



Transportation Activity Management Plan 2024 - 2034

Te Mahere Whakahaere Waka

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whakatane.govt.nz

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1 PURPOSE & STRUCTURE

This Activity Management Plan (AMP) provides an evidence-based case for investment in the Whakatane District Council (WDC) land transport network. This AMP is structured to meet the requirements of Waka Kotahi the New Zealand Transport Agency's business case approach as follows:

1.2 Strategic Case (Part A)

Consists of two sections:

1.2.1 Strategic Context

- Sets out legislative requirements, policy and strategic context.
- Describes Council objectives and how these integrate with Regional and National objectives.
- Provides an overview of the network: Current State information about the network and performance. Future state forecasts and assumptions on current and emerging trends and issues.
- Identifies gaps between current and future states to inform the Strategic Assessment.
- Identifies key risks and management options.

1.2.2 Strategic Assessment.

- Identifies and prioritises core problems that need to be addressed to close the gaps identified.
- Identifies and prioritises the benefits to be realised through addressing the above problems.
- The benefits are assessed against the outcomes sought by Council's Long Term Plan, The Regional Land Transport Plan, and the Government Policy Statement on Transportation.
- Linkages from problem statements, through to delivery are described.

1.3 Programme Business Case (Part B)

Identifies the programme of works that will deliver on the Strategic Case. The PBC is structured by asset group. For each asset group as appropriate the PBC will:

- Link to the strategic case;
- Define levels of service considering the ONRC and WDC desired outcomes;
- Compile and analyse evidence;
- Assess gaps;
- Develop and consider options considering levels of investment, risk, ONRC, and fit to Strategic Case;
- Identify the preferred programme of works, including co-funded and non-co-funded elements.
- Include an improvement plan.

1.4 Management Case

Describes management systems, capability and capacity of the Council that will be applied to manage the delivery the proposed programme.

1.5 Commercial Case

Describes the procurement systems and policy that will be used to engage a range of appropriate and competent suppliers in a way that delivers value for money and broader outcomes.

EXECUTIVE SUMMARY

1.6 Introduction

The Whakatāne District Council 2024-34 Transportation Activity Management Plan (AMP) provides the evidence case for the 2024-34 investment proposal. This plan has been developed to strategically align with the Council's Long-Term Plan and 30-year Infrastructure Strategy, as well as the Bay of Plenty Regional Land Transport Plan (RLTP) and Waka Kotahi's National Land Transport Plan.

1.7 The Strategic Context

This AMP has been developed with a firm local focus. Development has involved aligning with regional and national direction, whilst ensuring the primary local focus and flavour remained front and centre. The AMP is centred around four key problem statements, and desired benefits. The problems and benefits cover four key themes: Growth, Climate Change, Asset Deterioration, and Road Safety. Further information including the Investment Logic Map are covered in the strategic case section of the AMP.

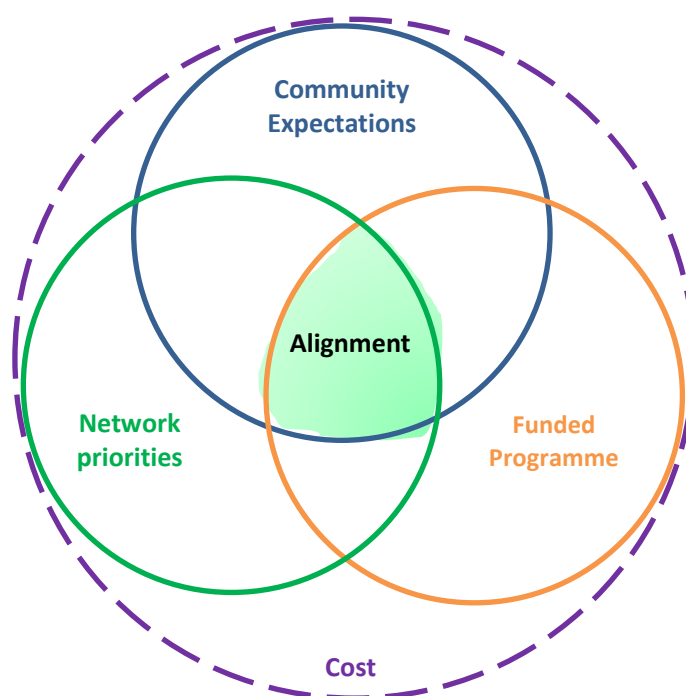
Much like our Council Vision "Better Together – Toitu te Kotahitanga", the focus of this AMP is:

"Better Alignment = Greater Benefits for Minimised Cost"

Benefits are maximised and cost minimised when there is greater alignment between community expectation, network needs and funded programme.

The transport activity is a very broad Kaupapa. The following image represents the key areas pulling us in different directions:

- Community Expectations – Our LTP strategic priorities represent our community's reasonable expectations and needs.
- Our funded programme – The RLTP represents regional priorities and is consistent with the GPS, which outlines the Crown's ten-year land transport investment strategy. This also represents alternative funding opportunities.
- Network Priorities – Our ILM represents the network's needs and priorities. It defines and prioritises the key problems and opportunities in the network, and the benefits we want to achieve through investment.



We need to focus on “Better Alignment” and avoid investing in areas with no alignment, or leaning too far into one area alone.

The bigger the gap between these three key areas, the bigger the cost envelop becomes to deliver. With Better Alignment, the cost envelop is minimised and the greater our benefit delivery.

1.8 Programme Composition

The AMP is compiled of the following programmes to maintain the existing and improve the future transport network within the Whakatane region. Maintenance, Operations and Renewals Programme (MOR), and Capital Improvements Programme, including a number of Transport Planning items to lead into future Improvements Programmes.

1.9 Options Analysis

1.9.1 Maintenance, Operations and Renewals Programme

The MOR programme focuses on overcoming existing problems faced by the Whakatane Transport network. These include aging pavements and infrastructure, increasing traffic volumes, and declining road safety. The MOR programme development considered three options:

- **Proactive** – Focuses primarily on renewals and more frequent maintenance to reduce failure risk on all corridors. This option would improve the level of service (LOS) on higher classification roads and maintain LOS on lower classification roads.
- **Balanced** – Provides a proactive approach to higher classification roads by maintaining these corridors frequently, and a reactive approach to lower classification roads allowing a gradual decrease in LOS over time.
- **Reactive** – Focuses on maintaining the higher classification roads and allows the lower classification roads to reach failure before maintenance or repair works are carried out.

Cost-benefit analysis shows the balanced option has the lowest total cost over a 10-year period when monetarily quantifying the risks associated with each program option. The proactive options has ~\$3M less risk than the balanced option, but for ~\$20M additional cost. Conversely the reactive option has ~\$21M less cost than balanced, but comes with an increased risk of ~\$31M. Options analysis is detailed further in the program business case section of the AMP.

1.9.2 Capital Improvements Programme

The Capital Improvements Programme has been shaped to deliver the ILM benefits in the form of the following key themes:

- **Future Demand** – improvements to the network to cater to increased travel demand from future population growth. This work will be informed by the Eastern Bay of Plenty Spatial Plan currently under development.
- **Safety** – Projects which primarily improve road safety on the network.
- **Resilience** – Projects which improve resilience of the network to unplanned events and natural hazards

The capital improvement programme is compiled of physical works projects as well as transport planning projects that will lead into future physical projects.

Each potential project has been assessed against the following three factors which results in a total profile score, combined into ranking from A (highest) to F (lowest)

- Benefit – Assesses the scale of benefits (i.e. future demand, safety, resilience) expected to be achieved by each project (where 4 is highest and 1 lowest)
- Simplicity - Assesses deliverability of a project considering governance, innovation and community alignment. (where 3 is very complex and 1 is simple)
- Value for Money – Assesses whole-of-life cost of the project (where 4 is very low and 0 very high).

This prioritisation was then used to develop the Improvement Programme, compiling of the various prioritised projects.

Two programme value options were considered when proposing the programme: continuing with 'Business as Usual' of ~\$12.5m for the initial three year period vs. an enhanced programme of ~\$15m (increase of ~25% from previous years).

The programme development then also considered prioritising each of the three key benefit themes; Future Demand, Safety, and Resilience, to propose a further three sub options against the value options above. Note the prioritised theme resulted in the programmes being focused on that particular theme, but highly prioritised projects still proceeded per the overall prioritisation, the theme option was to determine the preferred 'focus' of the proposed programme.

The proposed improvement programme is the enhanced value, with the primary resilience theme. Although future demand ranked slightly higher than resilience in the ILM, we believe this prioritisation reflects where we currently are for the coming three year period 2024-27. To effectively deliver on our future demand benefit, we need to first deliver the planning projects identified, to be able to inform the optimal physical future demand projects, that we can then go on to deliver in the remaining years of the 2024-34 period. Steaming ahead now, before the spatial plan work is complete and without a thorough network level planning lens applied, risks inefficient and adhoc investment occurring.

In addition to this, have some known key resilience issues on our network that are regularly cutting off whole communities right now, that we need to deal with yesterday! Growth is coming, but we still have some time to prepare and align ourselves to ensure we make optimal and prudent investment decisions. We propose to prioritise these resilience projects now, while undertaking the growth and resilience planning projects identified, to fully inform the next round of programme development for 2027 and beyond.

1.10 Proposed Programme

Through the process summarised above, we have developed a 10year locally focused programme, covering maintenance, operations, renewals, planning and improvements, designed to meet the needs of our community, our network and our funding opportunities, whilst keeping affordability and deliverability front of mind. A high-level summary of the programme is shown in the table below:

	2024-27 Programme	FAR	Local Share	WK Share	Program Portion
LR MOR TOTAL	\$ 157,540,000	65%	\$ 55,139,000	\$ 102,401,000	
SPR MOR TOTAL	\$ 21,222,000	100%	\$ -	\$ 21,222,000	
NFA MOR TOTAL	\$ 6,170,000	0%	\$ 6,170,000	\$ -	
TOTAL MOR	\$184,932,000		\$61,309,000	\$123,623,000	69%
LR IMPROVEMENTS TOTAL	\$ 66,575,000	65%	\$ 23,301,250	\$ 43,273,750	
SPR IMPROVEMENTS TOTAL	\$ 2,500,000	100%	\$ -	\$ 2,500,000	
NFA IMPROVEMENTS TOTAL	\$ 9,600,000	0%	\$ 9,600,000	\$ -	
TOTAL IMPROVEMENTS	\$ 78,675,000		\$32,901,250	\$ 45,773,750	30%
PLANNING TOTAL	\$ 2,650,000	65%	\$ 927,500	\$ 1,722,500	1%
GRAND Total	\$266,257,000		\$95,137,750	\$171,119,250	

STRATEGIC CONTEXT

2 Why Does Whakatane District Council Do Transportation?

The transport network is a significant and essential resource in the District, contributing to the social and economic well-being of residents, visitors and businesses. The transport system within the District provides for access across the Eastern Bay of Plenty and is the main connection between Opotiki, the East Coast, Gisborne, Rotorua and Tauranga. The roading network is essential to the continued growth and economic success of the Whakatāne District and must be managed, safely, efficiently and effectively, now and in the future.

Transport planning, policy and networks are all provided through the transportation activity. This includes transport infrastructure including roads, footpaths, cycleways, parking facilities and bridges; public transport infrastructure (such as bus shelters); and traffic control mechanisms (such as signage, lighting and road markings). This activity ensures a safe, efficient and affordable transport network that enables the movement of people, goods and services.

3 Statutory, Policy and Strategic Context

3.2 Local

The Local Government Act (LGA) is the enabling legislation for the Whakatane District Council. It sets out the purpose, role and powers of local government. The Act provides for local authorities to play a broad role in promoting the social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach.

The Long-Term Plan establishes Council's vision and priorities and sets the budget and work plan to implement these for the coming decade. Our vision and community outcomes set out the high-level direction and goals that Council works towards in order to support and enhance the social, cultural, economic and environmental wellbeing of our communities.

3.2.1 Our Vision

Our vision statement recognises that the Whakatāne District offers a great quality of life. It also embraces Council's role in supporting our communities to flourish, fulfil their potential and live life to its fullest.



3.2.2 Council's Strategic Priorities

Council has identified five goals (strategic priorities) for change or improvement as we work towards our vision of 'More life in life'



3.2.3 Infrastructure Strategy 2024-54

The Infrastructure Strategy outlines how Council intends to manage infrastructure assets over the next 30 years. It outlines the Council's vision for our communities, identifies the significant infrastructure challenges and drivers in achieving that vision, and how the Council intends to address these through our long-term planning and investment.

3.2.4 Climate Change Strategy, Principles and Action Plan:

The Whakatane District is vulnerable to natural hazards including slips, flooding and coastal erosion with climate change likely to make the consequences of these hazards worse.

The Council is a signatory to the 2017 Local Government Leaders Climate Change Declaration and, in 2020, adopted a Climate Change Strategy 2020 – 2023 and is currently progressing an updated strategy and action plans for beyond 2023.

The Climate Change Strategy incorporates an action plan for transport to address both greenhouse gas emissions and resilience of transport infrastructure. It is particularly important for Whakatāne as transportation represents the third largest emissions sector for the district with the majority of emissions resulting from petrol and diesel consumption by road transport⁷.

The key goals of the climate change action plan for transport are:

- Promote travel efficiency
- Enable and encourage active transport
- Increase low carbon transport options
- Manage climate change risks to existing transport infrastructure
- Build future transport infrastructure for a changing climate

Council is striving to reduce its contribution to climate change through the delivery of its Active Whakatane strategy. Further work to make sure the district can adapt to climate change successfully is needed, including developing a programme of improvements to improve network resilience at critical nodes and links where natural hazards and other unforeseen disruptions can have significant social and economic impacts on local communities and businesses. This work will be informed by the development of the eastern bay of plenty spatial plan, district and regional natural hazard risk assessments.

3.2.5 Active Whakatane

In 2020 WDC adopted the [Active Whakatane Strategy](#) to represent a collective vision for active transport and recreation. The strategy was developed in close consultation with the community. The vision of this strategy is to enable 'a District where active travel and recreation improve health, connectedness, our environment and economy'. It encourages all active modes of transport, from mobility scooters to cyclists to pedestrians, making it both easier and safer for the Whakatane District residents to get where they want to go without needing to use a car.

The three key investment areas were defined to deliver this vision:

- Commuter walking, scooting and cycling – shared paths and greenways along streets, path through parks, reserves and on-road cycleways. This includes kerb ramp upgrades to improve journeys for wheeled-device users in particular and improved/additional crossing facilities to make crossing busy roads safer and easier
- Safe Ways to School – wider, sealed shared paths along key streets to and from schools, which will also form part of commuter routes
- Recreational walking and cycling trails – through parks, reserves, stop banks, coastal and harbour reserves

The strategy also supports:

- Education programmes (the safe passing of people on bikes, using roundabouts and courteous path use, for example)
- Encouragement activities (community and school events, for example).

Implementation of the Active Whakatāne Strategy contributes toward delivery of the outcomes of Transport action plan for climate change

The maps overleaf illustrate the Active Whakatane capital investments currently either being planned or underway. These have been integrated into the AMP capital improvements programme for prioritisation over the 2024-27 period.

Long term vision: a connected network *Kitenga roa: he tūhononga*

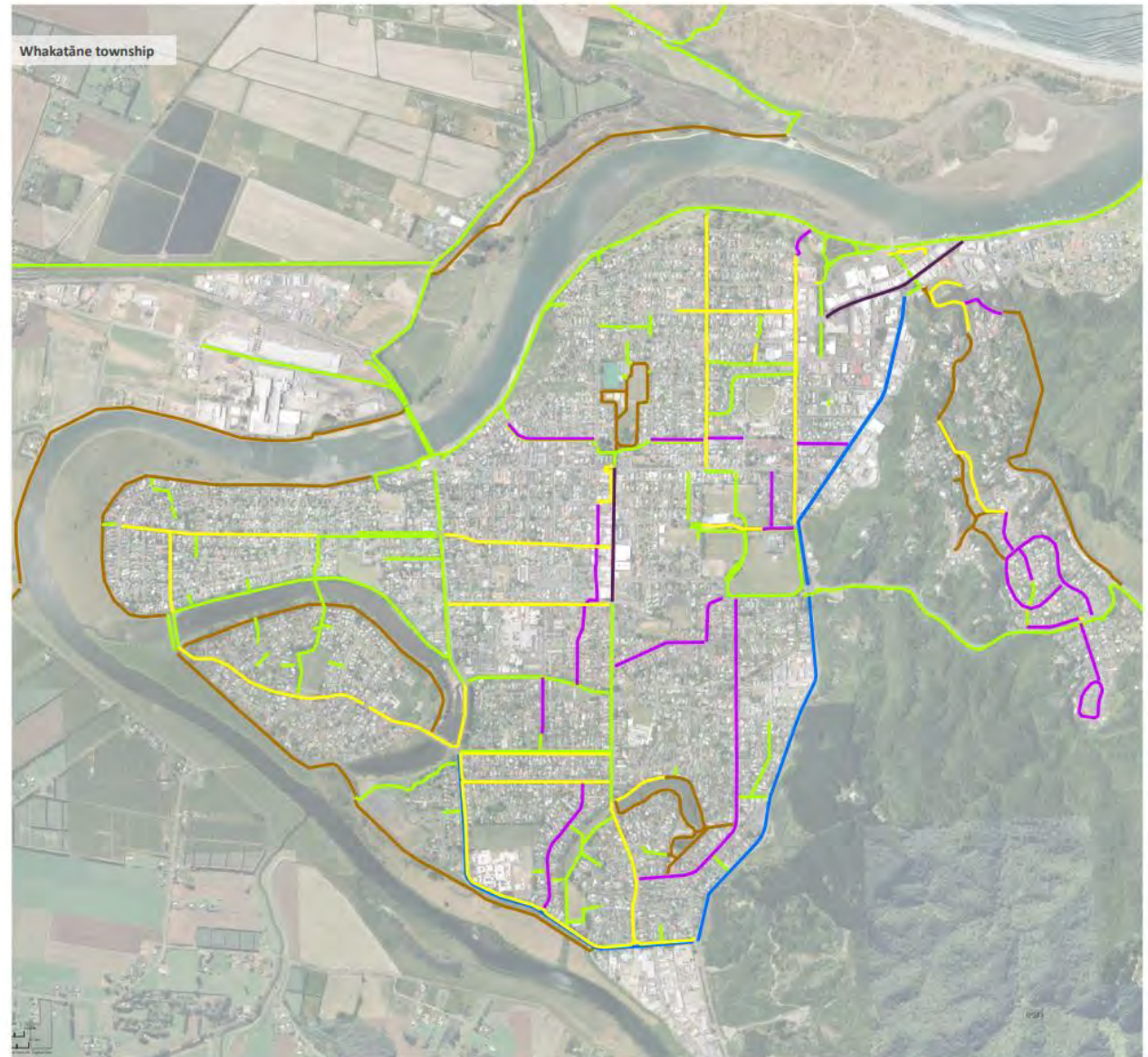
For the full implementation plan maps, visit whakatane.govt.nz/active-whakatane. The online maps are interactive with zoom and panning abilities to zoom into areas of particular interest. The maps shown in this strategy document represent the Active Whakatāne vision, to create a connected network, made up of a series of active travel and recreation facilities spanning across the District.

Facility type	
Cycle lane	
Shared path	
Footpath (cycling allowed)	
Trail	
Neighbourhood greenway	
Low speed commercial	
Small towns initiatives: details to be developed with communities	



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Cycle lane	
Shared path	
Footpath (cycling allowed)	
Trail	
Neighbourhood greenway	
Low speed commercial	
Small towns initiatives: details to be developed with communities	

[View the full implementation maps online](#)



3.2.6 Eastern Bay of Plenty Spatial Plan

Prior to 2013, Statistics New Zealand forecasted that the population in Whakatane would decline. However, growth has occurred instead and is expected to continue. The purpose of the Spatial Plan is to identify:

- How much land will be required for housing development over the next thirty years
- Where housing development will take place
- The types of housing that will be delivered
- The infrastructure (transport, three waters, community, lifelines) requirements for the development that is proposed

To prepare and set the scene for the Spatial Plan, Five Foundation Papers - People and Community, Housing and Land, Economy and jobs, Infrastructure and Natural Environment - were completed, describing the current state and challenges for the Spatial Plan in Whakatane regarding the Spatial Plan. These analyses will shape the Spatial Plan as it continues to develop.

Once the Spatial Plan is completed in 2024, further planning will be required to identify improvements to the transport system required to support this planned growth.

3.2.7 Whakatāne District Plan

The Whakatāne District Plan became Operative in June 2017. The Plan encompasses legislative and regional planning requirements in terms of developments, to allow growth to occur in a way that minimises negative impacts on the environment and surrounding community.

A proposed plan change is currently underway to enable the provision of accessible parking to be considered during the consenting process. With the removal of minimum carparking requirements under the NPS – UD 2020, if a developer chose not to provide any car parks, the Council could no longer consider whether accessible car parking is appropriate when assessing a resource consent application. Previously, provisions of accessible carparks was required as a ratio of the total number of carparks that were required.

A private plan change to rezone 23 and 45 Keepa Road, Whakatane, from Light Industrial to Residential is also in development, and could potentially see future residential developments.

3.2.8 Eastern Bay of Plenty Road Safety Plan (2024-27)

The EBOP Road Safety Plan 2024-2027 identifies speed, alcohol & drugs, young drivers, motorcyclists and rural roads as the highest areas of concern. These will be addressed through:

- Road safety promotion & education programmes
- Other programmes addressing issues (e.g. drug use) that could improve road safety indirectly
- Road safety engineering improvements to the transport network

3.3 Regional

The Bay of Plenty Regional Council (BoPRC) have the statutory responsibility under the Land Transport Management Act (LTMA) to ensure the Regional Transport Committee prepare the Regional Land Transport Plan (RLTP). Activities within WDC's AMP, alongside those from other councils in the region, are assessed and prioritised against the regional strategic transport issues and objectives for inclusion into the National Land Transport Plan (NLTP) for funding.

The RLTP in turn is also guided by the GPS on Land Transport Funding, as summarised in Chapter 2. The endorsed vision for the 2024-34 RLTP is:

“Our transport system meets the needs of our diverse communities, our environment and our economy”.

The RLTP identifies the following key objectives for the regional transport system.

- Healthy and Safe People
- Environmental Sustainability
- Inclusive Access
- Economic Prosperity
- Resilience and Security
- Enabling Housing Supply

3.4 National

3.4.1 The Land Transport Management Act (LTMA)

The purpose of the LTMA is to contribute to the aim of achieving an affordable, integrated, safe, responsive and sustainable land transport system. The LTMA provides the legal framework for managing and funding land transport activities, disbursing the National Land Transport Fund (NLTF) and developing the National Land Transport Programme (NLTP).

3.4.2 Resource Management Act (RMA) 1991

The RMA promotes managing the use, development and protection of natural and physical resources in a way, or at a rate, that enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety, while:

- Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations
- Safeguarding the life-supporting capacity of air, water, soil and ecosystems
- Avoiding, remedying or mitigating any adverse effects of activities on the environment

The act sets out the functions, powers and duties of local government, and the resource consent and designation process. When building or maintaining the roads, the RMA requires us to avoid, remedy or mitigate adverse environmental effects caused by the infrastructure and we must apply for a resource consent from the relevant council if an activity is not allowed ‘as of right’ in the relevant district or regional plan.

The Resource Management Act 1991 (RMA) is planned to be replaced with the following three new Acts:

- Natural and Built Environments Act (NBA) to provide for land use and environmental regulation (this would be the primary replacement for the 1991 RMA)
- Strategic Planning Act (SPA) integrating with other legislation relevant to development, and specifying the requirement for long-term regional spatial strategies
- Climate Change Adaption Act (CAA) providing the enabling legislation necessary to plan and deliver adaptation initiatives to climate change

This new resource management framework could result in greater control over development within environmental constraints across Whakatane, particularly through Regional Spatial Strategies, of which the Eastern Bay of Plenty Spatial Plan may be a pre-cursor.

3.4.3 Government Policy Statement on Land Transport Funding (GPS)

The government has signalled the following strategic priorities in the draft GPS:

- Sustainable urban development
- Safety
- Integrated freight system
- Maintaining and operating the system
- Resilience

The GPS is subject to change by the new government and a final GPS will be provided in 2025.

3.4.3.1 Sustainable Urban Development

The primary outcome for sustainable urban development is the provision of inclusive access for people living in towns and cities who can readily access places of work, study, shop and play using a variety of transport options.

This will be achieved by planning for more medium and high-density mixed-use developments in urban centres that are well connected to public transport and active travel networks. Changes made will include making active and shared modes of travel more appealing to people in urban centres. Further actions are planned to take place and include:

- Waka Kotahi, the Ministry of Housing and Urban Development, and Kainga Ora partnering with local authorities to develop future development strategies and VKT reduction plans.
- Government co-investment in priority rapid transit systems, including investing in metropolitan rail as part of the Rail Network Investment Programme
- Further investment to improve public transport, walking, and cycling infrastructure and services
- Enabling congestion charging and other demand management tools as signalled in the ERP

Intertwined is emissions reduction targets:

- Reducing total vehicle kilometres travelled (VKT) by 20% through improved urban form and providing better travel options, particularly in our largest cities
- Increasing zero emissions vehicles to 30% of the light vehicle fleet
- Reducing freight emissions by 35%
- Reducing the emissions intensity of transport fuel by 10%

The Emissions Reduction Plan (ERP) calls for Waka Kotahi to develop a VKT reduction program in partnership with local councils and communities. These new plans will help to inform future investment priorities and should provide for alternative travel options in a way that encourages an increase in more sustainable travel choices.

Significant changes in the way New Zealanders use the transport system is required to reach the ERP targets set out. Whakatane has the opportunity to contribute to the ERP by increasing the availability of walking and cycling through the Active Whakatane Strategy.

This priority is likely to be focused on tier 1 and tier 2 urban centres, which does not include Whakatane District. However, under the NPS-UD tier 3 local authorities (all authorities that are not classed as tier 1 or 2) are strongly encouraged to follow the steps at tier 1 and 2 levels.

3.4.3.2 Safety

The primary outcome for the Safety priority is to develop a transport system that no-one is killed or seriously injured while travelling. In combination with the Road to Zero strategy which commits New Zealand to zero deaths and serious injuries on the roads. The outcome plans to be achieved with an immediate target to reduce DSIs by 40% by 2030. Delivery of these outcomes will require focus on the following areas:

- Infrastructure improvement and speed management
- Vehicle safety
- Work-related road safety
- Road user choices
- System management

These will include investments in safer infrastructure, speed management, road policing, safety cameras and promoting responsible behaviour. Investment in improved road safety has consistently been a priority in Whakatane in recent times. Based on the evidence presented in later chapters, this needs to continue if Vision Zero is to be realised.

3.4.3.3 Integrated Freight System

The primary outcome of generating an Integrated Freight System is economic prosperity whereby well-designed transport corridors with efficient, reliable and resilient connections will support productive economic activity.

This will be achieved by including a network wide inter-regional strategy, with an emphasis on rail improvements set out in the New Zealand Rail Plan and includes:

- Implementation of a freight and supply chain strategy
- Managing resilience risk on important regional corridors where disruptions cause the highest economic and social cost
- Improving the safe and efficient movement of freight through logistics planning and network optimisation
- Enabling greater mode choice through more integrated networks, to enable freight to travel on the most efficient modes

The Whakatane District has the opportunity to contribute to this priority through improvements to the regionally significant freight routes of SH2 and the Kawerau rail freight line that go to the Port of Tauranga (PoT). Road-rail integration is already being planned for in Kawerau.

3.4.3.4 Maintaining and operating the system

The primary outcome of maintenance and continued operations of transport systems allows key routes and essential access for communities, businesses, and in particular areas with limited modes of transport to meet the current and future needs of users. This will be achieved by a land transport system that delivers the right infrastructure and services at the best cost and quality.

3.4.3.5 Resilience

The primary outcome of a resilient and secure transport system is to improve liveability and wellbeing. It is achieved by minimising and managing the risks from natural and human made hazards and adapting to threats as they emerge. This allows transport networks to be capable of recovering from disruptive events. This outcome is achieved through the actions and strategies covered in the Natural Disaster Resilience strategy, the National Adaption Plan and the National Security System including the 4Rs:

- Reduction – identifying and analysing long-term risks and taking steps to eliminate these risks if practicable, or if not, to reduce their likelihood and the magnitude of their impact

- Readiness – developing operational systems and capabilities before an emergency happens
- Response – taking action immediately before, during or directly after a significant event
- Recovery – using coordinated efforts and processes to bring about immediate, medium-term, and long-term regeneration

The opportunity for Whakatane to identify and maintain future vulnerable assets to allow it to be fit for the change in climate persists.

3.4.4 Arataki

Arataki is Waka Kotahi's 30-year plan outlining what is needed to meet the governments present priorities and future objectives for New Zealand's land transport system.

It has been developed as a shared sector view between Waka Kotahi and its partners to co-create a plan outlining the direction that will guide how Waka Kotahi and its partners will work together during the next 30 years to deliver the future land transport system needed to keep Aotearoa moving.

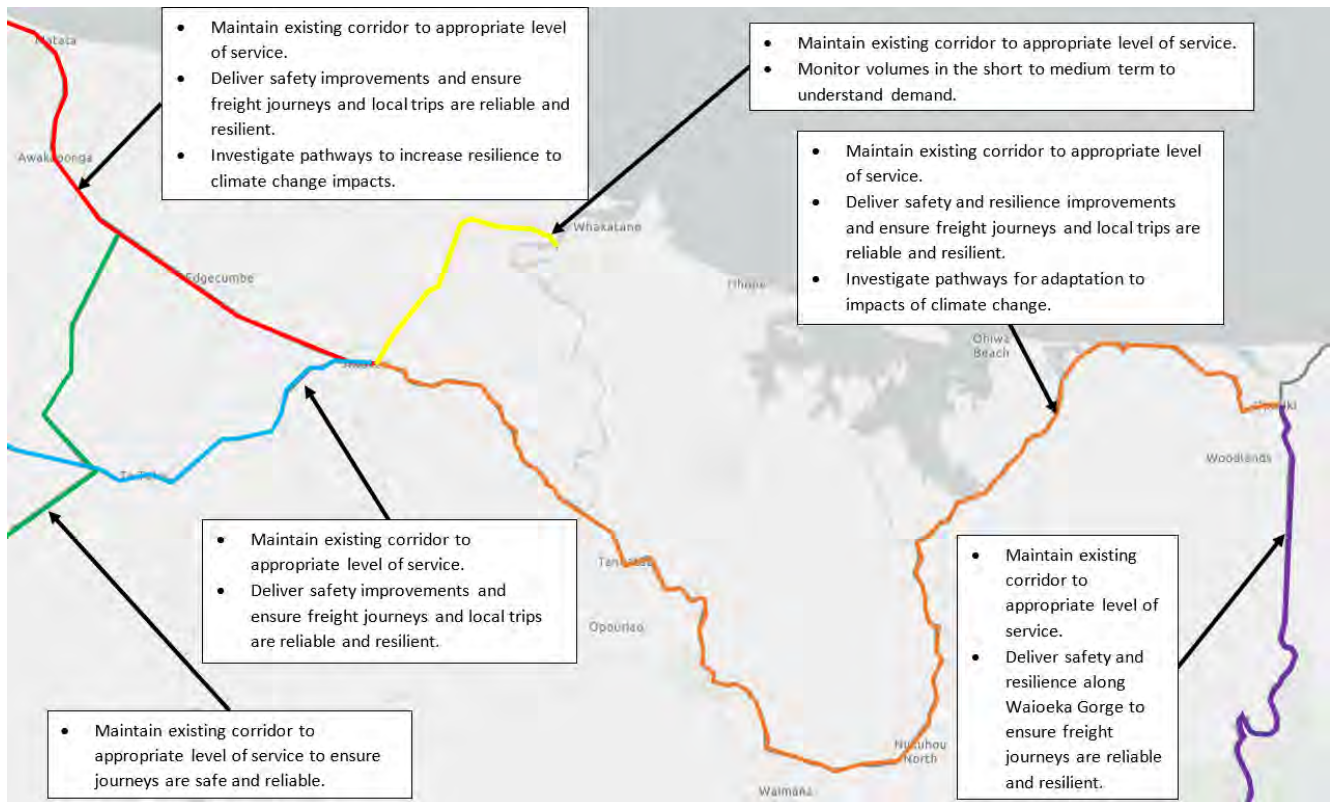
The latest iteration of Arataki continues to provide a longer-term view by:

- Identifying the strategic context, national and regional directions;
- Applying three lenses (equity, Māori and freight) to best represent customers using the land transport system; and
- Presenting maps of the current and future desired performance of the strategic network

The strategic context describes what the land transport system could look like in 30 years. The national and regional directions set out the long-term objectives which are to be achieved at a national and regional level respectively. It differentiates between the 14 regions of Aotearoa to provide objectives for each region.

The freight lens identifies SH2 between Tauranga and the Eastern Bay of Plenty (via Whakatāne) as a Regionally significant road freight corridor, connecting goods producers and consumers with markets and suppliers via the Port of Tauranga, and Eastland Port.

The future focus map identifies where future interventions, and activities may be required to overcome any existing or future service deficiencies on the strategically significant network. An Arataki Future Focus map extract for the Whakatane area is shown below.



3.4.5 Road to Zero

The Ministry of Transport's policy of Road to Zero aims to ensure that no-one is killed or seriously injured in road crashes, and where no death or serious injury (DSI) while travelling on the road network is acceptable.

Whakatane DC is already an active contributor to the programme including Speed Management Plans and other investments in safer infrastructure, road policing, safety cameras and behaviour change. Investment in improved road safety has consistently been a priority in Whakatane in recent times. Based on the evidence presented in later chapters, this needs to continue if Vision Zero is to be realised.

3.4.6 Regional Economic Development

The Regional Development Unit (RDU) administers various funds from central government to support growth in the regions. Since 2018 \$4.5 billion has been allocated by central government and administered by Kānoa-RDU, including the upgrade of Whakatane Boat Harbour for commercial fleets.

3.4.7 National Policy Statements

3.4.7.1 National Policy Statement for Urban Development

The National Policy Statement on Urban Development (NPS-UD) 2020 sets out the objectives and policies for planning for well-functioning urban environments that enable all people, communities, and future generations to provide for their social, economic, cultural wellbeing, and health and safety. The NPS-UD also sets out to provide sufficient development capacity to meet the different needs of people and communities. This policy is particularly targeted at tier 1 and 2 urban centres, which does not include Whakatane.

3.4.7.2 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2020 sets out the objectives and policies for freshwater management under the Resource Management Act 1991. The NPS-FM came into effect in September 2020 and replaced the National Policy Statement for Freshwater Management 2014 (amended 2017).

The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:

- First – the health and well-being of water bodies and freshwater ecosystems
- Second – the health needs of people (such as drinking water)
- Third – the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

This NPS is particularly relevant to freshwater resources like Whakatāne River and is likely to affect the costs of assets within freshwater catchments such as culverts and bridges.

3.4.7.3 National Policy Statement for Highly Productive Land (NPS-HPL)

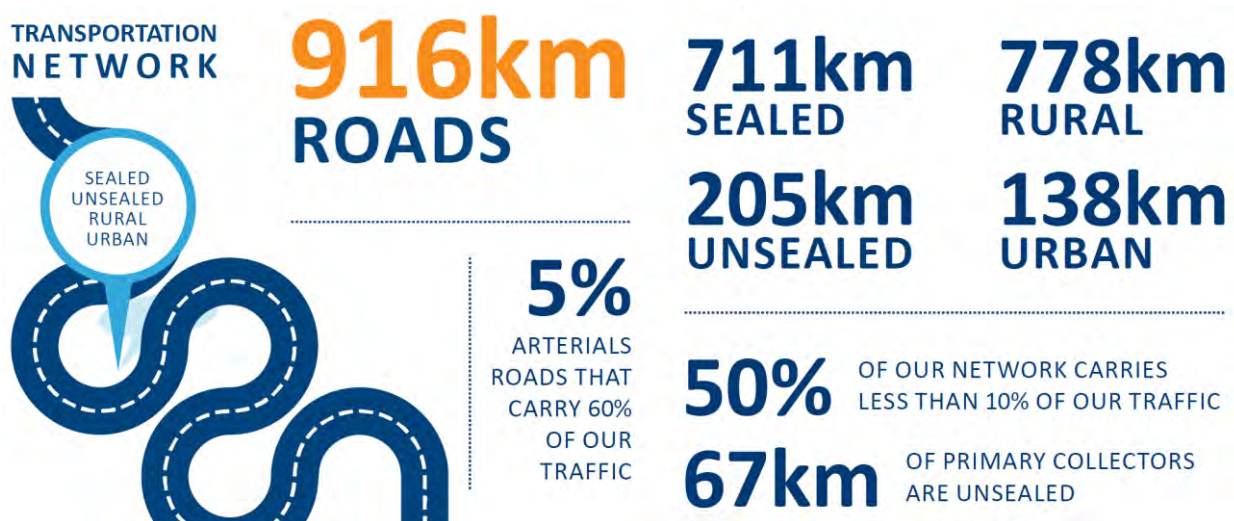
The new National Policy Statement for Highly Productive Land (NPS-HPL) is about ensuring the availability of New Zealand’s most favourable soils for food and fibre production, now and for future generations. In line with the outcomes, the following objectives and the relevant policies regarding transport include:

- Highly productive land is mapped and included in regional policy statements and district plans
- Use of high productive land for land-based primary production is prioritised and supported
- The urban rezoning of high productive land is avoided, except as provided in NPS-HPL
- The subdivision of highly productive land is avoided, except as provided in NPS-HPL
- Highly productive land is protected from inappropriate use and development

WDC must map all highly productive land to appropriately constrain development on it.

4 Network Context

The Whakatāne District is served by a network made up of the following road context:



Arterial roads make up 5% of the network length but carry 60% of the traffic. The primary reason for this is that, for many trips, Whakatāne’s coastal east-west route is shorter and quicker than the inland SH2

alternative. The coastal arterial route carries a higher total volume of traffic than SH2, though SH2 carries around 3 times more heavy commercial vehicles. At the other end of the scale, 50% of the network is access/low volume and carries less than 10% of our traffic.

As at 30 June 2023, the average annual daily traffic density (Annual VKT/lane km/365) on the Whakatāne network is 346vpd, this is a decrease of 11% over the last three year period. The prominent decline has been evident since Covid-19 surfaced in 2020

Our transport network consists of the following key assets:



Management of the network is guided by a system of network classification with associated levels of service. Currently, the One Network Framework system is in operation, which superseded the One Network Road Classification. This new classification is displayed on the following maps for the whole area and for Whakatāne township as the main centre for the council area.

The development of the network has largely been guided by the ‘valleys and plains’ type topography. In this context, bridge roads define the four major river valleys (Rangitaiki, Whakatāne, Tauranga and Tarawera Rivers).

Dairy and horticulture predominate on the Rangitaiki and Galatea Plains. The river valleys feature some dairy on the lower levels, with dry stock and forestry featuring in the foothills and ranges. The southeast of the district is dominated by the ranges of Te Urewera and the south west incorporates the massive forest plantations of the central plateau.

Significant industry includes the Fonterra dairy factory in Edgecumbe, The Board Mills in Whakatāne, two of the country’s largest aluminium boat builders, one of New Zealand’s largest Pulp and Paper Mills, Geothermal Resource and Power Station are also in the neighbouring Kawerau District.

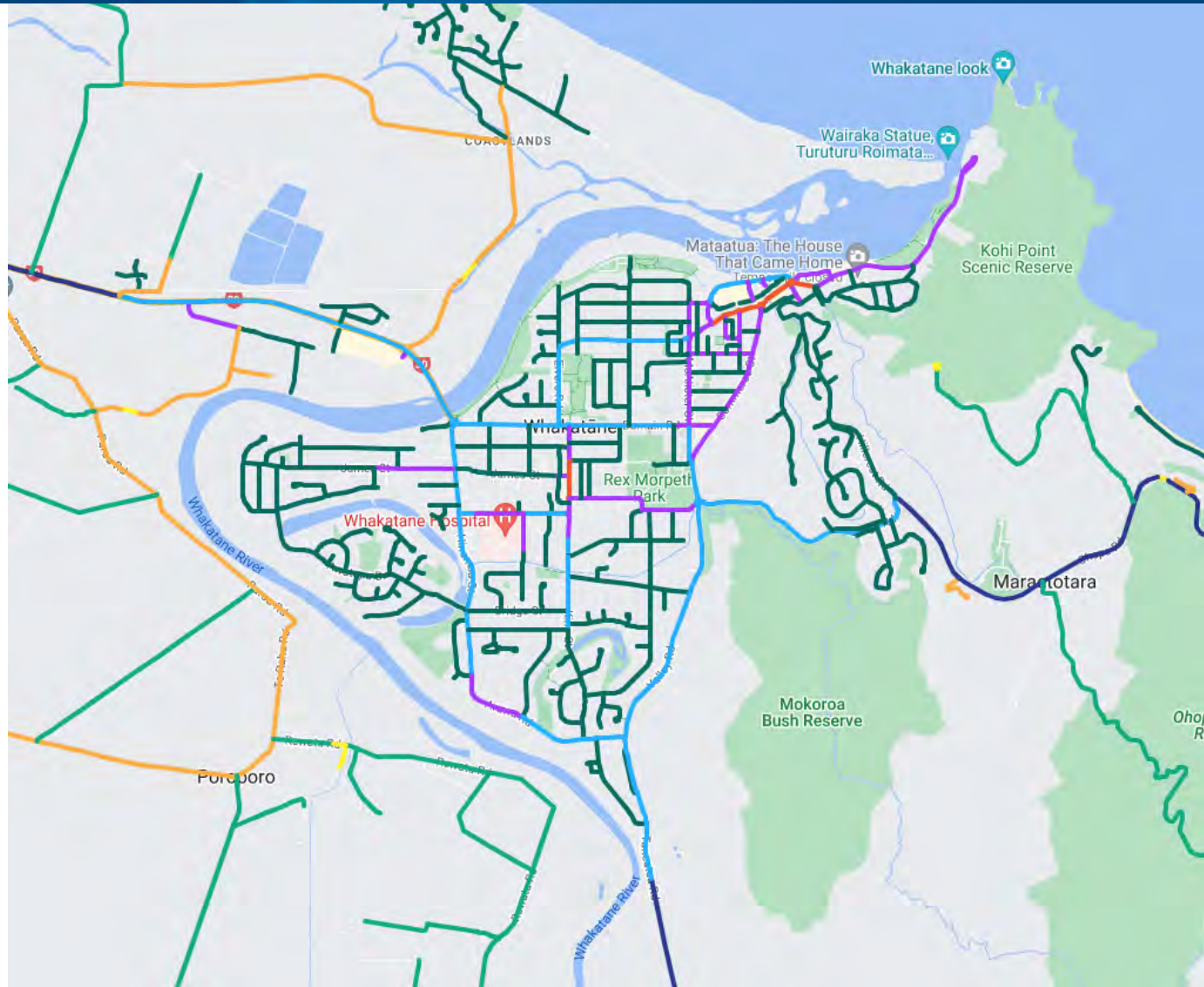
The main urban area is Whakatāne. Whakatāne Township is physically constrained by the escarpment to the east and the Whakatāne River to the west. A number of smaller dormitory towns and suburbs are located around the district which predominantly rely on Whakatāne for services and supply.

Whakatāne enjoys an enviable climate, with high levels of sunshine. Access to outdoor activities such as fishing, hunting, tramping surfing and adventure sports is a strong draw card. Tourists are also drawn to experience the strong Maori culture and identity of our District.

On the flip side, the same geographic location that delivers a lot of sun, also places Whakatāne in the firing line for ex-tropical cyclones and depressions. The significant volumes and intensity of rain associated with these systems wreaks havoc on the steep and weathered sedimentary and volcanic soils that underlay much

of the district causing devastating flooding and damage to the transport network – particularly in the district’s east, west and southern hill country.





5 Current State

5.2 Progress Report on the 2021 AMP

5.2.1 Overview 2021-2024

- Road safety outcomes having a decreasing trend
- Road condition indices (roughness, SCI, PII, STE, etc) trending downwards, particularly on arterials and collectors.
- Renewal quantities for pavements, surfacing and structures demonstrates increasing quantities.
- Population growth continuing to increase.
- Congestion along arterial routes becoming more prevalent.
- Active modes infrastructure increasing through sustained investment.
- Unsealed primary collector roads continuing to contribute to poor community outcomes.
- Asset management practices steady and improved from previous years.

5.2.2 Closing the Gaps 2021-24

The 2021 AMP benchmarked the then current state of the network, identified trends, made forecasts and assumptions regarding the future, and identified the desired future state. Gaps identified between the current and desired future states. The core problems or issues to be addressed to close the gaps were identified, along with the consequences and benefits that could be realised.

The below describes the progress during the past 3 years:

Symbol	Description
	Good progress on closing gap, outcomes achieved
	No or little progress on closing gap, valid reason for delay
	No progress on closing gap, gap widening

Gap	Progress	Commentary
Knowledge, Data & Information Gaps		
Move to advanced asset management practices (eg modelling) requires new data and tools including structural pavement information, condition data on 100% of network (eg high speed data, SCRIM, GPR or		High speed +SCRIM data collection introduced. Dims modelling undertaken to inform 2021-31 and 2024-34 pavement programmes.

FWD, etc). This will give confidence that financial plans are appropriate and robust.		
Traffic model needs updating to inform timing and scope of future capacity improvements for the urban arterial access network.		Waka Kotahi recommended that a NOF be undertaken in the first instance to guide and inform future transport planning. Further modelling of the main urban arterial corridor as part of the Spatial plan Transport Response is planned for 2024-27.
Walking and cycling strategy needs updating to reflect current growth patterns, priorities, trends etc. Scope needs to be widened to consider e-bikes and mobility scooters.		Active Whakatāne Strategy adopted by Council in 2020 and has seen sustained investment and noticeable improvements to active mode infrastructure in the district. Further work to be undertaken in 2024-27 to evaluate uptake of alternate mode travel.
The remaining useful life of the District's bridge stock requires a greater level of accuracy to give confidence that financial plans are appropriate and robust.		This problem is not urgent and stretched resources were assigned to other priorities.
ONRC Performance Gaps		
Safety. High personal risk on secondary collector and access roads. High numbers of fatal and serious crashes on primary collector roads.	 	Two faces. All education and physical work improvement programmes delivered. Secured substantial funding to deliver a range of safety improvements to the Wainui Rd corridor (complete) and Thornton Road corridor (underway due to complete May 2024). But road safety outcomes (fatal and serious injuries) have turned sharply negative.
Cost efficiency. Unsealed primary collector roads contributing to high metaling and unsealed pavement maintenance costs.	 	The Te Urewera Rainforest Route improvements has been superseded by the Natures Road Project lead by Tūhoe in partnership with Waka Kotahi. The Southern Transport Links BC has been deferred as stretched resources were assigned to other priorities. Currently planned for commencement in 2024-27.
Accessibility. A significant portion of the network that services significant dairy and forestry production is not accessible by 50max		A programme of investigation and physical works has opened up the majority of the network to 50max vehicles. The last remaining bridge, that is viable to improve to 50max capacity is included in the 2024-27 LCLR

		programme. HPMV routes have also been significantly extended.
Travel time reliability. The urban arterial access into and through town is reaching capacity.		The Landing Road renewal project has progressed this period and has been undertaken in readiness for future changes associated with the Spatial Plan Transport Response Programme which is proposed in 2024-27.
Infrastructure Gaps		
Growth on West side of river and intensification within Kope will at some point exceed capacity of main arterial route (SH30, Landing, Domain, McAlister, Commerce, Gorge,)		See comments for travel time reliability.
Capacity over river will eventually need to be addressed to avoid severe congestion and negative impacts on economic growth and development.		See comments for travel time reliability, and there is also provision for a separate indicative or detailed business case to cover the progression of an additional river crossing.
To facilitate modal change appropriate infrastructure required. Currently river and main urban arterial (Landing and Domain) create significant severance barriers.		See comments for travel time reliability.
Walking and cycling infrastructure required to be in place to maximise uptake of these modes when new subdivisions on west side of river develop (1000+ sections), so as to minimise impact on already congested bridge.		Bunyan Rd SUP completed. Keepa Rd at concept stage. Detailed design and delivery deferred to integrate with Keepa Rd improvements, boat harbour, and industrial subdivision. Shaw Road to Whakatāne Shared Use Path designed and ready for construction through Transport Choices Programme, currently on hold due awaiting new govt decision.
Footpaths will need upgrading to cater for increasing mobility scooter use as population ages.		Programme of improvements underway driven by Active Whakatāne. Initial focus on crossing points and connecting schools.
Unsealed primary collector roads need sealing to bring to acceptable LOS.		See comments for Te Urewera and Southern Links BC above.
Unsealed access and low volume roads need sealing to address health and productivity impacts.		Council has reintroduced its Seal Extension Policy and Prioritisation and has an annual programme on non-financially assisted seal extensions to address community impacts from dust.

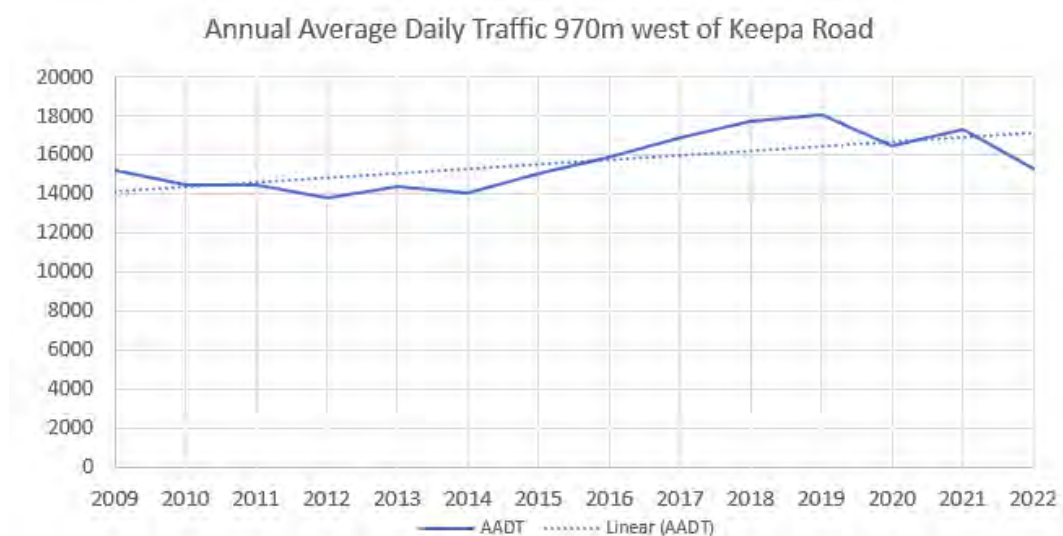
Keepa and Bunyan Rd are changing in form from rural to urban and need investment to facilitate this.		TIA and concept design completed. Keepa Rd improvements deferred to integrate with boat harbour, industrial subdivision and SUP projects. Business Case completed in 2023, pre-implementation currently underway.
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5.2.3 Strong Growth continues for the Eastern Bay

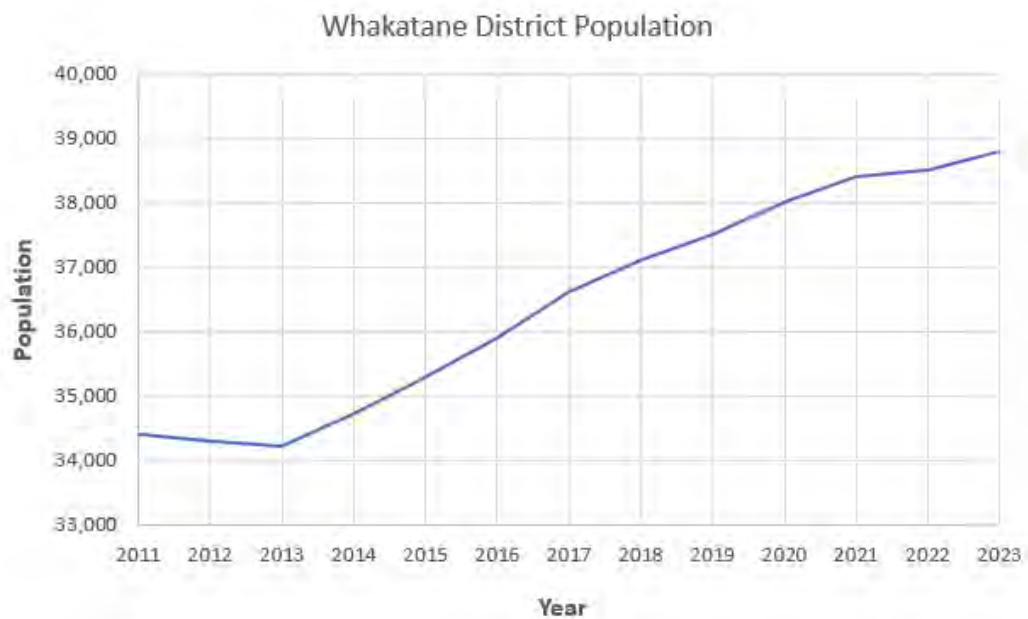
Since 2018, traffic use of the network has increased by 20%. Increased traffic translates to increased maintenance requirements.:



Traffic on SH30 (970m west of Keepa Road) was steadily growing between 2014 – 2019. Between 2019 - 2022, traffic volumes have reduced likely due to the impact of Covid-19 and other economic conditions:



The population within the Whakatane District has been steadily increasing since 2013. As of 2023, it is estimated approximately 38,800 people reside within the Whakatane district.



5.2.4 COVID-19 pandemic

The COVID-19 pandemic and its associated lockdowns significantly disrupted New Zealand's communities and the global economy.

It also had a significant impact on how, where and when people travel and work. Flexible work arrangements such as working from home and telecommuting became more prominent, and active modes became more popular, benefitting the climate, work life balance, and community liveability. Since then, slowly but surely, life has started to return to its pre-pandemic routine for many, if not most communities and businesses.

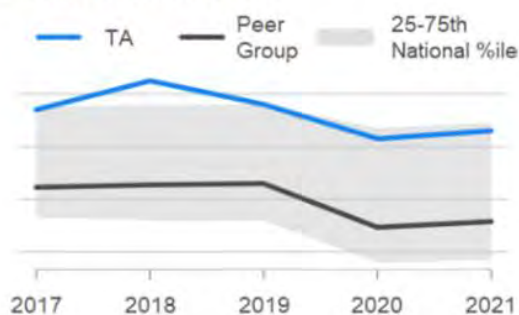
5.3 How Are We Performing?

5.3.1 Condition Trends

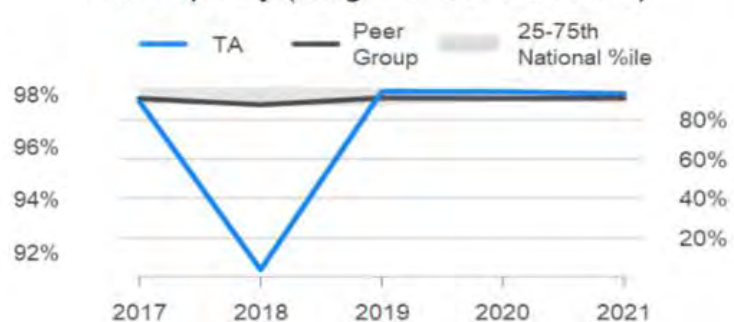
Three principal measures are used to monitor and benchmark condition at a network level. These are:

1. Pavement Condition Index. This combines a range of condition and fault data to indicate the overall performance of the structural base layers of the road.
2. Surface Condition Index. This combines a range of condition and fault data to indicate the overall performance of the surfacing layers of the road.
3. Smooth Travel Exposure. This calculates the percentage of travel on smooth roads (defined as road roughness below a prescribed value for different road classes). It is a proxy for user experience.

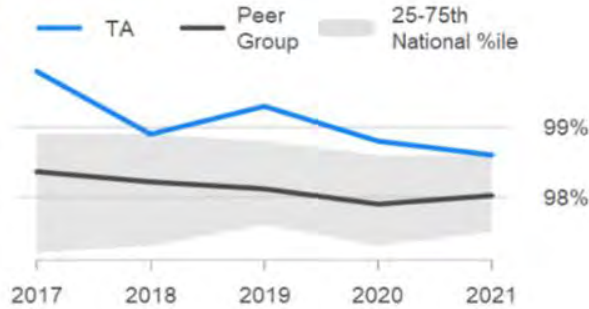
Pavement condition



Ride quality (roughness of the roads)



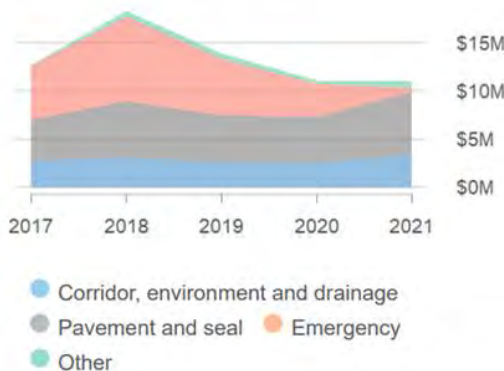
Surface condition



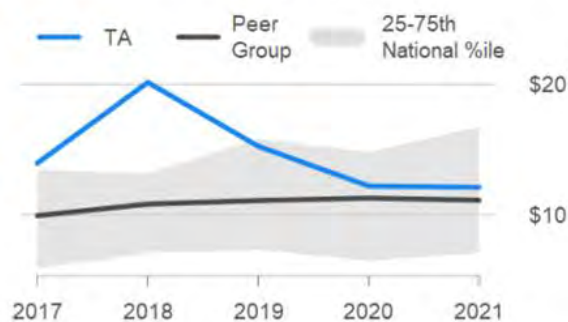
While pavement and surface condition are relatively ok and compare well to peers, they have shown a deteriorating trend over the past 5 years.

5.3.2 Network MOR Costs

Road maintenance, operations and renewals



Maintenance, operations and renewals expenditure / length (\$1,000 / km)



For 10 or more years prior to covid, network MOR costs (excluding emergency works) had been kept fairly stable at around \$8M to \$9M PA even though construction cost indices had risen substantially. This was achieved through utilising innovative procurement methods and WDC staff retaining in-house decision-making capability and control over work programmes. Since covid, resource and inflationary pressures have increased costs to around \$11M PA for the 2021-24 LTP.

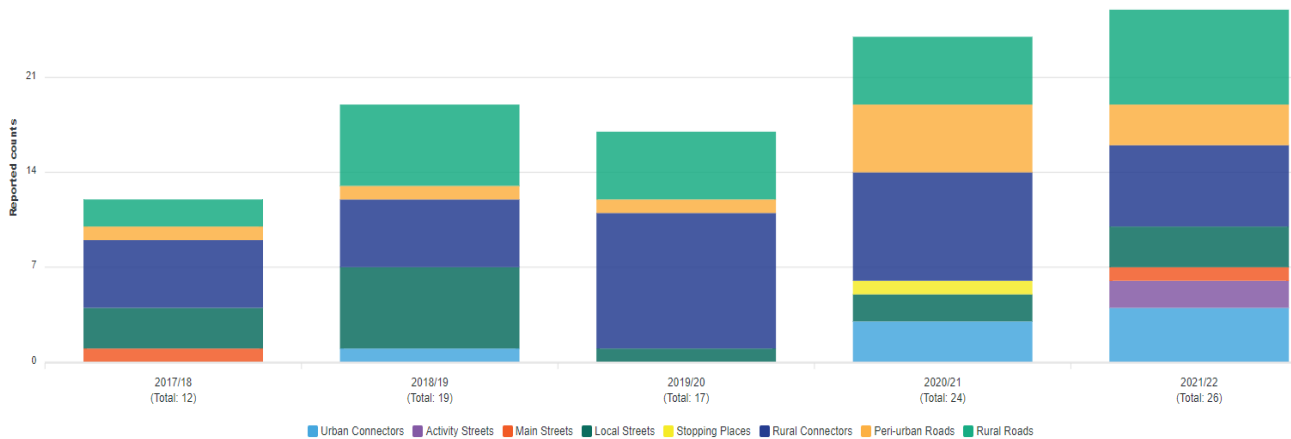
Excluding emergency works, WDC maintenance costs track around the average for the peer group of provincial centres. The emergency works shown are the response to cyclones Debbie and Cook in 2017.

5.3.3 Road Safety Trends

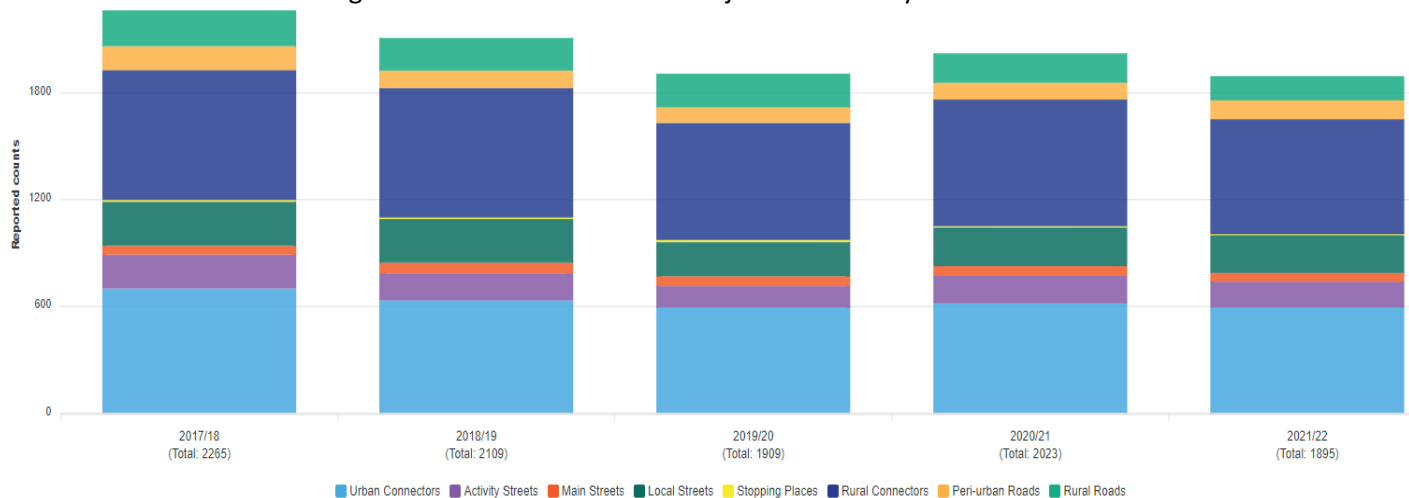
Road Safety has evolved in recent years from a focus on crashes, deaths and injuries into a broader consideration of the wider impacts of transport on the health and safety of people. The Land Transport Benefits Framework clusters the measures and benefits into three groups: changes in user safety, changes in perception of safety, changes in human health. Current performance of the Whakatane transport network is described under these three groups.

5.3.3.1 Changes in User Safety

Death and serious injury counts on the Whakatane Network have more than doubled over the previous five year period from 12 in 2017/18 to 26 in 2021/22:



This contrasts with a reducing trend of deaths and serious injuries nationally:



5.3.3.2 Communities at Risk Register

This looks at contributing factors for deaths and serious injury crashes and compares them with other road controlling authorities around the country. Contributing factors that are significantly over-represented when compared to other networks are identified.

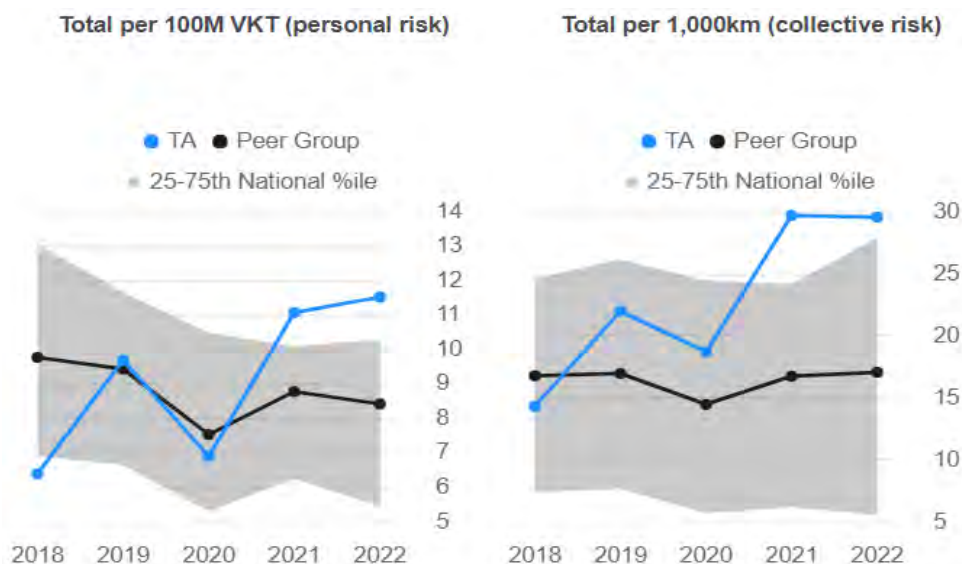
Whakatane's transport network has gone from having 2 categories out of 15 in the medium or high concern in 2017, to 8 out of 15 in 2022.

Category	2017	2019	2022
All deaths and serious casualties			
Young drivers (of light vehicles aged 16-24yrs)			
Alcohol and/or Drugs			
Speed (too fast for the conditions)			
Urban intersections			
Rural intersections			
All intersections			
Rural road loss of control and/or head-on (speed zones >70km/hr)			
Motorcyclist involved			
Cyclist involved			
Pedestrian involved			
Distraction (crash factor: attention diverted)			
Fatigue			
Older road users (those aged 75yrs and older)			
Restraints (seatbelt not worn)			

Legend	
Below Mean	
0 to 0.5 SD above Mean	
0.5 to 1.0 SD Above Mean (Medium Concern)	
> 1.0 SD above Mean (High Concern)	

5.3.3.3 Safe System (Infrastructure)

Safe System refers to the level of safety built-in to roading infrastructure. The infrastructure risk rating considers the features of each section of road and assigns a safety risk rating on a five-level scale from low to high. 188km (20%) of WDC roads have a high-risk rating. As shown below, the WDC road safety risk has continued to rise in recent years, well above those in our peer group.

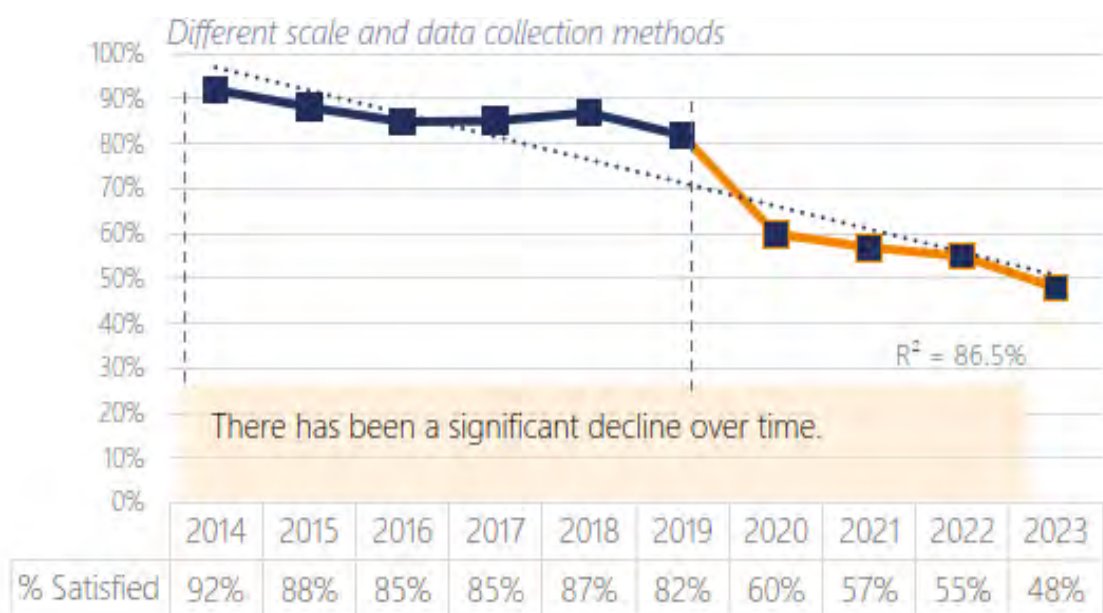


The travel speed gap assesses the difference between the safe and appropriate speed, and actual speed. This is still under development. Initial results indicate 96km (10%) have an actual speed more than 10km/h above the safe and appropriate speed.

5.4 What do our customers think?

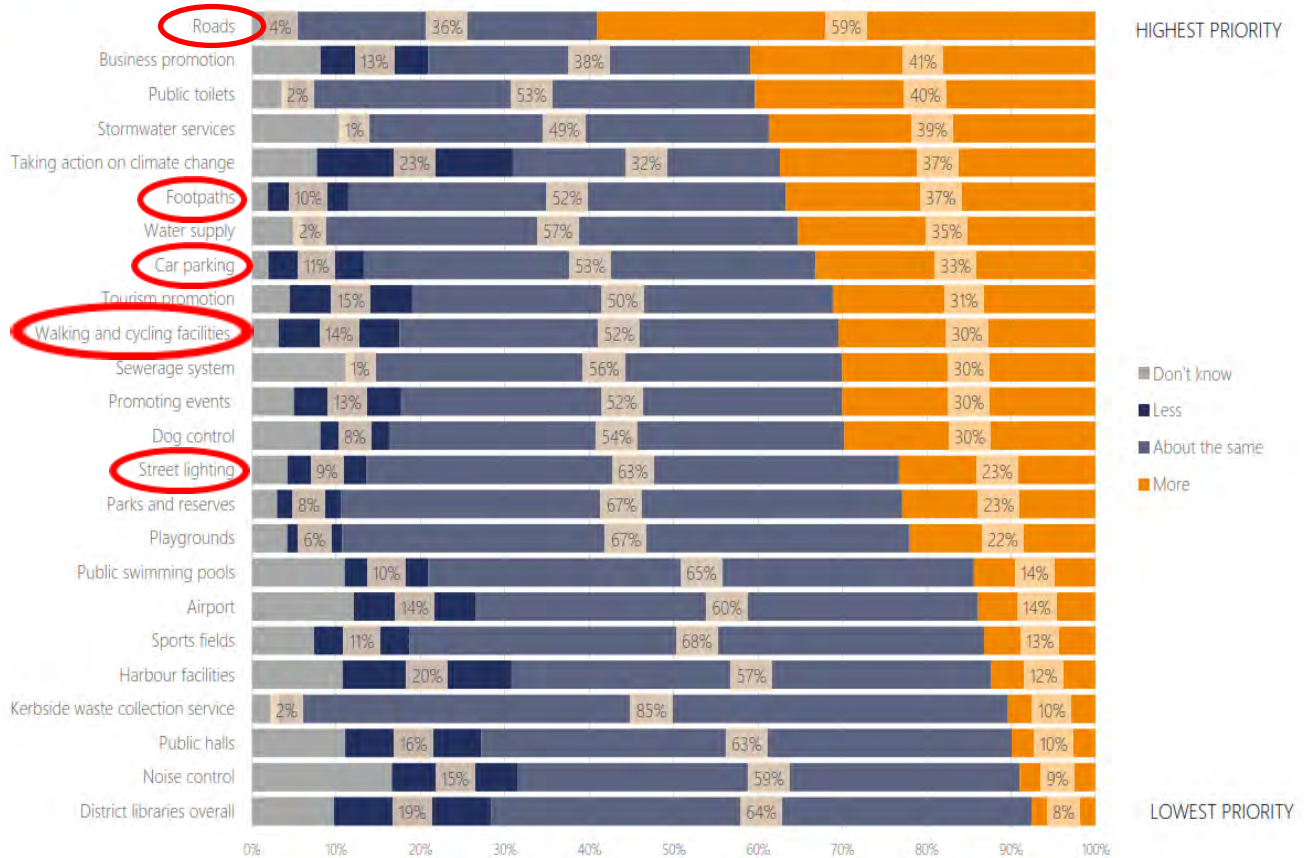
5.4.1 Resident Satisfaction Survey

Results from the resident surveys, shows that in 2023, roads were ranked as the third lowest performing activity out of all council activities: 38% Dog Control - 43% Noise Control - 48% Roads



Roads were also ranked as the highest priority for spending with 59% of residents requesting for additional spending. Footpaths, car parking, and walking and cycling facilities also received a strong mandate for additional spending with 37%, 33% and 30% of residents requesting for additional spending on these activities respectively.

Spending priorities



5.4.2 Customer Request for Services

Council has a request for service system that records when people contact the Council about a particular issue. The below graph shows by year and activity type the numbers of request for service (RFS) Council has received over the past 5 years.

Interestingly Streetlight RFS have dramatically reduced following the full transition to LEDs and the Central Management System.

Footpaths features high on the activities receiving RFS, as does Streetlights, sealed roads and complaints. Complaints have notably increased over the past 5 years, 2021 and 2022 receiving double the previous 2 years and 2023, substantially higher; 3times the numbers seen in 2019 and 2020.

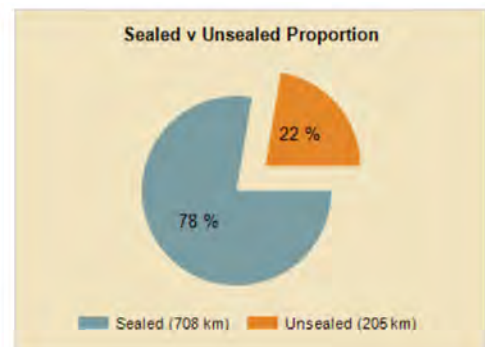
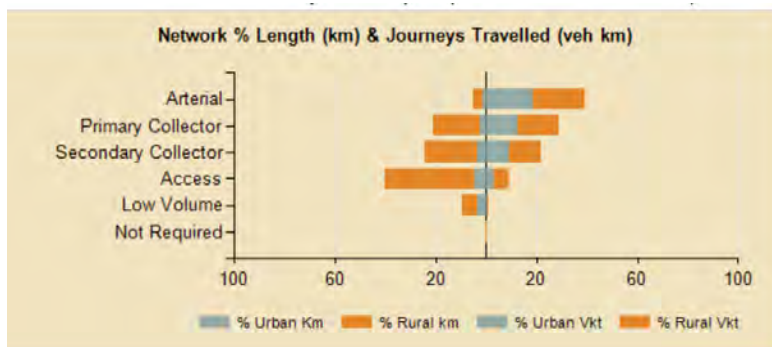
5.5 Demand

5.5.1 Total Network Demand

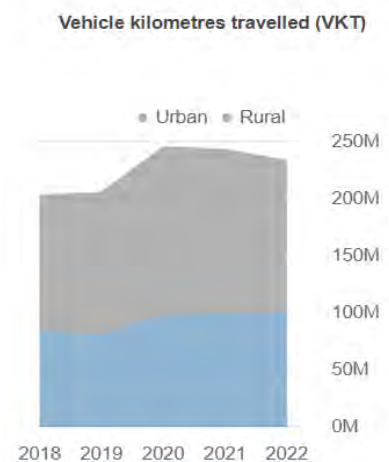
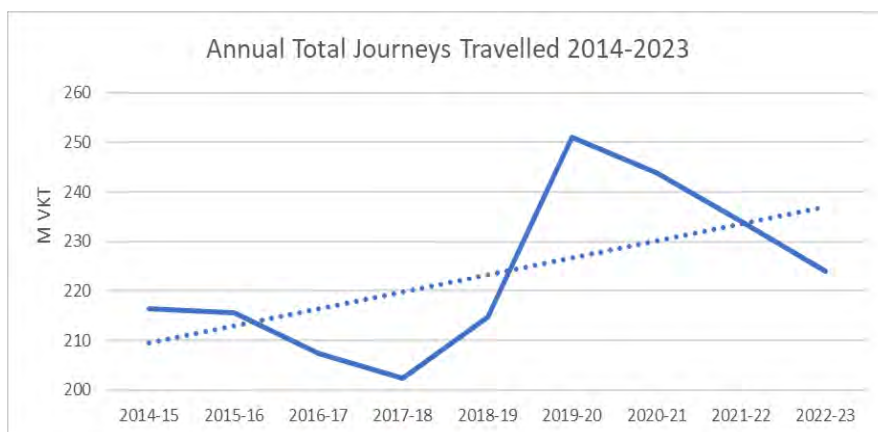
Overall network demand in terms of vehicle kilometres travelled (VKT) by classification at 30 June 2023:

ONRC	Total Length (Km)	Urban (Km)	Rural (Km)	Sealed (Km)	Unsealed (Km)	Lane (Km)	Urban Journeys (M VKT)	Rural Journeys (M VKT)	Annual Total Journeys Travelled (M VKT)	Percentage of length
Arterial	45	12	33	45		91	41.2	46.8	88.0	5%
Primary Collector	189	18	171	137	52	378	28.7	35.8	64.5	21%
Secondary Collector	223	32	191	223		445	20.8	28.3	49.1	24%
Access	366	42	324	261	104	696	7.4	13.1	20.6	40%
Low Volume	87	30	57	42	46	160	1.3	0.8	2.1	10%
Not Required	2.4		2.4		2.4	4.9				0%
TOTAL NETWORK	912	134	778	708	205	1,775	99.4	124.8	224.2	

Table 1: Network Statistics for network length (km) and journeys travelled (Million vehicle km) by ONRC Class



The network has experienced mixed traffic growth over the past decade; a dramatic increase in traffic was seen through 2018-19 and 2019-20 of 6% and 17% per annum respectively. Increasing annual VKT to an all time high of 251M VKT. However, since Covid-19 appeared in 2020-21 this has steadily decreased at an average of -4% per annum across the network. Evaluation at an urban rural split however shows most of this decline in the rural VKT with urban remaining steady. Refer graphs below:



5.5.2 Commuting Patterns

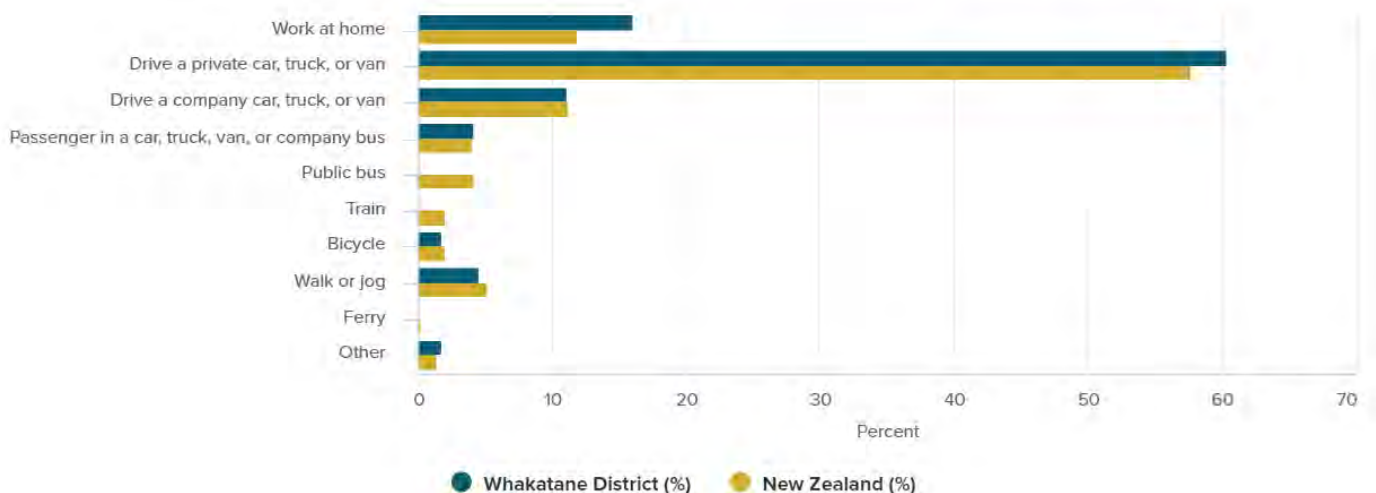
		People Who Work In				
People Who Live In		Whakatāne	Kawerau	Ōpōtiki	Other Areas	Total
	Whakatāne	10,131	900	228	789	12,048
	Kawerau	330	1,056	..C	102	1,488
	Ōpōtiki	189	15	2,430	96	2,730
	Other Areas	831	273	129	n/a	1,233
	Total	11,481	2,244	2,787	987	17,499

Source: Stats NZ 2013 census, RCG

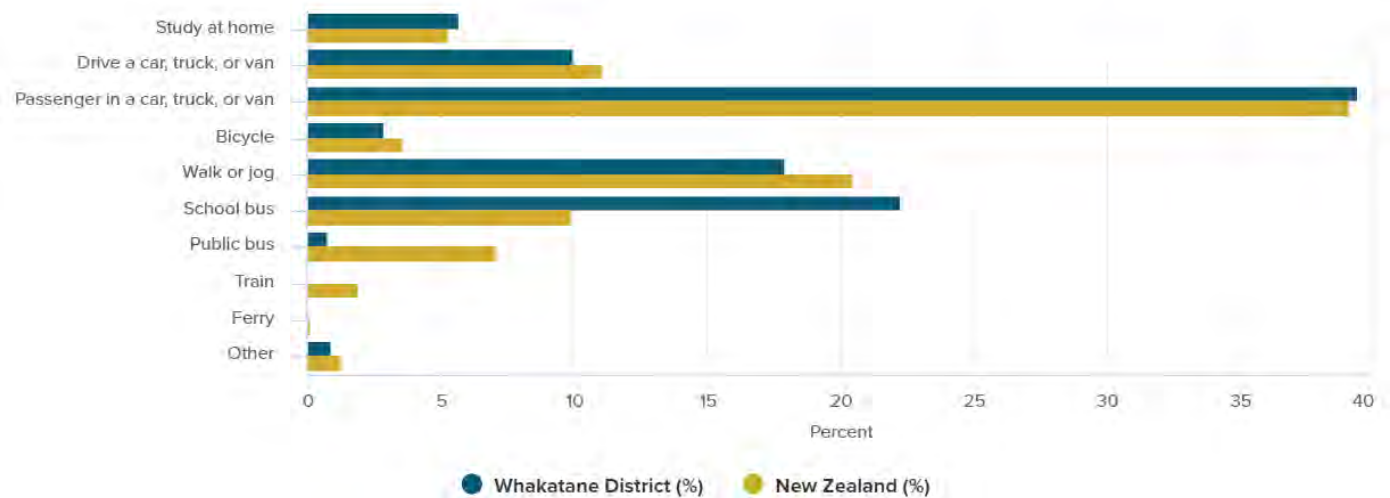
A significant number of people live in Whakatane and work in neighbouring districts. The data in the table above from the RCG WDC Demand Assessment Report is based on data from the 2013 census and needs to be updated for 2018 census data. It is expected that this will show this pattern become further entrenched. Anecdotal evidence indicates an increase in commuting to Tauranga. Updates to this information is being undertaken as part of the Eastern Bay of Plenty Spatial Plan work.

5.5.3 Mode Share

Main means of travel to work for people in Whakatane District and New Zealand, 2018 Census



Main means of travel to education for people in Whakatane District and New Zealand, 2018 Census



Within the Whakatane District, travel for work and education is proportionally greater by motor vehicle and proportionally lower by public transport and active modes when compared to New Zealand. There is however significant variation within individual census areas in the district.

5.6 Asset Valuation Information

Latest Asset Valuation Data as at 1 July 2023 – Fair Value Assessment:

Optimised Replacement Cost: \$839.01M

Optimised Depreciated Replacement Cost: \$629.04M

Annual Depreciation: \$9.43M

Latest Full Asset Valuation Data as at 1 July 2022:

Optimised Replacement Cost: \$813.64M

Optimised Depreciated Replacement Cost: \$607.71M

Annual Depreciation: \$9.33M

Asset Type	Optimised Replacement Cost (ORC)	Optimised Depreciated Replacement Cost (ODRC)	Annual Depreciation (AD)
Pavement Formation	\$140,240,925	\$140,240,925	\$0
Sealed Pavement Basecourse	\$165,756,023	\$82,215,163	\$2,259,486
Unsealed Pavement Basecourse	\$14,719,573	\$14,719,573	\$0
Pavement Subbase	\$260,121,363	\$260,121,363	\$0
Sealed Pavement Surface	\$37,994,382	\$17,682,488	\$2,536,133
Unsealed Wearing Course	\$4,548,328	\$909,666	\$909,666
Bridge Railings	\$3,301	\$660	\$330
Bridges and Large Culverts	\$58,508,287	\$28,421,838	\$649,847
Car Parks*	\$6,001,016	\$3,622,905	\$111,325
Drainage	\$24,600,679	\$11,144,990	\$508,985
Drainage Walls	\$23,450	\$9,955	\$454
Footpaths	\$25,943,907	\$10,455,528	\$540,802
Islands	\$7,124,360	\$3,614,126	\$139,503
Railings	\$7,231,575	\$2,720,785	\$320,680
Retaining Walls	\$12,798,793	\$9,021,795	\$168,222
Signs	\$2,055,588	\$792,665	\$128,086
Street Light	\$7,891,983	\$4,471,444	\$304,249
Surface Water Channel	\$38,080,455	\$17,541,771	\$751,478
Total	\$813,643,989	\$607,707,642	\$9,329,247

6 Future State

6.2 Overview

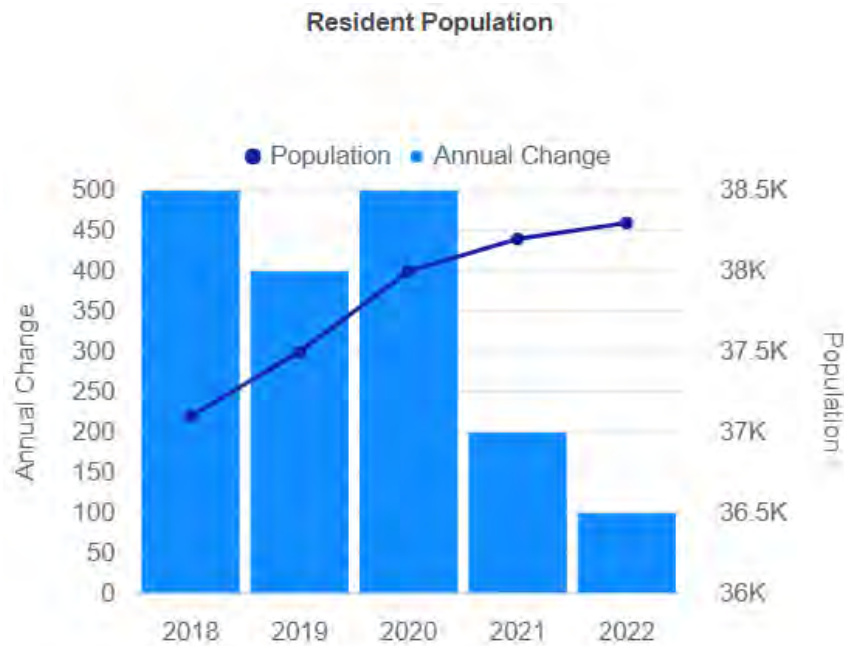
Some significant change in central government investment direction is expected in the short-term following the 2023 election. However, the following long-term future themes of population growth, economic development, and climate change have remained relatively unchanged through recent election cycles in the Whakatane area. These are explored below.

6.3 Key Themes

6.3.1 Population Growth

Whakatane District continues to grow on the back of favourable house prices, people relocating for lifestyle reasons or retirement to enjoy our favourable climate, and improved transport links to Tauranga via State Highway 2 and the Tauranga Eastern Link (TEL).

The assumption for the Long-Term Plan 2024-34 is that the population of the Whakatāne District will grow to approximately 41,800 people by 2043. Over the ten years of the AMP, an average increase of around 0.5% per annum. This growth will not be uniformly distributed across the district, with some areas facing decline while others remain stable or are continuing to grow.



A demand assessment for Whakatane was prepared by RCG Ltd in 2020. The following figures forecast the number of dwellings required and land requirements to accommodate the dwellings:

Figure 11.7: Recommended Housing Demand Assessment for the NPS-UD

Scenario	Short Term	Medium Term	Long Term
Stats NZ High	436	951	1,819
High Pop Derived, HH Size Falling	478	1,087	2,413
RCG High Plus, HH Size Falling	691	1,273	2,823
RCG High Minus, HH Size Falling	432	970	1,993
Recommended Figure	450	1,050	2,400
Recommended Figure, per year	150	150	120

Source: RCG

Figure 11.8: Recommended Residential Land Demand Assessment (in Hectares)

Scenario	Short Term	Medium Term	Long Term
Stats NZ High	31	68	130
High Pop Derived, HH Size Falling	34	78	172
RCG High Plus, HH Size Falling	49	91	202
RCG High Minus, HH Size Falling	31	69	142
Recommended Figure	32	75	171
Recommended Figure, per year	11	11	9

Source: RCG

The report also forecast land requirements for industrial and commercial growth as shown below.

Figure 11.11: Recommended Commercial Land Demand Assessment (in Hectares)

Scenario	Short Term	Medium Term	Long Term
Stats NZ High	2.1	4.4	3.0
RCG High Plus	3.4	5.4	4.0
RCG High Minus	1.9	3.7	2.0
Recommended Figure	2.2	4.3	3.0
Recommended Figure, per year	0.7	0.6	0.2

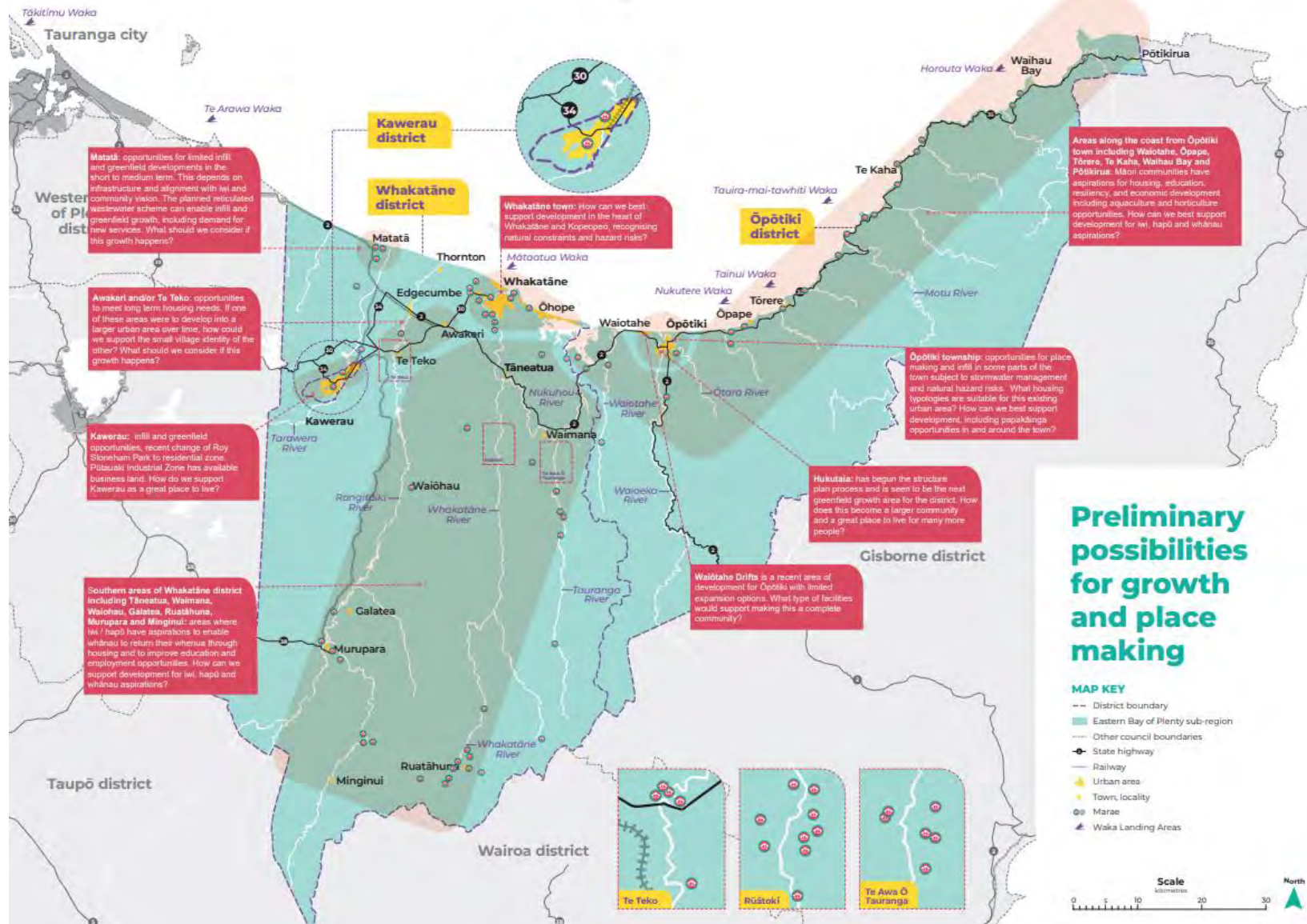
Source: RCG

Figure 11.10: Recommended Industrial Land Demand Assessment (in Hectares)

Scenario	Short Term	Medium Term	Long Term
Stats NZ High	4.9	10.0	6.9
RCG High Plus	7.7	12.3	9.1
RCG High Minus	4.3	8.4	4.5
Recommended Figure	5.0	9.9	6.9
Recommended Figure, per year	1.7	1.4	0.3

Source: RCG

[The Spatial Plan - Our Places - Ō tātau wāhi](#) (Eastern Bay of Plenty Spatial Plan) is underway to plan where best to accommodate this forecast growth over the next few decades around a range of constraints such as climate change risk and productive soil retention. Some preliminary possibilities for this growth are shown over the page.



Much of the focus is on accommodating growth in and around existing centres through a mix of infill and greenfield growth. In Whakatane this includes:

- Whakatane township
- Matatā
- Awakeri/Te Teko
- Kawerau
- Smaller communities like Tāneatua, Galatea and Murupara where there is potential for iwi-led community growth, including better access to social and economic opportunities.

6.3.2 Economic Development

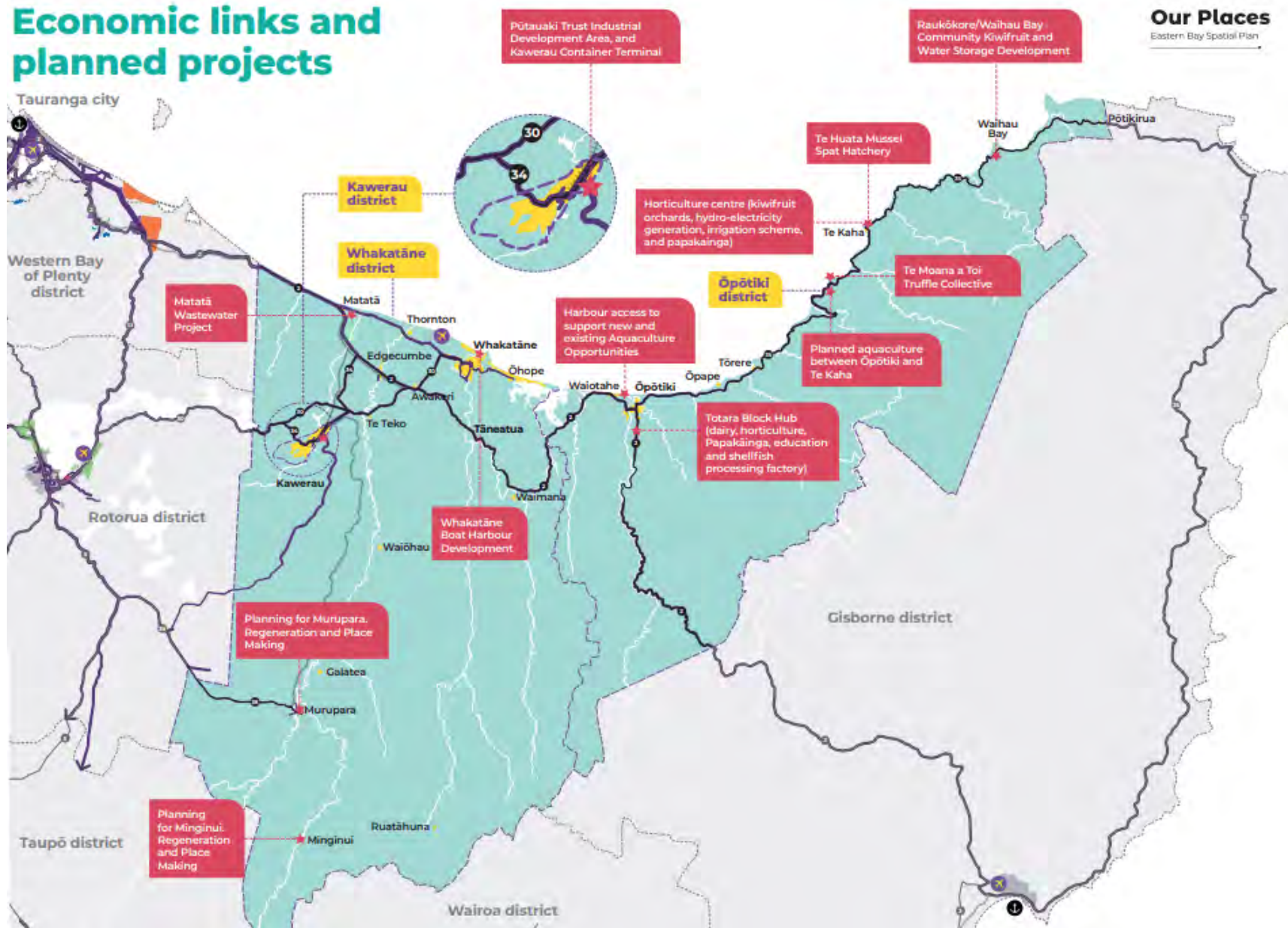
Again, much of the future economic development picture for the Whakatane area is shown below from the [EBOP-Spatial-Plan-Economic-Links-and-Planned-Projects](#).

This shows significant investment planned to expand employment in Kawerau, and support and regenerate smaller communities like Murupara and Minginui.

It also highlights how interdependent Whakatane will continue to be with economic activities in:

- the Western Bay of Plenty (particularly the Port of Tauranga for primary exports);
- Rotorua; and,
- Ōpōtiki District (particularly horticulture and aquaculture)

Economic links and planned projects



Provision to support and regenerate smaller communities is partly a reflection of long-standing levels of social deprivation in these areas. Poor transport access (e.g., low or no car ownership, combined with limited access to active or shared modes) to key life opportunities (e.g. healthcare) is often a significant contributor to deprivation. So, interventions that address community transport constraints will need to be part of the investment mix. Some infrastructure components of these are included in the programme development work of Part B and need to be complemented by non-infrastructure investments (e.g. on-demand community buses)

Primary industries in the area will continue to rely on good inter-regional freight links to get product to market. We expect to see demand on these links grow as rail freight grows out of Kawerua Inland Port, particularly for logs and other wood products. The area will continue to rely on State Highway 2 and its local road connections to support efficient truck access to the rest of New Zealand (particularly the Port of Tauranga) for logs, horticulture and aquaculture. It will therefore be important that this network remains open for business as much as possible as more severe climate events impact on the area.

Despite current economic conditions, post-COVID and the Whakaari-White Island disaster, the tourist sector is working hard to return to the levels of economic performance last seen in the 2010's.

Much of this will be stimulated by attractive walking and cycling infrastructure for tourists to explore the local environment and its landmarks, supported by programmes such as Active Whakatane. Inter-regional connections have also been and will remain important for access to the local tourist economy, particularly State Highways 2 (the Pacific Coast Highway), 5 and 30. So, again, keeping them open as more severe climate events impact on the area will be important,

6.3.3 Funding and Financing

Our District faces a number of resourcing challenges that places pressure on Council's capacity to deliver on its investment priorities for transport. The current phase of economic stagnation (post-COVID) is contributing to these pressures, but the Council's Financial Strategy continues to set out how Council will manage its revenue and expenditure prudently, including debt.

6.3.4 Climate Change

Climate change is expected to impact the Whakatane District in the following ways:



The Council has developed a Climate Change Strategy and Action Plans to meet the requirements of the Climate Change Response (Zero Carbon) Amendment Act. This is described in the Strategic Context section and available on Council's Climate Change Webpage.

The effects of climate change are already being seen and will continue for decades, even if aggressive mitigation strategies are undertaken to reduce greenhouse gas emissions. The most recent example - Cyclone Gabrielle - had a devastating impact on communities and businesses across Tairāwhiti, Napier and Hastings, only just missing the Eastern Bay of Plenty. It is only a matter of time that similarly devastating events will impact other areas. Sea level rise will continue to erode and undermine the coast as well as exacerbate frequent flood events.

A significant amount of work will be required to forecast and deal with the impacts of these events and we have already seen rising costs in our MOR programme as the scale of work required to keep the network functioning rises.

7 Gaps

The gaps between current and future states outlined above, will need to be addressed to ensure the network continues to provide acceptable outcomes. However, in some cases, evidence and data is itself a gap that needs to be addressed if the right investments are to be made in the right place. We have therefore addressed both in this chapter.

7.2 Data and Evidence

WDC has made significant progress in recent years updating its network management system through the [Transport Insights - Te Ringa Maimoa](#) portal for regular reporting, backed up by:

- the Thinkproject update to the Road Asset and Maintenance Management (RAMM) system; and
- Progress towards adoption of the Asset Data Management Standard (ADMS)

These new management tools have also enabled WDC to complete a first version of the One Network Framework asset classification for the area as shown earlier.

More work remains however, and WDC will continue to stay on top of reporting measures and metrics as they evolve and improve. Currently, WDC is able to report on the following ONF Transport Outcomes through [Transport Insights - Te Ringa Maimoa](#):

- Safe Travel:
 - Deaths & Serious Injuries
 - Personal & Collective Risk
 - Wet Roads/Night/Intersections
 - Infrastructure Risk
- Inclusive Access (not meaning access from social deprivation perspective)
 - Smooth Travel Exposure
 - Peak Roughness

Evidence reporting for indicators of economic prosperity are yet to be completed and made available.

- Economic Prosperity

- o Unplanned Road Closures
- o Heavy vehicle accessibility
- o Maintenance Costs
- o Sealed Road Pavement Rehabilitation & Resurfacing

To plan for safe travel outcomes, we also have access to the Waka Kotahi (New Zealand Transport Agency) Crash Analysis System (CAS) and other tools. Roughness data is useful to plan MOR investments. Resilience risk data is also available for extreme, major and moderate levels of risk on the SH network (see [Appendix G of the National Resilience Programme Business Case \(nzta.govt.nz\)](#))

In terms of the key problems and benefits for this AMP, however, significant gaps remain, in particular:

- The distribution of resilience risks across the local road network (to complement the SH risk picture; and,
- The distribution of travel demand and efficiency measures e.g., travel time reliability, link capacity, mode share

More of this evidence is needed particularly, for projects aimed at managing demand and improving network resilience, to be able to prioritise projects robustly, and forecast the programme or area - wide outcomes that the MOR and capital improvement programmes developed in Part B are designed to achieve.

7.3 Network Performance Gaps Against Key Investment Benefits

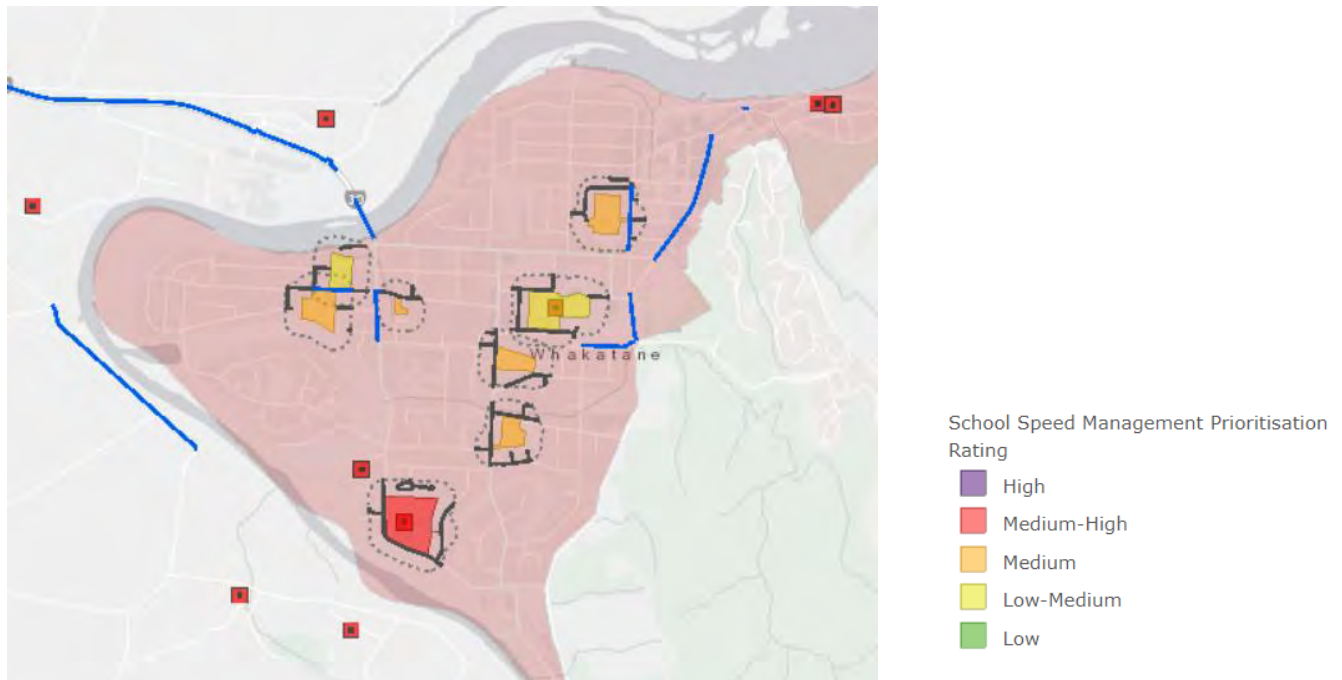
7.3.1 Road Safety

Road safety network deficiencies have been identified in partnership with the Waka Kotahi Speed and Infrastructure Programme (SIP). These are shown below.

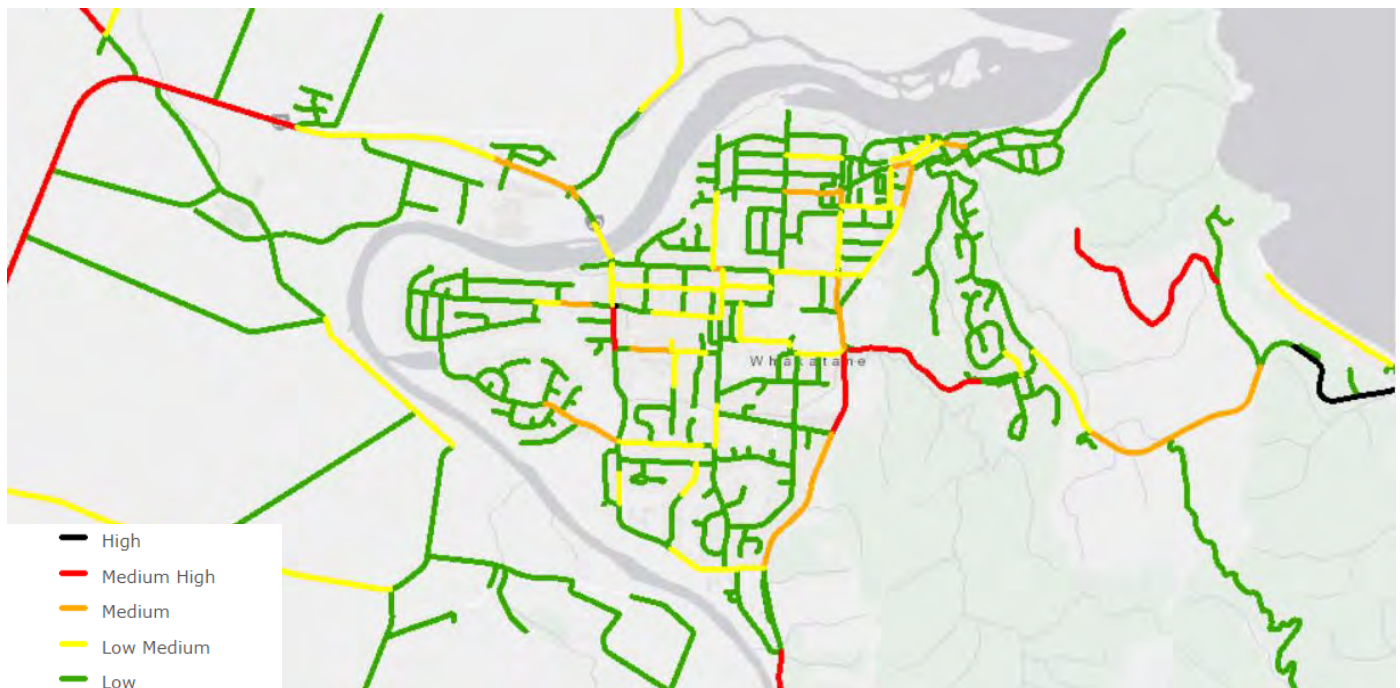
High Benefit Speed Management Corridors:



School Speed Management Prioritisation Ratings - Whakatane



Collective Risk Network Distribution



Many of these have recently been mitigated or improvements are underway. These include an area-wide Speed Management programme. MOR and capital improvement programmes in Part B include many of these activities.

Looking forward, the challenge and ambition remains no deaths and serious injuries on our roads. Unfortunately, recent trends reported elsewhere are going in the opposite direction. This needs to be addressed not just by improving infrastructure, but also by improving behaviour.

7.3.2 Demand from Planned Growth

The location and scale of additional travel demand from planned growth arising out of the Spatial Plan will become clearer as the Spatial Plan nears completion. Further work is necessary to ensure this demand can be either managed within the capacity of the available network or identify where improvements are needed to accommodate it.

The Spatial Plan itself will, to some degree, manage demand by prioritising community and business growth areas where the need for lengthy, car-based, trip-making to meet everyday needs is minimised. The Active Whakatāne programme will also support more active mode trip making from new communities and business. Further work is needed to identify how best to respond to any further demands in order to programme appropriate transport responses across the intervention hierarchy. This is addressed through new planning activities outlined in Part B for the 2024-27 period, intended to generate an expanded future pipeline of transport system improvements.

7.3.3 Resilience to Unplanned Disruptions

As described above, more work is needed to collate the available evidence for the distribution of resilience risks (e.g. the historical trends and forecasts for unplanned road closures) as well as their impacts on communities and businesses in order for appropriate responses to be programmed. This is also addressed in Part B to enable a future pipeline of resilience improvements to be generated.

In the meantime, regular network operational reporting is maintained to highlight where specific risks are becoming critical and a number of projects addressing site-specific deficiencies have been included in the MOR and capital improvement programmes in Part B.

8 Risk Management

This section covers the risk management implemented by Whakatāne District and how these apply to the current and future transport activities.

The purpose of this risk plan is to identify the risks associated with the transport activity and assets. This requires approaching the risks from many perspectives including financial, operational, organisational and public health and safety.

These risks are pertinent to both a higher, corporate level, and to a more detailed asset –specific level, but do not substitute for more specific risk analysis at those levels.

8.2 Corporate Policy

The Council's risk management policy provides the context and framework for how risks to the Council are to be managed.

The objective is to identify realistic possible risks faced by Council, analyse and evaluate these risks. The outcome of this evaluation is to be used to:

- Emphasise the importance of continuing to provide Council's core services and manage inherent risks
- Continually identify improvements required to Council services to avoid risk events, or minimise their impact or to realise identified opportunities

This policy also defines the responsibilities of Council managers and staff to form and maintain the framework, and use it to make sound decisions in alignment with business objectives.

8.3 Risk Management Process

The following sections explain the key elements of the risk management process. The risk assessment process has been generally based upon the Australian New Zealand Risk Management Standard 4360:2004 to establish a Risk Matrix as shown in Table 4.4.3. This matrix provides a tool to quantify a risk by identifying the likelihood of the risk occurring and the outcomes, or consequences should the risk occur. The first step in the process is to identify all possible risks.

8.3.1 Identify All Possible Risks

All possible risks affecting the asset activity need to be identified. Risks can include financial, environmental, social, operational and health and safety considerations. Once identified, risks are entered into the risk register. The register is used to record and summarise each risk and to outline current mitigation measures and potential future management options.

8.3.2 Determine Likelihood and Consequence for Gross Risk Factor

The following tables demonstrate the scales used to determine the likelihood and consequence levels, which are input into the risk calculation to consider the effect of a risk event.

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

The likelihood scales identify how likely, or often, a particular event is expected to occur, these are shown in the table below;

8.3.2.1 Likelihood of Occurrence

Likelihood	Descriptor	Probability
Frequent	Continuous or will happen frequently.	5
Often	5 – 12 times per year	4
Likely	1 – 5 times per year	3
Possible	Once every 2 to 5 years	2
Rare	Less than once every five years	1

8.3.2.2 Consequence Rating

Consequence	Descriptor	Score
Catastrophic	Loss of life, major financial loss	5
Major	Major financial impact, widespread damage, serious harm	4
Moderate	Moderate financial impact, potential litigation, loss of image	3
Minor	Minor financial impact, involves management time	2
Insignificant	Negligible effects	1

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

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

The final outcome is a risk rating. The risk rating enables definition between those risks that are significant and those that are of a lesser nature. Having established the comparative risk level applicable to individual risks, it is possible to rank those risks. Four risk categories have been used: Extreme, High, Moderate, and Low.

Likelihood	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20
Frequent (5)	5	10	15	20	25

Once the impact has been ranked according to the relative risk level it poses, it is then possible to target the treatment of the risk exposure, by beginning with the highest risks and identifying the potential mitigation measures.

8.3.2.3 Comparative Levels of Risk

15 - 25	Extreme Risk	Requires immediate remedial action
8 - 12	High Risk	Requires remedial planning and action via the AMP
4 - 6	Moderate Risk	Address via new procedures and/or modification of existing practices and training
1 - 3	Low Risk	No formal requirement for further action, unless escalation of risk is possible

Initially, the gross risk needs to be calculated, so likelihood and consequences need to be considered as if there were no measures in place to prevent or mitigate the risk occurrence. Essentially gross risk is an exercise to determine “What is the worst that could happen?” Once the gross risk is determined it is possible to investigate the current systems and processes to identify the net risk and then formulate an action plan to further reduce the likelihood or consequences of identified risks occurring.

8.3.3 Identify Current Systems & Processes, and their Effectiveness

Identifying current systems and processes are identified, and as far as resources allow, their effectiveness measured. It is often practical to identify these processes and systems initially, and rank the effectiveness conservatively until the audits and actual practice prove otherwise. Audits can be identified as part of the improvement process.

Effectiveness of existing systems and processes is expressed in the following categories:

Excellent	Fulfil requirements thoroughly, very robust and positive measurable effects
Good	Fulfil requirements, robust and measurable, room for improvement
Fair	Barely fulfils requirements, effects hard to measure (or haven't been audited or measured), improvement required

Excellent	Fulfil requirements thoroughly, very robust and positive measurable effects
Poor	Not fulfilling requirements, little measurement or effect on overall risk
Very Poor	Totally ineffective in avoiding or mitigating associated risk events

8.3.4 Determine Net Risk

The net risk is the actual risk that exists considering the effective measures implemented. The measures in place reduce either, or both, the consequence and the likelihood of a risk occurrence. The revised factors are input into the same risk matrix to obtain the Net Risk Factor.

8.3.5 Prioritise Net Risks and Formulate Action Plan for Risk Management

A priority order of issues to be addressed is obtained by sorting Net Risk Factors by risk level. The most suitable actions are determined considering available options and resources. The costs and benefits of these actions need to be analysed. The best available techniques are required to analyse the options e.g. optimised decision-making (ODM).

Application of ODM applies a 'value chain' to the proposed actions rather than just working from the highest risk down regardless of cost, for example:

- A high risk may have to remain due to the inhibitive costs associated with avoidance or mitigation
- A medium risk event could be easily and cost-effectively avoided within resources available

From an Asset Management perspective, the options for mitigating risks considered to reduce the cause, probability or impact of failure, are typically:

Do nothing	Accept the Risk
Management Strategies	Implement enhanced strategies for demand management, contingency planning, quality processes, staff training, data analysis and reporting, reduce the target service standard, etc
Operational Strategies	Actions to reduce peak demand or stresses on the asset, operator training, documentation of operational procedures, etc
Maintenance Strategies	Modify the maintenance regime to make the asset more reliable or to extend its life
Asset Renewal Strategies	Rehabilitation or replace assets to maintain service levels
Development Strategies	Investment to create a new asset or augment an existing asset
Asset Disposal/ Rationalisation	Divestment of assets surplus to needs because a service is determined to be a non-core activity or assets can be reconfigured to better meet needs

8.3.6 Monitor, Measure, Report, Review Plan and Actions

The management structure needs to be in place to ensure that actions are monitored, reported on and reviewed regularly. It is important to identify and constantly review the following:

Responsibility	Nominated person responsible for ensuring the risks are managed and improvements carried out in accordance with the programme
Best Appropriate Practice	The practices that should ideally be carried out to manage risks to an acceptable level
Audit Trail	Date of entries and revisions, target date for actions to be taken and actual task completion dates

In addition, management options should be ranked via benefit / cost analysis using Net Present Value (NPV) calculations. The inputs considered in the NPV calculation are:

- Capital investment costs.
- Changes in operating and maintenance costs.
- Reduction in business risk exposure (BRE).
- Increase in effective asset life / value.
- Increase in level of service.

All capital development projects should be ranked corporately for inclusion in the LTP/ Annual Plan consultation process using benefit / cost analysis plus the following additional criteria;

- Contribution to Council's Strategic Plan objectives.
- Contribution to Whakatāne's business objectives.
- Level of project commitment (contractual and legal issues).

The resulting action plan for risk treatment needs to be practical and achievable such that the necessary resources and time frames are realistically met. The actions also need to be able to be monitored and measured.

8.3.7 Review Risks

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

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8.4 Risk Register

The risk registers provided in the following tables for the current and future transport activities of Whakatāne District Council have been developed in consultation with key staff.

Asset Management Risks – Network and Asset Management.												
Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA01	Lack of resources – the ability to attract key staff and or retain skilled staff.	Organisational Financial	4	4	16	District promotion (lifestyle) Dedicated HR staff Recruitment consultancy used (senior staff) Benchmarked salary levels.	Good	4	1	4	HR Manager W&S Director Roading Asset Manager	Look at review of recruitment policy (current lack of policies) Family/Lifestyle friendly policies Look at improving Career development. Draft policy/programme needs completing Review salary levels and incentives Implement the Performance Development system ASAP
TRA02	Knowledge management – inability to retain knowledge or have sufficient systems in place to manage data/information, especially regarding asset performance and condition. Loss of institutional knowledge. IT failure.	Organisational Financial Operational Etc	4	5	20	Asset changes/updates –Information currently provided by contractors Condition surveys undertaken IT practices (backup, virus, security etc.) RAMM database in place RAMM managed by external consultant	Fair	3	3	16	HR Manager Roading Asset Manager	Responsibilities defined between WDC staff and RAMM consultant Suitable training for WDC staff so they have the ability to view snapshot summary report Protocols for update and ongoing auditing Development of Staff Retention Policy Develop clear processes for updating vested assets and new capital works into RAMM in conjunction with RAMM consultant
TRA03	Project Management – projects inadequately scoped, budgeted, managed and documented, and reviewed, inadequate consultation with owners, resource consent issues etc resulting in time & cost, loss of image and other impacts.	Operational Financial Reputation/ Image Safety	4	5	20	Project Management Training for key staff Annual Plan/LTP Process (is initial consultation) Use of trained external resource Have access to external specialists. Media Communication Plan Appropriate resources (e.g. software/information systems)	Good	3	3	9	Roading Asset Manager HR Manager Manager Service Delivery	Ensure adequate (quality) training for key staff Initial project information better communicated Project Closure/Reviews improved Define accountabilities and mapping organisation wide impacts and priorities Implement MCA process for CAPEX projects above \$20,000
TRA04	Maintenance Contract Management – unsatisfactory resulting in unnecessary or excessive costs and/or insufficient output or quality. Poor Contractor performance.	Operational Financial Reputation/ Image	4	5	20	Maintenance Contracts (Fulton Hogan and Total Power Services) Contract procurement process Contracts managed by Professional Services - WSP Contract conditions (KPI's, penalties) Financial reporting	Good	3	3	9	Roading Asset Manager W&S Director Manager Service Delivery	Develop contract procedures manual Improve Auditing and Reporting (including performance) Contract review and improvement
TRA05	Capital Works Contract Management – unsatisfactory resulting in unnecessary or excessive costs and/or insufficient output or quality. Poor Contractor performance.	Operational Financial Reputation/ Image	4	5	20	Standard Capital Works Contracts Approved design and specification Contract procurement process Contracts managed by Professional Services - WSP Contract conditions (KPI's, penalties) Financial reporting	Good	3	3	9	W&S Director Roading Asset Manager Manager Service Delivery	Develop contract procedures manual (including closure review) Improve Auditing and Reporting (including performance) Contract review and improvement Strengthen reporting (including financial, performance, programme status) Implement MCA process for CAPEX projects above \$20,000
TRA06	Asset Management – not up to date, or insufficient quality of process and output.	Operational Legislative Financial	4	4	16	Asset Management processes and practices Asset Information System Professional Services – WSP, GHD etc. RAMM	Fair	4	4	16	GM Infrastructure Roading Asset Manager	Asset Management Plan - Improvement Plan Continuing Staff Development Ongoing external review Ongoing budget provision Ongoing input from network manager

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Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Persons(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA07	Inadequate condition/performance assessments – lack of reliable data for renewals/replacements and valuations.	Operational Financial	3	4	12	Internal and external feedback Condition assessments Some annual audits and monthly inspections RAMM, SLIMS	Fair	3	3	9	Roading Asset Manager	Periodic assessments (as deemed appropriate) Staff training Staff continuity (internal and external) Develop a process to ensure that knowledge is transferred, stored and accessible. Define champions and successors. External backup.
TRA08	Compliance with Legislation and legal requirements – inability or failure to comply with consents, statute and national standards. Increase in requirements.	Legislative Financial	4	5	20	Compliance with resource consents, RMA, funding requirements Contract Conditions Consents database Some internal audits Staff training and development Local government networking Use of external advice/resources Standard templates and some written Council procedures Some auditing of works contracts (e.g. traffic management, safety, OSH)	Good	4	2	8	W&S Director Roading Asset Manager Director Environment & Policy	Monitoring of expiring consents and identifying new consents to be improved (define responsibilities) Key staff to keep updated on current legislation Regular communications to staff Development of Council procedures Communicating effects of legislative change to Council/ LTP process
TRA09	Extreme Natural Hazards – (landslips/ earthquake/ tsunami/ volcanic/ major storm event) causing damage to assets and or hindering development.	Environmental Public Health Organisational Financial	5	4	20	Emergency Response Plan – Network inspection and hazard identification RFS feedback Civil Defence Maintenance contracts Structure audits and renewals Engineering Code of Practice Building code/standards Variation 6 coastal hazards (District Plan)	Good	4	2	8	Roading Asset Manager Manager Service Delivery	Liaise with National and Regional policy makers to identify hazards and ensure emergency response mechanisms are in place in the event of a hazard occurring Increase effectiveness of current practices as a priority
TRA10	Technology – inability to track technology, engineering developments/techniques, local and national trends and to utilise where relevant.	Organisational	3	4	12	Local government networking Some staff development and training Use of external advice/resources	Good	3	2	6	W&S Director Roading Asset Manager	IT Policy/ IT Roadmap Further staff development and training
TRA11	Possible Political Interference , or inability of elected members to fulfil roles and responsibilities or disregard for community views.	Organisational Reputation/ Image	3	5	15	Councillors roles well defined and implemented Legislative requirements/ LTP process Reports to Council and Community boards Councillor induction/ handbook Councillors conferences	Good	2	3	6	W&S Director Chief Executive Roading Asset Manager	Manage process through Chief Executive
TRA12	External Economic Influences (Cost Escalations) – terrorism, rising costs (e.g. fuel), pandemic, worldwide incidents.	Economic	5	4	20	Local government networking Responding to national directives Monitoring world events and reacting	Poor	5	4	20	W&S Director Roading Asset Manager	Track national and global trends. Monitor key economic developments and liaise with central government. Improve current practices

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Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Persons(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA13	Decrease in Funding – Both internal and including failure to acquire external subsidies.	Organisational Financial	3	2	6	Asset management process Monitor other funding opportunities Prioritising projects/ LTP process Skill of staff/resources submitting external applications and reporting internally to Council	Good	3	2	6	W&S Director Roothing Asset Manager	Maintain and manage clear lines of communication with key external agencies Forecast likely scenarios regarding effects of budget changes Using sustainable practices Increasing efficiency Rationalise spending
TRA14	Lack of Planning and timing of funding applications: - Risk of people not applying for funding on time or not identifying potential areas where funding is required.	Organisational Financial	4	4	16	Asset management process Monitor other funding opportunities Prioritising projects/ LTP process Approved NZTA annual programme Skill of staff and external resources submitting external applications and reporting internally to Council Knowledge and awareness	Good	4	3	12	Roothing Asset Manager	Maintain and manage clear lines of communication with key external agencies Forecast likely scenarios regarding effects of budget changes Using sustainable practices Increasing efficiency Rationalise spending Staff training
TRA15	Diminishing Funding Allocation – subsidy, rate, tax, and development contribution changes including change of roading status.	Organisational Financial	5	4	20	NZTA criteria & agreement with Council Development contributions Asset management process Monitor other funding opportunities Prioritising projects/ LTP process Approved NZTA annual programme Skill of staff and external resources in applying for funding Knowledge and awareness Lobbying authorities Active involvement with funding authorities	Good	4	3	12	Roothing Asset Manager	Maintain and manage clear lines of communication with key external agencies Forecast likely scenarios regarding effects of budget changes Using sustainable practices Increasing efficiency Rationalise spending Staff training
TRA16	Council Owned Roads and Bridges on Private land.	Operational Legal Financial	4	3	12	Reactive and solutions on a case by case basis	Poor	4	3	12	Roothing Asset Manager	<i>Possible Future Option:</i> Review and list all bridges not on Council land and report Review during next AMP Review
TRA17	Inadequate Road Design - Sub standard geometry and low skid value surfaces resulting in inefficient or unsafe operating conditions (loss of control accidents).	Public Health Reputation/ Image	5	5	25	Conformance with all Council design standards (Engineering Code of Practice, National Standards) for both Council work and vested works NZTA results analysed, crash reduction studies Professional Services - Opus Monitoring and reviewing annual capital works programme Contract supervision and performance monitoring?	Good	4	4	16	Roothing Asset Manager	Develop and Implement Council Safety Management System Identify and remedy blackspots and develop improvement strategy for identification and monitoring of skid deficient sites. Field identification during reseal programme.
TRA18	Inadequate Road Maintenance - Low skid value surfaces resulting in inefficient or unsafe operating conditions (loss of control accidents, potholing, stone loss etc).	Public Health Reputation/ Image	5	5	25	1. Maintenance Contract and specification monitored and reported 2. Conformance with all Council design standards (Engineering Code of Practice, National Standards) for both Council work and vested works 3. NZTA results analysed, crash reduction studies 4. Professional Services - Opus 5. Monitoring and reviewing annual capital works programme 6. Contract supervision and performance monitoring	Good	4	4	16	Roothing Asset Manager	Review Maintenance Contract and specifications

Activity Management Plan 2024-34 TRANSPORTATION

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA19	Network Capacity - traffic volumes increase roading requirements.	Operational	4	5	20	Developing Transportation Strategy and Model Asset Management Monitor traffic volumes and trends	Poor	4	4	16	Roading Asset Manager	Adoption of Transportation Strategy, Residential Growth Strategy, and Industrial Growth Strategy
TRA20	Dust Nuisance settling on adjacent property resulting in resident health issues, environmental effects and/or poor image.	Public Health Environmental Reputation/ Image	4	5	20	Monitoring of Maintenance and Works Contracts Seal extension policy and programme Development contributions RFS feedback	Poor	4	4	16	Roading Asset Manager	Accelerate seal extension programme
TRA21	Hazardous Materials - Leakage from transporter damaged in an accident or with a slow leak, bitumen spill, stock effluent from truck, droving or herd movements.	Environmental Public Safety	4	2	8	Bylaws and enforcement (stock movement) RFS feedback Maintenance Contract Encouragement of off road races and underpasses	Poor	4	2	8	Roading Asset Manager	Review regulations for transport of dangerous goods and assess whether it is consistent with WDC Continued promotion of stock races and underpasses based on traffic volume and funding assistance from NZTA
TRA22	Hazardous Environmental conditions - landslide, flooding, trees on roads, washouts causing traffic delay, injury, potential litigation.	Public Health Financial	4	4	16	RFS feedback Routine inspections Maintenance Contract Reactive signage	Good	3	3	9	Roading Asset Manager	Continue to identify high risk zones and outline mitigation measures, remedial works, buttressing, dewatering, signage, sealing etc Identify potential trees that may be affected by old age, disease or prone to high winds
TRA23	Low lying road inundated by high tides, floods or heavy rainfall events.	Environmental Public Health Operational	4	3	12	Identification of low lying assets Monitor during flooding Liaison with BOPRC Signage	Good	3	3	9	Roading Asset Manager	Identify at risk areas, carry out assessments (apply for funding) and remediate where necessary
TRA24	Loss of amenity and visibility caused by rank roadside vegetation, spread of noxious weeds and debris (within the road reserve).	Environmental Public Health Reputation/ Image	4	4	16	RFS feedback Maintenance Contract (weed spraying programme, tree management and mowing Removal of debris and detritus	Good	3	2	6	Roading Asset Manager	Review maintenance contracts. Monitor complaints and feedback Liaise with Regional Council to organise noxious weed control Work with community groups (farmers) Review funding
TRA25	Availability and cost of Road Materials and quality aggregate – economic viability.	Operational Financial	4	3	12	Good quarrying options available Testing	Good	3	2	6	Roading Asset Manager	Monitor availability and cost

Asset Management Risks – Footpaths & Accessways

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		

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TRA26	Pedestrian tripping or slipping caused by uneven surface, damage, slippery surface.	Public Health Operational Reputation / Image	4	5	20	Professional Services Contract Maintenance contract Annual audit of all existing footpaths Footpath replacement/ renewal programme New capital works programme RFS monitoring complaints Reactionary work Engineering Code of Practice Development/ subdivision/ building consent control Urban tree strategy Footpath policy	Fair	4	3	12	Roading Asset Manager	Implementing six-monthly inspection programme for the entire network with corresponding budget increase. Annual root pruning programme
TRA27	Widespread footpath deterioration caused by lack of funding.	Public Health Operational	4	5	20	LTP consultation process Budgeting for community requests	Fair	3	4	12	Roading Asset Manager	Full audit and costing for footpath renewal Review of funding allocation based on community requests
TRA28	Widespread footpath deterioration caused by poor construction/materials.	Public Health Operational	4	4	16	Professional Services Maintenance contract Annual audit of all existing footpaths RFS monitoring complaints Engineering Code of Practice Development/ subdivision/ building consent control Footpath policy	Good	3	1	3	Roading Asset Manager	Auditing of contractor and number of complaints regarding poor workmanship
TRA29	Widespread footpath deterioration caused by lack of utilities reinstatements.	Public Health Operational	4	5	20	Road opening notices (audited) Reinstatements occur if identified via RFS or officers Informal communication between OBU and Professional Services provider	Fair	4	3	12	Roading Asset Manager	Feedback required from OBU to Professional Services provider (to be covered by Origin system?) Education of OBU staff Improve auditing of remedial works associated with road opening notices
TRA30	Inadequate Accessibility for physically and visually challenged persons/ wheelchairs/ strollers/ walkers/ prams/ mobility scooters.	Public Health Reputation/ Image	3	5	15	Engineering Code of Practice Development/ subdivision/ building consent control Eastern Bay Access Group (Council, staff, community reps, disabilities resource centre reps) RFS/ complaints Disability fund	Good	3	1	3	Roading Asset Manager	Continue Councils commitment to Eastern Bay Access Group and Disability Fund

Asset Management Risks – Street Lighting

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA31	Inadequate Carriageway/Amenity/Under Veranda lighting resulting in crime or accidents (e.g. tripping and falling).	Organisational Public Health Reputation/ Image	4	4	16	Engineering Code of Practice Development/ subdivision/ building consent control SLIM system CPTED Principles (crime prevention through environmental design) Professional Services provider Maintenance contractor Upgrade/ renewals programme Eastern Bay Energy Trust programme (annual grant for under veranda lighting) RFS/ complaints Assessments in conjunction with urban/street upgrades	Good	4	3	12	Roading Asset Manager	Continued programme of under veranda lighting in conjunction with Eastern Bay Energy Trust Audit of bulb types Match bulb types to appropriate areas Identify high-risk areas Review Levels of Service. Review RFS resulting from poor or inadequate lighting.

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TRA32	Inadequate Intersection street lighting resulting in accidents.	Organisational Public Health	4	4	16	Engineering Code of Practice Requirements of NZTA Upgrade/ renewals programme RFS/ complaints SLIM system Professional Services provider Maintenance contractor (Total Power Services)	Good	4	1	4	Roading Asset Manager	Identify high-risk intersections Review Levels of Service Review RFS resulting from poor or inadequate lighting Review position of streetlights (distance from carriageway edge)
TRA33	Damage to streetlights due to vandalism and or vehicle damage, resulting in crime, replacement costs and safety considerations.	Operational Financial Public Health	4	4	16	RFS/ complaints Engineering Code of Practice CPTED Principles (crime prevention through environmental design) Professional Services provider Maintenance contractor (Total Power Services) Accident reporting and response times CCTV strategy	Good	4	3	12	Roading Asset Manager	Review position of streetlights (distance from carriageway edge) Further implement CCTV strategy through installation of more cameras where required

Asset Management Risks – Signs, Markings and Controls

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA34	Inadequate lane separation or definition, which may lead to vehicle accidents.	Operational Public Health	4	4	16	Road marking programme as per contract Engineering Code of Practice Development/ subdivision control Minor safety works Professional Services Contract RFS/ complaints NZTA crash statistics	Good	4	2	8	Roading Asset Manager	Ensure that safety measures/ temporary traffic measures are implemented as part of all roadwork's Review of standards, and audit of controls and control works. Ongoing Crash reduction studies (in conjunction with police, NZTA & network manager).
TRA35	Inadequate Signage causing Accident/Damage – due to vandalism, non-compliant to standards, missing, deterioration. Including Sight Rails (chevrons, edge marker posts, bridge end markers, culvert markers) damaged and or missing.	Operational Public Health	4	4	16	Road signs policy Sign programme as per contract Engineering Code of Practice Development/ subdivision control Professional Services Contract RFS/ complaints Specified response times in maintenance contracts RAMM updates NZTA crash statistics Minor safety works	Good	4	2	8	Roading Asset Manager	Ensure that safety measures/ temporary traffic measures are implemented as part of all roadwork's Continue safety audits
TRA36	Guard Rails/Medians damaged and or missing.	Operational Public Health	4	4	16	Guard rail and median programme as per contract Engineering Code of Practice Development/ subdivision control Professional Services Contract RFS/ complaints Specified response times in maintenance contracts RAMM updates NZTA crash statistics Minor safety works	Good	4	2	8	Roading Asset Manager	Ensure that safety measures/ temporary traffic measures are implemented as part of all roadwork's Continue safety audits

Asset Management Risks – Drainage Facilities

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Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA37	Flooding affecting roads due to under capacity drainage, poorly located, or blocked drainage assets.	Operational Public Health Accessibility Financial	5	4	20	Drainage maintenance programme as per contract Professional Services Contract Engineering Code of Practice Development/ subdivision control RFS/ complaints Specified response times in maintenance contracts RAMM updates Annual drainage improvements programme	Good	5	2	10	Roading Asset Manager	Identify at-risk assets Review Levels of Service in problem areas Review Levels of Service in accordance with seasonal changes (leaf dropping) Review RFS/ complaints and plan improvement works.
TRA38	Overtopped table drain causing surface flooding.	Operational Public Health Accessibility	4	4	16	Drainage maintenance programme as per contract Professional Services Contract Engineering Code of Practice Development/ subdivision control RFS/ complaints Specified response times in maintenance contracts RAMM updates Annual drainage improvements programme	Fair	4	2	8	Roading Asset Manager	Increase auditing of contractor performance Identify at-risk drains and carry out options assessments Review Levels of Service in problem areas
TRA39	Surface water contamination during normal operation of the network caused by lack of environmental controls.	Environmental Operational Reputation/ Image	3	5	15	Drainage maintenance programme as per contract Professional Services Contract Engineering Code of Practice Development/ subdivision control RFS/ complaints Specified response times in maintenance contracts Annual drainage improvements programme Silt control for physical works contracts Resource consent requirements for discharges	Poor	3	5	15	Roading Asset Manager	Identify known problem areas and implement upgrade programme within existing projects Monitoring of discharges via consent conditions and liaison with Environment Bay of Plenty Future possible central government legislation

Asset Management Risks – Bridges and Culverts

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
TRA41	Bridge Collapse/ damage/ deterioration/ erosion/ blockage – Accessibility, safety (excluding catastrophic events).	Structural Safety	5	4	20	Annual Bridge Audit (170 bridges) leading to maintenance list. Bridge replacement schedule. Loading restrictions Bridge overweight permits All new bridges designed to NZ Standards and consented Maintenance Contract Fulton Hogan Professional Services Opus	Good	4	2	8	Roading Asset Manager	Review bridge replacement schedule on an annual basis.

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TRA42	Private Bridges and Stock Underpasses on Road Reserve – Privately owned, but responsibility of Council (still working through – Brookfields legal advice).	Structural Safety Legal Financial	5	4	20	Initiative to assess the quantum and report to Council in light of Brookfields legal advice Revise as AMP is reviewed Develop policy WORK IN PROGRESS: to be updated at the next AMP review	-	-	-		Roading Asset Manager	
TRA43	Damage to services causing loss of water, electricity, phone etc.	Operational Financial Legal	4	3	12	Annual Bridge Audit (170 bridges) leading to maintenance list. Bridge replacement schedule. Loading restrictions Bridge overweight permits All new bridges designed to NZ Standards and consented Maintenance Contract Fulton Hogan Professional Services Opus	Good	3	2	6	Roading Asset Manager	Assessment and audit of all services attached to bridges Maintain register of services attached to bridges
TRA44	Vehicle or pedestrians fall from bridge.	Public Health Reputation/ Image	5	4	20	Conformance with design standards Sight rails, guard rails, handrail, signage, and delineation Annual bridge inspection	Good	4	2	8	Roading Asset Manager	Inspection of signage and safety barriers/ handrails etc, should be carried out in conjunction with the annual bridge inspection
TRA45	Structure damage from overloading.	Structural Organisational Administration	5	4	20	Weight restrictions process, including signage Issuing and administration of permits Informal communication with logging companies to determine routes and loadings Bylaws	Fair	4	2	8	Roading Asset Manager	Enforcement of weight restrictions according to Bylaws Formalise communication with logging companies regarding routes and loadings Advertising and awareness Review current capacity of bridges, overweight permit process and communication of requirements
TRA46	Economic/Social Cost due to Bridge restrictions – access to emergency services, freight [further discussion required]. WORK IN PROGRESS: to be updated at the next AMP review	Economic	-	-	-	Postings and advertising Alternative routes Review high risk bridges	-	-	-	-	Roading Asset Manager	

Asset Management Risks – Minor Structures, Retaining Walls and Sea Walls

TRA40	Wall failure resulting from natural hazard (e.g. landslide, undermining), vehicle impact.	Environmental Operational Public Health	5	2	10	Compliance with building code/standards Approved by design engineer Roading maintenance programme as per contract Professional Services Contract Development/ subdivision control RFS/ complaints Specified response times in maintenance contracts	Very Poor	5	2	10	Roading Asset Manager	Update engineering code of practice Review RAMM data and update to include all retaining walls/ sea walls/ gabion walls etc, and make budgetary provision for this Implement annual wall inspection programme, and make budgetary provision for this Ensure compliance with Building code/standards and Councils Engineering Standards and issue certification at satisfactory completion. Monitor hazards frequency and implement inspection programme or testing of specific sites for stability.
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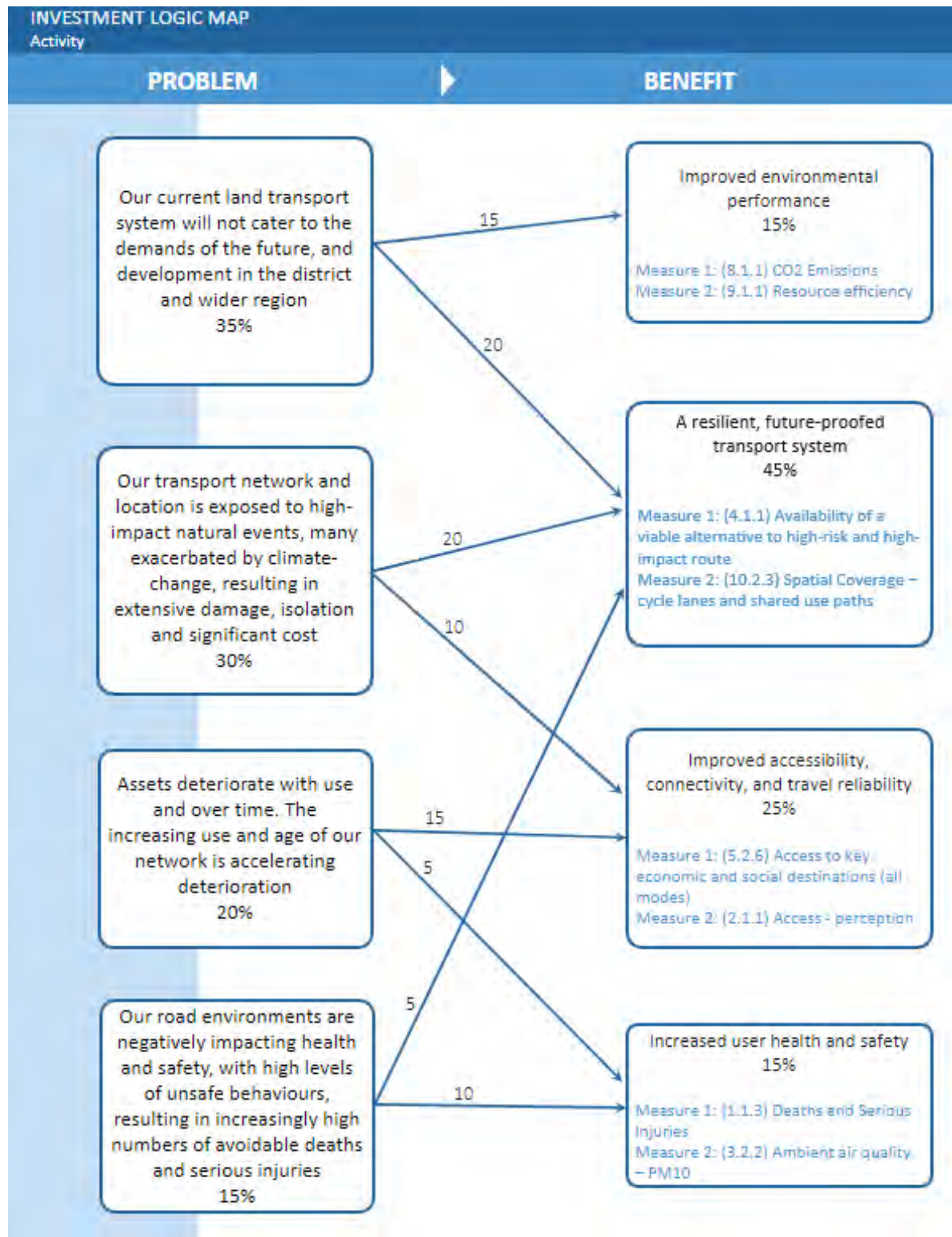
Asset Management Risks – Car Parking

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)			Net Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness		Consequence	Likelihood	Factor		
TRA47	Inadequate number of car parking facilities (including disabled carparks).	Operational Financial Reputation/ Image	3	3	9	Parking restrictions and enforcement in CBD Annual audit in CBD Conformance with District Plan requirements for new developments and the receipt of development contributions Fines into parking fund Bylaw Parking controls (Pay & Display)	Good		2	2	4	Roading Asset Manager	Review car park inventory, number of spaces and Levels of Service annually. Review seasonal monitoring as required. Review and further investigate opportunities to extend the Pay & Display areas
TRA48	Poorly marked or sign posted carparks.	Operational Reputation/ Image	3	4	12	Maintenance Contract (car parks are well sign posted)	Good		2	2	4	Roading Asset Manager	Monitor Contractor performance Inspect signage annually in conjunction with annual carpark utilisation audit

STRATEGIC ASSESSMENT

9 Problems, Benefits and Measures

This section identifies the priority problems, benefits and measures that Council officers and elected members developed together, in the form of an Investment Logic Map (ILM) shown below. For each problem statement, it's weighting and the benefit of addressing the problem are also stated. These problems and benefits are the focus of the Activity Management Plan.



In summary, the key problem statements, and benefits sought, relate to:

- Catering for future travel demand,
- Improving the networks' resilience to unforeseen disruptions,
- Improving road safety,
- Effectively managing asset deterioration

Evidence to support these key issues has been covered under the strategic context section.

These priority issues are locally focused, as well as being aligned with the problem statements of our previous 2021-31 AMP, Council's LTP Vision and Strategic Priorities, the RLTP Vision and Objectives and the (Draft) GPS Strategic priorities.

10 ILM Link to WDC Strategic Priorities

Investment Logic Map		Whakatane District Council Strategic Focus				
Problem	Benefit	Enhancing the safety, wellbeing & vibrancy of communities	Strengthening relationships with iwi, hapū & whānau	Building climate change & natural hazard resilience	Facilitating economic regeneration & responding to development pressures	Shaping a green District
Our current land transport system will not cater to the demands of the future, and development in the district and wider region	Improved environmental performance		✓			✓
	A resilient, future-proofed transport system			✓	✓	
Our transport network and location is exposed to high-impact natural events, many exacerbated by climate-change, resulting in extensive damage, isolation and significant cost	A resilient, future-proofed transport system			✓		✓
	Improved accessibility, connectivity, and travel reliability	✓		✓		
Assets deteriorate with use and over time. The increasing use and age of our network is accelerating deterioration	Improved accessibility, connectivity, and travel reliability			✓	✓	
	Increased user health and safety	✓	✓			
Our road environments are negatively impacting health and safety, with high levels of unsafe behaviours, resulting in increasingly high numbers of avoidable deaths and serious injuries	Increased user health and safety	✓	✓			
	A resilient, future-proofed transport system	✓				✓

11 Strategic response

11.2 Road Safety

A step change in safety management is required to address the deteriorating safety performance. Updating Councils Safety Management Strategy to align it with the Road to Zero will be a priority undertaking. Key elements will include:

- The Road Safety Education Programme.
- Development and implementation of a speed management plan.
- Utilising newly collected high speed geometry and SCRIM data to identify and prioritise out of context curves and deficient skid sites.
- Ongoing programme of low cost low risk interventions at high personnel risk sites.
- A corridor approach to the rural arterial Thornton Rd to address high collective risk (Wainui Rd is currently undergoing improvements on this basis).
- Treatment of other sites prioritised by the Pipeline tool.

11.3 Growth

To manage the current and forecast growth scenario Council is actively pursuing strategies to minimise and push out the need for large infrastructure investment. The approach includes:

- Further development of the Eastern Bay of Plenty Spatial Plan, and the transport response to growth
- Continued implementation of the Active Whakatāne strategy to deliver connected and safe active mode networks to achieve mode shift through providing alternatives.
- Progressing the Small Towns initiative – increasing the resilience and range of service offerings at small towns to minimise the need to travel to Whakatāne.
- Identifying lower cost efficiency and capacity improvements to the urban arterial ring route, while identifying and protecting the ability to provide future capacity improvements and/or access across the river.

11.4 Climate Change

Whakatāne is a signatory to the NZ Local Government Leader's Climate Change Declaration, which sets out 7 principles to guide future decision making. A Climate Change Action Plan has been prepared for transport.

Outcomes:

- Reduce transport related carbon emissions
- Improve the resilience of the transport infrastructure

Goals:

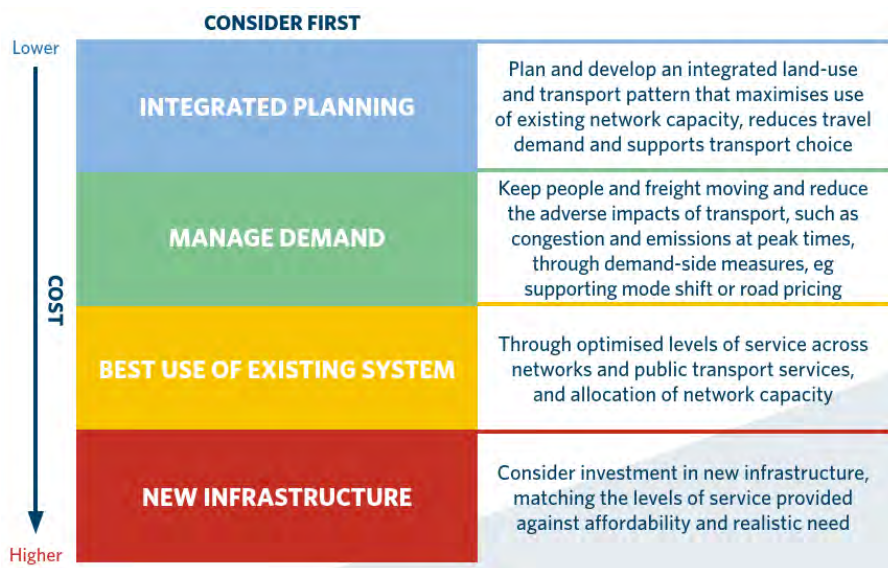
- Promote travel efficiency
- Enable and encourage active transport
- Increase low carbon transport options
- Manage climate change risks to existing transport infrastructure (Dynamic Adaptive Pathways)
- Build future transport infrastructure for a changing climate.

11.5 Asset Deterioration

Continued and sustainable investment into Maintenance, Operations and Renewals needs to continue to mitigate the effects of an aging network subject to increasing population and traffic growth.

11.6 Hierarchy of Interventions

Whakatāne Council utilises a structured hierarchy of intervention measures, to respond to the strategic direction. This ensures new infrastructure, typically the higher cost response, is considered only after all other interventions have been considered and utilised. See full description below:



11.7 Strategic Response: Actions Mapped to Benefits

The following tables demonstrate the links between the intervention hierarchy, our proposed actions/ projects/ programmes and how these link to delivering the benefits associated with our problem statements.

Key:
Primary Benefit
Supporting Benefit
No Benefit

Response	Action/Project/Programme	Benefits link to Problem				Notes
		Asset Decline	Road Safety	Growth	Climate Change	
Integrated Planning	Eastern Bay of Plenty Spatial Plan					Key to enabling, shaping and responding to expected population growth projected in the district/region. Also required by NPS-UD. Will identify location of future urban, industrial and commercial development
	Climate Change Action Plan					Council's commitment to taking action to mitigate and adapt to climate change.
	Implementation of the One Network Framework					Desired form and function for each section of the network.
	Road to Zero					Road to Zero outlines a strategy to guide improvements in road safety in NZ over the next 10 years
Manage Demand	Active Whakatāne Strategy and Implementation Plan					Form, shape and priorities for developing active mode networks
	Education					Safety, mode options, environmental impacts and choices
	Travel Plans					Work places and schools
	Transport System Programme, and modelling.					The TSP and modelling, form the transport response to the integrated planning and growth forecast from the Spatial Plan. The TSP identifies the long term programme of works required to enable the objectives set out in the spatial plan and efficiently and effectively respond to the expected growth. The TSP covers demand management, optimisation and new infrastructure responses.
Best Use of Existing Network	Further development of the Network Operating Framework					Identifying modal priorities to allow for network optimisation
	Speed Management Plan					Will support RTZ
	Maintenance Intervention Strategy					Optimising the maintenance and renewal programme, and alignment with ONF
New Infrastructure Years 1-3	Implementation of the Resilience themed improvement projects programme					Individual projects listed under PBC - Improvement Programme.
	Implementation of the Safety themed improvement projects programme					Individual projects listed under PBC - Improvement Programme - relates to SMP implementation.
	Continued implementation of Active Whakatāne Implementation Plan					Continued roll out to form a continuous network that users can rely on. Individual projects listed under PBC - Improvement Programme.
	Keepa Road form and function improvements					Enhancing the form and function of the road to meet the demands of growth, provide a safe environment and encourage mode shift.

Response	Action/Project/Programme	Benefits link to Problem				Notes
		Asset Decline	Road Safety	Growth	Climate Change	
New Infrastructure Years 4-10	Expected to come from the TSP - Arterial Ring Network efficiency and capacity					Further new infrastructure improvements to optimise the primary urban arterial/collector routes, delaying the need for second access over Whakatāne River.
	Continued roll out of Active Whakatāne					Continued roll out to form a continuous network that users can rely on
	Whakatāne Cycle Trails Project					Development of cycle trails to provide safe, off road commuter options for the nearby townships/communities. Also provides an economic driver through recreational cycle trails that support the mode shift philosophy.
	Implementation of the Safety themed improvement projects programme					Further targeted road safety improvements
	Southern Transport Links Project					Capital investment to reduce high whole of life cost, provide appropriate LoS for currently unsealed primary collector routes, and improve inter-regional resilience for Whakatae District.
	Climate/Resilience Projects					New Infrastructure in response to climate change; upsizing of culverts, resilience improvements on to low-lying key connector routes, CC consideration with bridge renewals etc
	New Infrastructure to Support Greenfields Developments					New Infrastructure as required
New Infrastructure Years 11-30	Completion of Arterial Ring Network					Further new infrastructure improvements to optimise the primary urban arterial/collector routes, delaying the need for second access over Whakatāne River.
	Further Active Whakatāne Programme					Continued improvements and extending the network to encourage mode shift
	Further Whakatāne Cycle Trails Programme					Continued development of cycle trails to provide safe, off road commuter options for the nearby townships/communities. Also provides an economic driver through recreational cycle trails that support the mode shift philosophy.
	Further Climate/Resilience Projects					Further new Infrastructure in response to climate change; upsizing of culverts, resilience improvements on to low-lying key connector routes, CC consideration with bridge renewals etc
	Further Safety themed improvement projects programme					Further targeted road safety improvements
	New Access over Whakatāne River (TBC)					TBC following completion of EBOP Spatial Plan, TSP, Modelling and Indicative/Detailed Business Case. Timing will consider review of growth trends, mode shift impacts and future transportation/access change opportunities.

12 Investment Decision Making Framework and Prioritisation Method

12.2 Overview

The Investment Prioritisation Method (IPM) for 2024–27 NLTP uses three factors:

GPS Alignment indicates the alignment of a proposed activity or combination of activities with a GPS strategic priority, and identifies the potential contribution to achieving the GPS strategic priority.

Scheduling indicates the criticality or interdependency of the proposed activity or combination of activities with other activities in a programme or package or as part of a network.

Efficiency indicates expected return on investment and considers the whole life costs and benefits through cost-benefit analysis.

The prioritisation starting point for continuous programmes is a rating of High for GPS alignment, High for Scheduling and Medium for efficiency. This provides a rating of HHM, and a priority order of 4.

12.3 Whakatāne DC Programme Appraisal

The following comments summarise the support for our programme against the IPM. Further detail to support this summary is contained throughout this Activity Management Plan:

12.3.1 GPS Alignment (High)

- **Maintaining and operating the system:** Our proposed investment prioritises sustained investment in core MOR.
- **Increasing Resilience:** Our proposed improvement programme prioritises resilience as the key investment area for the 2024-27 Low Cost Low Risk Improvement Programme. Our drainage investment also supports climate change adaptation that has severe community and economic impacts.
- **Reducing Emissions:** Our programme aims to reduce the expected vkt growth currently occurring through developments and population growth by supporting mode shift. Our proposed investment in Walking and Cycling will form links as part of the district and township networks, investment is specific to supporting accessibility and supports mode shift.
- **Safety:** Our safety projects have Very High alignment, addressing DSIs in areas of high concern, and our broader safety outcomes also target medium-high and high collective risk corridors and situations.
- **Sustainable Urban and Regional Development:** Our proposed programme of works related to the Eastern Bay Spatial Plan is highly aligned with this objective.
- **Integrated Freight System:** Our programme supports improvements to regionally significant production and distribution points.

12.3.2 Scheduling (High)

Interdependency: Delivery of the programme is required to enable the delivery of other parts of programme or package that it belongs to. Non-delivery will hold up the programme. Non-delivery of the proposed activity will impact negatively on benefits realisation of the programme.

Criticality: Significance of this programme as part of the network, with any loss of service having severe impact to users.

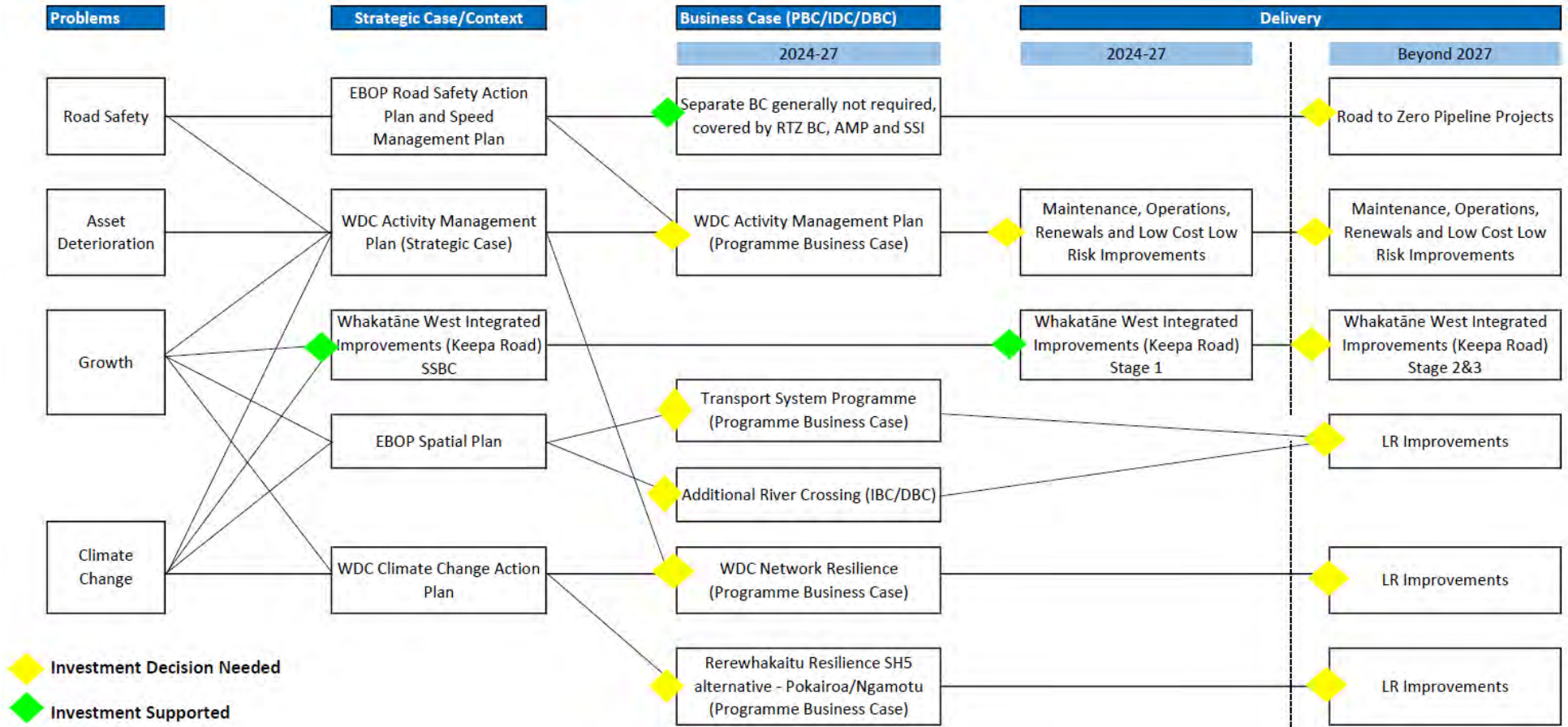
12.3.3 Efficiency

The programme as a whole is assessed as having a medium rating with a BCR between 3.0 and 5.9.

The cost effectiveness on a per lane.km basis shows average band efficiency on an overall cost of network basis. Taking into consideration that the Whakatane network is more heavily trafficked than many of its peers, the cost effectiveness on a per vkt basis is well above-average band efficiency. Network cost trends are also improving at a greater rate than peer groups.

Network condition also shows above-average band efficiency for roughness (proportion of network over 150 NAASRA), pavement integrity index and surface condition index.

13 Strategic Overview – Linking Problems to Delivery



PROGRAMME BUSINESS CASE: Maintenance, Operations and Renewals

14 Summaries

14.1 Introduction

The benefits framework is being applied to this AMP. Many of the measures are yet to be defined and this is a work in progress for Waka Kotahi and for us. Some require investigation to establish current performance, benchmark, and establish targets. As a first step, relevant measures have been identified and desired trends indicated. The impact of programme options has been tested against these measures using a 5 step subjective scoring system.

These measures will be confirmed, quantified and benchmarked through the 2024-27 LTP period. Development of the 2027-30 LTP will then establish targets for these measures.

Council workshops identified the balanced approach as preferred at a programme level. Through the PBC the balanced option is tested against proactive and reactive options at an activity level.

14.2 Administration and Escalation

The administration multiplier has been developed from Council's actual administration costs from the current year. The Escalation multiplier is derived from the BERL Cost Adjuster 2023 final update. The financial programme values shown throughout the PBC are the base programme costs with administration and escalation excluded.

Work Category		10 Year Programme									
		2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Admin multiplier	\$1,033,761	1.058	1.061	1.062	1.064	1.064	1.064	1.064	1.064	1.064	1.064
Escalation - Cumulative (Source: BERL Cost adjusters 2023 final update, Table 7, Transport)		1.000	1.021	1.043	1.066	1.089	1.111	1.133	1.154	1.176	1.199
Admin x Escalation		1.058	1.083	1.107	1.134	1.159	1.182	1.206	1.228	1.251	1.276

Activity Management Plan

2024-34

TRANSPORTATION

14.3 Financial Programme Summary

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC111 Sealed pavement maintenance Routine	T30251	LOC111	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000
LOC111 Sealed pavement maintenance Pre-seal	T30252	LOC111	\$840,000	\$840,000	\$840,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000
LOC112 Unsealed pavement maintenance	T30253	LOC112	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000
LOC113 Routine drainage maintenance Routine	T30254	LOC113	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000
LOC113 Routine drainage maintenance Street cleaning	T30256	LOC113	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
LOC114 Structures maintenance Bridge	T30257	LOC114	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
LOC114 Structures maintenance Retaining	T30220	LOC114	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000
LOC114 Structures maintenance Other	T30258	LOC114	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
LOC121 Environmental maintenance Routine	T30259	LOC121	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000
LOC121 Environmental maintenance Tree removal	T30261	LOC121	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
LOC121 Environmental maintenance Vegetation	T30260	LOC121	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000
LOC121 Environmental maintenance Urban chemical control	T30273	LOC121	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000
LOC122 Network service maintenance Marking	T30221	LOC122	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000
LOC122 Network service maintenance Street lights	T30262	LOC122	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000
LOC122 Network service maintenance Signs	T30263	LOC122	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000
LOC123 Network operations	T30222	LOC123	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
LOC124 Cycle path maintenance	T30268	LOC124	\$20,000	\$20,000	\$20,000	\$25,000	\$25,000	\$25,000	\$30,000	\$30,000	\$30,000	\$35,000
LOC125 Footpath maintenance Routine	T30223	LOC125	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
LOC125 Footpath maintenance Cleaning	T30224	LOC125	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000
LOC131 Rail level crossing warning devices maintenance	T30264	LOC131	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000
LOC140 Minor events	T30269	LOC140	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000
LOC151 Network and asset management External	T30265	LOC151	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000
LOC151 Network and asset management PSBU	T30266	LOC151	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000
Subtotal			\$6,760,000	\$6,760,000	\$6,760,000	\$6,597,000	\$6,597,000	\$6,597,000	\$6,602,000	\$6,602,000	\$6,602,000	\$6,607,000
Local Rd Renewal												
LOC211 Unsealed road metalling	T31437	LOC211	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000
LOC212 Sealed road resurfacing Chip seal	T31438	LOC212	\$4,200,000	\$4,200,000	\$4,200,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000
LOC212 Sealed road resurfacing Thin AC	T31439	LOC212	\$830,000	\$830,000	\$830,000	\$2,320,000	\$2,320,000	\$2,320,000	\$960,000	\$960,000	\$960,000	\$960,000
LOC213 Drainage renewals Culverts	T31440	LOC213	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000
LOC213 Drainage renewals Kerb and channel	T31441	LOC213	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
LOC214 Sealed road pavement rehabilitation	T31442	LOC214	\$1,850,000	\$935,000	\$935,000	\$1,481,000	\$1,481,000	\$1,481,000	\$1,459,000	\$1,459,000	\$1,459,000	\$1,459,000
LOC215 Structures component replacements Bridges	T31443	LOC215	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000
LOC215 Structures component replacements Retaining	T31444	LOC215	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000
LOC215 Structures component replacements Other	T31XXX	LOC215	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000
LOC216 Bridge and structures renewals Retaining	T31XXX	LOC216	\$327,000	\$750,000	\$750,000							
LOC222 Traffic services renewals Street lights	T31445	LOC222	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
LOC222 Traffic services renewals Signs	T31446	LOC222	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000
LOC222 Traffic services renewals Power underground	T31447	LOC222	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
LOC225 Footpath renewal	T31464	LOC225	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000
Subtotal			\$9,789,000	\$9,297,000	\$9,297,000	\$9,743,000	\$9,743,000	\$9,743,000	\$8,361,000	\$8,361,000	\$8,361,000	\$8,361,000
LOCAL ROADS PROGRAMME TOTAL			\$16,549,000	\$16,057,000	\$16,057,000	\$16,340,000	\$16,340,000	\$16,340,000	\$14,963,000	\$14,963,000	\$14,963,000	\$14,968,000

Activity Management Plan 2024-34 TRANSPORTATION

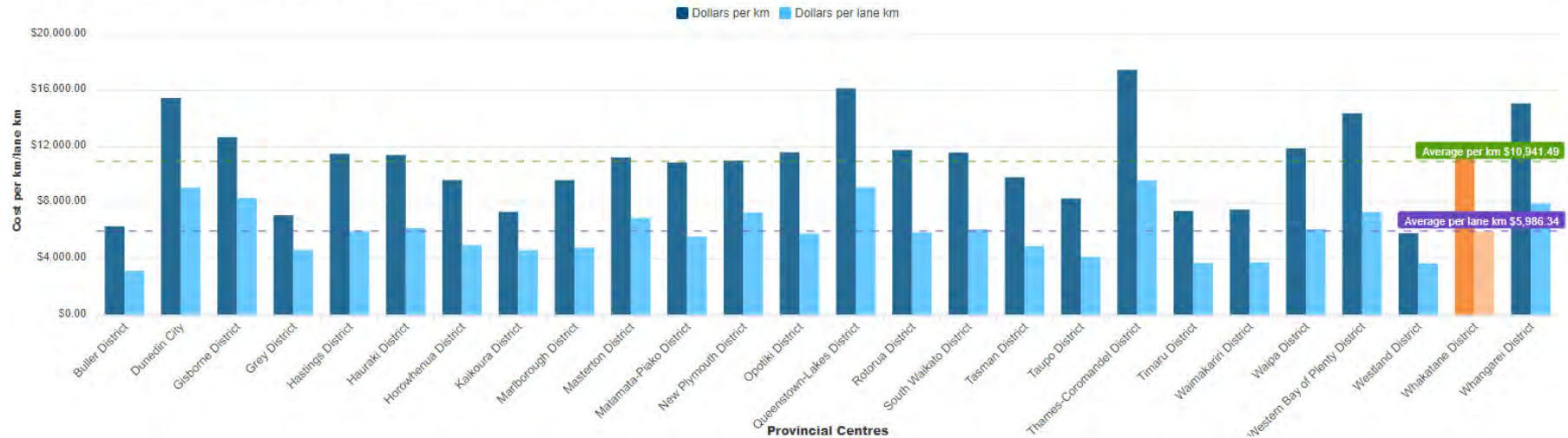
Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Special Purpose Rd Maintenance												
SPR111 Sealed pavement maintenance Routine	T32251	SPR111	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000
SPR111 Sealed pavement maintenance Pre-seal	T32252	SPR111	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
SPR112 Unsealed pavement maintenance	T32253	SPR112	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000
SPR113 Routine drainage maintenance	T32254	SPR113	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000
SPR114 Structures maintenance Bridge	T32256	SPR114	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
SPR114 Structures maintenance Retaining	T32435	SPR114	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
SPR114 Structures maintenance Other	T32257	SPR114	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
SPR121 Environmental maintenance Routine	T32258	SPR121	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000
SPR121 Environmental maintenance Tree removal	T32436	SPR121	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
SPR121 Environmental maintenance Vegetation	T32259	SPR121	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
SPR122 Network service maintenance Marking	T32437	SPR122	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
SPR122 Network service maintenance Street lights	T32260	SPR122	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
SPR122 Network service maintenance Signs	T32261	SPR122	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
SPR140 Minor events	T32438	SPR140	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000
SPR151 Network and asset management External	T32262	SPR151	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000
SPR151 Network and asset management PSBU	T32263	SPR151	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000
Subtotal			\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000	\$1,328,000
Special Purpose Rd Renewal												
SPR211 Unsealed road metalling	T33437	SPR211	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000
SPR212 Sealed road resurfacing	T33438	SPR212	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000
SPR213 Drainage renewals	T33439	SPR213	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000
SPR214 Sealed road pavement rehabilitation	T33155	SPR214	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
SPR215 Structures component replacements Bridges	T33440	SPR215	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
SPR215 Structures component replacements Retaining	T33441	SPR215	\$18,000	\$200,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
SPR216 Bridge and structures renewals Retaining	T33XXX	SPR216	\$50,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SPR222 Traffic services renewals Street lights	T33442	SPR222	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
SPR222 Traffic services renewals Signs	T33443	SPR222	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
Subtotal			\$806,000	\$1,088,000	\$756,000	\$756,000	\$756,000	\$756,000	\$756,000	\$756,000	\$756,000	\$756,000
SPECIAL PURPOSE ROADS PROGRAMME TOTAL			\$2,134,000	\$2,416,000	\$2,084,000	\$2,084,000	\$2,084,000	\$2,084,000	\$2,084,000	\$2,084,000	\$2,084,000	\$2,084,000

Activity Management Plan 2024-34 TRANSPORTATION

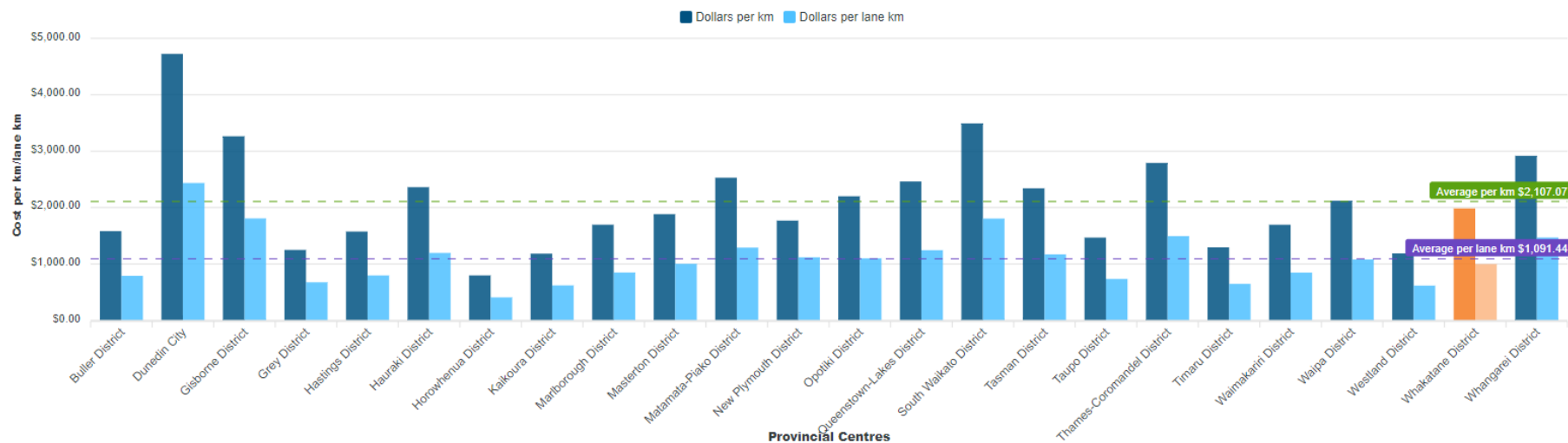
Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
NFA Maintenance												
NFA Network and Asset Management Other	T34153		\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
NFA Street Cleaning	T34154		\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000
NFA Amenity Lighting Maintenance SLMC	T34155		\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
NFA Beach SW Outlet Mtc	T34210		\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000
NFA Network and Asset Management PSBU	T34168		\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000
NFA Urban Tree Removal	T34211		\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
NFA Rooding General - Misc	T34150		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
NFA Rooding General - Road Closures	T34151		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Subtotal			\$513,000	\$513,000	\$513,000	\$513,000	\$513,000	\$513,000	\$513,000	\$513,000	\$513,000	\$513,000
NFA Renewal												
NFA Drainage Renewal	T35150											
NFA Soakpit Renewal	T35212		\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000
NFA k+C Renewal	T35211		\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000
NFA Amenity Lighting Renewals	T35214		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
NFA Car Park Renewal	T35224		\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Subtotal			\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
NON-FINANCIALLY ASSISTED ROADS PROGRAMME TOTAL			\$617,000	\$617,000	\$617,000	\$617,000	\$617,000	\$617,000	\$617,000	\$617,000	\$617,000	\$617,000
OVERALL PROGRAMME TOTAL			\$18,305,000	\$17,574,000	\$17,392,000	\$16,733,000	\$16,733,000	\$16,733,000	\$16,733,000	\$16,733,000	\$16,733,000	\$16,733,000

14.4 Benchmarking

Total Costs - MO&R costs, excluding emergency works - 3 year average (2020/21–2022/23)

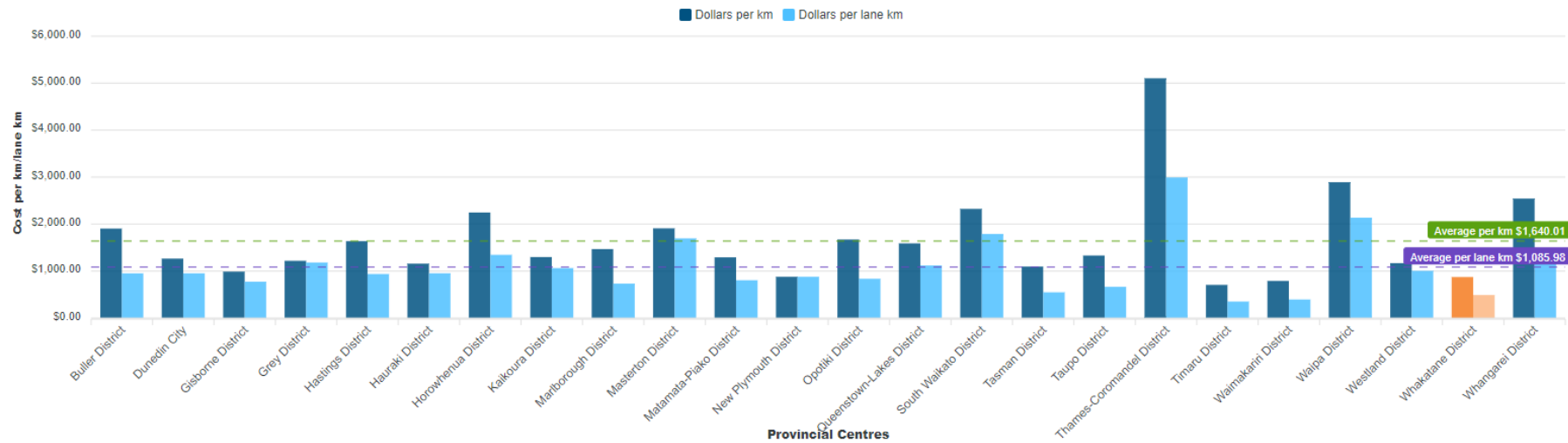


WC111 - Sealed pavement maintenance - 3 year average (2020/21–2022/23)

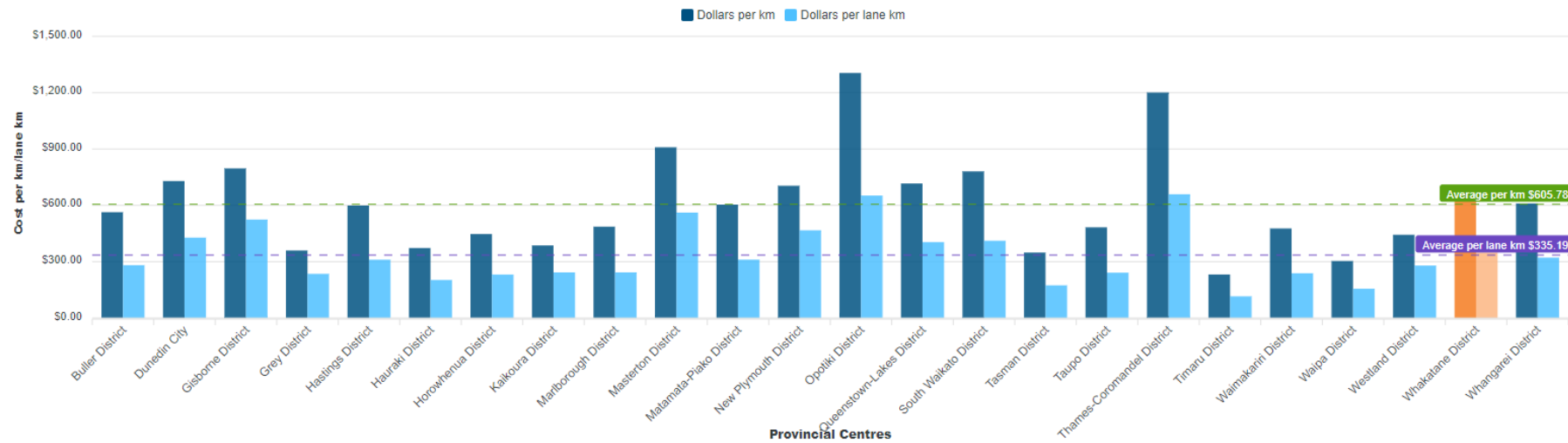


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WC112 - Unsealed pavement maintenance - 3 year average (2020/21-2022/23)

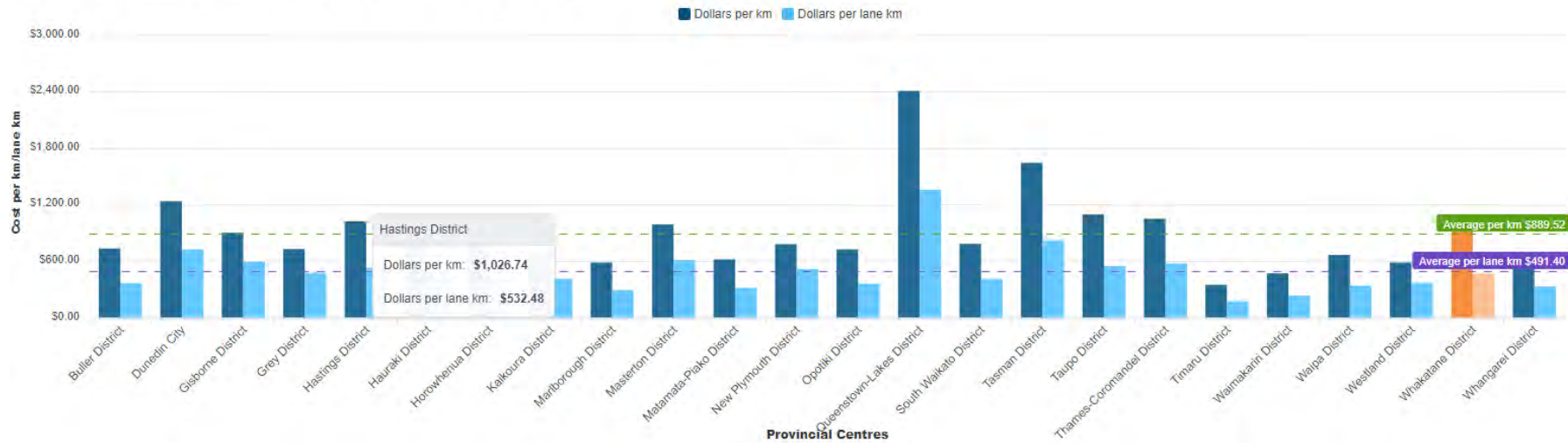


WC113 - Routine drainage maintenance - 3 year average (2020/21-2022/23)

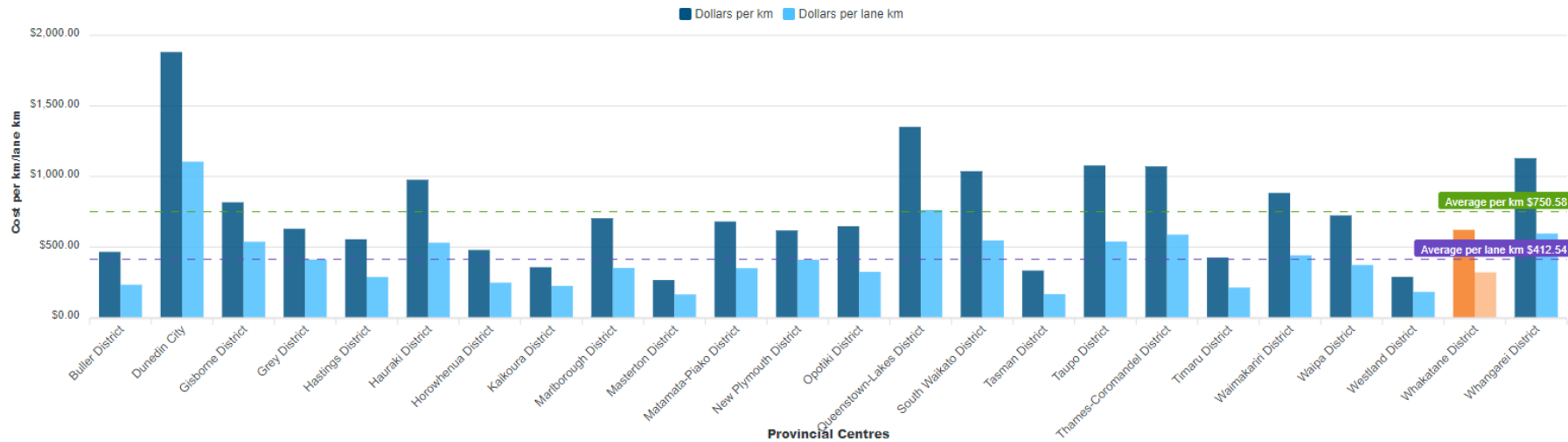


Activity Management Plan 2024-34 TRANSPORTATION

WC121 - Environmental maintenance - 3 year average (2020/21-2022/23)

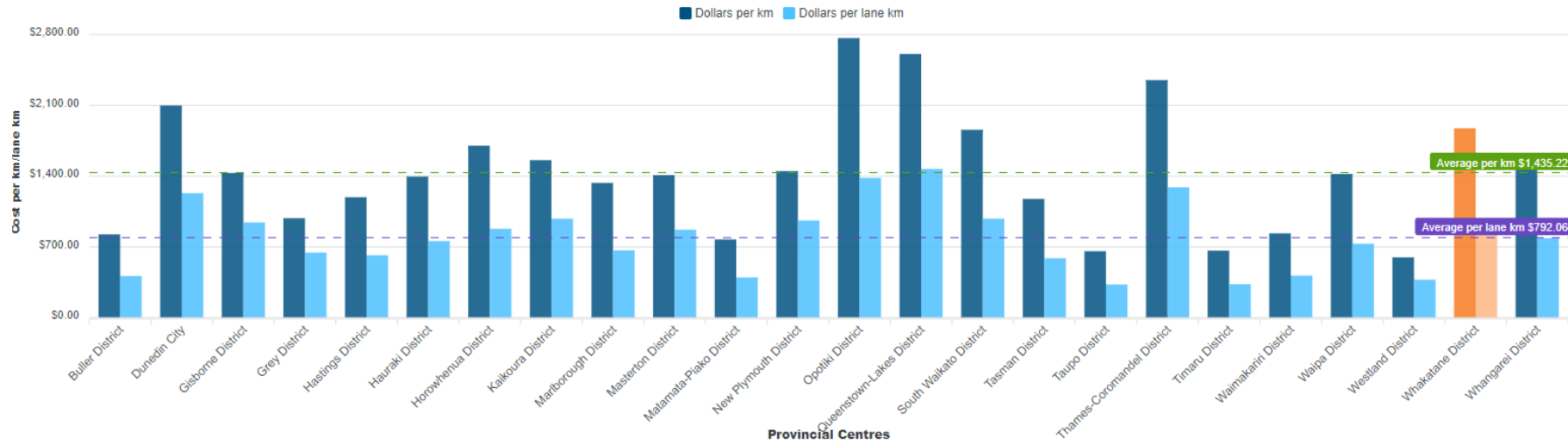


WC122 - Traffic Services maintenance - 3 year average (2020/21-2022/23)

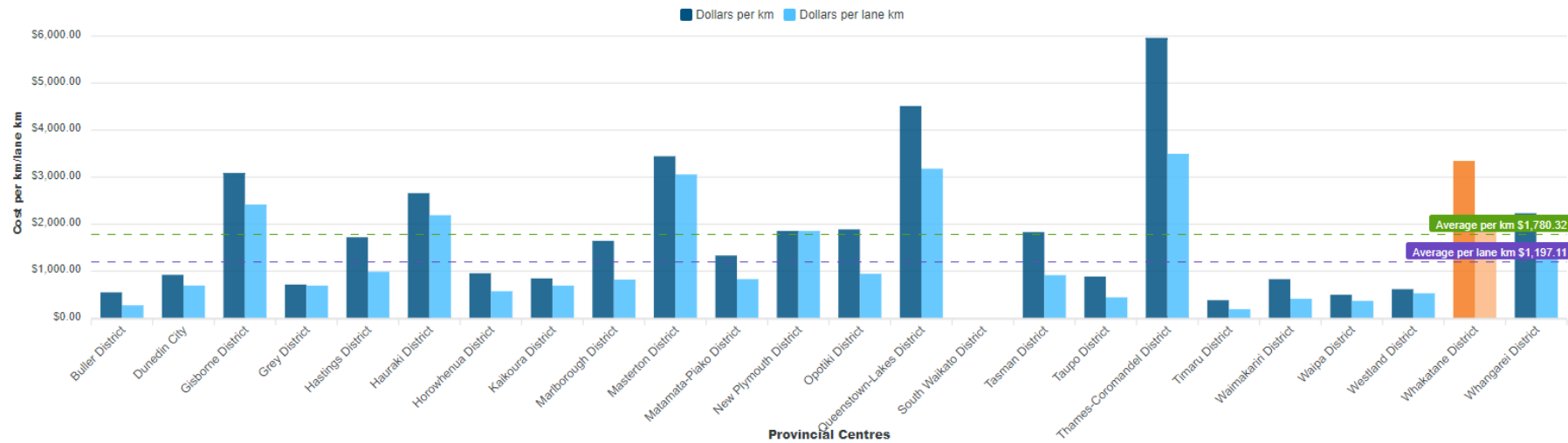


Activity Management Plan 2024-34 TRANSPORTATION

WC151 - Network and asset management - 3 year average (2020/21-2022/23)

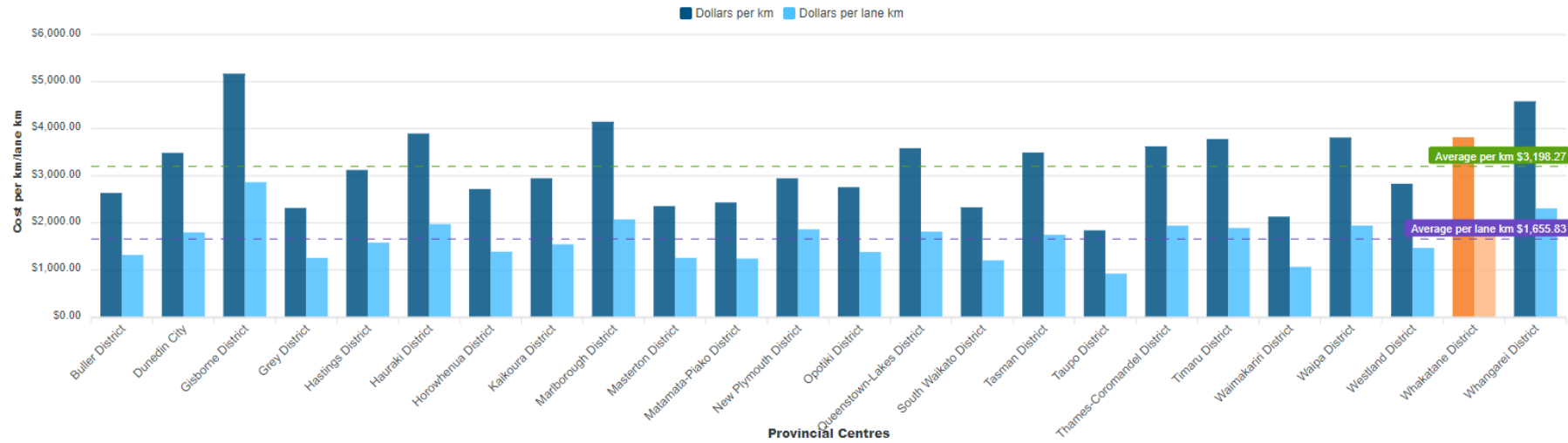


WC211 - Unsealed road metalling - 3 year average (2020/21-2022/23)

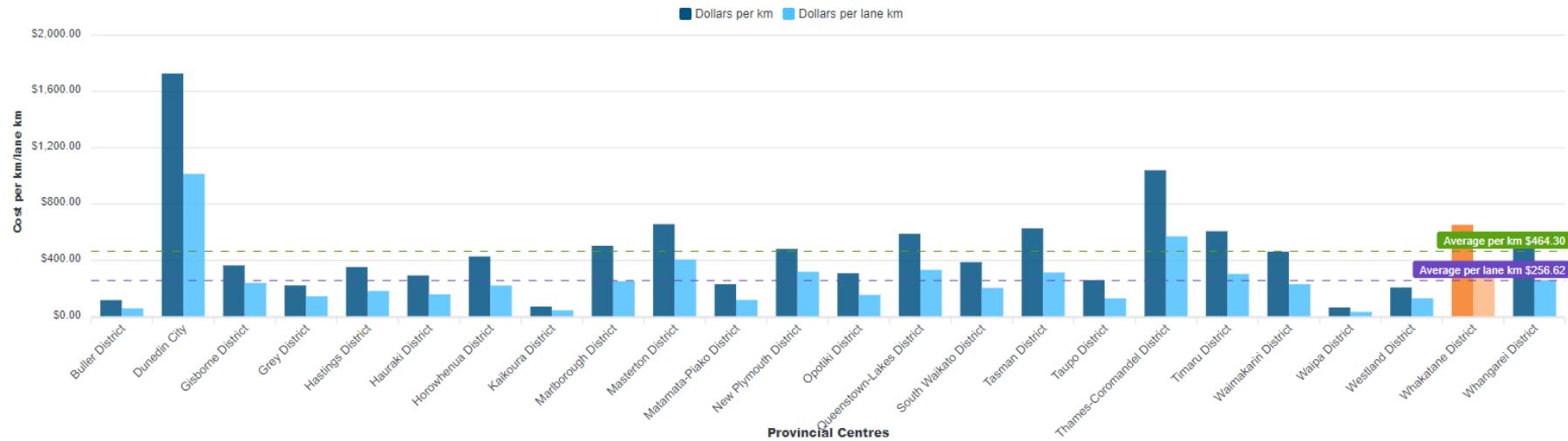


Activity Management Plan 2024-34 TRANSPORTATION

WC212 - Sealed road resurfacing - 3 year average (2020/21-2022/23)

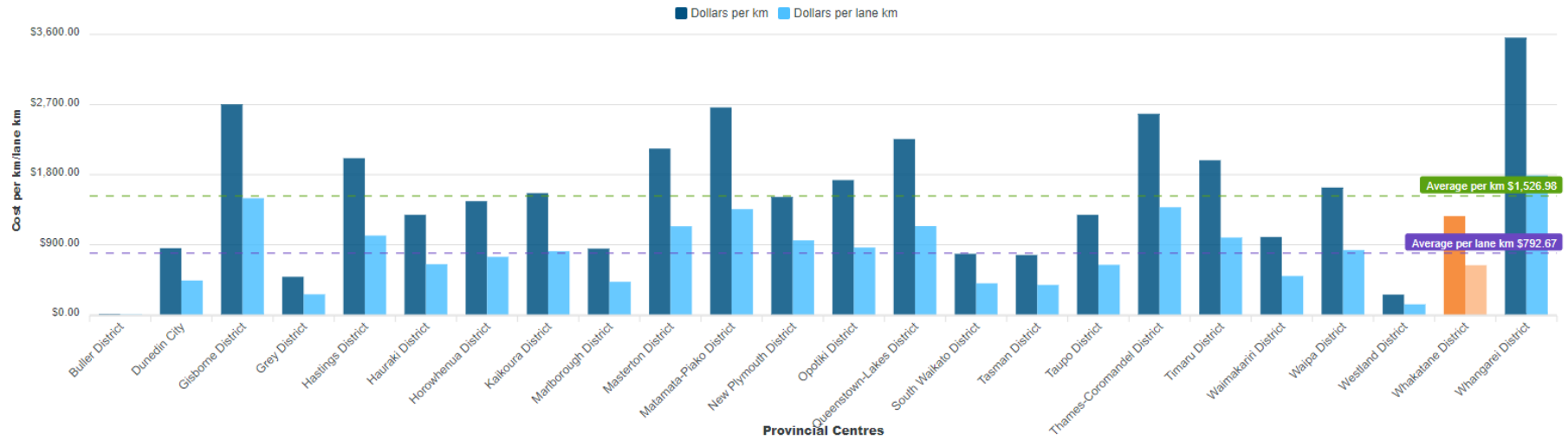


WC213 - Routine drainage renewal - 3 year average (2020/21-2022/23)

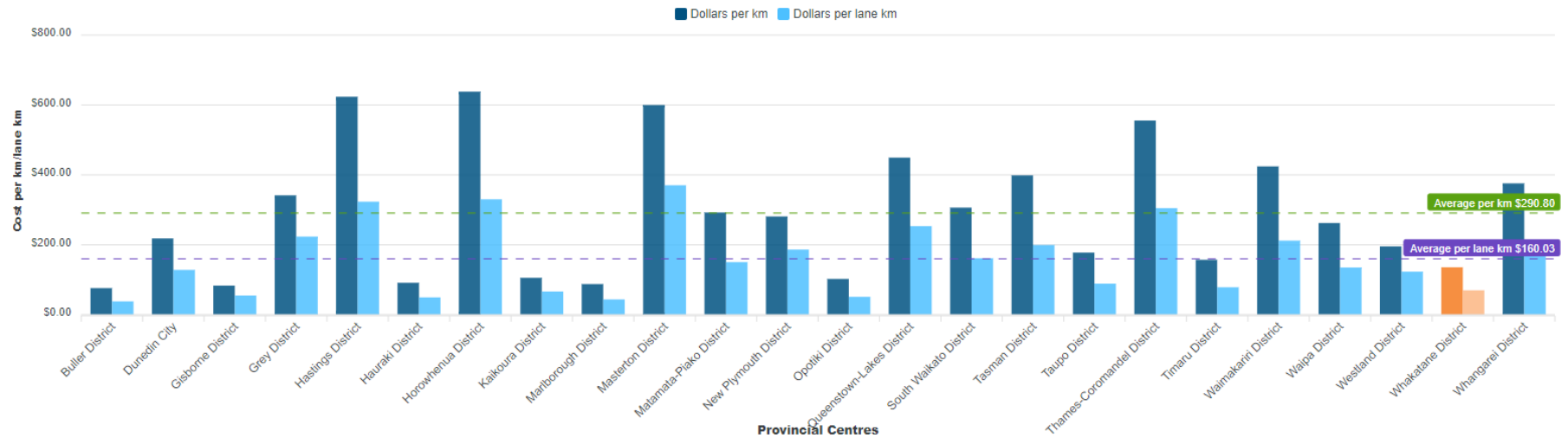


Activity Management Plan 2024-34 TRANSPORTATION

WC214 - Sealed road pavement rehabilitation - 3 year average (2020/21–2022/23)



WC222 - Traffic Services renewal - 3 year average (2020/21–2022/23)



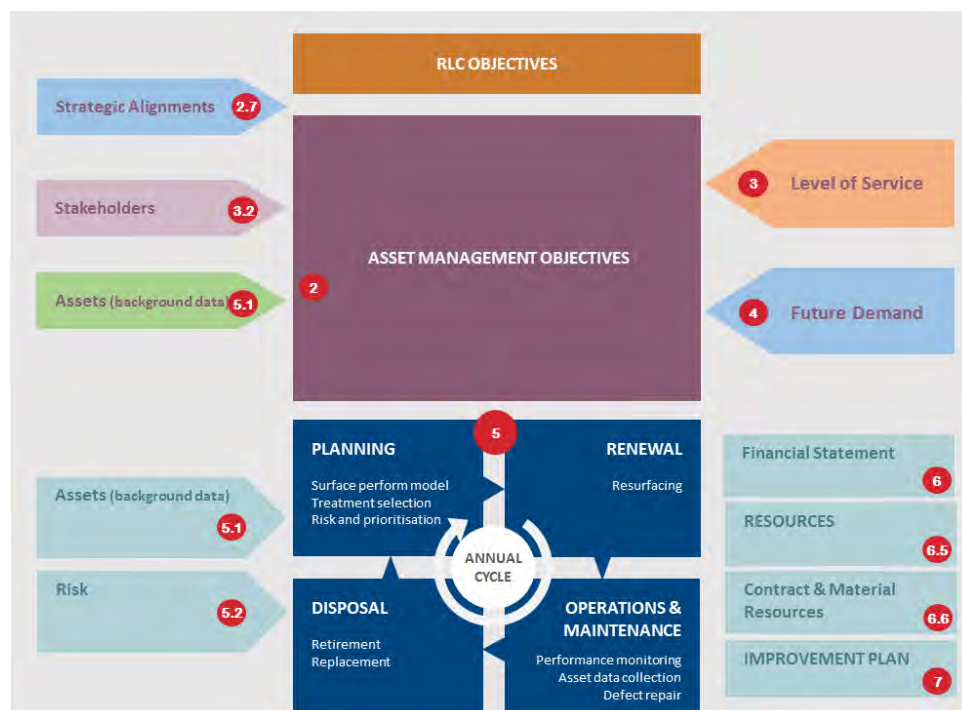
15 Network and Asset Management

15.2 Overview

Our goal is to contribute through the transportation activity to Whakatāne District's vision, purpose, community outcomes and statutory requirements. To do this, Council adopts the principles of infrastructure asset management, to meet levels of service in the most cost-effective manner through the management of assets for present and future customers. The key elements of asset management and core to our approach are:

- Taking a lifecycle approach to asset investment, maintenance and renewal activities
- 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 asset management practices.

Asset management draws together several separate infrastructure planning processes demonstrated by the Asset Management Framework diagram below. The asset management framework shows the relationship between the various elements of the asset management process, including the Council's planning framework, infrastructure strategy, and asset management plan. This framework is aligned with the Asset Management Concept Model (ISO 55001) which is based on four principles: output focus, capabilities, level of assurance, and learning organisation.



15.3 Key Issues

Operating an asset management system aimed at meeting organisational goals, achieving agree service levels all in the cost-effective manner requires investment in people, processes and technology. This AMP builds on the step-change in asset management for Whakatāne District commenced through the 2018-21 period, and with that an increase in investment to ensure Council is achieving what it has set out.

The biggest area of impact is in data collection and technology. Data is the foundation of asset management as it is through the analysis of data, using systems that we gain information, and from that we make informed decisions seeking to maximise the impact we have on achieving Councils aspirations for the least cost.

Council have expanded their in house PSBU team to retain an increased level of network and operational knowledge which will flow through to better and more informed decision making. Professional Services providers continue to be engaged to provide specialist services and support. Increasing the in-house capability has also resulted in savings that have been reinvested in additional data collection including SCRIM, high speed data collection and pavement strength. With further expansion of the in-house team planned to progress overtime to optimise the cost effective network and asset management activity, further savings will be used to implement the use of advanced asset management tools including dTims and Juno viewer.

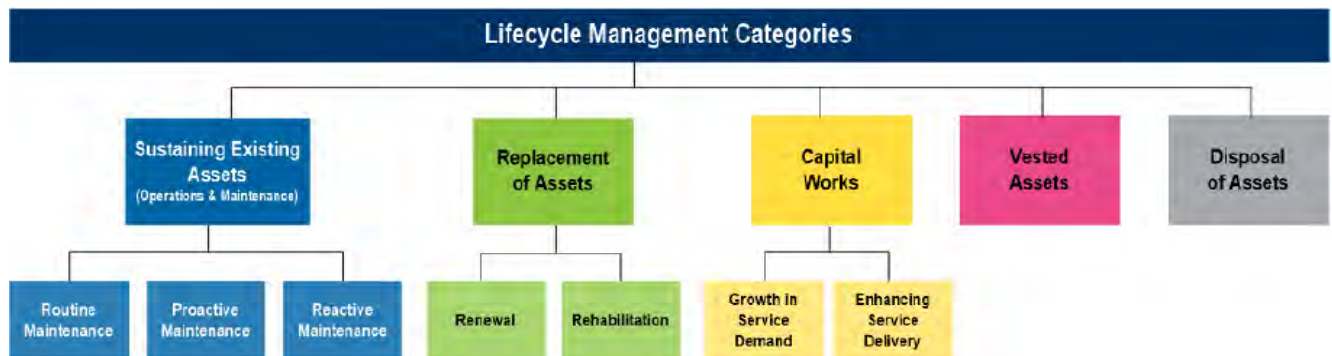
15.4 Links to Strategic Case

Asset Group	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Transport Planning & Network Asset Management	✓	✓	✓	✓	✓	✓	✓	✓
Pavements		✓	✓		✓		✓	✓
Structures		✓	✓		✓		✓	
Drainage		✓	✓		✓			
Traffic Services	✓				✓	✓	✓	
Foot, Cycle & Shared Use Paths	✓		✓	✓	✓	✓	✓	
Car Parking		✓			✓			

15.5 Life Cycle Management Strategies Overview

The lifecycle of the assets can be categorised into the five principal areas:

- Sustaining the existing assets
- Replacing the existing assets
- Growing the asset base through enhancing service delivery or service demand
- Vested assets from developers and
- Disposing of assets when they reach the end of their useful life or fail to deliver the level of service.



These items are summarised below, and discussed in more detail in the respective Asset Summaries in the following sections.

15.5.1 Key Issues and Strategies

The key issues relating to the management of the transport activities are as follows:

- The Whakatāne network has relatively young pavements and many have not reached the age where they need rehabilitation. Accordingly the current rehabilitation rate is quite low at less than 0.5% of the network annually. Looking forwards based on a birthday renewal basis the rehabilitation rate looks to increase to 1.7% of the network over the next 30 years. Utilising a pavement modelling program (dTims) will be important to quantify and manage the extent of this problem.
- Related to the first bullet point, many sealed pavements are only on their 2nd or 3rd reseal and currently 15 year average seal lives are being achieved. As the number of seal layers accumulate average seal lives are likely to reduce. Establishing a pavement modelling program (dTims) will be important to quantify and manage the extent of this problem.
- Many of the reinforced concrete bridges were assigned an 80 or 100 year expected life when constructed. Based on birthday replacement many of them appear in the 30 year strategic view period. Anecdotal evidence suggests the life span of these bridges may be considerably longer. A program of invasive inspection is required to determine the rate of deterioration of these structures and determine a more accurate assessment of expected life.
- A considerable number of retaining structures have been constructed over the previous 30 years. As they age maintenance requirements are growing.
- Traffic volumes and growth rates on the urban arterial network are resulting in a developing congestion problem. The progression of the EBOP Spatial Plan and the subsequent Transport System Programme are instrumental to the effective and efficient response to enable growth..
- Traffic volumes and growth rates on the rural arterial network are resulting in a developing safety problem. This is highlighted during the frequent state highway closures in the SH2 Waimana Gorge which diverts additional traffic, especially heavy vehicles onto the local coastal arterials. Safety problems have been addressed along Wainui Road as part of the Safe Road Alliance work and part of Thornton Road as part of this 2021-24 NLTP Road to Zero Programme.

- Pavements in the Rangitaiki Plains and Whakatāne Township areas are susceptible to accelerated damage following long periods of rain and high water-tables. Under current climate change scenarios this issue is likely to be exacerbated.
- The impacts of climate change is becoming an increasingly prevalent issue, especially with regards to assets vulnerable to sea level rise, the not yet well understood relationship sea level rise has with groundwater table rise, and the increasing frequency of high intensity storm events.

15.5.2 Data

15.5.2.1 Data Collection – Consistent Data Collection Programme

All our asset management systems require data on the extent and condition of transport assets managed and maintained by Council. Data collection can be expensive and therefore it is necessary to strike a balance between the costs of data collection and the benefit derived from having access to data of appropriate quality to make informed asset maintenance and renewal decisions.

Along these lines, Te Ringa Maimoa has successfully introduced the Consistent Condition Data Collection (CCDC) programme with support from RCAs, Waka Kotahi, sector stakeholders and data collection providers. The aim of CCDC is to establish a consistent approach to collecting pavement condition data for all local authority sealed roads starting 1 July 2024 through the ‘Centre of Excellence’ delivery model. This model includes the following:

Centrally-delivered, automated condition inspections

Under this new approach, a national centre of excellence will oversee the sealed road pavement condition requirements, quality assurance, delivery. This will be completed via an annual automated pavement condition inspection survey for roughness, rutting, texture, cracking and geometry. During the annual pavement inspections, a forward-facing video will be captured to support quality assurance. The collected footage will be available to RCAs. As the programme moves forward, other technological advancements, such as artificial intelligence will be explored.

Automated inspections to replace RAMM survey

The current RAMM manual visual rating survey will no longer be required for funding, as it will be replaced by the automated condition inspections.

Skid resistance, pavement strength and drainage/shoulder condition assessments are not part of the proposed requirement for funding. The CCDC programme are developing further guidance around technology and methodology for this data collection, which will be shared with all RCAs. RCAs will still have access to the skid resistance data collection services via the Waka Kotahi arrangement with WDM Limited.

Alignment with state highways

CCDC are working with Waka Kotahi transport services to align the state highway and local road pavement condition data collection approach

Associated Costs and FAR

The following figures have been compiled based on our One Network Road Classification (ONRC). All sealed roads are inspected every two years, with higher class roads inspected annually. The Funding Assistance Rate for CCDC programme has been confirmed as 100% Waka Kotahi Funded and will be procured directly via Waka Kotahi so these costs below are not included in our WC151 Programme:

Survey Length (lane km)		Recommended Minimum 2024-27 Budget
Annual average	Total	Total Cost

961 km	2,883 km	\$135,000
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15.5.2.2 Data Collection – Additional to CCDC

The following data collection is not included in the CCDC model but is important to the continued management of our network and assets. The costs associated with this data collection is included in our WC151 programme:

Traffic Counting (1 week counts)	Across Network	100 per annum
Maintenance Activity Data	All roads and all activities via RAMM contractor for term maintenance contracts.	Monthly
Network Audits	10% of the network	Monthly/Quarterly
Crash Data (CAS)	Across Network	Continuous. Quarterly update to RAMM
Crash Reports	Across Network	All fatal and high profile serious crashes
Drainage	Plains / low risk	Annually
	Hill Country / high risk	4 monthly
Structures Condition (Bridges & Retaining Walls)	Superficial Inspection	10% per month
	High Risk Assets	Every 3-6-12months per risk profile
	General Inspection	Every 3 rd year
	Detailed Inspection	Every 6 th year
	Special Inspection	Following significant floods, earthquakes, overloads, public feedback

15.5.2.3 Data Management

Council is committed to continuing to operate the RAMM inventory and data management system. This system is cost effective and proven for New Zealand road Controlling Authorities. Council is utilising the IDS NZ dTIMS system to better inform its medium and long-term road pavement and resurfacing decision-making processes. Use of Juno Viewer will be investigated as a potential improvement to better inform the short term pavement and resurfacing treatment selection process and forward works program development.

Experience has shown that inventory data tends to go “out of date” for several reasons. Therefore, a validation of RAMM inventory data will be undertaken each year coving 1/3 of inventory data.

Maintenance activity (cost) information is currently being collected on the network and entered into RAMM via RAMM Contractor for term maintenance contracts. For other renewal and capital improvement projects the RAMM as built data is provided by the contractor in a prescribed format, checked and verified by the project manager (Council or Consultant staff) and then uploaded into RAMM. The availability of accurate maintenance cost data enables the development of more accurate maintenance cost prediction models that

are used in both BCR and NPV analysis of various pavement maintenance, rehabilitation and capital works projects.

Crash records are collected and the information entered into NZTA's CAS system. This information is then used to review trends in crash rates at a network level as well at the project level when identifying or reviewing accident black spots. This information can then be summarised in RAMM (or transferred into a proprietary GIS system) that can assist in displaying trends or inter-relationships between various data sets.

Traffic count information collected and stored in RAMM is to be used in the following aspects of road asset management:

- Strategic transport planning
- Assignment of network hierarchies
- Risk management and the development of criticality plans
- Pavement deterioration modelling (dTIMS)
- Pavement and surfacing design
- Network safety analysis and design
- Total transport costs, road user costs and BCR analysis.

15.5.2.4 Data Quality

Te Ringa Maimoa have been producing RCA Data Quality Reports since 2014/15. The summary results for Whakatāne's latest data quality report (2022/23) is shown overleaf and further history and detail is available on the [Performance Measurement Reporting Tool Portal](#). Whakatāne have been using this information to drive data improvement which shows a mostly improving trend over time. We have seen a slight decline in the last 2 years. This has been attributed to stretched resource in our in-house team as the role managing data has also been responsible for a broad number of other activities. In late 2023 we recruited a separate Data and Development Engineer role to reallocate our internal resource and allow more focus in this important area. We have identified a number of data related items in our improvement plan.

2022/23

**Whakatane District Council
Data Quality Export**

Te Ringa Maimoa
Transport Excellence Partnership

● Major Issues ● Minor Issues ● Expected Standard

Score

81

LAST YEAR

79

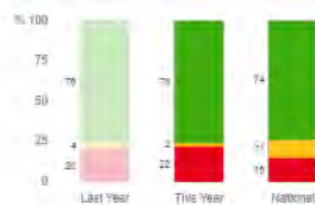
THIS YEAR

Overall Results

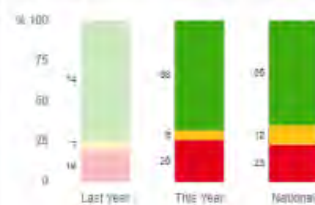


Results by Importance

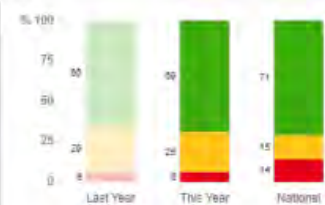
High



Moderate

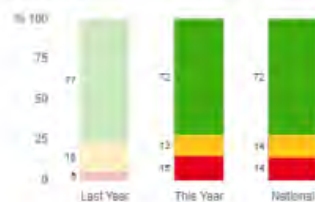


Low

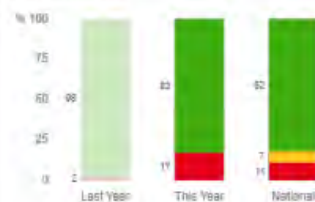


Results by Quality Dimension

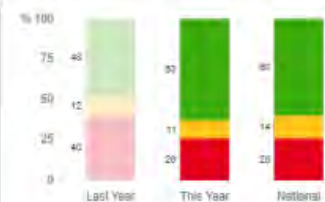
Accuracy



Completeness

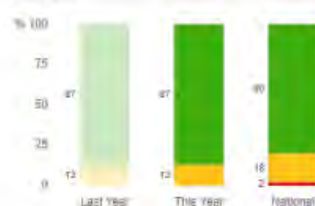


Timeliness

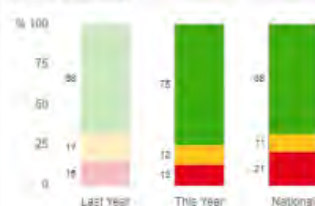


Results by Data Category

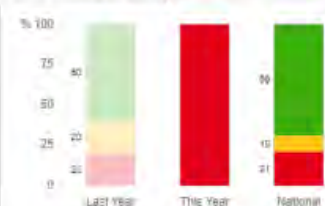
Network



Asset Inventory



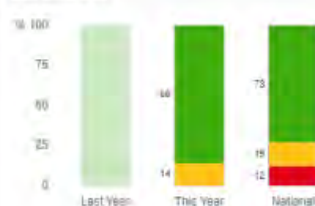
Maintenance Activity



Condition



Demand/Use



Crash



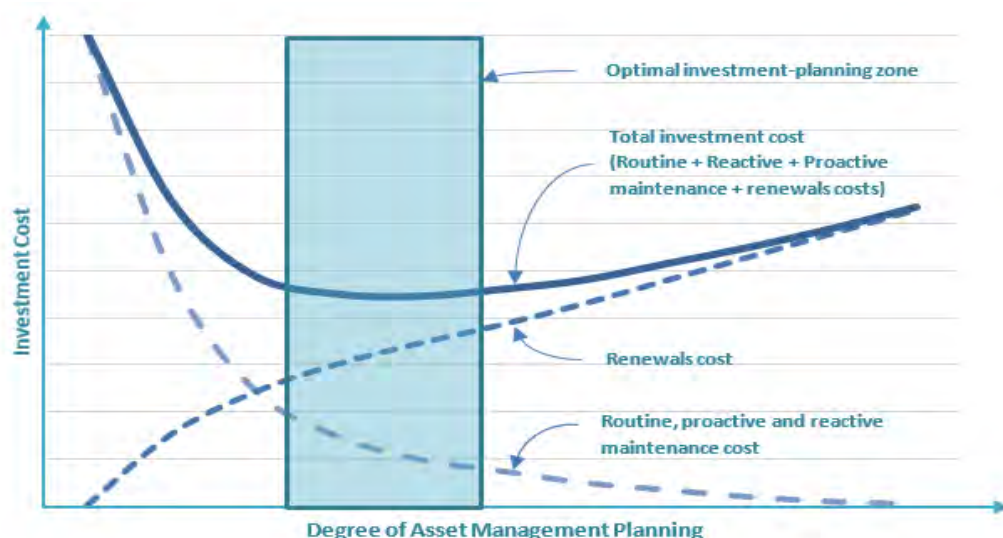
15.5.3 Operations and Maintenance

Physical works to sustain the asset is broken down into 3 sub-areas as outlined in the following table:

Maintenance Categories

Routine (General) Maintenance	Routine maintenance is the regular on-going day-to-day work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. This work falls into two broad categories as follows:
Proactive	Proactive inspection and maintenance works planned to prevent asset failure.
Reactive	Reactive action to correct asset malfunctions and failures on an as required basis.

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



15.5.4 Annual Inspection and MOR Delivery Schedule

Our Council team performs all its fault identification and programming through in-house resource. This allows us to develop our programmes in a best for customer and best for network approach, rather than being potentially swayed by commercial drivers when programming is done by the physical works supplier. Performing this key activity inhouse gives us better ownership of the available budgets and ability to make appropriate trade-offs. The procurement of our physical works, being a lot based on dayworks rates, reduces the risk needing to be built into prices by the contractor, from being separate to the programming activity. The other way this risk is managed is through our Supplier Panel procurement model, where the contractor prices the actual programme/package of work so can provide a realistic price for delivering a set portion of work. Rather than having to provide a schedule rate separate to the programme.

To deliver this programming activity our inhouse team follows the annual schedule overleaf:

Activity Management Plan 2024-34 TRANSPORTATION

Culvert inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Western Hills culverts												
Eastern Hills culverts												
Southern hills culverts												
Galatea Plains culverts												
Eastern Plains culverts												
West Plains culverts												
Every year												
K+C inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Urban sites for next years reseal list												
Every year												
Metalling inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
All unsealed network												
Every year												
Pavement inspection groups	July	August	September	October	November	Dec	Jan	February	March	April	May	June
FWP year 2												
Rest of chipseal network												
AC network												
Every year												
Sump inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Every 3rd year												
Footpath inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Every year												
Watertable inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
FWP Year 2												
All other areas (RFS, Network issues)												
Every storm event												
Critical culvert inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Every year												
Network Condition inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Every year												
Edgebreak inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June
Every year												
High Shoulder inspection	July	August	September	October	November	Dec	Jan	February	March	April	May	June

15.5.5 Renewal Works

Council will adopt the IDS NZ dTIMS (dTIMS) system to undertake network level studies of road pavement and surfacing renewal and as an annual, first-cut, planning system for further on-site investigation to develop its Forward Works Programme. Council will not be using the RAMM Treatment selection algorithm.

dTIMS includes several analysis techniques to assist with identify cost-effective renewal option aimed at achieving service level targets for the least life cycle cost:

- **Trigger Model:** Cause work to be programmed when condition limits are reached – suboptimal i.e. not necessarily the least life cycle cost approach.
- **Optimal Model:** Cause work to be selected when it is the least life cycle cost over a 30-year analysis period for an allowable budget provision. Requires cross-checking to ensure the budget provision is sufficient to meet target service levels. This approach uses an objective to achieve target performance across a range of indicators.
- **Committed Model:** Provides an analysis to verify the defined programme of work will meet target service levels.

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

Focus is on progressive replacement of individual assets that have reached the end of their useful service life. Required levels of expenditure on the asset replacement programme will vary from year to year, and will reflect:

- The condition /performance profile of the assets with respect to required LoS and resilience.
- The ongoing reactive maintenance demand and hence reactive maintenance cost.

Renewal or replacement of an asset is focussed on restoring the asset to an equivalent performance capability. Renewal need is assessed in terms of the level of service provided, asset condition and a comparison between the ongoing maintenance costs and the costs of renewal. When renewing or replacing an asset, we will strive to comply with industry best practice. In general, and where appropriate, Council:

- Evaluates all other alternatives to confirm the need is justified
- Uses an optimized 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.

The timing of renewal is set to balance:

- The most economic time for replacement (as identified by detailed desktop analysis i.e. dTIMS).
- 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.

15.5.6 Development Works

Development works includes creation of new assets (including those created through subdivision and other development) or works which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in usage, customer expectations, or improved resilience. These works are either Council initiated or developer initiated.

Council recognises asset development and asset renewal can occur simultaneously to increase the performance capability of the existing asset. 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.

Development Work Categories:

Growth	Any asset development (council funded and development contributions) that is required because of growth
Levels of Service	Any asset development that is required because of a change in service levels
Legislative	Any asset developed out of legislative requirements
Vested	Any subdivision development that is required because of land development and vested in Council by the developers

15.5.6.1 Benefit Cost Ratio (BCR)

Where development works projects, such as realignments or pavement smoothing, require justification or prioritisation based upon a BCR calculation, then the latest version of the NZTA Simplified Procedures and project economic evaluation software is used.

Where several options are evaluated, the calculated BCR for each, can assist in ranking and comparing these with other social and environmental considerations.

15.5.6.2 Net Present Value (NPV)

Comparison of projects based on Council cost savings is undertaken using a net present value analysis approach. With pavement projects, this approach requires future maintenance cost information relating to the various options being evaluated based upon historical trends, either at the project level or from a generic maintenance cost curve developed at a network level. Once the basis of the future maintenance costs for the project has been derived, then the options' comparison is undertaken through a relatively simple spreadsheet analysis.

15.5.6.3 Multi-Criteria Analysis (MCA)

Within the road sector land transport activity area, there is the opportunity to use MCA to rank options that are not easily quantified in terms of dollar values. Such situations are likely to arise where the road project will potentially have the following impacts:

- Long-term environmental degradation
- Non-renewable resource consumption
- Long-term community/social disruption
- Loss of amenity values
- Loss of historical or cultural values.

The comparison or ranking of several road-related project options across economic, social, cultural and environmental assessment criteria, especially in sensitive situations where a narrow economic focus would not result in the most acceptable outcome, will enable a more balanced approach to the management of the road asset.

The application of MCA also permits optimised decision making to be undertaken across a range of assets where it is necessary for Council to prioritise investment at a strategic level and to ensure that the management input and financial allocations are appropriately targeted.

Although there has been limited application of this tool within the land transportation sector, one example of its application has been the risk assessment process that has been undertaken and the development of

the risk register. Opportunities to further extend the application of this technique across other Council assets exist.

15.5.6.4 Disposal

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, Council's processes for considering the disposal/retirement of assets comply with industry best practice.

The process considers the following:

- Under utilisation
- Obsolescence
- Undeveloped (e.g. paper roads)
- Provision exceeds required level of service
- Assets replaced before its predicted economic life
- Uneconomic to upgrade or operate
- Policy changes
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social, vandalism).

Council has no plans, at this time, to dispose of any transportation assets.

15.6 Options Assessment

Options assessment has been configured around three base options:

- Proactive: sees a further increase in use of advanced network and asset management systems, processes, tools and technologies
- Balanced: sees a continuation of a similar level of network and asset management practices currently being utilised.
- Reactive: sees a reduction in use of network and asset management practices, reverting back to a very reactive and operational model where things are intervened as the issue arises, rather than pre-empting intervention.

Large Positive	Minor Positive	Neutral	Minor Negative	Large Negative
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Benefit	Proactive	Balanced	Reactive
Improved Environmental Performance	Utilise planning for recycled materials option, planned resourcing of work.	Utilise planning for recycled materials option, planned resourcing of work.	No/minimal investment into waste minimisation or carbon balancing options. Reactive use of resource, high carbon load.
A resilient, future proofed transport system	Intervening proactively ahead of potential risks to the network. Well evidenced decision-making. Improves	Inspections and maintenance is undertaken at appropriate interventions. Providing function assets to handle weather events.	Significant impacts from weather events due to poorly maintained system. Very reactive storm

	financial certainty, performance and risks.		response. Avoidable high-cost damage. Increased levels of financial uncertainty as network matures. Increasingly difficult to predict and deliver to target levels of service.
Improved accessibility, and travel reliability	Appropriate intervention timing.	Appropriate intervention and timing.	Simialr to above
Increased user health and safety	Risks adequately managed through appropriate intervention and timing.	Risks adequately managed through appropriate intervention and timing.	Increased risks due to reactive interventions.
Cost (2024-34)	\$26,508,000	\$22,090,000	\$17,672,000
Preferred Option			

Activity Management Plan 2024-34 TRANSPORTATION

15.7 Preferred Programme of Works

Description	10 Year Programme									
	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance										
LOC151 Network and asset management External	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000	\$518,000
LOC151 Network and asset management PSBU	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000	\$1,236,000
Subtotal	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000	\$1,754,000
Special Purpose Rd Maintenance										
SPR151 Network and asset management External	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000	\$61,000
SPR151 Network and asset management PSBU	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000	\$315,000
Subtotal	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000
NFA Maintenance										
NFA Network and Asset Management Other	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
NFA Network and Asset Management PSBU	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000
Subtotal	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000	\$79,000
Network and Asset Management PROGRAMME TOTAL	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000	\$2,209,000

15.8 Improvement and Monitoring

Refer Improvement Plan section of the AMP.

16 Pavements

16.1 Overview

The objective of pavements is to provide for the safe, effective and efficient movement of vehicles around the network. Pavements consist of the following components:

- **Formation.** The Formation layer is essentially the natural ground material that the carriageway structure is formed upon. Formation is considered to have an indefinite life and is therefore not depreciated over time.
- **Basecourse.** The basecourse is the compacted granular material that sits above the formation. Basecourse has a much longer life, and therefore the renewals profiles vary differently to that of the surface materials.
- **Top Surface.** A durable all-weather skid resistant top layer that traffic runs on.

The table below provides a summary of asset quantities and valuation.

Component	Area (m2)	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Average Age	Average RUL	% Base Life consumed
Formation					N/A	N/A	N/A
Sealed Pavements							
Sub base	6087772	\$260,121,363	\$260,121,363	\$0	90	31	74%
Basecourse	5141005	\$165,756,023	\$82,215,163	\$2,259,486	80	35	70%
Top Surface	5139577	\$37,994,382	\$17,682,488	\$2,536,133	70	39	64%
Unsealed Pavements							
Basecourse	946767	\$14,719,573	\$14,719,573	\$0	24	65	27%
Wearing Course	946767	\$4,548,328	\$2,274,164	\$909,666	3	3	50%
Totals		\$19,267,901	\$16,993,737	\$909,666			

16.2 Key Issues

- Cost inflation over the previous 3 years has significantly increased the cost of doing work at the same time our community is reeling under a cost of living crisis.
- Compliance requirements and costs are impacting on both cost and productivity, compounding the inflation issue above.
- Pavement renewals have been underfunded over the previous 12 years as Council have focused on significant stormwater system upgrades in response to some serious flooding events. This has led to a bow wave of pavement renewals.
- There is upward pressure into the future on resurfacing and rehabilitation quantities.
- Alarming deterioration in deaths and serious injuries network wide.
- High rate of loss of control crashes. Particularly at night and wet roads.
- High rate of intersection crashes.

- High rate of crashes featuring vulnerable users.
- The network is constantly subject to intense rainfall events generated in the tropics and these are expected to increase in intensity and frequency as a result of climate change.

16.3 Links to Strategic Case

Assets / Activities	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Pavement Layers		✓	✓		✓			
Surface Layers		✓	✓		✓		✓	✓

16.4 Evidence Base

16.4.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the pavements activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	9.1.1 Resource Efficiency	Proportion of sustainable & recycled materials	Y	Increasing			
		Waste minimisation	Y	Improving			
	9.1.2 Embodied carbon	Tonnes of CO2 equivalents emitted		Decreasing			
A resilient, future-proofed transport system	4.1.1 Availability of alternative to high risk/impact routes	Percentage of high-risk & high-impact routes with a viable alternative routes	Y	Increasing			
	4.1.2 Level of service & risk	Percentage of network assessed as having a major or extreme risk rating		Decreasing			
Improved accessibility, connectivity, and travel reliability	5.2.6 Access to key economic and social destinations - all modes	Proportion of population living within travel threshold of economic opportunities by different modes	Y	Increasing			
	5.1.4 Temporal availability - road	Number & duration of resolved road closures		Decreasing			
	2.1.1 Access - perception	Perception of safety & ease of walking & cycling	Y	Improving			
Increased user health and safety	1.1.3 Deaths and serious injuries	Number of deaths & serious injuries	Y	Decreasing			
	1.2.1 Road assessment rating	Infrastructure risk rating		Improving			

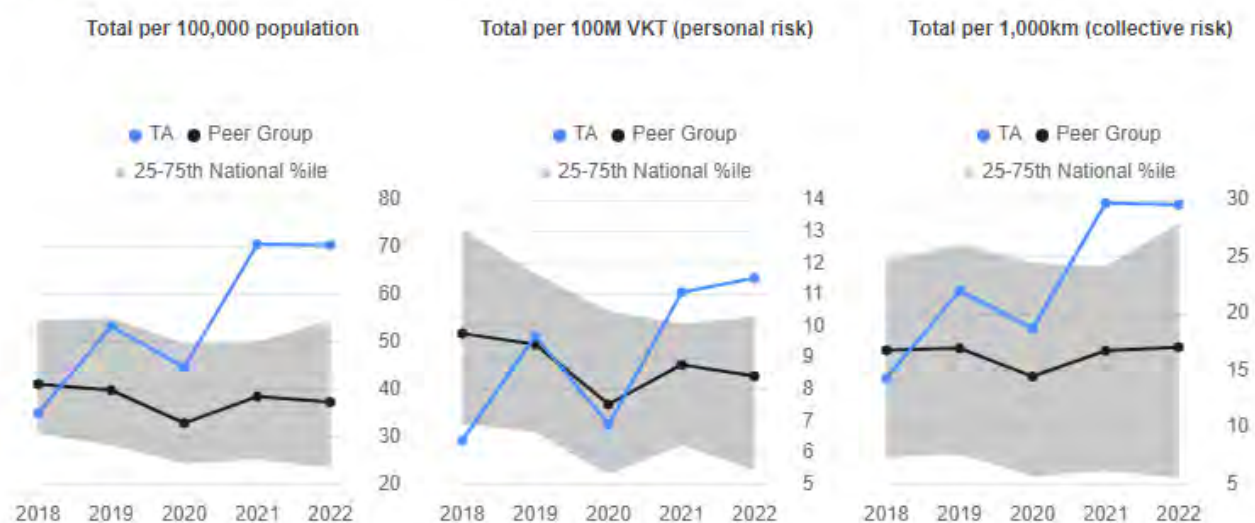
16.4.2 Community Feedback

The following graph shows the Customer Request for Services related to sealed roads:



16.4.3 Safety Performance – DSI

Network



Category	2017	2019	2022
All deaths and serious casualties			
Young drivers (of light vehicles aged 16-24yrs)			
Alcohol and/or Drugs			
Speed (too fast for the conditions)			
Urban intersections			
Rural intersections			
All intersections			
Rural road loss of control and/or head-on (speed zones >70km/hr)			
Motorcyclist involved			
Cyclist involved			
Pedestrian involved			
Distraction (crash factor: attention diverted)			
Fatigue			
Older road users (those aged 75yrs and older)			
Restraints (seatbelt not worn)			

Legend	
Below Mean	
0 to 0.5 SD above Mean	
0.5 to 1.0 SD Above Mean (Medium Concern)	
> 1.0 SD above Mean (High Concern)	

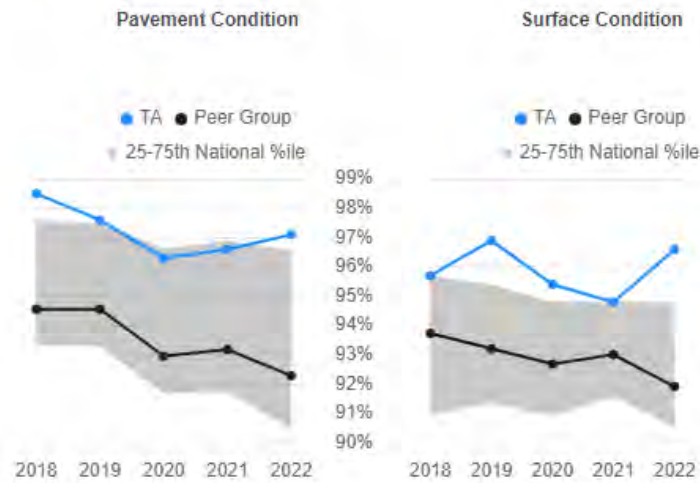
- Over 5 years the safety performance on our network has deteriorated significantly. Safety performance has dropped from the top performing quartile to the bottom quartile.
- Over 5 years our network has gone from having only 2 categories rating a medium concern, to 4 rating medium and 4 rating high concern.

16.4.4 Condition and Performance Measures

There is an anomaly in the pavement data. PII and SCI had both shown a declining trend for some years, then in the current year there has been an apparent large improvement. The high speed data indicates a significant improvement in rutting and shoving, however this does not align with observation of the network which visibly shows increasing rutting and shoving. Condition rating also shows increasing potholes, edgebreak, and cracking which is consistent with observed changes. A change in rutting and shoving of the extent indicated implies a significant investment in pavement renewals, which has not occurred. Rutting and shoving are a significant component of SCI and PII, and has potentially impacted these measures.

Amenity (Sealed Roads)

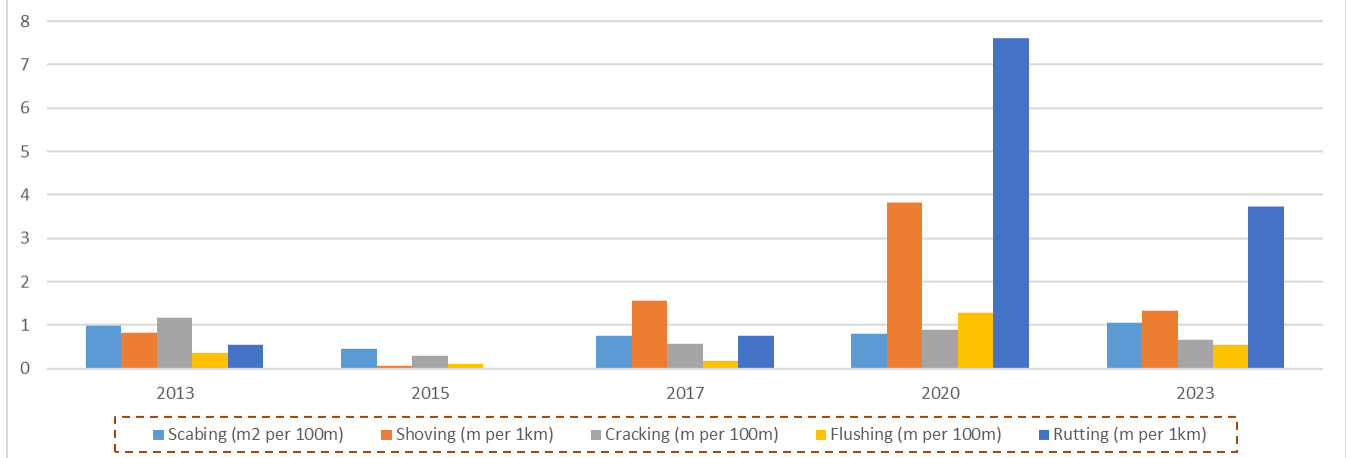
Road Condition (Sealed Roads)

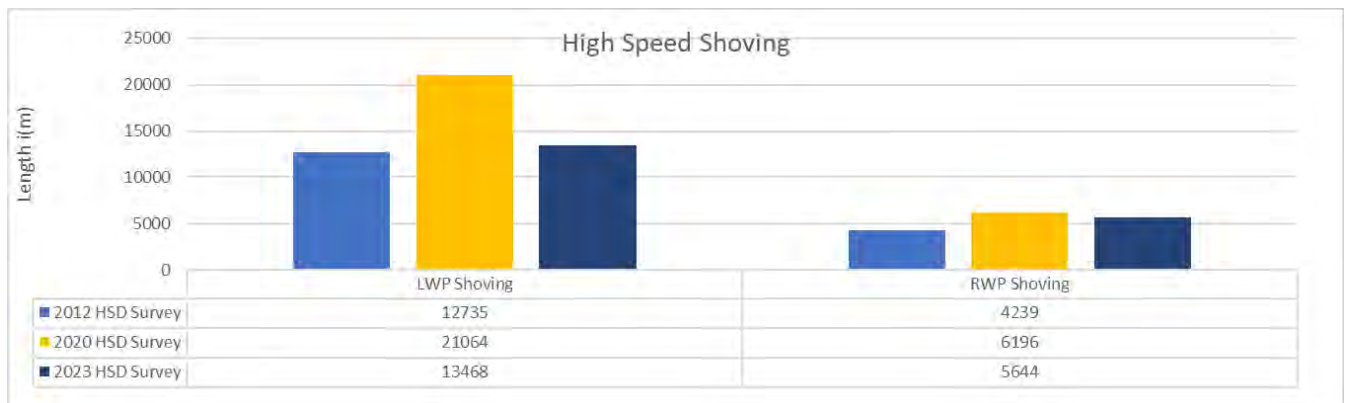
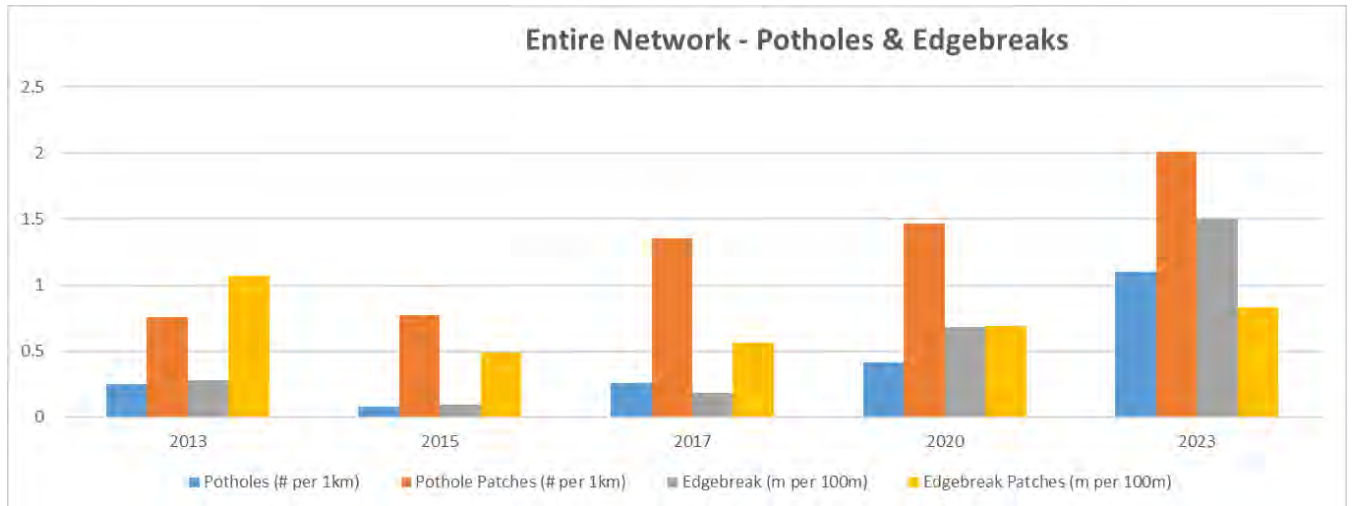


Ride quality (roughness of the roads)



Entire Network - Pavement



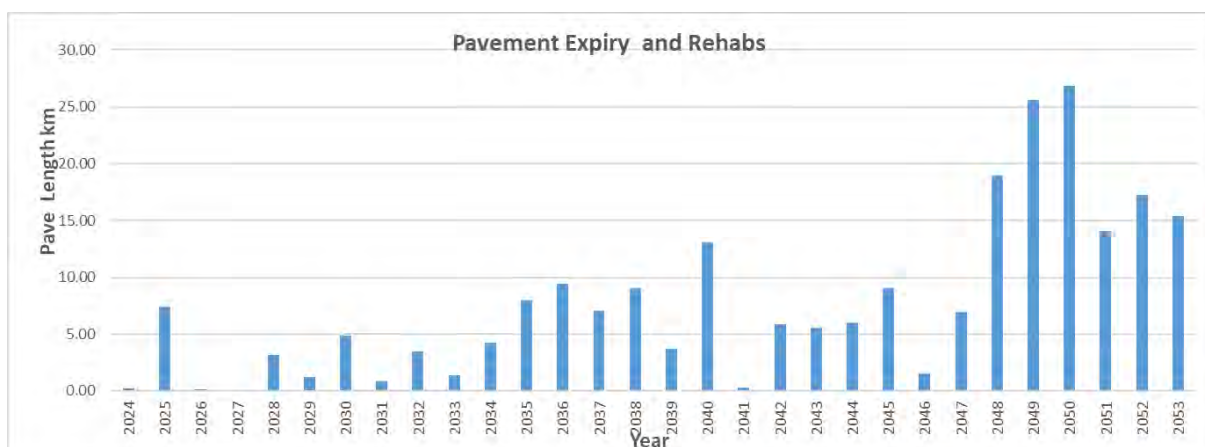




SCRIM performance historically (pre 2012) had been good on the Whakatane network. High PSV chip sources are available in our network, and that was the chip predominantly used. Price increases meant most sealing chip came from other sources. This has been compounded by a restricted resurfacing programme over the years since. A growing portion of sites are now failing by macro texture, as well a sSCRIM.

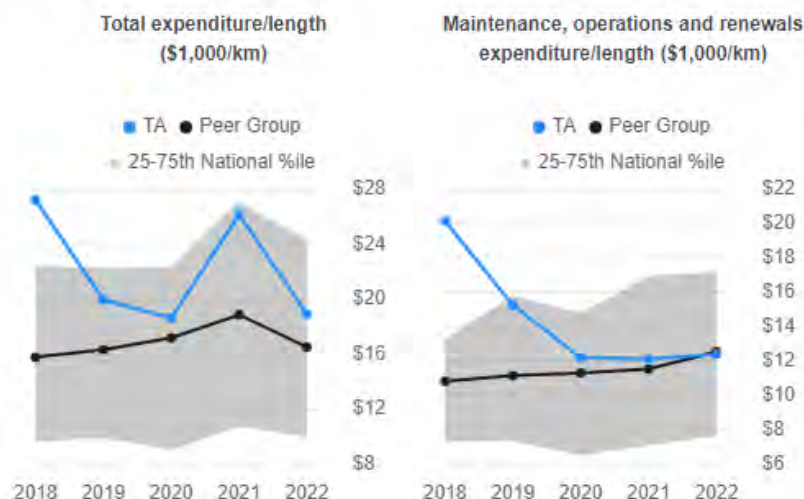


The significant drop in new pavement construction around 2010, when Council prioritised spend on stormwater improvements is obvious in the graph above.



The pavement expiry graph above is based on birthdays. It aligns reasonably closely with the dTims modelling outputs. It shows annual quantities ramping up over coming decades as the network matures and pavements age enough to need rehabilitation.

Cost Efficiency



Excluding emergency works, the Whakatane network typically runs at or just below the peer group average. The spike shown in 2018 and 2019 are the response to the twin cyclones Debbie and Cook in 2017. The spike in 2021 relates to a significant package of safety improvements to the Wainui Rd corridor in conjunction with Waka Kotahi

16.5 Pavement Modelling

A separate report for the modelling is available for more detailed information.

Three scenarios were run, based on the proactive, balanced and reactive scenarios developed for the broader PBC.

The model outputs were reported based on ONRC network hierarchy. Pavement performance targets and triggers have not yet been translated to the ONF. The model has three reporting classes:

- High Class, Arterial and Primary Collectors
- Medium Class, Secondary Collectors
- Low Class, Low Volume and Access

Current rutting and roughness performance is worse for the high class roads than the low class, which is contrary to differential levels of service. The objectives for each scenario are described in the table below:

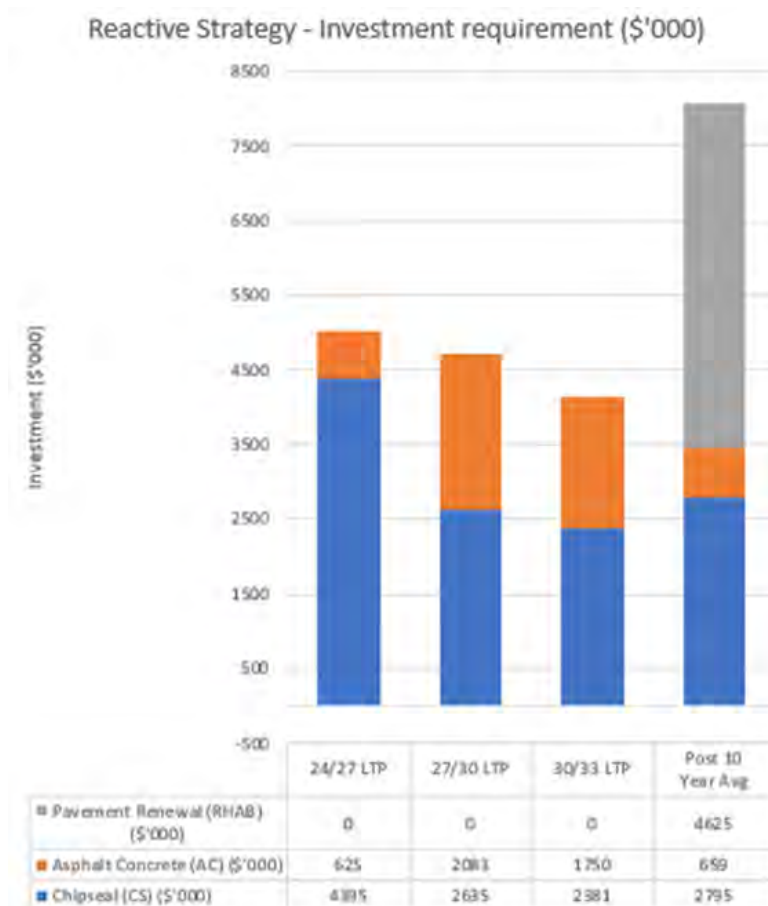
Scenario \ Class	High Class	Medium Class	Low Class
Proactive	Improving	Maintaining	Declining
Balanced	Maintaining	Maintaining	Declining
Reactive	Declining	Declining	Declining

The model followed these scenarios for the first 10 years. Beyond the first 10 years the model was allowed to run with an unlimited budget for all 3 scenarios to provide council with visibility on the possible impact, that the 10-year budget strategies would have on the network condition.

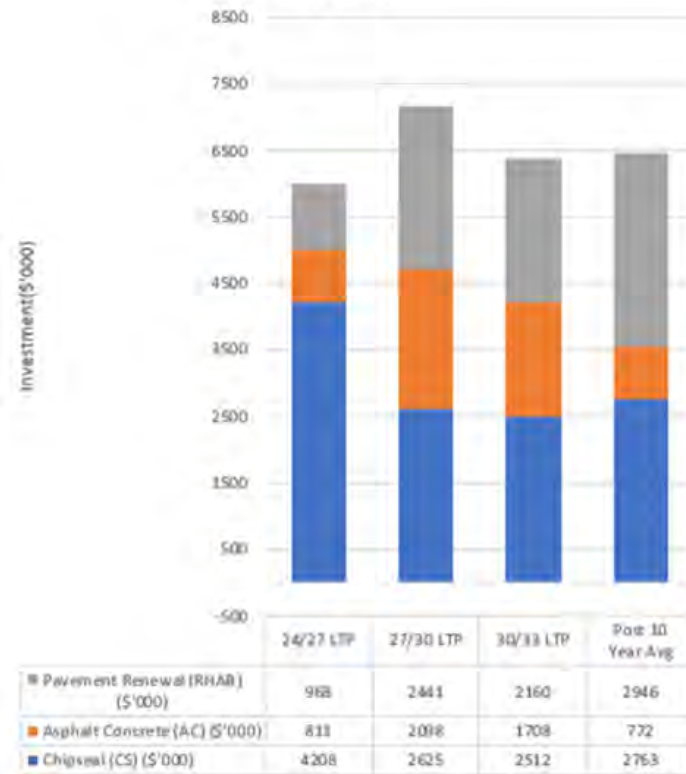
All 3 scenarios prioritised catching up on overdue resurfacing for the first 3 years, reducing rehab and Thin AC to achieve this, followed by reduced sealing quantities from year 4, with increased rehab and thin AC>

Cost and length of treatments for each option are displayed in the following graphs. The reactive strategy goes from the lowest cost scenario for years 1 to 10, following which it becomes the most expensive scenario due to the large backlog of rehabilitation and very poor network condition.

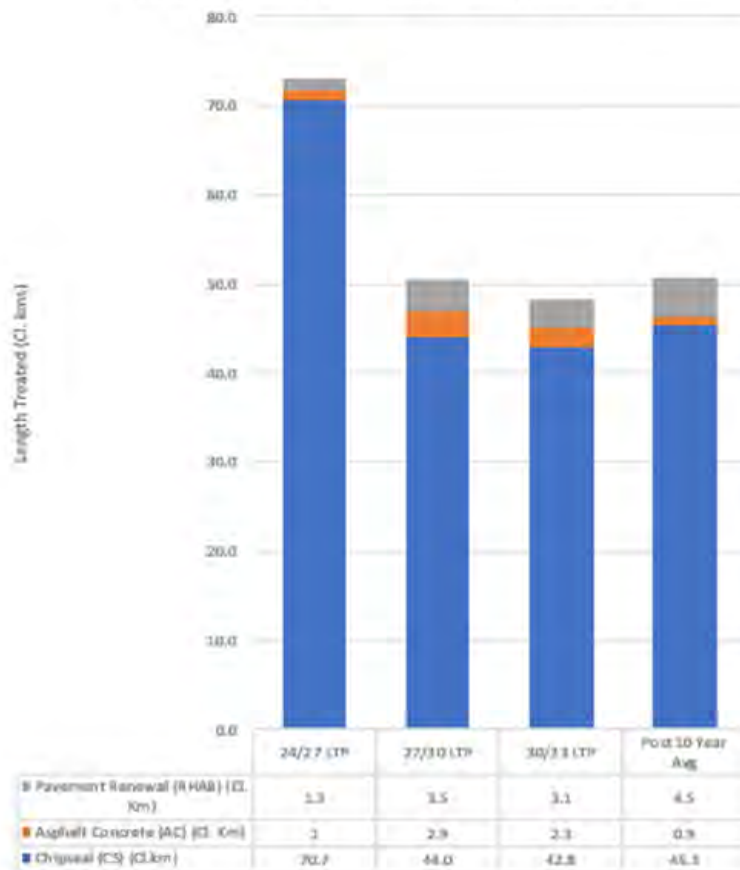
The balanced and pro-active strategy are quite close in terms of condition outcomes, though.



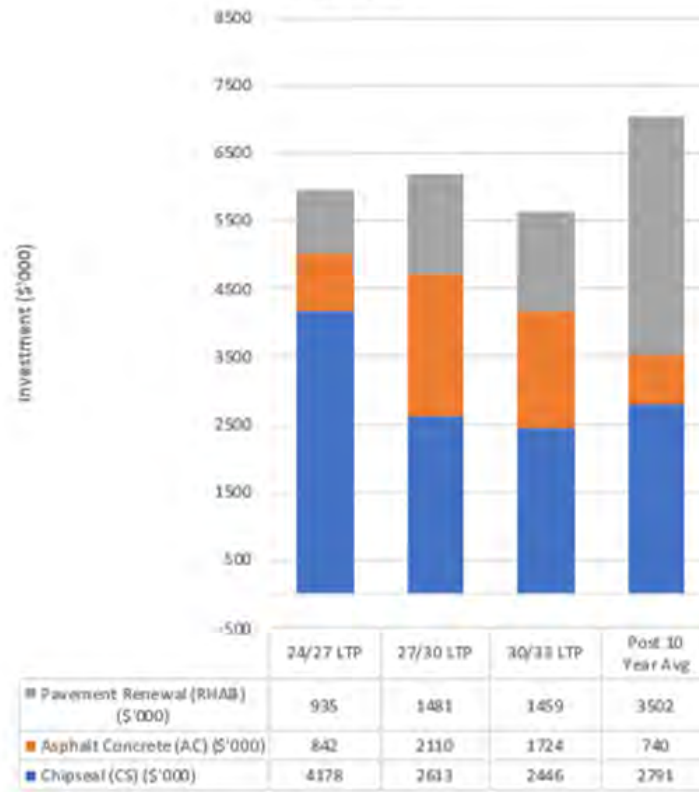
**Proactive Strategy - Investment requirement
(\$'000)**



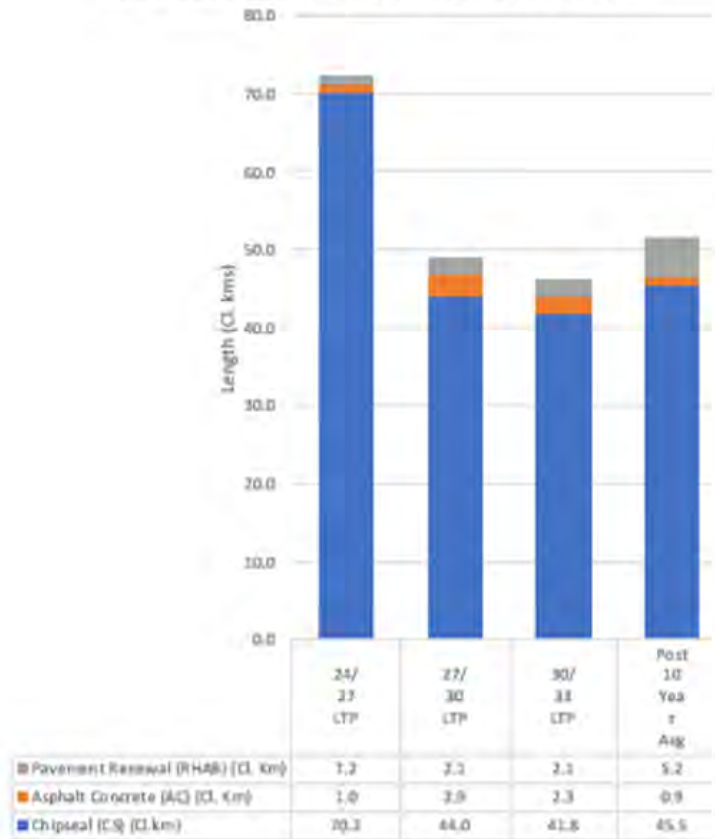
Proactive Strategy - Length Treated (Cl. kms)

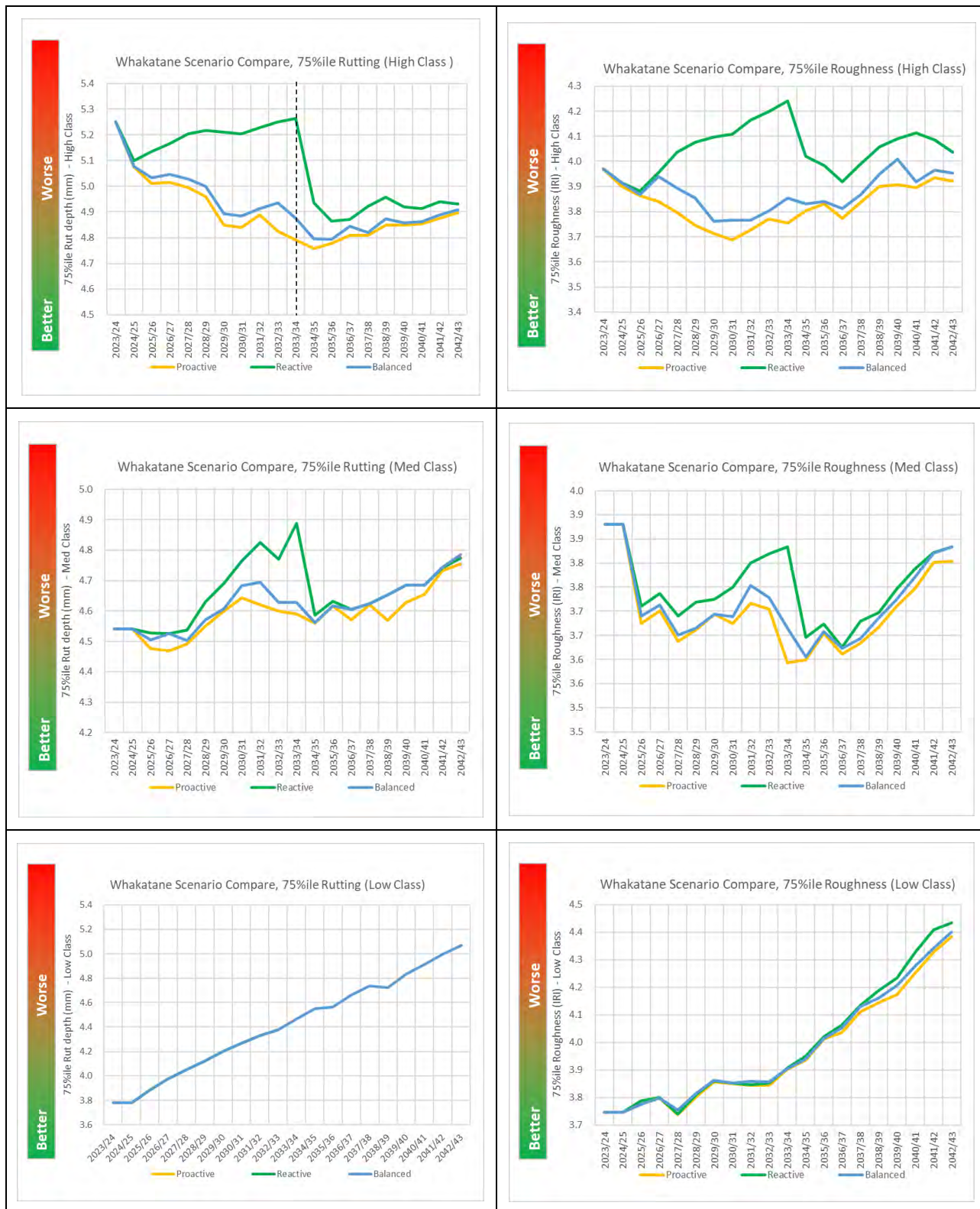


**Balanced Strategy - Investment requirement
(\$'000)**

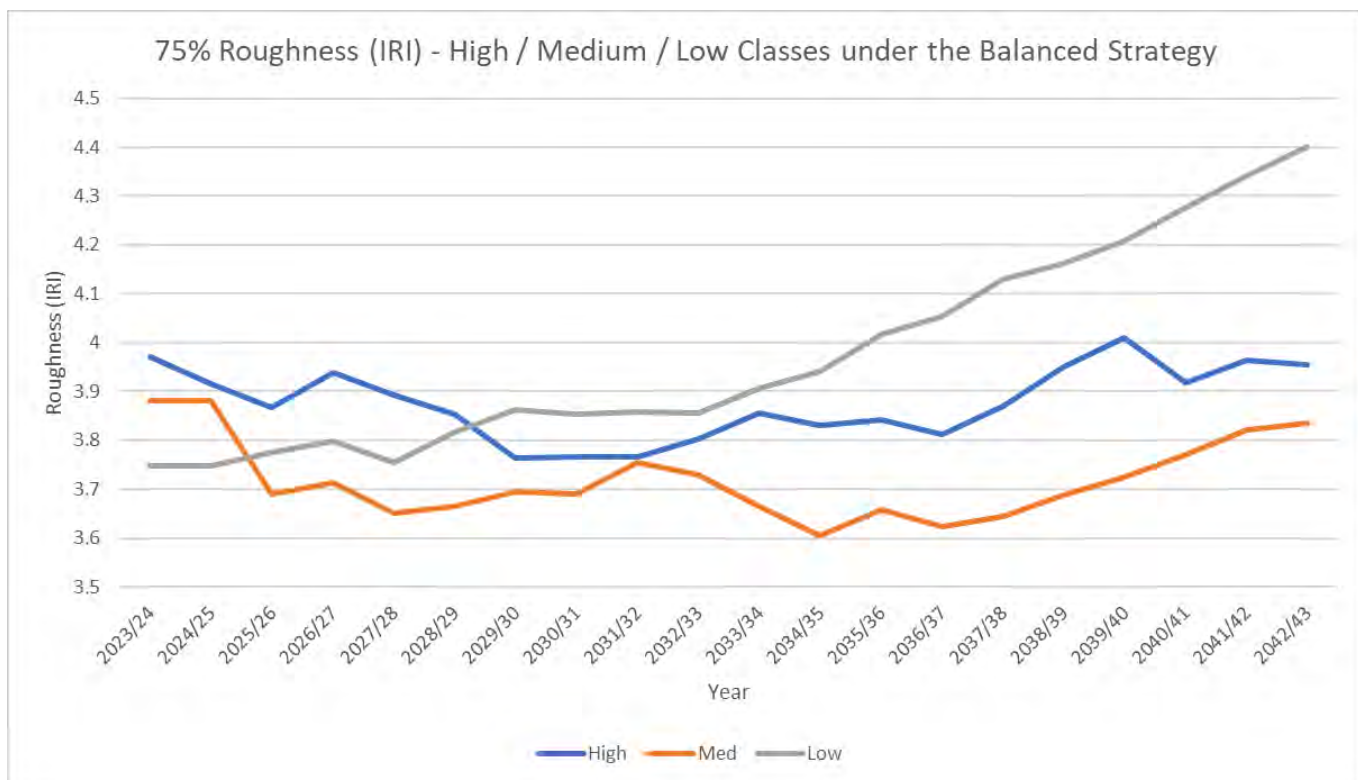
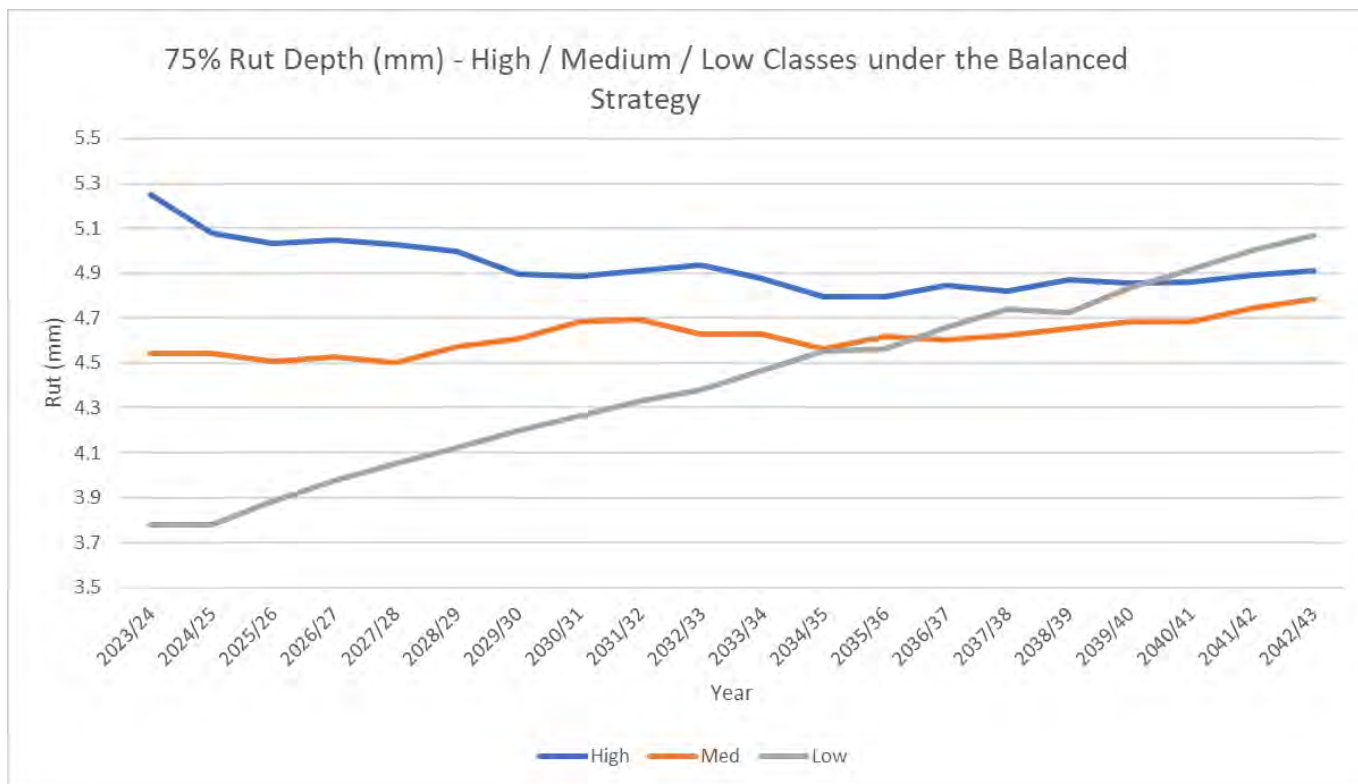


Balanced Strategy - Length Treated (Cl. kms)





Rutting and roughness for the balanced strategy are displayed in the figures below. The objectives are met under this strategy though it takes more than 10 years for the relative performances to flip the right way.



16.6 Optioneering

16.6.1 Option Development

16.6.1.1 Balanced

The balanced programme combines a proactive approach to higher classification roads and a more reactive approach to lower classification roads. The programme proposed has been developed from a combination of:

- Network data and condition information.
- Historic practices and experience.
- Pavement Modelling (dTims).
- Field verification of the FWP.

Maintenance & Operations

Maintenance is largely a continuation of current practice, with an increase to the pre-reseal repair budget to accommodate the increased resurfacing programme. The programme is primarily driven by regular inspections and monitoring by PSBU staff, guided by the Maintenance Intervention Strategy. Work is delivered primarily through the contract panel and managed by PSBU staff. The main exception being Resurfacing and pre-reseals which is under a long term contract with Fulton Hogan.

Regular surveillance maintenance patrols and inspections are completed fortnightly for movement category 1, 2 and 3 roads. And quarterly for movement category 4 & 5 roads. Specific inspections are undertaken for programming. The annual inspection programme is described in the Network and Asset Management section 14.

Annual costs vary through the programme. The balanced pavement maintenance programme averages \$2,505,400 PA.

Renewals

Pavement renewals have been underfunded over the previous 12 years as Council have focused on significant stormwater system upgrades in response to some serious flooding events. This has led to a bow wave of pavement renewals. Pavement modelling prioritises resurfacing for the first 3 years, which then tapers off to accommodate more rehabilitation and Thin AC surfacing. Year 1 also includes 2 rehabilitation sites that were not able to be accommodated in the 2021-24 LTP. The quantities in the 10 year programme are detailed in the following table:

Activity	10 Year Programme (km)									
	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Chip Seal	74	74	74	60	60	60	60	60	60	60
Thin AC	1.1	1.1	1.1	2.9	2.9	2.9	1.2	1.2	1.2	1.2
Rehab	2.5	1.2	1.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1

Annual costs vary through the programme. The balanced pavement renewal programme averages \$7,584,900 PA.

16.6.1.2 Proactive

Maintenance & Operations

- Increased pre-reseal repairs to allow for higher surfacing quantity and enable lower priority but still important repairs to be completed such as edgebreak, low shoulder, and adjustments to service cover height. Increase by \$80k PA
- Increased patrol and inspection frequency on movement category 1, 2 & 3 roads from fortnightly to weekly. Increase by \$80k PA (\$1500/day x 2 days per fortnight x26)
- Allowance for watercart and compaction resource to improve LOS during summer on high use gravel roads. Increase by \$60k PA. (\$3000/day x 20 days)

Proactive Maintenance Programme averaged total \$2,725,400 PA.

Renewals

- Increase rehabs 1km PA , \$600k PA
- Increased chipseal 0.9km PA \$54k
- Allowance for high PSV chip to treat SCRIM sites. \$120k PA (5km / 40,000m2 @ \$3/m2)

Proactive Renewals Programme averaged total \$8,358,900 PA.

16.6.1.3 Reactive

Maintenance & Operations

- Reduced pre-reseal repairs limited to just structural deformation and failures in the traffic lanes only. No edgebreak, low shoulders or service cover adjustments unless within budget. Reduce by \$200k PA
- Reduce patrol and inspection frequency on movement category 1, 2 & 3 roads from fortnightly to monthly. Reduce by \$60k PA
- Reduce grading allowance by 25%. Reduce by \$113k PA.

Reactive Maintenance Programme averaged total \$2,132,400 PA.

Renewals

- No planned rehabs. Allowance for unexpected failures only. Reduce by 1km PA, \$600 PA.
- Some urban residential streets currently with TAC surfacing will be resealed with chip seal. Reduce by \$217k PA.

Reactive Renewals Programme averaged total \$6,767,900 PA.

16.6.2 Options Assessment

Benefit	Option		
	Proactive	Balanced	Reactive
Improved environmental performance	Catching up on resurfacing and maintenance will increase pavement life reducing future rehabilitation requirements with associated materials, waste and embodied carbon.	Catching up on resurfacing and maintenance will increase pavement life reducing future rehabilitation requirements with associated materials, waste and embodied carbon.	Further deferral of pavement rehabilitation will result in increased future maintenance and decreasing resurfacing cycles, ultimately requiring expensive reconstruction.
A resilient, future-proofed transport system	A well maintained network is more resilient to damage and is more able to sustain a period of reduced focus during future emergency events.	A well maintained network is more resilient to damage and is more able to sustain a period of reduced focus during future emergency events.	A network in poor condition is susceptible to failure and reduces the ability to redirect resources to handle any future potential emergency.
Improved accessibility, connectivity, and travel reliability	Network in better condition will have less frequent closures (planned and unplanned) related to failure or maintenance interventions.	Network in better condition will have less frequent closures (planned and unplanned) related to failure or maintenance interventions.	Network in poor condition will have more frequent closures (planned and unplanned) related to failure or maintenance interventions.
Increased user health and safety	Network in good condition will develop less frequent hazardous faults, and there will be shorter periods between identification and repair. SCRIM seals will reduce loss of control type crashes.	Network in better condition will develop less frequent hazardous faults, and the period between identification and repair will be BAU.	Network in poor condition will develop more frequent hazardous faults, and there will be longer periods between identification and repair.
Risk	Overall moderate risk reduction compared to balanced option. Capital investment is required in tandem with a solid MOR programme to produce a large positive impact.	Refocused maintenance and renewal effort and enhanced resurfacing programme contains levels of risk to manageable levels	Overall investment is not sufficient to prevent any of the outcomes deteriorating.
Maintenance (2024-34)	\$27,254,000	\$25,054,000	\$21,324,000
Renewal (2024-34)	\$83,589,000	\$75,849,000	\$67,679,000
Preferred Option			

16.7 Life Cycle Management

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

16.7.1 Operations and Maintenance

Routine pavement maintenance of the network is built around the programming, inspection and auditing activities of Council's PSBU staff. These include:

- **Pavement Repair Program.** This is an annual program that focusses on structural pavement and surfacing repairs for the sealed network. The primary guiding document for this program is the Maintenance Intervention Strategy which defines the priority, timing, repair type and dimension guidelines for each treatment length. The MIS requires updating to reflect the level of service differentiation across the ONRC hierarchy. The primary focus is first cut of repair work for the following years resurfacing sites. The repair types driven by this program include stabilisation, dig out and replace, rip and remake, crack sealing, rut filling, low shoulder and associated drainage improvements where this has been a factor. RAMM contractor is used to develop and manage delivery of the program, and to record maintenance costs in RAMM.
- **Routine Inspections.** These are undertaken at various frequencies across the network from weekly to 3 monthly depending on road hierarchy and vulnerability. They are also undertaken in response to community feedback. These inspections are used to provide direction and focus to the road maintenance contractor's cyclic operations including the cyclic patrol truck (potholes, edgebreak, detritus, litter, incident response, etc) and grading of unsealed roads.
- **Auditing.** Auditing is undertaken quarterly and covers 10% of the network. It is used to assess contractor performance and provide a snapshot of network performance. This is useful for monitoring the effectiveness and adequacy of work programs over time. Auditing processes require updating to enable reporting against the full range of ONRC performance measures.

The quantity or demand for repairs in any given year is influenced by a range of factors which are important to manage to minimise exposure to future maintenance cost increases. These include:

- Many pavements are thin/weak and rely on consolidated subgrade to perform. High ground water following periods of substantial rain can make these pavements vulnerable to heavy traffic. It is vital that functioning water table drains are maintained to adequate depth to minimise impacts on these pavements.
- Many pavements consist of basecourse material that does not meet the requirements of NZTA M/4. These materials can perform ok when dry, but most are moisture sensitive so when moisture is allowed in through a surface that has lost its water proofing, or water table drains are not maintained, they fail very quickly.
- The historic drive to maximise surfacing life increased the risk that the optimal date for resealing is missed and unnecessary repairs result. There are two sites in year one of this LTP that fall in this category. It is important that pavements with aged or vulnerable surfaces are regularly monitored for signs of failure and addressed quickly.
- Rutting and or shoving tends to feature in the outer wheel track where there is no shoulder to speak of. Maintaining water table drains reduces the rate of rutting. Where pavement repairs are effected (rather than rut filling) consideration should be given to constructing additional pavement width alongside the repair. The trend for rutting and shoving shows improvement from high speed data, but this does not accord with general network observation.
- Maintaining the correct crossfall on unsealed roads and utilising moisture and compaction to extend grading cycles and minimise occurrence of potholes.

16.7.2 Renewals

16.7.2.1 Resurfacing

The programme is developed from a combination of:

- Network data and condition information.

- Historic practices and experience.
- Pavement Modelling (dTims).
- Field verification of the FWP.

Treatment selection typically follows guidance from the Chip Sealing in New Zealand handbook. Further guidance and considerations for the Whakatāne network includes:

- High traffic volumes on urban arterials are at limits of chip seal design. Landing, Domain, McAlister proposed for asphalt surfacing in future.
- Low volume urban cul-de-sac heads require asphalt to cope with modern service vehicle stresses, for example 4 axle rubbish trucks which will tear up a chip seal on a cul de sac.
- Resurfacing cycles are likely to shorten in the future as the number of seal layers on the network increases.

Over the previous decade resurfacing quantities have been held to 6% per annum on average (equating to an average seal life of over 16 years), down from 8% prior. A relatively young network in good overall condition facilitated this approach. This has allowed Council to prioritise other asset classes for investment such as storm water.

Increasing vkt, a growing bow-wave of resurfacing, declining condition indicators and accumulating seal layers as the network ages indicate resurfacing cycles need to return to a more sustainable level around 8% per annum (average seal lives 12.5years).

Pavement modelling has confirmed this view. All budget scenarios modelled returned resurfacing quantities averaging 56km, about 8% of the network per annum, once the overdue sites are caught up.

16.7.2.2 Pavement Rehabilitation

Pavement rehabilitation on this network is primarily driven by either a change in heavy vehicle loading or the pavement and subgrade becoming saturated for an extended period, and sometimes a combination of both. Examples include dairy farm conversions, forestry harvesting operations from a new block, carting rock for river and flood protection works and repairs. Saturated pavements and subgrades can be the result of the exceptionally wet winters we get every 6 years or so, or poor drainage maintenance. This mode of failure is relatively sudden and makes it difficult to accurately forecast a reliable rehabilitation programme more than a few years out.

A secondary driver for pavement rehabilitation (recycling) is unstable seal layers. This is likely to become a more significant driver over time as the network ages and seal layers accumulate. A few of these sites are starting to appear in the FWP now.

The Whakatane network is relatively young, with an average pavement age of 35 years. Pavement life estimates range from 40 years for pavement use 6 (ADT 10000 – 20000) up to 90 years for pavement use 1 (ADT < 100). The implications of this are that many of the pavements are only part way through their useful life. As the network matures we could potentially see a significant increase in pavement renewal requirements. A pavement renewals forecast based on expected life was developed for the 30-year infrastructure strategy (see figure below). The first 10 years (2021-2030) the rehab rate is 2.5km per annum (0.4%). The second 10 years (2031-2040) the rehab rate is 5.2km per annum (0.7%). The final 10 years (2041-2050) the rehab rate is 11.8km per annum (1.7%). The theoretical rehab rate once the network matures is 11.8km per annum (1.7%).

Pavement rehabilitation is only pursued when it demonstrably is the lowest whole of life NPV option. A minimum of three options are assessed and must include do minimum (ongoing maintenance), do something (typically heavy maintenance and reseal), and do rehabilitation.

This approach has been utilised over the past 12 years and resulted in a number of sites where the selected option was do something. This strategy has appeared to be successful with most sites performing better than or as expected. It would be useful to quantify maintenance costs at these sites and compare them to those forecast for the NPV analysis to help refine NPV analysis on future sites.

When rehabilitating roads, all drainage deficiencies including standard culverts are rectified and road widths are brought up to the appropriate road standard for those contained in the Engineering Code of Practice.

The preferred scenario from the pavement modelling recommends 1.8km of pavement rehabilitation per year. Where budgets are constrained the model prioritises resurfacing over rehabilitation. This however leads to the heavy maintenance and reseal option, increasing cost pressures for those activities. The requirement for rehabilitation is not removed, only deferred, adding to future cost pressures.

16.7.2.3 Unsealed Road Metaling

The unsealed road metaling program is built around the programming, inspection and auditing activities of Council's PSBU staff, supplemented by feedback from the network maintenance contract grader driver. The program is entered and managed in RAMM FWP. The program attempts to cover long treatment lengths of similarly performing pavement to minimise cost per kilometre, but this is tensioned by the requirement to respond to smaller lengths and isolated sections which for whatever reason have failed.

The majority of Whakatāne's unsealed roads are on good subgrades of weathered sedimentary rock or pumice. Those roads that are not subject to logging or other HCV use perform well with just a wearing course over a consolidated subgrade.

Council try to maintain regular communication with forest owners and operators around their harvesting plans to program unsealed pavement strengthening works and other improvements prior to the commencement of harvesting. Harvesting decisions are often made around current timber prices and exchange rates and often have very short lead times which can place considerable pressure on budget allocations. Council have been successful with obtaining contributions from operators towards any improvements required which helps offset these pressures.

Council have a local specification for unsealed basecourse aggregates that provides for lower cost locally sourced brown rock and river run aggregates. River run aggregates typically require basic processing either through a portable primary crusher, or spread and milled in situ to achieve the right size and broken faces.

Council also have a local wearing course specification based on the ARRB Unsealed Roads manual called Country Roads All Passing 30mm (CRAP30). This has proven to be the best material for providing a durable long lasting wearing surface with the lowest maintenance costs. Fully compliant material is only available from a few sources and can prove to be pricy for longer haul lengths.

Alternative wearing course materials have been experimented with. Two of which show promise:

- Local brown rock. Some sections of brown rock, particularly along the special purpose road through Ruatahuna, have very similar properties to CRAP30 when broken out, spread on the road, and smashed under a grid roller. This process has been used extensively along this route to good effect.
- River run aggregate. Recent trials spreading river run and milling in to the existing pavement to generate the fines required to bind the surface using a special pulverising mill has shown promise. The success of this option has been largely related to the skills and experience of the construction crew. It is likely to be further utilised in the future.

Other options such as polymer additives, eva glue, and cement/lime stabilising have also been trialled. Ultimately these have all proved either uneconomic, ineffective or environmentally unacceptable.

There are two main challenges affecting this activity:

- There are 61km of unsealed primary collector. These make up 29% of the network, but consume 45% of the budget
- Increasing levels of forest harvesting into the foreseeable future. Additional funding is being sought to assist in managing the impacts.

16.7.3 Asset Acquisition

Asset acquisition typically involves a developer investing assets constructed during development of subdivisions with the Council. The WDC Engineering Code of Practice sets out the policies and procedures for this process to ensure assets are constructed to the required standard and all relevant data is transferred and entered into RAMM.

Subdivisions in the planning process that will result in assets being transferred to WDC include:

Bunyan Rd East Opihi Block
Keepa Rd / SH 30 Corner

No allowance has been made in maintenance budgets for new assets in this funding round. The quantities of assets potentially being acquired are small in relation to the whole network, and new assets should require little to no maintenance. Budget adjustments will be made as appropriate, for each new funding period, as assets are acquired.

The spatial plan, currently under development, may also identify new assets to be acquired.

16.7.1 Asset Disposal

There are no set plans to dispose of any roads within the Whakatāne District at this stage.

There is however on-going discussion with Waka Kotahi at the moment with regards to the special purpose roads in the Whakatāne District and where the future ownership/management/maintenance responsibilities of these roads will sit in the future if the current 100% funding assistance rate is reduced.

Activity Management Plan 2024-34 TRANSPORTATION

16.8 Funding for Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC111 Sealed pavement maintenance Routine	T30251	LOC111	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000	\$806,000
LOC111 Sealed pavement maintenance Pre-seal	T30252	LOC111	\$840,000	\$840,000	\$840,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000	\$672,000
LOC112 Unsealed pavement maintenance	T30253	LOC112	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000
LOC121 Environmental maintenance Routine	T30259	LOC121	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000	\$264,000
Subtotal			\$2,120,000	\$2,120,000	\$2,120,000	\$1,952,000	\$1,952,000	\$1,952,000	\$1,952,000	\$1,952,000	\$1,952,000	\$1,952,000
Local Rd Renewal												
LOC211 Unsealed road metalling	T31437	LOC211	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000	\$719,000
LOC212 Sealed road resurfacing Chip seal	T31438	LOC212	\$4,200,000	\$4,200,000	\$4,200,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000	\$3,360,000
LOC212 Sealed road resurfacing Thin AC	T31439	LOC212	\$830,000	\$830,000	\$830,000	\$2,320,000	\$2,320,000	\$2,320,000	\$960,000	\$960,000	\$960,000	\$960,000
LOC214 Sealed road pavement rehabilitation	T31442	LOC214	\$1,850,000	\$935,000	\$935,000	\$1,481,000	\$1,481,000	\$1,481,000	\$1,459,000	\$1,459,000	\$1,459,000	\$1,459,000
Subtotal			\$7,599,000	\$6,684,000	\$6,684,000	\$7,880,000	\$7,880,000	\$7,880,000	\$6,498,000	\$6,498,000	\$6,498,000	\$6,498,000
LOCAL ROADS PROGRAMME TOTAL			\$9,719,000	\$8,804,000	\$8,804,000	\$9,832,000	\$9,832,000	\$9,832,000	\$8,450,000	\$8,450,000	\$8,450,000	\$8,450,000
Special Purpose Rd Maintenance												
SPR111 Sealed pavement maintenance Routine	T32251	SPR111	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000
SPR111 Sealed pavement maintenance Pre-seal	T32252	SPR111	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
SPR112 Unsealed pavement maintenance	T32253	SPR112	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000	\$242,000
SPR121 Environmental maintenance Routine	T32258	SPR121	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000	\$111,000
Subtotal			\$503,000	\$503,000	\$503,000	\$503,000	\$503,000	\$503,000	\$503,000	\$503,000	\$503,000	\$503,000
Special Purpose Rd Renewal												
SPR211 Unsealed road metalling	T33437	SPR211	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000
SPR212 Sealed road resurfacing	T33438	SPR212	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000
SPR214 Sealed road pavement rehabilitation	T33155	SPR214	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
Subtotal			\$525,000	\$525,000	\$525,000	\$525,000	\$525,000	\$525,000	\$525,000	\$525,000	\$525,000	\$525,000
SPECIAL PURPOSE ROADS PROGRAMME TOTAL			\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000
OVERALL PROGRAMME TOTAL			\$10,747,000	\$9,832,000	\$9,832,000	\$10,860,000	\$10,860,000	\$10,860,000	\$9,478,000	\$9,478,000	\$9,478,000	\$9,478,000

16.9 Improvement and Monitoring

Refer Improvement Plan section of the AMP.

17 Structures

17.2 Overview

Structures enable a safe, connected, resilient and reliable transport network.

Structures include:

- Bridges, road, cycle and pedestrian
- Culverts > 3.4m² cross-section area
- Retaining structures
- Guardrails
- Stock access structures, Cattle stops and underpasses

The table below provides a summary of asset quantities and valuation.

Structure Type	Length m	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Average Age	Average RUL	% Base Life consumed
Bridges & Large Culverts	2784	157	\$58,508,287	\$28,421,838	\$649,847	42	59	42%
Retaining	5731	287	\$12,798,793	\$9,021,795	\$168,222	22	56	28%
Guard Rail	16703	406	\$6,847,241	\$2,675,538	\$301,330	20	6	77%
Fords	144	9	N/A	N/A	N/A	19	N/A	N/A
Stock Structures	142	35	N/A	N/A	N/A	17	N/A	N/A

17.3 Key Issues

17.3.1 Bridges and Large Culverts:

Increasing frequency and intensity of rainfall is resulting in scour through bridge waterways causing rock armouring to collapse, undermining abutments and wingwalls, leading to bridge approaches settling.

Conversely, some of the water courses in the Galatea area are aggrading with large volumes of aggregate being washed out of the ranges and being deposited on the plains. This is reducing the waterway area on a number of bridges. Combined with more frequent and intense rain events existing waterways are not adequate and bridge approaches have been damaged regularly severing access.

Changes to design standards to meet climate change and the NES Freshwater requirements are adding significantly to bridge and culvert replacement costs, on top of the general construction cost escalation pressure seen recently.

While there are no bridge renewals within the ten-year window of this AMP, within the 30-year strategic view there are 28 bridges potentially up for renewal. The actual remaining useful life for many of our bridges and large culverts is uncertain but current condition and performance indicates it may be substantially more than the current assumed values. This matter has been getting national attention, which hopefully will result in guidance being issued on better estimating useful economic life.

Although not in the ten-year AMP time frame, there are two bridges which require specific mention:

- Quay St, bridge #148. This bridge is 73 years old. It is in the marine environment and has suffered from corrosion attack and spalling in recent years. Following the most recent round of repairs, the expected remaining life is > 10 years. The bridge is integrated into the Whakatane River stop banks.

There are two projects commencing in the short to mid term that will impact on the timing and scope for the replacement of this bridge. Project Future Proof is a Regional Council project currently going through pre-implementation and design to raise and strengthen the stop banks through this section of town. Te Ara Hou is a component of the Whakatane Regeneration programme led by Whakatane DC to redevelop the riverfront promenade in this location. It is imperative that both projects are aware of and consider the replacement of this bridge. Note there is no funding for the replacement of the bridge in this AMP.

- Ohotu Rd Bridge #100. This is the oldest and longest bridge in the District at 86 years old and 202m long. It has required substantial repairs over the years including underpinning of piles, deck joint repairs and repairs to concrete spalling. While the bridge is assessed to have approximately 20 years of life remaining it will be costly to replace, in the order of \$10M. And there are planning, cultural and heritage challenges that will take time to navigate. In particular, a substantial length of the approach roads are not within road reserve, crossing Maori/private land.

17.3.2 Retaining Structures:

There is a growing stock of retaining walls constructed principally in response to storm damage across the network. As the asset increases and ages there will be an increasing maintenance and renewals requirement to ensure they remain safe.

There are some unidentified and ad-hoc retaining walls around the network constructed in years past and never recorded. These are constructed from a variety of re-purposed materials including railway irons, power poles, bridge beams, corrugated iron and so-on. It is these type of walls that are driving the bulk of the renewals programme.

The asset database is not up to date. There are structures that were destroyed in the 2017 cyclones that have not been removed from the database, and there are new structures built during the rebuild that have not been entered into the database. Many of the mechanically stabilised/reinforced earth walls and slopes are missing from the database.

Vegetation growing over retaining structures is making inspections and monitoring difficult.

17.3.3 Guardrail:

Most guardrail renewal relates to repairing damage caused by vehicle impact. This can be difficult to plan for. Standards have changed considerably over the years, and in many cases the repair can necessitate replacing the whole system, pushing up costs.

17.3.4 Stock Structures:

There is ongoing demand from farm owners for the installation of stock underpasses. WDC contribute to these in accordance with NZTA policy. Ownership and maintenance responsibility remains with the land owner.

Some underpasses are now over 30 years old. To date these structures have not been on any regular inspection schedule for Council. While the land owner is responsible for maintenance, Council should include these structures on the regular inspection schedule to provide assurance that they are maintained and remain safe for road users.

17.4 Links to Strategic Case

Assets	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Bridges & Large Culverts		✓	✓		✓			
Retaining		✓	✓		✓			
Guard Rail						✓	✓	
Stock Access							✓	

17.5 Evidence Base

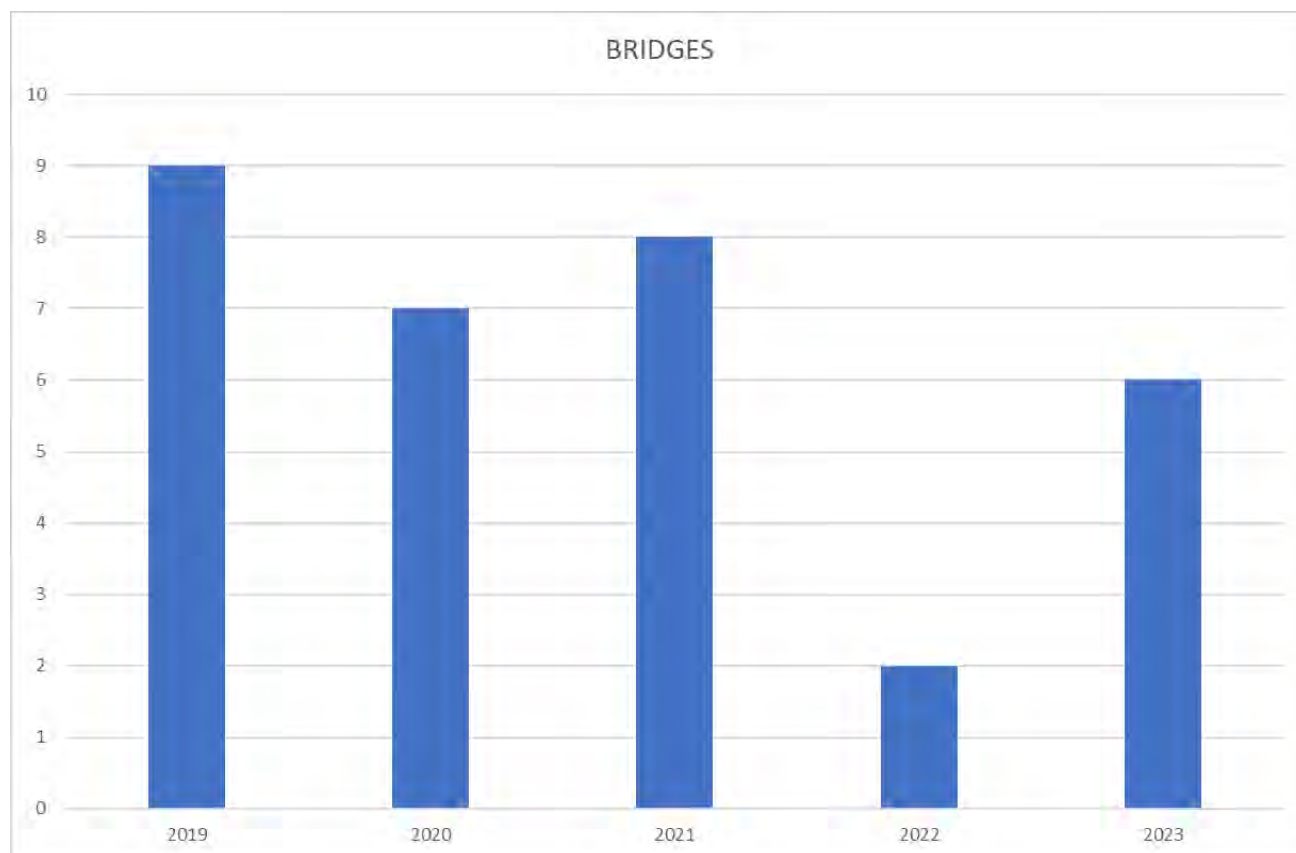
17.5.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the structures activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	9.1.1 Resource Efficiency	Proportion of sustainable & recycled materials	Y	Increasing			
		Waste minimisation	Y	Improving			
	9.1.2 Embodied carbon	Tonnes of CO2 equivalents emitted		Decreasing			
A resilient, future-proofed transport system	4.1.1 Availability of alternative to high risk/impact routes	Percentage of high-risk & high-impact routes with a viable alternative	Y	Increasing			
	4.1.2 Level of service & risk	Percentage of network assessed as having a major or extreme risk rating		Decreasing			
Improved accessibility, connectivity, and travel reliability	5.2.6 Access to key economic and social destinations - all modes	Proportion of population living within travel threshold of economic opportunities by different modes	Y	Increasing			
	5.1.4 Temporal availability - road	Number & duration of resolved road closures		Decreasing			
	2.1.1 Access - perception	Perception of safety & ease of walking & cycling	Y	Improving			
Increased user health and safety	1.1.3 Deaths and serious injuries	Number of deaths & serious injuries	Y	Decreasing			
	1.2.1 Road assessment rating	Infrastructure risk rating		Improving			

17.5.2 Community Feedback

The following graph shows the Customer Request for Services related to structures:



17.5.3 Design Standards

New and replacement bridges, retaining structures and underpasses are all designed in accordance with the Waka Kotahi Bridge Manual. This manual sets out design requirements and levels of service based on the importance level of the structure and road hierarchy.

17.5.4 Bridge Restrictions

The table below summarises bridge restrictions on the network. All but four bridges are certified for 50 Max. Of the four bridges, two are certified to Class 1, and two are posted.

Bridge number	Location	Restrictions	
		Load	Speed
67 - Whirinaki Bridge	Whirinaki Road, Galatea, over the Whirinaki River	Maximum Loading: Class 1 (44 Tn)	Maximum Speed Limit: 20 km/hr
124 - Kirkbride Bridge	Kirkbridge Road, Waimana, over the Raroa Stream	Maximum 7.2 Tn Axle load	No restrictions
129	Matahī Valley Road, over the Waimana River	Maximum Loading: Class 1 (44 Tn)	No restrictions
133 - Ogilvies Bridge	Matahī Valley Special Purpose Road, over the Waimana River	Maximum 7.5 Tn axle load and 60% of Class 1 loading	No restrictions

There is a project in the Capital Improvements Programme for strengthening Whirinaki Rd Bridge #67 to full HPMV. It is currently ranked as priority C in the resilience theme. It is included in the 2024-27 LCLR programme. The other three bridges meet current demand and there are no plans to progress any improvements.

17.5.5 Renewals Profile

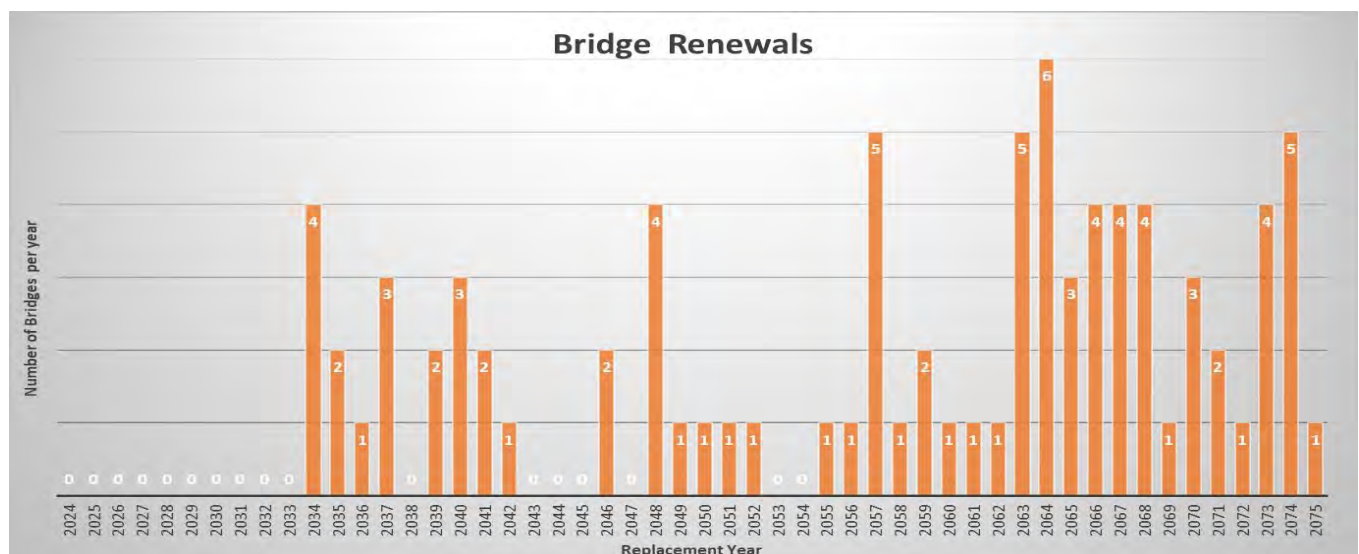
Owing to the relatively young age of the network and typically long lives for structural assets, very few are due for renewal within the 10 year view of the AMP. Many of the retaining structures have been built in response to damage from severe storms experienced over the last two decades. Much of the guardrail has been installed through safety programmes over the last three decades. The bridge and guardrail stock is generally in good condition, and performance to date indicates that the actual economic lives for these assets on average may be substantially longer than those assumed within the asset database.

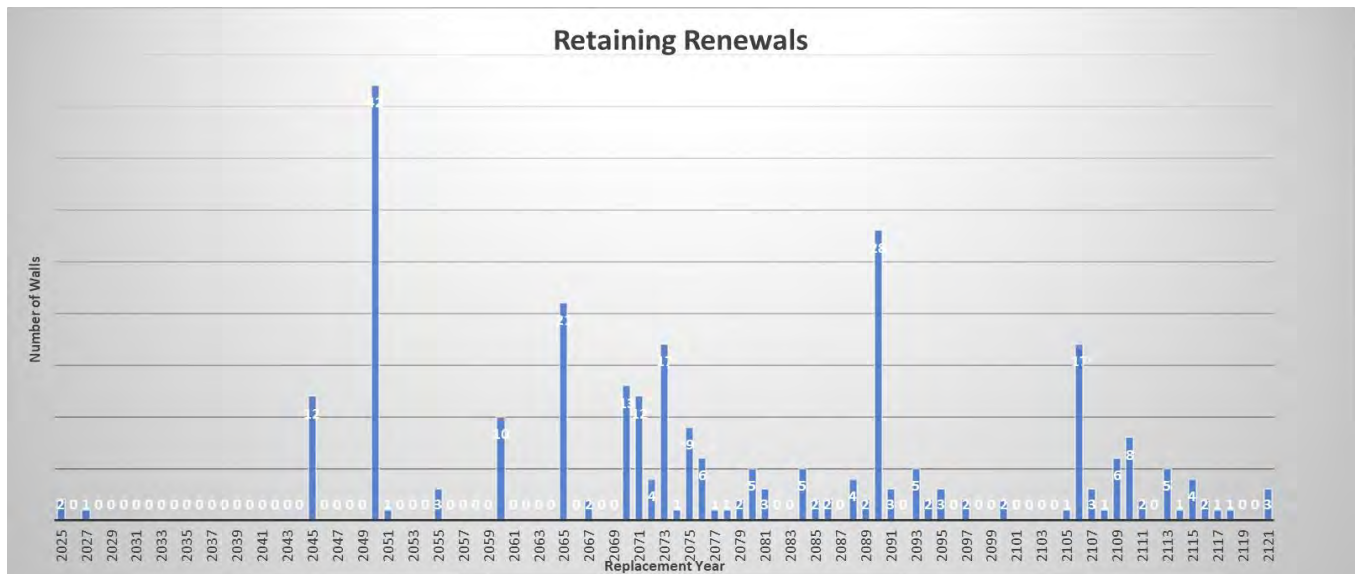
The figures below display projected asset renewal profiles bridges, retaining walls and guardrail.

There were seven bridges in the ten year programme indicated for renewal based on age. These have all been through a PV-EOL assessment. For all seven bridges it proved economic to defer replacement through a modest programme of maintenance for periods from 10 up to 30 years.

This spike will likely end up distributed between the years 2040 and 2060.

The spike for guardrail renewals in 2024 is the result of the estimated useful life being far to short. None of the rail in 2024 needs replacement because of condition. In fact the majority of guardrail replacement is due to impact damage from vehicles. The useful life for guardrail needs to be reviewed and updated.





17.6 Optioneering

17.6.1 Option Development

17.6.1.1 Balanced

The balanced option represents an enhancement of the previous approach to structures MOR. This approach is based on a regular cycle of inspections in accordance with national guidance to identify MOR requirements, and a programme of works to address those requirements. Enhancements include:

- An increase to bridge maintenance and renewal budgets to respond to increasing waterway impacts. \$20k PA.
- A new allocation for retaining wall maintenance to respond to emerging maintenance requirements and control of vegetation on MSE slopes and walls. \$45k PA.

Works are only carried out that maintain the safety and structural integrity of the structure, or to prevent increased future costs.

Bridge replacements are only carried out when supported by the PV-EOL assessment, with options developed and assessed in accordance with the SP-2 procedure from the Waka Kotahi Monetised Benefits and Costs manual.

17.6.1.2 Proactive

A proactive option has not been explored for structures in this AMP revision. A study will be progressed through the 2024-27 LTP exploring and quantifying network resilience and route security. The outputs of that study will be used to develop and support a proactive programme at that stage if it is shown to provide value.

17.6.1.3 Reactive

A reactive option has not been explored for structures in this AMP revision. Structures MOR is a small portion of total MOR spend and maintains fit for purpose levels of service across the network. Any minor savings achieved are dwarfed by the increase in risk.

17.6.2 Options Assessment

The table below identifies the contribution each programme option makes to the ILM benefits, option cost, and the preferred option.

Benefit	Option		
	Proactive	Balanced	Reactive
Improved environmental performance	N/A	Life maximised, deferring replacement and associated demand on materials (resource efficiency) and embodied carbon.	N/A
A resilient, future-proofed transport system	N/A	Increased focus on waterway maintenance improves resilience to floods.	N/A
Improved accessibility, connectivity, and travel reliability	N/A	Appropriate levels of maintenance reduce frequency and duration of unplanned closures.	N/A
Increased user health and safety	N/A	Guardrail maintained in a fit for purpose condition ensures that it is effective when stuck by an errant vehicle.	N/A
Cost (2024-34)	N/A	\$8,559,000	N/A
Preferred Option			

Large Positive	Minor Positive	Neutral	Minor Negative	Large Negative
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17.7 Life Cycle Management

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

17.7.1 Operations and Maintenance

17.7.1.1 Bridges and Retaining Walls

Maintenance is derived through a structured inspection programme based on Waka Kotahi Bridge Manual requirements.

- Every third year 50% of all bridges and retaining walls undergo a general inspection, and 50% have more detailed structural inspection undertaken.
- Annual superficial inspections are co-ordinated with other routine maintenance condition inspections.
- Structures nearing end of life or considered at high risk have special inspections at shorter intervals as determined on a case by case basis. Currently four structures are on special inspections schedule:
 - Ohotu Rd Bridge
 - Herepuru Rd Retaining Wall
 - Kowhai Street Retaining Wall
 - Seaview Rd Retaining Wall
- Inspections after specific events such as earthquakes, severe floods or instances of overloading.

This schedule does not line up exactly with the inspection schedule in the Waka Kotahi Bridge Manual. All structures receive a detailed inspection every six years in accordance with the Bridge Manual, but receive a general inspection every three years instead of every two as described in the manual. The revised schedule aligns better with the three year RLTP funding cycle. Risks associated with extending the period for general inspections is offset by:

- Local roads typically have lower traffic volumes and loading than state highways.
- Special inspections for end of life and at risk structures.
- A more frequent superficial inspection regime.

Repair treatments and priorities are determined on a case by case basis by the structural engineer and Council asset staff giving consideration to the following:

- Public safety
- Resilience
- Asset preservation
- Risk to the structure
- Timing
- Whole of life costs.

The BOPRC currently monitor many of the aggrading streams within the Galatea area. WDC will work with BOPRC to identify priority areas for gravel extraction activities to assist with managing this problem.

17.7.1.2 Guardrail

Maintenance requirements are identified through:

- routine maintenance condition inspections
- three yearly network safety audits

- crash reports
- community reporting

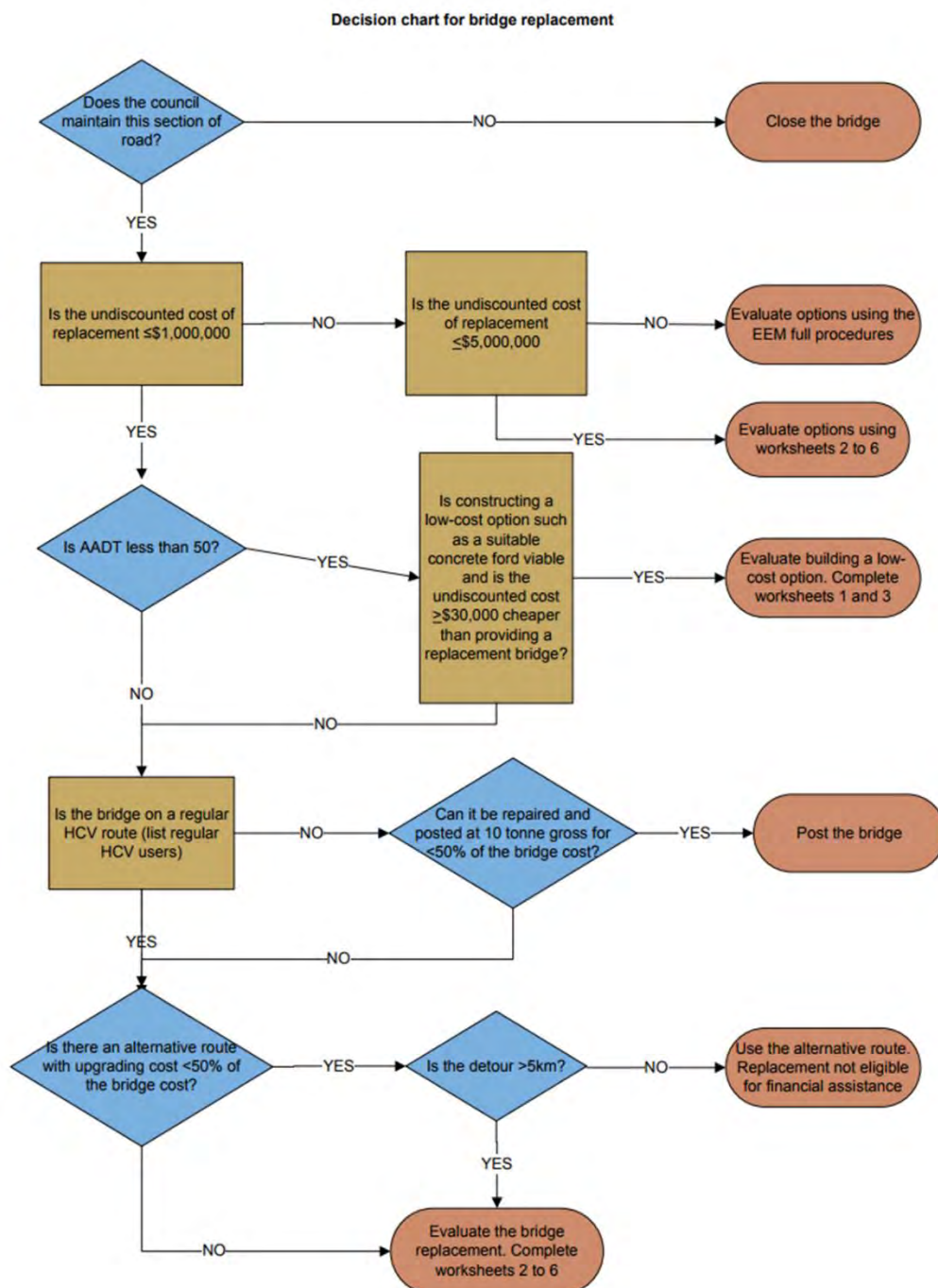
The majority of maintenance relates to vehicle impact damage or vandalism.

17.7.2 Renewals

17.7.2.1 Bridges and Retaining Walls

Renewals are identified and prioritised through the bridge inspection regime as described in section 2.6.1 1 above. Renewals can be replacement of individual structural components, or replacement of the entire structure. The decision on whether to repair or replace is tested through Waka Kotahi's PV-EOL procedure and the decision chart for bridge replacement in the Waka Kotahi Monetised Benefits and Costs manual.

**Decision chart for
bridge
replacements on
low-volume roads**



There were seven bridges in the ten year programme indicated for renewal based on age. These have all been through a PV-EOL assessment. For all seven bridges it proved economic to defer replacement through a modest programme of maintenance for periods from 10 up to 30 years.

There are four retaining walls identified for replacement in the 10 year horizon of this plan as detailed in the table below:

Road Name	RP	Constructed	Age	RUL	Year	Cost	Work Cat
HEREPURU ROAD	395-440	unknown	unknown	0	2024/26	\$1,000,000	LR216

(two adjacent retaining walls)							
SEAVIEW ROAD					2025/27	\$250,000	LR216
KOWHAI STREET		unknown	unknown	0	2025/27	\$577,000	LR216
TE WHAITI ROAD		unknown	unknown	0	2024/26	\$200,000	SPR216

17.7.2.2 Guardrail

Renewals are identified and prioritised through the inspection regime as described in section 2.6.1 2 above. The majority of renewals relate to repairing vehicle impact damage, which is necessarily reactive. As such an allowance is included in the budget for guardrail renewal but there isn't a programme.

Older guardrail is often installed to outdated standards. When a section of guardrail is damaged and requires replacement a decision is required to either replace the damaged section only to the outdated standard as a component replacement, or replace the entire length to meet current standards as an LCLR improvement.

This decision is made on a case by case basis. Typically LCLR improvements will only be considered for connector roads and only if LCLR budget under the associated improvements category can be prioritised.

17.7.3 Improvements

Improvement works are proposed to address identified level of service gaps where planning interventions, demand management and maximising use of the existing network cannot address the gaps on their own.

Where identified, improvement works will be evaluated and prioritised against other capital improvement activities in Improvement Programme Section of the AMP

17.7.4 Asset Acquisition

Asset acquisition typically involves a developer vesting assets constructed during development of subdivisions with the Council.

The WDC Engineering Code of Practice sets out the policies and procedures for this process to ensure assets are constructed to the required standard and all relevant data is transferred and entered into RAMM.

There are currently no confirmed structures in development associated with subdivision in the 10 year horizon of this plan. There could potentially be a new bridge built over the Kope Canal linked to further development of the Shaw Rd block and the SH30 SIP works. The spatial plan, currently under development, may also identify new structures to be acquired.

17.7.5 Asset Disposal

There are no plans to dispose of any bridge within the 10 year horizon of this plan.

Activity Management Plan 2024-34 TRANSPORTATION

17.8 Funding for Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC114 Structures maintenance Bridge	T30257	LOC114	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
LOC114 Structures maintenance Retaining	T30220	LOC114	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000
LOC114 Structures maintenance Other	T30258	LOC114	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Subtotal			\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000	\$284,000
Local Rd Renewal												
LOC215 Structures component replacements Bridges	T31443	LOC215	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000	\$128,000
LOC215 Structures component replacements Retaining	T31444	LOC215	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000	\$73,000
LOC215 Structures component replacements Other	T31XXX	LOC215	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$49,000
LOC216 Bridge and structures renewals Retaining	T31XXX	LOC216	\$327,000	\$750,000	\$750,000							
Subtotal			\$577,000	\$1,000,000	\$1,000,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
ITAL			\$861,000	\$1,284,000	\$1,284,000	\$534,000	\$534,000	\$534,000	\$534,000	\$534,000	\$534,000	\$534,000
Special Purpose Rd Maintenance												
SPR114 Structures maintenance Bridge	T32256	SPR114	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
SPR114 Structures maintenance Retaining	T32435	SPR114	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
SPR114 Structures maintenance Other	T32257	SPR114	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Subtotal			\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Special Purpose Rd Renewal												
SPR215 Structures component replacements Bridges	T33440	SPR215	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
SPR215 Structures component replacements Retaining	T33441	SPR215	\$18,000	\$200,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
SPR216 Bridge and structures renewals Retaining	T33XXX	SPR216	\$50,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal			\$116,000	\$398,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000
PROGRAMME TOTAL			\$156,000	\$438,000	\$106,000	\$106,000	\$106,000	\$106,000	\$106,000	\$106,000	\$106,000	\$106,000

17.9 Improvement and Monitoring

Refer Improvement Plan section of the AMP.

18 Drainage

18.2 Overview

As the old saying goes “the three most important aspects of roading are drainage, drainage and drainage”.

Well maintained and functioning drainage systems are essential for:

- achieving long pavement lives,
- keeping the road network safe to use in adverse weather,
- avoiding erosion in the environment and damage to road pavements,
- maintaining water quality,
- avoiding nuisance or damage to neighbouring property upstream or downstream,
- maintaining network resilience.

Drainage assets include:

- culverts (<3.5m2),
- Kerb and channel
- unlined surface water channels and side drains,
- sub-surface drainage systems,
- road stormwater collection and disposal systems.

The table below provides a summary of asset quantities and valuation.

Drainage Asset	Length m	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Average Age	Average RUL	% Base Life consumed
Catchpits		2222	\$3,159,520	\$1,408,726	\$62,399	29	22	57%
Culverts	38556	2769	\$17,099,833	\$8,086,592	\$344,612	27	24	53%
Side Culverts	14613	1534	\$2,812,848	\$1,229,673	\$69,265	26	17	60%
Subsoil Drains	5619	59	Not valued			9	62	13%
Manholes, Drop Chambers		199	Not valued			14	47	23%
Soakpits		5	Not valued			18	33	35%
Flumes	2712	339	Not valued			16	55	23%
Kerb & Channel (Conc)	268000		\$34,478,125	\$15,958,948	\$680,540	26	25	51%
Scour Protection	4215	51	Not valued			13	58	18%
Side Drains	74414		Not valued			N/A		
Surface Water Channels	1106165		Not valued			N/A		
Totals	1514294	7178	\$ 57,550,326	\$ 26,683,939	\$ 1,156,816			

18.3 Key Issues

18.3.1 Asset Data

Many soakpits are missing from the database. RAMM records only 5, but there must be close to 100 in Coastlands alone.

Some substantial assets are not included in the valuation including:

- subsoil drains
- manholes
- drop chambers
- soakpits
- flumes
- scour protection.

Current actual renewal rates for drainage assets are significantly lower than that indicated by the renewals profiles. Regular inspections of the drainage system and condition rating indicate that the current renewals rates are appropriate. This suggests that the assumed asset lives for drainage assets are too short.

18.3.2 Statutory

Changes to data requirements and design standards to meet climate change and the NES Freshwater requirements are adding significantly to drainage replacement costs, on top of the general construction cost escalation pressure seen recently. As discharge consents expire and require replacement, likely to need significant investment to manage / treat / mitigate adverse effects of discharging contaminated water. The extent of this issue, and potential cost implications is not yet well understood. This is an area we plan to address during the 2024-27 period, and this is likely to have an impact on the subsequent drainage programme beyond 2027.

18.3.3 Rural:

Substandard or silted up water tables are not effectively allowing the structural pavement layers to drain adequately contributing to accelerated rutting within the outer wheel track of the pavement.

Some parts of the network, particularly the western hill country, are on highly erodible volcanic soils.

Many culverts are undersized and block or overtop regularly causing damage to the pavement and adjacent properties.

For a period around 20 years ago, galvanised corrugated culverts were extensively used. Many of these are rusting out and collapsing, particularly where stream bed loads are high.

Changes to design standards to meet climate change and the NES Freshwater requirements are adding significantly to drainage replacement costs, on top of the general construction cost escalation pressure seen recently.

18.3.4 Urban:

A lot of the older kerb and channel was constructed using pre-cast pumice kerb blocks. These have badly deteriorated letting surface water into the pavement resulting in failures.

Some areas of town have many deciduous trees which block catchpit grates resulting in flooding during autumn months. The roots of these trees can lift and break kerb and channel.

Much of the storm water network that catchpits connect to is undersized.

More frequent, high intensity rain events are considered likely in the future due to climate change.

Some urban streets do not have kerb and channel. In some of these cases road runoff is causing problems for adjacent properties. It also leads to pavement maintenance problems with edgebreak and low shoulder.

18.4 Links to Strategic case

Assets	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Culverts		✓	✓		✓			
Kerb & Channel		✓			✓			
Unlined surface water channels & side drains		✓	✓					
Sub-surface drainage systems		✓						
Road stomwater collection & disposal		✓	✓		✓			

18.5 Evidence Base

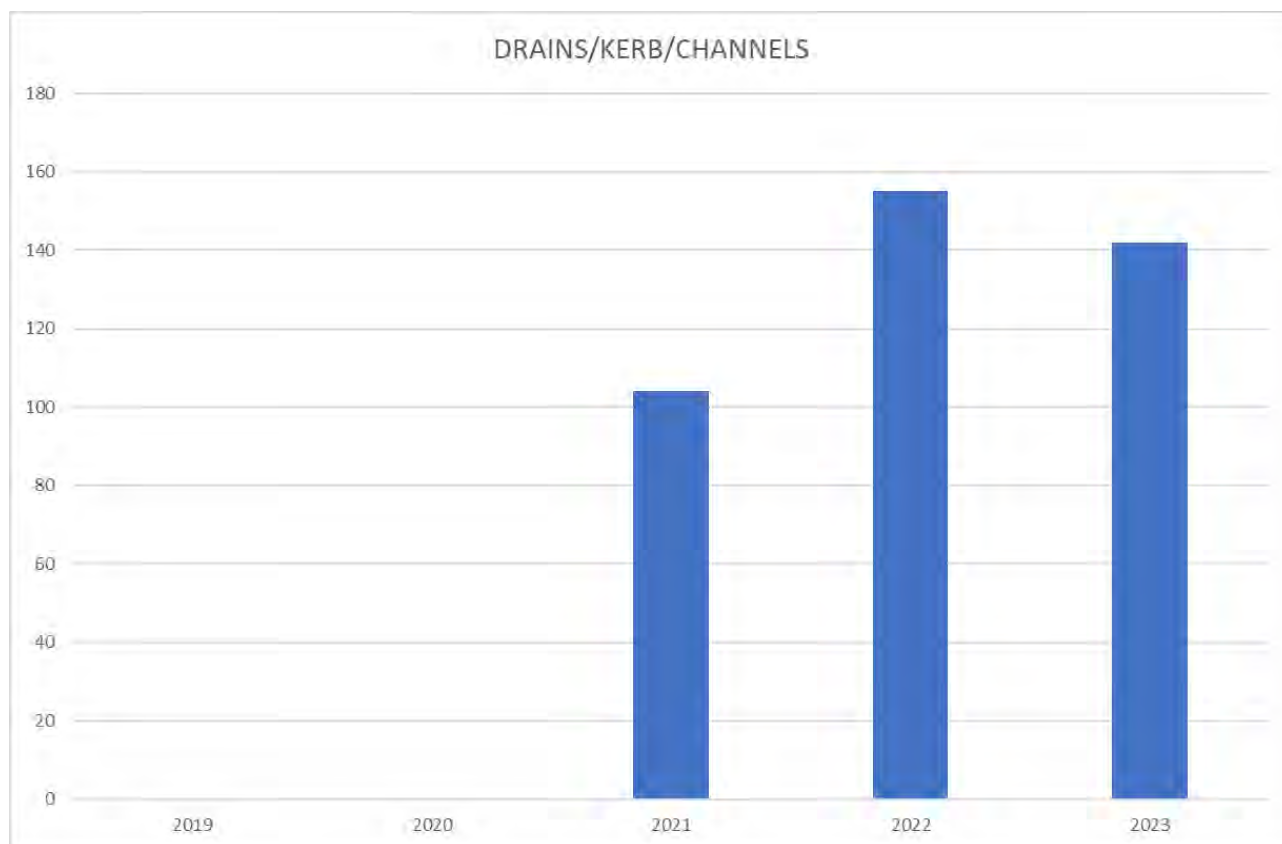
18.5.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the drainage activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	9.1.1 Resource Efficiency	Proportion of sustainable & recycled materials	Y	Increasing			
		Waste minimisation	Y	Improving			
	9.1.2 Embodied carbon	Tonnes of CO2 equivalents emitted		Decreasing			
A resilient, future-proofed transport system	4.1.1 Availability of alternative to high risk/impact routes	Percentage of high-risk & high-impact routes with a viable alternative routes	Y	Increasing			
	4.1.2 Level of service & risk	Percentage of network assessed as having a major or extreme risk rating		Decreasing			
Improved accessibility, connectivity, and travel reliability	5.1.4 Temporal availability - road	Number & duration of resolved road closures		Decreasing			

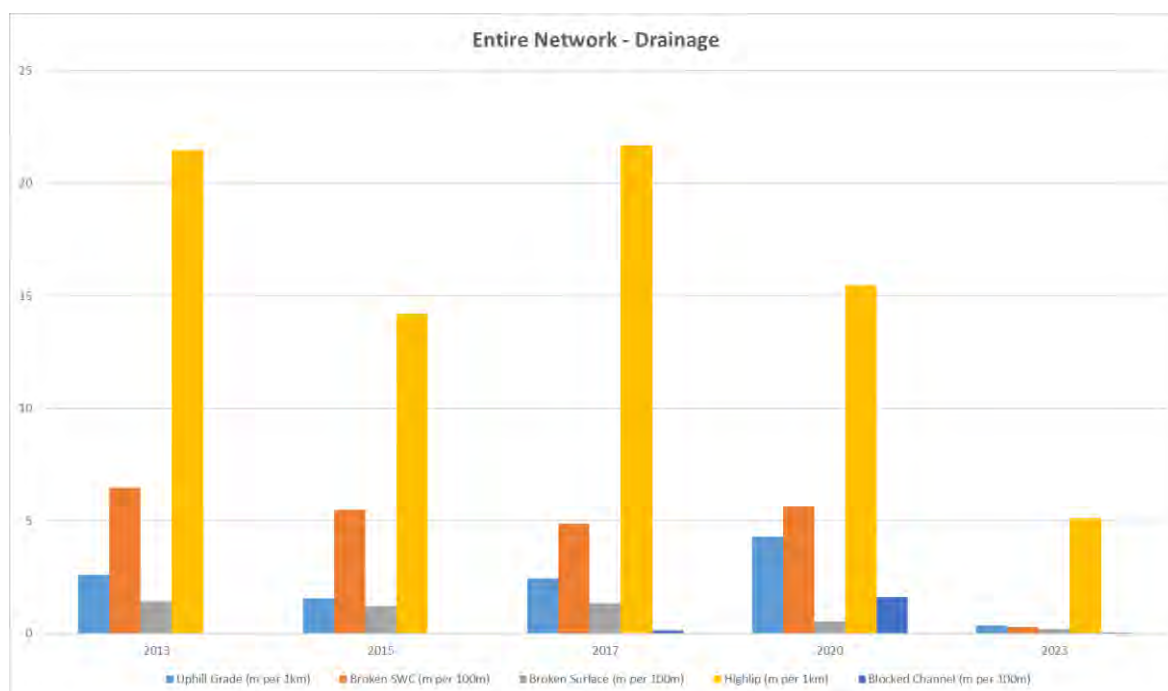
18.5.2 Community Feedback

The following graph shows the Customer Request for Services received related to drainage:



18.5.3 Condition Rating:

The figure below shows condition rating results for the previous 10 years from full network surveys

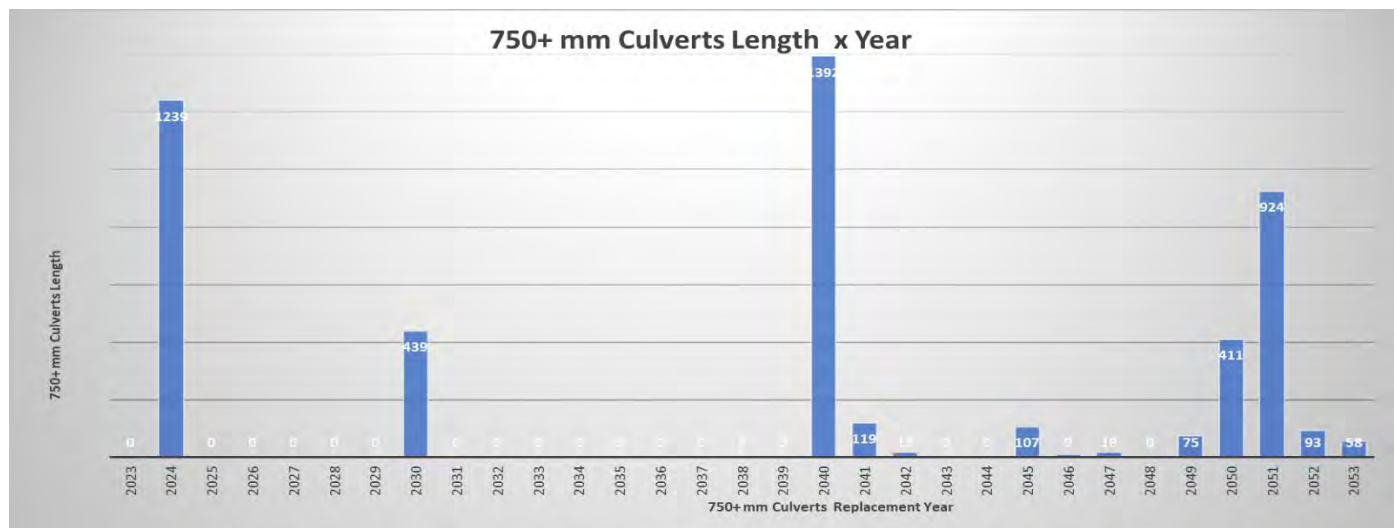
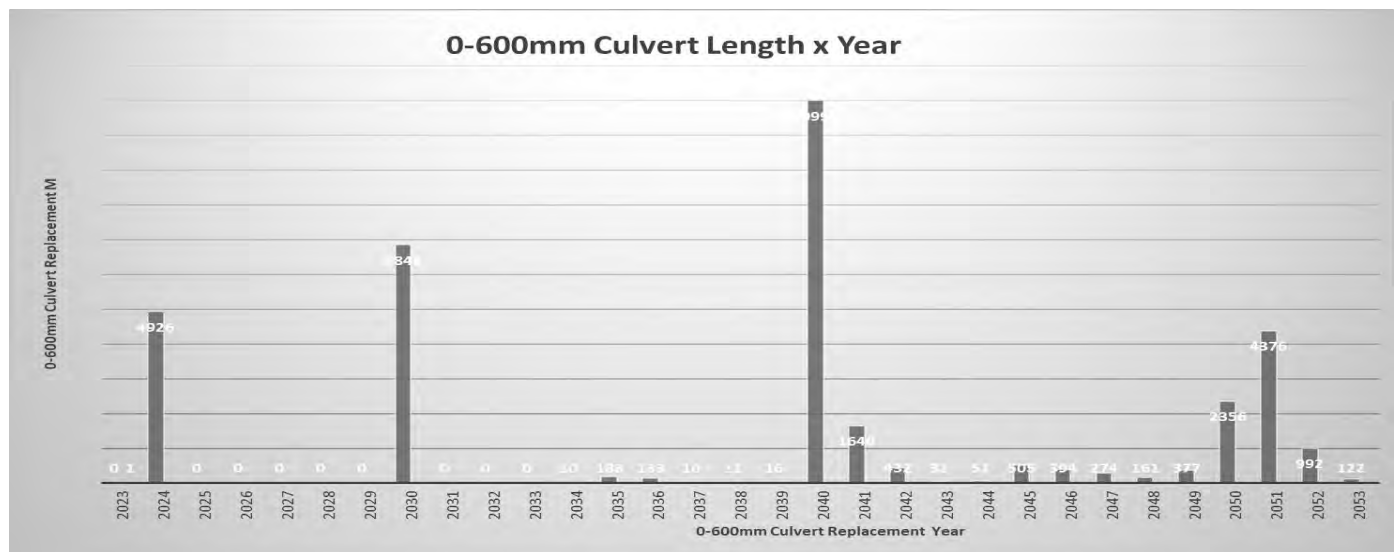


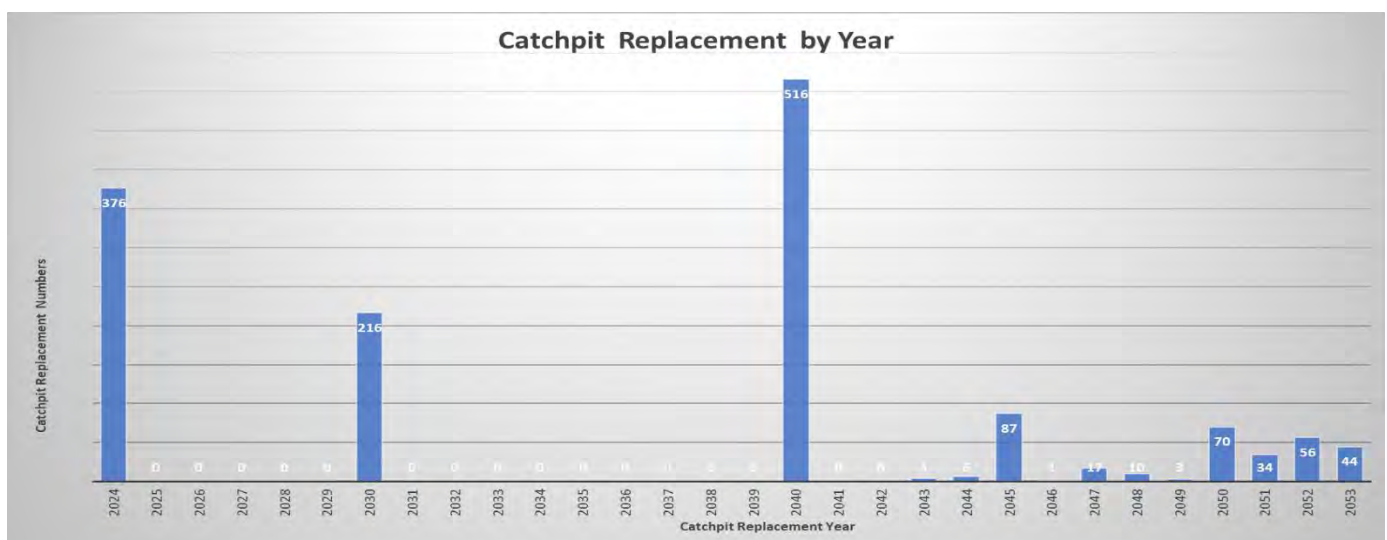
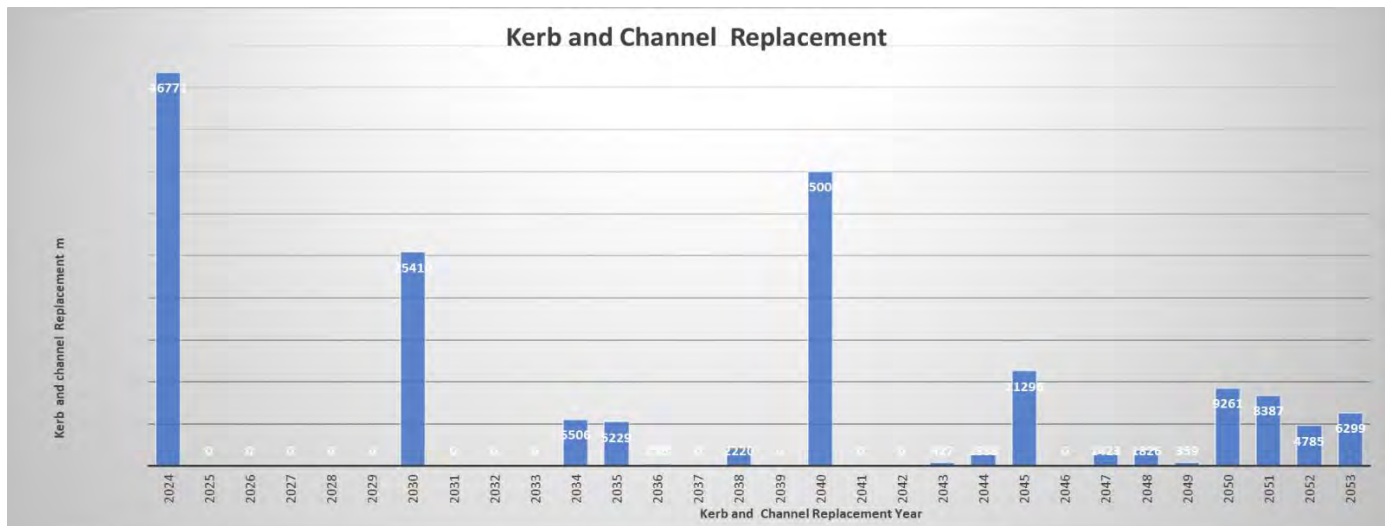
The results of an increased focus on drainage maintenance over the previous two LTP periods (2018 – 2024) can be seen.

18.5.4 Renewals Profiles

Renewals profiles for the main asset types of culverts, kerb and channel, and catchpits are shown in the figures below. They all show a similar pattern.

Most drainage assets have assumed lives of 50 years. The spikes in renewals for the year 2030 and 2040 relates to default dates of 1980 and 1990 being applied to existing assets when the RAMM database was first established in the 90's. Records did not exist for many of these structures so a default date was set. The spike in 2024 relates to assets with an assigned default date of 1970, that have not required replacement as yet.





18.6 Optioneering

18.6.1 Option Development

18.6.1.1 Balanced

The balanced option represents a business-as-usual approach. This includes a risk-based inspection and monitoring regime. Condition is monitored through 10% quarterly audits and 100% condition rating of the full network every 3 years. Critical culverts are inspected prior to and following the forecast arrival of heavy rain.

Maintenance to preserve the functionality of the drainage system utilises differential levels of service based on ONF street families. Autumn leaf-fall sweeps are scheduled fortnightly.

Maintenance to repair damaged drainage assets is prioritised to resurfacing and pavement rehabilitation sites in the first instance, then the remainder of the network in the second instance as budget allows. Typically many faults that are desirable to repair but less urgent will not be repaired. Balanced maintenance programme total \$1,044,000 PA

Renewals are also prioritised to resurfacing and pavement rehabilitation sites in the first instance, replacing any assets at condition 4 or 5. Then the remainder of the network in the second instance. For ONF movement

categories 1, 2 and 3 the aim is to replace assets at condition 4 (poor), avoiding failure. For ONF movement categories 4 and 5 the aim is to replace assets at condition 5 (very poor), recognising the risk that some assets may fail prior to replacement. This provides for 450m of culvert renewal, 3000m of kerb and channel renewal and 20 replacement catchpits annually. Balanced renewals programme total \$760,000 PA

18.6.1.2 Proactive

The proactive option increases the maintenance allocation to allow for:

- Leaf fall sweeps to be scheduled weekly. + \$15k
- All desirable faults to be repaired. + \$100k
- The asset data issues identified to be corrected. + \$35k

Proactive maintenance programme total \$1,194,000 PA.

An increased renewals allocation would allow for the replacement of assets for ONF movement categories 4 and 5 at condition 4, avoiding failure. This would include:

- Extra 1000m kerb and channel PA. + \$100k
- Extra 20 catchpit replacements PA. + \$50k
- Extra 100m culvert renewals PA. +\$75k

Proactive renewals programme total \$985,000 PA.

18.6.1.3 Reactive

The reactive option decreases the maintenance allocation and reduces levels of service including:

- The 10% condition monitoring audits reduced to once annually. - \$18k
- Autumn leaf fall sweeps scheduled monthly. - \$20k
- Differential levels of service (street sweeping frequency etc) set at the lowest LOS right across all street families. - \$100k

Reactive maintenance programme total \$906,000 PA.

A reduced renewals allocation would see replacement of assets for ONF movement classes 1, 2 & 3 at condition 5, and for ONF movement classes 4 & 5 only once the asset had failed. While the quantity of renewals will decrease a small amount, the overall cost is expected to be similar to the balanced as responding reactively to a failed asset is likely to be significantly more expensive per asset than planned intervention. Reactive renewals programme total \$760,000 PA.

18.6.2 Options Assessment

The table below identifies the contribution each programme option makes to the ILM benefits, option cost, and the preferred option.

Benefit	Option		
	Proactive	Balanced	Reactive
Improved environmental performance	Planned renewal programme allows efficiency for delivery (embodied carbon), maximises opportunity to incorporate sustainable & recycled materials, & consider waste minimisation	Mix of proactive and reactive, similar to BAU but application of DLOS results in overall minor improvement.	Reduced inspections, maintenance and renewals expenditure increases likelihood of blockages or asset failure leading to scour and erosion damage causing increased discharges of sediment to waterways.
A resilient, future-proofed transport system	Enhanced renewals programme contributes to reduction in the risk to levels of service from unplanned disruption by natural events.	Mix of proactive and reactive, similar to BAU but application of DLOS results in overall minor improvement.	Reduced inspections, maintenance and renewals programme increases risk to levels of service from unplanned disruption by natural events.
Improved accessibility, connectivity, and travel reliability	Enhanced renewals programme contributes to reduction in the number of closures with duration over 2hrs (urban or 12hrs (rural))	BAU. Neutral as the measure does not incorporate DLOS.	Reduced inspections and renewals programme contributes to increase in the number of closures with duration over 2hrs (urban or 12hrs (rural))
Risk	Enhanced renewals programme reduces risk related to asset failure. As renewals are to current standards climate change risks are accommodated. Risk of unplanned expenditure minimised.	Mix of proactive and reactive, similar to BAU but application of DLOS results in overall minor improvement.	Reduced inspections, maintenance and renewals programme increases risk related to asset failure. The risk is compounded as assets are not being renewed to current standards as quickly, increasing exposure to climate change risks. Significant risk of unplanned expenditure. Risk to private property also significantly elevated.
Maintenance (2024-34)	\$11,940,000	\$10,440,000	\$9,060,000
Renewal (2024-34)	\$9,850,000	\$7,600,000	\$7,600,000
Preferred Option		✓	

Large Positive	Minor Positive	Neutral	Minor Negative	Large Negative
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Costs for the preferred option are at 10.4% of the MOR programme total. This is in the middle of the recommended 9% to 12% range.

18.7 Life Cycle Management

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

18.7.1 Operations & Maintenance

Drainage maintenance is built around the programming, inspection and auditing activities of Council's PSBU staff, supplemented by feedback from the maintenance contractor and community. These include:

- **Drainage Inspections.** The network is divided into six areas and include Rangitaiki Plains West, Rangitaiki Plains East, Galatea, Western Hill Country, Eastern Hill Country and Southern Hill Country. The higher risk hill country areas are inspected three times per year, and the remaining areas once per year. These inspections assess function and condition of all drainage assets. Any maintenance or replacement requirements are recorded along with a priority rating. These inspections form the basis of the monthly maintenance and renewals program provided to the contractor.
- **Special Inspections.** Critical culverts have been identified and recorded in RAMM. Critical culverts are those where significant damage to transport assets or private property is likely to occur if they are blocked or otherwise not functioning. These are inspected prior to heavy rain arriving following receipt of a warning, during the event if it is of long duration, and again following the event. Urban areas with high leaf fall in autumn are also inspected on a weekly basis.
- **Auditing.** Auditing is undertaken quarterly and covers 10% of the network. It is used to assess contractor performance and provide a snapshot of network performance. This is useful for monitoring the effectiveness and adequacy of work programs over time. Auditing processes require updating to enable reporting against the full range of ONRC performance measures.
- **Condition Rating.** 100% of the network every three years.

A large part of drainage maintenance is focused on maintaining the functionality of the system, rather than the system itself. Typical activities include:

- Kerb and channel sweeping
- Clearing culverts and other structures
- Removing high shoulders
- Redefining earth water channels
- Catchpit and soakpit cleaning

Other maintenance activities focussing on maintaining system components typically include:

- Repairs to catchpit aprons
- Repairs to rock riprap protection
- Repairs to collapsed headwalls
- Repairs to outlet flumes.

Substantial improvements to the function and condition of the drainage network have been observed since Council took back in-house responsibility and control over the maintenance programmes.

18.7.2 Renewals

Renewal programmes are developed through the inspections described under Operations and Maintenance above.

Although drainage asset renewals are largely condition driven, renewals are designed taking into consideration climate change risks by applying DAPP as specified by Council's Climate Change Action Plans. Over time through the renewals programme the drainage system is adapting to manage climate change risks. Whether this rate of change is quick enough, or needs supplementing with a programme of associated improvements through the LCLR programme is yet to be determined.

Note that replacement assets designed to current standards are still considered renewals even if, for example, an existing 600mm culvert requires replacing with a 1000mm culvert to accommodate climate change effects.

18.7.2.1 Kerb & Channel

The kerb and channel asset is generally in reasonable condition. The main issues that drive kerb and channel renewal include:

- For a period in the past pumice concrete kerb blocks were used in all new kerb and channel installations. These have deteriorated significantly and let water through to the pavement layers causing damage. These are programmed for replacement in conjunction with either resurfacing or rehabilitation of the adjacent pavement.
- Street tree selection in the past was not always well thought through. Some tree species with shallow root systems were planted in narrow berms right next to the kerb and channel. Over time these have lifted and broken sections of kerb and channel, often preventing the channel from conveying water to the catchpit. These are generally also programmed for replacement in conjunction with either resurfacing or rehabilitation of the adjacent pavement. If the issue is impacting on access or private property then a stand alone replacement will be programmed earlier.

18.7.2.2 Culverts

The main issues that drive culvert renewal include:

- Older butt-jointed concrete pipes. Over time through differential settlement these pipes tend to move apart and allow water to flow into and through the bedding. It also allows fine grained soils used as fill over the pipe to drop through the gaps. As a result, support is either lost from under the pipe, or a tomo develops in the road above the pipe. For larger pipes this type of fault is easier to identify, but for smaller pipes often the first indication of a fault is a tomo appearing. The frequency of these failures requiring a reactive response is low enough that it can generally be accommodated for within the program. Old butt-joint pipes are proactively identified and replaced in conjunction with the pavement rehabilitation.
- Galvanised corrugated steel pipes. A lot of these culverts were installed in rural locations during the late 1990's and early 2000's. Many were installed on the special purpose roads between Murupara and Huiarau Summit. These have proven far less durable than anticipated, particularly in locations with a high bed load of gravel. Typically they rust or wear through on the bottom and then collapse. From the condition distribution table above it can be seen that these culverts are in much worse condition overall than concrete culverts, even though they are much younger. A large part of the culvert renewal program is focussed on replacing these culverts, either in conjunction with pavement renewals, or as standalone renewals.

- Undersized culverts causing damage to other roading assets or private property when they overtop. These are either identified from network observations or brought to the attention of Council by adjacent land owners. These often require a hydrological assessment to identify the appropriate culvert size. They are then prioritised and programmed. This issue is significantly exacerbated with climate change implications overlaid.

Other considerations for culvert renewals are:

- Where there is evidence to suggest an existing culvert is too small, a hydrological analysis of the catchment is required.
- On long downhill sections consideration should be given to over-sizing every 3rd or 4th culvert. This will cut-off excess flow if any of the pre-ceding uphill culverts become blocked and prevent significant damage from uncontrolled run-off.
- In the hill country with mobile sediments the absolute minimum culvert size shall be 375mm (desirable minimum 450mm). Culverts smaller than this tend to block easily and quickly, and are difficult to clean out.
- Outlet flumes where required should be constructed from full round corrugated HDPE pipe such as farmtough. They are significantly more robust and maintenance free compared to half pipes, which are easily damaged or blocked with detritus falling on them.

Where a culvert replacement results in a culvert size greater than 3.5m², these are included in the bridge programme and constructed as low cost low risk improvements.

18.7.3 Improvements

Improvement works are proposed to address identified level of service gaps where planning interventions, demand management and maximising use of the existing network cannot address the gaps on their own.

Where identified, improvement works will be evaluated and prioritised against other capital improvement activities in the Improvements Programme Section of the AMP

18.7.4 Asset Acquisition

Asset acquisition typically involves a developer investing assets constructed during development of sub divisions with the Council. The WDC Engineering Code of Practice sets out the policies and procedures for this process to ensure assets are constructed to the required standard and all relevant data is transferred and entered into RAMM.

Subdivisions currently underway or in the planning process that will result in assets being transferred to WDC include:

- Shaw Rd Extension
- Bunyan Rd East Piripai Block
- Keepa Rd / SH 30 Corner

There is also likely further future subdivisions expected to create additional assets in the 10-30 year horizon as part of the expected growth. The Spatial Plan work currently underway will help to give a clear indication of these likely impacts.

No allowance has been made in maintenance budgets for new assets in this RLTP round. The quantities of assets potentially being acquired are small in relation to the whole network, and new assets should require little to no maintenance. Budget adjustments will be made at each new RLTP period as assets are acquired.

18.7.5 Asset Disposal

There are no plans to dispose of any drainage assets within the Whakatāne District.

Activity Management Plan 2024-34 TRANSPORTATION

18.8 Funding for Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC113 Routine drainage maintenance Routine	T30254	LOC113	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000	\$605,000
LOC113 Routine drainage maintenance Street cleaning	T30256	LOC113	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
Subtotal			\$687,000	\$687,000	\$687,000	\$687,000	\$687,000	\$687,000	\$687,000	\$687,000	\$687,000	\$687,000
Local Rd Renewal												
LOC213 Drainage renewals Culverts	T31440	LOC213	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000	\$234,000
LOC213 Drainage renewals Kerb and channel	T31441	LOC213	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
Subtotal			\$574,000	\$574,000	\$574,000	\$574,000	\$574,000	\$574,000	\$574,000	\$574,000	\$574,000	\$574,000
LOCAL ROADS PROGRAMME TOTAL			\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000	\$1,261,000
Special Purpose Rd Maintenance												
SPR113 Routine drainage maintenance	T32254	SPR113	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000
Subtotal			\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000	\$138,000
Special Purpose Rd Renewal												
SPR213 Drainage renewals	T33439	SPR213	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000
Subtotal			\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000	\$134,000
SPECIAL PURPOSE ROADS PROGRAMME TOTAL			\$272,000	\$272,000	\$272,000	\$272,000	\$272,000	\$272,000	\$272,000	\$272,000	\$272,000	\$272,000
NFA Maintenance												
NFA Street Cleaning	T34154		\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000	\$190,000
NFA Beach SW Outlet Mtc	T34210		\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000
Subtotal			\$219,000	\$219,000	\$219,000	\$219,000	\$219,000	\$219,000	\$219,000	\$219,000	\$219,000	\$219,000
NFA Renewal												
NFA Drainage Renewal	T35150											
NFA Soakpit Renewal	T35212		\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000
NFA k+C Renewal	T35211		\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000
Subtotal			\$52,000	\$52,000	\$52,000	\$52,000	\$52,000	\$52,000	\$52,000	\$52,000	\$52,000	\$52,000
NON-FINANCIALLY ASSISTED ROADS PROGRAMME TOTAL			\$271,000	\$271,000	\$271,000	\$271,000	\$271,000	\$271,000	\$271,000	\$271,000	\$271,000	\$271,000
OVERALL PROGRAMME TOTAL			\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000	\$1,804,000

18.9 Improvement & Monitoring

Refer Improvement Plan section of the AMP.

19 Traffic Services

19.2 Overview

Traffic services encompasses a range of assets and activities that facilitate the safe and efficient use of the transportation system.

- Road signs assist the safe navigation of the network by giving advance warning, highlighting hazards or other obstructions, providing information about road names, place names and distances, advising safe cornering speeds and maximum speed limits.
- Delineation (line marking, RRPMS, edge marker posts) allows road users to position their vehicles in the correct location on the road to avoid collisions and allows the user to read the road ahead.
- Vegetation control ensures adequate sight distance is maintained, noxious weeds in the road corridor are managed, fire risk is contained, and that it is safe for a vehicle to pull onto the verge if necessary.
- Traffic islands channelize traffic at busy intersections to improve efficiency and reduce crash risk by minimising conflict areas.
- Street lighting and amenity lighting provides adequate lighting on streets within urban areas to assist all road users at night; drivers, pedestrians and cyclists to see each other and to recognise possible dangerous situations. Lighting is also used on rural road intersections to assist drivers in identifying and navigating intersections.

The table below provides a summary of asset quantities and valuation.

Traffic Services Assets	Area m2	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Average Age	Average RUL	% Base Life consumed
Signs		6799	\$1,847,858	\$719,388	\$115,279	12	5	71%
Sign Posts		6248	Not valued			10	N/A	
Street & Amenity Light Pole		3289	\$4,085,678	\$2,318,145	\$128,426	16	18	47%
Street & Amenity Light Bracket		3310	\$1,339,537	\$714,141	\$44,602	15	16	48%
Street & Amenity Light Light		3451	\$1,493,679	\$980,537	\$96,526	6	10	38%
Traffic Islands		457	\$6,893,146	\$3,448,811	\$135,031	20	30	40%

19.3 Key Issues

19.3.1 Signs

- Theft, vandalism and other damage continues to be the biggest driver of signs renewal.
- Increasing inventory of active/smart warning signs which are proving expensive to maintain.

19.3.2 Street Lights

- Most streetlights were upgraded to LED approximately 5 years ago. These lights are now half way through their warranty period of ten years, and one third of the way through their expected useful life of 15 years. We need to understand budget implications and investigate a renewals strategy prior to the 2027 AMP.

- The undetected corrosion of streetlight columns at or below ground level continues to be a problem (national issue).

19.3.3 Traffic Islands

- Providing acceptable levels of health and safety for staff maintaining landscaped traffic islands, particularly on arterial routes, has become increasingly challenging from a cost and road user impact considerations.
- Landscaped traffic islands in some instances are allowing water into the pavement resulting in additional repair costs for pavement and surfacing.

19.3.4 Vegetation Control

Managing pest plant species and wilding tree growth remains an ongoing challenge.

19.4 Links to Strategic case

Assets / Activities	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Signs	✓				✓	✓	✓	
Delineation	✓				✓	✓	✓	
Street Lights		✓				✓	✓	
Amenity Lighting		✓				✓		
Traffic Islands	✓					✓	✓	
Vegetation Control						✓	✓	

19.5 Evidence Base

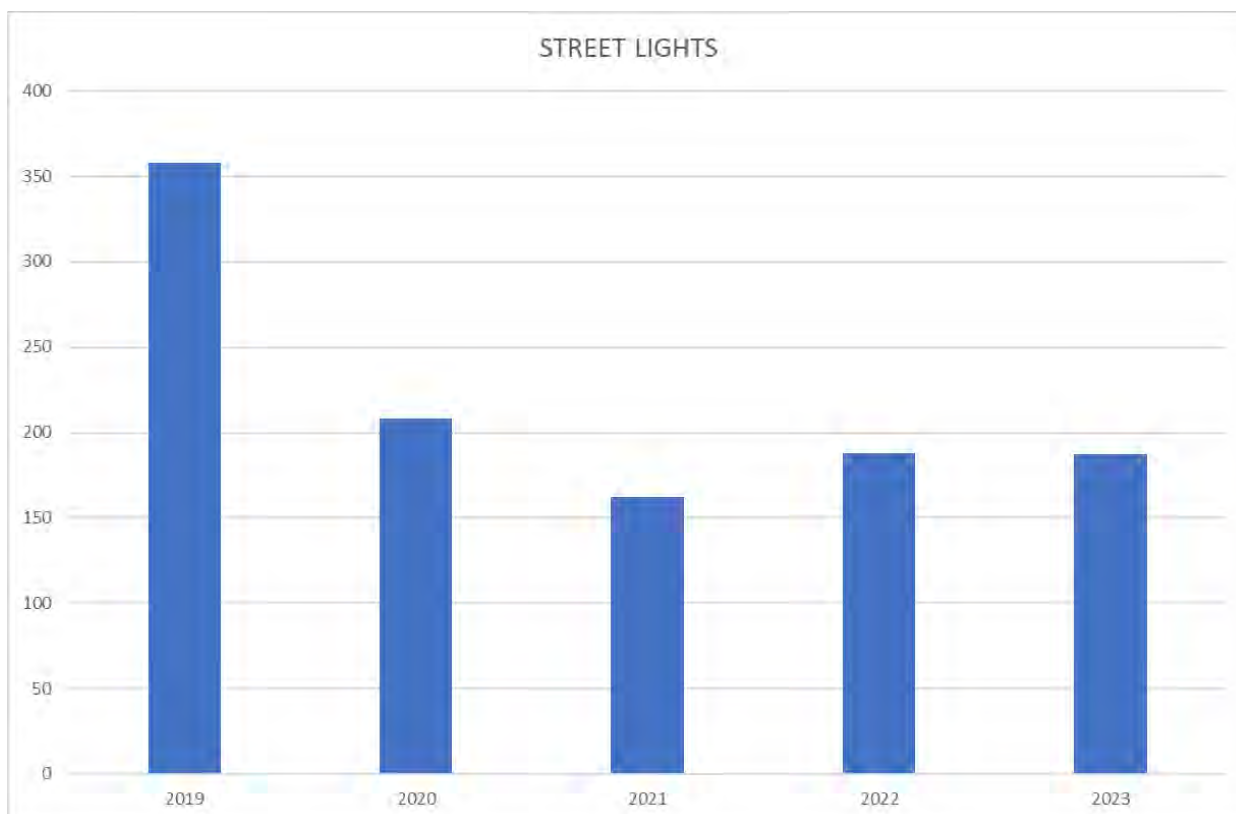
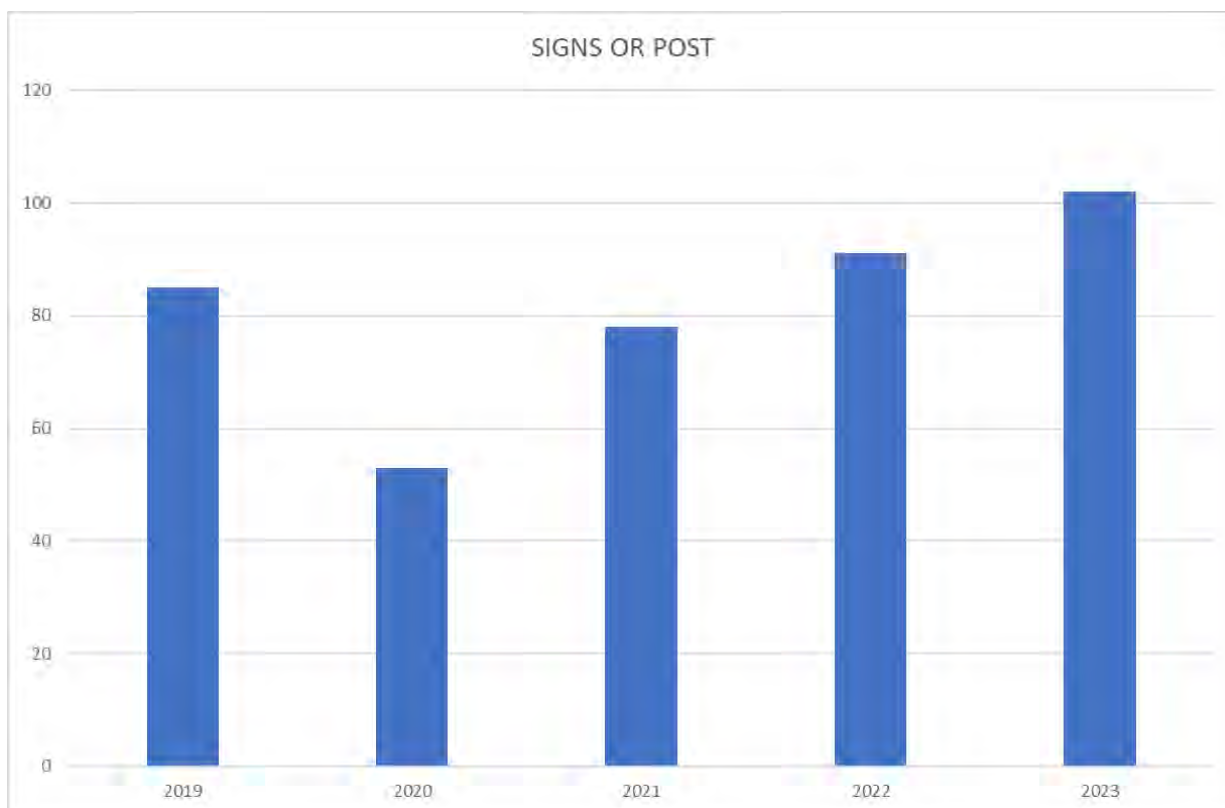
19.5.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the traffic services activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	7.2.1 Biodiversity	Roadside wilding trees and pest plants		Improving			
	9.1.1 Resource Efficiency	Proportion of sustainable & recycled materials	Y	Increasing			
		Waste minimisation	Y	Improving			
	9.1.2 Embodied carbon	Tonnes of CO2 equivalents emitted	Y	Decreasing			
Improved accessibility, connectivity, and travel reliability	2.1.1 Access - Perception	Perception of safety & ease of walking & cycling	Y	Improving			
	5.2.6 - Access to key economic and social destinations - all modes	Proportion of population within travel threshold	Y	Increasing			
Increased user health and safety	1.1.3 - Deaths and serious injuries	Number of Deaths and serious injuries	Y	Decreasing			
	1.2.1 - Road assessment rating	Infrastructure risk rating		Decreasing			

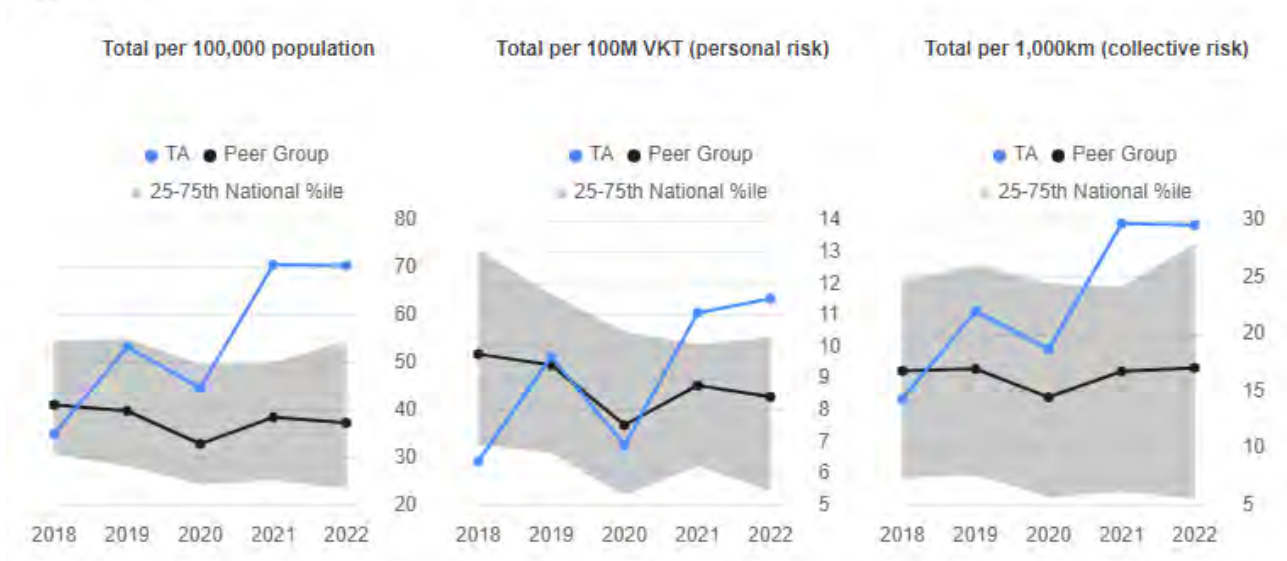
19.5.2 Community Feedback

The following graphs show the Customer Request for Service related to traffic services:



19.5.3 Safety Performance – DSI

Network



19.5.4 Provision of Delineation

Council have adopted a tiered approach to the provision of delineation across the network by ONRC category. This will be translated to ONF Street Families through 2024-27.

NZTA's RTS 5 publication Guidelines for Rural Road Delineation were referenced in developing Council's approach which follows below:

19.5.4.1 Delineation Matrix:

	1. REFLECTORISED CENTRELINES	2. REFLECTORISED EDGELINES	3. REFLECTORISED RAISED PAVEMENT MARKERS (CENTRE)	4a. EDGE MARKER POSTS	4b. REFLECTORISED RAISED PAVEMENT MARKERS (EDGELINES)
ARTERIAL	YES	YES	YES	YES	CBC ₁
PRIMARY COLLECTOR	YES	YES	YES	CBC ₂	CBC ₁
SECONDARY COLLECTOR	YES	YES	CBC ₃	NO	NO
ACCESS	YES	CBC ₄	NO	NO	NO
LOW VOLUME	CBC ₅	NO	NO	NO	NO
CBC ₁	Case by Case - A substitute only for when edge marker posts would otherwise be expected, but due to road side structures or pull-off areas they cannot be installed				
CBC ₂	Case by Case - Where vertical geometry makes it difficult or unsafe to read road				
CBC ₃	Case by Case - Where horizontal geometry makes it difficult or unsafe to read road				
CBC ₄	Case by Case - seal width ≤ 6.0m				
CBC ₅	Case by Case - seal width ≤ 5.5m				

19.5.5 Renewals Profiles

Renewals profiles for the main asset types of signs, streetlights and traffic islands are shown in the figures below.

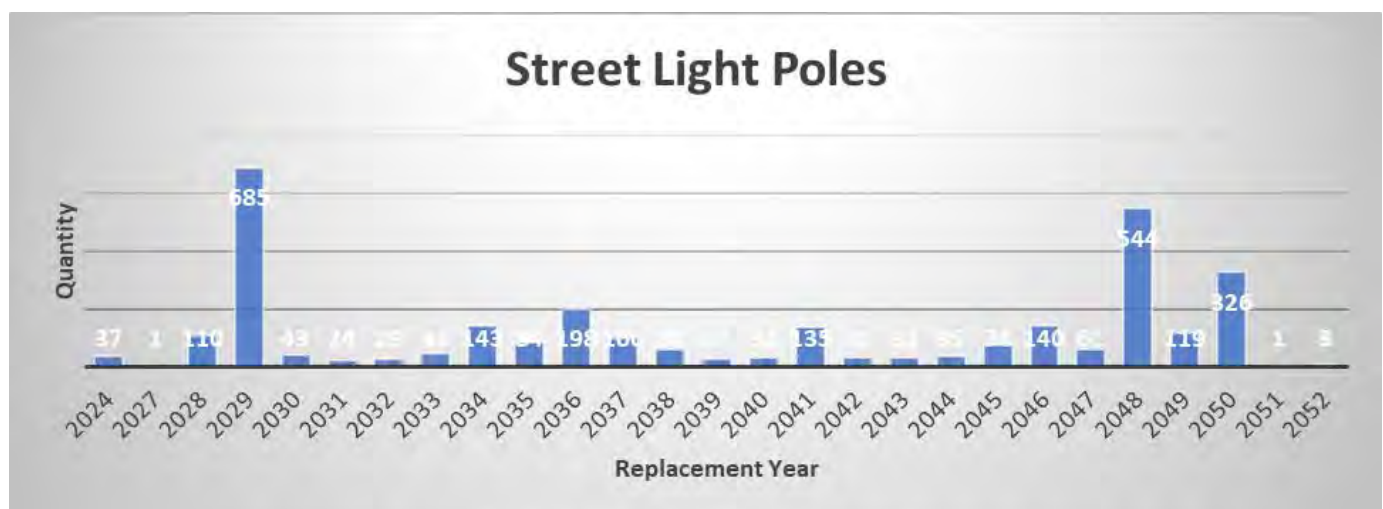
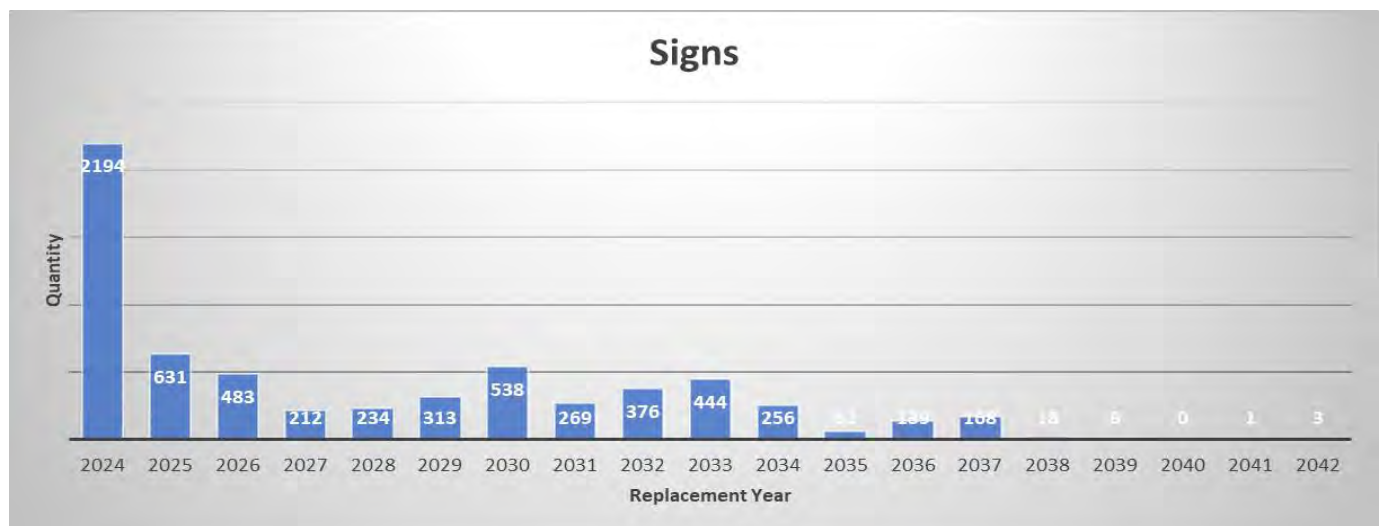
The signs renewal profile indicates a large spike for the first year of the LTP. Sign panels will last significantly longer than the 15 years assumed. However this is offset as the majority of sign are replaced due to theft,

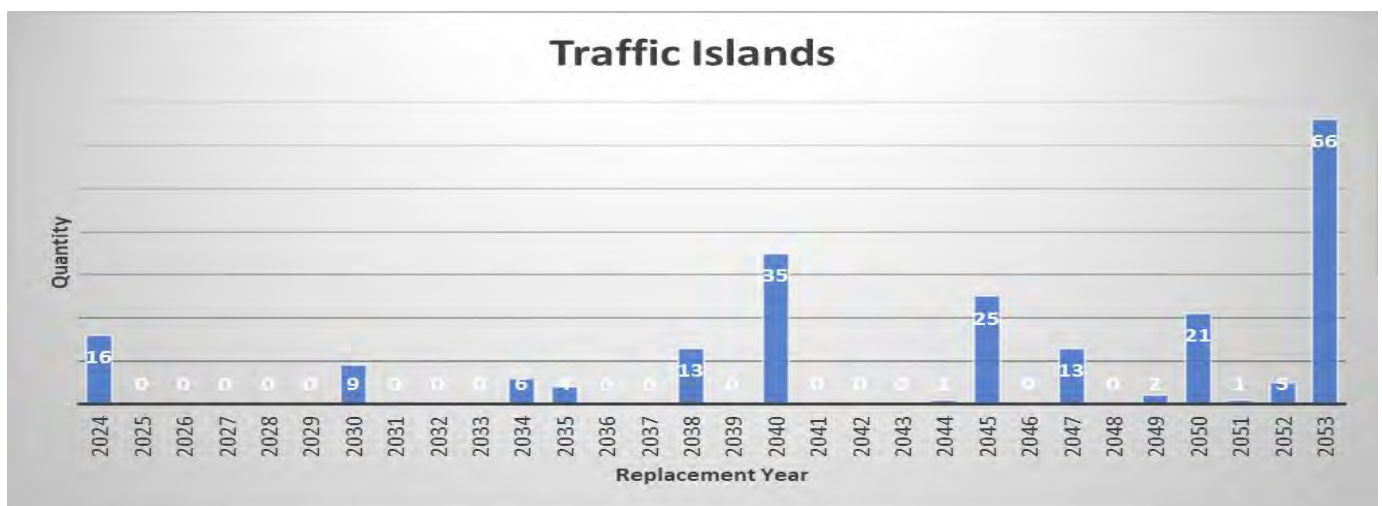
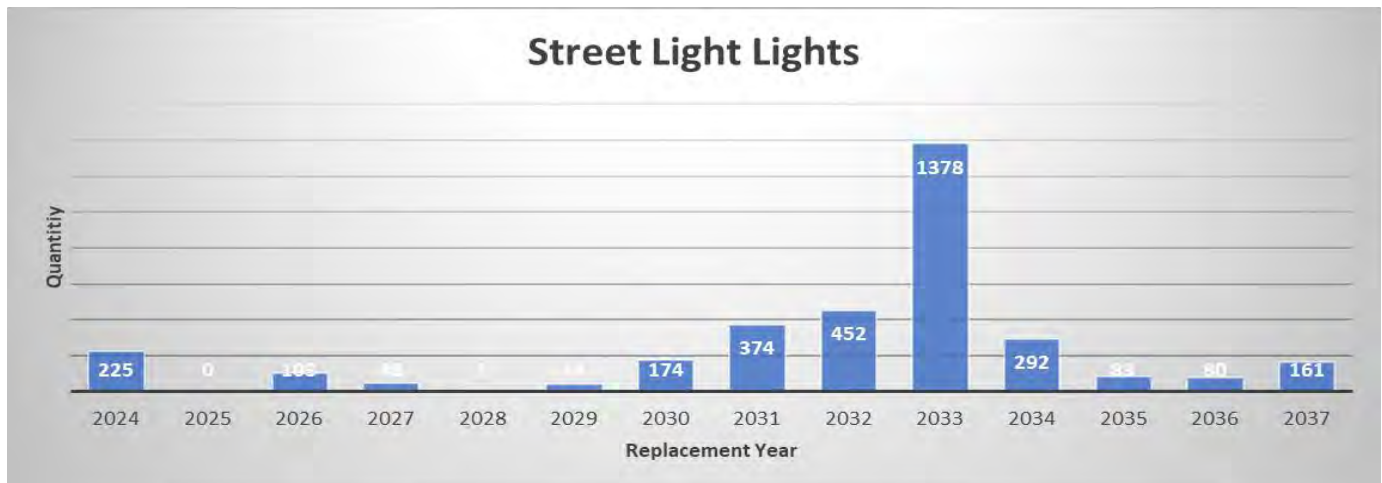
vandalism and other forms of damage before the fail by condition. Only 7% of signs replaced in the past 10 years have been for condition. This results in a large variation in achieved life, with a range from 0 to 31 years. The spike represents signs that are older than 15 years and have not yet been stolen or vandalised.

The street light poles profile shows two spikes. The first in 2029 is a result of default dates being applied to existing assets when the RAMM database was first established. This spike will end up distributed across the first 10 years of the programme. The second is in 2048. As part of the LED light upgrade in 2018 a large number of new poles were installed to address lighting deficiencies across the network.

Street light lights underwent an LED upgrade from 2016 to 2018. The LED's have a 10 year warranty. The low levels of renewal out to 2030 mostly represent amenity lighting renewals. LED warranties will begin to expire from 2026 so potentially the quantities from 2026 through to 2030 are understated.

The traffic island profile shows indicates 25 islands are due for renewal based on estimated useful life, 23 of which are roundabouts. On going maintenance has effectively extended the lives of these islands indefinitely. None are programmed for renewal in the ten year AMP programme. Traffic islands are typically replaced as part of wider improvement projects that re-design or re-allocate road space. Examples include the Active Whakatane programme and the Landing Rd RAB upgrade.





19.6 Optioneering

19.6.1 Option Development

19.6.1.1 Balanced

The balanced option represents a largely business-as-usual approach, but with an emphasis on differential levels of service. This includes a risk-based patrol, inspection and monitoring regime.

Sign condition is monitored through 10% quarterly audits and a network safety audit of the full network every 3 years. Maintenance patrols are undertaken quarterly for local streets and rural roads, and fortnightly for other street families. Community input through lodging requests or reporting faults is also an important source of information.

Streetlights are continuously monitored through the CMS system, which reports faults and outages in real time. Physical asset condition is monitored through annual inspections.

Line marking is undertaken annually for all roads in movement categories 1, 2 or 3, and bi-annually for movement categories 4 and 5.

Road side mowing is completed 2 times annually for movement category 5, 3 times annually for categories 4 and 3, and 4 x annually for categories 1 and 2.

Wilding tree removal focuses on trees within the encroachment envelope in the first instance, and then on small trees that might become a future problem in the second.

Balanced maintenance programme total \$1,766,000 PA

Sign renewals are completed on an as discovered basis, programmed to meet response times based on movement class and safety impact. The renewals budget allows for up to 450 sign renewals per annum, which meets requirements for a 15 year average life.

Streetlight pole renewals are based on the prioritised programme identified through the annual condition inspection. A separate budget provides renewals for a joint power undergrounding programme with the local lines company. Lights renewals are mainly focused on amenity lights. LED street lights are mostly under warranty.

Balanced renewals programme total \$369,000 PA

19.6.1.2 Proactive

The proactive option increases the maintenance allocation to allow for:

- Active management of pest plants in the road corridor. +\$100k

Proactive maintenance programme total \$1,866,000 PA.

No increases have been identified for proactive renewals. The balanced approach is maintaining levels of service and condition to a satisfactory level. Opportunities to positively shift performance in the MOR space are limited. These are best pursued through LCLR improvement programmes.

19.6.1.3 Reactive

The reactive option decreases the maintenance allocation and reduces levels of service including:

- Reducing line marking frequency on movement category 1, 2 and 3 from annually for all marking types to annually for centreline and intersection markings. All other markings bi-annually. - \$80K
- Halving the wilding tree control programme. - \$45K
- Reducing the number of mowing rounds for movement categories 1 and 2 from 4 rounds per annum to 3. - \$40k
- Reducing urban chemical control frequency by 1/3rd. - \$34k

Reactive maintenance programme total \$1,667,000 PA.

Under the reactive renewals option, the undergrounding programme would be put on hold, reducing the renewals programme total by \$82k to \$287,000 PA.

19.6.2 Options Assessment

The table below identifies the contribution each programme option makes to the ILM benefits, option cost, and the preferred option.

Benefit	Option		
	Proactive	Balanced	Reactive
Improved environmental performance	Increased funding for wilding tree and pest plant control makes inroads on tackling problem with associated positive biodiversity impacts.	BAU. Neutral. Holds wild tree and pest plant issue at status quo.	Wilding tree and pest plant problem will get worse. Negative biodiversity impacts.
Improved accessibility, connectivity, and travel reliability	Perception of safety and ease of use improves over time if facilities constantly managed to reasonable LOS.	Perception of safety and ease of use improves over time if facilities constantly managed to reasonable LOS.	Reduced frequency of chemical control will result in patchy LOS from overgrown weeds etc, contributing to a decline in perception of safety and ease of use over time.
Enhancing the safety, wellbeing & vibrancy of communities	Applying DLOS to better align LOS and effort with risk results in decreased infrastructure risk rating and lower DSI.	Applying DLOS to better align LOS and effort with risk results in decreased infrastructure risk rating and lower DSI.	Reduced mowing could impact on visibility, contributing to an increase in DSI. Clear delineation plays an important role guiding the driver. Reduced frequency of marking means line marking may not be so clear, particularly in low light conditions or inclement weather. This could result in an increased risk of DSI. The District is already over represented in loss of control type crashes.
Risk	Applying DLOS to better align LOS and effort with risk results in decreased infrastructure risk rating and lower DSI.	Applying DLOS to better align LOS and effort with risk results in decreased infrastructure risk rating and lower DSI.	Marginal cost reductions result in negative impacts on 3 of the 4 key benefits Council are wanting to achieve from the Transport activity.
Maintenance (2024-34)	\$18,660,000	\$17,660,000	\$16,670,000
Renewal (2024-34)	\$3,690,000	\$3,690,000	\$2,870,000
Preferred Option		✓	

Large Positive	Minor Positive	Neutral	Minor Negative	Large Negative
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19.7 Life Cycle Management

19.7.1 Operations, Maintenance & Renewal

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

19.7.1.1 Delineation

Delineation is provided in accordance with the delineation matrix above. And Waka Kotahi's Traffic Control Devices Manual.

Line marking is reapplied annually for all roads in movement categories 1, 2 or 3, and bi-annually for movement categories 4 and 5. Application is completed in accordance with NZTA P/22 Specification for Reflectorised Pavement Marking. Applicators must be NZTA T/8 certified and operators trained and qualified for type A and type B markings as appropriate.

RRPM are assessed visually during an annual night inspection and a replacement programme developed. RPMs must comply with NZTA M/12 Specification for Raised Pavement Markers.

Edge marker posts are installed in qualifying locations in accordance with NZTA P/16 – Specification for the Installation of Edge Marker Posts. EMP have proved problematic on several fronts. They are used by local hunters regularly for target sighting, the mowing contractor often runs over them, the road maintenance contractor routinely removes them during drainage maintenance and then neglects to reinstate them, and contracting staff who actually understand and can install EMP in accordance with the TCD manual are as rare as hen's teeth.

19.7.1.2 Signs

Council has adopted the NZTA Traffic Control Devices Manual for signs which is a means of compliance with the Traffic Control Devices Rule 2004 and subsequent amendments.

Sign condition is monitored through 10% quarterly audits, an annual night inspection and a network safety audit of the full network every 3 years.

Maintenance and renewal programmes are informed from a range of processes including:

- Maintenance patrols. Completed by PSBU staff quarterly for local streets and rural roads, and fortnightly for other street families.
- Community input through lodging requests or reporting faults.
- The 10% quarterly audits.
- Annual night inspections.
- Three yearly network safety audits.

PSBU staff compile the programme and procure the work through Councils Transportation Contract Panel.

Vandalism continues to be a major maintenance and renewals cost driver with bent over posts, stolen signs and graffiti featuring the most. Strategies employed to combat vandalism include:

- Using stronger fluted aluminium posts that vandals cannot bend. Each post is more expensive, but very few ever have to be replaced.
- Using tamper proof bolts on signs where theft is high. These are a last resort as it makes future maintenance replacements difficult.

The other main driver of replacement is vehicle damage. Between vehicle damage and vandalism very few signs ever require replacement for condition. Over the past 10 years only 167 out of 2477 sign replacements have been due to condition.

In recent years Council have been installing a growing number of active warning signs including for school zones, out of context corners, and concealed intersections. Council have also entered into an agreement with the Tauranga TOC for video monitoring of the urban arterials. These installations have growing maintenance needs and increased funding application for work category 123, Operational Traffic Management, is included

19.7.1.3 Street Lighting

Street lighting energy is supplied by Genesis Energy and charged via an EECA approved Central Management System (CMS) meter.

The energy for amenity and under-veranda lighting in the Whakatāne CBD is metered and charged on a kWh consumption basis.

With the network being 100% upgraded to LED in 2017/18, the only area that energy costs may be optimised in the future is through the tendering of energy supply that is carried every 3 years collectively by the 3 Eastern Bay of Plenty District Council, Regional Council and the NZ Transport Agency.

The CMS system enables the network of street lights to be controlled and monitored via the web-based software, providing real time control and monitoring negating the need to carry out night time patrols. Physical asset condition is monitored through annual inspections.

A large portion of faults relate to the supply side and fall under the responsibility of the local lines company, Horizon Networks, to respond to. The quantity of work required doesn't support a stand alone contract, so Council have a direct appointment agreement with Horizon on an hourly basis as and when required.

The LED streetlight upgrade came with a 10 year replacement warranty for all lights which will expire in 2027/28. The LED lights have an advertised life of 15 years. Current renewals are focussed on pole replacements, amenity lights and under veranda lights. There is also a programme for replacing streetlights that are removed as powerlines are gradually undergrounded in a joint programme between WDC and Horizon.

Pole replacements are relatively steady at just under 100 per year. This rate is adequate to meet projected renewal quantities. One of the biggest issues and risk is the undetected corrosion of poles at or below ground level. Some non-invasive technologies are available to help identify and prioritise replacement however these currently come at a significant cost. A watching brief should be maintained for affordable options in this space.

An strategy should be developed through the 2024-27 LTP period for the replacement of the LED lights.

19.7.1.4 Vegetation Control

Mowing and chemical control are completed to an annual schedule on a measure and value basis. Operators for chemical control must have the appropriate chemical handlers' qualification.

The annual high cut (control of the tree canopy encroaching into the vegetation free zone) is identified and programmed from inspections undertaken by PSBU staff.

Planted or self-sown trees that present a safety issue are identified and programmed from inspections by PSBU staff. Small individual tress and scrub is taken care of by the cyclic maintenance contractor. Council work with various land owners and forestry operators to encourage them to take responsibility for planted trees.

Councils approach to vegetation control includes:

- Recognising that the extent of seasonal growth is a risk to the contractor that they have no control over so attracts a significant level of risk in the pricing of performance based vegetation control contracts (confirmed by contractors). Council are better placed to manage the level of service / cost trade-offs.
- Revisiting mowing standards viewed through the objective lens of the ONRC performance measures.
- Working with contractors to establish mowing widths and control envelopes to enable efficient application of plant. For example, reducing the width from 1.8m to 1.5m allows a single pass with a smaller lower cost plant item, instead of requiring two passes or a larger more expensive plant item.
- Separating the high cut (canopy) maintenance from mowing. This item adds significant cost risk to the contractor and often requires more specialist plant. It is more efficient to manage as a separate activity.
- Working with forest harvesting operators and private property owners to control planted or self-sown trees and scrub in the road reserve.
- Only managing weed pests where the adjacent property owner is managing the problem.

19.7.2 Improvements

Improvement works are proposed to address identified level of service gaps where planning interventions, demand management and maximising use of the existing network cannot address the gaps on their own.

Where identified, improvement works will be evaluated and prioritised against other capital improvement activities in the Improvement Programme Section of the AMP

19.7.3 Asset Acquisition

Asset acquisition typically involves a developer investing assets constructed during development of sub divisions with the Council. The WDC Engineering Code of Practice sets out the policies and procedures for this process to ensure assets are constructed to the required standard and all relevant data is transferred and entered into RAMM.

Subdivisions currently underway or in the planning process that will result in assets being transferred to WDC include:

- Shaw Rd Extension
- Bunyan Rd East Piripai Block
- Keepa Rd / SH 30 Corner

There is also likely further future subdivisions expected to create additional assets in the 10-30 year horizon as part of the expected growth. The Spatial Plan work currently underway will help to give a clear indication of these likely impacts.

No allowance has been made in maintenance budgets for new assets in this RLTP round. The quantities of assets potentially being acquired are small in relation to the whole network, and new assets should require little to no maintenance. Budget adjustments will be made at each new RLTP period as assets are acquired.

19.7.4 Asset Disposal

Whakatāne District Council has no plans to dispose of any traffic services assets at this time.

19.8 Improvement & Monitoring

Refer Improvement Plan section of the AMP.

Activity Management Plan

2024-34

TRANSPORTATION

19.9 Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC121 Environmental maintenance Tree removal	T30261	LOC121	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
LOC121 Environmental maintenance Vegetation	T30260	LOC121	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000	\$520,000
LOC121 Environmental maintenance Urban chemical control	T30273	LOC121	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000	\$101,000
LOC122 Network service maintenance Marking	T30221	LOC122	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000	\$398,000
LOC122 Network service maintenance Street lights	T30262	LOC122	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000	\$198,000
LOC122 Network service maintenance Signs	T30263	LOC122	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000
LOC123 Network operations	T30222	LOC123	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
LOC131 Rail level crossing warning devices maintenance	T30264	LOC131	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000
Subtotal			\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000	\$1,508,000
Local Rd Renewal												
LOC222 Traffic services renewals Street lights	T31445	LOC222	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
LOC222 Traffic services renewals Signs	T31446	LOC222	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000	\$162,000
LOC222 Traffic services renewals Power underground	T31447	LOC222	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
Subtotal			\$326,000	\$326,000	\$326,000	\$326,000	\$326,000	\$326,000	\$326,000	\$326,000	\$326,000	\$326,000
POSE ROADS PROGRAMME TOTAL			\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000	\$1,834,000
Special Purpose Rd Maintenance												
SPR121 Environmental maintenance Tree removal	T32436	SPR121	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
SPR121 Environmental maintenance Vegetation	T32259	SPR121	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
SPR122 Network service maintenance Marking	T32437	SPR122	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
SPR122 Network service maintenance Street lights	T32260	SPR122	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
SPR122 Network service maintenance Signs	T32261	SPR122	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
Subtotal			\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000
Special Purpose Rd Renewal												
SPR222 Traffic services renewals Street lights	T33442	SPR222	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
SPR222 Traffic services renewals Signs	T33443	SPR222	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
Subtotal			\$31,000	\$31,000	\$31,000	\$31,000	\$31,000	\$31,000	\$31,000	\$31,000	\$31,000	\$31,000
POSE ROADS PROGRAMME TOTAL			\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000
NFA Maintenance												
NFA Amenity Lighting Maintenance SLMC	T34155		\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
NFA Urban Tree Removal	T34211		\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Subtotal			\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000
NFA Renewal												
NFA Amenity Lighting Renewals	T35214		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Subtotal			\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
NON-FINANCIALLY ASSISTED ROADS PROGRAMME TOTAL			\$122,000	\$122,000	\$122,000	\$122,000	\$122,000	\$122,000	\$122,000	\$122,000	\$122,000	\$122,000
PROGRAMME TOTAL			\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000	\$2,135,000

20 Active and Micro Mobility

20.1 Overview

Active and micro mobility encompasses a range of assets and activities that enable pedestrians, cyclists and other active or micro modes to move freely, safely and efficiently around the network. Assets and activities consist of:

- Footpaths. Primarily provide a safe and unobstructed place on which pedestrians can walk. Children aged 14 and under are able to ride a cycle on the footpath. Footpaths are also the approved space for the use of mobility scooters.
- Shared use paths. Provide for all active and micro mode users. They consist of a separate facility either adjacent to the road carriageway or away from the road through reserves, along stopbanks, or other space. These are appropriate in high speed and higher traffic volume locations.
- Maintenance and renewal of pathways.
- Pathway lighting, where the path is outside the road corridor and not sharing carriageway lighting.
- Traffic services including pathway specific way-finding signs, delineation, vegetation control.
- Structures and other pathway specific features such as safety rails, bridges, bike racks.
- Drainage where the path is outside the road corridor and not sharing carriageway drainage.

On road cycle lanes are not included in this activity. These are maintained a part of the road carriageway.

These assets form part of a wider active transportation network. See the Active Whakatane Strategy for more detail at:

<https://www.whakatane.govt.nz/sites/www.whakatane.govt.nz/files/documents/active-whk-strategy-24-june-2020-final-web.pdf>

The table below provides a summary of asset quantities and valuation.

Active & Micro Mode Assets	Area m2	Length m	Repalcement Cost	Depreciated Replacement Cost	Annual Depreciatio n	Average Age	Average RUL	% Base Life consumed
Footpaths	300838	192877	\$21,336,055	\$8,045,383	\$435,790	31	20	61%
Shared Use Paths (in road corridore)	30596	12786	\$2,069,199	\$1,493,004	\$52,048	12	40	23%
Shared Use Paths (stand alone)	16903	5789	not valued yet					
Pathway specific assets including traffic services, structures & drainage	Information not available							

20.2 Key Issues

- Historically there have been very few shared use paths and walking or cycling specific facilities. Maintenance was typically undertaken as an add-on to wider corridor activities and charged to the appropriate work category. Over the last 2 years, the Active Whakatane programme has driven a rapid increase in facilities. Improvements are required to the way these assets are recorded, managed and maintained.
- Many new assets are yet to be added to RAMM.

- Shared use paths are recorded across two tables in RAMM. Within the road corridor they are recorded in the Footpath table. Where there is no corridor, they are recorded as a new carriageway under the hierarchy “shared use path”. There are some double ups, and it makes management of these assets difficult.
- Historic under investment in maintenance and renewals has produced a bow wave of maintenance and renewals. Compounded by the increasing length of aged footpath.
- Over 5 years Whakatane have gone from being in the best performing quartile for walking and cycling DSI to the worst performing quartile.

20.3 Links to Strategic Case

Assets / Activities	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Footpaths	✓			✓		✓	✓	
Shared Use Paths	✓			✓		✓	✓	
Cycle Lanes	✓			✓		✓	✓	
Bike Stands						✓		

20.4 Evidence Base

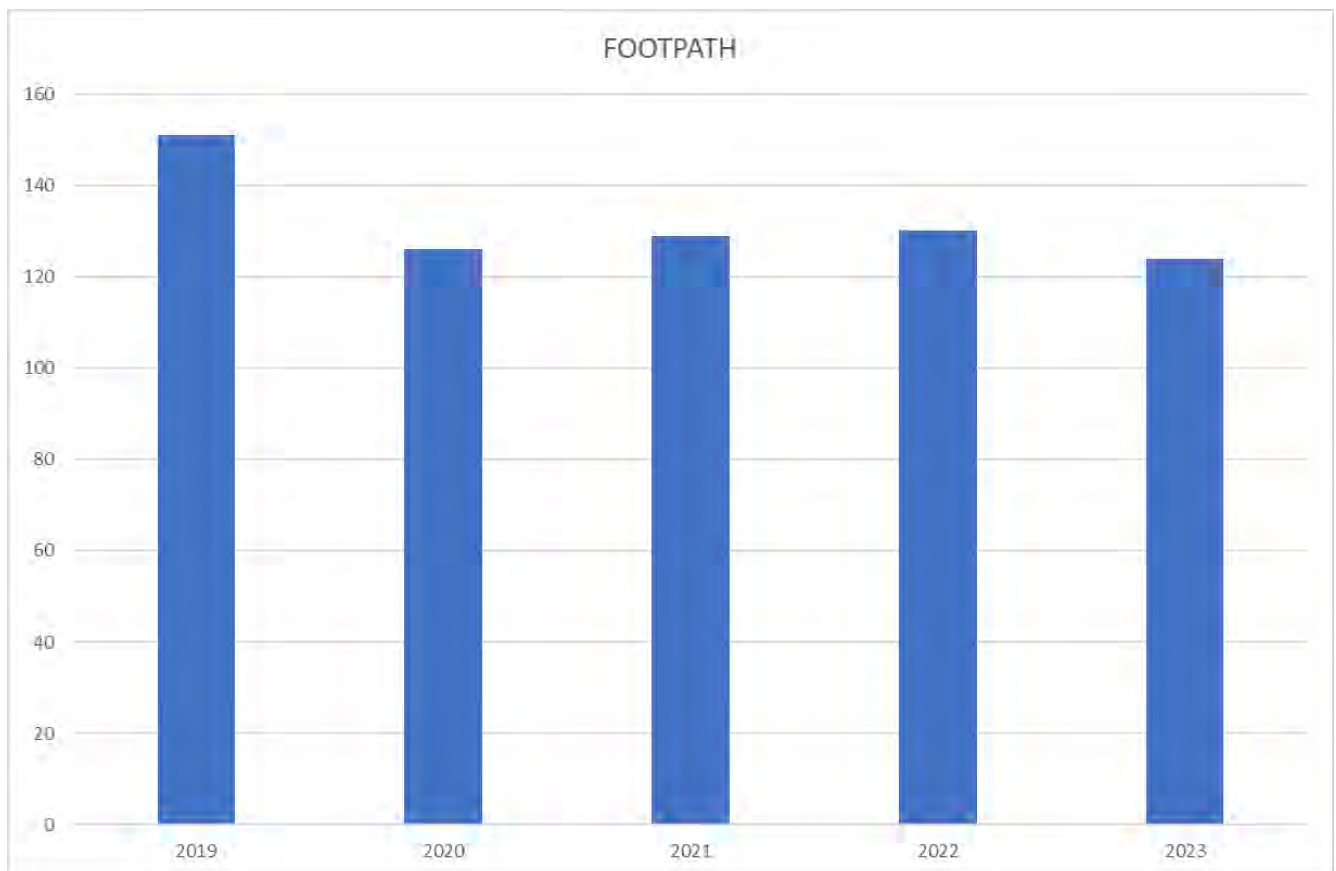
20.4.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the active and micro mobility activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	8.1.1 Greenhouse gas emissions	Tonnes of CO2 equivalents emitted	Y	Improving			
Facilitating economic regeneration & responding to development pressures	10.2.3 Spatial coverage - cycle lanes and paths	Percent completion of the strategic cycling network	Y	Increasing			
Improved accessibility, connectivity, and travel reliability	2.1.1 Access - Perception	Perception of safety & ease of walking & cycling	Y	Improving			
	10.2.1 People - mode share	Number of pedestrians, cyclists, PT boardings and motor vehicles x PPV		Increasing			
Increased user health and safety	1.1.3 - Deaths and serious injuries	Number of Deaths and serious injuries vulnerable users	Y	Decreasing			
	3.1.1 Physical health benefits from active modes	TBA		Improving			

20.4.2 Community Feedback

The following graphs show the Customer Request for Service related to active and micro mobility:



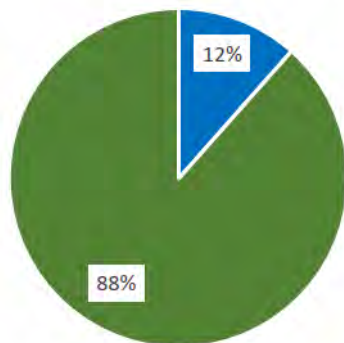
20.4.3 Safer Performance – DSI by Mode

By Mode (no. per 100,000 Population)

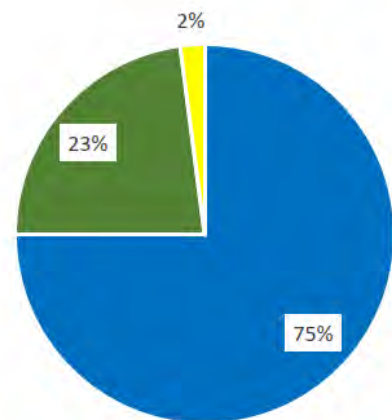


20.4.4 Footpath Condition Data

Portion of footpath network with faults recorded 2023 survey

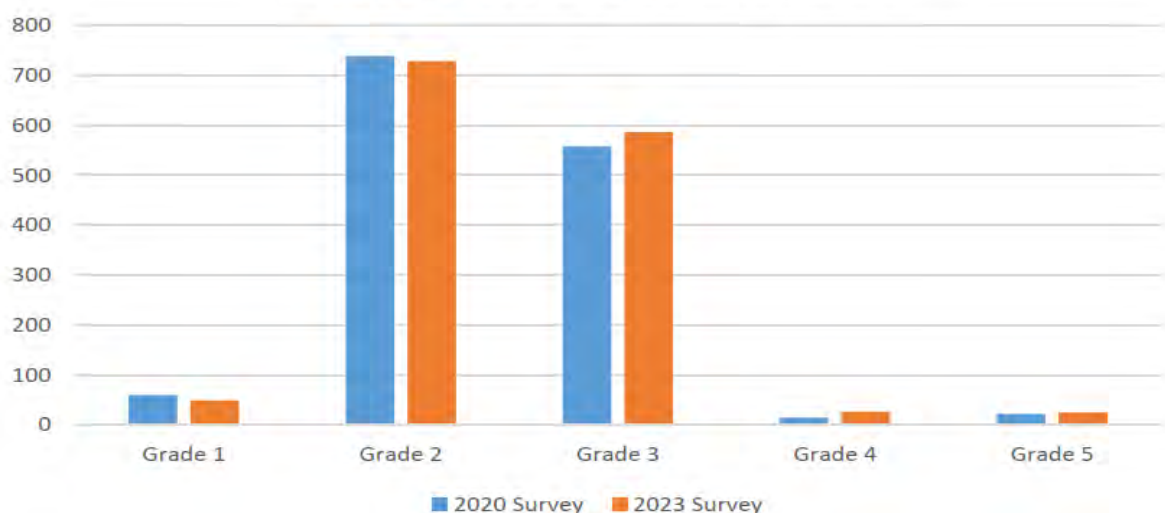


Extent of faults recorded

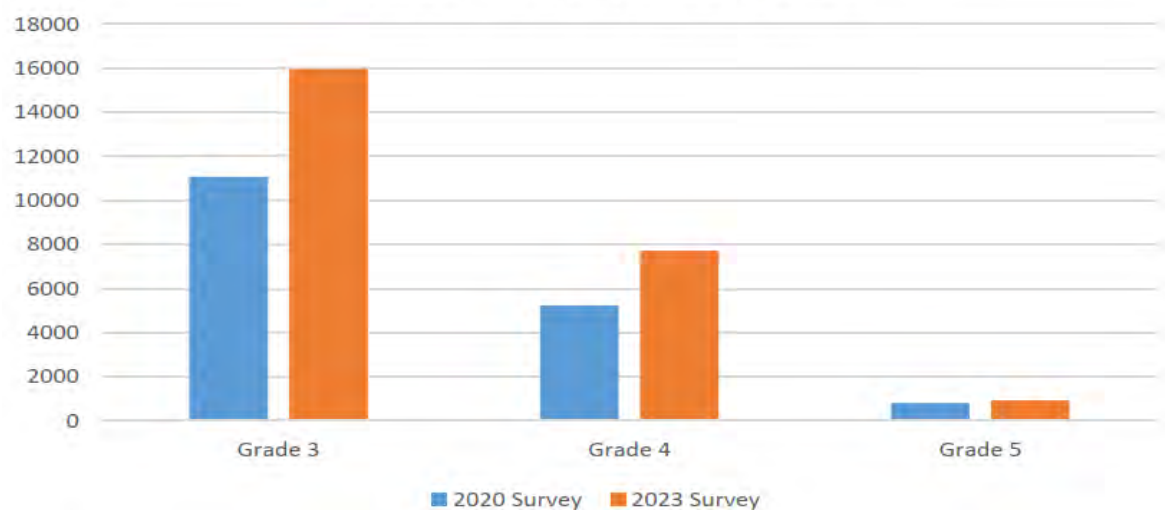


■ Faults (minor to very poor condition) ■ No faults recorded ■ Grade 3 (moderate faults) ■ Grade 4 (poor) ■ Grade 5 (very poor)

Footpath Sections by Condition Grade

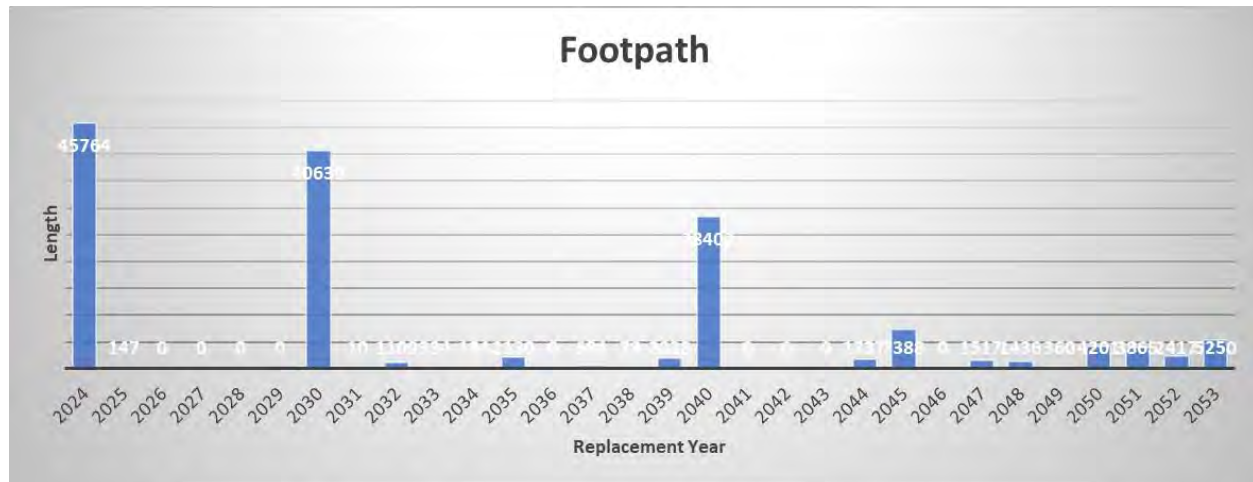


Footpath Faults by Lineal Meters



20.4.5 Renewals Profile

Renewals profile for footpaths are shown in Figure XXX, below.



Footpaths have an assumed live of 50 years. The spikes in renewals for the year 2030 and 2040 relates to default dates of 1980 and 1990 being applied to existing assets when the RAMM database was first established in the 90's. Records did not exist for many of these paths so a default date was set. The spike in 2024 relates to assets with an assigned default date of 1970, that have not been replacement as yet. They represent a combination of assets that have performed better than average and deferred renewals.

20.5 Optioneering

20.5.1 Option Development

Only one option has been considered for active and micro modes. The uptake of active modes is strongly dependent on maintaining facilities to a safe and reasonable standard.

Maintenance spend is quite low in context of the MOR programme, and meaningful savings are simply not available, even if the entire programme is cancelled. Cycle path maintenance increases over the 10 year period as the length of new shared use path increases. The active mode maintenance programme averages \$246,000 PA.

Renewals spend is targeted to replace all footpaths at grade 4 and 5. There are currently approximately 9km of path at grade 4 and 5. A further 4km of path per year (2%) is expected to deteriorate to grade 4 and 5. A total of 49km of footpath renewal is expected over the ten year AMP programme, averaging 4.9km per year. Footpath renewal is estimated to cost \$145 per lineal meter on average. 4917m @ \$145/m = \$713,000 PA.

20.6 Like Cycle Management

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

20.6.1 Operations & Maintenance

Works are identified and programmed for repair by a Footpath Inspection company every 3 years. The inspection method includes prioritising, taking photographs and GPS locating all faults. A programme of repair work in accordance with the Engineering Code of Practice is then procured. Work that is identified outside of this programme, through customer services requests, or other inspections is also prioritised and repaired.

Footpath edges are sprayed under the vegetation control contract.

Council staff manage the complaints received on footpath condition and approve the location and construction of vehicle crossings.

Footpaths in main streets and activity streets are subject to a higher rate of inspection because of the higher pedestrian traffic they are subject to. These are generally constructed in cobbles or exposed aggregate concrete.

The intervention level for the repair of concrete footpath has been set at a > 10 mm lip, settled to a stage where the path is uneven, unsafe or ponding water.

CBD Footpath cleaning is completed twice annually, once prior to the Christmas break and once in the middle of the year. This is done in a non-damaging manner so as not to disturb the jointing sand between cobbles.

Maintenance programs are delivered through the WDC Contract Panel arrangement.

Shared use path maintenance requirements are currently quite low as most of the paths are relatively new. Majority of maintenance requirements is detritus sweeping as well as the following:

- Ohope Rd path. Minor redressing of the unsealed surface with crusher dust. Sweeping the concrete section from detritus build up, mostly chip flicked up by vehicles from the road. A section between Foxglove and Burma Rd is problematic with a fretting pumice bank leaving detritus on the path and ground water oozing out over the path.
- Keepa Rd path. Maintenance on this path is being deferred. Only the minimum maintenance necessary to keep it serviceable is programmed until a planned improvement project is completed. Due to this path's age (~30years) the path surface does require frequent pothole/minor surfacing repair to maintain service.

20.6.2 Renewals

Renewals are identified through the inspection and monitoring regime described in the section above. Renewals programmes are delivered through the maintenance panel.

20.6.3 Improvements

Improvement works are driven by the Active Whakatane Strategy and Implementation plan.

Where identified, improvement works will be evaluated and prioritised against other capital improvement activities in the Improvements Programme section of the AMP

20.6.4 Asset Acquisition

Asset acquisition typically involves a developer investing assets constructed during development of sub divisions with the Council. The WDC Engineering Code of Practice sets out the policies and procedures for this process to ensure assets are constructed to the required standard and all relevant data is transferred and entered into RAMM.

No allowance has been made in maintenance budgets for new assets in this RLTP round. The quantities of assets potentially being acquired are small in relation to the whole network, and new assets should require little to no maintenance. Budget adjustments will be made at each new RLTP period as assets are acquired

20.6.5 Asset Disposal

Whakatāne District Council has no plans to dispose of any foot path assets at this time.

Activity Management Plan 2024-34 TRANSPORTATION

20.7 Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Local Rd Maintenance												
LOC124 Cycle path maintenance	T30268	LOC124	\$20,000	\$20,000	\$20,000	\$25,000	\$25,000	\$25,000	\$30,000	\$30,000	\$30,000	\$35,000
LOC125 Footpath maintenance Routine	T30223	LOC125	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
LOC125 Footpath maintenance Cleaning	T30224	LOC125	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000	\$145,000
Subtotal			\$240,000	\$240,000	\$240,000	\$245,000	\$245,000	\$245,000	\$250,000	\$250,000	\$250,000	\$255,000
Local Rd Renewal												
LOC225 Footpath renewal	T31464	LOC225	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000
Subtotal			\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000	\$713,000
LOCAL ROADS PROGRAMME TOTAL			\$953,000	\$953,000	\$953,000	\$958,000	\$958,000	\$958,000	\$963,000	\$963,000	\$963,000	\$968,000

20.8 Improvements & Monitoring

Refer Improvement Plan section of the AMP.

21 Parking

21.2 Overview

The provision of off road car parking is principally to facilitate access to the CBD, or public reserve and recreation areas. Carpark assets consist of the pavement, surfacing, and associated facilities such as drainage, signs, delineation and lighting. Each of those components is managed in accordance with the relevant sections of this AMP, but funded through a range of non-financially assisted budgets depending on the asset owner.

The table below provides a summary of asset quantities and valuation.

	Area m2	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation	Average Age	Average RUL	% Base Life consumed
Carparks	46776		\$6,001,016	\$3,622,905	\$111,325			

21.3 Key Issues

- Asset data for many of the carparks is quite sparse. They are not included in the normal data collection or condition rating programmes that roads receive.
- Generally carparks have rolled on with very little maintenance or renewal and given very little trouble. As a result carpark resurfacing has always been the first sacrificial lamb when budgets have been tight. This has resulted in some very aged surfacing that is becoming increasingly vulnerable to failure.
- Several important programmes are in progress that will have a significant impact on the future provision of carparking. These include the Spatial Plan, and the Whakatane Regeneration Project.
- Until the above programmes reach a stage of completion, carpark MOR is in a holding pattern of do-minimum reactive maintenance.
-

21.4 Links to Strategic case

Assets / Activities	Benefits							
	Improved environmental performance		A resilient, future-proofed transport system		Improved accessibility, connectivity, and travel reliability		Increased user health and safety	
	Measures							
	CO2 Emissions	Resource Efficiency	Availability of alternative to high risk/impact routes routes	Spacial Coverage - cycle lanes and shared use paths	Access to key economic and social destinations - all modes	Access - perception	Deaths and serious injuries	Ambient air quality - PM10
Carparks		✓			✓			

21.5

21.6 Evidence Base

21.6.1 Levels of Service - Benefits & Measures

The benefits, measures associated with delivery of the parking activity are described in the table below. An improvement item is included in our Improvement Plan, to determine methods for capturing current performance, trend, and benchmarking for these new measures.

Benefits	Measures	Measure Description	ILM ?	Target	Current Performance	Trend	Benchmarking
Improved environmental performance	9.1.1 Resource Efficiency	TBA	Y	Improving			
Improved accessibility, connectivity, and travel reliability	5.2.6 Access to key economic and social destinations - all modes	Proportion of population living within travel threshold of key economic and social opportunities	Y	Improving			

21.7 Optioneering**21.7.1 Option Development**

For this 3 year RLTP period we will continue to hold the carpark asset with minimal reactive maintenance and renewal as necessary. The carparks are very low speed environments so the risk is quite low. The planning projects should be complete in time to develop a robust MOR programme for the 2027 AMP.

21.8 Life Cycle Management

This section describes in detail the Life Cycle Management processes to deliver the preferred programme option.

21.8.1 Operations & Maintenance

Maintenance repairs are carried out as a result of customer complaints, routine inspections or planned work in preparation for maintenance reseals. General maintenance of car parks comprises the following work activities:

- Pavement patching and repairs
- Metalling and grading of unsealed car parks
- Repair of potholes
- Repair of surface openings and minor surface levelling
- Repair of surface defects (rutting, scabbing, flushing etc)
- Drainage maintenance
- Repairs to concrete kerb and channel, sumps and leads
- Maintenance of signs and markings

21.8.2 Renewals

Renewals will only be applied where it is uneconomic and impractical to continue to maintain a minimum level of service. The key activities are:

- Resealing/Resurfacing
- Pavement Rehabilitation

The selection of surfacing type is typically based on the existing surface, how well that surface has lasted and knowledge of the engineer.

21.8.3 Deferred Renewals

It is noted that there are some gaps in the current inventory and it is unclear as to whether or not deferred renewals exist.

21.8.4 Improvements

Capital works are generally initiated through triggers such as growth, Levels of Service, regulatory, operational efficiency, or vested (gifted) through subdivisions.

The Spatial Plan and Whakatane Regeneration project will inform necessary improvements for the 2027 AMP. Identified improvement projects will be assessed and ranked against other capital improvements for inclusion.

21.8.5 Disposal

There are no assets to be disposed of at this time.

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21.9 Preferred Programme of Works

Description	WDC Job Number	WK WC	10 Year Programme									
			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
NFA Maintenance												
NFA Roding General - Misc	T34150		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Subtotal			\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
NFA Renewal												
NFA Car Park Renewal	T35224		\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Subtotal			\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
NON-FINANCIALLY ASSISTED ROADS PROGRAMME TOTAL			\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000

21.10

Note car park maintenance is funded as required from the NFA Roding General – Misc budget. Following the implementation of the improvement item to develop a forward work plan for car parks, more surety will be able to be given to forming a proactive maintenance and renewal programme for car parks.

21.11 Improvement & Monitoring

Refer Improvement Plan section of the AMP

22 Bus Shelters

22.2 Overview

For some time, the funding of bus shelters has been a grey area between local and regional council in the Whakatāne District. Further discussions are still required in the PT Infrastructure maintenance/renewal space to determine where the maintenance/renewal of bus shelters is best placed (regional or local council)? With this comes a body of work related to collating bus shelter asset data, condition data and developing an appropriate forward work programme for maintenance and renewal. At this stage, no allowance has been made for bus shelters in our proposed programme. We have however included an improvement plan item to gain clarity about the future management of bus shelters.

PROGRAMME BUSINESS CASE: Improvement Activities

23 INTRODUCTION

The recommended improvement programme for Whakatane’s road network builds on the MOR programme described previously with the following further sub-programmes:

- Capital Improvements
- Planning & Design Activities

The capital improvements programme is a combination of projects developed by WDC over the last few years through strategic plans, identified network deficiencies and community requests.

24 CAPITAL IMPROVEMENTS PROGRAMME DEVELOPMENT

24.2 Prioritisation Method

All projects have been prioritised according to two types:

- Capital Investment projects (e.g. new infrastructure).
- Investment management projects (e.g. new studies, investigations, planning)

A three-factor approach has been developed to rate capital projects as follows:

- **Benefit Rating** – an assessment of the extent to which a project is likely to achieve its intended benefits
- **Simplicity Rating** – an assessment of how simplex or complex the project will be to deliver, focused on:
 - *Governance* - whether it would be delivered by a single agency (e.g., WDC), or requires co-ordination across multiple partners
 - *Innovation* - whether tried and tested solutions are likely to be used, or some innovation (with a consequently higher level of risk) is needed
 - *Community Support* - whether community support or resistance is expected (see section 4.1.2 below)
- **Value for Money Rating** – an assessment of how much value for money (on a whole-of-life basis) the project provides for the expected benefit? (see section 4.1.3 below)

The assessment methods for each factor are detailed in the following sections. These are then combined into a total profile score to rank all the identified projects.

24.2.1 Benefit Rating

One of three potential criteria - road safety, active and shared travel for future demand, and network resilience - aligned with ILM benefits, are used to determine the overall Benefit Rating of each project.

Each criteria have measures and thresholds which are used to rate project benefits on a 3 to 1 scale (where 3 signifies a high level of potential benefits, and 1 is Low). These criteria, measures and thresholds are shown in the table below.

Factor		Criteria	Threshold		
AMP Benefit	Description	Significance Indicator	RATING THRESHOLDS		
			3	2	1
Road Safety	Reduce deaths and serious injuries	Collective Risk or, Infrastructure Risk Rating (IRR) (whichever is highest)	High / High-Medium collective or IRR	Medium collective or IRR	Medium-Low/Low collective or IRR
Active and shared travel for future demand	Get more people using active or shared modes to meet future demand	Population and schools within 250 m No. Of Schools served Or is part of strategic network	1000 to 1500 Or 3+Schools served Or is part of strategic network	500 to 1000 Or 1-2 Schools served	0 to 500
Network Resilience	Improve resilience of the network to unplanned events and natural hazards	Availability of reliable, alternative routes Road closure duration Community Impact (people/house holds directly affected) (overall rating is the mean of these 3)	No reliable alternative available Weeks High number of population affected	Partial access usually available Days Moderate number of population affected	Full alternative access usually available Hours Low number of population affected

Some projects will have more than one benefit. In these cases, a secondary benefit is listed and a bonus point is added to the rating for the primary benefit. Project benefit ratings therefore range from 4 to 1. In some cases, the data available is insufficient to assess the benefits of a project adequately. In these cases, a default rating of 1 is given.

24.2.2 Simplicity Rating

The measures and thresholds used to assess a project's simplicity across the three criteria of governance, innovation and community support are shown in the table below. The overall rating is the mean of each criteria, rounded to the nearest whole number. High scoring projects (rated around 3) are expected to be delivered by a single agency, with a low level of innovation (and risk) and enjoy significant community support.

Factor	Criteria	Threshold		
Score		RATING THRESHOLDS		
		3	2	1
Description		Simple project	Manageable project challenges	Complex project with significant challenges
Governance	How many agencies or authorities are required to plan and deliver the project?	Single lead or agency authority	Small number of agencies / authorities involved	Many agencies / authorities involved
Innovation	Does the project involve tried and tested, or unproven (higher risk) solutions?	Tried and tested solutions	Solutions need some innovation/updating	Untried and unproven solutions
Community Support	What level of community support is likely for the project?	High level of community support	A mix of support, with some resistance	Significant community resistance

24.2.3 Value for Money

The Value for Money rating considers both the Benefit Rating and the whole-of-life cost (WOLC) of each project. The WOLC criterion combines capital expenditure (CAPEX) with maintenance liability (OPEX). The CAPEX sub-criteria is classified as follows:

- **LOW:** Project capital cost less than <\$500k
- **MEDIUM:** Project capital cost between \$500k - \$2m
- **HIGH:** Project capital cost greater than \$2m

The OPEX sub-criteria is classified as follows:

- **REDUCED:** A lower level of maintenance expected than the existing state.
- **LOW:** A low levels of additional maintenance expected once the project is completed.
- **MEDIUM:** A medium level of maintenance expected once the project is completed.
- **HIGH:** A high levels of maintenance expected once the project is completed.

The table below shows how CAPEX and OPEX ratings are combined into a single WOLC rating. High scoring projects tend to have low or medium CAPEX with a low or reduced maintenance liability. For example, a project (highlighted yellow in the table) with a Low CAPEX, but a high OPEX will have a High WOLC rating - scoring only 1. Similarly, a project (highlighted blue) with a high CAPEX, but reduced OPEX will have a Medium WOLC rating - scoring 2. This approach therefore rates high CAPEX projects with reduced OPEX slightly higher than low CAPEX projects with high OPEX.

CAPEX	OPEX	WOLC Rating	WOLC Score
Low	Reduced	Very Low	4
	Low	Low	3
	Medium	Medium	2
	High	High	1
Medium	Reduced	Low	3
	Low	Medium	2
	Medium	High	1
	High	Very High	0
High	Reduced	Medium	2
	Low	High	1
	Medium	Very High	0
	High	Very High	0

Value for Money combines the WOLC and Benefit ratings as shown in the table below. This results in Value for Money ratings ranging between 8 (relatively high value for money) and 1 (relatively low value for money).

WOLC rating	Benefit Rating	Value for Money Rating
4	4 to 1	8 to 5
3	4 to 1	7 to 4
2	4 to 1	6 to 3
1	4 to 1	5 to 2
0	4 to 1	4 to 1

24.2.4 Overall Project Ranking

An overall project score is generated by adding the Benefit, Simplicity and Value for Money ratings as discussed in the previous sections. This results in project scores ranging from 3 (minimum) to 15 (maximum).

These scores are then grouped to reflect an appropriate level of uncertainty around the accuracy and reliability of the scores and then assigned a letter rank as shown in the table below. These ranks are used to develop the capital programme priority options.

Total Profile Score	Rank
14-15	A
12-13	B
10-11	C
8-9	D
6-7	E
3-5	F

24.3 Capital Project Programme

24.3.1 Programming Principles

Six alternative programmes have been generated drawn from:

- Three programme themes:
 - o safety,
 - o future demand
 - o resilience
- Two budget scenarios:
 - o continuing current expenditure (BAU) of around \$12.5m over 3 years,
 - o BAU +25% i.e., around \$15m over 3 years.

Four further programme principles are also applied as follows:

Principle 1: Prioritising the delivery of A, B and C-ranked projects

All A and B ranked projects are appropriately included in every programme option, in the knowledge that these are deliverable within a BAU budget scenario. C-ranked projects are also included if they align to the programme theme without significantly exceeding the budget scenario.

Principle 2: A Reserve List for other C-ranked projects.

There is a long list of alternative C-rated projects which could be added or swapped into each programme option. These are kept 'in reserve', to be reconsidered for inclusion:

- as and when preferred programme themes and budgets change
- as and when the ranking or delivery timescales of individual projects within the preferred programme change.

Principle 3: Monitoring of projects ranked D or below.

Projects ranked D or below are not included in any programme or kept 'in reserve'. However, as and when the programme is monitored and reassessed, and it becomes clear that such a project should be ranked higher, then it may be included in the reserve list or even inclusion in the preferred programme. This will depend on the programme monitoring process outlined above.

Principle 4: Interdependent projects

Some projects in a programme are in close proximity to each other, or perhaps require completion of one before another. In these cases, they are considered for programming together.

24.3.2 Programme Options

Based on the prioritisation process and programming principles outlined above, the six programme options evaluated are summarised in the table below:

Programme Themes	Budget Scenarios	
	BAU	BAU + 25%
Future Demand	PROGRAMME 1 - \$12.42m 15 A and B projects + the 2 best C projects on this theme	PROGRAMME 2 - \$14.71m As Programme 1 + 5 more of the best C projects on this theme
Safety	PROGRAMME 3 - \$12.38m 15 A and B projects + the 3 best C projects on this theme	PROGRAMME 4 - \$15.31m As Programme 3 + 5 more of the best C projects on this theme
Resilience	PROGRAMME 5 - \$12.25m 15 A and B projects + the 1 best C project on this theme	PROGRAMME 6 - \$15.51m As Programme 5 + 1 more of the best C projects on this theme

As shown in the table below, the 15 A and B ranked projects proposed for all the programme options have an estimated total CAPEX of \$11.65 million, leaving just under \$1m available for other C-rated projects in the BAU budget scenario, and almost \$3.5m in the BAU+25% scenario.

<u>Project Name</u>	<u>Primary project Benefit</u>	<u>Priority Rank</u>	<u>Project Cost (est.)</u>	<u>Running Project Cost (est.)</u>
Keepa Road - Stage 1 Southern (SH30 to Kope Canal)	Future Demand	A	\$4,800,000	\$4,800,000
Arawa/Bridge Roundabout	Future Demand	B	\$750,000	\$5,550,000
Thornton Road Safety Improvements - Stage 1 - RnB Widening	Safety	B	\$150,000	\$5,700,000
Hinemoa St, James to Landing SUP	Future Demand	B	\$375,000	\$6,075,000
Tūi Street (safer routes)	Future Demand	B	\$348,000	\$6,423,000
Gorge Road - Reallocate Road space	Safety	B	\$550,000	\$6,973,000
Ohope Road - Stage 1 - Space Reallocation + Roadside Barriers	Safety	B	\$760,000	\$7,733,000
Safety and Access Improvements - 3-Year Programme	Safety	B	\$450,000	\$8,183,000
Henderson Street SUP	Future Demand	B	\$396,000	\$8,579,000
Goulstone Road safe crossing	Future Demand	B	\$251,000	\$8,830,000
Speed Management Delivery (2024-27 programme of 10years)	Safety	B	\$750,000	\$9,580,000
Manawahe and Matahi Road - Seal Widening 3-year Programme	Future Demand	B	\$500,000	\$10,080,000
Improvements associated with Renewals	Future Demand	B	\$600,000	\$10,680,000

Rewatu Road Underslip	Resilience	B	\$720,000	\$11,400,000
Detour VMS Advanced Warning Signs	Resilience	B	\$250,000	\$11,650,000

24.3.3 Future Demand Programme Theme

The additional C-rated projects included in programmes one and two are shown in the table below.

<u>Programme</u>	<u>Project Name</u>	<u>Primary project Benefit</u>	<u>Priority Rank</u>	<u>Project Cost (est.)</u>
1 and 2	Horrocks Ave Shared Use Path - James Street to Awaptapu Path	Future Demand	C	\$331,000
1 and 2	Warren Park path upgrades	Future Demand	C	\$441,000
Total Cost of Programme One including all A and B ranked projects				\$12,422,000
2 only	Apanui Stream Pathway - stage 1 Pyne Steet to the Strand	Future Demand	C	\$105,000
2 only	Apanui Stream Pathway - stage 2 - the Strand to Warren Cole	Future Demand	C	\$311,000
2 only	King Street SUP stage 1	Future Demand	C	\$400,000
2 only	Awatapu Causeway and Park path	Future Demand	C	\$885,000
2 only	Douglas St - Safer Travel Route	Future Demand	C	\$589,000
Total Cost of Programme Two including all A and B ranked projects				\$14,712,000

24.3.4 Safety Programme Theme

The additional C-rated projects included in programmes three and four are shown in the table below.

<u>Programme</u>	<u>Project Name</u>	<u>Primary project Benefit</u>	<u>Priority Rank</u>	<u>Project Cost (est.)</u>
3 and 4	Mcgarvey Road/Domain Road intersection	Safety	C	\$150,000
3 and 4	Whakatane West Street Traffic Calming	Safety	C	\$200,000
3 and 4	Taneatua Road Safety - Speed Management	Safety	C	\$375,000
Total Cost of Programme Three including all A and B ranked projects				\$12,375,000

4 only	Blueberry Corners - Speed Management Treatments	Safety	C	\$500,000
4 only	Taneatua Road Safety - Widening and barriers	Safety	C	\$520,000
4 only	Te Teko Road Corridor Treatment - Speed Management	Safety	C	\$187,000
4 only	McGarvey / Domain Road Crossing Point	Future Demand	C	\$100,000
4 only	Taneatua Road - Blue Rock Quarry Flood Resilience	Resilience	C	\$1,630,000
Total Cost of Programme Four including all A and B ranked projects				\$15,312,000

The McGarvey/Domain Road Crossing is included because of its secondary safety benefit. The Taneatua Road Blue Rock Quarry project is included to complement the other Taneatua Road projects from a delivery efficiency perspective.

24.3.5 Resilience Programme Theme

The additional C-rated projects included in programmes five and six are shown in the table below.

<u>Programme</u>	<u>Project Name</u>	<u>Primary project Benefit</u>	<u>Priority Rank</u>	<u>Project Cost (est.)</u>
5 and 6	Whirinaki Bridge 50MAX and HPMV strengthening	Future Demand	C	\$600,000
Total Cost of Programme Five including all A and B ranked projects				\$12,250,000
6 only	Taneatua Road - Blue Rock Quarry Flood Resilience	Resilience	C	\$1,630,000
6 only	Taneatua Road - Red Devon Curves Flood Resilience	Resilience	C	\$1,630,000
Total Cost of Programme Six including all A and B ranked projects				\$15,510,000

The Taneatua Road resilience projects are included together in programme six as their benefits are interdependent. However, this does add an estimated \$0.5m to the programme cost.

24.3.6 Projects On Hold

There are various capital improvements being kept 'on hold' until other activities they depend on are completed and/or the success of their outcomes become clear. For these reasons these projects are not included in the 6 programmes, but are summarised in the table below for completeness. These can be reconsidered for delivery as and when project priorities change in the preferred programme and outstanding issues have been addressed.

Projects On Hold

Project Name	Dependency
James St Intermediate south side SUP	Subject to power undergrounding
Rex Morpeth Stage 2 - Off-Road 3m SUP Crete Street to McAlister St	Subject to inclusion in the Rex Morpeth Recreation Hub Masterplan.
Rowing Club Accessibility Improvements	Subject to success of the Landing Rd Safe Crossing Point project to deliver improved accessibility.
Rex Morpeth Stage 3 - Aquatic Centre/Lovelock Connection	Pending completion of the Rex Morpeth Recreation Hub masterplan.
Te Teko Rd and Otakiri RD SNP	Subject to success of recent minor upgrades
Rewatu RD and Titoki RD SNP	Subject to success of recent minor upgrades
Landing RD and Hawera Rd SNP	Subject to completion of the EBoP Spatial Plan
Hinemoa St and Victoria St SNP	Subject to completion of the EBoP Spatial Plan

24.3.7 Recommended Programme and Reserve List

Programme Six (Resilience theme with 25% increased investment) is the recommended programme.

Although growth was ranked slightly higher in the ILM priorities, we believe for where we currently are, we need to first deliver the planning projects identified, to be able to inform the optimal physical growth projects/programme that we could then deliver in the following AMP.

Steaming ahead now, before the spatial plan work is complete and without a thorough network level planning lens applied, risks inefficient and ad hoc investment occurring.

We also have some key resilience issues on our network that are regularly cutting off whole communities right now, that we need to deal with yesterday! Growth is coming, but we still have some time to prepare and align ourselves to ensure we make optimal and prudent investment decisions.

We propose to prioritise these resilience projects now, while undertaking the growth and resilience planning projects identified, to fully inform the next round of programme development.

In addition to the A and B ranked projects, programme six primarily includes projects which provide resilience and future demand benefits. These two benefits were assessed to have the equal highest priorities. Significant sums of money have already been invested in safety, and speed management projects in the Whakatane district and while this investment has already occurred, its results have not yet been fully

observed. These projects are expected to be effective in increasing safety for all road users. As such, it is recommended to focus on projects which will provide resilience and future demand benefits.

The table below shows the C-ranked projects on the Reserve List for preferred programme 6. These can be reconsidered for delivery as and when project priorities change in the preferred programme.

<u>Project Name:</u>	<u>Primary Project Benefit</u>	<u>Priority Rank</u>	<u>Project Cost (Est.)</u>
Te Teko Road Corridor Treatment - Speed Management	Safety	C	\$187,000
Mcgarvey Road/Domain Road intersection	Safety	C	\$150,000
Taneatua Road Safety - Speed Management	Safety	C	\$375,000
Whakatane West Street Traffic Calming	Safety	C	\$200,000
Horrocks Ave Shared Use Path - James Street to Awaptapu Path	Future Demand	C	\$331,000
Warren Park path upgrades	Future Demand	C	\$441,000
Blueberry Corners - Speed Management Treatments	Safety	C	\$500,000
Taneatua Road Safety - Widening and barriers	Safety	C	\$520,000
McGarvey / Domain Road Crossing Point	Future Demand	C	\$100,000
Apanui Stream Pathway - stage 1 Pyne Steet to the Strans	Future Demand	C	\$105,000
Apanui Stream Pathway - stage 2 - the Strand to Warren Cole	Future Demand	C	\$311,000
King Street SUP stage 1	Future Demand	C	\$400,000
Awatapu Causeway and Park path	Future Demand	C	\$885,000
Douglas St - Safer Travel Route	Future Demand	C	\$589,000
Whakatāne Bridge SUP clip on	Future Demand	C	\$2,070,000
Landing and Domain Road Safe Crossing Points	Future Demand	C	\$300,000
McAlister Street SUP or Cycleway	Future Demand	C	\$486,000
Footpath extensions (general programme)	Future Demand	C	\$300,000
Rūātoki Resilience - Awahou/Reid Road	Resilience	C	\$2,000,000

24.3.8 Planning & Design activities

A range of new planning and design activities are needed to define future capital improvements for all key benefits. The outputs of these investigations will inform future MOR and capital improvement programmes.

The table overleaf shows these proposed new investigations, prioritised 3 (high) to 1 (low) in relation to ILM priorities as well as their alignment to (draft) GPS priorities.

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Project Name	ILM Benefit	Cost Estimate	Work Phases	Priority	Case for Change	GPS Strategic Alignment
Pokairoa/Nga motu Rerewhakaitu Resilience	Resilience	\$500,000	Business Case, Concept design	3	This is the shortest viable alternative freight route to SH30 (by around 16km) between Whakatane and Rotorua. SH30 is rated as a moderate resilience risk by Waka Kotahi (National Resilience Programme Business Case 2020), prone to closure at Rotoma Bluff. The 25km long Pokairoa Road/ Ngamoto Road section of this route is an unsealed primary collector between Galatea Road and Bonisch Road that costs around \$120k per annum (2016 est.) for WDC to maintain. Sealing it would reduce the MOR cost burden on WDC, improve the efficiency of the freight system with shorter travel distances, and improve resilience with a higher (sealed) level of service for this alternative to SH30 in the event of its frequent closure at Rotoma during weather events.	Integrate freight system' Resilience Maintaining and operating the system

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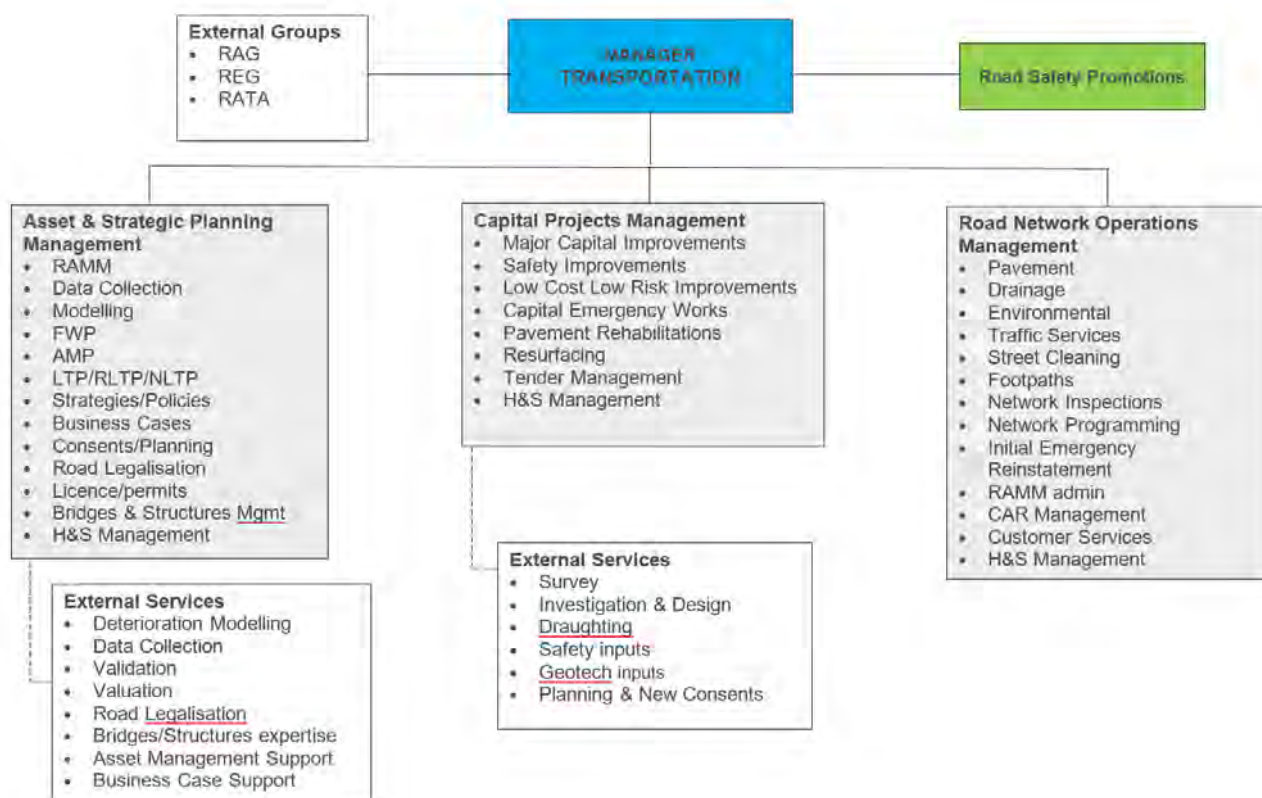
Network Resilience Programme	Resilience	\$500,000	Programme Business Case, Concept Designs	3	A network improvement programme is needed to protect assets from failure caused by unplanned disruptions, keep more of the network open when they happen and save on significant future road reinstatement costs	Resilience Integrated Freight System Maintaining & Operations the system
Spatial Plan - Transport System Programme	Future Demand	\$400,000	Programme Business Case	3	A transport programme and new investment pathways will be needed to support delivery of the spatial plan	Sustainable Urban Development
Spatial Plan - Urban Transport Modelling	Future Demand	\$250,000	(Transport) Model Development	3	Development of network demand modelling tool(s) to assist with the Transport System Programme	Sustainable Urban Development
Spatial Plan – 2 nd Whakatane River Crossing	Future Demand	Depends on: - Spatial Plan – TSP - Network Resilience Programme	Detailed Business Case, Concept Designs	2	Detailed optioneering and design to support Whakatane growth area components of the Spatial Plan and improved network resilience should Landing Road Bridge be unavailable.	Sustainable Urban Development Resilience
Mill Road Roundabout - Shaw Road Connection	Future Demand Safety	\$500,000	Detailed Business Case, Concept Design	2	The Mill Road intersection has safety deficiencies which will be compounded by planned growth between Shaw Road and Huna Road.	Sustainable Urban development Safety

MANAGEMENT CASE

25 The Transportation Team – Organised for success

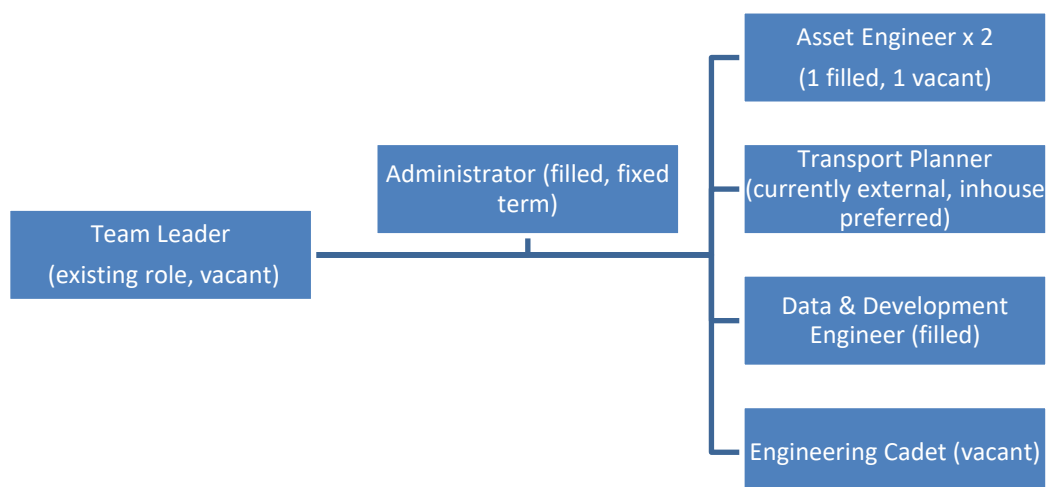
25.2 Activities and Service Delivery

The Whakatāne District Council Transportation Team is in the process of refreshing its structure to manage transportation activities and assets. This structure is still shaped around the core functions of Asset Management and Strategic Planning, Capital Programme & Project Management, and Road Network Operations & Management. The key activities for each of these three functions are shown below.

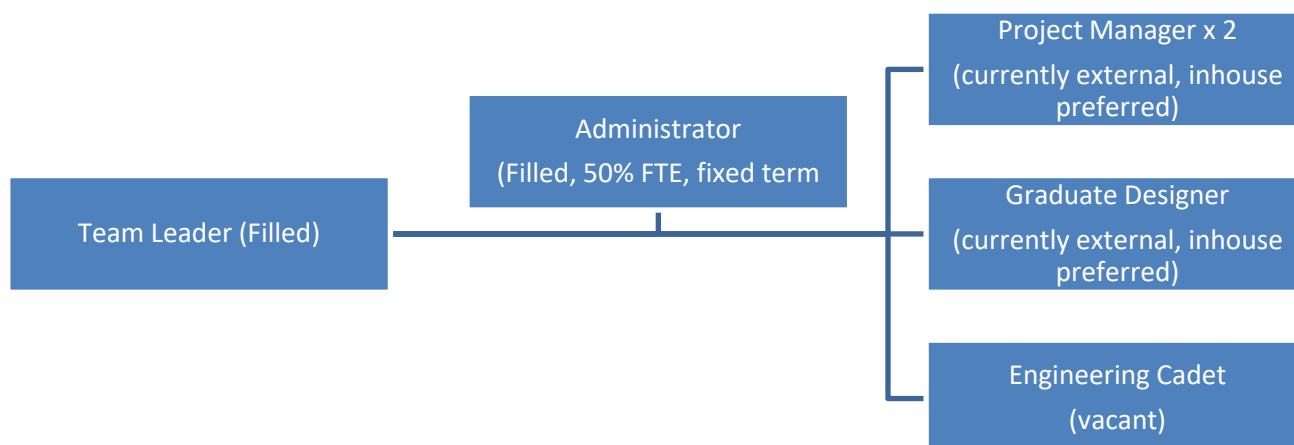


These functional activities are proposed to be delivered through the roles defined for each of the transportation sub-teams presented below, according to org structure and procurement status:

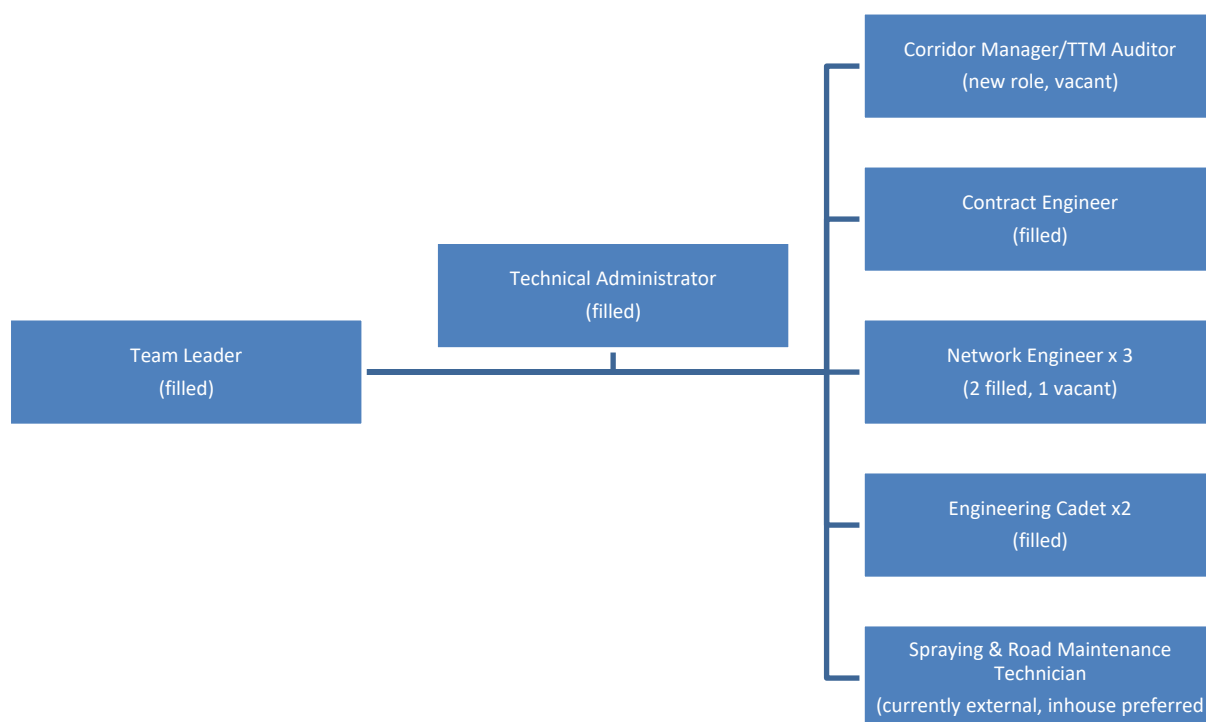
Asset Management & Strategic Planning:



Capital Programme & Project Management



Road Network Operations & Management



As shown above a number of roles are currently procured externally or are vacant. The preference is to bring these roles provided inhouse so that the WDC Transportation team can deliver on its key objectives across the local transport system for the communities that rely on them.

This will take time, however, so strong relationships remain in place with external professional service providers to fulfil these roles in the interim, providing continuity of service to the community as the team further establishes. This also allows flexibility for one-off secondments and extensions, to meet unforeseen service demands and opportunities if and then they arise.

The Transportation team also continues to grow its capability and influence through its involvement in external groups like the Regional Advisory Group (RAG) on regional land transport matters, Te Ringa Maimoa

(previously known as the Road Efficiency Group) on national land transport matters, and the Road Asset Technical Accord (RATA) on asset management best practice.

25.3 Testing of Evidence

The organisation has solid data collection, rated well above average when compared to peers and nationally in the REG Data Reports. We also have a robust traffic count program in place to keep traffic information regularly updated. We have recently established pavement and performance modelling and when used in conjunction with our sound data it assists in informed decision making.

25.4 Confidence in Delivery and Risk Management

We are confident that the organisation can deliver the program. We have a good record of delivering the program on time. We have established a diverse, capable and experienced team as set out above, to ensure all aspects of delivering the program are covered.

Our biggest risk affecting the delivery of program is large weather events. Our district has suffered a fair few events over the years and this can stretch all resources, both management and physical works.

To manage this risk in terms of the managing delivery of the program we will maintain the existing relationships we have with external professional service providers, allowing us to draw on additional external resources if required to deal with weather events as well as deliver the normal program.

(Explained in further detail in the Commercial Case) We have also established a Supplier Contract Panel which allows WDC to efficiently engage resources for physical works when required to meet peak demands.

COMMERCIAL CASE

26 Procurement Context

26.2 Contract Models

26.2.1 Supplier Panel

26.2.1.1 Background

In 2017 we identified a procurement opportunity, to improve our ability to efficiently engage contractors through establishment of a Supplier Contract Panel.

During the multiple significant weather events experienced on the network during April 2017, the widespread and significant damage that resulted was far too demanding to effectively be managed through the existing Road Maintenance Contract. Whakatāne District Council directly engaged multiple local contractors to assist in the initial response to the events. This proved to be an efficient way to manage the large scale and widespread works, allowing large amounts of resource to be deployed to the areas of most significance and get the network operational as quickly as possible.

Other benefits seen through this process was allowing local contractors a chance to carry out this kind of work for the Whakatāne DC. The Eastern Bay of Plenty has many competent local contracting companies that often don't win major contracts through WDC, and this can be related to the onerous tender process that makes it hard for them to win the work when competing against large national/multi-national firms.

It also allowed our in-house team Network Engineer Roles who supervise the implementation of physical works, to have improved direct communication with the contractors crews in the field carrying out the work. This enabled clearer and quicker messaging to be passed along the line, quick response times for decision making and resolving unforeseen issues, as well as enabling more contractor input into the physical works designs and scheduling.

This type of communication was not possible with the traditional, buddled maintenance contracts because the particular nature of the various works, (and in terms of the storm response, the quantum of supplementary resource required) meant large numbers of sub-contractor arrangements, and multiple layers of reporting lines between our network engineers and the field crews.

26.2.1.2 Procurement Process

Various suppliers apply to be selected onto the Supplier Contract Panel under different activity groups. Application's to be appointed on the panel include similar information required in a standard Request for Tender; Health and Safety information, insurances, conditions of contract, relevant history, resources, basic methodologies. Contractors are then approved onto applicable panels, to carry out certain types of work depending on their skills and experience.

Once suppliers are approved onto the panel, packages of work are put out to panel as its ready for implementation to provide a price. Depending on the size and scope, minor additional attribute information may be requested (such as site specific methodology, programme etc). This process has been found to balance the need to keep work competitively priced, along with minimising workload for all involved (WDC staff and supplier) and reducing typical procurement timeframes.

To provide a quality index and ensure 'lowest price' isn't the sole evaluation tool once suppliers are appointed to the panel, we have included a grading system in our supplier evaluation process. Panellists are graded according to the quality of their initial tender submission and this grading is aligned with a discount factor that is applied to their price provided for the various work packages (much like the standard PQM model). Gradings are assigned to the various panel submissions according to specific skills and experience of the supplier – eg a supplier on multiple activity panels will typically have different gradings for different panels to reflect the various skills and experience in different activities.

To also encourage continuous improvement and to distinguish between suppliers that can provide a top quality tender submission vs those that may not excel at submissions, but can still deliver top quality work outputs, we also have a performance review framework associated with the panel gradings. A supplier is assigned their initial grading upon submission of their tender, but this can move (up or down) following delivery of work to reflect the calibre of outputs and recognise the quality benefits provided. This process can also be used to remove a supplier from the panel, should the quality of work (or lack thereof) warrant removal (details set out in the performance review). So far we have not had to remove any panellists.

The panel is an open supplier panel so new suppliers can apply to join, encouraging new suppliers to enter the Whakatāne District Market.

The panel has been in place successfully for the initial 5year term and is currently operating under a 1year roll over (due to resourcing shortages in the local team, unable to update the contract documentation in time before the initial expiry). Only minor updates are being made to the contract form, in light of continuous improvement, a few snags have been encountered during the initial 5year operation, which can be smoothed over through the revised contract documents. These include addition of an earthworks activity panel, splitting drainage panel into two (maintenance and capital), minor changes to H&S and contract conditions to reduce the info required to be included in the Request for Price documentation. These changes are currently being prepared, ready for a 1 July 2024 commencement date.

26.2.2 Professional Services

As covered under the Management Case, a large portion of Council's professional services are provided through an in-house team. This in-house team delivery model was established in 2017 and has been successfully implemented for over 6 years. Some of the benefits of bringing core transport professional services in house include: value for money, improved effectiveness, improved in-house capability and capacity, increased ownership of the network and confidence in service delivery from our customers. Key feedback includes customers valuing being able to deal with Council staff directly rather than us being seen to 'hide' behind layers of consultants.

Through the delivery over the past 6 years the inhouse team has supplemented the internal resource with external resource to cover specialised tasks (eg. geotech, survey, detailed design, modelling, valuation assessments, traffic counting etc) and to cover peak resource demands during busy periods. Through the process of implementation, and as part of the feedback from Waka Kotahi Audit and external peer review, we have noted a number of continual tasks that are being delivered by externals, that could effectively be delivered by extending the internal team. Some of these roles have been outlined in the previous management case section to show where a role is currently outsourced but we will look to recruit to an internal role over time. This will take time to source good staff so these activities will continue to be delivered by externals until the roles can be successfully filled.

External resourcing for specialised activities and to cover peak resource demands will continue.

26.3 Smart Buyer

Our Smart Buyer assessment demonstrates our capability as a Smart Buyer, with a few areas to further develop. Our organisation has embraced the principles of being a smart buyer, but can still create further improved value for our communities. Refer overleaf:

Assessment statement	Score				
	1	2	3	4	5
Our Organisation Whakatane District Council Transportation Team					
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. Is able to 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			1	6	7
Multiplying factor	x1	x2	x3	x4	x5
Total Score in Column			3	24	35
Total Score	62				

IMPROVEMENT PLAN

27 Overview

The following tables summarise our Improvement Plan for 2024-34. It captures progress from the 2021-31 Improvement Plan, as well as new items identified to address through the 2024-34 period. The priority reflects indicative timeframe for commencement: H = Years 1-2, M = Years 3-6, L = Years 7-10. The resource team lead reflects the transport sub-team that will lead the progression of the improvement item. Further detail around resourcing and implementation will be developed through the improvement plan project plan.

Asset Group	Improvements	Priority	Resource Lead Team	IIMM Reference	REG Pillars of Success					
					Systems	Evidence	Comms	Decision Making	Service Delivery	Benefit Delivery
Network & Asset Management	Develop a detailed project plan to detail implementation of the identified Improvement Plan items contained in the 2024-34 AMP.	H	All	XX						
	Improve Maintenance Cost data management, in alignment with the PMRT attributes.	H	Operations	XX						
	Review treatment length deactivation/reactivation process to ensure treatment lengths are true and correctly correlated to treatment lengths on the ground.	H	Strategy and Asset Management	XX						
	Review and modernise risk identification and management processes, and develop new risk register. Quantify risks financially and set targets for reducing level of exposure.	M	Strategy and Asset Mgmt	3.2						
	Better ONF and RAMM integration for improved reporting and analysis. Including to determine methods for capturing current	H	Strategy and Asset	2.5						

Activity Management Plan 2024-34 TRANSPORTATION

	performance, trend, and benchmarking for the new benefits measures identified in the AMP.		Mgmt and Operations							
	Develop a pavement skid policy detailing how SCRIM data will be applied (Keep based in NZTA T/10 as considered best practice, but will need to balance affordability). Hardwire SCRIM TLs into RAMM.	H	Strategy and Asset Mgmt	2.5						
	Continued development and succession planning for in-house personnel and systems	H	All Teams	XX						
	Further expand on use of dLoS to quantify risk and return on investment.	H	Strategy and Asset Mgmt	XX						
	Review and update asset lives for all asset classes prior to next valuation and review against renewal profiles.	H	Strategy and Asset Mgmt	XX						
Pavements	Establish program to quantify pavement strength for each treatment length. This will provide significant improvements to the accuracy and reliability of the pavement model.	Completed: MSD Data Collection	Strategy and Asset Mgmt	2.5						
	Revise the Maintenance Intervention Strategy to target level of service delivery to ONF measures.	H	Strategy and Asset Mgmt and Operations	3.3						

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	Develop a dTims model that evaluates the 30year proposed pavement renewal and surfacing programme Update: included to 20years but model results were low confidence because of the data it was working off. No further action at this stage, may revisit following maintenance cost improvement item.	Complete	Strategy and Asset Mgmt Strategy and Asset Mgmt	XX						
Structures	Review guardrail asset lives	M	Strategy and Asset Mgmt and Operations	XX						
	Complete resilience study to better understand role, contribution and priorities of structures to better inform 2027-37 AMP	H	Strategy and Asset Mgmt	XX						
	Undertake detailed investigations and analysis of bridge stock to provide improved understanding about remaining useful life.	M	Strategy and Asset Mgmt	2.5 3.2						
	Investigate feasibility of insurance for bridge assets. Completed: not a worthwhile avenue to use. Current management process sufficient.	Completed	Strategy and Asset Mgmt	XX						
Drainage	Use modelling techniques to identify and prioritise at risk pavements for drainage maintenance.	M	Strategy and Asset Mgmt	3.2 3.3						
	Add missing soakpits and other assets to RAMM database.	H	Strategy and Asset	XX						

Activity Management Plan 2024-34 TRANSPORTATION

			Mgmt and Operations							
	Review asset lives for drainage assets	M	Strategy and Asset Mgmt and Operations	XX						
Traffic Services	Explore development of a more performance-based asset replacement policy for signs and markings.	L	Operations	2.5						
	Develop a renewal strategy for LED lights as the warranty expires and the approach end of life.	L	Operations	XX						
	Explore technologies for identifying underground corrosion of poles.	L	Operations	XX						
Active Micro Mobility &	Determine appropriate maintenance and renewal regime for PT Infrastructure	M	Strategy and Asset Mgmt and Operations	XX						
	Develop counting program to establish base demand and growth.	Commenced – on-going	Strategy and Asset Mgmt and Operations	2.3						
	Review data and asset management procedures for active mode assets to ensure they are captured and managed in an effective and efficient manner	M	Strategy and Asset Mgmt	XX						

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	Develop FWP for off-road cycle facilities.	L	Strategy and Asset Mgmt	4.4						
Parking	Develop FWP for carparks	L	Strategy and Asset Mgmt	4.4						