

Transportation Activity Management Plan 2018



Quality Assurance Statement

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1 Executive Summary

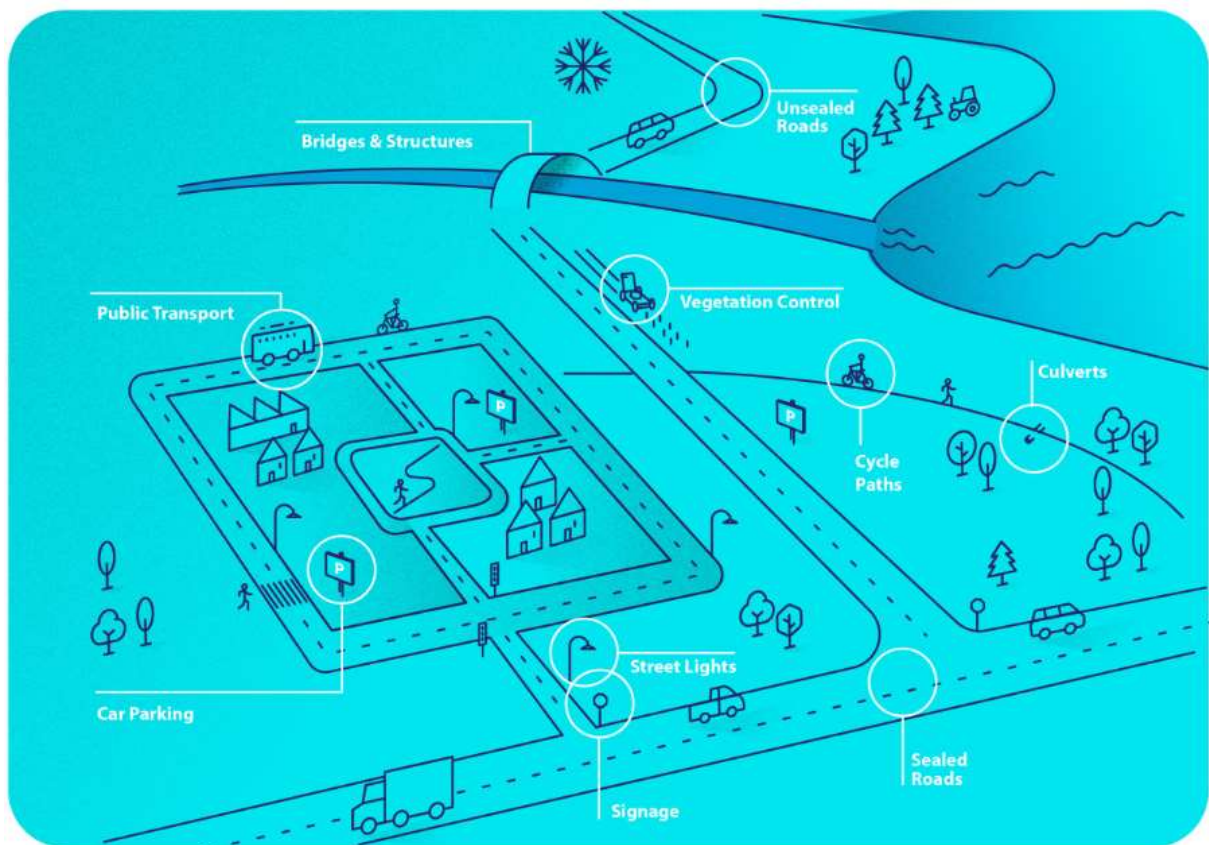
This transportation Activity Management Plan (AMP) has undergone significant change in the last few years, due to changes in the wider transportation sector and changes in Council's financial and community priorities. This AMP incorporates a business case approach to determine strategic issues and justify investment in the programmes of work against realisable benefits.

Population growth is the overarching theme of this AMP and investment has been targeted at addressing the increase in residents but also growth in elderly population.

This AMP also addresses the risk of significant future costs brought about by three years of restrained investment whilst continuing to meet Council's **financial strategy**.

1.1 What We Do

Council manages a range of transportation services and assets to facilitate transportation in the District. This can be as simple as keep the roads free from debris and frost to undertaking major route changes to improve efficiency. The figure below has an overview of what Council does, Section 8 covers the work undertaken on the assets in more detail.



1.2 Why We Do It

By providing a quality transportation network, Council enables the safe and efficient movement of people and goods which improves the economic and social well-being of the District. The provision of transport services, roads and footpaths is a public good and as such it is a core function of local government.

Council will manage transportation activities to facilitate movement of people and goods within communities and around the District.

1.3 Levels of Service

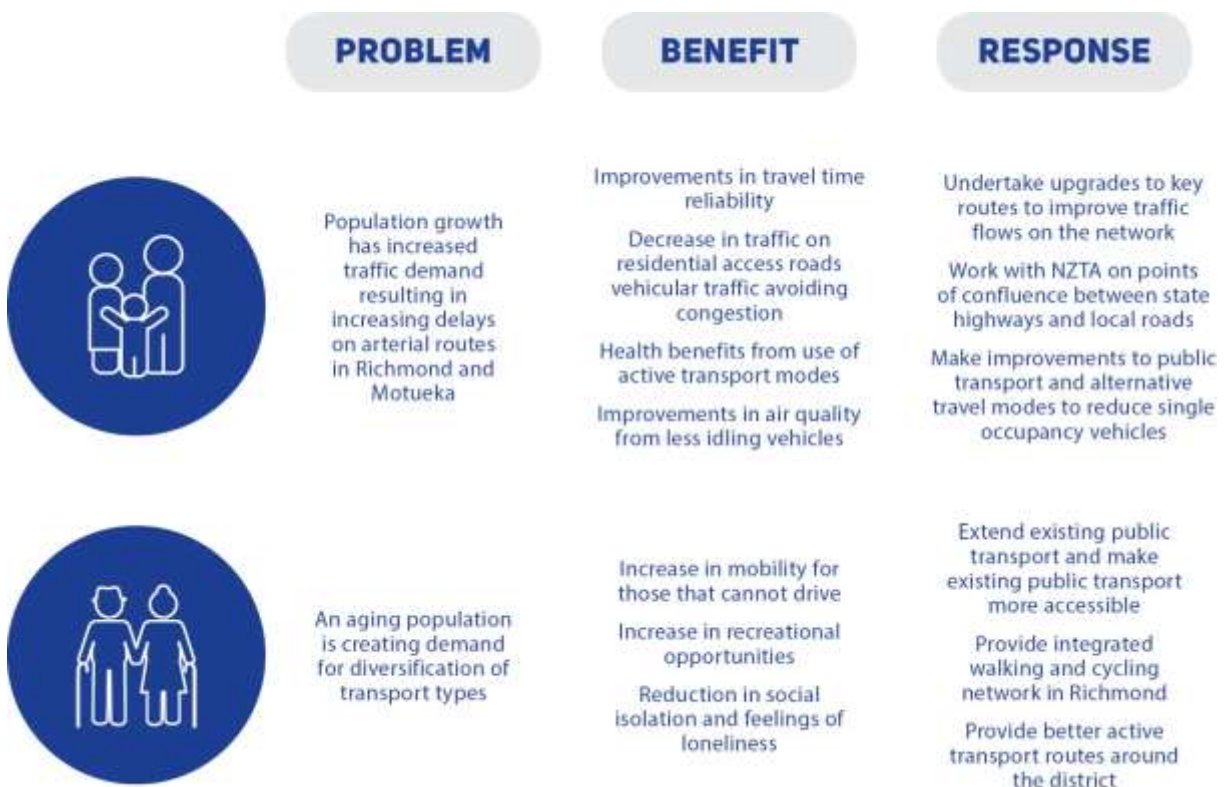
Council aims to provide the following levels of service for the Transportation activity.



<p>“Our transportation network is becoming safer for its users.”</p>	<p>“We proactively maintain roads in high risk areas to minimise unplanned road closures.”</p>	<p>“Our transportation network enables the community to choose from various modes of travel.”</p>
<p>“Our transportation network is maintained cost effectively and whole of life costs are optimised.”</p>	<p>“Our transportation network is managed so that changes to normal travel time patterns across the network are communicated effectively.”</p>	<p>“The travel quality and aesthetics of our transportation network is managed at a level appropriate to the importance of the road and satisfies the community’s expectations.”</p>

For the duration of this AMP, Council is generally maintaining existing levels of service. However, some asset types and modes of transport including unsealed roads, walking, cycling and public transport are planned to have some improvements. For further detail, including measures and targets for the levels of service refer to Section 5.

1.4 Key Issues

To assist in shaping the programme of works in this document, Council has developed problem statements that assist in focusing on the problem, what the benefits to solving the problems would be and how council will respond. This is outlined using in the investment logic map in the figure below.



	PROBLEM	BENEFIT	RESPONSE
	Growth in commercial activities both across the District and in localised areas is accelerating asset damage	Maintaining a cost-effective road network Improving safety by having a smooth surface that sheds water Secure and efficient freight routes	Increase pavement renewal programme to target routes that are prone to damage from heavy commercial vehicles
	Natural hazard events and local geology are resulting in significant service disruptions across the network that take longer and cost more to fix	Maintain access for critical services in natural hazard events Reduce risk of and the duration of communities' isolation in natural hazard events	Increase drainage maintenance and renewals programme Undertake an across activity risk, resilience and recovery study

Section 7 outlines the problems and the evidence that supports them. Section 8 addresses how Council will respond to these problems.

1.5 Operational Programme

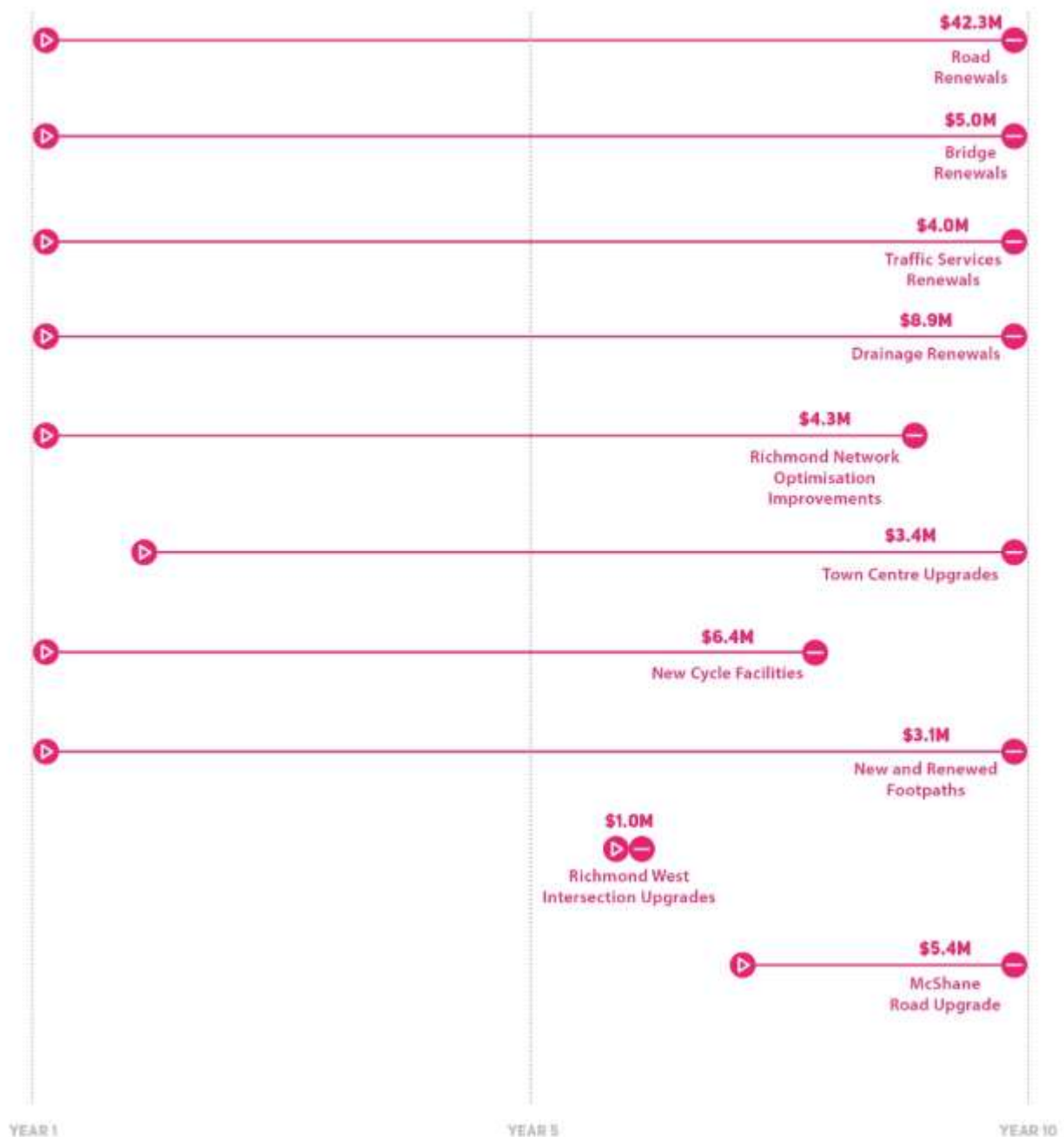
The transportation maintenance and operational programme is the largest of Council's activities. Together it constitutes around \$6.7 million in annual spending. The major bodies of work in this programme and their forecast spend for the next 30 years are shown in below.

Environmental Maintenance	Sealed Road Maintenance	Unsealed Pavement Maintenance	Transport Services Maintenance
\$45.0M	\$37.5M	\$18.6M	\$15.9M
Drainage Maintenance	Road Structures Maintenance	Road Safety Programmes	Public Transport
\$15.0M	\$7.4M	\$6.5M	\$5.5M

Council contributes the majority of funding to the transportation programme. New Zealand Transport Agency (NZTA) is also a significant contributor funding subsidised works at around 51%. This plan is largely business as usual but there are some changes to meet customer expectations. Drainage maintenance has been increased to address the increase in natural hazards. Public transport has also been increased to add new and expanded services to address increasing demand from population growth and demographic changes. Section 8.2 provide greater detail on this.

1.6 Capital Programme

Council has developed the capital programme of works based on prioritisation of projects that address safety, active transport, renewals and growth. The figure below shows the key programmes of capital improvements expenditure.



This document introduces two new programmes of work. The first is new cycle facilities. This addresses growth in congestion and aging population. The second is projects that are defined as part of the Richmond Network Operating framework. These projects are across all transportation modes and increase the walking and cycling facilities in response to growth and the aging population. Section 8.3 provides a complete programme of capital works further detail on the scope of the projects.

1.7 Key Changes

This document largely follows on from the themes developed in the 2015 AMP. The key issues and customer expectations have changed the prioritisation of key bodies of work. Some of the biggest changes are shown below.



1.8 Key Risks and Assumptions

There are factors outside of Council's control that can change having an impact on Council's ability to do what it planned. Sometimes the impact can be significant. There is always uncertainty in any planning process but the key to good quality planning is to make clear assumptions to help address this uncertainty. This section sets out the key risks and assumptions that relate to this activity:

- Natural hazard events continue at the current rate and there is no catastrophic event;
- The Richmond Network Operating Framework study identifies similar projects to those in this document;
- NZTA continues to provide a similar level of funding in the future;
- The revised Government Policy Statement on transportation does not change the priorities as defined in this document;
- Growth in the District is high for the first 15 years and then medium for the following 15 years;
- Technology does not significantly change the current transportation paradigm.

2 Introduction

The purpose of this Activity Management Plan (AMP) is to outline and to summarise in one place, Council's **strategic management** and long-term approach for the provision and maintenance of its transportation network to an agreed level of service.

2.1 Rationale for Council Involvement

This AMP demonstrates responsible management of the District's **assets on behalf of customers and stakeholders** and assists with the achievement of strategic goals and statutory compliance. This AMP combines management, financial, engineering and technical practices to ensure that the levels of service required by customers are provided at the lowest long-term cost to the community and are delivered in a sustainable manner.


The provision of a transportation network, facilities and services is a core service of local government and is something that Council has always provided. The transportation activity provides many public benefits and it is considered necessary and beneficial to the community. Council undertakes the planning, implementation and maintenance of the network to assist in promoting the economic, social, environment and cultural well-being of the District's communities.





2.2 Description of Assets & Services

Council is responsible for connecting people and moving goods across Tasman.

Tasman's road network includes 1,751 kilometres of maintained roads and associated assets. The transport assets have a replacement value of \$824 million and a current depreciated value of \$618 million as summarised in Table 1 below

Table 1: Transport Assets Overview

Transport Asset Group		Replacement Value	Depreciated Value
	1,741km of roads, (967km sealed and 784km unsealed)	\$522M	\$457M
	494 bridges (including footbridges)	\$152M	\$82M
	285km of footpaths, 276km walkways and 9km cycleways	\$35M	\$17M
	138 km of Recreational based Tasman Great Taste Trail	\$7.2M	\$6.4M

Transport Asset Group	Replacement Value	Depreciated Value
	22 off street carpark areas	\$4.4M
	10157 culverts with a total length of 98.7km 2428 sumps and catchpits	\$77M
	2,901 Streetlights	\$8.5M
	Other Road and Transport Assets	\$17.5M
TOTAL VALUE OF TRANSPORT ASSETS AS AT 1 APRIL 2017		\$824M
		\$618M

Council uses the One Network Road Classification system to categorise the road network. This enables Council to assess our road network for efficiencies in investment and relative performance against other road controlling authorities in New Zealand. Figure 1 below, shows that arterial and primary collector roads make up a small proportion of the overall road network but constitute a significant proportion of total travel on the network. Conversely, the lower classification road (Access and Low Volume) make up a majority of the overall road network, but account for a small proportion of total journeys.

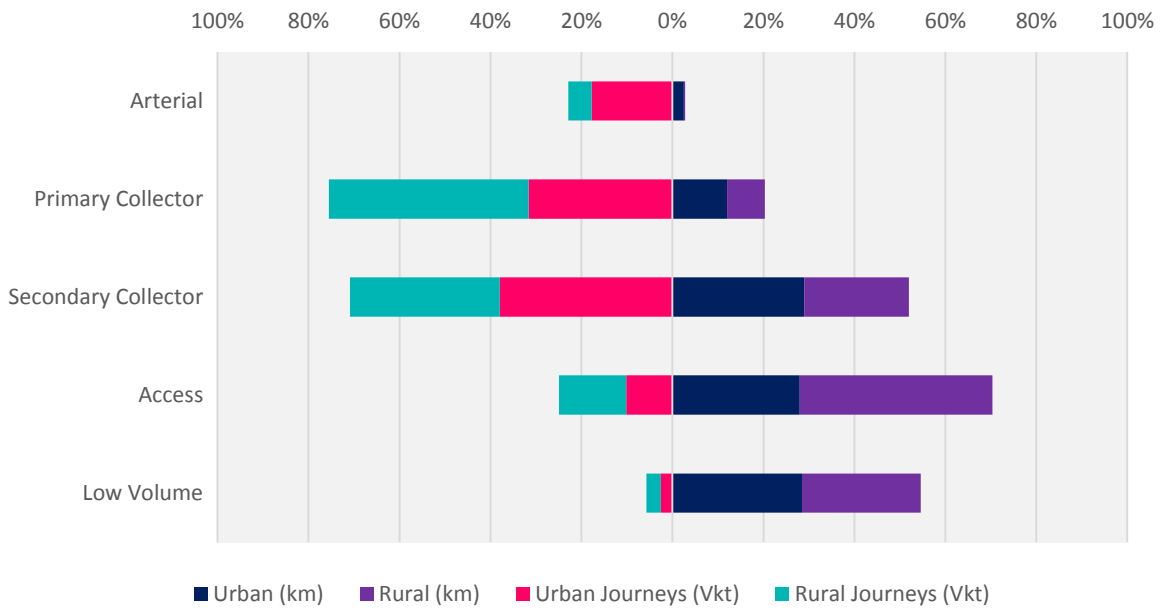









Figure 1: Network Length and Journeys Travelled

In addition to asset management, Council undertakes transport related services. Table 2 below summaries the transport related service that Council is involved in.

Table 2: Transport Services Overview

Transport Service	Influence	Annual Cost
 Public Transport services around the District		\$199,000 pa
 Door to door passenger transport scheme for people with disabilities		\$83,000 pa
 Transport safety programmes undertaken at schools to educate and encourage safe active transport	4,000 attendees	\$50,000 pa

Transport Service	Influence	Annual Cost
	Targeted training programmes at drivers that are identified as being at higher risk	600 attendees \$96,500 pa
	Driver safety education through targeted signage	+10,000 drivers \$70,000 pa
	Road reserve pest plant control	\$80,000 pa
	Time limited parking enforcement	\$50,000 pa

2.3 Transportation Asset Group Description

2.3.1 Sealed Pavement & Surfacing

Council currently maintains a total of 1,741 km of road network, of which 967 km is sealed. Surface and pavement inventory data is held in Council's Road Asset and Maintenance Management (RAMM) database. The RAMM database records go back to the 1960s with some of the pavement records noted as estimates. Generally urban pavements have been constructed with reasonable depths of aggregate (eg. 300 mm) and there has been minimal pavement rehabilitation over the last 10 years. Many rural roads were developed in the 1960s at low cost with minimal amounts of pavement aggregate (eg. 50-100 mm) and were then sealed.

During the last 10 years, there has been considerable Falling Weight Deflectometer testing on the network. This involved load testing the pavement to measure pavement strength. Associated with this, test pits have been excavated at selected sites to measure the actual layer depths and then compared with what is in the RAMM database. A conclusion from the last five years of test pit information is that generally the test pit measures are showing a greater aggregate depth than what is shown in RAMM.

2.3.2 Unsealed Pavements

Council maintains 766km of unsealed roads. These vary in width from 2m to 8m with an average width of 3.7m. Generally Council's unsealed road network carries low traffic volumes, with 63% of roads carrying less than 50 vehicles per day (vpd), and 33% carrying less than 25 vpd. Council does not expect that this will change significantly. It is also unlikely that many unsealed roads will be sealed in future due to dropping the seal extension programmes the greater whole-of-life costs. The exception to this is if the capital upgrade cost is paid by a third party.

Council have undertaken some testing of various maintenance metal types and the cost efficiency of using higher value aggregates especially on areas of high traction demand. This has identified products that are now used to minimise maintenance needs, and as more of the unsealed network is treated with these products over time unsealed road performance will improve.

Unsealed road inventory data is held in Council's RAMM database. Figure 2 shows the approximate traffic volumes across Council's unsealed network.

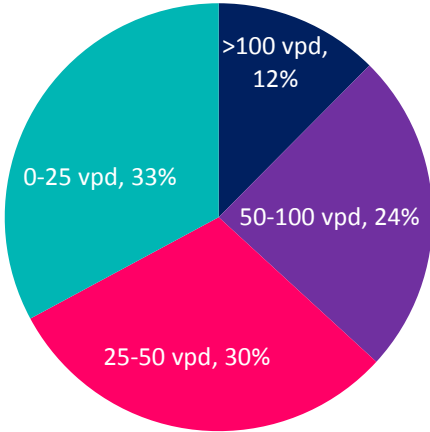


Figure 2: Traffic Volumes on Unsealed Roads

Historically pavement material and depth data has not been recorded for unsealed roads. Since 2012/13 Council has been recording new pavement layers in RAMM when completing structural overlay activities. Routine maintenance metaling is not recorded in the RAMM inventory table, and the costs associated with the work are captured in RAMM under the Maintenance Cost table.

2.3.3 Drainage

Drainage assets include culverts, lined and unlined surface water channels, sumps and soak pits.

Poor condition, lack of maintenance and lack of adequate surface water channels were noted in the 2010 NZ Transport Agency's technical report as a weakness for Council's road network. Following receipt of this report, the transportation programme included significant emphasis on improving roadside drainage by forming new, deepening existing and reforming surface water channels. Since 2010/11, 115km of roadside drainage has been improved. It is proposed to continue with the programme of improvements which includes the existing backlog of inadequate drainage and greater emphasis on drainage in the first five years of this AMP. This should help to minimise pavement deterioration which would otherwise arise from poor drainage and associated saturated pavements and subgrades. This drainage improvement strategy supports the current pavement strategy of longer pavement and surfacing lifecycles.

Drainage improvements will be prioritised based on:

- forward works programme and particularly reseal timing;
- traffic (Annual Average Daily Traffic and Heavy Commercial Vehicles);
- risks to existing infrastructure;
- topography.

Culvert inventory data is held in Council's RAMM database. Approximately 94% of Council's culverts are constructed of concrete. The remainder are PVC (2%), earthenware (1.5%), steel (1.5%) or recorded as 'unknown'. Culverts are relatively long-life assets and modern well-constructed reinforced concrete culverts could be expected to last up to 100 years and perhaps longer.

The installation date of a large majority of Council’s existing culverts is unknown. Therefore, relying on age-based renewal is not considered feasible or practical. Council carries out condition inspection to determine renewal requirements. Approximately 50% of lined surface water channels have their construction dates recorded in RAMM. For the purposes of valuation, they are generally assigned a life of 50 years for concrete and 15 to 25 years for sealed or asphalt. Their actual life may vary considerably from what is assumed, and in practice these assets are renewed based on condition. It is expected that the life achieved for a concrete channel may significantly exceed 50 years.

2.3.4 Bridges

A bridge or large culvert is classed as a bridge structure when the waterway area exceeds 3.4m². Council’s bridge stock is generally static in nature due to typically slow deterioration of the assets and little growth.

Council owns and maintains 483 bridges as described in Bridge asset data is held in Council’s RAMM database and summarised in Table 3 below.

Table 3: Bridge Summary

Bridge Type	Number	Length (m)
Road – Two Lane	194	2,114
Road – Single Lane	278	5,444
Footbridges/Cycle bridges	11	545

All bridges are inspected every two years (50% of bridges in year 1 and 50% of bridges in year 2) on a cyclic basis. Council receives overweight vehicle applications and issue permits based off a database that gives the allowable loading of each bridge in the District. Anything that has additional complication, a structural engineer undertakes an assessment and provides conditions to the use of bridges for specific transits.

2.3.5 Retaining Walls

Historically the collection of retaining wall inventory data was poor and Council has had to identify the majority of its assets post construction. Retaining wall inventory data was first collected and recorded in RAMM during 2011/12. New walls added to the network are typically as a result of slips from either gradual processes or sudden events. New walls are considered on a case-by-case economic basis. Generally, Council’s preferred option is to realign the road rather than construct new structures.

2.3.6 Traffic Signs, Delineation and Road Markings

Signs and marking convey important information to road users to improve safety and ensure people and discover the way to their destination.

In 2012, Council reviewed its signs and delineation policy and developed a specific hierarchy. Generally, the new approach required improvements to arterial and tourist routes in order to provide consistency for drivers that are unfamiliar with the network. At this time the level of service for the other lower road hierarchies was considered and reduced. The basis for the reduction was due to the proportion of drivers who are unfamiliar with these routes being much less when compared with arterial and tourist routes. Regardless of the hierarchy, Council staff can assess sites on a case-by-case basis and recommend specific treatments if there is considered to be a safety exception.

Traffic signs and road markings are recorded in Council’s RAMM database. Sign inventory data is summarised below in Table 4. Edge marker posts and culvert markers are excluded from the database as asset data is not collected for these short-life and low-cost assets. To date no asset data for raised pavement markers has been captured or recorded. Road markings which have been classed as a safety exception by the Policy are recorded in a separate RAMM table.

Table 4: Road Sign Inventory Summary

Sign Type	Quantity
Guide	48

Sign Type	Quantity
Hazard Markings	2,088
Information Signs	1,358
Miscellaneous	74
Motorist Service	77
Permanent Warning	2,646
Regulatory General	2,045
Regulatory Parking	360
Street Name	1,784
Tourist	57
Total	10,537

2.3.7 Traffic Signals

There are currently two traffic signal-controlled intersections within the District which are owned by Council. These are at the Talbot Street and Salisbury Road intersection, and the Arbor-Lea Avenue and Salisbury Road intersection in Richmond.

Council uses the Wellington Transport Operations Centre (WTOC) which is an operational division of NZ Transport Agency, to operate and monitor all traffic signals in the District. The maintenance of the traffic signals is also undertaken **in conjunction with Nelson City Council's assets under their maintenance contract which is currently held by Powertech NZ Ltd.**

New traffic signals may be installed in conjunction with intersection upgrades across the network.

2.3.8 Street Lights

Council is responsible for 2,994 street lights, this includes 2,901 Engineering Services and 93 Community Services assets. The non-transportation assets are not funded by the transportation budget but for efficiency purposes they are maintained within one maintenance contract managed by the transportation team. **Council's street light inventory data** is held in its Confirm database.

Council typically owns all street lights, pedestrian crossing lights and poles constructed in road reserve since the early 1970s. Street lights and poles constructed prior to this are typically owned by Network Tasman Limited who charge Council for the leasing of those lights. Council is responsible for the maintenance and operation of all public street lighting regardless of whether they are owned by Council or Network Tasman Limited.

Council has recently upgraded its entire transportation street light network to LED. The change to LED has reduced whole-of-life costs, primarily due to longer life fittings and less power consumption.

2.3.9 Footpaths & Walkways

Footpaths are a dedicated pedestrian path with an alignment alongside a carriageway within road reserve. Walkways are a dedicated pedestrian path with an alignment which connects between road reserves. For practicality purposes, walkways and footpaths are managed as one asset group. Cycleways and shared paths are considered separately. Recently NZTA included walkways and cycleways as subsidised activities.

Council's footpath and walkway inventory data is held in the RAMM database. There are currently about 273 km of formed footpaths and walkways in the District. Figure 3 summaries the footpath network by surface type.

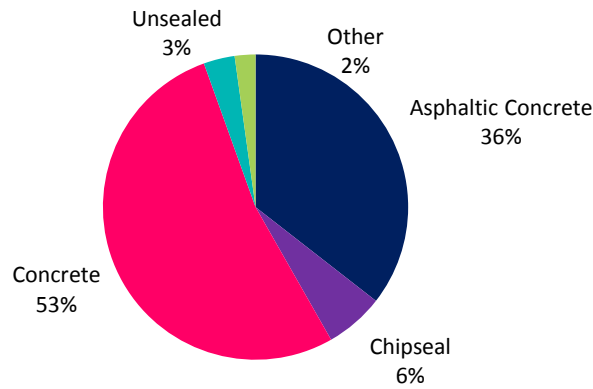


Figure 3: Summary of Footpath and Walkway Surfaces

2.3.10 Cycleways

Council's cycleways are grouped into three types; on-road, off-road and Tasman's Great Taste Trail. On-road cycleways form part of the sealed carriageway and as such are managed as part of the sealed pavement. The cycleway is in effect a function of that part of the carriageway and it is not considered to be a separate asset. Off-road shared paths may be constructed separately to the road carriageway or connected to the edge of the road. In this situation the cycleway is considered to be a separate physical asset and is managed and maintained similar to footpaths and walkways.

Tasman's Great Taste Trail was formed by incorporating existing assets where possible and then constructing new infrastructure to join the gaps. The trail extends across some of Council's shared pathways, road sections, through parks and reserves, and across private property and Department of Conservation land. Development of the trail is planned to continue until 2022.

Cycleways are not well defined or classified in the RAMM database. Some are listed as footpaths, some walkways, and some not at all. This requires improvement and has been identified in the Improvement Plan. For completeness all have been listed below; however, this will not be consistent with RAMM.

Table 5: Cycleway Inventory

	Classification	Surface Type	Length (m)	Part of Tasman's Great Taste Trail
Oxford Street	On-road	N/A	-	No
Salisbury Road	On-road	N/A	-	No
Wensley Road	On-road	N/A	-	No
Richmond Railway Reserve	Off-road	Asphaltic Concrete	1550	Yes
Richmond Deviation	Off-road	Asphaltic Concrete	1500	Yes
Lodder Lane	Off-road	Slurry & Asphaltic Concrete	1630	Yes
Main Road Lower Moutere	Off-road	Asphaltic Concrete & Chip Seal	2700	Yes
Queen Victoria Street	Off-road	Asphaltic Concrete	1240	No
Abel Tasman Drive	Off-road	Asphaltic Concrete	315	No
High Street	Off-road	Asphaltic Concrete	292	Yes
Total			9227	

2.3.11 Car Parks

Council owns and maintains 22 off-street car parking areas. The provision of these off-street car parking facilities is not funded by the NZ Transport Agency and consequently activities associated with providing these facilities are considered to be non-subsidised. Council's off-street car parking facilities include a range of assets, for example surfacing, pavements, signs, lighting and drainage sumps. Table 6 provides a detailed summary of Council's off-street car parking facilities. Off-street car parking inventory data is stored in Council's RAMM database.

Table 6: Carpark Inventory Summary

	Number of Off Street Car Parking Areas	Total Area (m ²)	Total No. of Marked Parking Spaces
Brightwater	1	1020	6
Kaiteriteri	1	2430	80
Motueka	5	10554	290
Murchison	1	544	24
Richmond	7	20572	625
St Arnaud	1	280	0
Takaka	4	10855	141
Wakefield	2	2455	73
Total	22	48710	1239

2.3.12 Street Furniture

Council's street furniture is predominately located within the town centre areas across the District. Assets typically include seats, litter bins, shade structures and bus shelters. New street furniture is generally installed in conjunction with town centre renewal or upgrade projects. Litter bins are an exception to this and are replaced based on condition.

The inventory data for street furniture assets is stored in Council's RAMM database. The summary of assets from the latest valuation undertaken in 2010 is shown below in Table 7.

Table 7: Street Furniture Inventory Summary

Description	Quantity
Bike Stand	20
Bus Shelter	5
Drinking Fountain	1
Rubbish Bin	200
Seat	68
Shade Structures	3
Water Feature	1
Total	298

2.3.13 Public Transport

Public transport services are undertaken by Nelson City Council on behalf of Tasman with its bus service extending into Richmond connecting it with Nelson CBD. Nelson City Council also run the Total Mobility service, which assist those in our community with transportation limitations by subsidizing door to door travel.

3 Strategic Direction

Strategic direction provides overall guidance to Council and involves specifying the organisation's objectives, developing policies and plans designed to achieve these objectives, and then allocating resources to implement the plans. Transportation strategic direction is set using a combination of national transportation priorities set via the Government Policy Statement on Land Transport, regional issues set via the Regional Land Transport Plan, **Council's Infrastructure Strategy** and District transportation strategic issues.

3.1 Our Goal

Council will manage transportation activities to facilitate movement of people and goods within communities and around the District.

3.2 Contribution to Community Outcomes

Table 8 below presents how the transport activity contributes to the Joint Council's Community Outcomes.

Table 8: Community Outcomes

Community Outcomes	Does Our Activity Contribute to the Community Outcome	How Our Activity Contributes to the Community Outcomes
Our unique natural environment is healthy and protected.	Yes	We minimise the effect on our natural environment by undertaking routine road sweeping, sump cleaning, and litter removal.
Our urban and rural environments are people friendly, well-planned and sustainably managed	Yes	We aim to provide a transportation network that is safe to use and accessible to all. Our road network is the backbone of the District and connects our communities.
Our infrastructure is efficient, cost effective and meets current and future needs.	Yes	We undertake robust long and short-term planning to enable infrastructure and activity management decisions to be optimised to meet both the current and future demand.
Our communities are healthy, safe, inclusive and resilient.	Yes	We provide a safe and resilient transport network, which also provides opportunities for active recreation with associated health benefits.
Our communities have opportunities to celebrate and explore their heritage, identity and creativity.	No	Not applicable.
Our communities have access to a range of social, educational and recreational facilities and activities.	Yes	Our transport network enables the community to travel to their social, educational and recreational activities.
Our Council provides leadership and fosters partnerships, a regional perspective and community engagement.	Yes	We provide an integrated transport network with our partner NZTA as well as our neighbours, Nelson City Council and Marlborough District Council. Along with these parties, we prepare Regional Land Transport Plans that are aligned across the Top of the South.

Community Outcomes	Does Our Activity Contribute to the Community Outcome	How Our Activity Contributes to the Community Outcomes
Our region is supported by an innovative and sustainable economy.	Yes	Our transport system is operated in an effective and efficient way to meet the needs of residents and businesses, as well as enabling our economy to thrive and grow.

3.3 Government Policy Statement on Land Transport

The GPS is the Government’s main document which sets priorities and funding levels for land transport investment.

The Government released an ‘Engagement Draft’ of its GPS (the Draft GPS 2018) in April 2018 which includes:

- national objectives for land transport;
- the results the Government wishes to achieve from allocation of the National Land Transport Fund;
- the Government’s land transport investment strategy in a framework that will guide investment over the next 10 years; and
- the Government’s policy on borrowing for the purpose of managing the NLTP.

The GPS cannot determine which projects will be funded or how much funding any particular project will receive. Rather, the GPS sets ranges of funding which the Government will make available for different types of activities that best meet its objectives. The Transport Agency then determines which projects receive funding and to what level, within those overall funding ranges.

The strategic priorities in the draft 2018 GPS are shown below in Figure 4 below.

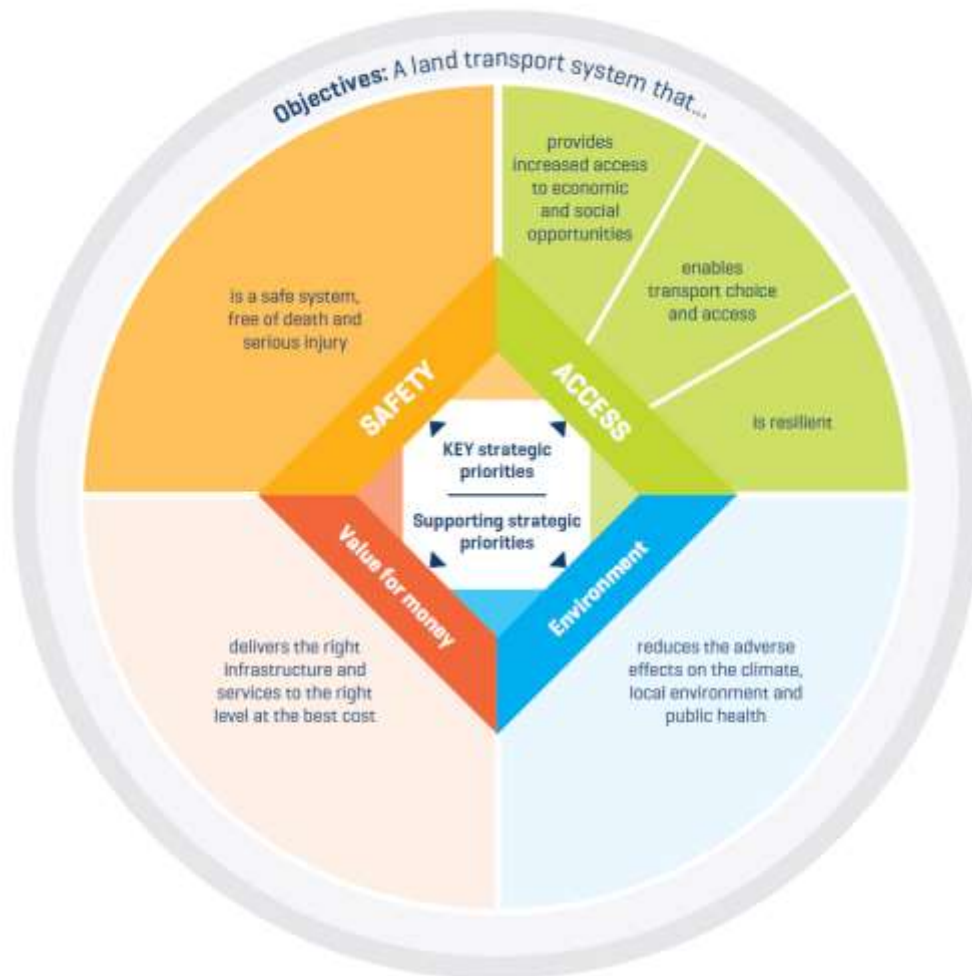


Figure 4: GPS 2018 Strategic Priorities

Draft GPS 2018 transforms the focus of investment for land transport. There are new strategic priorities, and amended objectives and themes that focus on road safety, more liveable cities, regional economic development, protecting the environment, mode neutrality, and delivering the best possible value for money.

A second stage GPS is likely to be required in order to fully realise Government direction for transport investment. Inclusion of some things in the Draft 2018 has not been possible given the time constraints. This is because they rely on other work such as a review of rail, development of a new road safety strategy, and any future recommendations and targets produced by the independent Climate Change Commission. The Ministry of Transport hope to release this in 2019. Variation to this RLTP as a result of the second stage GPS could occur and at that time, and during that variation the opportunity could be taken to refine and more closely align this RLTP's objectives and measures to the GPS.

3.4 Regional Land Transport Plan

The Tasman Regional Land Transport Plan (RLTP) provides an integrated approach to land transport planning across the local government boundaries in the Tasman District and Top of the South region. The RLTP includes a ten year forward works programme that sets the direction for the transport system. It identifies what is needed to contribute to the aim of an effective, efficient, safe and sustainable land transport system for the public interest. **The RLTP's purpose (once investment in the transport network has been secured) is to benefit the Top of the South and Tasman communities by providing a resilient and reliable network that will meet our current and future needs.**

The key problems and benefits from solving those problems that face land transport in the Top of the South have been **collaboratively determined using Treasury's Better Business Case principles.** Four key problems were identified:

- Constraints on the transport network are leading to delays affecting freight, tourism, business and residential growth;
- Lack of redundancy, and susceptibility of the network to the impacts of climate change and high impact natural hazards increases the risk of losing community connectivity and impacting the economy;

- Driver behaviour and unforgiving roads lead to unacceptable levels of death and serious injuries;
- Roads and footpaths inadequately support our ageing population and increasing active travel demands creating barriers to utilise alternative modes of transport.

Tasman's RLTP included the **Regional Public Transport Plan (RPTP)** which sets out the policies, services and information relating to public transport in Tasman. The plan enables engagement with the public on the design and operation of the public transport network and is a means of encouraging Council and public transport operators to work together in developing public transport.

3.5 Infrastructure Strategy

Council's Infrastructure Strategy covers the assets needed to support Council's water supplies, stormwater, wastewater, rivers and flood control, and transportation activities.

The purpose of the Strategy is to identify the significant infrastructure issues for Tasman over the next 30 years, and to identify the principal options for managing those issues and the implications of those options.

When setting out how Council intends to manage the District's infrastructure assets and services, it must consider how:

- to respond to growth or decline in demand;
- to manage the renewal or replacement of existing assets over their lifetime;
- planned increases or decreases in levels of service will be allowed for;
- public health and environmental outcomes will be maintained or improved; and
- natural hazard risks will be addressed in terms of infrastructure resilience and financial planning.

There are three parts to the Strategy: the Executive Summary, the Strategic Direction, and the Activity Summaries. The Strategic Direction section sets the direction for infrastructure management and outlines the key priorities that Council will focus on when planning and managing its infrastructure. The Activity Summaries section provides an overview of each activity and is largely a summary of the relevant activity management plan.

The four key infrastructure priorities included in the Strategy are:

- Providing infrastructure services that meet the needs of our changing population
- Planning, developing and maintaining resilient communities
- Providing safe and secure infrastructure and services
- Prudent management of our existing assets and environment

These priorities have been used to determine and prioritise what is required to be included in the programmes of work for each activity management plan.

3.6 Financial Strategy

The **Financial Strategy outlines Council's financial vision for the next 10–20 years and the impacts on rates, debt, levels of service and investments. It will guide Council's future funding decisions and, along with the infrastructure strategy, informs the capital and operational spending for the Long-Term Plan 2018-2028.**

Three key financial limits are established in the Financial Strategy that set Council's overall financial boundaries for its activities. These include:

- Rates Income - limited to \$65 million per annum and targeted rates to \$60 million per annum.
- Rates Increases - limited to a maximum of 3% per annum, plus an allowance for annual growth in rateable properties.
- Debt - net external debt limited to a maximum of \$200 million

Infrastructure expenditure forms a large proportion of Council's spending being 39% of operational expenditure and 80% of capital expenditure over the next 10 years. Because of this, the Infrastructure Strategy and Financial Strategy are closely linked to ensure the right balance is struck between providing the agreed levels of service within the agreed financial limits. Often these financial limits will influence how Council manages and develops existing and new assets. This is especially so for the next 10 years.

Over the next 10 years, forecast rate income increases and debt levels are projected to be near Council's limits. Council has had to work hard to prioritise and plan a work programme which addresses key issues while staying within these limits. Given **Council's debt is projected to peak at \$199.6m in Year 2020/21** there is very little scope to add further work programmes in the next five years.

3.7 Key Issues

Council used business case principals to determine key issues for transportation in line with NZ Transport Agency recommendations. Development of the key issues were established through a number of meetings of a working group consisting of Council staff, Councillors and NZ Transport Agency Staff. The process to determine key issues was:

- Working Group decide on a number of strategic issues
- Council staff compile evidence
- Council staff refine strategic issues into problem statements
- Working Group refine problem statements
- Working Group determined problem statement priority and the ranking of the benefits of addressing the problem.

These problem statement (also referred to as key issues) are discussed in this section and summarised in Table 9 below.

Table 9: Key Issues Summary

Key Issue	Discussion
Population growth has increased traffic leading to increasing delays on arterial routes in Richmond and Motueka	Population growth in Richmond, Motueka, Mapua, Brightwater and Wakefield has raised traffic at peak and inter-peak periods which gets focused into Richmond as it travels there or through to Nelson. The Queen Street/Gladstone Road confluence focuses traffic on a short stretch of State Highway around three sets of signalised intersections. As a consequence, users are finding alternate routes to avoid 'congestion' which generally involves residential streets and minor intersections. In Motueka, the High Street (SH60) serves as a through road, an arterial road for the town, the main shopping precinct and primary parking. This mix of uses is at its highest in the summer when tourists, seasonal workers and higher industrial and commercial activities are superimposed on the high base level activity. Like Richmond, alternative routes are being utilised to avoid the areas of 'congestion' raising the vehicle numbers on lower class roads which reduces amenity and increases safety risk.
An aging population is creating demand for diversification of transport types	Tasman is leading New Zealand in progression to an elderly population. This is in part due to the high proportion of baby boomers now entering retirement age and in part due the Tasman region being attractive to retire to. There have been requests and community discussion for greater public transport options and criticism of the footpath condition and design.
Growth in commercial activities both across the District and in localised areas is accelerating asset damage.	Bigger trucks, more tourists and a thriving economy rely heavily on the road network. The growth in primary industry across the District is contributing to increased freight traffic, accelerating asset consumption/damage and increasing conflicts between other road users Growth in tourism and the location of many tourist destinations at the end of the road network (where roads are not designed to cater for peak traffic in terms of width, safety and road condition) is leading to reduced service to the tourist sector and safety concerns Industry and commercial growth is seen across all of the Tasman network which results in an increasing number of HCV vehicles. Additionally, the introduction of HPMV vehicles is contributing to faster deterioration on some roads.
Natural hazard events and local geology are resulting in significant service disruptions across the network that take longer & cost more to fix	Climate change, sea level rise and local geology are leading to more frequent and more significant service disruptions across the network that take longer and cost more to fix. With rivers, coasts and fault lines all posing significant risks and resilience that need to be addressed.

Detailed development, assessment of evidence and determination of benefits are addressed in greater detail in Section 7.2 Assessing Demand.

3.8 Prioritisation

Council cannot afford to undertake all work at once due to financial and resource constraints. This means that Council needs to prioritise what work it undertakes first, and what work can wait until later.

There are multiple factors that affect the priority of individual works. These include:

- The need to protect public health & safety
- Statutory compliance
- **Meeting the needs of tomorrow's population**
- Readiness to implement works
- Co-funding opportunities
- Enabling pleasant community environments
- Benefits and risks
- District distribution
- Strategic fit

Council has taken all of the above into consideration when planning its programme of work. Generally, mandatory requirements such as statutory compliance take priority, and discretionary activities have been programmed second to this.

4 Key Linkages

There are multiple factors that influence how Council manages this activity. They can be internal or external and include legislation, policies, regulations, strategies and standards. This section summarises these key linkages.

4.1 Overview

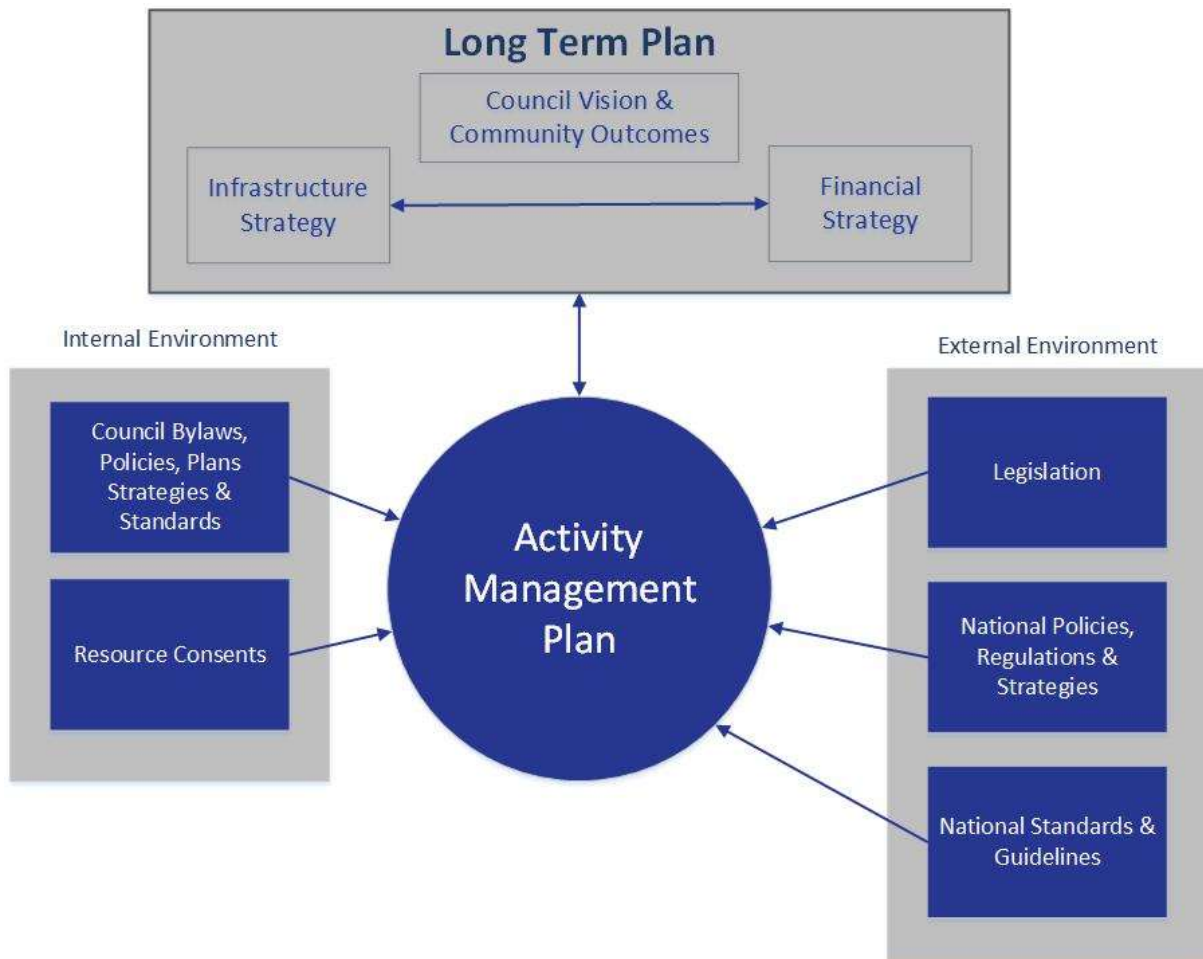


Figure 5: Transportation AMP Relationship with other Documents

4.2 Key Legislation

The key pieces of legislation are listed below in Table 10 along with how it relates to Councils transportation activity. For the latest Act information, refer to <http://www.legislation.govt.nz/>

Table 10: Legislation that influences Transportation

Legislation	How it relates to Transportation Activity
Local Government Act 2002	The Local Government Act requires local authorities to prepare a ten-year Long Term Plan and 30-year Infrastructure Strategy, which are to be reviewed every three years. The Act requires local authorities to be rigorous in their decision-making by identifying all practicable options and assessing those options by considering the benefits and costs in terms of the present and future well-being of the community. This activity management plan provides information to support the decisions considered in the Long Term Plan

Legislation	How it relates to Transportation Activity
Land Transport Management Act 2003	<p>Defines how transportation is organised in New Zealand. This includes:</p> <ul style="list-style-type: none"> • Planning and funding of the land transport system; • Strategic documents; • National transport agency; • Regional transport committees; <p>Specifically, the funding of the Tasman local road network by NZ Transport Agency is defined by this Act.</p>
Land Transport Act 1998	This Act defines the types of transportation that can be undertaken on the Tasman road network and how the system is licensed and administered.
Public Transport Management Act 2008	This Act defines how public transport is administered, planned, funded and procured by regions throughout New Zealand. Tasman as a unitary council is required to undertake this work.
Resource Management Act 1991	Sets out obligations to protect New Zealand's natural resources such as land, air, water, plants, ecology, and stream health. Resource consents draw their legal authority from the Resource Management Act 1991. Transportation has a large impact on the District and work requires Resource Consents from time to time.
Building Act 2004	This Act is fundamental in the development and management of the transportation structures such as retaining walls and bridges.
Public Works Act 1981	The Public Works Act provides the statutory authority to acquire and secure land for transport infrastructure.
Health and Safety in Employment Act 1992 & 2015	Health and Safety legislation requires that staff and contractors are kept safe at work. There is onus on principal to ensure that contractors are undertaking work in a safe manner.
Utilities Access Act 2010	The processes and rules for co-ordinating work done in transport corridors by utility operators, or that affects utility operators' assets.
Land Drainage Act 1908	Transportation is an owner of significant length of the drainage network. Some of which is located on the road reserve and is part of the larger drainage network and some of which is specifically to keep the road free of surface water. This act outlines the responsibilities as land owners and the local authority for drainage.
Te Tiriti o Waitangi – Treaty of Waitangi	The Treaty of Waitangi is an agreement between Māori and the Crown. Under Section 4 of the Local Government Act 2002 local authorities are required to 'recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Māori to contribute to local government decision-making processes'. Further sections of the Act, particularly 77 and 81, detail the scale of requirement for local authorities to seek contributions and involvement from Māori in consultation and decision-making processes.

4.3 National Planning, Policies, Strategies, Standards & Guidelines

Along with legislation, there are a number of other important documents that influence Councils transportation activities. These are listed below in Table 11 along with how it relates to Councils transportation activity.

Table 11: National influences on Transportation

Document	How it relates to Transportation Activity
Government Policy Statement on Land Transport	The Ministry of Transport triennial policy statement details the Governments land transport priorities. These priorities are used to assess programmes of work that are put into the National Land Transport Plan . Tasman's transport programmes seeking funding. See Section 3.3 for further information.
New Zealand Transport Agency, Long Term Strategic View	The NZ Transport Agency is in the process of developing a Long Term Strategic View (LTSV) to capture the pressure points and key economic, environmental, and population factors that will shape the transport system needed for the future. The first draft version released in March 2017. The LTSV is a link between the Government Policy Statements (GPS) and business case investment proposals. The LTSV sets out the Agency's view of issues and opportunities and appropriate interventions , and will be an input into Strategic Business Cases.
One Network Road Classification	NZTA's ONRC is a system for measuring and classifying the condition of New Zealand's roads. The ONRC has been jointly developed by the NZTA and Local Government New Zealand (LGNZ) as a tool for moving to a consistent Level of Service experience by customers as they travel throughout the country.
NZTA Specifications, Rules, Policies and Guidelines	The NZ Transport Agencies specifications, rules, policies and guidelines are embedded in the management of the transportation assets at Council.
Austrroads Guidelines and Manuals	Council uses Ausroads guidelines and manuals to guide best practice in design and specification of works in the District. It is extensively used by contractors in work undertaken for Council.
Safer Journeys Plans and Guides	Safer Journeys guides Council in programmes and initiatives around safety improvements.

4.4 Local Planning, Policies and Strategies

Council undertakes many plans, policies and strategies to inform residents and allow feedback as well as setting long term direction and strategies. Some of these are requirements of legislation, but many are undertaken to shape transportation now and into the future. A list of these documents is below in Table 12 along with how it relates.

Table 12: Local Influences on Transportation

Document	How it relates to Transportation Activity
Tasman Regional Land Transport Plan	The NZ Transport Agency subsidised components of this Activity Management Plan have been developed to be consistent with the objectives and policies set by the 2015-2021 Regional Land Transport Plan (RLTP). The RLTP has the objectives of efficient, safe, resilient, integrated, sustainable land transport system.

Document	How it relates to Transportation Activity
Tasman Regional Public Transport Plan	The Regional Public Transport Plan 2015 - 2021 (RPTP) sets out the subsidised transport prioritised programme for six years in accordance with the NZ Transport Agency's Investment and Assessment Framework in accordance with the GPS and this Activity Management Plan. The RPTP 2015 - 2021 is undergoing a mid-term review in late 2017 to confirm or amend the direction detailed above.
Tasman Resource Management Plan	The plan is the guiding document for all activities undertaken in the District. It dictates and shapes the forward works and capital programmes but also influence the consent and permissions required when undertaking any construction.
Tasman District Council Engineering Standards	The Engineering Standard are the requirements that all infrastructure must conform with. It is largely based on national guidelines and standards, but there are requirements that are specific to Tasman. This document also dictates the standards that developer have to abide with when undertaking work that will be vested with Council.
Tasman District Council Infrastructure Strategy	In 2014 the Local Government Act 2002 was amended to require local authorities to prepare an infrastructure strategy as part of the Long-Term Plan. The strategy is expected to look at least thirty years into the future and detail the issues that the local authority can reasonably foresee. The office of the Auditor General has provided guidance documents for authorities to use when developing the strategy.
Carpark Strategy	The carpark strategy sets out Council's approach to managing town centre car parking in Motueka and Richmond . The strategy provides will inform decisions that create or manages car parks in these areas.

4.5 Local Bylaws

Council has a number of bylaws to assist in the transportation activity around the District. A list of the bylaws is below in Table 13 along with how it relates.

Table 13: Local Influences on Transportation

Bylaw	How it relates to Transportation Activity
Speed Limits Bylaw 2016	This bylaw provides the ability to change speed limits and/or set new speed limits by Council resolution. Such changes are likely to be to the maps and schedules that accompany the bylaw and will be an efficient and cost effective alternative to a full bylaw review.
Tasman's Great Taste Trail Bylaw	This bylaw promotes, protects, and maintains the safety of people using, working, and living in proximity to the trail. The trail is administered by the transportation activity.
Traffic Control Bylaw 2016	This bylaw facilitates traffic management and parking control measures with respect to roads, public places and parking areas. All areas that is administered by the transportation activity
Stock Control Bylaw (Expired)	Council adopted this bylaw in 2005 with the objective of providing for the control and orderly droving and grazing of stock on all roads within the District. This bylaw is now expired and will be review in 2018.

5 Levels of Service

A key objective of this plan is to match the levels of service provided by this activity with the agreed expectations of our customers and their willingness to pay for that level of service. These levels of service provide the basis for the life cycle management strategies and works programmes identified in this Plan.

Levels of service can be strategic, tactical or operational. They should reflect the current industry standards and be based on:

- Customer Research and Expectations: information gained from stakeholders on expected types and quality of service provided.
- Statutory Requirements: Legislation, regulations, environmental standards and Council bylaws that impact on the way assets are managed (eg, resource consents, building regulations, health and safety legislation). These requirements set the minimum level of service to be provided.
- Strategic and Corporate Goals: Provide guidelines for the scope of current and future services offered and manner of service delivery, and define specific levels of service, which the organisation wishes to achieve.
- Best Practices and Standards: Specify the design and construction requirements to meet the levels of service and needs of stakeholders.

5.1 Our Levels of Service

Table 14 summarises the levels of service and performance measures for this activity. The light blue shaded rows show those that are included in the Long Term Plan and reported in the Annual Plan. Unshaded white rows are technical measures that are only included in the activity management plan.

Table 14: Levels of Service

Levels of Service (we provide)	Performance Measure (we will know we are meeting the level of service if ...)	Current Performance	Future Performance Targets			
			Year 1	Year 2	Year 3	Year 10
			2018/19	2019/20	2020/21	2028/29
<p>Safety</p> <p>Our transportation network is becoming safer for its users.</p>	<p>There is a downward trend in the number of serious and fatal injury crashes occurring on our road network.</p> <p>Measured using the NZ Transport Agency's crash database.</p> <p>ONRC Safety – OM1.</p>	<p>2016/17: 12</p> <p>Increasing trend</p> <p>See Figure 6.</p>	Decreasing	Decreasing	Decreasing	Decreasing
	<p>The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number.</p> <p>Mandatory Measure 1.</p>	<p>2016/17: 0</p> <p>See Figure 6.</p>	≤ 0	≤ 0	≤ 0	-1
	<p>There is a decreasing number of loss of control crashes occurring on bends on our road network each year.</p> <p>Measured using the NZ Transport Agency's crash database.</p>	<p>2016/17: 37</p> <p>Decreasing trend.</p> <p>See Figure 7.</p>	Decreasing	Decreasing	Decreasing	Decreasing
<p>Resilience</p> <p>We proactively maintain roads in high risk areas to minimise unplanned road closures.</p>	<p>The number instances where road access is lost.</p> <p>This measure shows the number of unplanned road closures with no detour and the number of vehicle trips affected by those closures annually.</p> <p>Measured through the road maintenance contractor's monthly reports.</p> <p>ONRC Resilience – Customer Outcome 2</p>	<p>Actual = New measure</p>	< 500 trips	< 500 trips	< 500 trips	< 500 trips per year

Levels of Service (we provide)	Performance Measure (we will know we are meeting the level of service if ...)	Current Performance	Future Performance Targets			
			Year 1	Year 2	Year 3	Year 10
			2018/19	2019/20	2020/21	2028/29
<p>Accessibility</p> <p>Our transportation network enables the community to choose from various modes of travel.</p>	<p>Council constructs a minimum length of new footpath each financial year to meet population growth plus an additional proportion to reduce the gaps in the existing footpath network over 30 years.</p> <p>Measured using RAMM inventory data and GIS mapping.</p>	<p>2014/15: 505 m</p> <p>2015/16: 1,010 m</p> <p>2016/17: 0 m</p>	≥500m	≥500m	≥500m	≥500m per year
	<p>The annual growth in use of cycle routes exceeds specified levels.</p> <p>Measured using day traffic counts for February and June</p>	<p>2014/15: -1.4%</p> <p>2015/16: -11.6%</p>	≥ 1%	≥ 1%	≥ 1%	≥1% per year
	<p>The annual growth in use of passenger transport exceeds specified levels.</p> <p>Measured using yet to be implemented integrated ticketing service data for people travelling to, from or within Richmond.</p>	<p>Actual = New measure</p>	≥ 1%	≥ 1%	≥ 1%	≥1% per year
<p>Value for Money</p> <p>Our transportation network is maintained cost effectively and whole of life costs are optimised</p>	<p>Council maintains the Condition Index (CI) for sealed roads within the specified range.</p> <p>As reported through RAMM.</p> <p>CI is a measure of visual defects identified during Condition Rating inspections completed biennially. The lower the CI, the better the condition.</p>	<p>2014/15: 1.48</p> <p>2015/16: 2.03</p> <p>2016/17: 2.04</p> <p>See Figure 19.</p>	1.7 to 2.1	1.7 to 2.1	1.7 to 2.1	1.7 to 2.1
	<p>Council maintains the Pavement Integrity Index (PII) within the specified range.</p> <p>As reported through RAMM.</p> <p>PII combines surface faults (CI) with structural defects rutting, roughness and shoving.</p> <p>The lower the PII, the better the condition.</p>	<p>2014/15: 3.07</p> <p>2015/16: 3.15</p> <p>2016/17: 3.15</p> <p>See Figure 19.</p>	3.0 to 4.0	3.0 to 4.0	3.0 to 4.0	3.0 to 4.0

Levels of Service (we provide)	Performance Measure (we will know we are meeting the level of service if ...)	Current Performance	Future Performance Targets			
			Year 1	Year 2	Year 3	Year 10
			2018/19	2019/20	2020/21	2028/29
Value for Money Our transportation network is maintained cost effectively and whole of life costs are optimised	The percentage of sealed local road that is resurfaced each financial year. Mandatory Measure 3.	2014/15: N/A 2015/16: 4.50% 2016/17: 5.04% See Figure 58.	5% - 7%	5% - 7%	5% - 7%	5% - 7%
Travel Time Our transport network is managed so that changes to normal travel time patterns across the network are communicated effectively.	The hourly traffic volume during the peak morning hour and peak afternoon/evening hour. Measure the vehicle throughput over an hour of the AM or PM peak for each key indicator site on each key route, or on each major leg of a key intersection. ONRC TTR – PM1.	Actual = New measure	Salisbury Road > 1,500 vehicles per hour Lower Queen Street > 1,000 vehicles per hour	Salisbury Road > 1,500 vehicles per hour Lower Queen Street > 1,000 vehicles per hour	Salisbury Road > 1,500 vehicles per hour Lower Queen Street > 1,000 vehicles per hour	Salisbury Road > 1,500 vehicles per hour Lower Queen Street > 1,000 vehicles per hour
Amenity The travel quality and aesthetics of our transportation network is managed at a level appropriate to the importance of the road and satisfies the community's expectations	The percentage of footpaths with the Tasman District that are maintained to a condition of average or better. As measured through the triennial footpath condition rating survey ONRC Safety – PM8. Mandatory Measure 4.	2010/11: 94.5% 2013/14: 94.2% 2016/17: 90.9% See Figure 12.	No survey planned	≥95%	No survey planned	≥95%

Levels of Service (we provide)	Performance Measure (we will know we are meeting the level of service if ...)	Current Performance	Future Performance Targets			
			Year 1	Year 2	Year 3	Year 10
			2018/19	2019/20	2020/21	2028/29
<p>Amenity</p> <p>The travel quality and aesthetics of our transportation network is managed at a level appropriate to the importance of the road and satisfies the community's expectations</p>	<p>The average ride comfort level of the sealed road network meets specified levels.</p> <p>As measured by biennial Roughness survey (last completed 2013/14, next due 2015/16) and reported through RAMM.</p> <p>ONRC Amenity – OM2.</p>	<p>Arterial</p> <p>2016/17: 76</p> <p>Primary Collector</p> <p>2016/17: 74</p> <p>Secondary Collector</p> <p>2016/17: 78</p> <p>Access</p> <p>2016/17: 86</p> <p>Low Volume</p> <p>2016/17: 127</p> <p>See Figure 14</p>	<p>Arterial <= 100 NAASRA</p> <p>Primary Collector: Urban <= 110</p> <p>Secondary Collector <= 110 NAASRA</p> <p>Access <= 120 NAASRA</p> <p>Access (LV) <= 140 NAASRA</p>	<p>Arterial <= 100 NAASRA</p> <p>Primary Collector: Urban <= 110</p> <p>Secondary Collector <= 110 NAASRA</p> <p>Access <= 120 NAASRA</p> <p>Access (LV) <= 140 NAASRA</p>	<p>Arterial <= 100 NAASRA</p> <p>Primary Collector: Urban <= 110</p> <p>Secondary Collector <= 110 NAASRA</p> <p>Access <= 120 NAASRA</p> <p>Access (LV) <= 140 NAASRA</p>	<p>Arterial <= 100 NAASRA</p> <p>Primary Collector: Urban <= 110</p> <p>Secondary Collector <= 110 NAASRA</p> <p>Access <= 120 NAASRA</p> <p>Access (LV) <= 140 NAASRA</p>
	<p>The proportion of travel undertaken on the sealed road network meets the specified comfort levels. Known as Smooth Travel Exposure (STE). Smooth travel exposure is defined as the proportion of vehicle kilometres travelled on roads with roughness below the following thresholds:</p> <p>As reported through RAMM, based on traffic count and roughness survey data.</p> <p>ONRC Amenity – OM1.</p> <p>Mandatory Measure 2.</p>	<p>Arterial</p> <p>2016/17: 92.4%</p> <p>Primary Collector</p> <p>2016/17: 96.4%</p> <p>Secondary Collector</p> <p>2016/17: 97.2%</p> <p>Access</p> <p>2016/17: 95.9%</p> <p>Low Volume</p> <p>2016/17: 94.7%</p> <p>See Figure 15.</p>	<p>Arterial ≥ 95%</p> <p>Primary Collector ≥ 95%</p> <p>Secondary Collector ≥ 95%</p> <p>Access ≥ 90%</p> <p>Access (LV) ≥ 90%</p>	<p>Arterial ≥ 95%</p> <p>Primary Collector ≥ 95%</p> <p>Secondary Collector ≥ 95%</p> <p>Access ≥ 90%</p> <p>Access (LV) ≥ 90%</p>	<p>Arterial ≥ 95%</p> <p>Primary Collector ≥ 95%</p> <p>Secondary Collector ≥ 95%</p> <p>Access ≥ 90%</p> <p>Access (LV) ≥ 90%</p>	<p>Arterial ≥ 95%</p> <p>Primary Collector ≥ 95%</p> <p>Secondary Collector ≥ 95%</p> <p>Access ≥ 90%</p> <p>Access (LV) ≥ 90%</p>

Levels of Service (we provide)	Performance Measure (we will know we are meeting the level of service if ...)	Current Performance	Future Performance Targets			
			Year 1	Year 2	Year 3	Year 10
			2018/19	2019/20	2020/21	2028/29
<p>Amenity</p> <p>The travel quality and aesthetics of our transportation network is managed at a level appropriate to the importance of the road and satisfies the community's expectations</p>	<p>Residents are satisfied with Council's roads and footpaths in the District.</p> <p>As measured through the annual Communitrak survey.</p>	<p>2016/17</p> <p>Roads: 76%</p> <p>Footpaths: 74%</p> <p>See Figure 26 and Figure 27.</p>	<p>Footpaths ≥ 70%</p> <p>Roads ≥ 70%</p>	<p>Footpaths ≥ 70%</p> <p>Roads ≥ 70%</p>	<p>Footpaths ≥ 70%</p> <p>Roads ≥ 70%</p>	<p>Footpaths ≥ 70%</p> <p>Roads ≥ 70%</p>
	<p>Customer Service Requests relating to the transportation network and activities are completed on time.</p> <p>As measured by the maintenance contractor's compliance with fault response time requirements (using RAMM Contractor), and the percentage of requests assigned to Council staff which are attended to within 5 days (using NCS).</p> <p>ONRC Safety – PM7.</p> <p>Mandatory Measure 5</p>	<p>2016/17</p> <p>Council Staff: 77%</p> <p>Contractors: 88%</p>	<p>≥ 90%</p>	<p>≥ 90%</p>	<p>≥ 90%</p>	<p>≥ 90%</p>

5.2 Level of Service Changes

Council reviews its levels of service every three years, as part of the Long Term Plan development. Table 15 below summaries the key changes Council has made during development of the Long Term Plan 2018 – 2028.

Table 15: Summary of areas where we made changes to our levels of service

Performance Measure	Summary of change
Number of crashes	The performance measure is the same, but the target have changed from one less crash each year to no more crashes per year. With a relatively low number of crashes, there are fluctuations up and down. A target of no more crashes indicates we do not want it to increase and is realistic. Over 10 years we want to see a small reduction.
Crashes on straights	This performance measure does not provide any further information when the total number of crashes is measured and the number of crashes on curves are measured.
Resilience	The performance measure for resilience has been changed from the number of sites inspected in response to a severe weather event, to the number of lost trips. This new measure is customer focused and determines the impact on the community. This is also in line with ONRC recommendations.
Accessibility (cycling)	Added a new performance measure on changes in the number of people using the dedicated cycle paths. A 1% increase has been added to take into account anticipated population growth.
Accessibility (public transport)	Added a new performance measure on changes in the number of people using the public transport. A 1% increase has been added to take into account anticipated population growth.
Value for Money (road resurfacing)	The performance measure has been retained, but the target has been adjusted. The target is now a range to determine if Council is either under investing or over investing. The minimum target has been increased from 4.8% to 5% to match recommended seal lives of between 15 to 20 years.
Travel Time	The performance measure has been changed from communication of planned works to traffic throughput. This new measure is customer focus and determines the impact on the community. This is also in line with ONRC recommendations.
Amenity (Smooth Travel)	The performance measure has remained, but the targets have been adjusted by road classification to meet customer expectations for different roads.

5.3 Levels of Service Analysis and Performance

5.3.1 Safety

There is a long term downward trend in the number of serious and fatal injury crashes occurring on our road network. The target is for the trend to continue to decrease (see Figure 6). This target is currently being met, but could be at risk if the recent increases (2014/15 to 2016/17) turn into a long term trend. This measure is an ONRC Safety Measure.

The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number. The previous target has been to reduce the number of fatalities and serious injuries by 1 every year. The past three years have not seen a decrease (see Figure 6) and therefore the target has not been met. With a small number of death or serious injury crashes (10 to 15 per year), trends are more appropriate measure. This is a Local Government Act mandatory measure and therefore cannot be removed, but by making the change in the number of annual death and serious injury crashes zero, we are indicating that Council does not want it to increase. Over ten year, the target is to see a reduction.

There is a decreasing number of loss of control crashes occurring on bends on our road network each year as shown in Figure 7.

There is an increasing number of loss of control crashes on straights on our road network each year. Figure 7, shows that despite the target not being met, more recent years have been stable and a lower than normal year in 2009/10 is influencing the trend.

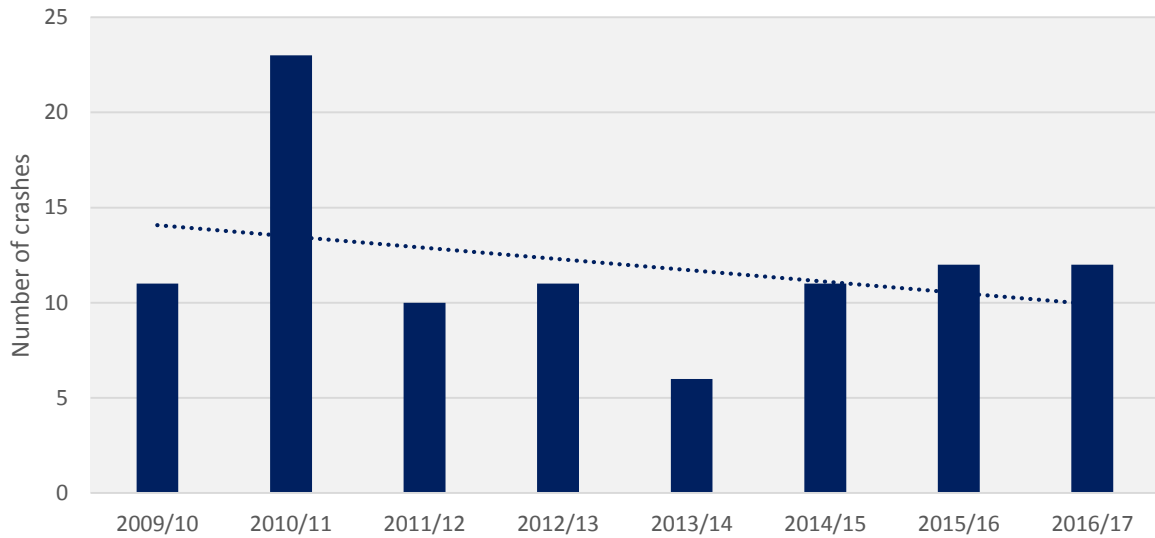


Figure 6: Fatal & Serious Injuries Crashes

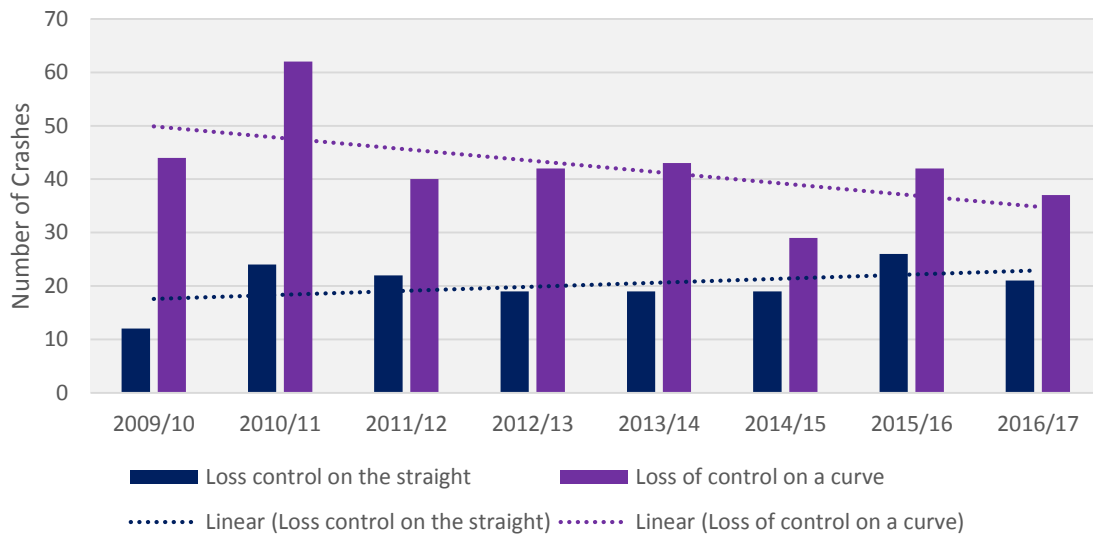


Figure 7: Loss of Control Crashes

Figure 6 and Figure 7 indicate that the number of crashes has generally been stable over the last 8 years. Some years have significant increases or decreases but the trend has been 10 – 12 fatal or serious injury crashes. Despite the 8 year average being 12 crashes per year, fluctuations has meant that Tasman has not met several levels of service measures targets. Levels of service measures that have discrete targets from one year to the next are difficult to achieve in a District that has a relatively low number of crashes due to their rare and often random nature. Targets that use trends, can absorb a spike (or drop) in crash statistics and allows Council to take a longer term view and intervene in a planned approach.

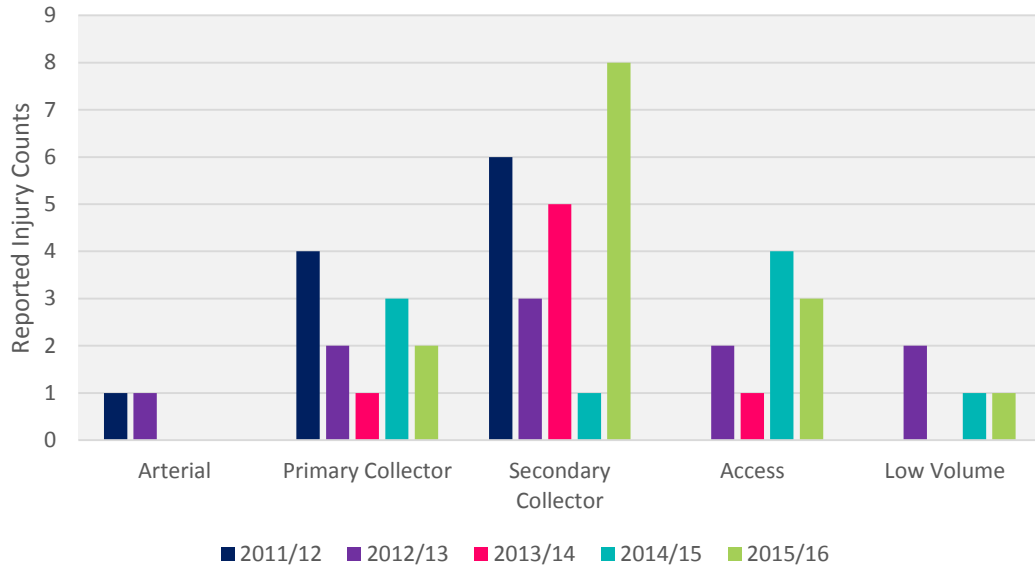


Figure 8: Serious Injuries and Fatalities by ONRC Category

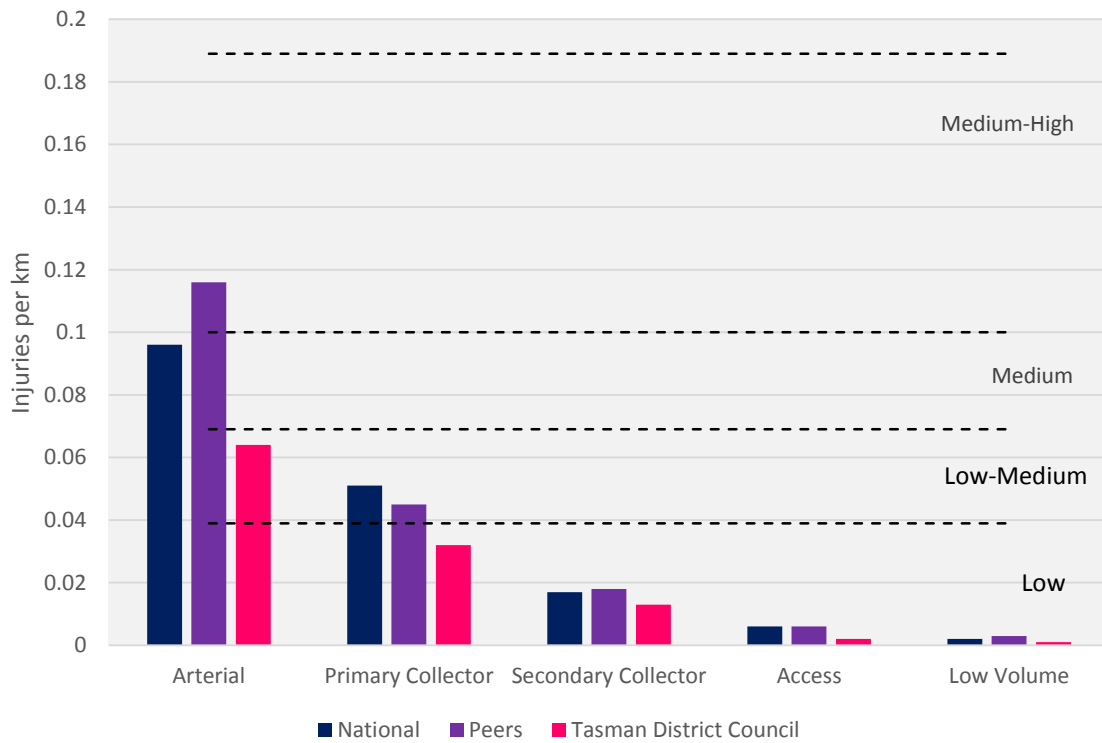


Figure 9: Serious Injuries and Fatalities per km of Road by ONRC Category

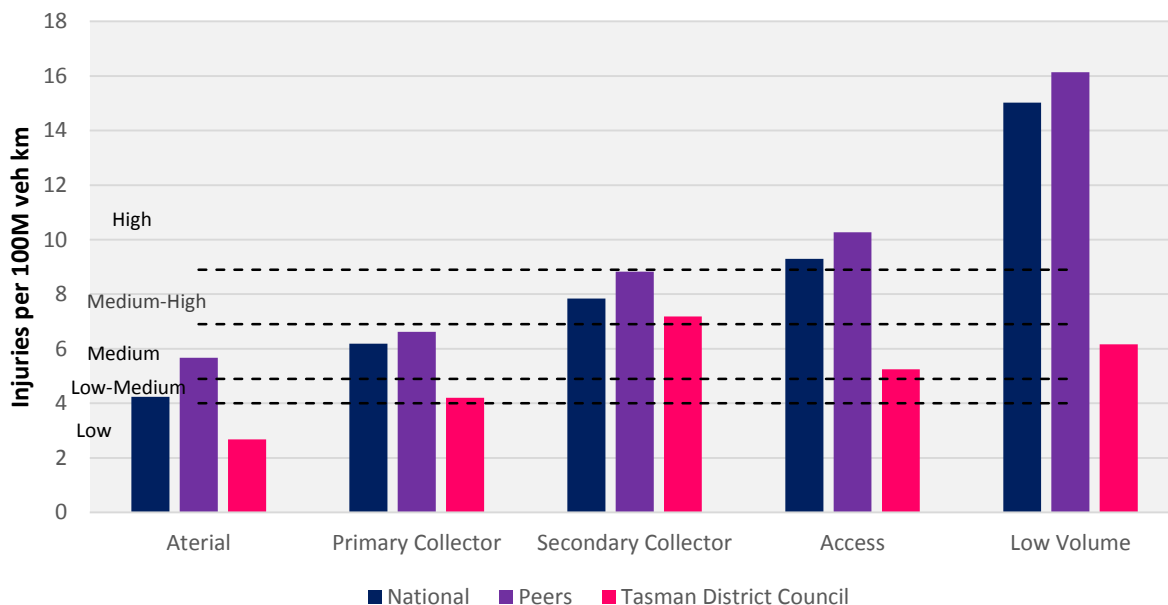


Figure 10: Serious Injuries and Fatalities per 100 Million Vehicle km by ONRC Category

Figure 8 shows that safety on all routes have variation, but there are no obvious trends given the small number of serious injuries other than an increase in secondary collector serious injuries. All roads have had increasing traffic in recent years, but access roads have seen the largest proportional increase in recent years due to greater production or harvesting in remote locations. Analysis of the crashes does not show any trends across road categories, all licence and all accident types. This flat trend indicates that Tasman road safety is not becoming better over time, but if personal risk is tracked over time (Figure 11), it can be seen that in reality, we are seeing an increase in kilometres travelled on Tasman roads.

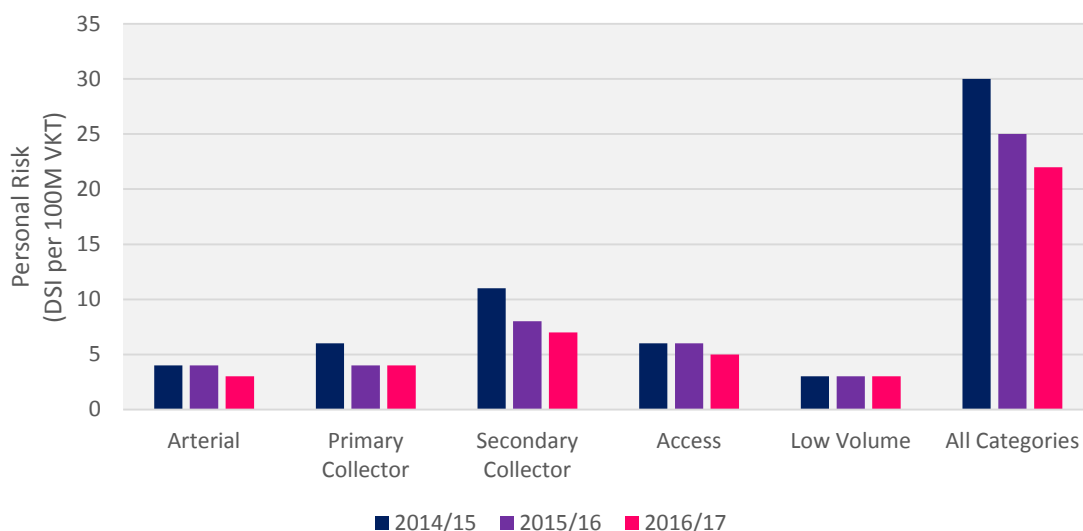


Figure 11: Serious Injuries and Fatalities (DSI) per 100 Million Vehicle km by ONRC Category since 2014

When compared to other regions (Figure 9 and Figure 10) with similar networks (peers) and nationally Tasman performs well, being better than the national average and peer group average in every road classification. When compared to the Kiwi Road Assessment Programme ranges, all road classifications are medium risk or better.

ONRC safety measures generally indicates that Tasman compares well in safety both against peer groups and nationally. There is no one route classification that stands out as needing urgent improvements, but does indicate we could do better across the entire network to bring us into the low risk rating.

All this would indicate that measuring crash statistics in isolation without taking into account growth and comparing with other regions in New Zealand paints a poor picture of safety in the District. Offsetting for growth and comparing with nationwide peers, the crash numbers and rates show adequate road safety performance. There is no significant safety gap that needs to be addressed. The current programme of safety measures should be retained given the recent national trend of increasing crash occurrences especially as trend cause have been difficult to determine.

5.3.2 Amenity

5.3.2.1 Footpath Condition

The performance measure, percentage of footpaths with the District that are maintained to a condition of average or better is summarised in Figure 12. As can be seen in Figure 12 the actual condition has met the target for the last three assessments. Over the last 7 years there has been a drop in the average condition which it not addressed will fail to meet performance targets at the next assessment. This is both an ONRC and LGA mandatory measure.

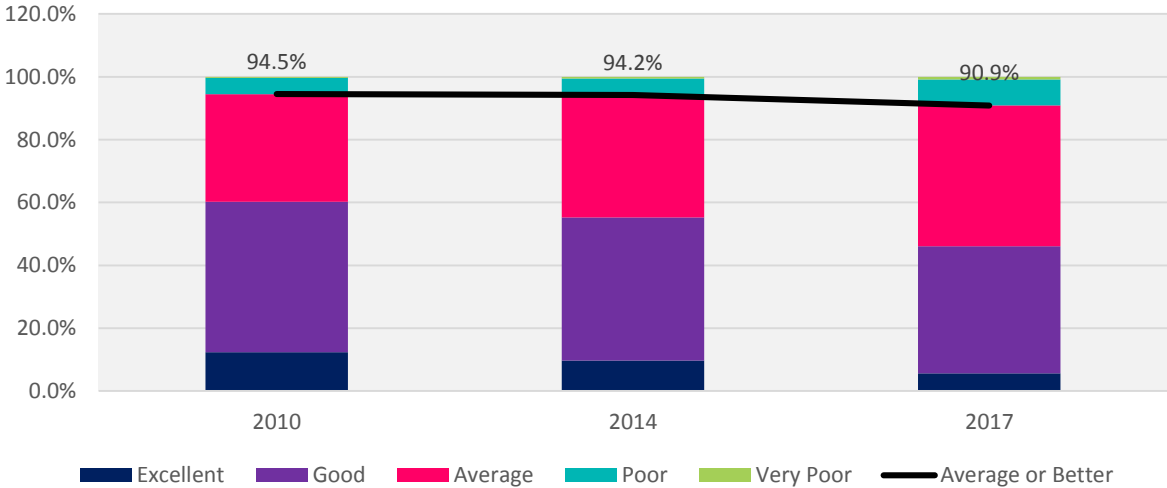


Figure 12: Spread of Footpath Condition Rating

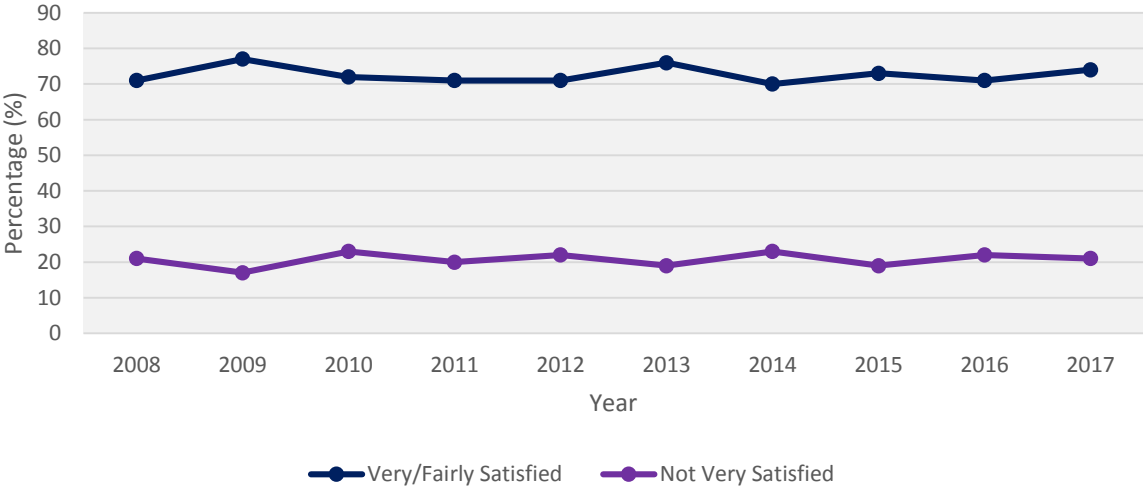


Figure 13: Footpath Resident Satisfaction

Triannual footpath inspections, indicate that the condition of the footpaths around the District are progressively getting worse with the weighted average condition being 2.33 in 2010 and 2.58 in 2017. Figure 12 shows an increase in footpath condition being poor to average and a decrease in condition being good and excellent. Resident satisfaction survey results (Figure 13) shows that the satisfaction has remained relatively constant over the last ten years with footpath satisfaction remaining between 70% and 77%. Whilst the targets have been met for footpath condition there is an increase demand for smooth, good condition pavement. Analysis of the customer service requests and reasons of dissatisfaction in the recent survey point to concerns from those with limited mobility. Given footpaths address a key issue, the target has been increased from 90% average or better condition to 95%.

5.3.2.2 Road Roughness

The performance measure, average ride comfort level of the sealed road network meets target levels is summarised in Figure 14 below.

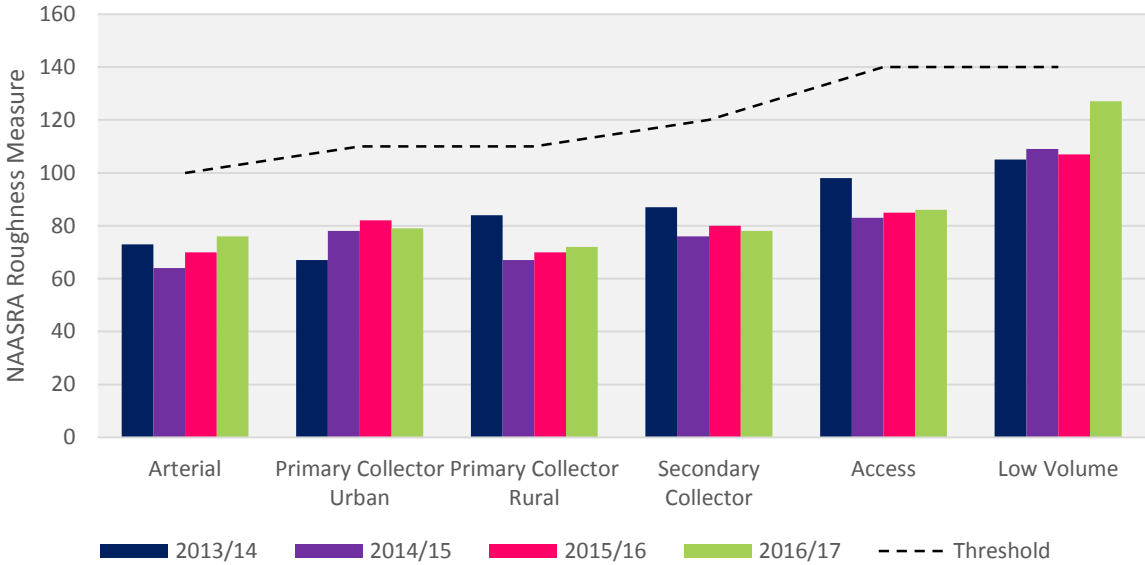


Figure 14: Roughness of the Road (Average)

Roughness and smooth travel exposure (STE) are performing well against the levels of service measures despite the reduction in resurfacing and rehabilitation budget. There is no trend that road amenity has been over invested in but there is some indication that the reduction in renewals is starting to have an impact on amenity. Generally, the road roughness measures have met targets. The arterial STE fell short (Figure 15). When compared to other provincial centres around New Zealand, it confirms that Tasman is doing well in this space, by doing better than national and peer averages, without being an outlier (Error! Reference source not found., Figure 16 and Figure 17).

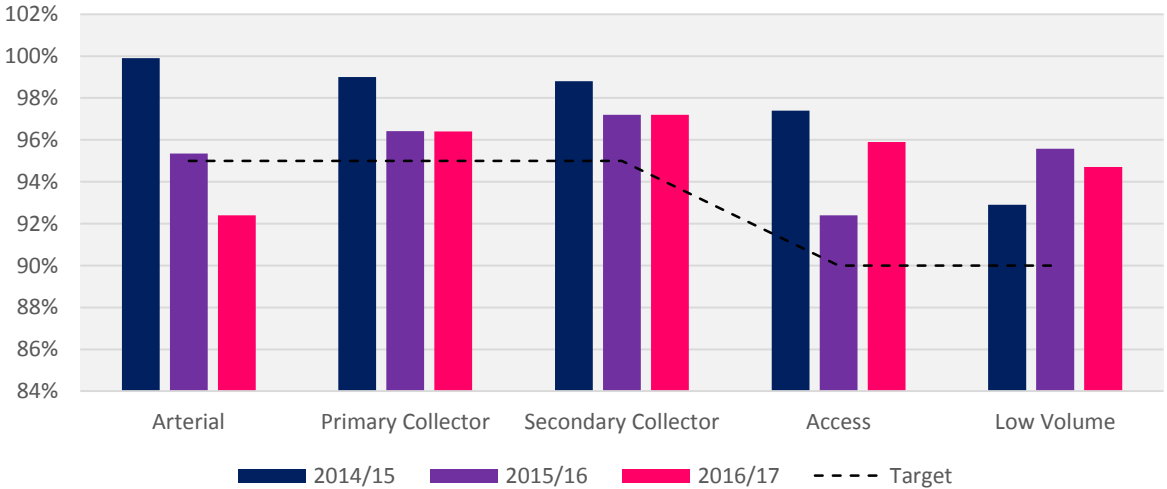


Figure 15: Smooth Travel Exposure

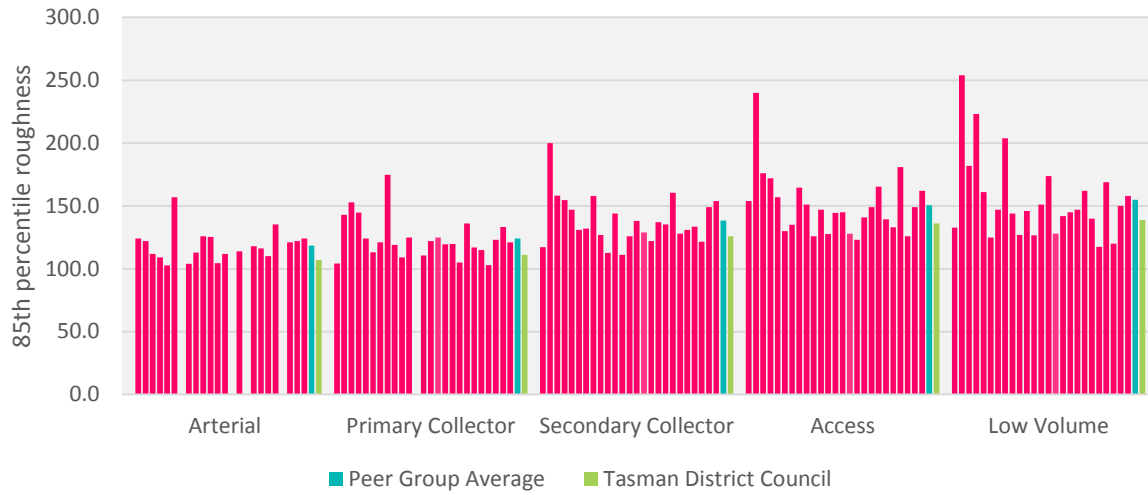


Figure 16: Urban Peak Roughness Comparison with Peers

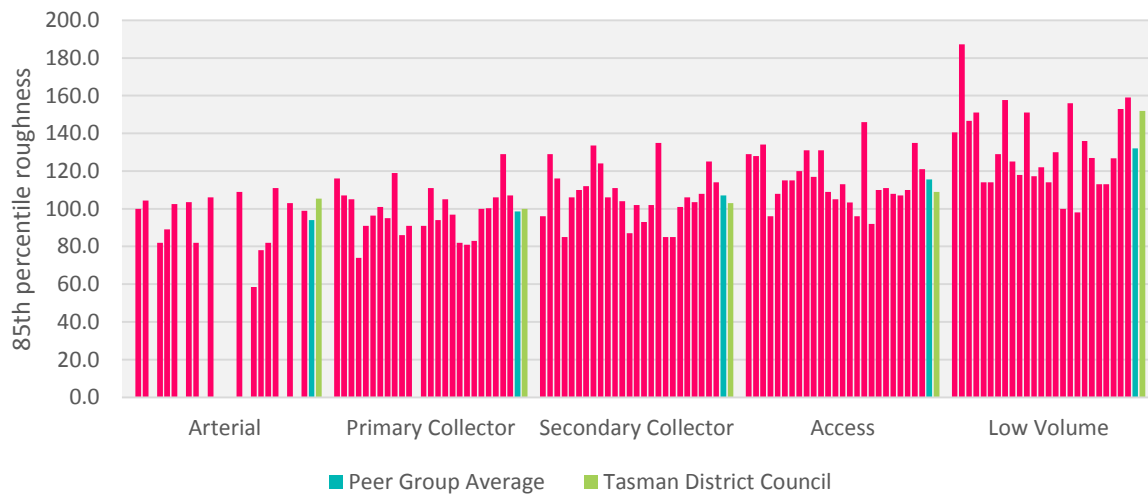


Figure 17: Rural Peak Roughness Comparison with Peers

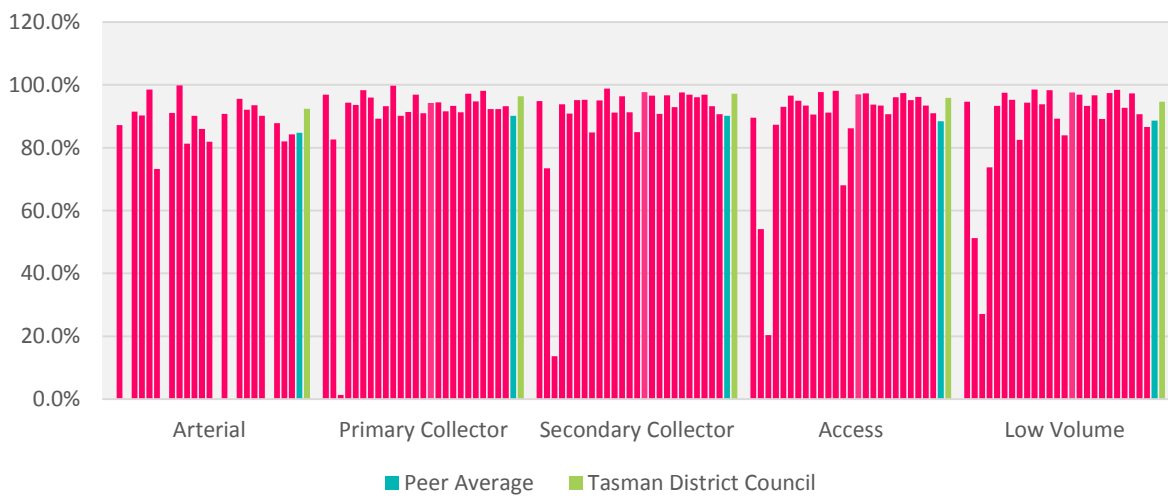


Figure 18: Smooth Travel Exposure Comparison with Peers

Generally speaking that measures and targets are appropriate. There is no need for an enhanced programme to address issues, but a modest increase in resurfacing and/or pavement smoothing on arterial roads will be required.

5.3.3 Cost Efficiency

Council maintains the Condition Index (CI) for sealed roads within the specified range. CI is a measure of visual defects identified during Condition Rating inspections completed biennially, and is calculated by RAMM. The measure is to have a CI between 1.7 and 2.1. The past three financial years performance are shown in Figure 19 below.

Likewise, Council maintains the average Pavement Integrity Index (PII) within the specified range. PII combines surface faults (CI) with structural defects rutting, roughness and shoving. The measure is to have a PII between 3.0 and 4.0 with average actual condition being between 3.07 and 3.15 in the past three years as shown in Figure 19 below.

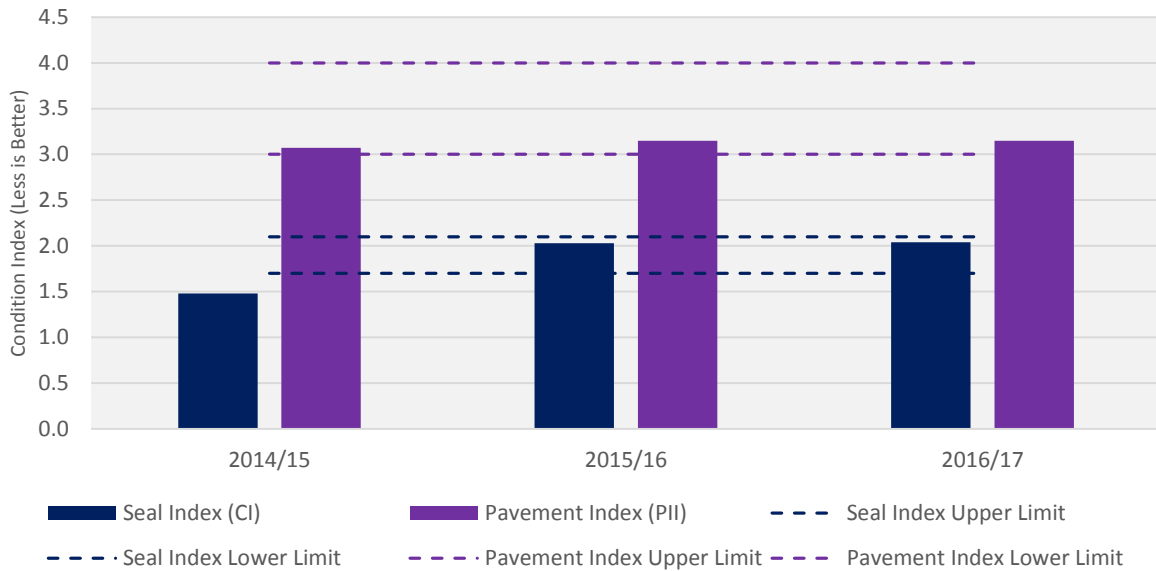


Figure 19: Seal & Pavement Condition Index

The seal condition has been in excellent condition. In the last two years it has dropped a lot to be still be within the target range, but unlikely achieve the target in 2017/18. The pavement condition has also dropped in average condition albeit is still within the target range.

The target percentage of sealed local roads that are resurfaced each financial year is between 5% and 7% which accounts for a surface life of between 15 and 20 years. Actual achievements of resurfacing can be seen in Figure 20 below.

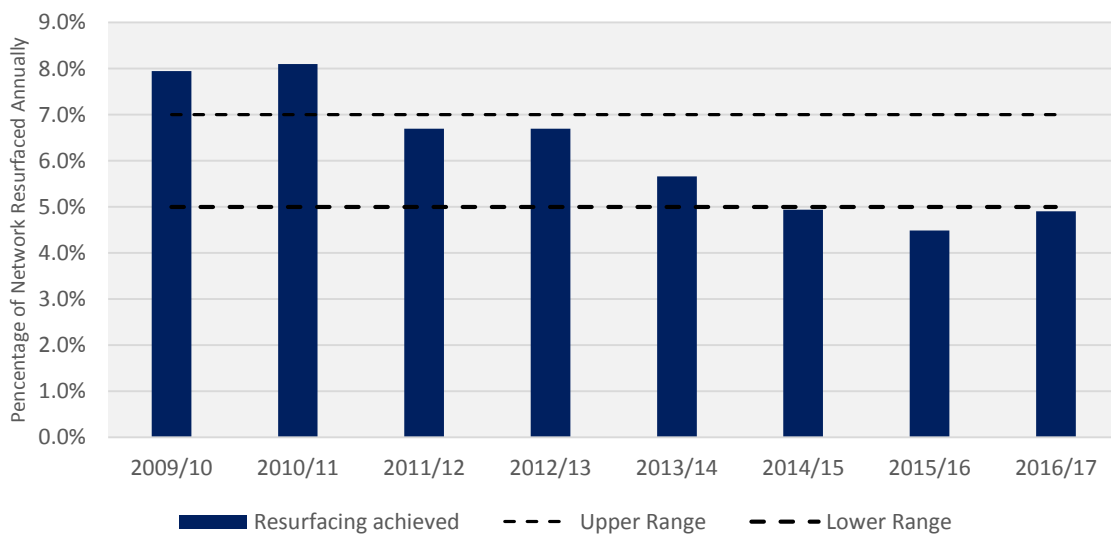


Figure 20: Proportion of Network Resurfaced

Figure 20 shows the proportion of resurfaces was greater than the target range between 2009 and 2011. For the last three years the proportion has been lower than the target range. Figure 21, Figure 22 and Figure 23 all show Council undertakes less renewals and spends less on its road network than both peers and nationally. This peer and national cost comparison plus the outputs from dTIMMs, confirm that whilst the network is in good condition and managed efficiently, there is scope to increase renewal and maintenance to optimise whole of life costs and meet customer expectations.

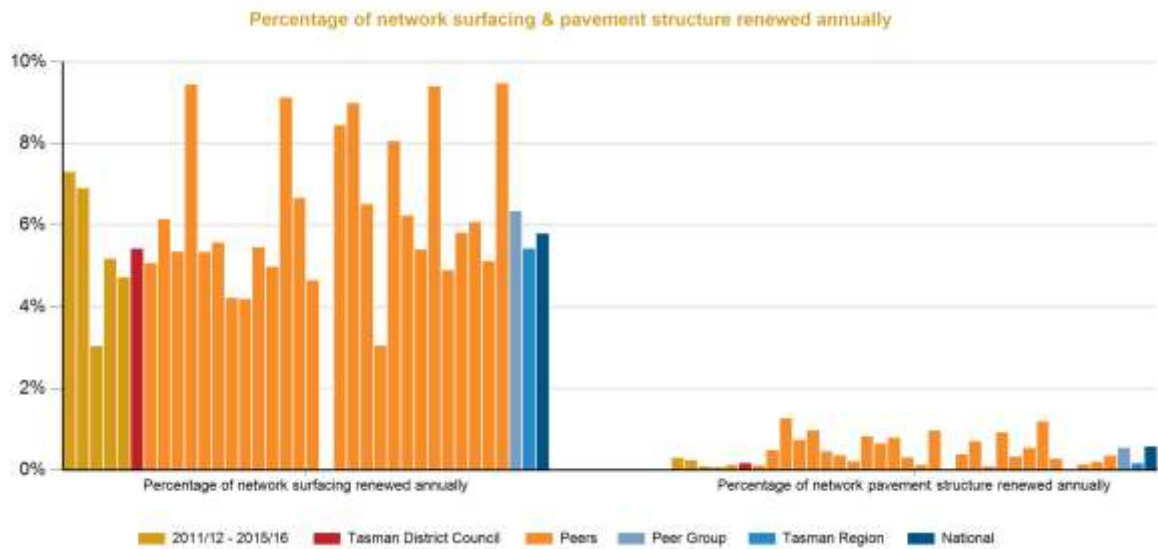


Figure 21: Annual Surfacing Renewal & Pavement Renewal Percentage

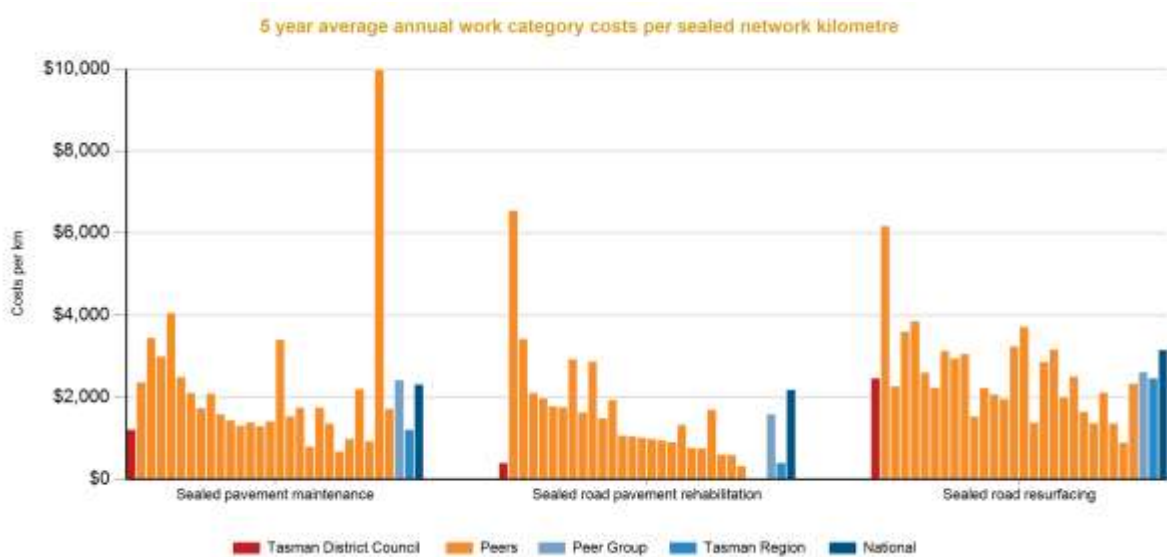


Figure 22: Sealed Road Maintenance Costs per kilometre

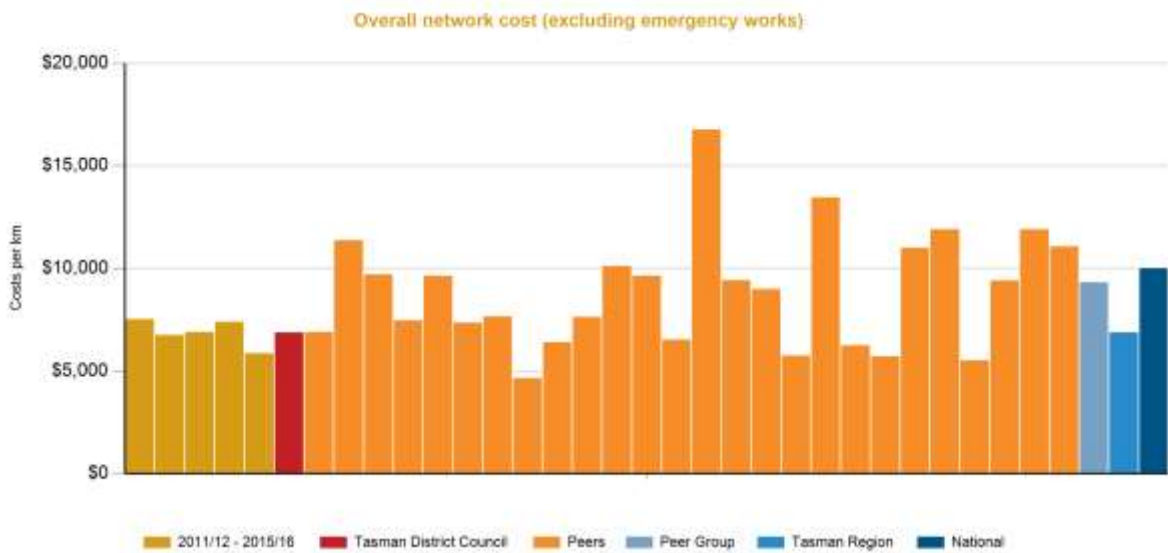


Figure 23: Overall Network Cost (excluding emergency works) per kilometre

An analysis in the rutting on the sealed roads shows that the proportion of ruts greater than 20mm (generally regarded as a failure of the pavement) has been increasing (see Figure 24). This is also reflected in the average rut depth across all road categories as seen in Figure 25. ONRC comparison Figure 22 shows that compared to our peers, we generally spend less than our peers on both seal renewal and pavement structure renewal.

One of the recorded measures that makes up the Pavement Integrity Index is rut depth. This is monitored every two to three years. In 2016, it was observed that the average rut depth and the proportion of ruts that are 20mm or larger were growing (Figure 24 and Figure 25), particularly on pavements classed as weak.

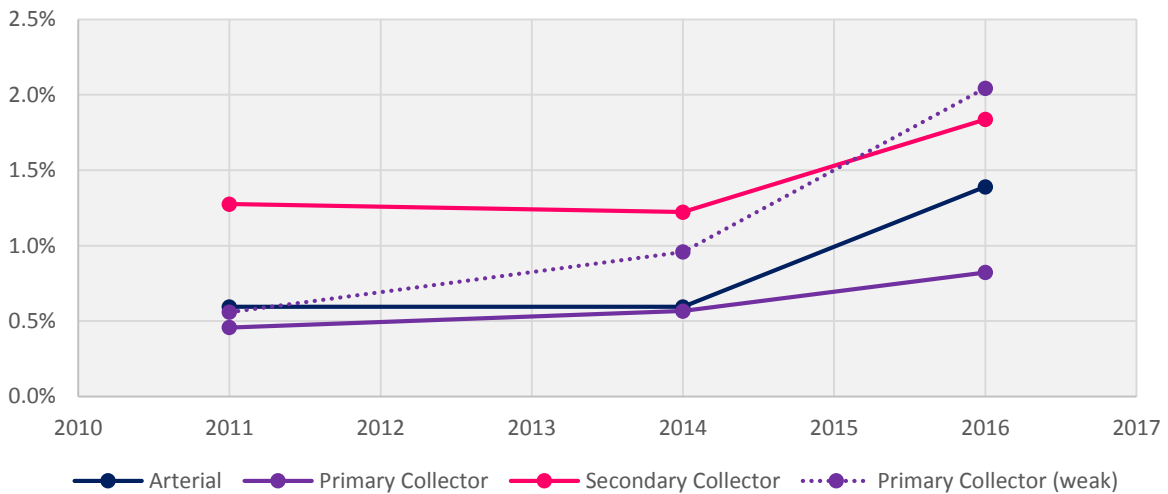


Figure 24: Rut Depths Greater than 20mm by ONRC Classification

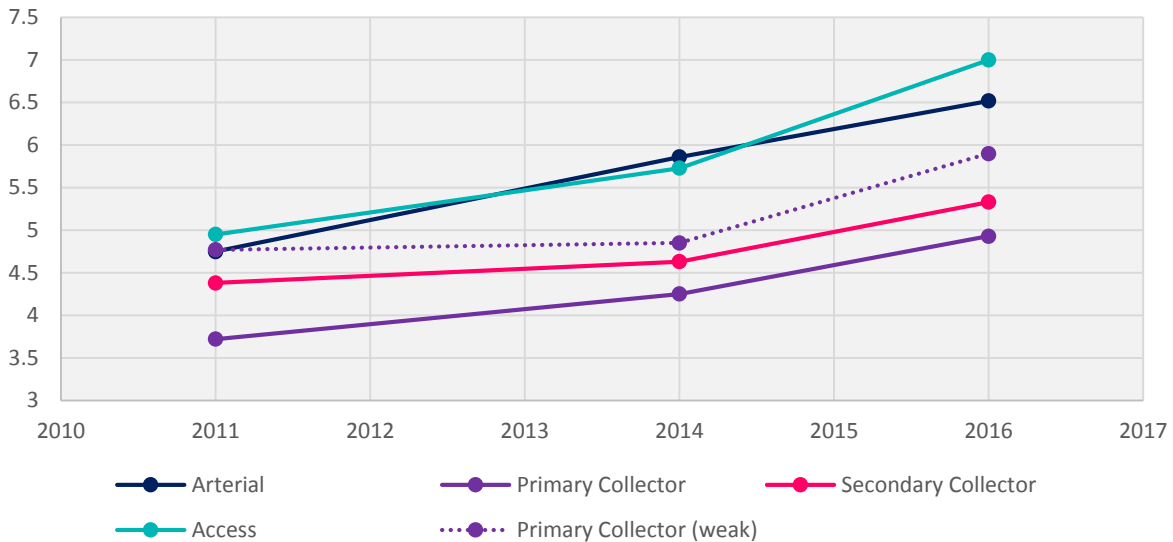


Figure 25: Average Rut Depth

Rut depths exceeding 20mm is generally regarded as a failed pavement. The increase in rutting coincides with the reduction in rehabilitation and reseals and also coincides with a period of high growth for the District. This indicates that we are consuming the pavement faster than we are renewing. This fits well with Figure 22 which indicates that we are spending less on rehabilitation than all of our peers. Whilst the average rut depth has increased, it has been increasing over the last 5 years, in particular, the proportion of ruts exceeding 20mm has jumped in the last 2-3 years. This would indicate that specific routes that have a higher proportion of heavy commercial vehicles are likely consuming the pavement at a faster rate.

The level of service should be improved over the next three years by continuing to invest in pavement renewal. To ensure renewals are completed at the right time additional investment into conditional assessments, forward works planning and dTIMS modelling will be made.

5.3.4 Accessibility

Council constructs a minimum of 500 metres of new footpath each financial year to reduce the length of the gaps in the existing footpath network and meet community demand for pedestrian facilities.

Whilst the existing level of service does facilitate accessibility issues, it does not measure changes of usage patterns. It is recognised that measuring footpath usage by pedestrians would be challenging. Additionally, 500m of new footpath is an arbitrary target with no basis for its adoption. This measure is useful to ensure that footpaths are a priority for Council and should be changed to match population growth in the District with additional footpaths to fill in the gaps in the network in urban areas of greatest need (eg. close to shops, schools, aged care facilities, busy roads etc) for the next 30 years.

Additional levels of service have been adopted to measure and monitor the uptake of cycling and passenger transport modes of transportation. Council has a small cycle network (The Great Taste Trail not withstanding) a single measure that incorporates overcoming inhibitors like safety and convenience would be better. Additionally, uptake is an easily recognised measure. It should be noted however, that with high population growth, uptake could be from population growth only as opposed to an increased proportion of cycling as a mode of transport. It should be recognised that whilst this measure refers to cyclists, there is a growing trend of diversification of personal transport devices such as electric bikes especially with the increase in battery density and cost.

Passenger transport is recognised as having several community benefits especially for the younger and older residents who do not have access to a car as their primary transport. Council has a bus connection through central Richmond and into Nelson city via Stoke and this AMP proposes an extension of bus services to more residences and businesses within Richmond. Given, that this activity is currently underway a measure to measure and monitor uptake should be included. Like cycling, population growth will probably increase patronage, but we also want to encourage an increase in proportion of trip made on public transport.

5.3.5 Resilience

Specified sites that Council considers to have a high risk of failure are inspected and attended to if necessary in response to severe weather warnings.

Whilst the level of service has been consistently met, this is not a good measure of the performance of the road network. This will be changed to 'The number instances where road access is lost and number of trips impacted' measure as detailed by ONRC.

5.3.6 Travel Time

Council communicates planned works programme and road closures to road users via the weekly road status report published on Council's **website**.

This is another level of service that is consistently met, but is not a good measure as it does not measure whether travel time is changing. Council plans to utilise an array of sensors to gather this information, but will use traffic throughput on arterial routes as a proxy until this can be established.

5.3.7 One Network Road Classification (ONRC)

The One Network Road Classification (ONRC) has been developed by the Road Efficiency Group (REG) which includes representatives from local government and the NZ Transport Agency and is to be implemented by road controlling authorities across New Zealand by 2018.

The ONRC involves categorising roads based on the functions they perform as part of an integrated national network. The classification will help local government and the NZ Transport Agency to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country. In addition to this the NZ Transport Agency has set out the customer levels of service and associated performance measures for each road hierarchy within the ONRC.

Council has taken the first step towards aligning to the ONRC by including the six key factors: safety, resilience, amenity, value for money, travel time and accessibility into its levels of service and assessing the Tasman network performance and cost efficiency against our peer group and nationally. Council will need to focus on implementing the ONRC through its operation team and contractors.

5.3.8 Suitability of Levels of Service

New levels of service have been created to ensure that both the outcomes of the GPS and the strategic problems are able to be tracked and reported on as show in Table 16 below. New levels of service have been added to ensure that actions to address strategic themes can be monitored and reported to determine effectiveness.

Table 16: Activity classes and Themes that Level of Service Address

	Transport GPS Priorities			Tasman District Strategic Themes			
	Economic Growth and Productivity	Road Safety	Value for Money	Population Growth	Aging Population	HCV Growth	Natural Hazards
Crash Trend (ONRC)		X					
Crash Reduction (LGA)		X					
Bend Crash Trend		X					
Road Closures (ONRC)	X						X
New Footpath		X		X	X		
Cycling Trend		X		X	X		
Passenger Transport Trend	X			X	X		

	Transport GPS Priorities			Tasman District Strategic Themes			
	Economic Growth and Productivity	Road Safety	Value for Money	Population Growth	Aging Population	HCV Growth	Natural Hazards
Condition Index			X			X	
Pavement Index			X			X	
Resurfacing percentage (LGA)			X				
Travel Time (ONRC)	X			X			
Footpath Condition (ONRC) (LGA)			X		X		
Ride Comfort (ONRC)		X	X				
STE % (ONRC (LGA)			X			X	
Resident Satisfaction			X				

Where applicable, new levels of service follow the ONRC recommendations on performance measures, but a few new measure have been created if there was not an appropriate existing measure or the measure required a higher degree of specificity.

5.3.8.1 Cycling

A new cycling measure has been added to monitor the existing cycle networks and to monitor changes required to meet the aging population demand. A generic cycling measure was adopted to measure growth of cycling on the cycle networks that are influenced by improvements in safety of the cycling network and improvements in efficiency. Should **cycling play a more significant part in three years' time this measure will** be changed to reflect a greater influence on transportation modes in the region.

5.3.8.2 Passenger Transport

A new passenger transport measure was added to take into account the bus service that is now running into Nelson from Richmond and the proposed Richmond extension. This measure is also in direct response to the aging population strategic theme to meet the need of people who are no longer able to drive vehicles. Patronage numbers either starting or ending their public transport trip within Richmond has been adopted to measure usage and growth of public transport.

6 Our Customers and Stakeholders

Council consults with the public to gain an understanding of customer expectations and preferences. This enables **Council to provide a level of service that better meets the community's needs.**

6.1 Stakeholders

There are many individuals and organisations that have an interest in the management and/or operation of **Council's** assets and activities. Council has a Community Engagement Policy which is designed to guide the expectations with the relationship between Council and the Tasman community. Council has made a promise to seek out opportunities to ensure the communities and people it represents and provides services to, have the opportunity to be:

- fully informed;
- provide reasonable time for those participating to come to a view;
- listen to what they have to say with an open mind;
- acknowledge what we have been told;
- inform contributors how their input influenced the decision Council made or is contemplating.

Engagement or consultation:

- is about providing more than information or meeting a legal requirement;
- aids decision making;
- is about reaching a common understanding of issues;
- is about the quality of contact not the amount;
- is an opportunity for a fully informed community to contribute to decision-making.

The key stakeholders Council consults with about the transportation activity are:

- elected members (Community Board members);
- New Zealand Transport Agency;
- Iwi (Councils Treaty Partners);
- Regulatory (Consent compliance, Public Health);
- Fisheries organisations;
- Heritage New Zealand;
- Regional Transport Committee (including Nelson City Council and Marlborough District Council);
- Road Transport Association;
- Accessibility for All;
- New Zealand Police;
- Automobile Association;
- Civil Contractors Federation (Nelson - Marlborough);
- service providers / suppliers (Network Tasman, Power Companies);
- Nelson City & Marlborough District Councils;
- South Island Regional Transport Committee Chair group;
- Richmond Unlimited;
- Bicycle Nelson Bays;
- Greypower.

6.2 Consultation

6.2.1 Purpose and Types of Consultation

Council consults with the public to gain an understanding of customer expectations and preferences. This enables **Council to provide a level of service that better meets the community's needs.**

Council's knowledge of customer expectations and preferences is based on:

- feedback from resident's surveys;
- other customer/user surveys, such as Yardstick visitor measures;
- levels of service consultation on specific issues;
- feedback from staff customer contact;
- ongoing staff liaison with community organisations, user groups and individuals;
- public meetings;
- feedback from elected members, advisory groups and working parties;
- analysis of customer service requests and complaints;
- consultation via the Annual Plan and Long-Term Plan processes; and
- consultation on Strategies and Reserve Management Plans.

Council commissions resident's surveys on a regular basis (the National Research Bureau Ltd has provided this service since 2008). These NRB Communitrak surveys assess the levels of satisfaction with key services, including provision of community facilities, and the willingness across the community to pay to improve services. Other informal consultation is undertaken with community and stakeholder groups on an issue by issue basis, as required.

From time to time Council undertakes focused surveys to get information on specific subjects or projects.

6.2.2 Consultation Outcomes

The most recent NRB Communitrak survey was undertaken in May 2017. This asked whether residents were satisfied with roads, footpaths and public transport in their local town.

6.2.2.1 Roads

Figure 26 shows that 76% of residents are satisfied with road networks in the District. This shows an increase in the last three years but not as high as 2010 to 2013 when satisfaction was around 80%. This level is on par with the Peer Group average of 76%, slightly higher than the national average of 75%.

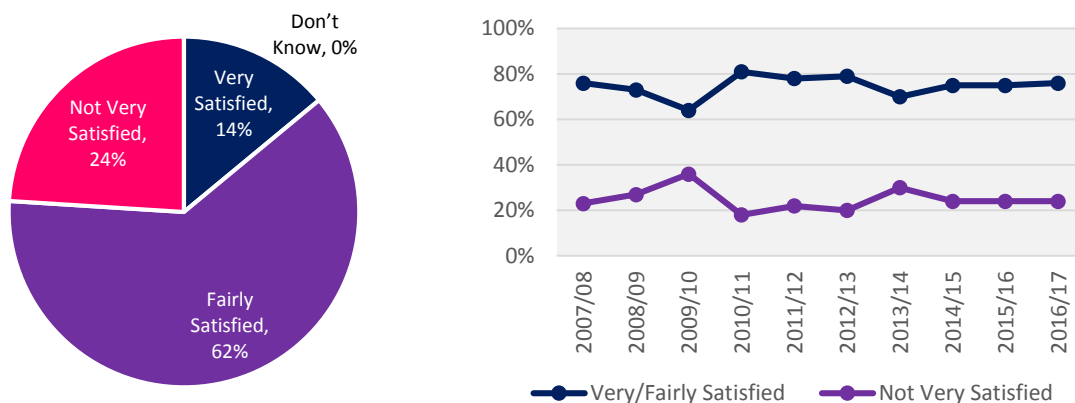


Figure 26: 2017 Satisfaction with Roads

The main reasons residents were not very satisfied with roads are:

- potholes / uneven / rough / bumpy;
- poor condition / need upgrading / improving;
- lack of maintenance / slow to maintain.

When asked whether they would like more, less or about the same to be spent on roads, given that Council cannot spend more without increasing rates, 40% said they would like to see more spent and 3% said they would like to see less spent. In the Lakes Murchison Ward, 67% of residents would like to see more spent on roads.

6.2.2.2 Footpaths

Figure 27 shows that 74% of residents are satisfied with footpaths in the District. This shows a stable long term trend. This level of satisfaction is higher than the Peer Group average of 60%, but slightly more than the national average of 72%.

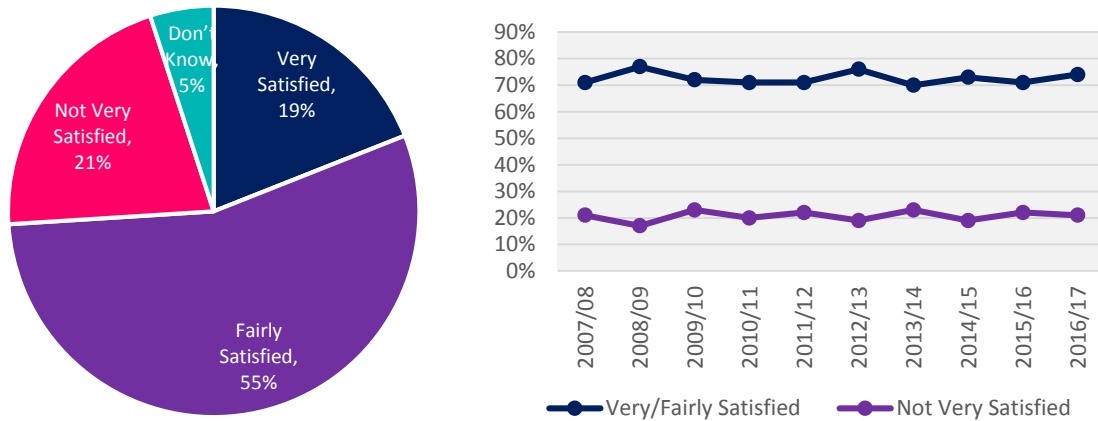


Figure 27: Satisfaction with Footpaths

The main reasons given for not being very satisfied with footpaths are:

- uneven / cracked / rough / bumpy / potholes;
- poor design / narrow / difficult access at crossings;
- no footpaths / lack of footpaths / only on one side.

When asked whether they would like more, less or about the same spent on footpaths, given that Council cannot spend more without increasing rates, 28% said they would like to see more spent and 32% said they would like more spent on walkways and cycleways. In the Golden Bay Ward, 77% of resident would like to be spent on walkways and cycleways.

6.2.3 Public Transport

Public transport was last assessed for customer satisfaction in 2014. This was after the establishment of the N-Bus service in Richmond and very little has changed within the District affecting public transport since then. Figure 28 shows that 32% of residents are satisfied with public transport in the District. This was a new measure, so a long-term trend cannot be identified and there are no comparative Peer Group or National averages for this service.

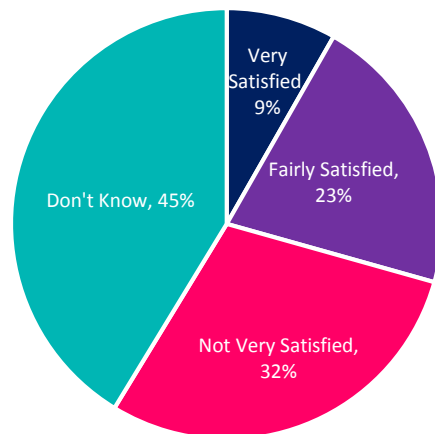


Figure 28: Satisfaction with Public Transport

The main reasons residents were not very satisfied with public transport are:

- non-existent / don't have any / would like a bus service;
- poor service / could do better / not enough buses / infrequent;
- specific bus routes needed.

When asked whether they would like more, less or about the same to be spent on public transport, given that Council cannot spend more without increasing rates, 30% said they would like to see more spent.

7 Current and Future Demand

The ability to predict future demand for services enables Council to plan ahead and identify the best way of meeting that demand. That may be through a combination of demand management and investing in improvements. This section provides an overview of key drivers of demand and what demand management measures Council has planned to implement.

7.1 Demand Drivers

Through development of the strategic Business Case, the working group identified two key themes:

- Growth of the District
- Natural hazards influence on the District

Of these themes, general growth including growth in the aging population constituted the greatest problem. This is due to Tasman having one of the highest rates of growth of older people and the benefits to health and wellbeing of good transportation connections.

The growth of Heavy Commercial Vehicles (HCV) and High Productivity Motor Vehicles (HPMV) vehicles is closely related to growth in GDP of the entire region. This is generally in line with the growth that many regions around New Zealand are experiencing, however, we are seeing deterioration along our main HCV routes which is likely to get worse if not addressed due to forecast industry growth.

The population growth is causing issues around unexpected delays on major routes through Motueka and Richmond which is causing traffic to use lower hierarchy roads to avoid congestion. Additionally, the alternate routes are undergoing localised development growth which will only make this problem worse. Many of the problems can be offset by making changes to state highways and work is currently underway with NZTA to address state highways through the Richmond Network Operating Framework and the State Highway 60 business case.

There is an ongoing concern that with a higher frequency of natural hazard events some of the more isolated settlements in the District can be cut off and reinstatement of basic services could be days or months in the case of significant events. In comparison to other Districts we are well serviced by other potential modes of transport such as via sea that whilst not established, could be pulled into service to provide vital emergency access and linkages.

7.1.1 Population Growth

Council uses a growth model to project the District's future population and households. The purpose of the growth model is to provide predictive information (demand and supply) for future physical development, to inform the programming of a range of services, such as network infrastructure and facilities, and district plan reviews. The model generates residential and business projections for 17 settlement areas and 5 ward remainder areas.

The key demographic assumptions affecting future growth are:

- Ongoing population growth over the next 30 years with the rate of growth slowing over time. The overall population of Tasman is expected to increase by 4,420 residents between 2018 and 2028, to reach 55,690.
- Higher growth in Richmond, Motueka, Mapua, Brightwater, and Wakefield for 2018-2028. For 2018-2028, Council has used **Statistics New Zealand's high growth projections for Richmond, Brightwater, Wakefield, Motueka, and Mapua/Ruby Bay**, and medium growth projections for the rest of the District. Medium growth projections have been used for the whole District for 2028-2048.
- An ageing population, with population increases in residents aged 65 years and over. The median age in the Tasman District in 2013 was 44. This is expected to increase to 53 (high projection) /54.1 (medium projection) by 2043. The proportion of the population aged 65 years and over is expected to increase from 18% in 2013 to 36% (high projection) / 37% (medium projection) by 2043.
- A decline in average household size, mainly due to the ageing population with an increasing number of people at older ages who are more likely to live in one or two person households.

The following provides a summary of the outputs from the growth model that have been determined by using the above input assumptions and parameters.

- Residential growth is measured in the number of new dwellings. Council has estimated demand for 2,955 new dwellings over the next ten years, and a further 3,040 dwellings between 2028 and 2048. This is based on population and household size projections, and also allow for demand for dwellings for non-residents, such as holiday houses or temporary worker accommodation. The growth model projects demand for new dwellings to be an average of 365 a year for Years 1-3 (2018-2021), dropping to 266 a year for 2021-2028. In recent years, Tasman has experienced increased growth in the number of new dwellings, with an average annual increase in the last three years of 365 new dwellings. The average over the last ten years was 291 new dwellings a year.

Business growth is measured in the number of new business lots. Council has estimated demand for 243 new business lots in our settlements over the next ten years, and a further 212 new lots between 2028 and 2048. This is based on a business land forecasting model from Property Economics using medium population projections, national and regional economic trends, employment projections and employment to land ratios.

7.2 Assessing Demand

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

- Local population trends;
- Accuracy of predicted future populations;
- Local economic trends;
- Land use change;
- Changing technologies;
- Changing legislative requirements;
- Changing regional and District planning requirements;
- Climate and climate change.

Increasing demand for services can generate the need for additional infrastructure or demand management interventions. The land transport network enables efficient movement of people and goods throughout the District and to neighboring Districts. The land transport network is a core facility maintained by Council to assist it in meeting its Community Outcomes. The present road network was set up many decades ago and has been gradually upgraded to the present standard. Over that time community expectations in transportation have increased which may require ongoing development of the transportation network.

Generally, the network copes with the demands on it. While there is little demand for the supply of new infrastructure right now, apart from that required in subdivision work, the present network will need redevelopment on key locations over the next 30 years to meet this community expectation and the growth forecasts.

An increase in population

This will increase traffic on the roads which will increase congestion and reduce the level of service provided by the road. This will increase wear and tear on the roads which will increase maintenance costs and renewal frequency.

A change in the way a road is used

There is a greater demand for alternative modes of transport, especially in areas where no viable alternate to private motor vehicles exists. This is especially true in settlements where public amenities have been developed some distance from central areas.

A change in the level of service demanded by the road users

Over time, communities tend to expect improving service from their assets. Roads and the activities involved in managing the roads may need to be improved to satisfy these future needs.

A change in the strategic management of the assets

Council's **policies and management strategies are in continual evolution to keep pace with the changing needs of the community, statutory requirements, funding organisation's and central government.**

People moving from urban areas to lifestyle properties in rural areas tend to expect a high level of service. These rural roads which were once used by local farmers now have a much wider range of people and vehicle types driving on them. This has resulted in factors such as smoothness of ride, no loose metal and higher speeds becoming more important to more road users. Changes to policies and management strategies can also have a significant effect on how assets are managed.

Around New Zealand, Councils are grappling with an aging population as the baby boomers start a post-employment period of their lives. The elderly population in Tasman has been rising steadily and is forecast to increase faster than the rest of New Zealand. Tasman is an attractive District to retire to due to its temperate climate, high sunshine hours, coastal location, moderate population and perception of safety. This adds to the demand for recreation facilities like cycling and walking trails. As people age, the ability to remain mobile is of greater importance especially as freedom of movement and strength diminish.

Technology is playing a larger part in transportation than it has in the last 100 years. Recent developments in smart phones has enabled ride sharing and other non-traditional transport as a service initiatives'. Recently electric motor vehicles have regained their popularity, driven in part by a need to save on running costs and a desire to reduce carbon emissions. Electric cars are one of the fastest selling type of vehicle in Nelson/Tasman. There has been a surge in adoption worldwide leading to almost all car manufactures introducing a line of electric vehicle in the next three years with buses and trucks in development. Almost all car manufacturers are working on autonomous vehicle technology to complement the development of electric cars. Whilst the technology is there, autonomous vehicle adoption may take longer due to the legal, ethical and trust issues that need to be worked through.

The direction of future land use changes and their effects on the transportation network are difficult to determine with accuracy, but it is important that Council plans ahead and adapts to these changes.

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

- New roads;
- Sealing of unsealed roads;
- Widening and alignment improvements;
- Upgraded intersections;
- New and upgraded bridges;
- New dedicated cycle and footpaths;
- Appropriate urban facilities in closely settled areas e.g. street lights, kerb and channel, footpaths.

Council intends to maintain its awareness of these issues and plans to provide a transportation network which meets the **community's** expectations.

The business case approach to determining the transport maintenance programme has been developed by The Treasury. NZ Transport Agency is a funder of the Councils transportation programme and requires that the maintenance programme be developed as part of the AMP document using business case approach principals. The approach also utilises the Investment Logic Mapping (ILM). The ILM is a series of structured workshops that brings together key stakeholders to ensure that there is early agreement on problems, outcomes and benefits before any investment decisions are made or a specific solution is identified. At the end of the ILM, a problem has been defined through a statement, the benefits of addressing these problems have been defined and key performance indicators (KPI) to measure the success of addressing problem. This has been undertaken for each of the key issues and are included below for each issue.

7.2.1 Growth

Population growth in Richmond, Motueka, Mapua and Brighwater has raised traffic at peak and interpeak periods which gets focused into Richmond as it travels to Richmond and through to Nelson. The Queen Street/Gladstone Road confluence focuses traffic on a short stretch of State Highway around three sets of signalised intersections. As a **consequence, users are finding alternate routes to avoid 'congestion' which generally use residential streets and minor intersections.** In Motueka, High Street (SH60) serves as a through road, an arterial road for the town, the main shopping precinct and primary parking. This mix of uses is at its highest in the summer when self-drive tourists, seasonal workers and higher industrial and commercial activities are superimposed on the high base level activity. Alike Richmond, **alternative routes are being utilised to avoid the areas of 'congestion' raising the vehicle numbers on lower class roads.** This has been refined into a problem statement specific to the Richmond and Motueka areas.

Problem Statement:	Priority:
<p>“Population growth has increased traffic leading to increasing delays on arterial routes in Richmond and Motueka”</p>	<p>30%</p>

The problem has been investigated in terms of:

- Growth in traffic on key local road routes within Richmond and Motueka;
- Population growth in the Richmond and Motueka area.

Table 17: Growth Causes and Consequences

Cause	Consequence
Population and business growth is increasing transport demands.	Road users are seeking alternative routes to avoid ‘congestion’ increasing traffic and reducing amenity for residents and safety for vulnerable road users.
Lack of viable alternative land transport options to private vehicle travel.	Travel time on some key journey routes are increasing to unacceptable levels during peak hours.
	Growth may need to be throttled and obligations of the National Policy Statement on Urban Growth Capacity may not met.

7.2.1.1 Growth in traffic on key local road routes within Richmond

Traffic count data on key local road routes within Richmond for the period of 2006 to 2016 is presented in Figure 30. The data shows traffic on the key routes has grown between 20% - 40% on the routes into Richmond (Figure 29 shown in blue) and 75% – 80% on routes that avoid Richmond CBD (Figure 29 shown in red) over the last 10 years. All routes show an increase in traffic volumes in the last 18 months due to strong region wide growth. This region wide growth is forecast to continue for the next 10 years.

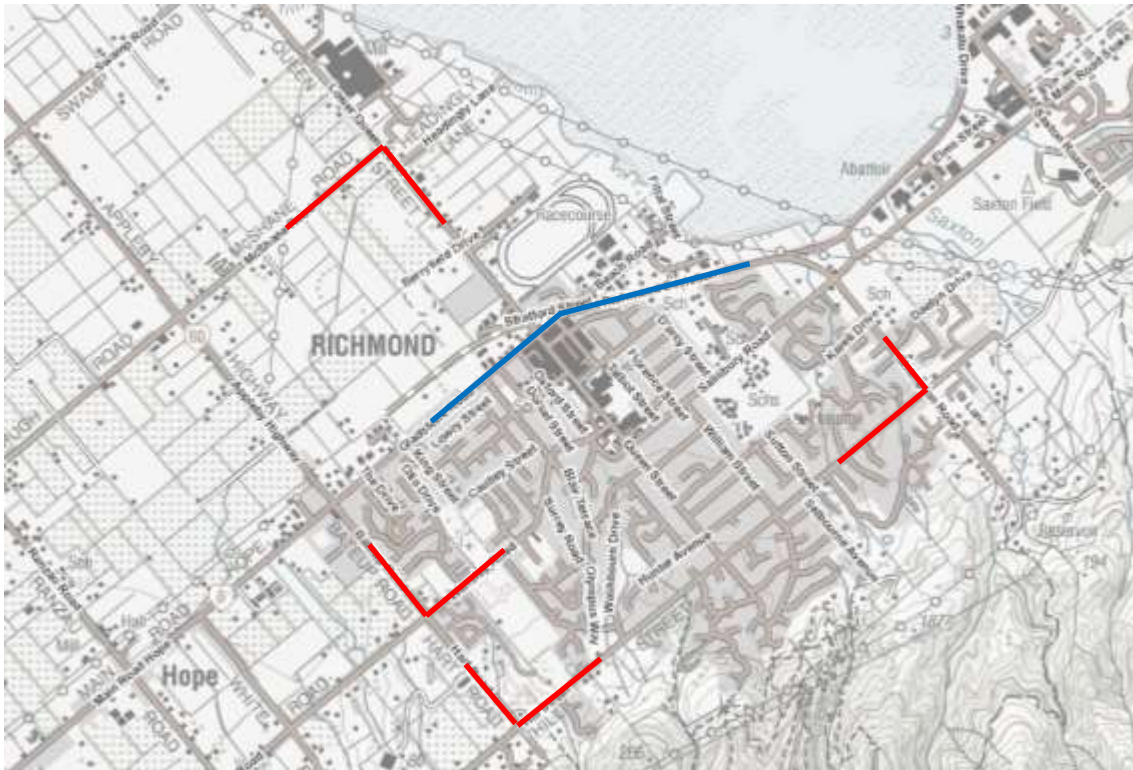


Figure 29: Routes through Richmond

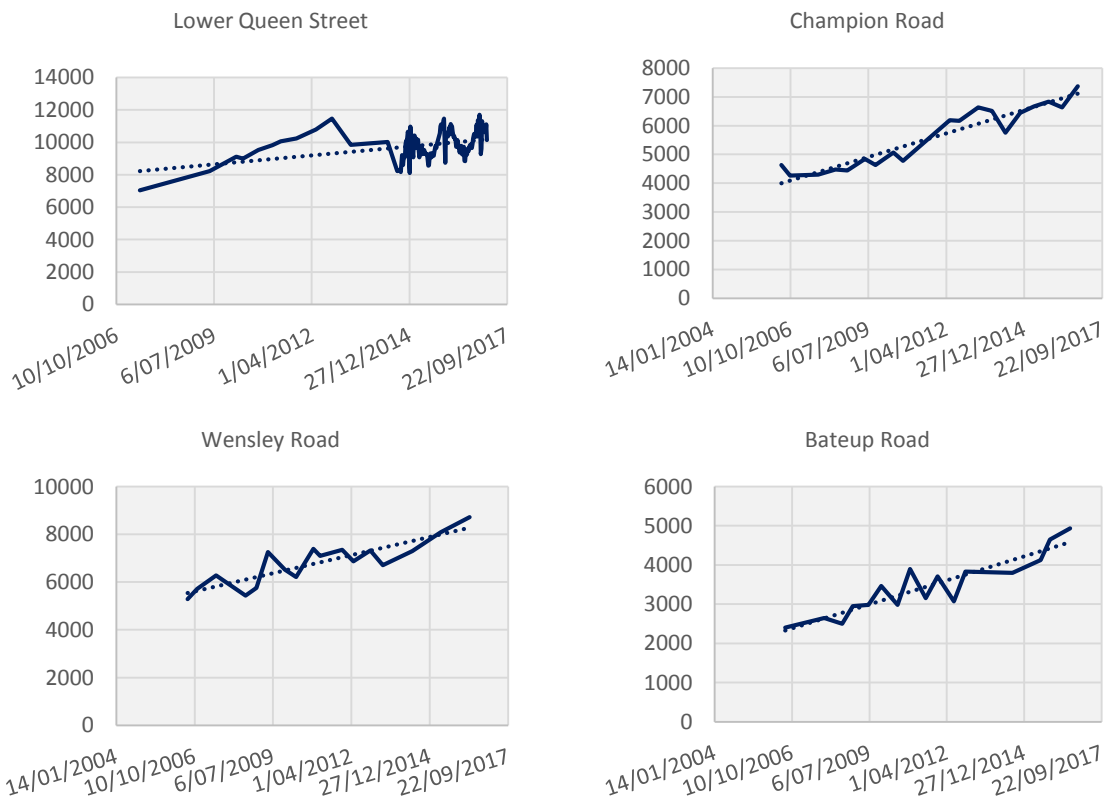


Figure 30: Daily vehicle count on roads around Richmond

Lower Queen Street installed a permanent traffic count system in 2014 and is shown as a higher count density

7.2.1.2 Population growth in the Richmond area

Based on Statistics New Zealand data the Population growth in Tasman District is expected to grow (Figure 31).

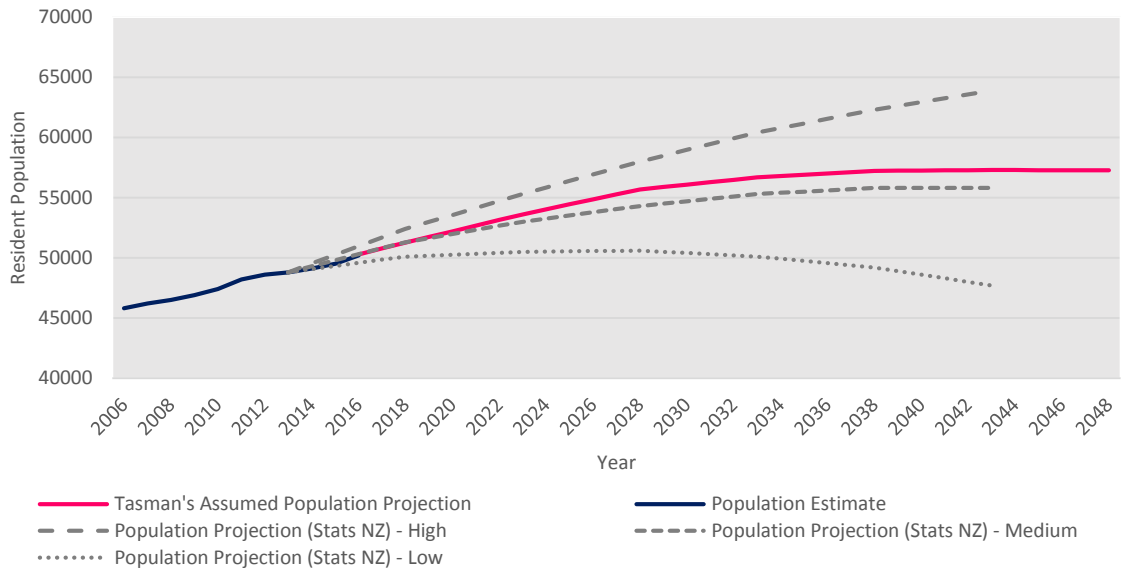


Figure 31: Tasman District Growth Projections

During the 2015 AMP cycle, Council based all activities on a medium growth. Actual growth were inline high growth projections.

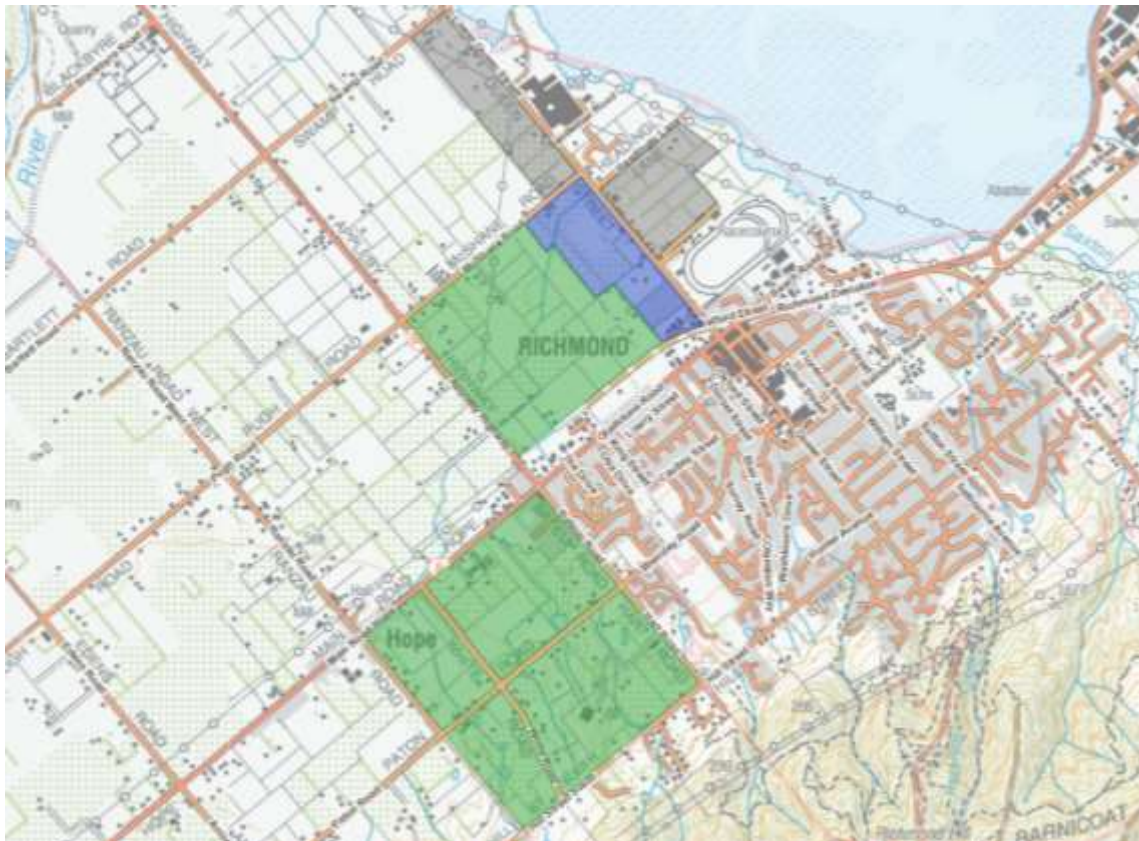


Figure 32: Richmond Growth Areas

The majority of the growth in Richmond is likely to happen to the West and South of the current Richmond CBD as shown in Figure 32. This means that growth will be in the main routes surrounding Richmond as people continue to travel to and through Richmond.

7.2.1.3 Motueka Traffic

Motueka’s traffic on SH60 has been increasing on average annually by 1.8% between 2011 and 2015. The annual traffic growth experienced at the Motueka Bridge has been 3.7% per year in the same period.

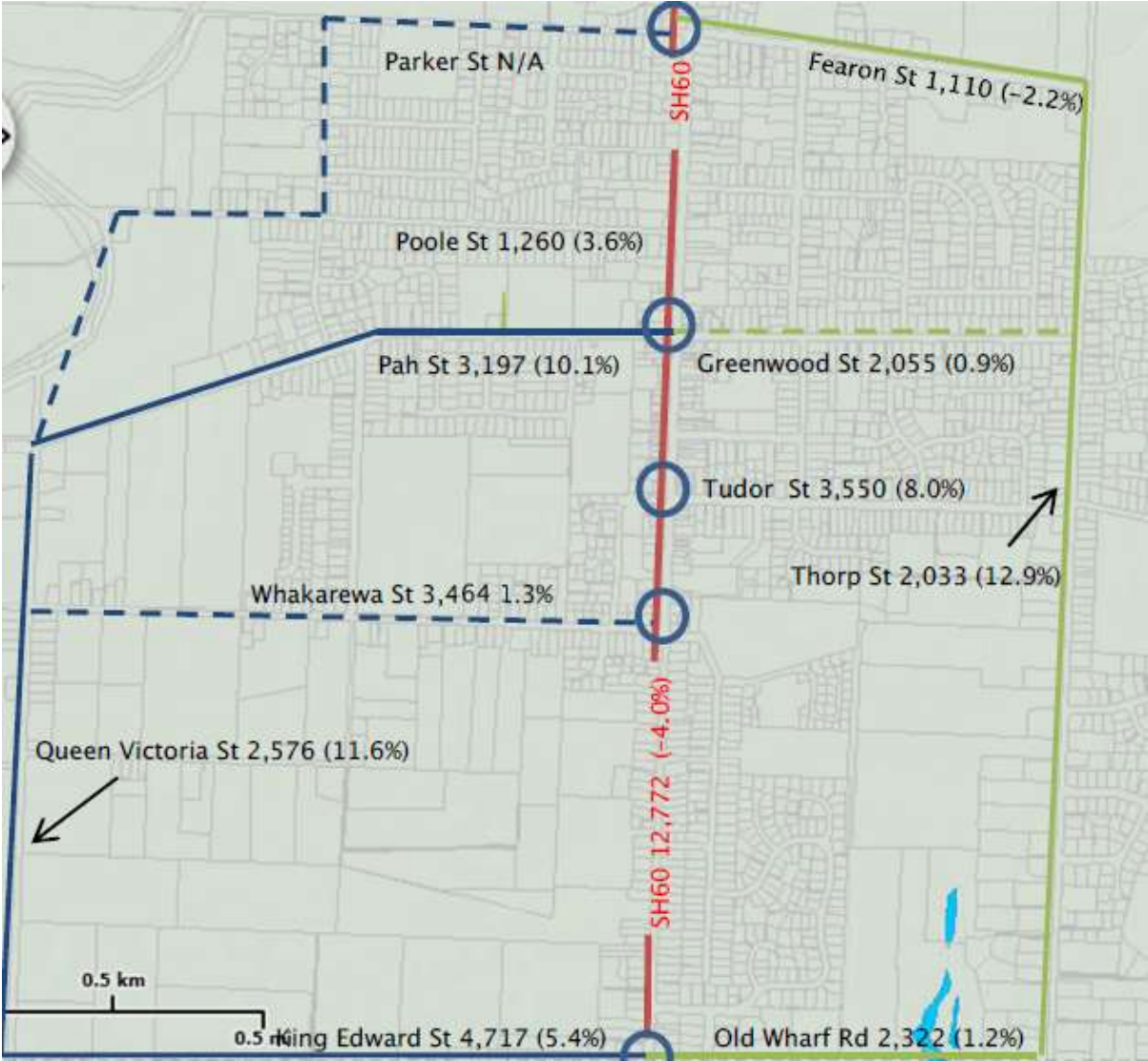


Figure 33: Motueka Traffic Volumes and Growth on Alternative Routes from SH60 Motueka Strategic Case, NZTA

Figure 33, shows that there has been significant growth on several of the side roads. Most notably, King Edward Street, Queen Victoria Street and Pah Street. The increase in side road traffic in conjunction with the total traffic across the Motueka Bridge suggests that a significant portion of traffic is diverting onto local roads to avoid congestion.

Motueka is projected to grow by 1,006 residential units over the next 30 years with 95% of these (shown in Figure 34 in red) being west of SH60 which will directly influence these streets.



Figure 34: Area of Motueka Growth

7.2.1.4 Benefits

Investment into high growth areas in Motueka and Richmond will help provide safe and efficient movement and ensure Tasman meets its obligation of the National Policy Statement on Urban Development Capacity. Widening of key routes will allow turning vehicles to not interfere with through traffic, improving safety and travel time reliability. Traffic is less likely to 'Rat Run' on access routes through residential areas to avoid high traffic congestion.

Addressing the issues created by growth also helps to address Council's infrastructure priorities and the Government Policy Statement priorities. The specific themes and priorities are detailed in Table 18 below.

Table 18: Alignment of Growth with Influencing Policies

Tasman Strategic Infrastructure Priority	Government Policy Statement
<ul style="list-style-type: none"> Providing infrastructure that meet the needs of our changing population 	<ul style="list-style-type: none"> Matching capacity and demand Journey time reliability Accessibility

As part of the business case approach, Council has determined the benefits of responding to the growth issue and key performance indicators to assess the benefits. Improved reliability of travel time is the most significant benefit of addressing this problem. Measures have been developed to determine whether responses have been effective in addressing the issue, see Table 19 below.

Table 19: KPI's to Measure Response to Growth

Benefits	Investment Key Performance Indicator	Measure Description
Reliability "Population growth has increased traffic leading to increasing delays on arterial routes in Richmond and Motueka"	KPI 1: Traffic - throughput	Number of pedestrians, cyclists and motor vehicles by vehicle class
	KPI 2: Travel time	Average travel time (in minutes) on Salisbury Road between Champion Road and Queen Street

7.2.2 Aging Population

Tasman is leading New Zealand in progression to an older population. This is due to the high proportion of baby boomers now entering retirement age and in the Tasman District being attractive place to retire. There have been greater requests and community discussion for greater public transport options and criticism of the footpath condition and design.

Problem Statement:	Priority:
<p>“An aging population is creating demand for diversification of transport types”</p>	<p>45%</p>

Table 20: Aging Population Causes and Consequences

Cause	Consequence
Tasman has a greater proportion of people over 65 when compared to the rest of New Zealand and it is forecast to grow	The transport system will need to respond to the changing demographic e.g. safe pedestrian facilities (including mobility scooters) and improved public transport.
	Broadening of peak hour congestion
The over 65 population cohort is growing at twice the NZ average	Tasman will be a leader the national change to the transport system to meet the needs of the aging population
Aged population is generally increased level of impairment	Footpaths need to be smoother, flatter and wider to ensure that they do not create a hindrance to mobility
Shift of people aged 70+ from rural areas to urban areas with good health care service and public transport	Increase in public transport demand in areas that retirement villages and good health services such as Richmond and Motueka.

7.2.2.1 Population Age Forecast

Census data shows an increasing percentage of older residents over recent years. This combined with Statistics NZ forecasts indicate growth may occur at double the average New Zealand average.

In 2013 the over 65 cohort made up 18% of the population and by 2043 this is forecast to grow to 37%, more than twice the increase when compared with the NZ population as a whole as shown in Figure 35.

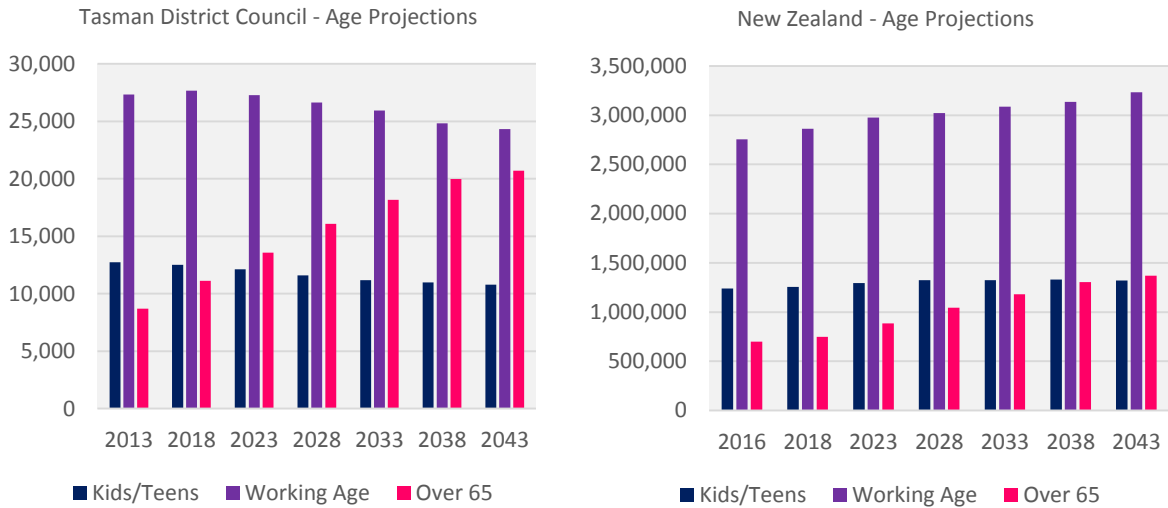


Figure 35: Tasman Age Projections Compared to the Rest of New Zealand¹

Tasman is one of the fastest growing regions in terms of rate of growth of elderly people, forecast to jump from 20% of total population to 30% of the total population (Table 21) by 2028.

Table 21: New Zealand Regions Elderly Population Growth²

Rank	Percentage of population aged 65 and over, 2015	Percentage of population aged 65 and over, 2028
1	Thames-Coromandel 29%	Thames-Coromandel 38%
2	Kapiti Coast 26%	Central Otago 31%
3	Horowhenua 25%	Horowhenua 31%
4	Hauraki 23%	Hauraki 31%
5	Marlborough 22%	Kapiti Coast 30%
6	Waimate 22%	Marlborough 30%
7	Waitaki 22%	Tasman 30%
8	Central Otago 22%	Kaipara 30%
9	Kaipara 21%	Kaikoura 29%
10	South Wairarapa 21%	Central Hawke's Bay 28%
11	Kaikoura 21%	Timaru 28%
12	Timaru 21%	Carterton 28%
13	Western Bay of Plenty 20%	Gore 28%

¹ Statistic New Zealand

² Aging Population Report to Council, Nelson City Council

Rank	Percentage of population aged 65 and over, 2015	Percentage of population aged 65 and over, 2028
14	Tauranga 20%	Waimate 28%
15	Whanganui 20%	South Wairarapa 27%
16	Masterton 20%	Masterton 27%
17	Carterton 20%	Waitaki 27%
18	Tasman 20%	Whanganui 27%
19	Far North 19%	Western Bay of Plenty 27%
20	Kawerau 19%	Nelson 27%
21	Napier 19%	Tamaraoa 26%
22	Central Hawke's Bay 19%	Far North 26%
23	Gore 19%	Grey 26%
24	Whangarei 18%	Napier 26%
25	Matamata-Piao 18%	Buller 26%

7.2.2.2 Aging Population Needs

A 2012 research report by NZTA³ made eight recommendations to meet the needs of aging population by the New Zealand transport system. The last five recommendation were relevant to Tasman District:

- Pedestrian safety regarding both injuries from motor vehicle crashes and non-motor vehicle accidents on the road and roadside will need greater attention as the number of older pedestrians' increases. This is an area for territorial authorities to consider with regard to both pavement design and maintenance, and for the NZTA and regions to consider with regard to standards.
- Encouragement to cycle should be sensibly moderated by knowledge of older cyclists' frailty and increased vulnerability to injury in the event of a crash.
- Attention is needed to make public transport and special transport more acceptable to and useable by older passengers.
- Further encouragement for people to take their transport needs into account when making housing decisions is needed.
- Urban planning needs to ensure that community services and facilities are more accessible by public transport and non-motorised forms of transport, including walking.

Public satisfaction with footpaths has remained fairly consistent over the last 10 years. Comments regarding their lack of satisfaction has changed from reference to bikes, prams and wheelchairs in 2008 survey to references to mobility scooters, driveway slopes, elderly tripping and width in 2016.

³ Demand for transport services: impact on networks of older persons' travel as the population of New Zealand ages, NZTA

7.2.2.3 Benefits

Investment into infrastructure to meet the needs of the aging population will help elderly residents to maintain mobility when driving is no longer viable or preferred. Evidence shows that access to convenient, cost effective and safe transport is important for older people to maintain connections with friends and family which directly influence the effects of isolation and loneliness. Additionally, the journey itself is as important as the destination through further opportunities to interact with the general public. Losing a **driver's** license can be the first obvious outcome of aging and can lead to loss of independence by not being able to travel when they want to. Good alternative transport options are important to assisting older people through this major life transition.

People who undertake more regular travel lead more active lifestyles and are shown to enjoy benefits to their health. This is important as the population ages, with anticipated increases in longevity and decreases in healthcare costs.

The irony is that older people have more free time to travel, yet start to experience physical and cognitive impairment reducing the likelihood that they can use the existing transportation networks. An English study showed that for every \$1 spent on concessionary travel, \$2.87 is generated in benefits. The benefits are broken down into:

- 50% goes to the older person themselves
- 20% to the other transportation users
- 30% to the wider community

Getting transport right for older people brings with it many positives to wider society; increased numbers of people can travel to volunteer, to shop and spend.

Improving crossing opportunities for pedestrians and cyclists will reduce community severance, and improve accessibility and safety for non-vehicle users which can in turn make walking or cycling more attractive. The specific themes and priorities are detailed in Table 22 below.

Table 22: Alignment of Aging Population with Influencing Policies

Tasman Strategic Infrastructure Priority	Government Policy Statement
<ul style="list-style-type: none"> • Providing infrastructure that meets the needs of our changing population • Providing safe and secure infrastructure services 	<ul style="list-style-type: none"> • Transport is required to provide access to economic and social opportunities, particularly for those with limited access to a private motor vehicle (accessibility) • A safe system increasingly free of death and serious injury crashes.

Access to transportation is the most significant benefit of addressing this problem. Measures have been developed to determine whether responses have been effective in addressing the issue, see Table 23 below.

Table 23: KPI's to Measure Response to an Aging Population

Benefits	Investment Key Performance Indicator	Measure Description
Access "An aging population is creating demand for diversification of transport types"	KPI 3: Footpath condition - walking	Percentage of footpaths in average or better condition
	KPI 4: Spatial coverage – Public Transport	Number of people living within 500m of a bus stop

7.2.3 Heavy Commercial Vehicle Growth

Bigger trucks, more tourists and a thriving economy rely heavily on the road network. There are two parts to this issue:

- The growth in primary industry across the District is contributing to increased freight traffic, accelerating asset consumption/damage and increasing conflicts between other road users
- Growth in tourism and the location of many tourist destinations at the end of the road network (where roads are not designed to cater for peak traffic in terms of width, safety and road condition) is leading to reduced level of service to the tourist sector and safety concerns

Industry and commercial growth is seen across all of the Tasman network which results in a great number of Heavy Commercial Vehicles (HCV). Additionally, the introduction of High Productivity Motor Vehicles (HPMV) is resulting in faster deterioration on lower classification roads.

Problem Statement:	Priority:
“Growth in commercial activities both across the District and in localised areas is accelerating asset damage”	15%

Table 24: Heavy Commercial Vehicle Growth Causes and Consequences

Cause	Consequence
Road transport is the only means of getting export products to the port or airport as there is no regional rail network	Most freight journeys rely solely on the use of the road network
Nelson City and Tasman District have one of the highest export road freight levels in NZ per capita	Accelerating asset consumption/damage especially from HPMV traffic
Trucks are getting heavier and longer	Greater pavement damage and increased maintenance costs
The Regional economy is growing with corresponding increase in road transport use	Greater pavement damage and increased maintenance costs

7.2.3.1 Asset Consumption

Road condition assessments show that the rut depth. These results are based on data collected on 63% of arterial, 77% of primary collector, 37% of secondary collector, and 4% of access road lengths. This is generally associated with deformation of the subgrade materials due to heavy truck loading has been increasing overtime as shown by Figure 36 below.

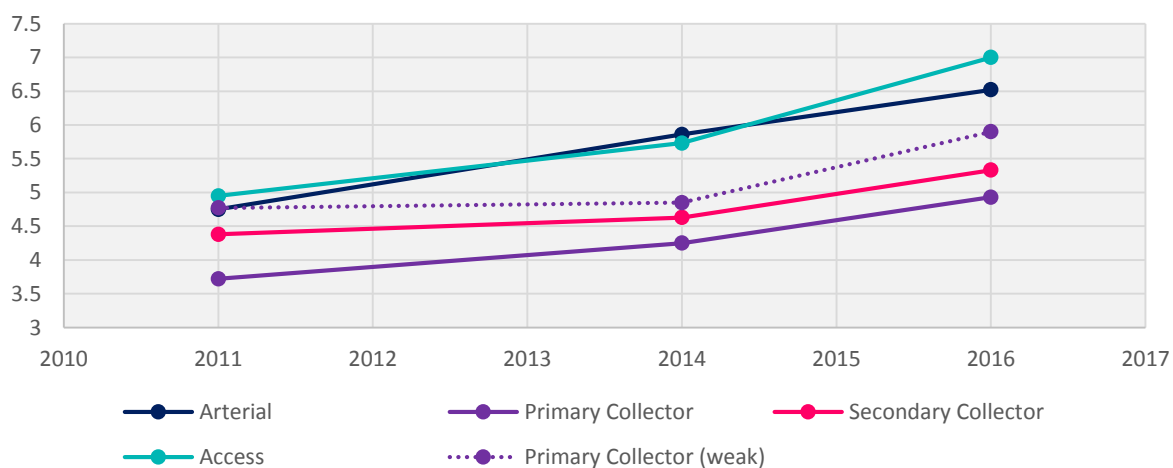


Figure 36: Average Rut Depth

Closer analysis shows not only is the rutting increasing but the severity or depth of those ruts is also increasing. Deeper ruts result in water ponding creating safety issues due to hydroplaning rises and increased deterioration from water soaking into the pavement’s metal course. The increase in ruts greater than 20mm across the three highest ONRC categories is shown in Figure 37 below.

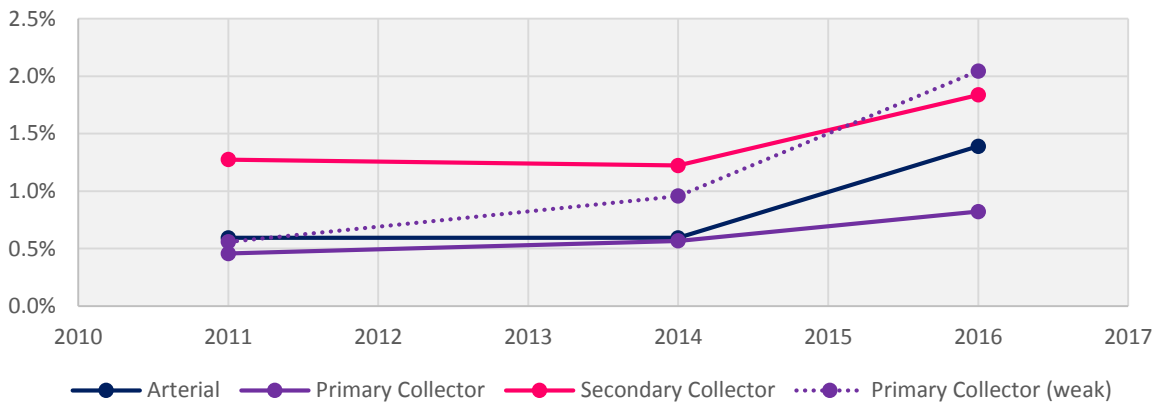


Figure 37: Rut Depths Greater than 20mm by ONRC Classification

Council has undertaken falling weight deflectometer testing of all its HPMV routes. The testing shows that 13% or 30km of HPMV routes have low strength pavements with a Structural Number Pavement (SNP) of 2 or less (i.e. they are vulnerable or weaker than normal). Rutting on low strength pavements is increasing faster than on stronger pavements.

7.2.3.2 Industry Growth

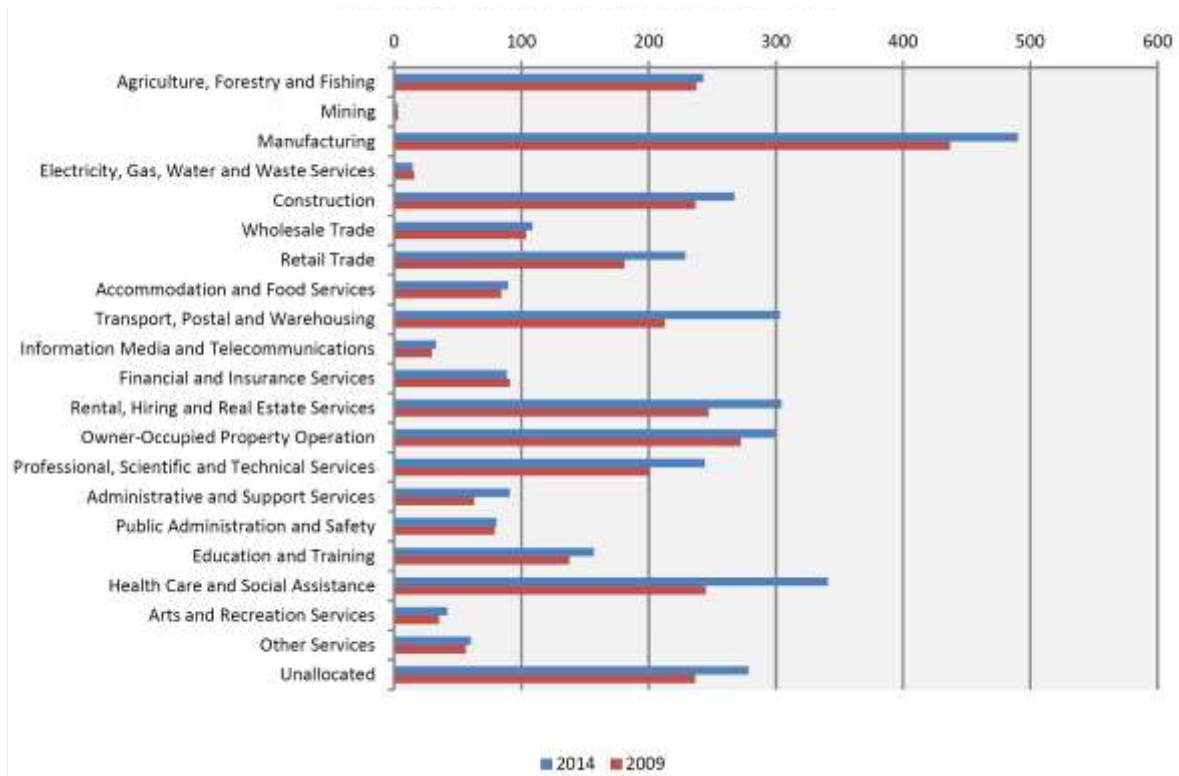


Figure 38: Sources of Nelson/Tasman GDP4

⁴ Statistics New Zealand

Figure 38 above shows that Nelson/Tasman has experienced growth across the board. Health Care and Social Assistance and Transport, Postal and Warehousing have experienced greater growth than the others. Transport postal and warehousing in particular are industry sectors that have a significant impact on the number and size of HCV's on the road networks. Additionally, whilst not at the same level, construction and manufacturing experienced solid growth which also has an impact of the number of HCV's.

The Agriculture, Forestry and Fishing sector experienced mild growth. Recent growth in the aquaculture industry in Golden Bay, proposed construction of the Waimea Dam and the current price of timber may see both the agriculture, forestry and fishing sector and the manufacturing sector (which includes processing of agriculture, forestry and fishing industries) experiencing further and sustained growth.

7.2.3.3 HCV Growth

Figure 39 shows that HCV's has grown by almost 3,000 vehicles (74%) between 2000 and 2015. This follows a similar trend (80% increase between 2000 and 2015) as GDP per capita. Economic growth for the Tasman District shows a similar correlation to that seen internationally, GDP is a good indicator of HCV growth. Over the last five recorded years, Nelson/Tasman has grown faster than all of the comparator regions in New Zealand and is fast catching up with the national average (on a GDP per capita basis). The Nelson Regional Development Authority (NRDA) has a goal of having a GDP per capita figure greater than the national average figure by 2020. Given current trending this goal is realistic. Completion of the Waimea Community Dam is likely have a positive impact on the regional economy. NRDA estimates that the benefit will be in both primary production and indirect flow on effects. Other known regional industrial growth is aquaculture in the Golden Bay area and the current and future rock supply for the North Island. With the positive economic outlook, it is predicted that the HCV fleet and the corresponding use of the fleet will increase at a similar rate as GDP. This is likely to have an accelerating detrimental effect on Tasman's pavements.

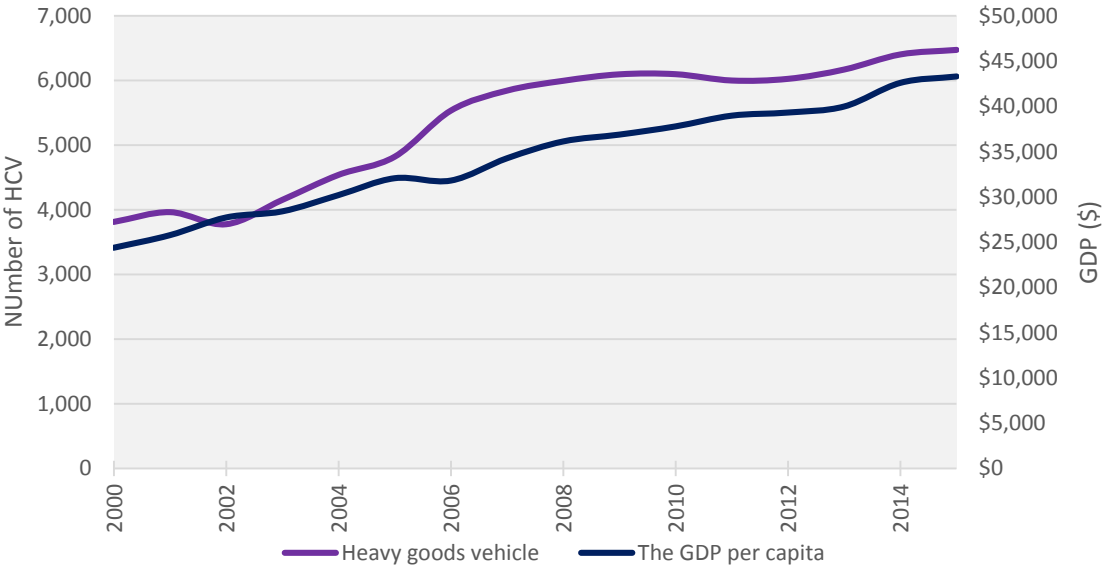


Figure 39: Nelson/Marlborough Fleet Numbers & GDP per Capita

7.2.3.4 HCV Traffic Volumes

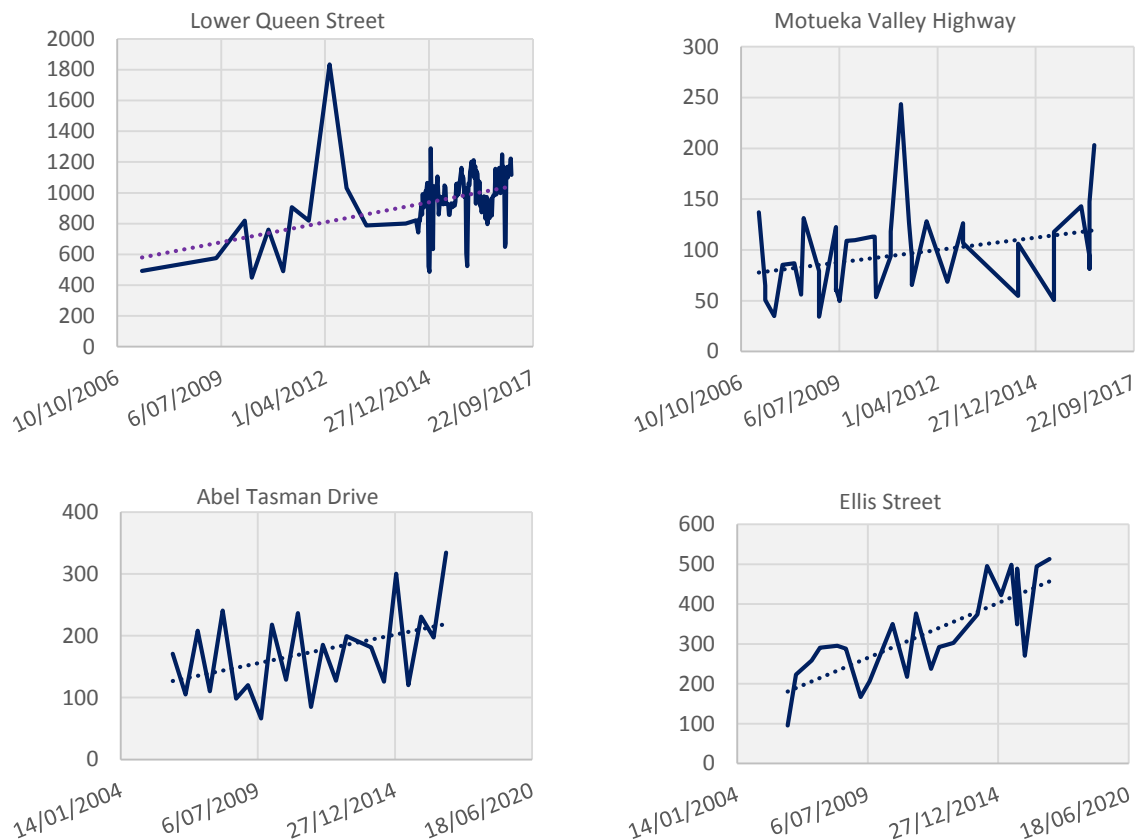


Figure 40: AADT on HCV Routes

Figure 40 shows that all major heavy vehicle routes have had an increase in HCV traffic over the last 10 years of around 60% - 70%. There are a number of routes that have seen a significantly greater increase due to specific industry growth. One such route is Ellis Street which has grown by 130% due to being the predominate route between forestry blocks and a saw mill.

The spike shown at 2012 in the Lower Queen Street data coincides with works on both SH60 and SH6.

7.2.3.5 Benefits

Changing the network condition up or down is risky and may result in unexpected long term effects. This has particular relevance for Tasman as it has in the last three years decreased the amount of renewals compared to the traditional normal. Pavement deterioration modelling in 2015 using Deighton’s Total Infrastructure Management System (dTIMS), showed that the reduction in funding for renewals would cause a drop in the network condition 20 years from now. Through targeted investment, the modelled deterioration can be managed. The network is currently in good overall condition compared with our ONRC peers. Tasman has robust asset management practices in place to identify and alter the future investment direction should that be necessary, it was felt that an enhanced maintenance program to reverse the modelled drop in network quality 20 years from now was not necessary. Council decided making investment in the surface and pavement early will provide a better whole of life cost compared to differing renewal works until faults are evident and widespread.

Addressing the issues created by heavy commercial vehicle growth also addresses Infrastructure strategy theme and transportation Government Policy Statement priorities. The specific themes and priorities are detailed in Table 25 below.

Table 25: Alignment of Heavy Commercial Vehicle Growth with Influencing Policies

Tasman Strategic Infrastructure Priority	Government Policy Statement
<ul style="list-style-type: none"> • Providing safe and secure infrastructure services • Prudent management of our existing assets and environment 	<ul style="list-style-type: none"> • Resilience • Addresses current and future demand for access to economic and social opportunities

Availability is the most significant benefit of addressing this problem. Measures have been developed to determine whether responses have been effective in addressing the issue, see Table 26 below.

Table 26: KPI's to Measure Response to Heavy Commercial Vehicle Growth

Benefits	Investment Key Performance Indicator	Measure Description
<p>Availability</p> <p>"Growth in commercial activities both across the District and in localised areas is accelerating asset damage and Natural hazard events & local geology are resulting in significant service disruptions across the network that take longer & cost more to fix."</p>	<p>Network Condition - road</p>	<p>No more than 2% of the sealed road network has a rut depth greater than 20mm</p>

7.2.4 Natural Hazards

Climate change, sea level rise and local geology are contributing to more frequent and more significant service disruptions across the network that take longer and cost more to fix. Rivers, coasts and fault lines all pose significant risks, to **Taman's communities reinforcing the need for improved resilience.**

<p>Problem Statement:</p> <p>"Natural hazard events & local geology are resulting in significant service disruptions across the network that take longer & cost more to fix"</p>	<p>Priority:</p> <p>15%</p>
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Table 27: Natural Hazards Causes and Consequences

Cause	Consequence
<p>Close proximity to the Flaxmore and Alpine faults systems increases risk</p>	<p>Service disruptions take longer and cost more to fix resulting in unplanned closures/travel disruptions/delay. Many roads do not have alternative routes meaning more significant impacts from closures.</p>
<p>Climate change, sea level rise and local geology are leading to more frequent and more significant service disruptions</p>	<p>Multiple unplanned disruptions as all utility providers rely on the road network to restore their services following an event. Eg. Water, sewer, storm water, power, telecommunications, food and fuel supply</p>

7.2.4.1 Seismic

The Tasman District lies in a seismically active zone with the Alpine Fault (boundary between the Pacific and Australian tectonic plates) extending southwest through the southern part of the District. Branching off the Alpine Fault are a number of other active faults (albeit with higher assessed recurrence intervals) including the Waimea - Flaxmore Fault system in the east and the Lyell and White Creek faults in the west as shown by the fine blue lines in Figure 41.

Rupture of the Waimea-Flaxmore Fault system is assessed to be in the order of 1 in every 6,000 years with potential ground shaking of MM8-9 in the vicinity of the fault and MM7-8 elsewhere in the region.

Rupture of the Alpine Fault system is considered to be possible in the next 50-100 years, resulting in shaking intensities of MM8-9 in the immediate vicinity and MM 6-8 elsewhere.

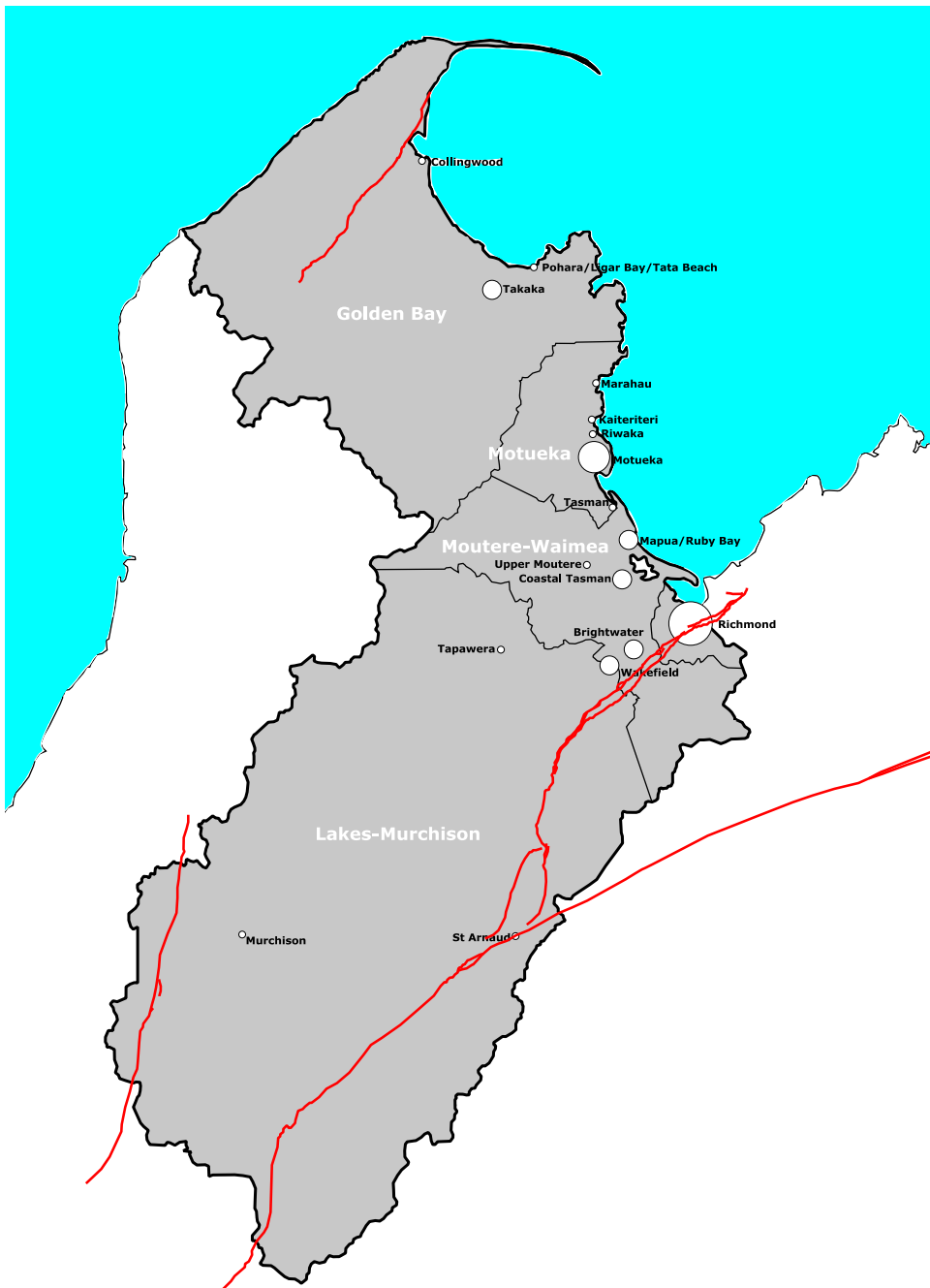


Figure 41: Tasman Fault Lines

7.2.4.2 Severe Weather

Floods are the most commonly occurring major natural hazard in the Tasman District. They occur across the entire District and have caused the most damage in recent times. Flooding can range from widespread overland flood flows from the Districts' **principal** rivers affecting much of their flood plains, to more localised and isolated flooding in smaller catchments.

Service disruptions to the transport network associated with severe weather are typically due to flooding from under capacity / overwhelmed drainage and bridge assets, slope failures blocking roads and fallen trees. The worst affected areas are those that are low lying and have low gradient. Takaka and Motueka areas fit this description and are also seeing an increase in the severity of storm events as seen in Figure 42.

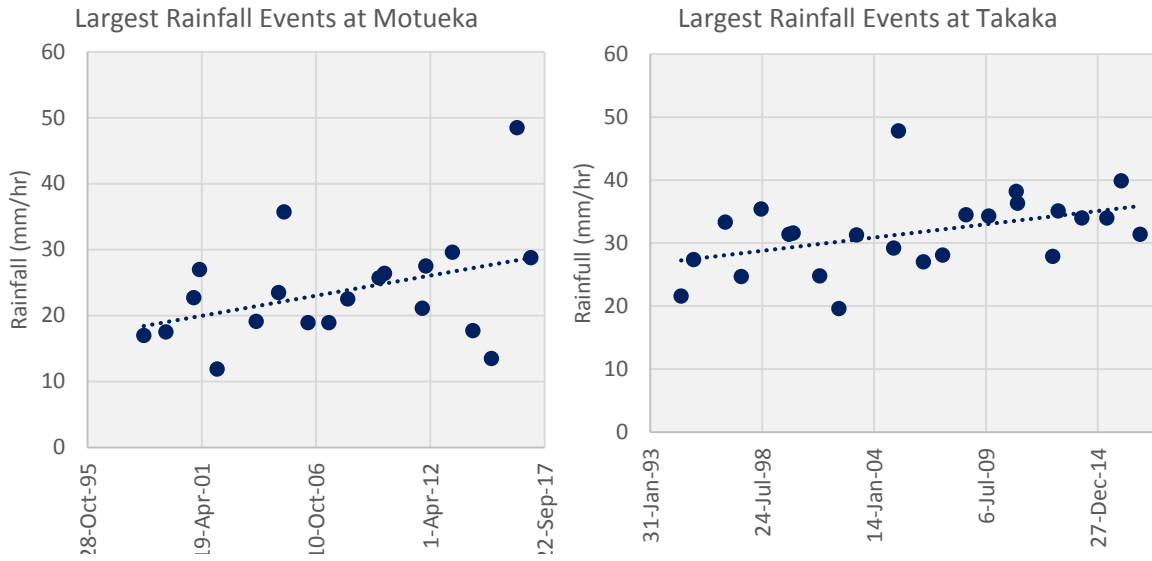


Figure 42: Motueka/Takaka Rainfall Events

7.2.4.3 Lifelines

Recently the Nelson Tasman Civil Defence Emergency Management Group completed a Nelson Tasman Lifelines Project. One of the key findings that came from this piece of work is that roads, bridges and retaining structures are vitally important to allow reinstatement of other services and the community to rebound from natural hazard events. The road network gives access to the water supply, wastewater and stormwater networks as well as the private but critical communications and power reticulation. It also provides the means for food and fuel to be moved around the region, all critical elements to enable the community to respond and recover.

It is very difficult to budget for unknown emergency works events. Figure 43 below shows significant variance in the expenditure on initial response and reinstatement of the transport network as a result of emergency events (ranges between \$0.2 million in 2014/15 and \$2.8 million in 2012/13).

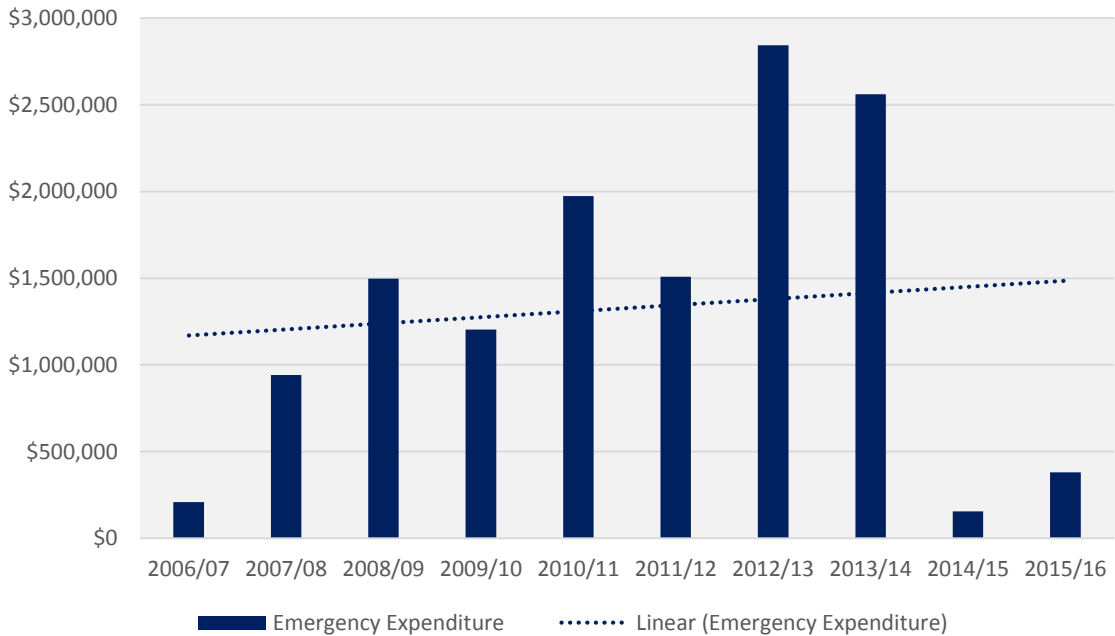


Figure 43: Transportation Emergency Work Expenditure

7.2.4.4 Benefits

Investment in resilience works will provide a higher degree of confidence that the network can cope with both small and large naturally occurring events and an increased frequency of storm events. Almost all utilities and services rely on the road network to provide access for reinstatement of their infrastructure following events. Additionally, the road network also provides transportation of provisions, allows the public to access healthcare services and allows repairs and maintenance to be undertaken following the event. An event that disrupts an arterial or regional route, has a significant impact on the remainder of the network. Due to the placement of key urban centres on low lying flat land, close to major rivers and the coast, the urban areas are prone to coastal and river inundation.

Tasman is well serviced with four ports/harbours that do allow transportation around the coastal areas and has three sealed landing strips and numerous grass landing strips that can be utilised to evacuate people or move supplies.

Addressing the issues created by natural hazards also addresses Infrastructure strategy theme and transportation Government Policy Statement priorities. The specific themes and priorities are detailed in Table 28 below.

Table 28: Alignment of Natural Hazards with Influencing Policies

Tasman Strategic Infrastructure Priority	Government Policy Statement
<ul style="list-style-type: none"> • Providing safe & secure infrastructure services • Planning, developing & maintaining resilient assets 	<ul style="list-style-type: none"> • Resilience • Journeys that support economic growth and productivity for freight

Availability is the most significant benefit of addressing this problem. Measures have been developed to determine whether responses have been effective in addressing the issue, see Table 29 below.

Table 29: KPI's to Measure Response to Natural Hazards

Benefits	Investment Key Performance Indicator	Measure Description
<p>Availability</p> <p>This benefit relates to Problems 3 and 4, Growth in commercial activities both across the District and in localised areas is accelerating asset damage and Natural hazard events & local geology are resulting in significant service disruptions across the network that take longer & cost more to fix</p>	<p>Resilience Customer Outcome - The Number of Instances Where Road Access is Lost</p>	<p>This measure shows the number of unplanned road closures with no detour and the number of vehicles affected by those closures annually.</p>

7.3 Demand Management

The objective of demand management (sometimes called non-asset solutions) is to actively seek to modify customer demands for services in order to:

- optimise utilisation/performance of existing assets;
- **meet the organisation's strategic objectives** (including social, environmental and political);
- deliver a more sustainable service;
- respond to customer needs.

7.3.1 Council's Approach to Demand Management

Council's approach to demand management centres around five key areas:

- Public transport;
- Ridesharing;
- Support active modes;
- Parking Management;
- Changing route hierarchy;
- Investment succeeds growth

Council works with Nelson City Council to undertake public transport within the Nelson Richmond area. This is principally due to Nelson and Richmond sharing the same problem with congestion during peak periods. Nelson undertakes all coordination of the public transport system including administration and marketing with Council providing financial support. Likewise, Nelson is undertaking a ridesharing initiative which will be available to all Tasman residents to facilitate ride sharing. This includes a website portal in which all Tasman residents can find differing modes of transport and arrange with other people to share resources.

With growth in Richmond and Motueka, finding space to park has become an issue for many residents. Council is currently developing a carparking strategy which will look to manage demand by time limiting parks convenient to commercial premises to allow turnover of parking. This will be supported by a greater degree of enforcement to ensure these time limits on these parks are being respected.

With increases in traffic at points on the network, residents are using lower classification roads to avoid congestion. Council plans to implement measures to disincentivise the alternative routes and make the main route more attractive. Road network upgrade is one of the few pieces of infrastructure that is not required to proceed construction. Council have made investment decisions based on likely traffic growth.

8 Lifecycle Management

Lifecycle cost is the total cost to Council of an asset throughout its life including, creation, operations and maintenance, renewal, and disposal. Council aims to manage its assets in a way that optimises the balance of these costs. This section summarises how Council plans to manage each part of the lifecycle for this activity.

8.1 Asset Condition and Performance

8.1.1 Sealed Pavement & Surfacing

Section 5.3.2 summarises network condition trends. These trends provide Council with useful indicators on how investment in the network is translating into actual condition.

Condition rating is based on the NZ Transport Agency's standardised methods and is completed every two years by an independent and qualified person. It is a manual process where 10% of each road section is manually inspected for visual defects. Most defect types are static or reducing, except rutting and longitudinal and transverse cracking which show an upward trend over the last five years. The defects are discussed in more detail in the following sections. dTIMS is used to forecast future condition and level of investment required.

8.1.1.1 Rutting

Rutting is a depression in the wheel path due to traffic loading which can be caused by several factors, including:

- pavement layer pushing into the subgrade because the subgrade is too weak for heavy traffic loads and/or the pavement layer is too thin to spread the load adequately to subgrade;
- densification of the pavement layer due to lack of compaction, particularly in new pavements;
- densification of asphalt surfacing due to improper mix design or manufacture, and/or lack of compaction during construction.

Rutting can be a significant safety concern as ruts filled with water can cause vehicle hydroplaning. Ruts also tend to pull a vehicle towards the rutted path as the vehicle is steered across the lane. Ruts are a maintenance and pavement lifecycle concern as they can be the site of surface cracking which allows water into the pavement, further accelerating pavement deterioration.

In addition to the manual condition rating process, rutting is also measured electronically on selected routes on a three-yearly basis via the High Speed Data (HSD) programme. Figure 24 and Figure 25 in Section 7.2.3.1 shows an increase in the percentage of tested lengths of rutting greater than 20mm and an increase in the average rut depth. The rut depth concern is confirmed with a decrease in the pavement integrity index. The increasing rut trend also suggests some asset consumption is occurring as a result of low amounts of pavement rehabilitation/renewal which is supported by ONRC comparisons with Tasman spending the least per kilometer out of our peers on rehabilitations (Figure 22).

8.1.1.2 Roughness

Roughness is another measure of overall network condition. As pavements age, they tend to become rougher due to longitudinal irregularities in pavement or subgrade strength. Trenches and other pavement defects also contribute to increased roughness.

Rougher roads reduce ride comfort and increase vehicle operating costs through greater damage to vehicle components **from wear and tear. It is generally considered to be a 'road user' cost, and is a way of helping to define trade-offs between road quality and asset costs.**

Roughness is measured every two years on the entire sealed road network using a profilometer which measures the vertical displacement as a vehicle travels along the road. A comparison of results from recent years is shown in Figure 16 and Figure 17 in Section 5.3.2.2. From these figures, it can be seen that Council is doing better than peers in most road classifications other than rural arterial and rural low volume roads. This can be addressed through modifying the resurfacing programme.

STE is a measure of how much travel occurs on roads below roughness levels specified in Table 30. To determine the Smooth Travel Exposure (STE) the measured roughness of each road section is used along with the traffic volumes.

Table 30: Smooth Travel Exposure Inputs

Urban Roads		Rural Roads	
Vehicles per Day	Roughness (NAASRA)	Vehicles per Day	Roughness (NAASRA)
<500	<=180	<1,000	<=150
500-3,999	<=150	>=1,000	<=130
4,000-9,999	<=120		
>=10,000	<=110		

Figure 15 in Section 5.3.2.2 shows a decreasing trend in smooth travel exposure especially on the Arterial roads. This reflects the reduction in investment in the last three years to **stay within Council's financial constraints**. The NZ Transport Agency's funding criteria currently states that roughness alone is not a valid trigger for rehabilitation but in conjunction with the increase in HCV's and a corresponding increase in rut depth all indicators are showing pavement consumption.

8.1.2 Unsealed Pavements

8.1.2.1 Asset Condition

Council does not collect specific condition data for unsealed roads. These roads tend to be very dynamic with the conditions changing rapidly based on climatic effects and maintenance activities such as grading. However, ONRC have compared annual unsealed maintenance and metaling costs against Council's peers which shows that Council spends very little on maintenance and spends just under average for metaling as shown in Figure 44 below.

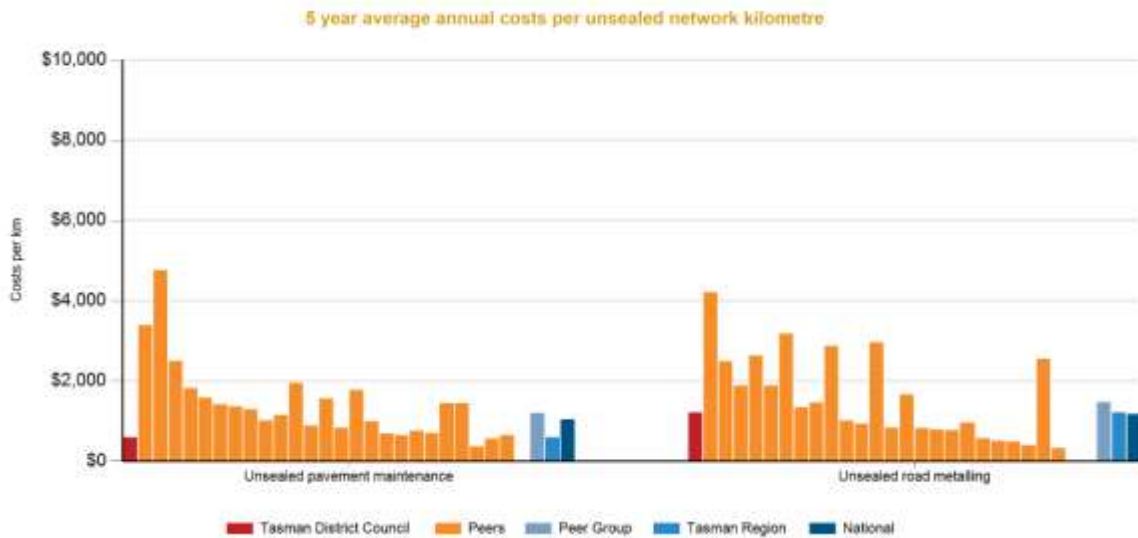


Figure 44: Maintenance costs of Unsealed Roads Compared with Peers

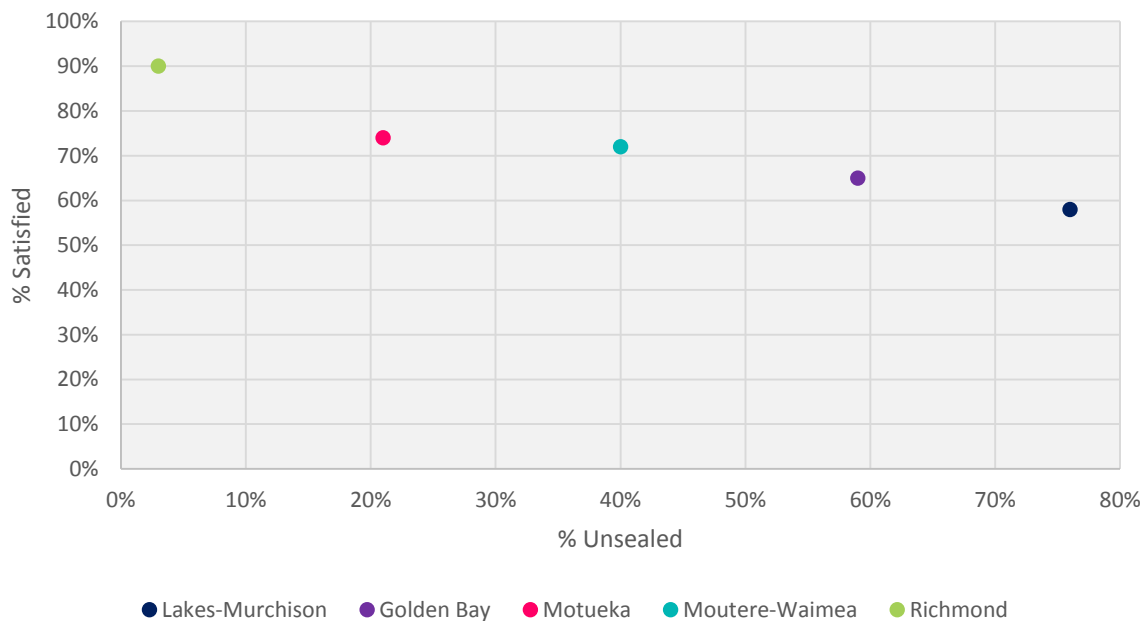


Figure 45: Satisfaction with Unsealed Roads

When satisfaction with the road network is compared with proportion of unsealed roads around the District (Figure 45), there is a correlation that indicates that the higher the proportion of unsealed road the lower the satisfaction.

Using seal extensions to improve the level of service on unsealed roads is not an option as Council have given a clear indication that it no longer wanted to make that type of investment. Additional maintenance of the gravel roads may improve customer service and there is scope to do so when compared to peers.

8.1.3 Drainage

8.1.3.1 Culvert Condition

The culvert condition data was collected in 2014 for approximately 80% of the 10,300 recorded culverts. This data is presented in Figure 46.

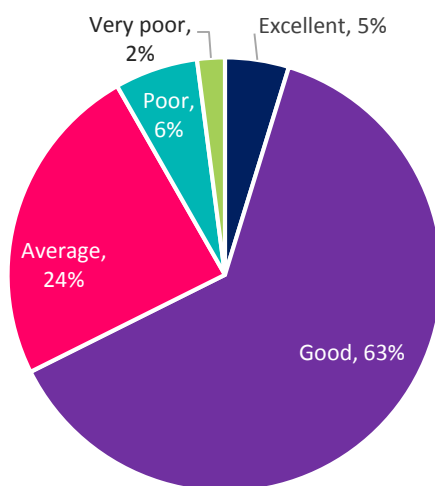


Figure 46: Culvert Condition Summary

The majority of culverts are in good condition with a relatively small but not insignificant number of culverts (8%, or 824 culverts) in poor or very poor condition. This condition data is used as an input into the development of the drainage renewal programme.

Council's road maintenance contractor for the Tasman maintenance contract is required to complete an annual drainage inspection of all drainage structures including culverts, sumps and soak pits. The contractor is required to validate inventory data and report on asset condition. The Golden Bay and Murchison network contracts do not include a requirement to assess condition of drainage structures but will be included in the renewal of new maintenance contracts. Council commissioned a full drainage inspection of the entire network in 2014. There are currently no plans to repeat this process in the short term. The condition of drainage assets on the Murchison network has not been assessed to date. It is expected that when the current contracts expire, an annual drainage inspection will form part of the new contracts.

8.1.3.2 Surface Water Channel Condition

Condition rating inspections collect data on whether a lined channel is 'broken' such that it carries a risk of water ingress. This could result in deterioration of other assets such as pavement layers and surfacing. Figure 47 summarises the condition information collected during the 2016 condition rating inspections.

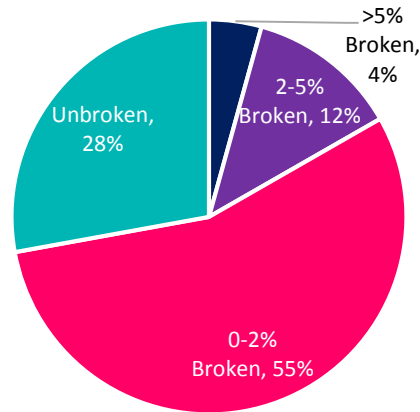


Figure 47: Water Channel Condition Summary

Figure 48 demonstrates that progress is being made in addressing the network drainage deficiencies as shown by the reducing trend in recorded defects.

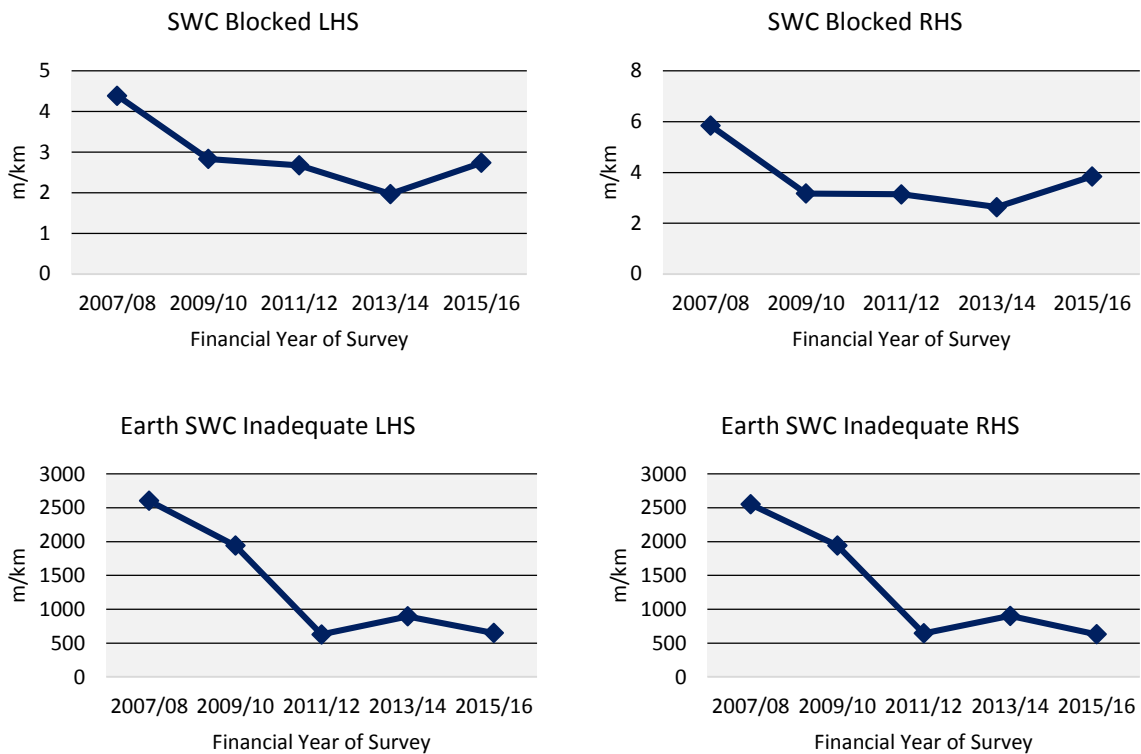


Figure 48: Drainage Condition Rating Trends

8.1.4 Bridges

Council engages a consultant to complete biennial inspections of its bridges. In order to manage the workload, half the bridge stock is inspected annually. The inspector will record the severity and extent of defects, which items Council needs to prioritise for repair, and photographs of the bridge. They may also compare notes and photographs from previous inspections to monitor any changes.

A report summarising inspection results is provided to Council from which the condition data is used to determine the Bridge Stock Condition Index (BSCI). The index is an overall summary of the condition of Council's bridges, and was introduced to New Zealand by the NZ Transport Agency in 2014 in its Bridge Inspection Policy S6.

Historic bridge inspections have not collected condition information in a way which enables BSCI to be calculated. In the future the BSCI will be an important guide in determining the right investment levels for bridge maintenance and renewals. It will also enable Council to benchmark its overall bridge condition with other road controlling authorities.

In some situations, a bridge may be 'posted' to limit to maximum speed or weight that can cross the bridge. This usually occurs for bridges that have very few users. Council has 25 speed and/or weight posted bridges.

8.1.5 Retaining Walls

Table 31 describes the wall types and Figure 49 summarises indicative condition data which was collected during the initial identification inspection.

Table 31: Retaining Wall Material and Condition Summary

Wall Type	Excellent	Good	Average	Poor	Unknown	Total
Concrete	15	9	10		9	43
Earth	7					7
Galvanised Steel			2	1		3
Steel		1				1
Stone	11	26	14	4	9	64
Timber	6	2	1	1	1	11
Unknown					4	4
Wood		4	1	1	1	7
Unknown					4	4
Total	39	42	28	7	28	144

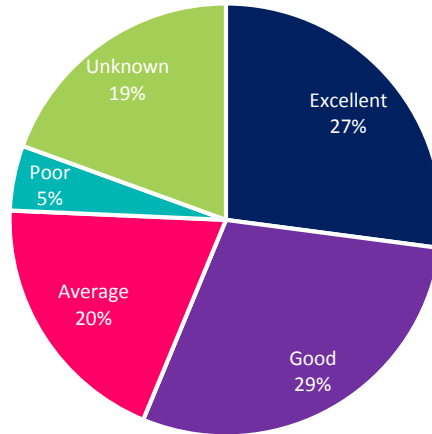


Figure 49: Condition of Retaining Walls

Council considers that this dataset is not complete and there are likely to be retaining walls in existence that have not yet been added to the database. Council is confident that the most significant structures from both a value and risk point of view have been recorded. Retaining walls will be added to the database over time as Council becomes aware of their existence.

Council's consultant will inspect retaining walls biennially in accordance with the NZ Transport Agency's S6 specification. This inspection process is similar to the bridge inspection process and records wall condition as a function of defect severity and extent which is reported along with specific maintenance items. Council can then report the overall condition of walls in terms of a condition index.

8.1.6 Traffic Signs, Delineation and Road Markings

The Tasman network maintenance contractors are required to complete day and night time sign inspections. Signs that are in poor condition with generally poor reflectivity and/or the legend has become illegible will be identified for replacement.

Targeted road marking inspections are undertaken by Council's contractor twice a year. During these inspections the condition of the marking is assessed and a decision on the need to remark is made. Condition data from these inspections is not recorded in Council's RAMM database as markings typically have a very short life eg, one to two years.

Council's Delineation Policy determines the base level of markings to be applied to road sections based on their hierarchy. Sites are then identified on a case by case basis as candidates for additional markings to address specific safety concerns, eg, poor alignments.

8.1.7 Traffic Signals

Between the two existing intersections there are a total of nine signals. The asset data for these signals is held in Council's Confirm database. The condition of the assets are good as they are all less than ten years old.

8.1.8 Street Lights

The street light maintenance contractor is required to collect and maintain asset condition data during each visit to an asset. In addition to the normal maintenance, contractors now undertake non-destructive testing to monitor pole strength and electrical testing. This started in 2017 in response to an identification of safety risks. The contractor carries a tablet in the field which allows for the condition data to be updated immediately in Confirm using Confirm Mobile software. Figure 50 summarises the condition of Council's street light pole assets.

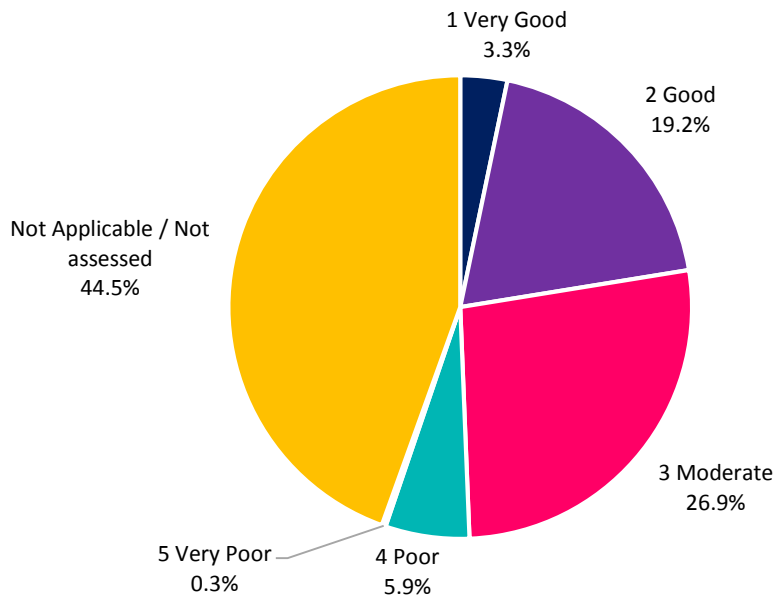


Figure 50: Street Light Condition Summary

8.1.9 Footpaths and Walkways

The last condition rating on footpaths was completed in May 2017. The results are shown below in Figure 51. Footpaths that are graded Very Poor or Poor are assessed for maintenance and/or rehabilitation needs and will be included in the Footpath Rehabilitation Matrix where appropriate. Condition rating is programmed to be completed on a three yearly cycle.

Three condition rating surveys have been completed to date for footpaths and walkways. Whilst it is a small sample size there are some trends emerging of decreasing overall condition which are shown in Figure 52 below.

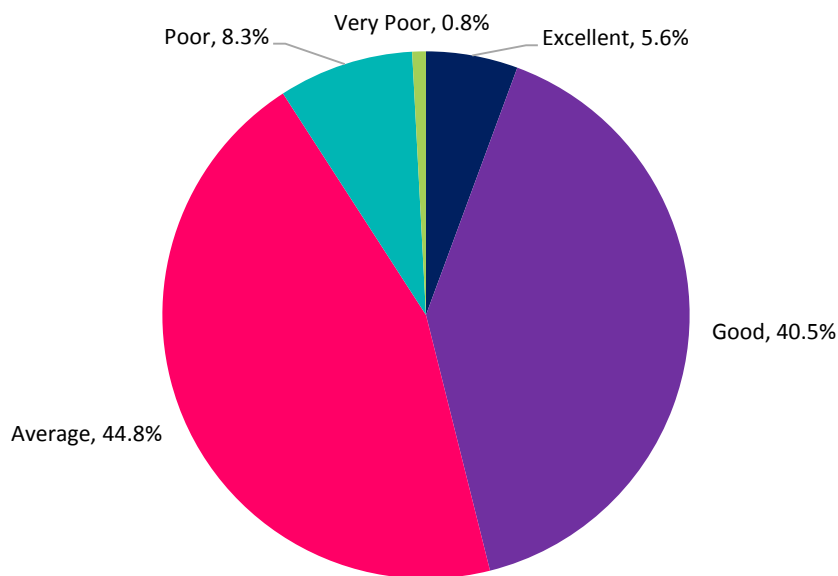


Figure 51: 2017 Footpaths Condition Rating Summary

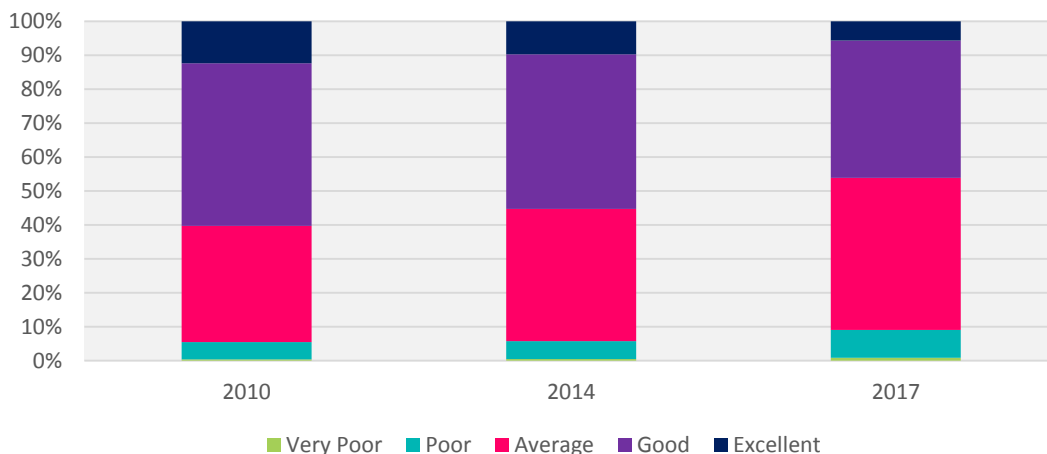


Figure 52: Footpath Condition Trends

8.1.10 Cycleways

A condition rating survey was undertaken in May 2014 for the off-road cycleways listed in Table 5. The results of the survey are shown in Figure 53. The majority of Council’s off-road cycleways are in good to excellent condition (96%), and the remainder in average condition (4%). Approximately 50% (by length) of the off-road cycleways were resurfaced in 2014. The effect of the recent renewals is reflected in the condition rating results, shown by the high percentage of cycleways in good to excellent condition. Council has planned to undertake condition rating on its off-road cycleways on a three yearly basis.

Tasman’s Great Taste Trail is required to be maintained to a good standard as a condition of it being classed as a ‘Great Ride’ by NZ Government and therefore eligible for funding assistance.

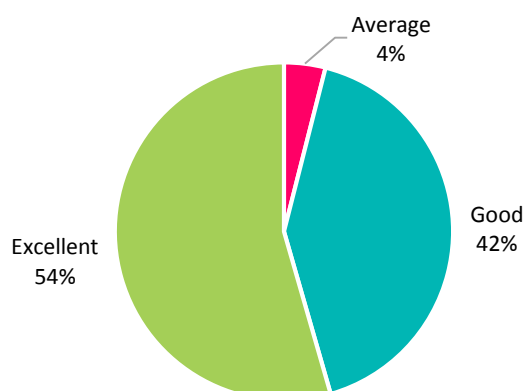


Figure 53: Cycleways Condition Rating Summary

8.1.11 Carparks

The last condition rating of carparks was completed in May 2014. Carparks are rated on the same faults as sealed carriageways. Since this condition inspection and rating, Council undertakes maintenance inspection on a regular basis and to ensure that all components of the carpark are in good condition. From these inspections, maintenance contractors are instructed to make repairs as necessary.

8.1.12 Street Furniture

Council does not currently collect condition data for street furniture assets.

8.1.13 Public Transport

Public transport connecting Richmond with Nelson is generally well supported by the community. The Nelson-Stoke-Richmond NBus route is the most support in Nelson's bus service with a farebox recovery of 76% which is well above NZTA's target of 50%. Council is working with Nelson to provide electronic ticketing which will enable Council to understand the origin and destination of passengers. This will help us tailor future services and target public transportation needs of the community.

8.2 Operations and Maintenance

8.2.1 Key Maintenance and Operational Themes

8.2.1.1 Damage from Natural Hazard Events

In December 2010 and December 2011 Tasman experienced extremely heavy rainfall which led to flooding, slips and debris flows resulting in damage to Council's infrastructure and private property. Damage to Council's transport infrastructure cost around \$6 million for each event, in contrast to annual spending of \$1million annually to clean up and make repairs from regular events.

As well as these more significant events, there has been an increase in the severity and frequency of storm events occurring in Tasman during recent years. This has resulted in a significant increase in emergency works costs. Consequently, forecast average expenditure has been increased to \$2 million per year to align with recent trends. Actual expenditure is expected to vary in any given year, so Council have budgeted for this amount to be placed in a reserve fund.

8.2.1.2 Pest Control

Council is increasing funding for pest control for the next three years to address historic under funding. This means that pest species will be targeted for the next three years to reduce the problem to point that the works can be undertaken as part of a maintenance contract and meet obligations under the Regional Pest Management Plan.

8.2.1.3 Government Funding Changes

NZ Transport Agency have undertaken changes to the assessment of funding for maintenance, operations and renewals. Councils programme of works be prepared using NZTA's Business Case Approach. This includes creation of a Strategic Case and a Programme Business case with supporting evidence to justify the programme of work applied for.

NZ Transport Agency has signalled that the anticipated requests for funding will exceed the provisional budget for 2018/19 – 2021/22 and that full funding of programmes will be influenced by Council making a solid case for investment.

NZ Transport Agency has signalled that co-funding of special purpose roads will reduce from 2022/23 onwards to match the level of funding that is applied to local roads. This could effectively cause a gradual reduction in the amount the NZ Transport Agency contributes towards funding of Tasman's local roads. This would have the effect of reducing the funds available to manage roads and other transportation activities. Council has been working with Department of Conservation to manage the effects of Special Purpose Road (SPR) funding changes and minimise their impact on Council's road maintenance programme.

NZ Transport Agency will commence co-funding maintenance activities on pedestrian and cycling assets from 2018/19 to meet their new priority of mode neutral access.

8.2.1.4 Public Transport Improvements

Council will extend bus services around Richmond and will investigate what additional services will be of benefit to the wider community. This is in response to changes in central government priorities and public demand for extended and prioritised services. Investigation will be undertaken with Nelson, to provide a combined public transport systems that responds to the issues that are faced by both Councils.

8.2.2 Maintenance Contracts

The service delivery role is primarily outsourced. Key functions in the road maintenance and their outsourcing mechanisms are outlined in the following Table 32 below.

Table 32: Maintenance Contracts

Function	Operations and Maintenance
Road Corridor and Carriageway	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018) Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Bridges and Structures	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018) Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Streetlighting	Streetlighting Contract (Powertech until 30 June 2018)
Roadmarking	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018) Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Footpaths and vehicle crossings (unsubsidised)	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018) Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Traffic Counting	L&M Price Ltd until October 2018

Network Maintenance Contracts are presently split into distinct geographic areas. Golden Bay is a joint principals contract with NZTA to supply road maintenance services to both state highway and local roads.

The geographic splitting of contract areas has been in place for many years and generally meets community preferences, recognising that the District covers a large area with a range of environments and challenges, as well as enhancing opportunities for a competitive supplier market.

Each contract uses several ways of specifying how work is to be undertaken in order to achieve the best overall result for the network and users. These methods are summarised below:

- Performance based
 - Specifications in the maintenance contract state the required level of service and the timeframe the contractor has to complete the work. This is frequently used for routine works where the contractor can apply innovation and efficiency in undertaking the tasks;
- Scheduled work / unit rate
 - This is used where the contractor is best suited to define the unit cost and control their costs, but the total quantity of work to be undertaken during the contract may be known or unknown;
- Lump sum or fixed price
 - This is used where a package of work is defined, and the contractor is able to clearly identify their required resources, materials and risks;
- Hourly rates
 - This is typically used for emergency works and where it is not realistic to define the scope of work. It can also be used for day works when the scope is not well defined.

All three road maintenance contracts include sealed and unsealed pavement maintenance, drainage systems maintenance, routine bridge maintenance (debris, cleanliness and vegetation), footpath and walkway maintenance, vegetation control, debris removal, street cleaning, litter removal, signs maintenance, barrier maintenance and street furniture maintenance. Incident response (eg, vehicle crashes) and emergency event response (eg, slips, floods, fallen trees) are also included.

Work excluded from these contracts includes:

- Street light maintenance is procured through one contract that covers the entire District. The contract is 3+1+1 format and Powertech Nelson NZ Ltd were awarded the first extension on 1 July 2017. The contract includes quarterly inspections at which time defects are noted and attended to along with a check of the assets inventory data. The maintenance contractor is also responsible for following up defects reported by the public (CSRs) and attending to other reactive maintenance issues such as vandalism or damage caused by vehicle accidents.
- Structural bridge and retaining wall renewals is procured through a separate contract that has an annual. It is currently held by Downer NZ and yet to appoint a new contractor.
- **The maintenance of Tasman's Great Taste Trail is procured through a separate maintenance contract that is currently held by the Nelson Tasman Cycle Trail Trust.**
- Traffic signals are managed by Wellington Transport Operations Control and Powertech NZ Ltd complete physical maintenance works.

The key maintenance types are described below:

- Routine Maintenance – includes sealed and unsealed pavement maintenance, routine drainage maintenance, routine maintenance of bridges, guardrails and retaining walls;
- Corridor Maintenance – includes those items above the pavement and adjacent to the carriageway such as road marking, signs, vegetation, street lighting, street furniture, sweeping and street litter, managing ice and gritting, responding to incidents and minor emergency works;
- Emergency Reinstatement – this covers reinstatement of the road to allow single lane traffic to pass and cleaning up the immediate response to major flood events, wind and snow storms and slips. Where this is a substantial sum, and subject to Council policies and specific approval, this is usually paid for through additional funding requests to the NZ Transport Agency;
- Network and Asset Management – includes professional engineering services provided by Council and consultants to programme, monitor and report on the work undertaken on the road network;
- Special Purpose Roading – includes all of the above activity groups for the Totaranui Road and Pupu Springs Road which Council manages but are subsidised at a special rate by the NZ Transport Agency;
- Non Subsidised Roading – this includes the maintenance, operation and management of those components of the transportation network such as carparks and footpaths that are not eligible for subsidy from the NZ Transport Agency and typically, solely funded by Council;

8.2.3 Maintenance Strategies

8.2.3.1 Sealed Pavement & Surfacing

The expected expenditure on sealed pavement maintenance is forecast at \$1.25million (excluding inflation) per year in the 2018/21 programme. This is a decrease of 3.8% or approximately \$50,000 per year below the level in the 2015/45 Activity Management Plan. This reduction in maintenance returns investment to similar levels as that prior to 2015 and the renewal spending reductions.

Figure 54 shows a more complete picture of the pavement strategy and shows that maintenance is generally increasing at the rate of inflation.

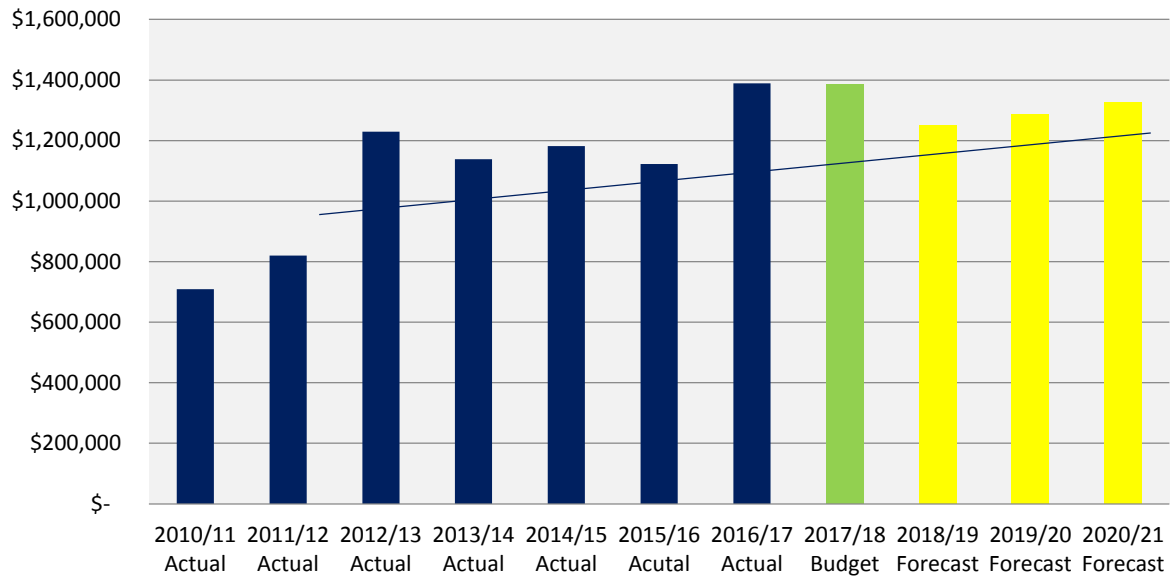


Figure 54: Actual and Forecast Sealed Pavement Expenditure

8.2.3.2 Unsealed Pavements

Unsealed pavement maintenance expenditure is expected to increase in response to customer feedback on the condition of unsealed roads. The feedback is indicating that there is dissatisfaction with the gravel road network as shown in Figure 45. This will be met with an increase in the maintenance through additional resource to increase the current maintenance activities such as grading.

Council has a project underway to improve the running course (surface) on unsealed roads using higher quality products which remain bound and shed water more effectively. These products are more expensive, and efforts are focused on measuring the cost effectiveness as well as securing strategic supplies at the lowest possible cost. Over time it is expected that improved materials will minimise maintenance costs for example by requiring less frequent grading.

Council's **unsealed road network** is spread across a wide and diverse geographic area and is maintained via three performance-based contracts covering three distinct areas Golden Bay, Murchison and Tasman (Waimea/Motueka/Tapawera).

8.2.3.3 Drainage

Council considers drainage maintenance to be a core activity and good maintenance is essential in providing a safe and cost-effective road network. The effects of poor drainage maintenance range from accelerated deterioration of pavements and surfacing, to catastrophic failure of roads, damage to private property and risk to life.

Three areas are currently identified as 'high risk drainage areas', due to historic issues with damage and high-cost reinstatement works. These areas are proactively maintained in advance of forecast rainfall events. These areas are:

- Riwaka – Kaiteriteri – Marahau loop (Riwaka-Kaiteriteri Road, Riwaka Sandy Bay Road and Kaiteriteri-Sandy Bay Road)
- Aniseed Hill (Aniseed Valley Road)
- Wainui Hill (Abel Tasman Drive)

8.2.3.4 Urban Kerb and Channel and Sump Cleaning

Council maintains approximately 276km of kerb and channel and 2428 sumps and catchpits.

The current strategy and specification in the maintenance contracts are:

- Key township roads are swept monthly;
- Full network sweep four times per year, with some additional sweeping as required during autumn to minimise potential blockages caused by fallen leaves;
- Suction cleaning of each sump annually.

This strategy is considered to be providing an acceptable level of service and no changes are proposed.

Unlike other maintenance activities, this work is eligible for a 30 percent subsidy from the NZ Transport Agency which equates to approximately \$36,000 per year.

8.2.3.5 Culvert Maintenance

Council maintains approximately 10,157 culverts.

The 2015/18 maintenance programme programmed eight percent or 825 culverts for cleaning each year.

The 2018/21 maintenance programme will increase cleaning up to 900 culverts per year, which equates to around nine percent at a similar cost. This will be undertaken through a mix of fixing defects and preventive maintenance targeting high risk and prone areas. A small amount of reactive maintenance is included to address issue identified through natural events. The additional cleaning will improve network resilience and address a key issue.

8.2.3.6 Unlined Surface Water Channel Maintenance

A robust surface water channel maintenance programme is proposed for 2018/21, which includes annual mechanical cleaning of 10% of the recorded 1,400km of earth surface water channels.

8.2.3.7 Structures

Since 2009 Council has focused on completing high quality and timely routine maintenance and repairs on its road bridges. This focus followed several years of less proactive routine maintenance which resulted in a slight deterioration in the condition of many bridges. Recent inspections show that the general bridge condition is good to very good and that there is minimal backlog in routine maintenance items.

The Road Maintenance Programme Leader prioritises the list of maintenance items from the annual bridge inspection report against available budgets. Priorities are based on the element importance factor (EIF, defined in NZTA S6) and risks to road users and the structure itself. Maintenance works are procured through an appropriate contractor for completion through either the relevant road maintenance contract, or included in the annual tendered Structural Component Replacements contract. The Road Maintenance Programme Leader chooses the procurement method that provides the best value to Council. Council uses RAMM Contractor to manage completion of maintenance work on structures which is better linking maintenance details with asset records held in RAMM.

8.2.3.8 Retaining Walls

Retaining wall routine maintenance and repairs are identified during biennial inspections, and prioritised based on the severity of the defect and the consequence of failure. This work is usually packaged with similar bridge maintenance activities and completed by the bridge maintenance contractor accordingly.

8.2.3.9 Amenity

The maintenance of Council's **amenity involves** the following activities:

- maintaining and repairing litter bins;
- maintaining and repairing seats, including periodic oiling of wooden slats;
- maintaining and repairing bus shelters, including replacement of glass panels;
- maintenance and operation of the Sundial Square water feature;
- maintenance and repair of decorative bollards, shade structures and other miscellaneous furniture items;
- environmental maintenance;
- street cleaning.

Maintenance is generally conducted in a reactive manner due to vandalism or vehicle damage. The network maintenance contractor is responsible for the maintenance of all street furniture except for the Sundial Square water feature; this asset is maintained by under a separate contract. At times of water shortage, the water feature is turned off.

Emptying of the litter bins is a requirement of the network maintenance contractor. The frequency requirements for emptying the bins is set out in the network maintenance contract specifications.

The transportation team are investigating how Council could combine emptying of road side litter bins with the parks and reserves bins to achieve better efficiencies. Some high use and remote bins have been replaced with 'big-belly' compacting bins which require emptying less often.

8.2.3.10 Vegetation Control

Historically both mowing and spraying have been performance-based activities with the contractor paid a lump sum per month to achieve required minimum outcomes, eg, maximum grass height. At times, particularly during spring, this resulted in frequent mowing and relatively high associated costs due to the contractors pricing for the risk of rampant grass growth occurring.

In 2012, Council changed its mowing specification for the Tasman Urban and Rural contracts to specify two network wide mows per year, this removed most of the risk from the contractor. The specification change saved approximately \$140,000 per year, this however led to a greater level of customer dissatisfaction. This AMP includes funding for a consistent mowing level of service of four mows per year around the District, more in line with public expectations.

8.2.3.11 Frost and Ice Control

The annual cost of frost and ice control is variable and heavily dependent on climatic conditions and variability. From the mid-2000s to early 2010, Council used Calcium Magnesium Acetate (CMA) as an anti-icing agent in addition to grit on some areas of the network to help control frost and ice on the roads. This was determined to be unaffordable and is no longer used on the network.

Council will continue to use grit and associated warning signs to manage frost and ice hazards. In general grit provides only marginally more traction than an icy road and in non-icy conditions grit itself can be a hazard. It could therefore be considered that the main safety benefits of signs and gritting come from the visual warning they provide to motorists and not an increase in traction.

8.2.3.12 Minor Slips and Trees

This is generally reactive maintenance, with weather events and natural processes causing slips and/or trees to fall onto the carriageway, shoulder and/or drainage channel. In these situations, it usually requires rapid response by contractors to restore road access and/or protect transportation assets. Forecast costs are based on historic expenditure. Council has been investigating opportunities for proactive works to reduce reactive costs by identifying and procuring tree removal and/or batter trimming in a cost-effective manner. It is envisaged that actively removing specific problem areas over time will significantly reduce the long term costs of this activity. As 30 percent of Council's road network is through rolling or mountainous terrain it is unlikely that reactive costs will ever be eliminated.

8.2.3.13 Cycle, Footpaths and Walkways

Council generally maintains its footpaths and walkways in a reactive manner through the network maintenance contracts. Footpaths are generally subjected to very little loading and consequently they deteriorate slowly. The majority of Council's footpaths are concrete which have expected lives in excess of 75 years, with the remainder comprised of asphaltic concrete (35%) and chip seal (7.5%). It is uncommon for concrete paths to require maintenance, however when maintenance is necessary it is typically due to lips or tripping hazards caused by tree roots cracking and uplifting sections or subsidence.

The integrity of the surface of asphaltic concrete and chip seal footpaths can be affected if weed growth is allowed to occur within or on the edge of the sealed surface. The weeds can break up the surface, reducing its waterproofing, which can lead to potholing. Therefore, it is important that a weed spray regime is maintained to ensure the surfaces do not prematurely deteriorate.

Council's town centre footpaths are generally hot washed on a biannual basis; this usually occurs prior to Christmas each year. The pavers in Sundial Square in Richmond require more frequent maintenance due to the colour of the pavers and the high volume of pedestrians; this area is cleaned annually. In addition, the Sundial Square pavers are also resealed to maintain their integrity.

The ongoing maintenance costs for the 2018-48 programme are based on historical reactive maintenance expenditure.

Council's cycleways are grouped into three types, on-road, off-road and Tasman's Great Taste Trail.

On-Road

On-road cycleways form part of the sealed carriageway and as such are maintained as part of the sealed pavement. There are no specific cycleway maintenance activities undertaken on this type of cycleway. Refer to Section 8.2.3.1 for further details.

Off-Road Shared Paths

Off-road shared paths are managed and maintained the same as for Council's footpath assets. Refer to Section 8.2.3.13 for further details.

Tasman's Great Taste Trail

The Trail is comprised of concrete, asphaltic concrete, chip seal and unsealed surfaces. Some sections of the trail existed prior to the conception of Tasman's Great Taste Trail. These sections were either maintained by Transportation, or Parks and Reserves depending on their location. The pre-existing sections continue to be maintained by the original department. The sections of Trail that were not pre-existing assets are maintained under a separate term maintenance contract which is currently held by the Nelson Tasman Cycle Trails Trust. Key maintenance items include surface repairs, vegetation control and sign maintenance. **Maintenance of the gravel surface including 'top-ups' as required to maintain the running surface is included as part of the maintenance works.**

8.2.3.14 Carparks

All aspects of the maintenance of Council's off-street car parking areas are not subsidised by the NZ Transport Agency. Consequently, carpark maintenance activities do not need to be broken down into the NZ Transport Agency's work categories. Therefore, carpark maintenance activities are practically managed and maintained at an activity level but are funded from an overarching account.

Carpark maintenance activities include:

- sealed pavement maintenance;
- vegetation control;
- signs and pavement markings;
- detritus and litter;
- drainage.

The annual maintenance budget allows for all of the above activities and forecast expenditure is based on historic actual expenditure and maintenance trends.

8.2.3.15 Increase in Network Size through Development

When new development, such as when subdivisions are constructed, there are two types of road works that may be required:

- construction of new roads inside the subdivision or development;
- upgrading of roads outside the subdivision to service the new demand.

Once vested as a Council asset they are included in the road network and routine maintenance is undertaken through the respective contract. The maintenance contract's risk profiles identify network growth as a risk the contractor is required to manage. This is applicable for scheduled lump sums. Work of a measure and value nature will inherently be a direct cost to Council.

8.2.3.16 Signs and Delineation

Maintenance requirements are specified in Council's road maintenance contracts and generally include:

- inspection and cleaning of signs (annually or as required);
- checking sign fixings;
- ensuring posts or poles are within 5 degrees of vertical;
- painting of posts;
- repairing crash or vandalism damage.

Response times for attending to sign faults are scaled according to the importance of the sign, with regulatory signs (for example, stop and speed limit signs) given highest priority, followed by warning signs, then other signs.

8.2.3.17 Street Lighting

In 2015 Council significantly changed its street light strategy by upgrading to LED technology. Completion of those renewal works immediately and significantly reduced maintenance and power costs for the long term.

Maintenance and power costs have been reduced by \$5.95 million over the next 30 year period when compared with the status quo. This includes conservative assumptions about energy savings. Actual savings will need to be monitored taking into account both the LED upgrade and a new power supply contract Council entered into in mid-2014.

In addition to the normal maintenance, contractors now undertake non-destructive testing to monitor strength and electrical testing. This started in 2017 in response to an identification of and safety risk.

Future consideration will be given to a centralised management system for street lighting. This has been made possible with the new LED fittings as a management system can be installed as an optional extra. Such systems can enable greater energy savings through controlling levels of light output to where and when it is required, eg, light dimming between midnight and dawn instead of all lights operating at full output throughout the hours of darkness.

8.2.3.18 Pavement Marking

Council's **pavement marking programme** is zone-based. Markings are repainted every two years with waterborne paint. Roads designated as arterial, tourist route and/or those affected by winter maintenance (ie, frost gritting damaging paint) are inspected every six months and remarked as necessary to ensure their safety. This programme has been in place since 2012 and the results have been good, with most markings lasting well between remarks.

8.2.3.19 Traffic Signals

Council's **traffic signals are relatively new with the oldest set installed in 2009**. The signals are LED which require very little maintenance and have an expected life of approximately 15 years. Routine and reactive maintenance costs are expected to be minimal due to the good condition of the signals and the associated controlling gear. The ongoing maintenance costs have therefore been based on historic trends. A slight increase in costs is shown in the programme to align with proposed intersection improvements on Salisbury Road as it is expected that these improvements will be based on a signalised layout.

8.2.4 Forecast Operations & Maintenance Expenditure

The 30 year forecast for operations and maintenance expenditure is shown in Figure 55. For a detailed breakdown of the programme that makes up the total operations and maintenance expenditure forecast see Appendix A.

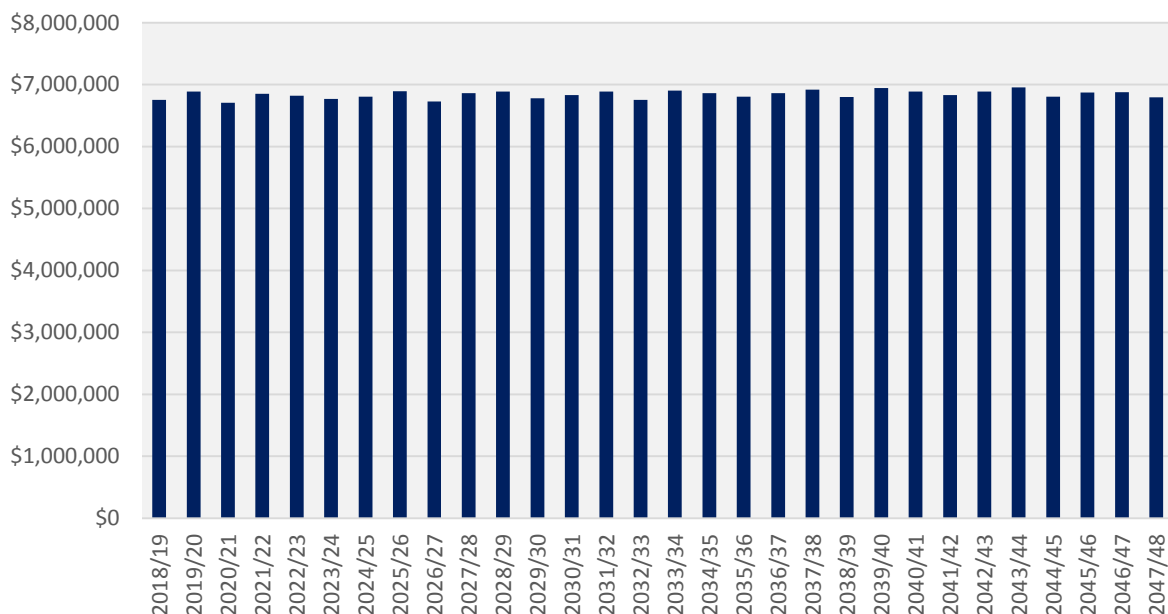


Figure 55: 2018 – 2048 Direct Operations and Maintenance Expenditure Excluding Inflation

8.3 Asset Renewal/Replacement

Renewal expenditure is major work that does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original capacity. Funding of work over and above restoring an asset to its original capacity is considered to be new capital works expenditure.

8.3.1 Key Renewal Themes

Generally, Council undertakes renewals in an appropriate and timely manner to retain appropriate levels of service and customer satisfaction. During development of Council's Long Term Plan 2015-2025 capital projects and programmes of work were identified to make reductions to assist Council achieve the debt goals in the financial strategy. Transportations resurfacing and renewal programmes were identified as having potential to make savings. Investigation and dTIMS modeling at the time indicated that the surface integrity index will drop over a 30 year period using the low spend scenario as shown as the aqua line in Figure 56 below.

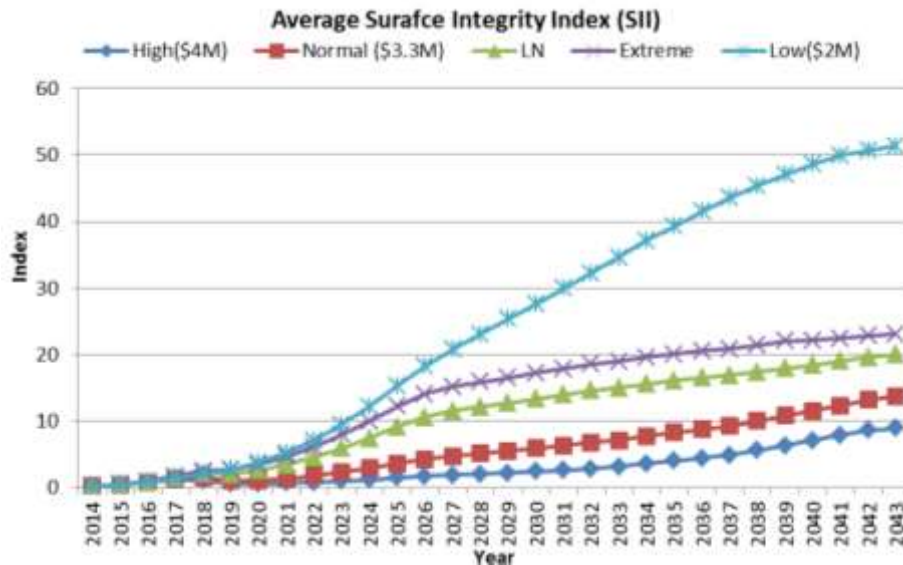


Figure 56: 2015 Optioned Scenarios for Resurfacing

This drop in surface integrity was deemed unacceptable but a low/normal scenario (shown in green) which had a low spend for three years and then return to normal spending from there on afterwards was selected. If spending is retained at the low spend level, then surface integrity will drop following the Low (\$2M) series.

8.3.2 Renewal Contracts

The delivery of renewal services is primarily outsourced. Key functions in the transportation activity and their outsourcing mechanisms are outlined in the following Table 33 below.

Table 33: Renewal Contracts

Function	Capital – Renewals and New
Projects (Low Cost Low Risk and other specific projects)	Specific one-off Contracts
Road Corridor and Carriageway	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018) Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Bridges and Structures	Specific one-off Contracts
Streetlighting	Streetlighting Contract (Powertech until 30 June 2018)
Resealing	Maintenance Contracts Murchison – Fulton Hogan (until 1 July 2018)

Function	Capital – Renewals and New
	Golden Bay – Fulton Hogan (until 1 April 2021) Tasman – Downer (until 1 July 2020)
Footpaths and vehicle crossings (unsubsidised)	Specific Annual Contracts and/or Maintenance Contracts

Network renewal Contracts are presently split into distinct geographic areas.

8.3.3 Renewal Strategies

8.3.3.1 Sealed Pavement and Surfacing Renewal

Council has 952km of sealed roads, of which 97.2% are chip sealed and 2.8% are asphaltic concrete with an average achieved life of 13.6 years and 7.1 years respectively. The chip seal life is less than the average when compared to peers and the asphaltic concrete is one of the lower average life when compared to peers. It should be noted that, the proportion of single coat seals in Tasman is higher than elsewhere in the country. The cost per kilometer as shown in Figure 22 in Section 5.3.3 shows that the maintenance and rehabilitation costs are some of the lowest in our peers with the resurfacing being below the average. **Tasman’s proposed investment for 2018-2021 is 38% less than what our peer group have spent over last 5-year period as can be seen in Figure 57.** This shows that despite the age of the sealed network the current strategy is providing an overall lower cost of ownership. The proposed increase in rehabilitation seeks to return investment to normal levels rather than running down the assets and creating a significantly higher re-investment to return to a sustainable level in the future.

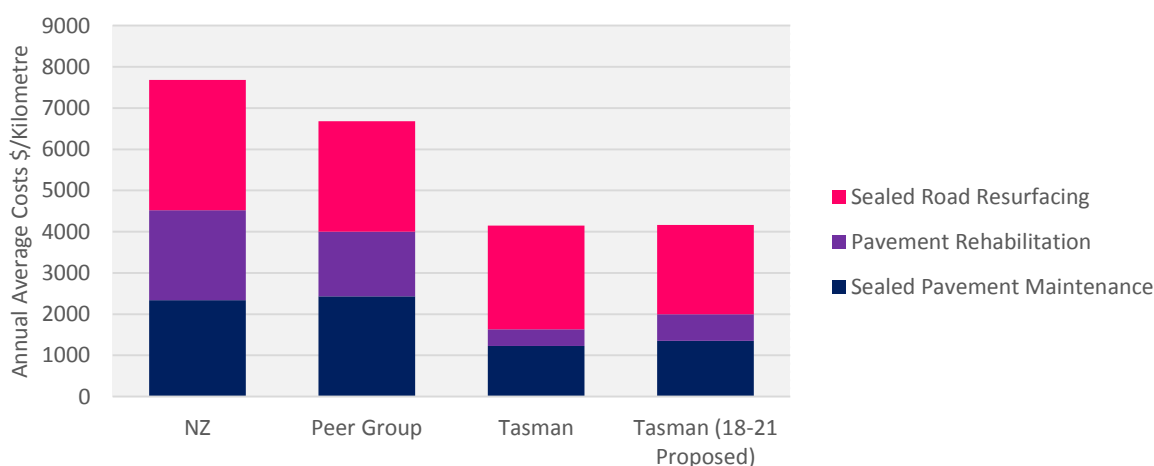


Figure 57: Sealed Pavement Costs Comparison (5 Year Average)

Prior to 2015, Council resurfaced an average of 6.8% of the network, this dropped to 4.9% between 2015 and 2018 to help Council meet its Financial Strategy and it will be maintained at around 6.0% of the network as shown in Figure 58 below. This compared well to our peers who undertake (on average) resurfacing of 6.9% of their networks.

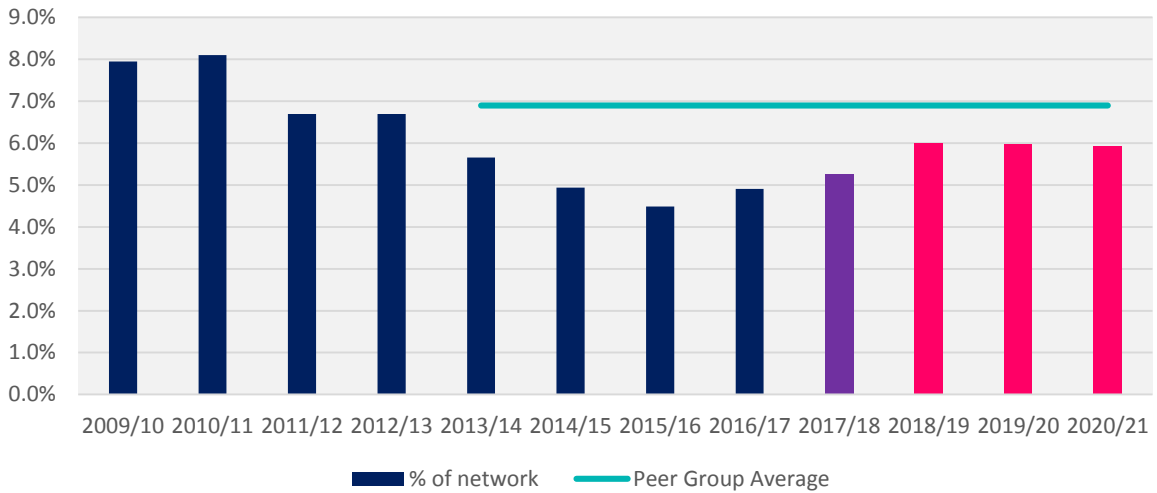


Figure 58: Proportion of Network Resurfaced

Council has recently considered the benefits of reverting some low volume chip sealed roads back to an unsealed pavement. There is currently 13% of Council’s chip sealed roads that carry less than 100 vpd. Even though reverting to an unsealed pavement was considered, there is no intention in the short term to implement this approach. As these low volume pavements age and deteriorate, further analysis and discussion may be required before Council commits to expensive rehabilitation of these roads.

Council has developed a basic seal renewal model to enable comparison of whole-of-life costs for different resurfacing investment levels. This is in an attempt to try and find the optimum reseal investment that minimises total whole-of-life costs. The model assumptions are summarised below:

- resurfacing cost of \$5.60/m² which represents averaged costs over last three years as well as weighted average unit rate of current overall network seal types;
- current network seal types will remain largely constant (ie, no significant changes in percentages of asphaltic concrete, single coats, two coats etc);
- chip seals over 15 years old are considered ‘high risk’, and some high-risk seals could be expected to suffer rapid distress and fail, incurring additional maintenance and/or pavement rehabilitation costs;
- Western Bay of Plenty has supplied data which showed 1.67% of their ‘high risk’ sites suffered failure;
- Council has applied a risk cost of \$44.30/m² which is the 2012/13 average rehabilitation cost, and tested different likelihoods of this risk occurring.

Results of this modelling are shown in Figure 59 below.

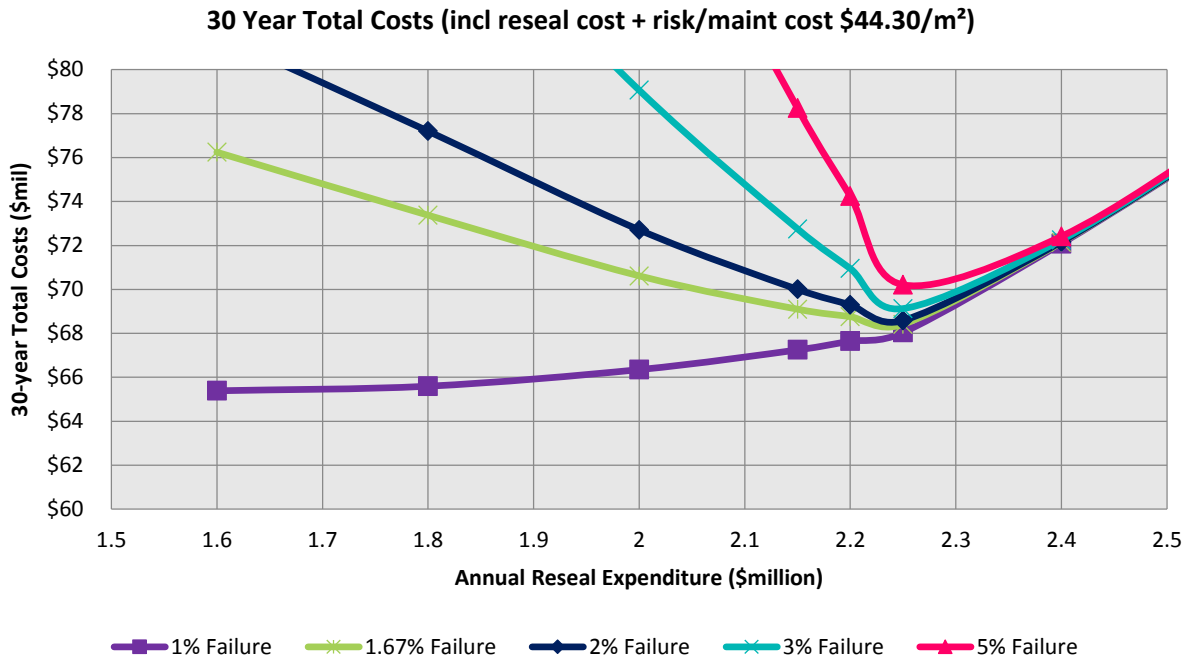


Figure 59: Resurfacing Modelling Scenarios

The resurfacing investment model summarised in Figure 59 suggests that there is an optimum annual reseal investment of between \$2.2 and \$2.3 million per year (in 2014 dollars), even with varying risk of failure of the older seals.

The very low (1%) failure risk gives an unusual result with total 30-year costs appearing to reduce as annual reseal expenditure reduces. Council does not consider this to be a viable scenario, as long term reduction in resurfacing to say \$1.6 million will ultimately result in poor surface condition, poor road serviceability, increasing maintenance costs and high failure rates.

The model was also tested for sensitivity of varying risk costs from \$30 to \$75/m² which yielded similar results with optimum reseal investment of \$2.2 to \$2.3 million per year.

Figure 59 shows that all models converge as annual reseal expenditure approaches \$2.5 million. This indicates that effectively no risk of extended seal lives is being taken with this level of resealing. The whole-of-life costs associated with this level of expenditure is higher than if some risk is taken through lower reseal investment and extending seal lives.

Depending on failure risk the total costs can increase very rapidly with annual reseal investment below \$2.2 million. It is important to note that the model is very sensitive to assumed failure risk.

Overall the model indicates that the optimal whole-of-life cost is achieved by extending seal lives and accepting the risk of some failures occurring. The model suggests that annual expenditure of \$2.25 million for resurfacing is an optimum level of long-term investment.

8.3.3.2 Sealed Pavement Rehabilitation

Sealed pavement rehabilitation is a treatment option for specific sections of road that experience high maintenance costs (generally due to structural weakness in pavement layers and/or the subgrade) and it is determined that rehabilitation is the least long term cost treatment. Rehabilitation generally consists of either a granular overlay, or cement stabilisation of the existing pavement layer(s). The chosen treatment depends on depth and type of the existing pavement layers, and extent of work required. It is also a suitable treatment to reduce roughness. However, the current NZ Transport Agency's funding criteria does not use roughness as a justification for rehabilitation.

Recent experience shows that the quantity of justifiable pavement rehabilitations has been reducing over time. Figure 60 shows that Council completed 11 lane-kms of pavement rehabilitation in the 2005/06 financial year (equivalent to a network-wide renewal cycle of 173 years), and more recently completed 2.5 lane-kms in the 2016/17 financial year (equivalent to a network-wide renewal cycle of 744 years).

Council will need to continue to rely on indicators of pavement condition and performance as well as models of future performance to provide a balanced pavement renewal forecast.

dTIMs, a modelling and decision support tool, uses asset strength, condition, maintenance cost data, as well as traffic loading and other environmental variables as inputs to model the deterioration of pavements and outline an optimised programme of future renewals.

Comparison of sealed pavement rehabilitation with peers shows Council spends the least on as seen in Figure 22 of Section 5.3.3. Council's low spending on pavement rehabilitation not sustainable in the long term. Investment going forward will increase to 2011-2013 levels of be 5.3 lane-km (equivalent to a network-wide renewal cycle of 351 years). In addition to returning funding to 'Normal' levels as recommended in dTIM's modelling, the additional investment will endeavor to address the pavement degradation that is observed in increased rut depth (Figure 24 in Section 7.2.3.1).

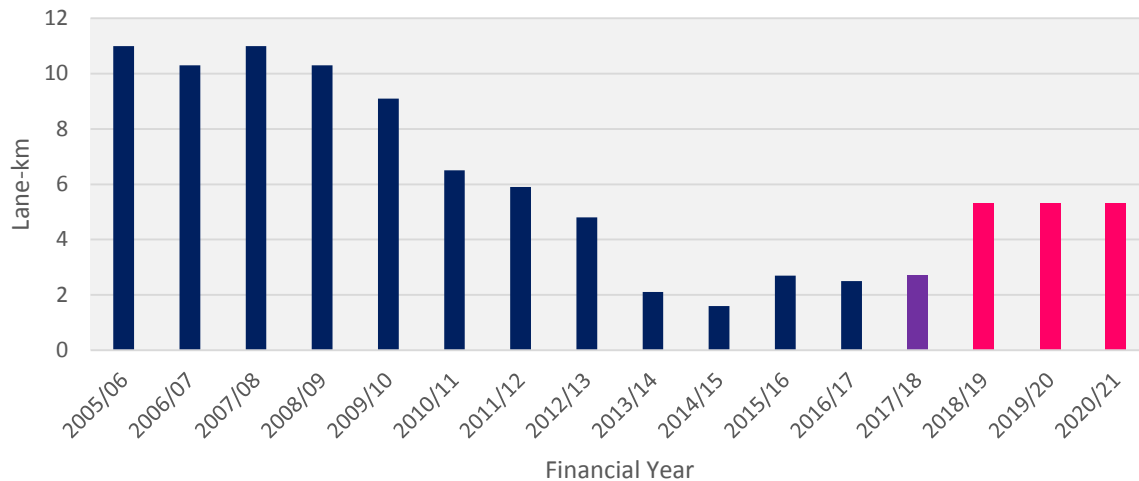


Figure 60: Sealed Pavement Rehabilitation Quantities

Rehabilitation sites are generally identifiable one to three years in advance of when treatment is required as the pavement condition typically begins to visibly deteriorate, and greater maintenance will be required to keep the pavement serviceable. Occasionally sites are subject to more rapid and unexpected deterioration due to one or more of these factors:

- change in traffic flows or composition, for example the first harvest of a forest, new developments, or construction traffic;
- extraordinarily wet conditions which saturate subgrade and/or pavement and overwhelm drainage systems;
- loss of waterproofing (ie, aged seal becomes brittle and cracks) with associated weakening of pavement layers.

8.3.3.3 Unsealed Pavement Metalling

Between 2004 and 2009 Council was applying 40,000m³ of metal per year across its 750km of maintained unsealed roads, equivalent to an average depth of 12mm annually. This was an attempt to address a perceived deficit in metal depth across the network ie, a building strategy.

Council was involved in the New Zealand Gravel Loss Monitoring Project between 2002 and 2007 which provided some data to assist with determining Council's network metal requirements. Results for Council's monitoring sites showed generally 6 to 10mm of gravel was lost per year.

Council reduced the annual quantity for the 2012/15 programme to 30,000m³, equivalent to an average depth of 9mm annually and more recently the 2015/18 programme applied 27,000m³ per year, equivalent to an average depth of 8mm.

In conjunction with these changes, Council has explored a range of options regarding metal types and sources, and has since set up a monitoring programme to measure the relative success, based on annualised gravel loss of various metal types. It is acknowledged that this will be a long-term project in order to understand the performance of different materials.

Figure 61 below shows the general relationship between metal costs, performance (annual loss rates) and whole-of-life costs.

Council is committed to minimising the whole-of-life costs of its unsealed roads. This will be achieved by gathering good data and finding a balance between material performance and cost.

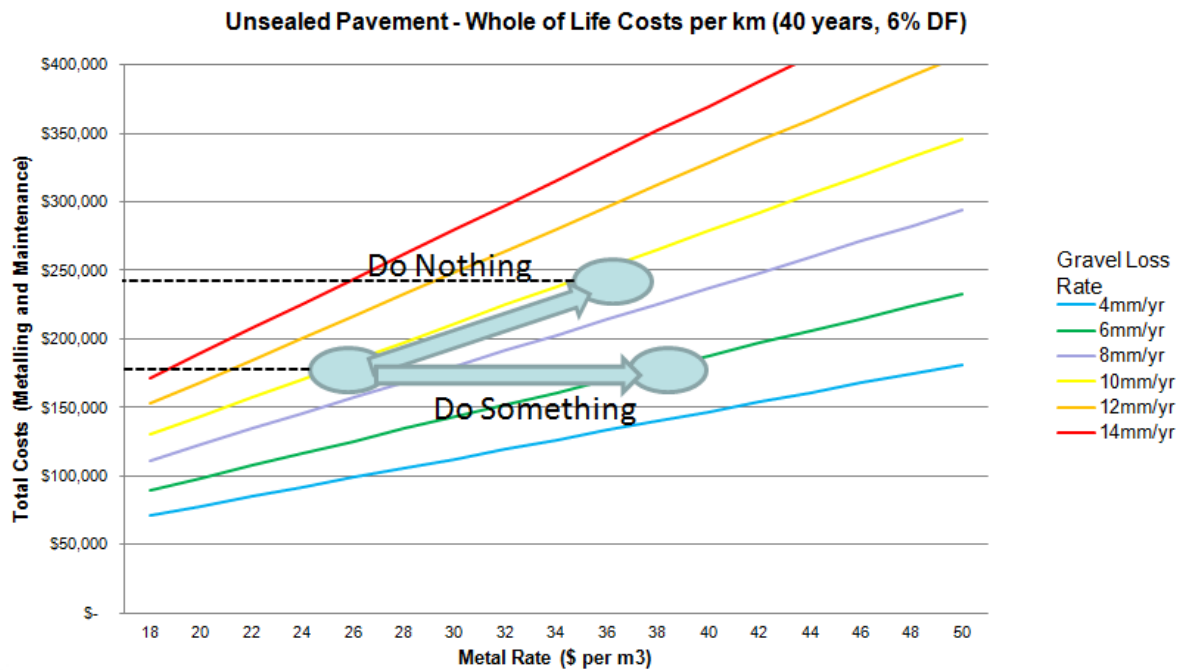


Figure 61: Whole-of-life Unsealed Pavement Costs

Council proposes to increase the 2018/21 programme to 30,000m³, equivalent to an average depth of 9mm to match monitored consumption. Due to current metal costs increasing, Council will continue to explore blended metal and as such there will be a substantial increase in network metal costs.

Key items for Council to develop and continue during 2018/21 include:

- ongoing monitoring of metal performance at benchmarked trial sites;
- securing and developing metal sources;
- implementation of a more detailed network-wide unsealed roads management system including site-by-site data (such as material types, existing depths, geometry, traffic and other characteristics) to enable greater granularity, management and planning of unsealed road metalling and maintenance. This will enable more efficient investment in unsealed roads.

8.3.3.4 Drainage Renewals

Council has developed a simple stochastic deterioration model to predict the likely future condition of culvert assets based on current condition and investment/rate of renewal. This model considers the probability of an asset in a certain condition state transitioning to another (lower) condition state in a given time period. The transition probability has been assumed using age and condition information where both these data fields are recorded. Using this model, 8% of culverts rated 'poor' or 'very poor', it is considered reasonable to be conservative.

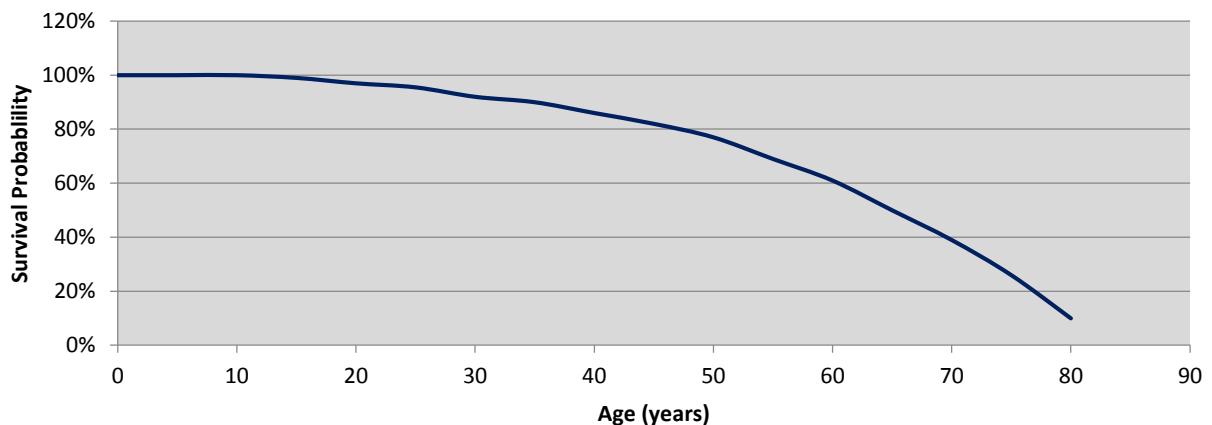


Figure 62: Typical Survival Probability Profile for Concrete Culverts

Climatic effects are expected to induce demand changes on the existing culverts due to more intense rainfall occurring more regularly. Based on anecdotal evidence, many existing culverts could be considered to be undersized, and when analysed using runoff calculations, they would not meet Council’s 2013 Engineering Standards which require Q20 capacity (or 1-in-20 year return period).

Topographical or land-use changes can alter runoff characteristics of existing catchments, eg, forest harvesting typically decreases run-off time and consequently increases peak flows. This can exacerbate any existing drainage issues and necessitate the installation of new or larger culverts.

An annual allowance of \$100,000 has been included in the drainage renewals budget to improve existing or install new culverts to ensure they meet appropriate standards. Culvert renewals will be prioritised based on need including existing culvert condition and consideration of risk/consequences to the transportation network and its users.

The renewal strategy is to replace culverts in the poorest condition or most significantly undersized first, and then renew **at a rate that ensures the proportion of culverts rated ‘poor’ or ‘very poor’ does not increase above current levels over the 30 year planning timeframe.** The level of investment required to achieve this has been modelled at \$250,000 per year for Year 1 to Year 10, and then increasing to \$300,000 per year in year 11 and beyond.

8.3.3.5 Lined Surface Water Channels (SWC)

A broad relationship between condition and expected life has been estimated to provide a condition-based renewal investment profile, as described in Table 34.

Table 34: Estimated Renewal Timing and Costs for Lined Surface Water Channels

Condition	Estimated Renewal Timing	Average Annual Cost
>5% Broken	0-10 years	\$112,000
2-5% Broken	11-20 years	\$327,000
0-2% Broken	21-40 years	\$729,000
Unbroken	41-50 years	\$733,000

Renewal requirements are low over the first 10 years, increasing significantly through years 20 to 50. This is considered a worst case scenario, and lives in excess of 50 years are achieved as expected this will go some way to smoothing out future renewal costs. Future renewal costs are very likely to be higher than at present with an approaching bow-wave in ageing assets associated with historic growth patterns.

8.3.3.6 Unlined Surface Water Channels (SWC)

Unlined surface water channels are generally renewed during mechanical maintenance which restores the formation depth and width. There are many examples of roads which have inadequate unlined surface water channels, either missing altogether or of insufficient shape or depth to be effective in draining the pavement layers. This data is collected **during condition rating inspections and recorded as “Inadequate SWC”.** Table 35 summarises the length of road considered to have inadequate surface water channels during the 2016 condition rating survey.

Table 35: Inadequate Surface Water Channel Length

Side	Inadequate SWC Length (m)
LHS	61,692
RHS	59,890
Total	121,582

The highest priority sites, including those on High Productivity Motor Vehicle routes, have largely already been improved. The longer term timeframe for completing improvements has not been risky as many sites carry low traffic volumes (and low heavy commercial vehicle numbers) and have been functioning adequately without overt signs of pavement distress for a number of years. However, improving surface water channels will significantly extend the expected life of these pavements and reduce whole of life costs.

8.3.3.7 Sumps

Council owns approximately 2,060 road sumps or catchpits. The construction date is recorded for approximately 30% of these. Condition data is currently not collected or recorded.

Sumps have a long assumed life of 80 years for valuation purposes, and anecdotally a significant majority of sumps are considered to be in average to good condition, with few requiring renewal in the next 10 years.

The forecast renewal budget has been set at \$20,000 per year for Year 1 to Year 10, increasing to \$50,000 per year from Year 11.

8.3.3.8 Bridge Component Replacements

Council's bridge consultant is engaged to complete detailed inspections (if required) and/or detailed design of more complex repairs identified during the routine inspections. Examples of these items include repainting structural steel elements, underpinning piers or abutments, replacing or improving wingwalls and significant concrete repairs. This work is packaged together and tendered in an annual Structural Component Replacements contract.

8.3.3.9 Bridge Replacement

Council has developed an indicative bridge replacement programme. Figure 63 shows the future estimated costs of this programme and the average age of bridges at the time of replacement. Bridges shown as "null" age in Figure 63 are actually null points and indicate that there are no bridge replacements planned for that financial year.

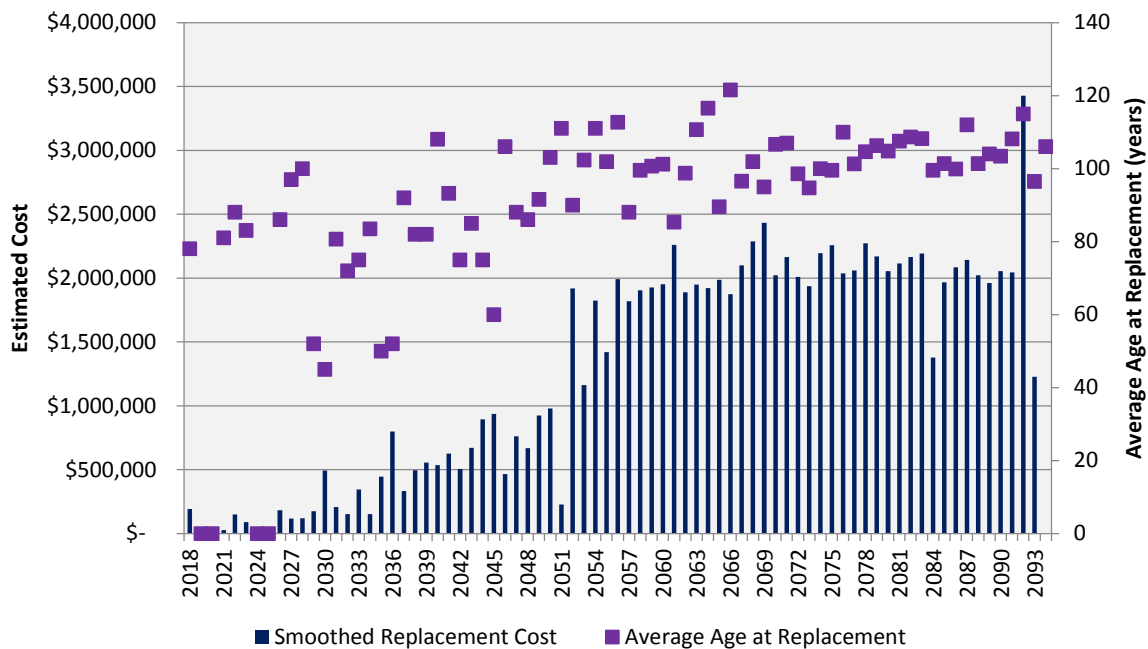


Figure 63: Bridge Replacement Programme

The programme shows that minimal bridge replacements are likely to be required until approximately 2030, at which time the annual replacement expenditure will vary from \$500,000 to \$1 million. From approximately 2050, the expenditure increases substantially to around \$2 million per year.

Bridges are typically long-life structures and in most cases, will last at least 100 years. Figure 63 demonstrates this expectation, although it also shows that some of Council's bridges have an expected useful life of as little as 50 years. Examples of expected short-life bridges are found on Dry Road on Golden Bay's west coast, where some concrete hollowcore deck units constructed in 1985 have been found to have insufficient cover to the steel pre-stressing and reinforcing strands. These deck units will need to be replaced well before their intended 100-year design life.

The 'end of life' scenario for a bridge will vary based on where the bridge is located, and the type of traffic it is required to cater for. In situations where mainly light traffic (cars) use the bridge, and/or it is uneconomic to replace, Council may defer replacement of the bridge by reducing the weight limit for traffic using the bridge (known as 'posting').

Council's bridge consultant has estimated the remaining useful life (RUL) of Council's bridges based on bridge construction date, type, condition, and whether posting is possible. Council has not accounted for any future demand changes from land use changes, or changes to the vehicle fleet (heavier trucks), in the indicative replacement programme.

Council has developed an Economic Network Plan (ENP) which models export freight value flows across its road and bridge network. The ENP gives Council the ability to create scenarios involving changes to land use on the road and bridge network, and test the effect on freight movement and property access. This will assist in optimising investment in bridge replacements and improvement projects.

8.3.3.10 Retaining Walls

Council has not yet developed a robust renewal programme for retaining walls. Asset condition data collection is still at an early stage.

Renewal decisions will be made on a case-by-case basis, as replacement of a structure may not be the preferred economic decision. In some cases, it may be more economic to avoid replacing the wall by realigning the road and/or accepting a lower level of service (narrower carriageway). Council has also been trialing 'non-traditional' retaining structures using layered willow which grows a significant root structure, acting in a similar manner to traditional engineered walls. These willow walls are substantially (60% to 70%) cheaper and less disruptive than traditional walls. So far these have been a success.

8.3.3.11 Signs and Delineation

Council's road asset revaluation in 2017 assumed signs and delineation assets to have useful lives as shown in Table 36.

Table 36: Sign and Delineation Useful Lives

Asset Type	Valuation Expected Useful Life (Years)
Signs	10
Edge Marker/Culvert/Kilometre Pegs	5
Culvert Marker Pegs	10
RRPMs	5

Approximately 45% of road signs have known installation dates recorded in RAMM. Figure 64 shows the distribution of the age of signs where this data is known.

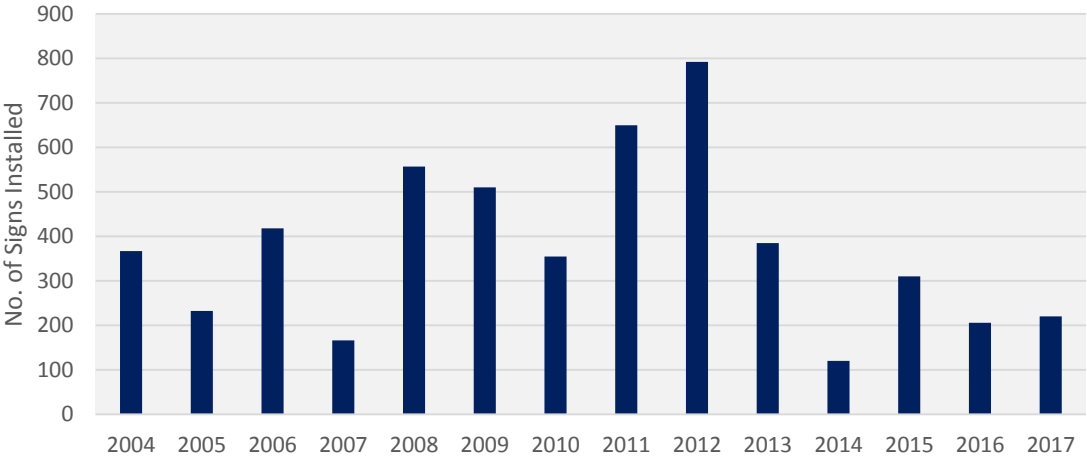


Figure 64: Sign Installation Year

Historic sign renewal rates appear to be well below the 'steady state' renewal rate of 1,300 signs per year, based on an assumed 10-year life scenario. This infers that the actual average life of a sign commonly exceeds 10 years. For this reason, Council has planned to review signs on a 15 year lifecycle, this equates to a cost of \$207,000 per year.

Pegs and delineation device useful lives as are also shown in Table 36. The useful lives for pegs are considered reasonable for life-cycle costing, with renewals estimated to cost \$70,000 per year.

8.3.3.12 Street Lights

Street lights have several components with different expected lives, and renewals of these are broken down as follows:

Columns and Brackets

Council's database records 1,956 brackets and 1,961 street light columns, with 80% of the columns being steel, 18% concrete and the remainder unknown/not recorded. Condition information is incomplete, so the short-term renewals strategy is to match expenditure with depreciation based on a 50-year expected life or approximately 40 column and bracket replacements per year. Condition information is being progressively collected through the street light maintenance contract, and some trends have been found with columns in coastal areas being prone to corrosion around the base and not achieving full expected useful life.

Lights

Council has now completed an upgrade of all its existing street lights to LED lights. These new lights have an expected life of 20 years, and renewals are planned to be staggered from Years 18-22. Actual performance of the new LED lights will need to be monitored to ensure renewals are planned for the right time.

8.3.3.13 Footpaths and Walkways

The Transportation levels of service, include a footpath performance measure that states that Council will maintain 90% of its footpath network to average condition or better. Condition rating is undertaken on a three-yearly cycle to assist renewal planning and to measure performance against this target. The results of the November 2010 condition rating showed that 94.3% of the network was in average or better condition. The results of the May 2014 condition rating showed that 95% of the network was in average or better condition and the results of the May 2017 condition rating showed that 90.9% of the network was in average or better condition. This shows that the condition is dropping over the last three years and have come close to the targeted level of service. There has been a drop of in resurfacing work undertaken due to budget limitations.

Footpath sites that score a Poor or Very Poor condition rating are added to Council's **footpath** rehabilitation list. Sites from the list are reviewed annually and prioritised based on the more recent review and are included in the rehabilitation schedule for that financial year or deferred based on the current condition and/or funding limits.

The budget for pavement rehabilitation is set at \$140,000 per annum to improve the footpath condition. This may be re-evaluated beyond Year 4 if the average condition survey schedules to be undertaken in 2020 improves. As time progresses, further condition rating will help to identify condition trends and will assist with review and setting of the future budgets.

8.3.3.14 Subsidised Cycleways

Cycleways that were built prior to the inception of Tasman's Great Taste Trail were built with funding assistance from the NZ Transport Agency and are considered to be subsidised cycleways. As such, these cycleways continue to be eligible to receive funding for ongoing maintenance and renewal works.

The subsidised sections of cycleway on Main Road Lower Moutere, Lodder Lane, Queen Victoria Street and Wildman Road were all originally sealed with a grade 6 chip in an attempt to balance cost and ride comfort. These first-coat chip seal surfaces did not withstand vehicle traffic and potholed sooner than expected. Consequently, the maintenance costs were higher than expected and the surface prematurely deteriorated. The only exception is Wildman Road as there is clear separation from the vehicle lane and vehicles do not use the path as they would a sealed shoulder. Given this history, Council have surfaced many of the cycleways that are connected to the vehicle carriageway with a slurry or asphaltic concrete surface. This will continue when funding allows.

The renewal planning for these subsidised cycleways is based on the age, type and condition of the surface. Generally, chip seal and slurry surfaces have an assumed life of 12 years, and asphaltic concrete has an assumed life of 25 years.

8.3.3.15 Tasman’s Great Taste Trail

At present Council is focused on construction of Tasman’s Great Taste Trail, specifically exploring options to provide a connection between Spooner’s Tunnel and Motueka. Renewal of the trail has not been included in the AMP expenditure forecast, but making improvements to known high cost maintenance areas will reduce the maintenance expenditure and improve resilience of the trail.

8.3.3.16 Street Furniture

Reactive renewal of street furniture is generally due to vandalism or vehicle damage. Most of the time this type of damage can be repaired through maintenance but from time-to-time complete renewal of the asset eg, a seat or bus shelter may be required. There has been and are proposed a number of capital projects that will significantly increase the total number of these types assets. It is expected that replacement will occur infrequently and therefore Council has only budgeted \$16,000 per year for reactive renewals.

An additional budget of \$7,700 per year has also been included to allow for replacement of litter bins.

Council takes a proactive approach to street furniture renewal at the time of undertaking town centre renewals. Town centre renewal projects look to improve the functionality and aesthetics of shared spaces within the town centre and usually result in the installation of new and/or replacement furniture. Council has planned to undertake town centre renewals on a 15-year cycle.

8.3.4 Deferred Renewals

Deferred renewal is the shortfall in renewals required to maintain the service potential of the assets. This can include:

- renewal work that is scheduled but not performed when it should have been and which has been put off for a later date (this can often be due to cost and affordability reasons);
- an overall lack of investment in renewals that allows the asset to be consumed or run-down, causing increasing maintenance and replacement expenditure for future communities.

The extent of deferred renewals can be identified by comparing the accumulated investment in renewals and accumulated investment in capital with the accumulated annual depreciation as shown in Figure 65.

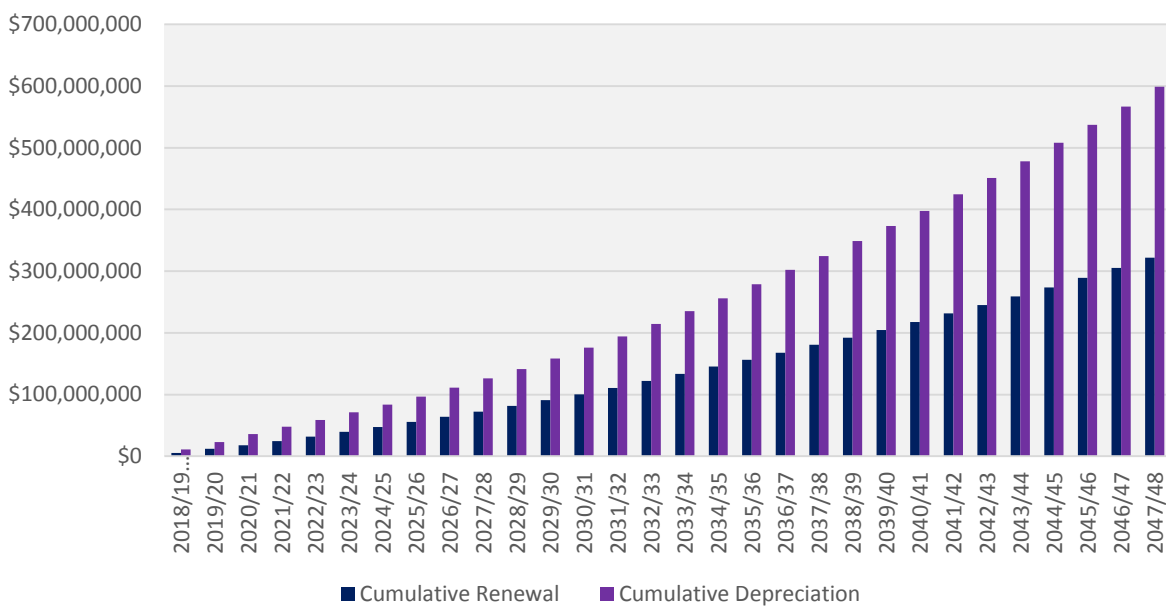


Figure 65: 30 Accumulated Renewal and Depreciation Comparison Including Inflation

The apparent divergence between the investment in renewals and depreciation over the 30-year period initially suggests that Council may be under-investing in renewals. This is not believed to be the case due to the reasons detailed in the discussion below.

The annual depreciation costs for each asset group are calculated using assumed total useful lives and replacement costs. The calculation does not take into account actual asset condition or dTIMs modelling results. In reality some assets will expire prior to the assumed total useful life, and some will expire after. What actually occurs is heavily dependent on asset condition and use. For example, the sealed pavement surfacing asset group accounts for approximately 37% of the total annual depreciation for the Transportation activity, dTIMs modelling supports an investment in renewals that is significantly less than the annual depreciation for this asset group which suggests that depreciation is overstated for this particular asset group.

The transportation network includes some long-life asset groups such as bridges and major culverts, pavements and footpaths. These assets account for approximately 33% of the total annual depreciation costs for the Transportation activity. All of these assets have an expected total useful life in excess of 50 years. In general, the current condition of these assets groups does not require significant investment in their renewal within the next 30 years. For example, due to the nature of the historic development of the network a significant proportion of the bridges across the network are not expected to require renewal until 2050. At this point the investment in renewals, specifically for bridge assets will increase significantly. A longer-term comparison between the cumulative investment in renewals and cumulative depreciation would show this 'bow-wave' in renewals, and consequently a reduction in the gap between renewals and depreciation.

In some situations, Council is purposely deferring renewals or 'sweating asset lives' to optimise whole-of-life costs while accepting some risk of premature asset failure and/or long term effects on condition and expenditure requirements. Council will closely monitor and compare renewal expenditure, depreciation and asset condition, to allow for early mitigation/management of the negative effects associated with this strategy.

8.3.5 Forecast Renewal Expenditure

Figure 66 shows the forecast renewal spend. The forecast is generally trending up in relation to anticipated renewal of bridge structural components. From year 15 (2032/33) the renewal of the town centres start creating inconsistent renewal spend year on year.

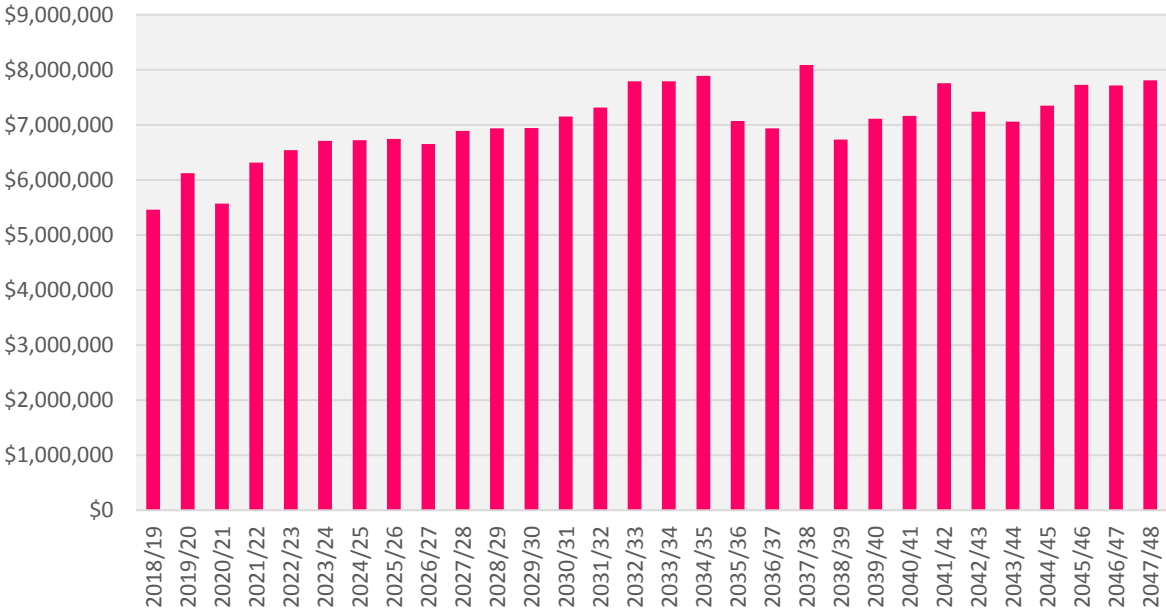


Figure 66: 2018 – 2048 Forecast Renewal Expenditure Excluding Inflation

8.4 Asset Development

New capital expenditure is used to create new assets, expand or upgrade existing assets, or increase the capacity of existing assets beyond their original design capacity or service potential. This section summarises future new capital work requirements for this activity.

8.4.1 Key Asset Development Issues

General activity key issues are addressed in Section 3. Specific asset development issues are detailed below.

8.4.1.1 Government Funding Changes

NZ Transport Agency have undertaken many changes, the biggest of which is to capital funding projects. The Agency has made the following changes:

- Change the name of the category from 'Minor Improvements' to Low Cost, Low Risk';
- Low Cost, Low Risk funding will cover projects up to \$1 million, an increase from \$300,000;
- All other capital projects require a strategic case and business case.

NZ Transport Agency has signalled that the anticipated requests for funding will exceed the provisional budget in the 2018/19 – 2021/22 and that full funding of programmes will be influenced by Council making a solid case for investment.

8.4.1.2 Focus on Maintaining the Existing Network and Critical Improvements

Council is under increasing pressure to minimise its long term debt forecast and keep rate raises to a minimum. In order to achieve this, Council has reduced its planned expenditure on transportation by approximately \$20 million over 30 years. Council is focusing on delivering critical core infrastructure projects and maintaining its existing network, rather than providing new assets or improved assets that will require on-going maintenance and expenditure.

8.4.1.3 Demand for Transportation Services due to Growth

Residential growth in the Richmond area is creating extra pressure and demand on Council's transportation network. This growth will increase traffic volumes and may cause congestion on urban arterial routes. A number of projects are planned to occur within the Richmond Ring Route to improve traffic flows, these include intersection improvements on Salisbury Road and widening on Oxford Street. Wensley Road is also planned to be upgraded to enable growth in Richmond South.

8.4.1.4 Richmond Network Operating Framework

NZ Transport Agency has initiated a Network Operating Framework (NOF) study for Richmond in response to the heavy traffic at key intersections along State Highway 6. This study was started in 2017 and has not been completed at the time of writing this AMP. The NOF determines the desired level of service for all the modes of transport and then assesses current performance against the targets. Whilst the study has not been completed, early indications have been used to inform a number of projects included in this AMP. They include projects to:

- improve accessibility;
- Diversify transport modes;
- Enable growth;
- Improve safety.

8.4.1.5 Developer Created Assets

Private developers generally construct new subdivisions with consent from Council. It is very seldom that Council itself constructs subdivisions to service growth. Council is normally responsible for the upgrading/upsizing of existing assets to provide for increased volumes associated with growth, or provision of trunk services and headworks with the developer responsible for the construction of the actual subdivision.

Council does oversee the subdivision process, from consenting through to construction and handover to Council. Council's **engineers inspect design** plans and finished works to ensure the assets meet the required standards and are in an acceptable condition to be accepted as a Council-owned asset. Should any work not meet the required standards Council will require the developer to remedy the issue prior to accepting ownership.

8.4.1.6 Parking

With the growth in a number of the large settlements comes demand for additional convenient car parking facilities. Council are yet to complete its parking strategy but has consulted on a draft. The draft strategy is to undertake low cost, low risk interventions to provide a small number of additional parking facilities and does not contemplate significant investment in car parking until the changes in the transport industry are fully understood. The draft strategy also recognises that parking is influenced and influences the wider transportation network. The draft strategy works with other transportation initiatives to limit the impact increases in parking have on alternative transport modes.

8.4.2 Projects to Support Increasing Levels of Service

Council is planning the following key projects to increase level of service:

- Richmond – Salisbury Road Hierarchy Improvements
- Richmond – Queen/Salisbury Intersection Improvements
- Motueka – Town Centre Improvements
- Richmond – Oxford/Wensley Intersection Improvements
- Brightwater – Town Centre Upgrade
- Mapua – Town Centre Upgrade
- Richmond – Champion Road Cycle Crossing
- Richmond – Champion/Salisbury Route Improvements
- Richmond/Motueka – New Car Parking Facilities
- Motueka – Many to Talbot Street Extension
- Tapawera/Motueka – Tasman Great Taste Trail Construction
- Takaka – Takaka to Pohara Cycle Connection
- General District – New Footpaths

8.4.3 Projects to Support Growth

Council is planning the following key projects to address growth:

- Richmond – Wensley Road Hierarchy Improvements
- Richmond – Lower Queen Street Widening
- Richmond – McShane Road Upgrade
- Coastal Tasman – Tasman View Road Upgrade

8.4.4 Forecast New Capital Expenditure

The capital programme that has been forecast for this activity where the primary driver is classed as ‘New Works’ is shown in Figure 67 below.

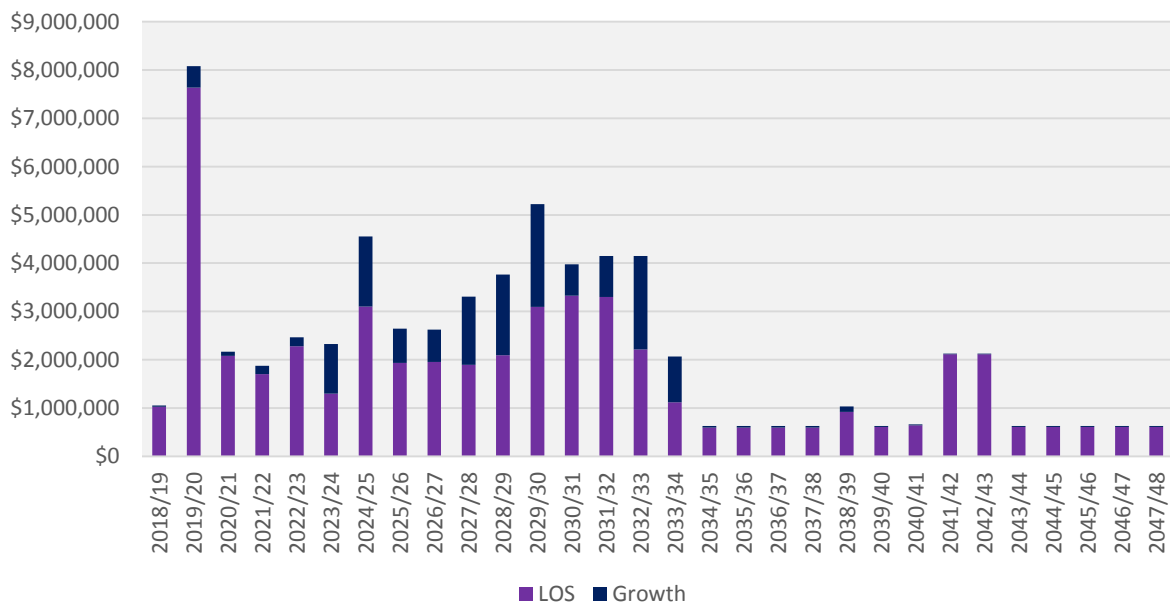


Figure 67: Forecast New Capital Expenditure 2018 - 2048

Figure 67 shows a high level of new capital expenditure over the next 15 years up until 2033/34. This reflects the high residential and commercial growth that has happened in the last three years and is forecast to continue to 2048.

8.5 Asset Disposal

8.5.1 Asset Disposal Strategy

Council does not have a formal strategy on asset disposal and as such it will treat each asset individually on a case-by-case basis when it reaches a state that disposal needs to be considered.

Asset disposal is generally a by-product of renewal or upgrade decisions that involve the replacement of assets.

Assets may also become redundant for any of the following reasons:

- under utilisation;
- obsolescence;
- provision of the asset exceeds the required level of service;
- uneconomic to upgrade or operate;
- policy change;
- the service is provided by other means (e.g. private sector involvement);
- potential risk of ownership (financial, environmental, legal, social, vandalism).
- depending on the nature, location, condition and value of an asset it is either:
 - made safe and left in place;
 - removed and disposed of;
 - removed and sold;
 - ownership transferred to other stakeholders by agreement.

In most situations assets are replaced at the end of their useful life and are generally in poor physical condition. Consequently, the asset will be disposed of to waste upon its removal. In some situations, an asset may require removal or replacement prior to the end of its useful life. In this circumstance Council may hold the asset in stock for reuse elsewhere on the network. Otherwise, if this is not appropriate it could be sold off, transferred or disposed of.

When assets sales take place, Council aims to obtain the best available return from the sale and any net income will be credited to that activity. Council follows practices that comply with the relevant legislative requirements for local government when selling off assets.

8.5.2 Paper Roads

From time to time areas of unformed legal road reserve, also referred to as paper roads, that have little or no public access value may become surplus to requirements and the most economic approach is to explore the possibility of the road reserve being closed and sold to the adjoining property owner. Whenever this occurs Council is required to follow a very prescriptive legislative process which includes public notification.

8.5.3 Bridges

Bridge structures that provide little to no public access value may be considered for disposal. These structures are usually located within a legal road reserve that does not have a formed or maintained road adjacent to the structure. In all situations the bridge being considered for disposal will be treated and consulted on a case by case basis.

Transfer to the adjacent property owner may be by way of a direct sale, or either transfer for a nominal fee. There may need to be extensive negotiation between Council and the adjacent property owner before the terms of the transfer can be agreed.

Council does not currently have a policy to support this process and has identified the need to prepare a policy to support the divesting of bridge assets.

9 Financials

Council has planned a prudent financial approach to managing its assets and services. This section provides a summary of the total value of the activity and the investment that Council has planned to make over the next 30 years.

9.1 Funding Sources

The transportation activity is currently funded through a mixture of the following sources:

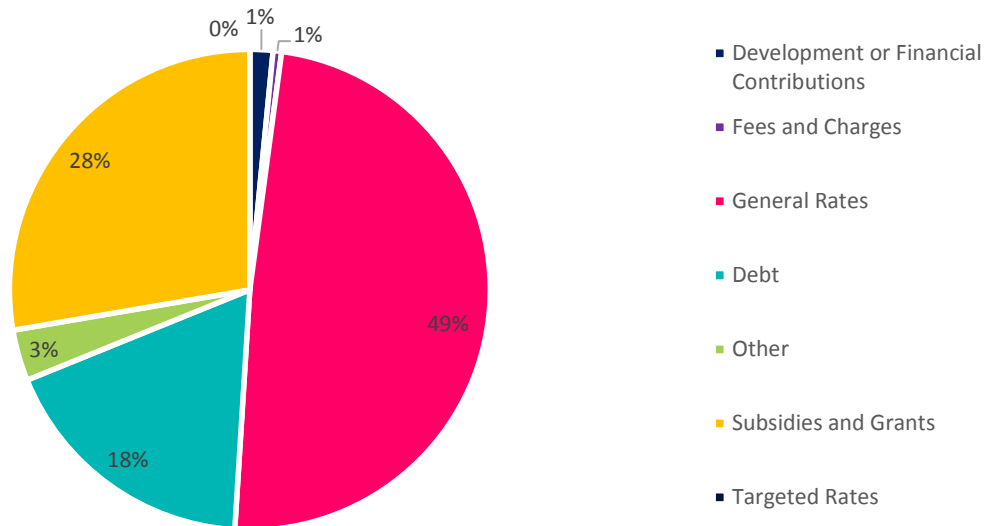


Figure 68: Sources of Transportation Funding

9.1.1 Funding Strategy

Council’s strategy is to maximise the funding sourced through the NZ Transport Agency for all works qualifying for co-investment. The current NZ Transport Agency co-investment rate and local share proportions for subsidised works are detailed below in Table 37.

Table 37: NZTA Co-Investment Rates

Activity Type	2017/18 and beyond	
	NZ Transport Agency	Council
Operations and Maintenance	51%	49%
Renewals	51%	49%
Public Transport	51%	49%
Total Mobility	60%	40%

NZ Transport Agency will co-invest in maintenance, renewals and new capital works to assist Council achieve:

- optimal national land transport outcomes within the combined financial resources
- an integrated and appropriately consistent land transport network throughout the country
- appropriately share the costs of the land transport network between land transport system users and local communities, recognising that the national and local benefits that are derived from investment in the network.

NZ Transport Agency's co-investment subsidises 7%-8% of all transportation works undertaken by the Council. Some of the works that are not subsidised include:

- car parks;
- road reserve pest control;
- amenity;
- street furniture.

Totaranui and Pupu Springs Roads are designated Special Purpose Roads because of their national significance. They attract a progressively reduced maintenance subsidy over the next 6 years from 91.8% in 2017/18 to 51% in 2022/2023. Council also receives funding from the Department of Conservation and TrustPower towards the maintenance of Cobb Dam Road.

Further information on Council's funding sources can be found in the schedule of fees and charges, and the Revenue and Financing Policy.

9.1.2 Development Contributions

Council's Development and Financial Contributions Policy can be found on our website at:

www.tasman.govt.nz/policy/policies/development-contributions-policy.

The Policy will be adopted in conjunction with Council's Long Term Plan and will come into effect on 1 July 2018.

The Policy sets out the development contributions payable by developers, how and when they are to be calculated and paid, and a summary of the methodology and rationale used in calculating the level of contributions. The key purpose of the Policy is to ensure that growth, and the cost of infrastructure to meet that growth, is funded by those who cause the need for and the benefit from the new or additional infrastructure, or infrastructure of increased capacity. There are three water supply development contributions in place. Which charge is applicable depends on what catchment the development is located in.

Table 38: Transportation Development Contribution Charges as at 1 July 2018

Catchment	Development Contribution per HUD \$ (incl GST)
Waimea	\$ 1,290
Motueka	\$ 1,290
Golden Bay	\$ 1,290
Rest of District	\$ 1,290

HUD = Household Unit of Demand

* The value of the Development Contribution shall be adjusted on 1 July each calendar year using the annual change in the Construction Cost Index.

9.2 Asset Valuation and Depreciation

The Local Government Act 1974 and subsequent amendments contain a general requirement for local authorities to comply with Generally Accepted Accounting Practice ("GAAP").

The Council requires its infrastructure asset register and valuation to be updated in accordance with Financial Reporting Standards and the AMP improvement plan.

The valuations summarised below have been completed in accordance with the following standards and are suitable for inclusion in the financial statements for the year ending June 2017.

- NAMS Group Infrastructure Asset Valuation Guidelines – Edition 2.0
- New Zealand International Public Sector Accounting Standard 17; Property, Plant and Equipment (PBE IPSAS 17) and PBE IPSAS 21 (Impairment of Non Cash Generating Assets)

9.2.1 2017 Valuation

Assets are valued every three years. The transport assets were last revalued in April 2017 and are reported under separate cover. Key assumptions in assessing the asset valuations are described in detail in the valuation report.

The majority of information for valuing the assets was obtained from the Council's Confirm database. The data confidence is detailed in Table 39 below.

Table 39: Data Confidence

Asset Description	Confidence	Comments
Road Pavement Formation	B - Reliable	The Formation value is difficult to establish because large areas of reconstruction are not normally carried out. The unit rates used in this valuation have been based on a value established by Council.
Pavement Surfacing	B – Reliable	
Sealed Pavement Layers	B – Reliable	Basecourse and subbase depths were estimated based on carriageway hierarchy.
Unsealed Pavement Layers	B – Reliable	In the absence of a pavement layer date a default construction date was applied. The estimates of subbase depth are based on local knowledge and were provided by Council staff.
Bridges and Major Culverts	B – Reliable	Major culverts (with cross sectional area greater than 3.4 m ²) in the drainage table have also been included in the bridge valuation, and are reported as Bridge Culverts.
Drainage	B – Reliable	Where there was no construction date in RAMM these were assigned a default construction date which equated to an age 50% through the expected life of the asset. Culverts have different unit rates depending on size and type. These unit rates assume that all intake and outlet structures are included.
Footpath	B – Reliable	Where there was no construction date in the RAMM database they were assigned a default construction representing an age 50% of the total useful life.
Miscellaneous Road Furniture	B – Reliable	The Minor Structure table formed the basis of the valuation. Where there was no construction date in the RAMM database a default construction date was applied. A linear metre was applied to steel fence and each unit rate was used for the rest.
Railings	B – Reliable	Where there were no installation dates available for rails an assumed value, depending upon material was used for missing dates.
Retaining Walls	B – Reliable	
Signs	B – Reliable	Where there was no installation date in RAMM an assumed date representing 50% of the useful life was used.
Surface Water Channels	B – Reliable	Earth surface water channel was not valued as this is accounted for in Formation rates. Where there was no construction date in the RAMM database they were assigned a default construction representing an age 50% of the total useful life.
Carparks and Walkways	C - Uncertain	In the absence of a pavement layer date a default construction date was applied.
Traffic Facilities	C – Uncertain	

Asset Description	Confidence	Comments
Tasman Great Taste Trail	C - Uncertain	Quantities and unit rates were not available.

Based on NZ Infrastructure Asset Valuation and Depreciation Guidelines – Edition 2, Table 4.3.1: Data confidence grading system.

The Base Useful Lives for each asset type as published in the NZIAVDG Manual were used as a guideline for the lives of the assets in the valuation. Generally, lives are taken as from the mid-range of the typical lives indicated in the Valuation Manual where no better information is available. Lives used in the valuation are presented in Table 40 following.

Table 40: Asset Lives

Item	Life (years)	Minimum Remaining Life (years)
Road Pavements	100	-
Unsealed Pavement Layers	5	1
Bridges and Major Culverts	100	5
Drainage	75	2
Footpath	75	2
Miscellaneous Road Furniture	20	2
Railings	18	2
Retaining Walls	50	2
Signs	10	2
Surface Water Channels	50	2
Carparks and Walkways	-	-
Traffic Facilities	-	-
Tasman Great Taste Trail	-	-

9.2.2 Depreciation

Depreciation of assets must be charged over their useful life. Council calculates depreciation on a straight line basis on most infrastructural assets at rates which will write off the cost (or valuation) of the assets to their estimated residual values, over their useful lives.

The optimised replacement value, optimised depreciated replacement value, total depreciation to date, and the annual depreciation of the water supply assets are summarised in Table 41 and Table 42 below.

Table 41: Water Asset Valuation Summary 30 June 2017

Asset Type	Optimised Replacement Value (\$000)	Optimised Depreciated Replacement Value (\$000)	Annual Depreciation (\$000/yr)
Formation	\$308,378,311	\$308,378,311	\$0
Pavement Surface	\$37,508,910	\$13,348,504	\$2,787,637
Sealed Pavement	\$156,896,023	\$120,620,283	\$1,045,875

Unsealed Pavement	\$19,390,048	\$14,912,275	\$860,621
Drainage	\$39,177,171	\$23,028,116	\$527,472
Surface Water Channels	\$38,151,035	\$21,957,731	\$768,017
Footpath	\$35,033,639	\$16,713,424	\$910,259
Traffic Facilities	\$657,192	\$328,596	\$100,070
Signs	\$4,027,438	\$1,392,357	\$390,652
Railings	\$3,634,815	\$1,534,307	\$201,934
Retaining Walls	\$8,135,862	\$3,864,088	\$162,717
Bridges and Major Culverts	\$151,574,001	\$81,822,841	\$1,515,740
Carparks and Walkways	\$4,464,408	\$3,402,477	\$85,878
Miscellaneous Road Furniture	\$1,228,384	\$597,980	\$87,858
Great Taste Cycle Trail	\$7,206,285	\$6,422,025	\$197,718
Total	\$815,463,521	\$618,323,315	\$9,642,449

Table 42: 2015 / 2017 Water Valuation Comparison

Year	Optimised Replacement Value (\$000)	Optimised Depreciated Replacement Value (\$000)	Annual Depreciation (\$000/yr)
2015	\$749,500,235	\$584,314,795	\$8,787,815
2017	\$815,463,521	\$618,323,315	\$9,642,449
% Increase	9%	6%	10%

Overall the water assets have increased in optimised replacement value by 9% since the 2015 valuations. The increase in the replacement values is due to the following reasons:

- the addition of new assets to the network since 2015;
- inclusion of subdivision surface water channels as wells as increasing unit rate for concrete assets;
- inclusion of subdivision footpaths as wells as increasing unit rate for concrete assets;
- The increase in ORC for Traffic Facilities (9%) and Railings (29%) is due to new assets added to the network.
- The value for Bridges and Major Culverts has increased by 15%. This is the result of major culverts with a cross sectional area greater than 3.4 m² being added to this component.
- Consequently, this has decreased value for Drainage by 2% as these major culverts were valued as normal culverts historically.
- The value for Great Taste Cycle Trail has increased by 28% due to the addition of new assets.

- The value for Drainage has decreased by 2% overall. This results from major culverts which have been classified as bridge culverts being excluded from this component.

9.3 Financial Summary

9.3.1 Funding Impact Statement

Council's Funding Impact Statement (FIS) for this activity is included in the table below. It summarises in one place how this activity will be funded and how those funds will be applied over the next 10 years.

Table 43: Funding Impact Statement

	2017/18 AP \$000	2018/19 Budget \$000	2019/20 Budget \$000	2020/21 Budget \$000	2021/22 Budget \$000	2022/23 Budget \$000	2023/24 Budget \$000	2024/25 Budget \$000	2025/26 Budget \$000	2026/27 Budget \$000	2027/28 Budget \$000
SOURCES OF OPERATING FUNDING											
General rates, uniform annual general charges, rates penalties	11,826	12,029	12,556	13,342	14,025	14,804	16,126	16,285	16,576	17,306	17,567
Targeted rates	0	0	0	0	0	0	0	0	0	0	0
Subsidies and grants for operating purposes	3,486	3,579	3,649	3,675	3,854	3,920	4,104	4,178	4,310	4,349	4,535
Fees and charges	91	158	161	165	170	174	178	183	188	194	199
Internal charges and overheads recovered	0	0	0	0	0	0	0	0	0	0	0
Local authorities fuel tax, fines, infringement fees, and other receipts	959	991	1,012	1,032	1,041	1,061	1,060	1,084	1,098	1,107	1,103
TOTAL OPERATING FUNDING	16,362	16,757	17,378	18,214	19,090	19,959	21,468	21,730	22,172	22,956	23,404
APPLICATIONS OF OPERATING FUNDING											
Payments to staff and suppliers	7,048	7,363	7,668	7,644	7,973	8,129	8,255	8,503	8,819	8,843	9,240
Finance costs	1,739	1,709	1,640	1,787	1,789	1,861	1,775	1,653	1,515	1,359	1,197
Internal charges and overheads applied	1,808	2,176	2,285	2,317	2,309	2,336	2,358	2,448	2,596	2,684	2,749
Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
TOTAL APPLICATIONS OF OPERATING FUNDING	10,595	11,248	11,593	11,748	12,071	12,326	12,388	12,604	12,930	12,886	13,186

	2017/18 AP \$000	2018/19 Budget \$000	2019/20 Budget \$000	2020/21 Budget \$000	2021/22 Budget \$000	2022/23 Budget \$000	2023/24 Budget \$000	2024/25 Budget \$000	2025/26 Budget \$000	2026/27 Budget \$000	2027/28 Budget \$000
SURPLUS (DEFICIT) OF OPERATING FUNDING	5,767	5,509	5,785	6,466	7,019	7,633	9,080	9,126	9,242	10,070	10,218

SOURCES OF CAPITAL FUNDING											
Subsidies and grants for capital expenditure	3,764	3,050	6,641	3,852	3,941	4,256	4,762	4,621	4,720	4,860	4,481
Development and financial contributions	142	433	433	433	400	400	400	461	461	461	884
Increase (decrease) in debt	4,373	(661)	3,049	(1,167)	(1,361)	(1,328)	(4,033)	(1,714)	(3,041)	(3,814)	(3,058)
Gross proceeds from sale of assets	0	0	0	0	0	0	0	0	0	0	0
Lump sum contributions	0	0	0	0	0	0	0	0	0	0	0
Other dedicated capital funding	0	0	0	0	0	0	0	0	0	0	0
TOTAL SOURCES OF CAPITAL FUNDING	8,279	2,822	10,123	3,118	2,980	3,328	1,129	3,368	2,140	1,507	2,307

APPLICATIONS OF CAPITAL FUNDING											
Capital expenditure											
- to meet additional demand	0	0	0	0	0	0	94	690	0	0	0
- to improve the level of service	3,098	393	4,484	2,170	1,638	1,534	939	4,440	1,744	1,075	4,049
- to replace existing assets	11,101	6,250	10,319	6,073	7,278	8,498	9,274	8,033	9,495	10,313	8,813
Increase (decrease) in reserves	(153)	1,688	1,105	1,341	1,083	929	(98)	(669)	143	189	(337)

	2017/18 AP \$000	2018/19 Budget \$000	2019/20 Budget \$000	2020/21 Budget \$000	2021/22 Budget \$000	2022/23 Budget \$000	2023/24 Budget \$000	2024/25 Budget \$000	2025/26 Budget \$000	2026/27 Budget \$000	2027/28 Budget \$000
Increase (decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
TOTAL APPLICATIONS OF CAPITAL FUNDING	14,046	8,331	15,908	9,584	9,999	10,961	10,209	12,494	11,382	11,577	12,525
SURPLUS (DEFICIT) OF CAPITAL FUNDING	(5,767)	(5,509)	(5,785)	(6,466)	(7,019)	(7,633)	(9,080)	(9,126)	(9,242)	(10,070)	(10,218)
FUNDING BALANCE	0	0	0	0	0	0	0	0	0	0	0

9.3.1 Project Drivers

All expenditure must be allocated against at least one of the following project drivers.

- Operation and Maintenance: operational activities that do not involve the renewal or upgrade of assets, or work that is necessary in order to provide on-going services at the agreed levels.
- Renewals: significant work that restores or replaces an existing asset towards its original size, condition or capacity.
- Increase Level of Service: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance.
- Growth: works to create a new asset, or to upgrade or improve an existing asset, beyond its original capacity or performance to provide for the anticipated demands of future growth.

This is necessary for two reasons as follows.

- Schedule 13(1) (a) and section 106 of the Local Government Act require Council to identify the total costs it expects to have to meet relating to increased demand resulting from growth when intending to introduce a Development Contributions Policy.
- Schedule 10(2)(1)(d)(i)-(iv) of the Local Government Act requires Council to identify the estimated costs of the provision of additional capacity and the division of these costs between changes to demand for, or consumption of, the service, and changes to service provision levels and standards.

All new works have been assessed against these project drivers. Some projects may be driven by a combination of these factors and an assessment has been made of the proportion attributed to each driver.

9.3.2 Total Expenditure

The estimated expenditure needs for the transportation activity have been prepared for the next 30 years.

Figure 69 and Figure 70 show the total expenditure for the transportation activity for the first 10 and 30 years respectively.

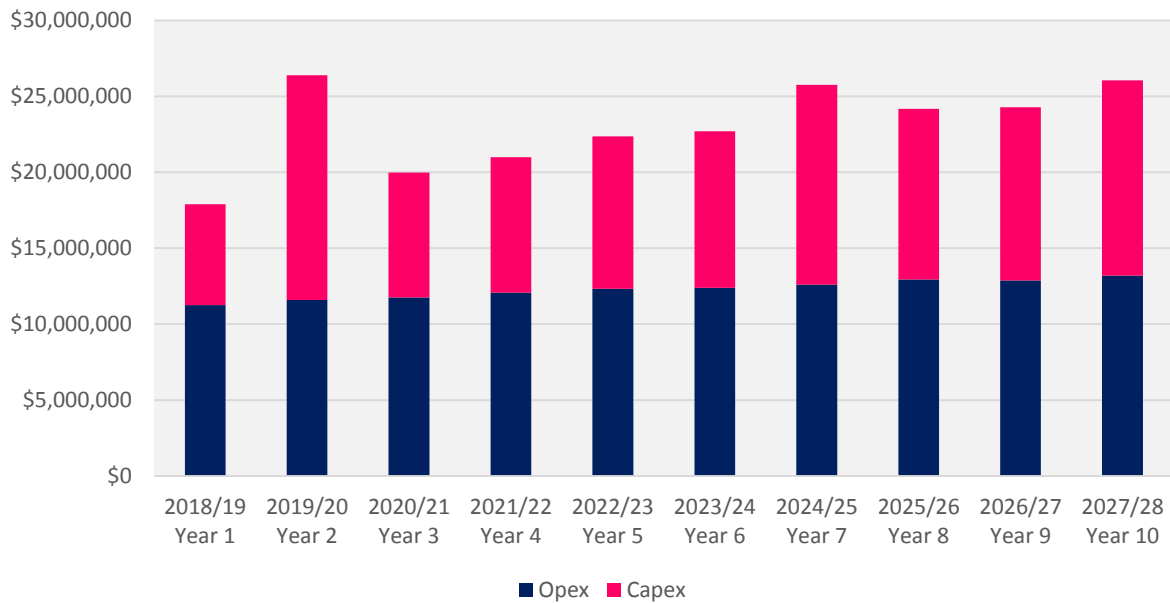


Figure 69: Total Annual Expenditure Years 1 to 10 Including Inflation

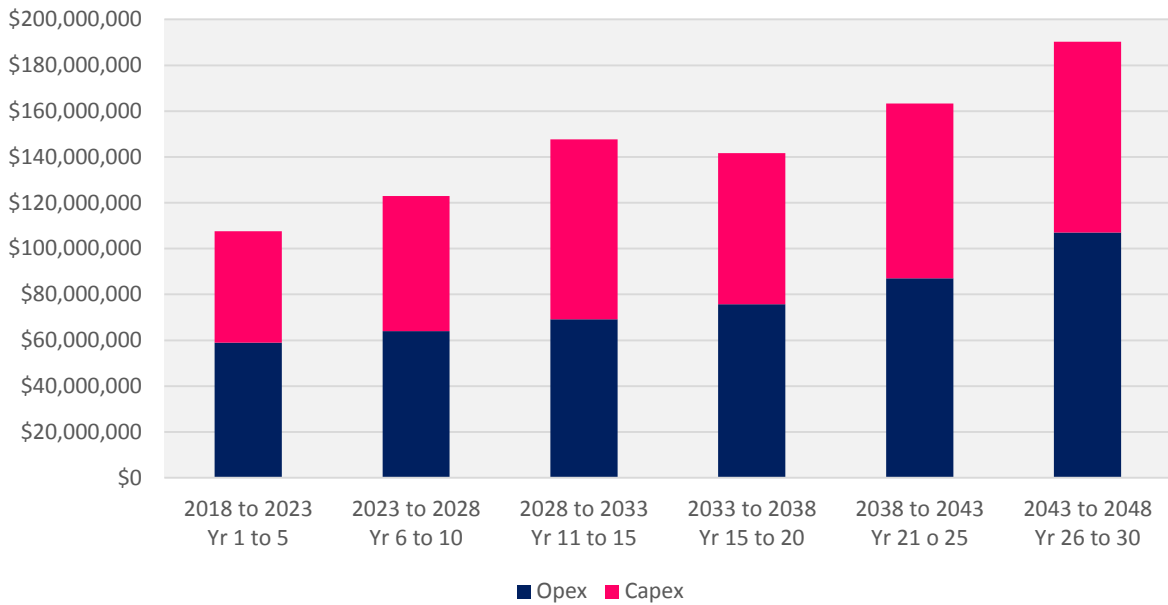


Figure 70: Five Yearly Total Expenditure Years 1 to 30 Including Inflation

9.3.3 Total Income

Figure 71 and Figure 72 show the total income for the transportation activity for the first 10 and 30 years respectively. Rate increases account for the majority of the increase in income.

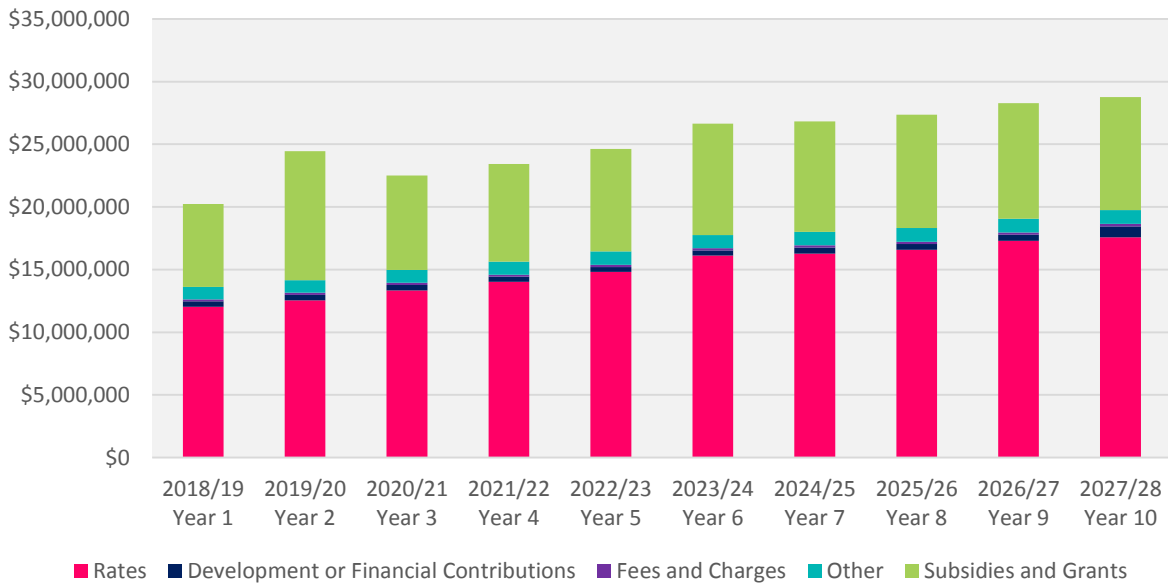


Figure 71: Total Annual Income Years 1 to 10 Including Inflation

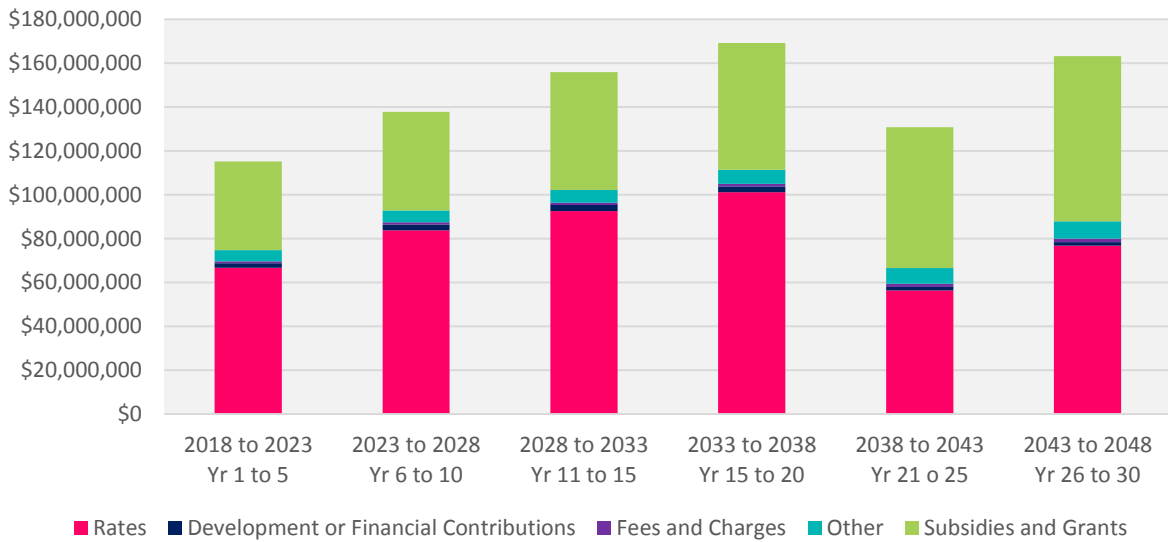


Figure 72: Five Yearly Total Income Years 1 to 30 Including Inflation

9.3.4 Operational Costs

Figure 73 and Figure 74 shows the operational costs for the transportation activity are forecast to increase by around 2% per year for the first 10 years, and 4% per year over 30 years. Direct costs generally increase in line with inflation for the duration of the 30 years. Indirect costs increase with inflation over 30 years, as well as increasing loan interest costs beyond Year 20.

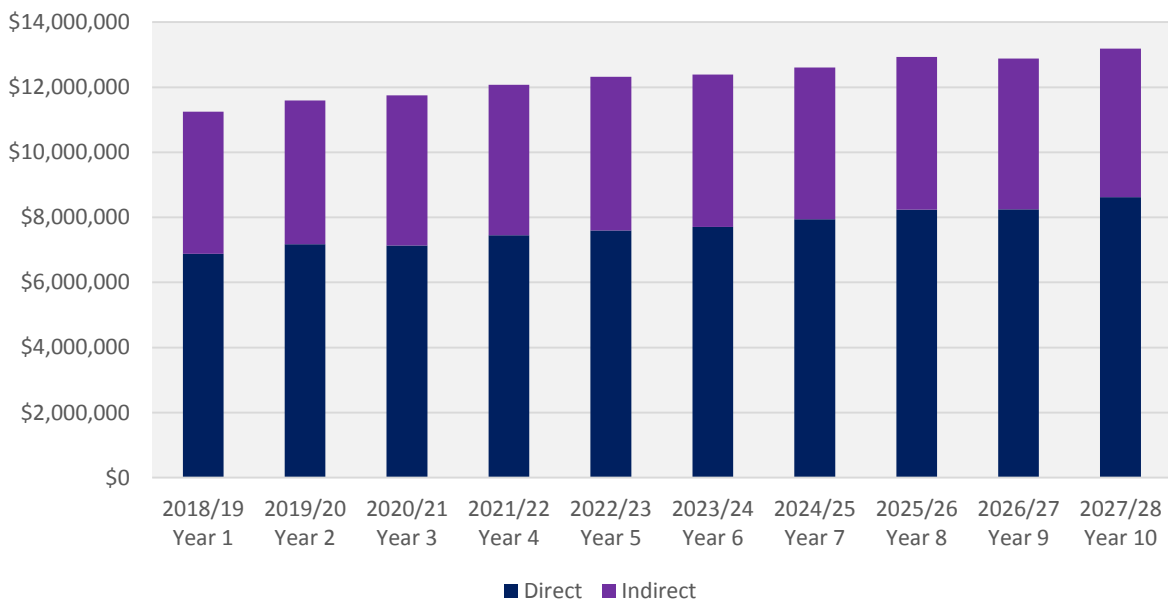


Figure 73: Annual Operating Costs Years 1 to 10 Including Inflation

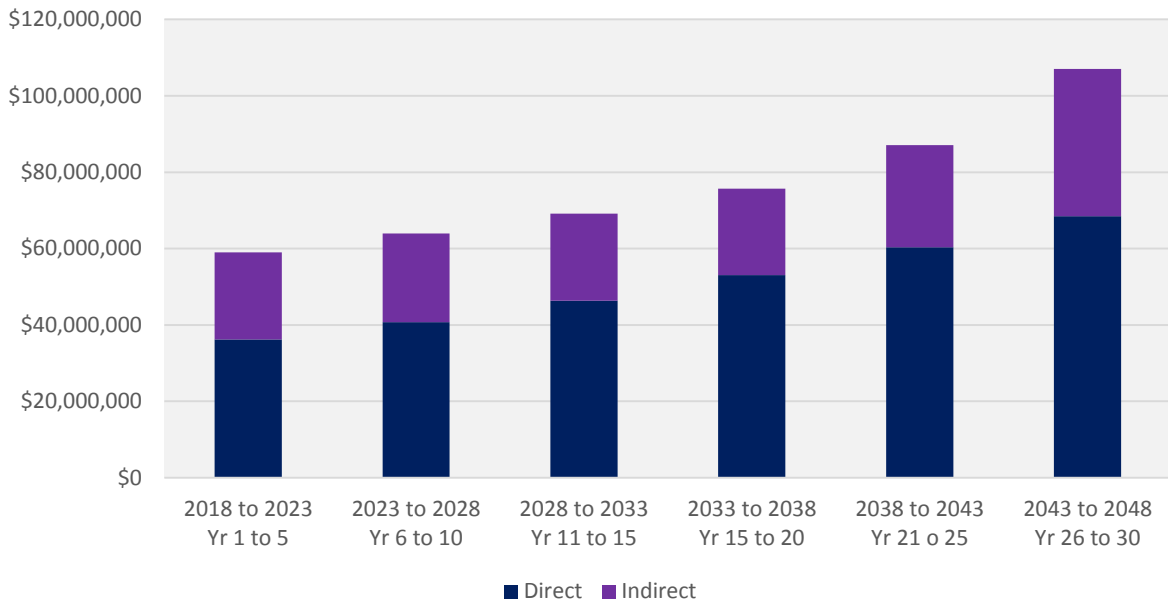


Figure 74: Five Yearly Operating Costs Years 1 to 30 Including Inflation

9.3.5 Capital Expenditure

Figure 75 and Figure 76 show Council plans to spend around \$108 million on capital improvements over the next 10 years. Of this 7% is attributable to growth, 26% for level of service improvements, and 67% for asset renewal. Council's clear priority for the transportation activity is maintaining the condition of the network. Council's capital investment is primarily for renewal and that this investment is steady for the next 30 years.

In Year 7 to Year 10, there is a notable increase in growth expenditure. This is due to the need to upgrade parts of the Richmond ring route, roads and intersection in Richmond West, and Bird Lane in Brightwater. Between Year 11 and Year 15 Council has planned to upgrade Lower Queen Street which accounts for a large portion of growth expenditure required over that timeframe. The small amount of growth funding shown outside of these timeframes largely relates to the growth proportion of the new footpath and kerb and channel works that Council has planned to do each year.

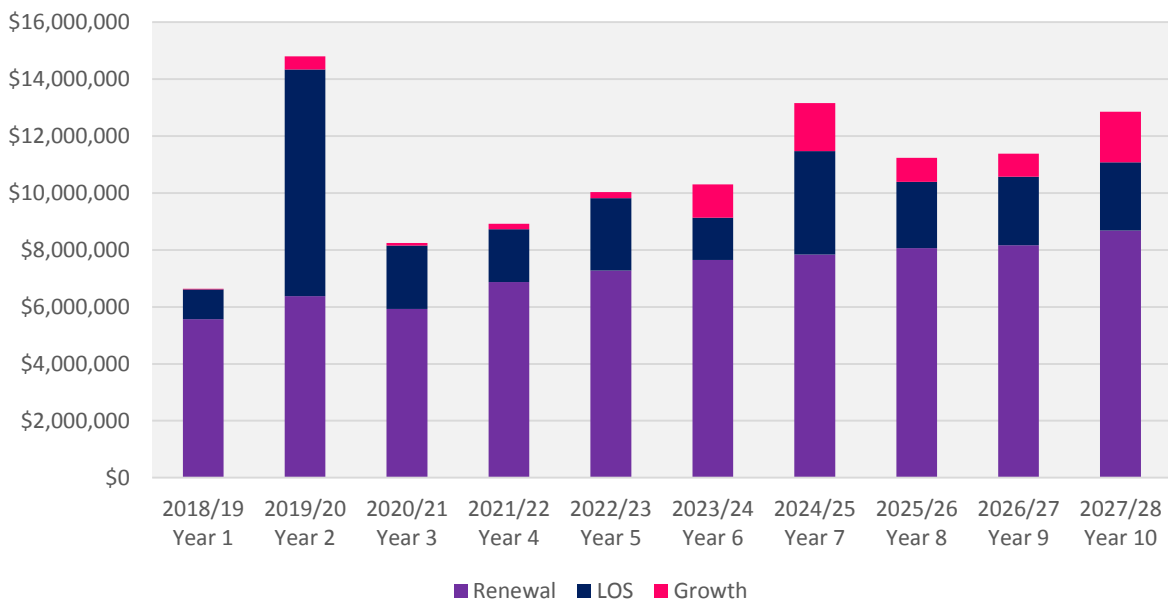


Figure 75: Annual Capital Expenditure Years 1 to 10 Including Inflation

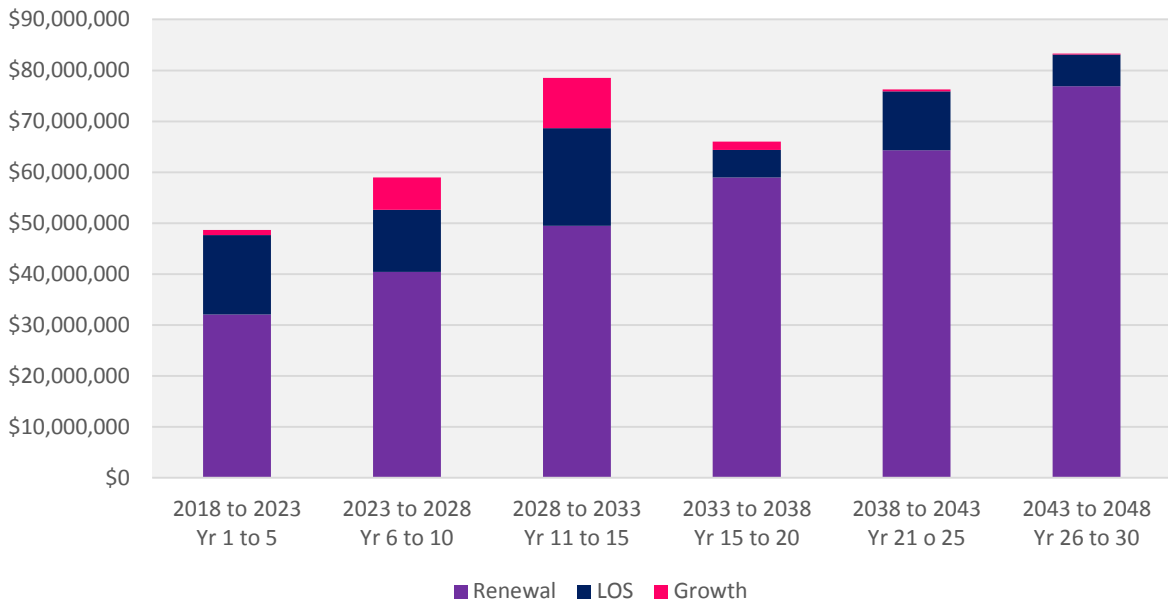


Figure 76: Five Yearly Capital Expenditure Years 1 to 30 Including Inflation

10 Sustainability

Sustainability means that we effectively balance the needs of present and future communities. From an asset management perspective, sustainability is critical, as many assets have a long lifespan **and must be 'future-proofed'**. Council has a responsibility to manage this activity in way that supports the environmental, social, cultural and economic well-being of current and future generations. This section focuses on social, cultural and environmental sustainability.

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting their business, taking into account the current and future needs of communities for good-quality local infrastructure, and the efficient and effective delivery of services.

Sustainable development is a fundamental philosophy that is embraced in the Council's Vision, Mission and Objectives, and is reflected in the Council's community outcomes. The levels of service and the performance measures that flow from these inherently incorporate the achievement of sustainable outcomes.

We measure sustainability against the triple bottom line framework that aims to create a balance between the three dimensions of performance, often referred to as **people, planet and profit (3P's)**.

People – The effects of the activity on the social and cultural wellbeing of our community.

Council is guided by the Community Outcomes to assist in determining how our decisions affect the social wellbeing of our community. Council undertake the activity to meet the level of service that is required to enhance community well-being.

Planet – The effects of the activity on the environment.

Transportation is a significant contributor to all forms of pollution. Council acknowledges this is the case, and uses the resource management process to ensure the right balance is struck to meet the **community's needs**. **Council is actively** encouraging public transport, active transport mode shift and undertakes street cleaning, amongst other initiatives to mitigate some of the effects.

Profit – The financial and overall long-term economic viability of the activity.

Council operates, maintains and improves the water supply infrastructure assets on behalf of its ratepayers. Council uses **its Financial Strategy to guide the development of an affordable work programme. Council's finances are managed** within the set debt limits and rates income rises to ensure economic viability for current and future generations.

This section reviews both the positive and negative effects of this activity and ensure that the negative effects have adequate mitigation measures in place.

10.1 Negative Effects

Potential significant negative effects and the proposed mitigation measures are listed below in Table 44 below.

Table 44: Negative Effects

Effect	Description	Mitigation Measures
Noise Generation	<p>Vehicle use within the network produces noise.</p> <p>Social - The level of noise generated generally depends on the speed of vehicles, and the type of road surface and/or vehicle tyre types.</p>	<p>Council addresses noise generation by selecting suitable road surface materials such as chip seal or asphaltic concrete during the treatment selection process. In the urban areas a smaller size sealing chip or asphalt surfacing may be used to reduce noise. Asphalt is the most expensive; however, it is also the most effective and typically provides a longer surface life than a chip sealed surface.</p> <p>Council can also reduce noise by encouraging slow streets, implementing traffic calming and ensuring the hierarchy of roads is followed in accordance with Council's Engineering Standards.</p>
Light Spill	<p>Council installs lighting in public areas and along roads to improve the safety and amenity of the area.</p> <p>Social – This can have an adverse effect on neighboring properties due to light spill.</p> <p>Environmental – Upward light spill can adversely affect user groups by 'polluting' the night skies.</p>	<p>Council has upgraded all street lighting across the District to new LED lighting. LED lighting provides improved light cut-off and direction control which minimises light spill and upward waste light.</p>
Vehicle Emissions	<p>Vehicles using the road network produce emissions.</p> <p>Environmental – Discharges from motor vehicles have the potential to diminish water quality in adjacent streams from surface water run-off from roads.</p> <p>Air quality can be affected by dust generation from vehicles travelling on unsealed roads.</p>	<p>Compliance with vehicle emission standards is targeted at a national level with requirements for all vehicles to meet during testing for warrant/certificate of fitness.</p> <p>Vehicle emissions are increased under times of acceleration and braking. Council can reduce the effect of this by the using traffic engineering design techniques which encourage smooth traffic flow on the main routes.</p>
Traffic Congestion	<p>Increasing traffic volumes may result in congestion of urban arterial links.</p> <p>Economic – Traffic congestion causes delays to the road users and has the potential to affect the cost of freight.</p>	<p>Council has identified a number of capital projects such as intersection upgrades and the Richmond Network Operating Framework to provide for future traffic flows.</p>
Road Crashes	<p>Social – Road users face potential crashes and associated injury or death.</p>	<p>The detrimental impact of crashes can be reduced through undertaking design of new roads and improvement to existing roads in accordance with best practice design. Council undertakes works so that the risk of crashes is minimised, eg, through the use of protective barriers, clear zones, recovery areas, signs, road marking and inspections and safety audits. Council also aims to prevent crashes by undertaking road and intersection alignment improvements, along with road safety education programmes.</p>

Effect	Description	Mitigation Measures
Community Cost	Economic – The costs of providing transportation services.	Council uses a combination of in house services and competitive tendering processes to achieve best value for money for the works it undertakes. It also uses priority decision making tools to prioritise funding allocations.
Damage to Historic Sites	Cultural – The provision of roads and transportation services has the potential to affect historic and wahi tapu sites.	Council undertakes consultation with the Heritage NZ and local iwi prior to undertaking work. Council also maintains a record of known heritage sites. If a heritage site may be damaged or destroyed due to Council work a Heritage NZ Authority is required.

Policies and strategies for mitigation, monitoring and reporting of those effects are at various stages of development. Where specific resource consent is applicable, reporting is part of the consent process. Safety is addressed at a national and local level of reporting through the location, severity, number and type of crashes in the NZ Transport Agency's CAS database.

10.2 Positive Effects

Potential significant positive effects are listed below in Table 45 below.

Table 45: Positive Effects

Effect	Description
Economic Development	Provision of an efficient road network allows for the movement of freight between key hubs and markets, therefore allowing economic growth and prosperity. A high quality road network that allows access to the National Parks and other destinations encourages and facilitates tourist activities.
Safety and Personal Security	Council aims to improve the safety of the transportation network for all modes of travel, for example this includes the implementation of the Minor Improvements programme and provision of lighting for pedestrians.
Access and Mobility	Council aims to provide a transport system that is integrated with land use planning, optimising access and mobility for all. Providing access also allows emergency services to access the majority of the community with ease.
Public Health	Council's management of the transport network encourages active modes of travel eg, walkways and cycleways which can enhance people's health and well-being.
Environmental Sustainability	Council aims to achieve environmental sustainability whilst managing the transportation activity. This is generally managed by the resource consent process and the Tasman Resource Management Plan.
Economic Efficiency	Council's management of the transportation activity uses best practice and competitive tendering to provide value for money for the ratepayers and provides jobs for contractors. Council manages the transportation assets to optimise the whole of life costs to provide economic efficiency.

10.3 Resource Management

The statutory framework defining what activities require resource consent is the Resource Management Act (RMA) 1991.

The RMA is administered locally by Council, a Unitary Authority, through the Tasman Resource Management Plan (TRMP) which sets out Policies, Objectives and Rules controlling activities to ensure they meet the Purpose and Principles of the RMA.

Council's network of public roads generally has existing use rights or permitted activity status in land use terms. Bridges and other structures in or across rivers, or along the coast were generally authorised prior to the RMA being enacted.

10.3.1 Resource Consents

Resource consents related to the transportation activity are listed in Table 46 below. Please note that the list may not be exhaustive and is subject to change. Short-term consents that are required from time-to-time for construction activities have not been included.

Table 46: Schedule of Current Resource Consents Relating to the Transportation Activity

Location	Consent No.	Consent Type	Effective Date	Expiry Date
District Wide	RM120440	Discharge to Land Permit for Calcium Magnesium Acetate (road de-icing).	28/06/2012	1/10/2037
District Wide	RM080624	Discharge to Land Permit for roadside spraying.	18/03/2009	1/03/2024
Bridge Maintenance	RM161201	Discharge Permit	17/03/2017	5/09/2041

The control of roadside vegetation by spraying of herbicides require a discharge permit.

Additional resource consents may be required to allow for construction works involved with new capital or renewal projects where the scope of the project exceeds the permitted activities set out in the TRMP. A case-by-case assessment is undertaken at the beginning of each project to determine the resource consent requirements and an application is made if necessary.

10.3.2 Resource Consent Reporting and Monitoring

Council aims to achieve compliance with all consents and/or operating conditions. BraveGen, a consent database is maintained to allow for the accurate programming of all actions required by the consents, including renewal prior to consent expiry. The database is actively updated to ensure all consent conditions are complied with and that all relevant report requirements are adhered to.

10.3.3 Property Designations

A number of existing designation for transportation purposes expire in 2018. These are being reviewed to ensure Council has the right designation in place to protect important road corridors to cater for future growth and network needs.

The Richmond Network Operating Framework (NOF) may identify the need for new designations. These will also be sought in 2018.

11 Risk Management and Assumptions

This AMP and the financial forecasts within it have been developed from information that has varying degrees of completeness and accuracy. In order to make decisions in the face of these uncertainties, assumptions have to be made. This section documents the uncertainties and assumptions that Council considers could have a significant effect on the financial forecasts, and discusses the potential risks that this creates.

11.1 Our Approach to Risk Management

A risk is any event that has the potential to impact on the achievement of Council's objectives. The potential impact of a risk is measured by a combination of the likelihood it could occur, and the magnitude of its consequences on objectives. Council adopted a Risk Management Policy in November 2017 and is in the process of improving our risk management processes. The main purpose of these improvements is to support better planning and decision-making, and to increase the chance of achieving Council's objectives.

Council's Risk Management Framework is still being developed but key components will be:

- a) Risk Categories:
 - Service delivery
 - Financial
 - Governance and Leadership
 - Strategic
 - Reputation
 - Legal
 - Regulatory
 - Health & Safety
 - Security
 - Business Continuity
- b) Table of Consequences which help set the Risk Appetite
- c) Enterprise Risk Register
 - identifying risks
 - measuring likelihood, consequence and severity
 - documenting controls, actions and escalation
- d) Monitoring and Reporting, including to Senior Management and Audit and Risk Committee as appropriate

Council has adopted an approach to risk management following the Australian/New Zealand Standard ISO 31000:2009 Risk Management – Principles and guidelines.

Refer to Council's Risk Management Policy for further information.

11.2 Activity Risks and Mitigation

The key risks relevant to the transportation activity are summarised in Table 47 below.

Table 47: Key Risks

Risk Event	Mitigation Measures
Catastrophic failure of a network structure.	<p>Current:</p> <ul style="list-style-type: none"> • routine maintenance and inspections are included in the network road maintenance contracts; • detailed inspections are completed for the entire bridge and retaining wall network every two years; • reactive inspection following extreme weather events. <p>Proposed:</p> <ul style="list-style-type: none"> • Bridge rating assessments for bridges and retaining walls that have not yet been rated and where inventory is not well known.
Premature deterioration or obsolescence of an asset.	<p>Current:</p> <ul style="list-style-type: none"> • maintenance performance measures included in the network maintenance contracts; • routine inspections; • street light replacements are LED.
Sub-optimal design and/or construction practices or materials.	<p>Current:</p> <ul style="list-style-type: none"> • NZ Transport Agency material inspections; • contract quality plans; • professional services and construction contract specifications; • third party reviews. <p>Proposed:</p> <ul style="list-style-type: none"> • Ongoing staff training.
Ineffective stakeholder engagement e.g. iwi, Heritage NZ, community groups.	<p>Current:</p> <ul style="list-style-type: none"> • Council holds regular iwi meetings; • Council's GIS software includes layers identifying cultural heritage sites and precincts. Council staff apply for Heritage NZ authorities when these known sites are at risk of damage or destruction; • project management processes and Council's consultation guidelines are followed.
Failure to gain property access.	<p>Current:</p> <ul style="list-style-type: none"> • stakeholder management; • works entry agreements; • use of Council's property team to undertake land purchase negotiations; • Public Works Act.

An asset management improvement item included in Section 13.3 is to implement Council's new risk management framework.

11.2.1 Natural Hazards and Resilience

The size and diverse nature of the Tasman landscape makes the region susceptible to a wide range of natural hazards. Tasman lies within a seismically active zone, has five major river catchments and a large coastal environment. As a result, Tasman residents have experienced the damaging effects of landslides, flooding and coastal inundation.

Some hazards have a slower onset period, for example sea level rise associated with the effects of climate change, and other hazards such as earthquakes can have little to no warning. Regardless of these timeframes, Council needs to plan for these hazards and determine whether adaptation, mitigation, or retreat is appropriate.

Council’s Infrastructure Strategy provides details of the relevant natural hazards in context to Council infrastructure and outlines how we intend to manage risk and improve resilience. In addition to this, the Regional Civil Defence Emergency Management Group Plan provides a risk profile that outlines and ranks these natural (and other) hazards. The risk assessment determines the likelihood and consequence of the hazard occurring ranges between low to very high likelihood and insignificant to catastrophic consequences. For example on the extreme end of the scale, an Alpine Fault earthquake is considered possible and would result in catastrophic consequences for both people and infrastructure.

Council needs to ensure it has robust planning in place and provides infrastructure that is resilient. Council is taking a long term strategic approach by undertaking risk, resilience and recovery planning to provide better information on infrastructure resilience requirements. This planning will cover Transportation and Three Waters activities and includes a total budget of \$160,000 over the next two years (2018-20). Council will also continue to focus on planning and managing its critical assets and lifelines networks to ensure that the appropriate level of effort is being made to better manage, maintain and renew them.

As well as ensuring its assets are resilient, Council has a range of financial provisions to assist with response to and recovery from major damaging events. These include:

- Annual emergency funding;
- An established Emergency Fund that Council aims to maintain to a value of \$12.8 million;
- Ability to reprioritise Council’s capital programme;
- Insurance cover of 40% of the costs of a catastrophic disaster event, up to \$125m;
- Central Government support of up to 60% through the Local Authority Protection Programme;
- NZ Transport Agency subsidy of at least 51% for subsidies transportation asset reinstatement.

11.3 Assumptions and Uncertainties

This section documents the uncertainties and assumptions that Council considers could have a significant effect on the financial forecasts, and discusses the potential risks that this creates as seen in Table 48 below.

Table 48: Generic Assumption and Uncertainties

Type	Uncertainties	Assumption	Discussion
Financial	Unless stated it can be unclear whether financial figures include inflation or not, as well as whether GST has been included or not.	That all expenditure has been stated in 1 July 2017 dollar values and no allowance has been made for inflation and all financial projections exclude GST unless specifically stated.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of each activity if inflation is higher than allowed for. Council is using the best information practically available from Business and Economic Research Limited (BERL) to reduce this risk.
Asset Data Knowledge	Council has inspection and data collection regimes in place for assets. These regimes do not allow for entire network coverage at all times. Council’s aim is to strike the right balance between adequate knowledge and what is practical.	That Council has adequate knowledge of the assets and their condition so that planned renewal works will allow Council to meet the proposed levels of service.	There are several areas where Council needs to improve its knowledge and assessments, but there is a low risk that the improved knowledge will cause a significant change to the level of expenditure required.

Type	Uncertainties	Assumption	Discussion
Growth Forecasts	Growth forecasts are inherently uncertain and involve many assumptions. Council uses Stats NZ projections as the basis for its growth planning, but these will vary depending on actual birth and death rates as well as net migration.	That the District will grow or decline as forecast in its Growth Model.	Growth forecasts are used to determine infrastructure capacity and when that capacity will be required. If actual growth varies significantly from what was projected, it could have a moderate impact on Council's plans. If higher, new or additional infrastructure may be required quicker than anticipated. If lower, Council may be able to defer the delivery of new or additional infrastructure.
Project Timing	Multiple factors affect the actual timing of projects e.g.: <ul style="list-style-type: none"> • Consents • Access to land • Population growth Timing of private developments	That projects will be undertaken when planned.	The risk of the timing of projects changing is high due to factors like resource consents, third party funding, and land acquisition and access. Council tries to mitigate these issues by undertaking the investigation, consultation and design phases sufficiently in advance of when construction is planned. If delays occur, it could have an impact on the levels of service and Council's financing arrangements.
Project Funding	Council cannot be certain that it will receive the full amount of anticipated subsidy or contribution. It depends on the funder's decision making criteria and their own ability to raise funds.	That projects will receive subsidy or third party contributions at the anticipated levels.	The risk of not securing funding varies and depends on the third party involved. If the anticipated funding is not received it is likely that the project will be deferred which may impact levels of service.
Accuracy of Cost Estimates	Project scope is often uncertain until investigation and design work has been completed, even then the scope can change due to unforeseen circumstances. Even if the scope has certainty there can be changes in the actual cost of work due to market competition or resource availability.	That project cost estimates are sufficiently accurate enough to determine the required funding level.	The risk of large underestimation is low; however, the importance is moderate as Council may not be able to afford the true cost of the project. Council tries to reduce this risk by undertaking reviews of all estimates and including an allowance for scope risk based on the complexity of the project.

Type	Uncertainties	Assumption	Discussion
Land Access and Acquisition	<p>Land access and acquisition is inherently uncertain.</p> <p>Until negotiations commence, it is difficult to predict how an owner will respond to the request for access or transfer.</p>	That Council will be able to secure land and/or access to enable completion of projects.	The risk of delays to projects or changes in scope is high due to the possibility of delays in obtaining access. Where possible, Council undertakes land negotiations well in advance of construction to minimise delays and scope change. If delays do occur, they may affect the level of service that Council provides.
Legislation Changes	Often Central Government changes legislation in response to events where the need for change is identified. It is difficult to predict what events may occur and the associated response. Election of a new Government also introduces uncertainty as to what policies they will implement.	That there will be no major changes in legislation or policy.	The risk of major change is high due to the changing nature of the Government and its policies. If major changes occur, it is likely to have an impact on the required expenditure. Council has not planned expenditure to specifically mitigate this risk.
Emergency Reserves	It is impossible to accurately predict when and where a natural hazard event will occur. Using historic trends to predict the future provides an indication but is not comprehensive.	That the level of funding reserves combined with insurance cover will be adequate to cover reinstatement following emergency events.	Funding levels are based on historic requirements. The risk of requiring additional funding is moderate and may have a moderate effect on planned works due to reprioritization of funds.
Network Capacity	Council uses a combination of as built data, network modelling and performance information to assess network capacity. The accuracy of the capacity assessment is based on the accuracy of asset and performance data.	That Council's knowledge of network capacity is sufficient enough to accurately programme works.	If the network capacity is higher than assumed, Council may be able to defer works. The risk of this occurring is low; however, it should have a positive impact on the community because the level of service can be provided for longer before requiring additional capital expenditure. If the network capacity is lower than assumed, Council may be required to advance capital works projects to provide the additional capacity sooner than anticipated. The risk of this occurring is low; however, it could have a significant impact on expenditure.

Table 49: Transportation Specific Assumptions and Uncertainties

Type of Uncertainty	Description
Resources Consents	<p>The need to secure and comply with resource consents can materially affect asset activities and the delivery of capital projects.</p> <p>The need to comply with resource consent conditions can affect the cost and time required to perform an activity. In some instances it determines whether or not the activity can continue. Council has assumed that there will be no material change in operations due to consenting requirements over the period of the AMP.</p> <p>There may be some risk of change in requirements for roadside spraying as the current consent is due to expire in 2024.</p> <p>Securing resource consents is often a significant task in the successful delivery of a capital project or in the management of a particular facility. Consent applications may consume considerable time and resources, particularly in the instance of a publically-notified application or where a decision is subject to appeal.</p> <p>Council has assumed that there will be no material change in the need to secure consents for construction activities and that consent costs for future projects will be broadly in line with the cost of consents in the past.</p>
Transport Government Policy Statement	<p>The draft Government Policy Statement (GPS) was released on April 2018. This statement, gave the issues that the Ministry of Transport wanted to prioritise for the next three years. The GPS is in draft form at the time of writing this document and as such this document is predicated on no or insignificant changes to the final GPS.</p>
Richmond Network Operating Framework	<p>Council is currently undertaking a study of the transportation network in Richmond in conjunction with Nelson City Council and NZ Transport Agency. The study is currently in the processes of modelling current and future developments. The capital programme has been developed based on the work undertaken to date that assesses the current level of service of primary and secondary routes for different transport modes against the current levels of service. Council assumes that once the Framework is complete, that the scope and cost of the individual projects will not materially change and that the planned budgets will be sufficient.</p>
Significant Natural Hazard	<p>The maintenance and renewal programmes assume that there will be no natural hazard events that the emergency reserve fund cannot cover the costs of remediation. Should such an event happen, the wider programme of work will be superseded by recovery works.</p>
Technology Shift	<p>Until now, self-drive vehicles have been the predominant form of transport throughout the District. In recent years, significant investment has been made in new technologies that have potential to change how vehicles operate and the demands that they may place on the road network. In the future, it is likely that driverless automated vehicles become commonplace. Council assumes that these changes in technology will not significantly impact the way the transportation network functions.</p>

12 Asset Management Processes and Practices

Good quality data and asset management processes are the heart of effective planning. This section outlines our approach to asset management, our processes, and provides an overview of our data management systems and strategies that underpins the transportation activity.

12.1 Appropriate Practice Levels

The Office of the Auditor General (OAG) has chosen to use the International Infrastructure Management Manual (IIMM) as the benchmark against which New Zealand councils measure their activity management practices. There are five maturity levels in the IIMM: Aware, Basic, Core, Intermediate and Advanced. The IIMM sets out what the requirements are for each level against each area of the activity management system.

In 2017, Council reviewed its Activity Management Policy and adopted an updated version. The Policy sets out Council's activity management objectives and appropriate levels of practice. For the transportation activity Council has determined that the appropriate level of practice is intermediate with advanced level of practice for demand forecasting, asset register data and asset condition

12.2 Service Delivery

12.2.1 Activity and Asset Management Teams

Council has an organisational structure and capability that supports effective asset management planning. Multiple teams across Council are responsible for the different aspects of activity and asset management. The focus of the teams ranges from a strategic focus at the Long Term Plan/Infrastructure Strategy level which involves a cross-Council team, through to detail/operational focus at the Operational team level.

Within the Engineering Services department, the asset management planning function is managed by the Activity Planning team. Operations are the responsibility of the Utilities and Transportation teams, while Projects and Contracts are managed by the Programme Delivery team.

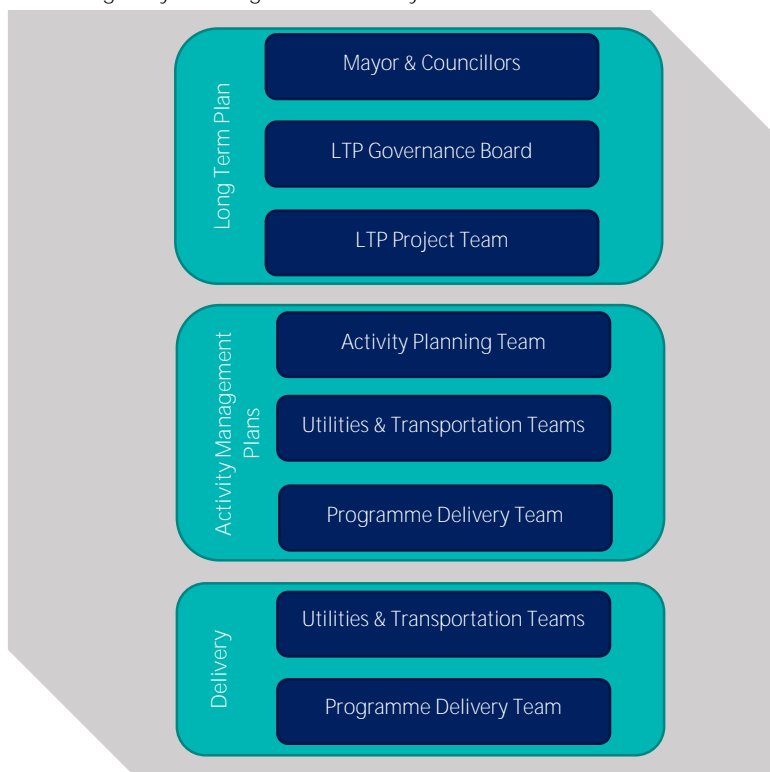


Figure 77: Teams Involved in Activity and Asset Management

The Activity Planning Team is responsible for the update of the activity management plans every three years, as well as implementation of the improvement plan. Each plan is assigned to the respective Activity Planning Advisor who is responsible for updating it. **The Activity Planning Advisor works in with the activity's Asset Engineer to ensure that the current and future operating and maintenance aspects of the activities are adequately incorporated into the document.** All activity management plans are reviewed by the Activity Planning Programme Leader who holds a National Diploma in Infrastructure Asset Management. The quality assurance process for the Engineering Services activity management plans is provided below.

- Preparation Activity Planning Advisor
- Check Utilities or Transportation Manager, and relevant Asset Engineer
- Review Activity Planning Programme Leader
- Approve Engineering Services Manager
- Adopt Full Council

12.2.2 Staff Training

Council maintains an annual budget for staff training that is managed by the Engineering Services Manager for the Engineering Services department. This budget allows for continued development of staff to ensure that best practice is maintained and that Council retains the skills needed to make improvements in asset management practices. This includes on-going technical and professional training as well as specific asset management training.

12.2.3 Professional Support

The Engineering Services Department has a need to access a broad range of professional service capabilities to undertake investigation, design and procurement management in support of its significant transport, utilities, coastal management, flood protection and solid waste capital works programme, as well as support with activity management practice. There is also a need to access specialist skills for design, planning and policy to support the in-house management of Council's networks, operations and maintenance.

To achieve this Council went to the open market in late 2013 for a primary professional services provider as a single preferred consultant to undertake a minimum of 60% in value of Council's **infrastructure professional services** programmes. The contract was awarded to MWH New Zealand Ltd (now Stantec NZ), beginning on 1 July 2014 with an initial three-year term and two three-year extensions to be awarded at Council's **sole discretion**. **In 2017, the first of these discretionary three-year extensions was granted, with the proportion of Council's professional services programmes reduced to 50%.** In addition to this, a secondary professional service panel was also appointed through an open market tender process for a period of three years, to provide professional services that will not be supplied by Stantec.

12.2.4 Procurement Strategy

Council has a formal Procurement Strategy that it follows in order to engage contractors and consultants to assist the Engineering Services department. This strategy has been **prepared to meet NZ Transport Agency's requirements for** expenditure from the National Land Transport Fund, and it describes the procurement environment that exists within the Tasman District. It was developed following a three-year review of the strategy and was approved in November 2013. It principally focuses on Engineering Services activities but is framed in the NZ Transport Agency procurement plan format, which is consistent with whole-of-government procurement initiatives. A review of the strategy was commenced in 2017/18.

12.2.5 Service Delivery Reviews

In 2014, Section 17A was inserted into the Local Government Act which requires Council to review the cost effectiveness of its current arrangements for providing local infrastructure, services, and regulatory functions at regular intervals. Reviews must be undertaken when service levels are significantly changed, before current contracts expire, and in any case not more than six years after the last review. In addition to the regular reviews, the Act requires Council to complete an initial review of all functions by August 2017.

Table 50 below summarises the reviews that have been completed to date and when the next review is required for this activity.

Table 50: Summary of Reviews

Scope of Review	Summary of Review	Review Date	Next Review
Transport maintenance service delivery	An initial review found the current maintenance structure is still the most cost-effective option for the delivery of governance, funding and service delivery. Additionally, Council continue to be involved in any regional initiatives around the delivery of various functions within the transportation activity	August 2017	2022

In addition to the Section 17A reviews, the Engineering Services department reviewed its current capability and capacity against the requirements of the future programmes of work set out in its activity management plans. To enhance the department's ability to deliver the capital works programme the following actions have been taken:

- undertaken a detailed review of the capital programme for the next five years to better understand project complexities and delivery requirements;
- implemented Planview a new project management system to track and report project delivery progress;
- increased the number of Project Managers from 4 to 5.5 full time equivalent staff resources;
- introduced enhanced performance requirements for our lead technical consultant for delivery of technical advice and engineering design;
- tendered for a new supporting professional services panel with enhanced performance requirements.

12.2.6 Management

The transport activity is the responsibility of the Transportation Manager, who reports to the Engineering Services Manager, who reports to the Chief Executive.

A Road Maintenance Programme Leader, Road Operations and Safety Co-ordinator, three Road Engineers, a Technical officer and Administration Officer report to the Transportation Manager. These positions are employed by Council within an internal business unit of Council, and deliver the operations, maintenance and renewals programmes.

Activity planning is undertaken by the activity planning team which is charged with strategic planning and policy development, asset data management, managing the impact of new development on infrastructure and providing regulatory services associated with the RMA to the rest of Engineering Services. The activity planning manager reports to the Engineering Services Manager.

Capital works is primarily delivered through a Programme Delivery team who provide project management services to the transport team, and report to the Engineering Services Manager. The design, specification and construction monitoring of capital and major renewal work is generally outsourced.

All professional services and physical works associated with the transport activity is procured in accordance with Council's NZTA approved Procurement Strategy.

12.2.7 Governance

The Tasman District Council comprises a Mayor and 13 Councillors, which provide governance for the transportation activity within the Tasman District. As a unitary authority, Council is also represented on the Tasman Regional Transport Committee. Tasman, Nelson and Marlborough Councils have aligned their Regional Land Transport Plans to produce a combined Top of the South Regional Land Transport Plan.

12.2.8 Smart Buyer Self-Assessment

The Road Efficiency Group (REG) through the Procurement sub-committee determined that expertise and understanding of delivery models, industry practices and understanding the whole cost of maintenance creates 'Smart Buyers'. Smart Buyers have a better chance of making sound and informed decisions during maintenance contracts renewal and often have better outcomes. REG developed a Smart Buyer Assessment to assist Road Controlling Authorities to determine where they can make improvements. This assessment has been undertaken by Council and results are shown in Table 51 below.

Table 51: Smart Buyer Assessment

Assessment statement	1	2	3	4	5
<p>Our organisation:</p> <p>1. Fully understands the different contracting models available.</p> <p>While we collectively understand the different models, and are familiar with the REG model selection guidance, most staff do not have direct experience of operating some of the models in the road maintenance environment – for example alliances.</p>				✓	
<p>2. Holds meetings that update the contracting industry on the forward works programme and any changes in approach, and proactively engages with the contracting industry to ensure it gains optimal value from any changes being implemented.</p> <p>We have regular, formal meetings with the local branch of Contractor's Federation to inform them of the forward works programme and discuss industry issues.</p>					✓
<p>3. Has sufficient robust data (or is in the process of gathering robust data) on our networks to enable optimal integrated decision-making.</p> <p>We have reasonably good coverage of our network by High Speed Data, FWD strength data. We have a significant traffic counting programme. DTIMS is used to test and refine investment decisions.</p>				✓	
<p>4. Has access to expertise that fully enables best use of the data available.</p> <p>The internal team has good capability with support from external specialists as required. Data-led decision making is part of how we do business.</p>					✓
<p>5. Is open to alternative solutions to those proposed in the contract documents.</p> <p>We maintain ongoing open conversations with suppliers regarding contract conditions and specifications to seek out best value. For example, unsealed metalling where alternative materials are actively sought, tested and valued.</p>					✓
<p>6. Understands risk and how to allocate and manage it.</p> <p>Risks are always a consideration when making decisions around investment, as well as with supplier engagement. For example, key risks are identified and allocated within our maintenance contracts.</p>				✓	
<p>7. Has a Council that is prepared to pay more now to achieve a lower whole of life cost.</p> <p>Council have invested in upgrading our streetlights to LED.</p>				✓	
<p>8. Actively pursues value for money & does not always award contracts to the lowest price.</p> <p>Our supplier selection methods for key activities like road maintenance mainly involve the use of the Price Quality Method with high weighting on non-price attributes – most recently 60% for C1096.</p>					✓

Assessment statement Our organisation:	1	2	3	4	5
<p>9. Is able to manage supplier relationships/contracts to ensure optimal expenditure, which sustains infrastructural assets at appropriate levels of service.</p> <p>Excellent relationships are maintained with suppliers through regular formal and informal meetings at various levels within the respective organisations.</p>					✓
<p>10. Supports ongoing skill and competency training and development for staff.</p> <p>Very low barriers to staff being able to access training opportunities, and staff regularly attend industry events including conferences. However, as an organisation we could sometimes be more proactive in identifying opportunities.</p>				✓	
<p>11. Actively shares and gains knowledge within the sector.</p> <p>Various staff are active in sector initiatives such as Road Efficiency Group (REG).</p>					✓
<p>12. Is effective in keeping up with best practice in procurement, including best practice RFP/contract documentation.</p> <p>Staff keep up with this through involvement with REG.</p>					✓
<p>13. Regularly seeks and receives candid feedback from suppliers on its own performance as a client and consistently looks to improve its performance.</p> <p>We encourage suppliers to give us feedback in an informal way.</p> <p>Our good supplier relationships enable conversations around performance improvements.</p>					✓
<p>14. Explores opportunities for collaboration by either sharing in-house resources with neighbours, or by procuring together or tendering together. That exploration could be through an LGA s17A evaluation of transport function delivery options.</p> <p>We actively seek out collaborative opportunities and demonstrated this recently with a joint process with NCC procuring road maintenance contracts. We have an active TAG for the Top of the South and prepare a joint RLTP with Nelson and Marlborough.</p>					✓
Number of ticks in each column				5	9
Multiplying factor	x1	x2	x3	x4	x5
Total Score in Column				20	45
Total Score	65				

A score of 65 in this assessment show that Council are smart transportation buyers and have good processes, expertise and training for achieving good value for money in the transportation activity. This assessment also indicates that there are some areas that Council can make improvements.

12.3 Asset Management Systems and Data

12.3.1 Information Systems and Tools

Council has a variety of systems and tools that support effective operation and maintenance, record asset data, and enable that data to be analysed to support optimised life-cycle management. These are detailed below in Figure 78. There is a continual push to incorporate all asset data into the core asset management systems where possible; where not possible, attempts are made to integrate or link systems so that they can be easily accessed.

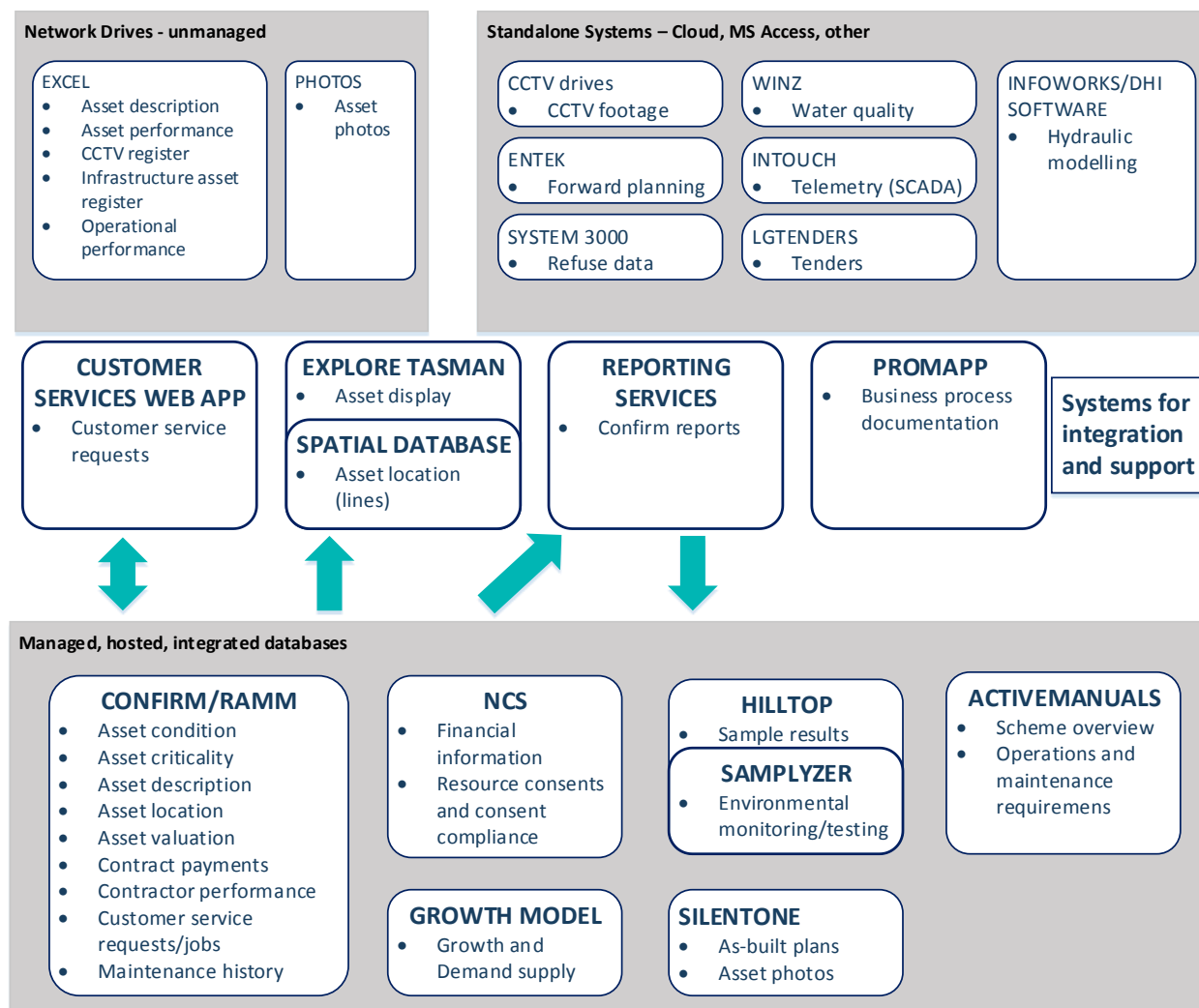


Figure 78: Systems Used for Asset Management

12.3.2 Asset Data

Table 52 summarises the various data types, data source and how they are managed within Council. It also provides a grading on data accuracy and completeness where appropriate.

Table 52: Data Types and Information Systems

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
As-built plans	SilentOne	As-built plans are uploaded to SilentOne, allowing digital retrieval. Each plan is audited on receipt to ensure a consistent standard and quality.	2	2

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
Asset condition	Confirm/RAMM	Assets are inspected by a consultant or staff and the inspection information is entered directly into RAMM using the Confirm Connect and Pocket RAMM mobile applications.	N/A	N/A
Asset criticality	Confirm/RAMM	When a new asset is created, the activity planner and engineer will make an assessment on criticality. Criticality of asset can be modified by authorized users should circumstances change.	4	3
Asset description	RAMM / Confirm	All assets are captured in RAMM or Confirm's Site and Asset modules, from as-built plans and maintenance notes. Hierarchy is defined by Site and three levels of Asset ID (whole site, whole asset or asset). Assets are not broken down to component level except where required for valuation purposes. It is also possible to set up asset connectivity, but this hasn't been prioritised for the future yet.	2	2
Asset location	RAMM (point data) / GIS (line data)	Co-ordinates for point data completely (NZTM) describe spatial location. Line data links to GIS layers that describe the shape.	2	2
Asset valuation	Confirm/RAMM	Valuation of assets done based on data in Confirm and valuation figures stored in Confirm.	2	2
Contract payments	Confirm/RAMM	All maintenance and capital works contract payments are done through Confirm. Data on expenditure is extracted and uploaded to NCS.	N/A	N/A
Contractor performance	Confirm/RAMM	Time to complete jobs is measured against contract KPIs through Confirms Maintenance Management module.	N/A	N/A
Corporate GIS browser	Explore Tasman	Selected datasets are made available to all Council staff through this internal GIS browser via individual layers and associated reports.	N/A	N/A
Customer service requests	Customer Services Application / Confirm	Customer calls relating to asset maintenance are captured in the custom-made Customer Services Application and passed to Confirm's Enquiry module or as a RAMM Contractor Dispatch.	N/A	N/A
Financial information	NCS	Council's corporate financial system is NCS, a specialist supplier of integrated financial, regulatory and administration systems for Local Government. Contract payment summaries are reported from Confirm and imported into NCS for financial tracking of budgets. NCS also holds Water billing information, while asset details and spatial component are recorded in Confirm and cross-referenced.	N/A	N/A
Infrastructure Asset Register	Spreadsheet	High level financial tracking spreadsheet for monitoring asset addition, disposals and depreciation. High level data is checked against detail data in the AM system and reconciled when a valuation is performed.	2	2

Data Type	Information System	Management strategy	Data Accuracy	Data Completeness
Forward planning	Spreadsheets, GIS Mapping	Forward programmes for Council's activities are compiled in excel, These are loaded onto GIS based maps for information and in order to identify clashes and opportunities.	N/A	N/A
Growth and Demand Supply	Growth Model	A series of linked processes that underpin Council's long term planning, by predicting expected development areas, revenues and costs, and estimating income for the long term.	2	2
Hydraulic modelling	Infoworks / DHI Software	Models have been developed for a number of schemes and catchments. Copies of the models are held on Council's network drives.	2	4
Maintenance history	Confirm/RAM M	Contractor work is issued via Confirms Maintenance Management module. History of maintenance is stored against individual assets. Prior to 2007 it was logged at a scheme level.	2	2
Photos	Network drives / SilentOne	Electronic photos of assets are mainly stored on Council's network drives. Coastal Structures and Streetlight photos have been uploaded to SilentOne and linked to the assets displayed via Explore Tasman.	N/A	N/A
Processes and documentation	Promapp	Promapp is process management software that provides a central online repository where Council's process diagrams and documentation is stored. It was implemented in 2014 and there is a phased uptake by business units.	2	5
Resource consents and consent compliance	NCS / Brave Gen	Detail on Resource Consents and their compliance of conditions (e.g. sample testing) are recorded in the NCS Resource Consents module.	2	2
Reports	Confirm Reports	Many SQL based reports from Confirm and a few from RAMM are delivered through Confirm Reports. Explore Tasman also links to this reported information to show asset information and links (to data in SilentOne and NCS).	N/A	N/A
Tenders	LGTenders	Almost all New Zealand councils use this system to advertise their tenders and to conduct the complete tendering process electronically.	N/A	N/A

Table 53: Asset Data Accuracy and Completeness Grades

Grade	Description	% Accurate
1	Accurate	100
2	Minor inaccuracies	± 5
3	50% estimated	± 20
4	Significant data	± 30

Grade	Description	% Complete
1	Complete	100
2	Minor gaps	90 – 99
3	Major gaps	60 – 90
4	Significant gaps	20 – 60

	estimated	
5	All data estimated	± 40

5	Limited data available	0 – 20

12.4 Critical Assets

Knowing what's most important is fundamental to managing risk well. By knowing this, Council can invest where it is needed most, and it can tailor this investment at the right level. This will avoid over investing in assets that have little consequence of failure, and will ensure assets that have a high consequence of failure are well managed and maintained. For infrastructure, this is knowing Tasman's critical assets and lifelines. These typically include:

- Arterial road links including bridges
- Water and wastewater treatment plants
- Trunk mains
- Main pump stations
- Key water reservoirs
- Stopbanks
- Detention dams

During 2016, Council in partnership with Nelson City Council, the Regional Civil Defence Emergency Management Group and other utility providers, prepared the Nelson Tasman Lifelines Report. This report summarises all lifelines within Nelson and Tasman. Within the report there was a number of actions identified to improve the Region's infrastructure resilience.

Over the next three years, as part of Council's risk, resilience and recovery planning work, it will focus on the identification, planning and management of its critical assets and lifelines. This will help to ensure that the appropriate level of effort is being made to manage, maintain and renew them, and will extend to ensuring that Council has adequate asset data to enable robust decisions to be made regarding the management of those assets.

12.5 Quality Management

Council has not implemented a formal Quality Management system across the organisation. Quality is ensured by audits, checks and reviews that are managed on a case by case basis. Table 54 outlines the quality management approaches that support Council's asset management processes and systems.

Table 54: Quality Management Approaches

Activity	Description
Process documentation	Council uses Promapp software to document and store process descriptions. Over time, staff are capturing organisational knowledge in an area accessible to all, to ensure business continuity and consistency. Detailed documentation, forms and templates can be linked to each activity in a process. Processes are shown in flowchart or swim lane format, and can be shared with external parties.
Planning	The Long Term Plan and associated planning process are formalised across Council. There is a LTP project team, LTP governance team, and AMP project team that undertakes internal reviews prior to Council approval stages. Following completion of the AMPs, a peer review is done, and the outcomes used to update the AMP improvement plans.
Programme Delivery	This strictly follows a gateway system with inbuilt checks and balances at every stage. Projects cannot proceed until all criteria of a certain stage have been completely met and formally signed off.
Subdivision Works	Subdivision sites are audited for accuracy of data against the plans submitted. CCTV is performed on all subdivision stormwater and wastewater assets at completion of works and again before the assets are vested in Council. If defects are found, Council requires that they are repaired before it will accept the assets.

Activity	Description
Asset Creation	As-built plans are reviewed on receipt for completeness and adherence to the Engineering Standards and Policies. If anomalies are discovered during data entry, these are investigated and corrected. As-built information and accompanying documentation is required to accompany maintenance contract claims.
Asset Data Integrity	Monthly reports are run to ensure data accuracy and completeness. Stormwater, water, wastewater, coastal structures, solid waste and streetlight assets are shown on the corporate GIS browser, Explore Tasman, and viewers are encouraged to report anomalies to the Activity Planning Data Management team.
Operations	Audits of a percentage of contract maintenance works are done every month to ensure that performance standards are maintained. Failure to comply with standards is often linked to financial penalties for the contractor.
Levels of Service	Key performance indicators are reported annually via Council's Annual Report. This is audited by the Office of the Auditor General.
Reports to Council	All reports that are presented to Council by staff are reviewed and approved by the Senior Management Team prior to release.

Table 55: Opportunities for Improvement

Assessment Statement	Priority
<p>Data to Enable Optimised Integrated Decision-Making</p> <p>We will continue to understand and refine our data needs by understanding and implementing industry best-practice, including utilising work by REG. The ONRC is giving us better context and a framework to help us focus on our data needs.</p>	High
<p>Understand Risk and How to Allocate and manage it</p> <p>We could be more explicit and complete in describing our risks and how they are allocated and managed. This is linked to a wider organisational Risk Framework project currently underway.</p>	High
<p>Supports ongoing skill and competency training and development for staff</p> <p>We will more actively assist staff to attend training and development opportunities such as RCA forum, REG workshops, and industry conferences by setting up a register of opportunities and events.</p>	High
<p>Has a Council that is prepared to pay more now to achieve a lower whole of life cost</p> <p>We could do more to better inform our governance of these types of opportunities and how this is already part of business as usual on our network.</p>	Medium
<p>Contracting Models</p> <p>Staff could build their knowledge of alliance-model contracts by observing these in practice in other places, and identifying and discussing opportunities for where they may be of value to this Council. However, this is not a high priority, as the REG delivery model guidelines indicate that an Alliance would not necessarily be an optimal model at present for our network maintenance management and delivery.</p>	Low

13 Improvement Planning

The activity management plans have been developed as a tool to help Council manage their assets, deliver on the agreed levels of service and identify the expenditure and funding requirements of the activity. Continuous improvements are necessary to ensure Council continues to achieve the appropriate level of activity management practice along with delivering services in the most **sustainable way while meeting the community's needs.**

Establishment of a robust, continuous improvement process ensures that Council is making the most effective use of resources to achieve an appropriate level of asset management practice.

13.1 Assessment of our Activity Management Practices

In 2017, Council undertook an assessment of its current asset management practices for the transportation activity. This was a self-assessment with the targets developed in consultation with Waugh Infrastructure Management Ltd to ensure they were appropriate for the activity given:

- Criticality of the Assets;
- Value of the Assets;
- Value spent on maintaining the assets.

The maturity levels were based on the International Infrastructure Management Manual descriptions to maturity.

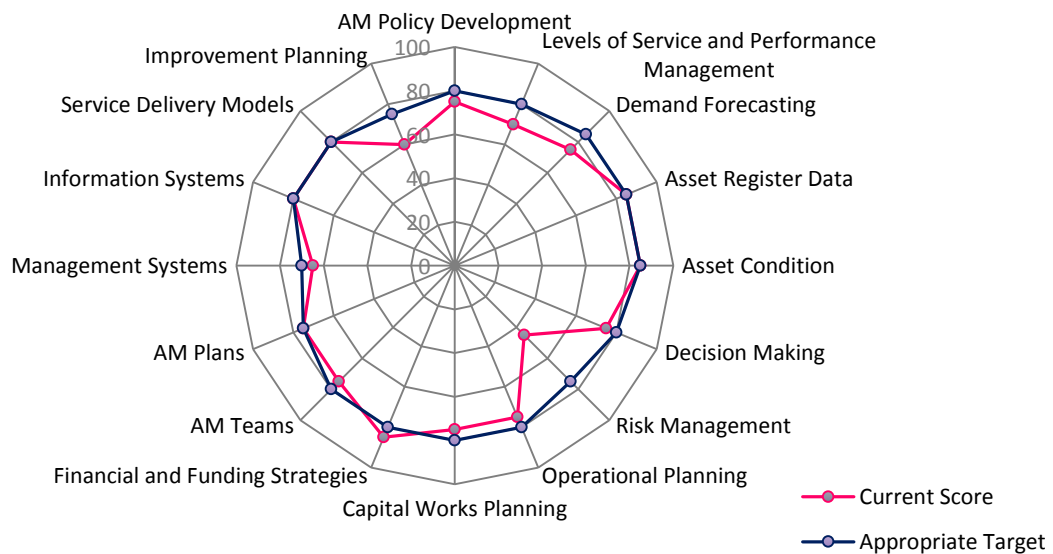


Figure 79: Transportation Maturity Levels

Figure 79 shows that there are some gaps between where Council's current practice is and where it is desired to be. Focus areas for improvements are Improvement Planning and Risk Management. The actions required to close these gaps have been included in the Improvement Plan.

13.2 Peer Reviews

13.2.1 Waugh Peer Reviews

In early 2018, Council engaged Waugh Infrastructure Management Ltd to undertake a peer review on the consultation version of this activity management plan. The peer review considered all Engineering Services activities and included the following analysis:

- Overview analysis and consideration of AMP progress completed since the Waugh Infrastructure detailed 2011 AMP Compliance Report (in summary not detail)
- Review of AMPs against general industry practice as observed by Waugh Infrastructure in the past 12 months
- Review and commentary on the adequacy of the AMP structure against current industry practice and requirements, as set out in IIMM 2015, ISO 55000
- Analysis of AMP individual section strengths and emphasis, including analysis of overall AMP 'message' verses issues identified
- Overview analysis of AMP status against appropriate asset management practice levels adopted in Council's Activity Management Policy (summary not detail)
- Analysis of the AMPs against Local Government Act 2002 amendment requirements, both 2012, and 2014 – identification of any issues or 'misses'
- Provide review comments of AMP strengths and weaknesses identified, with commentary on any suggested priority changes to be completed before LTP 2018

It is important to note that the peer review only considered what was included in the consultation version of this activity management plan. There are aspects of the Council's asset management processes that are not discussed in this activity management plan and are therefore not incorporated into the scoring.

The overall findings of the Peer Review were that the Council's AMPs are well developed to support the Council's Long Term Plan. Some of the AMPs had sections that required completion, but overall missing elements noted were relatively minor.

The AMP template has been updated to incorporate recent Local Government Act changes. The AMP template developed and used by Council has allowed clear, concise presentation of information in a logical manner.

The overall compliance status is shown below in Figure 80.

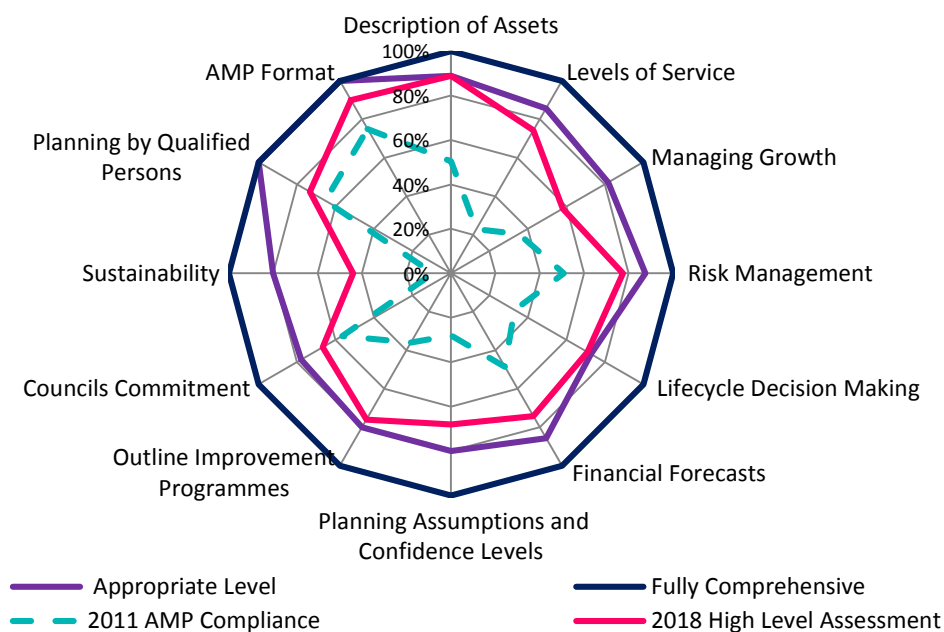


Figure 80: 2018 Peer Review Compliance Status Summary

Council staff have reviewed and prioritised the feedback received in the peer review report. Improvements that could be made immediately have been incorporated into the final version of this activity management plan. Other improvements have been ranked and included in the Improvement Plan.

13.2.2 Road Efficiency Group

In 2012, the REG was established from the Road Maintenance Taskforce (RMTF) to implement RMTF recommendation on improvements to road maintenance nationwide. REG has been responsible for developing the ONRC and national customer levels of service.

The 2016/17 vision for REG is as follows:

The REG leadership group will produce the tools and frameworks to enable all Road Controlling Authorities to improve asset management practices over the next 12 months.

- o We will successfully achieve our goals if:
- o We deliver our agreed programme
- o We inform our peers early on what is best practice
- o We work collaboratively with the sector to facilitate change
- o **We take leadership in our community and actively engage in the vision of REG'**

In 2016, REG established ONRC Performance measures to assist road controlling authorities in measuring the efficiency and effectiveness of their effective road network. Council's performance can be seen in section 5.2, but generally, Council performed well when compared to our peers.

In addition to the ONRC performance measures, REG also undertook to report on data quality for each RCA. The report integrates RAMM data for completeness, accuracy and timeliness, assessing 30 different indicators and 35 data quality metrics. Council's report indicated that it met the expected standard in 19 of the 35 data quality metrics, 6 having some minor data quality issues and the remaining 10 having some major quality issues.

In addition to the REG reports, REG has been undertaking a series of workshops to assist in learning and sharing what is expected for a fit for purpose business case. Generally speaking, Council has had good feedback, in the development of the strategic case and business case from the NZTA Investment Advisors during the REG workshops.

13.2.3 NZ Transport Agency Peer Review

During the development of the strategic case, the programme business case and the AMP, Council involved the NZTA Investment advisors to provide critical feedback at key stages.

A review of the strategic case from NZTA's Central Region Planning and Investment Manager made the following comments:

'Well done – it looks and reads great. It is comprehensive and shows solid logical/critical thinking.'

A review of Council's AMP document that was submitted to support the 'Initial Bid' to investment into the Tasman Transport Programme was also generally positive with the following feedback from the Senior Investment Advisor:

'Overall the BCA is developing as a best in class exemplar so well done there. I think a key task will be to generate a 1 page navigation sheet to help signpost where the assessable elements can be found. Especially where these are changed to fit into council's AMP template.'

In November 2015, NZTA undertook an investment audit of Councils land transport investment programme. The Audit covered previous audit issues, financial management, procurement, contract management and professional services. The finding from the audit are show in Table 56 below.

Table 56: NZTA 2015 Audit Feedback

Question	Findings	Recommendation
What issues, if any, remain unresolved from the previous procedural audit?	The previous investment audit in February 2013 made three recommendations. These all related to procurement procedures, and have now been addressed.	

Question	Findings	Recommendation
<p>Has Tasman District Council good financial systems in place to effectively manage the Transport Agency's investment in the delivery of its land transport programme?</p>	<p>Funding assistance claims for the three financial years ending 30 June 2015 were successfully reconciled to Council's general ledger. The final claim total for the final year agreed with the reported figure in the audited financial statements for 2014/15.</p> <p>In the current set up, the Financial Accountant is solely responsible for processing monthly claims, data entry into the financial system, and uploading information in Transport Investment Online (TIO). No other staff in the finance team are trained to perform this role. Council's internal process can be improved by developing a succession plan for the Financial Accountant role. This should also be part of Council's risk management plan relating to business continuity.</p> <p>A sample of 2014/15 expenditure transactions was reviewed and found to be correctly coded and payments were authorised within financial delegations. The good reporting structure provided for audit trail up to invoice level.</p> <p>There was evidence of compliance with the Transport Agency's requirement of claiming only 30% of costs for street cleaning.</p> <p>The contract retention account was checked; there were no outstanding retentions for Transport Agency-subsidised projects.</p>	<p>That Tasman District Council develops a succession plan for the Financial Accountant role to mitigate any risk relating to business continuity in the event that the Financial Accountant leaves the organisation.</p>
<p>Has Tasman District Council acted in accordance with its endorsed procurement strategy and the Transport Agency's procurement requirements?</p>	<p>Good procedures are in place for monitoring and managing Council's physical works programme. Contract variations were fully documented on contract files.</p> <p>One professional services contract and seven physical works contracts were reviewed for compliance with the Transport Agency' procurement requirements and Council's procurement strategy (refer appendix B).</p> <p>Contract 892 – Abel Tasman Drive Slip Remediation with a contract price of \$1.386 million, was awarded without going through the tender's panel. Council's procurement strategy requires panel approval for all open tenders with a successful price over \$500,000. Council was aware of this oversight and has subsequently implemented a "gate system" to strengthen the tender approval path.</p>	<p>That Tasman District Council adheres to its procurement strategy to avoid the risk of approving unsustainable contracts.</p>

Question	Findings	Recommendation
<p>Has Tasman District Council contract management practices in place to ensure contracts are managed effectively?</p>	<p>The administration of contract files and presentation of records for the audit was good. Contract files included records of contract variations and regular communication with suppliers and other stakeholders, supporting good contract management practice.</p> <p>A general observation on reviewed contracts was, although contracts were signed, all of the reviewed contracts did not contain the name of the people signing the contract, and the date when they were signed. Without clearly identifying the people representing a party to a contract, Council is exposed to potential risk relating to contracts which may have legal implications in the future (eg improperly signed contracts).</p>	<p>That Council ensures all contracts should contain not only the signature, but should include the name of the person signing, and the date it was signed by representatives of both contracting parties. By doing this, Council will be able to mitigate any potential risk relating to contract management.</p>
<p>Are Tasman District Council's professional services providing value for money?</p>	<p>The reorganisation of the Engineering Services Department in December 2013 has re-established professional service activities back to Council. This included all strategic and operational professional services work, while those related to the delivery of projects continue to be provided by a consultant. A 'Provision of Transportation Professional Services' contract is in place with clearly defined service deliverables, performance indicators and risk assessment. Accordingly, Council's procurement strategy for transportation services was rewritten to allow for the provision of in-house professional services.</p> <p>Analysis of its budget and actual expenditures appear reasonable to support the activities of the business unit. Overhead costs associated with individual staff charges are within specified parameters.</p> <p>Council's decision to bring professional service activities in-house has significantly reduced the services of the engineering consultant, and has resulted in some savings and increased staff capability.</p>	

13.3 Improvement Plan

Establishment of a robust, continuous improvement process ensures that Council is making the most effective use of resources to achieve the appropriate level of asset management practice. The continuous improvement process includes:

- Identification of improvements
- Prioritisation of improvements
- Establishment of an improvement programme
- Delivery of improvements
- On-going review and monitoring of the programme

All improvements identified are included in a single improvement programme encompassing all Engineering Services activities and is managed by the Activity Planning Programme Leader. In this way opportunities to identify and deliver cross-activity or generic improvements can be managed more efficiently, and overall delivery of the improvement programme can be monitored easily.

13.3.1 Summary of Recent Improvements

Based on the peer review by Waugh Infrastructure Management Ltd, NZTA reviews and internal evaluations, Council has made improvements to its activity management plan and specific asset management processes. The key improvements and areas of strengths of the current activity management plan include our asset descriptions, Levels of Service, financial forecasting and Council's **Infrastructure Strategy**.

Some of Council's key achievements in the asset management processes over the previous three years include:

- Integration of ONRC into road asset management
- Using ONRC levels of service and peer group comparison to determine intervention
- Use of lifecycle management tools to optimise whole of life costs
- Use of a business case approach
- Improvements in asset data quality
- Renewal of operations and maintenance contracts that resulted in a reduction in maintenance costs
- Inclusion of the Tasman Great Taste Trail data in inventory held in RAMM

13.3.2 Summary of Planned Improvements

A list of the planned improvements for this activity is provided in Table 57 below.

Table 57: Transport Specific Improvement Items

Improvement Item	Further Information	Priority	Status	Expected Completion Date	Team Responsible	Cost/Resource Type
Condition Rating: Develop model for condition rating of the unsealed network.	Based on ONRC performance measures	Low	In Progress	Dec 2020	Transportation	Staff time
Improve procurement procedures	As identified in the NZTA investment audit and Smart Buyer assessment	Med	In Progress	Dec 2018	Transportation	Staff time
Improve road data quality	As identified in ONRC data quality report	High	In Progress	July 2018	Activity Planning	Staff time
Parking Strategy	Create a parking strategy to cater for demand in Richmond and Motueka	High	In Progress	August 2018	Activity Planning	Staff time
Define and classify cycleways in RAMM Database	Ensure all cycleways are clearly defined.	Med	Not Started	July 2020	Activity Planning	Staff time
Create walking and cycling strategy	Identify walking and cycling deficiencies in the District	Med	Not Started	July 2021	Activity Planning	Staff time
Public Transport Plan	Review and update public transport services in Tasman	High	Not Started	June 2020	Activity Planning	Consultant and staff time
Update transport policies		Low	Not Started	July 2021	Activity Planning	Staff time

Improvement Item	Further Information	Priority	Status	Expected Completion Date	Team Responsible	Cost/Resource Type
Create retaining wall condition records	Inspect all retaining walls in accordance with NZ Transport Agency's specification	Med	Not Started	July 2021	Transportation	Consultant and staff time
Assumption sensitivity testing	Test sensitivity and impacts of various assumptions to improve AMP quality	Low	Not Started	October 2020	Activity Planning	Staff Time
Speed Management Plan	Update the speed management plan	High	Not Started	December 2018	Transportation	Staff Time
Safety Management Systems	Review the management systems regarding safety	Med	Not Started	December 2018	Transportation	Staff Time
Reserves Walkways	Identify walkways through reserves that are transit links for NZTA maintenance subsidy	High	Not Started	December 2018	Activity Planning/Parks & Reserves	Staff Time

A list of general across activity improvement items is given in Table 58 below.

Table 58: General Activity Management Improvement Items

Improvement Item	Further Information	Priority	Status	Expected Completion Date	Team Responsible	Cost/Resource Type
Create Critical Asset Framework	Describe in AMP how it is used to prioritise asset information and condition assessments, adjust economic lives (renewal profiles) prioritise renewals and expenditure, operation and maintenance.	High	In Progress	June 2020	Activity Planning	Staff Time
Consider how levels of service options are presented to the community	Consider how to better engage the community in agreeing appropriate levels of service through specific work streams (e.g. Risk, Resilience, Recovery Planning).	Medium	Not started	2021	Activity Planning	Staff Time

Appendix A: Detailed Operating Budgets

ID	Name	Description	Total Budget	Financial Year Budget (\$)										Total Budget	
			2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38	2038-48
42001	Regional Land Transport Planning	Preparation of Regional Land Transport Programme and Strategy and Regional Land Transport Committee administration	750,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	30,000	30,000	15,000	255,000	255,000
42002	Strategic Studies	Professional services to assist the implementation and update of strategies and network plans	360,000	90,000	0	0	30,000	0	0	30,000	0	0	30,000	90,000	90,000
42003	AMP Review	Transportation Activity Management Plan updates	238,000	2,000	16,500	5,300	2,000	16,500	5,300	2,000	16,500	5,300	2,000	87,900	76,700
42004	dTIMs Modelling	dTims modelling excluding dTims validation	300,000	30,000	0	0	30,000	0	0	30,000	0	0	30,000	90,000	90,000
42005	Sealed Pavement Maintenance	Maintenance of sealed pavements	37,500,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	12,500,000	12,500,000
42006	SPR - Sealed Pavement Maintenance	Maintenance of Pupu Springs Road sealed pavement	45,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	15,000	15,000
42007	Unsealed Pavement Maintenance	Maintenance of unsealed pavements	18,600,000	620,000	620,000	620,000	620,000	620,000	620,000	620,000	620,000	620,000	620,000	6,200,000	6,200,000
42008	SPR - Unsealed Pavement Maintenance	Maintenance of Totaranui Road unsealed pavement	387,000	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	129,000	129,000
42009	Routine Drainage Maintenance	Maintenance and cleaning of drainage assets including culverts, sumps and water tables	15,000,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	5,000,000	5,000,000
42010	SPR- Routine Drainage Maintenance	Maintenance and cleaning of drainage assets on Pupu Springs Road and Totaranui Road	606,000	20,200	20,200	20,200	20,200	20,200	20,200	20,200	20,200	20,200	20,200	202,000	202,000
42011	State Highway Street Cleaning	State Highway portion of street cleaning	276,000	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	92,000	92,000
42012	Structures Maintenance	Maintenance of bridges and retaining walls	7,350,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000	2,500,000
42013	SPR - Structures Maintenance	Maintenance of bridges and retaining walls on Pupu Springs Road and Totaranui Road	16,200	540	540	540	540	540	540	540	540	540	540	5,400	5,400
42014	Environmental Maintenance	Spraying, mowing, minor slip clearance, fallen trees, frost and ice control, and rubbish removal from rural roadsides	45,000,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	15,000,000	15,000,000
42015	SPR - Environmental Maintenance	Spraying, mowing, minor slip clearance, fallen trees, frost and ice control, and rubbish removal from rural roadsides for Pupu Springs Road and Totaranui Road	1,938,000	64,600	64,600	64,600	64,600	64,600	64,600	64,600	64,600	64,600	64,600	646,000	646,000
42016	Traffic Services Maintenance	Maintenance of road signs, markings and street lights	15,900,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	530,000	5,300,000	5,300,000
42017	SPR - Traffic Services Maintenance	Maintenance of road signs and markings on Pupu Springs Road and Totaranui Road	24,000	800	800	800	800	800	800	800	800	800	800	8,000	8,000
42018	Database and Asset Data Management	RAMM fees, training, data validation, dTims fees	1,714,500	62,200	52,100	62,200	52,100	62,200	52,100	62,200	52,100	62,200	52,100	571,500	571,500
42019	Bus Service Marketing	Undertake marketing in preparation and during operation of new Richmond extension service	75,000	15,000	15,000	15,000	15,000	15,000	0	0	0	0	0	0	0
42020	Road Legalisation	Survey and legalisation of existing roads outside legal road reserve	1,200,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000	400,000
42021	Bridge Rating Assessments	Bridge rating assessments for bridges that have not yet been rated	450,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000	150,000
42022	Road Asset Valuation	Bi-annual asset revaluation	250,000	0	25,000	0	0	25,000	0	0	25,000	0	0	100,000	75,000
42023	Traffic Data Collection	Traffic counting professional service contract	2,340,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	780,000	780,000

ID	Name	Description	Total Budget	Financial Year Budget (\$)										Total Budget	
			2018-19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38	2038-48	
42024	Asset Condition Monitoring	Routine structural inspections, pavement testing and condition rating	2,673,600	77,600	133,000	50,000	125,600	85,000	98,000	77,500	133,000	50,000	125,500	962,700	755,700
42025	Forward Works Programme	Development of forward works programme for pavement and surface renewals	900,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	300,000
42026	Asset Management Professional Services	Specialist asset management support	1,500,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	500,000
42027	Road Safety Programmes	Promotion, education and advertising to promote safe use of the transport network	6,495,000	216,500	216,500	216,500	216,500	216,500	216,500	216,500	216,500	216,500	216,500	2,165,000	2,165,000
42028	Operational Traffic Management	Maintenance of traffic signals	525,000	6,000	6,000	9,000	12,000	12,000	12,000	12,000	12,000	15,000	15,000	177,000	237,000
42029	Cycle Path Maintenance	Maintenance of subsidised cycleways	811,100	20,000	20,400	20,800	21,200	21,600	22,000	22,500	23,000	23,400	23,900	267,000	325,300
42030	Richmond Bus Extensions	Extension of the Richmond bus route	400,000	0	100,000	100,000	100,000	100,000	0	0	0	0	0	0	0
42031	Lower Cobb Dam Road Maintenance	Routine and reactive maintenance of the lower road	1,035,000	33,500	33,500	33,500	33,500	33,500	38,500	38,500	38,500	33,500	33,500	340,000	345,000
42032	Upper Cobb Dam Road Maintenance	Routine and reactive maintenance of the upper road	790,000	26,000	26,000	26,000	31,000	26,000	26,000	26,000	26,000	26,000	26,000	265,000	260,000
42033	Cobb Powerhouse Bridge Maintenance	Routine bridge maintenance of the Powerhouse Bridge	45,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	15,000	15,000
42034	Graham Valley Road	Shared maintenance with DoC	900,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	300,000
42035	Consent Procurement	External consent application support	120,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	40,000	40,000
42036	Roading Polices & Bylaws	Creation and review of polices and bylaws	390,000	25,000	10,000	10,000	10,000	10,000	25,000	10,000	10,000	10,000	10,000	130,000	130,000
42037	Footpath & Carpark Condition Rating Survey	Condition rating survey of footpaths and carparks to support resurfacing programme development	200,000	0	20,000	0	0	20,000	0	0	20,000	0	0	80,000	60,000
42038	Carpark Maintenance	Routine and reactive maintenance of off street car parking facilities	900,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	300,000
42039	Town Centre Paver Maintenance	Maintenance of pavers including hot washing and sealing	640,000	15,000	40,000	45,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000	200,000
42040	Footpath Maintenance	District wide footpath maintenance	4,500,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000	1,500,000
42041	Tasman's Great Taste Trail Maintenance	Renewal of road signs and street lights	4,170,000	139,000	139,000	139,000	139,000	139,000	139,000	139,000	139,000	139,000	139,000	1,390,000	1,390,000
42042	Pedestrian & Carpark Lighting Electricity	Electricity costs for walkways and carparks	290,800	7,300	7,300	7,300	7,300	7,300	7,500	7,600	7,800	8,000	8,200	94,400	120,800
42043	Pedestrian & Carpark Lighting Maintenance	Maintenance of walkway and car park lighting	180,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	60,000	60,000
42044	Street Cleaning	Non subsidised proportion of street cleaning (70% of total)	6,000,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	2,000,000	2,000,000
42045	Street Furniture Maintenance	Routine and reactive maintenance of street furniture	495,000	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	165,000	165,000
42046	Footbridge Maintenance	Maintenance of footbridges	290,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000	10,000	10,000	100,000	100,000
42047	Parking Enforcement	Additional parking enforcement / compliance	1,500,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	500,000
42048	Great Taste Trail Unforeseen Events	Budget to undertake remedial work following damaging natural events	600,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000	200,000
42049	Pest Control	Vegetation and pest control of non subsidised road areas	2,460,000	100,000	100,000	100,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	800,000	800,000

ID	Name	Description	Total Budget	Financial Year Budget (\$)											Total Budget	
			2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38	2038-48	
42050	Landscape Maintenance	Maintenance of roadside planting areas	5,887,500	160,000	162,500	165,000	167,500	170,000	172,500	175,000	177,500	180,000	182,500	1,962,500	2,212,500	
42051	Bus Services	Operation of bus services in Tasman Region	5,020,000	84,000	84,000	84,000	84,000	84,000	184,000	184,000	184,000	184,000	184,000	1,840,000	1,840,000	
42053	Total Mobility	Contribution to the service that is administered by Nelson City Council	2,686,200	82,000	82,500	83,000	83,500	84,000	84,500	85,000	85,500	86,000	86,500	894,200	949,500	
42054	Carparking Options	Investigate carparking options to address long term supply	25,000	0	25,000	0	0	0	0	0	0	0	0	0	0	
42055	Risk, Resilience & Recovery Planning	Undertake risk, resilience and recovery planning	130,000	20,000	20,000	0	0	10,000	0	0	10,000	0	0	40,000	30,000	
42056	Structure Planning & Designations	Long term infrastructure planning for new growth areas	220,000	20,000	20,000	0	20,000	0	0	20,000	0	0	20,000	60,000	60,000	
42057	Road Widening House Insurance		40,380	1,346	1,346	1,346	1,346	1,346	1,346	1,346	1,346	1,346	1,346	13,460	13,460	
42058	Carpark House Insurance	Insurance costs for Council owned houses on carpark land	26,940	898	898	898	898	898	898	898	898	898	898	8,980	8,980	
42059	Rates & Water	Rates and water charges	471,000	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700	157,000	157,000	
42060	CARPARK RATES	Rates associated with carpark land	1,518,000	50,600	50,600	50,600	50,600	50,600	50,600	50,600	50,600	50,600	50,600	506,000	506,000	
	Feasibility Studies	Feasibility Studies	65,000	0	0	0	0	0	0	0	0	0	0	34,700	30,300	

Appendix B: Detailed Capital Budgets

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget (\$)										Total Budget	
			Growth	IncLOS	Renewals		2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38
46001	Cycle Path Resurfacing	Resurfacing of subsidised cycleways	0	0	100	1,545,000	26,000	14,000	18,000	16,000	44,000	43,000	24,000	12,000	64,000	2,000	569,000	713,000
46002	Unsealed Road Metalling	Routine metalling of unsealed roads to mitigate gravel loss	0	0	100	33,000,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	11,000,000	11,000,000
46003	SPR - Unsealed Road Metalling	Routine metalling of Totaranui Road to mitigate gravel loss	0	0	100	561,000	18,700	18,700	18,700	18,700	18,700	18,700	18,700	18,700	18,700	18,700	187,000	187,000
46004	Sealed Road Resurfacing	Resurfacing of sealed roads	0	0	100	73,800,000	2,100,000	2,100,000	2,100,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	25,000,000	25,000,000
46005	SPR - Sealed Road Resurfacing	Resurfacing of Pupu Springs Road	0	0	100	72,000	0	0	0	0	0	0	0	0	36,000	0	0	36,000
46006	Drainage Renewals	Renewal of drainage assets including culverts, kerb and channel, surface water channels and sumps	0	0	100	27,510,000	800,000	800,000	800,000	930,000	930,000	930,000	930,000	930,000	930,000	930,000	9,300,000	9,300,000
46007	SPR - Drainage Renewals	Renewal of drainage assets on Pupu Springs Road and Totaranui Road	0	0	100	228,000	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	76,000	76,000
46008	Pavement Rehabilitation	Pavement rehabilitation of sealed roads that meet NZTA funding criteria	0	0	100	23,493,000	631,000	631,000	631,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	8,000,000	8,000,000
46009	Structures Component Replacements	Bridge component replacements	0	0	100	12,175,000	379,000	379,000	379,000	379,000	379,000	379,000	379,000	414,000	414,000	414,000	4,140,000	4,140,000
46010	Murchison Stock Effluent Facility	Renewal of telemetry and electronics	0	0	100	50,000	0	0	0	0	0	0	0	0	0	0	50,000	0
46011	Traffic Services Renewals	Renewal of road signs and street lights	0	0	100	14,856,000	287,000	303,000	320,000	354,000	388,000	422,000	422,000	540,000	450,000	540,000	7,595,000	3,235,000
46012	SPR - Traffic Services Renewals	Renewal of traffic signs and markings on Pupu Springs Road and Totaranui Road	0	0	100	33,000	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	11,000	11,000
46013	Bridge Renewals	Renewal of subsidised road bridges	0	0	100	12,847,100	0	500,000	0	0	53,800	215,200	107,600	0	0	215,200	3,550,800	8,204,500
46014	Brightwater Underpass Component Renewal	Replacement of pumps and components of underpass structure	0	0	100	176,000	0	26,000	0	0	0	0	75,000	0	0	0	75,000	0
46015	Cobb Powerhouse Bridge Renewal	Repainting of the structural steel components	0	0	100	55,000	0	0	0	0	0	55,000	0	0	0	0	0	0
46016	Lower Cobb Dam Road Resurfacing	Seal resurfacing	0	0	100	480,000	0	0	0	0	0	0	0	80,000	80,000	80,000	0	240,000
46017	Upper Cobb Dam Road Resurfacing	Seal resurfacing	0	0	100	80,000	0	0	0	0	0	40,000	0	0	0	0	40,000	0
46018	Carpark Resurfacing	Resurfacing of off street car parking facilities	0	0	100	2,203,900	18,000	66,500	23,000	36,000	146,000	27,300	181,000	166,000	76,200	106,000	477,300	880,600
46019	New Car Parking	Development of new car parking facilities. Extent to be determined by separate studies.	23	77	0	1,345,000	0	70,000	75,000	400,000	0	0	0	0	0	0	400,000	400,000
46020	Takaka / Pohara Cycle Connection	New cycleway between Takaka township and Pohara	0	100	0	1,135,000	145,000	990,000	0	0	0	0	0	0	0	0	0	0
46021	Footpath Rehabilitation	District wide footpath renewal	0	0	100	4,117,000	57,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	1,400,000	1,400,000
46022	New Footpaths - 1 to 10 yr	Construction of new footpaths	14	86	0	1,800,000	0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	0	0
46023	Tasman's Great Taste Trail Construction	Construction Spooner's Tunnel to Motueka	0	100	0	2,823,000	0	942,000	1,432,000	449,000	0	0	0	0	0	0	0	0
46024	Bird Lane Improvements	Improvements to Bird Lane including left turning lane onto SH6 to enable projected residential growth	74	26	0	828,800	0	0	0	0	0	0	85,800	743,000	0	0	0	0
46025	Kerb and Channel - 11 to 20 yr	Construction of new kerb and channel in conjunction with non-subsidised works e.g. footpaths	7	93	0	900,000	0	0	0	0	0	0	0	0	0	0	900,000	0
46026	Pedestrian and Carpark Lighting Renewal	Reactive renewal of walkway and car park lighting	0	0	100	237,000	7,900	7,900	7,900	7,900	7,900	7,900	7,900	7,900	7,900	7,900	79,000	79,000
46027	Pedestrian and Carpark Lighting Improvements	New or improved lighting of walkways or carparks	0	100	0	228,000	0	0	0	45,600	0	0	45,600	0	0	45,600	91,200	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget (\$)										Total Budget	
			Growth	IncLOS	Renewals		2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38
46028	Litter Bins	Renewal of Engineering Services' litter bins	0	0	100	231,000	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	77,000	77,000
46029	Street Furniture Renewals	Reactive renewal of street furniture	0	0	100	480,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	160,000	160,000
46030	Motueka Town Centre	Upgrade of High Street to better provide for a shared environment	13	87	0	880,000	0	0	0	80,000	800,000	0	0	0	0	0	0	0
46031	Brightwater Town Centre Upgrade	Upgrade of Ellis Street to better provide for a shared environment	17	83	0	870,000	0	870,000	0	0	0	0	0	0	0	0	0	0
46032	Takaka Town Centre	Upgrade of Commercial Street to better provide for a shared environment	0	100	0	150,000	0	0	0	0	0	0	0	50,000	100,000	0	0	0
46033	Mapua Town Centre	Upgrade of Aranui Road to better provide for a shared environment	17	83	0	703,000	0	0	0	0	0	102,000	601,000	0	0	0	0	0
46034	Collingwood Town Centre	Upgrade of Tasman Street and a section of Elizabeth Street to better provide for a shared environment	0	100	0	150,000	0	0	0	0	0	0	0	0	50,000	100,000	0	0
46035	Bateup Road Widening		0	100	0	380,800	380,800	0	0	0	0	0	0	0	0	0	0	0
46038	Manoy Street to Talbot Street New Road	New road to link Manoy and Talbot Streets in Motueka	0	100	0	1,735,000	0	0	0	0	0	0	0	0	0	0	1,735,000	0
46040	Lower Oxford Street Hierarchy Improvements	Reconstruction of Oxford Street between Wensley Road and Gladstone Road to improve flows on the Richmond Ring Route	29	71	0	901,000	0	0	0	0	47,000	79,000	775,000	0	0	0	0	0
46042	William Street and Salisbury Road Intersection Upgrade	Intersection upgrades to provide for growing traffic volumes	27	73	0	687,600	0	0	0	0	0	50,600	637,000	0	0	0	0	0
46043	Queen Street and Salisbury Road Intersection Improvements	Intersection upgrade to improve efficiency	29	71	0	1,189,000	0	0	0	0	0	62,000	1,127,000	0	0	0	0	0
46044	District Land Purchase	District wide land purchase to cover Notice of Requirements	14	86	0	2,000,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	0	0
46045	Champion / Salisbury Road Route Improvements	Joint project with NZTA and NCC to improve travel time between Salisbury Road and Stoke/Whakatu Drive	17	83	0	899,000	0	899,000	0	0	0	0	0	0	0	0	0	0
46046	McShane Road Upgrade	Road improvement to align with adjacent residential development	53	47	0	5,397,000	0	0	0	0	0	0	0	134,000	195,000	2,534,000	2,534,000	0
46047	Richmond Town Centre - Renewal	Renewal of Queen street between Gladstone Road Wensley Street	0	0	100	400,000	0	0	0	0	0	0	0	0	0	0	400,000	0
46048	Oxford / Wensley Intersection Improvements	Improvements to the sight lines and pedestrian access at the intersection.	29	71	0	950,000	0	0	0	0	0	0	0	0	0	0	950,000	0
46049	Tasman's Great Taste Trail Improvements	Improve the trail to address maintenance cost or safety issues	0	100	0	1,200,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000	400,000
46050	New Footpaths - 11 to 20 yr	Construction of new footpaths	7	93	0	2,000,000	0	0	0	0	0	0	0	0	0	0	2,000,000	0
46051	Borck Creek Shared Pathway Crossing	Create shared pathway across Borck Creek to provide linkages between proposed developments	83	17	0	673,700	0	0	0	0	0	82,700	591,000	0	0	0	0	0
46052	New Footpaths - 21 to 30 yr	Construction of new footpaths	4	96	0	2,000,000	0	0	0	0	0	0	0	0	0	0	0	2,000,000
46053	Kerb and Channel - 1 to 10 yr	Construction of new kerb and channel in conjunction with non-subsidised works e.g. footpaths	14	86	0	810,000	0	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	0	0
46054	Kerb and Channel - 21 to 30 yr	Construction of new kerb and channel in conjunction with non-subsidised works e.g. footpaths	4	96	0	900,000	0	0	0	0	0	0	0	0	0	0	0	900,000

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget (\$)										Total Budget		
			Growth	IncLOS	Renewals		2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38	2038-48
46055	Motueka Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	800,000	0	0	0	0	0	0	0	0	0	0	0	800,000	0
46056	Brightwater Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	500,000	0	0	0	0	0	0	0	0	0	0	0	500,000	0
46057	Mapua Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	200,000	0	0	0	0	0	0	0	0	0	0	0	0	200,000
46058	District Land Purchase - 11 to 20 yr	District wide land purchase to cover Notice of Requirements	7	93	0	2,000,000	0	0	0	0	0	0	0	0	0	0	0	2,000,000	0
46059	District Land Purchase - 21 to 30 yr	District wide land purchase to cover Notice of Requirements	4	96	0	2,000,000	0	0	0	0	0	0	0	0	0	0	0	0	2,000,000
46060	Collingwood Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	100,000	0	0	0	0	0	0	0	0	0	0	0	0	100,000
46061	Takaka Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	600,000	0	0	0	0	0	0	0	0	0	0	0	0	600,000
46062	Murchison Town Centre - Renewal	Renewal of town centre transport infrastructure	0	0	100	200,000	0	0	0	0	0	0	0	0	0	0	0	200,000	0
46063	Wakefield Town Centre - Renewal	Renewal of town centre infrastructure between Edward Street between SH60 and Arrow Street	0	0	100	200,000	0	0	0	0	0	0	0	0	0	0	0	200,000	0
46065	Upper Oxford Street Hierarchy Improvements	Upgrade road to meet arterial road, primary walkway and primary cycleway standards	29	71	0	570,000	0	0	0	0	0	0	0	70,000	500,000	0	0	0	0
46066	Champion Road Safe Cycle Crossing	Construct new crossing facility to provide safe crossing point for pedestrians and cyclists	0	100	0	2,300,000	0	2,300,000	0	0	0	0	0	0	0	0	0	0	0
46067	Salisbury Road Hierarchy Improvements	Changes to road carriageway to provide balanced acces for vehicles, cyclists and pedestrians	0	100	0	660,000	0	0	0	0	0	0	60,000	600,000	0	0	0	0	0
46068	Wensley Road Hierarchy Improvements	Changes to Wensley Road to improve the road to primary walking route and primary cycling route	23	77	0	5,000,000	0	0	0	0	0	0	0	0	0	0	0	5,000,000	0
46069	William Street Hierarchy Improvements	Changes to road carriageway to improve access for pedestrians and cyclists on a major school route	0	100	0	330,000	0	0	0	0	30,000	300,000	0	0	0	0	0	0	0
46070	Gardener Valley Rd / Moutere Highway Intersection Upgrade	Upgrade intersection to provide a safe alignment	0	100	0	450,000	0	450,000	0	0	0	0	0	0	0	0	0	0	0
46071	Edwards Rd / Central Rd Intersection Improvements	Undertake intersection improvements to reduce crash risk	0	100	0	50,000	50,000	0	0	0	0	0	0	0	0	0	0	0	0
46072	Lower Queen St / McShane Rd Intersection Improvements	Create a right turning bay and allow for better tracking of larger vehicles to reduce crash risks	0	100	0	250,000	0	250,000	0	0	0	0	0	0	0	0	0	0	0
46073	Chamberlain St / College St Intersection Improvements	Undertake road re-alignment to create offset with accompanying signage and an improvement of sightlines to reduce crash risk	0	100	0	100,000	0	0	0	0	0	0	0	100,000	0	0	0	0	0
46074	School safety improvements	Safety improvements around schools	0	100	0	30,000	30,000	0	0	0	0	0	0	0	0	0	0	0	0
46075	Edens Rd / Pugh Rd Intersection Improvements	Undertake road re-alignment to create offset with accompanying signage and an improvement of sightlines to improve visibility	0	100	0	50,000	0	0	0	0	0	0	0	50,000	0	0	0	0	0
46076	McGlashen Avenue pedestrian crossing facility	Address community severance issues for residents in the Doran Street/Bird Street area by enabling better access across McGlashen Avenue.	0	100	0	30,000	30,000	0	0	0	0	0	0	0	0	0	0	0	0
46077	Tudor Street Pedestrian Crossing Facility	Reduce community severance issue by constructing new crossing facility	0	100	0	30,000	0	0	0	0	30,000	0	0	0	0	0	0	0	0

ID	Name	Description	Project Driver %			Total Budget	Financial Year Budget (\$)										Total Budget	
			Growth	IncLOS	Renewals		2018-48	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028-38
46078	Lower Queen St / Lansdowne Rd Intersection Improvements	Intersection upgrade to reduce crash risks	0	100	0	150,000	0	0	0	150,000	0	0	0	0	0	0	0	0
46079	Main Rd Lower Moutere / Flett Rd Intersection Improvements	Realign intersection to be perpendicular and improve visibility to reduce crash risks	0	100	0	500,000	0	0	0	0	0	0	0	0	500,000	0	0	0
46080	Whakarewa St / Queen Victoria St Intersection Improvements	Undertake road re-alignment to create offset with accompanying signage and an improvement of sightlines to reduce crash risk	0	100	0	150,000	0	0	0	0	0	0	150,000	0	0	0	0	0
46081	Roadside Hazard Mitigation	Removal of trees and other obstructions close to the carriageway to reduce risk to drivers involved in loss of control crashes in high speed areas	0	100	0	180,000	30,000	30,000	30,000	30,000	30,000	30,000	0	0	0	0	0	0
46082	Reactive Safety Improvements	Allows to address emerging road safety issues	0	100	0	3,000,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
46084	Lower Queen Street Widening Stage 1	Reconstruction of Lower Queen Street to provide for future growth in Richmond West (Stage 1)	54	46	0	4,667,000	0	0	0	0	0	0	0	0	647,000	0	4,020,000	0
46085	Lower Queen Street Widening Stage 2	Reconstruction of Lower Queen Street to provide for future growth in Richmond West (Stage 2)	54	46	0	3,631,500	0	0	0	0	0	0	0	0	0	0	3,631,500	0
46086	Tasman View Road Upgrade	Upgrade and seal Tasman View Road to allow development in the area	0	100	0	3,030,000	0	0	0	0	0	0	0	0	0	0	0	3,030,000
46087	Ellis Street Power Undergrounding	Remove overhead power lines along Ellis Rd between Lord Rutherford Rd and SH6	0	100	0	450,000	0	450,000	0	0	0	0	0	0	0	0	0	0
46088	Lord Rutherford Ellis Intersection Upgrade	Modify Lord Rutherford / Ellis intersection to allow heavy vehicles to travel through the intersection without crossing the centreline	31	69	0	200,000	0	200,000	0	0	0	0	0	0	0	0	0	0
46089	Riwaka-Kaiteriteri Road Safety Improvements	Undertake a number of safety improvements to Riwaka-Kaiteriteri Road to improve safety and access for larger vehicles	0	100	0	990,000	0	0	0	90,000	900,000	0	0	0	0	0	0	0
46090	Borck Creek Cycle Trail Bridge	New crossing of widened Borck Creek on Tasman's Great Taste Trail	0	100	0	120,000	0	0	0	0	0	0	0	120,000	0	0	0	0
46091	Richmond Bus Extension Shelters	Construct new bus shelters to facilitate Richmond bus extension	0	100	0	50,000	50,000	0	0	0	0	0	0	0	0	0	0	0
46092	Berryfield/Lower Queen Intersection Upgrade	Upgrade the intersection at Berryfield Drive and Lower Queen Street to cater for residential and commercial growth in Richmond West	83	17	0	990,000	0	0	0	0	0	990,000	0	0	0	0	0	0
46093	McShane/Lower Queen Intersection Upgrade	Upgrade the intersection at McShane Road and Lower Queen Street to cater for residential and commercial growth in Richmond West	83	17	0	990,000	0	0	0	0	0	0	0	0	0	0	990,000	0
46094	Berryfield/Appleby Hwy Intersection Upgrade	Upgrade the intersection at Berryfield Drive and Appleby Highway (SH60) to cater for residential and commercial growth in Richmond West	83	17	0	200,000	0	0	0	0	0	0	0	0	0	0	200,000	0