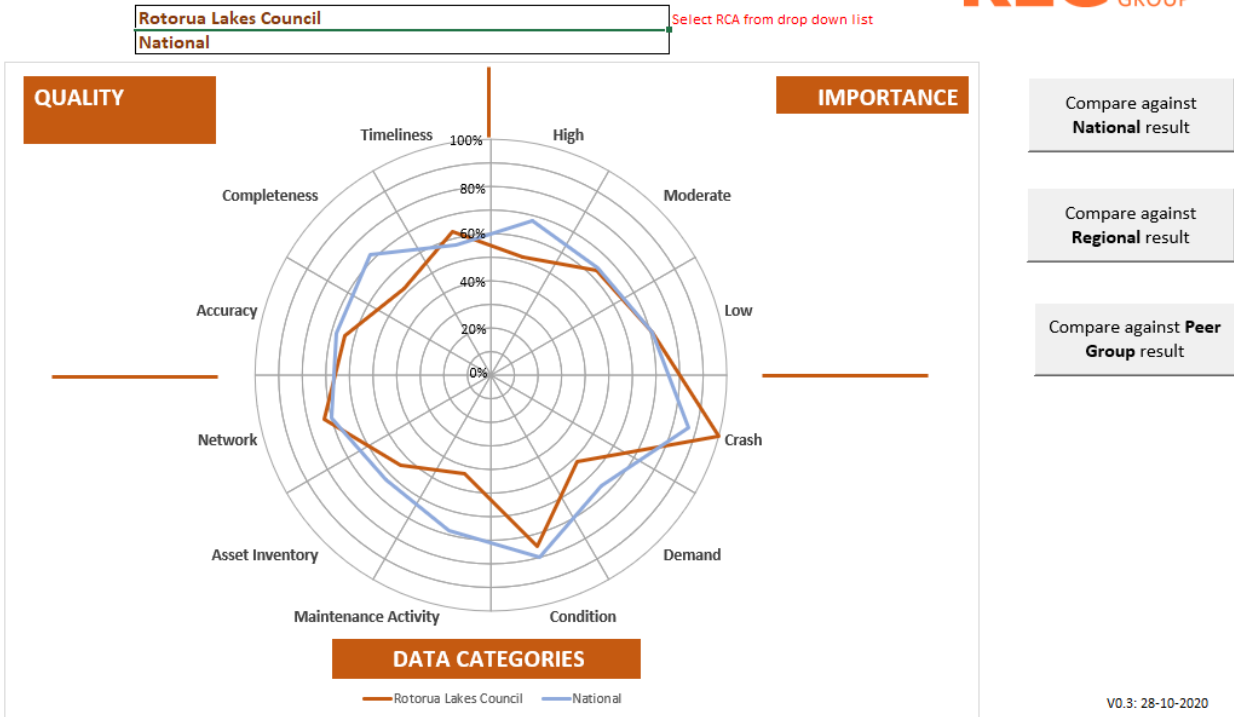
Sub-Cat	Metric Reference	Dimension	Metric Results 18/19	Metric Results 19/20
Footpath	FOOT1	Completeness	Expected Standard	Expected Standard
	FOOT2	Timeliness	Expected Standard	Expected Standard
Drainage	DRAIN1	Completeness	Expected Standard	Expected Standard
	DRAIN2	Timeliness	Minor Issues	Minor Issues
Surface Water Channel	SWC1	Completeness	Expected Standard	Expected Standard
	SWC2	Timeliness	Expected Standard	Expected Standard
Signs	SIGN1	Completeness	Major Issue	Major Issue
	SIGN2	Accuracy	Minor Issues	Minor Issues
	SIGN3	Timeliness	Major Issue	Major Issue
Railings	RAIL1	Completeness	Major Issue	Major Issue
	RAIL2	Timeliness	Expected Standard	Expected Standard
Retaining Walls	RETAIN1	Completeness	Major Issue	Major Issue
	RETAIN2	Timeliness	Expected Standard	Expected Standard
Streetlights	LIGHTS1	Accuracy	Expected Standard	Expected Standard
	LIGHTS2	Timeliness	Expected Standard	Expected Standard
	LIGHTS3	Completeness	Expected Standard	Expected Standard
Maintenance Activity	MAINT1	Accuracy	Major Issue	Major Issue
	MAINT2	Completeness	Expected Standard	Minor Issues
	MAINT3	Completeness	Major Issue	Major Issue
	MAINT4	Accuracy	Minor Issues	Minor Issues
	MAINT5	Accuracy	Expected Standard	Expected Standard
	MAINT6	Completeness	Expected Standard	Expected Standard
	MAINT7	Accuracy	Expected Standard	Expected Standard
Roughness	ROUGH1	Completeness	Minor Issues	Minor Issues
	ROUGH2	Accuracy	Expected Standard	Expected Standard
Rating	RATING1	Completeness	Minor Issues	Expected Standard
	RATING2	Accuracy	Expected Standard	Expected Standard
Traffic Count	COUNT1	Completeness	Minor Issues	Minor Issues
	COUNT2	Timeliness	Minor Issues	Minor Issues
	COUNT3	Completeness	Expected Standard	Expected Standard
Traffic Estimates	ESTIIM1	Completeness	Expected Standard	Expected Standard
	ESTIM2a	Timeliness	n/a	Major Issue
	ESTIM2b	Timeliness	n/a	Expected Standard
	ESTIM2c	Timeliness	Expected Standard	Expected Standard
	ESTIM3	Accuracy	Expected Standard	Minor Issues
Crash Data	ESTIM4	Completeness	Expected Standard	Expected Standard
	CRASH1	Timeliness	n/a	New
	CRASH2	Accuracy	Expected Standard	Expected Standard

Source: ONRC Reporting Tool October 2020

Figure 38 presents data quality in terms of a percentage at the expected standard. This shows that RLC is slightly behind the national average but will be looking to address the lower scoring areas.

Figure 38 REG data quality national summary results 2019/20

ASSET MANAGEMENT DATA QUALITY RESULTS 2019/20
PERCENTAGE AT THE EXPECTED STANDARD



Systems

Information systems are essential for storing and analysing asset information to make good AM decisions. The main AM information systems used by RLC for transport assets are:

- RAMM for asset inventory and valuations
- TechOne for finances.

More detail on the systems used to manage the transport assets is shown in below.

Table 47 AM systems summary

Name	System Purpose	Function	System User(s)	Status
RAMM	Asset Information System	RAMM holds individual assets records, condition data, maintenance costs, forward works programmes, valuation	Client, Consultant	No change proposed
RAMM Contractor	Job Management tool for programming and claiming.	Module within RAMM that enable user to facilitate the programming of network maintenance and the estimation and claims process which is integral to programmed maintenance contracts	Contractor	No change proposed
Pocket RAMM	Maintenance inspections, asset updates claiming, QA.	Pocket RAMM is the field version of RAMM Contractor run on a netbook, laptop, or tablet.	Contractor	No change proposed
CAS	Crash Analysis System	CAS is a national database owned and managed by NZTA. The data is based on completed Traffic Crash Reports from the New Zealand Police.	Client, Consultant	No change proposed

Name	System Purpose	Function	System User(s)	Status
Geyserview	GIS	GIS map-viewer provides access to interactive map-based information about the Rotorua District. With the viewer you can: <ul style="list-style-type: none"> - find property and rates information - view property and road boundaries - view assets - contains other information e.g. hazards - view aerial photography 	Public	No change proposed
TechOne	Financial Tracking	It will be used for financial tracking, processing, and managing service requests, and for the storage of information and electronic archived information.	Client	The system is being implemented progressively across Council functions and departments.
Mobile Roads	Location Referencing System	Mobile Road is a free collaborative app hosted at Auckland Motorways. It offers the following features: <ul style="list-style-type: none"> - Converting your smart device (or bluetooth) GPS location to the location on the nearest centreline i.e. Route Position on the road or KM peg. - Viewing information about the asset found above. - Finding and viewing linear locations on the desktop. 	Contractor, Consultant and Client	No change proposed
CAR	CAR (Corridor Access Request)	CAR Monitor is a new service. It combines the current process of lodging a B4UDig enquiry and having to apply separately for a CAR if the intended excavation site is in the road corridor	Client, Contractor	No change proposed
ONRC Performance Measures Reporting Tool	Performance and Benchmarking	<ul style="list-style-type: none"> - Standardisation of road performance throughout New Zealand. - Address historical inconsistencies. 	Client	This may be superseded by the proposed ONF.
High Speed Data	Data Collection	<ul style="list-style-type: none"> - Roughness, rutting, and texture data collected. - Used for performance and condition reporting in RAMM and ONRC. 	Client	No change proposed
RoadRoid	Unsealed road performance monitoring system	<ul style="list-style-type: none"> - Visual assessments - Roughness data capture 	Contractor, Client	No changed proposed

Processes

The key AM processes for the land transport activity are summarised in the table below:

Table 48 Key AM processes

Process Area	Function	Status/Enhancements
Asset valuation	Asset valuations are coordinated by RLC's Finance Department.	None identified at this stage.
Asset collection (including condition)	Asset data including inventory measure, material type and condition is collected to ensure the asset inventory is complete and accurate for AM decision making.	Improvements in the areas as identified in the ONRC performance report.
Risk management framework	Enterprise wide approach to ensure a comprehensive review of all potential risks across the whole Council.	None identified at this stage.

12.6 Improvement Plan

Key improvement programmes and associated projects have been developed through a review of the gaps identified during the development of this draft AMP and the issues identified. The three-year AM Improvement Programme is summarised in Table 48.

Our key improvement focus areas over the next three years will be:

- Get better at forecasting demand and changing behaviour. This will be achieved by developing the Rotorua Modeshift Plan collaboratively with Bay of Plenty Regional Council, NZTA and RLC. This will ensure increased share for various transport modes and not just public transport and will reduce demand for car journeys.
- Implement the various asset data improvements identified with the REG Data Quality Reports. This will ensure there is sound data to make sound investment decisions.
- Get better at the business as usual work programmes for our community. This will be achieved by developing the multi-year forward works programmes for footpath and kerb and channel replacements within RAMM utilising condition complaints (service requests information) and risk. Review alongside the proposed projects for efficiencies and reducing disruption to the public by these activities.

12.7 Improvement Monitoring

The AMP is a living document and needs to be kept current and relevant. It is recognised that priorities will change which makes review activities even more important to ensure this plan is a live document. The following review activities will be undertaken.

Table 49 Monitoring and review summary

Frequency	Review Task	Action	KPI	Report Name	Audience
Three-Yearly	AMP Development	Formal adoption of the plan by Council	100% Achievement	Council AMP Report	Council, Audit New Zealand and NZTA
Annually	AMP Review (internal)	Revise plan annually to incorporate new knowledge from the AM improvement programme	100% Achievement	Internal Report	Infrastructure Group
Three-Yearly	AMP Peer Review	The plan will be formally reviewed three-yearly to assess adequacy and effectiveness.	100% Achievement	External Consultant Report	Infrastructure Group, LTP team, and Audit New Zealand
Annually	Monitoring and Reporting	The KPIs identified in this table will be monitored and reported on annually through Business Plans.	100% Achievement	Business Plan Report	Infrastructure Group and LTP team
Quarterly	Progress review of the Improvement Programme	Tracking the progress of implementing the improvement programme quarterly particularly of projects in the short-term improvement programme.	100% Achievement	Quarterly Reports	Infrastructure Group and LTP team

Table 50 Improvement programme

No.	AM Improvement Area	REG Pillar of Success	Project no	Action	Responsibility	Priority	Indicative Timeframe			Source
							2020/21	2021/22	2022/23	
1	AM Policy and Strategy	People/Culture	1.1	Update the AM Policy and Strategic AMP to reflect RLC's latest thinking, industry, and legislation changes.	Infrastructure Capital Programme Manager	High				2021 AMP
2	Levels of Service and Performance Management	Systems	2.1	Consider undertaking customer satisfaction surveys of the land transport activity to inform the next LTP.	Transport Operations Manager	Medium				2021 AMP
3	Forecasting Demand	Evidence	3.1	Develop the Rotorua Modeshift Plan collaboratively with Bay of Plenty Regional Council, NZTA and RLC.	Infrastructure Group Manager, Safe and Sustainable Journeys Manager	High				Regional project governance group
			3.2	Establish the benchmark for travel time across the transport network and start monitoring the results.	Infrastructure Capital Programme Manager	Medium				2021 AMP
4	Asset Register Data	Evidence	4.1	Develop condition assessments on assets.	Transport Operations Manager	Medium				REG Data Quality Reports
			4.2	Implement the various asset data improvements identified with the REG Data Quality Reports.	Transport Operations Manager	Medium				REG Data Quality Reports
5	Asset Performance and Condition	Service Delivery	5.1	Address the low scoring items as identified in the annual REG reports: <ul style="list-style-type: none"> ONRC Performance Management Data Quality Report Asset Management Report. 	Transport Operations Manager	Medium				REG Data Quality Reports
			5.2	Formally assess the asset condition of footpaths and kerb and channel asset classes to inform the future FWP.	Transport Operations Manager	Medium				2021 AMP
			5.3	Complete the inspection of the culverts (greater than 600mm in diameter) to assess the condition grades.	Transport Operations Manager					2021 AMP
6	Decision Making	Decision Making	6.1	None identified at this stage.						
7	Managing Risk	Service Delivery	7.1	Develop the network Lifelines for the district.	Transport Operations Manager	High				2021 AMP
			7.2	Develop critical asset list.	Transport Operations Manager	High				2021 AMP
			7.3	Further investigate into increasing crash causes from an infrastructure perspective.	Transport Operations Manager	High				2021 AMP
			7.4	Implement Council's climate action plan including the impacts on the transport assets.	Infrastructure Group Manager	High				Corporate initiative
			7.5	Smart Buyer Assessment – focus to improve on the lower scoring items	Infrastructure Group Manager	Medium				Smart Buyer Assessment
8	Operational Planning	Systems	8.1	Start to monitor quantity of Planned vs. Reactive Maintenance monthly.	Transport Operations Manager	Medium				RAMM data
			8.2	Measure the reactive versus planned maintenance expenditure with the new Rooding Network Maintenance and Management Contract to understand to trends over time.	Transport Operations Manager	Medium				2021 AMP

No.	AM Improvement Area	REG Pillar of Success	Project no	Action	Responsibility	Priority	Indicative Timeframe			Source
							2020/21	2021/22	2022/23	
9	Capital Works Planning	Decision Making	9.1	Develop multi-year FWP for footpath and kerb and channel replacements within RAMM utilising condition complaints (service requests information) and risk. Review alongside the proposed projects (reseals, AWPTs and upgrades) for efficiencies and reducing disruption to the public by these activities.	Transport Operations Manager	High				2021 AMP
			9.2	Develop the Bridge Upgrade Programme to cater for 50Max HPMV.	Infrastructure Capital Programme Manager	High				2021 AMP and Beca Desktop Screening Report 2013
10	Financial Planning	Decision Making	10.1	Review asset valuation assumptions, rates and design lives. Review the methodology from a first principles approach before the next full valuation.	Transport Operations Manager	High				2021 AMP
11	AM Leadership and Teams	Evidence	11.1	None identified at this stage.						
12	AMPs	Decision Making	12.1	Update the 2024 AMP with the ONF concepts as it is implemented nationally.	Infrastructure Capital Programme Manager, Infrastructure Planning Manager	High				2021 AMP
			12.2	Address the areas of improvement identified with the REG assessment of the 2018 AMP.	Infrastructure Capital Programme Manager, Infrastructure Planning Manager	High				REG
13	Management Systems	Systems	13.1	Update the Civil Defence Plans and BCP around critical transport assets (refer to projects 7.1 and 7.2 above).	Transport Operations Manager	High				2021 AMP
14	Asset Management Information Systems	Evidence	14.1	None identified at this stage.						
15	Service Delivery Mechanisms	Service Delivery	15.1	Undertake a formal Section 17A service review of the land transport activity to reflect the recent Roding Network Maintenance and Management Contract.	Transport Operations Manager	Medium				2021 AMP
16	Audit and Improvement	Service Delivery	16.1	Start formally monitoring progress on a six-monthly basis of implementation of the AM Improvement Plan.	Infrastructure Planning Manager	Medium				2021 AMP
			16.2	Strengthen the AM oversight governance functions and capability including establishing an AM Steering Group to bed in good AM culture into RLC for core infrastructure and to support enduring change.	Infrastructure Group Manager, Infrastructure Planning Manager	High				2021 AMP

SECTION 13: Appendices

Appendix A – Acronyms list

Abbreviation	Definition	Abbreviation	Definition
AM	Asset Management	LOS	Levels of Service
AMP	Activity or Asset Management Plan	LTMA	Land Transport Management Act
AMIP	Asset Management Improvement Plan	LTP	Long Term Plan
AMIS	Asset Management Information System	MCA	Multi-Criteria Analysis
AP	Annual Plan	NAMS	National Asset Management Support Group
AV	Asset Valuation	NLTP	National Land Transport Programme
BAU	Business-As-Usual	NPV	Net Present Value
BCA	Benefit Cost Analysis	NZTA	New Zealand Transport Agency (Waka Kotahi)
BCP	Business Continuity Plan	ODM	Optimised Decision Making
BOP	Bay of Plenty	ONF	One Network Framework
CAPEX	Capital Expenditure	ONRC	One Network Road Classification
CAS	Crash Analysis System	OPEX	Operational Expenditure
CCO	Council Controlled Organisation	O&M	Operations & Maintenance
CDEM	Civil Defence Emergency Management	PBC	Programme Business Case
CPI	Cost Price Indices	QA	Quality Assurance
DRC	Depreciated Replacement Cost	RAMM	Road Assessment and Maintenance Management system
ECMT	East Coast Main Truck line	RCA ¹	Road Controlling Authority
FAR	Fixed Asset Register	RCA ²	Root Cause Analysis
FMA	Failure Mode Analysis	REG	Road Efficiency Group
FWP	Forwards Works Programme	RLC	Rotorua Lakes Council
FY	Financial Year	RMA	Resource Management Act
GIS	Geographic Information System	STE	Smooth Travel Exposure
GPS	Government Policy Statement	TEU	Twenty-foot Equivalent Unit
HPMV	High Productivity Motor Vehicle		
HSWA	Health & Safety at Work Act		
IIMM	International Infrastructure Management Manual		
IPWEA	Institute of Public Works Engineering Australia		
KRA	Key Result Area		
KPI	Key Performance Indicator		
LCLR	Low-Cost Low-Risk		
LGA	Local Government Act		

Appendix B – Full LOS tables

Customer Outcomes	How we will measure our performance	Performance measure type	Baseline 2018/19										2019/20 Results										Performance for 2019/20	2020/21 Target		
			Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume					
Safety	Customer Outcome 1 - Serious Injuries and Fatalities	ONRC	1	2	3	3	0	2	9	4	8	2	Increase in number of crashes	Reduce crash numbers												
	Customer Outcome 2 - Collective Risk	ONRC	0.1	0.044	0.029	0.007	0.004	0.01	0.008	0.007	0.002	0.001	Risk reduced	Reduce												
	Customer Outcome 3 - Personal Risk	ONRC	4.171	9.702	8.786	6.347	19.283	0.446	1.852	2.218	1.274	4.735	Risk reduced	Reduce												
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target		
	Technical Output 1 - Permanent Hazards	ONRC	0	0	0	0.108	0	0	0	0	0	0	0	0	0	3.57	0	6.803	0.237	0	0	0	Increase in hazards	Reduce		
	Technical Output 2 - Temporary Hazards	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No data		
	Technical Output 3 - Sight Distances	ONRC	0.341	2.647	0.217	2.265	0	1.42	0.458	1.092	0.998	2.232	0.341	2.647	0.217	2.265	0	1.42	0.458	1.092	0.998	2.232	No change	Maintain		
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target		
	Technical Output 4 - Loss of Control on Wet Roads	ONRC	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	Increase	Reduce		
	Technical Output 5 - Loss of Driver Control at Night	ONRC	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	Increase	Reduce		
	Technical Output 6 - Intersections	ONRC	1	0	3	2	0	1	2	2	0	1	2	2	2	2	0	0	0	0	0	0	Increase	Reduce		
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target		
	Technical Output 7 - Hazardous Faults	ONRC	0	n/a	0	2.551	0	4.184	0.177	1.569	0	0	0	n/a	0	2.564	0	4.167	0.179	1.575	0	0	0	0	Constant	Maintain
	Technical Output 8 - Cycle Path Faults	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	0.791	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.769	n/a	n/a	n/a	n/a	Reduction	Reduce	
Technical Output 9 - Vulnerable Users	ONRC	1	0	0	2	0	1	4	2	3	0	Increase	Reduce													
Technical Output 10 - Roadside Obstructions	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a															
Resilience	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target		
	Customer Outcome 1 - Unplanned Closures with a Detour Provided	ONRC	1	2810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Improvement	Maintain	
	Customer Outcome 2 - The Number of Instances Where Road Access is Lost	ONRC	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Improvement	Maintain	
Amenity	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target		
	Customer Outcome 1 - Smooth Travel Exposure (STE)	ONRC	86.6%	91.6%	92.9%	89.9%	87.3%	87.9%	92.7%	92.8%	89.3%	86.4%	Maintained	Maintain												
	Customer Outcome 2 and Technical Output 1 - Peak Roughness (85%ile NASSRA)	ONRC	107	111	107	119	142	100.9	104	105	119	140	Improvement	Improve/Maintain												

	Customer Outcome 2 and Technical Output 1 - Average Roughness	ONRC	80		82		79		87		106		77		79		78		86		104		Improvement	Improve/Main tain
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
	Technical Output 2 - Aesthetic Faults	ONRC	0.17	0.882	0.072	0.539	0.311	0.947	0.131	0.756	0.623	1.116	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Accessibility	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
	Customer Outcome 1 - Proportion of Network not Available to Heavy Vehicles	ONRC	0%	0%	0%	1.30%	0%	0%	0%	1.70%	0%	0%	0%	0%	0%	0%	0%	0.1%	0.1%	0.2%	0.2%	0%	Increase	Reduce
	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
	Technical Output 1 - Wayfinding	ONRC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Cost Efficiency	How we will measure our performance	Performance measure type	Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Arterial		Primary Collector		Secondary Collector		Access		Low Volume		Performance for 2019/20	2020/21 Target
	Cost Efficiency 2 - Chipseal Resurfacing (% by sealed area)	ONRC	7.2%		10.2%		19.1%		11.8%		5.1%		0.2%		8.5%		10.5%		6.5%		7.5%		Large AC programme undertaken in 19/20	7-9%
	Cost Efficiency 2 - Chipseal Resurfacing (Avg Life)	ONRC	10.5		9.4		11.9		12.5		12.7		10.6		9.3		12.1		12.3		13.7			
	Cost Efficiency 3 - Asphalt Resurfacing (% by sealed area)	ONRC	1.6%		0.0%		0.0%		4.4%		0.0%		33.2%		83.2%		2.4%		3.2%		0.6%			
Cost Efficiency 3 - Asphalt Resurfacing (Avg Life)	ONRC	10		10.3		13.9		13.1		15.8		10.3		7.3		12.3		12.3		15.6				

Appendix C – Activity Risk Register

RISK ID	Strategic Pillars										Group Name	Business Unit	RISK Type	RISK Event (Describe the Event)	CONSEQUENCE Rating	LIKELIHOOD Rating	RAW RISK Rating	RAW RISK Level	RAW RISK Rank	Mitigation Measures										RISK Action Plan Status Duplicate	CONSEQUENCE Rating	LIKELIHOOD Rating	RESIDUAL RISK Rating	RESIDUAL RISK Level	RESIDUAL RISK Rank			
	Strategy	Technology Data	People	Service Delivery	Infrastructure	Reputation	Environment	Finance	Legal Compliance	Civil Emergency										Bi-cultural, iwi, hapū, whenua, reo, etc ...	Audit, Quality Assurance or Peer Review	Initiate a Plan i.e. Business Continuity, Disaster Recovery, Contingency	Consultation, Survey or seek Feedback	Contract or Service Level Agreement	Implement, amend or update Policy or Code	Standard Operating Procedure	Workforce or Succession Plan	Investigate and Research	Specific Project							Internal Review	Training	Crisis Management
1				✓	✓	✓	✓			✓	Infrastructure	Infrastructure	Inability to deliver service due to emergency event	Severe damage to infrastructure, resulting in the community with no access	100	1	100	Medium Risk	4		✓												Enhance Civil Defence capability, build community resilience, ensure RED CCO letter of intent includes climate change opportunities e.g. coastal refugees & land use change, work with BOPRC on joint stream management. Consider building capacity and resilience during replacements/ renewals. Ensure Emergency Response procedure are kept up to date and contractors have the ability to effectively aid in opening services back to isolated communities.	70	1	70	Medium Risk	8
2			✓	✓	✓	✓				✓	Infrastructure	Infrastructure	Failure to maintain assets at the required level of service	Poor asset condition resulting in failure or crash incidents	40	1	40	Low Risk	8							✓			✓	Ensure internal processes for asset management are robust, staff are adequately trained and feedback through performance monitoring is maintained	40	3	120	Medium Risk	4			
3						✓			✓	✓	Infrastructure	Infrastructure	Contractual Conflict	Legal action over contractual issues	70	1	70	Medium Risk	5	✓					✓			✓			Robust procurement policies, appointment of appropriate contract supervisors	40	2	80	Medium Risk	6		
4	✓		✓	✓	✓	✓		✓			Infrastructure	Infrastructure	Inaccurate or inadequate data capture and storage	Poor decision making in preparing forward works programmes	70	1	70	Medium Risk	5			✓						✓		✓	Keeping up to date with data measurement, reporting improvements through ONRC	70	2	140	Medium Risk	2		
5			✓			✓					Infrastructure	Infrastructure	Failure of Safety Management systems	Onsite crashes or accidents due to poor Traffic Management	100	2	200	High Risk	2									✓		✓	ensuring appropriate safety and traffic management plans are in place for each project and undertaking minimum of 10 random audits of sites each month	70	2	140	Medium Risk	2		
6				✓	✓		✓				Infrastructure	Infrastructure	Failure to appoint appropriate service providers	Appointment of contractor incapable of undertaking the task	70	1	70	Medium Risk	5	✓	✓										ensuring procurement methodologies for each project	40	3	120	Medium Risk	4		
7	✓			✓	✓		✓	✓			Infrastructure	Infrastructure	Insufficient funding for sustainable management of assets	Underfunding leading to the deterioration of the transport assets	70	3	210	High Risk	1	✓								✓		✓	Prioritisation of funding for operational and renewal programmes. Robust AMP built from basics	40	5	200	High Risk	1		
8	✓					✓	✓	✓		✓	Infrastructure	Infrastructure	Inability to deliver service due to environmental impact	Quality of surface road run-off into lakes not meeting standards.	40	3	120	Medium Risk	3	✓								✓	✓	✓	Work with BOPRC on joint stream management. Work with Contractor on runoff controls.	40	2	80	Medium Risk	6		

Appendix D – Top-Down Review of Strategic Case

Work Category effectiveness in addressing Considerations/Drivers (“+” good effect, “x” not delivering, “-” not relevant)												
WC No.	WC Description	Relevant Problem Statements	Community Outcomes	Problem solving	Benefits realised	Environmental impacts	Value for Money	LoS gaps and impacts	ONRC Performance	Asset preservation	whole of life Costs	Life Cycle Management
	Pavements	1	+	+	+	-	+	+	+	+	+	+
		2	+	+	+	-	+	+	+	+	+	+
		3	+	-	+	-	+	+	+	+	+	+
		4	+	+	+	-	+	+	+	-	+	+
		5	+	+	+	-	-	+	+	+	-	-
	Structures	1	+	+	+	-	+	+	+	X	X	-
		2	-	-	+	-	-	+	+	+	+	+
		3	+	-	+	X	+	+	+	-	-	-
		4	-	-	-	-	-	-	-	-	-	-
		5	+	+	-	X	+	+	+	+	+	+
	Traffic Services	1	+	-	+	X	+	+	+	X	X	X
		2	+	-	+	+	+	+	+	+	+	+
		3	+	-	+	+	+	+	+	-	-	-
		4	+	-	+	+	+	+	+	-	-	-
		5	-	-	-	-	-	-	-	-	-	-

Appendix E – Develop Options

Work function	Work Activity / Category	Problem Statements	Preferred Strategic Responses	PBC Options	Ranking (1 is highest)
Traffic services	Operational Traffic Management Network and Asset Management Low Cost Low Risk Traffic Services Maintenance Traffic Services Renewals	3. Efficiency - Managing future traffic growth, interaction with the State Highway network and revocation of SH30a	Demand management: <ul style="list-style-type: none"> Ensure Rotorua Traffic Model is updated and calibrated Review ONRC categories to ensure they match use Understanding impacts of State Highway changes on local road network (integration of design between the state highway system and local roads) (PBC options assessed for this response only) 	Demand management: <ul style="list-style-type: none"> Understand the effects of the demand from the State Highway network on the local network through analysis (i.e. modelling, collecting demand data) Negotiate with NZTA for better One Network approach Implement the interventions Conclusion: only three options in total so all three shortlisted for MCA process	1
					2
					3
Structures	Routine Drainage Maintenance Minor Events Emergency Works Network and Asset Management Low Cost Low Risk Structures Maintenance Structures Components Replacements Drainage Renewals	5. Resilience - Providing long-term provision for accessibility and availability of alternative routes	Programme adjustment: <ul style="list-style-type: none"> Resilience assessment with planning capital projects) (PBC options assessed for this response only) Demand management: <ul style="list-style-type: none"> Ensure appropriate network monitoring is in place 	Programme adjustment: <ul style="list-style-type: none"> Assess and address any risks to transport network as part of the design process Proactively assess and address all network risks Conclusion: – only two viable options in total so both shortlisted for MCA process	1
					2
Traffic services	Operational Traffic Management Network and Asset Management Low Cost Low Risk Traffic Services Maintenance Traffic Services Renewals Road Safety Promotion	1. Safety - Safety of the transport network	Programme adjustment: <ul style="list-style-type: none"> Implementing programmes to address safety issues Policy: <ul style="list-style-type: none"> Implementing a speed management programme Risk based: <ul style="list-style-type: none"> Addressing safety risk as part of maintenance and renewals programmes Relationship approach: <ul style="list-style-type: none"> Providing community safety education programmes (PBC options assessed for this response only) 	Relationship approach: <ul style="list-style-type: none"> Undertake specific safety assessments of community issues (g rural schools) Rolling out further community education programmes Implementing the Road to Zero Strategy Conclusion: – only three options in total so all three shortlisted for MCA process	1
					3
					1
Pavements	Sealed Pavement Maintenance Network and Asset Management Sealed Road Resurfacing Drainage Renewals Sealed Road Pavement Rehabilitation Structures Components Replacements	2. Sustainable infrastructure - Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity	Programme adjustment: <ul style="list-style-type: none"> Systems that prioritise renewal programmes Maintenance and renewal programmes that targets interventions at appropriate levels consistent with good industry practice and meeting agreed LOS (PBC options assessed for this response only) <ul style="list-style-type: none"> Responding to current and future compliance requirements Risk based: <ul style="list-style-type: none"> Managing environmental effects of transport network 	Programme adjustment: <ul style="list-style-type: none"> Continue with current practice of analysis and development of forward works programmes Value for Money: <ul style="list-style-type: none"> Responding to market costs to meet asset needs Funding: <ul style="list-style-type: none"> Seeking adequate funding to meet long term asset requirements Conclusion: – only three options in total so all three shortlisted for MCA process	1
					2
					3

Appendix F – Testing Options

Work function	Work Activity / Category	Problem Statements	PBC Options (from above table)	MCA scores (5 is highest)	Conclusions
Traffic services	Operational Traffic Management Network and Asset Management Low Cost Low Risk Traffic Services Maintenance Traffic Services Renewals	3. Efficiency - Managing future traffic growth, interaction with the State Highway network and revocation of SH30a	Understand the effects of the demand	3.6	MCA process suggests that all three options are important. It is good practice to start with understanding the demand, then negotiate with collaborative relationship approach before implementing any solution with hard assets.
			Negotiate with NZTA	3.6	
			Implement the interventions	4.2	
Structures	Routine Drainage Maintenance Minor Events Emergency Works Network and Asset Management Low Cost Low Risk Structures Maintenance Structures Components Replacements Drainage Renewals	5. Resilience - Providing long-term provision for accessibility and availability of alternative routes	Assess and address any risks to network	2.5	MCA process suggests that proactive assessment and monitoring of the network is the preferred option. This would need an increase in Network and AM budget and may result in additional low-cost low risk projects.
			Proactively assess and address all network risks	3.5	
Traffic services	Operational Traffic Management Network and Asset Management Low Cost Low Risk Traffic Services Maintenance Traffic Services Renewals Road Safety Promotion	1. Safety - Safety of the transport network	Undertake specific safety assessments of community issues	2.8	MCA process suggests that targeting the risks with safety improvements will achieve higher outcomes. Implementing the Road to Zero Strategy assesses and priorities safety risks across the network.
			Rolling out further community education programmes	2.1	
			Implementing the Road to Zero Strategy	4	
Pavements	Sealed Pavement Maintenance Network and Asset Management Sealed Road Resurfacing Drainage Renewals Sealed Road Pavement Rehabilitation Structures Components Replacements	2. Sustainable infrastructure - Ensuring investment is at appropriate levels and targeted to maintaining transport assets in perpetuity	Continue with current practice of analysis and development of forward works programmes	2.9	MCA process suggests that need sound AM processes in place supported with adequate funding for good asset stewardship.
			Responding to market costs to meet asset needs	2.6	
			Seeking adequate funding to meet long term asset requirements	2.9	

Appendix G – PMRT Data Quality

2019/20

Rotorua Lakes Council Data Quality

Type:	None
Categories:	Network, Asset Inventory, Maintenance Activity, Condition, Demand/Use, Crash
Importance:	High, Moderate, Low
ONRC Customer Outcomes:	Amenity, Cost Efficiency, Safety
Dimensions:	Accuracy, Completeness, Timeliness
Result:	Major, Minor, Expected, Not Applicable, No Result

2019/20 Provisional Results are now available

The 2019/20 results will be finalised and the annual reports will be produced when data sourced from the Waka Kotahi Transport Investment Online is finalised for the three metrics PAVE1, SURF1a and SURF1b.

Changes to the 2019/20 calculations include the exclusion of road sections which are not required for ONRC and identifying RCA ownership of minor assets. Refer to the RAMM sql for more information about the metric changes.

The metric reference codes have been changed due to the merging of the ONRC and asset management reports. The mapping of old and new references are available in the [Metric Reference Code Set Update Help](#) page.

● Major Issues ● Minor Issues ● Expected Standard

Category	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	
Network: Carriageway	CWAY1	Road network data complete	Accuracy	High	AMENITY COST EFFICIENCY SAFETY		99.8	—	
Network: Carriageway	CWAY3	ONRC categories assigned to new carriageways	Completeness	High	AMENITY COST EFFICIENCY SAFETY		96.6	new	
Network: Carriageway	CWAY4	ONRC categories are assigned	Completeness	High	AMENITY COST EFFICIENCY SAFETY	✓	98.8	—	
Network: Carriageway	CWAY7	Sealed/unsealed network correctly defined	Accuracy	High	AMENITY COST EFFICIENCY SAFETY	✓	98.8	—	
Network: Carriageway	CWAYS	Assigned ONRC category aligns with traffic data	Accuracy	Moderate	AMENITY COST EFFICIENCY SAFETY		90.5	—	
Network: Carriageway	CWAY6a	Rural carriageways are generally not short	Accuracy	Moderate	AMENITY COST EFFICIENCY SAFETY	✓	97.9	—	
Network: Carriageway	CWAY6b	Urban carriageways are generally not short	Accuracy	Moderate	AMENITY COST EFFICIENCY SAFETY	✓	98.9	—	
Network: Carriageway	CWAY2a	Rural number of lanes matches carriageway width	Accuracy	Low	AMENITY COST EFFICIENCY SAFETY	✓	99.5	—	
Network: Carriageway	CWAY2b	Urban number of lanes matches carriageway width	Accuracy	Low	AMENITY COST EFFICIENCY SAFETY	✓	94.8	—	
Network: Treatment Length	TREAT1	Treatment Length dimensions match sealed area	Accuracy	High	AMENITY		92.2	—	
Network: Treatment Length	TREAT2a	Treatment Lengths are generally not short	Accuracy	High	AMENITY	✓	92.0	—	
Network: Treatment Length	TREAT2b	Treatment Lengths are not too long	Accuracy	High	AMENITY	✓	83.2	—	
Network: Treatment Length	TREAT5	Treatment Lengths match renewals	Timeliness	High	AMENITY	✓	91.5	▼	
Network: Treatment Length	TREAT3	Treatment Lengths match major surfaces	Accuracy	Moderate	AMENITY	✓	93.4	—	
Asset Inventory: Surfacing	SURF1a	Achieved chipseal resurfacing renewal programme as-built	Timeliness	High	COST EFFICIENCY		104.8	▲	
Asset Inventory: Surfacing	SURF1b	Achieved asphaltic concrete resurfacing renewal programme as-built	Timeliness	High	COST EFFICIENCY		121.6	▼	

Category	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	
Asset Inventory: Surfacing	SURF2	Surface records have valid attribute data	Accuracy	High	COST EFFICIENCY		96.7	—	
Asset Inventory: Surfacing	SURF3	Surface records correctly located	Accuracy	High	COST EFFICIENCY	✓	96.9	—	
Asset Inventory: Surfacing	SURF4	Surface records with Original Cost	Completeness	High	COST EFFICIENCY	✓	0.0	new	
Asset Inventory: Surfacing	SURF5	Surface records with Work Origin	Completeness	High	COST EFFICIENCY	✓	93.0	—	
Asset Inventory: Surfacing	SURF6	Surface records newer than pavement	Accuracy	Moderate	COST EFFICIENCY	✓	100.0	—	
Asset Inventory: Pavement	PAVE1	Achieved pavement renewal programme as-built	Timeliness	High			97.2	—	
Asset Inventory: Pavement	PAVE2	Pavement layer records have valid attribute data	Accuracy	High			86.7	▲	
Asset Inventory: Pavement	PAVE3	Pavement layer records with Work Origin	Completeness	High			73.3	▲	
Asset Inventory: Footpath	FOOT1	Footpath asset known	Completeness	Moderate			98.5	—	
Asset Inventory: Footpath	FOOT2	Footpath asset records maintained	Timeliness	Low			38.6	▲	
Asset Inventory: Drainage	DRAIN1	Culvert assets known	Completeness	Moderate			97.8	—	
Asset Inventory: Drainage	DRAIN2	Culvert asset records maintained	Timeliness	Low			2.7	▲	
Asset Inventory: SW Channel	SWC1	SWC asset known	Completeness	Moderate			99.7	—	
Asset Inventory: SW Channel	SWC2	SWC asset records maintained	Timeliness	Low			40.2	▲	
Asset Inventory: Signs	SIGNS1	Sign assets known	Completeness	Moderate			15.3	—	
Asset Inventory: Signs	SIGNS2	Sign asset associated to a 'road'	Accuracy	Low			96.5	—	
Asset Inventory: Signs	SIGNS3	Sign replacement activity	Timeliness	Low			3.6	▼	
Asset Inventory: Railings	RAIL1	Railing assets known	Completeness	Moderate			27.1	▲	
Asset Inventory: Railings	RAIL2	Railing asset records maintained	Timeliness	Low			6.1	▼	
Asset Inventory: Retaining Walls	RETAIN1	Retaining Wall assets known	Completeness	Moderate			41.2	▲	
Asset Inventory: Retaining Walls	RETAIN2	Retaining wall asset records maintained	Timeliness	Low			37.6	▲	
Asset Inventory: Streetlights	LIGHTS1	Streetlights associated with a 'road'	Accuracy	Low			99.7	—	

Category	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	
Asset Inventory: Streetlights	LIGHTS2	Streetlights records have a light	Completeness	Low			100.0	—	
Asset Inventory: Streetlights	LIGHTS3	Streetlight replacement activity	Timeliness	Low			6.6	▼	
Maintenance Activity: Maintenance Activity	MAINT2	Complete pavement and surface maintenance activity	Completeness	High	COST EFFICIENCY	✓	10.0	▼	
Maintenance Activity: Maintenance Activity	MAINT4	Correctly located pavement and surface maintenance activity	Accuracy	High	COST EFFICIENCY	✓	83.1	—	
Maintenance Activity: Maintenance Activity	MAINT5	Level of pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	High	COST EFFICIENCY		98.1	—	
Maintenance Activity: Maintenance Activity	MAINT7	Pavement and surface maintenance activity has a valid location	Accuracy	High	COST EFFICIENCY	✓	99.0	—	
Maintenance Activity: Maintenance Activity	MAINT1	Consistency of pavement, surfacing and shoulder maintenance activity units	Accuracy	Moderate	COST EFFICIENCY		2.1	▲	
Maintenance Activity: Maintenance Activity	MAINT3	Pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	Moderate	COST EFFICIENCY		77.6	▲	
Maintenance Activity: Maintenance Activity	MAINT5	Correctly located shoulder and drainage maintenance activity	Accuracy	Low	COST EFFICIENCY		94.5	—	
Condition: Roughness	ROUGH1	Roughness survey within 2.5 years	Completeness	High	AVAILABILITY	✓	85.1	▲	
Condition: Roughness	ROUGH2	Roughness data has valid location	Accuracy	High	AVAILABILITY	✓	99.9	—	
Condition: Rating	RATING1	Road rating data current	Completeness	High			95.8	—	
Condition: Rating	RATING2	Rating data locations valid	Accuracy	Moderate			99.9	—	
Demand/Use: Traffic Count	COUNT1	Well targeted traffic count programme	Completeness	High	AVAILABILITY COST EFFICIENCY	✓	39.2	—	
Demand/Use: Traffic Count	COUNT3	Traffic loading understood	Completeness	High	AVAILABILITY COST EFFICIENCY	✓	39.1	—	
Demand/Use: Traffic Count	COUNT2	Traffic count programme activity on sealed network	Timeliness	Moderate	AVAILABILITY COST EFFICIENCY	✓	14.4	▼	
Demand/Use: Traffic Estimates	ESTIM1	Network has traffic estimates	Completeness	High	AVAILABILITY COST EFFICIENCY	✓	98.9	—	
Demand/Use: Traffic Estimates	ESTIM2a	Traffic estimates are maintained (High Volume to Arterial)	Timeliness	High	AVAILABILITY COST EFFICIENCY	✓	0.0	▼	
Demand/Use: Traffic Estimates	ESTIM2b	Traffic estimates are maintained (Primary and Secondary Collectors)	Timeliness	High	AVAILABILITY COST EFFICIENCY	✓	100.0	—	
Demand/Use: Traffic Estimates	ESTIM2c	Traffic estimates are maintained (Access including Low Volume)	Timeliness	High	AVAILABILITY COST EFFICIENCY	✓	97.7	—	
Demand/Use: Traffic Estimates	ESTIM3	Traffic estimates updated following counts	Accuracy	High	AVAILABILITY COST EFFICIENCY	✓	80.3	▼	
Demand/Use: Traffic Estimates	ESTIM4	Considered traffic loading	Completeness	High	AVAILABILITY COST EFFICIENCY	✓	99.8	—	

Category	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	
Crash: Crash Data	CRASH1	Crash data is recent	Timeliness	Moderate			0.0		
Crash: Crash Data	CRASH2	Crash records with valid location	Accuracy	Moderate			98.8		

Date imported: 30th July 2020

Appendix H – Smart Buyer Principles Assessment Tool



Smart Buyer Principles Assessment Tool

This assessment is based on the Smart Buyer Principles identified in the Road Maintenance Task Force Report. That statement of principles is included at the end of this document. Score the following by ticking the appropriate box - (1) Disagree to (5) Strongly Agree

Whenever you score yourself "4 or 5" think of an example you can use to justify your score to an independent auditor

Assessment statement	Score				
	1	2	3	4	5
Our Organisation					
1. Fully understands the different contracting models available					✓
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			✓		
3. Has sufficient robust data (or is in the process of gathering robust data) on our networks that enables optimal integrated decision-making				✓	
4. Has access to expertise that fully enables best use of the data available			✓		
5. Is open to alternative solutions to those proposed in the contract documents					✓
6. Understands risk and how to allocate and manage it					✓
7. Has a Council that is prepared to pay more now to achieve a lower whole of life cost				✓	
8. Actively pursues value for money & does not always award contracts to the lowest price				✓	
9. <u>Is able to</u> manage supplier relationships / contracts to ensure that expenditure is optimal and sustains infrastructural assets at appropriate levels of service					✓
10. Supports ongoing skill and competency training and development for its staff			✓		
11. Actively participates in gatherings to share and gain knowledge within the sector				✓	
12. Is effective in keeping up with best practice in procurement including best practice RFP / contract documentation				✓	
13. Regularly seeks and receives candid feedback from suppliers on its own performance as a client and consistently looks to improve its performance			✓		
14. Explores opportunities for collaboration by either sharing in-house resources with neighbours, or by procuring together or tendering together. That exploration could be through an LGA s17A evaluation of transport function delivery options.			✓		
Number of ticks in each column			5	5	4
Multiplying factor	x1	x2	x3	x4	x5
Total Score in Column			15	20	20
Total Score	55				

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