



Roading Activity Management Plan 2021- 2024 (Version 2)

Roading

Activity Management Plan

Quality Information

Document	Roading Activity Management Plan
Ref	Version 2
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Copies	

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Document Purpose and Structure

This AMP was reviewed in 2019, and revised to November 2020.

It is intended to support the Strategic Case and Programme Business Case that were submitted to Waka Kotahi in September and November 2020 respectively.

Duplication between the documents has been avoided, so it is recommended that the Business Cases and this AMP be referred to together.

The following is suggested to assist readers.

For a general overview of objectives and issues	Refer to Strategic Case
For details of the programme	Refer to Programme Business Case Summary
For financial forecasts	Refer to Refer to Programme Business Case Summary or AMP
For actions associated with particular work types (e.g. footpaths)	Refer to Programme Business Case
For discussion on Asset Management enablers such as Level of Service development or Risk Management	Refer to AMP

1.0 EXECUTIVE SUMMARY

Matamata-Piako District's Transport Activity Management Plan (AMP) gives the overview of our transport network and customer's requirements for the expected level of service.

The plan provides direction for the use of Councils funds. How we propose to maintain, operate, renew and improve the Matamata-Piako transport network. We want to clearly show the value of any investment made in addressing our strategic transport problems and undertaking core business activities. Any investment needs to achieve the desired outcomes and benefits for our customers and represent value for money. It is also important that we show how we will meet regulatory requirements and environmental protection.

Strategic Context

Matamata-Piako District has benefitted from continually increasing tourism and visitor numbers to Hobbiton. The Hauraki Rail Trail and potentially the Te Aroha to Matamata cycle path have and will add to tourism numbers.

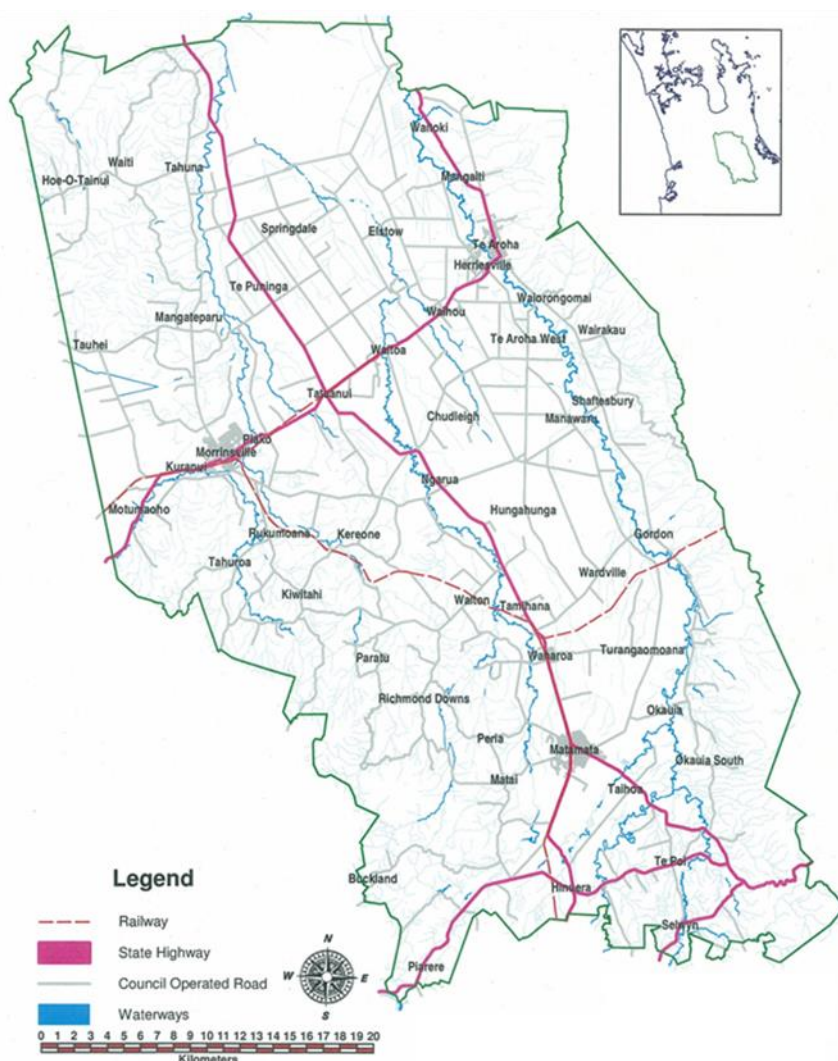
There has been a change of Land Use as the demand for housing in Auckland pushes horticulture, into our district on land previously used for Dairy.

Dairy properties are also recognising opportunities and reducing commercial risk by downsizing dairy and investing in partial conversions into poultry farming.

There has been expansion and increased production in processing plants both in the dairy and poultry sectors.

Also increased number of subdivisions and residential dwellings. The housing increase in 2019 and 2020 has exceeded the forecast growth significantly. One of the limiting factors for growth in Morrinsville is the disposal of stormwater.

With the items mentioned above there is a need to understand the effects on traffic movements. This creates the need to collect additional data. With improved technology and collaboration through the Regional Asset Technical Accord (RATA) this technology is now available at a cost effective rate. We entered into a High-speed data collection programme in the previous funding round and we recognise the need to continue to collect data to recognise network trends. Additional funding for network research is required for test pits at estimate of \$ 35,000 per annum.



Our network is subject to a high percentage of heavy traffic. Recent changes in legislation have allowed for additional legal width and increased tonnage on approved trucks. Our network has to be suitable for these changes. The changes in the use of our transport network increases our requirement for stronger bridges, safer, wider roads and appropriate sight distances.

Of the 380 plus bridges in our district we have 53 bridges that are recognised as critical. That is they are either main routes for local traffic or alternatives if the State Highway routes are not available. These bridges have priority for staged load assessments.

With the GPS focus on healthier modes of transport. This ties in nicely with MPDC's outlook for the construction of further cycleways/shared paths throughout the district.

This is likely to evolve into more shared pathways 2.5m wide. The NZ Transport Agency is now subsidising footpath maintenance and renewals. As we are now endeavouring to utilise the Waikato Regional Infrastructure Specifications (WRITS) the WRITS needs amendment to adhere to the Governments direction. This will ensure Developers are building what the Community and Government are requesting.

Additional Public Transport with a daily bus service operating from Matamata to Hamilton via Morrinsville. Also a new service operating between Morrinsville and Te Aroha. This needs to have appropriate infrastructure, bus stops and parking facilities.

Additional Investment Proposed

There is a need for additional funding to collect data this will ultimately give greater understanding of the network and potentially reduce long term maintenance costs.

To encourage Public Transport and greater safety there is a need for weather proof bus shelters and park and ride carparks.

For the shared footpaths there is a greater cost and the renewals should be completed in longer sections for continuity, consistency, aesthetics and safety.

We also need to assess loading capacity and capabilities on critical transport structural infrastructure.

The other items that we budget for will remain similar to previous levels, therefore overall, the budget increase is relatively low. There are a range of changes within in the work categories in response to the problem statements and benefits identified.

The investment level on unsealed roads was reduced in the previous funding round. We have not recognised any adverse effects. We will maintain the same budget for the 2021/2024 bid.

There has been focussed FWD and High-speed data collection undertaken over the last few years to improve the lifecycle management of sealed roads. The results from dTIMS modelling in 2017 confirmed a similar size programme of rehabilitating and resealing was appropriate. MPDC recognises the need to preserve the sealed roading assets through waterproofing and drainage. The rehabilitation budget was reduced in the previous funding round on the premise that it would be reviewed in the third year 20/21. This may impact on the next funding round with the recognition of more deformed areas requiring repair.

We are waiting on the next dTIMS report to give greater insight.

Resealing is the most efficient way to manage our network with our soft subgrades. If the Rehabilitation funding is resumed to the previous budget. This will allow us to maintain the optimum level of renewal and maintenance giving value for money. The drainage budget was increased in the previous funding round and should remain the same.

The next three years will provide an opportunity to re-assess the maintenance and renewal programme and collect additional data enabling us the opportunity to recognise trends. .

The Capital programme details a combination of Level of Service improvements and growth driven projects.

RATA and Better Asset Management

Council has undertaken an enhanced data collection programme. This is in alignment with a Waikato Data Collection Strategy. This supports the business case for the necessary extra investment as developed by RATA.

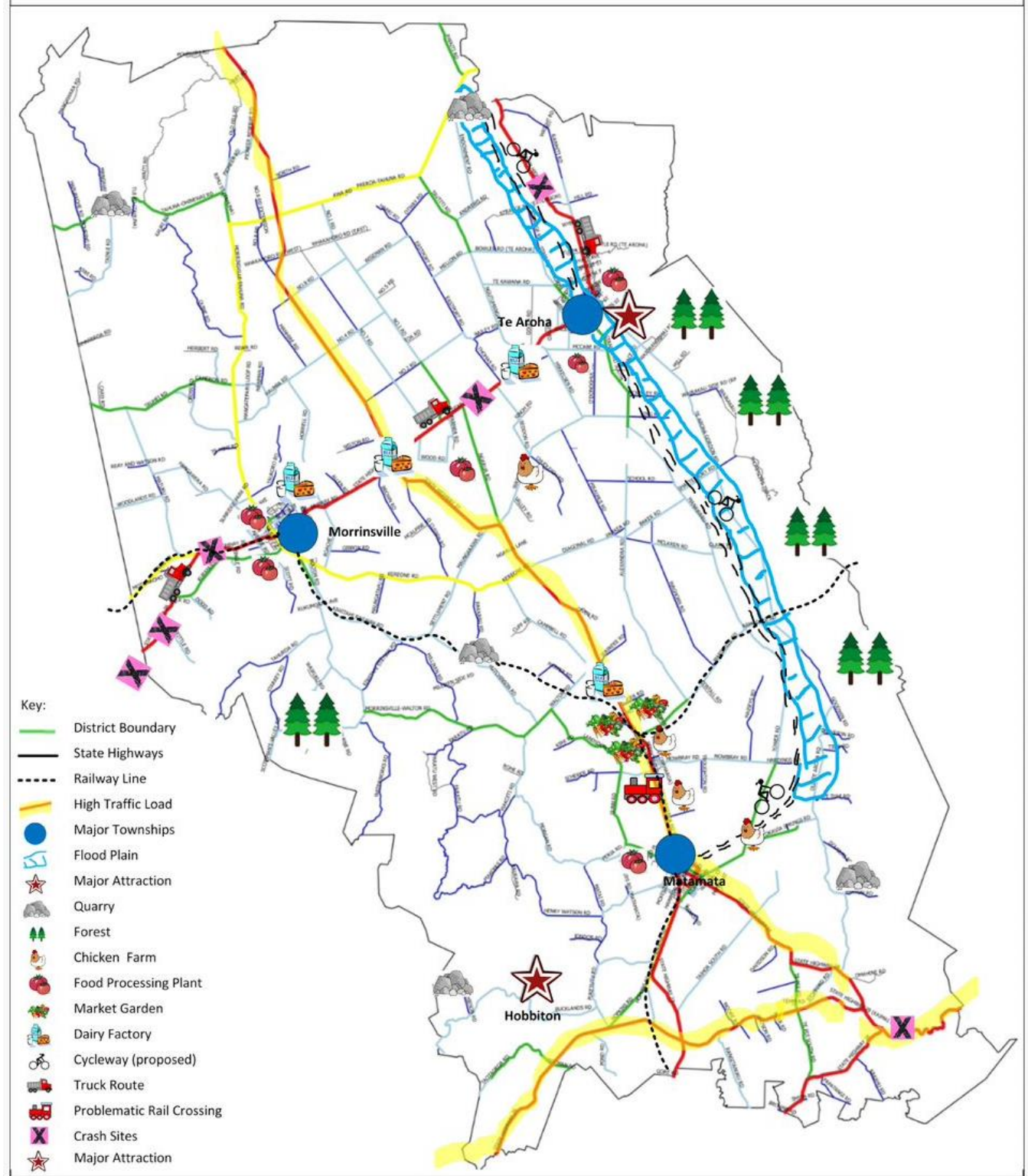
The lift in investment in work category 151 has enabled Council to meet the new strategic approach. The RATA data collection strategy focuses on the Regions higher volume roads although data will be collected on all local roads within the next funding round. This includes High Speed Data collection as well as the visual road ratings. As more information is collected, a greater understanding of that data is being developed. This improved knowledge is used in the refinement of dTIMS modelling, allowing further analysis of our network.

Waikato Region – Aligned Objectives

As part of the development of the Waikato Regional Land Transport Plan, road controlling authorities have undertaken joint planning and problem definition. The key issues could be summarised as better planning, improving safety and connectedness.

The issues facing the MPDC Transport Activity are summarised spatially in the figure below

MATAMATA-PIAKO DISTRICT COUNCIL ROADING CHALLENGES



The development of problems and benefit statements were discussed in the strategic case. They are repeated below for consideration through the programme cases for the different asset groups and work categories.

Table 1.1: Problem and Benefit Statements

Strategic Statement	Problem	Benefit	Programme Problem Statements	Example Projects
Road Safety: Driver behaviour and infrastructure deficiencies on our road network lead to fatal and serious injuries		Deaths and serious injuries are reduced; improving the outcomes locally and supporting wider initiatives	One lane bridges may be economical but cause road safety issues when being used by a larger volume of users (i.e. tourism)	<ul style="list-style-type: none"> • Old Te Aroha One Lane Bridge Review • Old Te Aroha One Lane Bridge Update
			Investment is required to implement safety initiatives	<ul style="list-style-type: none"> • Safe Network Review • Road Upgrades • Installation of Signages • Changing Speed limits
Resilience: Targeted investment is required to maintain current levels of service in the longer term for our district		The network remains fit for purpose and investment is focused where it is most needed	We have aging assets that need to be maintained, renewed or upgraded	<ul style="list-style-type: none"> • Bridge Maintenance and Renewals Program • Roothing Maintenance and Renewals Program
			Data collection, quality and gathering is lacking in some areas and are essential variables for future investments	<ul style="list-style-type: none"> • Process or Systems Review • Process or Systems Update
			The changing national strategy may affect how we prioritise our programmes and projects	<ul style="list-style-type: none"> • Government Policy Statement Review • Change of mode • Road Safety Action Plan • Climate change • Routes that support Economic Activity

Strategic Statement	Problem	Benefit	Programme Problem Statements	Example Projects
Demand Management: Transportation will need to adapt to the new changes or trends on transport modes and meet higher expectations of our road network performance	The network is fit for purpose meeting the needs of a wide range of users		The number of High Productivity Motor Vehicles (HPMVs) on our road networks lead to faster wear and more road maintenance	<ul style="list-style-type: none"> • HPMV Road Impact Review • Roding Improvement Projects
			Alternative modes of transport have been promoted and are being utilised by many	<ul style="list-style-type: none"> • Provision of E-Vehicle Charging Stations • Construction of Cycleways • Provision of Shared Footpaths • Pedestrian Connectivity Improvement Projects in Towns
			People who have relocated from urban areas (especially metropolitan areas) and have experienced high levels of service expect the same level of service as new residents of the district and this also negatively affects our customer satisfaction survey	<ul style="list-style-type: none"> • Information Drive Project • Roding Asset Upgrade Projects
Growth: Growth on the network affects its suitability, while affecting the maintenance and management of our road assets	The network remains fit for purpose and investment is focused where it is most needed		New residential areas need to be serviced as outlined in the district plan	<ul style="list-style-type: none"> • Hinuera to Station Road Link • Smith and Station Road upgrades • Hangawera Road to Snell • Station to Peria Road Link
			Waharoa is known to be a high potential growth area in the future	<ul style="list-style-type: none"> • Roding Projects
			Our road network may limit transportation needs associated industries such as Dairy and Forestry	<ul style="list-style-type: none"> • Roding Improvement Projects leading to Forest Areas • Roding Improvement Projects <ul style="list-style-type: none"> ○ 50Max Bridge upgrades
			Long term forecasts on tourism reported higher user volumes in the Matamata area	<ul style="list-style-type: none"> • Pavement Rehabilitation Works • R2Zero – Puketutu and Hinuera Road • Speed Management on Buckland Road

2.0 INTRODUCTION

2.1 Purpose of this Plan

Matamata-Piako District Council recognises that this AMP is the fundamental driver of the services, that impacts directly on customers.

This long-term planning approach is considered necessary given the large capital and operating expenditure expected. The long lives of the assets and the lead times in planning for upgrades, replacements and the acquisition or construction of new assets. The sequencing and timing of works are developed through discussions with key stakeholders and this plan is prepared in consultation with them.



This activity management plan also aims to demonstrate that service potential of Roothing assets are being maintained.

2.2 How this Plan will be Used

2.2.1 Overview of Activity Management Planning

Activity Management Objectives

This plan is a culmination of efforts to rewrite the plan in order to produce a living document. This plan will fulfil Community Outcomes, Vision, Goals and Objectives for Roothing. The plan uses an adopted systematic approach to long-term management of its assets.

MPDC's overall Activity Management objective is to operate, maintain, replace/upgrade and create/purchase new assets over the long term. This needs to meet required Levels of Service (LoS) using the best appropriate practice activity management for the foreseeable future needs of the community.

Plan Timeframe

This AMP covers a 30-year timeframe. The plan assumes that the roading activities as a whole have an indefinite life and the main focus of the plan is determining the strategies required to maintain, rehabilitate and renew components over the next 30 years.

It is intended that this plan be reviewed every year with a major update every three years prior to the LTP process.

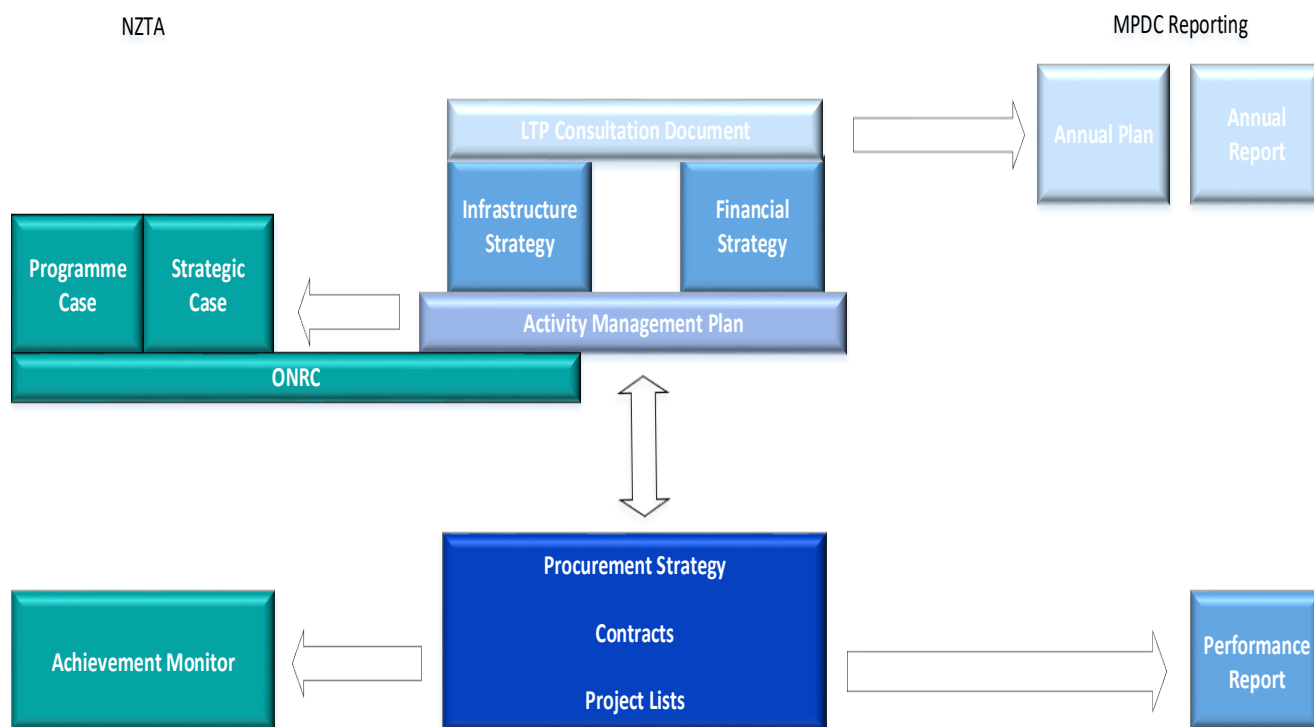
Key Planning Assumptions & Limitations of this Plan

This AMP has been prepared based on:

- Currently available information and data;
- Existing levels of service;
- 30 Year Financial Forecasts and
- Limited community consultation.

Council has determined the roading assets to be significant and therefore strategic in nature. This is noted in Council's Significance and Engagement Policy (2014), and 'core infrastructure for the purposes of the Local Government Amendment Act 2012.

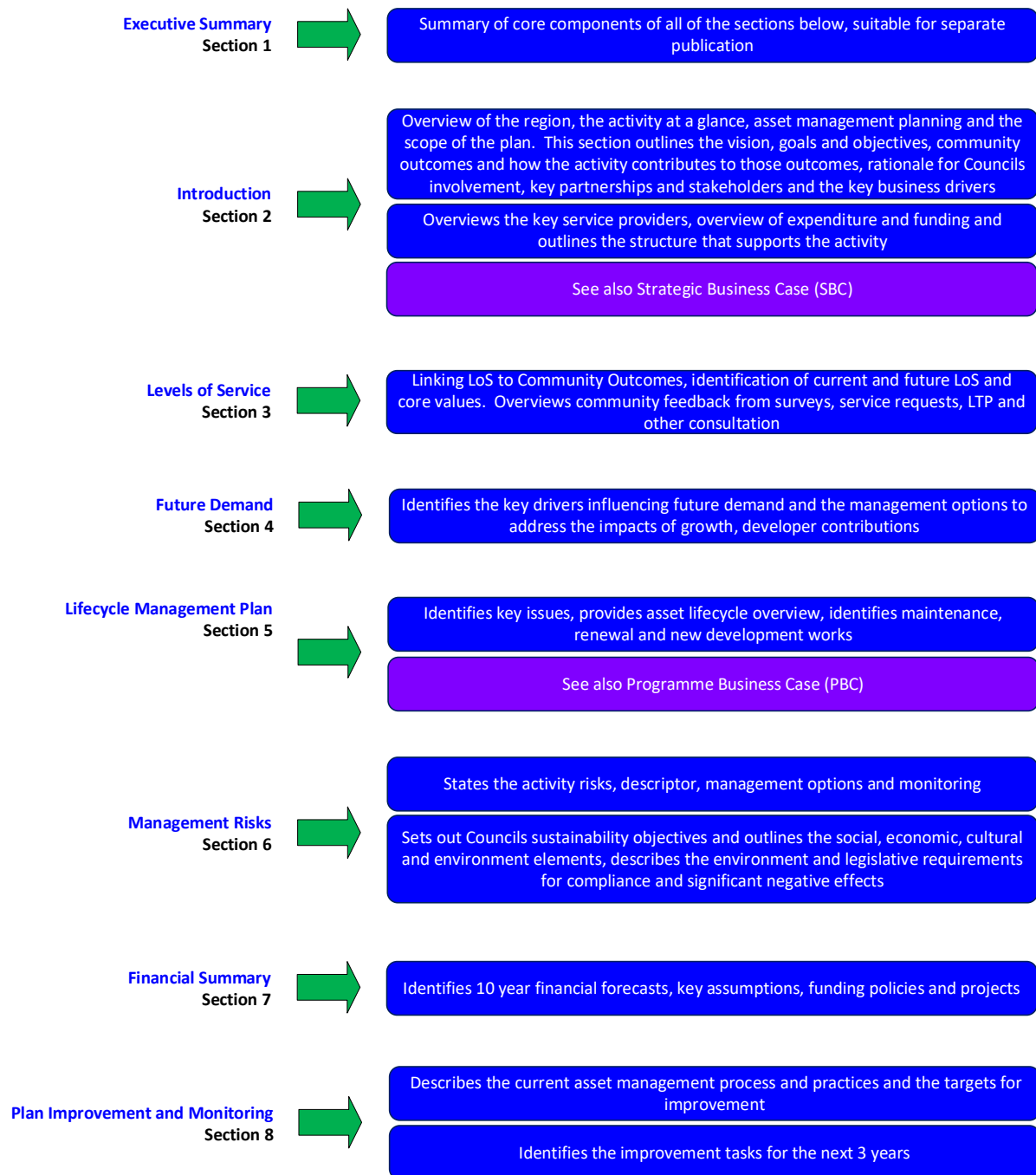
Figure 2.1: Integrated Planning Framework/Linkages



2.2.2 The Plan Format

The plan format shown below outlines the sections contained within this Roothing Activity Management Plan.

Figure 2.2: The Plan Format



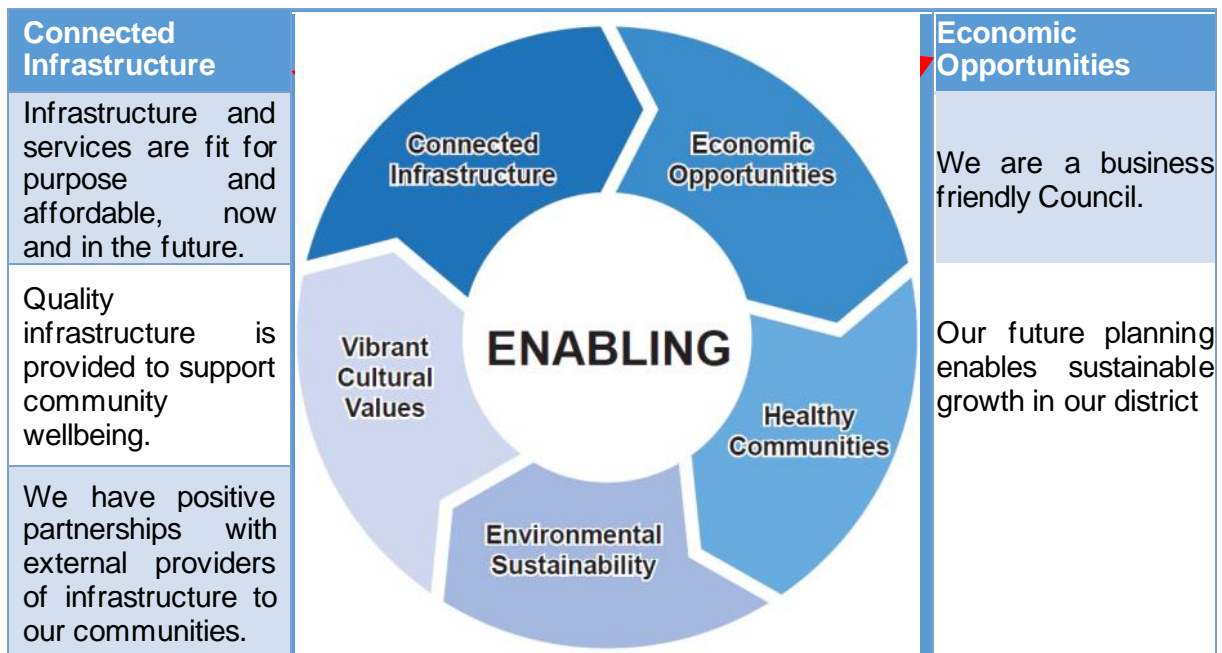
2.3 Matamata-Piako District Overview

Vision

In 2017 Council revised its strategic direction as illustrated below.

This describes Council's visions, community outcome themes and community outcomes.

***Matamata-Piako – The Place of Choice
Lifestyle. Opportunities. Home.***



2.4 Assets Included in this Plan

2.4.1 The Road Network

Within the District there are 1008 kms of road consisting of:

- 948 kms of sealed roads
- 60 kms of unsealed roads

Network development has largely been guided by the 'ranges, valleys and plains' type topography. The three major rivers, Waihou, Waitoa and Piako Rivers have meandered across the Plains over time depositing shingle and silt, creating a landscape of alluvial plains and peat swamp. The majority of the roading network crosses over river affected areas. The unsealed roads are predominantly in the ranges.

Network Components

The roading network comprises of the following assets or services.



Land

Land within the road reserve is a Council owned non-depreciating asset. The total land parcel amounts to about 2059 Ha.



Pavements

Pavements consist of formation, base layers and surface upon which vehicles pass over to travel between destinations. The surface of the pavement is generally sealed in order to preserve the underlying layers from water ingress pumped into the layers by heavy traffic loading but may be left unsealed where traffic loading is light.



Bridges Bridges include spanned structures and large culverts that provide continuous roading over waterways and rolling and mountainous terrain. Underpasses are a specialised culvert structure that allows the safe crossing of livestock under the road.



Footpaths

Footpaths are paths located within the road berm they had been specifically for pedestrian use. There may be some instances in the future where wide footpaths will be shared with bicycles. These will generally be designed to accommodate both modes of movement. They provide a separated safe place away from vehicles that use the carriageway.



Cycleways

Cycleways are specific paths for cyclists that are used to either separate cyclists from or integrate into main traffic flows. Cycleways are generally located as a space within the road carriageway or footpath delineated by road markings. Currently Matamata-Piako owns one dedicated gravel-surfaced cycleway.



Drainage Facilities

Roading drainage assets include catchpits and piping into stormwater systems. The systems drain water away from the road preserving the integrity of pavement layers. Culverts under roads are used to preserve land drainage flow paths.



Surface Water Channels

Surface water channels provide the open conduits that are located alongside roads. These channels collect water flows from the road and lead it to the drainage asset. The asset includes kerb and channel, dish channelling and open drains.



Street Lighting

Streetlights are provided at intervals along the road, at lighted intersections and at pedestrian crossings to facilitate safe and efficient movement of vehicles, cyclists and pedestrians during hours of darkness.



Railings

Railings are roadside structures that fence off roadside traffic hazards in order to improve the safety of the network. They include sightrails, handrails and guardrails.



Signage

Road signs are signs erected beside the road carriageway that provides advance warning of road hazards, road name or destination information, and regulatory information, such as parking time limits.



Road Markings

Road Markings are the painted lines and symbols on the pavement surface. They provide delineation, guidance; mark out regulatory zones and amenities, such as parking within the road carriageway.



Road Berms/Vegetation Control

Road berms are the grassed land strips within the road reserve that provides an area between the pavement and property for footpaths, signs, drains, street trees, public utilities and roading structures. Vegetation control is an activity within the road berm area to control weeds and grass growth, which keeps these grassed areas tidy to preserve safety and amenity values.



Minor Structures

Minor structures are mainly made up of retaining walls. Retaining walls are a roadside structure provided to support the road.



Traffic Controls

Traffic control includes intersection traffic signal equipment and structures that guide and regulate the safe movement of traffic. The Matamata-Piako roading network does not warrant traffic signal control presently, however there are physical traffic islands. In general, traffic control is delivered to the motorist by traffic signs and markings.



Carparks

Car parks are amenities provided on road or off road for the sole purpose of parking. On road car parks are often marked out spaces within the carriageway. Off road parks are property lots specifically developed for car parking that will include a hardstand area.

Figure 2.3: State Highway outside Matamata Piako District Head Office with a view of Mt Te Aroha



2.5 Relationships with other Documents

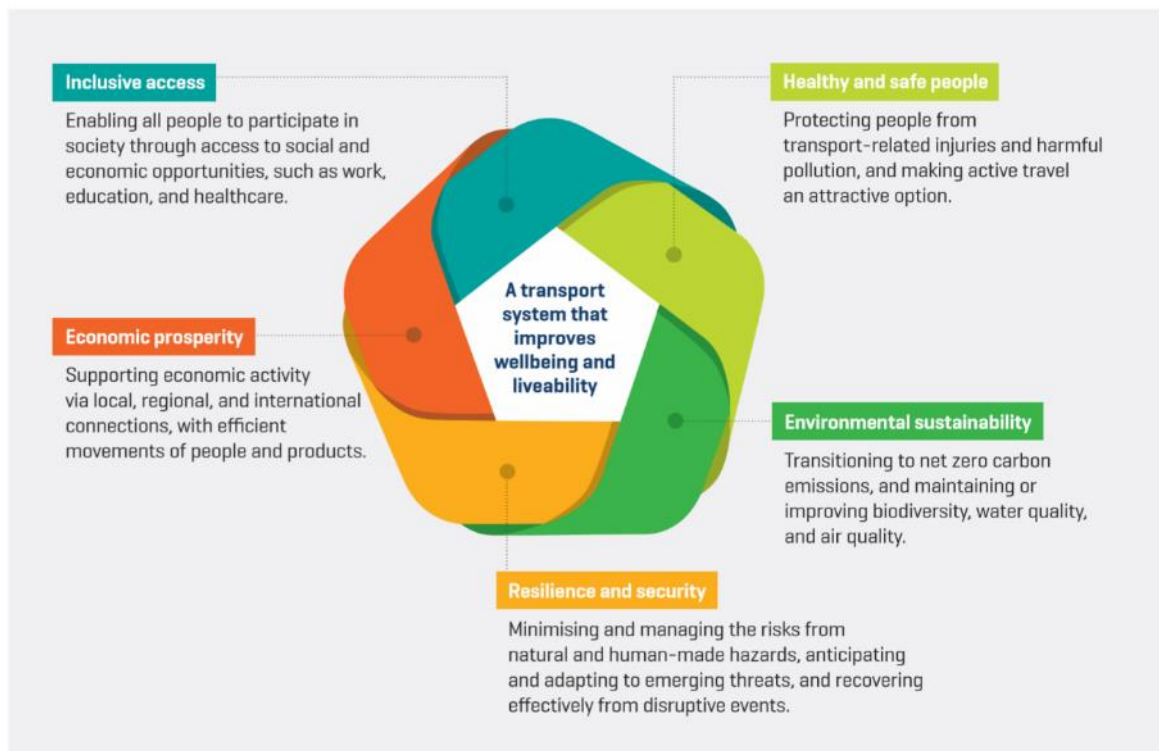
2.5.1 Government Policy Statement (GPS)

The Land Transport Management Act (LTMA 2003) requires the Minister of Transport to issue the Government Policy Statement on Land Transport (GPS) every three years. The GPS sets out the government's priorities for expenditure from the National Land Transport Fund over a 10-year period, and how funding should be allocated. Regional land transport plans must be consistent with the GPS, and Waka Kotahi (NZTA) must give effect to it with regards to land transport planning and funding.

The draft GPS 2021 outlines four strategic priorities for land transport:

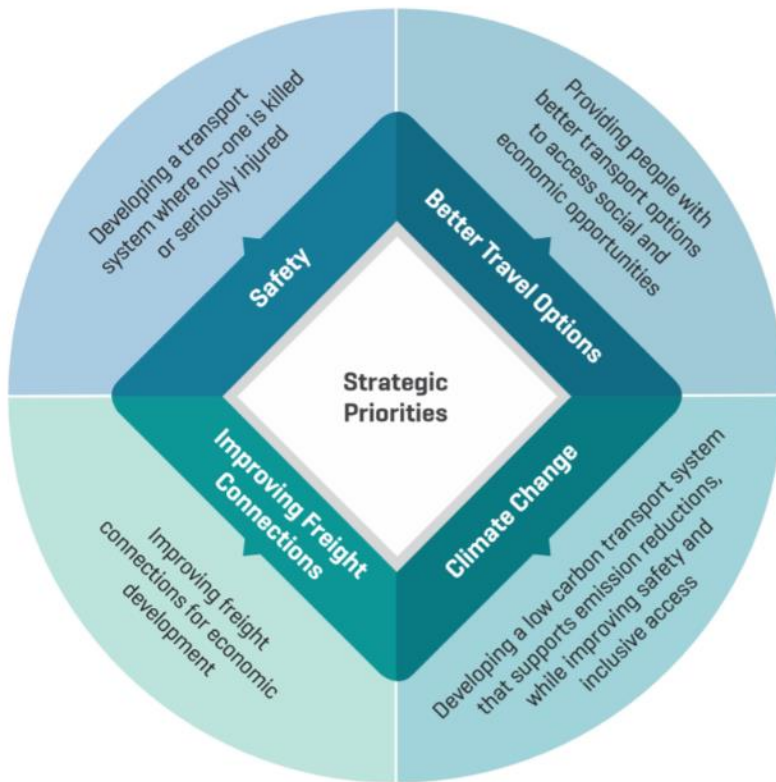
- Safety,
- Better Transport Options,
- Improving Freight Connections
- and Climate Change.

Transport Outcomes Framework



Investment will be guided by four strategic priorities

Considering the 10 year context [2021/22-2030/31], the Government has identified four strategic priorities for land transport investment to best contribute to improving our communities' wellbeing and liveability:



These themes, objectives and priorities guide the development of levels of service for the roading activity.

2.5.2 Roding Activity Goals

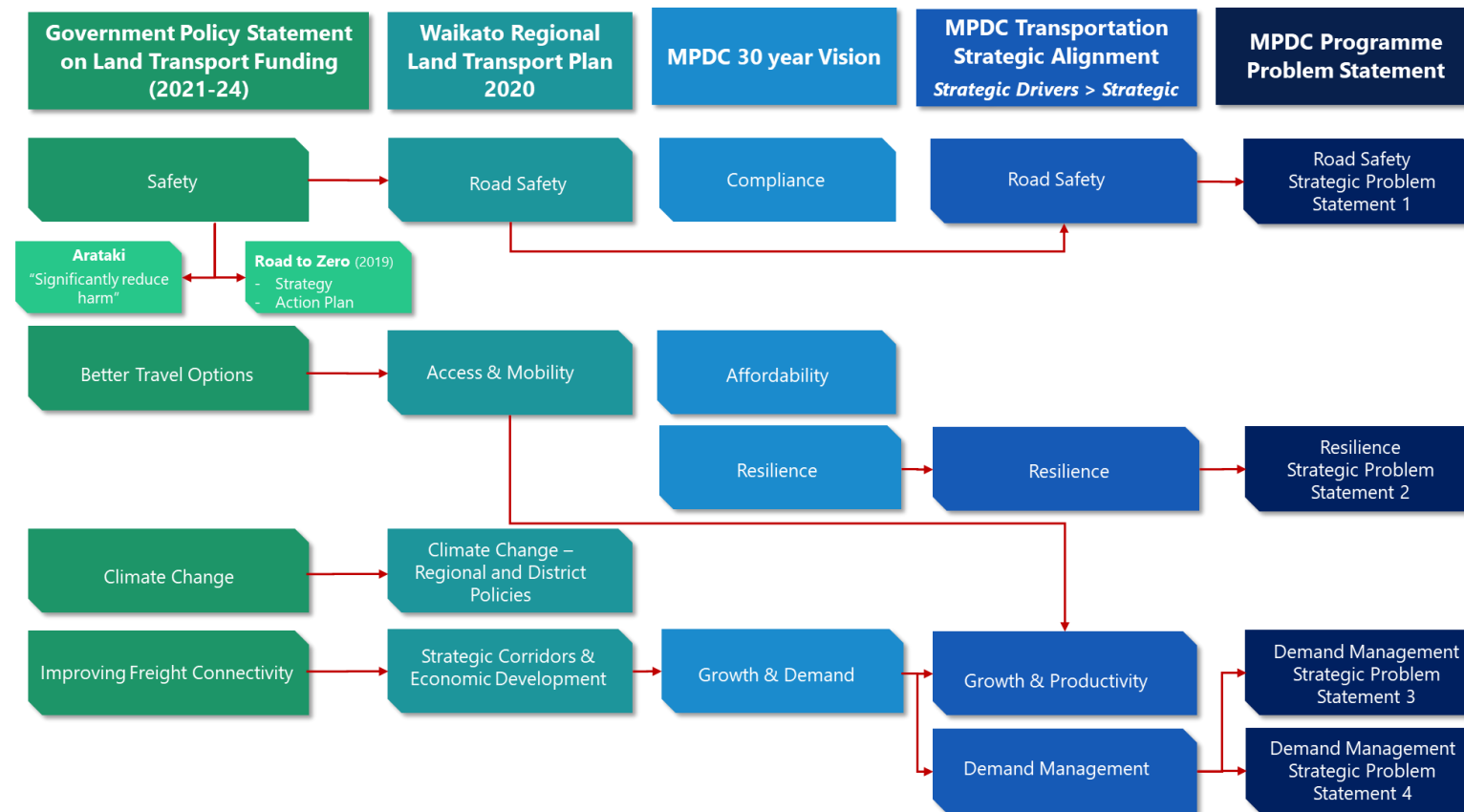
Within the activity the following goals have been identified:

- To provide a safe, reliable and efficient roading network that is affordable and sustainable
- To continue to manage the maintenance of the public roading assets in the long term to ensure there is no decrease in value and to forecast the estimated future costs of doing so
- To have continuity with adjoining roading networks through utilising the One Network Road Classification (ONRC)

Development of Problem and Benefit Statements

Through the process of developing strategic and programme business cases, as well as this AMP, Council has developed and refined a number of problem and benefit statements. These align with the national and regional framework as indicated below.

Figure 2.4: Development of Problem and Benefit Statements



The problem and benefit statements are considered in the development of the work programme.

Table 2.1: Problem and Benefit Statements

Strategic Statement	Problem	Benefit	Programme Problem Statements	Example Projects
Road Safety: Driver behaviour and infrastructure deficiencies on our road network lead to fatal and serious injuries		Deaths and serious injuries are reduced; improving the outcomes locally and supporting wider initiatives	One lane bridges may be economical but cause road safety issues when being used by a larger volume of users (i.e. tourism)	<ul style="list-style-type: none"> • Old Te Aroha One Lane Bridge Review • Old Te Aroha One Lane Bridge Update
			Investment is required to implement safety initiatives	<ul style="list-style-type: none"> • Safe Network Review • Road Upgrades • Installation of Signages • Changing Speed limits
			We have aging assets that need to be maintained, renewed or upgraded	<ul style="list-style-type: none"> • Bridge Maintenance and Renewals Program • Roothing Maintenance and Renewals Program
Resilience: Targeted investment is required to maintain current levels of service in the longer term for our district		The network remains fit for purpose and investment is focused where it is most needed	Data collection, quality and gathering is lacking in some areas and are essential variables for future investments	<ul style="list-style-type: none"> • Process or Systems Review • Process or Systems Update
			The changing national strategy may affect how we prioritise our programmes and projects	<ul style="list-style-type: none"> • Government Policy Statement Review • Change of mode • Road Safety Action Plan • Climate change • Routes that support Economic Activity

Strategic Statement	Problem	Benefit	Programme Problem Statements	Example Projects
Demand Management: Transportation will need to adapt to the new changes or trends on transport modes and meet higher expectations of our road network performance	The network is fit for purpose meeting the needs of a wide range of users		The number of High Productivity Motor Vehicles (HPMVs) on our road networks lead to faster wear and more road maintenance	<ul style="list-style-type: none"> • HPMV Road Impact Review • Rooding Improvement Projects
			Alternative modes of transport have been promoted and are being utilised by many	<ul style="list-style-type: none"> • Provision of E-Vehicle Charging Stations • Construction of Cycleways • Provision of Shared Footpaths • Pedestrian Connectivity Improvement Projects in Towns
			People who have relocated from urban areas (especially metropolitan areas) and have experienced high levels of service expect the same level of service as new residents of the district and this also negatively affects our customer satisfaction survey	<ul style="list-style-type: none"> • Information Drive Project • Rooding Asset Upgrade Projects
			New residential areas need to be serviced as outlined in the district plan	<ul style="list-style-type: none"> • Hinuera to Station Road Link • Smith and Station Road upgrades • Hangawera Road to Snell • Station to Peria Road Link
Growth: Growth on the network affects its suitability, while affecting the maintenance and management of our road assets	The network remains fit for purpose and investment is focused where it is most needed		Waharoa is known to be a high potential growth area in the future	<ul style="list-style-type: none"> • Rooding Projects
			Our road network may limit transportation needs associated industries such as Dairy and Forestry	<ul style="list-style-type: none"> • Rooding Improvement Projects leading to Forest Areas • Rooding Improvement Projects <ul style="list-style-type: none"> ○ 50Max Bridge upgrades
			Long term forecasts on tourism reported higher user volumes in the Matamata area	<ul style="list-style-type: none"> • Pavement Rehabilitation Works • R2Zero – Puketutu and Hinuera Road • Speed Management on Buckland Road

2.6 Improvement Items

IP 2.101: Revise section once there is progress with the cycleway project

3.0 LEVELS OF SERVICE

3.1 Levels of Service Overview

Council manages transport infrastructure assets to deliver the agreed levels of service (LoS) in a sustainable manner over the long term. There are now mandatory performance measures to make each of the LGA's comparable and to encourage consistency and continuity throughout the country. This combined with the new One Road Network Classification (ONRC) being introduced will impact on Levels of Service.

Council intends to manage the existing network assets to achieve this complying with ONRC and Road to Zero with a safe systems approach, along with community expectations. In some cases capital improvements will be made to the existing network to improve levels of service where the community has indicated that this is desirable and affordable. The following examples of such improvements include:

- Seal widening programme
- Road to Zero (safety) projects
- Low cost/Low Risk projects
- Shared paths development
- Kerb and channel development
- Street lighting development
- Strategic works (regional and district strategies)

3.1.1 What are 'levels of service'?

Levels of Service (LoS) define the type and extent of services delivered to the customer. They are written from a customer viewpoint to show outputs that the community and governance structure want from an activity. LoS aim to meet the community outcomes and strategic goals of Council.

We also measure 'technical levels of service' which assist us in managing service delivery. Performance measures give an indication of how well we are delivering the levels of service.

Council is committed to delivering levels of service that our current and future community want and are willing to pay for. Determining LoS involves understanding what our customers want and what outcomes they seek. In doing so, Council considers whether we are delivering the right level of service at the right cost.

Levels of service are influenced by legislative requirements and through consultation with the community.

3.2 Business Drivers

Roading assets are the largest asset group owned by Matamata-Piako District Council, and accordingly the management of these assets is of critical concern to both the Council and the community alike.

The business drivers for the current operation of roading are defined by statutory requirements, the Long Term Plan (LTP), health and safety and sustainability performance indicators.

3.2.1 Delivery of Roding Services

Levels of Service (LoS) standards define the levels to which MPDC provides services to the community. With the introduction of the One Road Network Classification (ONRC) some levels of service aim at national consistency. Others are defined in conjunction with the community, and some with key stakeholders. These standards (or levels of service) provide a basis for determining whether assets need to be constructed, replaced, or maintained. The mandatory performance measures have been determined by government to ensure MPDC's performance is able to be measured and reported against other Local Territorial Authorities. The mandatory performance measures also work in conjunction with the ONRC.



3.3 Legislative Requirements

The legislative requirements form the minimum level of service to which Council is required to comply. It does not necessarily mean that all level of service is covered within the legislation. The Roding Activity is influenced by the following legislative requirements.

As well as the legislated requirement to formalise a planning and reporting methodology that pays considerations to sustainability issues within Asset Management Plans, it is also standard New Zealand practice.

Beyond the RMA 1991 and LGA 2002, there are other Legislative drivers with direct Sustainability Implications for MPDC and the Asset Management Planning processes.

3.4 Safety on the Network

3.4.1 Road to Zero

The New Zealand Transport Agency sets safety standards for roads and promotes, assists and audits road controlling authorities' safety management systems.

The Agency aim is to ensure New Zealand's roads are designed, constructed and managed safely and at a reasonable cost. To achieve this, the Agency works in partnership with road controlling authorities (such as Matamata-Piako District Council), equipment suppliers and educational and enforcement organisations (such as ACC and NZ Police).

3.4.2 Safety Management System

The Council's Safety Management System is comprehensively described in Council's Safety Management System Manual that defines the roles of the major stakeholders and documents, road safety strategies, policies, standards, procedures, staff expertise, management, and audit systems with the focus on the desired outcomes, with regard to safety on the road network, rather than the method used to achieve these outcomes.

The Manual was prepared in June 2014. In order to keep this document relevant to Council systems and safety procedures, this Manual describes an internal and external auditing process, to be undertaken at least 3-yearly.

3.4.3 Eastern Waikato Road Safety Cluster

Road safety is an integral part of Council's activities that involve any person walking, cycling, skateboarding, roller skating/blading, using a mobility scooter or wheelchair, motorcycling, driving a vehicle of any description, on the access ways in the District.

Road Safety Clusters are regional groups to promote road safety. The East Waikato Road Safety Cluster includes representatives from Matamata-Piako District Council, Hauraki District Council, and Thames-Coromandel District Council. This cluster promotes and encourages road safety within the Waikato sub-region by facilitating regional campaigns that focus on particular road safety issues, such as use of child restraints, poor observation, driving under the influence of alcohol, and excessive speed.

East Waikato Road Safety Cluster's Road Safety Co-ordinator works in supporting community groups and residents of the sub region with road safety initiatives. The Road Safety Co-ordinator is also involved in running road safety projects in conjunction with groups such as ACC, NZ Transport Agency, RTA, local schools, SADD, aged drivers, and driver licensing.

Council road safety projects are intended to address the District's main road safety issues, including intersection safety, cycle and pedestrian safety, and drink-driving using the 3 'Es' methodology. The 3 'Es' described below are utilised in the best way they can be to ensure improved safety for all access way users.

1. Engineering: As well as roads, engineering covers other such environmental safety measures as signage, calming measures, and speed limits. Local roads are the Council's responsibility. The New Zealand Transport Agency assists with funding local road improvements as well as being responsible for State Highways in our District.

Section 3: Levels of Service

2. Enforcement: While the Police undertake this task, the Council has input into the delivery of service in the District and works with them through the Road Safety Co-ordinator, who maintains an active relationship with the Police. The Police and the Council are represented on the Eastern Waikato Road Safety Cluster and this adds another dimension of ongoing communication.
3. Education: This part of road safety is about the users of the access ways being responsible, knowledgeable, courteous and more able to reduce the risk of collision. Education takes place in many ways, from more high profile campaigns with much media coverage through to a local community initiative to address a particular road safety issue.



Community forums, radio advertisements, newspaper articles, pamphlets and such activities as fatigue stops and seat belt checks are all part of our education approach. As road safety is about citizens, Council keeps ongoing contact with community groups and agencies helps in furthering road safety education. These community groups and agencies include DARE, SADD (Students Against Driving Drunk), and health agencies to further the opportunities for improved road safety outcomes. ACC and the Police

Education Unit are also key partners

NZ Transport Agency fund the majority of the expenses for both the Road Safety Co-ordinator position and East Waikato Road Safety Cluster local road safety initiatives.

East Waikato Road Safety Action Plan

The Road Safety Action Plan is delivered through a cluster of East Waikato Councils. This includes community, local authority and state highway activities as well as local road policing.

This ensures there is a coordinated approach to addressing road safety across the region and district.

Ref	Road to Zero Focus Areas	Activity / programme name	Target audience	Planned intervention type	Budget 3 year total NLTP cost
1	Cycling	Expand on adult cycle courses. Deliver e-bike training for adults, skills training for youth. Support Bikes in schools and investigate Travel Plans. Running alongside education media campaign for all motorists.	Cyclists	Education course	360,000
2	Fatigue	Expanding on the last 18-21 fatigue programme. Offering to businesses to provide fatigue education presentation with staff. Billboard/media campaign on local roads to run alongside.	All road users	Workshop	90,000

Section 3: Levels of Service

3	Speed	Continue to run Stay Alive on 25 campaign, Quest and the Hauraki Speed campaign. Billboard/media campaign on local roads to run alongside.	All road users	Advertising (Promotional)	120,000
4	Alcohol	Continue with the brand 'Plan B4 U Party' expanding the Beer Goggles education session to add in Marijuana goggles and offering to businesses. Billboard/media campaign on local roads to run alongside.	All road users	Event	90,000
5	Restraints	Expanding on the 18-21 Restraints programme. Continue to promote the wearing of seatbelts in for all motorists via billboard/media campaign. Expanding on the relationship building and offering all East Waikato schools (61) and pre schools (89) presentation. Working Regionally where possible and incorporate in Ruben the road safety bear where applicable.	All road users	Workshop	90,000
		Totals			750,000

3.5 Policies & Strategies

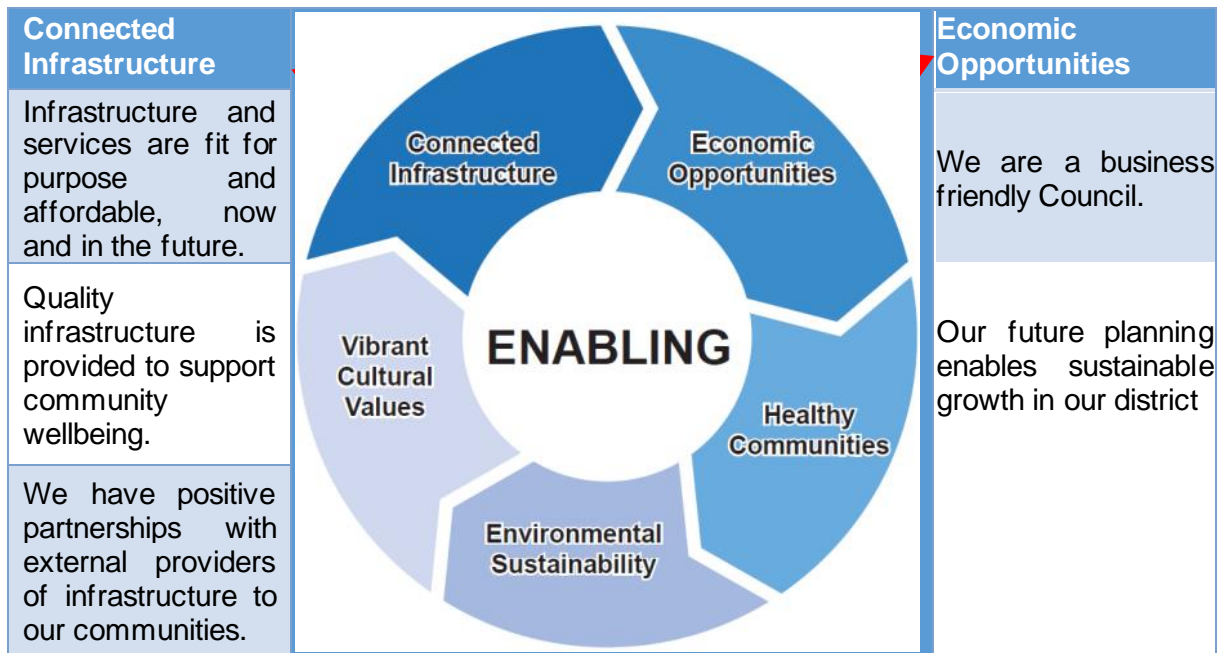
Council works in partnership with many other agencies, to fulfil its role and align its activities with other agencies and organisations throughout the region.

There is an Infrastructure Strategy, a draft Road Safety Strategy and a Rooding Procurement Strategy, there are no other Policies or Strategies developed specifically for roading activity. The Rooding activity should be aligned with the current Council policies such as Consultation, Sustainability and Financial Policy.

3.6 Linking Los to Community Outcomes

Council's roading activities contribute to many of the Council community outcomes, of which the most applicable are highlighted below.

***Matamata-Piako – The Place of Choice
Lifestyle. Opportunities. Home.***



In order to deliver these outcomes, it is important that the technical roading, customer services and operational and maintenance contracts are clearly linked to achieve this.

4.0 FUTURE DEMAND

4.1 Overview

This section describes the strategy that Matamata-Piako will adopt for growth and demand related to the roading activity.

The Local Government Act requires that growth and demand be considered as part of asset management planning to ensure that future requirements are identified and planned for. This will ensure that the needs of the individuals, the community and the District can be maintained over the long term.

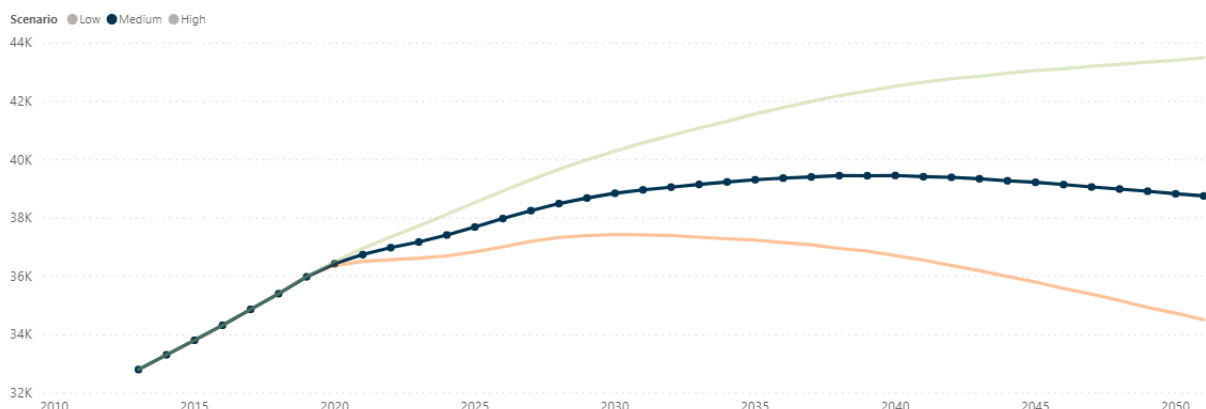
The key drivers that influence growth and demand are assessed in detail in the following section that investigates individual components contributing to the roading activity as a whole. These key drivers are: Population and Housing Considerations, Commercial and Industrial Development (Primary Industries), Legislation and Community Expectations.

4.2 Population and Community Growth

Population growth increases the demand for transportation, this is greater for light traffic but heavy traffic also increases as the demand for services increases.

4.2.1 Population Projections

The District population is just over 36,000. Population growth is 1.2% compared to 1.6% nationally. Council has adopted a Medium growth assumption in its Long Term Plan. A medium growth assumption would see the District population increase to just under 39,000 by 2051.



The number of rating units is forecast to increase over the next ten years and then start to taper off.

The District population is ageing. The following graphs indicate forecast population change. For the next twenty years there will be an increase in population Aged over 75. During the 2040s the aging population is predicted to slow down somewhat with a decline in people Aged

70-84 but with the number of people 55-64 years remaining strong. This is likely to drive demand for more informal recreation activities.



4.2.2 District Plan and latest Plan Change

Plan Change 47 was completed in 2018, which reviewed parts of the District Plan relating to the planning rules and zoning for each of our three towns and the areas around them. From smaller section sizes to business zones, we wanted to ensure that the land supply is aligned to our population projections and that there is room for future growth.

The changes approved by Plan Change 47 are wide ranging and affect the zoning and planning rules for Matamata, Morrinsville and Te Aroha. They include:

- changes to the rules for building setback distances from boundaries
- a review of residential zones
- a review of the locations of rural-residential zones
- identifying likely future urban growth areas
- changes to residential infill subdivision around town centres
- a review of shop frontage areas in town centres
- a review of the development controls and subdivision rules
- fewer requirements for landscaping in business and industrial zones.

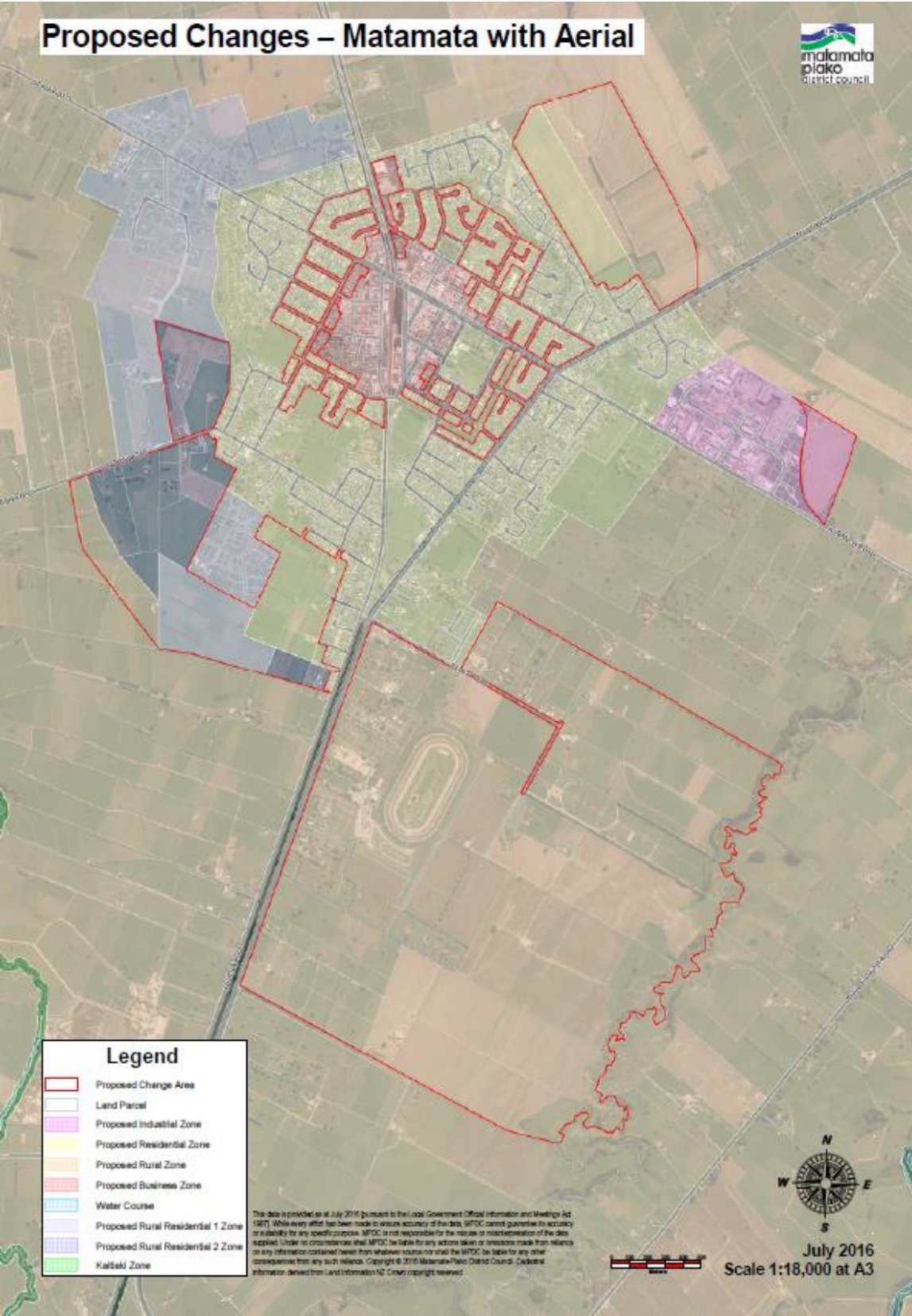
Some town specific changes have also been considered. These include:

- a review of the heritage rules and the extent of the Te Aroha Character Area.
- a major review of the existing zoning for land between Station Road and Firth Street in Matamata (formerly referred to as Precinct F)
- new industrial zoning for Morrinsville and Matamata
- new business zoning for Matamata to allow certain businesses to operate in some existing residential areas.

Section 4: Future Demand

- new business zoning for Morrinsville
- new residential zoning for Te Aroha
- new rural-residential zoning for Morrinsville

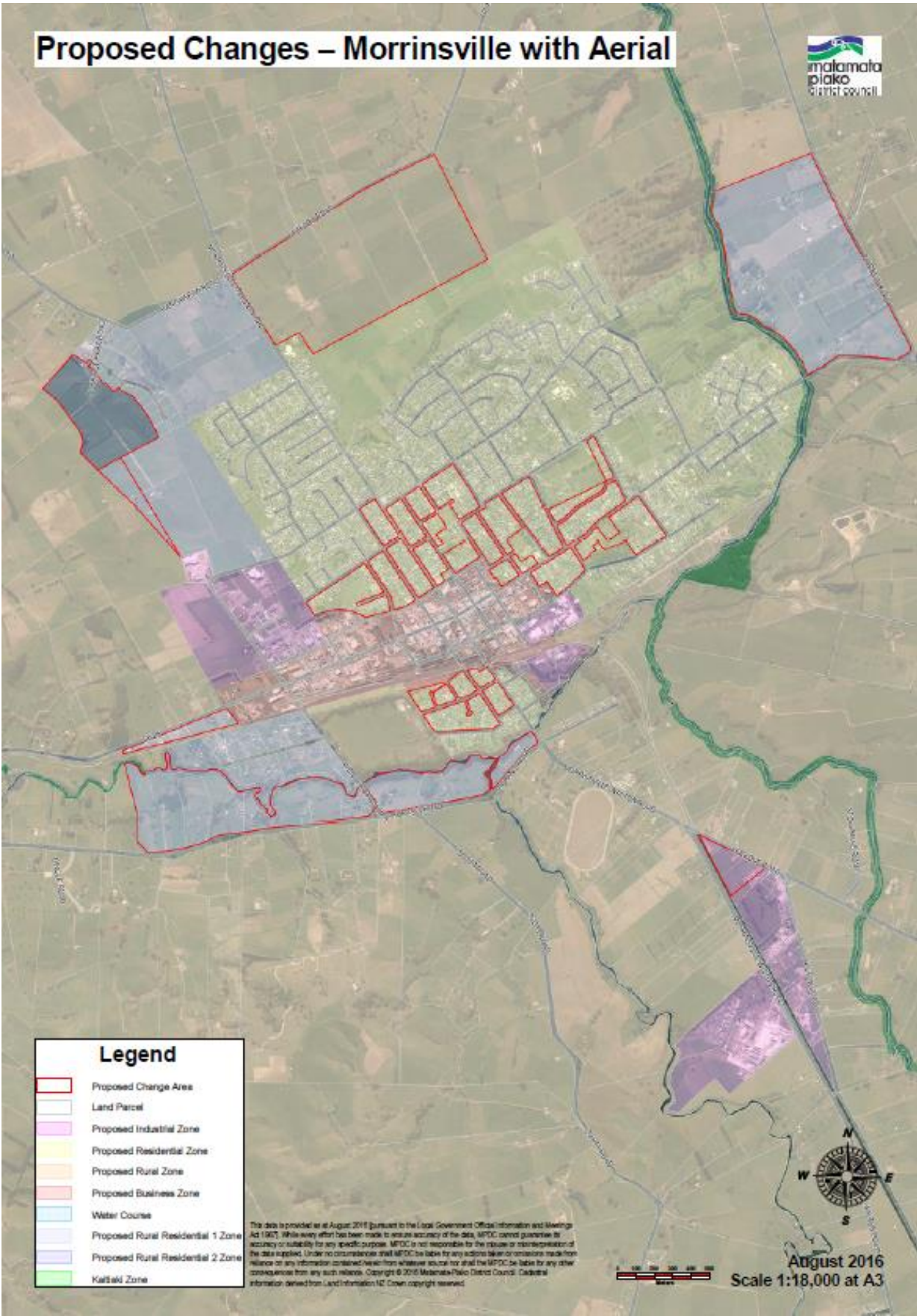
Figure 4.1: Matamata Changes



District Plan Changes - Matamata - Associated Projects

Description		Total cost (000)	Year	Growth %	Note
Additional widening to the new road linking Hinuera and Station Road	This is to provide for additional road width for the road planned to link Hinuera and Station Roads in Matamata as part of the development in the area.	500	2022-2027	100	
Additional widening to the new road linking Station and Peria Road	This is to provide for additional road width for the road planned to link Station and Peria Roads in Matamata as part of the development in the area.	700	2021-28	60%	
Parking Bays as a result of the Tower Road Structure Plan	This will provide for widening of the carriageway to provide for some on-street parking on Findlater Streets and surrounding Streets at isolated spots as a result of the planned development area. It will also provide some minor pedestrian improvements on the State Highway.	330	2022	100	
Station Rd Upgrade	This will provide for the improved pavement to Station Road and widening for some on-street parking as required. This is as a result of the increase in traffic due to the development area.	1,030	2022, 2025	80	
Smith St upgrade	This will provide for the improved pavement to Smith Street and widening for some on-street parking as required. This as a result of the increase in traffic due to the development area.	260	2031	100	
Hampton Terrace upgrade	This will provide for the improved pavement to Hampton Terrace and widening of the carriageway. This as a result of the increase in traffic due to the development area.	190	2027	100	
Banks/Burwood intersection upgrade	This will provide to some improvements at the intersection as a result of further development in the area.	115	2027	75	
Haig Rd Upgrade	This will provide for the improved pavement to Haig Road and widening where required as a result of the increase in traffic due to the development area.	335	2022	100	
Waharoa Rooding Upgrade	To upgrade the pavement and stormwater of Factory Road and other roads as a result of the waharoa plan change	250	2025	10	
Everad Ave intersection	To upgrade the intersection of Everad and Peria and Everad and James and Everad and Station.	257	2035	50	
District Wide – Capital Kerb and Channel	Extending the existing kerb and channel network in our urban areas.	55	Annual	5	
District Wide – Capital Footpath	Extending the existing footpath network in our urban areas.	55	Annual	5	
District Wide – Capital Street Lighting	Extend and upgrade our existing street lighting in our urban areas.	160	Annual	5	
District Wide – Seal Widening	Widening of existing roads to meet district plan requirement for road width.	160	Annual	30	

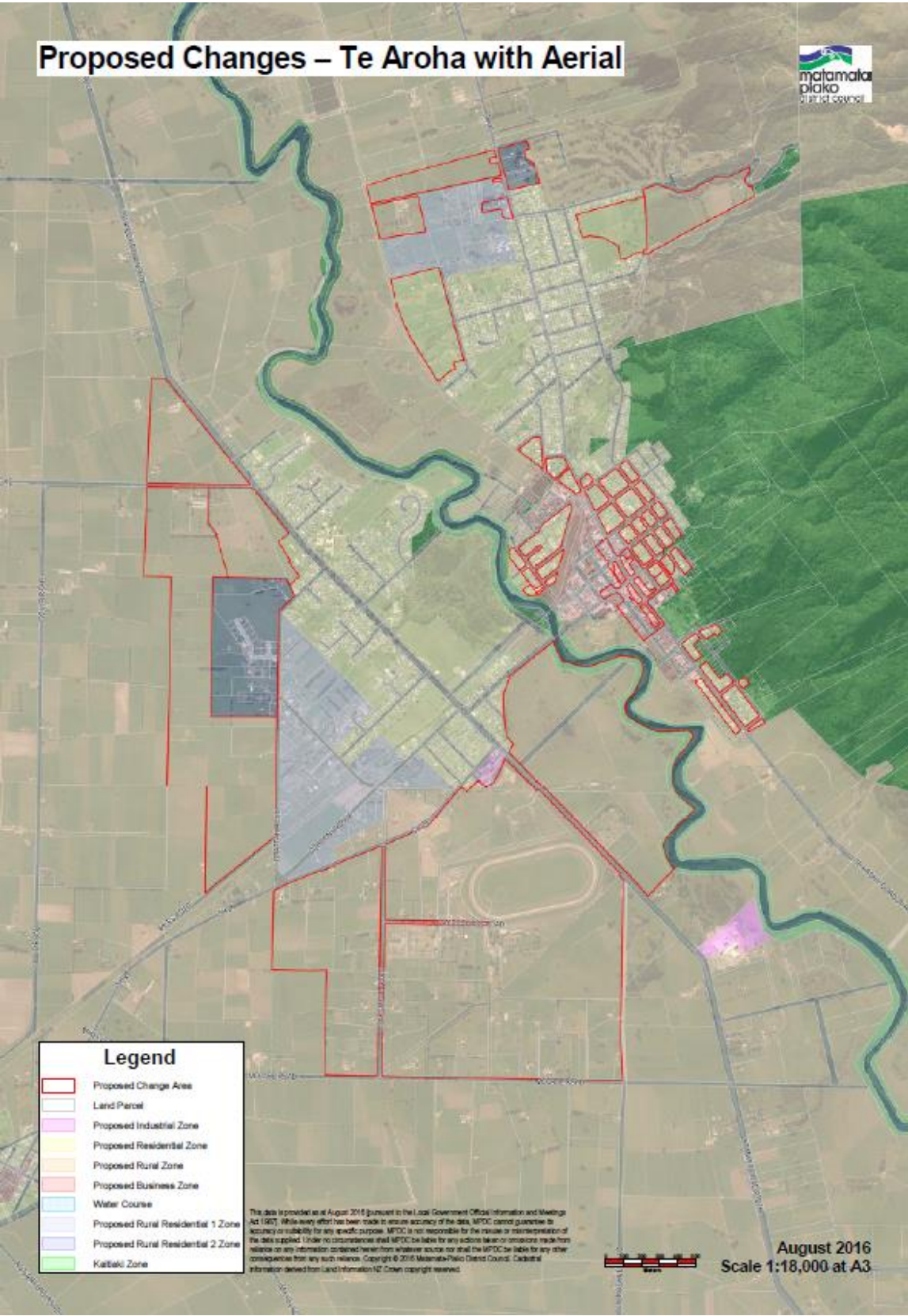
Figure 4.2: Morrinsville Changes



Section 4: Future Demand

Description		Total cost (000)	Year	Growth %
Avenue Rd North Upgrade	To widen the western side of Avenue Road North	120	2025	70
Additional widening to the new road linking Hangawera Road to Snell Street	Improvements will need to be made to the intersection of Hangawera/Sunridge Park Road and Snell/New Road, Morrinsville with the increase in traffic. There is also a road planned as part of the rural-residential planned development area to link and funding will provide for additional widening.	300	2020-23	60
District Wide – Capital Kerb and Channel	Extending the existing kerb and channel network in our urban areas.	55	Annual	5
District Wide – Capital Footpath	Extending the existing footpath network in our urban areas.	55	Annual	5
District Wide – Capital Street Lighting	Extend and upgrade our existing street lighting in our urban areas.	160	Annual	5
District Wide – Seal Widening	Widening of existing roads to meet district plan requirement for road width.	160	Annual	30

Figure 4.3: Te Aroha Changes



Section 4: Future Demand

Description		Total cost (000)	Year	Growth %
District Wide – Capital Kerb and Channel	Extending the existing kerb and channel network in our urban areas.	55	Annual	5
District Wide – Capital Footpath	Extending the existing footpath network in our urban areas.	55	Annual	5
District Wide – Capital Street Lighting	Extend and upgrade our existing street lighting in our urban areas.	160	Annual	5
District Wide – Seal Widening	Widening of existing roads to meet district plan requirement for road width.	160	Annual	30

4.3 Vehicle Numbers

4.4 Congestion

Congestion is not a big problem in any town, although there are delays on some routes, particularly on Broadway, Matamata.

Consideration has been given to establishing township bypasses for Matamata and Morrinsville. In 2018 the Morrinsville proposal was discontinued, and in 2020 Council agreed to abandon the Matamata proposal.

4.5 Heavy Commercial Vehicle Traffic

The Land Transport Rule Dimension and Mass Amendments (VDAM) 2010 has resulted in heavy motor vehicles being able to apply for route permits for revised dimensions in mass limits.

In late 2016 a number of changes were made to the VDAM rules relating to;

1. Gross weight increases to 45/46 tonnes
2. Increased axle weight limits for passenger vehicles
3. Increased axle weights for Special vehicles
4. Increased vehicle width
5. Increased vehicle height
6. Reduction in weight tolerances

Information in RAMM indicates that percentage of volume of Heavy Commercial Vehicles (HCV) for the roads Totman Road, Maisey Road, Graveson Road, Ngarua Road, Factory Road (Waharoa), No 1 Road and Taotaoroa Road is above 20%.

Bridge Capacity

These 45/46 tonne increases came into effect on the S/H network on 1 Feb 2017 and for Local roads on 1 December 2017. As a result Council has the following Bridge Restrictions in Place.

Table 4.1: Bridge Restrictions Currently in Place

Bridge ID	Road Name	Length	Weight Restriction	Speed Restriction
No. 92	Mace Road	56	80% of Class I	-
No. 236	Herries Street	11	30% of Class I	30 km/hr
No. 93	Wairakau Road	11	60% of Class I	-
No. 52	Haumia Rd	72	44,000 kg	-
No. 72	Rawhiti Rd	9	44,000kg	-
No. 94	Wairakau Rd	14	44,000kg	-
No. 96	Wairakau Rd	14	44,000kg	-
No. 97	Wairakau Rd	10	44,000kg	-
No. 131	Kereone Rd	31	44,000kg	-
No. 132	Kereone Rd	31	44,000kg	-

Section 4: Future Demand

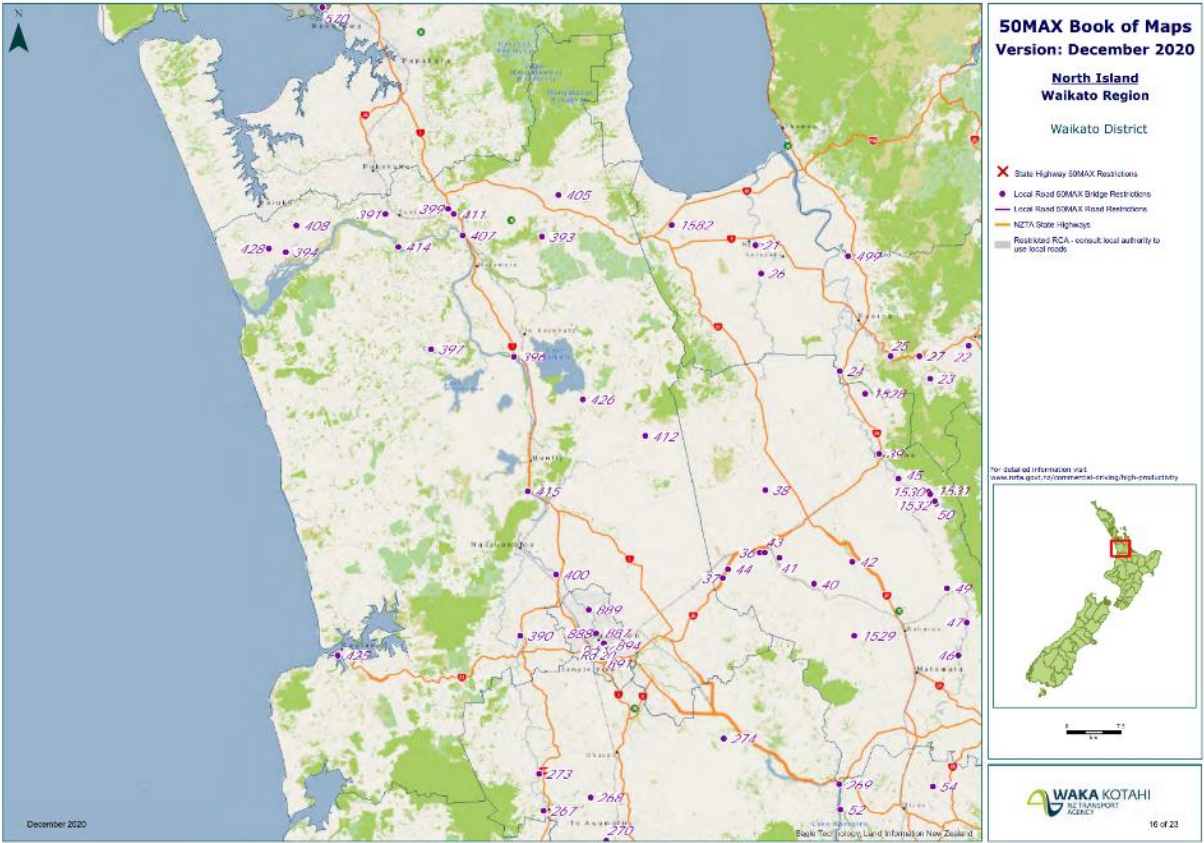
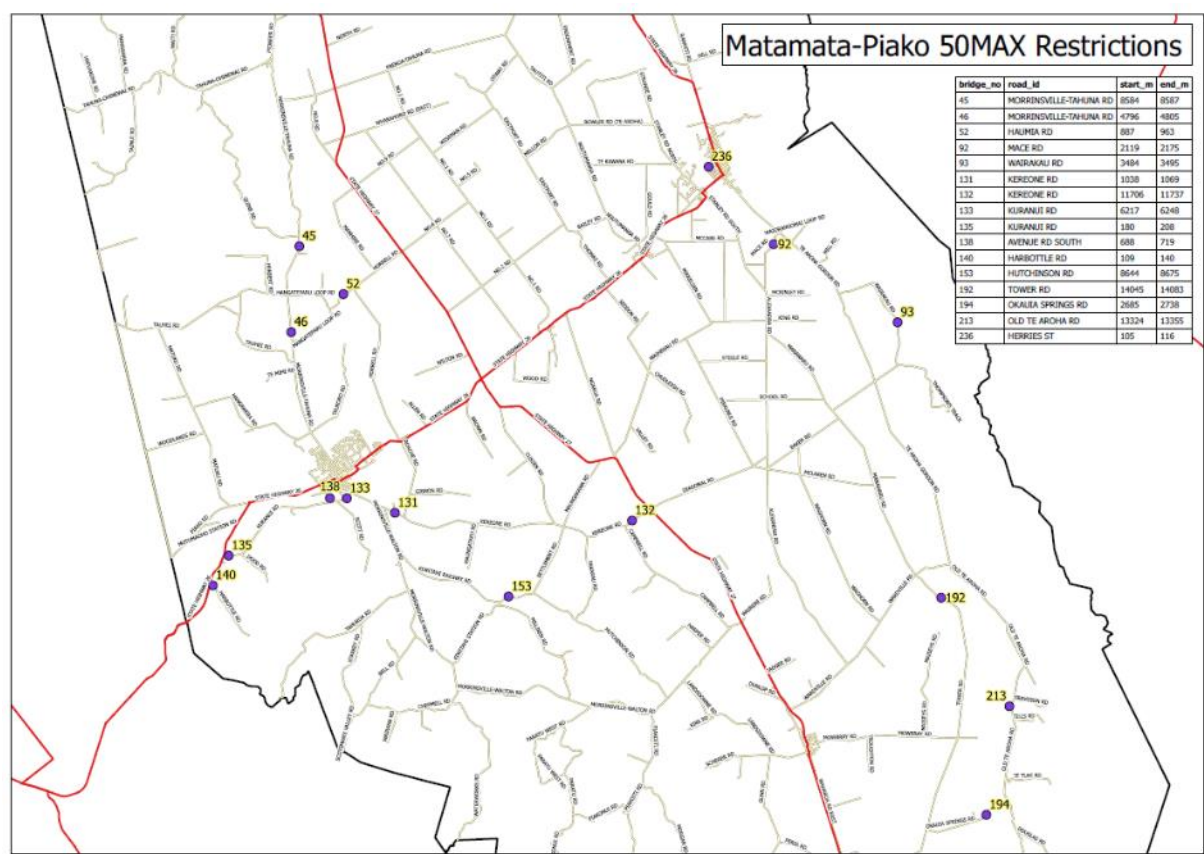
Bridge ID	Road Name	Length	Weight Restriction	Speed Restriction
No. 133	Kuranui Rd	31	44,000kg	-
No. 135	Kuranui Rd	28	44,000kg	-
No. 138	Avenue Rd South	31	44,000kg	-
No. 140	Harbottle Rd	31	44,000kg	-
No. 153	Hutchinson Rd	31	44,000kg	-
No. 166	Rohe Rd	12	44,000kg	-
No. 192	Tower Rd	38	44,000kg	-
No. 194	Okauia Springs Rd	53	44,000kg	-
No. 213	Old Te Aroha Rd	31	44,000kg	-

The NZTA website includes 50MAX information, this includes the restrictions on 50MAX and HPMV traffic routes.

Matamata-Piako 50MAX Restrictions

Bridge Name	Road Name	Northing	Easting
52	HAUMIA RD (163)	5836784.877	1823268.8242
92	MACE RD (241)	5838374.1028	1841691.4838
93	WAIRAKAU RD (507)	5834942.1498	1846877.4669
130	STUDHOLME ST (551)	5828462.2702	1823439.849
131	KEREONE RD (208)	5827483.7151	1825234.6347
132	KEREONE RD (208)	5826860.46	1835314.7265
133	KURANUI RD (226)	5828137.4531	1823204.0412
135	KURANUI RD (226)	5825860.0935	1818109.848
138	AVENUE RD SOUTH (17)	5828187.2608	1822485.5726
140	HARBOTTLE RD (159)	5824621.3709	1817403.0174
153	HUTCHINSON RD (186)	5823803.7876	1829994.8936
192	TOWER RD (483)	5823215.1124	1848400.652
194	OKAUIA SPRINGS RD (329)	5813954.1859	1850017.9335
213	OLD TE AROHA RD (331)	5818522.804	1851146.5724
236	HERRIES ST (171)	5841762.9812	1839021.7534

Figure 4.4: Bridges not capable of 50 MAX



High Productivity Motor Vehicles

There had only been two HPMV permits issued prior to the 2015 AMP there are now hundreds of permits that have been issued, and the demand for these is ongoing. It will be likely that further high productivity routes will need to be approved on local roads and studies on pavement deterioration will need to be undertaken to ensure maintenance costs can be catered for.

It can be expected that the loading on the network will increase as the population increases and land-use becomes more intensive. This will result in a greater length of pavement renewals needing to be undertaken and will increase the cost of these projects due to the stronger pavements required to produce the same level of service in a cost effective manner.

The current (September 2020) list of roads where HPMVs have been approved is as follows

Full HPMV approved roads

(Permit Types “HPMV AWF”, “HPMV No AWF”, “User Defined”, “Class 1 AWF”)

Road	Start or RP (m)	End of RP (m)	Full length
No 1 Rd	SH 26	1,500	No
Hawes St	SH 27	150	Yes
Factory Rd*	Hawe St	Link Road	No
Link Road	SH 27	Factory Road	Yes
Te Poi Rd	SH 24	SH 29	Yes
Taotaoroa Rd	SH 29	District Boundary	No
Avenue Rd North	SH 26	750	Yes
McRae St	SH 26	Anderson St	Yes
Anderson St	Avenue Rd North	Lorne St	No
Stanley Rd South	SH 26	1700	No
Rockford St	SH 24	880	Yes
Garland St	SH 24	400	Yes
Waihou St	SH 24	500	Yes
Waiomou St	0	150	Yes
Pepper St	0	250	Yes
Dunlop Rd	0	550	No
Studholme St	SH 26	Cureton St	No
Firth St	SH 27	Hinuera Rd	Yes
Hinuera Rd	Firth St	Hopkins Rd	No
Hopkins Rd	SH 29	Hinuera Rd	Yes
Wardville Rd	SH 27	600	No
Burwood Rd	SH 27	SH 24	Yes

*Some of this road is private road requiring separate approval

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Restricted HPMV approved roads (Permit Type "Class 1 AWF" only)

Road	Start or RP (m)	End or RP (m)	Full length
Wood Rd	SH 26	2700	No

As discussed under ONRC performance measures, there are portions of the highway that are not accessible by large trucks due to bridge restrictions. These include portions of Kereone Road (Arterial) and Kuranui Road (Primary Collector) near Morrinsville

Accessibility Customer Outcome 1 - Proportion of Network not Available to Heavy Vehicles

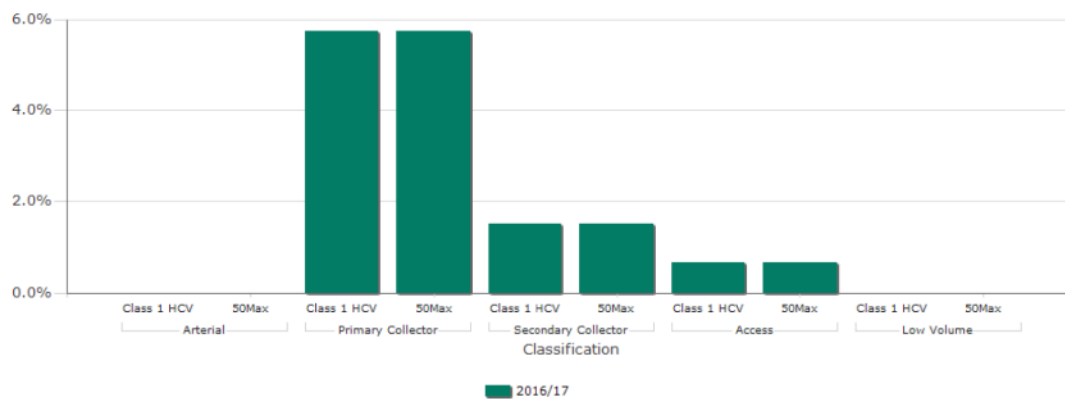
Financial Year: 2016/17

RCA: Matamata-Piako

Classifications: Arterial, Primary Collector, Secondary Collector, Access, Low Volume



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



As a result of the increased number of Heavy Vehicles on our road and changes to the VDAM Rule it is important to ensure our roading network provides connectivity and efficiency. It is proposed to complete Bridge Strengthening to open up our network to heavy vehicles. The priorities will be based on the use of the road and whether there are alternatives available.

As part of the Bridge inspection programme, detailed analysis on some of these critical bridges will be completed.

There has been no separate funding included in the 2021 LTP for the funding of bridge strengthening. It is proposed to review some of the inspection data to determine a forward works programme.

4.6 Active Modes of Transport

Walking and Cycling are important modes of transport within Matamata Piako District, and there is a limited public transport service available.

The Walking and Cycling Strategy

Matamata, Morrinsville and Te Aroha are served by comprehensive footpath networks, with limited network in smaller communities. The Open Spaces Strategy discussed the role of link paths, with footpaths and cycleways that encourage safe and efficient travel for cyclists and walkers through townships. This is being supported through Activity Management Planning and Structure planning processes.

Off road options include the Hauraki Rail Trail (Te Aroha to Paeroa and Te Aroha to Matamata) along with recreation trails at Mount Te Aroha and Te Miro.

Council has recognised the health and commercial benefits to the district of cycling. This has culminated in a cycleway from Te Aroha where the current Hauraki Rail Trail terminates. The cycleway continues through to Matamata.

In conjunction with other Territorial Authorities and the Regional Council a further leg in our district has now been planned to continue on from Matamata to Piarere where it will meet with the Waikato River Trails and also Te Awa River Ride, both are part of the Great NZ Ride network. This cycleway through four District Councils of the Waikato has huge tourism potential and is a great spectacle of Councils working together to benefit all.



Council has also committed to completing a business case on the feasibility of developing a trail to Morrinsville in the first three years of the LTP and some provisional funding included in 2031-36

The following projects are identified for the next 30 years:

Description		Ward	Total cost (000)	Year	LOS	Growth
Cycleway – Hinuera to Piarere**	To extend the current cycleway to Piarere where it will meet Te Awa and the Waikato River Trail	Matamata	2,000	2025-27	100	
Cycleway – Off shoots from existing Te Aroha to Matamata leg	To provide mostly on-road off-shoots to our key attractions along the Kaimai Ranges, from the existing trail.	Te Aroha & Matamata	100	2021	100	
Waharoa-Matamata Walkway	To construct a walkway from Waharoa to Matamata	Matamata	700	2021	100	
Improved pedestrian connectivity in Matamata	To provide some upgrades to the footpaths and possibly our roads to ensure that there are some safe pedestrian routes from the western side of State Highway 27 to the CBD. It will also look at the connectivity and safety of the routes to our Schools and community facilities.	Matamata	250	2021	100	
Extend cycleway to Morrinsville	To extend the current cycletrail from Te Aroha through to Morrinsville at a Grade 1.	Morrinsville	5,000	2031-36	100	
Widening of existing footpath	To extend the shared pathways throughout our urban centres to link to our schools and emergency services to provide for save off road cycling. It will also link up some of our key linkage routes identified in the open spaces strategy	District Wide	50	Annual	100	
New Footpaths	To extend the footpath network throughout our urban centres to link to our new developed areas and to provide for save off road walking. It will also link up some of our key linkage routes identified in the open spaces strategy	District Wide	55	Annual	100	

**The budgeted amount above represents Council's contribution towards the project. Additional funding will be sought from external funding providers and partners.

4.7 Alternative Modes of Transport

Another mode of transport is the limited passenger transport service that caters for Te Aroha to Hamilton and return once a day. Morrinsville to Hamilton and return 3 times a day. Matamata to Hamilton and return passenger transport service commenced in 2020 and is delivered by the Waikato Regional Council.

There is also assorted voluntary shuttle services providing mobility for residents attending hospital visits and the like. Council is examining options to improve passenger services throughout the district. MPDC is endeavouring to establish a service to Hamilton from Matamata, and to serve the large workforce travelling to Waharoa. Council is currently

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reviewing the option of subsidising a total mobility service to assist the communities permanent and temporarily impaired with transportation opportunities.

Potentially passenger transport services in the future could have improved options through partnership with other stake holders e.g. University of Waikato. This will be reviewed and investigated.

Council is also considering whether it wishes to fund for the Total Mobility scheme. Total Mobility is a government funded door to door transport scheme to help meet eligible users' needs and enhance their community participation. The scheme partners with local transport operators to offer subsidised transport

Recent development in technology has seen the emergence of electric and driverless vehicles. It is unknown at this stage what the impact of these trends may have on traffic flows through our towns in the future.

4.8 Capital Works Programme and Funding - Growth Projects

The key growth related projects in the District and Region listed below are discussed later in this section:

- District Plan and the latest plan change which assists Council with connectivity and improved traffic flow for the growth in the district
- High Productivity Motor Vehicles
- Low Cost/Low Risk programme subsidised through NZTA which includes the following:
 - Road to Zero
 - School Safety
 - Walking and Cycling
 - Local improvements

4.9 Improvement Items

IP 4.101: Improve information on visitor/tourism

IP 4.102: Investigate and improve MPDC VKT data

5.0 LIFECYCLE MANAGEMENT PLAN

Details of programme development are included in the November 2020 Programme Business case. The PBC is structured to reflect asset groups (and combined work categories) and should be referred to in the first instance for specific information.

5.1 Introduction

This Lifecycle Management (LCM) section provides the broad strategies and work programmes required to achieve the goals and objectives set out in the Description of the Activity and Levels of Service sections of this plan. Extracts of the programme Business Case (PBC) have been included in this section. This is to cover the Operations and Maintenance, Renewal and Capital Works Plans.

This section covers the following assets:

- Pavements
- Sealed Pavement Management
- Unsealed Pavement Management
- Drainage management
- Structures Management (Bridges, Guard- Rail, Retaining Walls, Stock Access Structures, Pedestrian Underpasses)
- Environmental Management (Safety, Aesthetic & Environmental Standards)
- Traffic Services Management (Road furniture, Markings, Carriageway & Pedestrian Lighting)
- Rail Level Crossings Warning Devices
- Network Asset Management (Quality Plan, RAMM, Professional Services including Street Light Management, Management of Road Network including Traffic & Condition Surveys & Implementation and Operation of Road Asset Management System)
- Low Cost Low Risk
- Minor Events
- Transport Planning
- Footpaths
- Cycleways

5.2 Work Category Definitions

Expenditure on infrastructure assets can be categorised into four main areas, which are discussed below.

Operations and Maintenance

Operations and Maintenance expenditure is that required for the day-to-day operation of the network whilst maintaining the current levels of service

Replacement (Renewals)

Renewal expenditure includes rehabilitation and replacement of assets to restore an asset to its original level of service, i.e. capacity or the required condition. Renewals expenditure forecasts cover the cost of asset renewal through its whole lifecycle through to disposal of the asset.

New Works (Capital Works)

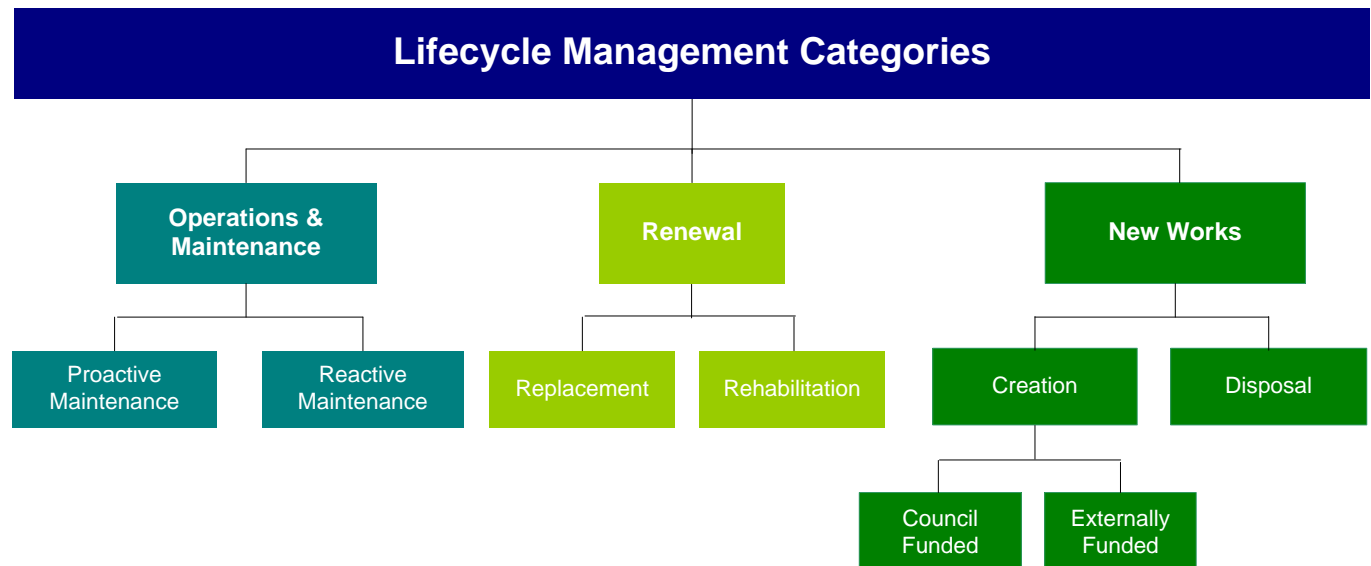
Capital works (new works) involves the creation of new assets, or works, which upgrade or improve an existing asset beyond its current capacity or performance in response to changes in usage or customer expectations.

Disposals

Asset Disposal is the retirement or sale of assets whether surplus or superseded by new or improved systems. Assets may become surplus to requirements due to obsolescence, under utilisation, changes in policy etc.

These categories are described in more detail in the Financials Section of this AMP.

Figure 5.1: Roading Lifecycle Management Categories



Operations and Maintenance

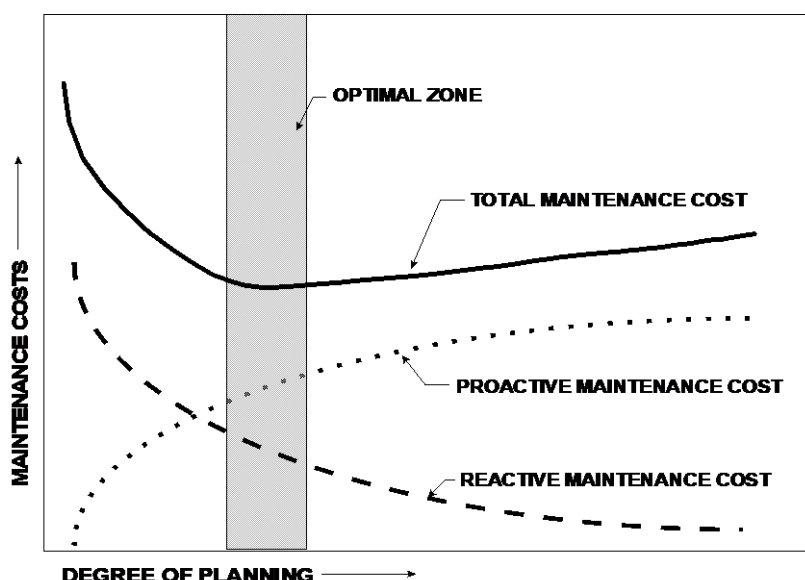
Operations and maintenance strategies cover the policies that will determine how the local roading network will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of the asset.

Table 5.1: Maintenance Categories

Category	Description
Routine (General) Maintenance	Routine maintenance is the regular ongoing 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 Figure 5.2 below.

Figure 5.2: Optimum Maintenance Period



Renewal Works

Renewal strategies are designed to provide for the progressive replacement of individual assets that have reached the end of their useful life. This is managed at a rate that maintains the standard and value of the network as a whole and aligns with ONRC.

This programme must be maintained at adequate levels to maintain current levels of service and the overall quality of assets. Required levels of expenditure on the cyclic asset replacement programme will vary from year to year, and will reflect:

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

Failure to maintain an adequate cyclic renewal programme will be reflected in a decline in the overall standard of the network of assets. Where the actual programme falls below the cumulative budget target, the shortfall will be reflected in depreciation of the overall value of the network, resulting in a lower LoS and the need for more reactive maintenance.

New Works

New Works covers the creation of assets (including those created through subdivision and other development) and works that upgrade or improve an existing asset beyond its existing capacity or performance in response to either usage or customer expectations. These works are either Council initiated or developer initiated.

While Council recognises that asset development and asset renewal can occur simultaneously, it is important to note that the purpose of asset renewal is to prevent a decline in the service potential of the assets.

Asset renewal is concerned with maintaining the condition of the assets and current service levels.

New assets or development is concerned with the service improvements, measured by asset performance.

Table 5.2: New Work Categories

Requirement for Asset	Creation
Growth	Any new asset (Council funded and development contributions) that is required as a result of growth.
Levels of Service	Any new asset that is required as a result of a change in service levels.
Legislative	Any new asset required out of legislative requirements
Vested	Any subdivision development that is required as a result of land development and vested in Council by developers.

Disposal

Disposal is the retirement or sale of assets whether surplus or superseded by new or improved systems. Assets may become surplus to requirements for any of the following reasons:

- Under utilisation
- Obsolescence
- 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).

At this time Council has no plans to dispose of any of its roading assets.

5.3 Roding Network

5.3.1 Overview

The Matamata-Piako road network consists of 1000 km of predominantly rural roads. Over 94% of the network is sealed, which is above the national average of 60%. The 60 km of unsealed roads, accounts for only 6% of the network.

The majority of the network is rural roads categorised by low volume traffic movements.

This network services a local economy based upon the production of processed and unprocessed agricultural products. These operations generate a high level of transport need.

Matamata, Morrinsville and Te Aroha are the three main townships in the District. The District is bounded in the east by the Kaimai Ranges and in the west by older ranges. In between these ranges lies the Hauraki Plains valley with soft underlying soils consisting mainly of silts and peat.

A high proportion of the road networks' volume is made up of traffic travelling through the district. This arises from the districts' location relative to Hamilton, Thames, Coromandel Peninsula and the Port of Tauranga as well as movements between the central North Island and the Auckland region.

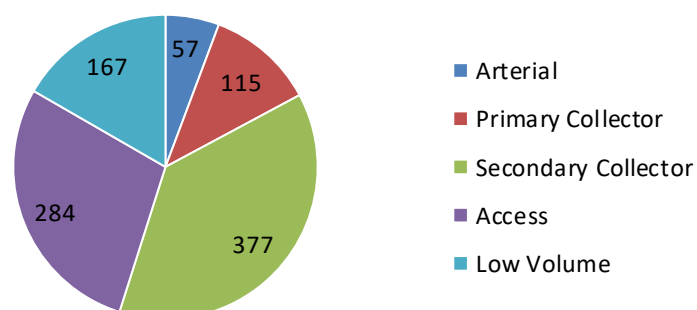
There are also 159 km of State Highways that pass through the District. The provision of roading infrastructure plays an important role. Due to the generally flat nature and intensive farming operations an extensive roading network has developed across the District.

Many roads have low traffic volumes, but are necessary for access and for the transportation of produce to processing plants. With the Districts' primary industry being intensive dairy farming, all roads must be capable of accommodating large milk tankers for up to 10 months of the year. This has created a demand on the road infrastructure that was not originally intended and creates many challenges in the management of the Council's roading network.

Vehicle Kilometres Travelled (VKT) is an indication of road usage, which is calculated by multiplying the kilometre length of each road in the District by its estimated ADT times 365 days per year. The VKT calculated for 1,010 km of roads is about 266 million per year. This is an increase of some 50 million VKT over three years.

Table 5.3: ONRC (2020)

Matamata Piako One Network Road Classification Proportions



	Urban (km)	Rural (km)	Total Length (km)	% of network
Arterial	4	53	57	6%
Primary Collector	11	103	115	11%
Secondary Collector	20	358	377	38%
Access	10	264	274	28%
Low Volume	83	88	172	17%
Total Network	129	866	995	

Section 5: Lifecycle Management Plan

Key Issues & Strategies

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

Table 5.4: Roding Key Issues & Strategies

Asset Type	Key Issue	Strategies to Address Key Issues
General	Latest GPS/NZTA funding levels	Assess implications for MPDC roads and funding, and mitigate
	One Network Road Classification	
	NZTA Funding Assistance Ratio (FAR) review	
	Input cost escalations over and above normal CPI inflation	
	30 year planning horizon	Show 30 year financial forecast accordingly
	LGA mandatory performance measures	Report accordingly
	Traffic growth exceeds 0.5% annual population growth	Assess implications for MPDC roads and respective costs, and mitigate
Pavements	Sensitive subgrade	Subgrade strengthening
	Varying subgrade conditions	
	Heavy traffic movements including HPMV	Demand management Route management
Bridges	High replacement costs and risks from ageing structures	Long term forward renewals and replacement programme.
	Higher loadings from HPMV's	Bridge assessment, posting, permitting and monitoring.
	Vehicle dimension and Mass (VDAM)	
	Flood risks	Monitoring and inspection
Footpaths	Root and vehicle damage	Renew when displacement lips exceed 20mm
Drainage	Blockage	Maintenance and inspections
Street Lighting	LED upgrade	Only 317 Roding street lights yet to be upgraded

Section 5: Lifecycle Management Plan

Value of Assets

Table 5.5 below is a summary of the assets currently owned by Matamata-Piako District Council. The Gross Replacement Cost (GRC), Depreciated Replacement Cost (ODRC), annual depreciation (AD) and values are current as at (1 July 2019)

Table 5.5: Asset Inventory (2019 Valuation)

Components	Length (m)	Quantity (No.)	Optimised Replacement Cost (ORC)	Optimised Depreciated Replacement Cost (ODRC)	Annual Depreciation (AD)
Bridge	2535	127	\$58,557,488.72	\$21,861,916.14	\$655,278.11
Drainage	??	8046	\$22,467,161.80	\$15,290,597.70	\$300,453.00
Footpath	311202	1995	\$24,421,197.23	\$9,133,814.69	\$496,185.87
Marking	??	??	\$262,116	\$262,116	\$23,902
Minor Structure	1441	52	\$983,402.41	\$243,138.99	\$27,618.88
Railing	10546	886	\$1,456,190.01	\$208,263.87	\$58,283.28
Surface Water Channel	259823	1773	\$15,952,007.91	\$11,207,525.65	\$364,947.44
Signs		6725	\$1,614,456.36	\$565,465.38	\$182,171.87
Streetlight - Light		2769	\$2,209,166.55	\$1,538,928.26	\$213,626.85
Streetlight - Bracket		2677	\$1,716,840.18	\$847,755.17	\$68,673.61
Streetlight - Pole		1815	\$4,093,075.47	\$2,667,090.34	\$81,864.72
Formation	924025	1667	\$122,395,172.10	\$122,395,172.10	\$0.00
Subbase	914255	1657	\$63,211,639.05	\$63,211,639.05	\$0.00
Basecourse	915353	1657	\$75,307,439.73	\$50,445,898.54	\$1,007,694.55
Surface	923772	1664	\$30,390,448.92	\$9,295,323.57	\$2,155,775.97
Total	4,262,952	33,510	\$425,037,802.44	\$309,174,645.45	\$5,636,476.15

5.3.2 Data Confidence and Reliability

Table 5.6 provides the confidence framework (NAMS IIMM) used to determine the confidence in the asset data used in this AMP.

Table 5.6: Asset Data – Confidence Grades

Confidence Grade	General Meaning
Highly Reliable	Data based on records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment.
Reliable	Data based on records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
Uncertain	Data based on records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade highly reliable or reliable data is available.
Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

Table 5.7 below reflects the confidence in the asset data for the Rooding assets.

Section 5: Lifecycle Management Plan

Table 5.7: Overall Confidence Data

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain	Source
Bridges		✓			RAMM & CM
Carriageway		✓			RAMM
Drainage		✓			RAMM
Footpaths		✓			RAMM
Railing		✓			RAMM
Signage		✓			RAMM
Street Lighting		✓			RAMM
SW Channel		✓			RAMM

Table 5.8: Overall Data Completeness

Asset Type	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Bridges								✓		
Carriageway									✓	
Drainage										✓
Footpaths								✓		
Railings										✓
Signage								✓		
Street Lighting										✓
SW Channel								✓		

Table 5.9: Condition & Performance for Critical and Non Critical Assets

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain
Drainage		✓		
Footpaths		✓		
Railing	✓			
SW Channel		✓		
Signage		✓		
Bridges		✓		
Street Lighting		✓		
Carriageway		✓		

5.3.3 Asset Condition

It is important that Matamata-Piako has clear understanding and good knowledge of asset condition and how they are performing. Condition data has been captured over a number of years, which has enabled Matamata-Piako to understand how asset condition affects expenditure patterns and how best to apply management decisions regarding maintenance, and renewals.

There are now additional tools available through the roading sectors move to One Network Road Classification (ONRC) and the performance measure tools available through the Road Efficiency Group (REG). MPDC has also started utilising High Speed Data Collection that has become available in recent times. This will allow us to recognise trends over time, and intervene with appropriate changes, to ensure efficiencies are maximised.

The development and continued use of condition assessment data will allow preparation of reliable and verifiable predictive decay curves for particular asset types and hence permit prediction of their remaining life. Consideration will still be required to allow for economic influences in the adopted life for the asset type.

Condition Assessment & Results

The RAMM condition assessment model in Table 5.10 is the basis of assessing the asset condition of Matamata-Piako's assets.

Table 5.10: Condition Assessment Model

Grade	Condition	Condition Assessment
1	Very Good	Sound physical condition. Asset likely to perform adequately without major work for 25 years or more.
2	Good	Acceptable physical condition; minimal short-term failure risk but potential for deterioration in long-term (15 years plus). Minor work required
3	Moderate	Significant deterioration evident; failure likely within the next 5 years but further deterioration likely and major replacement likely within next 15 years, Minor components or isolated sections of the asset need replacement or repair now but asset still functions safely at adequate level of service.
4	Poor	Failure likely in short-term. Likely need to replace most or all of assets within 5 years. No immediate risk to health or safety but works required within 3 years ensuring asset remains safe. Substantial work required in short-term, asset barely serviceable
5	Very Poor	Failed or failure imminent. Immediate need to replace most or all of asset. Health and safety hazards exist which present a possible risk to public safety, or asset cannot be serviced/operated without risk to personnel. Major work or replacement required urgently

5.4 Pavements

This section provides the detailed information on network pavements. This provides content to the programme business cases for each asset group in sections 5.4 to 5.19

5.4.1 Overview

The objective of pavement assets (formation, base layers and surface) is to provide a pavement network that is suitable for:

- The effective and efficient movement of vehicles
- All year round access

Pavements should:

- Have a safe and suitable all weather surface that is appropriate to its location and function in terms of skid resistance, noise reduction and smoothness
- Have a structure suitable for legal traffic loading requirements.

The current management of pavements is based on a combination of the current RAMM data, historic information and trends, and local knowledge.

5.4.2 Key Issues

Some of the key life cycle management issues that affect road surface and pavement layers are

- Capacity and pavement conditions of urban arterial roads.
- Capacity and pavement condition of rural roads, whether or not affected by heavy traffic movements such as forestry vehicles and milk tankers or by light vehicles.
- Impact of High Productivity Motor Vehicles (HPMV) and Vehicle Dimension and Mass (VDAM)
- Seal extension to be evaluated on a case by case situation due to funding constraints.
- Variable subgrade conditions (Plains soils are very weak).
- Rural lifestyle subdivision issues.
- Deterioration modelling development to accurately predict future pavement performance and associated needs

5.4.3 Assumptions & Confidence Levels

The major assumption for pavements is that the asset register is substantially complete enough to provide a reliable confidence level.

An audit of the 2015 RAMM database has shown that, there is a reasonable quantity of information available for pavement management, the gaps in the data in the data have been reduced since the Ramm Audit in 2006 , which improves our ability to confidently complete long term planning

Matamata-Piako is in the process of improving data and developing the use of dTIMS to improve this analysis and the confidence levels in the results. Performance analysis outputs from dTIMS were used to produce Pavement Deterioration Modelling.

The third iteration of the 2017 model is regarded as being robust and an advancement of earlier results.

5.4.4 Asset Description

Carriageway pavements comprise three major asset components as follows:

- **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.
- **Pavement:** The pavement is the compacted granular material that sits above the formation. For a deeper pavement often there is a subbase layer directly on the subgrade (formation) with a basecourse layer on top. Basecourse has a much longer life, and therefore the renewals profiles vary differently to that of the surface materials.
- **Pavement Surfacing:** This layer can comprise a variety of materials as explained below:



Table 5.11: Pavement Surfacing

Layer Type	Description
Chipseal	Layer of sprayed bitumen with a stone chip spread on top as a running surface. The life cycle for a chipseal surfacing varies dependent on the chip size used (small chip means less bitumen that can be sprayed as the waterproofing membrane) and by traffic volume.
Slurry Seal	Emulsion cement and fine aggregate mix laid between 3 - 8 mm thick. This is used in heavily trafficked routes and commercial areas where there are moderate traffic stresses.
Friction Course	Mix of asphaltic binder and graded aggregate with hydrated lime filler which has a high volume of air voids and is laid in a 30 - 35 mm layer. This has not been used in the past but may be used in heavily trafficked urban areas in the future, particularly where road noise and vibration are a problem.
Asphaltic Concrete	Mix of graded aggregate and asphaltic binder laid in a 25 - 50 mm layer. Primarily used at roundabouts, busy intersections, central business areas and high traffic stress areas, and where road noise is an issue.
Emulsion Mix	Mix of emulsion and graded aggregate used as a smoothing course laid in a 25 to 75 mm layer and usually resurfaced with a chipseal within 2 years.
Unsealed	Metal surface, may be stabilised or have a clay bound wearing course surface.

The layers typically have short lives and are renewed through re-sealing actions.

5.4.5 New Capital Works

This section of the LCM covers the strategies for the creation of new assets (included those created through new subdivision and other development) or works that upgrade or improve an existing asset beyond its original capacity or performance in response to changes in traffic needs or customer expectations.

New Works Asset Development

Pavement creation is closely related to:

- increased levels of services required by existing road users (to relieve traffic congestion, improve safety, etc)
- growth related capital works projects, and
- assets resulting from developments.

The development of the district is undertaken in accordance with the District Plan, which indicates location and requirements for new construction.

Projects are justified and prioritised on the basis of a Net Present Value (NPV) analysis which accounts for:

- the benefit to the road user for reducing delays in the time to travel along a given route
- vehicle operating cost savings
- safety benefits
- intangible benefits, including community dislocation, environmental issues (pollution, water quality, noise and vibrations) and other local, regional and national issues.



Road lifecycle costs (of which pavements are a major component) may be reduced in the asset creation phase by reviewing the:

- ranking criteria for all capital works and projects
- evaluation of options and staging for all road creation projects
- tendering and contract administration procedures
- strategies and plans.

5.4.6 Seal Extensions

Unsealed Network

The 60 km of road that is currently unsealed range in length from 45m to 8.3 km and are between 2.7m and 5.1m wide. The network alignments vary from flat and straight to mountainous and winding. Traffic volumes range from less than 10 VPD to 140 VPD. There have only been 4 reported crashes over the last 10 years on the unsealed network, however there are likely to be more that are unreported. Some 56% of unsealed roads are no exit roads.

Seal Extension Selection

Section 5: Lifecycle Management Plan

Historically Council has used multi criteria analysis (MCA) selection to identify which unsealed road section should be sealed. Factors such as traffic volume, exposure to dust, land use, terrain, and current and future maintenance costs were used in the analysis.

The current methodology for selecting candidate seal extension sites is a little more subjective but still considers these main factors in the decision making process. The approach is to identify which of the 40 unsealed roads on the network should not be sealed based on the current function of the road. In this regard, Councillors and staff have developed candidate lists detailing which roads warrant further investigation for seal extension. Workshops to be undertaken with Councillors to finalise a programme for seal extension will be based on the following:

- *Stage 1* - preparation of asset data indicating lengths, development, topography, and use for Council to decide which roads should be included in the programme and which roads should not be sealed.
- *Stage 2* - preparation of detailed costs and recommended priorities for the selected unsealed roads.

Currently there is no seal extension planned. Council has amended the policy not to seal any further roads within the district. Council have now opted to assess seal extension on an individual basis. There are no development contributions obtained for seal extensions.

5.4.7 Improvement Items

IP5.401: Investigate edgebreak and shoulder works for more cost effective result.

IP 5.402: Investigate cost/benefit of further HSD

5.5 Sealed Pavement Management

(Extract from the Programme Business Case)

Includes	Maintenance	Work Category 111 Sealed pavement maintenance The routine care of sealed pavements to maintain their structural integrity and serviceability.
	Renewal	Work Category 212 Sealed road resurfacing The planned periodic resurfacing of sealed roads. Work Category 214 Sealed road pavement rehabilitation The replacement of, or restoration of strength to, sealed pavements where other forms of maintenance and renewal are no longer economic.

5.5.1 Context

The Asset

All but 60km of the network is sealed., the majority being rural and either secondary collector or access in terms of ONRC.

ONRC Category	Urban (Km)	Rural (Km)	TOTAL LENGTH (Km)	Urban Journeys	Rural Journeys	ANNUAL TOTAL JOURNEYS TRAVELLED (M Veh Km)
Arterial	4	53	57	6	70	77
Primary Collector	11	103	115	8	55	63
Secondary Collector	20	358	377	7	57	64
Access	10	264	274	3	11	14
Low Volume	83	88	172	3	1	4
TOTAL NETWORK	129	866	995	27	195	222

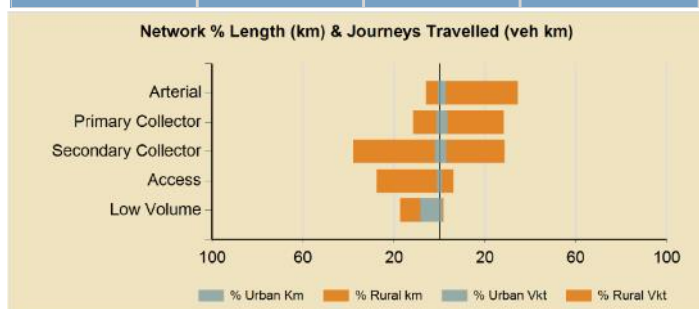


Figure 1: Network Percentage Length and Journeys Travelled - Sourced from ONRC performance measures reporting tool



Figure 2: Sealed v Unsealed - Sourced from ONRC performance measures reporting tool

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

2.0 Sealed Pavement Management

Contribution to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.5.2 Levels of Service

Councils performance measures associated with sealed roads follow.

Table 5.12: MPDC Core Values and Levels of Service

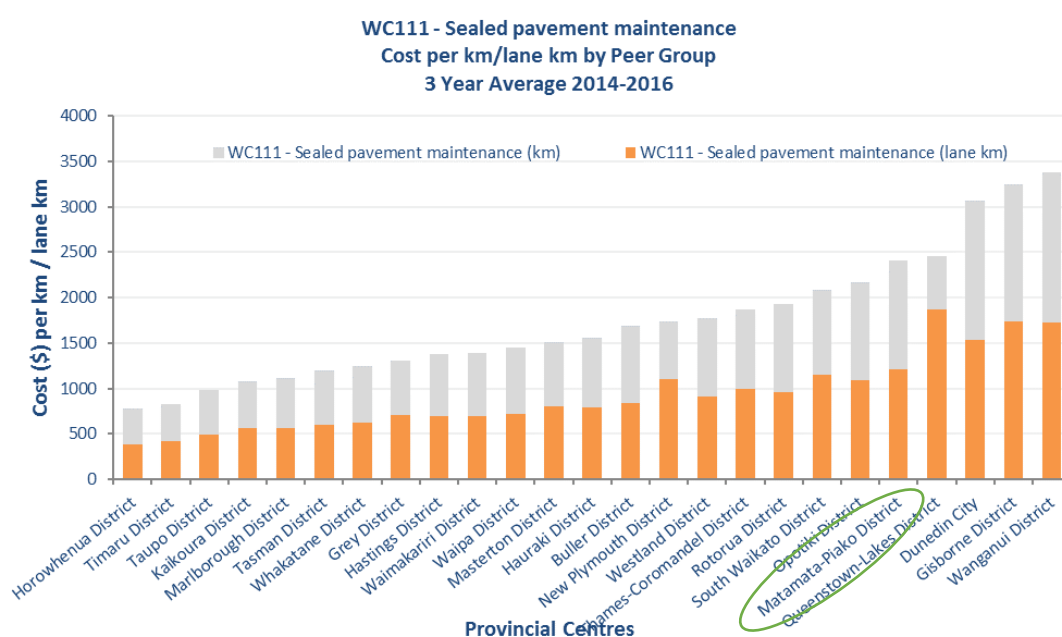
Asset	Core Value		
	Safety/	Quality	Accessibility
Sealed and Unsealed Roads	The road network is designed and managed for safe use by all road users	Sealed and unsealed roads are maintained/renewed /upgraded to provide reliability and quality of ride for all road users	All weather access is available for users throughout the road (formed roads) network, as far as practical Appropriate road design allowing transport mode choices

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

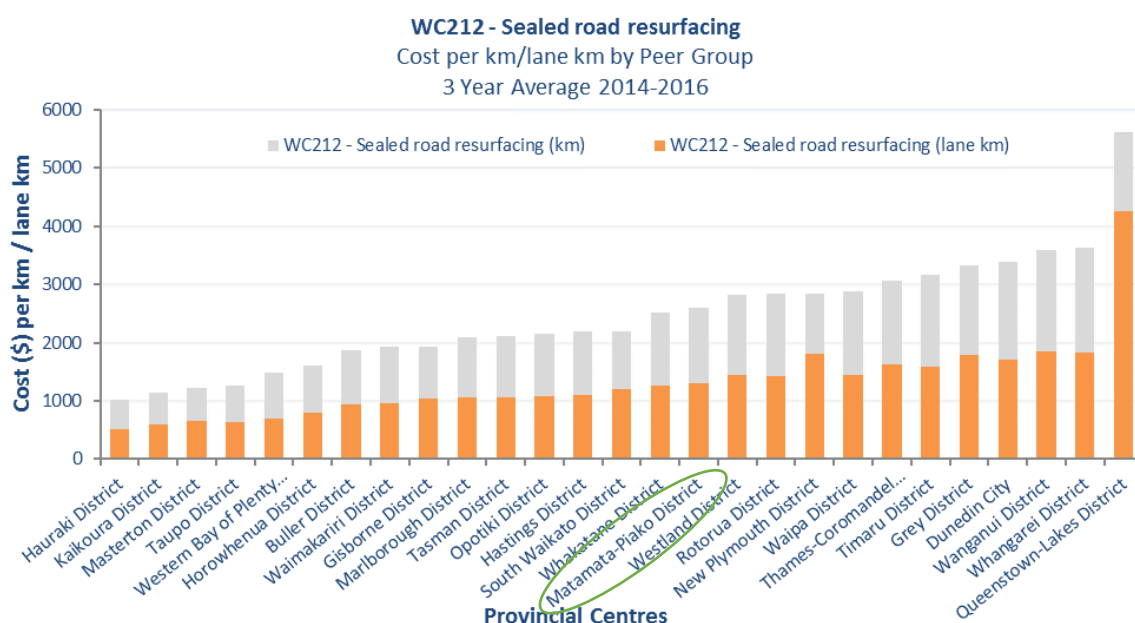
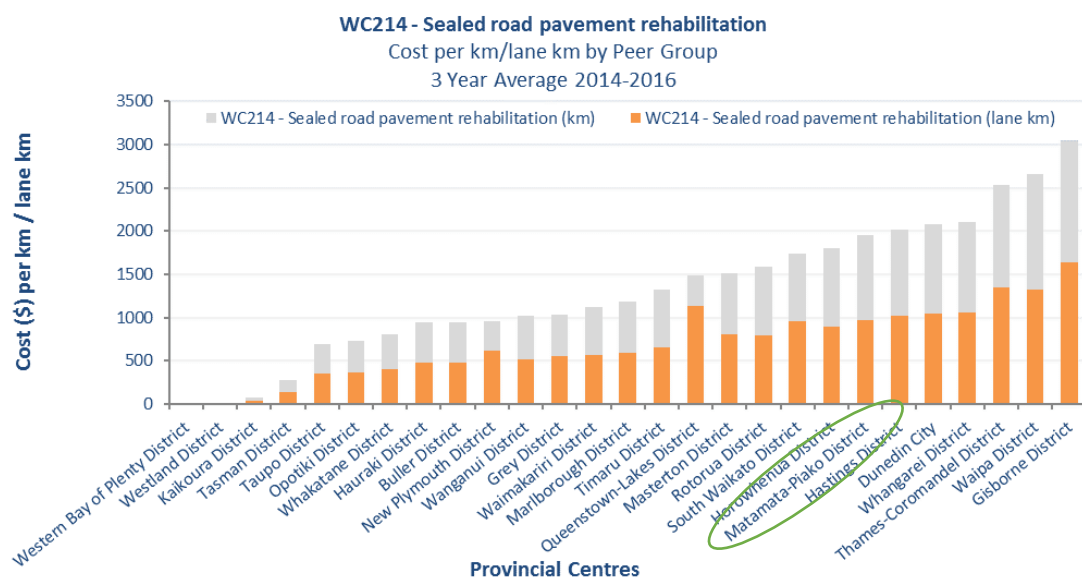
Investment Levels

Pavement maintenance and renewal costs are at the higher end of the peer group. Further analysis at ONRC level will enable a more focussed approach with the potential to revisit the intervention levels for the lower road classifications.

Figure 5.3: Investment Levels (3 graphs)



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5.5.3 The Case for Change

The current approach to the management of sealed roads is delivering a good result. Most indices reflect well on the approach in place as being effective, efficient and value for money.

There is scope to balance the renewals and maintenance differently and this is being explored through better use of data and modelling; as well as what level of service is acceptable on less trafficked routes.

There is also a level of risk associated with roads on poor ground conditions. Keeping surfacing waterproof and drainage in good order is key to preserving these pavements.

While timely resurfacing is the cost-effective approach to ensuring pavement are kept water proof there is a risk associated with the number of reseals. This has been a factor considered in the dTIMS analysis.

5.5.4 Options

Options identified include:

- i. Status Quo/Minor tweaks
- ii. Explore options in balancing maintenance and renewals
- iii. Introduce greater range in the level of service on less trafficked routes.

5.5.5 Preferred Programme

The suggested programme includes a combination of options 1, 2 and 3.

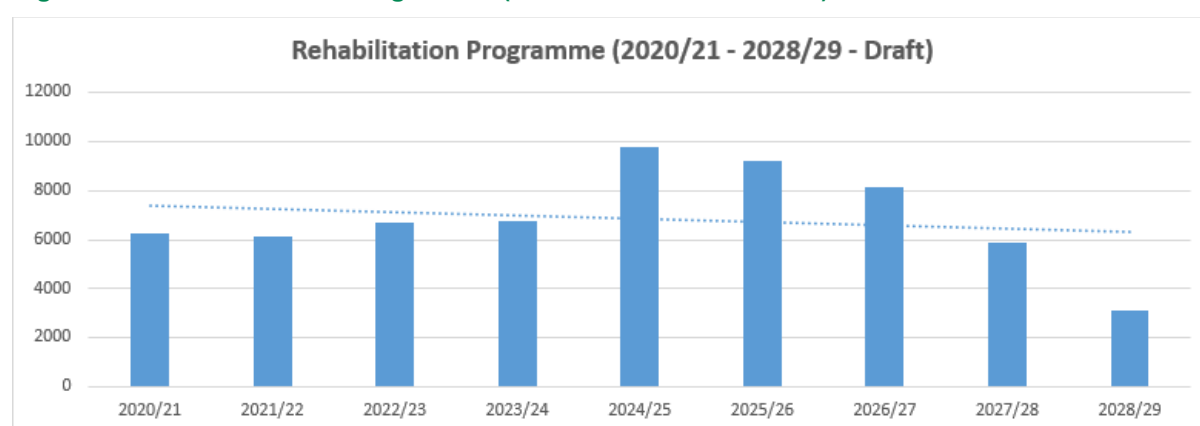
The latest dTims modelling suggests the following approach.

Item	Period	Average Annual Quantity (Centre line km)	Annual Percentage of Network
Pavement Rehabilitation	Current Target	6.0	0.63%
	Years 1 to 10	6.9	0.75%
	From year 11	7.6	0.83%
Chip Resurfacing Seal	Current Target	78	8.5%
	Years 1 to 10	64.1	6.98%
	From year 11	64.1	6.98%
Thin AC Resurfacing	Current Target	0.44	0.05
	Years 1 to 10	0.8	0.08
	From year 11	0.8	0.08
Total	Current Target	84.44	9.18%
	Years 1 to 10	71.8	7.81%
	From year 11	72.5	7.89%

Work Programme Proposed:

Maintenance:	The current contract commenced 1 Jul 2019 with a similar scope of services and costs to the previous contract.
Resurfacing:	A similar programme to the past is proposed with 70 to 80 centreline km targeted.
Pavement rehabilitation:	A slightly reduced programme is proposed for 2021/22, returning to the 6km target thereafter

Figure 5.4: Rehabilitation Programme (2020/21 – 2028/29 – Draft)



Investment proposed:

The table below sets out the projected operational expenditure for the Matamata-Piako pavement maintenance for the 10 years.

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sealed Pavement Maintenance	2,623,800	2,435,000	2,435,000	2,435,000	2,435,000	2,435,000	2,435,000	2,435,000
Renewals								
Sealed Road resurfacing	2,550,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Sealed road pavement rehabilitation	2,845,000	2,415,000	2,741,000	2,718,000	2,718,000	2,718,000	2,718,000	2,718,000

5.5.6 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Establishing an optimal balance between maintenance and renewals is sought but will be challenging given the difficult ground conditions encountered on much of the network. Resurfacing and drainage work are key to protecting the pavement. There is some risk around selection of the most appropriate surfacing type, to

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ensure adequate performance and life is achieved. This is a key component of the management of the contract.

A joint seal life analysis project is being considered as a RATA Project.

Consideration of emulsion bitumen versus cutback bitumen should also be assessed.

5.5.7 Improvement Items

IP 5.501 The variability in underlying conditions makes modelling difficult, further focussed data capture and analysis is proposed to be undertaken. Understanding this dynamic and refine pavement designs.

IP 5.502: RATA Surface Life Review

5.6 Unsealed Pavement Management (Extract form the Programme Business Case)

*Includes Maintenance Work Category 112 Unsealed pavement maintenance
The routine care of unsealed pavements to maintain their structural integrity and serviceability.
Renewal Work Category 211 Unsealed road metalling
The planned periodic renewal of pavement layers, including top surface metal, on unsealed roads.*

5.6.1 Context

The Asset

ONRC	Network (km)
Secondary Collector	2.4
Access	24.0
Low Volume	34.0
TOTAL	60.4

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

3.0 Unsealed Pavement Management

Contributes to:

The unsealed road network, while only 5% of the total, these roads a key rural link to and from farms.

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.6.2 Level of Service

Performance

There are less network level performance measures than sealed roads. The asset is dynamic, with most measures changing significantly between grader passes and resheeting. Customer feedback and response times to addressing queries are recorded as a measure of service delivery.

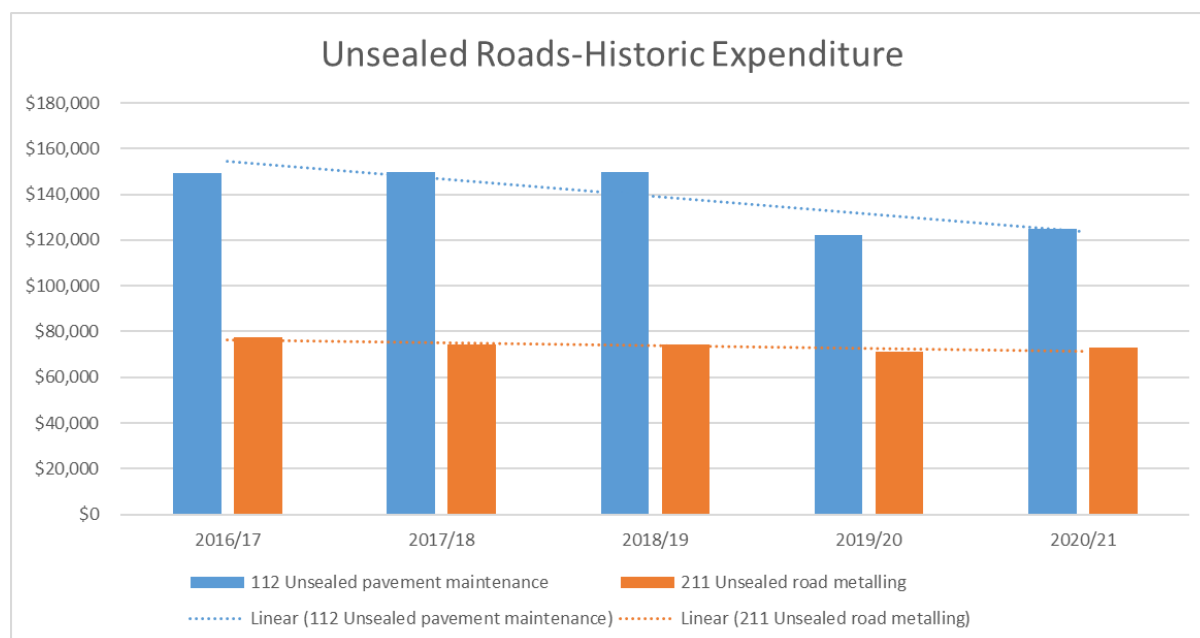
Table 5.13: MPDC Core Values and Levels of Service

Asset	Core Value		
	Safety/	Quality	Accessibility
Sealed and Unsealed Roads	The network is designed and managed for safe use by all road users	Sealed and unsealed roads are maintained/renewed / upgraded to provide reliability and quality of ride for all road users	All weather access is available for users throughout the road (formed roads) network, as far as practical Appropriate road design allowing transport mode choices

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

There are some customer issues with dust. There are concerns about possible health issues and these are evidenced through complaints and medical reports.

Investment Levels



5.6.3 The Case for Change

In 2018 MPDC acknowledged that the investment level per km was higher than its peers. A reduction of 40% in metalling was implemented and a modified programme of maintenance and renewal. This has been successful and it's proposed that this approach continue.

5.6.4 Options

The unsealed network is relatively limited and represents **2% of expenditure**. Given there are minimum performance issues following a reduction in investment no option evaluation is required.

5.6.5 Preferred Programme

A continuation of the programme of routine grading and re-sheeting is recommended

Work Programme and Investment Proposed:

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.14: Investment Proposed

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Unsealed Pavement Maintenance	120,000	124,800	124,800	124,800	124,800	124,800	124,800	124,800
Renewals								
Unsealed Road Metalling	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000

5.6.6 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.6.7 Improvement Items

IP5.601: Set levels of service in line with ONRC.

IP5.602: Undertake root-cause analysis to understand and quantify the interventions required.

IP5.603: Track Vallintines Road works and costs separately

5.7 Drainage Facilities

5.7.1 Overviews

Drainage assets include minor culverts (<3.4m²), catchpits and surface water channels. Roadside drainage assets provide an essential service to the integrity of the pavement network and to provide a level of protection to property from roadway flooding.

5.7.2 Key Issues

Some of the key issues that affect drainage facilities are and the importance of the drainage asset in keeping the road structural layer dry.

Drainage also contributed to the safety and amenity of road users through the removal of surface water. The risk of blockage affects performance.

As environmental standards for freshwater increase, drainage of water directly from roads into waterways is less acceptable. Integration with reticulated systems with treatment is expected to become commonplace.

In rural areas adequate culverts ensure the network is resilient and limits scour in wet conditions. Keeping culverts in good working order is key.

5.7.3 Assumptions & Confidence Levels

Good drainage is one of the key aspects to ensuring the integrity and serviceability of the Districts pavement assets and it is assumed present asset capacity provides effective roadways drainage in order to protect the road and adjacent property from roadway flooding.

Improvements have been made to surface water drainage over the last three years where the emphasis has been to improve previously ineffective rural stormwater channels. Along with rural continuation, a greater focus on urban road drainage is required to increase the overall confidence in the performance of road drainage facilities. Overall confidence level in the asset is considered to be medium



5.7.4 Asset Description

Drainage facilities comprise of two major asset groups:

- Drainage appurtenances (catchpits, sumps, culverts etc)
- Surface Water Channels (Kerb & Channel, Dish etc)

Drainage facilities include the catchpit lead, being the connection to the main trunk line, but not the manhole or any the main trunk lines. These assets are covered in the Stormwater Asset Management Plan.

Table 5.15: Asset Information (July 2017)

Drainage								
Component	Length	Quantity	Base	Age	RUL	RC	DRC	AD
Drainage_CP18	-	1910	60	21	39	\$2,939,986.60	\$1,927,863.55	\$48,991.50
Drainage_CUL	39100.5	2631	80	23	57	\$11,548,301.83	\$8,429,538.53	\$146,314.16
Drainage_DCHN	-	117	60		42	\$124,978.23	\$86,576.90	\$2,082.60
Drainage_side c	28962.8	2559	80	21	59	\$2,441,098.28	\$1,809,050.94	\$30,513.54
Drainage_side c	-	68	80	21	59	\$90,688.20	\$67,215.56	\$1,133.56
Bridge Culvert and Stock U		187				\$3,198,848.30	\$1,969,396.30	\$42,651.39
Total	68063.3	7472				\$20,343,901.44	\$14,289,641.78	\$271,686.75

5.7.5 Replacement Cost & Annual Depreciation

5.7.6 Key Drainage Facilities Risk

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roading.

Each component of the Roading Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Drainage assets are especially vulnerable to impact, blockages and scour which leads to deterioration and eventual asset failure.

Key risks associated with drainage assets are identified below:



Table 5.16: Key Drainage Facilities Risks

Risk Descriptor	Net Risk	Management Option
Flooding affecting roads due to under capacity drainage, poorly located, or blocked drainage assets causing inaccessibility or unsafe driving conditions.	9	<p>Monitor and review current practices</p> <p>Review Levels of Service in problem areas</p> <p>Review Levels of Service in accordance with seasonal changes and appropriate maintenance regime (leaf dropping)</p> <p>Review Quetzal/ complaints and plan improvement works</p> <p>Continually improve asset knowledge (capacity and condition)</p> <p>Continual liaison with Council Stormwater team regarding stormwater planning and issues that arise</p> <p>Benchmarking, looking at international innovations</p> <p>Strategy and policy to influence development that affects capacity. Input at strategic planning stage</p>
Surface water contamination during normal operation of the network caused by lack of environmental controls.	8	<p>Identify known problem areas and implement an appropriate upgrade programme within existing projects</p> <p>Monitoring of discharges via consent conditions and liaison with Regional Council</p> <p>Future possible central government legislation</p> <p>Improve design of stormwater quality devices and developing practical usage in new and existing network.</p> <p>Continual liaison with Council Stormwater team regarding stormwater planning and issues that arise</p>

5.7.7 Operations & Maintenance Plan

The Roading Maintenance Contractor is responsible for the following maintenance activities:

- Spraying of urban and rural SWC's (cyclical)
- Cesspit cleaning (cyclical) – organised by Kaimai Valley Services undertaken by separate contractor as required (via Works Order)
- Kerb & channel sweeping (cyclical) – organised by Kaimai Valley Services undertaken by separate contractor as required (via Works Order)
- Culvert maintenance is typically reactive

5.7.8 New (Capital) Works Plan

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

5.7.9 Disposal Plan

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

5.7.10 Drainage Management

Includes Maintenance Work Category 113 Routine drainage maintenance

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The routine care of drainage facilities to maintain their function.

Renewal Work Category 213 Drainage renewals

The renewal of drainage facilities that is not routine in nature, but that will reduce future maintenance costs.

5.7.11 Context

The Asset

Component	Quantity (No.)
Drainage_CP1&CP2&SS&other	2099
Culvert	2481
Drainage_DCHM&DS&SCOUR	113
Drainage_side culvert	3098
Drainage_side entry sump	68
Bridge Culvert and Stock Underpass	187
Total	8046

Component	Length	Quantity (No.)
Dished Channel (Asphalt)	350	4
Dished Channel (Concrete)	1775	44
Dished Channel (Half Pipe)	976	13
Kerb & Channel	179740	1176
Kerb Only	7350	67
Mountable Kerb & Channel	39810	385
Slot Channel	35	3
Unknown	29787	81
Total	259823	1773

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

4.0 Drainage Facilities

Contributes to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.7.12 Level of Service

Councils performance measures associated with sealed roads follow.

Table 5.17: MPDC Core Values and Levels of Service

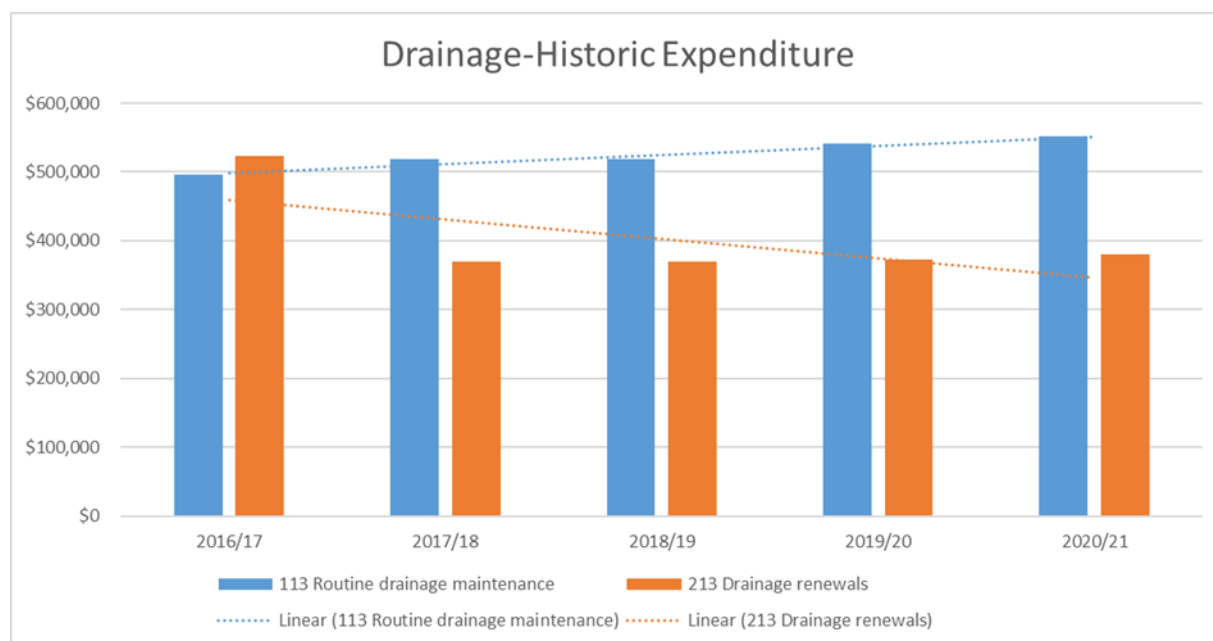
Asset	Core Value		
	Safety/	Quality	Accessibility
Drainage	All weather access is available for users throughout the road (formed roads) network, as far as practical Environmental considerations are taken into account		

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

Investment Levels

The combination of maintenance and renewals is relatively stable, a shift to more renewals would be triggered by condition surveys indicating a change was necessary.

Figure 5.5: Drainage Historic Expenditure



5.7.13 The Case for Change

The current approach to the management of the drainage system is a core approach and it is acknowledged that improvements to drainage should have a positive effect on pavement performance. Climate change is also a risk in terms of more and heavier rainfall events.

Due to the location and capacity of our rivers and streams, soakage is the only mechanism for new subdivisions to manage their stormwater. There is generally no discharge to existing stormwater systems allowed. This has meant that the number of retention ponds and soakage systems have been installed in our districts. A lot of these serve the purpose of draining the road only and therefore increased maintenance on stormwater systems will be required in our urban towns.

5.7.14 Options

Options identified include:

- i. Status Quo/Minor tweaks
- ii. Improve drainage across the network
- iii. Implement a prioritised drainage improvement programme focussing on sites where pavement performance is of concern and where there is a record of drainage affection access

5.7.15 Preferred Programme

The suggested approach is option iii.

The FWD and HSD data helps understanding of the network demands for drainage as well as looking at integrating drainage work with the rehabilitation programme. The ONRC measure for resilience will also be used to identify sites requiring attention.

Work Programme and Investment Proposed:

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.18: Investment Proposed

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2023 onwards
Routine drainage maintenance	551,400	601,400	601,400	601,400	601,400
Renewals					
Drainage renewals	150,000	184,000	140,500	257,000	257,000

5.7.16 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.7.17 Improvement Items

IP 5.701: Monitor pavement performance and resilience and improve knowledge of the role of drainage in these issues.

IP 5.702: A more detailed programme for the maintenance requirements in the urban areas also needs to be identified with the new soakage systems installed. This is only going to increase with the new growth areas identified for urban subdivisions.

5.8 Structural Management

Includes *Maintenance Work Category 114 Structures maintenance*
The routine work necessary to maintain the function, structural integrity and appearance of the following: road bridges, retaining structures, guardrails, tunnels, stock access structures, vehicular ferries, cattle stops, footpaths on road structure, pedestrian over-bridges /underpasses , and bridge waterways when the bridge itself is directly affected.

Renewal Work Category 215 Structures component replacements
The renewal of components of: road bridges, retaining structures, guardrails, tunnels, stock access structures, vehicular ferries, cattle stops, footpaths on road structure, pedestrian over-bridges /underpasses , and bridge waterways when the bridge itself is directly affected.

5.8.1 Bridges

5.8.2 Overview

The purpose of road bridges, culverts and minor structures is to provide continuous all-weather roading over rivers, streams and uneven terrain. Underpasses have been constructed to allow the safe movement of livestock. All retaining walls within the district have also been assessed as a minor structure.

Key Issues

Some of the key life cycle management issues that affect bridges and minor structures assets are:

Table 5.19: Key Issues

Key Issue	Strategies to Address Key Issues
High replacement costs.	Optimise designs and tender processes
Risks from flood, storm and earthquake events	Undertake informal route security programme to identify high risk assets that will require a higher level of monitoring
Development of Forward Works Programme & Replacement Strategies	Prepare replacement programme

5.8.3 Assumptions and Confidence Levels

Based on the bridge inspection reports, Council is confident that bridges are in sound condition.

As indicated in the key issues section above, there are a number of areas that require further investigations and improvements. The majority of these items relate to improving the current level of knowledge of the bridge assets, which will allow council to:

- Clearly understand the performance and financial risks of the bridge and minor structure assets
- Prepare long-term forward programmes based on accurate information and analysis



5.8.4 Asset Description

Council maintains 315 waterway crossing structures including culverts with a nominal area greater than 3.4m². Minor structures include 53 retaining walls. Behind pavements, this is one of the larger asset groups in the Roding network.

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Table 5.20: Asset Information & Values

Component	Length (m)	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	GRC	ODRC	Annual Depreciation
Bridge Stock Underpass	364	98	75	14	60	2,019,937	1,615,950	714,347
Culvert	342	79	75	48	45	1,446,854	657,532	
Concrete (Beams & Deck)	2,321	108	90	40	53	54,370,982	23,560,759	
Steel & Concrete	280	15	90	48	61	4,932,399	2,137,373	
Steel & Timber	70	6	90	48	48	822,364	356,358	
Minor Structures (mostly Retaining Walls)	1,443	53	50	21	24	941,676	494,954	18,791
Total						\$61,067,421	\$26,549,444	\$1,163,018

5.8.5 Replacement Cost & Annual Depreciation

Figure 5.6: GRC – Bridges & Minor Structures

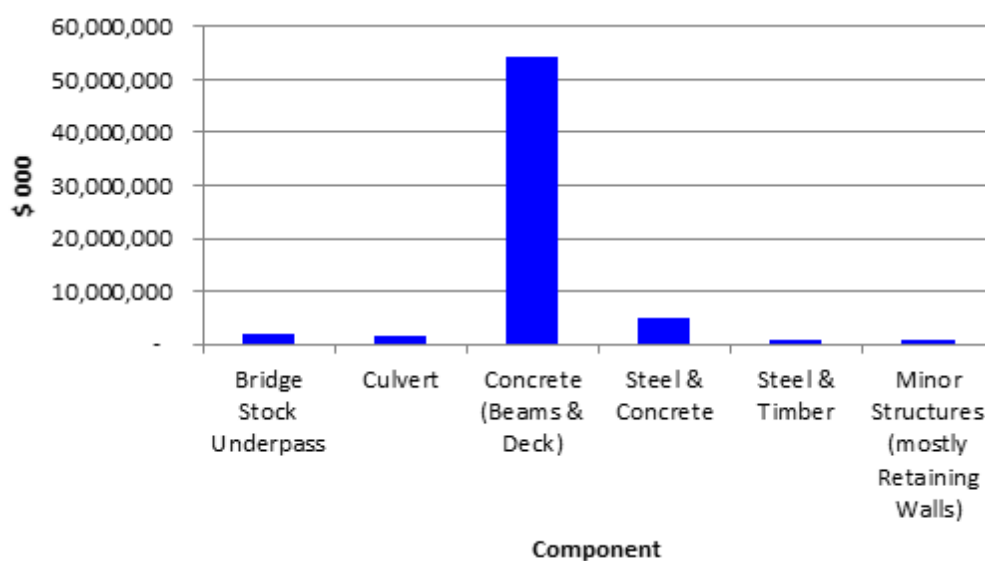
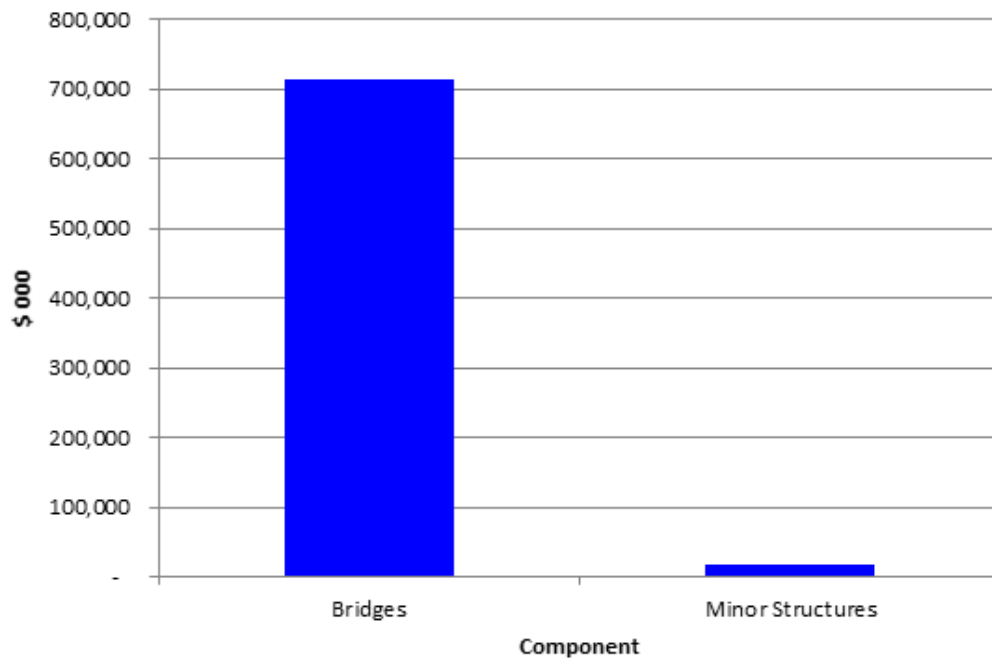


Figure 5.7: Annual Depreciation – Bridges & Minor Structures



5.8.6 Asset Age

The graph below compares the age with the average remaining useful life of each bridge type.

Figure 5.8: Average Age Vs Remaining Useful Life – Bridges & Minor Structures

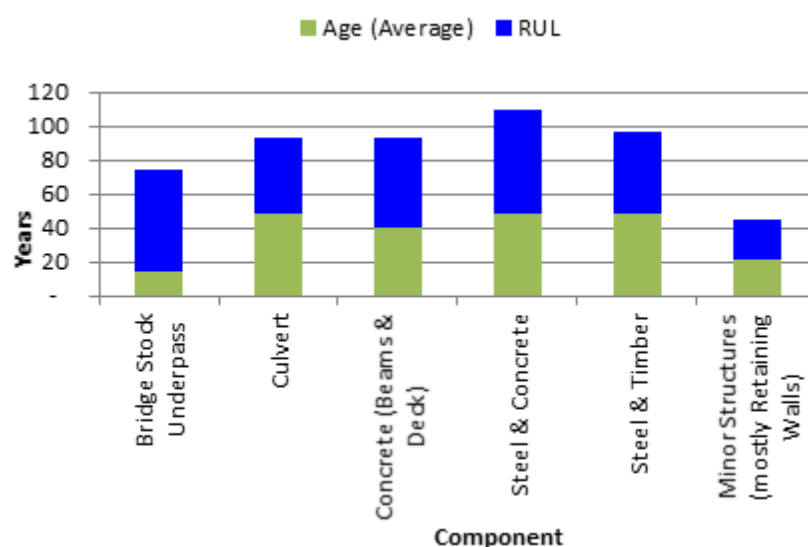
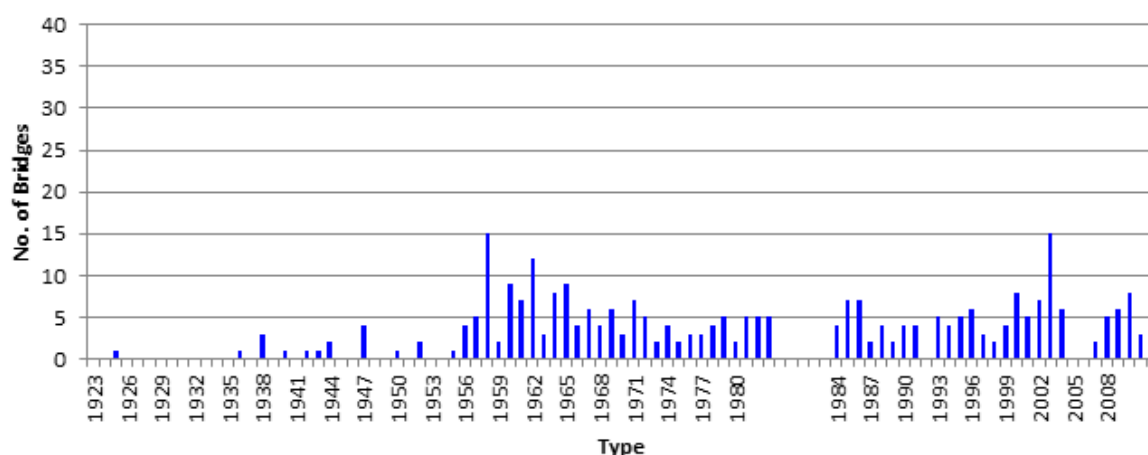


Figure 5.9: Histogram of Bridge Construction Dates



5.8.7 Condition Assessment & Results

Bridges are inspected and assessed for faults in accordance with the Transit New Zealand Bridge Inspection and Maintenance Manual. Items requiring remedial work are categorised relative to the non-compliance being attributed to either a routine maintenance item or to defects that compromise the structural integrity of the bridge. General inspections are programmed to occur annually for half the bridge stock. Therefore each bridge is inspected every second year.

There are three Class 1 weight-restricted bridges which require annual structural assessments to determine deterioration and the load carrying capacities relative to the maximum permitted loads, which are determined in the TNZ Manual as 100% Class 1. There is a further 12 bridges that are not 50 Max capable and therefore require signage to address this issue.

These bridges have been assessed as follows:

- Mace Road Bridge (No.92) which is 80% of Class 1.

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- Herries Street Bridge (No. 236) which is 30% of Class 1, max Axles 5000kg and has a speed restriction of 30km/hr.
- Wairakau Road Bridge (No.93) which has a weight restriction of 60% of Class 1.

The 100% Class 1 maximum permitted load represents what was previously the maximum legal load for heavy vehicles of the various axle configurations. Now there is a national requirement to allow up to 50 tonne maximum loading with correct axle configuration on bridges without requirement for permitting. Therefore our bridges that are class1 but not capable of 50 tonne max loading need to be signed to state their limited capacity i.e. not to exceed class1 loading for the specific bridge. The logistically practical way of informing Heavy Loads would be to give good clear advance notice signage in a location that operators may take an alternative route without the need to turn around. The structural assessment and weight restriction of a weight-restricted bridge includes safety factors with the intention of not unduly over-stressing the structure.

A vehicle exceeding the weight restriction on a bridge will stress the bridge but not necessarily cause failure. Repetitive stressing of the bridge structure will, however, ultimately lead to failure.

There are financial implications to upgrade these bridges. In most situations it will mean the renewal or upgrading of the structure. This normally requires either a Benefit Cost Ratio greater than four to qualify for (New Zealand Transport Agency) subsidy or a simplified flowchart to be followed for those bridges under \$200,000.

Structural Capacity

Short single span bridges make up the majority of Councils bridging that cross the many streams, rivers and drainage channels that flow in the District. There are now 15 bridges that have weight restrictions. One of the bridges is on a no exit road, while the other two are on through roads with low traffic volumes. The other load restricted bridges are suitable for Class1 vehicles but not 50 max vehicles. These bridges are shown in Section 4.10.10 Bridge 22 on Waiti Road has just been replaced with a concrete culvert and is now 100% class 1. Because there is alternative access to properties where the three weight restricted bridges with less than Class 1 loading capacity. Council is unlikely to upgrade any of these in the near future.

Waterway Capacity

Waterway capacity problems result from debris accumulation and inadequate vegetation clearance, which is a maintenance issue. The current road maintenance contractor has been addressing debris clearance and vegetation control.

Geometric/Width

There are 48 single lane bridges on the network most of these are on lightly trafficked roads. These structures are currently in good condition and therefore unlikely to be replaced in the near future.

5.8.8 Key Bridge and Structure Risks

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roding.

Each component of the Roding Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Section 5: Lifecycle Management Plan

Roadway structures are subjected in some areas to high traffic loading, which, if not effectively managed over time, can lead to deterioration and eventual asset failure.

Key risks associated with roadway structures are identified below:

Table 5.21: Key Roadway Structures Risks

Risk Descriptor	Net Risk	Management Option
Vehicle, pedestrians or objects fall, or thrown, from bridge.	9	Review and monitor maintenance and renewal programme Monitor and plan changes to current standards
Structure damage from overloading. Causing faster deterioration of bridges, culverts and structures	6	Review and improve enforcement of weight restrictions according to Bylaws Review current capacity of bridges, overweight permit process and communication of requirements Install weigh in motion sites Improve relationship with NZ Transport Agency – provide regulatory documentation
Bridge Collapse/ damage/ deterioration/ erosion/ blockage – Accessibility, safety (excluding catastrophic events).	4	Undertake review of bridges requiring seismic analysis Review and monitor current practices Undertake risk assessment of critical bridges Review and monitor lifeline project outcomes
Damage to services on structures - causing loss of water, electricity, telecommunications etc.	4	Review and monitor current practices Undertake risk assessment of critical structures Review and monitor lifeline project outcomes Improve co-ordination with utilities

5.8.9 Operations & Maintenance Plan

Maintenance is derived through the following inspection programme in accordance with the Transit NZ Bridge Inspection Guide;

- monthly superficial inspections, co-ordinated with other routine maintenance work, by the Contractor
- general inspections undertaken on a three year cycle
- special inspections after specific events such as earthquakes, severe floods or instances of overloading.

Repair treatments and priorities are determined by considering the impact on the following:

- Public safety
- Future costs if the work is not undertaken
- Traffic movement

Generic faults typically highlighted during inspections include:

- Signs of corrosion on steel beams
- Localised and general scour
- Concrete cracking and spalling
- Deterioration in timber components

- Expansion joint problems
- Handrail and guardrail repairs
- Potholes in bridge approaches.

Works relating to non-complying permanent warning signs, scour protection, concrete and timber repairs are also undertaken.

Bridge Maintenance Future needs

MPDC has a new Bridge Inspection Contract in place from 1st July 2017. With this new contract we have elevated the level of analysis on the structures to minimise the risk both to road users and for financial uncertainties.

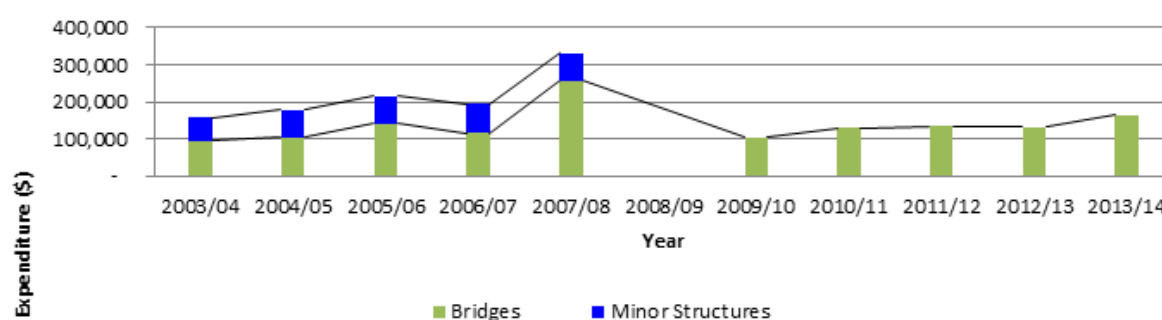
The maintenance expenditure to maintain the delivery of the defined levels of service, include:

- Expected planned maintenance work requirements.
- The nature, incidence and cost of unplanned maintenance (responsive) currently undertaken
- Planned inspections and preventative maintenance
- Managing assets to desired levels of service.

Historical Operational Expenditure

Figure 5.10 **Error! Reference source not found.**below summarises the operational expenditure for the bridge assets area over the last 10 years:

Figure 5.10: Summary of the Operational Expenditure for the Bridge Assets area over the last 10 Years



Deferred Maintenance

There is no deferred maintenance identified at this time.

5.8.10 Renewal Plan

The overall Levels of Service objective is to steadily renew assets considering the following:

- The age profile

- The condition profile
- The level of on-going maintenance
- The economic lives of the materials used
- Financial and customer risks

The Forward Works Plan will be developed and implemented as part of the next LTP cycle.

5.8.11 New (Capital) Works Plan

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

In the last three years we have widened Bridges 202 & 203 on Taotaoroa Rd near the entrance to the quarry. Also widening of Bridge No 45 Morrinsville/Tahuna Rd, and strengthened Bridge 130 Studholme St and Bridge 120 on Waiheke Rd. The plan now is to continue to strengthen bridges that optimise opportunities for HPMV's. Capital works (new and renewal) plan will be developed, at the completion of the bridge inspection programme. The remainder of work is either culvert lining or guardrail replacement.

5.8.12 Disposal Plan

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

5.9 Railings

5.9.1 Overview

This asset category is now part of structures management it includes guardrails and handrails.

5.9.2 Key Issues

Some of the key issues that affect road railing assets are:

Table 5.22: Key Issues

Key Issue	Strategies to Address Key Issues
Upgrading guardrail end treatments	Develop a programme that prioritises work

5.9.3 Assumptions & Confidence Levels

Guardrail, handrail and sight rail data is stored in RAMM, which records some 877 assets and is assumed relatively complete. Confidence level in this data is therefore reliable.

5.9.4 Asset Description

MPDC maintain approximately 3.16 km of rails including guardrails and handrail with a combined Replacement value of \$ 942,395.77.



Table 5.23: Asset Information for Rails (2017 Valuation)

Railing								
Component	Length	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	RC	DRC	AD
Railings_Guard Rail	3132	144	25	21.24	3.76	941,061.66	198,632.53	37,642.46
Railings_Hand Rail	28	3	15	13.00	2.00	1,334.11	111.18	55.59
Total	3160	147	40	34.24	5.76	942,395.77	198,743.71	37,698.05

Replacement Cost & Annual Depreciation

Guardrails (including W Section Guardrails) account for 50% of the total GRC for railing assets.

Figure 5.11: GRC - Railings

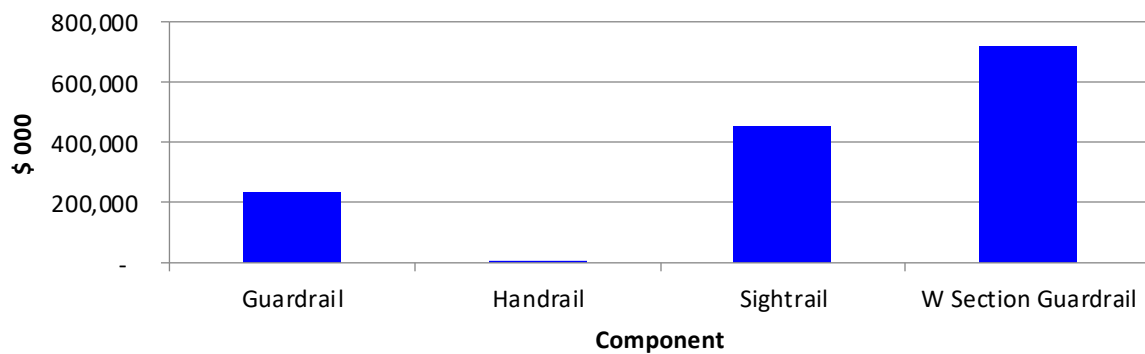
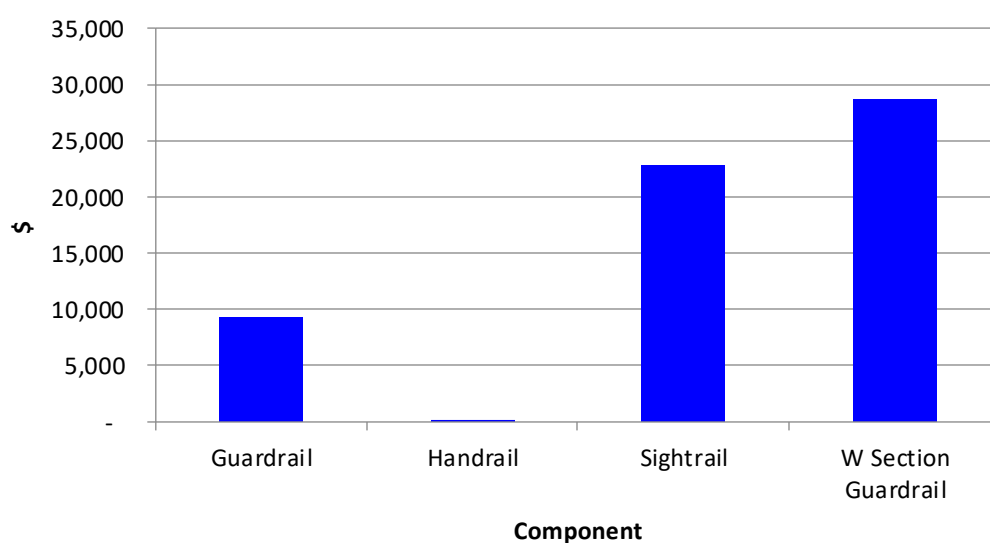


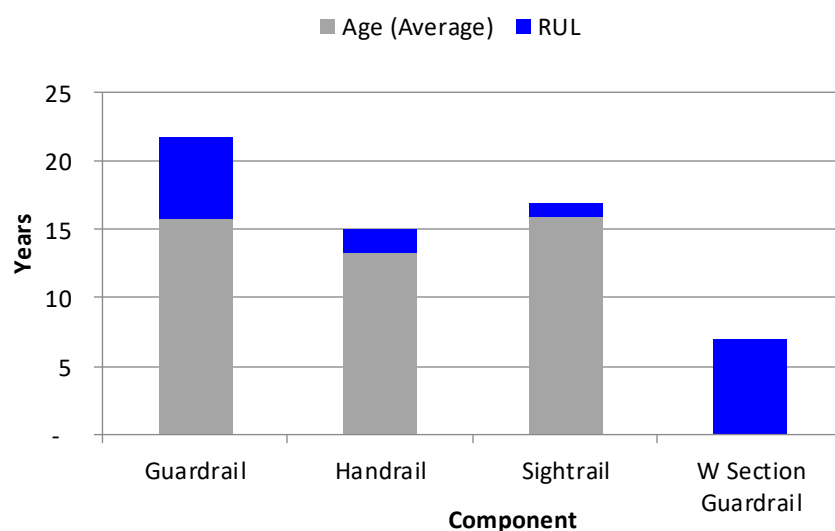
Figure 5.12: Annual Depreciation - Railings



Asset Age

The graph below compares the average age with the average remaining useful life of each asset.

Figure 5.13: Average Age Vs Remaining Useful Life - Railings

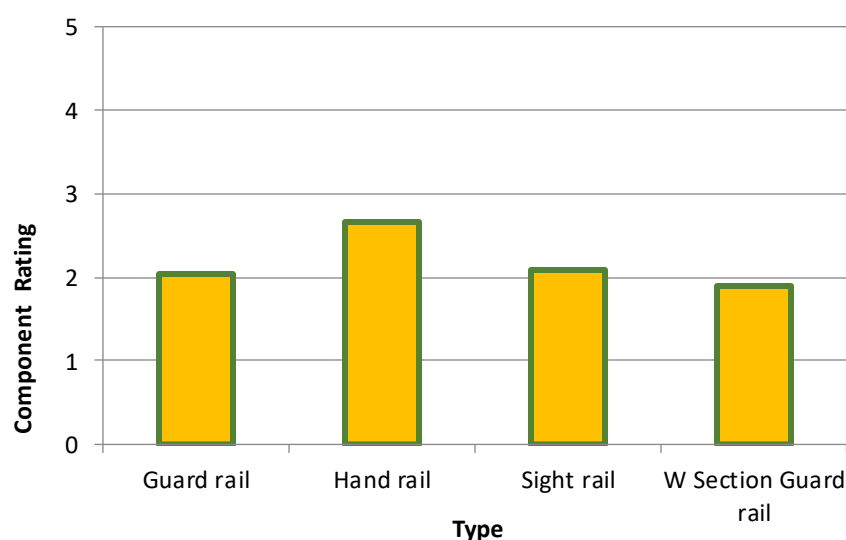


Handrail and sight rail assets are significantly consumed in terms of their remaining useful life.

5.9.5 Condition Assessment & Results

The condition of the guardrail and sight rail assets is monitored in accordance with the requirements of the service level agreement with Kaimai Consultants. The rating indicates that the railing assets are in fair to good condition.

Figure 5.14: Average Condition - Railings



Note: 1 – Excellent, 5 – Very Poor

5.9.6 Key Railing Risks

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roothing.

Each component of the Roothing Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Railing assets are especially vulnerable to impact and vandalism.

The key risk associated with railing assets is identified below:

Table 5.24: Key Railing Risks

Risk Descriptor	Net Risk	Management Option
Guard Rails/Medians damaged and or missing.	8	Monitor and improve current practices Ensure that safety measures/ temporary traffic measures are implemented as part of all roadworks (temporary barriers) Review of standards (MOTSAM, Transit specs etc), and audit of controls and control works. Ongoing Crash reduction studies (in conjunction with police, NZ Transport Agency) Continue informal safety audits managed in-house

5.9.7 Operations & Maintenance Plan

Maintenance of railing assets is the responsibility of Fulton Hogan Ltd under the Roding Maintenance Contract administered by Kaimai Consultants. Maintenance for guardrails and sight rails is planned cyclical, but also reactive based on calls received via the public or noted during monthly audits of the network.

Deferred Maintenance

There is no deferred maintenance at this time.



5.9.8 Renewal Plan

Guardrail, handrail and sight rail renewals are typically reactive and normally as a result of vehicular damage. If the renewal is not the result of vehicular damage, account needs to be taken of their relative age and remaining useful life in order to create a forwards works plan for renewal. Scheduled lifecycle replacement items would then need to be audited and reviewed as necessary to account for condition and performance factors that may extend useful lives.

Deferred Renewals

There are no deferred renewals at this time.

5.9.9 New (Capital) Works Plan

New works are generally initiated through safety requirements, or vested (gifted) through subdivisions.

5.9.10 Disposal Plan

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

5.10 Programme Business Case Extract for Structures Management

5.10.1 Context

The Assets

Are made up of the following items.

ROADING STRUCTURES	
Bridge	131
Major Culvert	85
Minor Culvert (rural only)	38
Minor Structures (mostly retaining walls, fence, weighbridge)	47
Retaining wall	77
Underpasses	127

The bridges are mostly concrete structures although **5** have wooden decks.

There are **33** bridges that are single lane bidirectional.

There are **3** posted bridges and **16** class1 bridges. A number of our bridges are able to have High Productivity Motor Vehicles (HPMV's) on them due to the short length of the bridge. This is because the full loading is not carried by the bridge at one time.

We have **5** bridges that need to be investigated to ascertain their ability to accept HPMV's and 45 /46 tonne vehicles.

Our major culverts are of significant sizing and usually either concrete or galvanised corrugated Armco culverts.

In the last 7 years we have refurbished 6 of the armco culverts by concrete lining the culvert in the areas that have corroded (exposed to air and water).

MPDC Retaining walls have not been seen as high risk items mostly due to their scale (no particularly large/high retaining walls). It is recognised that they should not be ignored and they have been included in our Bridge Inspection Contract for 2017/18. The regularity may be reviewed relative to perceived risk. The underpasses are over represented as MPDC assets as this list is derived from items for inspection.

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

5.0 Structural Renewals

Contributes to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.10.2 Level of Service

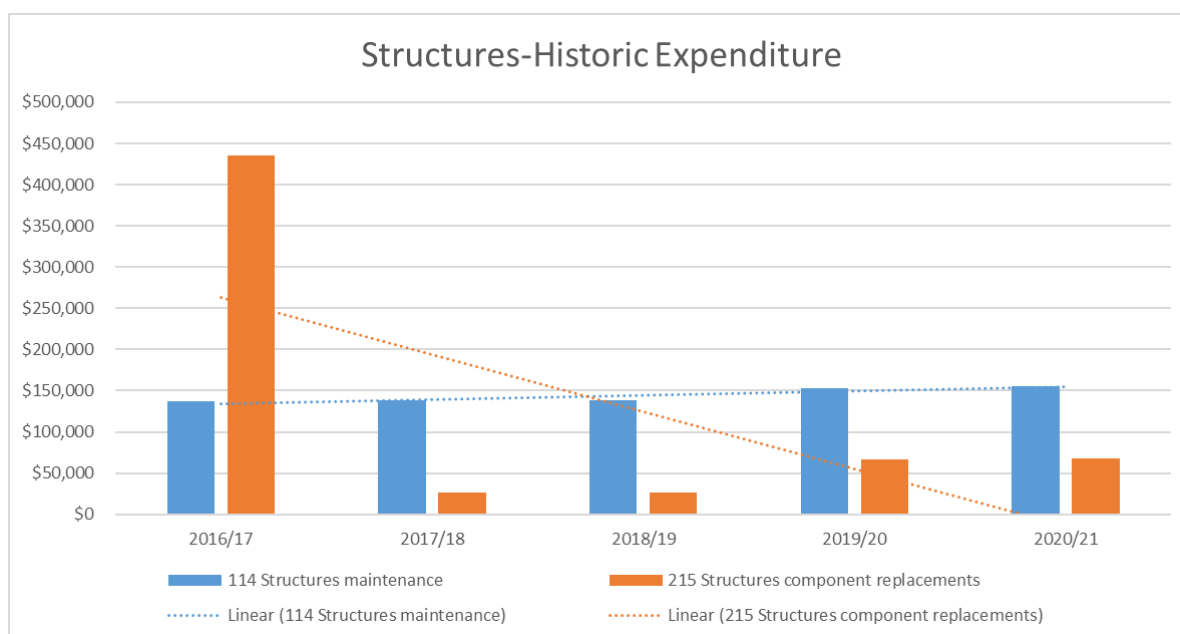
The levels of service for structures also resemble those agreed for sealed and unsealed roads.

Table 5.25: MPDC Core Values and Levels of Service

Asset	Core Value		
	Safety/	Quality	Accessibility
Bridges and Culverts	Bridges are safely designed and maintained of an appropriate quality.		Bridges are accessible to road users (minimum restrictions to width and weight)

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

Investment Levels



5.10.3 The Case for Change

Structures have a significant impact on the accessibility measures.

This relates to the loading capacity of the bridge. The overall impact of bridge restrictions (Class 1, 50MAX and HPMV) is not significant, but network resilience can be improved greatly with improvements to key bridges. This will be explored over the next three years. An allowance for structural strengthening or bridge replacements has not been made in the Low Cost/Low Risk category for the next 3 years but will be looked at for the following years.

5.10.4 Options

Despite their significant value, spending on bridges is relatively limited at **2% of expenditure**.

Options identified include:

- i. Status Quo/Minor tweaks
- ii. Improve bridges across the network
- iii. Implement a prioritised improvement programme focussing on ONRC level and network resilience.

5.10.5 Preferred Programme

The suggested approach is option iii.

A programme will be developed to achieve the desired result. 50MAX and HPMV bridge inspections will be a key part of this. Recently MPDC has adopted an improved approach to bridge inspections as part of a Waikato RATA initiative.

Work Programme and Investment Proposed:

The work programme proposed is similar to previous years. Improvement works may be undertaken under low risk low cost category.

This is indicated below.

Section 5: Lifecycle Management Plan

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29
Bridge Maintenance	156,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000	184,000
Renewals									
Bridge 196, Peria Road		50,000							
Upgrade crash ends of Barrier rails at bridges		12,000		12,000					
Bridge 213, Old Te Aroha Road			80,000						
Bridge 47, Morrinsville Tahuna Road				50,000					
Structural repairs					62,000	62,000	62,000	62,000	62,000
Total	72,000	62,000	80,000	62,000	62,000	62,000	62,000	62,000	62,000

5.10.6 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.10.7 Improvement Items

IP 5.101: Improve bridge knowledge and integrate improvements with network resilience.

5.11 Environmental Management

*Includes Maintenance Work Category 121 Environmental maintenance
The routine care and attention of the road corridor to maintain safety, aesthetic and environmental standards.
Renewal Work Category 221 Environmental Renewals
The renewal of existing environmental control facilities related to roads.*

5.11.1 Overview

Road berms are the grassed land strips within the road reserve that provide an area between the pavement and property for footpaths, signs, drains, street trees, public utilities and roading structures.

For the purposes of this AMP, vegetation control refers to berm maintenance to control of vegetation alongside carriageways and clearing vegetation from kerb and channel and footpaths.

Berm maintenance includes roadside mowing, weed spraying, removal of fallen trees, drain clearing, berm reinstatement, bank stability etc to improve safety, reduce fire risk, to protect Councils assets and maintain amenity values.

There is an increase in low impact urban design and stormwater treatment; this differs from traditional drainage but still involves assets that require management.

Rain garden have been included in a new subdivision off Banks Road Matamata. These also differ from soakholes as their purpose includes treatment.

As these are roading assets not stormwater, accordingly they are recorded in RAMM

5.11.2 Key Issues

Some of the key issues associated with environmental maintenance are:

Table 5.26: Key Issues



Key Issue	Strategies to Address Key Issues
Loss of amenity value	Review maintenance programme and audits
Spread of noxious weeds to neighbouring properties	Work with Regional Council and educate the public

Key Issue	Strategies to Address Key Issues
Impeded driver sight lines	Regular control of vegetation as required
Increase in low impact design of drainage facilities	Ensure specific maintenance plans are developed and recorded in the system.

5.11.3 Asset Description

Road berms relate to land within the road reserve that is not road pavement, or any other associated structure such as a wall or bridge. Being a land asset, the berms themselves do not require lifecycle management, which means asset age and condition of berms are not an issue for renewal or new works.

Vegetation control is not an asset to be developed or renewed. It is an activity related to operations and maintenance. Economic requirements relate to operations and maintenance activities.

5.11.4 Key Vegetation Risk

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roding.

Each component of the Roding Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP Outlines Risk.

Roding assets are adversely affected by vegetation growth.

The key risk associated with vegetation is identified below:

Table 5.27: Key Risks

Risk Descriptor	Net Risk	Management Option
Loss of amenity and visibility caused by roadside vegetation, spread of noxious weeds and debris (within the road reserve). Debris blocking stormwater.	4	Monitor and review maintenance contracts Monitor complaints and feedback

5.11.5 Operations & Maintenance Plan

Vegetation control is carried out under the road maintenance contract. The Contractor maintains both rural and urban areas. Regular audits are carried out by Kaimai Consultants to ensure that appropriate maintenance standards have been achieved. There is also an element of reaction maintenance that includes:

- Responding to public enquiries
- Removal of material that poses a significant risk

Deferred Maintenance

There is no deferred maintenance identified at this time.

5.11.6 Renewals

There are no Renewals identified at this time.

5.11.7 New Works

There are no New Works identified at this time.

5.11.8 Context

The Asset

- Litter Control rural
- Vege control - Rural (Mowing, spraying, Tree removal)
- Vegetation control - Urban
- environmental debris litter
- Pest Control (Unsubsidised)
- Stock Effluent Disposal

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

6.0 Environmental Management

Contributes to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.11.9 Level of Service

The levels of service for environmental management resemble those agreed for sealed and unsealed roads.

Table 5.28: MPDC Core Values and Levels of Services

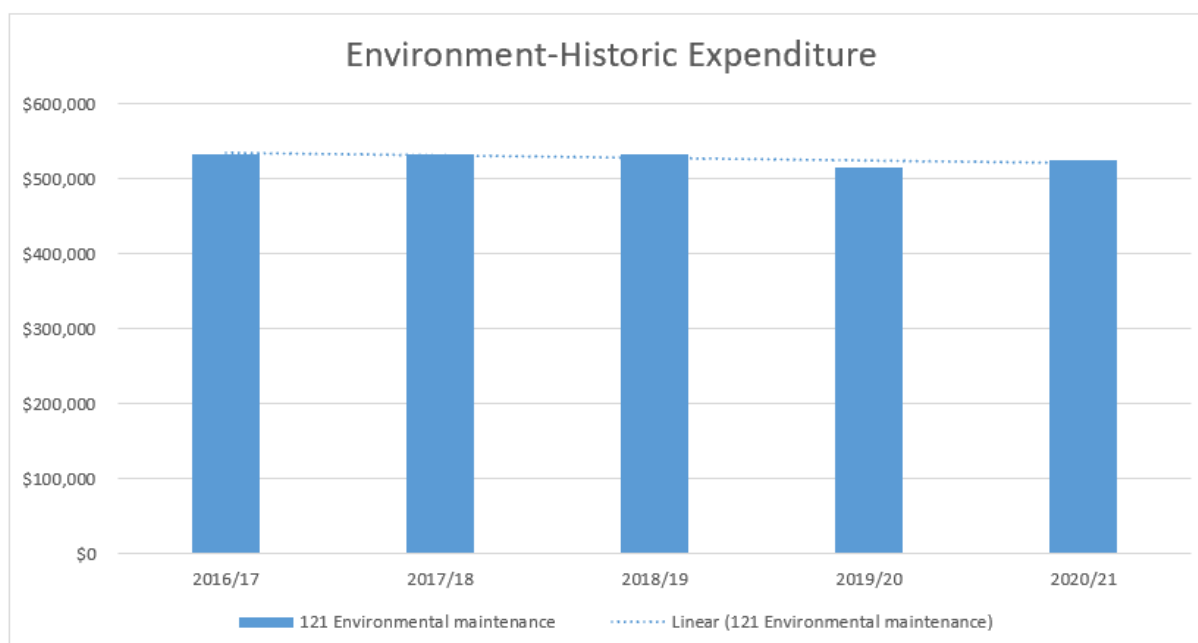
Asset	Core Value		
	Safety/	Quality	Accessibility
Sealed and Unsealed Roads	The roading network is designed and managed for safe use by all road users	Sealed and unsealed roads are maintained/renewed /upgraded to provide reliability and quality of ride for all road users	All weather access is available for users throughout the road (formed roads) network, as far as practical Appropriate road design allowing transport mode choices
Vegetation Management	Vegetation management enhances the quality, visual amenity and safety of the roading network Vegetation management does not adversely impact the health and safety of the community Employ good design in the planting and maintenance of vegetation in the road corridor.		

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

Investment Levels

Investment levels have been fairly uniform.

Table 5.29: Environment - Historic Expenditure



5.11.10 The Case for Change

Changes to freshwater management is necessitating a change to drainage. While this is discussed in the drainage section, there is an increasing role of the environmental

Section 5: Lifecycle Management Plan

management work category. Recent developments are favouring natural treatment methods and low impact designs

A small increase in the budget is proposed to assist in increasing actions associated with rain gardens and other assets.

5.11.11 Options

Spending on environmental maintenance represents **5%** of the programme value.

Options are limited.

5.11.12 Preferred Programme

A continuation of the programme of routine grading and re-sheeting is recommended.

Work Programme and Investment Proposed:

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.30: Investment Proposed

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
Environmental maintenance	525,300	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Renewals										
Environmental renewals	-	-	-	-	-	-	-	-	-	-

5.11.13 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.11.14 Improvement Items

IP 5.111: Set levels of service in line with ONRC.

IP 5.112: Undertake root-cause analysis to understand and quantify the interventions required.

IP 5.113: Review the contract specifications and basis of payments for the next maintenance contract.

5.12 Traffic Services Management

*Includes Maintenance Work Category 122 Traffic services maintenance
The routine care and attention of: road furniture, markings, and carriageway and lighting for pedestrians and crossings.*

*Work Category 222 Traffic services renewals
The renewal of existing: road furniture, lighting, signs and markings, and traffic management equipment and facilities.*

5.12.1 Street lighting overview

The purpose of street and amenity lighting is to provide agreed lighting levels in streets for the safe and efficient movement of vehicles, cyclists and pedestrians.

Council purchased street local lighting assets in the district from Power New Zealand in 2001. Some of the streetlights were in a neglected state with a large amount deferred maintenance being required. To improve this situation, Council tendered streetlighting maintenance and energy supply out and employed a specialist consultant, Power Solutions Ltd, to advise on how to best manage the asset. Over the last 7 years Council has:

- Replaced old inefficient lamp fittings
- Undertaken a bulk lamp replacement programme
- Carried out all of the deferred maintenance
- Installed new lights in some of the poorly lit areas of Matamata, Morrinsville and Te Aroha

This programme has reduced maintenance costs and outages and improved lighting in the three main urban areas of the District.

Council also has delegated authority to manage New Zealand Transport Agency lights on State Highways in urban areas.

5.12.2 Key Issues

Some of the key issues that affect streetlighting are:

Table 5.31: Key Issues

Key Issue	Strategies to Address Key Issues
The need to improve energy efficiency by replacing obsolescent and inefficient lanterns.	Replacement programme in place
Identify road crash sites where lighting is a factor and prioritising them for upgrading	Night-time inspections carried out by a lighting consultant
Rural flag lighting of intersections.	Night-time inspections carried out by a lighting consultant

5.12.3 Assumptions & Confidence Levels

Council's SLIM Database has been developed and improved over the last 5 years. It is therefore assumed that the inventory data held in the SLIM database is reliable and a high level of confidence can be attributed to this.

McKay Ltd, Council's streetlighting maintenance contractor, maintains this database while undertaking the following contracted physical works:

- Routine inspections
- Repair/replacement of faulty/failed components
- Identification, prioritisation and programming of improvements

Council tenders out the supply of electricity every 2 years. Currently, Genesis Energy Ltd is the electricity supplier. The electrical network owner is Powerco.



5.12.4 Asset Description

Street Lighting assets fall into the following categories:

Carriageway Lighting.

Where a streetlight is located to illuminate the road carriageway it is eligible for funding as defined in the New Zealand Transport Agency Planning & Investment Knowledge Base. The maintenance and renewal costs of this type of lighting light is eligible for NZTA financial assistance at a current rate of 51% as a carriageway light.

Amenity Lighting.

Lights specifically used to illuminate right-of-ways; footpaths and amenity areas are not eligible for New Zealand Transport Agency financial assistance. These are classified as amenity lights and are funded by Council.

Under Veranda or Display Lighting

Council does not own or maintain under veranda or display lighting. These are the responsibility of individual adjacent property owners.

Christmas lights are erected on town streetlighting poles annually (November/December) and are owned by the Matamata-Piako District Council.

Streetlighting components comprise of pole, bracket and light.

Table 5.32: Asset Information for Street Lighting (Valuation 2019)

Component	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (D)
Lights	2769				\$2,209,166.55	\$1,538,928.26	\$213,626.85
Poles	1815				\$4,093,075.47	\$2,667,090.34	\$81,864.72
Brackets	2677				\$1,716,840.18	\$847,755.17	\$68,673.61
TOTAL	-	-	-	-	\$8,019,082.20	\$5,053,773.77	\$364,165.18

Figure 5.15: GRC – Street Lighting

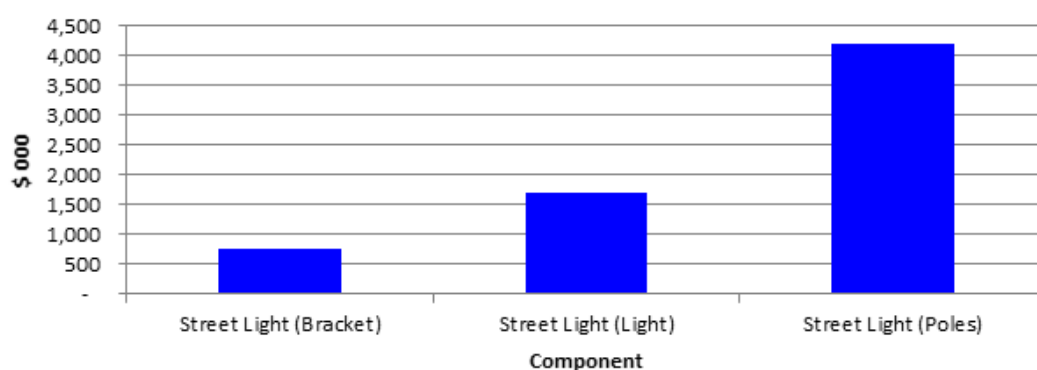
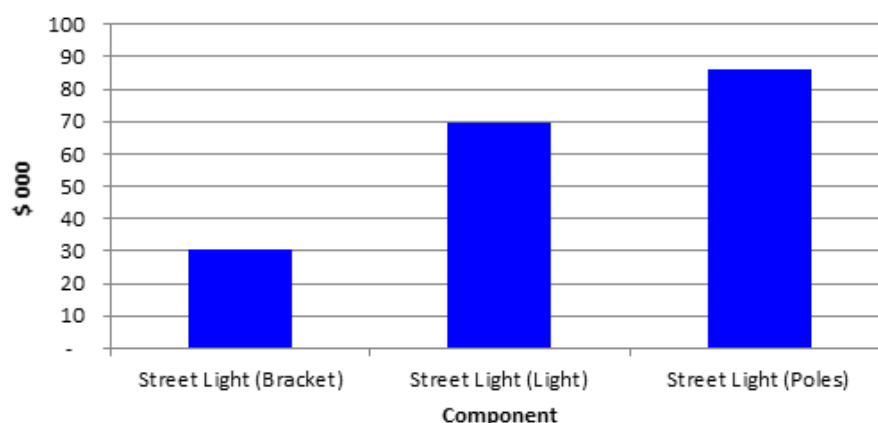


Figure 5.16 below shows the Annual Depreciation for street lighting assets.

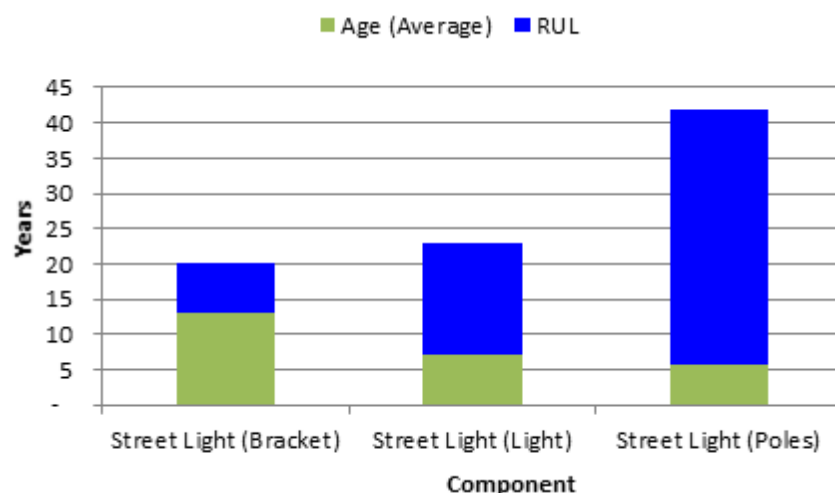
Figure 5.16: Annual Depreciation – Street Lighting



Asset Age

Figure 5.17 below compares the age with the average expected base life of each asset. Overall pole remaining useful life looks healthy but there are wooden poles in the network in the remaining third of their remaining useful lives. A plan for wooden pole and bracket replacement needs to be implemented within the next five years.

Figure 5.17: Average Age Vs Remaining Useful Life – Street Lighting



5.12.5 Condition Assessment & Results

The RAMM database is used to record all street light condition assessment, maintenance work and cost data. The latest survey of street light condition and performance was undertaken in 2009. The streetlights are progressively being reviewed and some inspections are planned to review the corrosiveness of some of our older streetlighting poles. Overall, the streetlights are in good condition.

Light Intensity

Surveys of lux light intensity levels in streets have been completed on some streets prior to and following upgrading work being carried out so changes in light levels can be confirmed.

Street lighting design is based on NZS 1158.1.3: 1997, which sets out the lighting intensity and other lighting requirements for various categories of roads with light levels being adjusted by spacing, lamp height and luminaires wattage.

Colour

Light colour is an important consideration in selecting light fittings. We are now using LED for all light replacements.

Mixture of lanterns causing colour variations on any one street should be avoided so as not to cause light pooling.

5.12.6 Key Street Lighting Risks

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roadway.

Each component of the Roadway Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Section 5: Lifecycle Management Plan

Street lighting assets are especially vulnerable to impact and weathering, which leads to deterioration and eventual asset failure.

Key risks associated with street lighting assets are identified below:

Table 5.33: Key Street Lighting Risks

Risk Descriptor	Net Risk	Management Option
Inadequate Intersection street lighting – <i>resulting in crashes.</i>	12	Identify high-risk intersections Review Levels of Service Review CRM resulting from poor or inadequate lighting Review position of streetlights (distance from carriageway edge) Review Street tree placement
Inadequate Carriageway/Amenity lighting resulting in crime or accidents (e.g. tripping and falling)	6	Match bulb types to appropriate areas Identify high-risk areas Review Levels of Service Review Quetzal resulting from poor or inadequate lighting
Damage to streetlights due to vandalism and or vehicle damage, resulting in crime, replacement costs and safety considerations	6	Review position of streetlights (distance from carriageway edge)

5.12.7 Operations & Maintenance Plan

Streetlighting and Amenity energy is supplied by Mercury Energy on a Time of Use basis, and charged on agreed monthly hours.

The main area where energy costs may be optimised in future is the replacement of inefficient fittings. Older inefficient MV fittings are being progressively replaced with more efficient LED luminaries.

Faults are monitored by monthly inspection and public reports.

The present maintenance and renewal contract is with McKay Ltd. The maintenance contract includes the following:

- Cleaning of diffusers to ensure full output from luminaries (lanterns)
- That all seals are effective
- That luminaries are securely fixed and supported
- That all columns are perpendicular and structural integrity is sound
- That all supports arms are securely anchored
- That all electrical fittings are installed correctly and are safe

All maintenance work must comply with the Electricity Act 1993 and Electricity Regulations 1993.

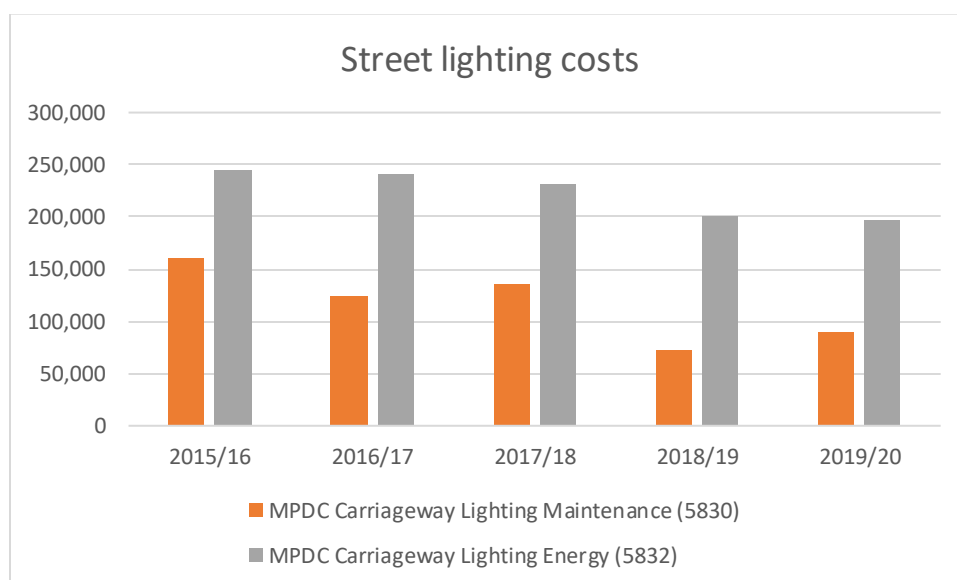


Deferred Maintenance

There are no significant items of deferred maintenance.

Historical Operational Expenditure

below summaries the operational expenditure for street lighting over the last 5 years.



5.12.8 Renewal Plan

Asset renewal is undertaken when a streetlight, or a component of a streetlight, has reached the end of its economic life. Renewal works involve the replacement of either the complete pole and lantern or individual components (e.g. lantern, bracket or pole).

The renewal programme involves upgrading lighting or the replacement of obsolescent fittings and is based on a number of factors:

Section 5: Lifecycle Management Plan

- Crash reduction studies where lighting is a factor
- Rural flag lighting
- Local crash or pedestrian safety concerns
- Programme for the bulk upgrading of obsolescent fittings
- Energy efficiencies

Council is working towards long term programming for the upgrading of lighting in Matamata-Piako. In order to achieve this, the following process needs to be completed:

- i. Determine the needs and priorities within the district.
- ii. Cost and prioritise needs.
- iii. Develop lighting upgrading programme for urban areas.

5.12.9 New (Capital) Works Plan

New assets are vested assets created from subdivisional development and by Council through programmed new works.

Approximately 10 new street lighting assets are acquired yearly from subdivisional lighting. Council new works centres around upgrading lighting on urban routes, which adds 10 new streetlights into the network each year.

The Development Manual sets out the requirements for new lights in subdivisional developments. Council staff keeps in close contact with New Zealand Transport Agency and their consultants to promote flag lighting at State Highway intersections.

Design Standards

The design standard for new works is AS/NZS 1158 and this is a requirement specified for both Council and subdivisional development. The design work for major works is referred to lighting suppliers who have computerised design services. Their proposals are then reviewed and site checked by the installation contractor and MPDC staff.

Electrical safety statutes, regulations and codes of practice apply to any works on the streetlighting activity.

5.12.10 Disposal Plan

Matamata-Piako District Council has plans to dispose of all luminaires that are not LED.

5.12.11 Signage overview

Overview

Road signs are a vital component of the roading environment. Road users rely on signs to assist them to travel the roading network in a safe and efficient manner. Signs are able to provide this assistance by giving the traveling public advance warning, hazards/obstruction identification, traffic movement regulation and provide information about road names, place names and distances.

A motor vehicle journey along any unfamiliar route will require the motorist to at least undertake some route planning. This is usually achieved by reference to maps or other publications. It is not the responsibility of the road controlling authority to provide road signs as the only source of guidance to the road user.

Road signs use should be limited to those signs that are legally required under Traffic Control Devices 2009 (Rule 54002) and those that the road controlling authority believe are essential for the safe and efficient movement of traffic. Transit's MOTSAM (TNZ Manual of Signs and Markings) specifies sign use and the types of symbols and wording to be used. The wording of all road signs is of a generic nature and no commercial advertising or trading names are permitted.

5.12.12 Key issues

Some of the key issues that affect signage assets are:

Table 5.34: Key Issues

Key Issue	Strategies to Address Key Issues
Vandalism	Continue with current inspection programme
The acquisition of new signs from developers needs to be quantified, to ensure that Council's data is kept up to date.	RAMM validation and data acceptance process in place

5.12.13 Assumptions & Confidence Levels

Sign data is held in RAMM. The data is considered to have a high level of confidence.

Whenever signs are replaced, the inventory needs to be updated. The Signs Contractor updates RAMM in "real time" using the GPS locating and internet-linking capabilities of pocket RAMM.

5.12.14 Asset Description

MPDC manage 6,492 signs across the network with a replacement value of \$1,423,118.15. Information signs include 814 fingerboards.

Table 5.35: Asset Information for Signs (2019 Valuation)

Signs

Component	Length	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (D)
G-ADS3	-	10	7	4	3	\$6,765.20	\$2,871.69	\$759.36
G-ADS4	-	7	7	4	3	\$6,723.50	\$2,532.43	\$785.94

Section 5: Lifecycle Management Plan

Component	Length	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (D)
G-ADS5	-	1	7	1	6	\$1,183.12	\$1,014.10	\$169.02
G-IDS1	-	49	7	4	3	\$23,264.71	\$7,612.00	\$2,652.96
G-IDS2	-	1	7	3	4	\$383.47	\$219.12	\$54.78
H01	-	2549	7	4	3	\$906,781.26	\$339,759.25	\$107,067.80
H04	-	1	7	5	2	\$115.41	\$13.58	\$6.79
H07	-	804	7	4	3	\$78,101.47	\$26,001.13	\$8,327.13
I06 & I30 & I42	-	325	7	5	2	\$45,315.96	\$11,094.79	\$4,057.71
I27	-	3	7	4	3	\$3,587.49	\$1,133.04	\$395.69
I32	-	9	7	5	2	\$5,593.86	\$1,298.80	\$516.21
I44	-	12	7	4	3	\$2,718.48	\$971.74	\$324.04
I60	-	7	7	5	2	\$1,348.48	\$218.71	\$123.11
MS	-	53	7	4	3	\$9,125.54	\$2,903.74	\$996.87
PW1	-	71	7	4	3	\$12,805.56	\$4,274.85	\$1,351.65
PW10	-	2	7	5	2	\$325.32	\$51.67	\$25.84
PW11	-	48	7	4	3	\$8,068.80	\$2,397.02	\$862.29
PW13 & PW13.2 & PW16	-	47	7	4	3	\$7,900.70	\$2,276.92	\$814.27
PW14 & PW15	-	66	7	4	3	\$22,040.70	\$7,622.00	\$2,021.90
PW16 & PW21 & PW22 & PW23	-	34	7	4	3	\$5,530.44	\$1,656.50	\$619.17
PW17	-	226	7	5	2	\$40,867.58	\$10,674.88	\$4,148.95
PW18 & PW20	-	45	7	5	2	\$7,564.50	\$1,639.82	\$759.94
PW2	-	88	7	5	2	\$17,952.88	\$5,027.80	\$1,887.17
PW24 & PW26	-	31	7	5	2	\$4,253.82	\$1,106.29	\$445.32
PW25	-	293	7	5	2	\$41,532.75	\$9,619.10	\$4,040.28
PW29 & PW31 & PW34 & PW35 & PW43	-	137	7	4	3	\$22,284.42	\$7,432.64	\$2,461.69
PW32	-	60	7	4	3	\$10,222.80	\$3,221.20	\$1,135.97
PW33	-	7	7	4	3	\$1,526.63	\$648.78	\$199.79
PW36 & PW37 & PW38 & PW40 & PW41 & PW44 & RG7	-	102	7	4	3	\$17,146.20	\$5,319.35	\$1,795.05
PW4 & PW5	-	3	7	5	2	\$512.49	\$68.67	\$34.34
PW49 & PW50	-	23	7	4	3	\$3,448.39	\$1,160.87	\$398.39
PW55 & PW7	-	59	7	5	2	\$11,553.38	\$3,277.82	\$1,289.10
PW8 & PW9 & RG17	-	42	7	5	2	\$6,678.84	\$1,698.71	\$701.70
RG1 & RG1-70	-	237	7	4	3	\$65,754.62	\$24,677.61	\$7,383.10
RG1-50	-	30	7	3	4	\$7,565.10	\$3,690.65	\$962.70
RG17.1	-	216	7	3	4	\$30,229.20	\$13,853.32	\$3,557.71
RG19	-	45	7	4	3	\$5,990.85	\$1,865.87	\$685.67
RG19.1	-	36	7	5	2	\$5,768.28	\$1,437.98	\$627.43
RG2	-	20	7	4	3	\$4,334.60	\$1,896.79	\$576.86
RG20	-	36	7	5	2	\$5,267.88	\$1,476.32	\$591.75
RG26 & RP4 & RP5 & RP6 & H15 & R57	-	134	7	5	2	\$22,954.20	\$6,343.73	\$2,413.38
RG5 & RG6 & RG9	-	620	7	4	3	\$115,506.00	\$37,312.74	\$12,334.62
RH5 & RP2 & RP3.5	-	10	7	3	4	\$736.10	\$408.94	\$83.57
RH6	-	5	7	5	2	\$797.30	\$126.10	\$74.45
RP1.1 & RP7 & RP7.1	-	91	7	4	3	\$9,826.18	\$3,011.00	\$873.16
W50C & W86 & W87	-	30	7	4	3	\$6,501.90	\$2,545.32	\$777.25
Total		6725				\$1,614,456.36	\$565,465.38	\$182,171.87

Replacement Cost & Annual Depreciation

Figure 5.18 and Figure 5.19 below shows the GRC and annual depreciation for signs. Warning signs account for 35% of the GRC with a value of \$441,592.

Figure 5.18: GRC - Signage

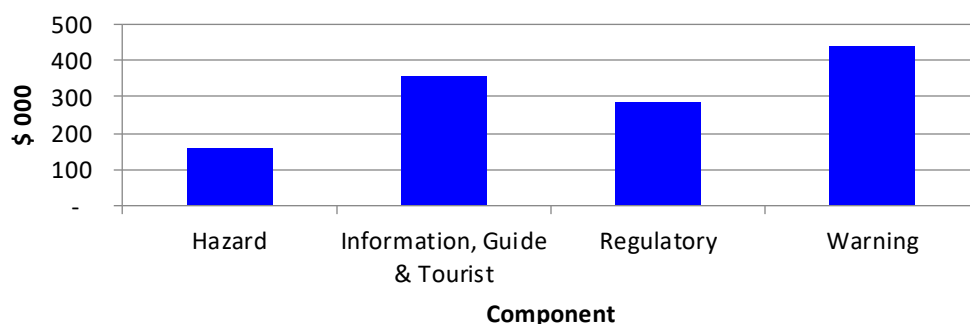
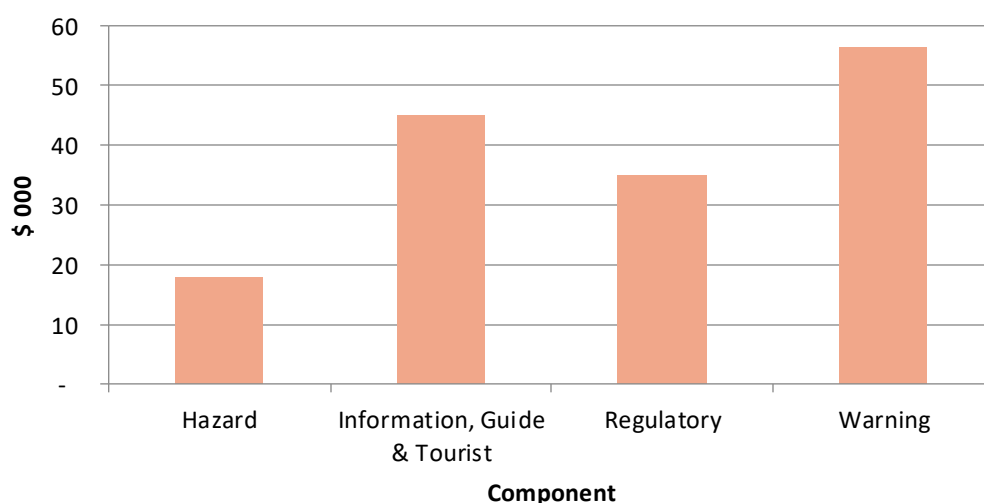


Figure 5.19: Annual Depreciation - Signage

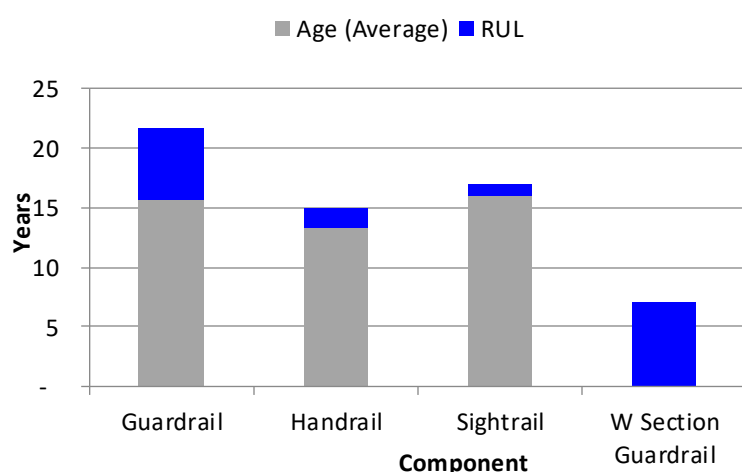


Asset Age

Expected lives of signs are relatively short, which accounts for its relatively high annual depreciation. As sign replacement most often occurs due to vandalism or accident, a case to fund replacement as an expensed maintenance cost may find some financial favour.

The graph below compares the age with the average expected base life of each asset.

Figure 5.20: Average Age Vs Remaining Useful Life - Signage



Modern signs are manufactured from more durable materials and, according to the manufacture, should last a minimum of ten years.

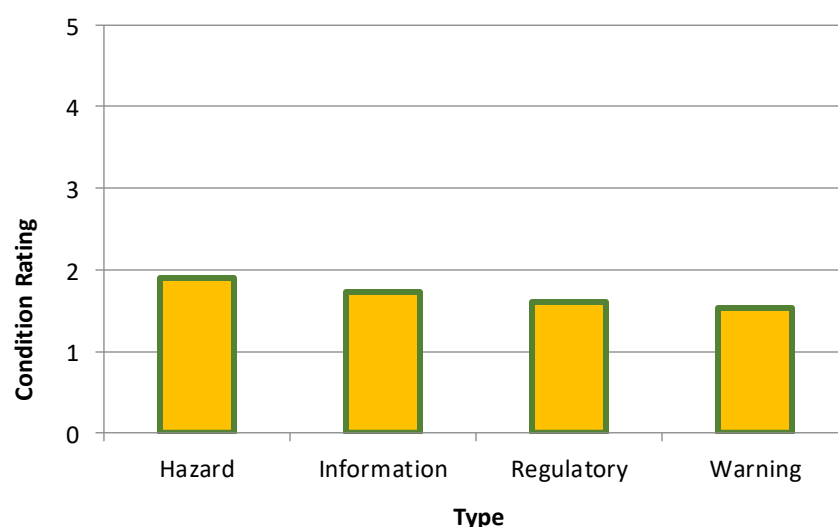
5.12.15 Condition Assessment & Results

According to information in RAMM, the overall condition of signs is considered to be good. This is achieved by six monthly night time inspections; regular informal inspections of signs by Council staff and the Contractor. Where any faulty or ineffective signs are found they are then replaced, where necessary. This is particularly the case for street nameplates, which are damaged by vehicles, are subjected to vandalised or over time the colour fades and become hard to read.

With the exception of those signs damaged by vehicles/vandals, old signs are replaced as they become faded to read effectively.

The graph below shows that average condition of signs is good.

Figure 5.21: Average Condition - Signage



Note: 1 – Excellent, 5 – Very Poor

5.12.16 Key Signage Risk

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roding.

Each component of the Roding Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Signage assets are especially vulnerable to impact and vandalism.

The key risk associated with signage assets is indicated below:

Table 5.36: Key Risks for Signage

Risk Descriptor	Net Risk	Management Option
Inadequate Signage/Markings 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.	8	<p>Monitor and improve current practices</p> <p>Ensure that safety measures/ temporary traffic measures are implemented as part of all roadworks</p> <p>Review of standards (MOTSAM, NZ Transport Agency specs etc), and audit of controls and control works. Ongoing Crash reduction studies (in conjunction with police, NZ Transport Agency)</p> <p>Continue informal safety audits managed in-house</p>

5.12.17 Operations & Maintenance Plan

The road signage maintenance and renewal contract is managed by Kaimai Consultants.

The Signage Maintenance Contract requires the Contractor to:

- Inspect the network on the timeframes specified in the contract, which are governed by road hierarchy.
- Carry out repairs and maintenance as part of their inspections in accordance with specified response times.
- Submit a programme of renewals to the Engineer for approval.
- Submit details of work completed.

All signs are designed and located and maintained according to the following Standards:

- Transit NZ “Manual of Traffic Signs and Markings – (MOTSAM) Part 1: Traffic Signs”
- TNZ Specification M/14 1991: Edge Marker Posts
- TNZ Specification P/16 1993: Installation of Edge Marker Posts
- TNZ 5414:1997 “Specification for Construction of Traffic Signs”
- Land Transport New Zealand RTS 2: “Guidelines for Street Name Signs”
- Land Transport New Zealand RTS 1: “Guidelines for the Implementation of Traffic Control at Cross Roads”

Vandalism continues to be a major maintenance cost.

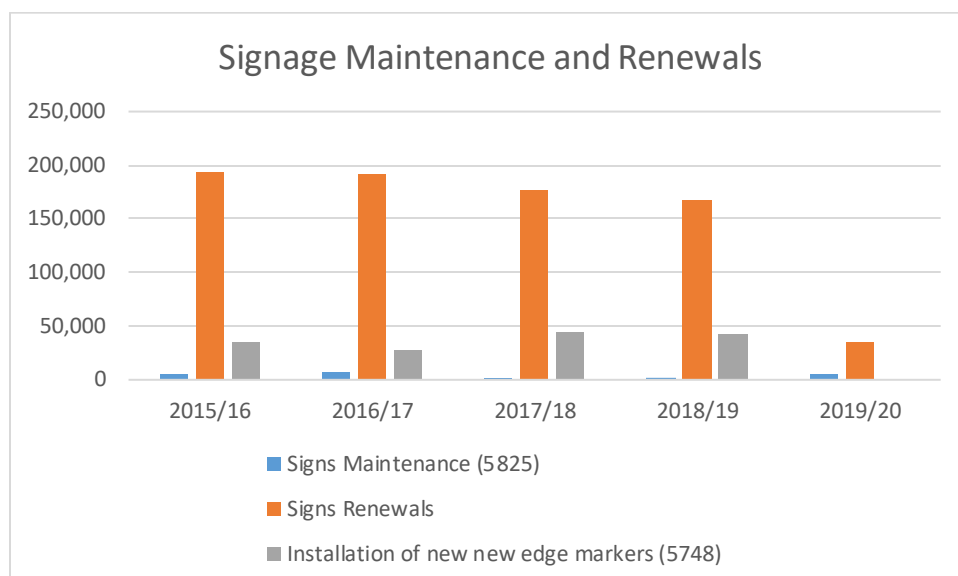
Deferred Maintenance

There is no deferred maintenance at this time.

Historical Operational Expenditure

Figure 5.22 below summaries the maintenance expenditure for signage over the last 5 years.

Figure 5.22: Historical Maintenance Expenditure - Signage



5.12.18 Renewal Plan

The majority of renewals are typically reactive in relation to damage caused by vandalism or other factors.

Deferred Renewals

The renewal of Give Way signs at roundabouts has been identified. However the current strategy in place is to replace these signs as they fail.

5.12.19 New (Capital) Works Plan

Several planned and unplanned programmes are operating and include:

- Crash reduction studies/safety programmes (planned)
- New subdivisional roading (minor – unplanned and vested)
- Intersection control upgrading (planned)
- School zones – installation of 1 electronic sign per annum (planned)

Requests for additional signs are received regularly and are assessed on a needs and safety basis.

5.12.20 Disposal Plan

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

5.12.21 Road Marking

Overview

Section 5: Lifecycle Management Plan

The purpose of road marking is to delineate road pavement as well as footpath and service lanes to indicate road use restrictions and to guide and regulate traffic movements, in conjunction with signage.

Maintenance and renewal work is undertaken by a separate road-marking contract.

5.12.22 Key Issues

Some of the key issues that affect marking assets are as follows:

Table 5.37: Key Issues for Road Markings

Key Issue	Strategies to Address Key Issues
Upgrading of markings to meet current standards such as RTS 3	Complete works in accordance with requirements of Traffic Control Devices Rule

5.12.23 Assumptions & Confidence Levels

It is assumed that the inventory in RAMM is complete and accurate. It therefore places a high level of confidence in this data.



5.12.24 Asset Data

Matamata – Piako District Council has approximately 425 km of carriageways with marked centrelines. The total replacement value for marking is \$236,709.

Marking also include intersection and non-intersection lines, symbols and raised reflectorised pavement markers.

Most of the marking asset is not depreciated as it is renewed at least annually, therefore asset age and condition of these assets is not an issue.

RRPM's are given a 5-year life, mainly for valuation purposes. The marking asset comprises as follows Figure 5.20 below.

Table 5.38: Road Marking Information

Non intersection markings	Intersection markings	Miscellaneous markings
Centre lines and lane lines	Intersection Controls	Messages and symbols
Edge lines and shoulder markings	Lane arrows	Pedestrian crossings
No overtaking/passing lines	Limit/continuity lines	Railway level crossings
Median markings	Right turn bays	Fire hydrants
Cycle lanes	Intersection continuity lines	Raised pavement markers
No Stopping	Painted islands	Parking areas
		Passing bays

Raised Reflectorised Pavement Markers (RRPM)

RRPM's are maintained under the Roothing Maintenance contract. They have been installed on many arterial and collector roads, especially in areas with substantial volumes of traffic, to improve safety by highlighting traffic lanes.

Installation has also been generated through the identification of safety related issues.

Table 5.39: Asset Information for Road Markings (2019 Valuation)

Valuation Component	Sub Component	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (D)
Marking	Marking	\$262,116	\$262,116	\$23,902
	Total	\$262,116	\$262,116	\$23,902

5.12.25 Key Road Marking Risk

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roothing.

Each component of the Roothing Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Road Marking assets are especially vulnerable to impact.

Key risks associated with road marking assets are identified below:

Table 5.40: Key Risks for Signage

Risk Descriptor	Net Risk	Management Option
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Section 5: Lifecycle Management Plan

Inadequate Signage/ Markings 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. (Note: included also as a Signage risk)	8	<p>Monitor and improve current practices</p> <p>Ensure that safety measures/ temporary traffic measures are implemented as part of all roadworks</p> <p>Review of standards (MOTSAM, NZ Transport Agency specs etc), and audit of controls and control works. Ongoing Crash reduction studies (in conjunction with police, NZ Transport Agency)</p> <p>Continue informal safety audits managed in-house</p>
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5.12.26 Maintenance & Renewal Plan

Marking maintenance and renewal is carried out under the Council's Roadmarking Contract, which specifies the standard required.

Intersections of local roads with State Highways are maintained by the State Highway Contractor and repainted every year.

Marking inspections are undertaken by Kaimai Consultants that determine the works required as part of network audits.

Markings are set out or maintained to the following standards:

- Transit NZ "Manual of Traffic Signs and Markings (MOTSAM) – Part II: Markings
- TNZ Specification M/7 1993: Roadmarking Paints
- TNZ Specification M/12 1986: Raised Pavement Markers
- TNZ Specification B/12 1995: Pavement Marking
- TNZ Specification P/14 1995: Installation of Raised Pavement Markers
- Land Transport New Zealand RTS 5: "Guidelines for Rural Roadmarking and Delineation"
- Land Transport New Zealand RTS 4: "Guidelines for Flush Medians"

Deferred Maintenance & Renewals

There is no deferred maintenance or renewals identified at this time.

5.12.27 Operations & Maintenance Plan

5.12.28 Renewals

5.12.29 New Works

New markings are installed on the basis of the following:

- Crash reduction studies or other safety related issues
- New standards
- Road widening or seal extension

Section 5: Lifecycle Management Plan

- New products becoming available to improve the life and effectiveness of markings
- Increase in traffic volumes

As a result of safety audits, inspections, traffic growth and crash reduction studies. MPDC instigated improvements to signage and road marking. The improved signage and road marking project has been completed. Therefore the actual amount of new road markings is likely to decrease and renewals increase. The increased use of long life materials could also affect the overall cost and have an effect on remarking frequencies over time.

5.12.30 Context

The Asset

The details of the Assets are under the specific asset classes above.

- Railings
- Street Lighting
- Road Marking
- Road Signage

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

7.0 Traffic Services

Contributes to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.12.31 Level of Service

Table 5.41: MPDC Core Values and Levels of Service

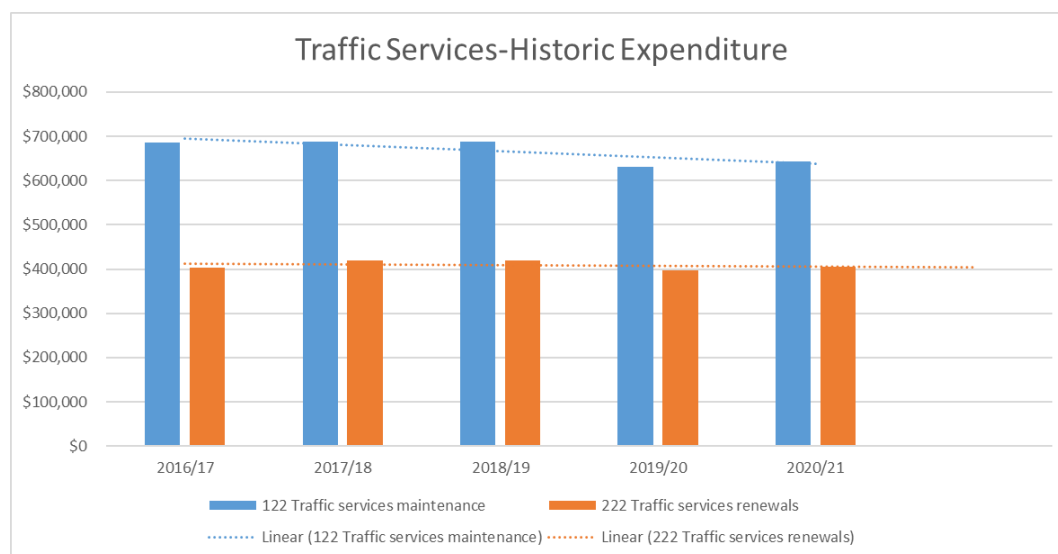
Asset	Core Value		
	Safety	Quality	Accessibility
Street Lighting	Street lighting is maintained and developed to provide a <i>safe, quality</i> roading network		
Signs and Markings	Road signage and markings provide clear guidance and route information for road users.		

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

Investment Levels

Trend

Table: Traffic Services-Historic Expenditure



Traffic Services maintenance and renewals are also prioritised in order of ONRC classifications.

5.12.32 The Case for Change

With the installation of LED lamps throughout the district there are going to be reduced energy, maintenance and renewal costs for the Street lighting. With the increase of electronic signs and making more use of additional signage and markings for some of the Road to Zero and safety programme there will be an increase in ongoing maintenance to maintain these new assets.

5.12.33 Options

Traffic Services provide a large contribution to the network being safe for the users:

Options identified include:

- i. Status Quo/Minor tweaks
- ii. Reduction and more of a prioritised approach to maintenance of Signs and Markings across the district.
- iii. An increase in Levels of service for the traffic services across the district.

5.12.34 Preferred Programme

The suggested programme is to continue with Status Quo and some minor tweaks to the current programme.

Work Programme and Investment Proposed:

The suggested approach is option i.

Investment proposed:

Section 5: Lifecycle Management Plan

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.42: Investment Proposed – Traffic Services

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29
Rails	13,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Lighting maintenance	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000
Edge markers	30,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Raised Pavement Markers	25,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Signs Maintenance	20,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Pavement Marking	270,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000
Lighting Energy	200,000	153,300	153,300	153,300	153,300	153,300	153,300	153,300	153,300
Total	643,000	643,300	643,300	643,300	643,300	643,300	643,300	643,300	643,300
Renewals									
Signs Renewals	175,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Markings Renewals	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Lighting Renewals	72,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Installation of new edge markers	40,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Total	307,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000

5.12.35 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.12.36 Improvement Items

IP 5.121: To continue monitoring to ensure the levels of service are in line with ONRC.

IP 5.122: To ensure all lights are LED within the district and identify key areas of lighting improvements required to improve the lighting standard. Progressively address this over time.

5.13 Rail Level Crossing Warning Devices Maintenance

Includes Maintenance Work Category 131 Rail Level crossing warning devices maintenance

*Work Category 222 Traffic services renewals
The renewal of existing: road furniture, lighting, signs and markings, and traffic management equipment and facilities.*

5.13.1 Context

The Asset

18 Vehicular rail level crossings (6 Rail over road and 12 Road over rail)

Note: Kiwi Rail fund Rail over road only

- 2 Pedestrian rail level crossings
- Lorne Street, Morrinsville
 - Tainui Street, Matamata

Road over rail crossings
Morrinsville – Walton Road, Morrinsville
Pohlen Road, Matamata
Puketutu Road, Matamata
Tainui Street, Matamata
Hawes Street, Waharoa
Avenue Road South, Morrinsville
Cureton Street, Morrinsville
Lorne Street, Matamata
Hutchinson Road, Morrinsville
Hopkins Road, Matamata
Kiwitahi Railway Road, Morrinsville
Kiwitahi Station Road, Morrinsville

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

7.0 Traffic Service Management

Contribution to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.13.2 Level of Service

The core values established through the AMP are useful improving a user focus into levels of service.

Table: Core Values – Traffic Services

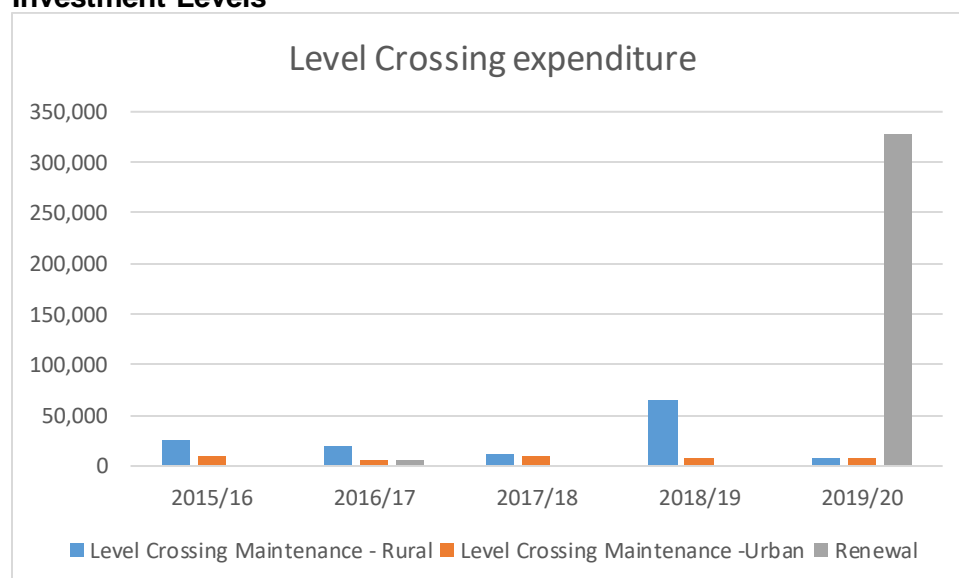
Asset	Core Value		
	Safety	Quality	Accessibility
Street Lighting	Street lighting is maintained and developed to provide a <i>safe, quality</i> road network		
Signs and Markings	Road signage and markings provide clear guidance and route information for road users.		

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met

5.13.3 The Case for Change

The works associated with Level Crossings is mainly determined by KiwiRail and the works is not programmed by Councils. With an increase around Health and Safety, not only the way the crossings are configured and the importance of having signage and markings appropriate, it is also becoming more stringent to do any work on our assets near rail crossings.

Investment Levels



5.13.4 Options

- i. Status Quo

5.13.5 Preferred Programme

The preferred programme is to continue with the status quo.

Work Programme and Investment Proposed:

Section 5: Lifecycle Management Plan

The work programme proposed is similar to previous years.

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024-31 per annum
Level Crossing Maintenance	36,400	96,400	96,400	36,400	36,400
Renewals					
	-	-	-	-	-

Investment proposed:

Operations	2017/18 (actual)	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2015/16	2016/17	2017/18
Level Crossing Warning Devices	25,633	35,264	35,264	35,264	35,264	35,264	35,264	35,264	35,264	35,264	35,264

5.13.6 Risks

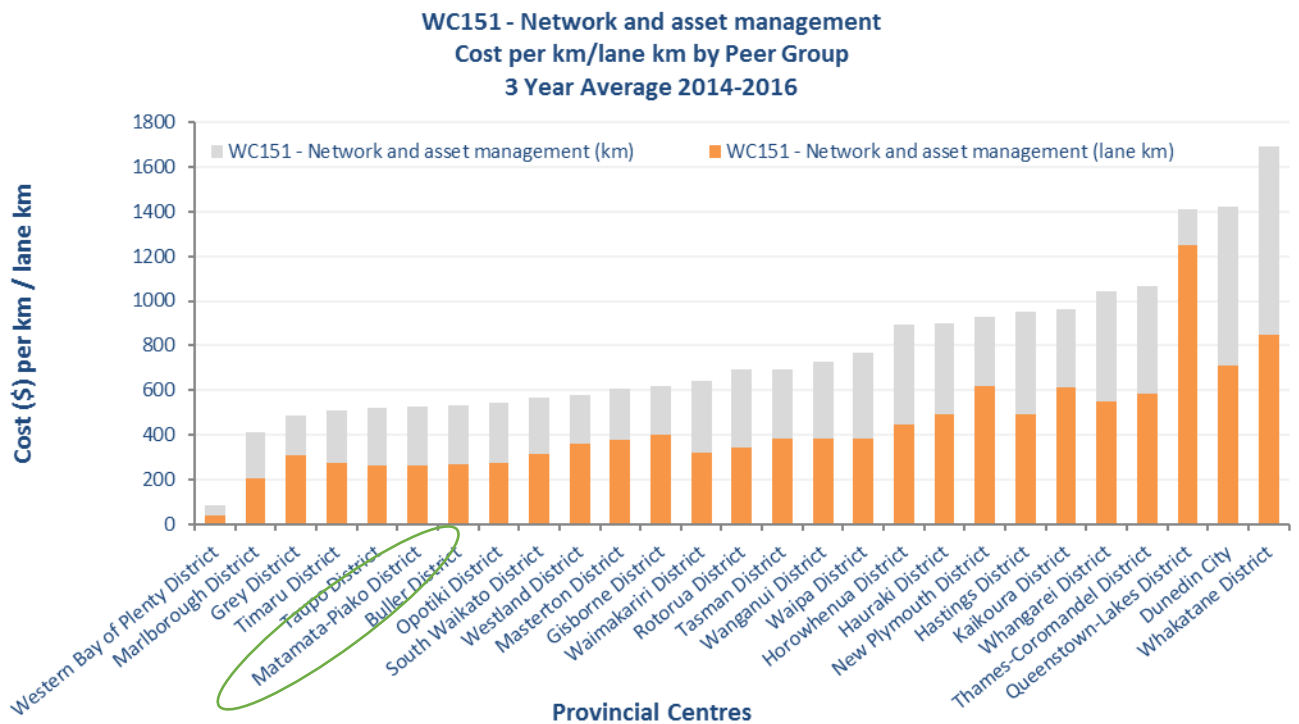
Council has little control over the programme as Kiwirail determines the priorities. Improved partnering is the best approach to address this concern.

5.13.7 Improvement Items

No improvements identified apart from working closer together with KiwiRail and having more input into their programme of works.

5.14 Network & Asset Management

Includes Work Category 151 Quality Plan – Ramm – Professional Services including Streetlighting Quality Plan
 This work category provides for the general management and control of the road network and management of road assets. It includes the management of the road network, traffic and condition surveys and implementation and operation of road asset management systems.



Refer to the Business Case section 12 For details of the programme

5.15 Minor Improvements has transitioned into Low Cost Low Risk

Previously when Council was preparing its annual capital works programme for the following 3 year period, specific provision were made for minor improvement works this will now be captured in Low Cost Low Risk, which includes:

- Visibility improvements
- School electronic signage
- Signage (over \$20k)
- Improved streetlighting (rural flag lighting)
- Road curvature realignment
- Road widening
- The funding of which is outlined in New Zealand Transport Agency's Planning & Investment Knowledge Base.

All Low Cost Low Risk work is analysed and recorded in the deficiency database which prioritises the work and provides best value for money. Each years programme is made up of individual safety projects, one speed threshold, one school electronic sign and some guard railing.

5.15.1 New (Capital) Works Plan

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

Section 4 Growth and Demand has details on the all the Growth projects. These are largely funded through a mixture of Development Contributions and Unsubsidised Capital. The list is of the work required to be undertaken over the next 30 years. More detail on funding sources for these projects is outlined in Section 7 Financials.

5.16 Low Cost/Low Risk

Work Category 341

This work category now allows for Improvements less than \$ 2,000,000 to address safety concerns to enhance safe travel.

This includes realignments and benching of corners to improve sight distance; removal of vertical curves by cut or fill; and bridge improvements e.g. widening or improved approaches or exits.

With the increase in project size to \$2M there greater scope to complete project such and intersection improvements and bridge works which were previously of too higher value.

The programme varies each year but generally the aim is to complete the following priorities:

The roading improvements template has been included in the TIO application.

Activity Class	(Total cost \$' 2021/22	(Total cost \$'s) 2022/23	(Total cost \$'s) 2023/24
Road to Zero	483,000	530,000	532,500
Walking and Cycling	150,000	150,000	125,000

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Local Road Improvements	267,000	220,000	242,500
PT Infrastructure	35,000	35,000	0
Grand Total	935,000	935,000	900,000

Refer to the Business Case for more details on the individual projects. Section 10.

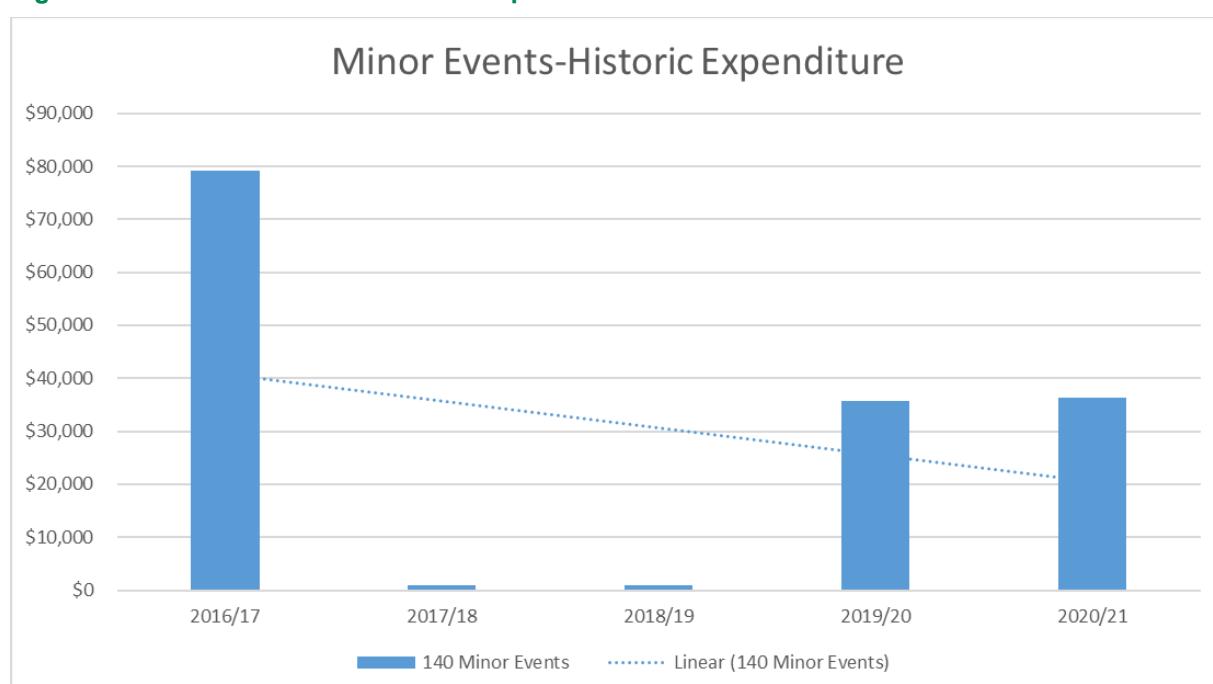
5.17 Minor Events.

Work Category 140

This work category (141) is to ensure some of the maintenance budget is available for unplanned events (e.g. storm event). This budget is to allow for the response to minor, short duration, natural events that reduce service levels on part of the transport network.

For events that do not meet the criteria for funding as emergency works (work category 140).

Figure 5.23: Minor Events – Historic Expenditure



Preferred Programme

A continuation of the programme of routine grading and re-sheeting is recommended.

Work Programme and Investment Proposed:

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.43: Investment Proposed

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
Minor events	35,000	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400	36,400

5.18 Transport Planning

*Includes Maintenance Work Category 003 Activity management planning
This work category provides for the preparation and improvement of land transport activity management plans, regional public transport plans, road safety action plans and procurement strategies.*

5.18.1 Road Safety Action Plan

This work category enables the development and implementation of activities that address the safe use of the land transport network.

MPDC is part of the East Waikato cluster with a Road Safety Coordinator serving Thames Coromandel, Hauraki and MPDC. The funding for this is administered through Thames Coromandel District Council. MPDC contributes \$40,000 per year (Local Share) towards the programme.

Safety is discussed in section 1.2 of this PBC, and the key items identified for action through the Road safety Action plan include:

- Cycling – education course -
- Fatigue – workshop with businesses, billboards/media campaign,
- Speed – billboard/media campaign run along Stay Alive 25 campaign.
- Alcohol – Plan B4 U Party complain continuation
- Restraints – expanding last restrain programme and working with pre-schools and schools and the road safety bear.

A copy of the Road Safety Action is appended to this document.

Preferred Programme

An evaluation report on the East Waikato Road Safety Programme 2019/20 was completed in June 2020.

The East Waikato Road Safety Programme (EWRSP) aims to encourage safe road use in order to reduce road crashes, fatalities and serious injuries in East Waikato.

The target areas for the EWRSP were:

- Older Drivers;
- Young Drivers;
- Motorcycle Riders;
- Cyclists;
- Fatigue;
- Speed;

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- Roads and Roadsides;
- Restraints;
- and Drugs and Alcohol.

Each target area has different activities, audiences, aims and/or objectives. Some are educational workshops others are awareness raising, promotion or social marketing campaigns; all include working with road safety partners and supporting other programmes and activities. Evaluation methods include workshop evaluation forms, post workshop surveys, road safety partners' data, previous evaluations and media analysis. The following summarises key findings, followed by overall conclusions and recommendations, and an extended summary of findings by target area.

Overall findings of the evaluations of the various road safety programmes indicate the following:

- The workshops (i.e. Driver Refresher, Fatigue Refresher, Cycle Skills, Restraints) are valued by participants, update their knowledge and provide useful, practical strategies.
- There is evidence that participants put road safety strategies into practice, as a result of the workshops.
- The programmes provided by other road safety partners, that are being supported by the East Waikato Road Safety Co-ordinator (RSC) (i.e. Ruben, Ride Forever) are established programmes with evidence that they have a positive impact on safe road use.
- There is evidence that the various media and promotional campaigns (i.e. Stay Alive on 25, Know the Code Before you Hit the Road, Be prepared, Plan B4 U Party) are being promoted and that people are aware of the campaigns.
- The proposed plan for 2021-2024 to reduce the number of campaigns will enable the EWRSP to be more focused, co-ordinated and manageable.

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024 onwards
Minor events	30,000	40,000	40,000	40,000	40,000

5.18.2 Activity Management Plan

This work category enables the further development and implementation of the Activity Management Plan. There are a number of Improvement Plan items that have been identified and some of which qualify for funding in this category. It is also proposed to continue keeping our Activity Management Plan up to date and update on a quarterly basis instead of leaving the document until the next Long Term Plan needs to be developed.

Refer to Section 8 to review what has been identified in our Improvement Plan.

5.19 Footpaths and Cycleways

Includes Maintenance and Renewals Work Category 125 Footpath Maintenance
This work category provides for the maintenance and renewal of public footpaths and facilities associated with public footpaths, such as pedestrian network connections, including stairs, alleyways and off-road connections.
This includes:

- *footpath patching and pothole repairs*
- *maintenance of associated facilities including signs, lighting, and hand rails/guard rails*
- *footpath renewals, such as resurfacing or reconstruction.*

5.19.1 Overview

The purpose of footpaths and pedestrian ways is to provide a safe, convenient and defined means for pedestrian movement alongside the linking roadways and public space.

Footpaths

Urban Area	Length (m)	Area (m2)
Matamata	85,604	125,646
Morrinsville	71,329	110,042
Te Aroha	50,862	77,618
Total	207,795	313,306

Cycleways

Matamata – Piako District Council currently owns one cycleway. It is approximately 500m long, is gravel surfaced and is located adjacent to Stanley Ave in Te Aroha.

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The rail trail, recently extended from Te outside of Councils transportation Council involvement. However, it does to move around the district.

There a number of projects identified Trail and increase the Economic mainly recreational and therefore Business, Innovation and Employment.

5.19.2 Key Issues

Some of the key lifecycle management

Providing key connections to This includes paths that and hospitals.

Linkages to growth areas are a priority, and integration with parks and open space is favoured.

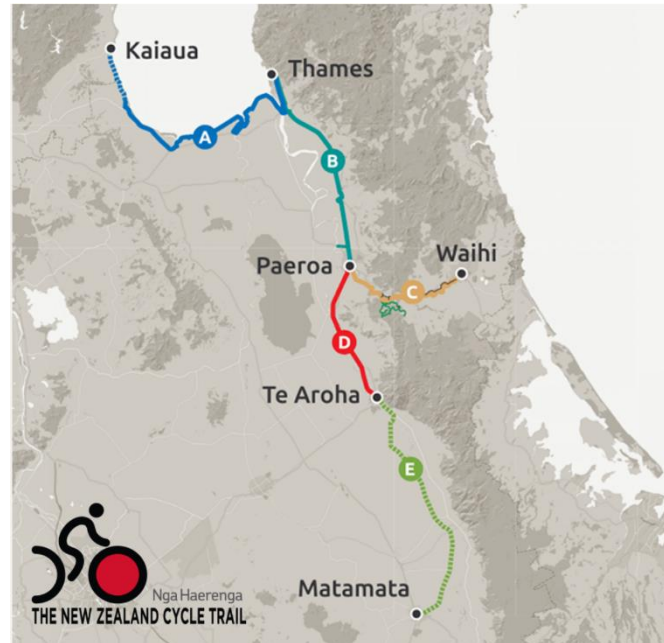
A community engagement process is included to ensure a successful result is achieved.

A prioritised capital programme is included in Low Cost Low Risk section

Root damage Root damage will remain an issue. As part of the maintenance contract, it is finding the most appropriate way to maintain the asset whilst keeping the amenity value provided by the tree

Development of a Forward Works Programme and replacement strategy

Develop a model for condition based footpath renewals, including an appropriate intervention level



Aroha to Matamata is a recreational trail and network. It is managed by a trust which includes provide opportunities for pedestrians and cyclists

over the next 30 years to increase the current Rail Opportunities for our District. The cycling is Council is working closely with the Ministry of

issues that affect footpath assets are:

encourage walking as a viable option
connect people to schools, commercial areas,

5.19.3 Assumptions & Confidence Levels

RAMM data is assumed to be about 95% complete footpath. Asset confidence is high with having Opus Consultants carry out footpath condition rating surveys in 2013, 2015 and again in 2017. Inspections are programmed to continue every three

Improving the current level of knowledge of the footpath assets will allow Council to:

- Clearly understand its responsibilities;
- Prepare long-term forward programmes based on accurate information and analysis;
- Prioritise improvements, maintenance and upgrades.

5.19.4 Asset Description

Based on current RAMM data, MPDC manages approximately 198 km of footpaths with a GRC of \$ 21,110,462. Most streets in urban areas have footpaths on both sides. Some have a footpath on only one side due to topographical restraints or insufficient need, while some streets have no footpaths at all. Rural roads seldom have formal footpaths. Where these exist, they are typically located near rural schools and tourist areas.

Surfacing type used is dependent on life cycle cost considerations, pedestrian volumes and amenity values (i.e. in shopping precincts). The main types of footpath surfaces in the district townships are:

- **Asphaltic Concrete (Black):** Mix of graded aggregate and asphaltic binder laid in a 15 - 20 mm layer. AC paths provide a smooth textured surface most suitable for the busier areas.
- **Concrete:** Concrete to a thickness of 75mm and 115mm for vehicle crossings). Rougher texture than AC but longer lasting.
- **Interlocking Blocks (Pavers):** Brick sized interlocking blocks or flat square pavers laid over prepared metal base and sand (used in areas where amenity value is important.)
- **Metal:** Maintained metallised surface over prepared metal base. Used mainly in areas with low pedestrian counts. These paths require regular vegetation control and surface maintenance to preserve surface integrity and prevent base water damage.
- **Seal:** Layer of sprayed bitumen with a fine grit spread on top. Most sealed paths were initially metallised but were later sealed due to increasing pedestrian counts or maintenance issues. With relatively short useful lives (compared to AC or concrete paths), these are typically a priority for the renewal programme

The full replacement value of railings as at 30th June 2019 is shown in the table below.

The table also provides a range of attribute data.

Table 5.44: Valuation

Component	Length (m)	Quantity (No.)	Base Life (Average)	Age (Average)	RUL	Replacement Cost (RC)	Depreciated Replacement Cost (DRC)	Annual Depreciation (D)
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Footpath - Concrete	267728.5	1770	50	29	21	\$22,724,915.29	\$8,612,544.68	\$453,318.02
Footpath - Asphaltic concrete	28366.1	143	51	48	3	\$785,502.66	\$56,676.14	\$23,278.76
Footpath - Interlocking blocks	9429.2	69	52	26	26	\$807,580.01	\$457,632.67	\$16,108.49
Footpath - Seal	1704.8	7	53	51	2	\$41,298.43	\$2,079.37	\$1,039.69
Footpath - Metal	3973.3	6	54	52	2	\$61,900.84	\$4,881.83	\$2,440.91
Total	311201.9	1995				\$24,421,197.23	\$9,133,814.69	\$496,185.87

5.19.5 Replacement Cost & Annual Depreciation

GRC and Annual Depreciation costs for Footpath assets are shown in the figures below. Concrete footpaths account for about 91% of the GRC.

Figure 5.24: GRC - Footpaths

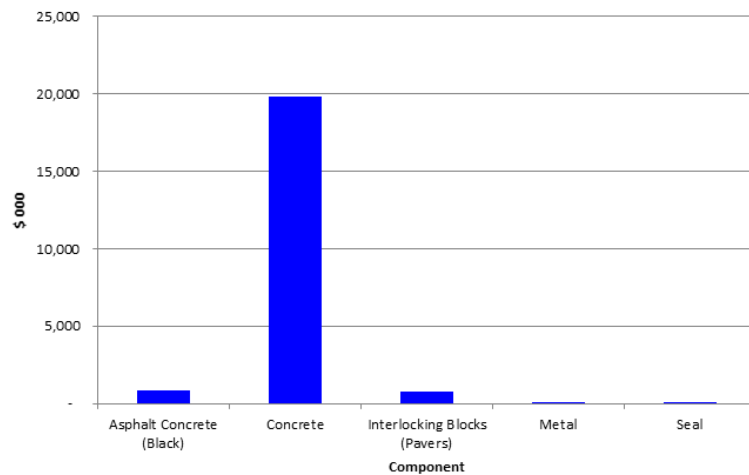
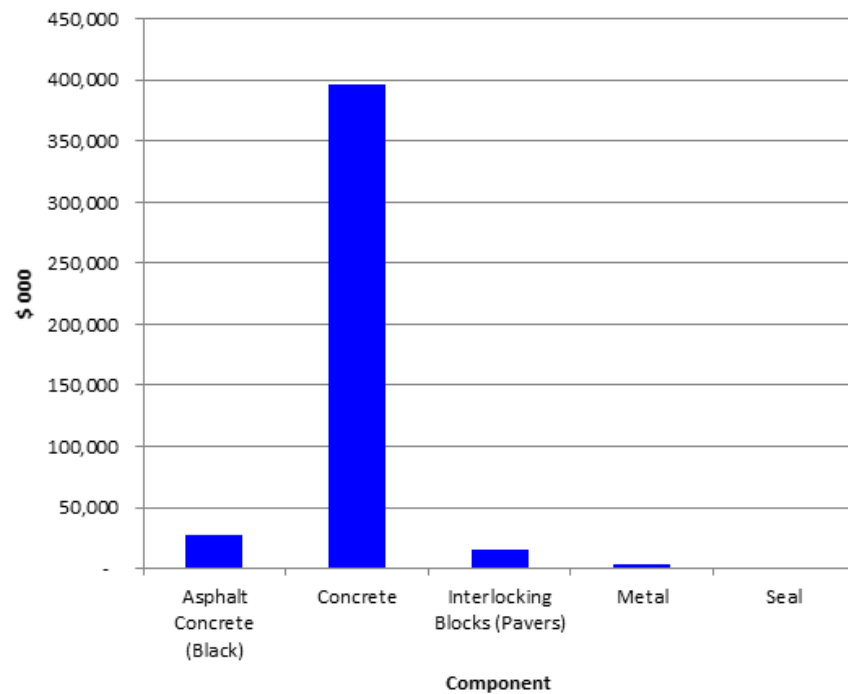
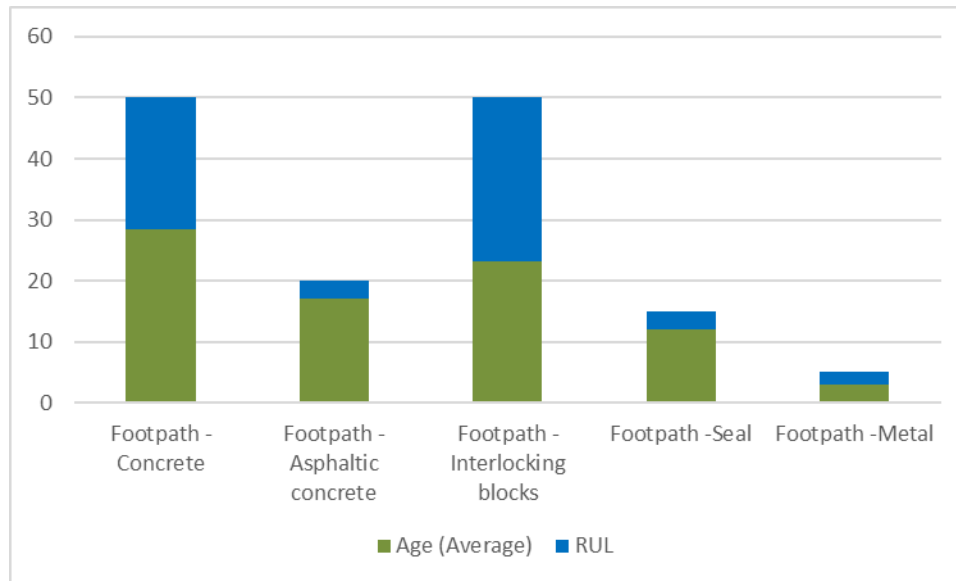


Figure 5.25: Annual Depreciation Footpaths

5.19.6 Asset Age

The graph below compares the average age with the remaining useful life of each asset. It is evident that most surface types with the exception of Interlocking Blocks and Concrete are nearing the end of their expected lives.

Figure 5.26: Average Age Vs Remaining Useful Life – Footpaths



5.19.7 Condition Assessment & Results

MPDC's footpath condition rating system is currently based on an informal annual internal inspection process and a two yearly condition rating from an external consultant. These inspections form the basis for developing the annual replacement programme.

Replacements are based on the severity of existing faults. Work is undertaken according to the following criteria with displacement faults producing "lips" being the highest priority for urgent repair:

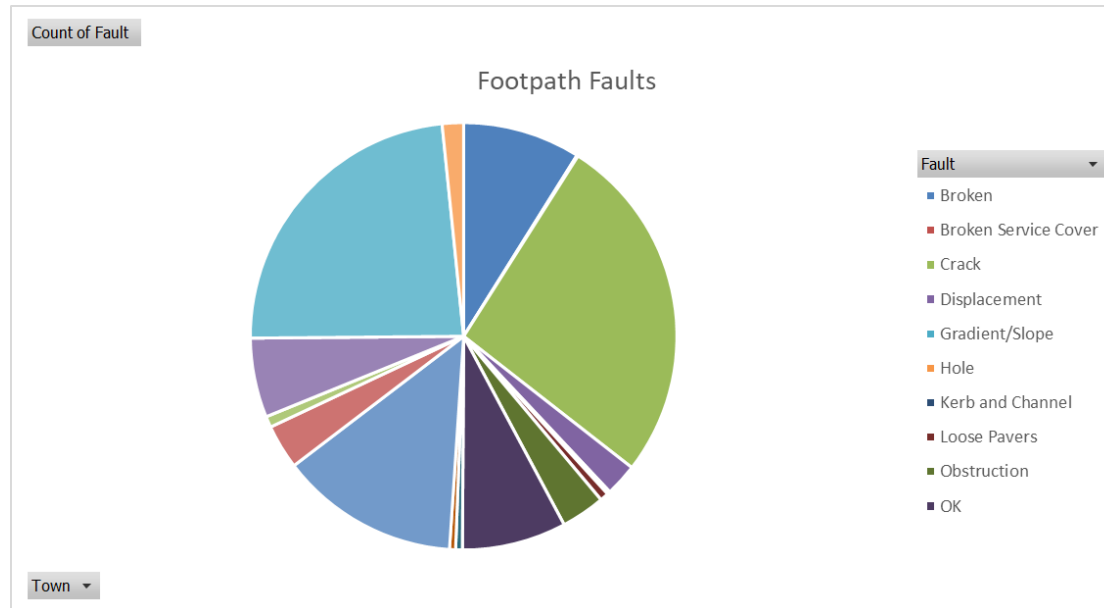
1. Displacement "lips: (produce tripping hazard)
2. Cracked and settled (accelerates surface deterioration)
3. Discretionary (usage, ponding potential, etc considerations).

The main reasons for deterioration are (in order):

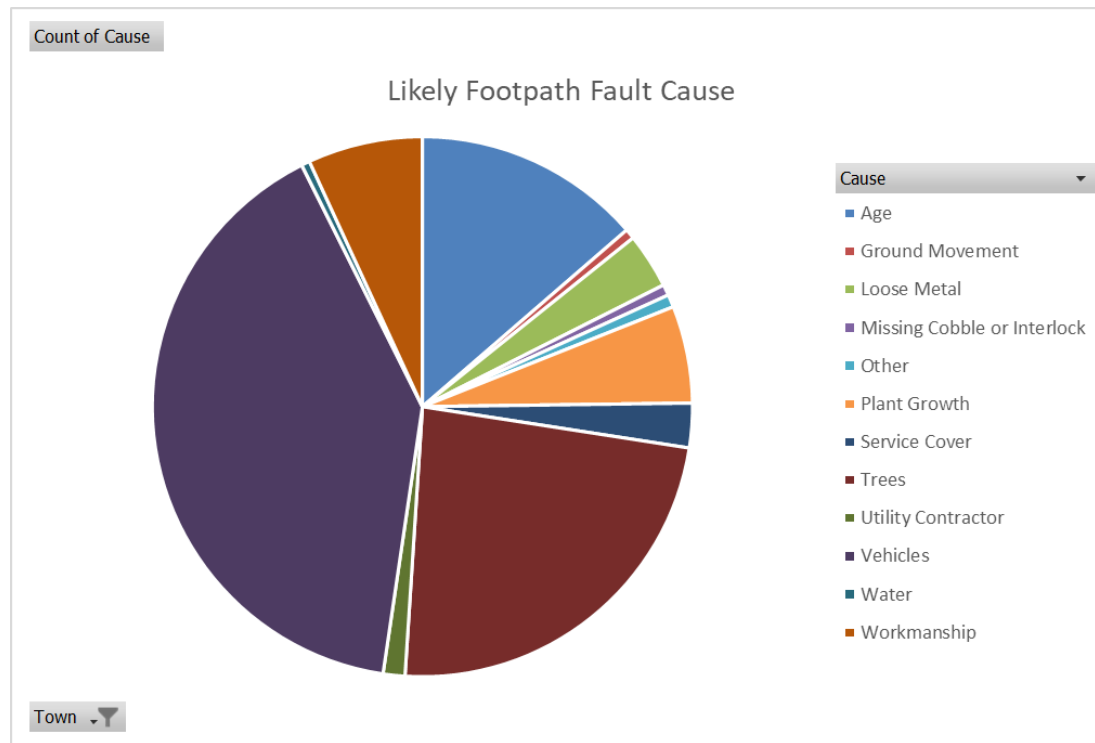
1. Vehicle damage
2. Tree root damage

3. Inadequate reinstatement by service authorities
4. Unauthorised street openings
5. Inspection of the footpath network was undertaken in 2018. This identify the extent and condition of the network.

Faults are illustrated below, cracks and 'trip lip' are the most common.



The cause of the faults was also ascertained with damage due to trees and vehicles being the most prevalent.



5.19.8 Key Footpath Risks

The Risk Management Section of this AMP provides a comprehensive overview of how risk is derived and managed relating to Roothing.

Each component of the Roothing Network is assessed with regard to its gross risk (risk with no effective measures in place) and net risk (measures in place) and options available for Council to best manage those identified risks. Section 6 of this AMP outlines Risk.

Footpaths crossing driveways are especially vulnerable to vehicle loading, which leads to deterioration and eventual asset failure.

Key risks associated with footpaths are identified below:

Table 5.45: Key Footpath Risks

Risk Descriptor	Net Risk	Management Option
<i>Footpaths and Accessways:</i> Inadequate footpath quality – caused by poor design, construction, materials, lack of funding, utilities reinstatements etc, resulting in pedestrian slip/ falls and inaccessibility	6	Review and improve current practices Develop footpath condition assessment programme Develop long term footpath replacement programme Monitor complaints and feedback
<i>Footpaths and Accessways:</i> Inadequate Accessibility – for physically and visually challenged persons/ wheelchairs/ strollers/ walkers/ prams/ mobility scooters. Including lack of footpaths limiting accessibility	6	Continue current practices Monitor complaints and feedback

5.19.9 Operations & Maintenance Plan

Kaimai Valley Services, a Council Business Unit, carries out the maintenance of the asphaltic concrete, seal, pavers and concrete footpaths as required and as per the programmed maintenance.

The majority of work is the replacement of footpaths damaged by vehicles or tree roots. The spraying of vegetation on footpath edges, cracks, etc, is undertaken as part of road maintenance contract. These contracts are managed by Kaimai Valley Services.

Kaimai Valley Services also receives and investigates complaints on footpath condition and approves the location and construction of vehicle crossings.

The intervention level for the repair of concrete footpath “lips” has been informally set at a 20 mm lip, settled to a stage where the path presents a significant tripping hazard or is ponding water.

The significant issue is vehicle damage either from heavy vehicles using the berms or as a result of building activities on the adjacent property. This issue is dealt with as part of the building consent process where a damage bond is paid in case repair is required.

Historical Operational Expenditure

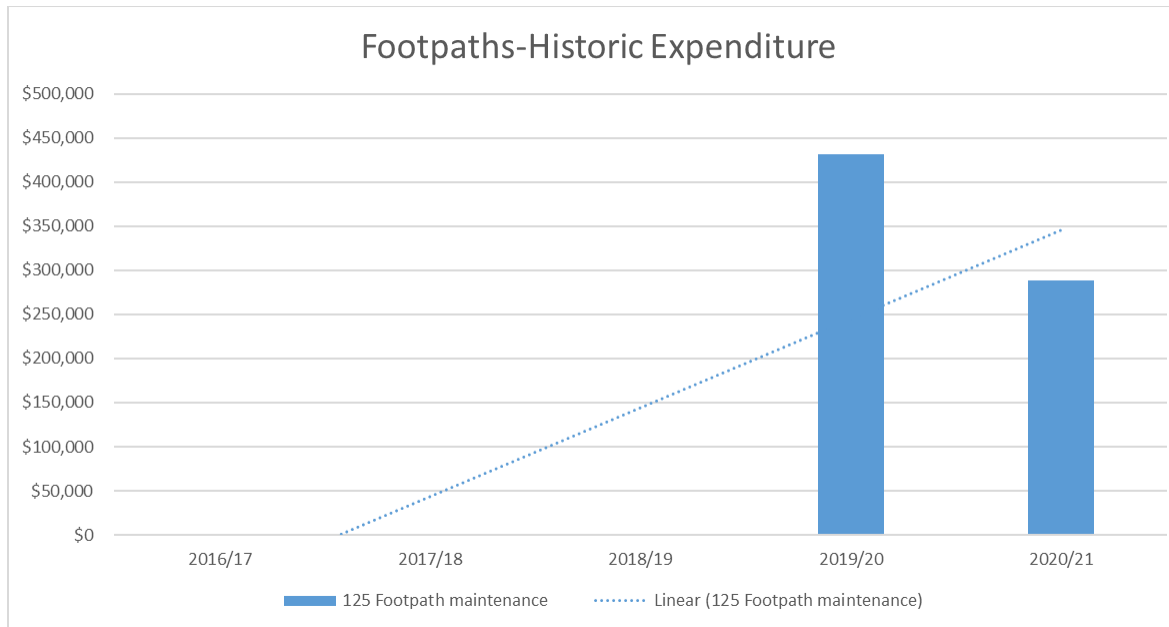
Table 5.46 below summaries the operational expenditure for the footpath assets over the last 5 years.

Table 5.46: Historical Maintenance Expenditure - Footpaths

	2013/14	2014/15	2015/16	2016/17	2017/18 est
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Footpaths	57,533	78,727	111,863	101,990	63,401.58
Total - \$	57,533	78,727	111,863	101,990	63,401.58

Figure 5.27: Historical Maintenance Expenditure – Footpaths

**Deferred Maintenance**

At the current level of service no maintenance is being deferred.

Table 5.47 below sets out the projected maintenance expenditure for the Matamata-Piako footpaths for the next 10 years.

Table 5.47: Projected Maintenance Expenditure - Footpaths

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
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Cycle path maintenance	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400
Footpath maintenance	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000

5.19.10 Renewal Plan

Footpath renewals are defined as the replacement of continuous sections exceeding 20 m in length. Sections shorter than that are considered as expensed maintenance items. Renewal expenditure is identified separately as it can be offset against asset depreciation. The types of renewal work undertaken to restore footpaths to the required condition are;

Resurfacing to provide a smoother surface by:

- overlaying with a thin layer of asphaltic concrete or slurry coat where it already exists
- removing the existing surfacing and laying new surface (where the high footpath profile in relation to berm prevents surface overlay)

Reconstruct new basecourse and surfacing when:

- the footpath base structure has deteriorated to an extent where resurfacing is not practical
- the condition of the kerb and channel or the condition of the carriageway rather than the footpath condition dictates renewal
- where the footpath is to be reconstructed on a new alignment

The required level of renewal will vary depending on:

- the age profile of footpaths
- the condition profile of footpaths
- the adequacy of historical control of trenching, vehicles and weed growth
- proximity to trees
- the level of ongoing maintenance demand
- the differing economic lives of the materials used

Ongoing condition assessments will assist with the knowledge and development of Forward Works Programmes for footpath assets

The footpath development plan emphasis in Matamata-Piako objectives also apply to the priority for footpath renewals:

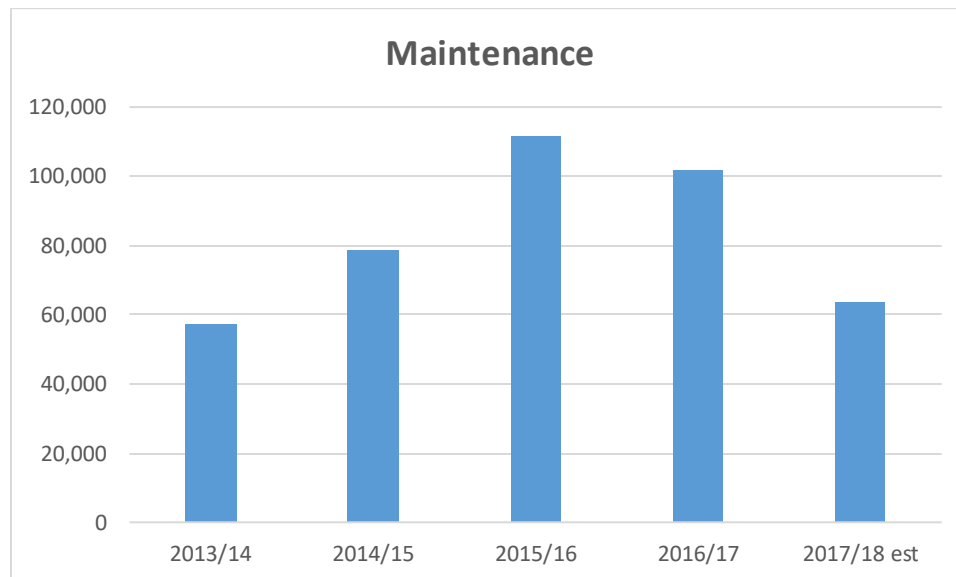
- Addressing high-use areas in front of schools
- Servicing main pedestrian route areas in and close to the CBD
- Servicing pedestrian routes around retirement villages
- Investigating reports and petitions received by Council that identify high use/risk areas and pedestrian factors.

Historical **Renewal** Expenditure

Table 5.46 below summaries the **renewal** expenditure for the footpath assets over the last 5 years.

	2013/14	2014/15	2015/16	2016/17	2017/18
Footpaths	167,426	25	25,823	162,225	96,370.17
Total - \$	167,426	25	25,823	162,225	96,370.17

Figure 5.28: Historical Renewal Expenditure - Footpaths



Deferred Renewals

This infers that deferred renewals exist and it is likely that they exist due to the lack of asset data. The amount of deferred renewals will become clearer as knowledge of the assets increases.

Table 5.47 below sets out the projected renewal expenditure for the Matamata-Piako footpaths for the next 10 years.

Renewals	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Cycle path renewal		-	-	-	-	-	-	-	-	-	-
Footpath renewal	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000

5.19.11 Development Plan

Under the Footpaths policy each urban street should be developed to have a footpath on one side of the carriageway as a minimum.

In order to measure progress towards this development policy target, a desktop analysis of RAMM data has been carried out as follows in main urban centres of Matamata-Piako District Council.

Given that road length has been obtained from the RAMM database with no allowance for intersections or turning facilities and that these features are likely to reduce the effective length of footpath required against the reported road length, a threshold of 80% has been used to estimate when a road might be considered to be fully serviced by a footpath on at least one side of the road.

The results are as follows:

- For all urban areas - 89% of the total length of urban roads in Matamata-Piako District have a footpath on at least one side.
- In Te Aroha – 85% of the total length of urban roads has a footpath on at least one side. 79% of all urban roads have a footpath on at least one side for more than 80% of its length.
- In Morrinsville - 90% of the total length of urban roads has a footpath on at least one side. 94% of all urban roads have a footpath on at least one side for more than 80% of its length.
- In Matamata - 93% of the total length of urban roads has a footpath on at least one side. 91% of all urban roads have a footpath on at least one side for more than 80% of its length.

Footpath development plan emphasis in Matamata-Piako is now on:

- Addressing high-use areas in front of schools
- Servicing main pedestrian route areas in and close to the CBD
- Servicing pedestrian routes around retirement villages
- Investigating reports and petitions received by Council that identify high use/risk areas and pedestrian factors.

The plan is to develop a Forward Works Programme (inclusive of maintenance and renewals) in alignment with the Footpath Policy.

Walking and Cycling Strategy 2007

Council will continue to encourage developers to provide cycling and walking facilities, with good connections to existing facilities at the development boundaries. The connectivity aspect is to ensure that linkages are provided between road networks as well as other public areas and facilities such as reserves, car parks, swimming pools etc thereby providing viable alternative community transport routes.

Providing attractive and ideally more direct routes will make walking and cycling transportation more attractive. A further consideration for developers and Council to take into account is personal security in the design and layout of these areas in accordance with Crime Prevention Through Urban Design principles.

The identification, commencement and completion of a few feature projects based on the above principles present ideal opportunities for Council to demonstrate to the community its commitment to the promotion of walking and cycling in Matamata-Piako.

New Assets Funding

Council undertakes construction of new footpath assets using funds generated from rates. Footpaths may also be “gifted” to Council from private subdivision development as newly vested public assets.

An operative Walking and Cycling Strategy is a requirement of New Zealand Transport Agency funding. In 2007 MPDC developed a draft Walking and Cycling Strategy, which is contained in Appendix C. This plan, when complete, will identify deliverable objectives, as part of implementing an annual construction programme.

Having an operative Walking and Cycling Strategy complete with an implementation plan presents the opportunity to fund footpaths using subsidised funds from the New Zealand Transport Agency, using its Walking Facilities category.

5.19.12 New (Capital) Works Plan

Capital works are generally initiated through triggers such as growth, Levels of Service, regulatory, operational efficiency, or vested (gifted) through subdivisions. All capital works are prioritised through the use of a multi criteria assessment framework outlined in the Section 6 sustainability of this AMP.

Table 5.46 below summarises the new capital expenditure for the footpath assets over the last 5 years.

Table 5.48: Historical New Capital Expenditure - Footpaths

	2015/16	2016/17	2017/18	2018/19	2019/20 est
Footpaths	0	0	0	0	0
Total - \$	0	0	0	0	0

below summarise the projected capital works to be undertaken over the next 3 years.

Note this CAPEX is included in LCLR funding.

Walking and Cycling	2021/22	2022/23	2023/24
Footpath	150,000	150,000	131,250
Footpath Improvements	50,000	50,000	50,000
Matamata New Footpath Construction	100,000	0	0
Morrinsville New Footpath Construction	0	100,000	0
Te Aroha New Footpath Construction	0	0	75,000
Grand Total	150,000	150,000	131,250

5.19.13 Disposal Plan

There are no asset disposals planned at this time.

5.19.14 Context

The Asset

Footpaths

Urban Area	Length (m)	Area (m2)
Matamata	85,604	125,646
Morrinsville	71,329	110,042
Te Aroha	50,862	77,618
Total	207,795	313,306

Cycleways

Matamata – Piako District Council currently owns one cycleway. It is approximately 500m long, is gravel surfaced and is located adjacent to Stanley Ave in Te Aroha.

Strategic Case References:

2.1 District Overview, AMP 8.2 & 8.3 Asset Description and discussion

Business Case References:

8.0 Footpaths and Cycleways

Contribution to outcomes

The Business Case and Strategic Case discussed the alignment between the GPS, Council outcomes and the individual Problem Statement and Benefits.

5.19.15 Levels of Service

The core values established through the AMP are useful improving a user focus into levels of service.

Refer to the Business Case which outlines the Long Term Plan Measures and also the ONRC measures and whether the targets have been met.

5.19.16 The Case for Change

Footpaths support mobility and encourage mode shift. Improving the standard of footpaths is necessary to achieve these outcomes and improve the safety of mobility impaired.

5.19.17 Options

The footpath activity is increasing important, yet only represents **3%** of expenditure. New footpaths are a priority to improve connectivity.

There options assessed at a elected representative level include the balance or maintenance, renewals and new footpaths.

Table 5.49: Options – Footpaths and Cycleways

Road	Town	Location	Length	Width	Total	Additional Work Type
Burwood Road	Matamata	Right (eastern side)	350	1.5	47,250	
Burwood Road	Matamata		391	1.5	52,785	
Burwood Road	Matamata		6	1.5	810	
Totara Avenue	Matamata	Right (southern side)	139	1.5	19,765	Pram crossing
Kauri Crescent	Matamata	Left (western side)	254	1.5	34,290	
Avenue Rd	Morrinsville	Right (eastern side)	483	1.5	67,205	Earthworks levelling
Snell Street	Morrinsville	Right (northern side)	110	1.5	17,850	Earthworks / drainage
Snell Street	Morrinsville	Left (southern side)	360	1.5	48,600	
Aroha View RD	Te Aroha	Left (southern side)	25	1.5	3,375	

Road	Town	Location	Length	Width	Total	Additional Work Type
Bosson Road	Te Aroha	Right (eastern side)	263	1.5	37,505	Earthworks levelling
Gordon Avenue	Te Aroha	Left (northern side)	210	1.5	38,350	Earthworks / retaining around pond/water table
Gordon Avenue	Te Aroha	Left (northern side)	288	1.5	38,880	
					\$406,665.00	

5.19.18 Preferred Programme

A continuation of the programme of routine maintenance and renewals is proposed.

Work Programme and Investment Proposed:

The work programme and investment level proposed is the same as the past three years. This is indicated below.

Table 5.50: Investment Proposed

Operations	2020/21 (Current)	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Cycle path maintenance	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400
Footpath maintenance	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
Renewals											
Cycle path renewal		-	-	-	-	-	-	-	-	-	-
Footpath renewal	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000

Note this CAPEX is included in LCLR funding.

Walking and Cycling	2021/22	2022/23	2023/24
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Section 5: Lifecycle Management Plan

Footpath	150,000	150,000	131,250
Footpath Improvements	50,000	50,000	50,000
Matamata New Footpath Construction	100,000	0	0
Morrinsville New Footpath Construction	0	100,000	0
Te Aroha New Footpath Construction	0	0	75,000
Grand Total	150000	150,000	131250

5.19.19 Risks

There are risks associated with the proposed programme in terms of implementation, demand changes and extreme weather events. Currently these are manageable within the work programme.

5.19.20 Improvement Items

6.0 MANAGEMENT RISKS

6.1 Significant Effects of this Activity

Schedule 10 of the Local Government Act covers the information required to be included in the LTP. Part 2 (1) (c) states that a LTP must in relation to each group of activities of the local authority:

(c) Outline any significant negative effects that any activity within the group of activities may have on the social, economic, environmental, or cultural well being of the local community

This sub-section provides information in accordance with this legislative requirement.

The purpose of identifying significant negative effects is to ensure that Council activities are conducted in accordance with the principles of sustainability. The roading activity has the potential to have negative effects on community well being. The possible negative effects are outlined in the table below.

Table 6.1: Significant Negative Effects

Significant Negative Effect	Status of Effect*		Impact this effect <i>may</i> have on Well-being**				Mitigation of Negative Effects
	Existing	Potential	Cultural	Social	Economic	Environmental	
Changing weather patterns may result in extreme events causing damage to critical assets (Weather Bombs).	↔	↑	m	m	M	M	Liaise with central and regional govt regard to trends and any monitoring being undertaken.
Economically, the cost of desired infrastructure improvements may exceed the communities ability to pay.	↔	↑		m	M		Consult with the community on options for Levels of Service through process
Road development can impact on culturally significant and productive lands	↔	↓	m	m		m	Track and record all the procedures and results for e.g. Maori/iwi for all projects outside road reserve.
Road and Environment factors can contribute to crashes, (particularly those that involve loss of control) and cause a number of people to be killed or injured on roads each year.	↔	↓	m	M	m	m	The New Zealand Transport Agency and records through the Crash Analysis (CAS) the % of accidents caused by loss of control and the percentage of all deaths and injuries Undertake crash reduction studies Undertake Route Security projects Maximise funding for minor improvements
The particular needs of pedestrians and cyclists and their conflicts with other forms of traffic.	↔	↓		m			Implement the recommendations of the Walking and Cycling Strategy
The quality of surface runoff from roads that discharges into adjacent coastal or other waters.	↔	↓	m	m	m	m	Compliance with Resource Consent and Council's development standards guidelines. Environmental controls
Dust nuisance	↔	↓		m		m	Track and record complaints and resource consent conditions during activities

Section 6: Management Risks

Significant Negative Effect	Status of Effect*		Impact this effect <i>may</i> have on Well-being**				Mitigation of Negative Effects
	Existing	Potential	Cultural	Social	Economic	Environmental	
The impacts of industry (e.g forestry, horticulture, dairy) on local roads.	↔	↓		m	m		Monitor and report annually the de
Potential impacts on customer satisfaction due to service failure /delays /responsiveness	↔	↓		m	m		Monitor and report on Levels of S
Health and safety risks associated with the operation, maintenance, or construction of roading infrastructure	↔	↓		m	m		Service provider contracts. See customer complaints "close the lo
							Ensure compliance with legislatio
							& Safety Management Plans.
							Incidents Register.

* ↑ = increasing, ↔ = remaining the same, ↓ = decreasing
nil

** M = major, m = moderate, m = minor, 'blank' =

6.1.1 Significant Positive Effects

The roading activity also has the potential to have positive effects on community well being. The possible positive effects are outlined in the table below.

Table 6.2: Significant Positive Effects

Significant Positive Effects	Status of Effect*		Impact this effect <i>may</i> have on Well-being**				Mitigation of Positive Effects
	Existing	Potential	Cultural	Social	Economic	Environmental	
Roads provide access to employment and areas that contribute to economic growth	↔	↑		m	M		Maintaining funding levels to en
Appropriate roading enhances transport efficiencies and lowers the cost of transportation	↔	↑		m	M		assets are repaired and renewe
Road safety improvements help reduce in the number of deaths and serious injuries as a result of road crashes	↔	↓		M			appropriate times.
							Maintain road roughness by contin
							to undertake pavement mainten
							and renewal works. Ensure all as
							are renewed at appropriate times
							maximum funding be obtained.
							The New Zealand Transport ag
							monitors and records the percenta
							all road related deaths and inj
							through the Crash Analysis System
							Ensure minor improvement fundin
							maximised and work is prioritised.
							Undertake crash reduction studie
							our key routes

* ↑ = increasing, ↔ = remaining the same, ↓ = decreasing
Minor, "blank" = nil

** M = major, m = moderate, m =

6.2 Environmental Considerations

There are environmental and legislative obligations Council has in undertaking the provision Rooding works, including requirements specified as conditions of resource consents.

6.2.1 Legislation

There are a number of legislative mechanisms aimed to avoid or mitigate potential adverse environmental effects associated with the management of the roading network. These are set at national, regional and district level.

Statutory requirements have been outlined in the Business Overview section. Specific requirements relating to environmental stewardship are covered in more detail in the following sub sections.

6.2.2 National Statutes

The role of Central Government is one of setting policy for road management across New Zealand. This is achieved through the following key statutes:

Resource Management Act 1991

Under the Resource Management Act 1991, Council has a statutory obligation to avoid, remedy or mitigate any adverse effects on the environment through sustainable management. In this context, resource consents are one way, in which Council regulates the effects of activities such as building roads or bridges. Innovative design and use of Best Appropriate Practice in accordance with Councils development standards and guidelines are also beneficial in taking into account and managing the effects an activity may have on the environment.

Land Transport Management Act 2003

The purpose of the Land Transport Management Act 2003 (LTMA) is to:

- Provide a integrated approach to land transport funding and management.
- Improve social and environmental responsibility in funding, planning and management of land transport.
- Improve long term planning and investment in land transport.
- Ensure land transport funding is cost effective.
- Improve flexibility of funding including enabling land transport infrastructure to be built on a tolled or public/private partnership basis or combination of these.
- The LTMA also requires the Council to consult with a wide range of parties when developing the annual land transport programme and requires that the programme is consistent with the Regional Land Transport Strategy (RLTS).

Section 175(2)(h) of the Land Transport Act 1998 as amended by the LTMA 2003, states that every regional land transport strategy must give early and full consideration to land transport options and alternatives in a way that avoids, to the extent reasonable in the circumstances, adverse effects on the environment. The following outcome statements in the RLTS are related to environmental sustainability.

- Integration – an integrated multi modal transport system supported by sound land use planning and enabled by collaborative planning and partnerships.

Section 6: Management Risks

- Economic development – an integrated transport system that supports economic activity and provides for the efficient movement of people and goods within and through the region.
- Public health – an integrated transport system that connects communities, promotes active modes and enables positive public health outcomes.
- Environmental sustainability.

New Zealand Transport Strategy

All projects seeking funding from the National Land Transport Fund must take into account the objectives of the New Zealand Transport Strategy. These are to:

- Assist economic development
- Assist safety and personal security
- Improve access and mobility
- Protect and promote public health and
- Ensure environmental sustainability.

Local Government Act 2002

Specific to environmental stewardship the Local Government Act (LGA) includes the principles of making itself aware of community views; providing opportunities for Maori to participate in decision-making processes; collaborating and cooperating with other local authorities as appropriate; ensuring prudent stewardship of resources; and taking a sustainable development approach.

The LGA outlines the responsibilities of local authorities and the decision making process for activities undertaken on behalf of their community, primarily through the requirement to adopt a Long Term Plan (LTP). Councils are encouraged by the LGA to identify overall long-term priorities and to plan for the future.

Long Term Plan

Council has specified the following community outcome in the Long Term Plan 2018-2028 (“LTP”):

- Growth and Development - Council will provide essential infrastructure to meet the needs of our community now and in the future.

Hazardous Substances and New Organisms Act 1996 (HSNO)

The HSNO Act and regulations control the import, manufacture or use (including disposal) of hazardous substances. Council administers the HSNO Act through enforcement officers, with a focus on facilities and activities that use, store, transport or dispose of hazardous substances, rather than on the substances themselves.

6.2.3 Regional Plans

The Waikato Regional Council is responsible for ensuring the natural and physical resources of the region such as the land, air, water and coastal resources are managed in a sustainable manner under the Resource Management Act 1991.

This includes the following responsibilities in relation to Land Transport:

- Prepare regional land transport strategies
- Chair regional land transport committees

Section 6: Management Risks

- Issue air and water discharge consents under the Resource Management Act 1991

Environment Waikato has developed a Regional Plan, which is a resource management framework for the region's water, land and air resources. It outlines the rules and regulations regarding earthworks and discharges. Under these rules and regulations certain types of roading related development require Land Use Consents, such as:

- Earthworks
- Roadworks
- Reclamation
- Any proposed activity within the bed of a lake, river or stream such as the construction of structures (culverts, bridges, crossings)
- Any activity which results in discharges of stormwater containing contaminants into water or onto land

Use Consent applications will invariably include an Erosion and Sediment Control Plan. The purpose of these plans is to illustrate which erosion and sediment control measures are intended for the development.

6.2.4 District Plan

The Matamata-Piako District Plan (MPDP) assists Council to carry out its functions under the Resource Management Act 1991. To achieve the purpose of the Act it promotes the sustainable management of natural and physical resources.

In this context, the MPDP outlines the rules, objectives, policies and requirements for land based activities above Mean High Water Springs (MHWS). This includes earthworks, roadworks, and stormwater works (drainage) associated with roading related development. The District Plan also set outs the standards and controls for lighting, noise, hazardous substances (spill management), and contaminated land.

6.2.5 Resource Consents

Resource consents are a requirement for most roading based development, particularly the formation of roads, bridges, culvert crossings and or the control of discharges from development or drainage works (to streams, rivers or the coast).

An Assessment of Environmental Effects (AEE) is required to support the resource consent applications to the respective Councils when seeking approval to implement roading projects.

The AEE process involves the identification and assessment of both potential and perceived physical, social and cultural impacts that proposed works may have on the existing environment. It includes the examination and comparison of options and alternatives for mitigating any identified adverse effects, and the confirmation and recommendations of the preferred options as well as the methodology to carry out the works.

The critical environmental factors requiring consideration include:

- Geological and geotechnical effects of land movement (cut and fill).
- Ecological and biological effects of crossing water-courses.
- The cultural, archaeological and social effects on the environment as the works cross the landscape.
- Noise, air quality, and visual effects of the works.

Section 6: Management Risks

These may require specialist inputs and consultation with local communities.

Positive effects can include major reductions in traffic congestion and travel times, and improvements in air quality, noise levels and general visual amenity in urban areas. These will be balanced against the adverse effects identified in the AEE.

Council has a database of consents that relate to the roading activity. These are provided in the Table overleaf. In accordance with both Regional and District Plans, there are a number of requirements that must be met during the life of the consent. These requirements will stipulate monitoring conditions in the consent and will require the consent holder to report on compliance with those conditions.

Table 6.3: Roading Related Consents

Number	Purpose	Status	Property Address	Expiry
	Consent to work in the Kaitiaki Zone	Draft	Kaitiaki Zone throughout district	

Consent Monitoring & Compliance

Any future resource consents that would be provided above in Table 6.3 are most likely to relate to the occupation of a structure over a river, stream or watercourse. The nature of these consents is to basically charge the consent holder an annual fee to be able to occupy the area for specified duration (normally 35 – 40 years). During the construction, there will be requirements to monitor the release of sediment into waterways, or to disturb the bed of the watercourse, which again may entail the need to assess the nature of the stream ecology and the impacts that may be imposed by the development. At the end of the consent period, Council will need to apply to have the consent renewed, or will need to apply for new consents

6.3 Potential Environmental Issues

There are a number of adverse environmental effects that can occur in the process of undertaking roading development, particularly major construction projects. The potential effects of the roading activity can be generated during both the construction phase and the operational use of the network. The information provided below outlines some of these issues and associated mitigation measures that could be employed.

6.3.1 Dust

Dust can affect vegetation health along the edge of the earthworks area and can be a nuisance to the surrounding public. It can contribute to sediment loads by being deposited in areas without sediment control measures. Sediments deposited on sealed public roads can also result in a dust nuisance. Similarly, unsealed roads can present a dust nuisance during periods of prolonged drought.

Mitigation Measures

The following mitigation measures may be considered in the control of dust emissions:

- Wheel washing for trucks leaving development sites
- Spraying down areas (with water) to control dust emissions
- Monitoring at site boundaries

6.3.2 Sediment Runoff

Sediment runoff from development works is generally controlled via sediment control techniques and administered by the Regional Council. Sediment from exposed areas of land can enter waterways, streams and rivers, potentially causing adverse effects to fauna and flora.

Mitigation Measures

The following mitigation measures may be considered in the control of sediment runoff:

- Effective sediment control techniques such as cut-off drains, ponds, and silt fences retain sediment and prevent it from entering water systems
- Compliance with an approved sediment and erosion control plan

6.3.3 Noise

Noise is a factor to be considered during construction projects. The District Plan contains the standards for noise and the restrictions imposed on construction such as hours of operation and the decibel limits to be adhered to. Monitoring typically takes place to establish background noise levels against which construction and traffic noise can be measured against.

The documents that Council refer to include:

- NZS 6806: 1993 Road Traffic Sound.
- “Guidelines for the Management of Road Traffic Noise – State Highway Improvements” by Transit New Zealand 1994.

Mitigation Measures

The following mitigation measures may be considered in the control of noise emissions:

- Hours of permitted work.
- Monitoring at site boundaries.

- Compliance with standards.
- Community consultation.

6.3.4 Landscape Values

The district contains various landscape types that have an identifiable character based predominantly on geomorphological characteristics. Landscape values also includes natural and cultural heritage features, which need to be taken into account with any proposed developments.

Mitigation Measures

The following mitigation measures can be considered when taking into account landscape values:

- Review District Plan maps.
- Community consultation.

6.3.5 Cultural Heritage

Places of particular cultural heritage value have been scheduled and identified on District planning maps. This is so locations of significance can be taken into account when considering development and applying for resource consents. The scheduled sites are those that are registered under the Historic Places Act 1993, or those requested to be scheduled after consultation with iwi. Not all sites are recorded and for major developments it is important that consultation is undertaken with tangata whenua, registered archaeologists, NZ Historic Places Trust and the Regional Council. Protocols can then be developed in the event of a discovery.

Mitigation Measures

The following mitigation measures may be considered when taking into account cultural heritage values or sites:

- Consultation with key stakeholders.
- Development of protocols.
- Due diligence prior to development.

6.3.6 Stormwater Discharges

Stormwater discharges need to be managed to prevent pollutants from entering waterways. Roads provide a number of potential contaminants such as metals (from vehicles), hydrocarbons, gross pollutants (litter) and herbicides (from vegetation control). These can adversely effect flora and fauna in receiving waters.

In addition, stormwater pipes/culvert outlets can cause scour during large flows.

Mitigation Measures

The following mitigation measures may be considered in the control of stormwater discharges:

- Retention dams, swales, and outfall structures to dissipate flows. Any number of options can be evaluated prior to consent approvals.
- Evaluate receiving waters to determine background water quality.
- Monitoring of the mixing zone.

6.3.7 Climate Change

The International Panel on Climate Change (IPCC) best mid range estimate of sea-level rise is 0.49 metres by the year 2100.

Climactic variation can influence storm intensity, wave conditions sediment supply and erosion. Future changes in climate will alter these processes in the coastal environment, but in many instances there needs to be more data to accurately assess impacts. This also applies to sea level rise, which has been rising at a historical rate of around 1.8mm/year.

Until more information becomes available on rates of vertical land movement throughout the Waikato and any acceleration that could occur with global climate change, then accurate local impact assessment is not possible. In the meantime the current global estimate is considered appropriate. However, with future development works climate change will need to be taken into account, especially with river/stream crossings.

Mitigation Measures

The following mitigation measures may be considered when taking into account climate change:

- Have regard to projections during planning phases.

Cognisance of areas located as being potential hazard zones.

IP 6.101: To be expanded including Royal Society of NZ discussion

6.4 Hazards

The Matamata-Piako District and surrounding region are exposed to a number of natural hazards. From an activity point of view hazards have the potential to cause major disruption and need to be taken into account. Peat soils in the District represent a hazard because of the subsidence, fire and flood risks that are associated with them.

6.4.1 Flooding

Flooding is a commonly occurring major natural hazard that results when the natural and modified drainage systems fail in a particular rainfall event. The risk of flooding is influenced by a number of factors such as:

- Weather systems.
- Hydrological factors (catchment size, rainfall intensity and infiltration).
- Hydraulic factors.
- Soil type.
- Land use.
- Ground saturation.

Storm events and the resulting flooding can result in significant adverse effects on both residents and the environment. These effects may include:

- Personal injury or loss of life, property and possessions or livelihood.
- Disruption of utilities and roading networks.
- Impacts on the environment may include vegetation and habitat loss, erosion and sedimentation in waterways, and soil and water contamination.

Extensive flood protection schemes have been implemented to minimise flood damage in the District. The Matamata-Piako District was affected by severe flooding in 2002 and 2003.

6.4.2 Landslides

Landslides are generally caused by slope saturation and can include mudslides, debris flow or avalanches, rock falls and rock slides. Increased ground saturation can be caused by intense rainfall, changes in groundwater and water level changes in rivers, earth dams, and lake banks. Generally flooding and landslide events are closely linked as they both result from heavy rainfall, stormwater runoff and ground saturation.

The risk of flooding is influenced by a number of factors such as:

- Underlying geology;
- Proximity to rivers and lakes;
- Past and present land use including vegetation changes;
- Infrastructure development.

Landslides can result in significant adverse effects on both residents and the environment. These effects may include:

- Personal injury or loss of life, property and possessions or livelihood;
- Disruption of utilities and roading networks;
- Impacts on the environment may include vegetation and habitat loss, erosion and sedimentation in waterways.

Section 6: Management Risks

Landslides are important concerns in the hill country in the District, particularly on the steep slopes of Mt Te Aroha and along the Kaimai Range.

6.4.3 Earthquakes

New Zealand is considered amongst the most seismically active places on earth as it is located on an active boundary of two tectonic plates.

The Matamata-Piako district contains several active faultlines. Volcanic activity occurs at the geothermal hot springs at the Te Aroha Domain, and at the Opal Hot Springs near Matamata. The region has experienced earthquakes in the past such as one located near Morrinsville in October 2006 and one located near Te Aroha in January 2007.

6.4.4 Fire

Rural fires are hazardous events that occur in the district. Vehicle and building fires are the most common type of fires attended. The number of rural fires in 2005/06 and 2006/07 was higher (57) than in previous years, largely due to an increase in the number of vegetation fires.

IP 6.102: Update fire information and discuss impact on Roothing

6.4.5 Future Requirements

The main item that needs to be addressed from an Environmental Stewardship perspective is the tracking of resource consents and the conditions that they may contain. Tracking legislation will also need to occur, specifically in relation to Climate Change and the impacts this might have on the roading network. In addition to this, a constant monitoring of natural hazards and their impacts will need to be on-going.

6.5 Risk Management

6.6 Overview

This Roding-asset specific risk management planning for Matamata-Piako District Council (MPDC) will provide the basis for future risk analysis and improvement planning.

This section covers the risk management implemented by MPDC and how these apply to current and future Roding activities. In addition, an overview of Risk Management is provided along with suggested improvements to current practices.

The objective of risk management is to identify the specific business risks, together with any possible risks associated with the ownership and management of the Roding asset. This can be used to determine the direct and indirect costs associated with these risks, and form a priority-based action plan to address them.

The outcome of this evaluation is to be used to:

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

A Risk is defined in AS/NZS ISO 31000:2009 – Risk management – Principles and guidelines, as:

“Effect of Uncertainty on Objectives”

- Effect: Deviation from the expected – positive or negative.
- Objectives: Can have different aspects (see Risk Types) and can apply at different levels (see Risk Hierarchy Levels).
- Risks: Often characterized by reference to potential events and consequences, and is often expressed in terms of a combination of the consequences of an event and the associated likelihood.
- Uncertainty: The state, even partial, of deficiency of information related to, understanding or knowledge of an event, its consequence, or likelihood.

6.6.1 Putting the Risks into Perspective

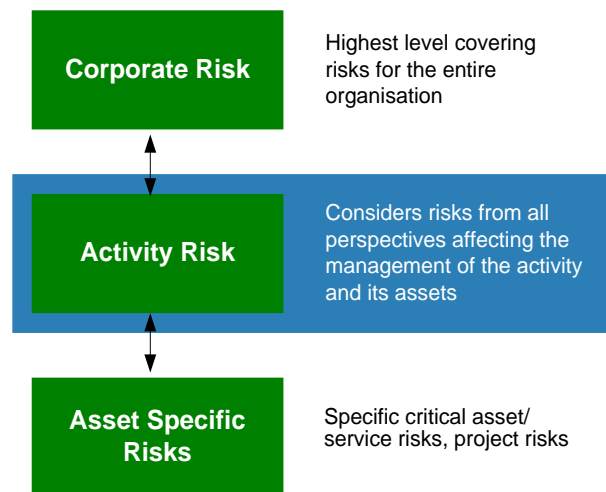
Council policy and operation cannot influence all the factors contributing to these events. However, actual deaths and injuries are occurring on the roading network. MPDC has a responsibility to assess the risks in order to best manage the network with the resources available to avoid and mitigate the effects of any event.

In addition, MPDC has highlighted a number of key risk areas across the activity including:

- External Economic Influences
- Natural Hazards
- Lack of resources
- Capital Works Contract Management
- Inadequate Asset Management

These are discussed in further detail in the Risk Register in the appendix and the overall Action Plan contained in this Section of the AMP.

Figure 6.1: Risk Hierarchy Levels



6.6.2 Level of Risk

The purpose of this risk plan is to identify the risks associated with the Roding 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 (see Figure 6.1).

The next step beyond this risk analysis is to develop more detailed risk plans where the criticality of specific assets is assessed and an action plan developed as appropriate.

6.6.3 Risk Types

Risk events will derive from, or impact in one or more of the following ways. These are identified against each risk as risk types.

Operational / Organisational

Risks affecting the efficient operation of Roothing and the ability to function.

Financial / Economic

Risks related to the financial management of MPDC and the ability to fund Council activities and operations now, and into the future.

Risks resulting from an externally imposed economic environment.

Health and Safety

A risk event that adversely impacts on the health and safety of the community or Council staff.

Reputation / Image:

- Risks that affect the way Council and Council personnel are perceived:
- By the community
- By staff
- Nationwide and internationally
- By stakeholders
- By the media

Legislative

A risk event that results in MPDC unknowingly or knowingly breaching statutes and stipulations, or exposed to liability.

Environmental

Potential or actual negative environmental or ecological impacts, regardless of whether these are reversible or irreversible in nature.



6.7 Current Situation

6.7.1 Corporate Policy

MPDC has introduced risk management initiatives across the organisation, and a corporate risk management exercise was undertaken in December 2008. The risk criteria and matrices have been proposed as the basis for risk evaluation in this section. These were developed from the NZS 4360 national risk management standard.

6.7.2 Risk Management Process

The following sections expand upon the risk management process as identified in the flowchart (Figure 6.2 overleaf) and text details the key elements of the Risk Management Process undertaken. The risk criteria and matrices have been established as the basis for risk evaluation in this section developed in line with the AS/NZS ISO 31000:2009 international risk standard.

6.7.3 Identify Risks

All practically possible risks affecting the Council need to be identified. Risks can include the types quoted previously i.e. financial, operational, health and safety etc.. 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.

6.7.4 Determine Likelihood and Consequence for Gross Risk Factor

Table 6.4 and Table 6.5 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 Table 6.4 below; The descriptors are there not as mandatory category requirements, but as a guide to assist ranking the probability in line with the nature of each risk. For example, a risk like a sewer overflow is 'rare' if it occurs once every ten years, whereas a tsunami occurring every ten years would be considered 'frequent'

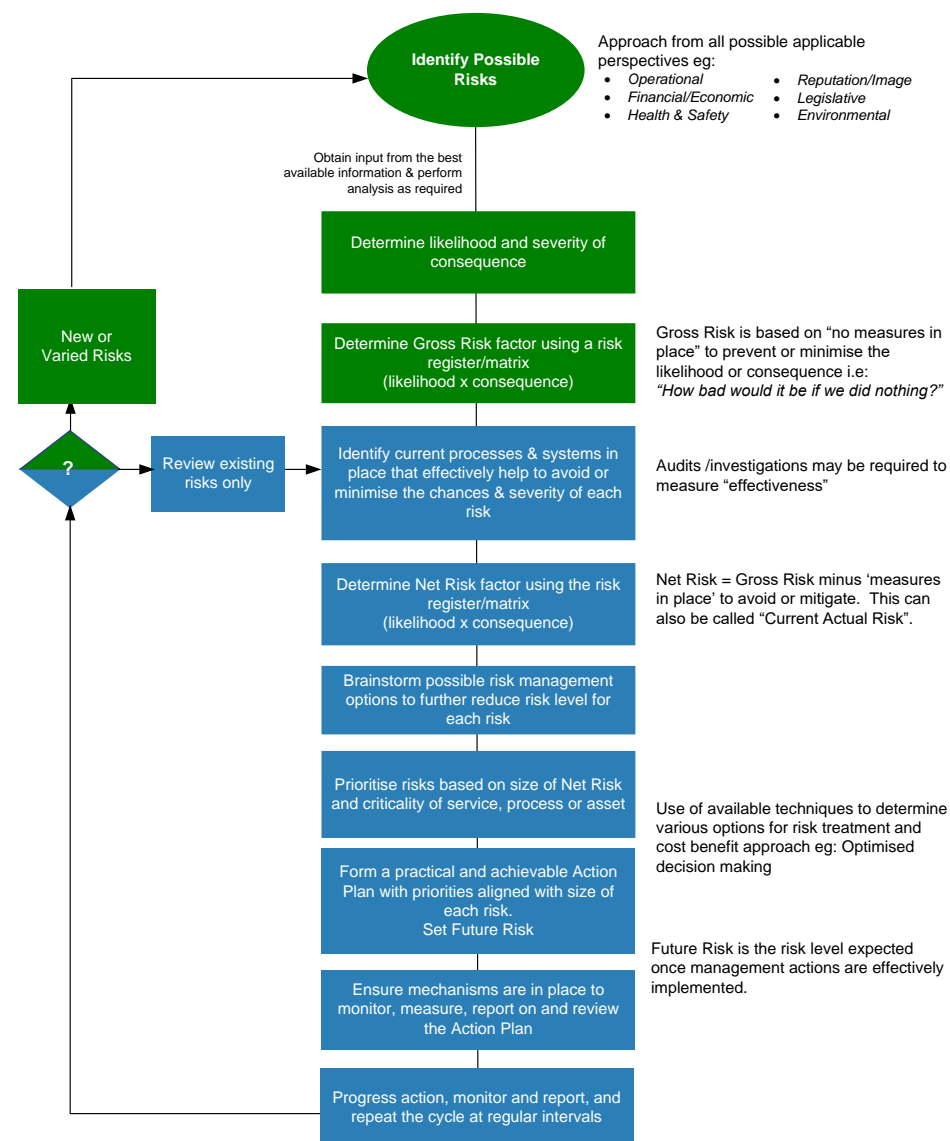
Table 6.4: Likelihood of Occurrence

Likelihood	Descriptor	Probability
Frequent	Continuous or will happen frequently. Major Risk: Will most certainly occur in the foreseeable future	5
Often	5 – 12 times per year Major Risk: Will possibly occur in the foreseeable future	4
Likely	1 – 5 times per year Major Risk : There is always a chance it will occur in the foreseeable future	3
Possible	Once every 2 to 5 years Major Risk: There is little chance of occurrence in the foreseeable future	2
Rare	Less than once every five years Major Risk: Occurrence is unlikely in the foreseeable future	1

6.8 Risk Management Process

The following flowchart and text details the key elements of the Risk Management Process undertaken.

Figure 6.2: Risk Management Process



The Consequence descriptors in Table 6.5 indicate the level of possible consequences for a risk.

Table 6.5: Consequence Rating

Consequence	Descriptor	Score
Catastrophic	Loss of life, major financial loss, prolonged national media and political attention	5
Major	Major financial impact, widespread damage, serious harm, national media	4
Moderate	Moderate financial impact, potential litigation, loss of image, regional media	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 (Table 6.4) and Consequence Rating (Table 6.5) 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 (see Table 6.6 & Table 6.7).

Table 6.6: Risk Assessment Matrix

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.

Table 6.7: 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.

6.8.1 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:

Effectiveness	Definition
Excellent	Fulfils requirements thoroughly, very robust and positive measurable effects
Good	Fulfils requirements, robust and measurable, room for improvement
Fair	Barely fulfils requirements, effects hard to measure (or haven't been audited or measured), improvement required
Poor	Not fulfilling requirements, little measurement or effect on overall risk
Very Poor	Totally ineffective in avoiding or mitigating associated risk events

6.8.2 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.

6.9 Risk Action Plan

The Risk Action Plan is compiled from the Risk Register and highlights the most significant risks faced as determined in the risk register. The main risks are listed in order of severity (primarily gross risk, and secondarily net risk) as assigned in consultation with key Council officers.

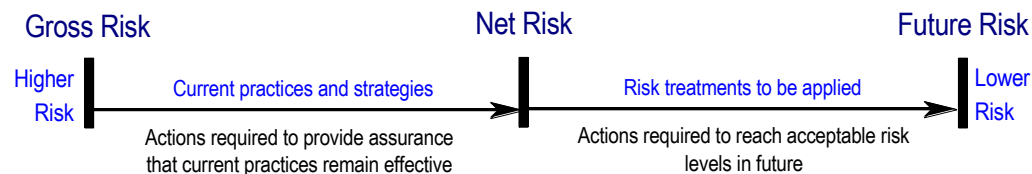
Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, action tasks will detail timeframes for achievement, and responsibility for these actions.

A priority order of issues to be addressed is obtained by sorting first the gross risk levels and then the net risk levels, and identification of the biggest gaps and opportunities for improvement.

Gaps between gross and net risk indicate the importance of effective current practices to prevent gross risk events. Accordingly, improvement actions should focus on the things that will further assure Council that current practices remain effective.

Gaps between net risk and an acceptable future risk require improvement actions that will reduce current risk levels.

Figure 6.3: Risk Actions



The most suitable risk reduction actions must be determined by considering options and resources available to the Council. Costs and benefits of these actions should be analysed to determine those actions yielding the greatest benefit (risk reduction) for the least cost. The best available techniques should be utilised 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

The options for mitigating risks considered to reduce the cause, probability or impact of failure, are typically:

Understanding Issue	Mitigation
Accept Risk	Accept the Risk, fund and resource any risk impacts
Strategic Change	Implement strategic planning, organisational improvements
Operational Change	Implement technical improvements, procedural changes
Risk Transfer	Outsourcing, Improving contract terms, increased insurance

6.9.1 Link to Improvement Plans

Actions identified in this Risk Management analysis should be directly linked to actions identified in appropriate improvement plans where they exist e.g. Activity Management Improvement Plan, where resources should be identified, approval of resources noted, and a defined method is provided for revisiting and reviewing progress against each action item. Where an equivalent action item is not listed in the Improvement Plan, it should be added.

In all cases, the appropriate risk reference number should be noted in the Improvement Plan, and the Improvement number should be noted in the Risk Action Plan.

6.9.2 Monitor, Measure, Report, Review Plan and Actions

Management options listed in the risk tables have been refined into actions for each risk listed. These are the actions that are required to cost-effectively reduce the net risk by increasing MPDC's ability to minimise the chances of the risk event occurring, or minimising the consequences should it occur.

Actions should consider the overall management of Council, not just the minimisation of risk. If possible, proposed actions should align with other initiatives to:

- Reduce capital investment costs.
- Reduce operating and maintenance costs.

- Reduce business risk exposure (BRE).
- Increase effective asset life / value.
- Increase level of service.

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.

The monitoring/reporting column of the Risk Action Table specifies:

- Responsibility: Nominated person responsible for ensuring the risks are managed and that improvements are carried out in accordance with the programme;
- Timeframe: Achievable target date to be monitored and reported against; and
- Method and Frequency of Monitoring: This entire Action Table will be monitored by the Risk Management Steering Committee, but there will be certain actions that are being monitored and reported in other forums. These forums are to be specified and the frequency with which these actions will be reviewed.

The actions listed will be reported, monitored and reviewed regularly at the Risk Management Steering Group and various Group forums.

As necessary, this group will need to revise timeframes, responsibility, and even the appropriateness of continuing with the proposed action, or adding new actions.

As actions are complete, the net risk should reduce in most cases. The risk tables will need to be reviewed against these and updated to reflect these improvements.

6.9.3 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.

6.10 Risk Register

Risk Register has been relocated into the appendix.

6.11 Risk Action Plan

Table 6.8 is compiled from the Risk Register and highlights the most significant risks faced by the Roding activity (i.e. risks with an Extreme gross risk, or that have an Extreme or High net risk). The main risks are listed in order of severity (Gross and then Net risk) as assigned in consultation with key Council staff.

Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, Action tasks will detail timeframes for achievement, and responsibility for these actions.

Table 6.8: Activity Management Risk Action Plan – Roding

(to be added when recreated from Excel spreadsheet)

6.12 Improvement Items

IP 6.101: Climate change discussion to be expanded including Royal Society of NZ discussion

IP 6.102: Update fire information and discuss impact on Roding

Section 7: Financial Summary

7.0 FINANCIAL SUMMARY

7.1

Overview

To undertake a sustainable, long-term approach to asset management, it is essential to prepare long-term financial forecasts. This allows a long term view of how the asset will be managed, how much this will cost and when additional funding may be required to meet expected service levels. These financial forecasts are a culmination of the previously discussed aspects of the Activity Management Plan such as:

- Community Consultation
- Levels of Service
- Demand Management
- Lifecycle Management
- Asset Lives
- Condition Ratings
- Asset Valuation
- Sustainability

The above forms the basis of the long-term operations, maintenance and capital requirements. Funding requirements have also been included in the financial statements.

This section contains the summary of financials from the programme business case (PBC) with respect to the strategic case. It outlines the investment intentions for Matamata Piako District Council's roading activity for the 2018-28 period.

The strategic case and programme business case have been embedded into this Activity Management Plan.

While the programme business case (embedded into section 5 Lifecycle Management) reflects Council's intentions for the 2018/19 to 2021/22 funding period, this will not be finalised until:

- i. There is an indication from NZTA as to the level of funding that will be provided;
- ii. Council deliberate over the Long Term Plan that will be presented to the community for comment;
- iii. Consultation over the Long Term Plan is complete and any changes arising from the consultation are considered and included where applicable.

7.2 Roothing Funding & Expenditure

7.2.1 Funding

The general approach to the funding of roading starts from the premise that those who benefit (either directly or indirectly) should pay towards the cost of that service. An explanation of the funding apportionment rationale is given in Appendix 3 of the Long Term Plan (LTP).

For funding purposes there are two types of roading work. They are:

- Subsidised work— This work is work that is funded jointly by Council and New Zealand Transport Agency. This work has a financial assistance rate of 51% funded by New Zealand Transport Agency and 49% by Council. Work in this category includes:

Section 7: Financial Summary

sealed/unsealed routine drainage maintenance, structures maintenance, environmental maintenance, traffic services maintenance etc. Under Councils funding policy road maintenance work is funded from General rates and Uniform Annual General Charges (UAGC) for Councils portion. Renewals works are funded from Councils depreciation reserve and from New Zealand Transport Agency subsidies

- Unsubsidised work – This work is funded 100% by Council out of General Rates. Capital works are usually funded from internal loans. Renewals works are funded from Councils depreciation reserve. Work in this category includes footpaths, street cleaning etc

7.2.2 Expenditure

Below shows the transport related expenditure for the past five years.

Figure 7.1: Historical Expenditure

Expenditure

Expenditure on infrastructure assets can be categorised into four main areas, which are discussed below:

7.2.3 Operations and Maintenance

Operations and Maintenance expenditure is that required for the day-to-day operation of the network whilst maintaining the current levels of service. Examples of this type of expenditure are:

- Overheads
- Minor replacements

Maintenance costs are generally subdivided into 3 groups, these are described in Table 7.1.

Table 7.1: Maintenance Types

Maintenance Type	General Meaning
Routine	Day to day maintenance which is required on an ongoing basis and is budgeted for
Planned (Proactive)	Non day-to-day maintenance which is identified in advance and is incorporated into a maintenance budget for a certain time period
Reactive	Maintenance that is unexpected and necessary to attend to immediately to continue operation of the service

Replacement (Renewals)

Renewal expenditure includes rehabilitation and replacement of assets to restore an asset to its original level of service, i.e. capacity or the required condition. Renewals expenditure forecasts cover the cost of asset renewal through its whole lifecycle through to disposal of the asset.

New Works (Capital Works)

Capital works (new works) involves the creation of new assets, or works, which upgrade or improve an existing asset beyond its current capacity or performance in response to changes in usage or customer expectations.

Disposals

Asset Disposal is the retirement or sale of assets whether surplus or superseded by new or improved systems. Assets may become surplus to requirements due to obsolescence, under-utilisation, changes in policy etc.

7.3 Key Financial Forecast Assumptions

The following Roding Asset Management assumptions have been made in preparing the 10-year expenditure forecasts:

- Minimum remaining useful life (RUL) has been assumed as 2 years
- Asset information is as complete as possible at 1 July 2019. This is based on the RAMM and asset data supplied by MPDC.
- Only Roding assets have been valued.
- The determination of, asset replacement value, depreciated value, and renewal projections are based on the valuation data as at 1 July 2019.
- All projected expenditure is stated in dollar values as at 1st July 2019 with no allowance made for inflation.
- Operational costs are largely based on historical expenditure.
- Maintenance and operations allocations are largely based on maintaining current service levels.
- Depreciation has been calculated on a straight-line basis.
- Confidence in the data used to produce the 10-year forecasts for this AMP has been assessed at 80 - 85%.
- Council staff have developed this programme. No formal consultation has been undertaken with the public at this stage.
- It is assumed that regulations relating to roading will remain essentially the same over the planning period (i.e. 30 years to June 2051)

The LTP assumptions and associated risks are outlined at the end of this section.

7.4 Financial Statements and Projections

The tables below contain the Roding Statement of financial Performance, which incorporates the projected income and funding sources to fund operational, renewal and capital expenditure for the next 10 years (2021/22 – 2031/32).

To be finalised as part of LTP deliberations

	Combined	2020/21	2021/22	2022/23	2023/24	Based on:
	Sealed Roads					

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	Combined	2020/21	2021/22	2022/23	2023/24	Based on:
111	Maintenance	2,623,800	2,435,000	2,435,000	2,435,000	
212	Resealing	2,550,000	2,500,000	2,500,000	2,500,000	Ongoing target – required to protect vulnerable pavements
214	Rehabilitation	2,845,000	2,415,000	2,741,000	2,718,000	From dTIMS modelling (visual rating and HSD) LV deferred
Unsealed Roads						
112	Maintenance	124,800	124,800	124,800	124,800	Reduction from 2018 continues
211	Metalling	50,000	50,000	50,000	50,000	No change
Drainage						
113	Maintenance	551,400	601,400	601,400	601,400	Additional asset to be maintained Soakholes and Rain gardens
213	Renewals	150,000	184,000	140,500	257,000	Associated with Rehabs, Kerb and Channel renewals and small culvert renewals
Structures						
114	Maintenance	156,000	184,000	184,000	184,000	Based on latest condition assessment on our Bridges
215	Structure component replacements	67,600	62,000	80,000	62,000	Based on latest condition assessment on our Bridges
Network/Traffic Services						
	Street Lighting - Maintenance	138,000	85,000	85,000	85,000	Reduced because of LED lights
	Street Lighting – Energy Costs	200,000	153,300	153,300	153,300	Reduced because of LED lights
	Street Lighting - Renewals		70,000	70,000	70,000	Reduced because of LED
	Signage - Maintenance	6,000	40,000	40,000	40,000	Greater safety focus – keep in good condition More electronic/active signage
	Signage - Renewals		180,000	180,000	180,000	
	Signage - EMPs		40,000	40,000	40,000	
	Roadmarking Renewals -		20,000	20,000	20,000	
	Roadmarking Maintenance –		280,000	280,000	280,000	
	Road Markings – RPM		30,000	30,000	30,000	
	Sight Rails		15,000	15,000	15,000	
	(all) Traffic services maintenance	643,300	643,300	643,300	643,300	

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	Combined	2020/21	2021/22	2022/23	2023/24	Based on:
222	(all) Traffic services renewals	434,381	300,000	300,000	300,000	
	Footpaths					
125	Footpaths maintenance	120,000	120,000	120,000	120,000	
225	Footpaths renewal	189,000	189,000	189,000	189,000	
124	Cycleways	5,400	5,400	5,400	5,400	
	Other categories					
121	Environmental Maintenance	525,300	600,000	600,000	600,000	Increase based on past trend and safety focus on sightlines
131	Rail Crossing Warning Devices	96,400	96,400	96,400	36,400	
	Passenger transport	115,000	123,000	123,000	123,000	New Matamata bus and Increased frequency of service
140	Minor Events	71,400	36,400	36,400	36,400	
151	Network & Asset Management	695,300	695,300	695,300	695,300	
	Transport Planning	80,219	60,219	60,219	60,219	

Capital and Renewal Funding

Project Name	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031-36	2036-41	2041-46	2046-51
NZTA Funded - Low Cost Low Risk Projects	\$935,000	\$935,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000	\$900,000
Hinuera to Station Road Link [Eldonwood South - Collector Road Widening]		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000								
Hangawera Road to Snell						\$100,000	\$100,000	\$100,000						
Waharoa Roothing Projects				\$250,000										
TA to MV Cycleway											\$5,000,000			
MM Seal Widening - Capital		\$104,000	\$80,000		\$104,000	\$80,000		\$104,000	\$80,000					
MV Seal Widening - Capital	\$104,000		\$80,000	\$104,000		\$80,000	\$104,000		\$80,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
MM Kerb and Channel - Capital	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
MV Kerb and Channel - Capital	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
MM Footpath - Capital	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
MV Footpath - Capital	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
MM Streetlighting - Capital	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941	\$46,941
MV Streetlighting - Capital	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125	\$34,125
Station to Peria Road Link Matamata - Capital	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000							
Tower Road Parking Bays		\$300,000												
Tower Road Intersection			\$5,000											

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Tower Road Pedestrian				\$25,000										
Station Road 1 Upgrade		\$730,000												
Station Road 2 Upgrade					\$300,000									
Hampton Terrace Upgrade							\$190,000							
Banks/Burwood Intersection Upgrade							\$115,000							
Haig Road Upgrade		\$335,000												
Avenue Road North Upgrade					\$120,000									
Hinuera to Piarere Cycleway					\$750,000	\$1,250,000								
TAMM Offshoots Minor Upgrades Cycleway	\$100,000													
MM Pedestrian Connectivity		\$250,000												
Smith Street Upgrade										\$260,000				
Everad Avenue Intersection Upgrade										\$257,000				
Waharoa - Matamata Walkway	\$700,000													
Unsealed Road Metalling (Metalled Road Resurfacing)	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Sealed Road Resurfacing (Reseals)	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
Drainage Renewals (Drainage Renewals)	\$184,000	\$140,500	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000	\$257,000
Sealed Road Pavement Rehabilitation (Rehabs)	\$2,415,000	\$2,741,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000	\$2,718,000

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Structures component replacements (Structural Renewals)	\$62,000	\$80,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000	\$62,000
Traffic services renewals (Traffic Services Renewals)	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Foot Path Renewal - District	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000	\$189,000
TA Footpath - Capital	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000
TA Kerb and Channel - Capital	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000
TA Streetlighting - Capital	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934	\$28,934
TA Seal Widening - Capital	\$56,000	\$56,000		\$56,000	\$56,000		\$56,000	\$56,000		\$56,000				
	\$7,915,000	\$9,130,500	\$7,561,000	\$7,831,000	\$8,726,000	\$8,906,000	\$7,861,000	\$7,456,000	\$7,356,000	\$8,123,000	\$12,300,000	\$7,300,000	\$7,300,000	\$7,300,000

Low Cost/Low Risk Breakdown – Note further breakdown in Business Case section 10

Activity Class	(Total cost \$' 2021/22	(Total cost \$'s) 2022/23	(Total cost \$'s) 2023/24
Road to Zero	483,000	530,000	532,500
Walking and Cycling	150,000	150,000	125,000
Local Road Improvements	267,000	220,000	242,500
PT Infrastructure	35,000	35,000	0

7.5 Maintenance Planning and Delivery

The short-term maintenance strategy is intended to maintain the current levels of service standards. The long-term maintenance strategy will be modified to reflect the following factors:

- Risk of failure -The risk associated with failure of critical assets
- Levels of service - Changes in the current or agreed level of service
- Economic efficiency -Asset condition assessment
- Extend the life of the asset component -Asset improvements and development programme
- Legislative compliance – e.g. requirements of, LGA 2002, LTMA 2003

7.5.1 Operations & Maintenance Programme

Maintenance works are undertaken by various contractors including Kaimai Valley Services. There are processes in place to measure quality and timeliness of work completed. Maintenance work is generally routine, which includes reactive and cyclic maintenance undertaken.

Customer service requests are recorded on our CRM model in Authority which records date, time, details, responsibility, response time and action taken. These requests are forwarded to Kaimai Valley Services or Kaimai Consultants to be programmed into the maintenance works.

Operations and Maintenance Forecasts

Anticipated work needs and costs over the next 30 years to ensure delivery of the defined levels of service, include:

- Expected operational work
- The nature, incidence and cost of unplanned maintenance (responsive) currently undertaken
- Planned inspections and preventative maintenance
- Expected planned maintenance work requirements.
- Managing assets to desired levels of service.

7.6 Capital & Renewal Planning and Delivery

7.6.1 Renewal Works

Renewal expenditure is work that restores an existing asset to its original level of service, i.e. capacity or the required condition. These broadly fit into the following work categories as follows:

Rehabilitation

Involves the repair of an existing asset, or asset component. Rehabilitation doesn't provide for a planned increase in the operating capacity or design loading. It is intended to enable the assets to continue to be operated to meet the current levels of service.

Replacement

Doesn't provide for a planned increase to the operating capacity or design loading. Some minor increase in capacity may result from the process of replacement, but a substantial improvement is needed before asset development is considered to have occurred.

7.6.2 Renewal Strategy

The general renewal strategy is to rehabilitate or replace assets when justified by:-

Asset Performance

Assets are renewed where they fail to meet the required level of service. The monitoring of asset reliability, capacity and efficiency during planned maintenance inspections and operational activity identifies non-performing assets. Indicators of non-performing assets include:

- Structural failure
- Repeated asset failure (breaks, faults)
- Ineffective and/or uneconomic operation
- Unsafe conditions for the public

Economics

When it is no longer economic to continue repairing the asset (i.e. the annual cost of repairs exceeds the annualised cost of its renewal). An economic consideration is the co-ordination of renewal works with other planned works such as road reconstruction. Council actively researches the effectiveness of new technology, which may reduce the direct and social costs of repair works.

Risk

The risk of failure and associated environmental, public health, financial or social impact justifies proactive action (e.g. probable extent of roading damage, health and safety risk). Where such assets are identified (critical assets), proactive inspection is undertaken to determine asset condition at a frequency appropriate to the risk and rate of asset decay.

Life Cycle

The LTP states the current lifecycle expectations for accounting purposes listed for the roading assets as follows

Table 7.2: Projected Asset Lives

Asset Type	Projected Asset Life (Yrs)
------------	----------------------------

Land	Indefinite
Street lighting	1-50
Land under roads	Indefinite
Formation carriageway	Indefinite
Pavement surfacing	8-30
Pavement structure	28-70
Footpaths	5-50
Bridges	30-100
All other	2-50

Replacement (Renewal) Works Summary

While many of the smaller replacement (renewal) items are undertaken within maintenance, all major works are programmed as replacement items and are managed in a similar way to new capital works.

The replacement (renewal) programme and expenditure forecast for the next 10 years still needs to be improved as asset condition and data confidence improves.

The financial projections for (2021- 31) are summarised in Table 5 provides the renewals projects summary:

MPDC will consider the financial and customer risks of having sufficient funds to deal with renewal demands, consideration of detailed assessments, implementing proactive renewals and recognising the increasing maintenance and operational requirements.

7.6.3 New Works

New works are the creation of new assets or works, which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in usage or customer expectations. MPDC recognises that asset development and asset renewal can occur simultaneously.

Asset Renewal is maintaining the condition of the assets and current service levels.

Asset Development is providing service improvements, measured by asset performance.

Development Planning Categories

New works fall into separate categories as follows:

Growth

Any asset development (council funded or externally funded) that is required as a result of growth.

Levels of Service

Any asset development that is required as a result of an increase in levels of service.

Legislative

Any asset developed to meet legislative requirements

Vested

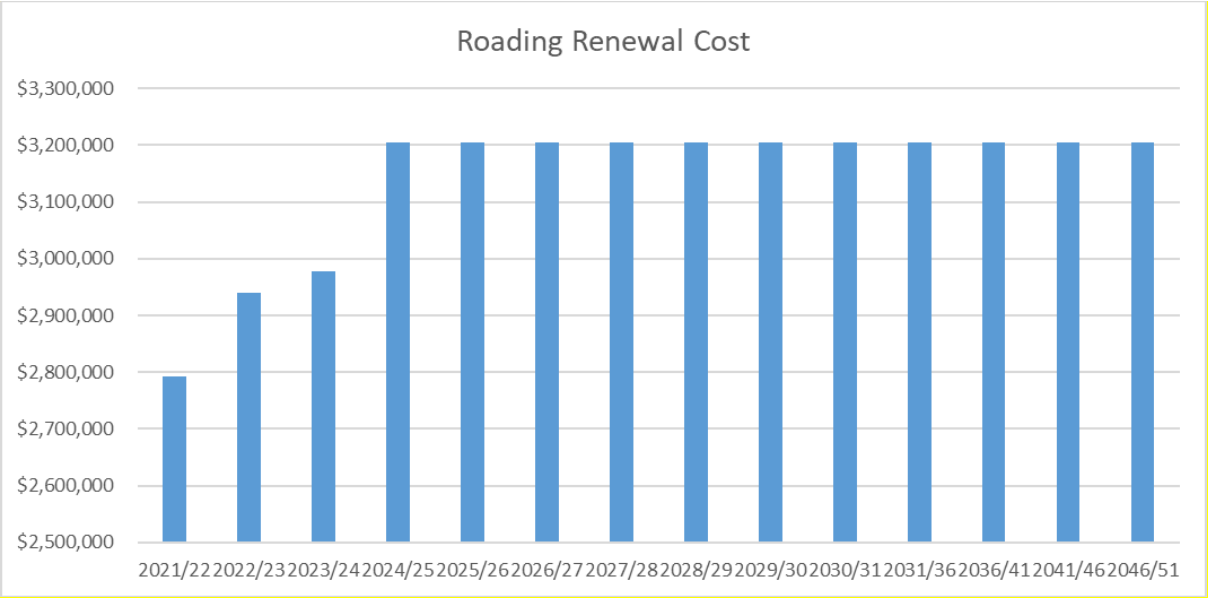
Any assets vested (gifted) with Council.

As required by schedule 10 of the LGA 2002, with respect to Council funded development work, this plan also identifies and differentiates requirements of additional asset capacity in terms of increased demand (e.g. growth) or increase in service provision levels and standards.

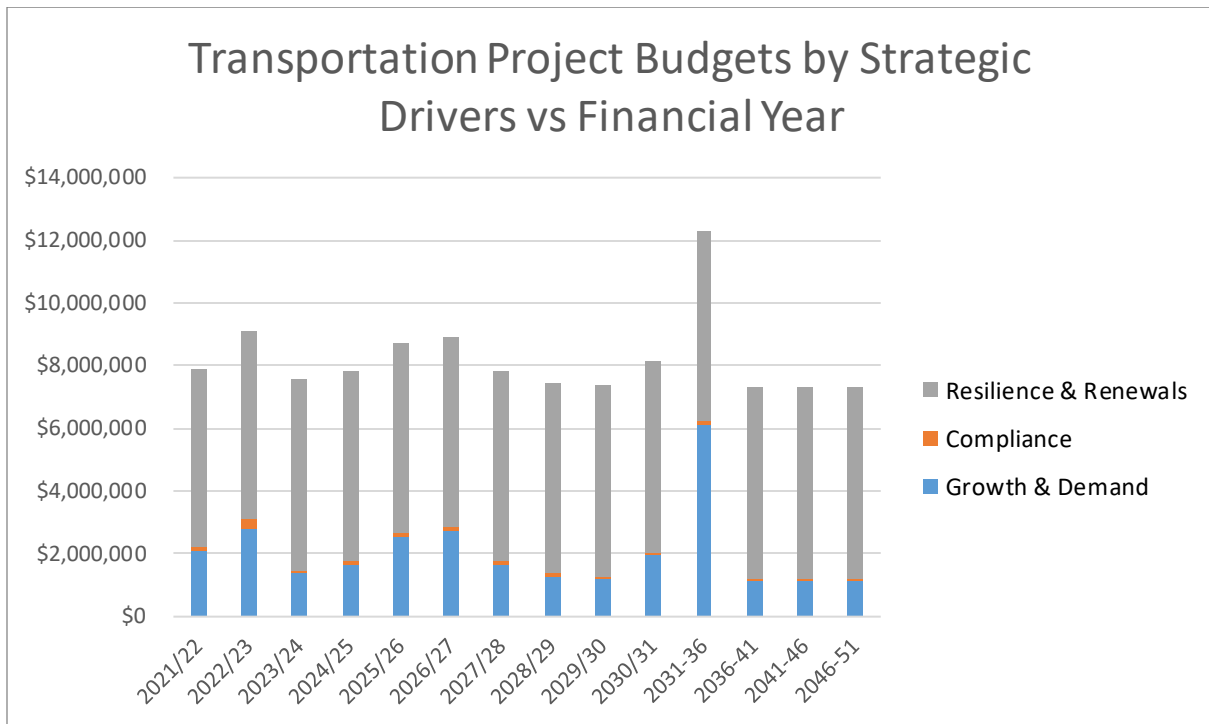
Selection Criteria

The selection criteria for the prioritising and programming of development projects is done mainly on a benefit cost basis considering safety and levels of service. Some prioritisation considers a triple bottom line analysis (economic, social, environmental).

Figure 7.2: Works – Roothing Renewals



Council carries out a prioritisation process of all necessary renewal or development works. The priority list is used to assign funds when preparing the financial plans. Cost estimates are reviewed at the detailed design stage and/or purchase.



Maintaining our existing assets

To ensure that where possible efficiencies are identified, we manage our budgets to allow for an affordable roading network for the long term while not compromising on efficiencies and levels of service. This is done by maximising benefits through asset optimisation, evidence based asset management, collaboration and working smarter. It also means maintaining our existing network without adding to it.

We could look at reducing our level of service on our roads and footpaths. This however will have an effect on our levels of service and put more pressure on our maintenance budgets. One option we have been focusing on is the implementation of the one network road classification that prioritises investment based on road classifications.

7.7 Disposals

As part of the whole life cycle management of assets, it is vital to consider the costs of asset disposal in the long-term financial forecasts for an asset. The cost of asset disposal is expected to be incorporated within the capital cost of new works, or asset renewals.

At this time MPDC has no plans to dispose of any of its roading assets.

7.8 Combined Financial Statements and Projections

The tables below contain the Roding Statement of financial Performance, which incorporates the projected income and funding sources to fund operational, renewal and capital expenditure for the next 10 years (2021/22 – 20230/31).

Table 7.3: Roding Element of Financial Performance 2021/22 – 2030/31

Projections not currently available

7.9 Operations, Maintenance and Renewals

7.9.1 Operations & Maintenance Programme

Anticipated work needs and costs over the next 30 years to ensure delivery of the defined levels of service, include:

- Expected operational work
- The nature, incidence and cost of unplanned maintenance (responsive) currently undertaken
- Planned inspections and preventative maintenance
- Expected planned maintenance work requirements.
- Managing assets to desired levels of service.

Tables for years one to ten and eleven to thirty have been separated to avoid confusion as the later periods are shown in five-year bands.

7.9.2 Operations & Maintenance Forecasts

Table 7.4: Forecast Financially Assisted Maintenance and Operations 2018/19 – 2027/28 (\$)

Operations	NZTA subsidy	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<i>Expenditure</i>											
<i>Subsidised Roding - Maintenance</i>											
Cycle Path Maintenance	51%	5,362	5,362	5,362	5,362	5,362	5,362	5,362	5,362	5,362	5,362
Environmental Maintenance	51%	504,878	504,878	504,878	504,878	504,878	504,878	504,878	504,878	504,878	504,878
Level Crossing Warning Devices	51%	35,264	115,264	35,264	35,264	35,264	35,264	35,264	35,264	35,264	35,264
Network & Asset Management	51%	668,318	668,318	668,318	668,318	668,318	668,318	668,318	668,318	668,318	668,318
Routine Drainage Maintenance	51%	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000
Sealed Pavement Maintenance	51%	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465	2,340,465
Structures Maintenance	51%	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Traffic Services Maintenance	51%	618,326	618,326	618,326	618,326	618,326	618,326	618,326	618,326	618,326	618,326
Unsealed Pavement Maintenance	51%	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
Total Subsidised Roding - Maintenance		4,972,613	5,052,613	4,972,613	4,972,613	4,972,613	4,972,613	4,972,613	4,972,613	4,972,613	4,972,613

Table 7.5: Forecast Financially Assisted Maintenance and Operations 2028/29 – 2043/48 (\$) Five Year Bands

Operations	NZTA subsidy	2028/33	2033/38	2038/43	2043/48
		\$	\$	\$	\$
<i>Expenditure</i>					
<i>Subsidised Roding - Maintenance</i>					
Cycle Path Maintenance	51%	26,810	26,810	26,810	26,810
Environmental Maintenance	51%	2,524,390	2,374,390	2,374,390	2,374,390

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Level Crossing Warning Devices	51%	176,320	176,320	176,320	176,320
Network & Asset Management	51%	3,341,590	2,591,590	2,591,590	2,591,590
Routine Drainage Maintenance	51%	2,650,000	2,743,985	2,743,985	2,743,985
Sealed Pavement Maintenance	51%	11,702,325	11,702,325	11,702,325	11,702,325
Structures Maintenance	51%	750,000	750,000	750,000	750,000
Traffic Services Maintenance	51%	3,091,630	3,366,630	3,366,630	3,366,630
Unsealed Pavement Maintenance	51%	600,000	600,000	600,000	600,000
Total Subsidised Roading - Maintenance		24,863,065	24,332,050	24,332,050	24,332,050

Table 7.6: Forecast Non-financially Assisted Maintenance and Operations 2018/19 - 2027/28 (\$)

Operations	NZTA subsidy	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Unsubsidised Roding - Maintenance											
Community Programmes		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Footpaths Maintenance		80,000	81,250	81,500	82,250	82,500	82,750	83,000	83,250	83,500	83,750
Amenity Lighting		25,000	26,500	28,000	29,500	31,000	32,500	34,000	37,500	41,000	43,500
Passenger Transport		45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Pest Control		35,110	35,110	35,110	35,110	35,110	35,110	35,110	35,110	35,110	35,110
Rapid Numbering		20,000	20,310	20,310	20,310	20,310	20,310	20,310	20,310	20,310	20,310
Road Legislation		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Thompsons Track Maintenance		6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Sundry Roding & Works (District)		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Te Aroha Railway Bridge		4,100	4,100	4,100	4,100	4,100	4,100	4,100	4,100	4,100	4,100
Street Cleaning		208,784	210,784	210,784	210,784	210,784	210,784	210,784	210,784	210,784	210,784
Transport Planning		60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Total Direct Costs											
Total Operating Expenditure		531,994	537,054	538,804	541,054	542,804	544,554	546,304	550,054	553,804	556,554

Table 7.7: Forecast Financially Assisted Maintenance and Operations 2028/29 – 2043/48 (\$) Five Year Bands

Operations	NZTA subsidy	2028/33	2033/38	2038/43	2043/48
		\$	\$	\$	\$
Unsubsidised Roding - Maintenance					
Community Programmes		150,000	150,000	150,000	150,000
Footpaths Maintenance		424,620	424,620	424,620	424,620
Amenity Lighting		215,000	215,000	215,000	215,000
Passenger Transport		225,000	225,000	225,000	225,000
Pest Control		175,550	175,550	175,550	175,550
Rapid Numbering		101,550	101,550	101,550	101,550

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Road Legislation		75,000	75,000	75,000	75,000
Thompsons Track Maintenance		32,500	32,500	32,500	32,500
Sundry Roothing & Works (District)		12,500	12,500	12,500	12,500
Te Aroha Railway Bridge		20,500	20,500	20,500	20,500
Street Cleaning		1,053,920	1,053,920	1,053,920	1,053,920
Transport Planning		300,000	300,000	300,000	300,000
Total Direct Costs					
Total Operating Expenditure		2,786,140	2,786,140	2,786,140	2,786,140

7.10 Capital Items

7.10.1 Capital & Renewal Programme

The tables below contain the Roothing Forecast which represents the renewal and capital expenditure for the next 30 years (2018/19 – 2047/48).

Tables for years one to ten and eleven to thirty have been separated to avoid confusion as the later periods are shown in five-year bands.

7.10.2 Capital & Renewal Forecasts

Table 7.8: Roothing Capital & Renewal Projects 2018/19 – 2027/28

Capital & Renewal's											
Renewals (annual)	NZTA subsidy	2018/19 \$	2019/20 \$	2020/21 \$	2021/22 \$	2022/23 \$	2023/24 \$	2024/25 \$	2025/26 \$	2026/27 \$	2027/28 \$
		0	0	0	0	0	0	0	0	0	0
Unsealed Road metalling	51%	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Sealed Road resurfacing	51%	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Drainage renewals	51%	365,559	365,559	365,559	365,559	365,559	365,559	365,559	365,559	365,559	365,559
Sealed road pavement rehabilitation	51%	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Structures component replacement	51%	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000
Traffic Services renewals	51%	390,000	390,000	390,000	390,000	390,000	390,000	390,000	390,000	390,000	390,000
		5,290,559	5,290,559	5,290,559	5,290,559	5,290,559	5,290,559	5,290,559	5,290,559	5,290,559	5,290,559

Table 7.9: Roothing Capital & Renewal Projects 2028/33– 2043/48 (\$) Five Year Bands

Renewals (5 yr period)		2028/33 \$	2033/38 \$	2038/43 \$	2043/48 \$
Minor Events	51%	0	0	0	0
Unsealed Road metalling	51%	350,000	350,000	350,000	350,000
Sealed Road resurfacing	51%	12,000,000	12,000,000	12,000,000	12,000,000
Drainage renewals	51%	1,827,795	1,827,795	1,827,795	1,827,795
Sealed road pavement rehabilitation	51%	10,000,000	10,000,000	10,000,000	10,000,000
Structures component replacement	51%	325,000	325,000	325,000	325,000
Traffic Services renewals	51%	1,950,000	1,950,000	1,950,000	1,950,000
		26,452,795	26,452,795	26,452,795	26,452,795

Table 7.10: Unsubsidised Roothing Capital & Renewal Projects 2018/19 – 2027/28

<i>Renewals Unsubsidised (Annual)</i>	<i>NZTA subsidy</i>	<i>2018/ 19 \$</i>	<i>2019/ 20 \$</i>	<i>2020/ 21 \$</i>	<i>2021/ 22 \$</i>	<i>2022/ 23 \$</i>	<i>2023/ 24 \$</i>	<i>2024/ 25 \$</i>	<i>2025/ 26 \$</i>	<i>2026/ 27 \$</i>	<i>2027/ 28 \$</i>
Footpath renewal - district	0	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000
		189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000	189,000

Table 7.11: Roothing Capital & Renewal Projects 2028/33– 2043/48 (\$) Five Year Bands

<i>Renewals Unsubsidised (5 yr period)</i>	<i>NZTA subsidy</i>	<i>2028/33 \$</i>	<i>2033/38 \$</i>	<i>2038/43 \$</i>	<i>2043/48 \$</i>
Footpath renewal - district	0	945,000	945,000	945,000	945,000
		945,000	945,000	945,000	945,000

Table 7.12: Roading Low Risk Low Cost Projects 2018/19 – 2027/28

Capital Works Low Risk Low Cost	NZTA subsidy	2018/19 \$	2019/20 \$	2020/21 \$	2021/22 \$	2022/23 \$	2023/24 \$	2024/25 \$	2025/26 \$	2026/27 \$	2027/28 \$
LOS	51%	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000	850,000

Table 7.13: Roading Low Risk Low Cost Projects 2028/33– 2043/48 (\$) Five Year Bands

Capital Works Low Risk Low Cost	NZTA subsidy	2028/33 \$	2033/38 \$	2038/43 \$	2043/48 \$
LOS	51%	4,250,000	4,250,000	4,250,000	4,250,000

Table 7.14: Roading Capital Projects 2018/19 – 2027/28

Capital Works			2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Growth		%	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
LoS		%										
Seal Widening	Growth	30%	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
Seal Widening	LoS	70%	112,000	112,000	112,000	112,000	112,000	112,000	112,000	112,000	112,000	112,000
Kerb and Channel	Growth	5%	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750
Kerb and Channel	LoS	95%	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250
Footpath	Growth	5%	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750
Footpath capital – district	LoS	95%	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250	52,250
Streetslighting capital – district	Growth	5%	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
Streetslighting capital – district	LoS	95%	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000
Matamata Bypass land acquisition –	LoS	90%				990,000						
Hinuera to Peria Road link Matamata	Growth	60%			60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Hinuera to Peria Road link Matamata	LoS	40%			40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Hangawera Road to Snell	Growth	60%			60,000	60,000	60,000					

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Capital Works			2018 /19	2019 /20	2020/2 021	2021/2 022	2022/2 023	2023/ 24	2024 /25	2025/ 26	2026 /27	2027 /28
Growth		%	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
LoS		%										
Hangawera Road to Snell	LoS	40 %			40,000	40,000	40,000					
Tower Road parking bays							300,000					
Tower Road intersection					5,000							
Tower Road pedestrian									25,000			
Station Road 1 upgrade							730,000					
Station Road 2 upgrade									300,000			
Hampton Terrace upgrade												190,000
Banks/Burwood intersection upgrade												115,000
Haig Road upgrade							335,000					
Eldonwood South - Collector road widening							100,000	100,000	100,000	100,000	100,000	
Stirling Street widening north				90,000								
Waharoa - Factory Road upgrade					250,000							
Avenue Road North upgrade									120,000			
Cycleway - Hinuera to Pairere						1,500,000						
Cycleway - off-shoots from existing trail			250,000	250,000	250,000							
Waharoa - Tower - Okaia Cycleway						600,000						

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Capital Works			2018 /19	2019 /20	2020/2 021	2021/2 022	2022/2 023	2023/ 24	2024 /25	2025/ 26	2026 /27	2027 /28
Growth		%	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
LoS		%										
MM pedestrian connectivity					250,000							
Total Capital Works - Growth												
Total Capital Works - LoS												
Total Capital Works - Grants												
Total Capital												
Total Renewal & New Works			739,000	770,000	1,135,000	3,912,000	3,595,000	2,480,000	655,000	1,050,000	630,000	835,000

Table 7.15: Rooding Capital Projects 2028/29 – 2043/48 (\$) Five Year Bands

<i>Capital Works</i>		Growth/ LOS Split	2028/33 \$	2033/38 \$	2038/43 \$	2043/48 \$
Smith Street upgrade			260,000			
Everad Ave intersection upgrade				257,000		
Total Capital Works - Growth						
Total Capital Works - LoS						
Total Capital			260,000	257,000	0	0

7.11 Improvement Planning

7.11.1 Continuous Improvement

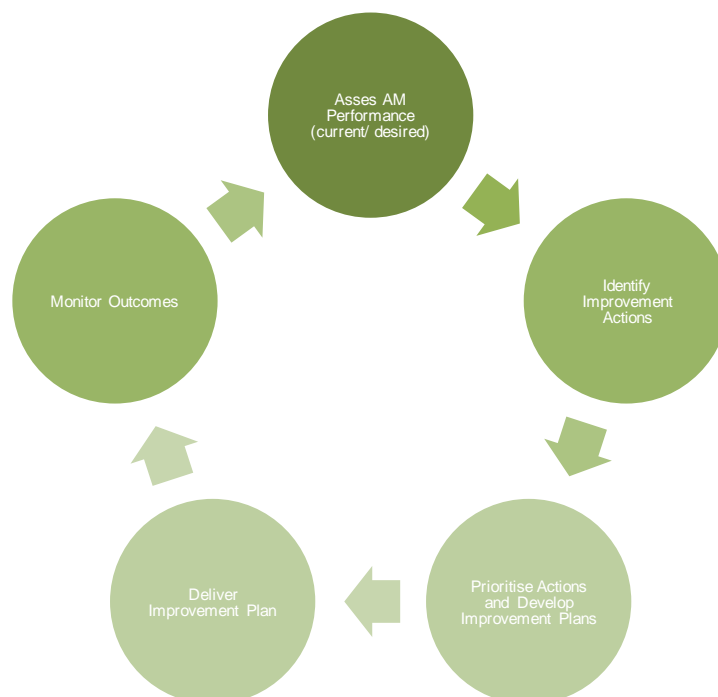
MPDC wishes to advance the status of the Rooding Activity Management Planning by adopting a continuous improvement approach. This Improvement Plan is integral to that approach, quantifying current business practice and measuring progress toward an identified future position.

7.11.2 Improvement Cycle

The purpose of the Improvement Plan is to identify, prioritise and implement specific projects and tasks which will increase the level of maturity over time.

8.0 PLAN IMPROVEMENT AND MONITORING

Figure 8.1: Continuous Improvement Cycle



8.1.1 Practice Assessment

The first step of Activity Management improvement plan is to understand the current and future appropriate practices. To do this in a systematic way the following elements will be assessed:

- Asset Management Policy Development
- Levels of Service and Performance Management
- Demand Forecasting
- Asset Register Data
- Asset Condition
- Risk Management
- Decision Making
- Operational Planning
- Maintenance Planning
- Capital Works Planning
- Financial and Funding Strategies
- Asset Management Teams
- Asset Management Plans
- Information Systems
- Service Delivery Mechanisms
- Quality Management
- Improvement Planning

These key elements are critical to achieving sustained performance of the organisation at the lowest life cycle cost and to form a clear picture of how well it is performing in each of these elements and where the weaknesses lie. Each of the elements adds value to the raw business processes which leads to good asset management practice.

8.1.2 Identify Improvement Actions

A clear understanding of the gap between current and appropriate practice will help drive identification of improvement actions. However identifying improvements should also be an ongoing activity, not just a one-off gap assessment process.

Improvement actions need to be clearly scoped and defined. Failure to recognise the full costs associated with improvements may see the projects inadequately resourced and potentially not meeting the desired outcomes.

8.1.3 Development Improvement Plan & Prioritise Actions

The improvement plan will be developed to identify the high priorities requiring action to focus the organisation on the most important areas. Utilising a simple improvement framework that has a clear relationship to the assessment elements will help people understand how the actions relate to the appropriate level of Asset Management required.

8.1.4 Deliver the Improvement Plan

The improvement plan needs to be strongly lead properly resourced and regularly monitored and reported to a steering group. Clear targets must be well defined with well specified deliverables that help focus on what is required.

8.1.5 Monitor the Outcomes

Organisations are under pressure to show the quantifiable benefits from improving Asset Management outcomes and this is a real challenge for the industry. Regular Asset management assessments using the frameworks in this section are currently the best way to demonstrate ongoing improvement to Asset Management practices and should be utilised over a number of years to track progress.

8.2 Maturity Index

The maturity index below makes an assessment of how advanced MPDC is in terms of improvement planning. The improvements that need to be made to achieve a target level of maturity that is appropriate to the organisation context are outlined in the previous tables.

The following factors have been considered when setting the maturity index target for the next 3 years:

- Level of Asset Management Maturity Required for the business unit
- Resources, level of competency and knowledge

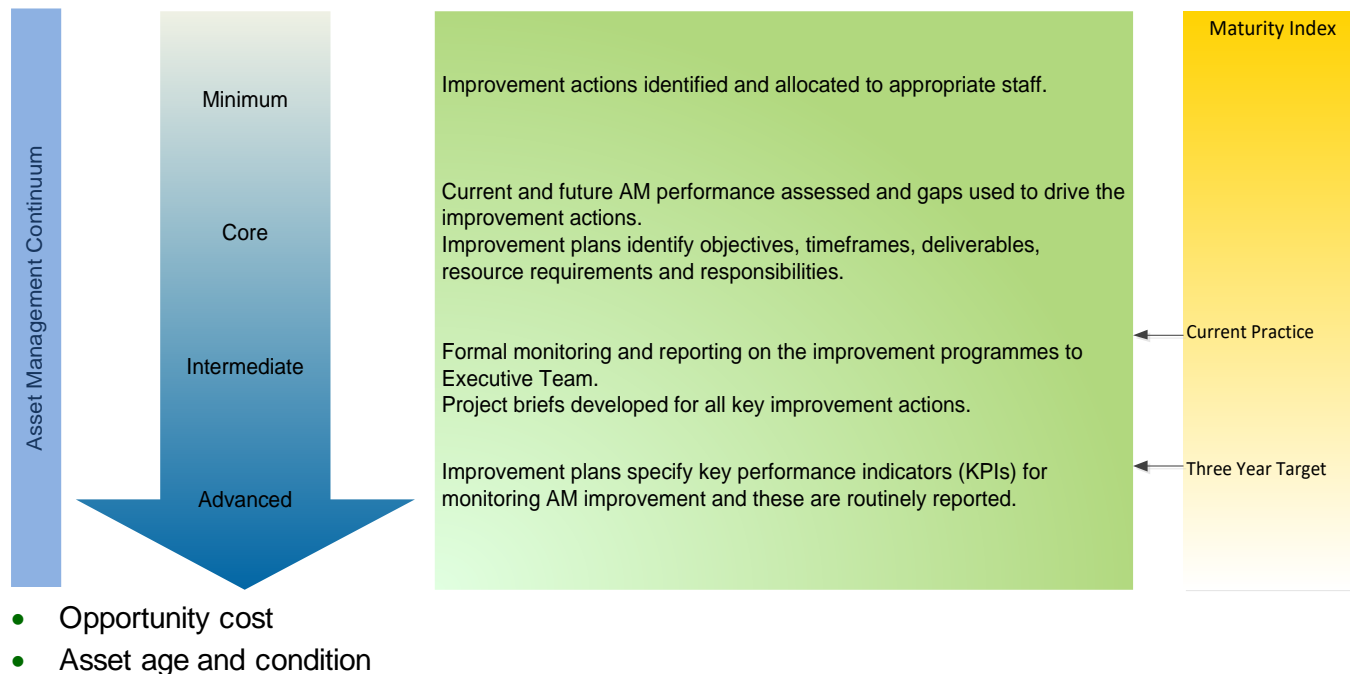


Figure 8.2: Asset Management Continuum

