Tasman District Council

Transportation
Activity Management Plan

2015 - 2045

January 2015

Quality Assurance Statement		
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For full Quality Assurance Statement, Refer Appendix Z

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1 ACTIVITY DESCRIPTION

1.1 What We Do

Tasman District Council is responsible for the management of a transportation network that comprises approximately 1,741km of roads, (955km sealed and 786km unsealed), 483 bridges (including footbridges), 282km of footpaths, walkways and cycleways, 22 off street carpark areas, on street car parking, streetlights, traffic signs, culverts and Tasman's Great Taste Trail. Each road in the transportation network has been categorised into a transportation hierarchy based on the road's purpose and level of use.

This activity includes:

- ownership or authority to use the land under roads;
- road carriageways for the safe movement of people and goods;
- culverts, water tables and a stormwater system to provide drainage for roads;
- signs, barriers and pavement markings to provide road user information and safe transport;
- bridges to carry traffic over waterways;
- footpaths, walkways and cycleways to provide for the needs of pedestrians and cyclists;
- street lighting to provide safe movement for road users at night;
- off street car parking facilities and on street car parking.

This activity also includes other transportation related services, for example transport planning, road safety and public transport services like the Total Mobility Scheme. These activities are included because they help to enable the movement of people and goods throughout the district and are consistent with the objectives of the Regional Land Transport Plan.

A complete description of the assets included in the transportation activity is in Appendix B.

1.2 Why We Do It

By providing a quality transportation network, the 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.

2 COMMUNITY OUTCOMES

The community outcomes that the transportation activity contributes to most are shown in Table 2-1.

Table 2-1: Community Outcomes

Community Outcomes	How Our Activity Contributes to the Community Outcome
Our communities are healthy, safe, inclusive and resilient.	Our network of roads, footpaths, cycleways and carparks are safe, uncongested and maintained cost-effectively. Our network of roads connects communities across the district.
Our infrastructure is efficient, cost-effective and meets current and future needs.	Our urban communities have a means of travel for pedestrians, cyclists and commuters that is safe and efficient. Our rural communities have safe and effective access to our transportation network.

3 KEY ISSUES FOR THE TRANSPORTATION ACTIVITY

The most important issues relating to the transportation activity are shown below in Table 3-1.

Table 3-1: Key Issues for the Transportation Activity

Key Issue	Discussion
One Network Road Classification (ONRC).	The One Network Road Classification (ONRC) has been developed by the NZ Transport Agency and is to be implemented by all 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. The 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. A transition plan has also been completed which outlines the Council's current position and what is required in order to achieve compliance with the ONRC by 2018. The transition plan is included in Appendix V. The Council will need to focus on implementing the transition plan over the next three year period.
Government funding pressure.	The NZ Transport Agency has not provided the Council with an inflation adjustment for its share of the funding for local roads over the last three years. This has effectively caused a gradual reduction in the amount the NZ Transport Agency's contributes towards funding of Tasman's local roads. The NZ Transport Agency has continued with this approach to road funding and will not provide for inflation adjustments for the next three years (2015-2018). This will have the effect of reducing the funds available to manage roads and other transportation activities. The Council has decided to inflation adjust its share of funding local roads, even though the NZ Transport Agency has not done so. The Council has and will continue to develop innovative ways to manage the challenges in the reduced funding environment. Also, since the preparation of the 2012-2032 Activity Management Plan, the NZ Transport Agency has reviewed its funding assistance rates for all road controlling authorities. The Council's new rate will be 52% for the 2015/16 financial year and then 51% thereafter for both maintenance and renewal works. This equates to an effective bottom line increase in the total funding rate of 0.2% for the total subsidised transportation programme in 2016/17 and beyond. The Council now needs to follow a business case approach in order for the Council to qualify for funding from the NZ Transport Agency. This new approach sets out detailed information supporting the level of funding requested and demonstrates how the Council is optimising its investment in transportation assets. The Council is always reviewing its maintenance and renewal practices to ensure that it is providing value for money and maximising efficiencies wherever possible.

Key Issue	Discussion
Increasing public concern about high levels of debt and rates increases.	The Council is under increasing pressure to minimise its long term debt forecast and keep rate rises to a minimum. In order achieve this, the Council is not planning to undertake approximately $47 million worth of capital projects that the public may have wanted, these are considered 'nice' to have rather than 'need' to have. The Council is instead 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. The Council is aware that this may mean that some Tasman residents may be unhappy with the lack of work proposed for the transportation network.
Damage to roads and the transportation assets from storms and heavy rainfall events.	In December 2010 and December 2011 the Tasman district experienced extremely heavy rainfall which led to flooding, slips and debris flows resulting in damage to the Council's infrastructure and private property. This was particularly destructive in Golden Bay in 2011 and in Murchison and Golden Bay in 2010. Both of these events depleted the Council's reserves funds. As well these more significant events, there has been an increase in the severity and frequency of storm events occurring in the district during recent years. This has resulted in a significant increase in emergency works costs and consequently forecast expenditure has been increased to align with recent trends. The Council has budgeted for $2 million per year for emergency works within the transportation network. As well as this the Council maintains a General Disaster Fund to help fund the cost repairs following extremely damaging weather events.
Increasing demand for transportation services due to growth.	Residential growth in the Richmond area is creating extra pressure and demand on the Council's transportation network, specifically within Richmond. This growth will increase traffic volumes and will 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 improvements on Salisbury Road and Oxford Street.
Crashes on the road. network	An unacceptably high number of crashes occur on the road network. The Council is constantly reviewing the network and intersections to identify improvements that can be made to help to address this problem. This work will generally be funded from the minor improvements budget which is limited to projects with a value of less than $300,000 and has a total annual budget of $750,000.

4 OPERATIONS, MAINTENANCE AND RENEWALS STRATEGY

4.1 Operations and Maintenance

The Council has determined that the most effective way to maintain the network is to contract out the physical maintenance works to commercial contractors in order to procure the work at true market value. By using a competitive tendering model in accordance with national requirements the Council is eligible to receive financial assistance from the NZ Transport Agency (currently set at 52% for 2015/16 financial year and then 51% for the following two year period 2016-2018).

The majority of the maintenance work undertaken on the transportation network is eligible to receive this financial assistance provided it meets the criteria set by the NZ Transport Agency. Exceptions to this are maintenance of carparks and associated lighting, footpaths, walkways, footbridges and street furniture.

Transportation activity management services are largely provided for "in-house" by the Council's staff. This follows the Engineering Department reorganisation that took place in 2013. Prior to this activity management was largely provide by external consultants.

Occasionally there is a need to engage consultants to provide specialist professional services when the scope of the work exceeds the Council's available resources or expertise.

The district has been divided into four contract areas as shown in the map in Appendix Y and summarised below in Table 4-1.

Table 4-1: Maintenance Networks

Contract Name	Contractor	Start Date	Contract Duration
C788 Golden Bay Roading Maintenance	Fulton Hogan Ltd	1 October 2010	3 + 1 + 1
C871 Tasman Urban Maintenance	Fulton Hogan Ltd	1 July 2012	3 + 1 + 1
C875 Tasman Rural Maintenance	Fulton Hogan Ltd	1 July 2012	3 + 1 + 1
C787 Murchison Roading Maintenance	Fulton Hogan Ltd	1 July 2010	3 + 1 + 1

Operation and maintenance is discussed in detail in Appendix E.

4.2 Renewals

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

Assets are considered for renewal as they near the end of their effective working life, or where the cost of maintenance becomes uneconomical and/or when the risk of failure is sufficiently high.

For most transportation assets, the main parameter that determines the need for road renewals is the asset condition.

For pavements and surfacings, the Council utilises modelling software in conjunction with field measurements and maintenance history to optimise the network renewals programme. For other assets such as footpaths and drainage structures, a combination of the condition, expected life and engineering judgement is used to programme renewals.

The quantity of renewals undertaken may be affected by the requirement to justify planned works with the NZ Transport Agency prior to funding approval. Works which cannot be justified will not receive subsidy, and therefore may be deferred or funded as a non-subsidised project. Funding applications are yet to be completed for the renewals work identified within the financial forecast; therefore at this stage the extent of deferred renewals is unknown.

Renewals are discussed in detail in Appendix I.

5 EFFECTS OF GROWTH, DEMAND AND SUSTAINABILITY

5.1 Population Growth

A comprehensive Growth Demand and Supply Model (GDSM or growth model) has been developed for Tasman District. The growth model is a long term planning tool, providing population and economic projections district wide. The population projections in the growth model have been taken from Statistics New Zealand population projections derived from the 2013 census data, using a "medium" growth rate projection for all settlement areas, see Figure 5-1.

The supply potential is assessed as well as demand, and a development rollout for each settlement is then examined. The ultimate outputs of the GDSM include a projection of the district's population, and forecast of where and when new dwellings and business buildings will be built. The development rollout from the Growth Model informs capital budgets (new growth causes a demand for network services) which feed into the AMPs and in turn underpin the Long Term Plan and supporting policies e.g. Development Contributions Policy. The 2014 growth model is a fourth generation growth model with previous versions being completed in 2005, 2008 and 2011. The Growth Demand and Supply Model is described in brief in Appendix F and in more detail in a separate model description report.

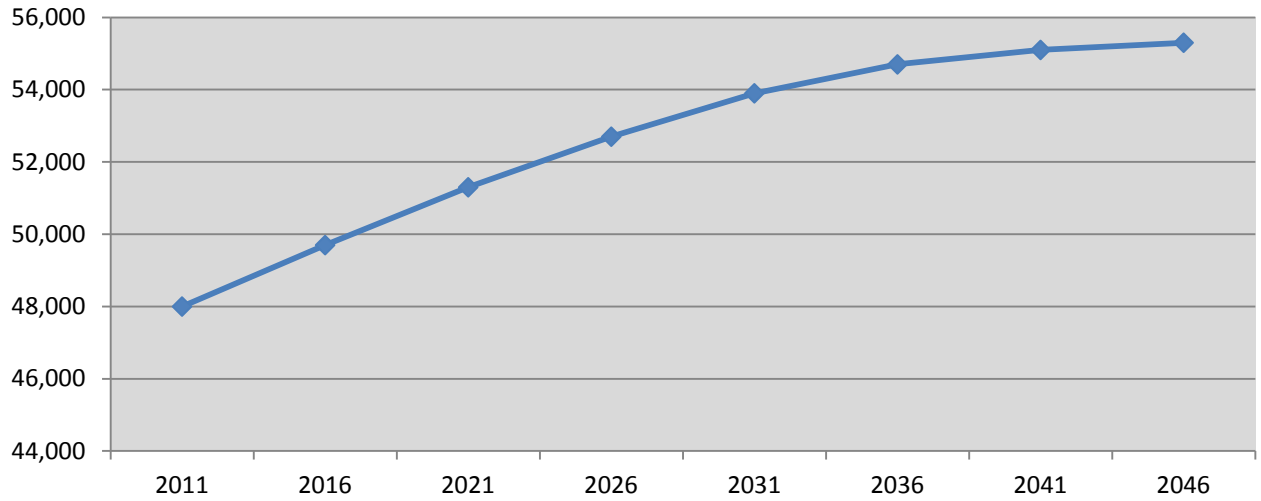


Figure 5-1: Projected Population Growth for Tasman District 2011-2046

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

Many of the Council's cross-organisational initiatives are shaped around the community well-being (economic, social, cultural and environmental) and take into consideration the well-being of future generations. This is demonstrated in the:

- Council's Integrated Risk Management approach which analyses risks and particularly risk consequences in terms of community well-being;
- Council's Growth Demand and Supply Model which seeks to forecast how and where urban growth should occur taking into account opportunities and risks associated with community well-being;
- Council adopting a 30 year forecast in the Activity Management Plans and the 30 year plus Infrastructure Strategy, to ensure the long term financial implications of decisions made now are considered;
- adoption of a Strategic Challenges framework and work programme that includes consideration of natural hazards, financial sustainability and growth in the District.

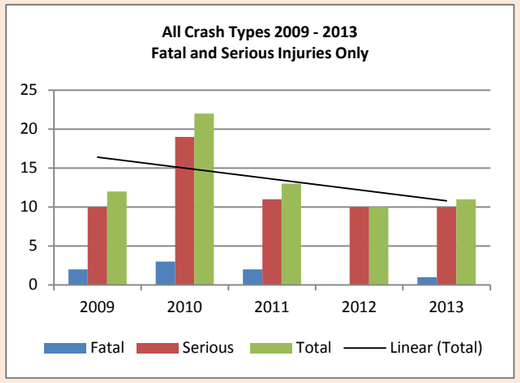
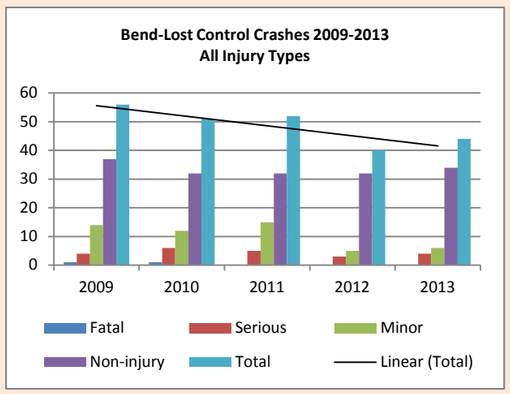
At the activity level, a sustainable development approach is demonstrated by the following:

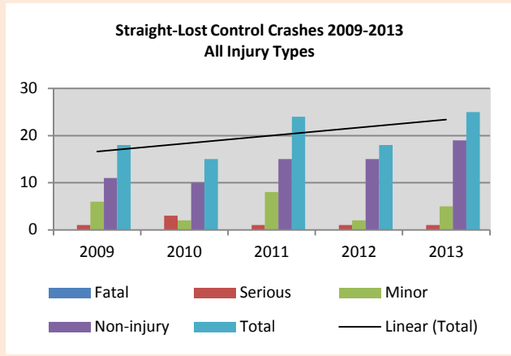
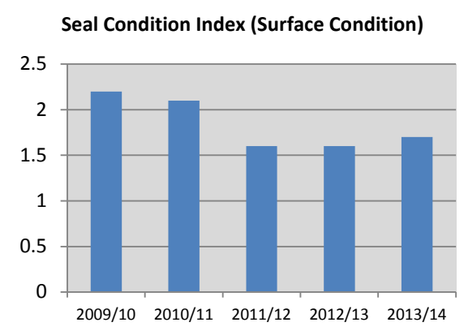
- providing for, and encouraging alternative modes of travel, for example;
    - promoting School Travel Plans (walking to school buses);
    - promoting Workplace Travel Plans;
    - providing incentives to employers to support alternative forms of transport;
    - implementing a carpooling scheme and promotion campaign;
    - providing walking, cycling and public transport opportunities;
    - providing funding towards the Total Mobility Scheme;
    - providing funding towards Nelson City Council's passenger transport.
- recycling natural resources where possible though stabilisation of existing pavements as an alternative to 'digging out';
- ensuring minimal impact on the environment by the activity ie, providing for fish passage when replacing culverts;
- ensuring that the district's likely future transportation requirements are identified at an early stage and that they and the financial risks and shocks are competently managed over the long term without the Council having to resort to disruptive revenue or expenditure measures;
- maintaining the network on a least whole-of-life cost approach to ensure inter-generational equity.

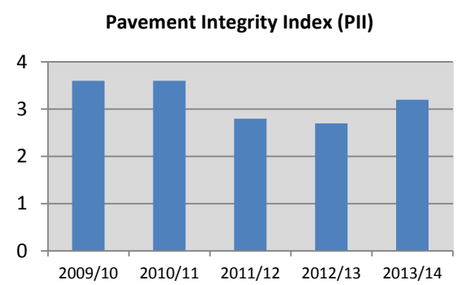
6 LEVEL OF SERVICE AND PERFORMANCE MEASURES

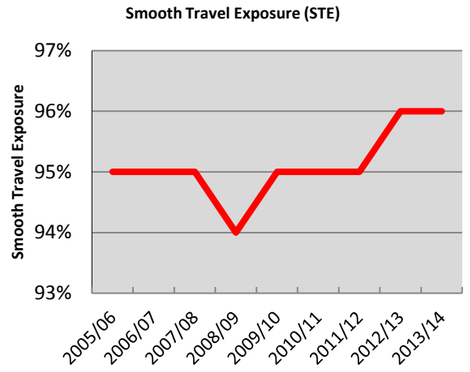
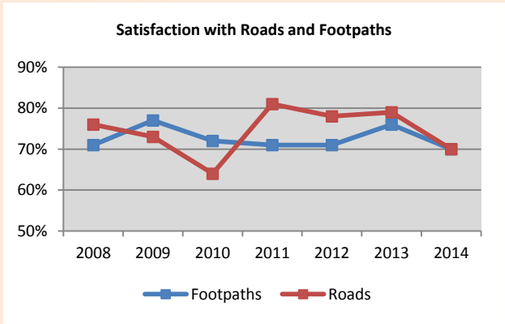
Table 6-1 summarises the levels of service and performance measures for the transportation activity. Development of the levels of service is discussed in detail in Appendix R. Shaded rows are the levels of service and performance measures to be included in the Long Term Plan.

Table 6-1: Levels of Service

ID	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	By Year 10
				2015/16	2016/17	2017/18	2024/15
Community Outcome: Our communities are healthy, safe, inclusive and resilient.							
1	**Safety** Our transportation network is becoming safer for its users.	There is a downward trend in the number of serious and fatal injury crashes occurring on our road network. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December. *ONRC Safety – OM1.*	**Actual = Decreasing** 	Decreasing	Decreasing	Decreasing	Decreasing
2		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. *LGA Mandatory Measure.*	**Actual = New measure**	-1	-1	-1	-1 per year
3		There is a decreasing number of loss of control crashes occurring on bends on our road network each year. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December.	**Actual = Decreasing** 	Decreasing	Decreasing	Decreasing	Decreasing

ID	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	By Year 10
				2015/16	2016/17	2017/18	2024/15
4	**Safety** Our transportation network is becoming safer for its users.	There is a decreasing number of loss of control crashes on straights on our road network each year. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December.	**Actual = Increasing** 	Decreasing	Decreasing	Decreasing	Decreasing
5	**Resilience** We proactively maintain roads in high risk areas to minimise unplanned road closures.	Specified sites that the Council considers to have a high risk of failure are inspected and attended to if necessary in response to severe weather warnings. Measured through the road maintenance contractor's monthly reports.	**Actual = New measure**	Sites are inspected in response to severe weather warnings at least 100% of the time			
6	**Accessibility** Our transportation network enables the community to choose from various modes of travel.	The Council constructs a minimum of 500 metres of new footpath each financial year to reduce the length of gaps in the existing footpath network Measured using RAMM inventory data and GIS mapping.	**Actual = New measure**	>=500m	>=500m	>=500m	>=500m per year
Community Outcome: Our infrastructure is efficient, cost-effective and meets current and future needs.							
7	**Value for Money** Our transportation network is maintained cost effectively and whole of life costs are optimised.	The Council maintains the Condition Index (CI) for sealed roads within the specified range. As reported through RAMM. CI is a measure of visual defects identified during Condition Rating inspections completed biennially (last completed 2013/14, next due 2015/16), and is calculated by RAMM based on the following defects: • alligator cracking; • ravelling; • potholes; • pothole patches; • flushing. The lower the CI, the better the condition. As a general rule, CI of 0 to 2 is considered excellent, 2 to 5 is considered good, and 5 to 10 is fair.	**Actual = 1.7 in 2013/14** 	1.7 to 2.1	1.7 to 2.1	1.7 to 2.2	1.8 to 2.5

<table>
<tr><th rowspan="2">ID</th><th rowspan="2">Levels of Service
(we provide)</th><th rowspan="2">Performance Measure
(we will know we are meeting the level of service if…)</th><th rowspan="2">Current Performance</th><th colspan="4">Future Performance Targets</th></tr>
<tr><th>Year 1
2015/16</th><th>Year 2
2016/17</th><th>Year 3
2017/18</th><th>By Year 10
2024/15</th></tr>
<tr><td>8</td><td rowspan="3">Value for Money
Our transportation network is maintained cost effectively and whole of life costs are optimised.</td><td>The Council maintains the Pavement Integrity Index (PII) within the specified range.
As reported through RAMM.
PII combines surface faults (CI) with structural defects rutting, roughness and shoving.
The lower the PII, the better the condition.</td><td>Actual = 3.2 in 2013/14
 
</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td></tr>
<tr><td>9</td><td>The percentage of sealed local road that is resurfaced each financial year.
LGA Mandatory Measure.</td><td>Actual = New measure</td><td>4.8%</td><td>4.8%</td><td>4.8%</td><td>6.9%</td></tr>
<tr><td>10</td><td>Travel Time
Our transportation network is managed so that changes to normal travel time patterns across the network are communicated effectively.</td><td>The Council communicates planned works programme and road closures to road users via the weekly road status report published on Council’s website.
Measured by tracking weekly website updates.
ONRC TTR – PM1.</td><td>Actual = New measure</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td>11</td><td rowspan="2">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.</td><td>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 (last completed 2013/14, next due 2016/17).
ONRC Safety – PM8.
LGA Mandatory Measure.</td><td>Actual = 94% as at May 2014
94.3% as at November 2010</td><td>N/A</td><td>>=90%</td><td>N/A</td><td>>=90%</td></tr>
<tr><td>12</td><td>The average ride comfort level of the sealed road network meets specified levels.
As measured by biennial Roughness survey (last completed 2013/14, next due 2015/16) and reported through RAMM.
ONRC Amenity – OM2.</td><td>Actual = 2013/14 average roughness in table:
<table><tr><th>Classification</th><th>Urban</th><th>Rural</th><th>All Roads</th></tr><tr><td>Arterial</td><td>65</td><td>74</td><td>73</td></tr><tr><td>Primary Collector</td><td>67</td><td>84</td><td>75</td></tr><tr><td>Secondary Collector</td><td>81</td><td>94</td><td>87</td></tr><tr><td>Access</td><td>90</td><td>107</td><td>98</td></tr><tr><td>Access (LV)</td><td>110</td><td>104</td><td>105</td></tr></table></td><td colspan="4">Arterial <= 100 NAASRA
Primary Collector: Urban <= 110, Rural <= 100 NAASRA
Secondary Collector <= 110 NAASRA
Access <= 120 NAASRA
Access (LV) <= 140 NAASRA</td></tr>
</table>

<table>
<tr><th rowspan="2">ID</th><th rowspan="2">Levels of Service
(we provide)</th><th rowspan="2">Performance Measure
(we will know we are meeting the level of service if…)</th><th rowspan="2">Current Performance</th><th colspan="4">Future Performance Targets</th></tr>
<tr><th>Year 1
2015/16</th><th>Year 2
2016/17</th><th>Year 3
2017/18</th><th>By Year 10
2024/15</th></tr>
<tr><td>13</td><td>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.</td><td>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:
<u>Urban Roads</u><table><tr><th>Vehicles per Day</th><th>Roughness (NAASRA)</th></tr><tr><td><500</td><td><=180</td></tr><tr><td>500-3,999</td><td><=150</td></tr><tr><td>4,000-9,999</td><td><=120</td></tr><tr><td>>=10,000</td><td><=110</td></tr></table><u>Rural Roads</u><table><tr><th>Vehicles per Day</th><th>Roughness (NAASRA)</th></tr><tr><td><1,000</td><td><=150</td></tr><tr><td>>=1,000</td><td><=130</td></tr></table>As reported through RAMM, based on traffic count and roughness survey data.
ONRC Amenity – OM1.
LGA Mandatory Measure.</td><td>Actual = 96% for 2013/14
 
</td><td>>=95%</td><td>>=95%</td><td>>=95%</td><td>>=93%</td></tr>
<tr><td>14</td><td></td><td>Residents are satisfied with the Council's roads and footpaths in the District.
As measured through the annual Communitrak residents survey.</td><td>Actual =
From Communitrak™ residents' survey undertaken in May 2014:
Footpaths =70%,
Roads = 70% 
</td><td>Footpaths >=70%
Roads >=70%</td><td>Footpaths >=70%
Roads >=70%</td><td>Footpaths >=70%
Roads >=70%</td><td>Footpaths >=70%
Roads >=70%</td></tr>
<tr><td>15</td><td></td><td>Customer Service Requests relating to the transportation network and activities are completed on time.
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).
ONRC Safety – PM7.
LGA Mandatory Measure.</td><td>Actual =
2013/14 percentage of Customer Service Requests were completed on time:
Maintenance Contractor = 94%
Council Staff = 76%</td><td>>=90%</td><td>>=90%</td><td>>=90%</td><td>>=90%</td></tr>
</table>

7 CHANGES MADE TO ACTIVITY OR SERVICE

Table 7-1 summarises the key changes for the management of the transportation activity since the 2012 Activity Management Plan.

Table 7-1: Key Changes

Key Change	Reason for Change
The Council is required to adopt the NZ Transport Agency's One Network Road Classification (ONRC). This hierarchy is used to improve the consistency of customer's experience across all roads nationally and to allow for better benchmarking practices across all road controlling authorities. The ONRC provides guidance on the customer levels of service and technical performance measures appropriate to each classification of road. The Council has applied this classification and are planning to deliver a network that meets the fit-for-purpose outcomes of the ONRC and provides good value for money, without over or under investing in the transportation network. Implementation of the ONRC will require further review and consideration when undertaking review of this AMP.	The One Network Road Classification (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.
NZ Transport Agency's funding assistance rates will change from 49% for maintenance and 59% for renewals, to 52% in 2015/16 and 51% thereafter for all subsidised transportation activities. Total Mobility is the only exception which is funded at 60%.	The NZ Transport Agency is under increasing pressure to reduce expenditure due to the release of the latest Government Policy Statement (GPS) by the Ministry of Transport.
Approximately $47 million worth of capital work has been removed from the forward work programme over 10 years. All seal extensions have been removed from the programme. Some road reconstruction projects have also been removed and re-scoped with the intention of completing them as minor projects instead. Key changes are summarised below:	The Council is under increasing pressure to minimise its long term debt forecast and keep rate rises to a minimum. The Council is instead focusing on delivering critical core infrastructure projects and maintaining its existing network.
• reduction in network and asset management budget of approximately $13 million over 20 years;	Cost savings due to reorganisation of the Engineering Department.
• reduction in drainage renewals budget of approximately $15 million over 20 years;	Modelling supports a lower rate in drainage renewal investment now that a backlog has been largely cleared.
• reduction in sealed pavement resurfacing budget of approximately $8.5 million over 20 years;	Driven by the generally good condition of the sealed network and the associated surface ages and predicted deterioration.

Key Change	Reason for Change
• reduction in bridge renewals budget of approximately $8.0 million over 20 years;	Nominal annual budget removed and replaced by specific budgets to reflect actual bridge condition needs and timing.
• reduction in minor improvements budget of approximately $10.5 million over 20 years;	Reduction reflects the current forward programme and project readiness.
• reduction in new footpath construction budget of approximately $6.2 million over 20 years;	Focus is on completing gaps in the network rather than extending the network.
• increase in emergency reinstatement budget of approximately $25 million over 20 years.	To reflect actual cost of emergency works over the past three years.
Some Class 1 weight or speed restricted bridges which have little access value (i.e. servicing one property) may now be divested or posted where possible rather than upgrading, based on a case by case basis.	The Council is under increasing pressure to provide value. The bridges of concern provide very little benefits to the community, and it is therefore questionable as to why Council owns or renews them.

8 KEY PROJECTS

Table 8-1 details the key capital and renewal work programmed for years 2015 to 2025 excluding inflation. Generally projects that have a total cost in excess of $0.5 million are considered to be a key project.

Appendix F includes a full detailed list of new capital works projects driven by growth and / or an increase in level of service.

Appendix I includes a full detailed list of renewal projects.

Table 8-1: Significant Projects

Project Name	Description	Year 1 ($)	Year 2 ($)	Year 3 ($)	Years 4 to 10 ($)	10 Year Total ($)	Project Driver[1]
Sealed Road Resurfacing	Resurfacing of sealed roads.	1,700,000	1,700,000	1,700,000	17,500,000	22,600,000	R
Drainage Renewals	Renewal of drainage assets including kerb and channel, culverts, sumps and water tables.	919,652	919,652	919,652	5,977,564	8,736,520	R
Unsealed Road Metalling	Routine metalling of unsealed roads to replace lost aggregate.	823,500	823,500	823,500	5,764,500	8,235,000	R
Pavement Rehabilitation	Pavement rehabilitation of sites which meet NZTA funding criteria.	350,000	350,000	350,000	5,600,000	6,650,000	R
Bridge Renewals	Sites yet to be determined, selection will be based on priority matrix, the NZTAs funding criteria, and high productivity motor vehicle routes.	0	0	0	600,000	600,000	R
Traffic Services Renewals	Renewal of signs, edge marker posts and street lighting.	465,226	465,226	465,226	2,906,582	4,302,260	R
Structures Component Replacements	Bridge component replacements.	428,440	378,440	378,440	2,649,080	3,834,400	R
Footpath Rehabilitation	Footpath and walkway rehabilitation, sites identified in priority matrix.	100,000	100,000	100,000	700,000	1,000,000	R
New Footpaths	Construction of new footpaths across the district.	160,000	160,000	160,000	1,120,000	1,600,000	LOS/G

[1] G = Growth, LoS = Levels of Service, R = Renewal

Project Name	Description	Year 1 ($)	Year 2 ($)	Year 3 ($)	Years 4 to 10 ($)	10 Year Total ($)	Project Driver[1]
Minor Improvements	Minor improvements, sites identified in priority matrix.	750,000	750,000	750,000	5,250,000	7,500,000	LOS
Tasman's Great Taste Trail Construction	Construction of the Great Taste Trail from Spooners Tunnel to Woodstock.	640,000	600,000	500,000	500,000	2,240,000	LOS
Richmond Town Centre Renewal	Upgrade of Queen Street to provide improved traffic calming and shared spaces.	100,000	2,276,500	2,276,500	0	4,653,000	LOS/G
Motueka Town Centre Renewal	Upgrade of High Street pedestrian areas to provide for a shared environment.	0	86,000	775,000	0	861,000	LOS/G
Brightwater Town Centre Improvements	Upgrade of Ellis Street to provide for a shared environment.	0	0	165,000	1,200,000	1,365,000	LOS/G
Bateup Road Widening	Reconstruction of Bateup Road to provide for growth.	50,000	250,000	2,500,000	0	2,800,000	LOS/G
Oxford Street Widening	Reconstruction of Oxford Street between Wensley Road and Gladstone Road to improve flows on the Richmond Ring Route.	0	0	0	872,000	872,000	LOS/G
William Street and Salisbury Road Intersection Improvements	Intersection upgrade to improve efficiency.	0	0	0	550,000	550,000	LOS/G
Queen Street and Salisbury Road Intersection Improvements	Intersection upgrade to improve efficiency.	0	0	0	1,041,000	1,041,000	LOS/G
Pah Street, Greenwood Street and High Street Intersection Improvements	Signalisation of the intersection to improve efficiency.	0	0	50,000	500,000	550,000	LOS/G

9 MANAGEMENT OF THE ACTIVITY

9.1 Management

The strategic approach to management of the transportation activity is diagrammatically represented below in Figure 9-1.

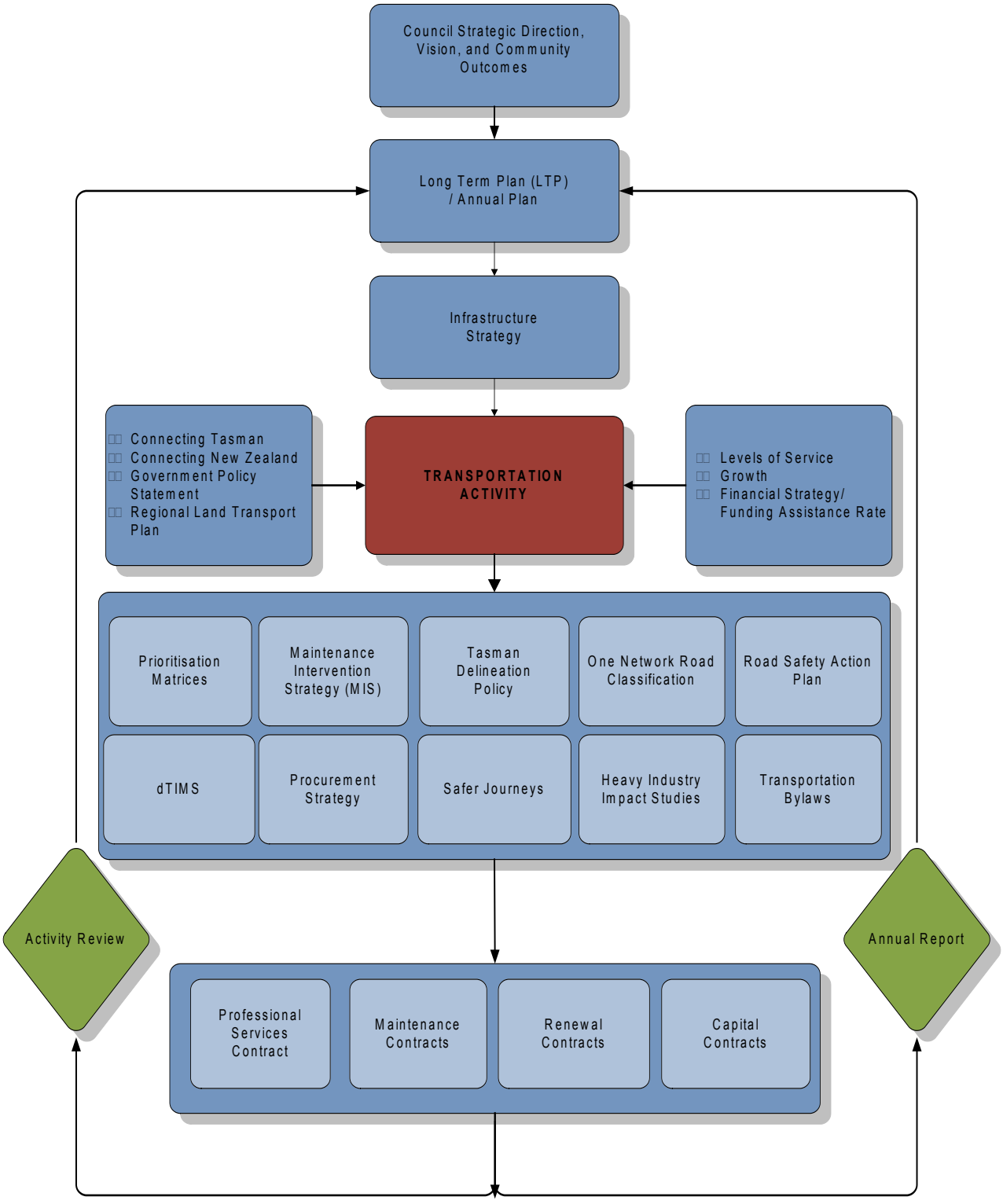


Figure 9-1: Hierarchy of Council Policy, Strategy and Planning for the Transportation Activity

9.2 Service Delivery Review

Section 17A of the Local Government Act 2002 requires all local authorities to review the cost-effectiveness of its current arrangements for delivering good quality local infrastructure, local public services, and performance of regulatory functions at least every six years.

The Council engaged Morrison Low to review its delivery of services provided by its Engineering Department in 2012. The review recommended a re-organisation of the department to reduce the proportion of asset management services that were provided by external consultants. The re-organisation was implemented during 2013 and has provided cost savings to the Council, an increase in asset knowledge, and greater interaction with customers.

In addition to this review, the Council reviews how it procures and delivers its Transportation services at the time of renewing individual maintenance and renewal contracts. These reviews include consideration of the maintenance specification, how work is packaged together e.g. the size and shape of contact areas. For example, in 2012 the Waimea Road Maintenance and the Tasman Road Maintenance contract areas were amended to provide network that were more similar in nature rather than being solely proximity based. This was because urban road networks experience different issues and have different maintenance regimes when compared to rural roads. The result of this review was the creation of the Tasman Urban Maintenance contract and the Tasman Rural Maintenance contract.

The Council is also aware of other opportunities to maximise efficient delivery of services, for example combined contracts or partnerships with other road controlling authorities, e.g. the NZ Transport Agency or Nelson City Council. The Council has formed good relationships with these parties to enable partnership discussions to take place as opportunities arise.

9.3 Significant Effects

The potential significant negative and significant positive effects are listed below in Table 9-1 and Table 9-2 respectively.

Table 9-1: Significant Negative Effects

Effect	Description	Mitigation Measure
Noise Generation	Vehicle use within the network produces noise. Social - The level of noise generated generally depends on the speed of vehicles, and the type of road surface and/or vehicle tyre types.	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 the most expensive; however it is also the most effective and typically provides a longer surface life than a chip sealed surface. Council can also reduce noise by encouraging slow streets, implementing traffic calming and ensuring the hierarchy of roads is followed in accordance with the Council's Engineering Standards.
Light Spill	Council installs lighting in public areas and along roads to improve the safety and amenity of the area. **Social** – This can have an adverse affect on neighbouring properties due to light spill. **Environmental** – Upward light spill can adversely affect user groups by 'polluting' the night skies.	Council is currently upgrading 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.
Vehicle Emissions	Vehicles using the road network produce emissions. **Environmental –** Discharges from motor vehicles have the potential to diminish water quality in adjacent streams from surface water run-off from roads. Air quality can be affected by dust generation from vehicles travelling on unsealed roads.	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. 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. Parties affected by dust from public roads are able to apply to Council for a Road Oiling Permit.
Traffic Congestion	Increasing traffic volumes may result in congestion of urban arterial links. **Economic –** Traffic congestion causes delays to the road users and has the potential to affect the cost of freight.	Council has identified a number of capital projects such as intersection upgrades and the Richmond Ring Route to provide for future traffic flows.

Effect	Description	Mitigation Measure
Road Crashes	**Social –** Road users face potential crashes and associated injury or death.	The detrimental impact of crashes can be reduced through undertaking design of new roads and improvement to existing roads in accordance with best practise design. The Council undertakes works so that the effect of the crashes are 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.
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 Historic Places Trust 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 Histroic Places Authority is required.

Table 9-2: Significant 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.
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 e.g. 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 TRMP.
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.

9.4 Assumptions

The Council has made a number of assumptions in preparing the Activity Management Plan. These are discussed in detail in Appendix Q. Table 9-3 lists the most significant assumptions and uncertainties that underline the approach taken for this activity.

Table 9-3: Major Assumptions

Assumption Type	Assumption	Discussion
Financial assumptions.	That all expenditure has been stated in 1 July 2014 dollar values and no allowance has been made for inflation and all financial projections are GST exclusive.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of the plans if inflation is higher than allowed for, but the Council is using the best information practically available from Business and Economic Research Limited (BERL). The bitumen cost index is subject to high fluctuations and is difficult to predict and manage.
Asset data knowledge.	That the Council has adequate knowledge of its assets and their condition so that the planned renewal works will allow the Council to meet the proposed levels of service.	There are several areas where the 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.
Growth forecasts.	That the district will grow as forecast in the Growth Demand and Supply Model (refer to Appendix F).	If the growth is very different it will have a moderate impact. If higher, Council may need to advance capital projects. If it is lower, Council may have to defer planned works.
Timing of capital projects.	That capital projects will be undertaken when planned.	The risk of the timing of projects changing is high due to factors like resource consents, funding and land purchase. The Council tries to mitigate these issues by undertaking the consultation, investigation and design phases sufficiently in advance of the construction phase. If delays are to occur, it could have significant effects on the level of service.
Funding of capital projects.	That the projects identified for subsidies will receive subsidy at the anticipated levels.	The risk of Council not receiving project subsidy is high due to the current NZ Transport Agency's criteria. If subsidies are not secured it may have significant effect on the levels of service as projects may be deferred due to lack of funding.
Accuracy of capital project cost estimates.	That the capital project cost estimates are sufficiently accurate enough to determine the required funding level.	The risk of large under estimation is low; however the importance is moderate as the Council may not be able to afford the true cost of the projects. The Council tries to reduce the risk by including a standard contingency based on the projects lifecycle.

Assumption Type	Assumption	Discussion
Land purchase and access.	That the Council will be able to secure land and/or access to enable completion of projects.	The risk of delays to project timing or changes in scope is high due to the possibility of delays in obtaining land. Where possible the Council undertakes land negotiations well in advance of construction to minimise delays. If delays do occur, it may influence the level of service the Council can provide.
Changes in legislation and policy.	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 politics. If major changes occur it is likely to have an impact on the required expenditure. The Council has not mitigated the effect of this.
Resource consents.	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.	The risk of material change in the resource consent process is low.
Emergency funding.	That the level of funding in these budgets and held in Council's disaster fund reserves 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 reprioritisation of funds.
Network capacity.	That Council's knowledge of network capacity is sufficient enough to accurately programme capital works.	If the network capacity is higher than assumed, Council may be able to defer works. The risk of this occurring is low and will have little significance. If the network capacity is lower than assumed, Council may be required to advance capital works projects to address congestion. The risk of this occurring is low; however the impact on expenditure would be significant.

9.5 Risk Management

The Council's risk management approach is described in detail in Appendix Q.

The risk assessment framework was developed in 2011 to be consistent with *AS/NZS IS 4360:2004 Risk Management.* It assesses risk exposure by considering the consequence and likelihood of each risk event. Risk exposure is managed at three levels within the Council organisation:

- Level 1 – Corporate Risks
- Level 2 – Activity Risks
- Level 3 – Operational Risks.

At an activity level (Level 2), the Council has identified key risks to the activity. These are listed in Table 9-4.

Table 9-4: Key Transportation Risks

Risk Event	Mitigation Measures
Catastrophic failure of a network structure.	Current: • routine maintenance and inspections are included in the network road maintenance contracts; • detailed inspections are completed for the entire bridge network every two years; • reactive inspection following extreme weather events. Proposed: • bridge rating assessments for bridges that have not yet been rated and where bridge inventory is not well known.
Premature deterioration or obsolescence of an asset.	Current: • maintenance performance measures included in the network maintenance contracts; • routine inspections; • street light replacements are LED. Proposed: • street lighting renewal strategy to be developed by 2015.
Sub-optimal design and/or construction practices or materials.	Current: • NZTA material inspections; • contract quality plans; • professional services and construction contract specifications; • third party reviews. Proposed: • ongoing staff training.
Ineffective stakeholder engagement e.g. iwi, Historic Places Trust, community groups.	Current: • the Council holds regular iwi meetings; • the Council's GIS software includes layers identifying cultural heritage sites and precincts. Council staff apply for Historic Places Trust authorities when these known sites are at risk of damage or destruction; • project management processes and Council's consultation guidelines are followed.

Risk Event	Mitigation Measures
Failure to gain property access.	Current: • stakeholder management; • works entry agreements; • use of the Council's property team to undertake land purchase negotiations; • Public Works Act.

9.6 Asset Criticality

In 2014 the Council developed a draft transportation critical asset framework to identify the critical asset hierarchy of an asset. Assets are classified as either primary or secondary criticality, or non-critical. The framework is largely complete but is yet to be finalised and implemented. It is planned to implement the framework during 2015 to test the draft weightings and respective scores. It is likely that the framework will be refined after this initial test run.

The critical asset hierarchy will be a key input that informs asset life-cycle decisions, especially when considering how much the Council should prolong the life of an asset.

9.7 Improvement Plan

This Activity Management Plan document was subject to a peer review in its draft format by Waugh Infrastructure Management Ltd in February 2015. The document was reviewed for compliance with the requirements of the LGA 2002. The findings and suggestions will be assessed and prioritised by the asset management team and either implemented in the final version of this document or added to the Improvement Plan.

The Improvement Plan is currently under development and will be included in Appendix V in the final version of this document.

10 SUMMARY OF COST FOR ACTIVITY

The following figures all include inflation and have been generated from the Funding Impact Statement detailed in Appendix L and the Public Debt and Loan Servicing Cost information detailed in Appendix K. Further detail is held in Appendix E, F and I for operating and maintenance, new capital and renewal costs respectively, the detailed information in these appendices excludes inflation.

10.1 Total Expenditure

Figure 10-1 show the total expenditure for the transportation activity for the first 10 years.

Year 3 shows the largest capital spend due to the construction of two major projects; Bateup Road widening and the Richmond Town Centre upgrade.

Operating expenditure increases from $22.9 to $32.0 million over the 10 year period. This is predominately due to inflation.

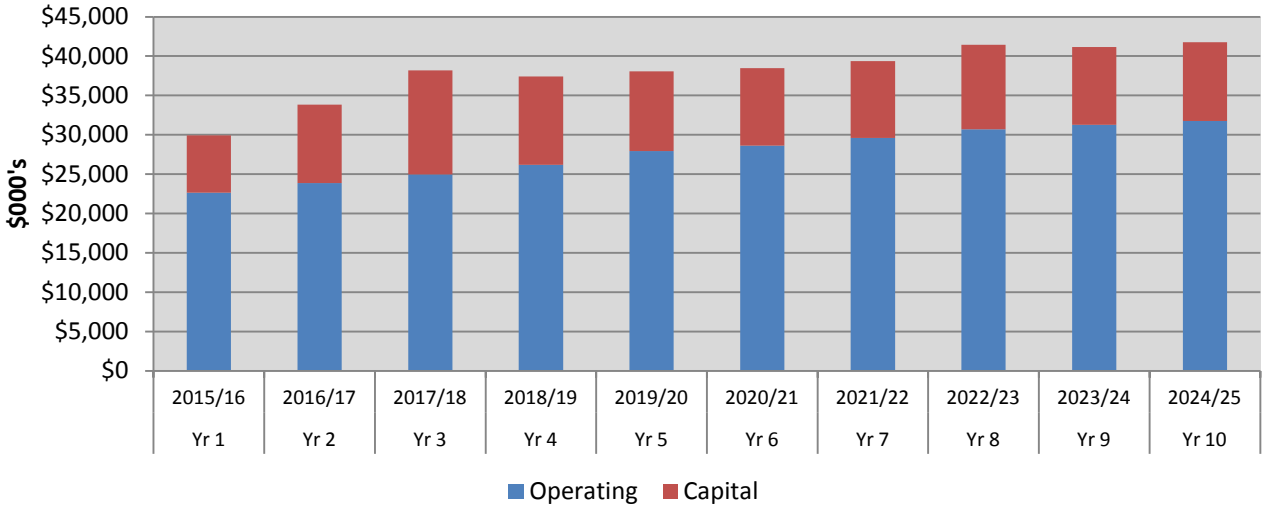


Figure 10-1: Total Annual Expenditure Years 1 to 10

10.2 Total Income

Figure 10-2 shows the total income for the transportation activity for the first 10 years.

Rate increases account for the majority of the increase in income.

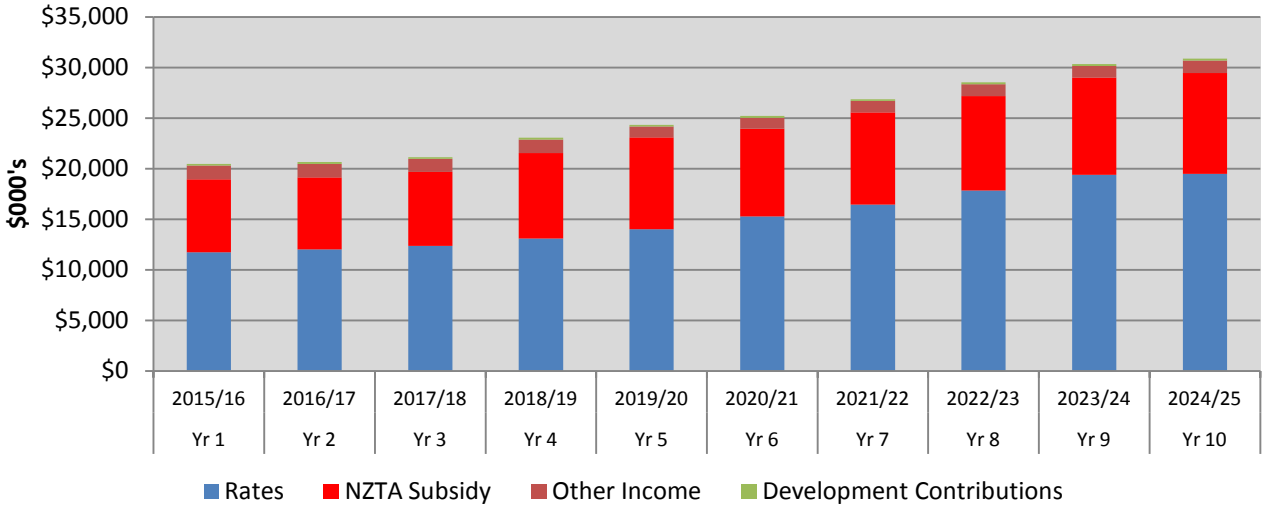


Figure 10-2: Total Annual Income Years 1 to 10

10.3 Operation and Maintenance Expenditure

Figure 10-4 shows the operations and maintenance expenditure for the transportation activity for the first 10 years.

Operating costs for transportation increase by around 3.8% per year on average over years 1 to 10, with indirect costs such as interest and depreciation, rising more quickly than direct costs. Longer term, costs are forecast to increase by around 2.4% per year.

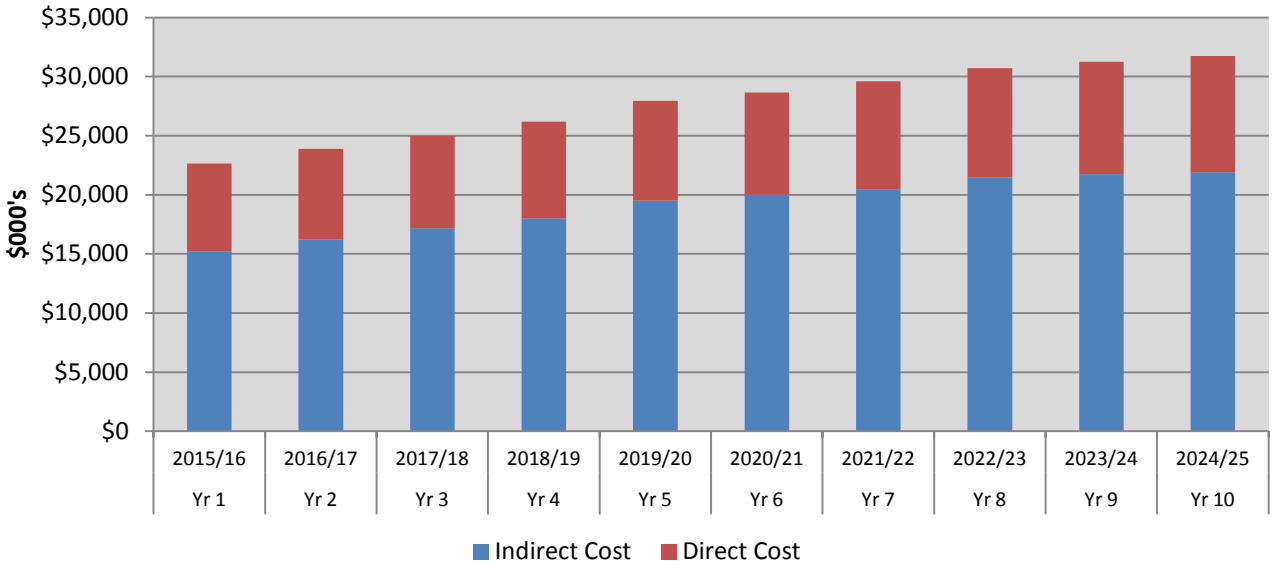


Figure 10-3: Annual Operating Costs Years 1 to 10

10.4 Capital Expenditure

Figure 10-3 shows the capital expenditure for the transportation activity for the first 10 years.

Around $10m per year in capital expenditure is forecast on average for years 1 to 10. A small spike in year three is associated with upgrades to Bateup Road. Both in the short term and longer term, the bulk of the capital works programme is focused on maintaining the existing network through renewals, accounting for around 70% of the total capital spend.

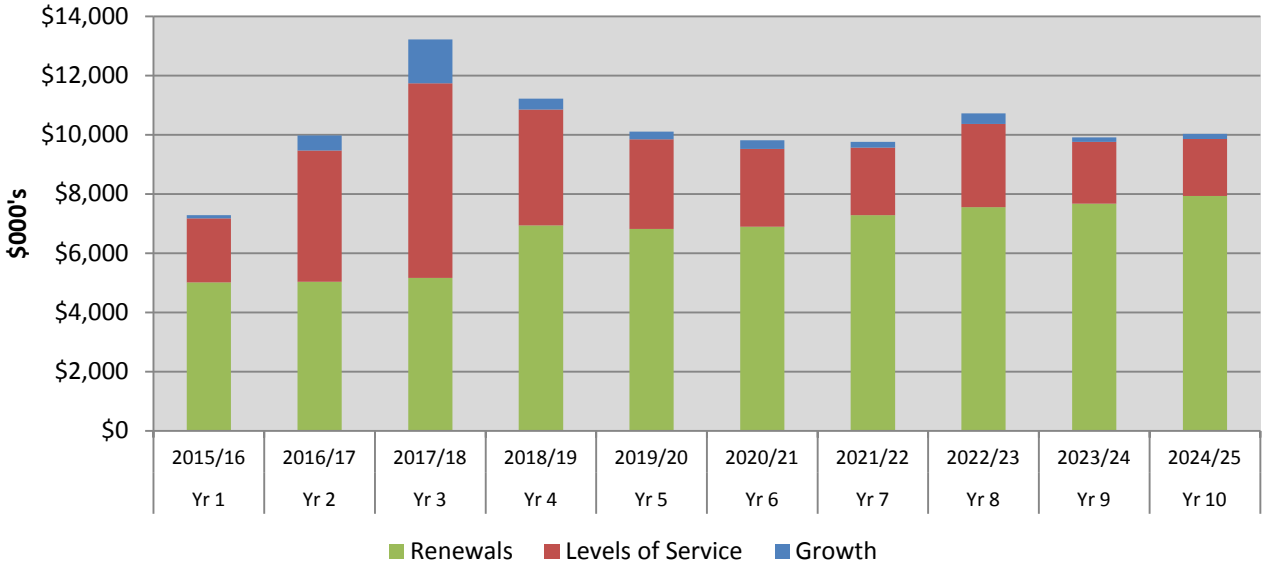


Figure 10-4: Annual Capital Expenditure Years 1 to 10

10.5 Debt and Servicing Costs

Figure 10-5 show the total debt and servicing costs for the transportation activity for the first 10 years.

Debt and interest costs associated with transportation continue to rise from $30m to a peak of $35m, before falling away to around $23m by year 10.

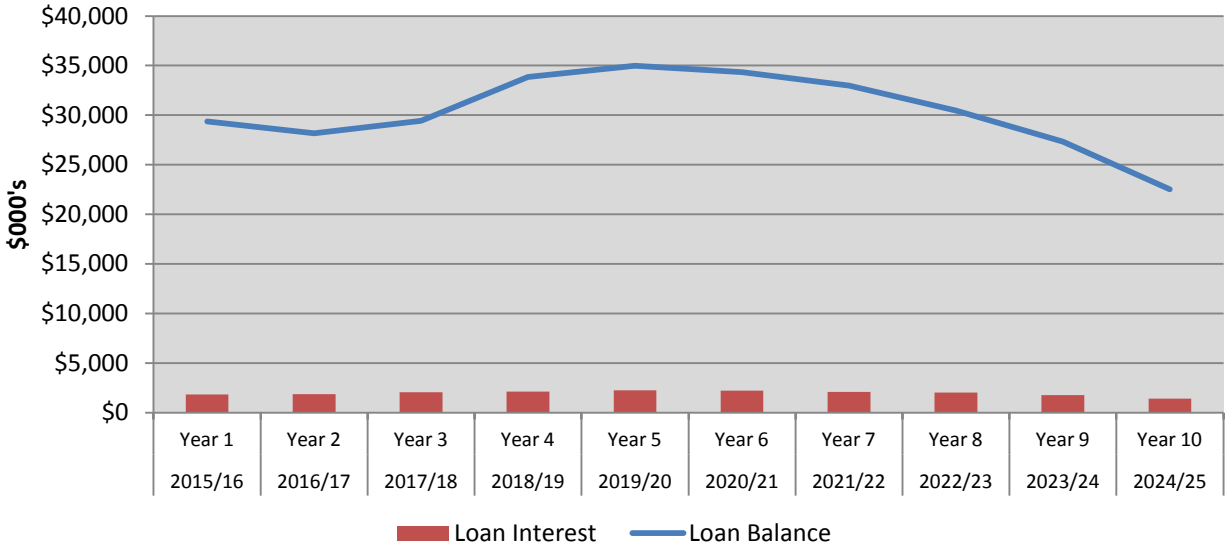


Figure 10-5: 10 Year Annual Debt and Interest Cost Forecast

10.6 Depreciation and Investment in Renewals

Figure 10-6 compares the total cumulative investment in renewals and capital expenditure with the total cumulative depreciation for the transportation activity for 30 years.

There is a significant gap between forecast cumulative depreciation and renewals, although the gap is smaller for total capital. The Council has based its renewals programme on detailed assessments of the condition and expected remaining life of its major asset classes. For example, bridge renewals are based on a condition assessment of all bridges in the district, and pavements reseals are based on current practice and confirmed by deterioration modelling. The underlying pavement is a major contributor to depreciation, but has a life in excess of 200+ years in most cases. Consequently, the Council is confident our programme will not run down the asset or create a major back-log of works to be undertaken.

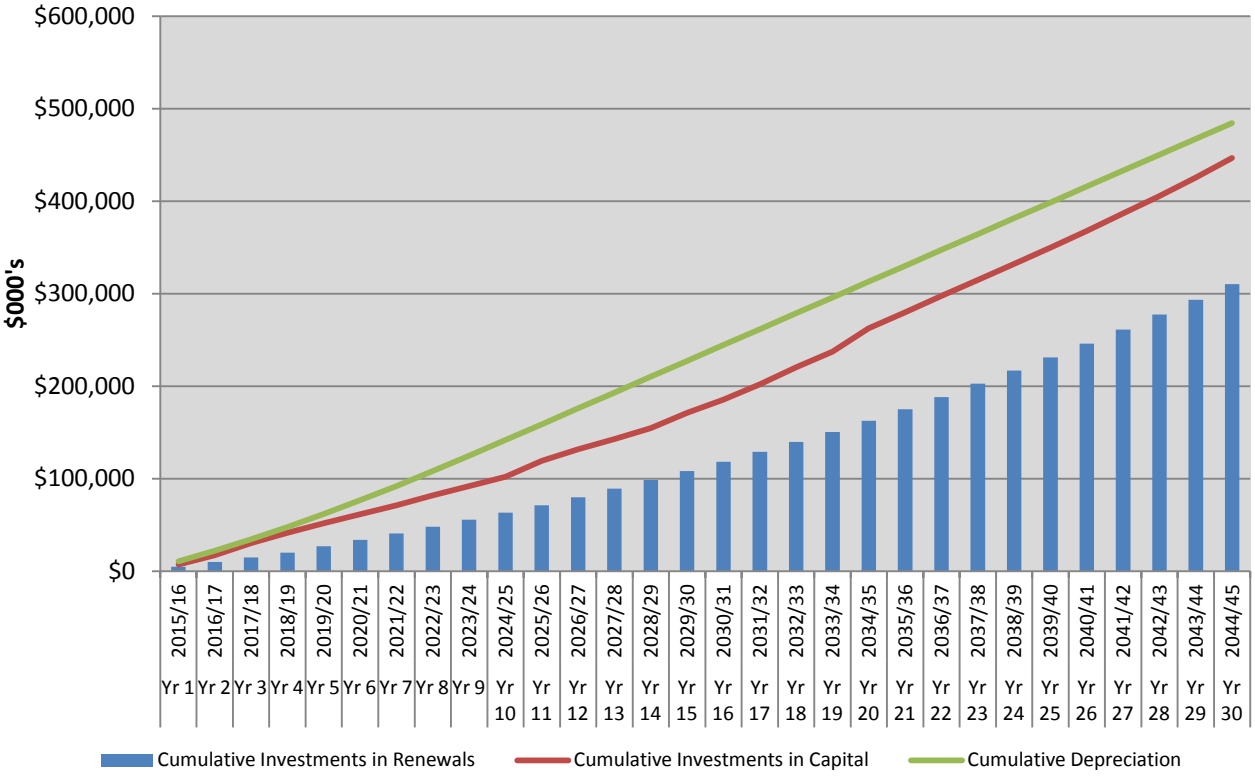


Figure 10-6: 30 Year Accumulated Renewal and Capital Expenditure compared with Depreciation for all Transportation Assets

APPENDIX A LEGISLATIVE AND OTHER REQUIREMENTS AND RELATIONSHIPS WITH OTHER PLANNING DOCUMENTS AND ORGANISATIONS

A.1 Introduction

The purpose of this activity management plan is to outline and to summarise in one place, the Council's strategic and management long-term approach for the provision and maintenance of its transportation network.

The 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. The 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 considered to be a core service of local government and is something that the Council has always provided. The transportation activity provides many public benefits and it is considered necessary and beneficial to the community that the 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, by helping to facilitate the safe and efficient movement of people and goods throughout the District.

The target audience of this AMP is the Tasman District community, Tasman District Councillors and Council staff. The appendices provide more in depth information for the management of the activity and are therefore targeted at the Activity Managers. The document is publicly available on the Council's website.

In preparing this AMP the project team has taken account of:

- **National Drivers** – for example the drivers for improving asset management through the Local Government Act 2002
- **Local Drivers** – community desire for increased level of service balanced against affordability
- **Industry Guidelines and Standards** – for example the Manual of Traffic Signs and Markings (MOTSAM)
- **Linkages** – the need to ensure this AMP is consistent with all other relevant plans and policies
- **Constraints** – the legal constraints and obligations the Council has to comply with in undertaking this activity.

The main drivers, linkages and constraints are described in the following sections.

A.2 Key Legislation, Industry Standards and Statutory Planning Documents

A.2.1. Acts of Parliament

The Acts below are listed by their original title for simplicity however all amendment acts shall be considered in conjunction with the original Act, these have not been detailed in this document. For the latest Act information refer to http://www.legislation.govt.nz/

- Local Government Act 2002
- Land Transport Management Act 2003
- Local Government Act 1974
- Land Transport Act 1998
- Public Transport Management Act 2008
- Resource Management Act 1991
- Building Act 2004
- Public Works Act 1981

- Telecommunications Act 1987
- Electricity Act 1992
- Biosecurity Act 1993
- Summary Offences Act 1981
- Civil Defence Emergency Management Act 2002
- Health and Safety in Employment Act 1992
- Utilities Access Act 2010
- Land Drainage Act 1908

A.3 National Policies, Regulations and Strategies

- The New Zealand Coastal Policy Statement 2010 http://www.doc.govt.nz
- The National Energy Efficiency and Conservation Strategy http://www.eeca.govt.nz
- The Heavy Motor Vehicle Regulations 1974 http://www.legislation.govt.nz/
- The Building Regulations http://www.legislation.govt.nz/
- NZ Transport Agency Specifications, Rules, Policies, Manuals and Guidelines http://www.nzta.govt.nz
- Austroads Guidelines and Manuals http://www.austroads.com.au/
- Government Policy Statement 2015 http://www.transport.govt.nz
- Safer Journeys http://www.saferjourneys.govt.nz
- The New Zealand Transport Strategy http://www.transport.govt.nz
- Ministry of Transport Statement of Intent http://www.transport.govt.nz
- The Government's Sustainable Development Programme of Action http://www.beehive.govt.nz
- NAMS Manuals and Guidelines http://www.nams.org.nz
- Office of the Auditor General's publications http://www.oag.govt.nz

A.4 Standards New Zealand

For all refer to http://www.standards.co.nz

- AS/NZS ISO 31000:2009 Risk Management Principals and Guidelines
- NZS 4404:2010 Land Development and Subdivision Infrastructure
- AS/NZS ISO 9001:2008 Quality Management Systems
- AS/NZS 4801:2001 Occupational Health and Safety Management Systems
- SNZ HB 2002:2003 Code of Practice for Working in the Road
- AS/NZS 1158 Lighting for Roads and Public Places Set
- AS/NZS 4676:2000 Structural Design Requirements for Utility Services Poles

A.4.1. Local Policies, Regulations, Standards and Strategies

- The Regional Land Transport Plan
- The Regional Land Transport Strategy – Connecting Tasman 2010 http://www.tasman.govt.nz
- Council's District Plan – Tasman Resource Management Plan (TRMP) http://www.tasman.govt.nz
- Tasman Regional Policy Statement (TRPS) http://www.tasman.govt.nz

- Tasman District Council Engineering Standards and Policies 2013 http://www.tasman.govt.nz
- Council's Procurement Strategy
- Council's Maintenance Intervention Strategy
- Council's Delineation Policy
- Tasman District Council Roading Policy and Procedure Manual

A.5 Links with Other Documents

This AMP is a key component in the Council's strategic planning function. Among other things, this plan supports and justifies the financial forecasts and the objectives laid out in the Long Term Plan (LTP). It also provides a guide for the preparation of each Annual Plan and other forward work programmes.

Figure A-1 depicts the links between the Council's activity management plans to other corporate plans and documents.

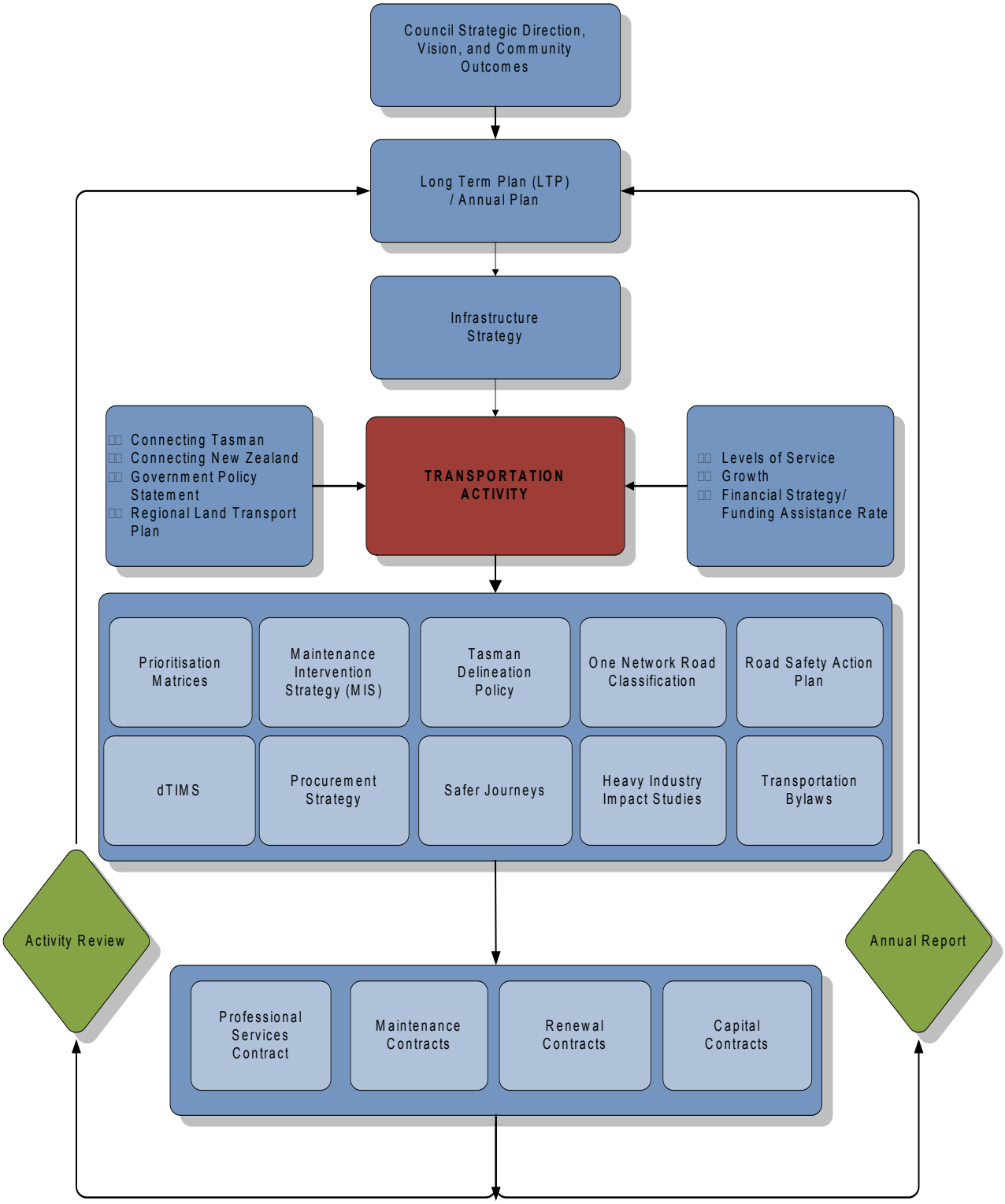


Figure A-1: Hierarchy of Council Policy, Strategy and Planning

A.6 Strategic Direction

The Council's strategic direction is outlined in the Vision, Mission and Community Outcomes.

Vision: Thriving communities enjoying the Tasman lifestyle.

Mission: To enhance community well-being and quality of life.

Community Outcomes:

Natural Environment

Our unique natural environment is healthy and protected.

Human Environment

Our urban and rural environments are people-friendly, well-planned and sustainably-managed.

Infrastructure

Our infrastructure is efficient, cost-effective and meets current and future needs.

Community

Our communities are healthy, safe, inclusive and resilient.

Culture

Our communities have opportunities to celebrate and explore their heritage, identity and creativity.

Recreation

Our communities have access to a range of social, educational and recreational facilities and activities.

Governance

Our Council provides leadership and fosters partnerships, a regional perspective and community engagement.

Economic

Our region is supported by an innovative and sustainable economy.

Table A-1 outlines the strategic documents utilised by the Council as part of the planning process.

Table A-1: Strategic Documents Used in the Planning Process

Document	Description
Long Term Plan (LTP)	The LTP is the Council's 10-year planning document. It sets out the broad strategic direction and priorities for the long term development of the District; identifies the desired community outcomes; describes the activities the Council will undertake to support those outcomes; and outlines the means of measuring progress.
Activity Management Plan (AMP)	AMPs describe the infrastructural assets and the activities undertaken by the Council and outline the financial, management and technical practices to ensure the assets are maintained and developed to meet the requirements of the community over the long term. AMPs focus on the service that is delivered as well as the planned maintenance and replacement of physical assets.
Annual Plan	A detailed action plan on the Council's projects and finances for each financial year. The works identified in the AMP form the basis on which annual plans are prepared. With the adoption of the LTP, the Annual Plan mainly updates the budget and sources of funding for the year.
Financial and Business Plans	The financial and business plans requirement by the Local Government Amendment Act. The expenditure projections will be taken directly from the financial forecasts in the AMP.

Document	Description
Contracts and agreements	The service levels, strategies and information requirements contained in the AMP are the basis for performance standards in the current Maintenance and Professional Service Contracts for commercial arrangements and in less formal “agreements” for community or voluntary groups..
Operational plans	Operating and maintenance guidelines to ensure that the asset operates reliably and is maintained in a condition that will maximise useful service life of assets within the network.
Corporate information	Quality asset management is dependent on suitable information and data and the availability of sophisticated asset management systems which are fully integrated with the wider corporate information systems (eg. financial, property, GIS, customer service, etc). The Council’s goal is to work towards such a fully integrated system.

A.6.1. How Does Transportation Contribute to the Community Outcomes?

Table A-2 below describes how the transportation activity contributes to the community outcomes.

Table A-2: How the Transportation Activity Contributes to Community Outcomes

Community Outcomes	How Our Transportation Activity Contributes to the Community Outcomes
Our communities are healthy, safe, inclusive and resilient.	Our network of roads, footpaths, cycleways and carparks are safe, uncongested and maintained cost-effectively. Our network of roads connects communities across the district.
Our infrastructure is efficient, cost-effective and meets current and future needs.	Our urban communities have a means of travel for pedestrians, cyclists and commuters that is safe and efficient. Our rural communities have safe and effective access to our transportation network.

APPENDIX B OVERVIEW OF THE ASSETS

B.1 Introduction

B.1.1. Road Hierarchy

B.1.1.1 *Tasman Resource Management Plan*

The following list is a summary of each road hierarchy and its descriptions from the Tasman Resource Management Plan (TRMP). This hierarchy guides development planning decisions.

- *Arterial Roads* – primarily roads which form the main traffic routes through and between the urban areas of the district, and provide connections to adjacent districts. Arterial roads include state highways.
- *Distributor Roads* – the secondary network of roads which carries traffic to and from arterial roads.
- *Collector Roads* – have a more local function and ensure that the traffic movement and property access functions are in balance. The role of these roads is to connect traffic-generating activities with the Arterial and Distributor road network.
- *Access Roads* – generally streets in urban or rural residential areas with connections at each end, but with mostly a property access function. The pedestrian and residential amenity functions of these roads predominate in residential areas and they are not intended to provide access for high traffic-generating non-residential activities.
- *Access Places* – are wholly for property access and offer no through-traffic function.

Figure B-1 summarises the Tasman Resource Management Plan hierarchy distribution by road length for the Council's road network.

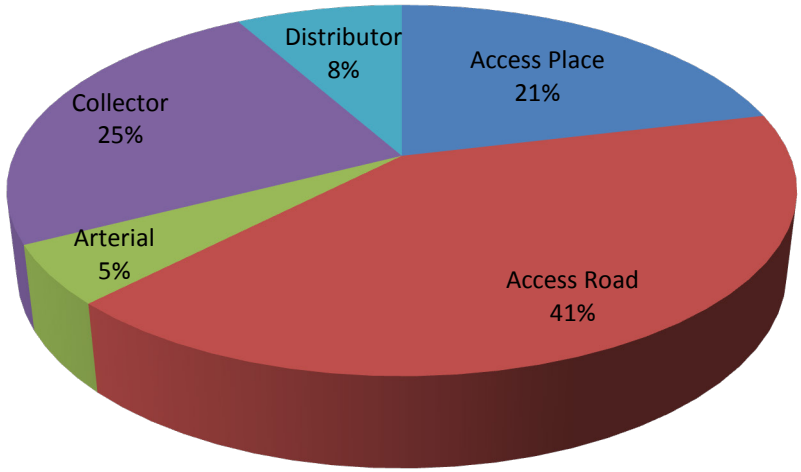


Figure B-1: TRMP Road Hierarchy

B.1.1.2 *One Network Road Classification*

In addition to the TRMP the Council has adopted the NZ Transport Agency's One Network Road Classification (ONRC). This hierarchy is used to improve the consistency of customer's experience across all roads nationally and to allow for better benchmarking practices across all road controlling authorities.

The ONRC provides guidance on the customer levels of service and technical performance measures appropriate to each classification of road. The Council has applied this classification and is planning to deliver a network that meets the fit-for-purpose outcomes of the ONRC and provides good value for money without over or under investing in these activities on its network of 952km of sealed roads.

Figure B-2 summarises the one network road classification hierarchy distribution by road length for the Council's road network.

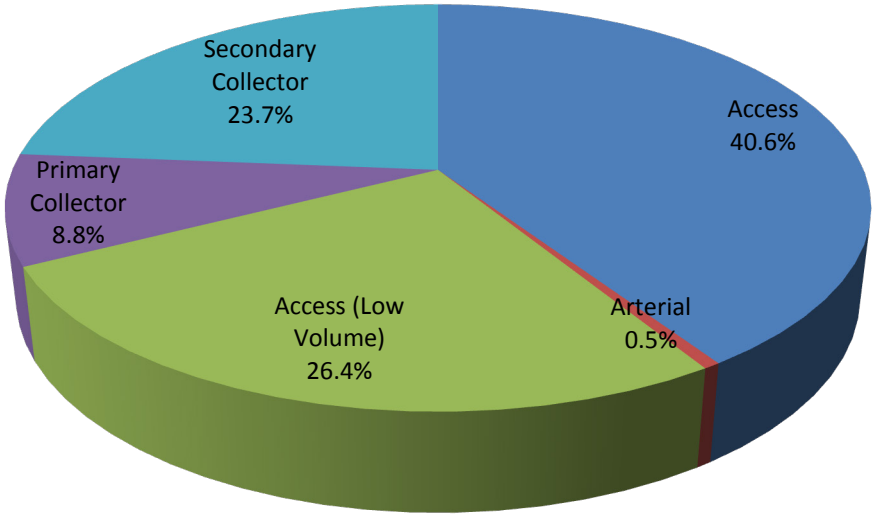


Figure B-2: ONRC Road Hierarchy

The NZ Transport Agency sets out the criteria to be used when classifying roads. The functional classification framework can be found at http://www.nzta.govt.nz/projects/road-efficiency-group/toolkit.html.

B.1.1.3 *Special Purpose Roads*

Pupu Springs Road and Totaranui Road are classified as access roads under the Council's hierarchy and are also classified as Special Purpose Roads (SPR) by the NZ Transport Agency. The NZ Transport Agency has confirmed that until 30 June 2018 these roads will have a co-investment rate of 100%, transitioning down to 51% by around 2023/24. The Council expects that the Department of Conservation will provide for the funding shortfall associated with the future reduction in NZ Transport Agency funding and that there will not be an increase in the Council's funding contribution.

To qualify for consideration for declaration as a special purpose road in terms of Section 104 of the Transit New Zealand Act 1989, a road should:

- cater for a high proportion of tourist traffic;
- be of a standard below that currently deemed as being adequate for consideration of state highway status;
- pass through an area where the rating potential of the surrounding land is significantly lower than the maintenance costs of the road.

Pupu Springs Road is 1.203km in length and Totaranui Road is 10.491km.

B.1.1.4 *High Productivity Motor Vehicle Routes*

High Productivity Motor Vehicles (HPMV) are larger and heavier trucks (up to and potentially exceeding 62 tonnes) which can be permitted to operate on specified routes. Discussion with transport operators revealed that most operators are investing in HPMV-capable units. As of 1 July 2014, the Council has approved approximately 325km of sealed roads as HPMV routes. Falling Weight Deflectometer (FWD) testing has been carried out on 225km or 69% of these roads to determine pavement strength. These FWD results show that 30km or 13% of tested sections have an adjusted strength number (SNP) of 2 or less. An SNP of less than 2 is considered to be vulnerable or weaker than normal. Average rut depth (where this has been collected) shows an average rut depth of 5.6mm which is 1mm greater than the entire network average.

As HPMV uptake increases, it could be expected that additional damage in the form of increasing rut depth, roughness and maintenance will be seen on HPMV routes and in particular the weaker sections. Ongoing monitoring via data collection and field observations will continue on these routes.

B.1.1.5 *Paper Roads*

The Council owns a vast area of legal road reserve across the district within which physical roads were never formed. These are referred to as 'Paper Roads'. The public is entitled to access these undeveloped legal road reserves and may request permission from the Council to form a private road or track within them. The Council has responsibility to regulate and control any development of a paper road.

If a private individual or group wishes to develop a paper road it may be allowed at the discretion of the Council's Transportation Manager. An application must be made in writing to the Council's Transportation Manager outlining the proposal. Further information such as survey data, typical cross-sections, long sections and/or detailed plans may be requested if deemed necessary by the Transportation Manager.

Regardless of whether the paper road is developed or not, it remains public land and the area is therefore accessible by the public at all times.

B.1.1.6 *Economic Network Plan*

The Council has developed an Economic Network Plan (ENP) which models the flow of export freight across its road network. The ENP is a decision support tool which will be used to:

- model the impact of land use changes on freight flows;
- model the impact of road network changes on freight flows;
- assist with level of service-related investment decisions for pavements and bridges.

The ENP gives the Council the ability to create scenarios involving changes to land use or 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.

B.2 Sealed Pavements and Surfacing

B.2.1. Asset Overview

Pavement and surfacing activities include sealed pavement maintenance, resurfacing, and rehabilitation; they are all inter-related and have been considered at a strategic level for this AMP.

Expenditure on sealed pavement maintenance has been increasing since 2010/11, a trend which is generally the reverse of sealed pavement rehabilitation expenditure as shown in Figure B-3. This is due to sites that have pavement defects not meeting the economic threshold for rehabilitation treatments and therefore requiring what is sometimes significant maintenance to maximise pavement life and maintain acceptable levels of service to road users.

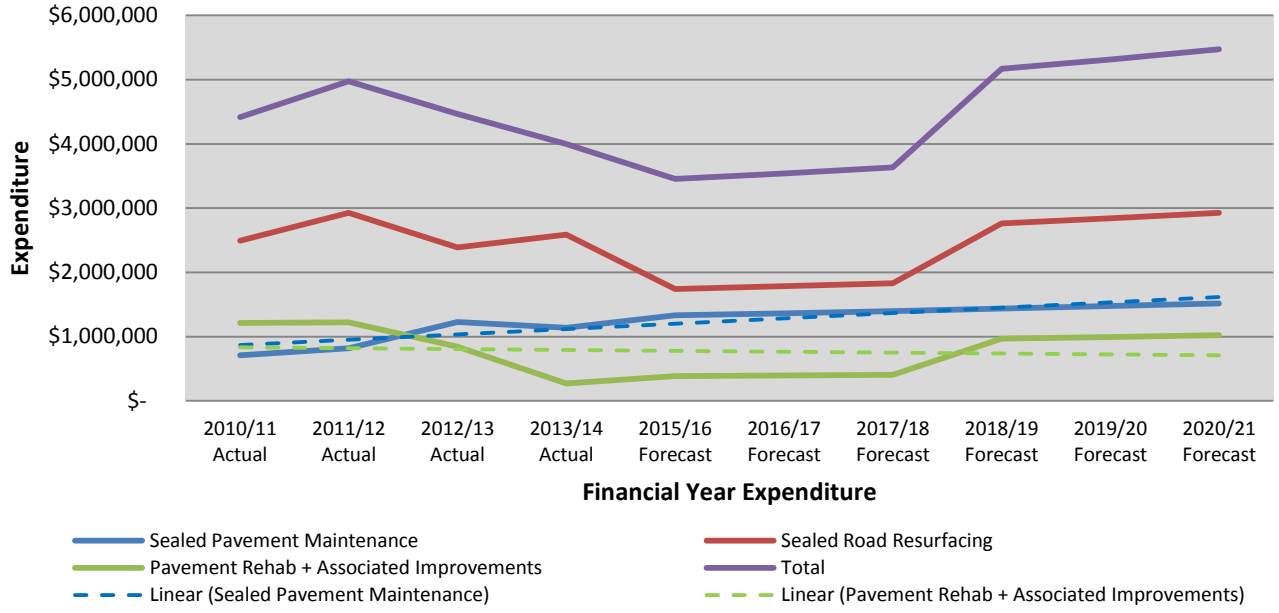


Figure B-3: Actual and Forecast Sealed Pavement Expenditure (Includes Inflation)

The Council's strategy for sealed pavements is to reduce renewal expenditure for 2015/18 to leverage off the generally very good present condition of pavements, before returning to what is considered steady-state renewals in 2018/19 and beyond. This strategy involves some risk and has potential for long-term effects. These effects have been assessed in detail in using the best tools and techniques available (including DTIMs modelling); refer to Appendix I for more details.

B.2.2. Asset Inventory

The Council currently maintains a total of 1,778 km of road network, of which 952 km is sealed. Surface and pavement inventory data is held in the Council's RAMM database.

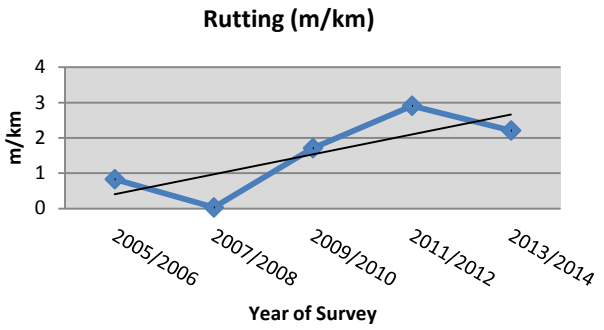
The RAMM database records go back to the 1960s with some of the pavement records appearing to be estimates. Generally urban pavements have been constructed with reasonable depths of aggregate (eg, 300 mm) and there has been minimal pavement rehabilitation over the last 10 years. Rural roads, however, were developed in the 1960s at low cost with minimal amounts of pavement aggregate (eg, 50-100 mm) and were then sealed.

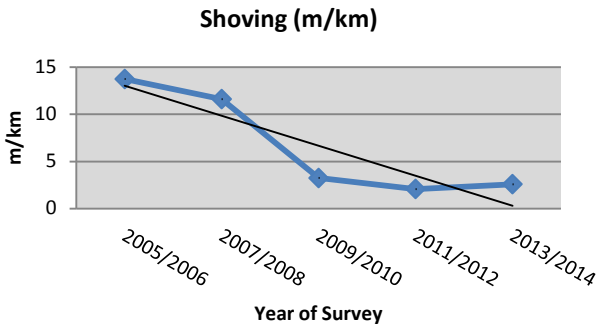
During the last 10 years there has been considerable Falling Weight Deflectometer testing on the network. This involved load testing the pavement to measure pavement strength; associated with this test pits have been excavated at selected sites to measure the actual layer depths and then compared with 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.

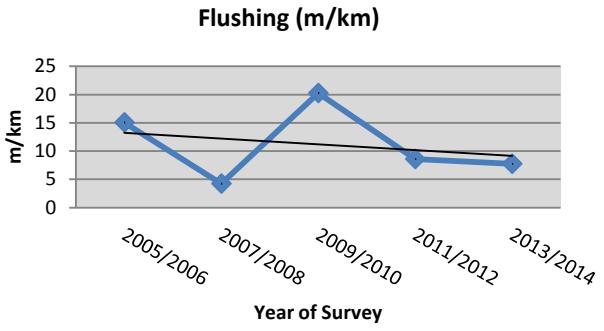
B.2.3. Asset Performance and Condition

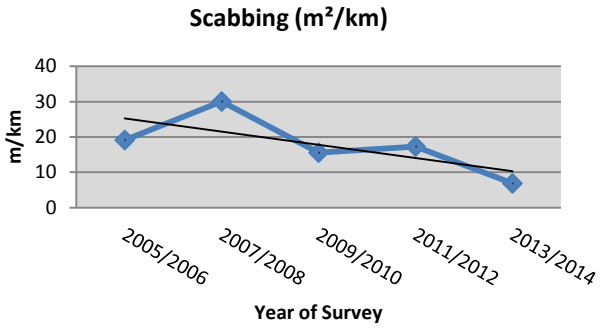
Figure B-4 summarises network condition trends and includes results from the 2013/14 network condition rating and roughness testing. These trends provide the Council with useful indicators on how investment in the network is translating into actual condition trends.

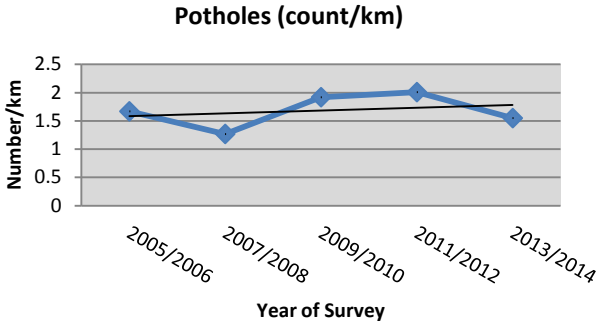
Condition rating is based on the NZ Transport Agency's standardised methods and is completed every two years by an independent and qualified person. It is a manual process where 10% of each road section is manually inspected for visual defects. Most defect types are static or reducing, except rutting 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.

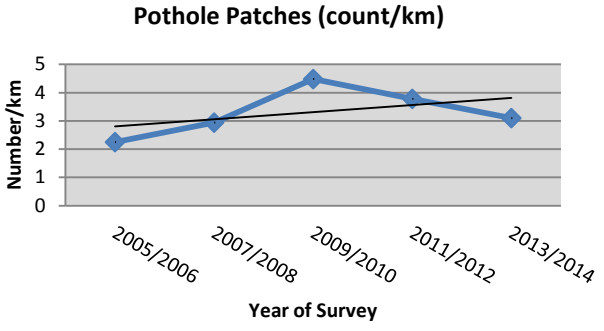


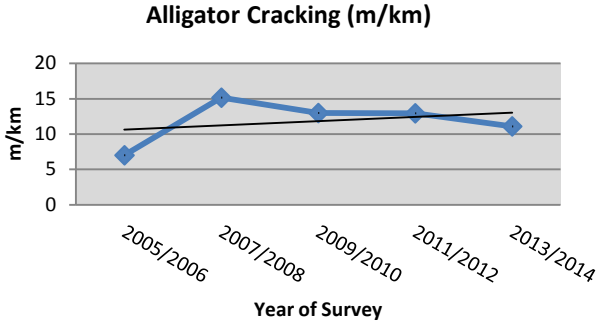












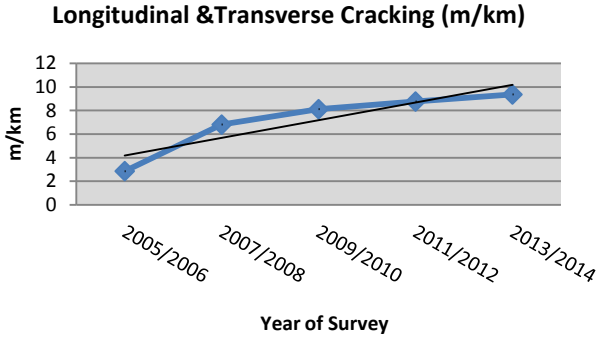


Figure B-4: Sealed Pavement Condition Rating Trends

B.2.3.1 *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 (eg, 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 (eg, due to lack of compaction, particularly in new pavements);
- densification of asphalt surfacing (eg, 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, and also ruts tend to pull a vehicle towards the rutted path as the vehicle is steered across the lane. It is also a maintenance and pavement lifecycle concern as ruts 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 B-5 below shows an increase in the percentage of tested lengths with rutting greater than 10mm and greater than 20mm, as well as an increase in the average rut depth. This trend will need to be monitored to ensure rehabilitation and maintenance investment is sufficient to keep pace with structural deterioration/rutting progression. The increasing rut trend also suggests some asset consumption is occurring as a result of low amounts of pavement rehabilitation/renewal.

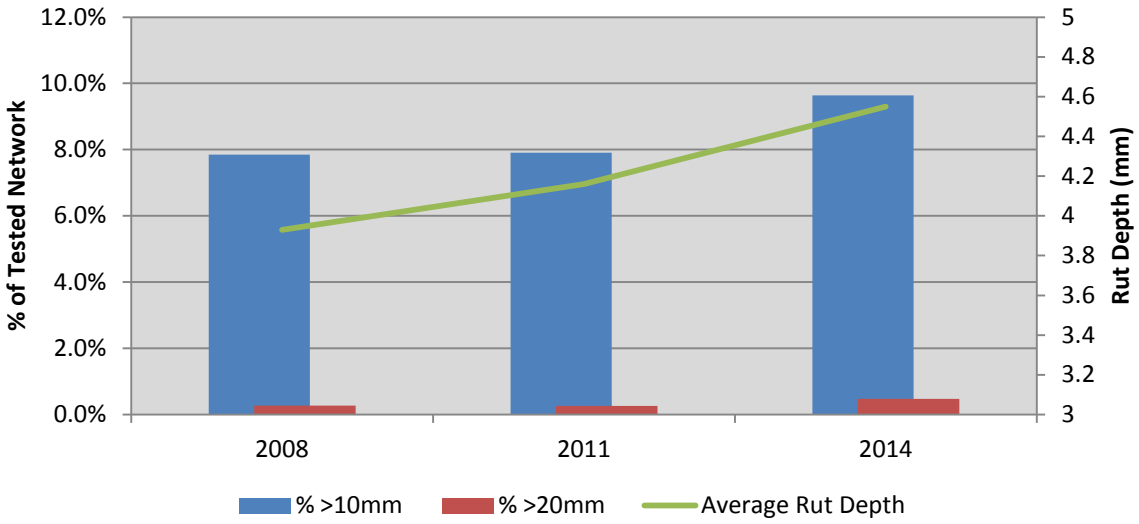


Figure B-5: Rut Depth Trend (Left Wheel Path)

The rut trends on key High Productivity Motor Vehicle routes are shown in Table B-1 below.

Table B-1: Mean Rut Depth Trends of High Productivity Motor Vehicle Routes

Road Name	Mean Rut Depth (LWP) (mm)						Trend
	Left Lane			Right Lane			
	2008	2011	2014	2008	2011	2014	
Abel Tasman Drive	-	4.0	4.6	-	3.9	4.8	Increasing
College Street	-	4.0	5.2	-	4.7	3.9	Left lane increasing
Dovedale Road	3.7	3.9	3.8	3.2	3.2	3.3	Static
Edwards Road	2.7	5.5	4.4	2.9	4.6	2.6	Left lane increasing
Eves Valley Road	-	4.2	5.2	-	4.9	5.6	Increasing
Kerr Hill Road	3.5	3.7	4.3	3.9	4.2	4.8	Increasing
Korere-Tophouse Road (0-18.46)	-	5.0	5.3	-	5.6	5.6	Static
Korere-Tophouse Road (18.46-end)	5.6	4.9	5.9	2.8	3.6	3.8	Increasing
Lansdowne Road	-	2.9	3.4	-	2.7	3.3	Slightly increasing
Lower Queen Street	-	4.9	7.2	-	6.0	6.3	Increasing
Main Road Lower Moutere	2.7	2.5	2.9	2.3	2.2	2.5	Static
Motueka Valley Highway	3.9	3.8	4.6	4.2	4.2	4.7	Increasing
Moutere Highway	3.0	3.0	3.1	3.8	3.8	3.9	Static
Neudorf Road	3.4	3.2	3.8	4.7	4.4	4.4	Static
Paton Road	-	5.1	4.7	-	5.5	4.7	Static (maintenance has decreased rutting)
River Terrace Road	-	3.0	3.1	-	5.0	5.6	Loaded lane increasing
Stock Road (Golden Downs)	3.1	3.7	4.0	3.8	4.1	4.8	Increasing
Wai-iti Valley Road	6.3	6.1	8.0	5.6	6.5	7.4	Increasing
Waimea West Road	4.5	4.1	4.8	3.7	3.4	3.9	Slightly increasing
Waiwhero Road	3.4	4.3	3.8	4.8	5.3	4.7	Static

Of the 20 roads analysed, 13 show a trend of increased rutting as measured by the mean rut depth. Lower Queen Street and Wai-iti Valley Road show the most significant increase in mean rut depth, and will be closely monitored to ensure levels of service are maintained.

Activities such as targeted pavement repairs, combination reseals (where an extra layer of stone chip is laid in the wheel path during resurfacing) and to a lesser extent pavement rehabilitation, are addressing some rutting issues. However, rutting is expected to continue to increase even with the current strategies in place. While rutting has not been a significant driver for recent pavement rehabilitations, if rut trends continue to increase it can be expected that rut-induced maintenance or rehabilitation requirements will also increase.

B.2.3.2 *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 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 B-6. It shows that the average roughness has been increasing slightly, but the proportion of the network that is very rough (>150 NAASRA) is reducing (from 4.9% in 2008 to 4.2% in 2014).

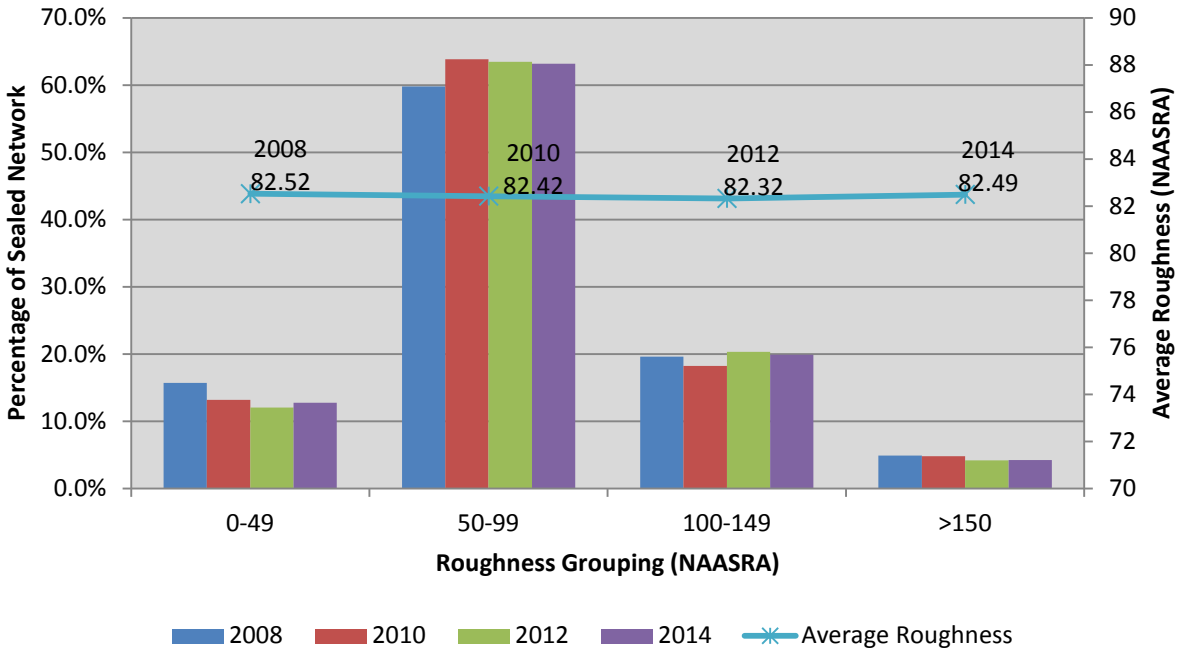


Figure B-6: Entire Sealed Network Roughness Trends

To determine the Smooth Travel Exposure (STE) the measured roughness of each road section is used along with the traffic volumes. STE is a measure of how much travel occurs on roads below roughness levels specified in Table B-2.

Table B-2: Smooth Travel Exposure Inputs

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

Rural Roads	
Vehicles per Day	Roughness (NAASRA)
<1,000	<=150
>=1,000	<=130

Figure B-7 shows an increasing trend in smooth travel exposure. This reflects how the Council has invested in improving the roughness on rougher and high trafficked routes through targeted pavement maintenance (generally asphaltic concrete levelling as a pre-reseal repair treatment). It should be noted that even though pavement rehabilitation has been reducing, the smooth travel exposure has been increasing. This helps to demonstrate that roughness is generally not a driver for pavement rehabilitation. The NZ Transport Agency's funding criteria also currently states that roughness alone is not a valid trigger for rehabilitation. Therefore in order to reduce roughness it will generally require an increase in pavement maintenance expenditure.

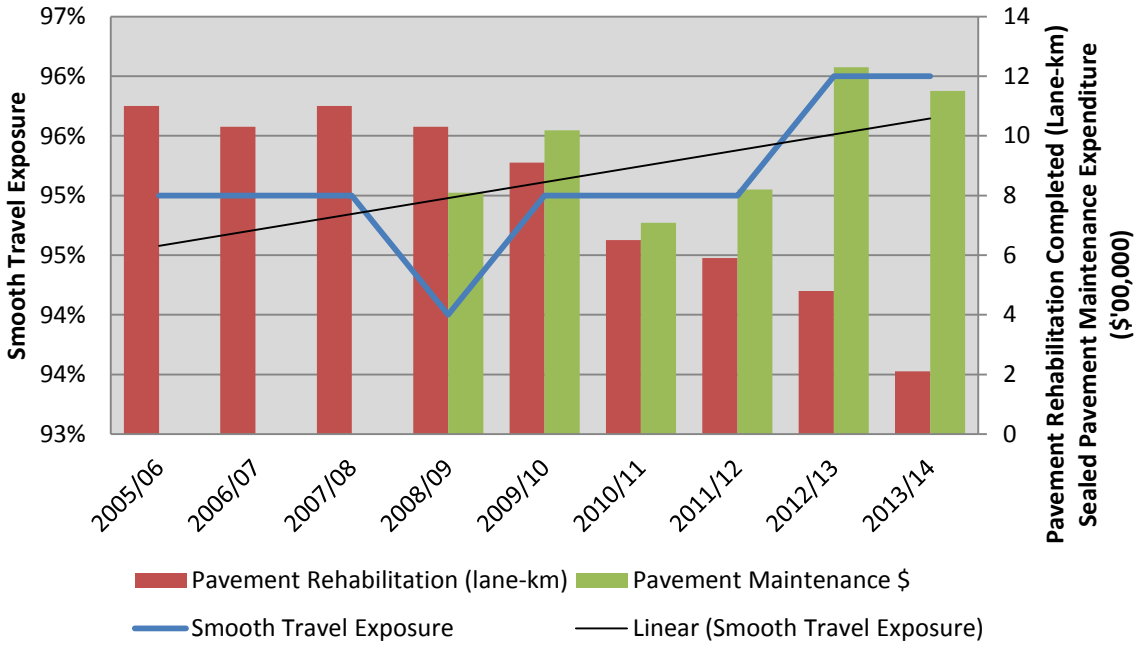


Figure B-7: Smooth Travel Exposure Trends

B.3 Unsealed Pavements

B.3.1. Asset Overview

The Council maintains 766km of unsealed roads. These vary in width from 2m to 8m with an average width of 3.7m. Generally the 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. The Council does not expect that this will change significantly. It is also unlikely that many unsealed roads will be sealed in future as this tends to result in greater whole-of-life costs. The exception to this is if the capital upgrade cost is paid by a third party. Figure B-8 shows the approximate traffic volumes across Council's unsealed network.

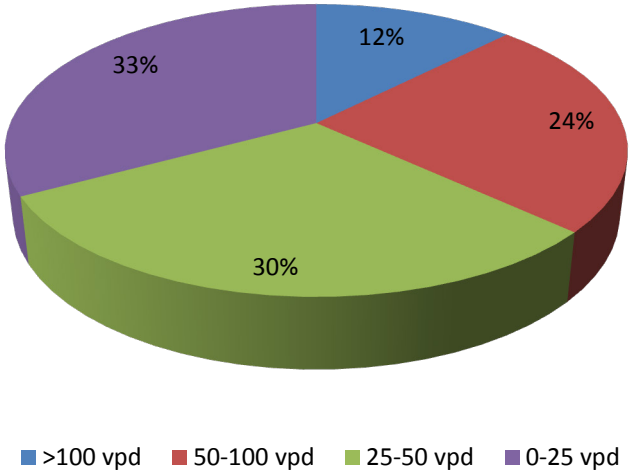


Figure B-8: Traffic Volumes on Unsealed Roads

B.3.2. Asset Inventory

Unsealed road inventory data is held in the Council's RAMM database.

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

B.3.3. Asset Condition

The 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.

B.4 Drainage

B.4.1. Asset Overview

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 the Council's road network. Following receipt of this report, the roading 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.

B.4.2. Culverts

B.4.2.1 *Culvert Inventory*

Culvert inventory data is held in the Council's RAMM database.

Approximately 94% of the 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 the Council's existing culverts is unknown. Therefore, relying on age-based renewal is not considered feasible or practical.

Table B-3 describes the existing culvert assets (as at 30 June 2013).

Table B-3: Culvert Inventory Summary

Description	Unit	Quantity
Diameter <=600mm	m	74,444
Diameter <=600mm No Length	each	151
Diameter > 600mm <=750mm	m	1,708
Diameter > 600mm <=750mm No Length	each	3
Diameter > 750mm <=900mm	m	5,102
Diameter > 750mm <=900mm No Length	each	2
Diameter > 900mm <=1200mm	m	2,059
Diameter > 900mm <=1200mm No Length	each	2
Diameter >1200mm <=1500mm	m	675
Diameter >1500mm	m	661
Side Culvert - dia <=600mm	m	541
Side Culvert - dia > 600mm <=750mm	m	10
Side Culvert - dia > 750mm <=900mm	m	14

B.4.2.2 *Culvert Condition*

The culvert condition data has been collected for approximately 80% of the 10,300 known culverts. This data is presented in Figure B-9.

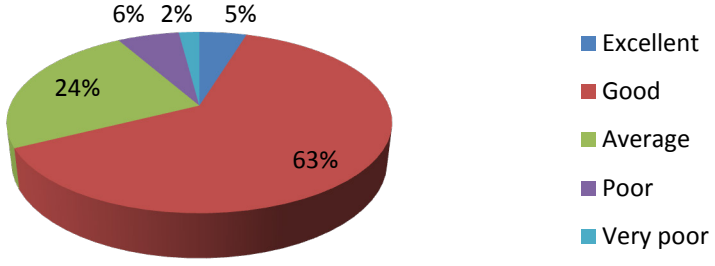


Figure B-9: Culvert Condition Summary

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.

The maintenance contractor for the Tasman Urban and the Tasman Rural network contracts 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.

The Council commissioned a full drainage inspection of the Golden Bay 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.

B.4.3. Surface Water Channels

B.4.3.1 *Surface Water Channel Inventory*

Table B-4 describes the existing lined surface water channel assets (as at 30 June 2014).

Table B-4: Lined Surface Water Channel Summary

Type	Total Length (m)
Dished Channel (Asphalt)	1,519
Dished Channel (Concrete)	6,093
Dished Channel (Half pipe)	285
Dished Channel (Sealed)	1,961
Kerb & Channel (Concrete)	239,118
Kerb & Dished Channel (Concrete)	91
Mountable Kerb & Channel (Concrete)	13,351
Total	**262,418**

B.4.3.2 *Surface Water Channel Condition*

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.

Condition rating inspections collect data on whether a lined channel is 'broken' such that it carries a risk of water ingress. This could in turn result in deterioration of other assets such as pavement layers and surfacing. Figure B-10 summarises the condition information collected during the 2011 condition rating inspections.

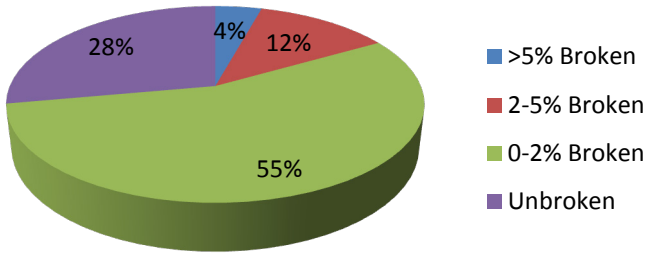


Figure B-10: Culvert Condition Rating Summary

The condition rating trends shown in Figure B-11 demonstrate that progress is being made in addressing the network drainage deficiencies as shown by the reducing trend in recorded defects.

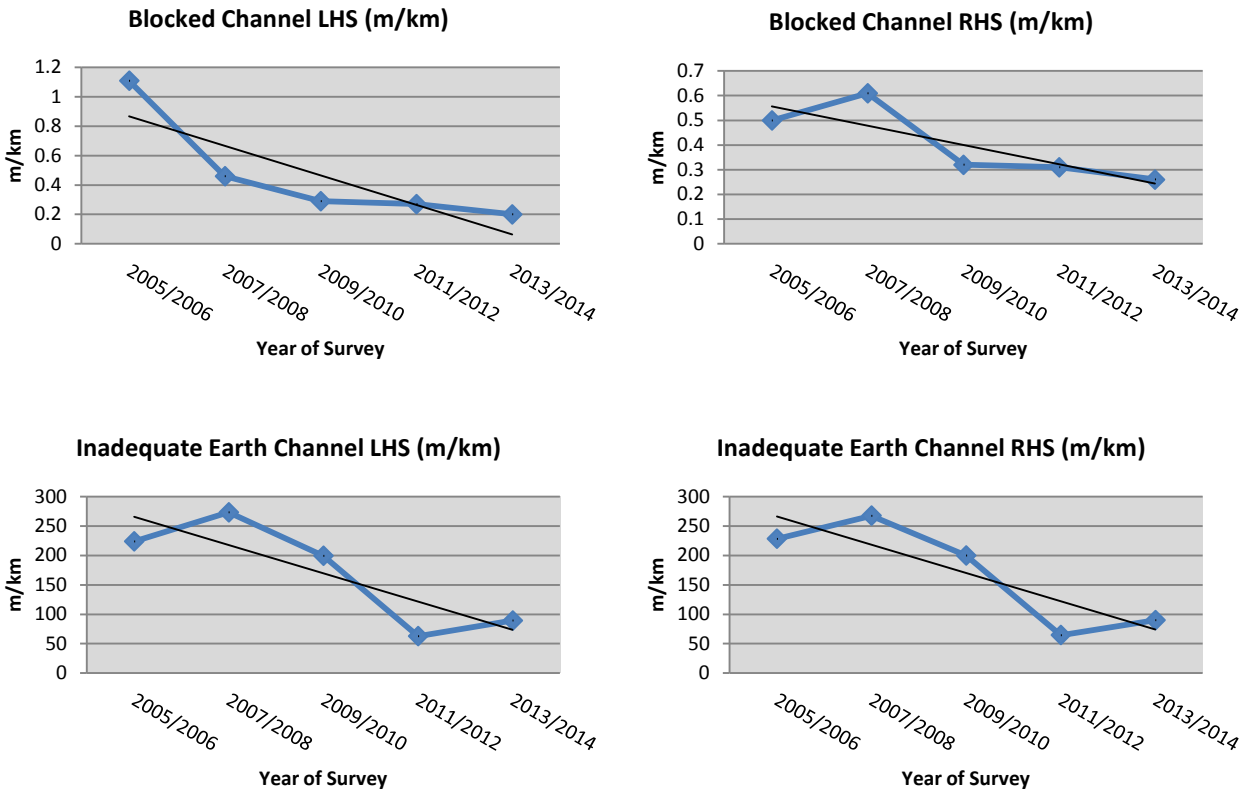


Figure B-11: Drainage Condition Rating Trends

B.5 Bridges

B.5.1. Asset Overview

A bridge or large culvert is classed as a bridge structure when the waterway area exceeds 3.4m^2.

The Council's bridge stock is generally static in nature due to typically slow deterioration of the assets and little growth.

B.5.2. Asset Inventory

The Council owns and maintains 483 bridges as described in Table B-5. Bridge asset data is held in the Council's RAMM database.

Table B-5: Bridge Summary

Bridge Type	Number	Length (m)
Road – Two Lane	194	2,114
Road – Single Lane	278	5,444
Total Road Bridges	472	7,558
Footbridges/Cycle bridges	11	545

B.5.3. Asset Condition

The Council engages a consultant (MWH New Zealand Ltd) 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 the Council needs to prioritise for repairs, 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 the 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 the 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 the 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. The Council has 25 speed and/or weight posted bridges.

B.6 Retaining Walls

B.6.1. Asset Overview

Historically the collection of retaining wall inventory data was poor and the 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 and generally speaking the preferred option is to realign the road rather than construct new structures.

B.6.2. Asset Inventory and Condition

Table B-6 describes the wall types and Figure B-12 summarises indicative condition data which was collected during the initial identification inspection.

Table B-6: 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**

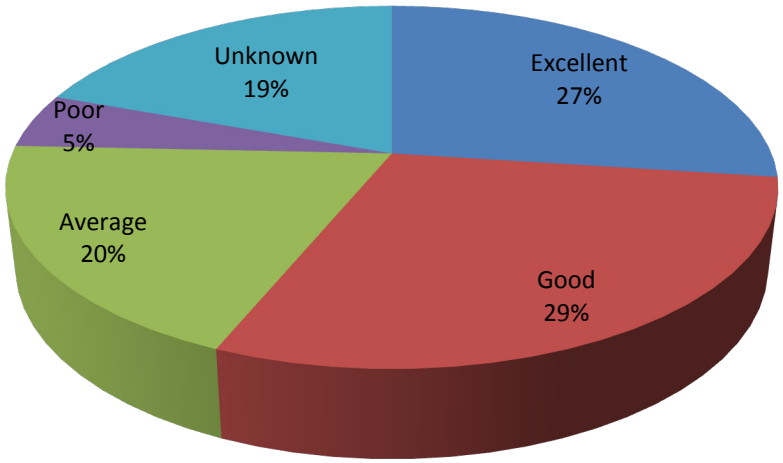


Figure B-12: Condition of Retaining Walls

The Council considers that this dataset is not yet fully complete and there are likely to be retaining walls in existence that have not yet been added to the database. However the 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 the Council becomes aware of their existence.

The 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. The Council can then report the overall condition of walls in terms of a condition index.

B.7 Traffic Signs, Delineation and Road Markings

B.7.1. Asset Overview

In 2012 the Council reviewed its signs and delineation policy and developed a specific hierarchy as shown in Figure B-13. 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.

For the purposes of procuring pavement marking the network has been grouped into four areas:

- Zone A includes Richmond, Wakefield and Tasman area;
- Zone B includes Motueka, Kaiteriteri, Tapawera and St Arnaud areas;
- Golden Bay;
- Murchison.

The Council often receives requests for new tourist signs, private right-of-way (ROW) name blades, or general information (yellow finger board) signs. The process for these requests is summarised below.

- *Tourist Signs* – An application is made to the Council, staff consider the application and, if appropriate, will grant approval to the applicant to install the sign. All costs are met by the applicant.
- *Private ROW Signs* - The name on the sign it to be approved by Council staff prior to installation, the sign can then be installed within the road reserve area. The developer or ROW residents must meet the cost of the first sign. The Council will then assume responsibility for the sign.
- *Community Signs* – The community group submits a sign for consideration. Signs are considered on a case-by-case basis and only installed upon approval from a Council staff member.

B.7.2. Asset Inventory

Traffic signs and road markings are recorded in the Council's RAMM database. Sign inventory data is summarised below in Table B-7. 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. The database table for road markings is incomplete and does not accurately reflect the road markings throughout the district. 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 B-7: Road Sign Inventory Summary

Sign Type	Quantity
Guide	48
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**

B.7.3. Asset Condition

The Tasman Urban and Tasman Rural network maintenance contractors are required to complete annual 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. This data is used to prioritise renewals but is not recorded in the Council's RAMM database. Currently there are no specific inspections required for the Golden Bay and Murchison networks.

Targeted road marking inspections are undertaken by the 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 the Council's RAMM database as markings typically have a very short life eg, one to two years.

The 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.

Treatment Type	ROAD DELINEATION CATEGORY					Notes
	ARTERIAL & TOURIST	COLLECTOR	LOCAL ROAD			
			Rural - Seal	Rural - Gravel	Urban	
Centre lines	√	√	Safety exception*		Safety exception*	Absolute minimum width 5.0m for urban & 5.4m where edge line is required
Edge lines	√ 100mm	√ 75mm	Safety exception*			
RRPM's	√	Safety exception*				
Edge marker posts	√	Isolated*	Safety exception*	Safety exception*		Install absolute minimum of 3 for isolated treatments
Full markings at single lane bridges	√	√	√	As practical		As per MOTSAM
Flag lighting	√					
Hazard Markers	On all hidden hazards 1m from edge of carriageway, including hidden culverts.					RM-7 type reflective discs
Intersection control	√	√	√	√	√	As per MOTSAM
Curve Warning signs	√	√	√	Safety exception		In line with MOTSAM for all out of character curves
Road name blades	160mm	120mm	120mm	120mm	100mm	Modified E, or C for longer names to fit on 1200mm blade. No Exit and Rapid No. 60mm, matching font. See Tasman District Council Street Name Blade Specification for detail
Advanced intersection signage	√					As per MOTSAM permanent Warning Signs (eg. PW8-12). Arterial / Arterial & Arterial / Collector intersections
Chevrons	√	√	√	√		Plus in-line with MOTSAM for all out of character curves where advisory signs alone are not sufficient
Sight rails	Guardrails	√	√	√		

* **Safety exception** and **Isolated** treatments at Engineers direction.

Note: Isolated RRPM's include 20m "lead in" to feature (curve, narrow bridge or intersection).

Arterial & Tourist Route: Full edge marker post spacing (as per MOTSAM Table 5.4)

Curve Radius (m)	Spacing (m) pairs opposite
20-30	10.0
30-40	12.5
40-60	15.0
60-80	17.5
80-100	19.0
100-150	21.0
150-200	25.0
200-300	28.0
300-400	31.0
400-600	35.0
600-800	40.0
800-1200	45.0
over 1200	50.0

Isolated edge marker post spacing (as per MOTSAM table 5.2):

Horizontal alignment (radius m)	Post type		Spacing (m)	EMP Location
	Left	Right		
Straights	A	B	100	Pairs opposite
All curves over 600m	A	B	100	Pairs opposite
LH Curves <600m	None	C	50	Right only
RH curves <600m	A	None	50	Left only
LH curves <140m	None	C	25	Right only
RH curves <140m	A	None	25	Left only
Vertical crest curve	A	B	At least three visible	

Note: Delineate entire feature (sub standard or frequent curves, narrow bridge or intersection) including at least one as "lead in". Install absolute minimum of 3 (correctly spaced) at isolated feature.

Figure B-13: Signs and Delineation Policy

B.8 Traffic Signals

B.8.1. Asset Overview

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

To maximise efficiency, the Council has engaged the Nelson City Council to operate the traffic signals along with their Nelson City Council's assets. 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.

B.8.2. Asset Inventory and Condition

Between the two existing intersections there are a total of nine signals. The asset data for these signals is held in the Council's Confirm database.

The condition of the assets is assumed to be very good as they are all less than five years old.

B.9 Street Lights

B.9.1. Asset Overview

The 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 the Council for operating and maintaining the lights. The Council is responsible for the maintenance and operation of all public street lighting regardless of whether they are owned by the Council or Network Tasman Limited.

Street lighting is a fast evolving technology with LED lighting being the most recent development. Prior to this street lighting in New Zealand was predominately high pressure sodium technology which currently accounts for 90% of the Council's street lights. Prior to this the Council upgraded all of its mercury vapour and fluorescent lamps within road reserve to high pressure sodium in 2010 and 2011. This was to improve energy efficiency of the network.

The Council has since decided to upgrade its entire transportation street light network to LED lights which will be completed by the end of 2015. The change to LED will reduce whole-of-life costs, primarily due to longer life fittings and less power consumption.

B.9.2. Asset Inventory

The Council's street light inventory data is held in its Confirm database.

The Council is responsible for 2,994 street lights, this includes 2,901 Engineering 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.

B.9.3. Asset Condition

The street light maintenance contractor is required to collect and maintain asset condition data during each visit to an asset. The contractor carries a tablet in the field which allows for the condition data to be updated immediately in Confirm using Confirm Mobile software. Table B-8 summarises the condition rating criteria for street lighting which is in accordance with the NZWWA Infrastructure Asset Grading Guidelines. Figure B-14 summarises the condition of the Council's street light assets.

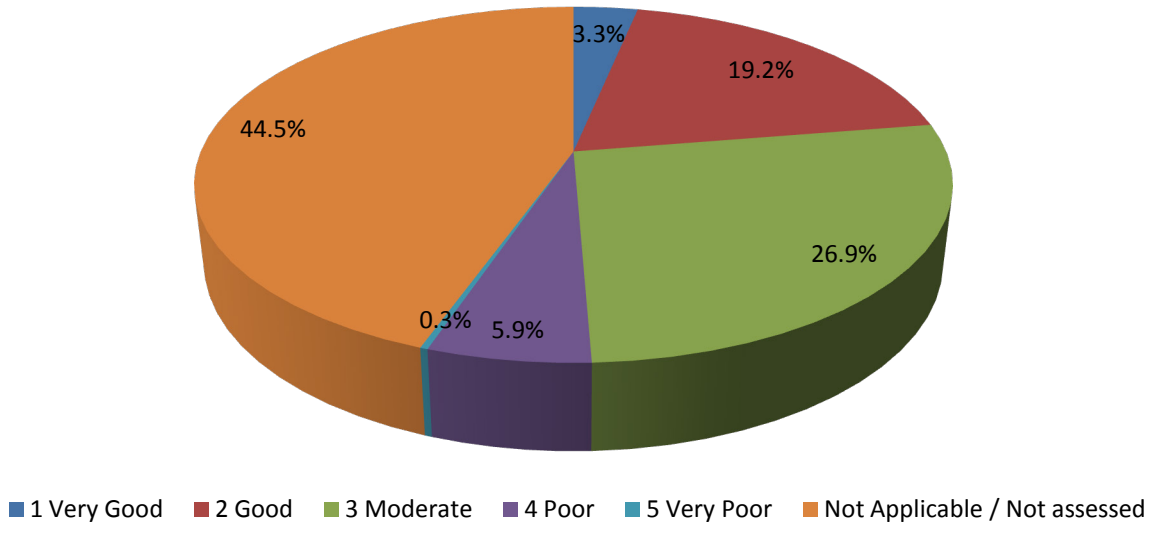


Figure B-14: Street Light Condition Summary

Table B-8: Asset Condition Rating Table

Condition Grade	General Meaning	
1 Very Good	Life: Physical: Access: Security: Exposure:	10+ years. Fit for purpose. Robust and modern design. Easy; easy lift manhole lids, clear access roads. Sound structure with modern locks. Fully protected from elements or providing full protection.
2 Good	Life: Physical: Access: Security: Exposure:	Review in 5 – 10 years. Fit for purpose. Early signs of corrosion/wear. Robust, but not latest design. Awkward; heavy/corroded lids, overgrown with vegetation. Sound structure with locks. Adequate protection from elements or providing adequate protection.
3 Moderate	Life: Physical: Access: Secure: Exposure:	Review in 5 years. Potentially impaired by corrosion/wear, old design or poor implementation. Difficult: requires special tools or more than one person. Locked but structure not secure, or secure structure with no locks. Showing signs of wear that could lead to exposure.
4 Poor	Life: Physical: Access: Secure: Exposure:	Almost at failure, needs immediate expert review. Heavy corrosion impairing use. Obvious signs of potential failure. Restricted, potentially dangerous. Locks and/or structure easily breeched. Exposure to elements evident e.g. leaks, over heating.
5 Very Poor	Life: Physical: Access: Security: Exposure:	0 years – broken. Obvious impairments to use. Heavy wear/corrosion. Outdated/flawed design/build. Severely limited or dangerous. No locks or easily breeched. Exposed to elements when not specifically designed to be.

B.10 Footpaths and Walkways

B.10.1. Asset Overview

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.

New footpaths may be built by the Council to connect network gaps or by private developers in conjunction with subdivision works. A new footpath matrix has been developed by the Council to prioritise potential new footpath sites that the Council may build; development work is excluded from the matrix. The matrix considers the following factors for potential sites at which there is an existing demand:

- pedestrian numbers – (close to school or CBD areas);
- deficiency – (eg, missing link or no existing path on either side);
- geometry – (availability of wide berms);
- public request – (what is the demand);
- vehicle speed – (what is the posted speed limit);
- annual average daily traffic (AADT) – (what are the traffic volumes).

B.10.2. Asset Inventory

The 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 Tasman district. Figure B-15 summaries the footpath network by surface type.

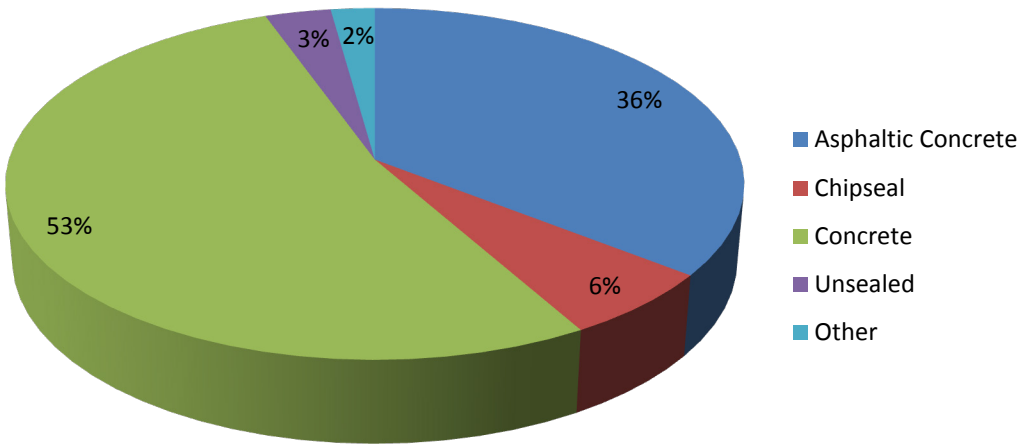


Figure B-15: Summary of Footpath and Walkway Surfaces

B.10.3. Asset Condition

The last condition rating on footpaths was completed in May 2014. The results are shown below in Figure B-16.

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. Footpath and walkway condition rating is discussed further in the *RAMM Condition Rating for Footpaths, Walkways and Carparks 2014* report. Condition rating is programmed to be completed on a three yearly cycle.

Only two condition rating surveys have been completed to date for footpaths and walkways. This makes it difficult to determine any real data trends in regards to the condition of these assets. In future, with ongoing condition rating, the Council will be in a better position to analyse footpath and walkway condition trends.

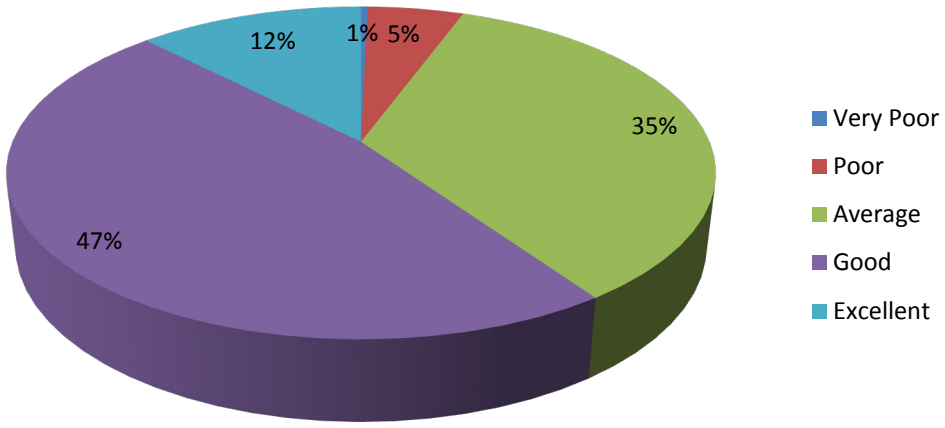


Figure B-16: Footpaths 2014 Condition Rating Summary

B.11 Cycleways

B.11.1. Asset Overview

The 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 the Council's shared pathways, road sections, through parks and reserves, and across private property and Department of Conservation land. A map of the trail is included in Appendix Y. Development of the trail is planned to continue until 2019.

B.11.2. Asset Inventory

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 the improvement plan. For completeness all have been listed below, however this will not be consistent with RAMM.

Table B-9: 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

	Classification	Surface Type	Length (m)	Part of Tasman's Great Taste Trail
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**	

B.11.3. Asset Condition

A condition rating survey was undertaken in May 2014 for the off-road cycleways listed in Table B-9. The results of the survey are shown in Figure B-17. The majority of the 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. The Council has planned to undertake condition rating on its off-road cycleways on a three yearly basis. Currently there are no plans to undertake condition rating of Tasman's Great Taste Trail.

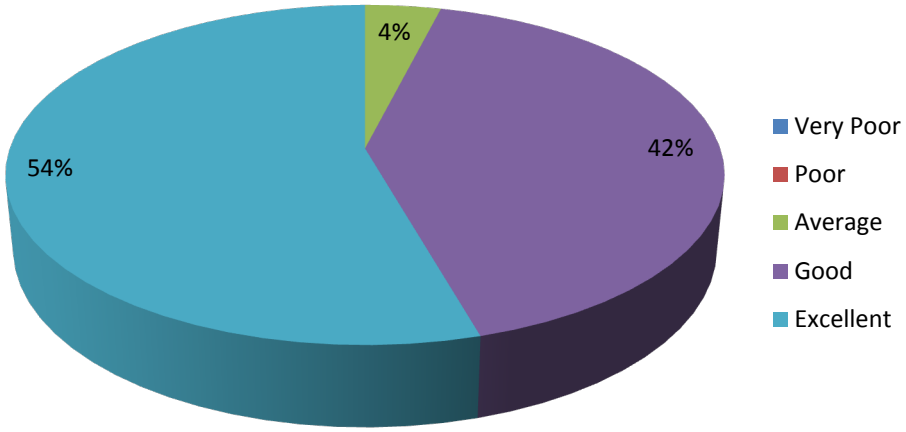


Figure B-17: Cycleways 2014 Condition Rating Summary

B.12 Carparks

B.12.1. Asset Overview

The Council owns and maintains 23 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. The Council's off-street car parking facilities include a range of assets, for example surfacing, pavements, signs, lighting and drainage sumps.

B.12.2. Asset Inventory

Table B-10 provides a detailed summary of the Council's off-street car parking facilities. Off-street car parking inventory data is stored in the Council's RAMM database.

Table B-10: 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**

B.12.3. Asset Condition

The last condition rating of carparks was completed in May 2014. Carparks are rated on the same faults as sealed carriageways. Condition rating is planned to be undertaken every three years.

B.13 Street Furniture

B.13.1. Asset Overview

The 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.

B.13.2. Asset Inventory

The inventory data for street furniture assets is stored in the Council's RAMM database. An improvement plan item in Appendix V is to improve the inventory data for street furniture assets. The summary of assets from the latest valuation undertaken in 2010 is shown below in Table B-11.

Table B-11: 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**

B.13.3. Asset Condition

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

APPENDIX C PRIVATE ROADS AND ACCESSWAYS

C.1 General

The Tasman Resource Management Plan (TRMP) and the Council's Engineering Standards and Policies define the acceptable standards for Council-owned and privately-owned roads. Private roads may be developed as part of approved developments.

The Council sets the standards to ensure the appropriate level of service and that in the long term the least cost can be achieved by the future owners together with the least adverse impacts on the adjoining road network.

The Council may take over a private road if further development of the road is fully brought up to the Council's standards at the developers cost. The Council holds a register of some private roads in its RAMM database. Updating of the private roads in RAMM is identified as an improvement plan action in Appendix V.

APPENDIX D ASSET VALUATIONS

D.1 Background

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

The Financial Reporting Act 1993 sets out a process by which GAAP is established for all reporting entities and groups, the Crown and all departments, Offices of Parliament and Crown entities and all local authorities. Compliance with the 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) is one of the current requirements of meeting GAAP.

The purpose of the valuations is to report asset values in the financial statements of Tasman District Council.

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 2013.

- 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).

D.1.1. Depreciation

Depreciation of assets must be charged over their useful life.

- *Depreciated Replacement Cost* is the current replacement cost less allowance for physical deterioration and optimisation for obsolescence and relevant surplus capacity. Where the remaining life of the asset can be assessed, the *Depreciated Replacement Cost* has been calculated as:

$$\frac{\text{Remaining useful life}}{\text{Total useful life}} \times (\text{Replacement cost} - \text{residual value}) + \text{residual value}$$

- *Depreciation* is a measure of the consumption of the economic benefits embodied in an asset. It distributes the cost or value of an asset over its estimated useful life. Straight-line depreciation is used in this valuation.
- *Total Depreciation to Date* is the total amount of the asset's economic benefits consumed since the asset was constructed or installed.
- The *Annual Depreciation* is the amount the asset depreciates in a year. It is defined as the replacement cost minus the residual value divided by the estimated total useful life for the asset.
- The *Minimum Remaining Useful Life* is applied to assets which are older than their useful life. It recognises that although an asset is older than its useful life it may still be in service and therefore have some value. Where an asset is older than its standard useful life, the minimum remaining useful life is added to the standard useful life and used in the calculation of the depreciated replacement value.

D.2 Revaluation Overview

The revaluations are based on accurate and substantially complete asset registers and appropriate replacement costs and effective lives.

(a) The lives are generally based upon NZ Infrastructure Asset Valuation and Depreciation Guidelines – Edition 2. In specific cases these have been modified where a different life is appropriate. The changes are justified in the valuation report.

(b) The component level of the data used for the valuation is sufficient to calculate depreciation separately for those assets that have different useful lives.

The recent history of valuations and revaluations of the transportation assets is as follows:

- Valuation of Infrastructural Assets – June 1998 by Beca Valuations
- Roading Asset Revaluation – July 2000 by MWH New Zealand Ltd
- Roading Infrastructure Asset Revaluation – March 2004 by MWH New Zealand Ltd
- Roading Infrastructure Asset Revaluation – at 30 June 2006 by MWH New Zealand Ltd
- Roading Infrastructure Asset Revaluation – at 30 June 2008 by MWH New Zealand Ltd
- Roading Asset Revaluation – at 31 March 2010 by MWH New Zealand Ltd
- Roading Asset Revaluation – at 30 June 2013 by MWH New Zealand Ltd.

The Council plans to undertake a revaluation of its transportation assets every two years.

The valuation data shown below is sourced from the latest asset revaluation for transportation assets prepared as at 30 June 2013. For a more detailed break-down of the asset revaluation to component level, refer to the Roading Asset Revaluation Report August 2013 prepared by MWH New Zealand Ltd. The valuation of the transportation network has been completed at a component level where appropriate. During the revaluation process the asset data is checked and any issues, errors or missing data is addressed prior to completing the revaluation.

The Council has utilised the RAMM System Asset Valuation Module (RAVM) for the asset categories that are recorded in RAMM. The remaining asset groups have been valued in separate spreadsheets.

The asset category that the road components have been grouped into, and their respective asset data sources are shown in Table D-1.

Table D-1*:* Asset Categories and Data Source

Asset Category	Asset Data Source	RAMM Table
Formation	RAMM	Treatment Length
Pavement		
Sealed pavement structure	RAMM	Treatment Length
Unsealed pavement structure	RAMM	Treatment Length
Sealed surfaces	RAMM	Treatment Length
Drainage	RAMM	Drainage
Surface water channels (including kerb and channel)	RAMM	Surface Water Channel
Footpaths	RAMM	Footpath
Railings	RAMM	Railings
Retaining walls	RAMM	Retaining Walls
Traffic facilities		
Bridge end markers	Spreadsheet	N/A

Asset Category	Asset Data Source	RAMM Table
Culvert markers	Spreadsheet	N/A
Kilometre markers	Spreadsheet	N/A
Edge marker posts	Spreadsheet	N/A
Raised pavement markers	Spreadsheet	N/A
Signs	RAMM	Signs
Street lights	Confirm	N/A
Car parks	Spreadsheet	N/A
Walkways	Spreadsheet	N/A
Bridges and major culverts	RAMM	Bridge / Drainage
Miscellaneous street furniture	RAMM	Minor Structures

An assessment of the data confidence level for each asset group has been made using the following criteria.

A – Highly Reliable — Data based on sound records, procedure, investigations and analysis which is properly documented and recognised as the best method of assessment.

B – Reliable — Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings.

C – Uncertain — Data based on sound records, procedures, investigation and analysis which is incomplete or unsupported, or extrapolation from limited sample for which grade A or B data is available.

D – Very Uncertain — Data based on unconfirmed verbal report and/or cursory inspection and analysis

The asset data confidence level is shown in Table D-2.

Table D-2: Data Confidence

Asset Category	Confidence	Comments
Formation	B – Reliable	Assumed depths and extra widths.
Sealed pavement surface	A – Highly Reliable	No assumptions have been made.
Sealed pavements	B – Reliable	Assumed depths and extra widths.
Unsealed pavements	B – Reliable	Assumed depths and extra widths.
Drainage	B – Reliable	Assumed construction ages and some culvert lengths.
Surface water channels	B – Reliable	Assumed construction ages.
Footpath	B – Reliable	Assumed construction ages.
Traffic facilities	C – Uncertain	Actual quantities are unavailable so estimates have been used.

Asset Category	Confidence	Comments
Signs	B – Reliable	Assumed installation dates.
Railings	B – Reliable	Assumed construction ages.
Retaining walls	B – Reliable	Assumed construction dates.
Street lights	B – Reliable	Assumed installation dates.
Bridges and bridge culverts	B – Reliable	Assumed construction ages.
Carparks and walkways	B – Reliable	Assumed construction ages and some component types.
Miscellaneous street furniture	B – Reliable	Assumed installation dates.

D.3 2013 Asset Revaluation Summary

Table D-3 compares the valuation of the transportation assets as at March 2010 and March 2013. The increases shown in the table are due to:

- changes in current contract rates;
- escalation/inflation;
- an increase is asset quantities e.g. new assets;
- the inclusion of retaining walls in the 2013 revaluation;
- changes to the way unsealed wearing course is valued.

Table D-3: 31 March 2010 and 30 June 2013 Valuation Comparison in $/mil

Valuation	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
31 March 2010	624.5	509.5	6.7
30 June 2013	716.5	567.1	8.6
% change	15%	11%	28%

Table D-4 provides a summary of the asset valuation as at 30 June 2013.

Table D-4: Summary of Asset Valuation as at 30 June 2013

Asset Description	Replacement Cost	Total Accumulated Depreciation	Depreciated Replacement Cost	Annual Depreciation
Formation	$292,505,368	$ -	$292,505,368	$ -
Pavement surface	$38,333,480	$19,885,494	$18,447,986	$3,192,433
Sealed pavement	$149,059,632	$31,001,000	$118,058,633	$994,476
Unsealed pavement	$17,052,186	$2,037,069	$15,015,117	$665,324
Drainage	$32,466,087	$12,138,443	$20,327,644	$432,927

Asset Description	Replacement Cost	Total Accumulated Depreciation	Depreciated Replacement Cost	Annual Depreciation
Surface water channels	$18,884,381	$7,275,017	$11,609,364	$380,809
Footpath	$19,833,963	$8,938,538	$10,895,425	$489,376
Traffic facilities	$674,263	$337,131	$337,131	$107,528
Signs	$3,676,460	$1,688,655	$1,987,805	$367,071
Railings	$2,674,231	$1,217,337	$1,456,894	$148,568
Retaining walls	$3,572,814	$1,452,385	$2,120,429	$71,456
Street lights	$5,704,893	$2,372,587	$3,332,306	$231,573
Bridges and major culverts	$127,520,037	$60,127,229	$67,392,809	$1,376,715
Carparks and walkways	$3,683,483	$677,608	$3,005,874	$73,522
Miscellaneous street furniture	$827,901	$225,075	$602,826	$44,987
Total	**$716,469,179**	**$149,373,567**	**$567,095,612**	**$8,576,765**

N.B Does not include inflation

APPENDIX E MAINTENANCE AND OPERATIONS

E.1 Procurement of Maintenance Activities

E.1.1. General

The Council has determined that the most effective way to maintain the network is to contract out the physical maintenance works to commercial contractors in order to procure the work at true market value. By using a competitive tendering model in accordance with national requirements the Council is eligible to receive financial assistance from the NZ Transport Agency (currently set at 52% for the 2015/16 financial year and then 51% for the following two year period 2016-2018).

The majority of the maintenance work undertaken on the roading network is eligible to receive this financial assistance provided it meets the criteria set by the NZ Transport Agency. Exceptions to this are maintenance of carparks and associated lighting, footpaths, walkways, footbridges and street furniture.

E.1.2. Activity Management

Transportation activity management services are largely provided for "in-house" by Council staff. This follows the Engineering Department reorganisation in 2013. Prior to this, activity management was largely provided by external consultants.

Occasionally there is a need to engage consultants to provide specialist professional services when the scope of the work exceeds the Council's available resources.

E.1.3. Network Maintenance

The district has been divided into four contract areas as shown in the map in Appendix Y and summarised in Table E-1 below.

Table E-1: Tasman District Road Maintenance Contracts

Contract Name	Contractor	Start Date	Contract Format
C788 Golden Bay Roading Maintenance	Fulton Hogan Ltd	1 October 2010	3 + 1 + 1
C871 Tasman Urban Maintenance	Fulton Hogan Ltd	1 July 2012	3 + 1 + 1
C875 Tasman Rural Maintenance	Fulton Hogan Ltd	1 July 2012	3 + 1 + 1
C787 Murchison Roading Maintenance	Fulton Hogan Ltd	1 July 2010	3 + 1 + 1

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 — Specifies 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 dayworks when the scope is not well defined.

All four road maintenance contracts include sealed and unsealed pavement maintenance, drainage systems maintenance, routine bridge maintenance (detritus, cleanliness and vegetation), footpath and walkway maintenance, vegetation control, detritus 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:

- Road marking for the Tasman Urban and Rural areas (Zones A and B) is procured through a separate three year contract. The current contract is held by Downer NZ and is due to expire on 1 July 2015. Road marking in Golden Bay and Murchison areas is included in the network maintenance contracts.
- 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 2014. 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 maintenance is procured through a separate contract that has a term of three years and expires on 1 July 2015. It is currently held by Downer NZ.
- 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. The contract is due to expire on 1 July 2015.
- Traffic signals are managed and maintained on the Council's behalf by Nelson City Council on a indefinite basis. Powertech NZ Ltd is currently engaged by the Nelson City Council to complete physical maintenance works.

The key maintenance types are described below:

- Structural 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 the 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 the 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 the 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 roading network such as carparks and footpaths that are not eligible for subsidy from the NZ Transport Agency;
- Customer Service Requests (CSRs) – this includes reactive maintenance of all aspects of the contract and in some instances requires additional work as triggered by customer requests.

E.2 Maintenance Strategies

E.2.1. Sealed Pavement Maintenance

The expected expenditure on sealed pavement maintenance is forecast at $1.3million (excluding inflation) per year in the 2015/18 programme. This is an increase of 20% or approximately $200,000 per year above the previous 2012/15 programme expenditure.

Figure E-1 shows a more complete picture of the 2015/18 pavement strategy and shows that increasing maintenance, while reducing renewals, is an important aspect of the proposed pavement strategy.

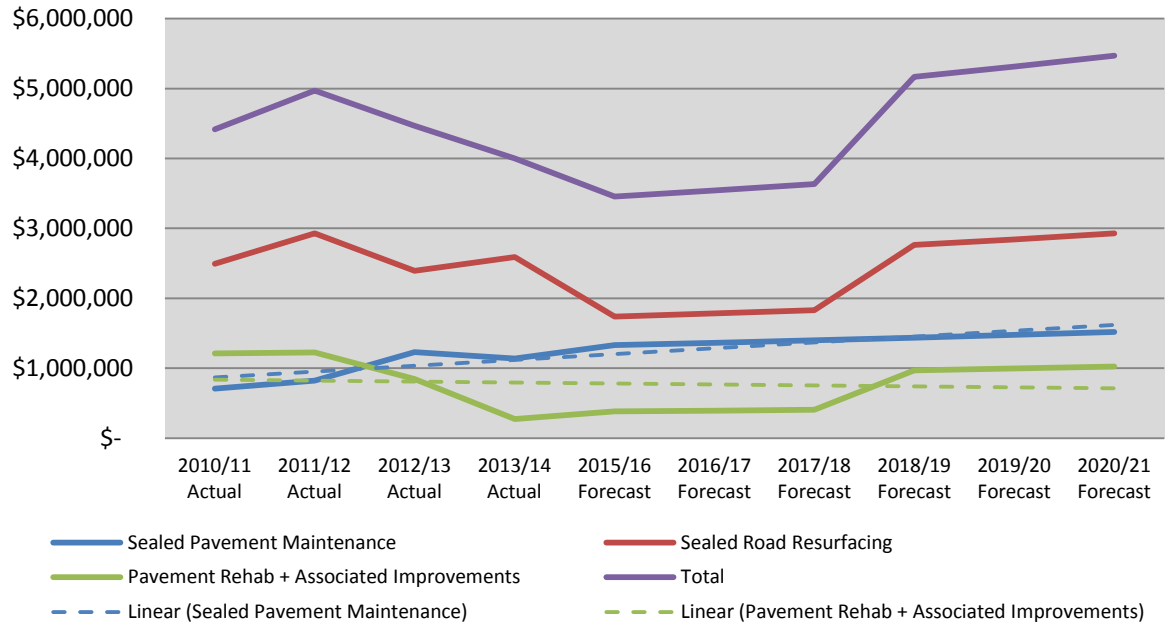


Figure E-1: Actual and Forecast Sealed Pavement Expenditure

Factors affecting the recent and future expected increase in sealed pavement maintenance requirements include:

- expecting minimal pavement rehabilitations in the 2015/18 programme, with the least whole of life costs for most sites achieved by targeted pavement maintenance;
- uptake of High Productivity Motor Vehicles and associated increase in wear and tear on specific routes;
- reducing reseal frequency and the associated increase in the age of seals is likely to have a impact on sealed pavement maintenance requirements.

Key sealed pavement risks and the proposed mitigation measures are shown in Table E-2.

Table E-2: Sealed Pavement Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Higher loadings from heavier trucks (HPMVs) increasing wear and tear.	• Continue monitoring condition trends on HPMV routes. • Increase inspection frequency on HPMV routes to ensure timely response to defects. • Ensure adequate drainage maintenance on HPMV routes.
Increasing average seal age and associated increase in number and severity of defects.	• Increase inspection regime on seals with extended age to ensure timely response to defects.

E.2.2. Unsealed Pavement Maintenance

Unsealed pavement maintenance expenditure is expected to hold steady with current levels continuing through 2015/18. There was a slight increase of $25,000 in unsealed maintenance expenditure from 2011/12 to 2012/13. This was due to procuring the new Tasman Rural maintenance contract which specified a new maintenance methodology being the use of a grader-towed roller. The objective of the new methodology was to provide a bound surface which should reduce gravel loss rates in conjunction with reduced metalling expenditure (primary benefit), as well as potentially reduce grading frequency (secondary benefit).

The Council's unsealed road network is spread across a wide and diverse geographic area and is maintained (as at 2014) via three performance-based contracts covering three distinct areas Golden Bay, Murchison and Tasman Rural (Waimea/Motueka/Tapawera). Council staff and local contractors are continuing to review the most efficient area boundaries to maximise grader utilisation. Future changes to contract boundaries may result in more optimal grader utilisation, however it is not considered practical to try and estimate any future savings at this time. There are potential further maintenance cost savings due to the replacement of the existing lower quality silty river gravels with better materials which remain bound for longer periods and require less frequent maintenance.

The 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. This project is discussed further in the unsealed metalling section of Appendix I.

Key unsealed pavement risks and the proposed mitigation measures, are shown in Table E-2.

Table E-3: Unsealed Pavement Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Increasing costs of metal due to environmental constraints ie. inability of suppliers to gain resource consents for quarries potentially resulting in longer cartage from fewer quarries.	• Engineering Department staff should participate in the consent processes.
Increasing cost of metal through lack of competition in local metal supply markets.	• Expand network of suppliers including trialing all possible materials to establish performance/cost profile. • The Council could consider owning/developing its own metal sources in strategic locations.
Poor understanding of material performance.	• Continue to develop monitoring project. • Collect and record data in unsealed roads management system.
Unexpected traffic or land use changes exposing vulnerable/under strength pavements.	• Continue regular updates of forest harvesting data from forest owners. • Maintain relationships with local transport industry. • Collect and record data in unsealed roads management system regarding metal depths and quality.

E.2.3. Drainage Maintenance

The Council considers drainage maintenance to be a critical function 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.

E.2.3.1 *Urban Kerb and Channel and Sump Cleaning*

The Council maintains approximately 250km of kerb and channel and 1,950 sumps.

The current strategy and specification in the maintenance contracts are:

- 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 $32,000 per year.

E.2.3.2 *Culvert Maintenance*

The Council maintains approximately 10,300 culverts. In 2012/13 and 2013/14, approximately 450 culverts were cleaned each year as part of routine maintenance, plus an estimated 300 to 400 culverts were cleaned as part of emergency works following storm events.

The 2015/18 maintenance programme assumes eight percent or 825 culverts will require cleaning each year, equating to an estimated cost of $145,000 per year.

E.2.3.3 *Unlined Surface Water Channel Maintenance*

A robust surface water channel maintenance programme is proposed for 2015/18, which includes annual mechanical cleaning of 10% of the recorded 1,400km of earth surface water channels, equating to an estimated cost of $240,000 per year.

This attention to drainage maintenance is necessary to support the pavement strategy of reduced pavement and surfacing renewals and accepting greater risk in respect to extending seal lives.

E.2.3.4 *Key Drainage Maintenance Risks*

The key drainage maintenance risks and the proposed mitigation measures are shown in Table E-3.

Table E-4: Drainage Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Lack of maintenance in rural areas causes damage to or deterioration of road assets.	• Adopt risk-based approach to drainage inspections and maintenance such as that outlined in the NZ Transport Agency research report 555. • Align maintenance contract with specifications risk-based approach.
Budgets are insufficient to complete all required maintenance work.	• Use risk-based approach to prioritise maintenance work. • Divert other maintenance budgets where possible.

E.2.4. Environmental Maintenance

E.2.4.1 *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 the Council changed its mowing specification for the Tasman Urban and Rural contracts to specify the number of mows per year and to remove most of the risk from the contractor. The specification change saved approximately $140,000 per year. Golden Bay and Murchison are yet to undergo a contract review and are still based on the performance-based structure.

The current Golden Bay and Murchison contracts end on 30 June 2015. For new contracts from 1 July 2015, it is planned to change the mowing specification to match the new approach. This is conservatively estimated to save $40,000 per year.

E.2.4.2 *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, the 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 due to the following reasons and is no longer used on the network:

- the high cost of the CMA raw product;
- the relatively short useful life of the product once applied to the road;
- inconsistency in use (due to cost, it was used on some roads and not on others) and therefore inconsistent level of service to road users which can present a safety issue.

The Council will continue to use grit and associated warning signs to manage frost and ice hazards.

It must be acknowledged that 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.

In 2014 the Council began trialing ‘smart’ Raised Reflective Pavement Markers (RRPMs) which flash blue LEDs in freezing conditions. This provides a strong warning to motorists for the period during which the hazard exists. Initial feedback has been positive, however it will be some time before it can be determined how these smart RRPMs may affect our frost and ice control strategy in the future. Key issues to address are the RRPM performance/reliability, life and economics.

The Council currently has very competitive rates from the contractor for winter maintenance gritting activities in the Tasman Rural maintenance contract. It is expected that rates will increase when this work is retendered in Year 2 (2016/17).

E.2.4.3 *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 roading assets. Forecast costs are based on historic expenditure.

The 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. However as 30 percent of the Council’s road network is through rolling or mountainous terrain it is unlikely that reactive costs will ever be eliminated. An allowance of $40,000 per year has been included for proactive works.

E.2.4.4 *Murchison Stock Effluent Facility*

The Council maintains the stock effluent facility located 1km north of the Murchison township adjacent to State Highway 6. Maintenance activities are contracted to Downer under the Council's utilities contract, and include:

- routine cleaning of the facility;
- collection, transportation and disposal of effluent;
- reactive maintenance (for example electrical faults).

Average costs over the last three years are $75,000 per year. This level is expected to continue, although it will vary from year to year based on actual effluent volumes, rainfall (which contributes to tank volumes), and required reactive maintenance.

E.2.4.5 *Key Environmental Maintenance Risks*

The key environmental maintenance risks and the proposed mitigation measures are shown in Table E-4.

Table E-5: Environmental Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Climatic conditions become more extreme or variable, resulting in peaks and troughs in expenditure.	• Maintain flexibility in funding arrangements, including the ability to carry over environmental maintenance funding from year-to-year.
Fire risk from long roadside grass in summer, particularly when mower is operating.	• Staff are in contact with the Rural Fire Network regarding risk levels to ensure mowing bans are implemented when required. • Mowers and pilot vehicles are equipped with fire extinguishers.

E.2.5. Structures

E.2.5.1 *Bridge Structures*

Since 2009 the 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 bridge conditions are very good and that there is minimal backlog in routine maintenance items.

The Council bridge manager 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 term Bridge Structures Maintenance contract, the relevant road maintenance contract, or included in the annual tendered Structural Component Replacements contract. The bridge manager chooses the procurement method that provides the best value to the Council.

From 1 July 2015 the Council proposes to use RAMM Contractor to manage completion of maintenance work which will better link maintenance details with asset records held in RAMM.

E.2.5.2 *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.

E.2.5.3 *Key Structural Maintenance Risks*

The key structural maintenance risks and the proposed mitigation measures are shown in Table E-5.

Table E-6: Structural Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Aging structures require increasing maintenance to achieve design lives.	• Continue biennial inspections to monitor structure condition. • Adjust budget forecasts based on any deterioration or increase in maintenance requirements. • Monitor backlog of lower priority repairs which are deferred by budget constraints.
Heavier HPMV trucks cause greater wear and tear on structures.	• Continue biennial inspections to monitor structure condition.

E.2.6. Traffic Services

E.2.6.1 *Signs and Delineation*

Maintenance requirements are specified in the 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 accidental 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.

Total maintenance costs are expected to be steady at $71,000 per year, based on current maintenance contract rates.

E.2.6.2 *Street Lighting*

In 2014/15 the Council committed to a significant change to its street light strategy. This change will see all existing street lights upgraded to LED technology during the 2015 calendar year. Completion of the renewal works will immediately and significantly reduce maintenance and power costs for the long term.

Key assumptions include:

- power costs will reduce to 55% of original non-LED estimate (conservative, actual savings should be greater than or equal to 50%);
- annual street light maintenance costs will reduce compared to original non-LED estimate (from $114,000 to $40,000/year). Every seven years the budget is increased to $208,000 to cover lens repairs and cleaning of all lights.

Maintenance and power costs have been reduced by $5.875 million over the 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 the Council entered into in mid 2014. The next 2018-2048 programme will based on more accurate estimated costs as the impact of the changeover will be better known.

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.

E.2.6.3 *Pavement Marking*

The Council's pavement marking programme is zone-based such that 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.

The estimated pavement remarking costs are $180,000 per year.

E.2.6.4 *Traffic Signals*

The 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 a long 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.

E.2.6.5 *Key Traffic Services Maintenance Risks*

The key traffic services maintenance risks and the proposed mitigation measures are shown in Table E-6.

Table E-7: Traffic Services Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Poor performance of new LED technology, for example high failure rate.	• Ensure chosen supplier(s) are reputable and provide satisfactory warranties. • The Council has chosen several suppliers to spread risk.
Power costs increase more and/or faster than anticipated.	• Monitor costs and revise forecasts as required.

E.2.7. Footpaths and Walkways

The 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 the 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 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.

The 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 every three years to maintain their integrity.

The ongoing maintenance costs for the 2015-45 programme are based on historical reactive maintenance expenditure.

E.2.7.1 *Key Footpath and Walkway Maintenance Risks*

The key footpath and walkway maintenance risks and the proposed mitigation measures are shown in Table E-7.

Table E-8: Footpath and Walkway Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Vehicles inappropriately parking or traversing footpaths.	• The Council is not able to prevent inappropriate use of the footpaths, however if a responsible party can be identified there is scope to pursue cost reimbursement.

E.2.8. Cycleways

E.2.8.1 *Introduction*

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

E.2.8.2 *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 E.2.1 for further details.

E.2.8.3 *Off-Road Shared Paths*

Off-road shared paths are managed and maintained the same as for the Council's footpath assets. Refer to Section E.2.7 for further details.

E.2.8.4 *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. Appendix Y outlines the maintenance responsibilities for the trail.

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.

E.2.8.5 *Key Cycleway Maintenance Risks*

The key cycleway maintenance risks and the proposed mitigation measures are shown in Table E-8.

Table E-9: Cycleway Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Vehicles inappropriately using the path and damaging it.	• Communicate and educate residents so that they do not park on the paths. Parking officers can enforce the bylaw if necessary.
Increased frequency and/or intensity of rainfall events resulting in damage and scour to unsealed surfaces.	• Maintain positive drainage to minimise the risk of scour and ponding.
Sign vandalism.	• There is little the Council can do to control vandalism. Budgets have been prepared based on recent trends.

E.2.9. Carparks

All aspects of the maintenance of the Council's off-street car parking areas are not funded 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.

E.2.10. Street Furniture

The maintenance of the Council's street furniture 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.

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 Pools, Spas and Essentials. 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.

E.2.10.1 *Key Street Furniture Maintenance Risks*

The key street furniture maintenance risks and the proposed mitigation measures are shown in Table E-9.

Table E-10: Street Furniture Maintenance Key Risks

Risk Description	Proposed Mitigation Measures
Vandalism of street furniture e.g. smashing glass panels on bus shelters.	• The Council has no mitigation measures in place and it is very difficult to manage deliberates vandalism. Budgets are developed based on historic trends.

E.3 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 the Council.

E.4 Engineering Studies

A number of studies have been allocated to the operations and maintenance budget. These are summarised in Table E-10 below.

Table E-11: Summary of Engineering Studies included in this Activity Management Plan

Study Name	Brief Description
Strategic Studies	Network use studies to support strategic planning.
dTIMS Modelling	Modelling is undertaken every three years.

E.5 Forecast Operations and Maintenance Expenditure

Figure E-2 shows the projected Non Subsidised and Subsidised Operations and Maintenance costs for the next 30 years.

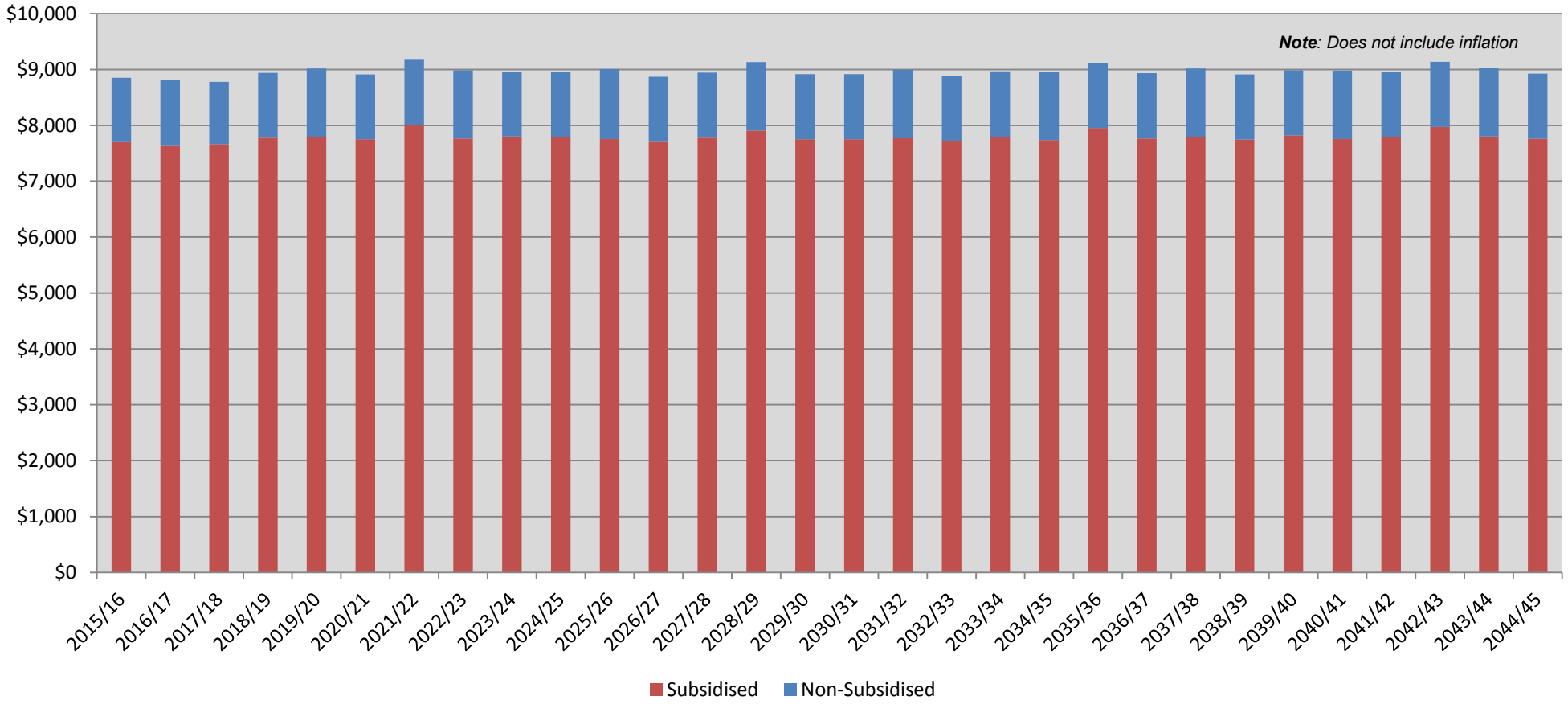


Figure E-2: 2015 – 2045 Transportation Operating and Maintenance Expenditure ($000)

Table E-12: 2015 – 2045 Transportation Operations and Maintenance Expenditure ($000)

ID	Project Name	Project Description	Category	GL Code	% O&M	O&M Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110001	Regional Land Transport Planning	Preparation of Regional Land Transport Programme and Strategy and Regional Land Transport Committee administration	Regional Land Transport Planning Management	04002203	100%	800	800	15	15	50	15	15	50	15	15	50	15	15	50	15	15	50	15	15	50	15	15	290
110002	Strategic Studies	Network use studies to support stategic planning	Transport model development	0400220305	100%	310	310	40	-	-	30	-	-	30	-	-	30	-	-	30	-	-	30	-	-	30	-	90
110003	AMP Review	Transportation Activity Management Plan updates	Activity Management Plans	0400220310	100%	250	250	-	5	20	-	5	20	-	5	20	-	5	20	-	5	20	-	5	20	-	5	95
110004	dTIMs Modelling	dTims modelling excluding dTims validation	Network and asset management	0400220312	100%	300	300	30	-	-	30	-	-	30	-	-	30	-	-	30	-	-	30	-	-	30	-	90
110005	Sealed Pavement Maintenance	Maintenance of sealed pavements	Sealed pavement maintenance	04012401	100%	39,000	39,000	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	13,000
110006	SPR- Sealed Pavement Maintenance	Maintenance of Pupu Springs Road sealed pavement	Sealed pavement maintenance	04202401	100%	42	42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
110007	Unsealed Pavement Maintenance	Maintenance of unsealed pavements	Unsealed pavement maintenance	04012402	100%	13,800	13,800	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	4,600
110008	SPR - Unsealed Pavement Maintenance	Maintenance of Totaranui Road unsealed pavement	Unsealed pavement maintenance	04202402	100%	360	360	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	120
110009	Routine Drainage Maintenance	Maintenance and cleaning of drainage assets including culverts, sumps and water tables	Routine drainage maintenance	04072403	100%	14,561	14,561	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	4,854
110010	SPR- Routine Drainage Maintenance	Maintenance and cleaning of drainage assets on Pupu Springs Road and Totaranui Road	Routine drainage maintenance	04202403	100%	144	144	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	48
110011	State Highway Street Cleaning	State Highway portion of street cleaning	Routine drainage maintenance	0405240101	100%	90	90	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	30
110012	Structures Maintenance	Maintenance of bridges and retaining walls	Structures maintenance	04082401	100%	7,890	7,890	200	200	200	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	2,700
110013	SPR - Structures Maintenance	Maintenance of bridges and retaining walls on Pupu Springs Road and Totaranui Road	Structures maintenance	0420240111	100%	15	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
110014	Environmental Maintenance	Spraying, mowing, minor slip clearance, fallen trees, frost and ice control, and rubbish removal from rural roadsides	Environmental maintenance	04162401	100%	39,747	39,747	1,308	1,308	1,308	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	1,327	13,268

ID	Project Name	Project Description	Category	GL Code	% O&M	O&M Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110015	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	Environmental maintenance	04202404	100%	1,800	1,800	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	600
110016	Traffic Services Maintenance	Maintenance of road signs, markings and street lights	Traffic services maintenance	04142401	100%	14,407	14,407	419	421	423	426	428	430	618	435	437	440	442	445	447	635	453	455	458	461	464	467	5,202
110017	SPR - Traffic Services Maintenance	Maintenance of road signs and markings on Pupu Springs Road and Totaranui Road	Traffic services maintenance	04202405	100%	15	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
110018	Database and Asset Data Management	RAMM fees, training, data validation, dTims fees	Network and asset management	0401220326	100%	1,714	1,714	52	62	52	62	52	62	52	62	52	62	52	62	52	62	52	62	52	62	52	62	571
110019	Safe Systems	Professional services to assist the implementation and update of Safe Systems processes led by NZTA	Network and asset management	0400220304	100%	1,050	1,050	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	350
110020	Road Legalisation	Survey and legalisation of existing roads outside legal road reserve	Network and asset management	0401220334	100%	2,100	2,100	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	700
110021	Bridge Rating Assessments	Bridge rating assessments for bridges that have not yet been rated	Network and asset management	0401220329	100%	510	510	30	30	30	60	60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-
110022	Road Asset Valuation	Bi-annual asset revaluation	Network and asset management	04002205	100%	250	250	-	25	-	-	25	-	-	25	-	-	25	-	-	25	-	-	25	-	-	25	75
110023	Traffic Data Collection	Traffic counting professional service contract	Network and asset management	0401220325	100%	2,340	2,340	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	780
110024	Asset Condition Monitoring	Routine bridge inspections, pavement testing and condition rating	Network and asset management	0401220333	100%	2,846	2,846	126	85	98	78	133	50	126	85	98	78	133	50	126	85	98	78	133	50	126	85	928
110025	Forward Works Programme	Development of forward works programme for pavement and surface renewals	Network and asset management	0401220317	100%	1,800	1,800	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	600
110026	Asset Management Professional Services	Specialist asset management support	Network and asset management	04012203	100%	1,500	1,500	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	500
110027	Road Safety Programmes	Promotion, education and advertising to promote safe use of the transport network	Promotion, education and advertising	05382526	100%	4,440	4,440	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	1,480
110028	Operational Traffic Management	Maintenance of traffic signals	Operational traffic management	04182401	100%	134	134	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	45

ID	Project Name	Project Description	Category	GL Code	% O&M	O&M Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110029	Cycle Path Maintenance	Maintenance of subsidised cycleways	Cycle path maintenance	04102401	100%	600	600	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	200
110031	Emergency Reinstatement	Emergency event response	Emergency works	0401240198	100%	60,000	60,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000
110049	Lower Cobb Dam Road Maintenance	Routine and reactive maintenance of the lower road	Sealed pavement maintenance	04042401	100%	1,035	1,035	34	34	34	34	34	34	34	34	39	39	39	34	34	34	34	34	34	34	34	350
110050	Upper Cobb Dam Road Maintenance	Routine and reactive maintenance of the upper road	Upper Cobb Dam Road	0506240101	100%	790	790	26	26	26	26	26	26	31	26	26	26	26	26	26	26	26	26	26	31	26	260
110051	Cobb Powerhouse Bridge Maintenance	Routine bridge maintenance of the Powerhouse Bridge	Structures maintenance	0404240101	100%	45	45	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	15
110052	Graham Valley Road	Shared maintenance with DoC.	Graham Valley Road	0508240101	100%	1,200	1,200	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	400
110053	Consent Procurement	External consent application support	Network & Asset Management Non Sub	0500220316	100%	120	120	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	40
110054	Non Subsidised Strategic Studies and Research	Studies and research to support policy development	Network & Asset Management Non Sub	0500220311	100%	300	300	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
110055	Footpath and Carpark Condition Rating Survey	Condition rating survey of footpaths and carparks to support resurfacing programme development	Network & Asset Management Non Sub	0502220302	100%	200	200	-	20	-	-	20	-	-	20	-	-	20	-	-	20	-	-	20	-	-	20	60
110056	Carpark Maintenance	Routine and reactive maintenance of off street car parking facilities	Carparking	05012401	100%	900	900	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	300
110060	Town Centre Paver Maintenance	Annual clean of Sundial Square, bi annual clean of other areas. Sundial Square resealing every three years then increase to allow for Richmond Town Centre.	Footpaths	0502240101	100%	982	982	20	42	20	20	60	20	20	60	20	20	60	20	20	60	20	20	60	20	20	60	320
110061	Footpath Maintenance	District wide footpath maintenance	Footpaths	05022401	100%	3,000	3,000	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,000
110066	Great Taste Trail Maintenance	Maintenance of the Great Taste Trail	Cycleways Non Sub	05182401	100%	4,022	4,022	78	89	102	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	1,390
110069	Pedestrian and Carpark Lighting Electricity	Electricity costs for walkways and carparks	Lighting Non Sub	05032505	100%	330	330	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	110
110071	Pedestrian and Carpark Lighting Maintenance	Maintenance of walkway and carpark lighting	Lighting Non Sub	05032401	100%	165	165	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	55

ID	Project Name	Project Description	Category	GL Code	% O&M	O&M Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110073	Street Cleaning	Non subsidised proportion of street cleaning (70% of total)	Street Cleaning	05052401	100%	6,000	6,000	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	2,000
110076	Street Furniture Maintenance	Routine and reactive maintenance of street furniture	Town Centre Infrastructure	05152401	100%	300	300	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
110085	Footbridge Maintenance	Maintenance of footbridges	Bridges Non Sub	05072401	100%	275	275	5	5	5	5	5	5	5	5	5	5	35	10	10	10	10	10	10	10	10	100
110086	Bridge Removal	Removal or divesting of foot and vehicle bridges that do not form part of the maintained network	Bridges Non Sub	0507240101	100%	40	40	10	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110099	Abel Tasman Drive Legalisation	Legalisation of Abel Tasman Drive at Tarakohe	Road Construction Non Sub	0556220301	100%	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110101	Pest Control	Vegetation and pest control of non subsidised road areas	Environmental Control	0500240102	100%	900	900	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	300
110102	Landscape Maintenance	Maintenance of roadside planting areas	Roadside Landscaping	05162401	100%	3,600	3,600	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	1,200
110103	NBus Services	Funding contribution to Nelson City Council for the Nbus services	Public Transport	0500220314	100%	1,173	1,173	31	31	31	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	400
110107	Subsidised Staff Costs	NZTA subsidisable portion of staff salary and wages, and overheads.	Network and asset management	*	100%	19,039	19,039	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	6,346
110108	Non Subsidised Staff Costs	Non-subsidisable portion of staff salary and wages, and overheads.	Network & Asset Management Non Sub	*	100%	11,105	11,105	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	3,702
110110	School Cycle and Scooter Training	School education programme to promote safe use of cycles and scooters	Network and asset management	04082526	100%	600	600	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	200
	TOTALS					268,985	541,290	8,853	8,807	8,779	8,940	9,018	8,913	9,176	8,987	8,963	8,960	9,008	8,872	8,945	9,133	8,918	8,915	8,993	8,888	8,966	8,964	89,987

APPENDIX F DEMAND AND FUTURE NEW CAPITAL REQUIREMENTS

F.1 Growth Supply and Demand Model

F.1.1. Model Summary

A comprehensive Growth Demand and Supply Model (GDSM or growth model) has been developed for Tasman District. The growth model is a long term planning tool, providing population and economic projections district wide. The supply potential is assessed as well as demand, and a development rollout for each settlement is then examined. The development rollout from the Growth Model informs capital budgets (new growth causes a demand for network services) which feed into the AMPs and in turn underpin the Long Term Plan and supporting policies eg, the Development Contributions Policy.

The 2014 growth model is a fourth generation growth model with previous versions being completed in 2005, 2008 and 2011. In order to understand how and where growth will occur, the growth model is built up of a series of Settlement Areas which contain Development Areas. A Settlement Area (SA) is defined for each of the main towns and communities in the district. There are 17 Settlement Areas for the present version of the growth model. Each Settlement Area is sub-divided into a number of Development Areas. Each Development Area is defined as one continuous polygon within a Settlement Area that, if assessed as developable, is expected to contain a common end-use and density for built development.

The growth model organises and integrates the assessments of demand and supply of built development. The development is categorised as residential or business demand and supply, with business including all industrial, commercial and retail uses. For residential demand and supply:

- the 'demand' for residential buildings (dwellings) is assessed from population and household growth forecasts based on Statistics New Zealand's latest release;
- the 'supply' of lots for future dwellings is assessed from analysis of the Development Areas in each Settlement Area and how many lots could feasibly be developed for residential end use over a 20-year time period, after accounting for a number of existing characteristics of the Development Area.

For business demand and supply:

- the 'demand' for business premises is assessed from economic and employment growth forecasts, and associated land requirements.
- the 'supply' of lots for future business premises is assessed from analysis of the Development Areas in each Settlement Area over time in a similar way as that for future dwellings.

The Development Areas and Settlement Areas are the building blocks that allow the growth model to spread demand for new dwellings and business premises, and assess where there is capacity to supply that demand.

The growth model is not just an isolated tool that calculates a development forecast. It is a number of linked processes that involve assessment of base data, expert interpretation and assessment, calculation and forecasting. The key input data, assessment and computational processes and outputs of the growth model are captured in a database called the Growth Model Database.

The outputs of the growth model are located on a shared browser site that all Council staff can access. The browser contains:

- all the various input data sets and calculated outputs;
- maps defining the Settlement Areas and Development Areas within those; and
- an updated model description describing the model working in detail, assumptions and planned improvements.

The review process is also mapped in ProMapp.

F.1.2. Overall Population Growth and Trends

Richmond is the largest and fastest growing town in the District with an estimated 13,606 residents, as at 2014. Motueka is the next largest town, with 6,687 residents. Another five settlements are relatively small, with populations ranging from 1239 in Takaka up to 2,498 in the Coastal Tasman area. Nine have populations of less than 500 people.

Tasman District is a popular destination for older age group or “retirees”. A high proportion of population growth results from people moving to the Tasman District from elsewhere, rather than from current residents having children. The growth modelling shows that older people moving to the Tasman district are choosing to live in larger centres with easier access to services, hence the larger settlements are growing and the smaller ones are not. As shown in Table F-1, Richmond, Brightwater and Wakefield are predicted to grow by 500 people or more over the next 25 years. Overall, Tasman’s population is expected to increase by 7,700 people by 2039. Council’s planning also takes into consideration the decrease in the number of persons per household and provides for an increase in the number of holiday homes. The latter is particularly important for holiday settlements such as Kaiteriteri and Pohara/Ligar Bay.

The population projection in the growth model has been taken from Statistics New Zealand population projections derived from the 2013 census data using a “medium” growth rate projection for all settlement areas (refer Table F-1). The population projections are used to determine a demand for new dwellings in each settlement area.

Table F-1: Population Projections Used in the Growth Model

Settlement Area	Population in 2014	Population projection for 2039	Increase or decrease in people by 2039
Brightwater	1835	2412	577
Coastal Tasman Area	2498	2903	405
Collingwood	232	250	18
Kaiteriteri	377	382	5
Mapua/Ruby Bay	2028	2506	478
Marahau	119	120	1
Motueka	6687	6810	123
Murchison	413	365	-48
Pohara/Ligar/Tata	543	583	40
Richmond	13606	16396	2790
Riwaka	591	636	45
St Arnaud	101	93	-8
Takaka	1239	1056	-183
Tapawera	284	320	36
Tasman	189	210	21
Upper Moutere	148	177	29
Wakefield	1939	2471	532
Ward Remainder (Area Outside Ward Balance)	282	303	19
Ward Remainder Golden Bay	3023	3248	225

Settlement Area	Population in 2014	Population projection for 2039	Increase or decrease in people by 2039
Ward Remainder Lakes Murchison	2418	2722	304
Ward Remainder Motueka	3096	3597	501
Ward Remainder Moutere Waimea	4248	4937	689
Ward Remainder Richmond	1612	2704	1092
Total for District	47508	55201	7693

Projected Population data derived from Statistics NZ 2013 Census Data (adjusted for Growth Model). Base projection series applied = medium

Table F-2 summarises some key statistics for Tasman's population, based on Statistics New Zealand medium growth projections (2006 base, updated in June 2013).

Table F-2: Population Change in Tasman District

Key Statistics	2006	2013	2031
Population	45,800	48,800	53,900
Median age (years)	40.3	44.2	47.3
Proportion of population aged over 65	13.6%	17.9%	29.1%
Number of households	17,900	18,261	23,500
Working age population	29,810	30,500	29,170

Additional information from the 2013 census about Tasman District:

- Tasman's population is 1.1% of New Zealand's total population;
- 93.1% of the population is European;
- 7.6% of the population is Māori;
- 20% of the population aged under 15 years;
- 75% of households in occupied private dwellings owned the dwelling or held it in a family trust (this is the highest rate of home ownership in New Zealand).

As shown in Table F-2, Tasman's population is expected to be about 53,900 by 2031. Like the rest of New Zealand, the median age of Tasman's population is also increasing. The first of the baby boomers (those born between 1946 and 1964) commenced retiring in 2011 and fertility rates have also decreased over the last 20 years. The median age is projected to increase from 44.2 in 2013 to 47.3 in 2031. By 2031, the number of people aged over 65 in Tasman is projected to comprise 29.1 percent of the population, compared to 17.9 percent in 2013. Twenty years ago the figure was less than 10 percent. These demographic changes raise a number of challenges for the Council.

As Tasman's population increases, the Council needs to provide more services. However, many of the retired population will be on fixed incomes and unable to pay for increases in services (rates are a tax on property, not income, and if a property value is high the rates can take a significant portion of this fixed income payment). The Council's Growth Strategy considers whether our community can afford to support growth in all 17 settlements and what form this growth will take.

Communities with an older population are likely to have different aspirations to the communities with a younger median age. This may include:

- where they wish to live, possibly closer to main settlement areas where medical and social services are more readily available;

- an increase in the demand for smaller properties and a decrease in the demand for lifestyle or larger properties, particularly given the projected increase in the number of single households;
- the type of facilities and the levels of service requested, including more informal recreation facilities and the increased demand for “free” or low cost services such as libraries;
- their ability and willingness to pay for services and facilities may be lower, given that incomes are expected to be lower.

The Council has taken these factors into account in the development of this AMP and the LTP.

F.1.3. Business Forecast

The last major review of business demand was undertaken as part of the 2008 growth model. Three economic demand assessments were used to build a quantitative picture of business growth in terms of employment growth and linked growth in demand for business space. Each study provided different datasets, but an aggregate picture of estimated business land demand in the Tasman district, including, Motueka and environs, Golden Bay, and Tasman district balance (including Richmond).

For the 2011 and 2014 growth models, a high level consideration of business growth opportunities showed that in the two main demand areas (Richmond as part of the eastern sub regional demand catchment of Nelson-Tasman, and at Motueka as the centre of the western sub regional demand catchment), there is a large business land supply capacity becoming available for business development. This includes the current deferred business zonings in both the Richmond West Development Area, and draft deferred zonings in the Motueka West Development Area. It was considered this amount of supply capacity will meet the expected needs of business growth for at least 50 years (well beyond the 20 year projection). On this basis, the 2014 review of the growth model simply adopted the data and assumptions in the 2008 growth model, but updated the datasets by extrapolation for a further three years (2032 to 2035).

Looking ahead, there are three main difficulties with relying on the historical demand assessments as the basis for business growth demand forecasts:

- the economic modelling by the consultants’ assessments used two different sets of now-dated census data for economic and employment growth;
- the demand assessment methods have yielded results of limited reliability at the level of individual settlement areas, as the areas assessed yielded aggregate results from an undisclosed simulation economic modelling routine, that have then been apportioned and subject to a number of simplifying assumptions;
- the consultant work done is not in a Council managed information system and does not provide a confidence in results in a regional (Nelson-Tasman) context especially for future Nelson-Richmond urban area forecasting.

Notwithstanding that the last study is now six years old, the information used for business demand is considered sufficient as for part of this time, the Global Financial Crisis also reduced local demand for new business land, and since this time many “new” businesses have been established on current business properties (brown fields development). What is required is the development of a regional (Nelson-Tasman) economic simulation model capable of yielding results at the settlement area level, and suitably populated with current data, to yield more reliable segmented business land demand estimates, for each settlement area. This is a strategic priority for further work after the completion of the 2014 growth model review.

F.1.4. Rollout Assessment

Once the analysis of demand for residential dwellings and buildings in each settlement area has been completed, and when the supply potential for new subdivision and dwelling/building construction has been assessed for each development area, the rollout analysis is done. This seeks to forecast when and if the demand for dwelling and business premises will be met and, if so, where and when. This results in a forecast for each development area of:

- the number of new residential dwellings that will be created through subdivision or building on vacant lots; and
- the number of new business buildings that will be created through subdivision or building on vacant lots.

This information is then used to plan how and where network infrastructure needs to be developed and to what capacity.

F.2 Projection of Demand for Transportation Services

F.2.1. Effect of Population Growth on the Transportation Network

Growth is expected to occur around established urban centres and along the coastal margins. As the population increases it is expected to have a direct relationship with the growth of traffic volumes within the district.

The measure of access to motor vehicles (refer Statistics NZ) indicates access to motor vehicles per household has increased. The pattern of vehicle ownership is likely to continue, though it may decrease in the medium to longer term as increases in the real costs of vehicle transport are transferred to the vehicle owners.

The Tasman average Annual Traffic Growth Rate for 10 years from 1992 to 2002 was 3.5%. As the traffic steadily grows, this will slowly erode the level of service provided by individual routes, potentially decreasing the efficiency of the entire network and may lead to an increased level of expenditure on assets to maintain the level of service. However, it is considered that the roads at a network level generally have a large capacity compared to present demand and increased traffic volume will not significantly affect the capacity levels of service. There are some localised networks in the main urban areas of Richmond however which may reach capacity.

As a result of this projected growth, the Council has included, within the forward projections, the following projects listed in Table F-3. This is a summary of the major growth projects, a complete list is included in Table F-4.

Table F-3: Summary of Major Growth Projects in the first 10 Years

Project Name	Description
Richmond Town Centre	Upgrade of the Richmond Town Centre (Queen Street) to provide improved traffic calming and shared spaces.
Brightwater Town Centre	Renewal of Ellis Street to better provide for a shared environment.
Bateup Road Widening	Reconstruction of Bateup Road to provide for growth.
Lower Queen Street Widening	Reconstruction of Lower Queen Street to provide for future growth in Richmond West.
Queen Street / Salisbury Road Intersection Improvements	Intersection upgrade to improve efficiency.

F.2.2. Implications of Community Expectations

Forecasting how road usage may change is related to forecasting development in the district and is derived by considering the best indicators available at the time of writing this plan.

The Council does however play a proactive role in applying drivers and controls to ensure that development is progressed with some consideration of the wider issues of the environment and the impact of development on the Council's infrastructure.

The intended levels of service detailed in Appendix R are considered to be representative of the service demands of the current and the future community.

The following assumptions have been made relating to the current community expectations:

- all road construction activities use best practice in the use of the district's natural resources;
- the network of roads, footpaths, cycleways and carparks are accessible, safe and uncongested;
- urban communities have a means of travel for pedestrians and cyclists which is safe and efficient.

F.2.3. Implications of Industrial Demand

The effect of tourism growth, industry expansion and residential expansion is reflected in vehicle growth rates on the arterial and local road networks.

The potential growth of the key primary industries in the district is noted in the areas of:

- forestry;
- farming;
- tourism;
- horticulture;
- seafood and agriculture.

It has been assumed that this will generally have little effect on new infrastructure. However the effect on maintenance and renewals standards and the associated costs is expected to be more significant as discussed in Appendices E and I respectively.

F.2.4. Implications of Legislative Change

Changes to transportation policies may be driven from a number of directions. They could be internally driven (for example the 2013 Tasman District Council Engineering Standards and Policies) or externally driven (for example, changes promoted by national organisations like the NZ Transport Agency and the Government Policy Statement). Monitoring internal and external environments enables the impacts of such changes to be anticipated and predicted. While there is no certainty to these predictions it is important to consider them when developing asset management forecasts and strategies.

F.3 Assessment of New Capital Works

Over 2014 a number of workshops with the project team (and other staff) were held to identify new works requirements.

New works were identified by:

- reviewing known subdivisions, developer expectations, and forecasts for the future;
- reviewing levels of service and performance deficiencies;
- reviewing risk assessments;
- reviewing previously completed investigation and design reports;
- using the collective knowledge and system understanding of the project team.

Each project identified was developed with a scope and a project cost estimate (or updated scope and project costs estimates). Common project estimating templates were developed to ensure consistent estimating practices and rates were used. This is described in Appendix Q.

The project estimate template includes:

- physical works estimates;
- professional services estimates;
- consenting and land purchase estimates;
- contingencies for unknowns.

All estimates are documented and held by Council. The information from the estimates has then been entered into the capital forecast spreadsheet/database that enables listing and summarising of the capital costs per project, per scheme, per project driver and per year. This has been used as the source data for input into the Council's financial system for financial modelling.

F.4 Determination of Project Drivers and Programming

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

- *Operation and Maintenance*: operational activities which have no effect on asset condition but are necessary to keep the asset utilised appropriately and on-going day-to-day work required to keep assets operating at required service levels[1].
- *Renewals:* significant work that restores or replaces an existing asset towards its original size, condition or capacity[2].

[1] Definition from International Infrastructure Management Manual – Version 3.0, 2006, pg 3.114
[2] Definition from International Infrastructure Management Manual – Version 3.0, 2006, pg 3.114

- *Increase Level of Service*: works to create a new asset to upgrade or improve an existing asset beyond its original capacity or performance to improve the level of service provided to existing customers.
- *Growth*: works to create a new asset 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.

a) Schedule 13(1) (a) and section 106 of the Local Government Act require the local authority 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.

b) Schedule 10(2)(1)(d)(l)-(iv) of the Local Government Act requires the local authority 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. A guideline was prepared to ensure a consistent approach to how each project is apportioned between the drivers.

Some projects may be driven fully or partly by needs for renewal. These aspects are covered in Appendix I. The projects have been scheduled out across the 30 year period, primarily based on their drivers. The first 10 years worth of works were then presented spatially along with projects from all other engineering activities to allow programme managers to assess any programme clashes or optimisation opportunities.

F.5 Project Prioritisation

The overall intent in development of the AMPs is to maximise the return on investment for capital works for both the Council and the community.

All projects identified as potential solutions to meet future demand, increase levels of service, or as renewal were discussed in workshops or meetings from April to October 2014. These workshops were attended principally by key council staff. Key issues needing direction from the Council were indentified and summarised for discussion with the Council in workshops.

A “challenge” review by engineering management of every line item in the forward works programme was also held in September and October 2014. This process tested the driver, need, and timing of all items in the programme.

For renewals, timing was largely based on expected asset lives in Confirm or RAMM, or in known problem areas, an economic assessment of the costs of continued maintenance verses renewal. Deterioration modelling and recent bridge condition assessment were also used to inform the need for roading assets renewals. For utility assets, a rule of thumb was used that suggested that if the annual costs of maintenance exceeded 10% of the costs of renewal, then renewal was warranted.

For increases in levels of service, priority was placed on meeting important regulatory and legislative compliance requirements and major deficits in service levels. For stormwater and transport, other prioritisation tools and processes have (or will be used) to prioritise projects or otherwise assess their merits.

Growth projects were prioritised according to which projects were needed to allow for growth and development known to be in progress (or will be in progress shortly) and/or where lower cost to service, and delaying longer term investment in areas that are more costly to service. This approach avoids the need to burden existing ratepayers with additional cost, which can be a consequence of population growth occurring in a number of different areas at the same time, all requiring new infrastructure.

The Council is currently reviewing the way that work programmes are prioritised; the outcome of this review will be further developed over the coming year to be implemented for the next AMP update.

F.6 Developer Created Assets

Private developers generally construct new subdivisions with consent from the Council. It is very seldom that the Council itself constructs subdivisions to service growth. The 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.

The Council does oversee the subdivision process, from consenting through to construction and handover to the Council. The 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 the Council will require the developer to remedy the issue prior to accepting ownership.

F.7 Cross Activity Projects

There are several projects that span across more than one of the Engineering Departments activities. These projects are strongly linked either because a one project causes the need for another or because it makes sense to undertake the projects either sequentially or in parallel. By managing related projects as a group the Programme Delivery Team will ensure that the overall cost and disruption caused by the works is minimised. Highlighting the linkages also helps to reduce the risk of a dependant project being rescheduled independently.

Table F-4 summarises cross activity projects including the predominate year of physical works and project cost.

Table F-4: Cross Activity Projects

Project ID	Activity	Project Description	Year	Project Cost
Richmond Town Centre Projects				**$8,916,490**
110077	Transportation	Upgrade of the Richmond Town Centre (Queen Street) to provide improved traffic calming and shared spaces.	2016/17	$4,653,000
150129	Water	Renewal of existing 300mm and 100mm diameter pipes.	2016/17	$1,837,000
160036	Stormwater	Renewal of existing pipes, plus additional capacity to reduce CBD flooding.	2016/17	$2,214,000
140035	Wastewater	Upgrade of pipes between 202 Queen Street to Sundial Square.	2016/17	$212,490
Oxford Street – Richmond				**3,714,268**
160033	Stormwater	Partial pipe upgrade.	2022/23	1,754,924
110093	Transportation	Widening of Oxford Street between Wensley Road and Gladstone Road.	2022/23	872,000
140034	Wastewater	Pipeline upgrade.	2022/23	772,600
150126	Water	Replace 100mm with 150mm main Wensley Road to Gladstone Road.	2022/23	314,744
Queen Street and Salisbury Road Intersection – Richmond				**1,716,055**
110096	Transportation	Upgrade intersection to improve efficiency.	2019/20	1,041,000

Project ID	Activity	Project Description	Year	Project Cost
160073	Stormwater	Rework stormwater at intersection.	2016/17	432,004
150131	Water	Rework water at intersection.	2019/20	243,051
Salisbury Road – Richmond				**1,240,476**
160076	Stormwater	Extend pipe to William Street.	2021/22	640,476
110095	Transportation	Upgrade intersection to improve efficiency.	2021/22	550,000
150246	Water	Renew old copper laterals.	2021/22	50,000
Gladstone Road – Richmond				**1,983,670**
150118	Water	New 250mm main from Queen Street to Three Brothers Corner.	2026/27	1,651,370
140031	Wastewater	Upgrade from WWSF-1709 to WWSF-1708.	2026/27	332,300
Pipe Works – Mapua				**4,200,000**
150237	Water	Replace existing water pipe in the same trench.	2027/28	3,700,000
140017	Wastewater	New rising main along Aranui Road and across channel.	2027/28	500,000
Flood Mitigation Works – Brightwater				**2,535,534**
160002	Stormwater	Mt Heslington stream diversion.	2020/21	2,235,534
160138	Stormwater	Drainage repair works.	2020/21	300,000
130020	Rivers	Removal of the railway embankment.	2020/21	80,000
Murchison Town Centre Projects				**1,344,000**
160019	Stormwater	Ned's Creek flood mitigation works.	2019/20	750,000
110084	Transportation	Town centre upgrade (potential link).	2023/24	594,000
160070	Stormwater	Pipe renewals.	2020/21	200,000

F.8 Forecast of New Capital Work Expenditure

The capital programme that has been forecast for this activity where the primary driver is classed as new works (ie, growth or levels of service) is shown in Figure F-1 and Table F-4.

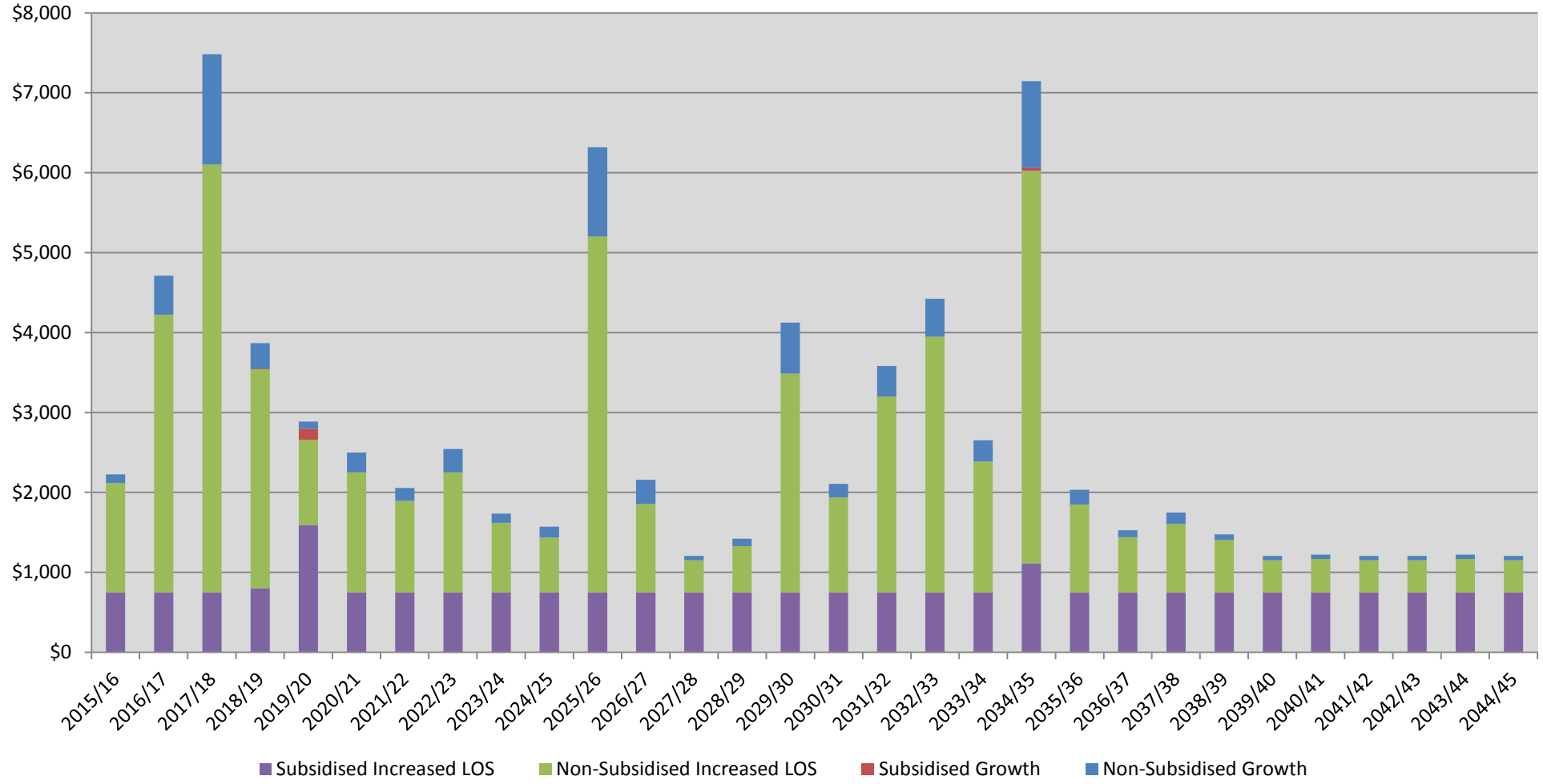


Figure F-1: 2015 – 2045 Transportation New Capital Expenditure ($000)

Table F-5: 2015 – 2045 Transportation New Capital Expenditure ($000)

ID	Project Name	Project Description	Category	GL Code	% Growth	% LOS	New Capital Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110045	Minor Improvements	Delivery of the roading minor improvement programme	Minor improvements	0425620001	0%	100%	22,500	22,500	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	7,500
110058	Richmond New Car Parking	Development of new carparking facilities. Extent to be determined by seperate studies.	Carparking	0501620013	11%	89%	800	800	-	-	-	-	-	-	-	-	-	400	-	-	-	-	400	-	-	-	-	-
110059	Mapua Carparking Improvements	On street carparking improvements to Tahi Street and Aranui Road	Carparking	0501621315	13%	87%	530	530	180	-	-	350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110063	New Footpaths	Construction of new footpaths	Footpaths	0502620012	12%	88%	4,800	4,800	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	1,600
110064	Pram Crossing Construction	Construction of pram crossings	Footpaths	0502620018	0%	100%	270	270	15	15	15	15	15	15	15	15	15	15	6	6	6	6	6	6	6	6	6	60
110065	Great Taste Trail Construction	Construction Spooners Tunnel to Woodstock	Cycleways Non Sub	051862001	0%	100%	2,240	2,240	640	600	500	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110067	Golden Bay Cycle Trail	Route investigation, design and land purchase to secure path corridor. Excludes path construction.	Cycleways Non Sub	0517620004	0%	100%	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110068	Kerb and Channel	Construction of new kerb and channel in conjunction with non-subsidised works e.g. footpaths	Kerb & Channel	0504620005	12%	88%	2,700	2,700	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	900
110072	Pedestrian and Carpark Lighting Improvements	New or improved lighting of walkways or carparks	Lighting Non Sub	05036221	0%	100%	150	150	-	15	-	-	15	-	-	15	-	-	15	-	-	15	-	-	15	-	-	15	45
110077	Richmond Town Centre	Upgrade of the Richmond Town Centre (Queen Street) to provide improved traffic calming and shared spaces	Town Centre Infrastructure	0571620014	14%	86%	9,706	9,706	100	2,277	2,277	-	-	-	-	-	-	-	-	-	-	-	-	500	2,277	2,277	-	-	-
110078	Motueka Town Centre	Renewal of High Street to better provide for a shared environment	Town Centre Infrastructure	0571620004	10%	90%	1,722	1,722	-	86	775	-	-	-	-	-	-	-	-	-	-	-	-	-	86	775	-	-	-
110079	Brightwater Town Centre	Renewal of Ellis Street to better provide for a shared environment	Town Centre Infrastructure	0571620001	14%	86%	2,730	2,730	-	-	165	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	165	1,200	-	-
110080	Takaka Town Centre	Renewal of Commercial Street to better provide for a shared environment	Town Centre Infrastructure	0571620008	3%	97%	888	888	-	-	-	44	400	-	-	-	-	-	-	-	-	-	-	-	-	-	44	400	-
110081	Mapua Town Centre	Renewal of Aranui Road to better provide for a shared environment	Town Centre Infrastructure	0571620003	16%	84%	1,780	1,780	-	-	-	-	90	800	-	-	-	-	-	-	-	-	-	-	-	-	-	90	800
110082	Collingwood Town Centre	Renewal of Tasman Street to better provide for a shared environment	Town Centre Infrastructure	0571620002	9%	91%	594	594	-	-	-	-	-	27	270	-	-	-	-	-	-	-	-	-	-	-	-	-	297
110083	Wakefield Town Centre	Renewal of Edward Street between SH60 and Arrow Street to provide for a shared environment	Town Centre Infrastructure	0571620105	17%	83%	1,100	1,100	-	-	-	-	-	-	50	500	-	-	-	-	-	-	-	-	-	-	-	-	550

ID	Project Name	Project Description	Category	GL Code	% Growth	% LOS	New Capital Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110084	Murchison Town Centre	Renewal of Fairfax Street and Waller Street to provide for a shared environment	Town Centre Infrastructure	0571620023	5%	95%	594	594	-	-	-	-	-	-	-	27	270	-	-	-	-	-	-	-	-	-	-	297
110087	Bateup Road Widening	Reconstruction of Bateup Road to provide for growth	Road Construction Non Sub	0556620030	36%	64%	2,800	2,800	50	250	2,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110089	Maisey Road Widening	Investigate and design to provide for growth	Road Construction Non Sub	0546620009	15%	85%	50	50	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110090	Manoy Street to Talbot Street New Road	Investigate and design to provide for LOS	Road Construction Non Sub	0517620008	10%	90%	50	50	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110091	Lower Queen Street Widening	Reconstruction of Lower Queen Street to provide for future growth in Richmond West	Road Construction Non Sub	0556620065	20%	80%	12,508	12,508	-	50	-	-	-	-	-	251	251	201	3,400	-	-	201	2,919	-	-	-	201	5,035	-
110093	Oxford Street Reconstruction	Reconstruction of Oxford Street between Wensley Road and Gladstone Road to provide for Richmond Ring Route	Road Construction Non Sub	0556620067	14%	86%	872	872	-	-	-	-	-	407	20	446	-	-	-	-	-	-	-	-	-	-	-	-	-
110094	Riwaka Kaiteriteri Road Upgrade	Construction of a new road from Cederman Drive to Martin Farm Road and upgrade of Martin Farm Road from the new road to the Kaiteriteri Inlet Bridge	Road Construction Non Sub	0556620069	26%	74%	2,407	2,407	-	-	-	-	-	-	-	-	-	156	1,297	954	-	-	-	-	-	-	-	-	-
110095	William Street and Salisbury Road Intersection Upgrade	Intersection upgrade to improve efficiency	Road Construction Non Sub	0556620025	14%	86%	550	550	-	-	-	-	-	50	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110096	Queen Street and Salisbury Road Intersection Improvements	Intersection upgrade to improve efficiency	Road improvements	0401620032	14%	86%	1,041	1,041	-	-	-	60	981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110098	District Land Purchase	District wide land purchase to cover Notice of Requirements	Road Construction Non Sub	0556620068	12%	88%	6,000	6,000	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	2,000
110100	Champion / Salisbury Road Route Improvements	Joint project with NZTA to improve travel time between Salisbury Road and Stoke/Whakatu Drive	Road improvements	0556620039	9%	91%	400	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
110104	Motupipi Carpark Improvements	Motupipi carparking extension. Removal of building foundations, and surface and drainage improvements. Excludes the existing car park area.	Carparking	0501620016	3%	97%	135	135	-	-	-	-	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110105	Pah Street / SH60 / Greenwood Intersection Improvements	Signalisation of the intersection to improve efficiency	Road Construction Non Sub	0556620073	10%	90%	550	550	-	-	50	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ID	Project Name	Project Description	Category	GL Code	% Growth	% LOS	New Capital Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110106	Wensley Road Route Improvements	Investigate the need for improvements to Wensley Road to cater for existing and future growth	Road Construction Non Sub	0556620074	42%	58%	90	90	-	-	-	-	-	-	-	90	-	-	-	-	-	-	-	-	-	-	-	-
110109	High Street Power Undergrounding	Council's contribution towards Network Tasman's undergrounding project.	Under grounding	0522620001	0%	100%	170	170	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS							80,767	541,290	2,225	4,713	7,482	3,869	2,886	2,499	2,055	2,544	1,736	1,572	6,318	2,160	1,206	1,422	4,125	2,106	3,584	4,423	2,651	7,146	14,049

APPENDIX G DEVELOPMENT CONTRIBUTIONS / FINANCIAL CONTRIBUTIONS

Tasman District Council's full Development Contribution Policy (The Policy) can be found on our website at http://www.tasman.govt.nz/policy/policies/development-contributions-policy.

The Policy was adopted in conjunction with the Council's Long Term Plan (LTP) and will come into effect on 1 July 2015.

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 Development Contribution 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 benefit from the new or additional infrastructure, or infrastructure of increased capacity.

There is one transportation development contribution in place (as shown in Table G-1 below).

Table G-1: Current Development Contributions

Activity	Growth costs to be recovered (in GST)	Recoverable Growth	Development Contribution per HUD $ (incl GST)*
Water	$7,627,839	1,514	$5,039
Wastewater	$17,062,205	1,699	$10,041
Transportation	$2,025,024	2,412	$840
Stormwater	$15,766,878	1,702	$9,264
TOTAL	$42,481,945		$25,184

HUD = Household Unit of Demand

* The value of the development contribution shall be adjusted on 1 July each calendar year.

A forecast of the income from transportation development contributions expected over the 10 year period of the LTP has been prepared by Council's Corporate Services based on the forecast residential and business growth projections of the Growth Demand and Supply Model (GDSM refer to Appendix F). The forecast income is included as a line item in the Cost of Service Statement included in Appendix L.

APPENDIX H RESOURCE CONSENTS AND PROPERTY DESIGNATIONS

H.1 Introduction

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

The RMA is administered locally by Tasman District 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.

The 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.

H.2 Resource Consents

Resource consents related to the transportation activity are listed in Table H-1 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 H-1: 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	NN960296	Discharge To Water Permit	13/09/1996	1/08/2011

The consent for water blasting and painting of bridge structures (NN960296) expired in 2011; however it has been approved for use while the application for a replacement resource consent is being processed.

The control of roadside vegetation by spraying of herbicides, and the spreading of Calcium Magnesium Acetate (CMA) for road de-icing purposes both require discharge permits.

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.

H.3 Resource Consent Reporting and Monitoring

The Council aims to achieve minimum compliance with all consents and/or operating conditions. 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.

H.3.1. Environmental Reporting and Monitoring

Environmental monitoring conditions are reported on quarterly, six monthly and/or annually as determined by the consent conditions. Any non-compliance incidents are recorded, notified to Council's Compliance Officer and mitigation measures put in place to minimise any potential impacts.

H.3.2. Annual Report

The extent to which the Council has been able to meet all of the conditions of each consent is reported in its Annual Report each year.

H.4 Property Designations

Designations are a way provided by the RMA of identifying and protecting land for future public works. The Council has designated several road widening requirements in the TRMP, mainly in urban areas of the district, to ensure that improvements can be made to the roading network to serve future traffic demands and environmental considerations such as urban amenity and treatment of stormwater.

The Council has made the following designations for road-widening purposes:

- Brightwater — Ellis Street
  Waimea West Road
- Mapua — Higgs Road
- Motueka — Pah Street
  Queen Victoria Street
  Green Lane
  Grey Street
- Kaiteriteri — Martin Farm Road
- Wakefield — Pitfure Road
- Richmond — Wensley Road
  Hill Street
  Queen Street
  Oxford Street
  Beach Road
  Lower Queen Street
  McShane Road

The Council has made one car parking designation on High Street, Motueka for Whitwell Carpark.

All designations have a duration of 10 years with the exception of Lower Queen Street and McShane Road.

Details of these designations are listed in Appendix 1 to Part II of the TRMP.

The Council has allocated funds under District Land Purchase to enable purchase of the land as required.

APPENDIX I CAPITAL REQUIREMENTS FOR FUTURE RENEWALS

I.1 Introduction

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

I.2 Sealed Pavement and Surfacing Renewal

I.2.1. Sealed Pavement Resurfacing

The Council has 952km of sealed roads, of which 97.2% are chip sealed and 2.8% are asphaltic concrete.

The current average seal age on the network is approximately 7.9 years. The age profile for seal age across the network is shown in Figure I-1.

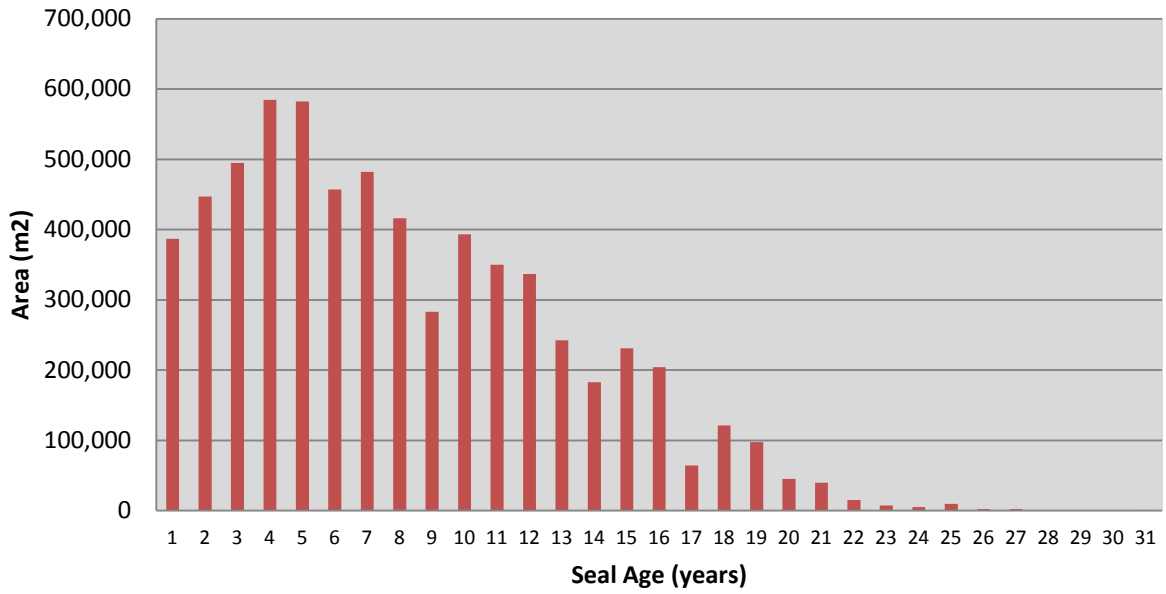


Figure I-1: Existing Seal Age Profile

For the most part the Council's sealed roads are subject to low traffic volumes, with 61% of chip sealed roads carrying less than 500 vehicles per day (vpd), and 93% of chip sealed roads carrying less than 2,000 vpd. Figure I-2 summarises average daily traffic (ADT) dispersion across the chip sealed network.

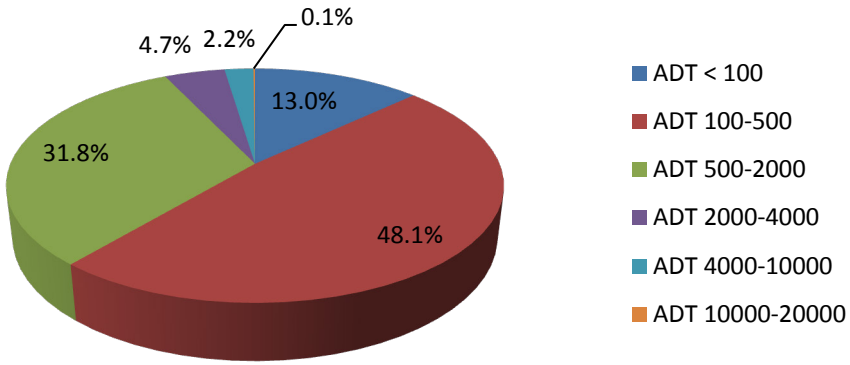


Figure I-2: Traffic Volume Dispersion on Chip Sealed Roads

The median traffic volume on the Council's chip sealed roads is 265 vpd, with an average of 9% heavy commercial vehicles (HCVs).

The Council has recently considered the benefits of reverting some low volume chip sealed roads back to an unsealed pavement. There is currently 13% of the 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. However, as these low volume pavements age and deteriorate, further analysis and discussion may be required before the Council commits to expensive rehabilitation of these roads.

The expected life of a chip seal depends on several factors, primarily the type of seal, and traffic volumes and composition that the seal is subjected to ie, a high percentage of heavy commercial vehicles will cause more damage to a pavement than a high percentage of cars. The '*Chipsealing in New Zealand'* manual provides equations for calculating theoretical expected design life of chip seals. Figure I-3 shows theoretical expected seal lives by traffic volumes and seal type based on the Council's network-average 9% HCVs. The red dashed lines indicate the median network traffic (265 vpd) and average expected life (11.6 years) based on weighted average of existing seal types.

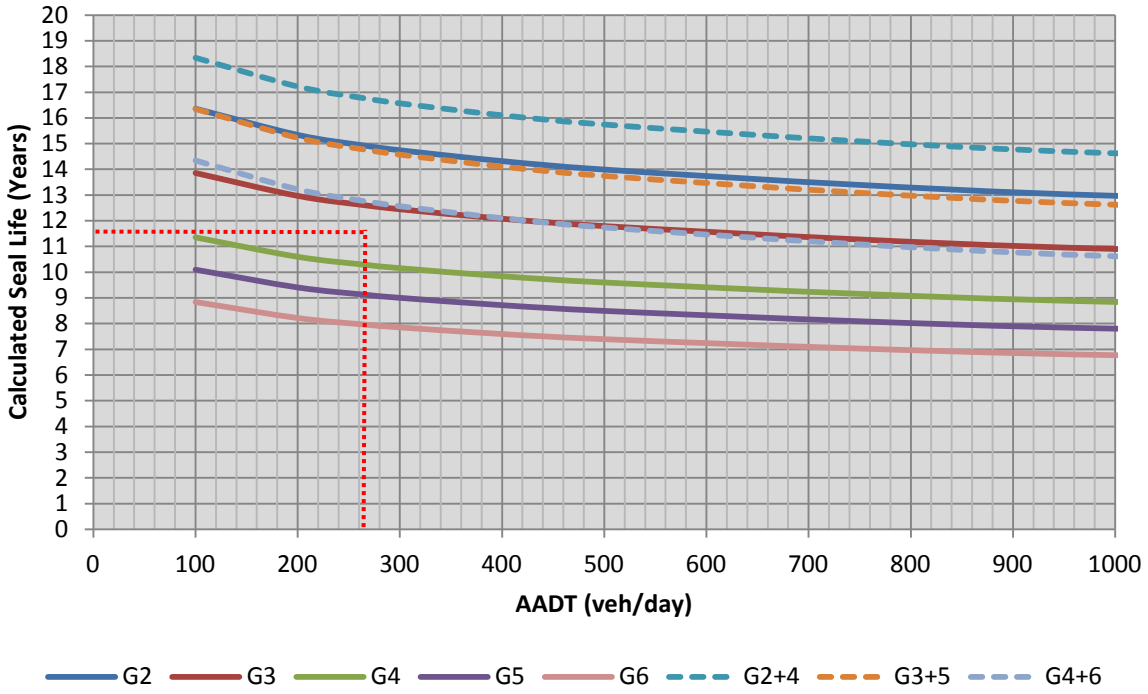


Figure I-3: Theoretical Chip Seal Lives

Theoretical seal lives are considered to be conservative, as the Council has many examples of chip seals which are well in excess of these calculated lives and they are still performing well. However, as chip seals age their condition could be expected to worsen creating a greater risk of failure. Generally this failure would mean loss of waterproofing due to brittleness of the bitumen binder which oxidises over time. Surface and then pavement failures can be expected to begin to occur and then accelerate rapidly. This scenario could be costly to repair. Figure I-4 shows an example of a seal which has been left to deteriorate without adequate attention and timely intervention. Earlier intervention with resurfacing and/or maintenance would have minimised the cost of required repairs.

Figure I-4: Example of Aged Chip Seal Suffering from Scabbing and Cracking

Figure I-5 provides an overview of the 2012 seal condition rating results as it relates to seal age. It confirms that there are trends of increasing defects with increasing seal age.

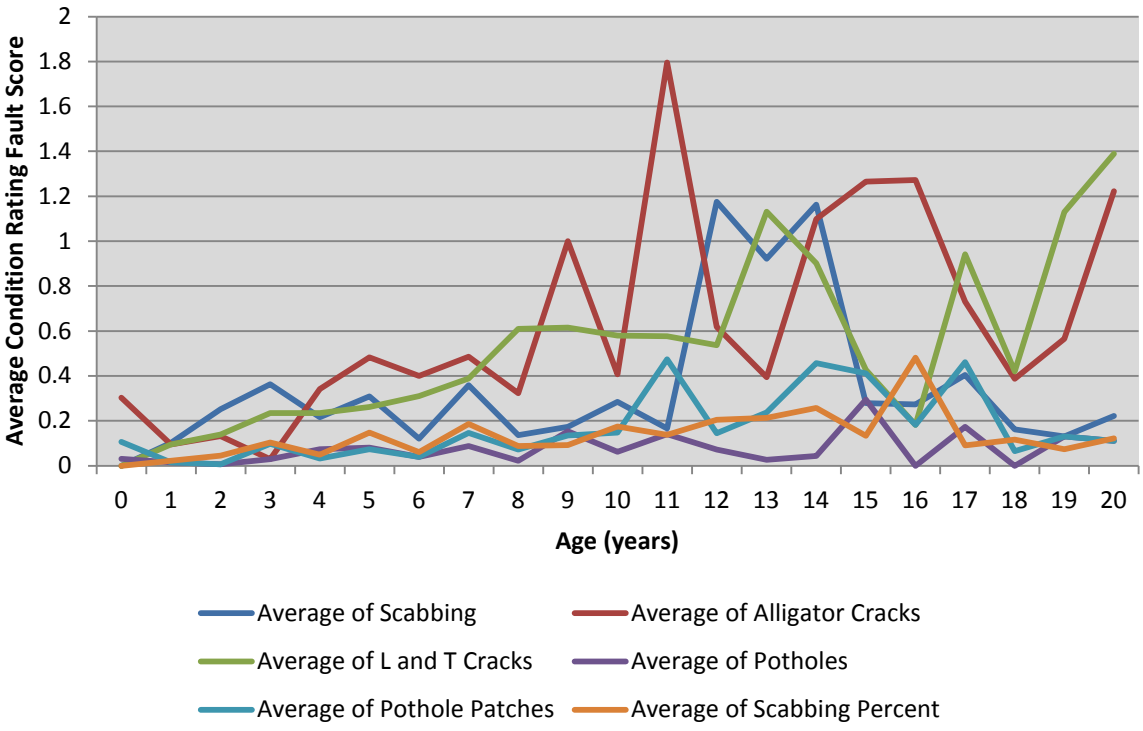


Figure I-5: Seal Condition Rating Defects by Age of Seal

It is important to note in these options that the Council is working in terms of total network averages which may include seals that last a shorter time than expected, and others which will last much longer than expected.

A measure of what level of deterioration is acceptable is described in Appendix R, Levels of Service.

I.2.1.1 *Recent Renewal History*

On average over the eight years between 2005 and 2013, the Council has resurfaced 6.9% of the network each year. This corresponds to a lifecycle renewal rate of 14.5 years at an average cost (in 2013 dollars) of $2,480,000 per year.

The Council's chip seals could be expected to achieve a network-average life of approximately 12 years, based on theoretical seal lives calculated using the 'Chipsealing in New Zealand' manual method. This corresponds to an estimated annual expenditure of $3 million per year.

A renewal strategy was developed for a 10-year performance-based contract (from 2002 to 2012) located in the Western Bay of Plenty area which involved extending seal lives beyond traditionally accepted limits in conjunction with a focused monitoring regime and reactive intervention strategy. This strategy recognised that savings could be made on a network-wide whole-of-life cost basis provided risks were adequately mitigated. This was achieved through significantly increased monitoring to ensure quick response at the first signs of seal distress which help to avoid more costly pavement repairs.

I.2.1.2 *Comparing Scenarios*

The 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/m^2 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;
- the Council has applied a risk cost of $44.30/m^2 which is the 2012/13 average rehabilitation cost, and tested different likelihoods of this risk occurring.

Results of this modelling are shown in Figure I-6 below.

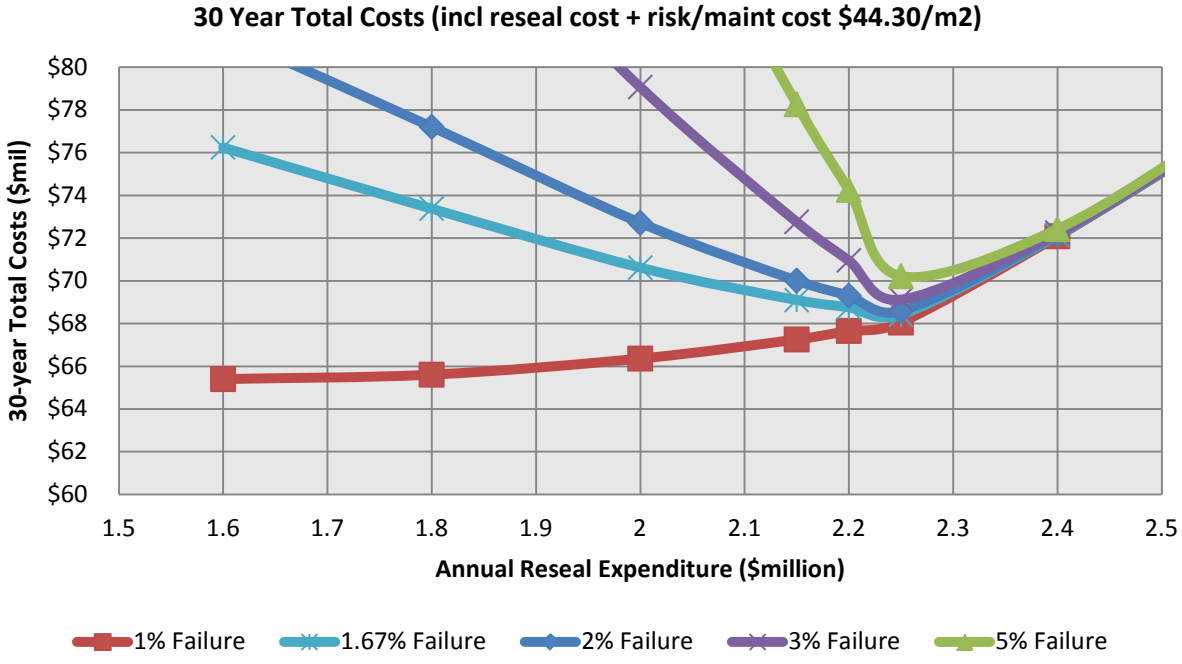


Figure I-6: Resurfacing Modelling Scenarios

I.2.1.3 *Modelling Results*

The resurfacing investment model summarised in Figure I-6 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. This recognises that there is an opportunity of reducing the whole-of-life costs by accepting some risk with seal lives.

The very low (1%) failure risk gives an unusual result with total 30-year costs appearing to reduce as annual reseal expenditure reduces. The 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 $75/$m^2$ which yielded similar results with optimum reseal investment of $2.2 to $2.3 million per year.

Figure I-6 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.

I.2.1.4 *Conclusion*

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. This approach cost is approximately $0.25 million less than recent historic investment levels.

If lower long-term investment is adopted a new monitoring regime will need to be implemented. This can be expected to require additional staff resource requirements.

It is recommended that the effects of reduced investment, as planned for the 2015/18 programme, be fully assessed in 2017/18 before committing to reduced reseal investment beyond 2018/19.

I.2.2. 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.

Recent experience shows that the quantity of justifiable pavement rehabilitations has been reducing over time. Figure I-7 shows that the 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 lane-kms in the 2013/14 financial year (equivalent to a network-wide renewal cycle of 907 years). While it is clear this rate of renewal is not sustainable in the long term, there is little the Council can do with regards to increasing pavement rehabilitation quantities under the current NZ Transport Agency's co-investment rules. The Council has focused on improving roadside drainage to mitigate the risks of extending pavement lives and/or premature failure of pavements

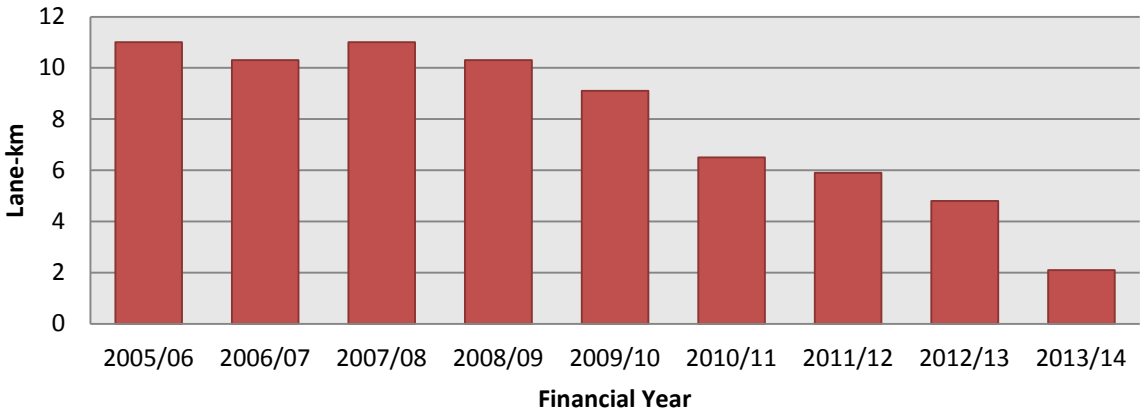


Figure I-7: Sealed Pavement Rehabilitation Quantities

The Council expects that there will be a minimal quantity of justifiable rehabilitation work in the short term due to current pavement condition and funding restrictions. Consequently the Council will need 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. Rehabilitation is suggested as a treatment where maintenance costs exceed a threshold, and 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.

Results of dTIMs modelling undertaken during 2014 indicate:

- That the network is not yet at its mature stage in regards to pavement; hence an increase in pavement age is expected regardless of budget.
- The current funding and maintenance regime does provide enough pavement renewals for sustainable pavement lives when considered against realistic pavement lives. The current condition of the network is also able to absorb some deterioration as the current average pavement age is around 29 years. To achieve average pavement lives of 100 years the Council would need to rehabilitate 9.5 km of pavement per annum; this is considerably more than the 3.2 km per annum shown by analysis.

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.

The Council has been focusing on roadside drainage improvements since 2010 to minimise the likelihood of poor drainage being a contributor to pavement failures.

I.2.3. Sealed Pavement Risk Summary

Table I-1 summarises key risks and mitigation measures related to the current sealed pavement network and management strategy.

Table I-1: Key Sealed Pavement Renewal Risks

Risk	Description	Mitigation
High Productivity Motor Vehicles (HPMV)	Increased axle loads causing accelerated damage and increased maintenance costs.	• Continue data collection (High Speed Data, Failing Weight Deflectometer) on current and potential HPMV routes. • Monitor trends in rutting and roughness. • Ensure pavement maintenance budgets are sufficient to deal with additional wear and tear.
Seal Age	Increased average seal age leading to increasing instances of rapid failure and high repair costs.	• Provide additional staff resourcing to ensure high risk seals are closely and regularly monitored.
Pavement Age	Long pavement lifecycle (due to low quantity of justifiable pavement rehabilitations) and increasing rutting trend consuming sealed pavement life. Possible future bow-wave of renewals.	• Monitor rutting and other condition trends. • Utilise Economic Network Plan (ENP) tool to help rationalise any future bow wave of rehabilitations.

I.3 Unsealed Pavement Metalling

I.3.1. Background

Between 2004 and 2009 the Council was applying 40,000m^3 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.

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

The Council reduced the annual quantity for the 2012/15 programme to 30,000m^3, equivalent to an average depth of 9mm annually. This was a change to a holding strategy and to reduce metalling costs. In conjunction with this change, the 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 I-8 below shows the general relationship between metal costs, performance (annual loss rates) and whole-of-life costs.

The 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.

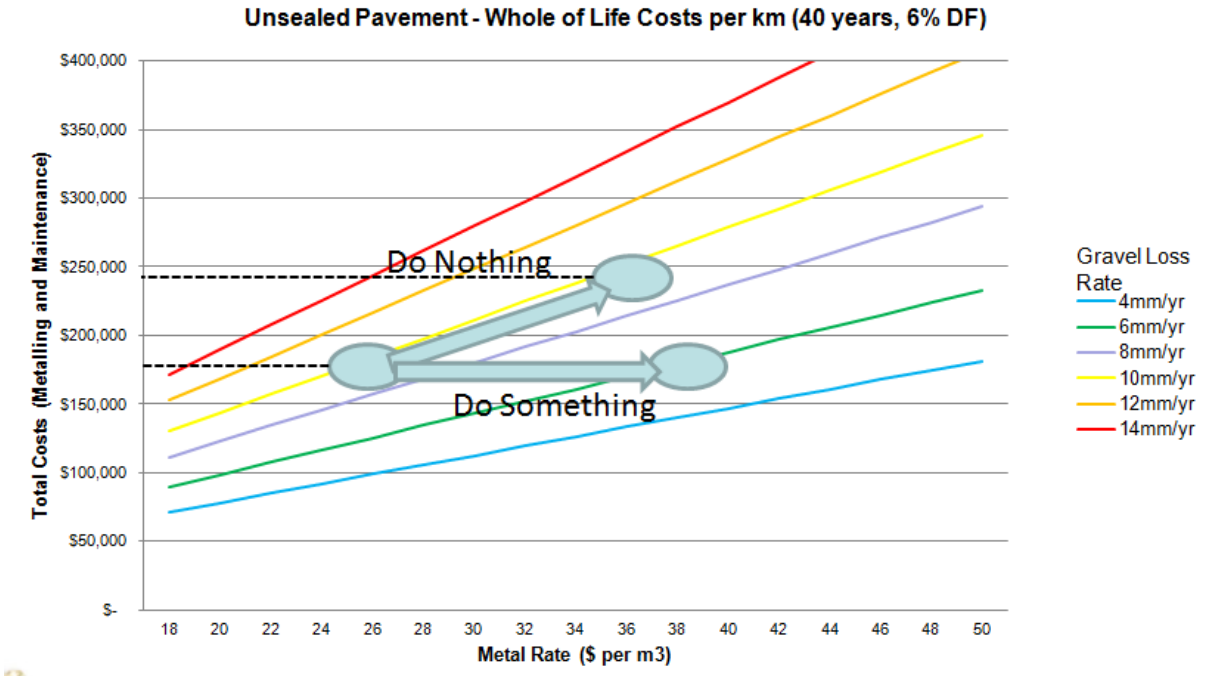


Figure I-8: Whole-of-life Unsealed Pavement Costs

I.3.2. 2015/18 Programme Summary

The Council proposes to continue with a holding strategy for the 2015/18 programme but to reduce the amount of metal applied to 27,000m^3 per year, equivalent to an average depth of 8mm. This is estimated to cost $823,000 per year based on current metal rates.

Key items for the Council to develop and continue during 2015/18 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.

I.3.3. Unsealed Pavement Metalling Risk Summary

Table I-2 summarises key risks and mitigation measures related to the current unsealed pavement metalling management strategy.

Table I-2: Key Unsealed Pavement Metalling Risks

Risk	Description	Mitigation
Supply limitations	Consenting issues or other supplier market forces limiting supply of preferred materials, increasing costs.	• Secure access to a range of sources • Investigate available materials and develop 'economic bands' for each relating quality to cost and value to the Council
Demand changes through forest harvesting patterns	Harvesting takes place on roads which have not been assessed and strengthened to take the heavy traffic, causing damage and costly repairs.	• Continue to update forest harvesting strategy in conjunction with industry.

I.4 Drainage Renewals

I.4.1. Culverts

The 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 currently been assumed using age and condition information where both these data fields are recorded, which is only a small portion (3%) of all culverts. Therefore, the Council will continue to collect condition data on a regular basis, say every three years, to enable the transition probabilities to be refined in future models based more on actual data than inferred or assumed data. However, until better data is available the model has been set with fairly conservative probabilities which assume more rapid deterioration than may be expected to actually occur. In future revisions of this AMP there may be scope to adjust renewals expenditure downwards; however for now, and with 8% of culverts rated 'poor' or 'very poor', it is considered reasonable to be conservative.

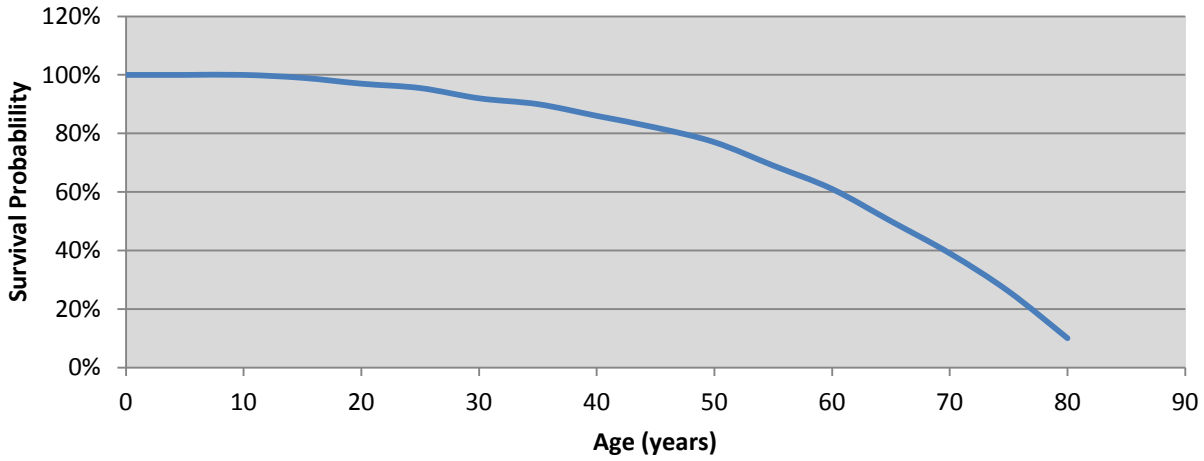


Figure I-9: Typical Survival Probability Profile for Concrete Culverts

I.4.1.1 *Demand*

Development-driven growth of the culvert network is expected to be relatively minor as the vast majority is in rural areas, and most growth is expected to occur in urban areas which tend to have reticulated stormwater networks (managed separately by the Council's Utilities team) rather than 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 analyzed using runoff calculations, they would not meet the Council's 2013 Engineering Standards which require Q_{20} 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.

I.4.1.2 *Renewal Strategy*

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 years one to 10, and then increasing to $300,000 per year in year 11 and beyond.

Culvert renewals will be prioritised based on need including existing culvert condition and consideration of risk/consequences to the roading network and its users. The renewal design will include upsizing to appropriate standards where the existing culvert is considered deficient in terms of size and a risk to the long term integrity of the road network.

I.4.2. 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 I-3.

Table I-3: 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 if lives in excess of 50 years are achieved as expected this will go some way to smoothing out future renewal costs. However, future renewal costs are very likely to be higher than at present due to an approaching bow-wave in ageing assets associated with historic growth patterns.

I.4.3. Unlined Surface Water Channels (SWC)

Unlined surface water channels are generally renewed during mechanical maintenance which restores the formation depth and width. However there are many of 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 I-4 summarises the length of road considered to have inadequate surface water channels during the 2011 condition rating survey. It is important to note that this excludes approximately 13km of sites which have been improved since the condition rating survey was completed.

Table I-4: Inadequate Surface Water Channel Length

Side	Inadequate SWC Length (m)
LHS	52,634
RHS	53,212
Total	**105,846**

The Council proposes to address this backlog in a smoothed cost format over years one to five at a cost of approximately $200,000 per year. The highest priority sites, including those on High Productivity Motor Vehicle routes, have largely already been improved. A five year timeframe for completing improvements is not considered too 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.

I.4.4. Sumps

The 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 years one to 10, increasing to $50,000 per year from year 11. During the next three years the Council will complete condition inspections on sumps to improve renewal planning.

I.4.5. Drainage Renewal Risk Summary

Table I-5 summarises key risks and mitigation measures related to the current drainage renewal management strategy.

Table I-5: Drainage Renewal Risks

Risk	Description	Mitigation
Climate change	Increased demand on existing infrastructure due to increasingly extreme weather events, requiring greater investment in upgrades	• Infrastructure strategy being developed to provide framework.

I.5 Bridge Structures and Retaining Walls

I.5.1. Bridge Component Replacements

The 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.

I.5.2. Bridge Replacement

The Council has developed an indicative bridge replacement programme. Figure I-11 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 I-11 are actually null points and indicate that there are no bridge replacements planned for that financial year.

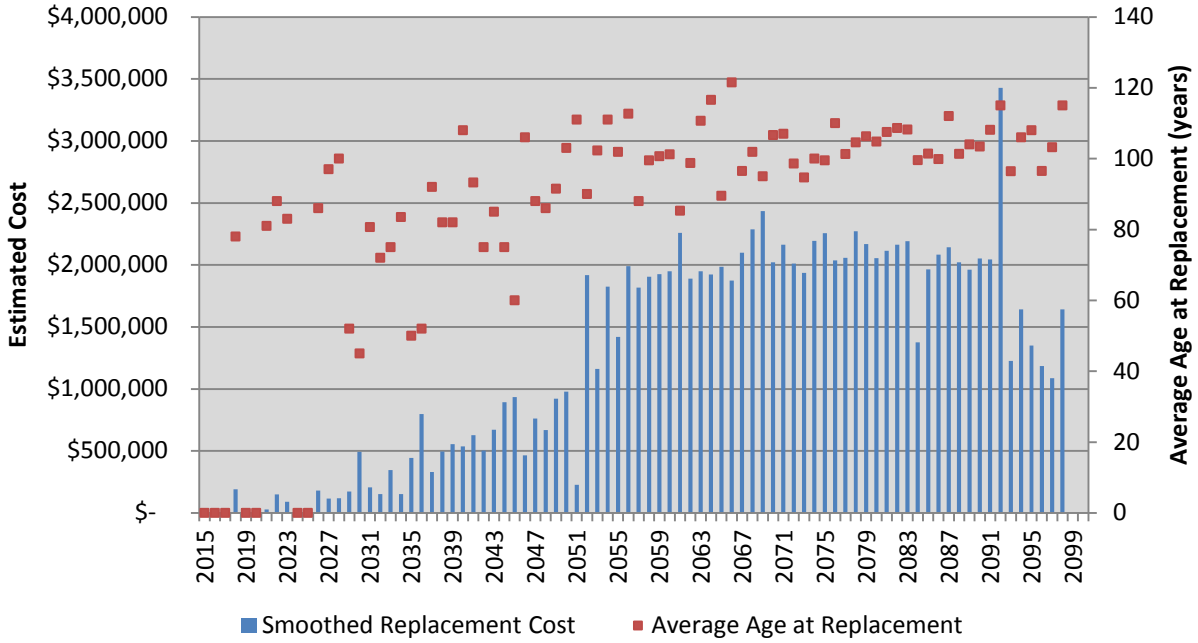


Figure I-10: Bridge Replacement Programme

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 I-11 demonstrates this expectation, although it also shows that some of the 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, the Council may defer replacement of the bridge by reducing the weight limit for traffic using the bridge (known as 'posting').

The Council's bridge consultant has estimated the remaining useful life (RUL) of the Council's bridges based on bridge construction date, type, condition, and whether posting is possible. The 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.

The Council has developed an Economic Network Plan (ENP) which models export freight value flows across its road and bridge network. The ENP gives the 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.

I.5.3. Retaining Walls

The 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). The 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.

I.5.4. Structures Renewal Risk Summary

Table I-6 summarises key risks and mitigation measures related to the current structures renewal management strategy.

Table I-6: Key Structures Renewal Risks

Risk	Description	Mitigation
Changing demand patterns due to land use changes	Existing structures require strengthening or improvement.	• Ensure access consideration is a requirement of plan change or resource consent applications. • Utilise Economic Network Plan (ENP) to model demand changes on road network.
Premature failure of structures	Bridges do not achieve expected life and require early/unplanned renewal.	• Continue biennial inspections. Consider more frequent inspections at vulnerable or poor condition structures.

I.6 Traffic Services

I.6.1. Signs and Delineation

The Council's road asset revaluation in 2013 assumed signs and delineation assets to have useful lives as shown in Table I-7.

Table I-7: 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 I-11 shows the distribution of the age of signs where this data is known.

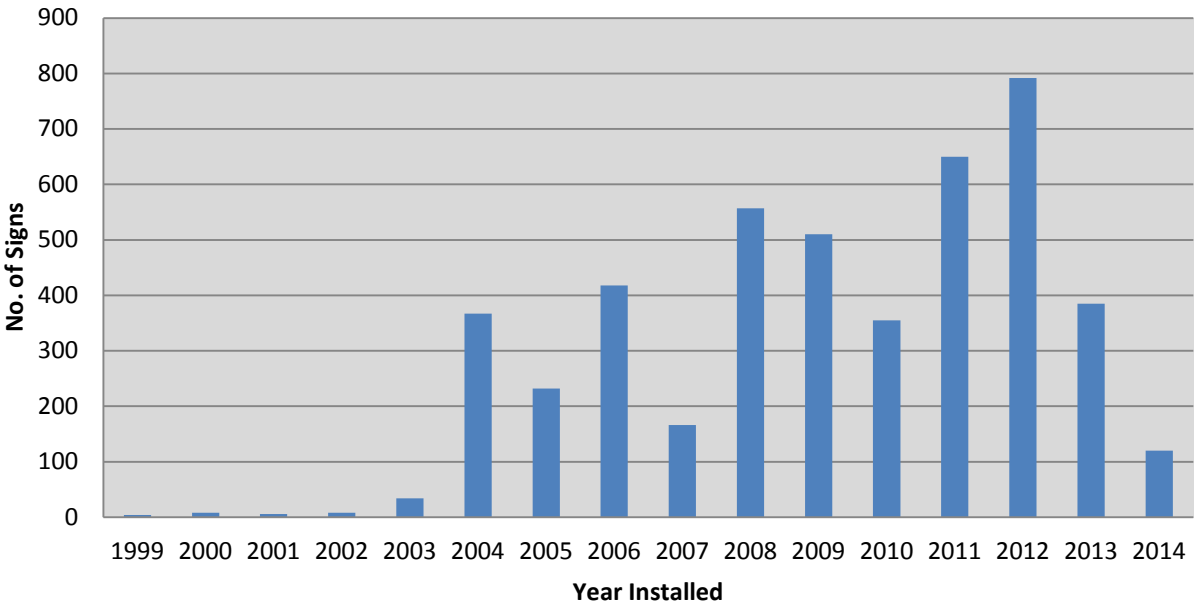


Figure I-11: Sign Installation Year

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. It is therefore proposed to budget for sign renewals 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 I-7. The useful lives for pegs are considered reasonable for life-cycle costing, with renewals estimated to cost $70,000 per year.

I.6.2. Street Lights

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

Columns and Brackets

The 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
During 2014/15, the Council is completing 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.

I.6.3. Traffic Services Risk Summary

Table I-8 summarises key risks and mitigation measures related to the current traffic services renewal management strategy.

Table I-8: Key Traffic Service Renewal Risks

Risk	Description	Mitigation
LED lights	New technology, some uncertainty around whether 20 year life will be achieved.	• Choose reputable suppliers with good guarantees.

I.7 Footpaths and Walkways

The transportation levels of service shown in Appendix R include a footpath performance measure that states that the 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. This shows that the Council is well on track to deliver the targeted level of service and that there is some scope to defer renewals with little risk to the target level of service.

Footpath sites that score a Poor or Very Poor condition rating are added to the Council's footpath rehabilitation matrix. The matrix assists in prioritising renewal by providing a prioritised list of sites for rehabilitation. Sites from the matrix are reviewed annually 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 $100,000 per year for Year 1 to 3 of the AMP programme. In Year 4 and beyond the budget is set at $50,000. Further condition rating will help to identify condition trends and will assist with review and setting of the future budgets.

I.7.1. Footpath Risk Summary

Table I-9 summarises key risks and mitigation measures related to the current footpath renewal management strategy.

Table I-9: Key Footpath Renewal Risks

Risk	Description	Mitigation
Accurate deterioration modeling	To date only two condition rating surveys have been completed. It is difficult to predict how the network will deteriorate at various investment levels without comprehensive historic data to identify trends.	• On-going condition rating surveys will build up this knowledge and allow the Council to more accurately compare investment in renewal against condition trends.

I.8 Cycleways

I.8.1. 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, the Council will attempt to surface cycleways that are connected to the vehicle carriageway with a slurry or asphaltic concrete surface 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.

I.8.2. Tasman's Great Taste Trail

At present the Council is focused on construction of Tasman's Great Taste Trail, specifically exploring options to provide a connection between Wakefield and the Spooners Tunnel. Renewal of the trail has not been included in the AMP expenditure forecast. Determining the renewal requirements of the trail has been identified in Appendix V – Improvement Plan.

I.8.3. Cycleway Risk Summary

Table I-10 summarises key risks and mitigation measures related to the current cycleway renewal management strategy.

Table I-10: Key Cycleway Renewal Risks

Risk	Description	Mitigation
Premature surface deterioration due to vehicle use.	Vehicles using the cycleway as a sealed shoulder increase the wear and tear on the surface causing premature deterioration.	• Use slurry or asphaltic concrete surfaces in these situations and as funding allows.

I.9 Street Furniture

I.9.1. Reactive Renewal

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. It is expected that this will occur infrequently and therefore the Council has only budgeted $5,000 per year for reactive renewals.

An additional budget of $10,000 per year has also been included to allow for replacement of litter bins.

I.9.2. Proactive Renewal

The 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. The Council has planned to undertake town centre renewals on a 15-year cycle.

I.9.3. Street Furniture Risk Summary

Table I-11 summarises key risks and mitigation measures related to the current street furniture renewal management strategy.

Table I-11: Key Street Furniture Renewal Risks

Risk	Description	Mitigation
Vandalism	Incidences of vandalism may increase and result in an associated increase in renewal expenditure.	• Little can be done to control willful damage. Expenditure may need to be prioritized over another asset group.

I.10 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.

I.10.1. Assessment of Deferred Renewals

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 I-12.

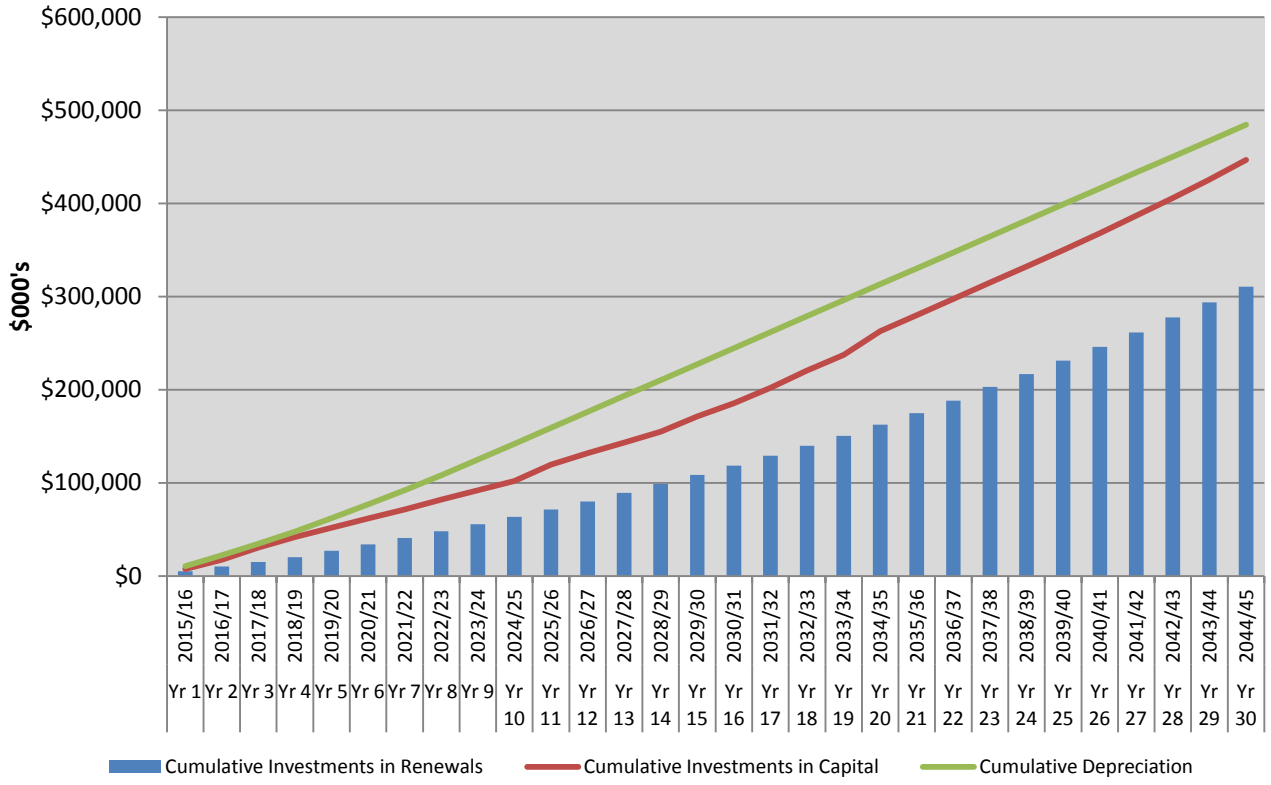


Figure I-12: 30 Year Accumulated Renewal and Capital Expenditure compared with Depreciation for all Transportation Assets

- The apparent divergence between the investment in renewals and depreciation over the 30 year period initially suggests that the 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. It 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 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.

I.10.2. Management and Mitigation of Deferred Renewals

The renewal strategy for each transportation asset group is discussed in the relevant sections of this appendix.

In some situations the Council is purposely deferring renewals or 'sweating asset lives' to optimise whole-of-life costs whilst accepting some risk of premature asset failure and/or long term effects on condition and expenditure requirements. The 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.

I.11 Forecast of Renewal Expenditure

Figure I-13 and Table I-6 shows the projected Subsidised and Non Subsidised Renewals costs for the next 30 years.

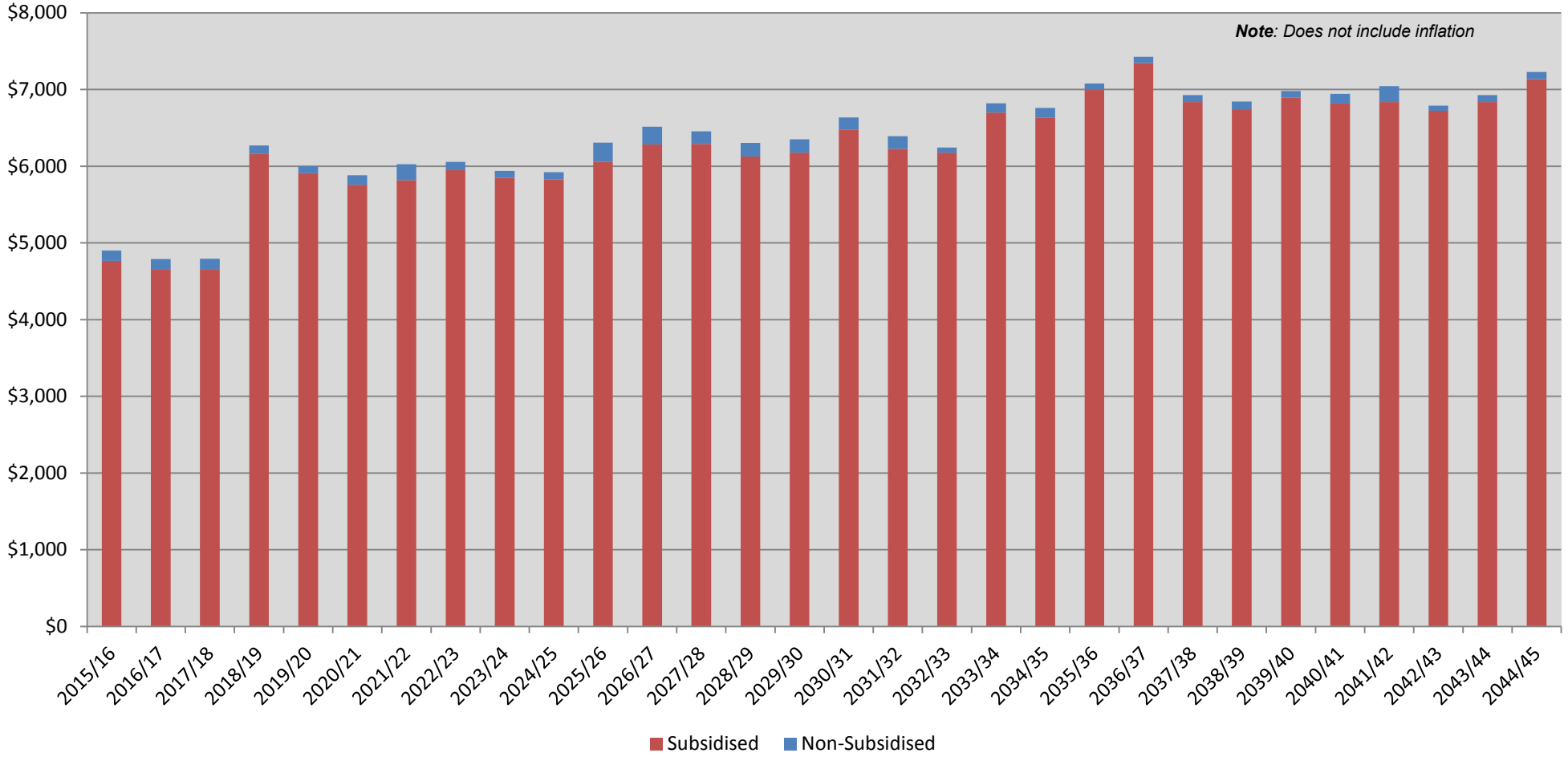


Figure I-13: 2015 – 2045 Transportation Renewals Expenditure ($000)

Table I-12: 2015 – 2045 Transportation Renewals Expenditure ($000)

ID	Project Name	Project Description	Category	GL Code	% Renewal	Renewal Estimate	Total Project Estimate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21 to Year 30
								2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	
110030	Cycle Path Resurfacing	Resurfacing of subsidised cycleways	Cycle path maintenance	0410620001	100%	425	425	-	-	-	-	-	8	21	-	-	-	-	25	76	-	-	-	-	-	21	107	167
110032	Unsealed Road Metalling	Routine metalling of unsealed roads to mitigate gravel loss	Unsealed road metalling	04016200001	100%	24,705	24,705	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824	8,235
110033	SPR - Unsealed Road Metalling	Routine metalling of Totaranui Road to mitigate gravel loss	Unsealed road metalling	0420620001	100%	441	441	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	147
110034	Sealed Road Resurfacing	Resurfacing of sealed roads	Sealed road resurfacing	0401620002	100%	72,600	72,600	1,700	1,700	1,700	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	25,000
110035	SPR - Sealed Road Resurfacing	Resurfacing of Pupu Springs Road	Sealed road resurfacing	0420620002	100%	72	72	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	36
110036	Drainage Renewals	Renewal of drainage assets including culverts, kerb and channel, surface water channels and sumps	Drainage renewals	0401620003	100%	30,369	30,369	920	920	920	970	970	808	808	808	808	808	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	11,610
110037	SPR - Drainage Renewals	Renewal of drainage assets on Pupu Springs Road and Totaranui Road	Drainage renewals	0420620003	100%	210	210	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	70
110038	Pavement Rehabilitation	Pavement rehabilitation of sealed roads that meet NZTA funding criteria	Sealed road pavement rehabilitation	0401620005	100%	22,650	22,650	350	350	350	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	8,000
110039	Structures Component Replacements	Bridge component replacements	Structures component replacements	04016200005	100%	12,101	12,101	428	378	378	378	378	378	378	378	378	378	413	413	413	413	413	413	413	413	413	413	4,133
110040	Murchison Stock Effluent Facility	Renewal of telemetry and electronics	Environmental renewals	04166200	100%	50	50	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	-	-	-	-
110041	Traffic Services Renewals	Renewal of road signs and street lights	Traffic services renewals	0414620004	100%	14,357	14,357	465	465	465	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	765	765	5,202
110042	SPR - Traffic Services Renewals	Renewal of traffic signs and markings on Pupu Springs Road and Totaranui Road	Traffic services renewals	0420620004	100%	30	30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
110044	Bridge Renewals	Renewal of subsidised road bridges	Replacement of bridges and other structures	0408620001	100%	9,100	9,100	-	-	-	250	-	-	50	200	100	-	-	200	150	150	200	500	250	200	350	200	6,300

ID	Project Name	Project Description	Category	GL Code	% Renewal	Renewal Estimate	Total Project Estimate	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Year 11 2025/26	Year 12 2026/27	Year 13 2027/28	Year 14 2028/29	Year 15 2029/30	Year 16 2030/31	Year 17 2031/32	Year 18 2032/33	Year 19 2033/34	Year 20 2034/35	Year 21 to Year 30
110046	Cobb Powerhouse Bridge Renewal	Repainting of the structural steel components	Structures component replacements	0408620002	100%	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110047	Lower Cobb Dam Road Resurfacing	Seal resurfacing	Sealed road resurfacing	040162000210	100%	480	480	-	-	-	-	-	-	-	-	-	80	80	80	-	-	-	-	-	-	-	240
110048	Upper Cobb Dam Road Resurfacing	Seal resurfacing	Upper Cobb Dam Road	0506620001	100%	80	80	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	40	-
110057	Carpark Resurfacing	Asphalt resurfacing of off street car parking facilities	Carparking	05016200	100%	1,637	1,637	17	14	17	44	20	60	141	-	24	26	181	166	98	109	106	90	95	-	54	17	361
110062	Footpath Rehabilitation	District wide footpath renewal	Footpaths	0502620002	100%	1,650	1,650	100	100	100	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	500
110070	Pedestrian and Carpark Lighting Renewal	Reactive renewal of walkway and carpark lighting	Lighting Non Sub	0503620001	100%	75	75	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	25
110074	Litter Bins	Renewal of litter bins (engineering only)	Town Centre Infrastructure	0505620001	100%	300	300	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
110075	Street Furniture Renewals	Reactive renewal of street furniture	Town Centre Infrastructure	0515620001	100%	150	150	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	50
	TOTALS					191,537	541,290	4,899	4,791	4,794	6,271	5,997	5,883	6,027	6,055	5,939	5,921	6,306	6,515	6,454	6,303	6,351	6,634	6,389	6,244	6,819	6,758	70,187

APPENDIX J DEPRECIATION AND DECLINE IN SERVICE POTENTIAL

J.1 Depreciation of Infrastructural Assets

Depreciation is provided on a straight line basis on all 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 total useful lives for the transportation infrastructure has been summarised in Appendix D – Asset Valuations. However, the following transportation assets are not depreciated:

- formation;
- sub base.

J.2 Decline in Service Potential

The decline in service potential is a decline in the future economic benefits (service potential) embodied in an asset.

It is the Council's policy to operate the transportation activity to meet a desired level of service. The Council will monitor and assess the state of the transportation infrastructure and upgrade or replace components over time to counter the decline in service potential at the optimum times.

J.3 Council's Borrowing Policy

The Council's borrowing policy was that it only funds capital and renewal expenditure through borrowing, normally for 20 years, but shorter terms are used for some assets depending on how long they are expected to last before they need to be replaced.

The Council has now made a decision to start phasing in the funding of depreciation; effectively this will create a reserve to fund the replacement of assets. This method means that debt will not be raised to fund asset replacement. This is being phased in over ten years and is more fully explained in the Financial Strategy which is part of the supporting information associated with the 2015 LTP.

APPENDIX K PUBLIC DEBT AND ANNUAL LOAN SERVICING COSTS

K.1 General Policy

The Council borrows as it considers prudent and appropriate and exercises its flexible and diversified funding powers pursuant to the Local Government Act 2002. The Council approves, by resolution, the borrowing requirement for each financial year during the annual planning process. The arrangement of precise terms and conditions of borrowing is delegated to the Corporate Services Manager.

The Council has significant infrastructural assets with long economic lives yielding long-term benefits. The Council also has a significant strategic investment holding. The use of debt is seen as an appropriate and efficient mechanism for promoting intergenerational equity between current and future ratepayers in relation to the Council's assets and investments. Debt in the context of this policy refers to the Council's net external public debt, which is derived from the Council's gross external public debt adjusted for reserves as recorded in the Council's general ledger.

Generally, the Council's capital expenditure projects with their long-term benefits are debt funded. The Council's other district responsibilities have policy and social objectives and are generally revenue funded.

The Council raises debt for the following primary purposes:

- capital to fund development of infrastructural assets;
- short term debt to manage timing differences between cash inflows and outflows and to maintain the Council's liquidity;
- debt associated with specific projects as approved in the Annual Plan or LTP. The specific debt can also result from finance which has been packaged into a particular project.

In approving new debt, the Council considers the impact on its borrowing limits as well as the size and the economic life of the asset that is being funded and its consistency with the Council's long term financial strategy.

The Borrowing Policy is found in Volume 2 of the Council’s LTP.

K.2 Loans

Loans to fund capital projects over the next 10 years add up to the following detailed in Table K-1.

Table K-1: Projected Capital Works Funded by Loan for Next 10 years ($000 including inflation)

Transportation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Loans Raised	1,906	4,801	8,398	5,430	3,917	3,216	2,206	1,687	17	20
Opening Loan Balance	29,376	28,154	29,426	33,853	34,989	34,339	32,989	30,463	27,331	22,532

K.3 Cost of Loans

The Council funds the principal and interest costs of past loans and these are added to the projected loan costs for the next 10 years as shown in Table K-2.

Table K-2: Projected Annual Loan Repayment Costs for Next 10 Years ($000 including inflation)

Transportation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Loans Interest	1,829	1,866	2,054	2,121	2,248	2,199	2,087	2,008	1,746	1,400
Loan Principal	2,860	3,128	3,529	3,972	4,294	4,566	4,732	4,819	4,816	4,658

Figure K-1and Figure K-2 show the 10 year and 30 year forecast debt and interest costs respectively. Debt and interest costs associated with transportation continue to rise from $30m to a peak of $35m, before falling away to around $23m by year 10. The longer term forecast is based on a continuation of the 10 year debt level for the foreseeable future.

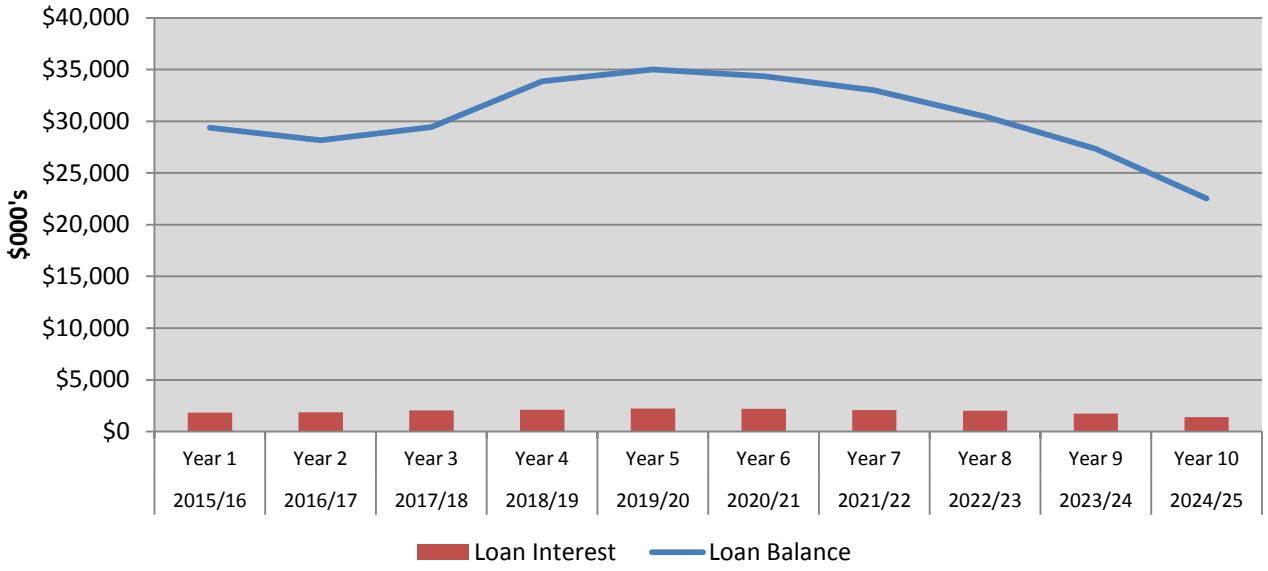


Figure K-1: 10 Year Annual Debt and Interest Cost Forecast

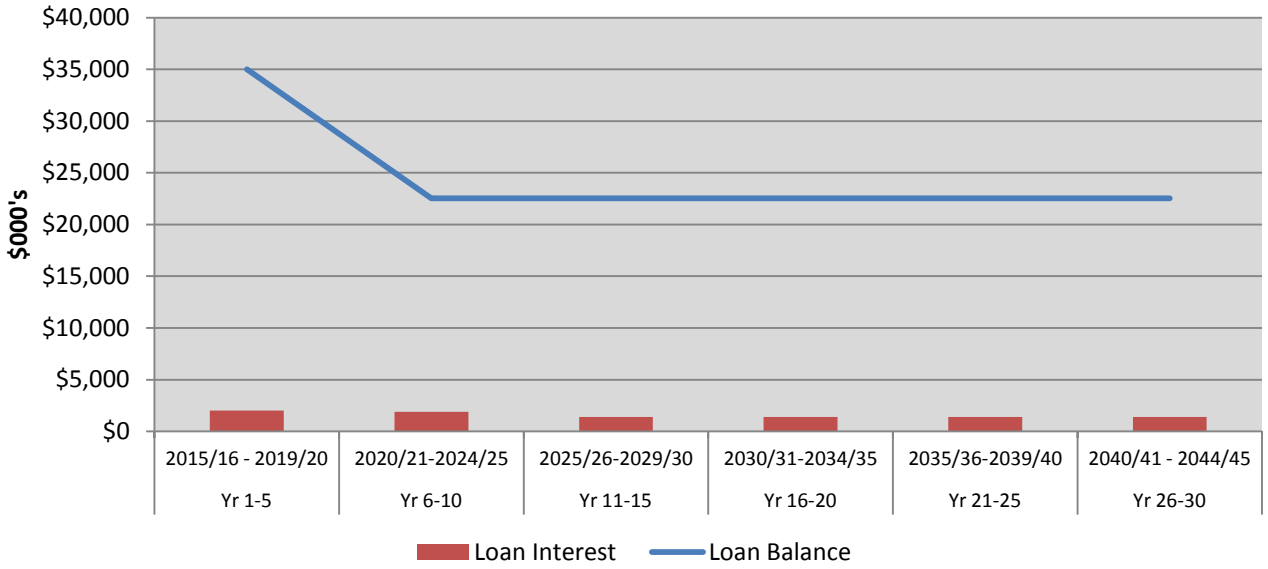


Figure K-2: 30 Year Five Yearly Average Debt and Interest Cost Forecast

APPENDIX L SUMMARY OF FUTURE OVERALL FINANCIAL REQUIREMENTS

L.1 Overall Financial Summary

Table L-1 presents a summary of the overall future financial requirements for the transportation activity in the Tasman district.

Table L-1: Funding Impact Statement

	2014/15 Budget $000	2015/16 Budget $000	2016/17 Budget $000	2017/18 Budget $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
SOURCES OF OPERATING FUNDING											
General rates, uniform annual general charges, rates penalties	9,930	11,713	12,022	12,354	13,081	13,997	15,281	16,451	17,838	19,373	19,494
Targeted rates (other than a targeted rate for water supply)	6	0	0	0	0	0	0	0	0	0	0
Subsidies and grants for operating purposes	3,655	4,511	4,421	4,550	4,737	4,882	5,001	5,310	5,330	5,535	5,729
Fees, charges and targeted rates for water supply	0	0	0	0	0	0	0	0	0	0	0
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	1,111	497	511	526	543	561	580	600	622	645	669
TOTAL OPERATING FUNDING	**14,702**	**16,721**	**16,954**	**17,431**	**18,361**	**19,440**	**20,861**	**22,362**	**23,790**	**25,552**	**25,892**
APPLICATIONS OF OPERATING FUNDING											
Payments to staff and suppliers	7,460	8,785	8,878	9,071	9,499	9,855	10,022	10,638	10,751	11,083	11,470
Finance costs	2,043	1,829	1,866	2,054	2,121	2,248	2,199	2,087	2,008	1,746	1,400
Internal charges and overheads applied	1,954	1,392	1,378	1,448	1,465	1,551	1,633	1,669	1,761	1,842	1,896
Other operating funding applications	0	0	0	0	0	0	0	0	0	0	0
TOTAL APPLICATIONS OF OPERATING FUNDING	**11,458**	**12,007**	**12,122**	**12,573**	**13,085**	**13,654**	**13,854**	**14,395**	**14,519**	**14,671**	**14,766**
SURPLUS (DEFICIT) OF OPERATING FUNDING	**3,245**	**4,714**	**4,832**	**4,857**	**5,276**	**5,786**	**7,008**	**7,967**	**9,270**	**10,881**	**11,126**
SOURCES OF CAPITAL FUNDING											
Subsidies and grants for capital expenditure	4,760	3,368	3,293	3,324	4,294	4,519	3,977	4,145	4,408	4,447	4,651
Development and financial contributions	109	159	177	168	186	171	181	171	178	178	191
Increase (decrease) in debt	1,909	(954)	1,673	4,869	1,458	(377)	(1,350)	(2,526)	(3,131)	(5,599)	(5,938)

	2014/15 Budget $000	2015/16 Budget $000	2016/17 Budget $000	2017/18 Budget $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
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
TOTAL SOURCES OF CAPITAL FUNDING	**6,779**	**2,573**	**5,143**	**8,362**	**5,938**	**4,313**	**2,807**	**1,790**	**1,454**	**(973)**	**(1,097)**
APPLICATIONS OF CAPITAL FUNDING											
Capital expenditure											
- to meet additional demand	66	0	0	0	0	0	0	0	0	0	0
- to improve the level of service	2,311	2,276	4,946	8,057	4,279	3,281	2,926	2,481	3,172	2,241	2,104
- to replace existing assets	7,315	5,011	5,028	5,162	6,935	6,819	6,889	7,276	7,552	7,667	7,926
Increase (decrease) in reserves	331	0	0	0	0	0	0	0	0	0	0
Increase (decrease) in investments	0	0	0	0	0	0	0	0	0	0	0
TOTAL APPLICATIONS OF CAPITAL FUNDING	**10,023**	**7,287**	**9,975**	**13,219**	**11,214**	**10,100**	**9,815**	**9,758**	**10,725**	**9,908**	**10,030**
SURPLUS (DEFICIT) OF CAPITAL FUNDING	**(3,245)**	**(4,714)**	**(4,832)**	**(4,857)**	**(5,276)**	**(5,786)**	**(7,008)**	**(7,967)**	**(9,270)**	**(10,881)**	**(11,126)**
FUNDING BALANCE	**(0)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

L.2 Total Expenditure

Figure L-1 and Figure L-2 show the total expenditure for the transportation activity for the first 10 and 30 years respectively.

Year 3 shows the largest capital spend due to the construction of two major projects; Bateup Road widening and the Richmond Town Centre upgrade.

Operating expenditure increases from $22.9 to $32.0 million over the 10 year period. This is predominately due to inflation.

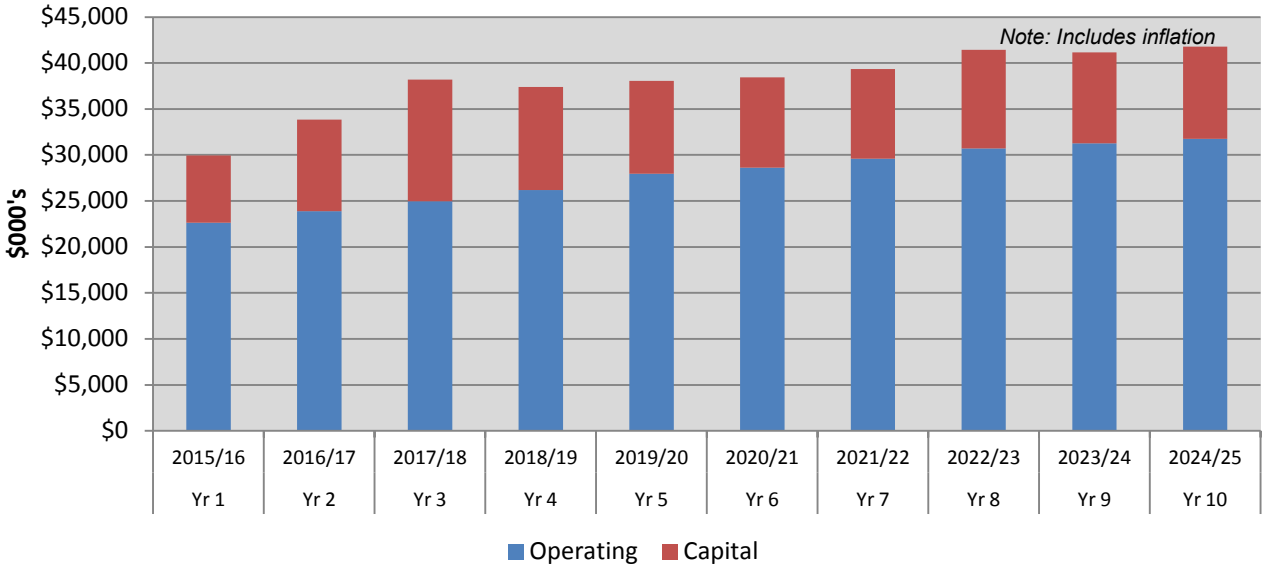


Figure L-1: Total Annual Expenditure Years 1 to 10

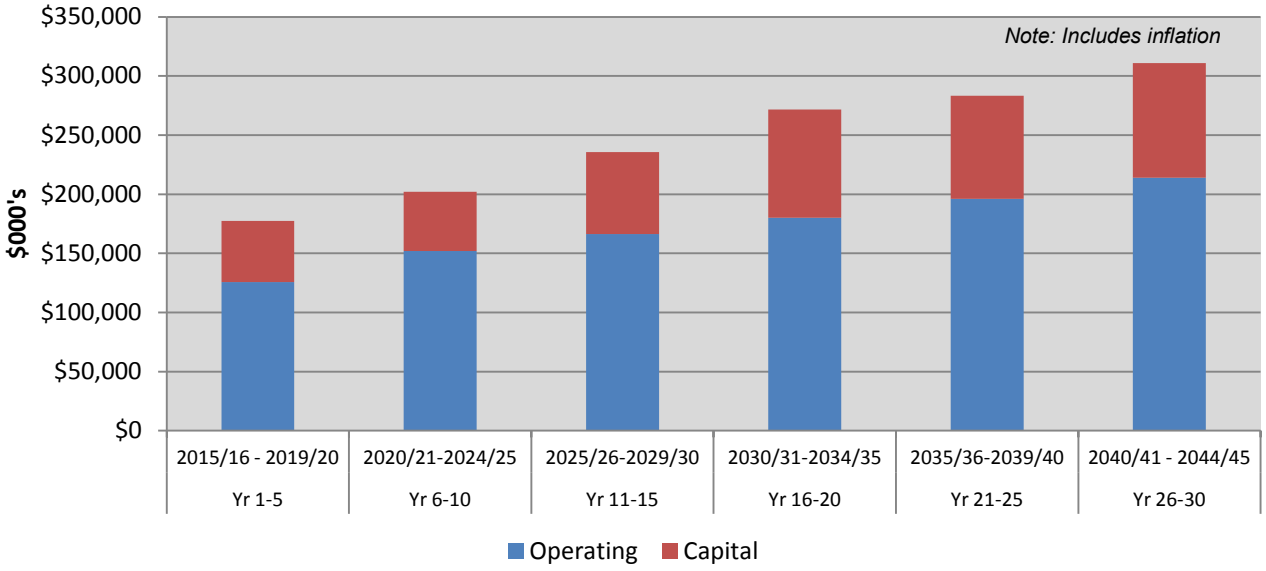


Figure L-2: Five Yearly Total Expenditure Years 1 to 30

L.3 Total Income

Figure L-3 and Figure L-4 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.

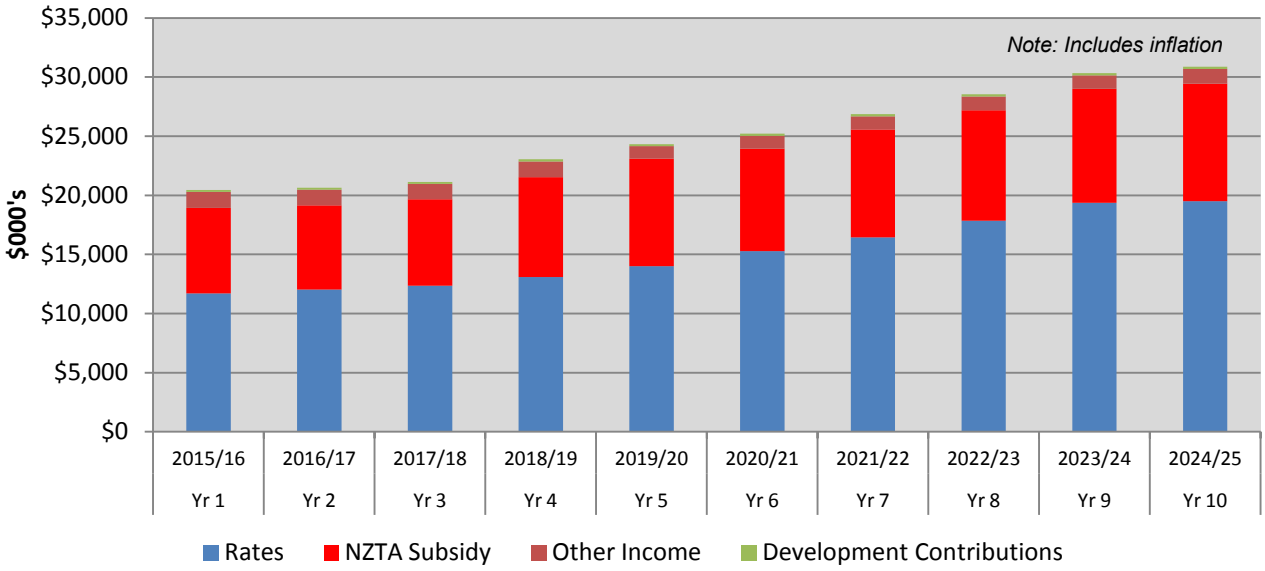


Figure L-3: Total Annual Income Years 1 to 10

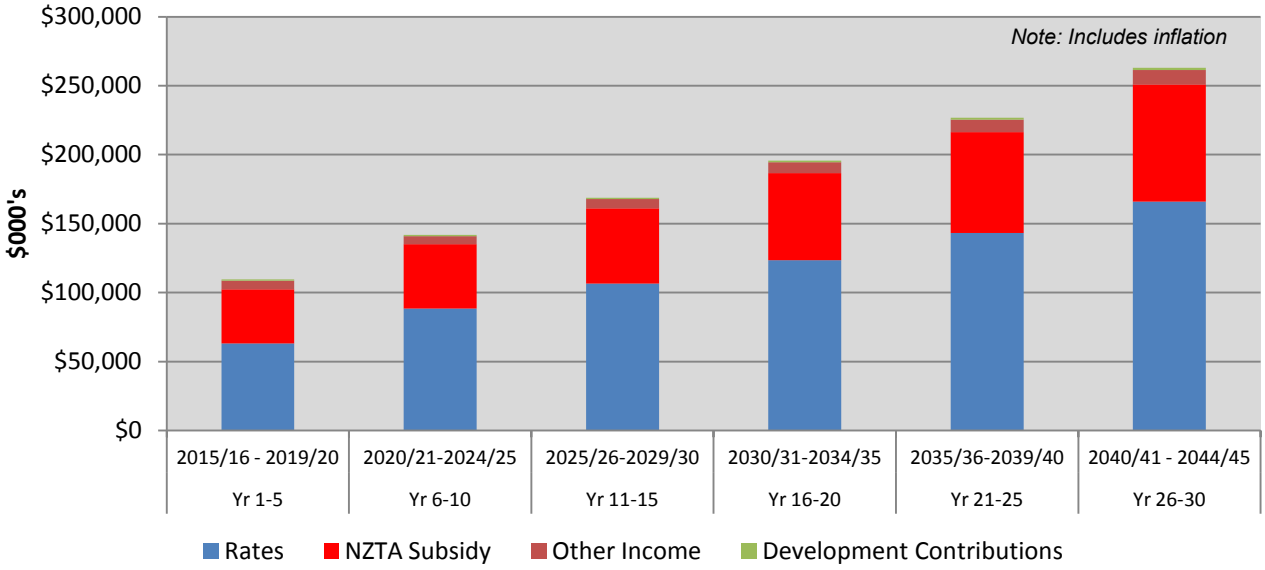


Figure L-4: Five Yearly Total Income Years 1 to 30

L.4 Operational Costs

Figure L-5 and Figure L-6 show the total operating expenditure for the transportation activity for the first 10 and 30 years respectively.

Operating costs for transportation increase by around 3.8% per year on average over years 1 to 10, with indirect costs such as interest and depreciation, rising more quickly than direct costs. Longer term, costs are forecast to increase by around 2.4% per year.

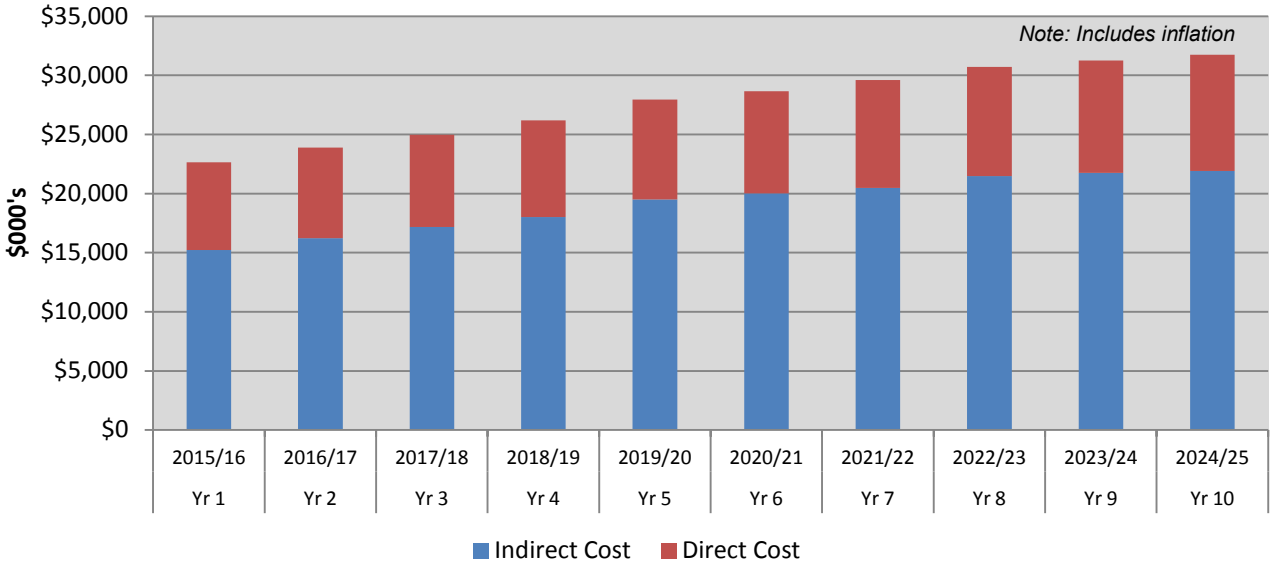


Figure L-5: Annual Operating Costs Years 1 to 10

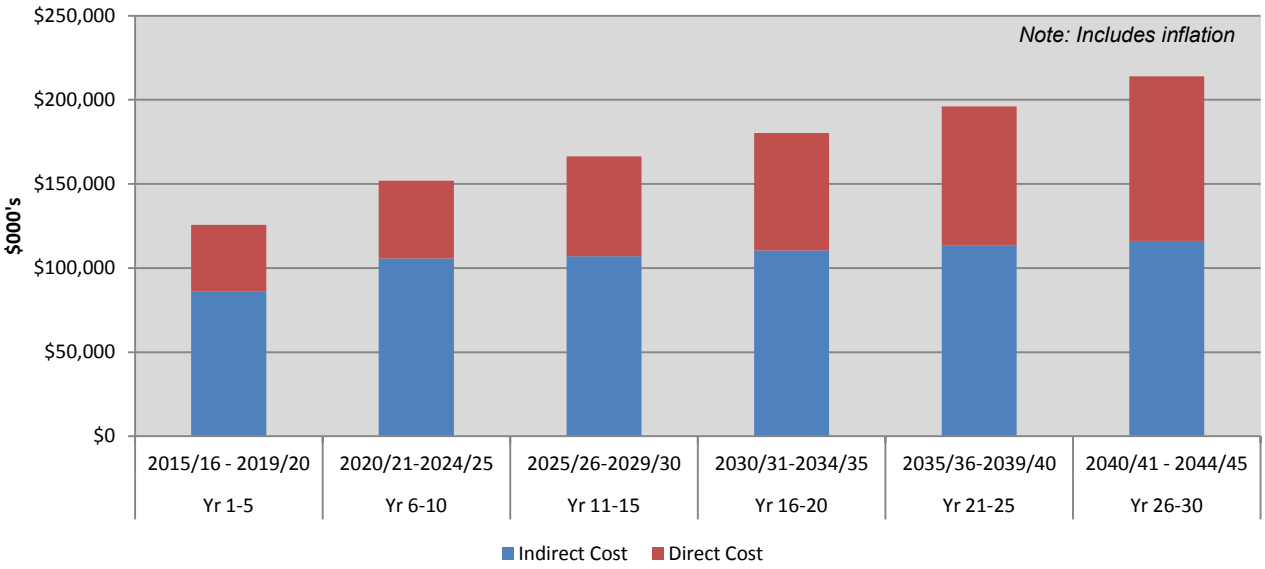


Figure L-6: Five Yearly Operating Cost Years 1 to 30

L.5 Capital Expenditure

Figure L-7 and Figure L-8 show the total capital expenditure for the transportation activity for the first 10 and 30 years respectively.

Around $10m per year in capital expenditure is forecast on average for years 1 to 10. A small spike in year three is associated with upgrades to Bateup Road. Both in the short term and longer term, the bulk of the capital works programme is focused on maintaining the existing network through renewals, accounting for around 70% of the total capital spend.

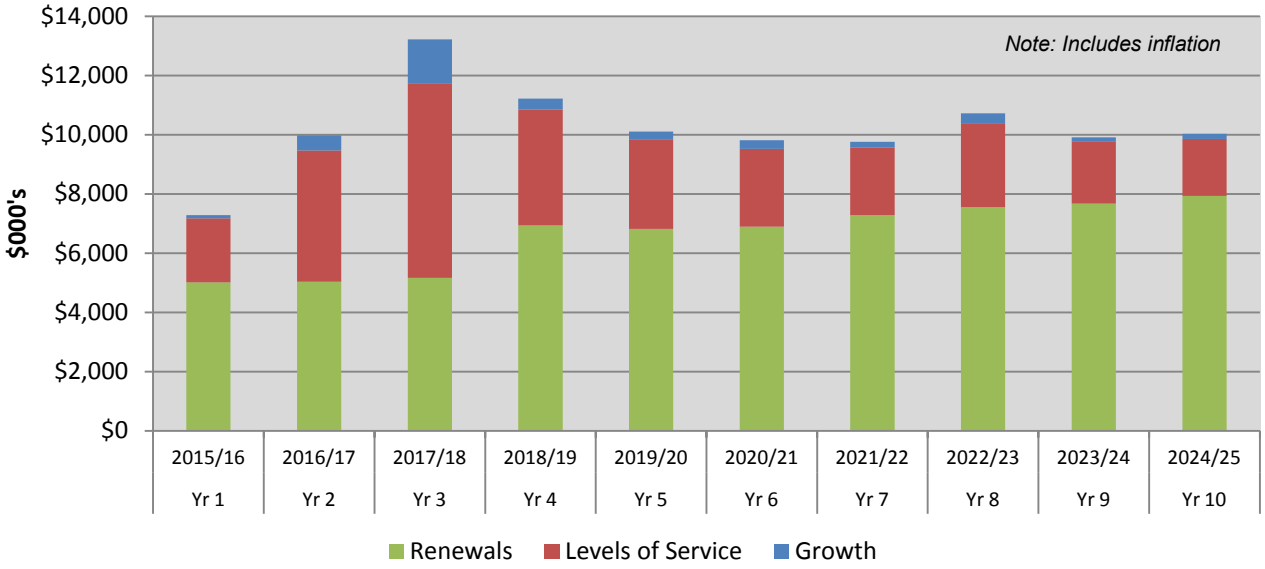


Figure L-7: Annual Capital Expenditure Years 1 to 10

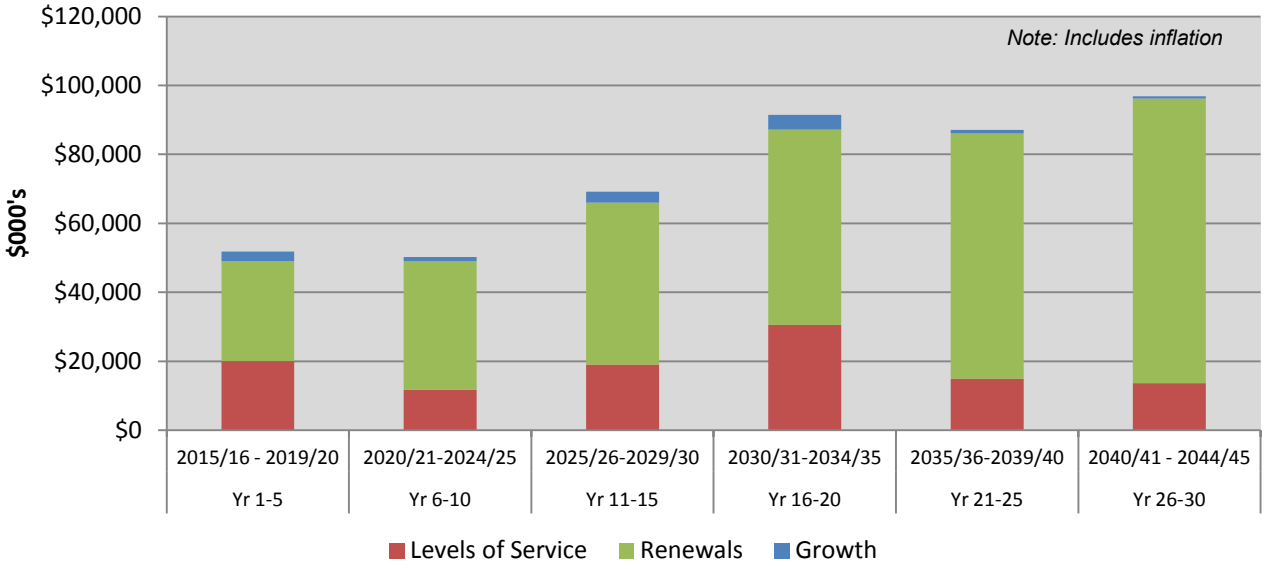


Figure L-8: Five Yearly Capital Expenditure Years 1 to 30

APPENDIX M FUNDING POLICY, FEES AND CHARGES

M.1 Funding Strategy

The Council's strategy is to maximise the funding sourced through the NZ Transport Agency for all works qualifying for subsidies.

The current NZ Transport Agency co-investment rate and local share proportions for subsidised works are detailed below in Table M-1.

Table M-1: Co-Investment Rates

Activity Type	2015/16		2016/17 and beyond	
	NZ Transport Agency	Council	NZ Transport Agency	Council
Operations and Maintenance	52%	48%	51%	49%
Renewals	52%	48%	51%	49%
Total Mobility	60%	40%	60%	40%

The Council's share of the operations and maintenance works is funded from General Rates. The Council share of the renewal and capital improvement works is to be loan funded; the only exception is Pavement Rehabilitation where the Council's share is funded from General Rates.

All work not receiving a NZ Transport Agency subsidy (non-subsidised) is funded from General Rates for maintenance and loans for capital works. For capital improvements part of the funding is from development contributions where growth impacts are justified.

Totaranui and Pupu Springs Roads are designated Special Purpose Roads because of their national significance and attract a 100% maintenance subsidy. The Council also receives funding from the Department of Conservation and TrustPower towards the maintenance of Cobb Dam Road.

Private developers generally meet the full cost of new roads when formed as part of a subdivision, or contribute to the upgrade of existing roads through Development Contributions.

Under the current Council policy, this activity is funded from the following sources:

- sundry income;
- fees and recoveries;
- loans raised;
- general rate;
- targeted rate;
- NZ Transport Agency subsidy.

M.2 Schedule of Fees and Charges

Fees and charges are set to recover the full administration costs of new developments. Other fees and charges for road access, road openings and structures on roads are set at a level to recover part of the management cost such that applicants are encouraged to apply and meet the standard conditions and to protect the road asset. The schedule of fees and charges is detailed in the Long Term Plan and are reassessed every year and included in the Annual Plan.

APPENDIX N DEMAND MANAGEMENT

N.1 Introduction

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;
- reduce or defer the need for new assets;
- meet the organisation's strategic objectives (including social, environmental and political);
- delivery of a more sustainable service; and
- respond to customer needs.

The future growth and demand projections are discussed in Appendix F – Demand and Future Capital Requirements. The Land Transport Management Act requires demand management to be addressed in the Regional Land Transport Plan.

N.2 Approach to Demand Management

The Council's transportation objectives are outlined in *Connecting the Top of the South, Tasman Regional Land Transport Plan 2015-2020*, these objectives are summarised in Table N-1.

Table N-1: Government Policy Statement and Council's Objectives (Draft)

GPS Objectives	Tasman's Objectives
A land transport system that addresses current and future demand.	1) A sustainable transport system that is integrated with well planned development, enabling the efficient and reliable movement of people and goods to, from and throughout the region. 2) Supporting economic growth through providing better access to Nelson-Richmond and the two regional ports.
A land transport system that provides appropriate transport choices.	3) Communities have access to a range of travel choices to meet their social, economic, health and cultural needs. 4) Enable access to social and economic opportunities by investing in public transport.
A land transport system that is reliable and resilient.	5) Communities have access to a resilient and reliable transport system.
A land transport system that is a safe system, increasingly free of death and serious injury.	6) Deaths and serious injuries on the region's transport system are reduced at reasonable cost.

The Council's objectives are followed up by having a set of policies and measures that can be directly linked to the GPS 2015 and Connecting Tasman (Regional Land Transport Strategy developed in 2010). The Tasman Regional Transport Committee has assessed this Regional Land Transport Plan and is satisfied that it contributes to achieving an affordable, integrated, safe, responsive, and sustainable land transport system, and contributes to each policy in Table N-2.

Table N-2: Policies and Measures (Draft)

Policy	Contributing Activities
Roads and Traffic Policy 1 Ensure the integrated, efficient, timely and safe maintenance and enhancement of the District's road network to meet the needs of the regional community and economic growth and development in line with this overall strategy.	It is important that the road network is safe, reliable and efficient at transporting people and goods throughout the region for the needs of the local communities as well as the economic vitality, growth and development of the region.
Roads and Traffic Policy 2 Ensure the integrated, efficient and safe provision for freight activity in support of regional economic growth and development while minimising adverse impacts on the regional community.	The strategic road network, both in Tasman and neighbouring regions, is a key element of the freight system although some local roads can take on temporary or long term roles in supporting freight movements, such as during logging operations in a particular forest block over a set period. Freight activity can have adverse impacts on communities and the environment, such as safety issues, increased road maintenance, air quality and noise nuisance.
Roads and Traffic Policy 3 Reduce the number and severity of road crashes in the Tasman District.	The priority is for activities that will reduce fatalities and casualties arising from road crashes. It aims to increase the use of walking and cycling, addressing road safety concerns. The safety of motorcyclists is also crucial due to the increase in popularity of this mode and the vulnerability of the rider in a crash.
Roads and Traffic Policy 4 Support activities that will improve population health and ensure monitoring of environmental impacts of land transport and compliance with national and regional standards.	This strategy aims to protect and promote population health by supporting transport-related public health initiatives in the region. Activities such as encouraging the use of a wider range of modes, demand management tools and supportive land use policies all work to enhance positive and reduce negative health impacts. For example, encouraging walking and cycling can increase individual levels of physical activity.
Walking Policy Promote and support the convenience and safety of walking to increase usage and mode share. Promote walking as a form of transport.	The strategy aims to recognise the importance of walking and promotes a pedestrian friendly built environment. Walking routes should be well signposted, connected, convenient, comfortable and safe. Walking does include those using walking aids such as wheelchairs and mobility scooters. It also includes those with specific requirements such as people with pushchairs. A walking environment designed with the needs of mobility impaired pedestrians in mind will often create excellent levels of service for all pedestrians.
Cycling Policy Promote and support the convenience and safety of cycling to increase usage and mode share. Promote cycling as a mode of transport.	It is key to improving cycle usage to recognise that different types of cycling environments will suit different cyclists (learners, commuters, social and serious recreational) have different infrastructural needs. Cycling forms an important element of a sustainable land transport system and this policy aims to change the current trends and situation in the Tasman region by generating a higher volume of cycling trips and cycling safety.

Policy	Contributing Activities
Sustainability Policy 1 Economic	A transport system that is integrated with well-planned development, enabling the efficient and reliable movement of people and goods to, from and throughout the region. The transport system will support economic growth through providing better access to Nelson, Richmond, Tasman region, Blenheim and the two regional ports. Reduction of risk of disruption planned for to increase resilience and reliability.
Sustainability Policy 2 Social	Communities have access to a resilient and reliable transport system with a range of travel choices to meet their social, economic, health and cultural needs, including through investment in public transport and cycling networks. A land transport system that is safe and increasing free of death and serious injury, and which minimizes adverse health and social impacts.
Sustainability Policy 3 Environment	A land transport system that appropriately mitigates the effects of land transport on the environment. A land transport system that reduces energy footprints through reductions in time and distance travelled, as well as reducing particulate pollution. A land transport system that looks for solutions which reduce greenhouse gas emissions.

N.2.1. Demand Management Data Collection and Analysis

The following surveys are undertaken to collect base demand data.

a) **Traffic Counting** – The Council engages a traffic counting consultant using the competitive tender process to undertake routine and special counts throughout the district. The contract is a 3 + 1 +1 format. The contract requires all roads to be counted a minimum of once every five years with the exception of the compulsory count sites which are required to be counted six-monthly or annually. The Council recently adopted the MetroCount system which enables classified and speed counts to be undertaken at all sites (with the exception of unsealed roads). This data is stored and managed by the Council. The data is analysed to determine average daily traffic (ADT) and annual average daily traffic (AADT) and then input into the RAMM database. This information is then used as an input to dTIMS modelling.

b) **Cycle Counting** – The traffic counting contractor is also engaged to undertake routine cycle counts in Richmond on a six-monthly basis. The data has been used to calculate growth rates to support development of new cycle facilities.

c) **Car Parking Surveys** – The Council has undertaken car parking surveys to determine the demand and occupancy of both on-street and off-street parking within the CBD areas of Motueka and Richmond. The results are summarised by street or parking area, however no further interpretation has been undertaken.

N.2.2. Demand Management Projects

A summary of the demand management related projects for the transportation activity are listed in Table N-3.

Table N-3: Summary of Demand Management Related Projects

Study Name	Brief Description
Strategic Studies	Network use studies to support strategic planning.
New Footpaths	Construction of new footpaths to expand and connect the pedestrian network.
nBus Services	Contribution to the Nelson City Council for the provision of nBus services within Tasman district.
Road Safety Programmes	Includes community education and school travel plans. Promotion, education and advertising to promote safe use of the transportation network.
Total Mobility	Subsidised travel for people with serious mobility constraints.
School Cycle and Scooter Training	School education programme to promote safe use of cycles and schools on the journey to school.

N.3 Sustainable Development Issues

New roads and rehabilitation of existing roads relies on the use of large volumes of aggregate. The Council wishes to encourage and facilitate the use of river gravels only for high-end use products such as concrete products and sealing chip. The Council is facilitating the use of lower quality products for road aggregate by allowing stabilisation methods, alternative pavement designs and a mix of aggregates in the pavements.

Chip sealing designs are continually monitored to ensure the optimal size and life is chosen for long-term cost and least use of the high quality product.

N.4 Climate Change

N.4.1. Introduction

The RMA 1991 states, in Section 7, that a local authority shall take account of the effects of climate change when developing and managing its resources. The Local Government Act 2002 also contains requirements to "meet the current and future needs of communities for good quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses". "Good quality" means infrastructure, services, and performance that are efficient and effective and appropriate to present and anticipated future circumstances.

This appendix summarises climate change information available to the Council for asset and activity planning. Key information sources include:

- Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in NZ, MfE (2008);
- Climate Change and Variability in the Tasman District, NIWA (2008);
- Mean High Water Springs report, NIWA (2013);
- Fifth Assessment Report, IPCC (2013);
- Extreme sea-level elevations from storm-tides and waves: Tasman and Golden Bay coastlines, NIWA (2014).

N.4.2. Changing Climatic Patterns

To assist local authorities, the Ministry for the Environment (MfE) prepared a report[1] to support councils' assessing expected effects of climate change, and to help them prepare appropriate responses when necessary.

In 2008, the Council commissioned NIWA to provide local interpretation[2]. The report examined the impacts of expected climate changes for the Tasman-Nelson region.

Subsequently, the Intergovernmental Panel on Climate Change (IPCC) has produced its fifth assessment report AR5 (2013). The AR5 is a result of substantial collective international science over the past five years, and has synthesised the current physical science basis for climate change understanding. The report covers the scope and significance of expected impacts, vulnerabilities and adaptation challenges arising at an international level, and national level.

AR5 does not fundamentally change our understanding of how global climate impacts will manifest themselves locally in Tasman however the Council will undertake a similar exercise to that of 2008 to commission NIWA to produce a Climate Change and Variability report specific to the Tasman District.

N.4.3. Temperature Change

Table N-4 shows that the mean annual temperatures in Tasman-Nelson are expected to increase in the future.

Table N-4: Projected Mean Temperature Change (Upper and Lower Limits) in Tasman-Nelson (in °C)

	Summer	Autumn	Winter	Spring	Annual
Projected changes 1990-2040	0.2 – 2.2	0.2 – 2.3	0.2 – 2.0	0.1 – 1.8	0.2 – 2.0
Projected changes 1990-2090	0.9 – 5.6	0.6 – 5.1	0.5 – 4.9	0.3 – 4.6	0.6 – 5.0

Source: Climate Change and Variability – Tasman District (NIWA, June 2008)

[1] Climate Change Effects and Impacts Assessment A Guidance Manual for Local Government in NZ (MfE, May 2008)

[2] Climate Change and Variability – Tasman District (NIWA, June 2008)

It is the opinion of NIWA[3] scientists that the actual temperature increase this century is very likely to be more than the 'low' scenario given here. Under the mid-range scenario for 2090, an increase in mean temperature of 2.0°C would represent annual average temperature in coastal Tasman in 2090.

N.4.4. Rainfall Patterns

Table N-5 shows an expected increase in mean annual precipitation in Tasman-Nelson from 1990 to 2090.

Table N-5: Projected Mean Precipitation Change (Upper and Lower Limits) in Tasman-Nelson (in %)

	Summer	Autumn	Winter	Spring	Annual
Projected changes 1990-2040	-14, 27	-2, 19	-4, 9	-8,9	-3,9
Projected changes 1990-2090	-13, 30	-4, 18	-2, 19	-20, 19	-3, 14

Source: Climate Change and Variability – Tasman District (NIWA, June 2008)

N.4.5. Heavy Rainfall

A warmer atmosphere can hold more moisture (about 8% more for every 10°C increase in temperature), so there is an obvious potential for heavier extreme rainfall under climate change.

More recent climate model simulations confirm the likelihood that heavy rainfall events will become more frequent.

N.4.6. Evaporation, Soil Moisture and Drought

From the report, NIWA concludes that there is a risk that the frequency of drought (in terms of low soil moisture conditions) could increase as the century progresses, for the main agriculturally productive parts of Tasman district.

N.4.7. Climate Change and Sea Level

The MfE Report provides guidance for local government on coastal hazards and climate change. The report recommends:

For planning and decision timeframes out to the 2090s (2090–2099):

a) a base value sea-level rise of 0.5 m relative to the 1980–1999 average should be used; along with

b) an assessment of the potential consequences from a range of possible higher sea-level rises (particularly where impacts are likely to have high consequence or where additional future adaptation options are limited). At the very least, all assessments should consider the consequences of a mean sea-level rise of at least 0.8 m relative to the 1980–1999 average. Guidance on potential sea-level rise uncertainties and values at the time (2008) is provided within the Guidance Manual to aid this assessment.

For planning and decision timeframes beyond the 2090s where, as a result of the particular decision, future adaptation options will be limited, an allowance for sea-level rise of 10 mm per year beyond 2100 is recommended.

Since the MfE guidance was published in 2008, the NZ Coastal Policy Statement has been updated, requiring identification of areas in the coastal environment that are potentially affected by coastal hazards over at least 100 years, taking into account the effects of climate change (Policy 24).

The two values of sea-level rise to be considered as a minimum number of rises for assessing risk of 0.5 m and 0.8 m by the 2090s in the 2008 MfE guidance are equivalent to rises of 0.7 m and 1.0 m extended out to 2115, which is "at least 100 years" from the present. These projections are for mean sea levels.

In 2013 the Council commissioned NIWA to prepare a report on mean high water springs (MHWS) for Tasman District, including a range of sea level rise scenarios[4]. Ongoing sea-level rise will require updates of

[3] Climate Change and Variability – Tasman District (NIWA, June 2008)

the MHWS levels and for projecting MHWS levels into the future, whereby the appropriate sea-level rise is simply added to the 'present day' MHWS levels. The report includes worked examples for sea-level rise magnitudes of 0.7 m and 1.0 m, which extend the equivalent tie-point values for the 2090s (0.5 m and 0.8 m) in the Ministry for the Environment (2008) guidance out to 2115 to cover at least a 100-year period.

Subsequently, the Council was granted an Envirolink medium advice grant (1413-TSDC99)[5] for NIWA to develop defensible coastal inundation elevations and likelihoods as a result of combinations of elevated storm-tide, wave setup and wave run-up, along the "open coast" of the Tasman Bay and Golden Bay coastlines. The study excludes inlets and the west coast of Tasman District. The report includes an interactive 'calculator' which allows the Council to accommodate various predicted sea level rise scenarios and different beach profiles.

The extent of coastal inundation in Motueka is being modelled at the time of writing this AMP (2014). The model is an extension of the modelling work undertaken on the movement of the Motueka Sandspit and impacts on Jackett Island. The Motueka modelling is expected to show the depth and extent of land affected by sea water inundation.

Mapua and Ruby Bay have also been subject to inundation modelling as a result of TRMP Plan Change 22.

Future urban locations for inundation modelling have yet to be determined.

A wider coastal hazard assessment project for Tasman District commenced in 2014. The project will consider options for risk mitigation and adaptation. The results will be integrated into land use and infrastructure planning.

N.4.8. Potential Impacts on Council's Infrastructure and Services

Table N-6 lists the potential impacts of climate change on Council's infrastructure and services.

Table N-6: Local Government Functions and Possible Negative Climate Change Outcomes

Function	Affected Assets of Activities	Key Climate Influences	Possible Effects
Water supply and irrigation	Infrastructure.	Reduced rainfall, extreme rainfall events and increased temperature. Sea level rise.	Reduced security of supply (depending on water source). Contamination of water supply. Saltwater intrusion into coastal wells.
Wastewater	Infrastructure.	Increased rainfall. Sea level rise.	More intense rainfall (extreme events) will cause more inflow and infiltration into the wastewater network. Wet weather overflow events will increase in frequency and volume. Longer dry spells will increase the likelihood of blockages and related dry weather overflows. Disruption of WWTPs due to coastal inundation or erosion impacts.

[4] NIWA Report: Mean High Water Spring (MHWS) levels including sea-level rise scenarios: Envirolink Small Advice Grant (1289-TSDC95), 4 September 2013 (revised 30 April 2014)

[5] NIWA Report: Extreme sea-level elevations from storm-tides and waves: Tasman and Golden Bay coastlines, March 2014.

Function	Affected Assets of Activities	Key Climate Influences	Possible Effects
Stormwater	Reticulation. Stopbanks.	Increased rainfall. Sea-level rise.	Increased frequency and/or volume of system flooding. Increased peak flows in streams and related erosion. Groundwater level changes. Saltwater intrusion in coastal zones. Changing flood plains and greater likelihood of damage to properties and infrastructure.
Transportation	Road network and associated infrastructure (power, telecommunications, drainage).	Extreme rainfall events, extreme winds, high temperatures. Sea-level rise.	Disruption due to flooding, landslides, falling trees and lines. Direct effects of wind exposure on heavy vehicles. Melting of tar. Increased coastal erosion or storm induced damage.
Planning / policy development	Management of development in the private sector. Expansion of urban areas. Infrastructure and communications planning.	All.	Inappropriate location of urban expansion areas. Inadequate or inappropriate infrastructure, costly retro-fitting of systems.
Land management	Rural land management.	Changes in rainfall, wind and temperature.	Enhanced erosion, Changes in type/distribution of pest species. Increased fire risk. Reduction in water availability for irrigation. Changes in appropriate land use. Changes in evapotranspiration.
Water management	Management of watercourses / lakes / wetlands.	Changes in rainfall and temperature.	More variation in water volumes possible. Reduced water quality. Sedimentation and weed growth. Changes in type/distribution of pest species.

Function	Affected Assets of Activities	Key Climate Influences	Possible Effects
Coastal management	Infrastructure. Management of coastal development.	Temperature changes leading to sea-level changes. Extreme storm events.	Coastal erosion and flooding. Disruption in roading, communications. Loss of private property and community assets. Effects on water quality.
Civil defence and emergency management.	Emergency planning and response, and recovery operations.	Extreme events.	Greater risks to public safety, and resources needed to manage flood, rural fire, landslip and storm events.
Biosecurity	Pest management.	Temperature and rainfall changes.	Changes in the range and density of pest species
Open space and community facilities management	Planning and management of parks, playing fields and urban open spaces.	Temperature and rainfall changes. Extreme wind and rainfall events.	Changes/reduction in water availability. Changes in biodiversity. Changes in type/distribution of pest species. Groundwater changes. Saltwater intrusion in coastal zones. Need for more shelter in urban spaces.
Transport	Management of public transport. Provision of footpaths, cycleways etc.	Changes in temperatures, wind and rainfall.	Changed maintenance needs for public transport infrastructure. Disruption due to extreme events.
Waste management	Transfer stations and landfills.	Changes in rainfall and temperature.	Increased surface flooding risk. Biosecurity changes. Changes in ground water level and leaching.
Water supply and irrigation	Infrastructure.	Reduced rainfall, extreme rainfall events and increased temperature.	Reduced security of supply (depending on water source). Contamination of water supply.

Source: Climate Change Effects and Impacts Assessment (MfE, May 2008)

The Council has incorporated the potential impacts of climate change in the Engineering Standards and Policies.

APPENDIX O NOT RELEVANT TO THIS ACTIVITY

APPENDIX P POTENTIAL SIGNIFICANT EFFECTS

P.1 Potential Significant Negative Effects

Potential significant negative effects and the proposed mitigation measures are listed below in Table P-1.

Table P-1: Potential Significant Negative Effects

Effect	Description	Mitigation Measure
Noise Generation	Vehicle use within the network produces noise. Social - The level of noise generated generally depends on the speed of vehicles, and the type of road surface and/or vehicle tyre types.	The 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 the most expensive; however it is also the most effective and typically provides a longer surface life than a chip sealed surface. The Council can also reduce noise by encouraging slow streets, implementing traffic calming and ensuring the hierarchy of roads is followed in accordance with the Council's Engineering Standards.
Light Spill	The Council installs lighting in public areas and along roads to improve the safety and amenity of the area. **Social** – This can have an adverse affect on neighbouring properties due to light spill. **Environmental** – Upward light spill can adversely affect user groups by 'polluting' the night skies.	The Council is currently upgrading 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.
Vehicle Emmissions	Vehicles using the road network produce emissions. **Environmental –** Discharges from motor vehicles have the potential to diminish water quality in adjacent streams from surface water run-off from roads. Air quality can be affected by dust generation from vehicles travelling on unsealed roads.	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. 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. Parties affected by dust from public roads are able to apply to the Council for a Road Oiling Permit.

Effect	Description	Mitigation Measure
Traffic Congestion	Increasing traffic volumes may result in congestion of urban arterial links. **Economic –** Traffic congestion causes delays to the road users and has the potential to affect the cost of freight.	The Council has identified a number of capital projects such as intersection upgrades and the Richmond Ring Route to provide for future traffic flows.
Road Crashes	**Social –** Road users face potential crashes and associated injury or death.	The detrimental impact of crashes can be reduced through undertaking design of new roads and improvement to existing roads in accordance with best practise design. The Council undertakes works so that the effect of the crashes are minimised, eg, through the use of protective barriers, clear zones, recovery areas, signs, road marking and inspections and safety audits. The Council also aims to prevent crashes by undertaking road and intersection alignment improvements, along with road safety education programmes.
Community Cost	**Economic –** The costs of providing transportation services.	The 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.	The Council undertakes consultation with the Historic Places Trust and local iwi prior to undertaking work. The Council also maintains a record of known heritage sites. If a heritage site may be damaged or destroyed due to Council work an Histroic Places 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.

P.2 Potential Significant Positive Effects

Potential significant positive effects are listed below in Table P-2.

Table P-2: Potential Significant 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.
Safety and Personal Security	The 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	The 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.

Effect	Description
Public Health	The 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	The Council aims to achieve environmental sustainability whilst managing the transportation activity. This is generally managed by the resource consent process and the TRMP.
Economic Efficiency	The 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.

APPENDIX Q SIGNIFICANT ASSUMPTIONS, UNCERTAINTIES AND RISK MANAGEMENT

Q.1 Assumptions and Uncertainties

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 the Council considers could have a significant effect on the financial forecasts, and discusses the potential risks that this creates.

Q.1.1. Financial Assumptions

The following assumptions have been made:

- all expenditure is stated in dollar values as at 1 July 2014, with no allowance made for inflation;
- all costs and financial projections are GST exclusive.

Q.1.2. Asset Data Knowledge

While the Council has asset registers and many digital systems, processes and records, the Council does not have complete knowledge of the assets it owns. To varying degrees the Council has incomplete knowledge of asset location, asset condition, remaining useful life and asset capacities. This requires assumptions to be made on the total value of the assets owned, the time at which assets will need to be replaced and when new assets will need to be constructed to provide better service.

The Council considers these assumptions and uncertainties constitute only a small risk to the financial forecasts because:

- the majority of asset data is known and well recorded;
- asset performance is well known from experience.

The assumptions that have been made that are considered significant include:

- The majority of the roading network is in a satisfactory condition. The known exceptions are that not all roads or sections of roads meet the current Engineering Standards & Policies.
- The road pavement data used in the planning models (such as dTIMS) is substantially estimated. However there has been detailed pavement testing using the Falling Weight Deflectometer since 2006.
- A condition rating survey is completed every two years for the sealed road network (which is approximately 55% of the total road network). A condition rating survey for footpaths, walkways and carparks is completed every three years. Condition rating has yet to be established for unsealed roads.
- Forward planning to accommodate heavy traffic, particularly forestry users, is developed in conjunction with the industry. This however is market-driven and significant changes can occur in the 10 year period. On-going relationships and conversations with industry will be key to managing this demand.
- Road condition is susceptible to extreme natural events, particularly the rural pavements and unsealed surfaces.
- Transportation asset data is stored in the following places:
    - RAMM database for roads, minor structures, drainage structures, bridges, footpaths, carparks, walkways and service lanes;
    - Confirm database for street lights.

Q.1.3. Growth Forecasts

Growth forecasts are inherently uncertain and involve many assumptions. The growth forecasts also have a very strong influence on the financial forecasts, especially in Tasman district where population growth is higher than the national average. The growth forecasts underpin and drive:

- the asset creation programme;
- the Council's income forecasts including rates and development contributions; and
- funding strategies.

Thus the financial forecasts are sensitive to the assumptions made in the growth forecasts. If the growth is significantly different it will have a significant impact. If higher, the Council may need to advance capital projects. If it is lower, the Council may need to defer planned works.

Q.1.4. Timing of Projects

The timing of many projects can be well-defined and accurately forecast because there are few limitations on the implementation other than the community approval through the LTP/Annual Plan processes. However, the timing of some projects is highly dependent on some factors which are beyond the Council's ability to fully control.

These include factors like:

- obtaining resource consent, especially where community input is necessary;
- obtaining community support;
- obtaining a subsidy from central government;
- securing land purchase and / or land entry agreements;
- the timing of large private developments;
- the rate of population growth.

Where these issues may become a factor, allowances have been made to complete in a reasonable timeframe. However these plans are not always achieved and projects may be deferred as a consequence.

Q.1.5. Funding of Projects

When forecasting projects that will not occur for a number of years, a number of assumptions have to be made about how the project will be funded.

Funding assumptions are made about:

- whether projects will qualify for subsidies;
- whether major beneficiaries of the work will contribute to the project, and if so, how much will they pay;
- whether a project should be funded from development contributions, and if so, how much is appropriate; and
- whether the Council will subsidise the development of the project.

The correctness of these assumptions has major consequences especially on the affordability of new projects. The Council has considered each new project and concluded for each a funding strategy. The funding strategy will form one part of the consultation process as these projects are advanced toward construction.

Q.1.6. Accuracy of Project Cost Estimates

The financial forecasts have been estimated from the best available knowledge. The level of uncertainty inherent in each project is different depending on how much work has been done in defining the problem and determining a solution. In many cases, only a rough order cost estimate is possible because little or no preliminary investigation has been carried out. It is not feasible to have all projects in the next 30 years advanced to a high level of accuracy. It is general practice for all projects in the first three years and projects

over $500,000 in the first 10 years to be advanced to a level that provides reasonable confidence with the estimate.

To get consistency and formality in cost estimating, the following practices have been followed:

- all expenditure is stated in dollar values as at 1 July 2014, with no allowance made for inflation;
- all costs and financial projections are GST exclusive;
- a project estimating template has been developed that provides a consistent means of preparing estimates;
- where practical, a common set of rates has been determined;
- specific provisions have been included to deal with non-construction costs like contract preliminary and general costs, engineering costs, Council staff costs, resource consenting costs and land acquisition costs;

Specific provisions have been included to deal with construction contingency, project complexity and estimate accuracy as described below:

- A 10% provision has been included to get a "Base Project Estimate" to reflect the uncertainties in the unit rates used. A further provision has been added to reflect the uncertainties in the scope of the project – ie, is the solution adopted the right one? Often detailed investigation will reveal the need for additional works over and above that initially expected. The amount added depends on the amount of work already done on the project.
- Each project has been assessed as being at the project lifecycle stage as detailed in Table Q-1 below, and from this an estimate accuracy is assessed. The estimate accuracy is added to the Base Project Estimate to get the Total Project Estimate – the figure that is carried forward into the financial forecasts.
- Project complexity ratings of "simple", "normal" or "complex" lead to different cost estimate multipliers of 0.8, 1.0 and 1.3 respectively. Table Q-2 below shows the complexity ratings assigned for large projects. In the 2015-2025 AMP preparation, contingencies were reduced to allow for the reduced risk of full cost overruns on a programme-wide basis. Individual projects are now more likely to go over budget and the Council has specifically accepted this risk.

Table Q-1: Life Cycle Estimate Accuracies

Stage in Project Lifecycle	Estimate Accuracy
Concept / Feasibility	± 20%
Preliminary Design / Investigation	± 10%
Detailed Design to Completion	± 5%

Q.1.7. Land Purchase and Access

The Council has made the assumption that it will be able to purchase land, and/or secure access to land to complete projects. The risk of delays to project timing is high due to possible delays in obtaining the land. The Council works to mitigate this issue by undertaking consultation with landowners sufficiently in advance of the construction phase of a project. The consequence of not securing land and/or land access for projects may require redesign which can have a moderate cost implication. If delays do occur, it may influence the level of service the Council can provide.

Q.1.8. Future Changes in Legislation and Policy

The legal and planning framework under which local government operates frequently changes. This can significantly affect the feasibility of projects, how they are designed, constructed and funded. The Council has assumed that there will be no major changes in legislation or policy. The risk of significant changes remains high owing to the nature of Government policy formulation. If major changes occur it will impact on required expenditure and the Council has not provided mitigation for this effect.

The Government has reviewed its New Zealand Transport Strategy – Connecting New Zealand (2011) and provided a Government Policy Statement (2015) to update their objectives and targets with respect to transportation. This AMP is based on these directions as they relate to the Tasman region.

Q.1.9. Resource Consents

The need to secure and comply with resource consents can materially affect asset activities and the delivery of capital projects.

The need to comply with resource consent conditions can affect the cost and time required to perform an activity, and in some instances determine whether or not the activity can continue. The Council has assumed that there will be no material change in operations due to consenting requirements over the period of the AMP.

There may be some risk of change in requirements for roadside spraying as the current consent is due to expire in 2024.

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.

The 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.

Q.1.10. Council's Disaster Fund Reserves

The Council has assumed, for the purposes of preparing this AMP, that the level of funding in these budgets and held in the Council's disaster fund reserves 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 reprioritisation of funds.

Q.1.11. Network Capacity

The Council has a growing knowledge and understanding of network capacity, however the knowledge is not complete. The Council is collecting asset data such as traffic counts and modelling specific areas such as Richmond CBD and Richmond West (Lower Queen Street) where capacity is effecting or likely to effect the levels of service.

Carpark surveys have been completed in some areas to assess the existing capacity and use.

Cycling and walking strategies (last reviewed in 2008) have included public consultation to assess the demand.

The Council has participated in strategic studies (such as the Nelson-Brightwater Study 2005-2007) including capacity modelling for the state highways and these have included the likely impacts on the Tasman District network. The majority of the local road network is at a satisfactory level of service for capacity.

If the network capacity is lower than assumed, the Council may be required to advance capital projects to address the issue. The risk of this occurring is low however the impact on expenditure could be moderate. If the network capacity is greater than assumed, the Council may be able to defer works.

Q.2 Risk Management

Q.2.1. Why do we do Risk Management

Risk management is the systematic process of identifying, analysing, evaluating, treating and monitoring risk events so that they are mitigated as far as possible, refer to Figure Q-1.

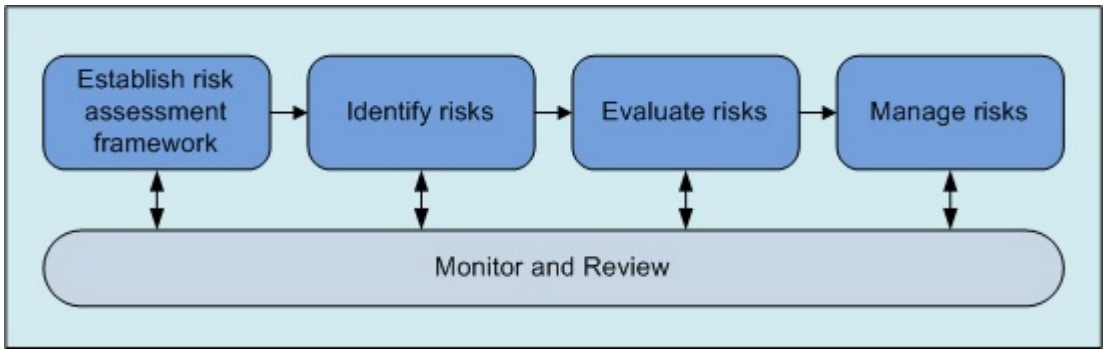


Figure Q-1: Risk Management Process

Risk management involves assessing each risk event and identifying an appropriate treatment. Treatments are identified to try and manage or reduce the risk. There are some risk events for which it is near impossible or not feasible to reduce the likelihood of the event occurring, or to mitigate the effects of the risk event if it occurs eg, extreme natural hazards. In this situation the most appropriate response may be to accept the risk as is, or prepare response plans and consider system resilience.

Well managed risks can help reduce:

- disruption to infrastructure assets and services;
- financial loss;
- damage to the environment;
- injury and harm;
- legal obligation failures.

Q.2.2. Our Approach to Risk Management

Q.2.2.1 *Risk Assessment Framework*

The Council's risk assessment framework was developed in 2011 to be consistent with *AS/NZS IS 4360:2004 Risk Management.* It assesses risk exposure by considering the consequence and likelihood of each risk event. Risk exposure is managed at three levels within the Council organisation, refer to Figure Q-2:

- Level 1 – Corporate Risks
- Level 2 – Activity Risks
- Level 3 – Operational Risks.

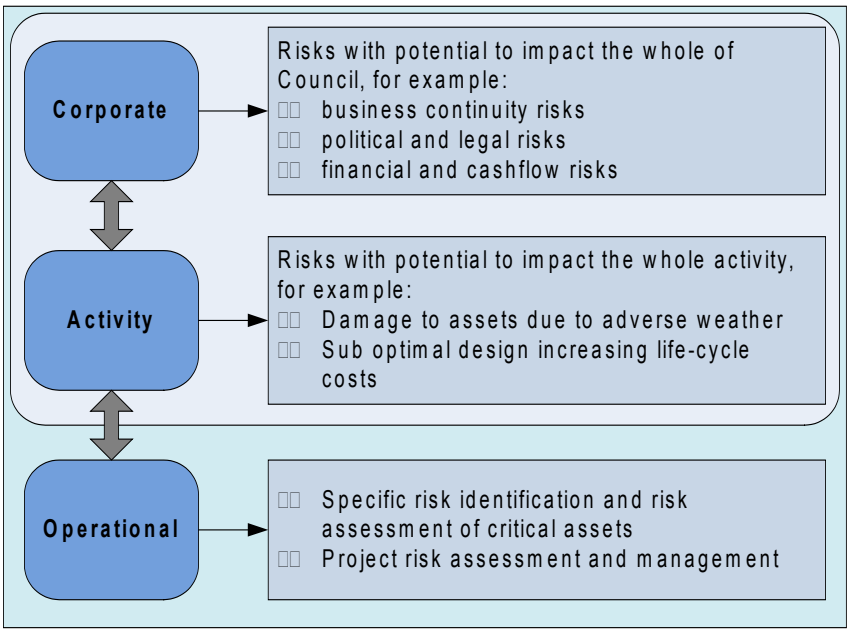


Figure Q-2: Levels of Risk Assessment

The risk assessment framework discussed in Section Q.2.2.1 and Q.2.2.2 is applied to Corporate and Activity specific risks. There are some risk events which could be interpreted as either Corporate or Activity level risks. For example, a risk event may have the potential to impact the Council organisation as a whole or many parts of the organisation if it was to occur. In the first instance this type of risk would be classified as a Corporate risk. There is however a secondary consideration that needs to be given, that is, "is the risk best managed in different ways within the separate activities?" For example, a large seismic event will likely impact the Council organisation as a whole, however each activity will prepare for and manage these risks differently; eg, water reservoirs may be strengthened to minimise the risk of collapse, or Corporate Services may prepare a business continuity plan.

The Council is yet to implement consistent risk management processes at the operational risk level. Development of the critical asset framework is discussed in Section Q.2.5. The Council plans to develop a framework for assessing maintenance and project risks in 2015.

Q.2.2.2 *Risk Identification and Evaluation*

The risk management framework requires the activity management team to identify activity risks and to then assess the risk, likelihood and consequence for each individual event. The definitions of risk, likelihood and consequence are defined Figure Q-3.

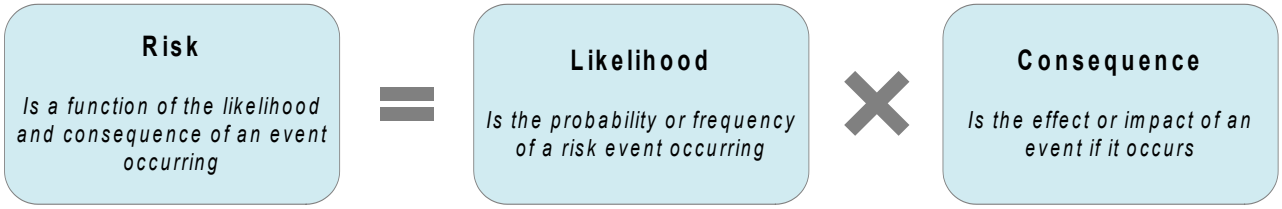


Figure Q-3: Risk Assessment Definitions

The Council has developed objective based scales to assist asset managers when determining the likelihood and consequence scores for all risk events. The consequence of each risk event is assessed on a scale of one to 100 for all of the consequence categories listed in Table Q-3 and the respective consequence rating score (Table Q-4) is selected. The detailed objective scale used to assess the consequence rating of the risk event against the risk is attached to the end of this appendix.

Table Q-2: Risk Consequence Categories

Category		Sub Category	Description
Consequence Categories	Service Delivery	N/A	Asset's compliance with Performance Measures and value in relation to outcomes and resource usage.
	Social / Cultural	Health and Safety	Impact as it relates to death, injury, illness, life expectancy and health.
		Community Safety and Security	Impact on perceived safety and reported levels of crime.
		Community / Social / Cultural	Damage and disruption to community services and structures, and effect on social quality of life and cultural relationships.
		Compliance / Governance	Effect on the Council's governance and statutory compliance.
		Reputation / Perception of Council	Public perception of the Council and media coverage in relation to the Council.
	Environment	Natural Environment	Effect on the physical and ecological environment, open space and productive land.
		Built Environment	Effect on amenity, character, heritage, cultural, and economic aspects of the built environment.
	Economic	Direct Cost	Cost to the Council.
		Indirect Cost	Cost to the wider community.

Table Q-3: Consequence Ratings

Consequence Rating					
Description	Extreme	Major	Medium	Minor	Negligible
Rating	100	70	40	10	1

Table Q-5 provides a summary of the likelihood assessment criteria.

Table Q-4: Likelihood Ratings

Likelihood Rating			
Description	**Frequency**	**Criteria**	**Rating**
Almost certain	Greater than every 2 years	The threat can be expected to occur or A very poor state of knowledge has been established on the threat	5
Likely	Once per 2-5 years	The threat will quite commonly occur or A poor state of knowledge has been established on the threat	4
Possible	Once per 5-10 years	The threat may occur occasionally or A moderate state of knowledge has been established on the threat	3

Likelihood Rating			
Unlikely	Once per 10-50 years	The threat could infrequently occur or A good state of knowledge has been established on the threat	2
Very Unlikely	Less than once per 50 years	The threat may occur in exceptional circumstances or A very good state of knowledge has been established on the threat	1

Using the existing risk management framework summarised in Table Q-6, the risk score is calculated by multiplying the likelihood of the risk event with the highest rated individual consequence category for that risk event to generate a risk score, as shown in Figure Q-4.

Table Q-5: Risk Scores

Risk Scoring Matrix		Consequence				
		Negligible	Minor	Medium	Major	Extreme
Likelihood	Almost Certain	5	50	200	350	500
	Likely	4	40	160	280	400
	Possible	3	30	120	210	300
	Unlikely	2	20	80	140	200
	Very Unlikely	1	10	40	70	100

Risk Score
Extreme
Very High
High
Moderate
Low
Negligible

An example of how the risk score is calculated is below.

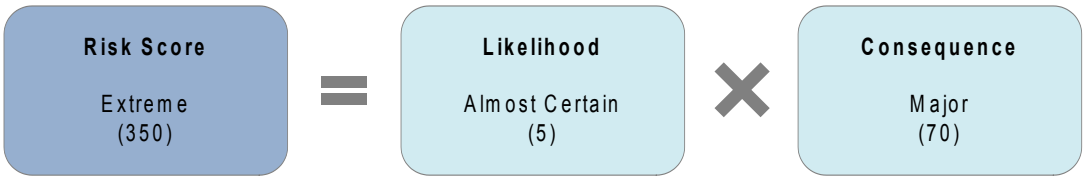


Figure Q-4: Risk Score Calculation

Risk scores are generated for inherent risk, current risk and target risk.

Inherent risk is the raw risk score without taking into consideration any current or future controls.

Current risk the level of risk to the Council after considering the effect of existing risk management controls.

Target risk is the level of risk the Council expects and wants to achieve after applying the proposed risk management controls.

In some cases it is not feasible to reduce the inherent risk and in this case the Council would accept the inherent risk level as the current and target risk levels.

Q.2.2.3 *Limitations*

The processes outlined above form a conservative approach to evaluating risk and could been seen as representing the worst case scenario. They also provide limited ability to differentiate the priority of risks due to the potential to score highly in at least one of the consequence categories; this tends to create a smaller range of results. For example two events with a likelihood of "Almost Certain (5)" have been compared below:

- **Event A** – scores "Major (70)" for one consequence category and "Negligible (1)" in all the remaining consequence categories, this will generate an inherent risk score of "Extreme (350)".

- **Event B** – scores “Medium (40)” in all 10 consequence categories, this will generate an inherent risk score of “Very High (200)”.
- **Event C** – scores “Major (70)” in all 10 consequence categories, this will generate an inherent risk score of “Extreme (350)”.

These examples show that there are limitations for the Council when prioritising risk events, especially those that may have a wider impact on the activity eg, Event B or C. Consequently, the Council acknowledges that there are some downfalls in its existing framework and it has proposed to undertake a full review of its risk management framework during 2015.

Q.2.3. Corporate Risk Mitigation Measures

Q.2.3.1 *Asset Insurance*

Tasman District Council has various mechanisms to insure assets against damage. These include:

- Tasman District Council insures above ground assets, like buildings, through private insurance which is arranged as a shared service with Nelson City and Marlborough District Councils.
- Tasman District Council is a member of the Local Authority Protection Programme (LAPP) which is a mutual pool created by local authorities to cater for the replacement of some types of infrastructure assets following catastrophic damage by natural disasters like earthquake, storms, floods, cyclones, tornados, volcanic eruption and tsunami. These infrastructure assets are largely stopbanks along rivers and underground assets like water and wastewater pipes and stormwater drainage.
- Taman District Council has a Classified Rivers Protection Fund, which is a form of self-insurance. The fund is used to pay the excess on the LAPP insurance, when an event occurs that affects rivers and stopbank assets.
- Tasman District Council has a General Disaster Fund, which is also a form of self-insurance. Some assets, like roads and bridges, are very difficult to obtain insurance for or it is prohibitively expensive if it can be obtained. For these reasons the Council has a fund that it can tap into when events occur which damage Council assets that are not covered by other forms of insurance. Some of the cost of damage to these assets is covered by central government, for example the New Zealand Transport Agency covers around half the cost of damage to local roads and bridges (as set out in the co-investment rate/financial assistance rate).
- Refer to the Council’s Financial Strategy for insurance disclosures as required by Section 31 of the LGA 2002.

Q.2.3.2 *Civil Defence Emergency Management*

The Civil Defence Emergency Management Act 2002 was developed to ensure that the community is in the best possible position to prepare for, deal with, and recover from local, regional and national emergencies. The Act requires that a risk management approach be taken when dealing with hazards including natural hazards. In identifying and analyzing these risks the Act dictates that consideration is given to both the likelihood of the event occurring and its consequences. The Act sets out the responsibilities for Local Authorities. These are:

- ensure you are able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency;
- plan and provide for civil defence emergency management within your own district.

Tasman District Council and Nelson City Council jointly deliver civil defence as the Nelson Tasman Civil Defence Emergency Management (CDEM) Group. The vision of the CDEM Group is to build “A resilient Nelson Tasman community”.

Civil Defence services are provided by the Nelson Tasman Emergency Management Office. Other council staff are also heavily involved in preparing for and responding to civil defence events. For example, Council monitors river flows and rainfall, and has a major role in alleviating the effects of flooding.

The Nelson Tasman Civil Defence Emergency Management Group developed a Regional Plan in 2012. The Plan sets out how Civil Defence is organised in the region and describes how the region prepares for, responds to and recovers from emergency events. A review is scheduled for 2016/2017.

Q.2.3.3 *Engineering Lifelines*

The Nelson Tasman Engineering Lifelines (NTEL) project commenced in 2002. The NTEL Group formed in 2003. Its report *Limiting the Impact* was reviewed in 2009. The purpose of the report was:

- to help the Nelson Tasman region reduce its infrastructure vulnerability and improve resilience through working collaboratively;
- to assist Lifeline Utilities with their risk reduction programmes and in their preparedness for response and recovery;
- to provide a mechanism for information flow during and after an emergency event.

The NTEL Group are in the process of applying for funding to hold a further review to begin in 2015.

The project was supported and funded by the two controlling authorities, Nelson City Council and Tasman District Council. Following the initial start-up forum in 2002, a Project Steering Group was formed and initial project work was completed. The initial work to investigate risks and assess vulnerabilities from natural hazard disaster events was divided amongst five task groups:

- Hazards Task Group;
- Civil Task Group;
- Communications Task Group;
- Energy Task Group;
- Transportation Task Group.

These groups were then tasked with assessing the risk and vulnerability of segments of their own networks against the impacts of major natural hazard disaster events. These natural hazards included:

- earthquake;
- landslide;
- coastal / flooding.

The Nelson Tasman region is geotechnically complex with high probabilities of earthquake, river flooding and landslides. By identifying impacts that these hazards may have on the local communities, the NTEL Group aim to have processes in place to allow the community to return to normal functionality as quickly as possible after a major natural disaster event. To date the project has identified the impacts of natural hazards and the critical lifelines of the regions service networks including communication, transportation, power and fuel supply, water, sewerage, and stormwater networks.

The initial NTEL assessment work is the first stage of an on-going process to gain a more comprehensive understanding of the impacts of natural hazards in the Nelson Tasman region.

Q.2.3.4 *Recovery Plans*

These plans are designed to come into effect in the aftermath of an event causing widespread damage and guide the restoration of full service.

The Recovery Plan for the Nelson Tasman Civil Defence and Emergency Management Group (June 2008) identifies recovery principles and key tasks, defines recovery organisation, specifies the role of the Recovery Manager, and outlines specific resources and how funds are to be managed. A review of the Recovery Plan is required and a budget has been applied for.

Information about welfare provision in the Nelson-Tasman region is contained in a Welfare Plan (December 2005), which gives an overview of how welfare will be delivered during the response and recovery phases of an emergency.

The plan is a coordinated approach to welfare services for both people and animals in the Nelson Tasman region following an emergency event.

Q.2.3.5 *Business Continuance*

The Council has a number of processes and procedures in place to ensure minimum impact to transportation services in the event of a major emergency or natural hazard event.

The Council has limited business continuity plans that were developed around influenza pandemic planning in 2014.

The Council's transportation contractors have up to date Health and Safety Plans in place.

Q.2.4. Transportation Risks

In order to identify the key activity risks the asset management team has applied a secondary filter to the outcomes of the risk management framework. This is necessary to overcome the limitations of the framework. To apply this secondary filter the asset management team have used their network knowledge and engineering judgement to identify the key activity risks. The key risks relevant to the transportation activity are summarised in Table Q-7.

Table Q-6: Key Risks

Risk Event	Mitigation Measures
Catastrophic failure of a network structure.	*Current:* • routine maintenance and inspections are included in the network road maintenance contracts; • detailed inspections are completed for the entire bridge network every two years; • reactive inspection following extreme weather events. *Proposed:* • Bridge rating assessments for bridges that have not yet been rated and where bridge inventory is not well known.
Premature deterioration or obsolescence of an asset.	*Current:* • maintenance performance measures included in the network maintenance contracts; • routine inspections; • street light replacements are LED. *Proposed:* • Street lighting renewal strategy to be developed by 2015.
Sub-optimal design and/or construction practices or materials.	*Current:* • NZ Transport Agency material inspections; • contract quality plans; • professional services and construction contract specifications; • third party reviews. *Proposed:* • Ongoing staff training.
Ineffective stakeholder engagement e.g. iwi, Historic Places Trust, community groups.	*Current:* • the Council holds regular iwi meetings; • the Council's GIS software includes layers identifying cultural heritage sites and precincts. Council staff apply for Historic Places Trust 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.	*Current:* • stakeholder management; • works entry agreements; • use of the Council's property team to undertake land purchase negotiations; • Public Works Act.

An asset management improvement item included in Appendix V is to review all inherent, current and target risk scores following the adoption of the amended framework.

Q.2.5. Critical Assets

The draft transportation critical asset framework was developed in 2014. The framework is largely complete but is yet to be finalised and implemented. It is planned to implement the framework during 2015 to test the draft weightings and respective scores. It is likely that the framework will be refined after this initial test run.

Figure Q-5 represents the process used by the transportation activity planning team to assess transportation assets for criticality.

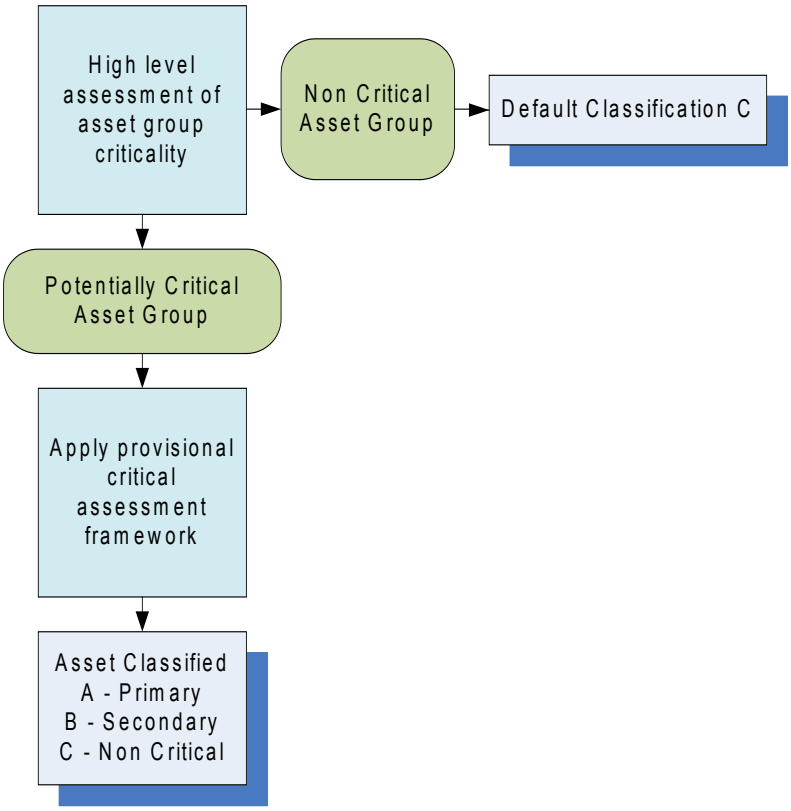


Figure Q-5: Critical Asset Assessment Process

A high level assessment was first undertaken to determine if some asset groups as a whole could be considered either critical or non-critical. This initial assessment determined that bridges, retaining structures and drainage asset groups were critical.

The following asset groups were considered non-critical:

- pavements and surfacing;
- footpaths, cycleways and walkways;
- carparks and service lanes;
- railings;
- street lights;
- signs and delineation;
- street furniture.

The key inputs into the framework and critical asset decision making process are:

- Nelson Tasman Engineering Lifelines report;
- the Council's traffic count data;
- water and wastewater critical assets;

- network and asset engineer's knowledge and experience.

Q.2.5.1 *Critical Asset Assessment*

All individual bridge and retaining structure assets will be assessed for criticality. Individual drainage assets will only be assessed for criticality at the discretion of the asset manager. Criticality assessments will be completed using the framework set out in Table Q-8 below.

To assess for criticality individual assets will be evaluated against all seven of the criteria categories listed below and a sub score will be selected based on the impact potential if the asset was to catastrophically fail. The sub score is then multiplied by the weighting to produce a weighted score. The final score is the total sum of the weighted scores for all seven categories.

Table Q-7: Critical Asset Framework

ID	Criteria Category	Well-Beings	Impact Potential	Sub Score	Weighting	Weighted Score
1	Lifelines	Social / Cultural	Is part of a Lifeline.	5	25	125
			Is not part of a Lifeline.	1		25
2	Alternative Routes	Economic	No alternative route.	5	20	100
			Route is an alternative to state highway.	3		60
			Alternative route exists.	0		0
3	Supports Other Critical Assets	All	Asset supports a wastewater critical asset.	5	25	125
			Asset supports a critical water asset.	4		100
			Does not support a critical asset.	0		0
4	Disturbance to Traffic Flows	Economic	Traffic volume > 7,500 vpd.	5	10	50
			Traffic volume 3,000 to 7,500 vpd.	3		30
			Traffic volume < 3,000 vpd.	1		10
5	Environmental Effects	Environment	Loss of access to industry would impact the environment e.g. dumping milk.	5	5	25
			Loss of access to industry would not impact the environment.	0		0
6	Time to Restore Access	Social / Cultural Economic	Can be temporarily repaired within 48 hours.	1	5	5
			May take up to a week to restore access.	3		15

ID	Criteria Category	Well-Beings	Impact Potential	Sub Score	Weighting	Weighted Score
			May take longer than a week to restore access.	5		25
7	Risk to Human Life	Social / Cultural	Potential for serious injury or fatality.	5	10	50
			Potential for minor injury.	2		20
			No potential for harm.	1		10

Once the final score has been calculated the critical asset hierarchy can be determined as shown in Table Q-9. The critical asset hierarchy will be a key input that informs asset life-cycle decisions, especially when considering how much the Council should prolong the life of an asset.

Table Q-8: Critical Asset Hierarchy

Category	Description	Final Score
A	Primary	>200
B	Secondary	100-200
C	Non Critical	<100

APPENDIX R LEVELS OF SERVICE

R.1 Introduction

A key objective of this AMP is to match the level of service provided by the transportation activity with the agreed expectations of customers and their willingness to pay for that level of service. The levels of service provide the basis for the lifecycle management strategies and works programmes identified in the activity management plan.

The levels of service for transportation have been developed to contribute to the achievement of the stated Community Outcomes that were developed in consultation with the community, at the same time as taking into account:

- Council's statutory and legal obligations
- Council's policies and objectives
- the Council's understanding of what the community is able to fund
- Local Government Act's mandatory performance measures
- NZ Transport Agency's One Network Road Classification (ONRC).

R.2 Level of Service

Levels of service are attributes that the Council expects of its assets to deliver the required services to stakeholders.

A key objective of this plan is to clarify and define the levels of service for the transportation assets, and then identify and cost future operations, maintenance, renewal and development works required of these assets to deliver that service level. This requires converting user's needs, expectations and preferences into meaningful and measurable levels of service.

Levels of service can be strategic, tactical, operational or implementation and 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.

R.2.1. Industry Standards and Best Practice

The AMP acknowledges the Council's responsibility to act in accordance with the legislative requirements that impact on the Council's transportation activity. A variety of legislation affects the operation of these assets, as detailed in Appendix A.

R.2.2. Prioritisation due to Funding Constraints

Sometimes customers may expect levels of service that are beyond what the Council can afford as determined by the limits set in the Council's fiscal envelope. Consequently tradeoffs need to be made and the priority is given to the 'need to have' as opposed to the 'nice to have'. For example, expenditure that is considered necessary to enable an asset to continue perform in a cost-effective manner will be prioritised above an amenity improvement.

R.3 What Level of Service Do We Seek to Achieve?

Level of services need to be reviewed and upgraded on a continuous basis in line with legislative and regulatory changes, and feedback from customers, consultation, internal assessments, audits and strategic objectives, and funding availability.

The levels of service that the Council has adopted for this AMP have been developed from the levels of service prepared in previous versions of this AMP. They take in account feedback from various parties, including Audit New Zealand, mandatory performance measures, NZ Transport Agency requirements, industry best practice and ease of measuring and reporting of performance measures.

The Council has decided to reduce the number of levels of service reported in the LTP, showing only those that are considered to be customer focused. The AMP extends the levels of service and performance measures to include the more technical measures associated with the management of the activity.

Table R-1 details the levels of service and associated performance measures for the transportation activity. Those shaded are the customer focused measures which are included in the LTP. The table sets out the Councils' current performance and the targets for the next three years and by the end of the next 10 year period.

The levels of service and performance measures are consulted on and adopted as part of the LTP consultation process.

R.4 Levels of Service Linked to Legislation

In 2010, the Local Government Act 2002 was amended to require the Secretary for Local Government to make rules specifying non financial performance measures for local authorities to use when reporting to their communities. In November 2013 the Non-Financial Performance Measures Rules 2013 was signed and came into force on 30 July 2014. The mandatory performance measures relating to the transportation activity have been included in Table R-1.

R.5 One Network Road Classification

In 2014 the NZ Transport Agency adopted the One Network Road Classification (ONRC) process which requires all local road controlling authorities to report on standard performance measures. The NZ Transport Agency expects all road controlling authorities to align with the ONRC process and be in a position to report the performance measures for the 2018-19 financial year and beyond. In the meantime, the Council is required to prepare a transition plan to outline how it will measure and report on any new measures that are not currently assessed by the Council. Compliance with the ONRC process will become an essential pre-requisite for the Council to enable it to secure funding from the NZ Transport Agency.

The levels of service in Table R-1 have been grouped to align with the six categories of the ONRC framework. Key performance measures that align well with the Council's existing levels of service have been included. The improvement plan included in Appendix V outlines the transition plan which will cover how the Council will align with the remaining performance measures.

R.6 What Plans Have Council Made to Meet the Levels of Service

In preparing the future financial forecasts, the Council has included specific initiatives to meet the current or intended future levels of service.

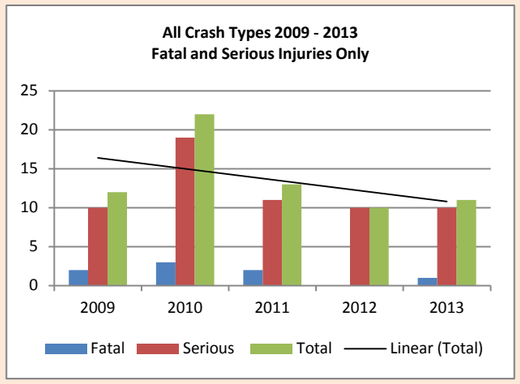
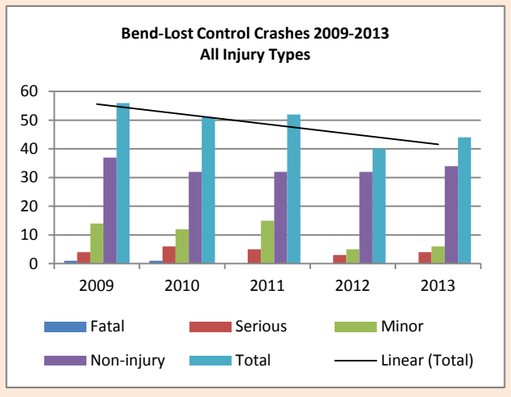
The Council is making a capital works investment of $80.7 million over the next 30 year period to upgrade existing transportation assets and improve levels of service. This includes the following projects:

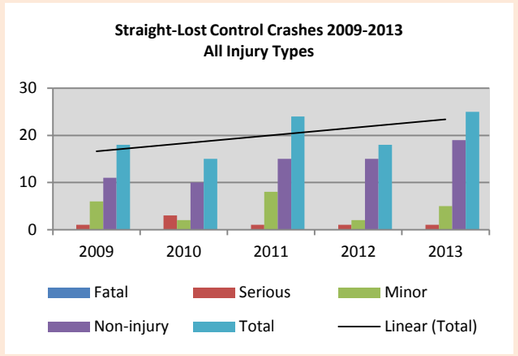
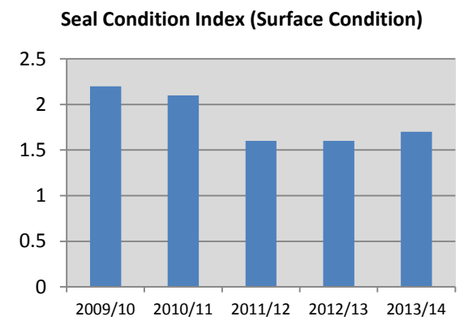
- district wide land purchase for road improvements;
- town centre renewals;
- various intersection and road improvements;
- Tasman Great Taste Trail construction;
- minor improvements;
- new footpaths.

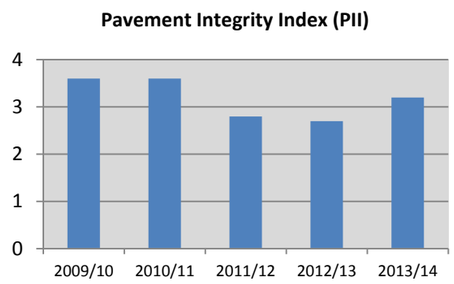
In addition to the capital works, the Council has allocated a budget of $272.5 million over the 30 year period for the operation and maintenance of its current and future transportation assets.

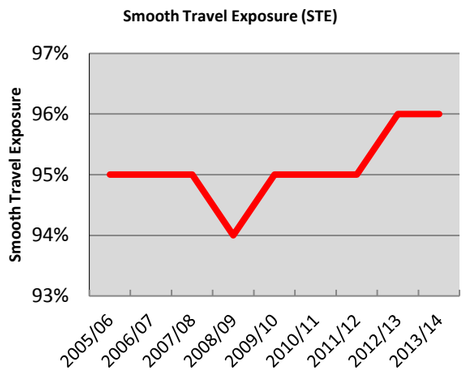
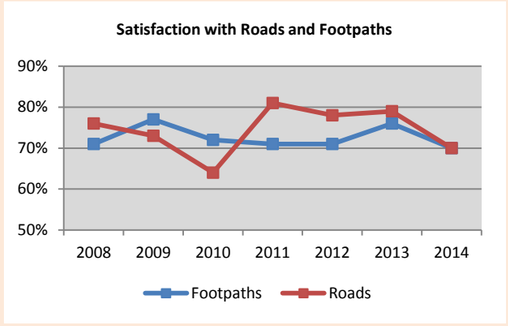
Table R-1 summarises the levels of service and performance measures for the transportation activity. Shaded rows are the levels of service and performance measures to be included in the Long Term Plan. Current performance is based on the 2013/14 financial year.

Table R-1: Performance against Current Levels of Service, and Intended Future Performance Targets

ID	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 2015/16	Year 2 2016/17	Year 3 2017/18	By Year 10 2024/25
Community Outcome: Our communities are healthy, safe, inclusive and resilient.							
1	**Safety** Our transportation network is becoming safer for its users.	There is a downward trend in the number of serious and fatal injury crashes occurring on our road network. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December. *ONRC Safety – OM1.*	**Actual = Decreasing** 	Decreasing	Decreasing	Decreasing	Decreasing
2		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. *LGA Mandatory Measure.*	**Actual = New measure**	-1	-1	-1	-1 per year
3		There is a decreasing number of loss of control crashes occurring on bends on our road network each year. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December.	**Actual = Decreasing** 	Decreasing	Decreasing	Decreasing	Decreasing

ID	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	By Year 10
				2015/16	2016/17	2017/18	2024/25
4	**Safety** Our transportation network is becoming safer for its users.	There is a decreasing number of loss of control crashes on straights on our road network each year. Measured using the NZ Transport Agency's crash database. The crash database is assessed annually on a calendar year basis, ie. 1 January to 31 December.	**Actual = Increasing** 	Decreasing	Decreasing	Decreasing	Decreasing
5	**Resilience** We proactively maintain roads in high risk areas to minimise unplanned road closures.	Specified sites that the Council considers to have a high risk of failure are inspected and attended to if necessary in response to severe weather warnings. Measured through the road maintenance contractor's monthly reports.	**Actual = New measure**	Sites are inspected in response to severe weather warnings at least 100% of the time			
6	**Accessibility** Our transportation network enables the community to choose from various modes of travel.	The Council constructs a minimum of 500 metres of new footpath each financial year to reduce the length of gaps in the existing footpath network Measured using RAMM inventory data and GIS mapping.	**Actual = New measure**	>=500m	>=500m	>=500m	>=500m per year
Community Outcome: Our infrastructure is efficient, cost-effective and meets current and future needs.							
7	**Value for Money** Our transportation network is maintained cost effectively and whole of life costs are optimised.	The Council maintains the Condition Index (CI) for sealed roads within the specified range. As reported through RAMM. CI is a measure of visual defects identified during Condition Rating inspections completed biennially (last completed 2013/14, next due 2015/16), and is calculated by RAMM based on the following defects: • alligator cracking; • ravelling; • potholes; • pothole patches; • flushing. The lower the CI, the better the condition. As a general rule, CI of 0 to 2 is considered excellent, 2 to 5 is considered good, and 5 to 10 is fair.	**Actual = 1.7 in 2013/14** 	1.7 to 2.1	1.7 to 2.1	1.7 to 2.2	1.8 to 2.5

<table>
<tr><th rowspan="2">ID</th><th rowspan="2">Levels of Service
(we provide)</th><th rowspan="2">Performance Measure
(we will know we are meeting the level of service if…)</th><th rowspan="2">Current Performance</th><th colspan="4">Future Performance Targets</th></tr>
<tr><th>Year 1
2015/16</th><th>Year 2
2016/17</th><th>Year 3
2017/18</th><th>By Year 10
2024/25</th></tr>
<tr><td>8</td><td rowspan="3">Value for Money
Our transportation network is maintained cost effectively and whole of life costs are optimised.</td><td>The Council maintains the Pavement Integrity Index (PII) within the specified range.
As reported through RAMM.
PII combines surface faults (CI) with structural defects rutting, roughness and shoving.
The lower the PII, the better the condition.</td><td>Actual = 3.2 in 2013/14
 
</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td><td>3.0 to 4.0</td></tr>
<tr><td>9</td><td>The percentage of sealed local road this is resurfaced each financial year.
LGA Mandatory Measure.</td><td>Actual = New measure</td><td>4.8%</td><td>4.8%</td><td>4.8%</td><td>6.9%</td></tr>
<tr><td>10</td><td>Travel Time
Our transportation network is managed so that changes to normal travel time patterns across the network are communicated effectively.</td><td>The Council communicates planned works programme and road closures to road users via the weekly road status report published on Council’s website.
Measured by tracking weekly website updates.
ONRC TTR – PM1.</td><td>Actual = New measure</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td>11</td><td rowspan="2">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.</td><td>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 (last completed 2013/14, next due 2016/17).
ONRC Safety – PM8.
LGA Mandatory Measure.</td><td>Actual = 94% as at May 2014
94.3% as at November 2010</td><td>N/A</td><td>>=90%</td><td>N/A</td><td>>=90%</td></tr>
<tr><td>12</td><td>The average ride comfort level of the sealed road network meets specified levels.
As measured by biennial Roughness survey (last completed 2013/14, next due 2015/16) and reported through RAMM.
ONRC Amenity – OM2.</td><td>Actual = 2013/14 average roughness in table:
<table>
<tr><th>Classification</th><th>Urban</th><th>Rural</th><th>All Roads</th></tr>
<tr><td>Arterial</td><td>65</td><td>74</td><td>73</td></tr>
<tr><td>Primary Collector</td><td>67</td><td>84</td><td>75</td></tr>
<tr><td>Secondary Collector</td><td>81</td><td>94</td><td>87</td></tr>
<tr><td>Access</td><td>90</td><td>107</td><td>98</td></tr>
<tr><td>Access (LV)</td><td>110</td><td>104</td><td>105</td></tr>
</table></td><td colspan="4">Arterial <= 100 NAASRA
Primary Collector: Urban <= 110, Rural <= 100 NAASRA
Secondary Collector <= 110 NAASRA
Access <= 120 NAASRA
Access (LV) <= 140 NAASRA</td></tr>
</table>

ID	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	By Year 10
				2015/16	2016/17	2017/18	2024/25
13	**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 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: **Urban Roads** **Vehicles per Day** / **Roughness (NAASRA)** <500 / <=180 500-3,999 / <=150 4,000-9,999 / <=120 >=10,000 / <=110 **Rural Roads** **Vehicles per Day** / **Roughness (NAASRA)** <1,000 / <=150 >=1,000 / <=130 As reported through RAMM, based on traffic count and roughness survey data. *ONRC Amenity – OM2.* *LGA Mandatory Measure.*	**Actual = 96% for 2013/14** 	>=95%	>=95%	>=95%	>=93%
14		Residents are satisfied with the Council's roads and footpaths in the District. As measured through the annual Communitrak residents survey.	**Actual =** From Communitrak™ residents' survey undertaken in May 2014: • Footpaths =70%, • Roads = 70% 	Footpaths >=70% Roads >=70%	Footpaths >=70% Roads >=70%	Footpaths >=70% Roads >=70%	Footpaths >=70% Roads >=70%
15		Customer Service Requests relating to the transportation network and activities are completed on time. 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). *ONRC Safety – PM7.* *LGA Mandatory Measure.*	**Actual =** 2013/14 percentage of Customer Service Requests were completed on time: • Maintenance Contractor = 94% • Council Staff = 76%	>=90%	>=90%	>=90%	>=90%

APPENDIX S COUNCIL'S DATA MANAGEMENT, ASSET MANAGEMENT PROCESSES AND SYSTEMS

S.1 Introduction

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 standards. The IIMM describes the Asset Management (AM) process as a step-by-step process applied to an activity or network level, to manage assets from planning to disposal or renewal. This process is shown in Figure S-1.

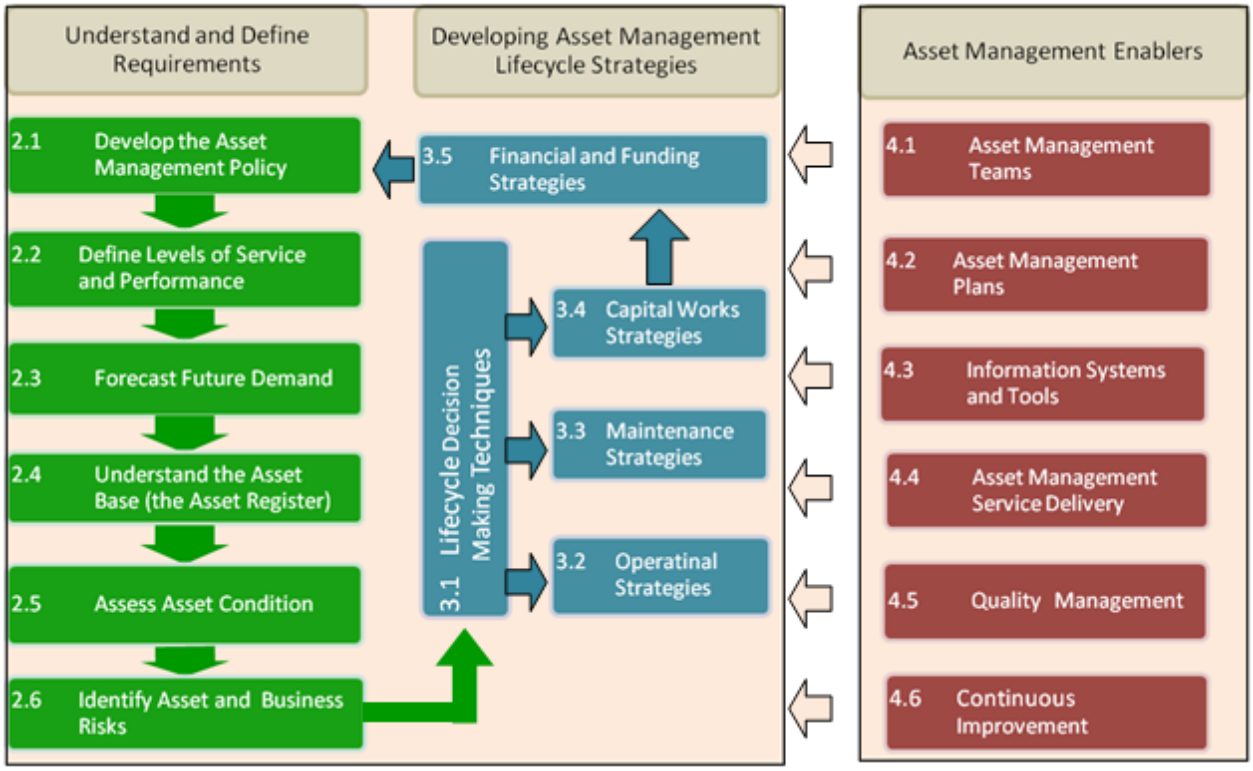


Figure S-1: The Asset Management Process (from IIMM 2011)

S.2 Understand and Define Requirements

This phase determines what service levels are required and how future demand might change over time, as well as the current assets' capability to deliver on those requirements.

S.2.1. Develop the Asset Management Policy

The Asset Management policy framework guides the organisation in terms of priorities and strategies, and sets out specific responsibilities, objectives, targets and plans. The Council has approached this by determining the desired and actual levels of asset management practice, and identifying the gaps between them for future improvement.

S.2.2. Appropriate Level of Asset Management Practice

The level of Asset Management expected can differ between activities. The IIMM defines the standards of the Activity Management Plans (AMPs) on a scale as follows:

- Minimum — Starting point
- Core — Basic
- Intermediate — Transition between Core and Advanced
- Advanced — Most thorough

In 2010, Waugh Infrastructure Management Ltd undertook a review of these levels and advised on target levels. A range of parameters (including population, issues affecting the district, costs and benefits to the community, legislative requirements, size, condition and complexity of assets, risk associated with failure, skills and resources available, and customer expectation) was assessed to determine the most suitable level of asset management.

The results showed that the Council should be managing its assets at the following levels:

- Transportation — Intermediate with demand management and resource availability drivers
- Stormwater, Water, Wastewater — Intermediate with demand and risk management drivers
- Solid Waste — Core with risk management drivers
- Rivers — Core
- Coastal Structures — Core (future reassessment may be required)

S.2.3. Determine the Actual Level of Asset Management Practice and Identify Gaps

The Council underwent a process at the end of the 2009 AMP to undertake a high level review of the AMPs and associated activity management processes against good practice asset management as described in the IIMM and in accordance with the Office of Auditor General. During this process, the AMP and associated practices were scored to give a snapshot of the current status and then set targets as to where the Council wished to head. The 2009 AMP Improvement Plan was assessed in its effectiveness to close the gap between actual and target compliance levels and new items added to the Improvement Plan where gaps were identified.

The results of the review are detailed in a separate report (Performance Review of Transportation Activity Management Processes, MWH New Zealand Ltd February 2010).

The two reviews described above were carried out independently of each other however the outputs from both were compared to ensure consistency of recommendations. Whilst both reviews focused on slightly different aspects of asset management practice, there was no conflict between the recommendations made.

This work is now somewhat dated as the AMPs have changed substantially since 2009. This area will be renewed following development of the LTP.

Table S-1 below shows analysis undertaken to link the two reviews to identify the compliance gaps and actions that should be undertaken to address them.

Table S-1: Analysis of Transportation Asset Management Reviews

Activity Management Area	Intermediate	Compliance Status	Compliance Gaps to address to meet Intermediate *(to be updated following peer review)*
Description of Assets	Advanced	Substantially Compliant	**Action:** Improve description of assets in the AMP.
Levels of Service (LoS)	Core (plus Evaluated LoS Options)	Higher level of compliance than suggested	There is substantial communication of LoS with the public. However, the LoS options are not evaluated. This is unlikely to be taken further.
Managing Growth	Advanced	Substantially Compliant	**Action:** A study should be undertaken to determine the impacts of growth on the roading activity. This has already been recommended.
Risk Management	Intermediate	Compliant	**Action:** Identify critical assets in AMP document.
Lifecycle Decision Making	Advanced	Compliant	**Action:** Additional information on decision making processes to be included in AMP document.
Financial Forecasts	Advanced (with the exception of sensitivity testing of forecasts)	Compliant	No plans to undertake sensitivity testing of forecasts.
Planning Assumptions and Confidence Levels	Advanced	Compliant	No further action required.
Outline Improvement Programmes	Advanced	Substantially Compliant	**Action:** Identify timeframes and resources for Improvement Plan actions.
Planning by Qualified Persons	Advanced	Substantially Compliant	**Action:** Peer reviews of AMP to be arranged.
Commitment	Advanced	Substantially Compliant	**Action:** More emphasis and commitment needed to Improvement Plan.

S.2.4. Define Levels of Service and Performance

The Level of Service and Performance Management frameworks will ensure that agreed stakeholder requirements are met. Levels of service, performance measures, and relationship to community outcomes are detailed in Appendix R.

S.2.5. Forecast Future Demand

Understanding how future demand for service will change enables the Council to plan ahead to meet that demand. Demand and future new capital requirements are dealt with in Appendix F.

S.2.6. Understand the Asset Base (the Asset Register)

A robust asset register is a core requirement for asset management.

Data on the Council assets is collected via as-built plans (supplied through capital works and subdivision), maintenance contract work and field studies. Two enterprise asset systems are used to record core data:

- RAMM – Transportation excluding Streetlights;
- Confirm – Stormwater, Water, Wastewater, Solid Waste, Rivers, Coastal Structures, Streetlights.

Most data sets can be viewed on the corporate GIS browser, Explore Tasman. Reporting systems summarise data for management and performance reporting, and for providing links between asset management systems and GIS / financial systems. Several other standalone applications exist for specific purposes.

The Asset Register and other information systems are described more comprehensively in Section S.4.3.

S.2.7. Assess Asset Condition

The Council needs to understand the current condition of its assets. Monitoring programmes should be tailored to consider how critical the asset is, how quickly it is likely to deteriorate, and the cost of data collection.

Collection of asset condition data is discussed in Appendix B.

S.2.8. Identify Asset and Business Risks

A key process is assessing critical assets and risks. This feeds into all lifecycle decision making processes.

S.2.9. Asset Risks - Critical Assets

A draft critical asset assessment framework has been prepared for transportation assets. The development and implementation of the framework is discussed in Appendix Q.

S.2.10. Business Risks

The Council has developed an Integrated Risk Management framework to manage risks, both at corporate and activity level. This is detailed in Appendix Q.

S.3 Developing Asset Management Lifecycle Strategies

S.3.1. Lifecycle Decision Making Techniques

The lifecycle decision phase looks at how best to deliver on the requirements by applying various decision-making techniques, strategies and plans. These are discussed in separate appendices as listed below.

S.3.2. Operational Strategies and Plans

Demand management strategies (reducing overall demand and / or reducing peak demands) are covered in Appendix N.

Emergency management processes are covered in Appendix Q.

S.3.3. Maintenance Strategies and Plans

Optimised maintenance programmes are dealt with in Appendix E.

S.3.4. Capital Works Strategies

Forecast growth and demand and new asset investment programming are detailed **in** Appendix F.

Optimised renewal programmes and asset investment programmes are covered in Appendix I.

S.3.5. Financial and Funding Strategies

A robust, long-term financial forecast is developed as the culmination of this phase, which identifies strategies to fund these programmes. This section covers how the resource demand of asset management can be identified, disclosed and funded.

The following appendices hold this information:

- Appendix D – Asset Valuations
- Appendix G – Development Contributions / Financial Contributions
- Appendix K – Public Debt and Annual Loan Servicing Costs
- Appendix L – Summary of Future Overall Financial Requirements
- Appendix M – Funding Policy, Fees and Charges

S.4 Asset Management Enablers

Underpinning asset management decision-making at each stage are the following.

S.4.1. Asset Management Teams

The Council has an organisational structure and capability that supports the asset management planning process. Responsibility for asset planning across the lifecycle is delivered by teams within the Council as shown by Figure S-2 below.

Corporate and Strategic Planning is performed by the Strategic Policy team in the Community Services Department.

The Asset Management function is managed by the Engineering Department's Activity Planning team. Operations are the responsibility of the Utilities and Transportation teams, while Projects and Contracts are managed by the Programme Delivery team.

Physical works are externally tendered. Professional services are supplied by external consultants. Details are discussed in Section 4.4.

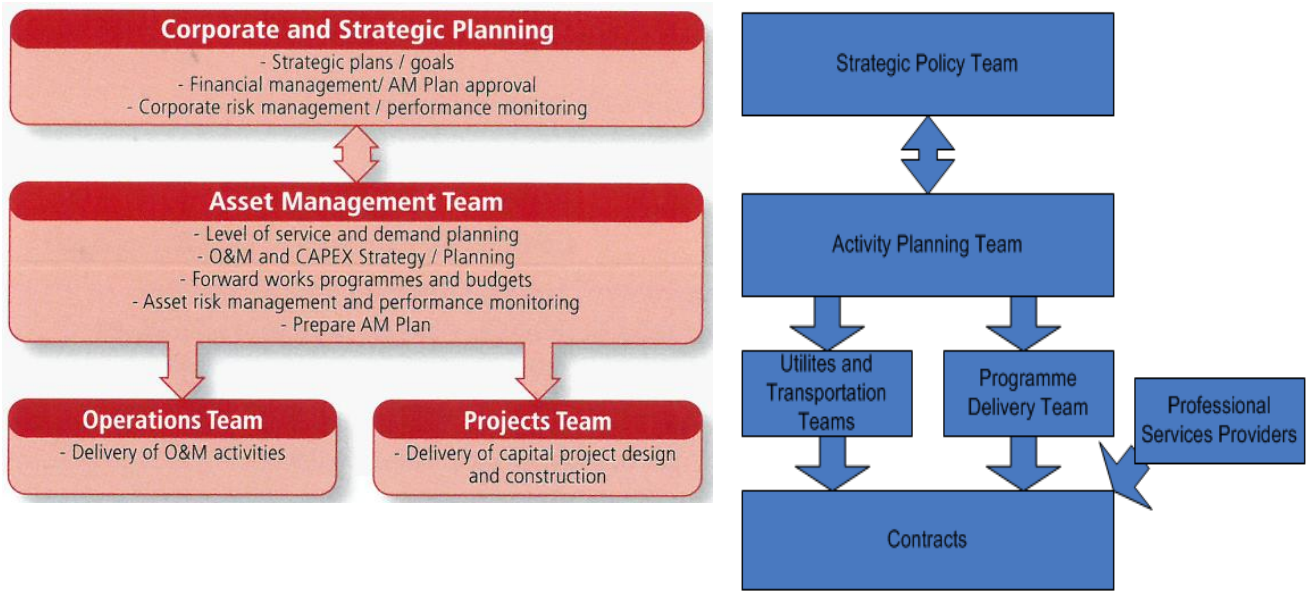


Figure S-2: Asset Management Team Roles

S.4.2. Asset Management Plans

Asset management plans need to be robust and set out clear future strategies and programmes. This document is a key part of the asset management process and will be updated on a regular basis in between AMP planning cycles.

S.4.3. Information Systems and Tools

The 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 optimal asset programmes. These are detailed below in Figure S-3. 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 S-3 shows how the various systems used in Council inter-relate.

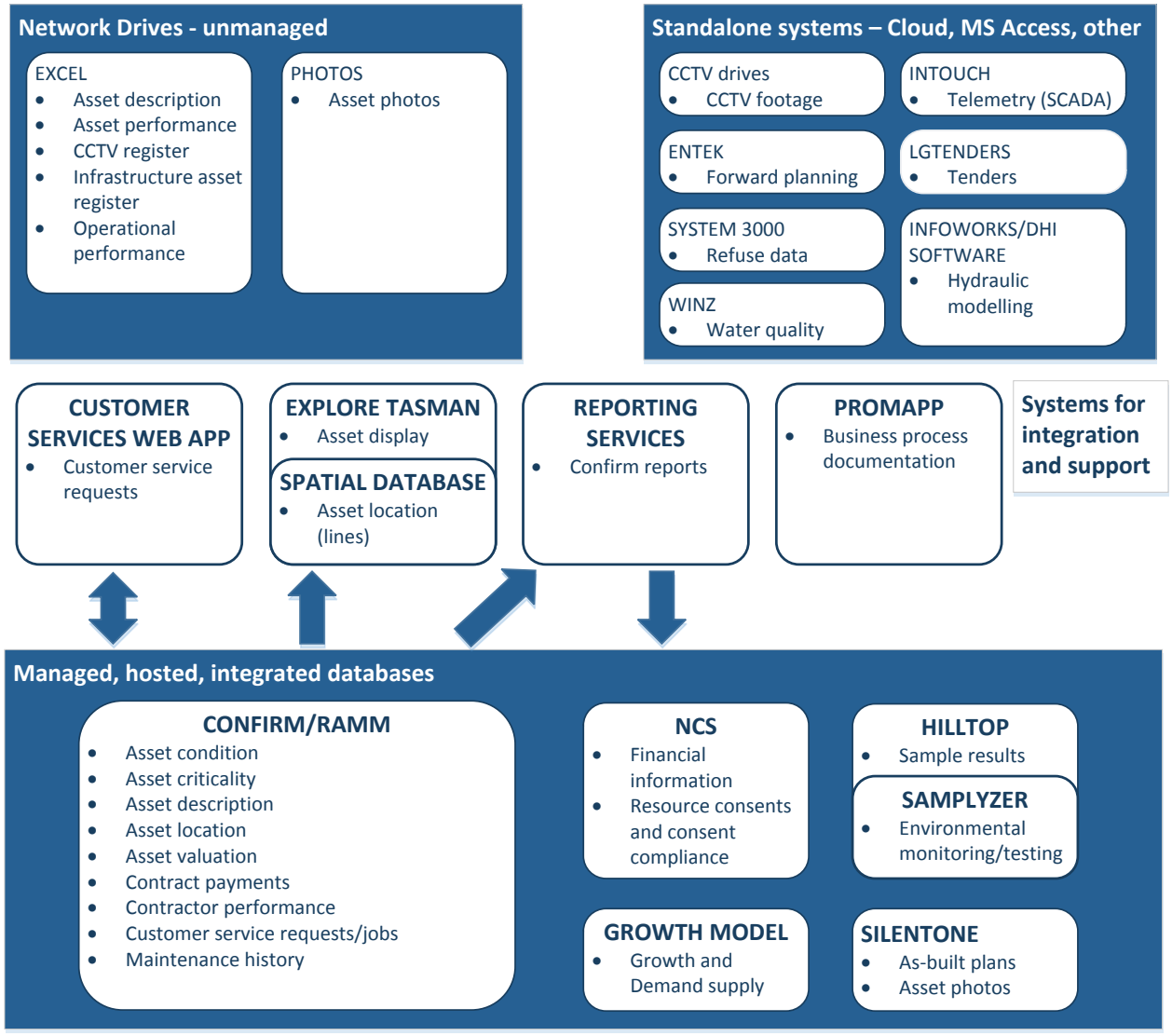


Figure S-3: Systems Used for Asset Management

Table S-3 summarises the various data types, data source and how they are managed within the Council. It also provides a grading on data accuracy and completeness where appropriate.

Table S-2: Data Types and Information Storage 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
Asset condition	Confirm / RAMM	See discussion in section S2.5	2	3
Asset criticality	Confirm / RAMM	See section S2.6.1 Asset Risks - Critical assets	N/A	N/A
Asset description	Confirm / RAMM	All Assets are captured in RAMM, apart from Streetlight assets which are recorded in Confirm.	2	2
Asset location	Confirm (point data) / GIS (line data) / RAMM	RAMM stores locations mainly as distance from road start along the centreline. For Streetlights, this is held in Confirm co-ordinates (NZTM).	2	2
Asset valuation	Confirm / RAMM	Valuation of assets done based on data in Confirm (Streetlights) and RAMM (rest of Transportation assets).	2	2
Corridor Access Requests	Entek T3	Road opening applications are currently managed in T3.	N/A	N/A
Contract payments	Confirm / RAMM	All maintenance contract payments are done through Confirm. Data on expenditure is extracted and uploaded to NCS. For Streetlights, this is done through Confirm's Maintenance Management module.	N/A	N/A
Contractor performance	Confirm / RAMM	Time to complete jobs is measured against contract KPIs through RAMM Reporting. For Streetlights, this is done through Confirm's Maintenance Management module.	N/A	N/A
Corporate GIS browser	Explore Tasman	Selected datasets are made available to all the 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	The 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 / RAMM and imported into NCS for financial tracking of budgets.	N/A	N/A
Infrastructure Asset	Spreadsheet	High level financial tracking spreadsheet for monitoring asset addition,	2	2

Data Type	Information System	Management Strategy	Data Accuracy	Data Completeness
Register		disposals and depreciation. High level data is checked against detail data in the AM system and reconciled when a valuation is performed.		
Forward planning	Entek TPM (Time and space Project Management)	Forward programmes for the Council activities, and reseal / footpath renewal programmes, are uploaded to TPM in order to identify clashes and opportunities. The strength of this module relied on buy in from Utilities Companies and Local Contractors (neither of which occurred).	N/A	N/A
Growth and Demand Supply	Growth Model	A series of linked processes that underpin the Council's long term planning, by predicting expected development areas, revenues and costs, and estimating income for the long term.	2	2
Maintenance history	Confirm / RAMM	Contractor work is issued via RAMM Contractor module. Maintenance history is available from 2009 on. For Streetlights – done in Confirm, history maintained from 2006.	2	2
Photos	Network drives / SilentOne	Electronic photos of assets are mainly stored on the 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 the 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	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 S-4 defines the accuracy and completeness grades applied to asset data in Table S-3.

Table S-3: Asset Data Accuracy and Completeness Grades

Grade	Description	% Accurate
1	Accurate	100
2	Minor inaccuracies	± 5
3	50% estimated	± 20
4	Significant data estimated	± 30
5	All data estimated	± 40

Grade	Description	% Complete
1	Complete	100
2	Minor gaps	90 – 99
3	Major gaps	60 – 90
4	Significant gaps	20 – 60
5	Limited data available	0 – 20

S.4.4. Asset Management Service Delivery

The Council has opted to tender capital works and operations and maintenance externally to obtain more cost-effective service delivery.

The Council has adopted effective procurement strategies, such that asset management activities are being delivered in the most cost-effective way (value for money rather than lowest cost).

S.4.4.1 *Procurement Strategy*

The Council has a formal Procurement Strategy for its engineering services. 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 has been 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.

The Council's objectives are to:

- implement policies and financial management strategies that advance the Tasman District;
- ensure sustainable management of natural and physical resources, and security of environmental standards;
- sustainably manage infrastructure assets relating to Tasman District;
- enhance community development and the social, natural, cultural and recreational assets relating to Tasman District;
- promote sustainable economic development in the Tasman District.

The Council has recently implemented a procurement and tender award governance gateway process. This is shown in Figure S-4 below.

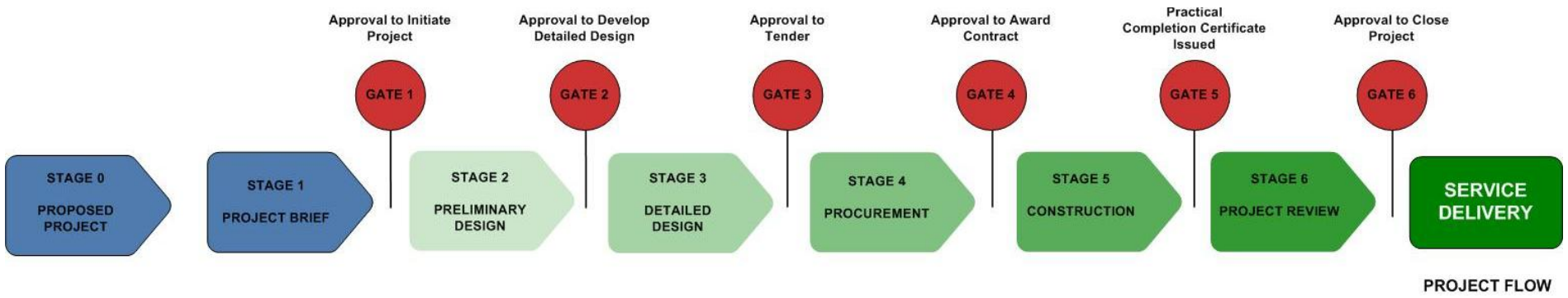


Figure S-4: Gateway Process for Project Delivery

At the Approval to Tender gate (Gate 3), the Tender Evaluation Team:

1. Carefully reviews the specifications, drawings, detailed design.
2. Reviews estimate against allocated budget and checks availability of funds.
3. Assesses/reviews project-specific risks and critical success factors.
4. Selects the evaluation method (supplier panel or direct to market; Price/Quality, Lowest Price Conforming, Weighted Attributes, Target Price, Brooks Law, etc) – check best suited to project's scope and risk levels.
5. Checks peer review of design.
6. Checks status of required consents and land issues.
7. Reviews Price/ Non-Price weightings, risk review and quality premium they are prepared to pay.
8. Reviews attributes (including pass/ fail and/ or weightings) and targeted questions in RFT to check for relevance to project-specific success factors and differentiators.
9. Reviews the response period (relative to RFT requirements) to ensure there is sufficient time for quality responses.

At the Approval to Award gate (Gate 4), the Programme Delivery Manager:

1. Reviews the tender process to check relevance/ effectiveness.
2. Reviews the recommendation.
3. Checks if Tender Panel approval is required.
4. Awards the Contract.

S.4.4.2 *Professional Services Contract*

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. There is also a need to access specialist skills for design, planning and policy to support the in-house management of the Council's networks, operations and maintenance.

To achieve this the 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 the Council's infrastructure professional services programmes. The contract was awarded to MWH New Zealand Ltd following a six month tender selection process and commenced on 1 July 2014 with an initial three-year term and two three-year extensions to be awarded at the Council's sole discretion.

S.4.5. Quality Management

Table S-5 outlines quality management approaches that support the Council's asset management processes and systems.

Table S-4: Quality Management Approaches

Activity	Description
Process documentation	This is being phased in across the Council with the implementation of Promapp. Over time business units are capturing organisational knowledge in an area accessible to all staff, 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.
Quality Management systems	Tasman District Council does not have a formal Quality Management system across the Council; quality is ensured by audits and checks that are managed in individual teams. Quality checks are done at many stages throughout the Asset Management process.
Planning	The planning process is formalised across the Council, with internal reviews and the Council approval stages. Following completion of the AMPs, a peer review is done. From that a comprehensive Improvement Plan is drawn up. Actions are discussed at regular meetings and progress noted. These will be incorporated into the following round of AMPs.
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 the Council, so that defects can be repaired.
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.
Asset performance	Audits of reticulation flows are done regularly to ensure that system performance is optimal.

Activity	Description
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 linked to financial penalties for the contractor.
Levels of Service	Key performance indicators are reported regularly in Engineering Services Committee meetings and then again annually and audited by the Office of the Auditor General.
Customer Service Requests (CSRs)	Asset based CSRs (in Confirm and RAMM) are checked monthly for outstanding items via a customised report that is e-mailed to staff for action. Non-asset based CSRs (in NCS) are checked for compliance weekly at Senior Management Teams, via a dashboard reporting system.
Reports to Council	All reports that are presented to the Council are reviewed and edited by the Executive Assistant prior to approval by the Engineering Manager and the Senior Management Team.

S.4.6. Continuous Improvement

Processes are in place to monitor the adequacy, suitability and effectiveness of all asset management planning activities to drive a continuous cycle of review, corrective action and improvement. These are covered in Appendix V: Improvement Programme.

APPENDIX T BYLAWS

The following bylaws have been adopted by the Council:

- **Consolidated Bylaws 2013 – Introduction***
- Control of Liquor in Public Places 2012
- Dog Control Bylaw 2014
- Freedom Camping Bylaw 2011
- Freedom Camping (Motueka Beach Reserve) Bylaw 2013
- Navigation Safety Bylaw 2014
- **Speed Limits Bylaw 2013***
- **Stock Control and Droving Bylaw 2005***
- Wastewater Bylaw 2015
- **Trading in Public Places Bylaw 2010***
- **Traffic Control Bylaw 2013***
- Water Supply Bylaw 2009.

In accordance with the Local Government Act 2002, these bylaws will be reviewed no later than 10 years after they was last reviewed.

***Bylaws of direct relevance in to this activity.**

APPENDIX U STAKEHOLDERS AND CONSULTATION

U.1 Stakeholders

There are many individuals and organisations that have an interest in the management and/or operation of the Council's assets. The Council has a Community Engagement Policy which is designed to guide the expectations with the relationship between the Council and the Tasman community. The 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 the 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 the Council consults with about the transportation activity are:

- elected members (Councillors and Community Board members);
- New Zealand Transport Agency;
- Iwi/Maori (Tiakina te Taiao and Manawhenua ki Mohua, iwi monitors);
- 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);
- affected or interested parties (when applying for resource consents);
- neighbours.

U.2 Consultation

U.2.1. Purpose of Consultation and Types of Consultation

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

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

- feedback from surveys;
- 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 process.

The Council commissions customer surveys on a regular basis, every year since 2008, from the National Research Bureau Ltd[1]. These Communitrak™ surveys assess the levels of satisfaction with key services, including transportation services and the willingness across the community to pay to improve services.

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

U.2.2. Consultation Outcomes

The most recent NRB Communitrak™ survey was undertaken in May 2014. This asked whether residents were satisfied with roads, footpaths and public transport in their local town.

U.2.2.1 *Roads*

Figure U-1 shows that 70% of residents are satisfied with roading in the district. This shows a decrease from the previous year's survey, however the long term trend is increasing slightly. This level of satisfaction is slightly lower than the Peer Group average of 72%, and lower than the national average of 76%.

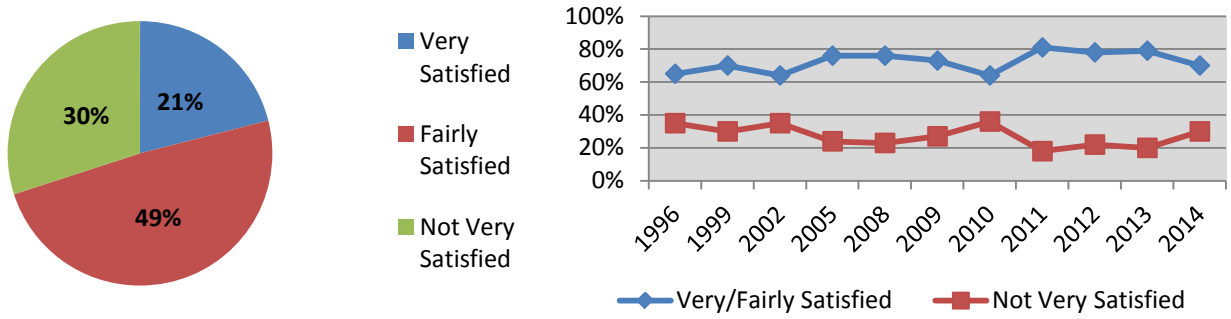


Figure U-1: Satisfaction with Roading and Services Provided

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

- poor condition / need upgrading / improving;
- potholes / uneven / rough / bumpy;
- poor quality of work / materials used / patching unfinished;
- lack of maintenance / slow to maintain.

When asked whether they would like more, less or about the same to be spent on roading, given that the Council cannot spend more without increasing rates, 34% said they would like to see more spent.

[1] Communitrak™: Public Perceptions and Interpretations of Council Services / Facilities and Representation, NRB Ltd May 2014.

U.2.2.2 *Footpaths*

Figure U-2 shows that 70% of residents are satisfied with footpaths in the district. This shows a decrease from the previous year's survey; however the long term trend is increasing slightly. This level of satisfaction is higher than the Peer Group average of 67%, but lower than the national average of 74%.

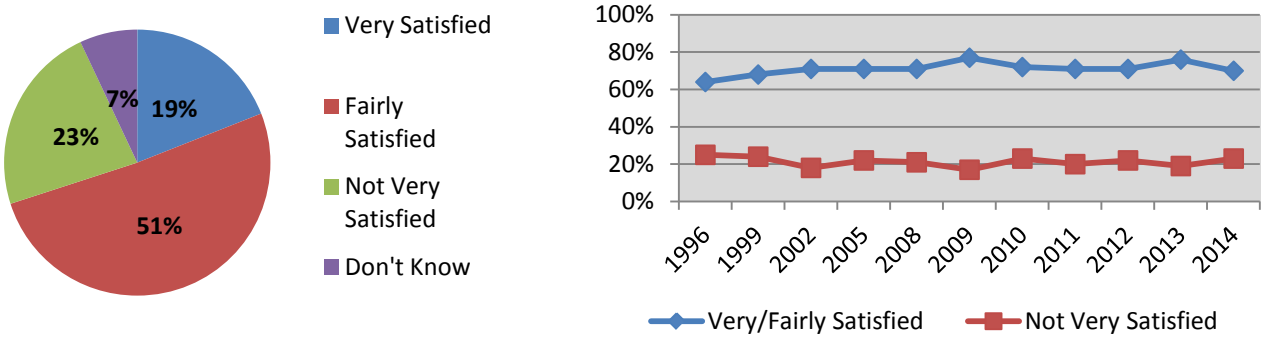


Figure U-2: Satisfaction with Footpaths

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

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

When asked whether they would like more, less or about the same spent on footpaths, given that the Council cannot spend more without increasing rates, 33% said they would like to see more spent.

U.2.2.3 *Public Transport*

Figure U-3 shows that 32% of residents are satisfied with public transport in the district. This is a new measure so a long-term trend cannot be identified and there are no comparative Peer Group or National averages for this service.

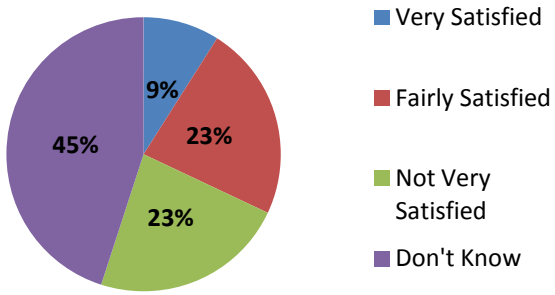


Figure U-3: Satisfaction with Public Transport

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 the Council cannot spend more without increasing rates, 30% said they would like to see more spent.

APPENDIX V IMPROVEMENT PLAN

To be provided in final document.

APPENDIX W ASSET DISPOSALS

W.1 Asset Disposal Strategy

The 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 followings 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 situation assets are replaced at the end of their useful life and are generally in poor physical condition. Consequently, the asset with 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 the 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 the Council aims to obtain the best available return from the sale and any net income will be credited to that activity. The Council follows practices that comply with the relevant legislative requirements for local government when selling off assets.

W.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 the Council is required to follow a very prescriptive legislative process which includes public notification.

W.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 maintenance 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 the Council and the adjacent property owner before the terms of the transfer can be agreed.

The 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. This has been included as an action in the transportation improvement plan, refer to Appendix V.

APPENDIX X GLOSSARY OF ASSET MANAGEMENT TERMS

Acronyms and Abbreviations

AMP	Activity Management Plan
LGA	Local Government Act
LTP	Long Term Plan
NZTA	NZ Transport Agency
TRMP	Tasman Regional Management Plan

Term	Description
Activity	An activity is the work undertaken on an asset or group of assets to achieve a desired outcome.
Activity Management Plan (AMP)	Activity Management Plans are key strategic documents that describe all aspects of the management of assets and services for an activity. The documents feed information directly in the Council's LTP, and place an emphasis on long term financial planning, community consultation, and a clear definition of service levels and performance standards.
Advanced Asset Management	Asset management that employs predictive modelling, risk management and optimised renewal decision-making techniques to establish asset lifecycle treatment options and related long term cash flow predictions. (See Basic Asset Management).
Annual Plan	The Annual Plan provides a statement of the direction of Council and ensures consistency and co-ordination in both making policies and decisions concerning the use of Council resources. It is a reference document for monitoring and measuring performance for the community as well as the Council itself.
Asset	A physical component of a facility that has value enables services to be provided and has an economic life of greater than 12 months.
Asset Management (AM)	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.
Asset Management System (AMS)	A system (usually computerised) for collecting analysing and reporting data on the utilisation, performance, lifecycle management and funding of existing assets.
Asset Management Plan	A plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost-effective manner to provide a specified level of service. A significant component of the plan is a long-term cash flow projection for the activities.
Asset Management Strategy	A strategy for asset management covering, the development and implementation of plans and programmes for asset creation, operation, maintenance, renewal, disposal and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved at optimum cost.

Term	Description
Asset Register	A record of asset information considered worthy of separate identification including inventory, historical, financial, condition, construction, technical and financial information about each.
Basic Asset Management	Asset management which relies primarily on the use of an asset register, maintenance management systems, job/resource management, inventory control, condition assessment and defined levels of service, in order to establish alternative treatment options and long term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than risk analysis and optimised renewal decision making).
Benefit Cost Ratio (B/C)	The sum of the present values of all benefits (including residual value, if any) over a specified period, or the life cycle of the asset or facility, divided by the sum of the present value of all costs.
Business Plan	A plan produced by an organisation (or business units within it) which translate the objectives contained in an Annual Plan into detailed work plans for a particular, or range of, business activities. Activities may include marketing, development, operations, management, personnel, technology and financial planning.
Capital Expenditure (CAPEX)	Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of an asset.
Condition Monitoring	Continuous or periodic inspection, assessment, measurement and interpretation of resulting data, to indicate the condition of a specific component so as to determine the need for some preventive or remedial action
Critical Assets	Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets.
Current Replacement Cost	The cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset.
Deferred Maintenance	The shortfall in rehabilitation work required to maintain the service potential of an asset.
Demand Management	The active intervention in the market to influence demand for services and assets with forecast consequences, usually to avoid or defer CAPEX expenditure. Demand management is based on the notion that as needs are satisfied expectations rise automatically and almost every action taken to satisfy demand will stimulate further demand.
Depreciated Replacement Cost (DRC)	The replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset.
Depreciation	The wearing out, consumption or other loss of value of an asset whether arising from use, passing of time or obsolescence through technological and market changes. It is accounted for by the allocation of the historical cost (or revalued amount) of the asset less its residual value over its useful life.
Disposal	Activities necessary to dispose of decommissioned assets.

Term	Description
Economic Life	The period from the acquisition of the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a particular level of service. The economic life is at the maximum when equal to the physical life however obsolescence will often ensure that the economic life is less than the physical life.
Facility	A complex comprising many assets (eg. swimming pool complex, etc.) which represents a single management unit for financial, operational, maintenance or other purposes.
Geographic Information System (GIS)	Software which provides a means of spatially viewing, searching, manipulating, and analysing an electronic database.
Infrastructure Assets	Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components. The network may include normally recognised 'ordinary' assets as components.
I.M.S.	Infrastructure Management System - computer database
Level of Service (LoS)	The defined service quality for a particular activity (ie. water) or service area (ie. Water quality) against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost.
Life	A measure of the anticipated life of an asset or component; such as time, number of cycles, distance intervals etc.
Life Cycle	Life cycle has two meanings. • The cycle of activities that an asset (or facility) goes through while it retains an identity as a particular asset ie. from planning and design to decommissioning or disposal. • The period of time between a selected date and the last year over which the criteria (eg. costs) relating to a decision or alternative under study will be assessed.
Life Cycle Cost	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
Life Cycle Maintenance	All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal.
Long Term Plan (LTP)	The Long Term Plan is the primary strategic document through which Council communicates its intentions over the next 10 years for meeting community service expectations and how it intends to fund this work. The LTP is a key output required of Local Authorities under the Local Government Act 2002. The LTP replaces the Long Term Council Community Plan (LTCCP).
Maintenance Plan	Collated information, policies and procedures for the optimum maintenance of an asset, or group of assets.

Term	Description
Objective	An objective is a general statement of intention relating to a specific output or activity. They are generally longer-term aims and are not necessarily outcomes that managers can control.
Operation	The active process of utilising an asset which will consume resources such as manpower, energy, chemicals and materials. Operation costs are part of the life cycle costs of an asset.
Optimised Renewal Decision Making (ORDM)	An optimisation process for considering and prioritising all options to rectify performance failures of assets. The process encompasses NPV analysis and risk assessment.
Performance Indicator (PI)	A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.
Performance Monitoring	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.
Planned Maintenance	Planned maintenance activities fall into three categories. • Periodic – necessary to ensure the reliability or sustain the design life of an asset. • Predictive – condition monitoring activities used to predict failure. • Preventive – maintenance that can be initiated without routine or continuous checking (eg. using information contained in maintenance manuals or manufacturers' recommendations) and is not condition-based.
Recreation	Means voluntary non-work activities for the attainment of personal and social benefits, including restoration (recreation) and social cohesion.
Rehabilitation	Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally involves repairing the asset using available techniques and standards to deliver its original level of service without resorting to significant upgrading or replacement.
Renewal	Works to upgrade, refurbish, rehabilitate or replace existing facilities with facilities of equivalent capacity or performance capability.
Renewal Accounting	A method of infrastructure asset accounting which recognises that infrastructure assets are maintained at an agreed service level through regular planned maintenance, rehabilitation and renewal programmes contained in an asset management plan. The system as a whole is maintained in perpetuity and therefore does not need to be depreciated. The relevant rehabilitation and renewal costs are treated as operational rather than capital expenditure and any loss in service potential is recognised as deferred maintenance.
Repair	Action to restore an item to its previous condition after failure or damage.
Replacement	The complete replacement of an asset that has reached the end of its life, so as to provide a similar or agreed alternative, level of service.

Term	Description
Remaining Economic Life	The time remaining until an asset ceases to provide service level or economic usefulness.
Risk Cost	The assessed annual cost or benefit relating to the consequence of an event. Risk cost equals the costs relating to the event multiplied by the probability of the event occurring.
Risk Management	The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.
Routine Maintenance	Day to day operational activities to keep the asset operating (eg. replacement of light bulbs, cleaning of drains, repairing leaks) and which form part of the annual operating budget, including preventative maintenance.
Service Potential	The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset.
Strategic Plan	Strategic planning involves making decisions about the long term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long term survival, value and growth of the organisation.
Unplanned Maintenance	Corrective work required in the short term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.
Upgrading	The replacement of an asset or addition/ replacement of an asset component which materially improves the original service potential of the asset.
Valuation	Estimated asset value that may depend on the purpose for which the valuation is required, ie. replacement value for determining maintenance levels or market value for life cycle costing.

APPENDIX Y DISTRICT MAINTENANCE AND CONTRACT ZONE MAP

Y.1 Network Maintenance Zones

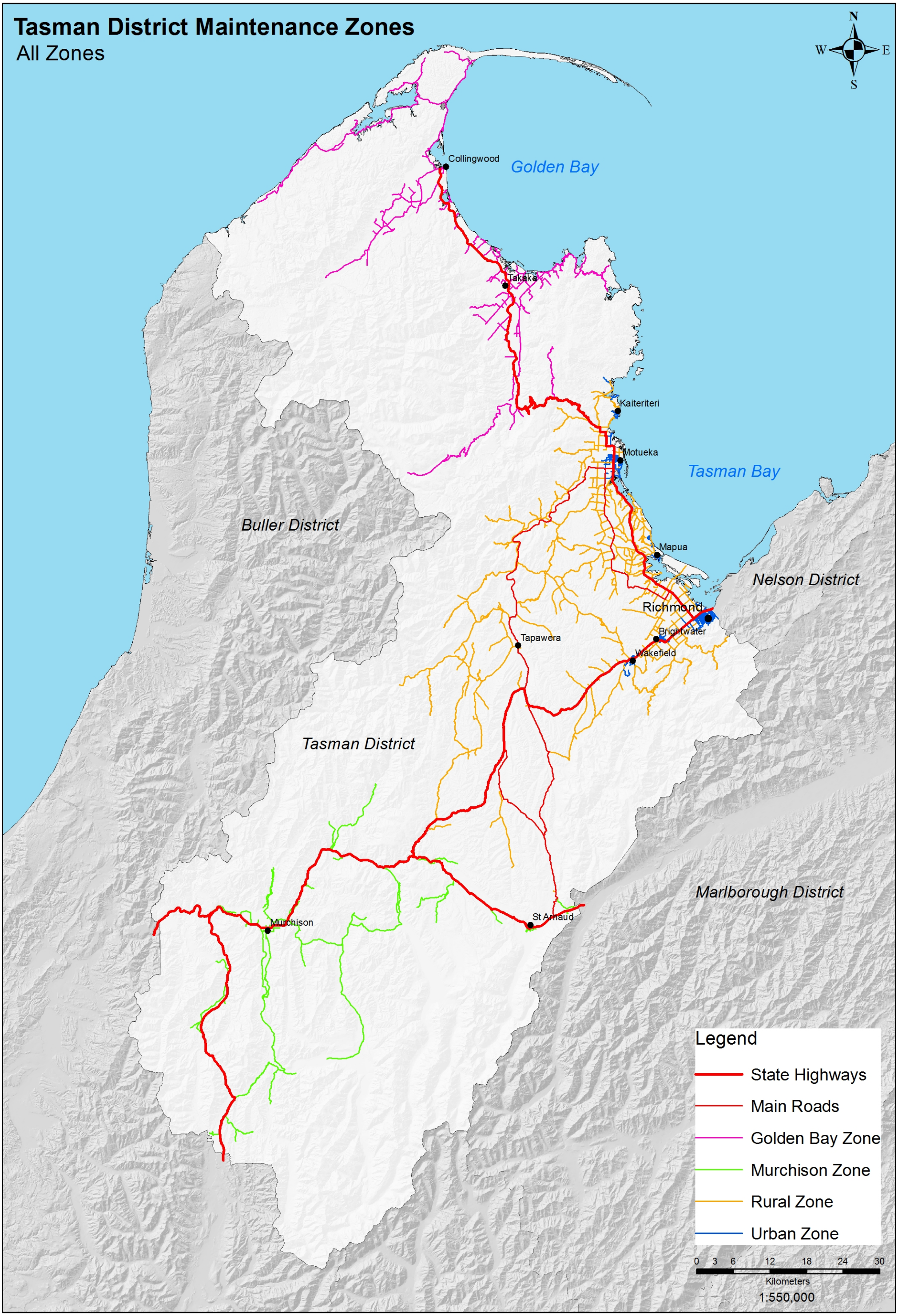
The Tasman District is separated into four road maintenance contracts; Golden Bay, Murchison, Tasman Rural and Tasman Urban. The areas of the four maintenance contracts are shown on the following two maps.

Y.2 Tasman's Great Taste Trail

The attached maps outline the maintenance responsibilities for Tasman's Great Taste Trail.

Tasman District Maintenance Zones

All Zones



Date: 25/09/2014

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Tasman District Maintenance Zones

Urban Zones

N
W E
S

Kaiteriteri

Motueka

Tasman Bay

Mapua

Nelson District

Richmond

Brightwater

Wakefield

Legend

- State Highways
- Main Roads
- Golden Bay Zone
- Murchison Zone
- Rural Zone
- Urban Zone

0 1.5 3 4.5 6 7.5

Kilometers

1:130,000

Date: 25/09/2014

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Tasman's Great Taste Trail

March 2014

Maintenance of Trail

Kaiteriteri
Martin Farm Rd
Rowling Rd
Torlesse Dr
Trail within Kaiteriteri mountain bike park (Trust & Kaiteriteri Park Board)
Riwaka-kaiteriteri Rd
Riwaka-sandy Bay Rd
Riwaka River (North Branch)
Riwaka Valley Rd
Riwaka River
Kahurangi National Park
Riwaka Valley Left Branch Rd
Riwaka River (South Branch)
Dehra Doon Rd
Riwaka
Riwaka Memorial Reserve
Factory Rd
Swamp Rd
Lodder Ln
Little Sydney Rd
Little Sydney Stream
Umukuri Rd
60
River Rd
Brooklyn Stream
Brooklyn Valley Rd
Old Mill Rd
Anderson Rd
Staples St
Motueka River
Parker St
Fearon St
Thorp St
Poole St
Pah St West
Pah St
Grey St
Greenwood St
Tudor St
Harbour Rd
Motueka
Shaggery Rd
Douglas Rd
Peach Island Rd
Whakarewa St
Shaggery Stream
Green Ln
College St
King Edward St
Woodland Ave
Motueka Quay
Old Wharf Rd
Hau Rd
Queen Victoria St
High St South
Wharf Rd
Trewavas St
Mytton Heights
Hursthouse St
Wildman Rd
Batchelor Ford Rd
Stames Rd
Chamberlain St
Main Rd Lower Moutere
Robinson Rd
Rowling Loop
Rocky River Rd
Motueka River West Bank Rd
Motueka Valley Hwy
Mcbrydie Rd
Central Rd
School Rd
Lindup Rd
Tasman View Rd
Moana Loop
Moana Rd
Kina Peninsula Rd
Herring Stream Rd
Ching Rd
Community Rd
Wanwhero Rd
Moutere River
Pokororo River

Sheet 1
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N
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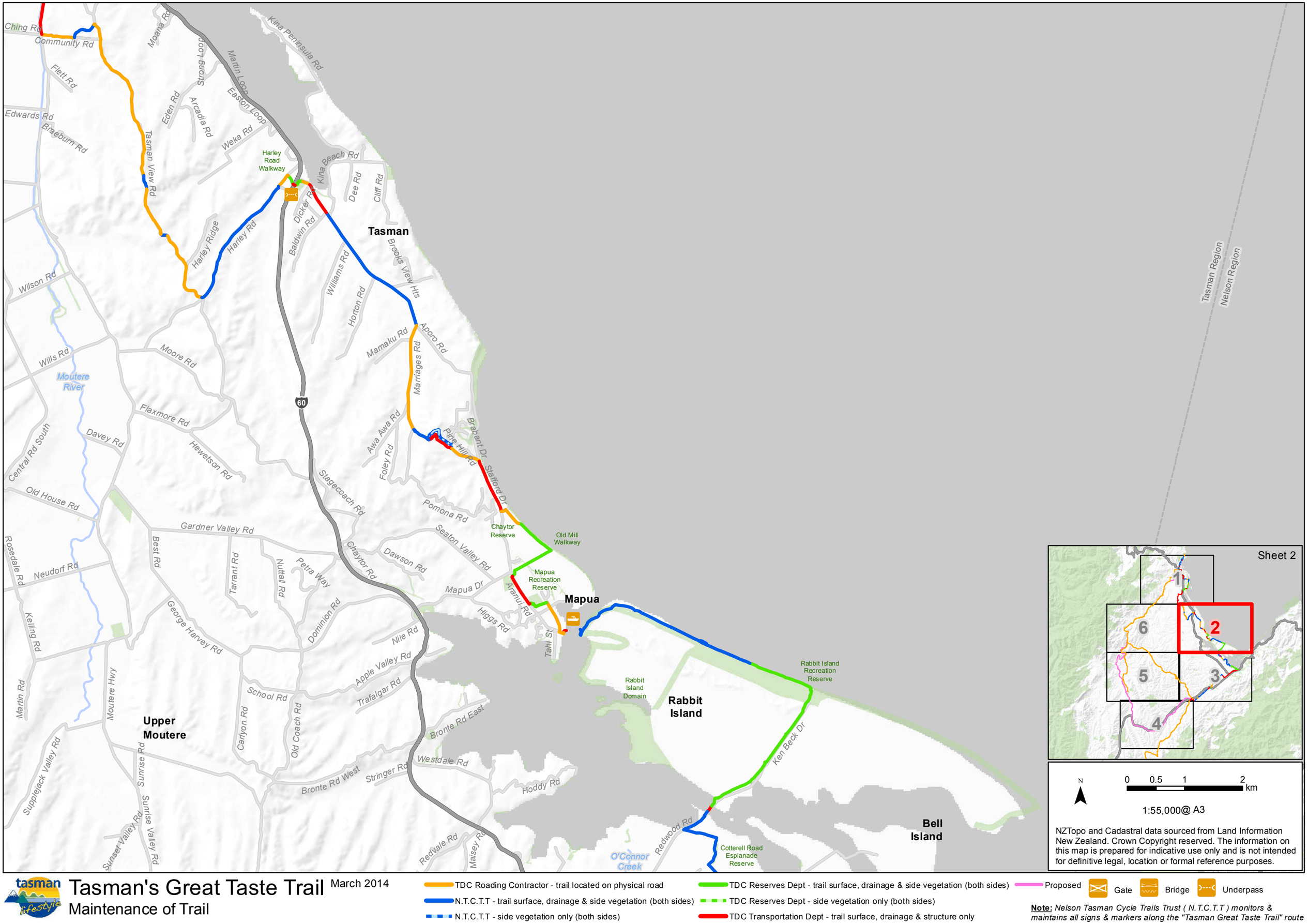
1:55,000@ A3

Path: V:\Projects\TasmanCycleway\June09\Maps\TasmanLoopRailTrail-Maintenance.mxd

- TDC Roading Contractor - trail located on physical road
- N.T.C.T.T - trail surface, drainage & side vegetation (both sides)
- N.T.C.T.T - side vegetation only (both sides)
- TDC Reserves Dept - trail surface, drainage & side vegetation (both sides)
- TDC Reserves Dept - side vegetation only (both sides)
- TDC Transportation Dept - trail surface, drainage & structure only
- Proposed
- Gate
- Bridge
- Underpass

Note: *Nelson Tasman Cycle Trails Trust (N.T.C.T.T) monitors & maintains all signs & markers along the "Tasman Great Taste Trail" route*



Tasman's Great Taste Trail

March 2014

Maintenance of Trail

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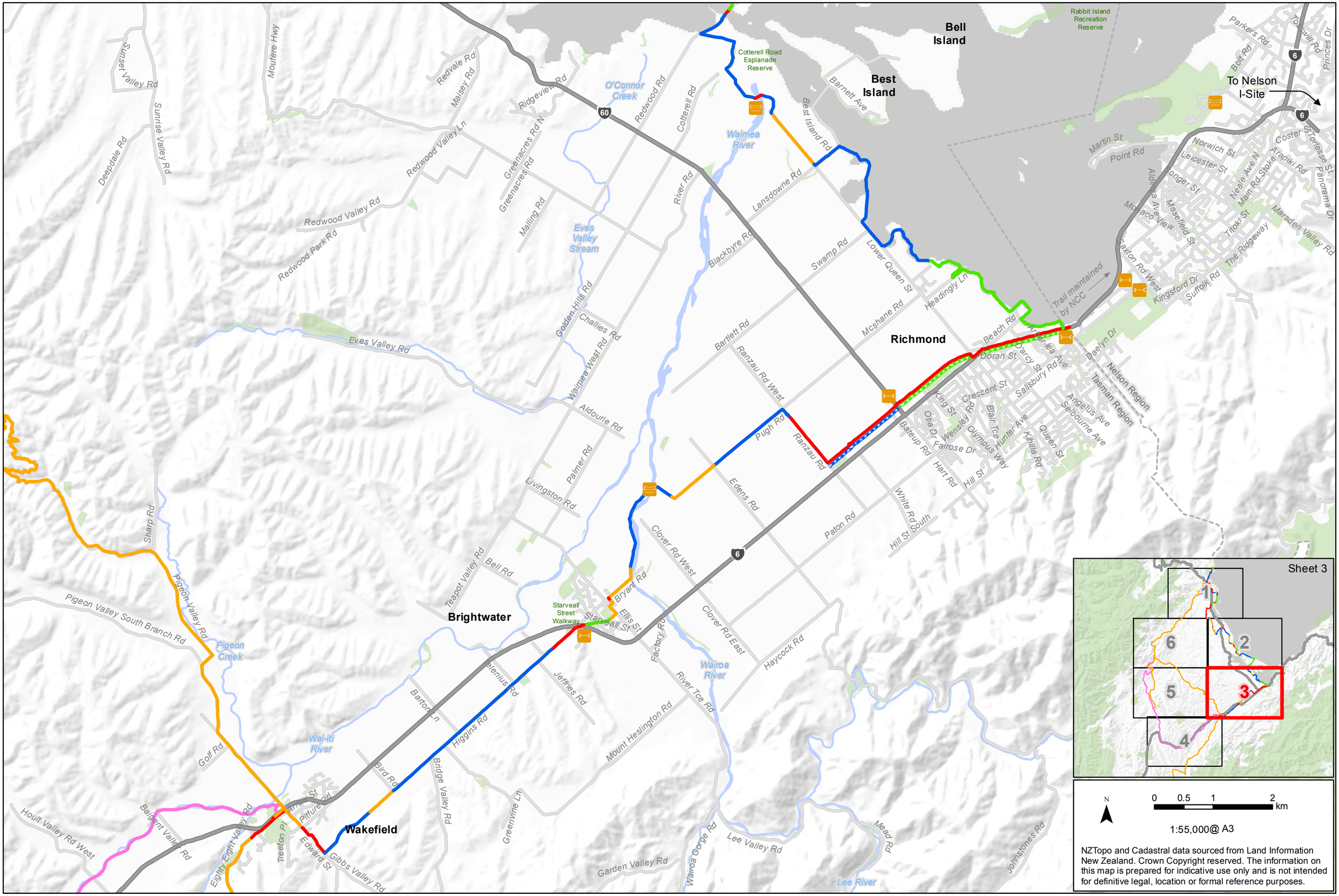
Tasman's Great Taste Trail

March 2014

Maintenance of Trail



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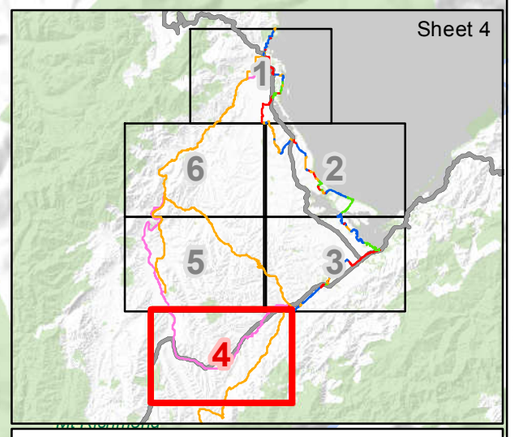
Tadmor River
Tadmor Valley Rd
Motueka River
Motueka Valley Hwy
Old School Rd
Motupiko
Kohatu
Valley Rd
Pretty Bridge Valley Rd
Belgrove
Berryman Rd
Spooners
Tunnel
Hoult Valley Rd West
Baigent Valley Rd
Trass Valley Stream
Trass Valley Rd
Treeton Pl
Arrow St
Pitfure Rd
Wakefield
Totara View Rd
Kilkenny Pl
Church Valley Rd
Eighty Eight Valley Stream
Quail Valley Rd
Eighty Eight Valley Rd
Wai-iti River
Wai-iti Valley Rd
Stock Rd
Wai-iti River (Left Branch)
Motupiko River
Korere



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Dovedale
Neudorf Rd
Dovedale Recreation Reserve
Thorn Rd
Supplejack Valley Rd
Sunset Valley Rd
Baton Valley Rd
Motueka River
Cozens Rd
Win Valley Rd
Dovedale Rd
Deepdale Rd
Baton River
Sunday Creek Rd
Stanley Brook
Eden Valley Rd
Motueka Valley Hwy
Wangapeka River
Forest Creek Rd
Brandy Creek Rd
Hinetai Rd
Upper Stanley Brook Rd
Phillips Rd
Tapawera-baton Rd
Pigeon Valley Rd
Glenrae Rd
Tapawera
Main Rd Tapawera
Tadmor Valley Rd
Tadmor River

Sheet 5
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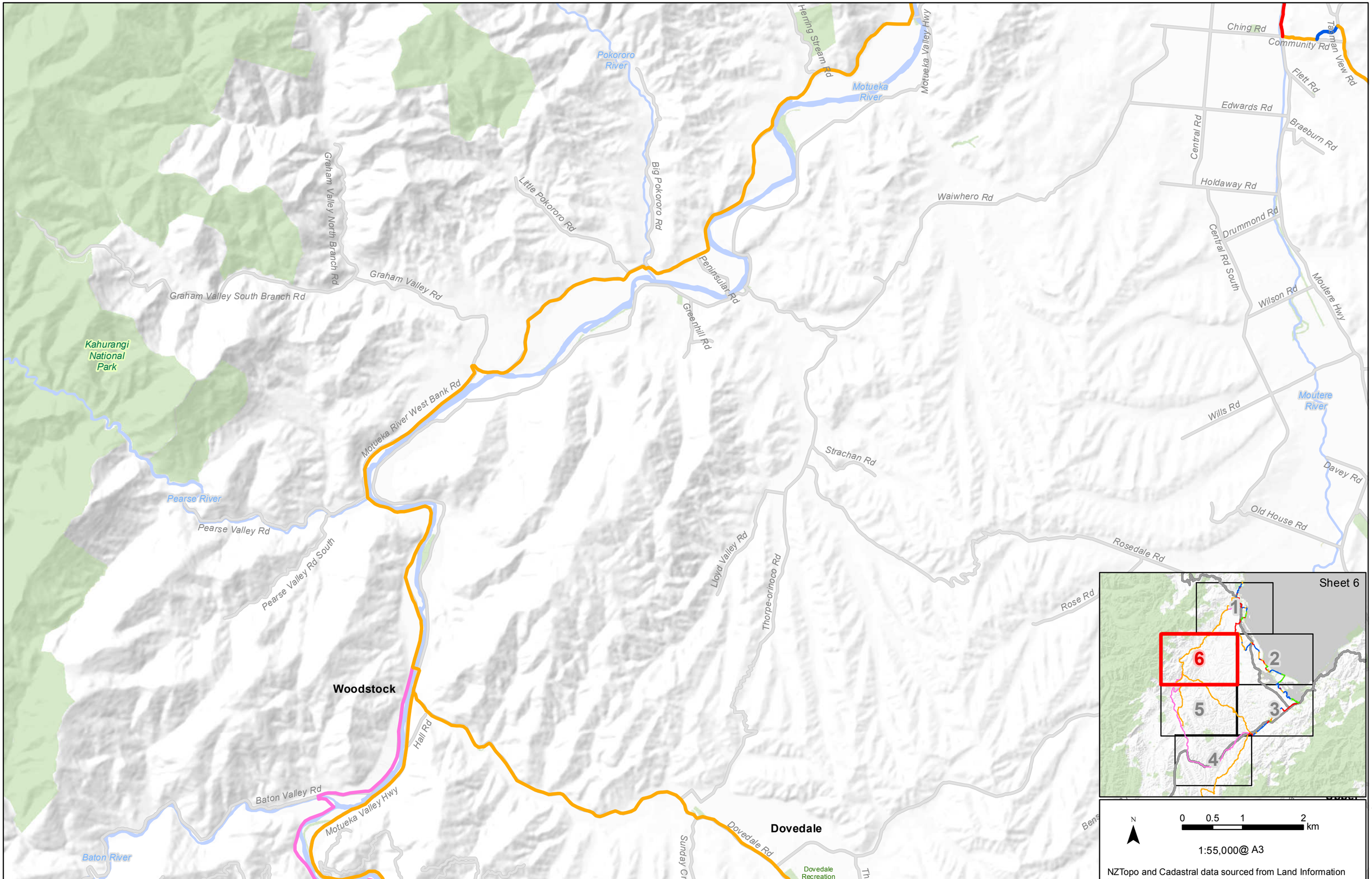

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APPENDIX Z AMP STATUS AND DEVELOPMENT PROCESS – RIVERS

Z.1 Quality Assurance

Quality Assurance Statement		
Tasman District Council 189 Queen Street Private Bag 4 Richmond 7050 Telephone: (03) 543 8400 Fax: (03) 543 9524	**Version:**	Draft – January 2015
	Status:	Draft
	Project Manager:	Dwayne Fletcher
	Prepared by: **AMP Author**	Jenna Voigt
	Approved for issue by: **Engineering Manager**	Peter Thomson

Z.2 Quality Requirements and Issues

	Issues and Requirements	Description
1	Fitness for Purpose	The AMP has to be "fit for purpose". It has to comply with Audit NZ expectations of what an AMP should be to provide them the confidence that the Council is adequately managing the Council activities.
2	AMP Document Consistency	Council want a high level of consistency between AMPs so that a reader can comfortably switch between plans.
3	AMP Document Format	The documents need to be prepared to a consistent and robust format so that the electronic documents are not corrupted (as happens to large documents that have been put together with a lot of cutting and pasting) and can be made available digitally over the internet.
4	AMP Text Accuracy and Currency	The AMPs are large and include a lot of detail. Errors or outdated statements reduce confidence in the document. The AMPs need to be updated to current information and statistics.
5	AMP Readability	The AMPs in their current form have duplication – where text is repeated in the "front" section and the Appendices. This needs to be rationalised so that the front section is slim and readable and the Appendix contains the detail without unnecessary duplication.
6	Completeness of Required Upgrades/Expenditure Elements	The capital expenditure forecasts and the operations and maintenance forecasts need to be complete. All projects and cost elements need to be included.
7	Accuracy of Cost Estimates	Cost estimates need to be as accurate as the data and present knowledge allows, consistently prepared and decisions made about timing of implementation, drivers for the project and level of accuracy the estimate is prepared to.

	Issues and Requirements	Description
8	Correctness of Spreadsheet Templates	The templates prepared for use need to be correct and fit for purpose.
9	Assumptions and Uncertainties	Assumptions and uncertainties need to be explicitly stated on the estimates.
10	Changes Made After Submission to Financial Model	If Council makes decisions on expenditure after they have been submitted into the financial model, the implications of the decisions must be reflected in the financial information and other relevant places in the AMP – eg. Levels of service and performance measures, improvement plans etc.
11	Improvement Plan Adequate	Improvements identified, costed, planned and financially provided for in financial forecasts.