West Coast Councils Transport Programme Business Case

Combined Activity Management Planning for the 2021-24 National Land Transport Programme

Final December 2020

rationale > IMPROVING INFRASTRUCTURE OUTCOMES

Document Title:

West Coast Councils Transport Programme Business Case

Prepared for:

Buller District Council, Grey District Council and Westland District Council

Quality Assurance Statement

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Covid-19 Impact

When we started our journey of "Preparing for step change" through the development of this Combined Transport Activity Management Plan, the West Coast was experiencing high growth in tourism. As such, providing the right infrastructure on the local roading networks to support this growth was considered paramount.

This was recognised in the original combined ILM - '*Increasing visitor numbers travelling to more destinations, increases tourist vehicles, placing greater pressure on visitor facilities, diminishing visitor experience*'. To address this, a key focus was on the tourism experience, improving access to attraction and providing appropriate facilities.

However, in March 2020, the country went into lockdown due to the Covid-19 pandemic and tourism stopped overnight. As of September, some six months later, the future of international travel is still unknown and so the focus of the programme has been revisited. An insight into the impacts of Covid-19 for land transport on the West Coast has been undertaken by Waka Kotahi[1] and shows a projected high level of unemployment, primarily due to its reliance on international tourism.

Whilst we need to be ready to accept international visitors when they arrive back on the West Coast, our focus for this Activity Management Plan has shifted to be more 'asset-focussed' with a stronger emphasis on addressing network risks such as resilience, safety and access through network improvements, renewals & targeted maintenance. This focus will continue to support economic productivity and enable future growth opportunities as freight task is optimised, and the network is maintained and improved providing a more enjoyable and safe journey experience for our domestic visitors and our overseas visitors when we see them again.

[1] https://www.nzta.govt.nz/assets/planning-and-investment/arataki/docs/regional-summary-11-west-coast-potential-impacts-of-covid-19.pdf

Executive Summary

Purpose

The West Coast Councils Combined Transport Programme Business Case was commissioned to:

- Continue development of a collaborative approach to activity management planning and network and asset management between Buller, Grey and Westland District Councils.
- Provide an evidence base for investment in transport activities on the West Coast for the 2021-24 National Land Transport Programme.
- Develop an agreed, preferred programme of investment and work activities that the councils and their investment partner Waka Kotahi can implement to address identified issues and achieve investment objectives.

This business case also identified potential actions for the Regional Land Transport Plan.

Background

In 2017 the three West Coast Councils collaborated to develop the 'West Coast Councils Combined Activity Management Plan: Programme Business Case' (2017 PBC). This was developed for the purpose of the 2018-21 National Land Transport Programme (NLTP) and each councils Long-Term Plan (LTP). This made the case for change from an individual to a more collaborative approach to delivery of transport programmes across the region.

The 2017 PBC recommended the preferred option 'Preparing for step change' recognising that, at the time, the councils were not ready to make significant increases in investment infrastructure improvements. There was a lack of available evidence to provide confidence for decision making, and the council's teams lacked the capability and capacity to plan and deliver more ambitious investment programmes.

So, the preferred option sought improved activity management through better programming, improved asset monitoring and data capture, development of business cases, and increased network and asset management capability and capacity.

The collaboration continues with the development of this 2021 Transport Programme Business Case (PBC) and Combined Transport Activity Management Plan (C.TAMP).

The Road Network

Together the three councils own and operate approximately 1,888 km of roads of which 1,069km (57%) is sealed and 819km (43%) is unsealed. Local roading assets across the region have a combined value of $921,505,247 (total replacement cost) and collective annual expenditure is in the order of $18 million per annum.

Of the 642 bridges across the local networks, there are a number of structures with limited level of service capacity with 64 bridges posted or proposed to be posted, approximately 80 bridges restricted for 50 Max and HPMV and nearly 300 single lane bridges.

In addition to the local road network, Waka Kotahi operates approximately 870 km of state highway across the West Coast region. The Department of Conservation also administer a relatively short length of roads to provide access to public conservation land; some of these connect to the local road network.

Key Issues and the Benefits of Investment

Engagement with the three councils and key stakeholders explored the challenges that constrain the West Coast councils from delivering an effective, efficient, and safe land transport network that supports regional growth and liveable communities. The following problems were identified:

1. Resilience of the transport network is declining as the impacts of climate change and ageing assets take effect, impacting on network reliability and regional prosperity (35%)
2. Failure to predict, identify and remedy life expired assets increases risks including safety, resilience, accessibility, and customer satisfaction (30%)

3. Changes in freight demand, fleet specifications and operator expectations, are not being met by the network, reducing freight efficiency and effectiveness (20%)
4. Increasing visitor numbers, travelling to more destinations, increases tourist vehicles placing greater pressure on visitor facilities, diminishing visitor experience (15%)

In particular, risks associated with continued under-investment in bridges will result in worsening condition, a growing backlog of maintenance and renewals, and potential for asset failure on the network. This will have an impact on access to our communities and also on economic development across the region.

Based on these problem statements, the following benefits of investment were agreed:

1. Improving network resilience (35%)
2. Reducing asset failure risk, as assets are maintained and renewed appropriately (30%)
3. Increasing freight task optimisation through appropriate network investment (20%)
4. Visitors continue to travel widely, are more dispersed, as more attractions are accessible having appropriate facilities (15%)

These benefits form the investment objectives for this PBC against which all project and programme options were evaluated.

Council Capability and Capacity

Early engagement with the three councils explored the challenges that constrain the West Coast councils from effectively undertaking activity and asset management activities. Key problems identified were:

1. Poor / incomplete data inhibits the ability to deliver evidence-based forward works programmes and present the case for funding, creating investment uncertainty (35%)
2. Environmental, economic, social and cultural pressures on the network require investment to be made, however a lack of clarity is causing delay for both action and funding (30%)
3. Mounting network pressures will increase costs, by how much is uncertain and funding constraints may threaten the ability to deliver an effective, efficient, safe land transport network (20%)
4. West Coast roading teams are under resourced, vulnerable to change and struggle to recruit, with a focus on operational and reactive work, inhibiting their ability to be strategic and plan (15%)

These four council-focused problems informed investment in detailed investigations and assessments by external contractors to improve evidence for decision making and support the roading teams. They also formed the basis for development of the preferred approach to improving capability and collaboration, as described in the Commercial Case of this PBC.

Preferred programme

Four programme options were developed:

1. Option 1: Status quo (business as usual).
2. Option 2: Optimised status quo (do-minimum) – uplift of expenditure in some work categories, particularly bridges, sealed roads, traffic services and asset management.
3. Option 3: Preserving our assets – an enhanced maintenance programme that increases investment in maintenance and condition-based renewals and replacement of key assets. Bridge structures are a core focus of this programme alongside substantial uplift in investment to improve asset management capability and capacity in council roading teams.
4. Option 4: Improved levels of service – further builds on Option 3 with a range of targeted level of service improvements including investment in town centres and tourism facilities.

Maintaining the status quo will not deliver the benefits sought and will see a deterioration of asset condition and customer levels of service.

The estimated total cost 2021-24 for the three options by district are:

Table 1: Cost Estimates Options 1, 2 and 3

2021-24 estimate	Option 1	Option 2	Option 3
Buller Local Roads	$12,879,000	$14,258,000	$16,299,000
Grey Local Roads	$17,967,000	$19,131,000	$22,085,000
Westland Local Roads	$13,666,000	$14,022,000	$15,896,000
Total Local Roads	**$44,512,000**	**$47,411,000**	**$54,280,000**
Buller SPR	$5,152,000	$9,480,000	$10,295,000
Westland SPR	$3,053,000	$4,589,000	$6,769,000
Total SPR	**$8,205,000**	**$14,069,000**	**$17,064,000**

Option 3: Preserving our assets was identified as the preferred way forward following a multi-criteria analysis.

The projected cost to deliver the preferred option is $71.3m over the next three years across the three networks. This compares to $61.4m for Option 2, but better delivers on the investment objectives, in particular improvements around asset condition, levels of service, safety and resilience, all of which will support economic development across the region.

Key Benefits of the Preferred Option

It is anticipated that implementation of Option 3 'Preserving our Assets' will deliver the following key benefits.

- Builds on the 2017 PBC preferred option 'Preparing for step change'.
- Delivery of an enhanced programme of works supported by an improved evidence base developed over the last three years that will deliver
    - Improved freight levels of service through targeted investment in bridges supporting economic development
    - Improved road safety through traffic services, intersection design, and bridge safety improvements
    - Better resilience outcomes as the risk of asset failure is reduced and structures are adequately maintained and renewed ensuring access to remote communities.
- Following on from significant improvements in data and evidence, investment in network and asset management will support long-term strategic planning and value for money as the three councils progress towards a more proactive rather than a reactive environment.
- Uplift in internal roading team asset management capability and capacity, enhanced transport collaboration between the three councils, and procurement of specialist services to continue improvement in data and evidence for asset management and strategic planning.

Risks of not investing in the preferred option

There are a number of risks associated with not investing in the preferred option:

- Continued under-investment in bridges will result in worsening condition, a growing backlog of maintenance and renewals, and potential for asset failure on the network.
- Deferment of condition-based bridge replacement in 2021-24 places increased pressure on the 10-year replacement programme, likely increasing overall cost and reducing value for money in the long-term.

- Without continued uplift in investment in network and asset management, there is the risk that the proposed programme cannot be delivered due to a lack of technical resources and in-house capacity to oversee activities.
- While pavement condition is in overall good condition, the current level of investment is expected to lead to a decline in pavement condition over time. The proposed uplift in investment, supported by detailed investigations and analysis, will maintain current levels of service.

Option 3 is well aligned with the 2017 PBC's preferred option 'Preparing for step change' and will build on Option 2 to better achieve the anticipated benefits of investment. Investing in the capability and capacity of council's roading teams to carry out asset management strategy and planning is a core element of Option 3.

Condition-based replacement of bridges and other structures is a core focus of this option, level of service improvements will be achieved through replacement of existing bridges to latest design standards. This option includes detailed investigations and assessment of bridges, carriageways and intersections, and development of business cases for level of service-based improvements.

To ensure delivery of the preferred option 3. a regional collaboration for the delivery of technical engineering and asset management services is proposed, comprising in-house and external providers. The Commercial Case considers two options for further assessment with the more ambitious comprising the formation of a Regional Formal Partnership / Business Unit with a focus on building technical engineering skills and capability.

Strategic Case

Buller District Council, Grey District Council and Westland District Council

1 Strategic Case – Making the Case for Change

1.1 Summary

1.1.1 PURPOSE

The importance of the transport network on the West Coast cannot be overstated. As a remote region with a limited number of alternative transport options, ensuring resilient, well-functioning network is critical to the social and economic wellbeing of those who call the West Coast home.

At a regional level, the roading network is heavily reliant on the state highways to provide the key north-south route and also to provide links to neighbouring regions. In 2019 the Waiho River bridge south of Franz Josef township was destroyed during a severe rain event, closing the state highway and causing major disruption to the entire region resulting 9n economic loss, primarily related to freight and tourism. The loss of the bridge led to an estimated loss of $50.4 million in tourism earnings[2] alone.

State highway and local road closures isolate the West Coast from neighbouring regions, and communities from each other which can have severe social and economic impacts. In the 2019 events, many dairy farms were cut off due to road closures resulting in farmers having to dump milk as tankers could not access them.

This Strategic Case has been developed to confirm that there is a robust case for investment that outlines why the local roads need to be maintained to an appropriate condition.

1.1.2 BACKGROUND

In 2017 the three West Coast Councils collaborated to develop the 'West Coast Councils Combined Activity Management Plan: Programme Business Case (2017 PBC)'. As well as providing an opportunity for more efficient delivery of programmes, this joint approach recognised the similar transport opportunities and challenges that are faced across the region.

The preferred option identified in the 2017 PBC was 'Preparing for step change', this option sought improved activity management through better programming, improved asset monitoring and data capture, development of business cases, and increased network and asset management capability and capacity.

The collaboration continues with the development of this 2021 Transport Programme Business Case (PBC) and Combined Transport Activity Management Plan (C.TAMP).

1.1.3 STRATEGIC CONTEXT

This PBC is guided by and seeks to achieve the strategic goals and vision as set out in the:

- Government Policy Statement on Land Transport 2021/22-30/31 (Draft)
- Transport Outcomes Framework (Ministry of Transport)
- Road to Zero Safety Strategy (Waka Kotahi)
- Arataki – Plan for the Land Transport System 2021-31 (Waka Kotahi)
- West Coast Regional Land Transport Plan

These strategic documents have outlined a vision of a land transport system that delivers benefits for safety, wellbeing, liveable communities, climate change response and economic prosperity while investing appropriately in infrastructure that delivers value for money.

1.1.4 WEST COAST OVERVIEW

The West Coast (Te Tai Poutini) region runs over 600km along the west coast of the South Island and is one of the least densely populated areas in the country. It includes the Buller, Grey and Westland Districts, the principal towns being Westport, Greymouth and Hokitika. The region is the country's fifth largest by land area, but the smallest by population size with approximately 85% of the region being public conservation land.

[2] https://www.stuff.co.nz/national/118105802/paradise-under-threat-is-mother-nature-limiting-west-coasts-tourism-potential

The region's unforgiving and spectacular geography has been a key influencer of the form of the transport network, which has a heavy reliance on the state highways for north–south journeys, and for links between neighbouring districts and regions. The West Coast is the country's fifth largest region by land area, but the smallest by population size. It's resident population of 32,600 (2019) has been generally static since the 2006 Census with 32,600 at that time. The West Coast is one of the few regions in New Zealand projected to have a decline in population over the next two decades with an estimated (medium scenario) 6% decline from 2018-43 to a population of 30,600.

1.1.5 INVESTMENT OBJECTIVES

Through stakeholder and council staff engagement and a community survey, a combined Investment Logic Map (ILM) was developed. The ILM identifies four key problems that constrain the West Coast councils from delivering an effective, efficient, and safe land transport network that supports regional growth and liveable communities.

The four problem statements are:

1. Resilience of the transport network is declining as the impacts of climate change and ageing assets take effect, impacting on network reliability and regional prosperity (35%)
2. Failure to predict, identify and remedy life expired assets increases risks including safety, resilience, accessibility, and customer satisfaction (30%)
3. Changes in freight demand, fleet specifications and operator expectations, are not being met by the network, reducing freight efficiency and effectiveness (20%)
4. Increasing visitor numbers, travelling to more destinations, increases tourist vehicles placing greater pressure on visitor facilities, diminishing visitor experience (15%)

In response to these problems, the benefits of investment were identified; these form the investment objectives for this PBC:

1. Improving network resilience (35%)
2. Reducing asset failure risk, as assets are maintained and renewed appropriately (30%)
3. Increasing freight task optimisation through appropriate network investment (20%)
4. Visitors continue to travel widely, are more dispersed, as more attractions are accessible having appropriate facilities (15%)

1.1.6 RISK, CONSTRAINTS, AND DEPENDENCIES

The capability and capacity of councils to deliver on the preferred programme and the affordability of the programme are the key risks to successful delivery and the main source of internal and external constraints and dependencies. All three councils have struggled historically to attract and retain staff with the right skillset and experience to shape and deliver high quality network and asset management outcomes. Each council has grown their team since the 2017 PBC and have a strong desire to continue this growth.

The collaborative approach to activity management planning and network and asset management is seeking to improve the capability and capacity while reducing costs to each council. But affordability remains a constraint, particularly with increased levels of investment being sought, due to the low number of ratepayers and relative lack of growth.

The uncertainty around the impacts of Covid-19 is a key risk that will require ongoing monitoring, particularly in the medium to long term. Research undertaken by Waka Kotahi on the Covid-19 impacts[3] recognises that regions reliant on international tourism, such as the West Coast, will be heavily impacted by Covid-19 over the next few years. Fifty percent of the tourism spend in the region has previously come from international visitors, so the region will be heavily impacted by border closures. The ability for the West Coast to offset these losses through domestic tourism is challenged by its remoteness from major population centres in the North Island and scale of the decline. However, whilst income to the region has been heavily reduced, there will be an ongoing need to support the Covid-19 recovery by improving access to economic opportunities and communities.

[3] https://www.nzta.govt.nz/assets/planning-and-investment/arataki/docs/regional-summary-11-west-coast-potential-impacts-of-covid-19.pdf

2 Introduction

2.1 Purpose of the Strategic Case

Transport on the West Coast has a vital role in enabling the social and economic aspirations for people and communities.

As such, the purpose of this Strategic Case is to confirm that:

- There is a compelling case for investment to maintain networks to the appropriate condition.
- Key stakeholders are aligned and behind the need to address the problem or the opportunity.
- Agreement is forming on what a good outcome looks like and what benefits could be.

2.2 Background

In 2014/15 the three councils, Buller, Grey and Westland District Councils (West Coast Councils), each prepared their own roading asset management plans which provided input into the 2015-18 National Land Transport Programme.

Then, in 2017, the West Coast Councils worked together to develop the 'West Coast Districts Combined Activity Management Plan: Programme Business Case' (2017 PBC). As well as providing an opportunity for more efficient delivery of programmes, this joint approach recognised the similar issues and challenges being faced across the region. The 2017 PBC was developed at a strategic level, recognising the importance of providing for economic growth in the West Coast region through combined investment in delivery of the roading activity.

Figure 1: Pathway to the 2021 Combined Transport PBC and AMP

The preferred programme of the 2017 PBC was 'Preparing for step change'. This option sought improved activity management planning through better programming, improved asset monitoring and data capture, development of business cases, and increased network and asset management capability and capacity. It excluded significant changes in infrastructure investment for the 2018-21 National Land Transport Programme period; instead, it focused on developing a better understanding of investment needs, supported by evidence, to prepare for the development of this Transport PBC and the C.TAMP.

The 2017 PBC included an Improvement Plan focused on the delivery of the 2021 Combined Transport PBC and C.TAMP. The improvement plan comprised 11 projects grouped into six workstreams, as shown in Figure 2 below.

See Appendix 1 for an overview of the programme and milestones.

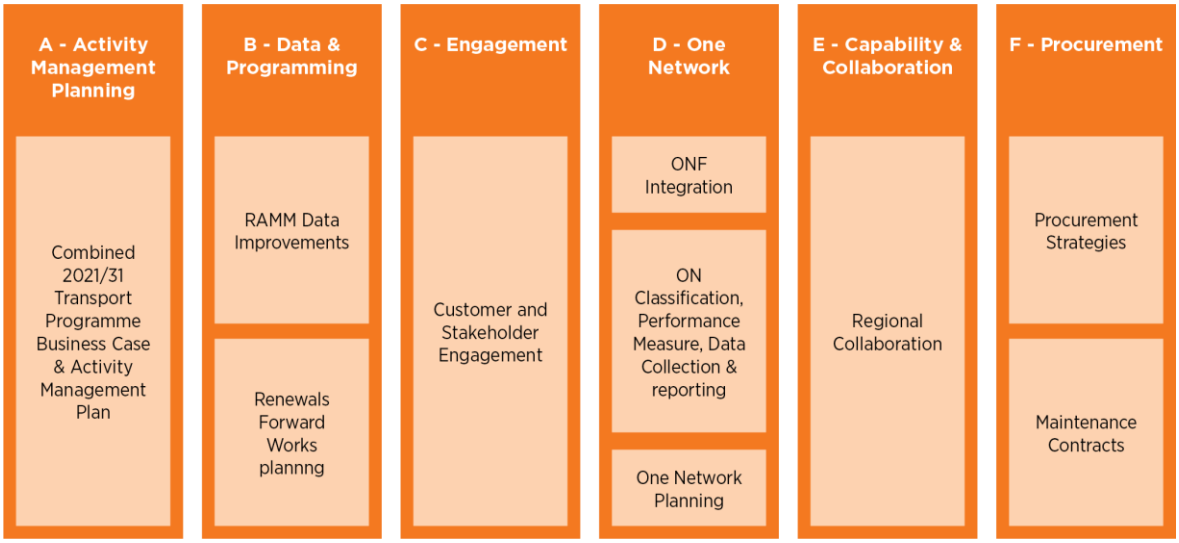


Figure 2: 2017 Transport PBC Improvement Programme Workstreams

The 2021 C.TAMP will have the same functions as its predecessor documents in setting out for each council proposed expenditure on transport programmes and projects. The key difference is the way it is developed, following Waka Kotahi's PBC approach that aims to ensure that the key investment drivers are understood and responded to appropriately.

Figure 3 shows the relationship between this PBC and the C.TAMP, and the flow of information and decision making between individual sections.

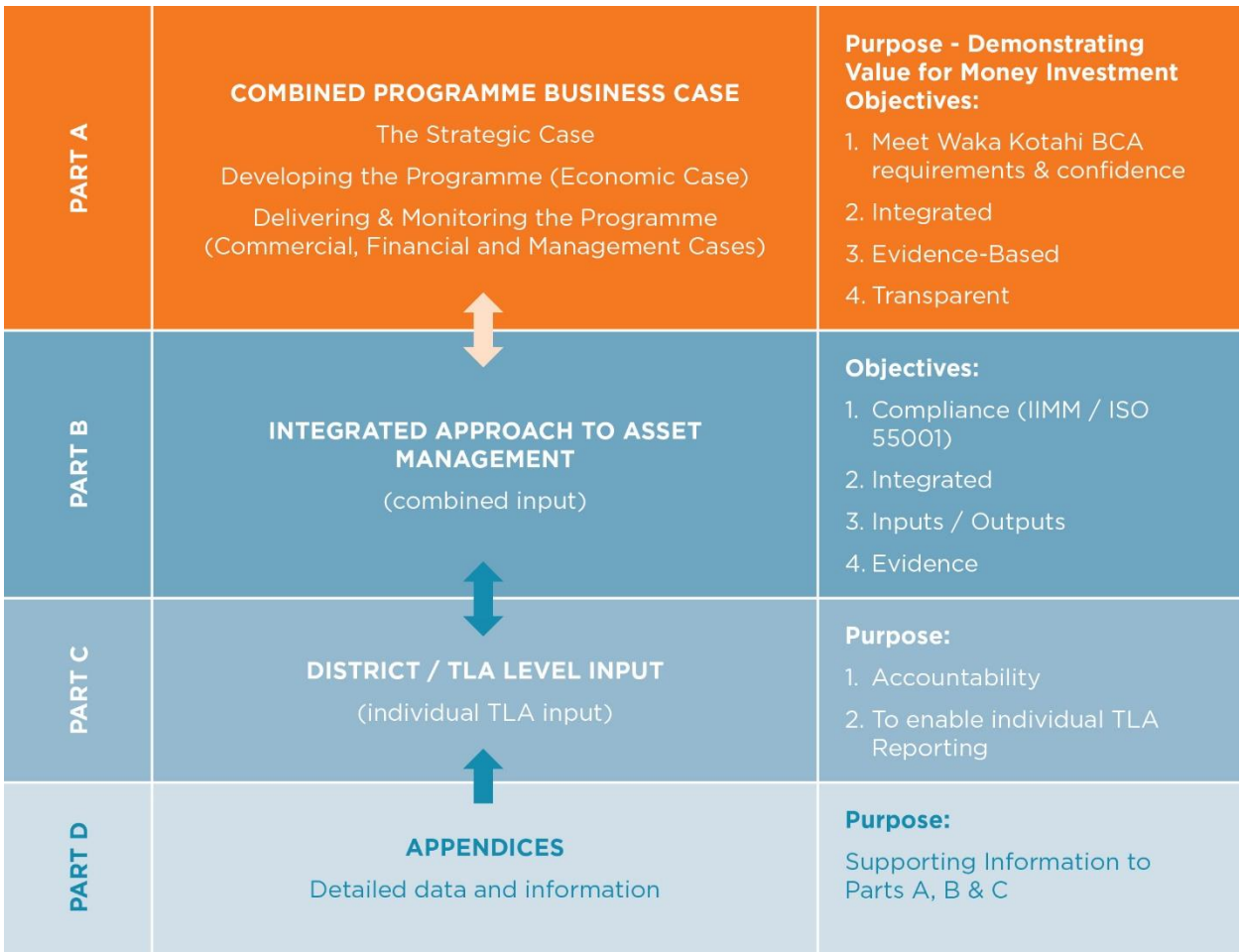


Figure 3: 2021 Combined Transport PBC and AMP document structure

2.3 Key Partners and Key Stakeholders

A collaborative approach has been taken to the development of this PBC and the 2021 C.TAMP. This is essential to identifying the shared transport opportunities and challenges, and the community and economic outcomes sought for those living, working and visiting the West Coast.

The **key partners** are:

- Buller District Council
- Grey District Council
- Westland District Council
- Waka Kotahi (NZ Transport Agency)

The Partners are committed to continuing to work collaboratively to deliver a value for money investment programme.

Key stakeholder individuals and organisations have provided input to the strategic case to help ensure the success of the project. Various stakeholders, including the West Coast Regional Council, Department of Conservation, freight providers and tourism operators, have had involvement in workshops and provided insights and evidence to inform the Strategic Case.

2.4 Telling the story through evidence and engagement

This Strategic Case, and wider PBC, have been developed as shown below:

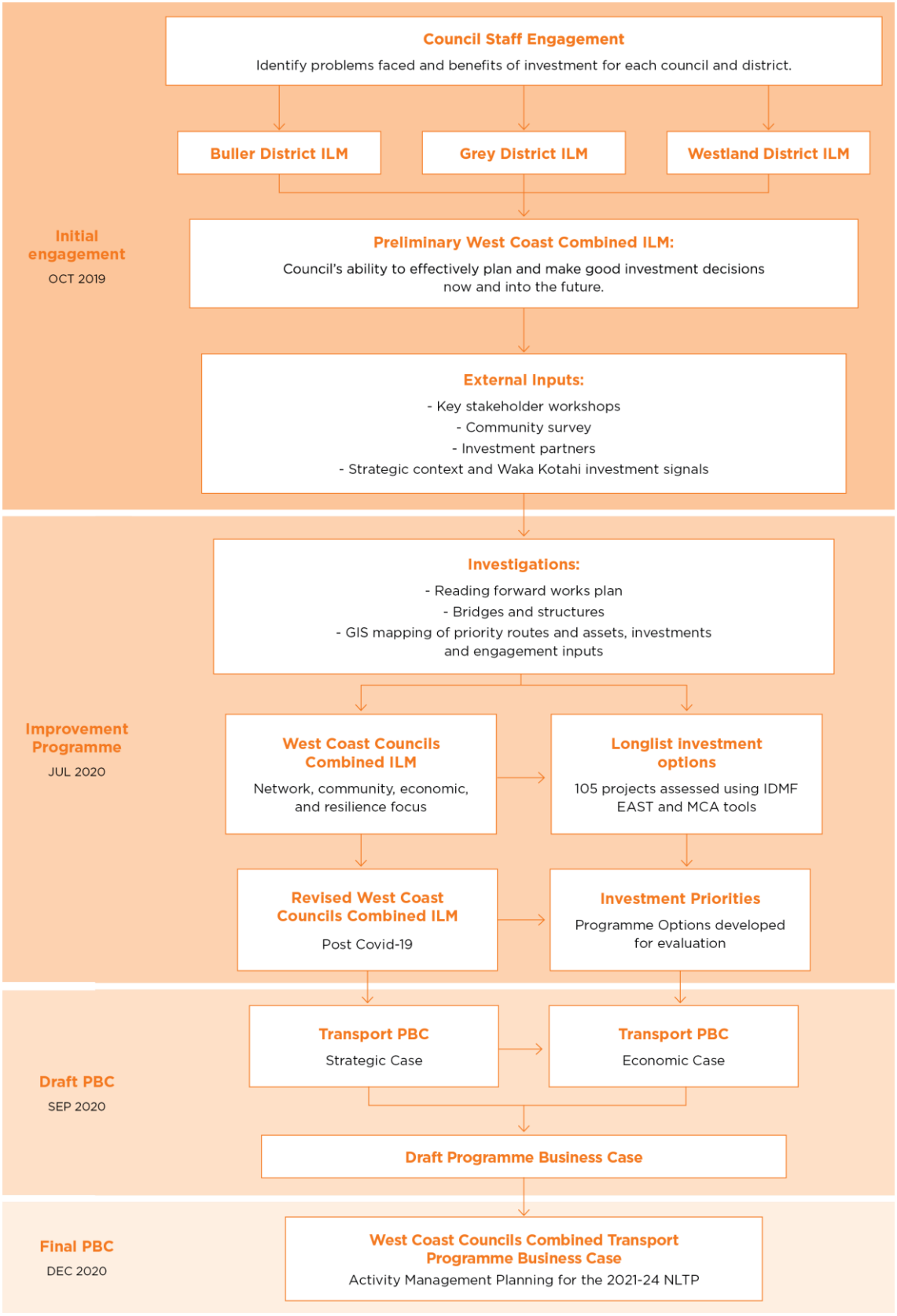


Figure 4: Combined Transport PBC development process

3 Overview of the West Coast Region

3.1 Geography

The West Coast, Te Tai Poutini, region runs over 600km along the west coast of the South Island between the Tasman Sea and the Southern Alps. It is one of the most sparsely populated areas of the country, with just 1.4 people per square kilometre compared to 15 in wider New Zealand. The region encompasses the territorial authorities of Buller, Grey and Westland districts, and the principal towns are Westport, Greymouth and Hokitika respectively.

The natural environment and topography are key influencers of the transport network and economy and contribute to the unique challenges faced by the people who live and work on the West Coast. The region is heavily reliant on the land transport network for accessibility and economic productivity, with just four State Highway links through alpine passes providing a connection to neighbouring regions. Approximately 85% of land in the region is managed by the Department of Conservation, and the three district councils are not responsible for roads on DoC land.

In addition to its geographic isolation, the West Coast is exposed to a range of natural hazards including extreme weather events, flood-prone river systems, proximity to the alpine fault, landslips, and exposed coastal areas. These hazards regularly disrupt the transport network, which is a vital lifeline for maintaining access to remote communities and the many New Zealand and overseas visitors to the region.

3.2 Resident population and visitors

The West Coast is the country's fifth largest region by land area, but the smallest by population size. Approximately half of the residents live in the main centres of Westport, Greymouth and Hokitika with the remaining residents dispersed in small towns and rural areas across the region.

As at the 2018 Census 31,575 residents live in the region, an increase of just 249 from 2006 (0.8%). Further, the West Coast is one of the few regions in New Zealand projected to experience a declining population over the next two decades, Infometrics 'Medium Growth' scenario for the West Coast forecasts a 6% decline from 2018-43.

Each district shows a similar population forecast, with a decline of between 3.5% and 8.4% for the medium growth scenario between 2019 and 2043.

Demographically, the West Coast's population is not dissimilar to the rest of New Zealand, although it does have a slightly smaller proportion of school age and younger children, and a slightly higher proportion of the population of retirement age.

Table 2: West Coast Population Projections[4]

Council	2019 Population	2043 Projected Population		% change
West Coast	32,600	Medium	30,600	-6%
Buller DC	9,840	Low	7,880	-20%
		Medium	9,500	-3%
		High	11,150	+13%
Grey DC	13,750	Low	10,450	-24%
		Medium	12,600	-8%
		High	14,780	+7%
Westland DC	8,960	Low	6,920	-23%
		Medium	8,500	-5%
		High	10,100	+13%

Over the last 10 years, the West Coast has experienced growth in domestic and international tourist numbers and significant investment in tourist destinations such as walking and cycle tracks, improved access and amenities at key destinations attractions will contribute to future growth.

Visitor numbers across the region were predicted to exceed 1.1 million by 2021, which is in the order of four times the resident population. However, the impact of Covid-19 has meant that the international tourism industry has effectively stopped and is not expected to return for at least 18 months.

The impact of Covid-19 will be significant on the West Coast. In the April 2020 year compared with the April 2019 year, the number of visitor arrivals to New Zealand was 3.35 million, down by 545,000.[5]

Full international travel is unlikely to resume in the short term. However, domestic tourism is anticipated to grow. Horizon Research has undertaken a survey of 1267 adult New Zealanders and 29% have stated they planned to holiday domestically over the 6 months following level 1 clearance with 33% saying they plan to take a road trip within New Zealand which equates to 1.75 million domestic travellers.

3.3 Mana Whenua

Ngāi Tahu are the tangata whenua that hold the mana of the West Coast, Te Tai Poutini, and further parts of the South Island. Ngāi Tahu's takiwa (tribal area) is the largest in New Zealand, and extends from White Bluffs/Te Parinui o Whiti (southeast of Blenheim), Mount Mahanga, and Kahurangi Point in

[4] Source: Figure NZ / Stas NZ https://figure.nz/chart

[5] https://www.stats.govt.nz/information-releases/international-travel-april-2020

the North to Stewart Island and the Subantarctic Islands in the south. Ngāi Tahu comprises 18 runanga (governance areas) corresponding to traditional settlements.

There are two rūnanga who are the kaitiaki (guardians) of the West Coast region. These are:

- Te Rūnanga o Ngāti Waewae is the mandated representative body of Ngāti Waewae, a hapū of Ngāi Tahu. Their takiwā is centred on Arahura and Hokitika and extends from the north bank of the Pouerua River to Kahurangi and inland to the main divide. Ngāti Waewae shares the area between Hokitika and Pouerua with Ngāti Māhaki. Te Rūnanga o Ngāti Waewae is based at Arahura Marae, where the whare tipuna (meeting house) is Tuhuru, named after a great fighting chief of Poutini Ngāi Tahu.
- Te Rūnanga o Makaawhio is the mandated representative body of Ngāti Māhaki ki Makaawhio, a hapū of Ngāi Tahu. Their takiwā is centred at Makaawhio (Jacobs River) and Mahitahi (Bruce Bay) and extends from the south bank of the Hokitika River to Piopiotahi and inland to the main divide. Ngāti Māhaki share the area between Pouerua and Hokitika with Ngāti Waewae. Te Rūnanga o Makaawhio is based at Te Tauraka Waka a Māui Marae, where the whare tipuna is Kaipo, named after an ancestor of all Poutini Ngāi Tahu

3.4 Economy

The West Coast has traditionally been a gold and coal mining area, but as those industries have declined agriculture, particularly dairy, has grown. Alongside this tourism has experienced significant growth contributing to an increase in hospitality and accommodation along with it.

The diagrams below show the range of industry and employment on the West Coast (2019).[6]

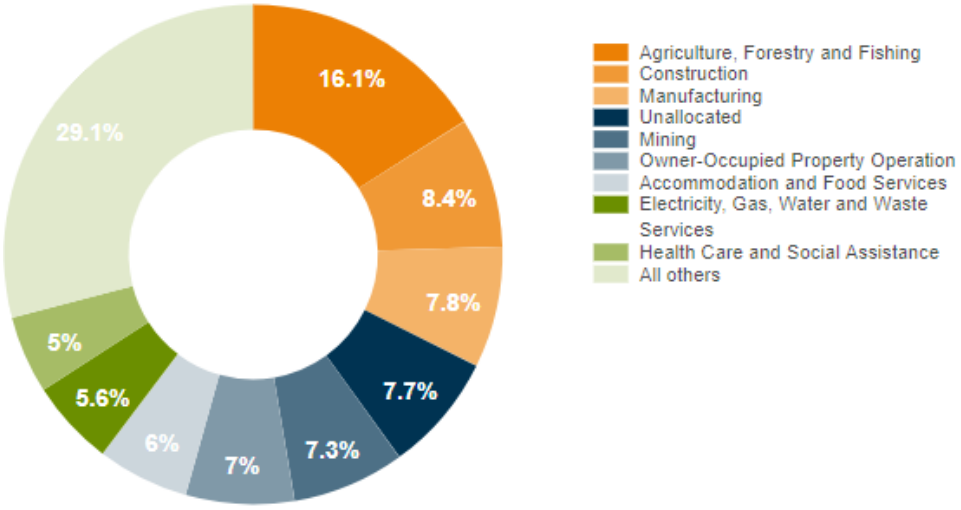


Figure 5: Proportion of GDP by industry on the West Coast 2019

[6] https://ecoprofile.infometrics.co.nz/West%20Coast%20Region/Employment

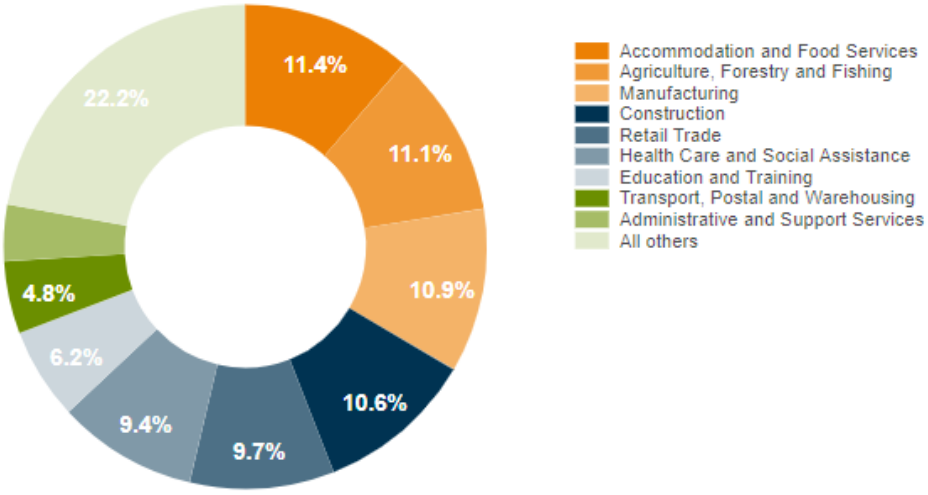


Figure 6: Proportion of jobs filled by industry on the West Coast 2019

The contribution of tourism to GDP is high compared to the rest of New Zealand. From 2012 to 2019 the tourism share of GDP in the region has more than doubled (6.7% to 14.9%), while absolute growth for 2012 to 2019 was 81.6% ($152m to $276m). Tourism is also a major contributor to employment in the region, supporting 22.5% or 3,657 filled jobs. Tourism was, before Covid-19, the largest contributor to employment (3,657 jobs) in the region.

Figure 7: Tourism share of total GDP West Coast and New Zealand 2000-19

The region's reliance on tourism, guest nights per capita are five times the national average and 50% of tourism spend comes from international visitors, makes it particularly vulnerable to the impact of Covid-19. Further, the West Coast is expected to experience the second largest immediate decline in job growth across 2020/21 after Otago.

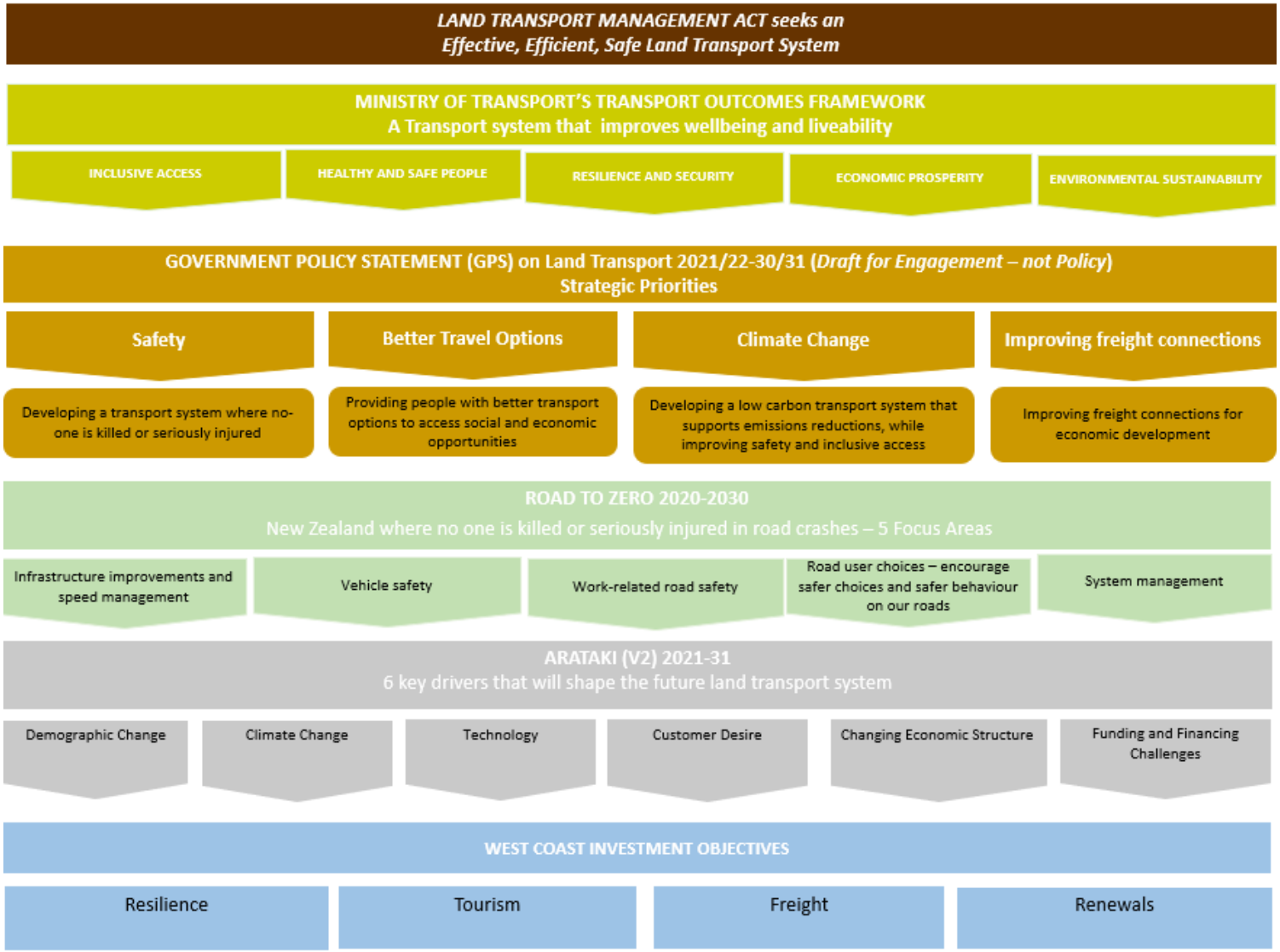
The ability for the West Coast to offset these losses through domestic tourism is challenged by its remoteness from major population centres in the North Island. Though MBIE's consumer spending data shows that after a major decline, weekly spending in each district has been above 2019 levels since the end of May.

Major uncertainties remain regarding the scale and duration of Covid-19 impacts, including for how long increased levels of domestic tourism offsetting international visitors can be sustained.

The West Coast has a relatively high share of GDP from exports, 44.3% in 2019 compared to 27.2% nationally. Agriculture dominates exports, with dairy product manufacturing accounting for 50.4% ($412.4m) of total exports from the region.

The nature of these industries, the export of goods and import of visitors, and a relative lack of alternative transport options other than rail mean the West Coast is reliant on the road network for economic vitality and growth. As mentioned above, most visitors are on self-drive holidays, disruption to the network at a point can have very localised impacts on income and employment, while freight providers require a robust network that is fit for purpose to optimise productivity across the region.

4 Strategic Context



4.1 Government Policy Statement on Land Transport 2021/22-30/31: Draft for Engagement (GPS)

The GPS provides the strategic direction for the National Land Transport Programme (NLTP). The draft 2021/22 GPS sets four priority areas as shown in the diagram below

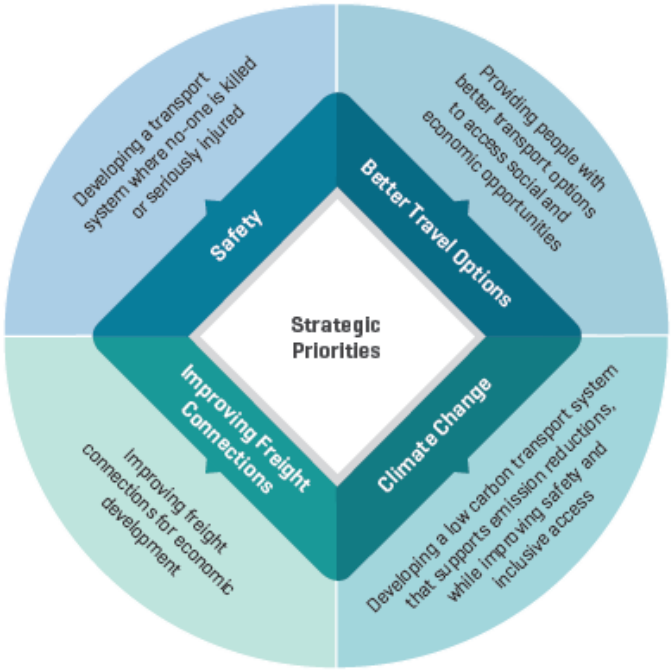


Figure 8: 2021 draft GPS on land transport strategic priorities

This PBC seeks to achieve the GPS strategic priorities for the West Coast through:

- A focus on freight connections to improve economic productivity and future growth opportunities.
- Strategic asset management that considers the long-term impacts of climate change on the region's communities, and how appropriate investment can effectively mitigate and adapt to these challenges.
- Multi-modal transport investment and improvements that improve local transport options and attract visitors to walk and cycle through the iconic landscape.
- A focus on safety for all users as the over-arching objective to all of our investments and decision making.

4.2 Road to Zero Safety Strategy 2020-2030

Road safety is a critical outcome sought for local residents and visitors to the West Coast. Road to Zero, released in December 2019, sets the vision for New Zealand's transport system where '*no one is killed or seriously injured on our roads*'.[7]

Safety has been incorporated in the over-arching vision of this PBC, that is safety for residents, the many visitors who come to the region each year and increasing numbers of people walking and cycling around the districts. This is structured around two key focus areas:

- Infrastructure improvements and speed management – targeted investment in network improvements and strategic decision making to ensure safe travel on local roads.

[7] Ministry of Transport (2019) Road to Zero https://www.transport.govt.nz/multi-modal/keystrategiesandplans/road-safety-strategy/

- Road user choices – promoting safe transport for all road users and ensuring that the journey experience of visitors to the region is positive.

Figure 9: Road to Zero Vision 2020-2030

4.3 Arataki – NZ Transport Agency Plan for the Land Transport System 2021-31

Where the GPS provides long-term strategic direction, Arataki is Waka Kotahi's 10-year view of what is needed to deliver on current government priorities. Arataki has been updated in light of Covid-19, for the West Coast it recognises that the land transport system will be a key lifeline for supporting post-Covid-19 recovery.

Three regional step changes are identified for the West Coast; this PBC is well aligned with each:

- Significantly reduce harms – a focus on road safety improvements through targeted infrastructure investment for multi-modal trips, safety audits and improvement to traffic services, and speed management.
- Tackle climate change – renewing and improving infrastructure to be resilient to future risk and identifying key issues on the network where medium to long-term mitigation or adaptation planning is needed.
- Support regional development – emphasis on developing a transport system that is safe and efficient for economic productivity and continues to be as much a part of the journey experience for visitors as the many iconic destinations across the region.

4.4 Regional Land Transport Plan 2021-31 (Draft)

'A safe, effective and efficient land transport network which brings together communities and industries on the West Coast and enables the region to thrive and contribute to a sustainable and prosperous New Zealand.'

At the time of writing the West Coast RLTP 2021-31 is in draft state and the content below may be subject to change in the final submission.

The draft RLTPs strategic transport objectives for the next 10 years are:

- A land transport network that is flexible, reactive, able to adapt to change and continues to provide connectivity.
- A transport system that provides and inclusive range of integrated, quality transport options for all users to meet their social, cultural and economic needs.
- A resilient, environmentally sustainable and energy efficient, land transport network the responds effectively to external pressures.
- Improve levels of safety across the transport system to reduce crashes resulting in death or serious injury.
- Environmentally sustainable and safe modes of transport that are beneficial to public health eg. walking and cycling.

These priorities are highly aligned with the investment objectives identified for this Strategic Case, ensuring that the prioritisation of projects and programmes for the 2021 C.TAMP meet regional as well as district transport objectives.

4.5 Tai Poutini West Coast Economic Development Strategy 2018-2025

The West Coast Economic Development Strategy was developed in collaboration with the district councils. regional council, iwi, Tourism West Coast, Development West Coast and the Department of Conservation. This Strategy sets the vision for economic development in the region:

'The West Coast will become a thriving and prosperous region – Working together to drive innovation through better utilisation of our unique natural resources will enable us to grow and care for our communities and environment.'

A key strategy to deliver on this vision is '*Infrastructure Investment to Support growth and resilience'* through:

- Investment in road resilience, safe and reliable connections along the West Coast into the region from the north, east and south are critical to supporting the region's economy.
- Growing the economic benefits from visitors and supporting the tourist industry, through enhanced visitor experiences, corridor improvements and increased visitor information.
- Support will continue for regional walking and cycling trails where there are opportunities to grow tourism and support increased expenditure from visitors.

5 The West Coast's Land Transport System

5.1 The Local Transport Network

5.1.1 OVERVIEW

At a regional level, the roading network is heavily reliant on the one north-south route – State Highway 6, providing the main arterial road functions for the West Coast and the linkages to neighbouring regions of Tasman and Otago. The local road networks extend off this main arterial, and there are few other options for making journeys up and down the coast. State Highways 7 and 73 provide important links to Canterbury and the ports in Christchurch.

Together the three councils own and operate approximately 1,945 km of roads. In addition, Waka Kotahi operates approximately 870 km of state highway across the West Coast region.[8] The Department of Conservation also administer a relatively short length of roads to provide access to public conservation land; some of these connect to the local road network.

[8] https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/

5.1.2 LOCAL ROADING NETWORK SUMMARY

The local road networks across the West Coast Councils are summarised below:

Table 3: Network Summary (as at 30 June 2020)

Asset Group	BDC	GDC	WDC	*Total*
Network length				
Data source: https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/				
Sealed	320.8 km	391.7 km	376.1 km	1,088.6 km
Unsealed	284.7 km	256.5 km	314.9 km	856.1 km
Total	**605.5 km**	**648.2 km**	**691 km**	**1,944.7 km**
Urban	102.5 km	161.1 km	60.9km	842 km
Rural	441.4 km	487.1 km	581.3km	992.5 km
Special Purpose Road	61.6 km	0	48.6 km	110.2 km
Total	**605.5 km**	**648.2 km**	**691.0 km**	**1,944.7 km**
ONRC Classification length				
Data Source: ONRC Performance Measures Reporting Tool				
Arterial	1km	4 km	0 km	5 km
Primary Collector	4 km	75 km	10 km	199 km
Secondary Collector	140 km	165 km	133 km	438 km
Access	220 km	145 km	190 km	555 km
Low Volume	223 km	224 km	357 km	804 km
Bridges				
Data Source: https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/				
(Note: there are some minor differences between the NZTA data and the WSP LCMPs).				
Total Bridges	**125**	**209**	**269**	**603**
Bridge restrictions				
Single Lane	94	101	154	349
Speed Restricted	1	5	11	17
Weight Restricted	4	12	14	30
Roading Assets Valuation				
Data Source: Roading Asset Valuation Reports (latest version)				
All roading assets	*2019*	*2020*	*2019*	
Total Replacement Cost	$348,902,220	$253,442,302	$319,160,725	$921,505,247
Depreciated Replacement Cost	$254,165,424	$170,329,584	$225,226,835	$649,721,843
Annual Depreciation	$3,139,467	$4,215,776	$3,261,218	$10,616,461

Asset Group	BDC	GDC	WDC	*Total*
Expenditure (2019/20)				
Data source: Transport Investment Online				
Local Roads	$4.06 m	$5.92 m	$4.88 m	$14.86 m
SPR	$2.12 m	n/a	$1.14 m	$3.26 m
Total	**$6.18 m**	**$5.92 m**	**$6.02 m**	**$18.12 m**

5.1.3 TRAVEL DEMAND AND GROWTH

The figure below shows that traffic volumes have seen a slight decrease in Buller (4.8%) and Westland (1.6%) over the last 10 years with an approximate 28% growth in vkt for Grey from 2013/14-2014/15, since which it has been more or less static[9].

Data is not available for different categories such as light vehicles or heavy vehicles.

Table 4: Traffic Growth 2010/11-2019/20

	Vehicle Kilometres Travelled (VKT)									
	2010/11	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Buller	37.6m	37.6m	37.6m	37.6m	37.5m	37.5m	37.5m	36.0m	36.1m	35.8m
Grey	47.1m	46.8m	46.2m	46.2m	59.1m	59.1m	59.1m	57.9m	57.9m	59.3m
Westland	36.9m	36.4m	36.4m	36.4m	36.4m	36.3m	36.3m	36.3m	36.3m	36.3m

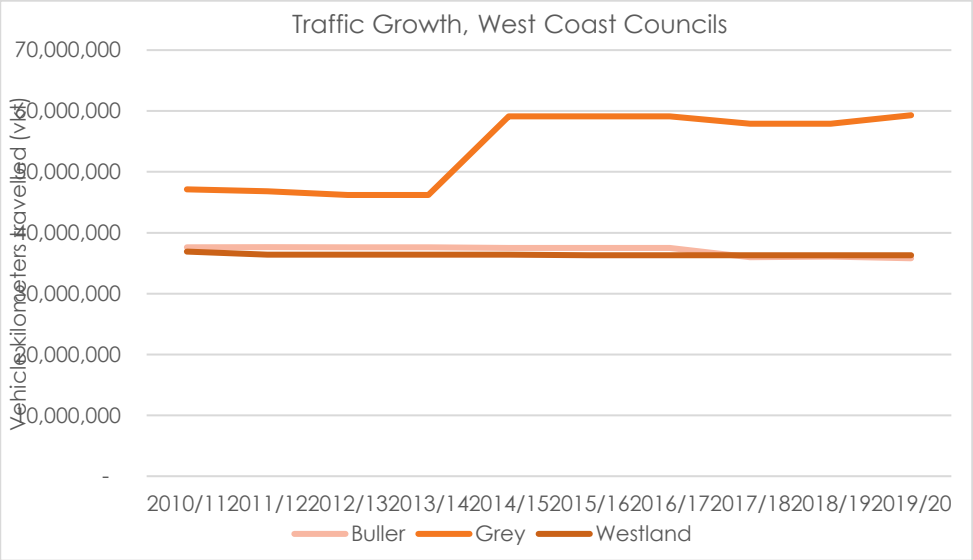


Figure 10: vkt 2010/11-2019/20

It is noted that traffic count data across the West Coast councils is limited and trends are therefore indicative only. This is being addressed through the implementation of recently developed Traffic Count Strategies.

Available local traffic count data has shown the following trends.

[9] Source: https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/transport-data/data-and-tools/

Buller - Growth of heavy vehicles in the order of 2.18% between 2004 and 2016, being higher in urban areas

Grey - Strong growth in HVs (3.41%) was recorded across the higher ONRC category routes between 2006 and 2015 with a decrease on the low volume routes, both rural and urban.

Westland – Local traffic count data was only available for 2005-2012 which showed growth across all ONRC categories except low volume roads and also showed a growth of 0.45% for HVs for the same period.

5.1.4 PUBLIC TRANSPORT

The West Coast does not have a comprehensive public transport network due to its small and dispersed population base although some private operators provide services where demand warrants such as for tourism and school buses.

However, the councils receive a subsidy for small (but important) programmes for taxi services in Westport, Greymouth and Hokitika, and regional total mobility scheme for wheelchair hoists.

The West Coast Regional Public Transport Plan 2015 cites little demand for increased public transport services and no plans for major changes to existing or funding new services at present.

5.1.5 WALKING AND CYCLING

Walking and cycling are important transport modes for the West Coast, both for day-to-day travel in urban areas, and perhaps more prominently as regional attractions through many walking, tramping and cycle trails.

The West Coast is well known for its day and multi-day walking tracks, and more recently mountain bike tracks including Heaphy Track, Old Ghost Road and the Paparoa Track.

Closer to the main towns a high-quality network of cycle and shared trails is being developed, over time these tracks will link up to form a regional network. The West Coast Wilderness Trail (Figure 11) is one example of these, running 120km from Kumara to Ross. More trails are planned for continued development, and the new Kawatiri Cycle Trail will extend from Westport to Charleston.

The network of cycle trails is being enjoyed by locals and visitors alike, making the West Coast wilderness more accessible to riders of all ability levels.

Walking facilities were a focus of the 2019 community survey, with themes emerging around a need for improved footpath condition, and provision of better walking and cycling infrastructure in urban areas.

Figure 11: West Coast Wilderness Trail map

Buller's recently completed Walking Action Plan[10] is focused on encouraging 'more walking, more cycling, more often'. This document provides an action plan that identifies a wide range of infrastructure, supporting policies and delivery actions for the next 10 years. Buller has recently received significant funding to invest in walking and cycling connections between the town centre and river in Westport, this anchor project will provide a connection between existing trails in the area and act as a catalyst for future investment in active modes in the town centre.

[10] https://bullerdc.govt.nz/wp-content/uploads/2019/08/Final-walking-action-plan.pdf

5.1.6 OTHER TRANSPORT INFRASTRUCTURE

Other key infrastructure, not specifically part of this C.TAMP but important in the context of 'inter modal' considerations, include:

- Port facilities at Jackson Bay, Greymouth, and Westport;
- Airports/aerodromes, including those at Westport, Greymouth and Hokitika;
- The Midland rail line (between Greymouth and Christchurch) and associated branch lines serving Hokitika and Buller.

5.1.7 GREYMOUTH AND WESTPORT PORTS

While independent of the local road network, the ports at Greymouth and Westport are identified as lifeline assets and important contributors to future economic growth in the region. The 2019 feasibility report 'Securing the Future of the West Coast Ports' made recommendations for improving the performance and benefits achieved for the region from each port. Regarding transport, the report recommends the formation of a West Coast Transport & Logistics Establishment Board to pursue a regional growth strategy. This strategy considers all transport modes; shipping, rail and road, and seeks to develop a logistics model that meets the needs of industry, transport operators, ports and stakeholders.

The study recognises that primary sector industries which currently export products via road and rail are unlikely to shift to sea freight. So, future growth of the two ports is based on establishing new extractive industries. Given the timeframe for such growth there is no evidence that investment in improved or new road assets is needed to support either port at this time.

5.2 Roading Service Delivery

The West Coast councils generally operate as three separate entities although they do work together as part of the 'Top of the South and West Coast Group', a Regional REG group formed to undertake tasks and implement change / improvement in delivery of the roading activity.

Activity and Asset Management Planning is being undertaken collaboratively, as evidenced by the 2017 PBC and this Combined Transport PBC and 2021 C.TAMP. Management of the physical works maintenance and capital contracts are undertaken in-house with specialist consultants engaged as and when required. Asset management is also generally completed in-house.

Road Maintenance contracts are also delivered separately by the three councils, current road maintenance contracts are held by Council Controlled Organisations (CCO): WestRoads Ltd is engaged by Westland DC and Grey DC. WestReef hold the Buller DC contract, with a new contract due to commence 1 October 2020.

Fulton Hogan holds the current Waka Kotahi West Coast Network Outcomes Contract (NOC) Contract.

None of the three councils has a fixed-term contract in place for professional services. There are a number of local consultants, but the West Coast is not generally considered a priority. West Coast councils are seen as low-cost providers which is reflected in the difficulty experienced in engaging consultants for works. As part of the 2021 C.TAMP the three councils have engagement professional services under a combined contract, the Commercial Case further details the preferred approach to collaboration moving forward.

5.3 Levels of Service

Each of the West Coast Councils report on a number of levels of service and performance measures through their Annual Report, including DIA mandatory non-financial performance measures related to safety, road and footpath condition and customer response.

The diagram below shows performance against the DIA measures over the last three years[11], indicating room for improvement and, in some cases, a review of the targets that have been set to remain challenging yet achievable.

[11] https://www.nzta.govt.nz/roads-and-rail/road-efficiency-group/rca-reports/

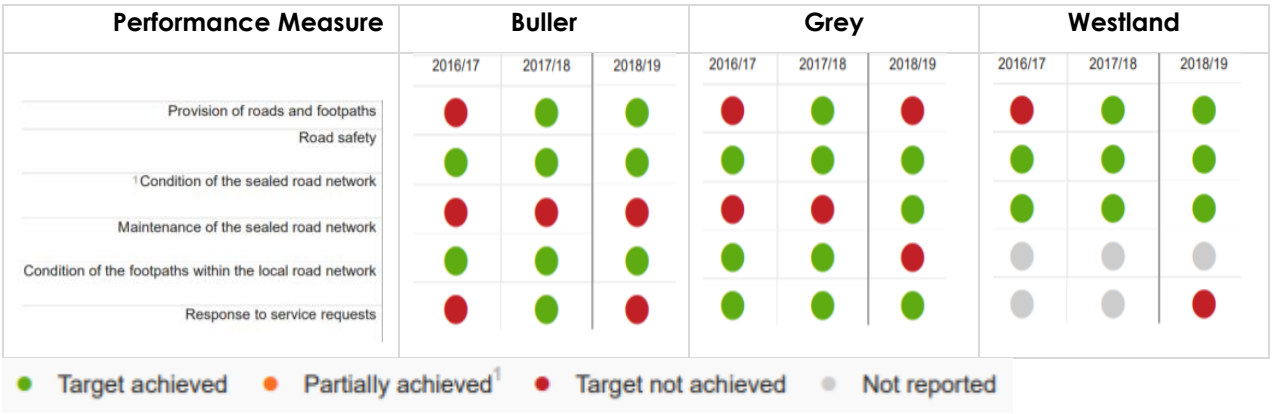


Figure 12: DIA Non-Financial Measures Performance (2018/19 RCA Report)

Overall, the West Coast Councils are not looking to increase levels of service over the next three years, but they are seeking to better meet current targets.

The exception is bridges where it is recognised that improvements and an increase in levels of service are required to support economic development across the region. There are currently a number of structures with limited LOS capacity with 64 bridges posted or proposed to be posted, approximately 80 bridges restricted for 50 Max and HPMV and over 400 single lane bridges across the local networks.

There is also a desire to further develop 'technical' levels of service that will provide for consistency across the Region and will support our Investment Objectives. This may range from bridge improvements (e.g. single lane to two lanes on key routes) through to consistent carriageway widths for particular ONRC categories of road.

5.4 Road Safety

The nature of the road network with many narrow and winding roads, and lack of alternative routes, means that light and heavy vehicles, and residents and visitors, are all using the same parts of the network. Further, growth in visitors into new parts of the region has seen higher numbers of vehicles (including campervans) on low volume rural roads that were not designed with these users in mind.

The Communities at Risk Register (CAR)[12] is produced by Waka Kotahi and highlights the personal risk to road users. It is noted that the CAR register reports on both state highways and local roads. As noted in 'Arataki', while the West Coast has relatively low levels of total deaths and serious injuries (DSIs), the region's transport system has the country's worst safety record in terms of DSIs per capita[13]. See Appendix 2 for CAR summary results.

The CAR 2019 data shows the West Coast region to be of 'medium concern' in several areas:

- Vehicle run-off and head-on crashes, often a result of inexperienced road users including visitors, and speeding on high-risk urban and rural roads.
- Driver behaviour, especially alcohol and drug impairment, people not wearing seatbelts, and speeding.
- Increasing numbers of buses, campervans and tourist drivers contributing to a high number of drivers unfamiliar with the local road network, and relatively slow vehicles on the roads causing frustration and high-risk decision making among other drivers.

Safety Performance at a local road network level is measured under the ONRC PMRT under a number of outcomes and outputs. The total number of crashes on local roads across the region has generally been trending upward from 2014-2019 as shown below. Grey has shown a gradual increase

[12] https://www.nzta.govt.nz/assets/resources/communities-at-risk-register/docs/communities-at-risk-register-2019.pdf

[13] https://www.nzta.govt.nz/assets/planning-and-investment/arataki/docs/regional-summary-west-coast-august-2020.pdf

in 'Deaths and Serious Injuries (DSI) over the last five years with Westland showing a decrease in 2018/19 whilst Buller has the highest number of DSI over the period.

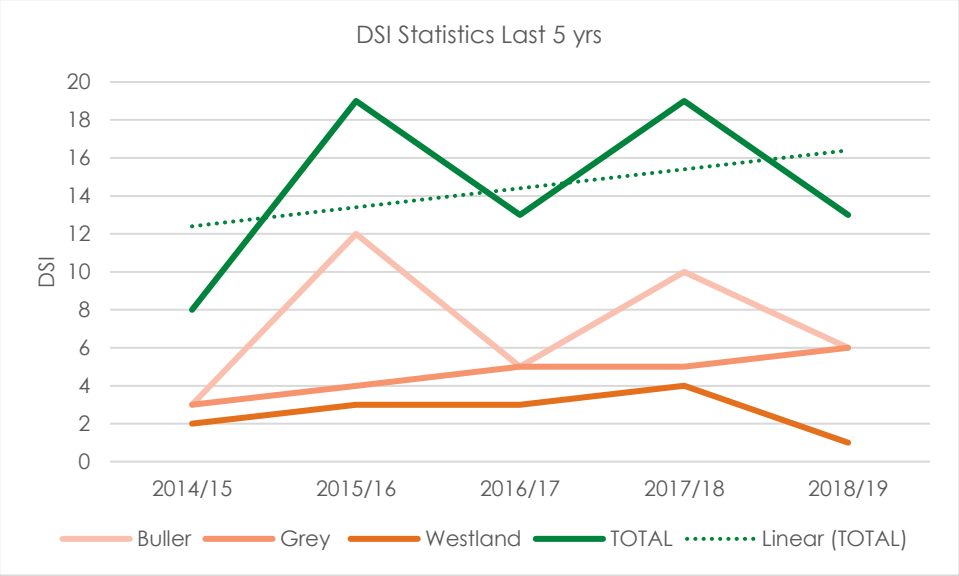


Figure 13: West Coast Local Road Deaths & Serious Injuries 2014-2019 (ONRC PMRT)

'Collective Risk' (no. of accidents per km of road) and 'Personal Risk' (no. of accidents by volume of traffic) statistics over the last 10 years are shown below. The West Coast is generally similar to other provincial and rural districts with regard to collective risk across all ONRC road categories (with the exception of Buller which is significantly higher on primary collector routes), but personal risk is generally higher on low volume roads.

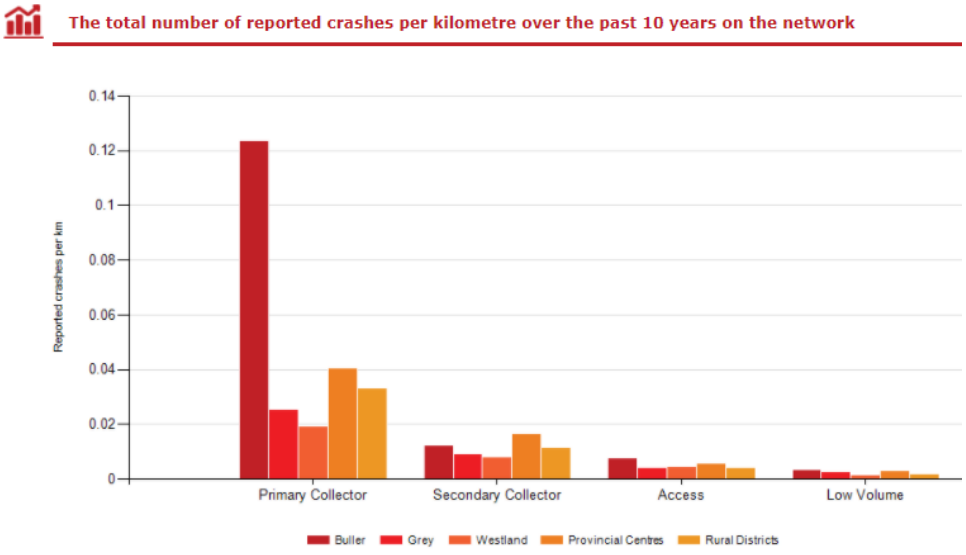


Figure 14: Collective Risk (ONRC PMRT)

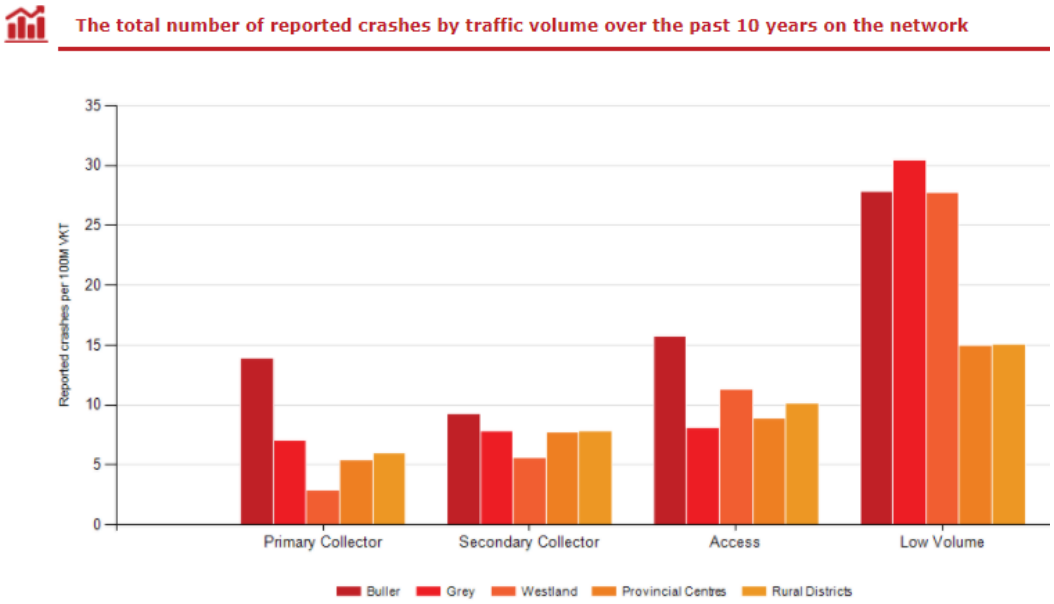


Figure 15: Personal Risk (ONRC PMRT)

5.5 Network Performance

5.5.1 ROAD CONDITION

The 20-Year Forward Works Plan developed for each district finds that overall, pavements are achieving relatively good surface lives, with good structural strength and surface geometry. There are some isolated sections of pavement renewals needed, and uplift in resealing activities to achieve desired levels of service over the 20-year programme and beyond.

General road condition, as shown below for Smooth Travel Exposure (STE), is not dissimilar to other provincial centres across New Zealand although performance is below that of rural roads nationally for each of the Councils.

Westland DC is performing better than Buller and Grey DC for STE across all road classifications with all showing better performance on higher class roads (arterial / collector).

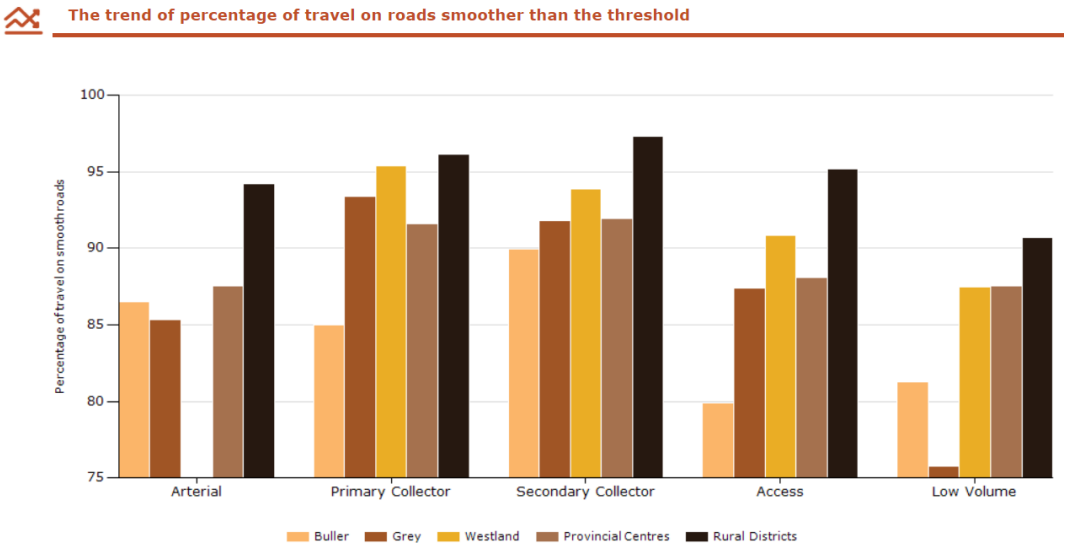


Figure 16: Smoothness: Smooth Travel Exposure – West Coast Councils (Source ONRC PMRT 2019/20)

The graphs below show the trend of performance in relation to smoothness. Each of the councils has shown a decrease in the percentage of roads smoother than the threshold over the last five years.

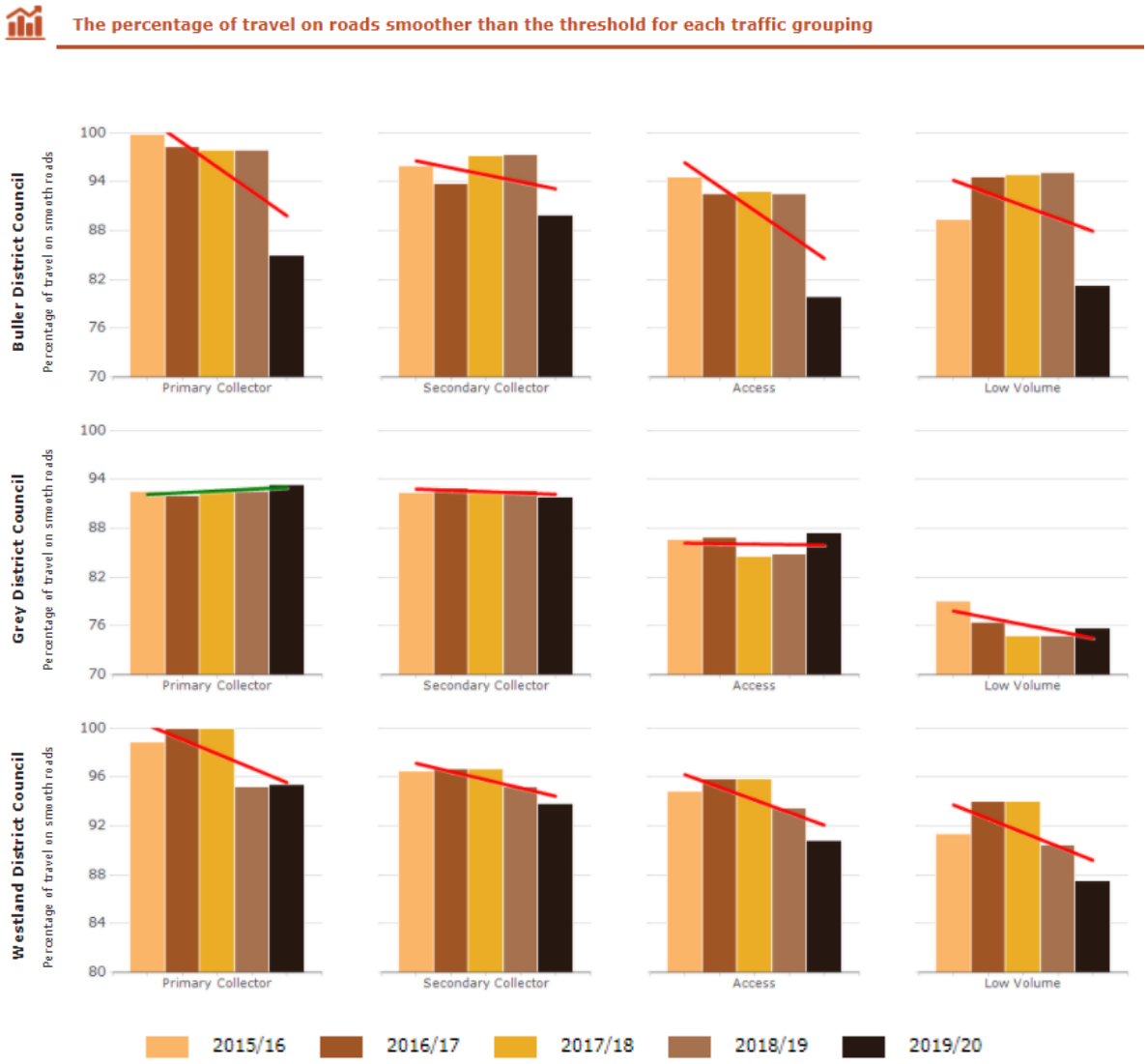


Figure 17: Smoothness: Smooth Travel Exposure – West Coast Councils (Source ONRC PMRT 2019/20

Figure 18 below shows the trend of peak roughness over the last five years for each of the West Coast councils, compared to their peer groups (provincial centres and rural districts).

Results are variable:

- Roughness is increasing across all road classifications for Buller other than low volume roads with more significant increases on primary and secondary collector roads
- Grey has shown consistent performance for all road classifications other than low volume roads which has shown a light increase in the 85th percentile
- Westland has shown a slight increase in the 85th percentile across all classifications other than Access Roads
- Results are generally similar to other provincial centres but for rural districts as a whole, performance is increasing across all classifications.

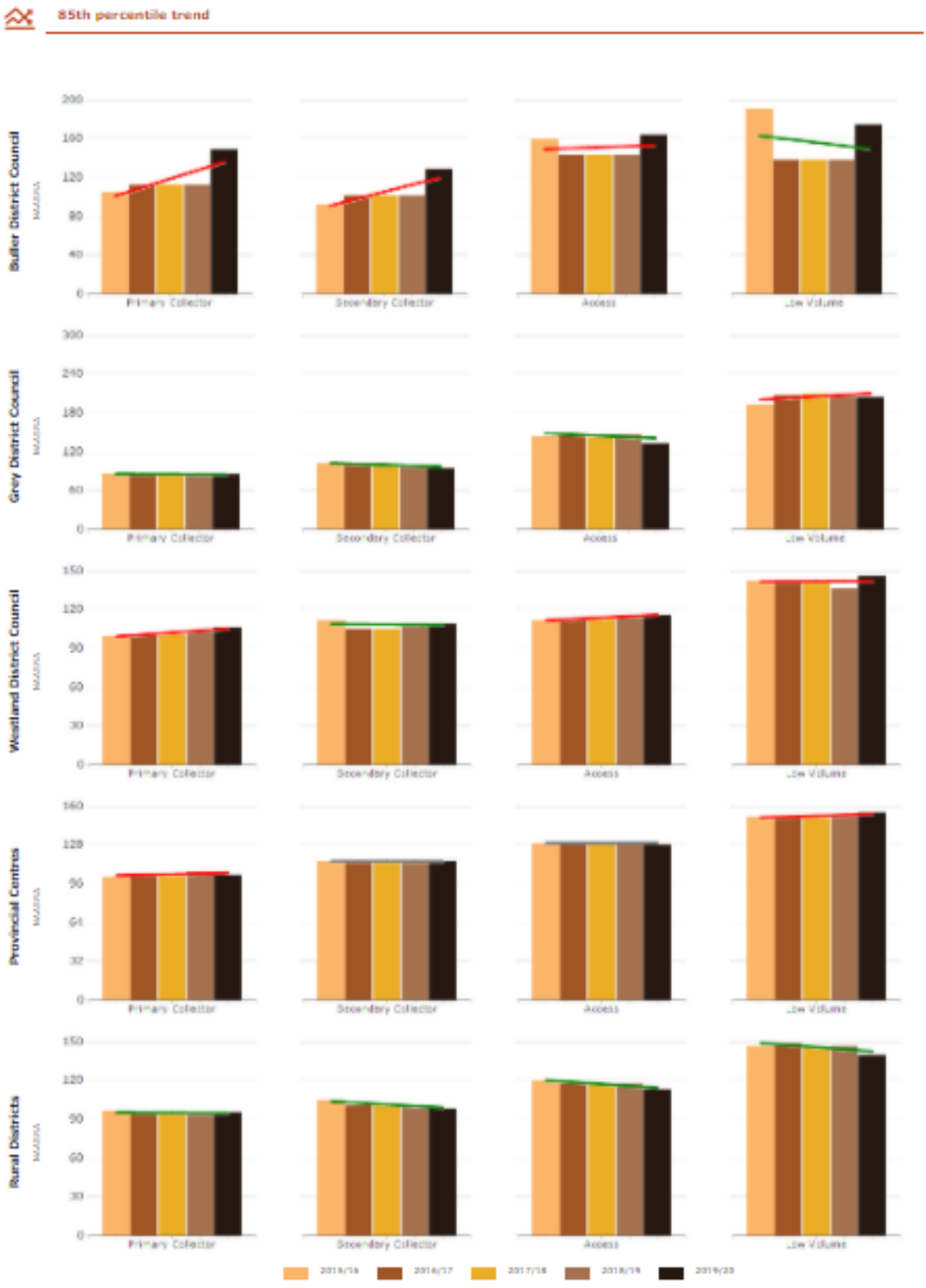


Figure 18: : Peak Roughness - 85th Percentile Trend (Source ONRC PMRT 2019/20)

5.5.2 BRIDGES AND STRUCTURES

WSP has recently (May/June 2020) completed a Road Structures Lifecycle Management Plan for each of the West Coast districts (Refer Appendix 9). These Plans have substantially improved the

knowledge and evidence each district has for the current state of their bridge assets, and provides detailed recommendations for the next 10 years of investment in maintenance, renewal and replacement activities to address identified issues and achieve current level of service targets.

It is recognised by each council that continual effort though the 2021-24 period will be required to improve bridge knowledge, management and lifecycle planning.

The WSP reports highlight serious areas of concern for each district, specifically:

- Deferred maintenance has led to a reduced level of service and poor condition on many bridges that need to be addressed urgently.
- For some bridge's extensive component renewals or full replacement is needed to address identified condition issues.
- Forward maintenance and renewal activities must increase to avoid more bridges and structures deteriorating to this level. **25 bridges have been identified for improvement or replacement due to condition over the 2021/24 period**.
- In addition to condition issues, several bridges on key routes do not currently meet desired levels of service for modern freight vehicles and are posted with speed and weight restrictions. **20 bridges have been identified for improvement or replacement due to level of service in the 2021/24 period**.

These findings support the views expressed by council staff and stakeholders, particularly freight, that the worsening condition of bridges on the West Coast poses a serious concern of asset failure risk, and poor economic outcomes as heavy vehicle movements become more restricted.

Issues presently faced across the region include:

- Waterway issues (debris build-up and impact, scour and aggradation)
- Vulnerable structure types (buried concrete metal culverts, timber structures)
- Corrosion of structure in aggressive environment hidden by Gold Seal Coating
- Fish passage
- Seismically vulnerable structures

Key findings and recommendations by district are:

Table 5: Bridges LCMP Recommendations

District	Findings / Recommendations	Anticipated cost impact
Buller	Six structures are proposed for condition-based replacement in 2021-24	$1.75m estimated replacement cost.
	Four structures are proposed for level of service replacement in 2021-24	$3.1m estimated replacement cost *(note some of these structures are included in the condition-based replacement list)*
	Maintenance and component replacement backlog needed to be addressed in the next five years	$118k (maintenance) and $2m (component replacement). This is additional to routine maintenance that should be carried out during the same period
	Historic funding of ~$110k per annum (local roads and SPR) for maintenance and renewals is insufficient	Recommended to increase to $300k per annum to avoid an increasing backlog. This increase will address identified issues and set an appropriate budget relative to the replacement value, age, and condition of Buller's bridges

District	Findings / Recommendations	Anticipated cost impact
Grey	Seven structures are proposed for condition-based replacement in 2021-24	$1.28m estimated replacement cost
	Five structures are proposed for level of service replacement in 2021-24	$11.3m estimated replacement cost.
	High priority maintenance and component replacement (routine, structural and bridge guardrail)	In the order of $930k - $1.4m
	total maintenance backlog (high, medium and low priority)	In the order of $3.2m - $4.8m
	Address existing issues and avoid an increasing backlog	Maintenance spend of ~$400k and renewals spend of ~$300k per annum is required
Westland	12 structures are proposed for condition-based replacement in 2021-24	$1.38m estimate replacement cost.
	11 structures are proposed for level of service replacement in 2021-24	$1.32m estimated replacement cost *(note some of these structures are included in the condition-based replacement list)*.
	Maintenance and component replacement backlog needed to be addressed in the next five years	$795k and $4.06m respectively. This is additional to the routine maintenance that should be carried out during the same period.
	Historic funding of ~$117k per annum (local roads and SPR) for maintenance and renewals is insufficient	Recommended to increase to $550k per annum to avoid an increasing backlog. This increase will address identified issues and set an appropriate budget relative to the replacement value, age, and condition of Westland's bridges. Further, three major structures on the SPR are recommended for maintenance and renewals: Arawhata bridge requires sandblasting and painting to address rust issues (est $900k), and the Okuru and Waiatoto bridges both have concrete spalling issues.

5.6 Expenditure

The graphs below outline expenditure on the Roading Activity per annum.

5.6.1 TOTAL EXPENDITURE

Source: Transport Investment Online

Th graph below shows a general increase in total expenditure over the last 10 years for each of the West Councils with a more marked increase since 2017/18. This partly reflects implementation of the improvement Programme for the preferred option of the 2017 PBC 'Preparing for step change'.

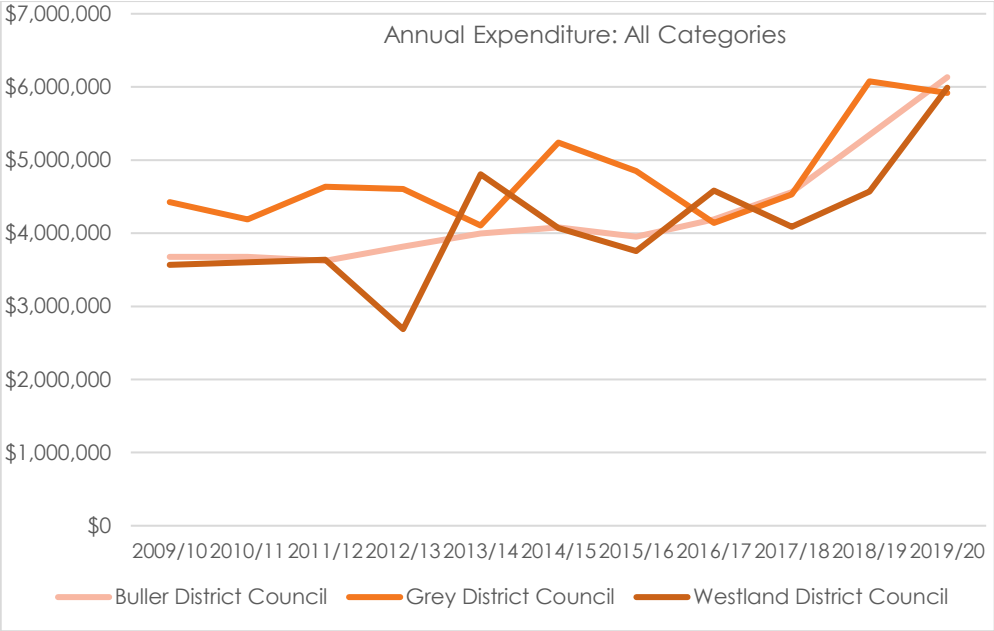


Figure 19: All Expenditure 2009/10 – 2019/20

5.6.2 COST EFFICIENCY

The graphs below show that each of the West Coast councils is spending less overall than their peer group and that gap has grown significantly since 2016. This will likely reflect the deferred maintenance, of structures in particular, that has been identified by each council.

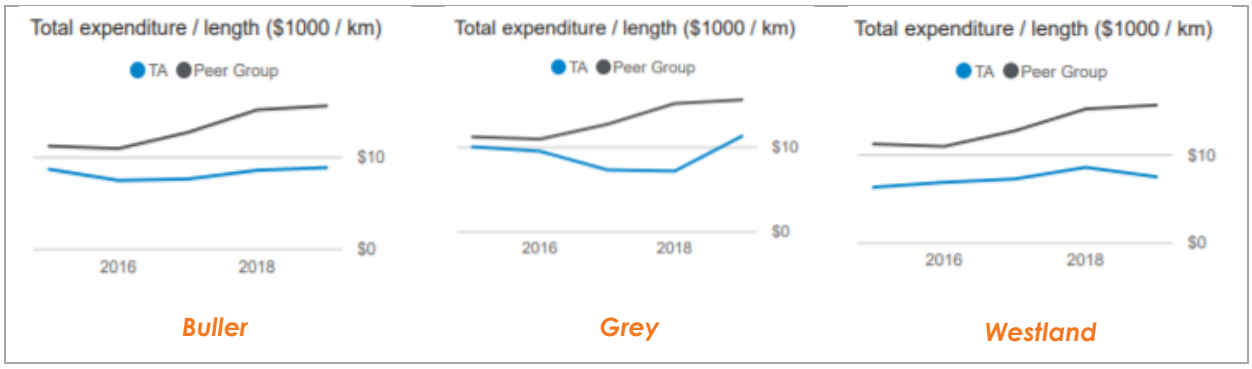


Figure 20: Cost Efficiency Graphs – 2019/20

Source: www.nzta.govt.nz/assets/Road-Efficiency-Group/docs/rca-reports/

Activity-based cost efficiency performance is outlined in the graphs below with data compared to peer group districts (Provincial Centres with 10% - 50% urban roads and Rural Districts).

Resurfacing

Source: ONRC Performance Measure Reporting Tool

Figure 21 below shows that Buller spent significantly more per km lane resurfaced by chipseal in 2019/20. This is primarily due to local contract rates. Westland also showed generally higher costs, other than for secondary collector roads.

Note: cost data is not available for asphalt surfacing

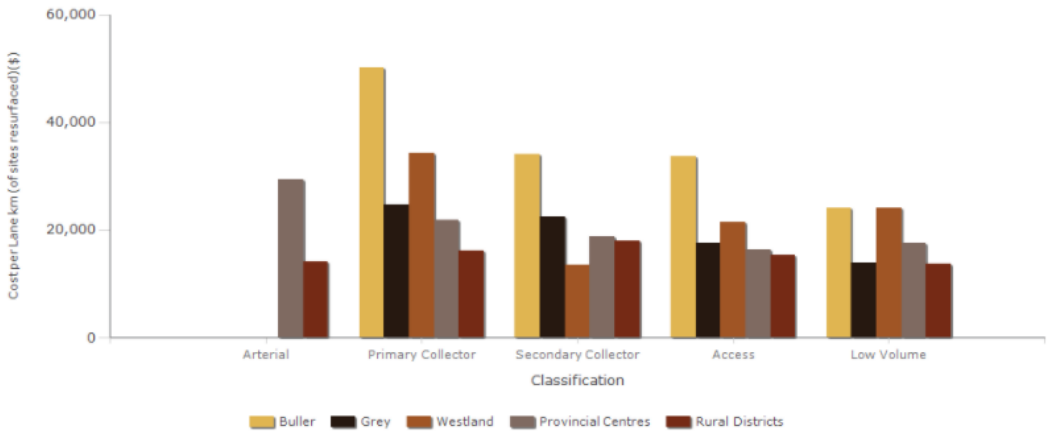


Figure 21: Cost per lane km of sites resurfaced (chipseal) 2019/20

Figure 22 below shows that the West Coast councils all generally perform in line with their peer groups for average surface life achieved with Buller and Grey both exceeding peer group averages for Access and Low Volume roads.

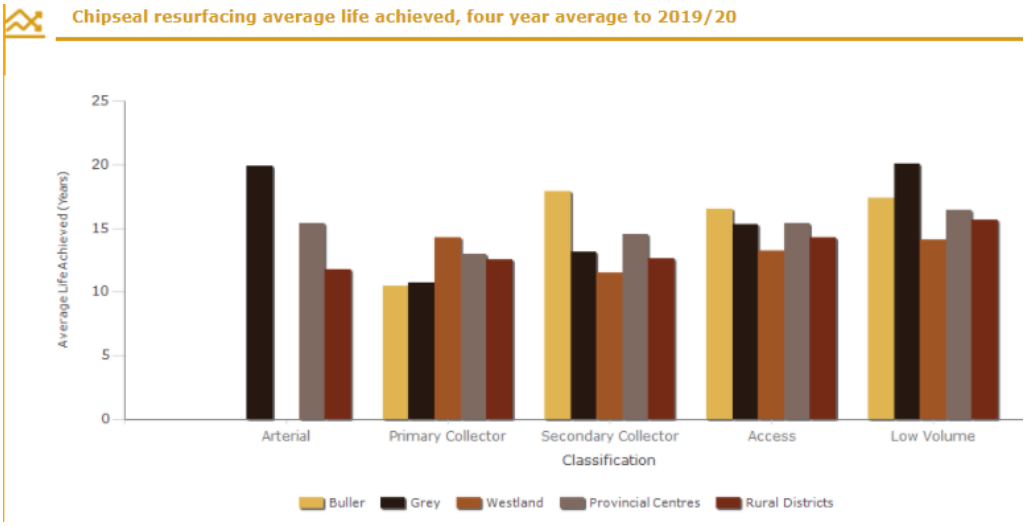


Figure 22: Surfacing - Average life achieved: Chipseal

For asphalt resurfacing, where this is constructed, the West Coast councils generally perform at or above peer groups.

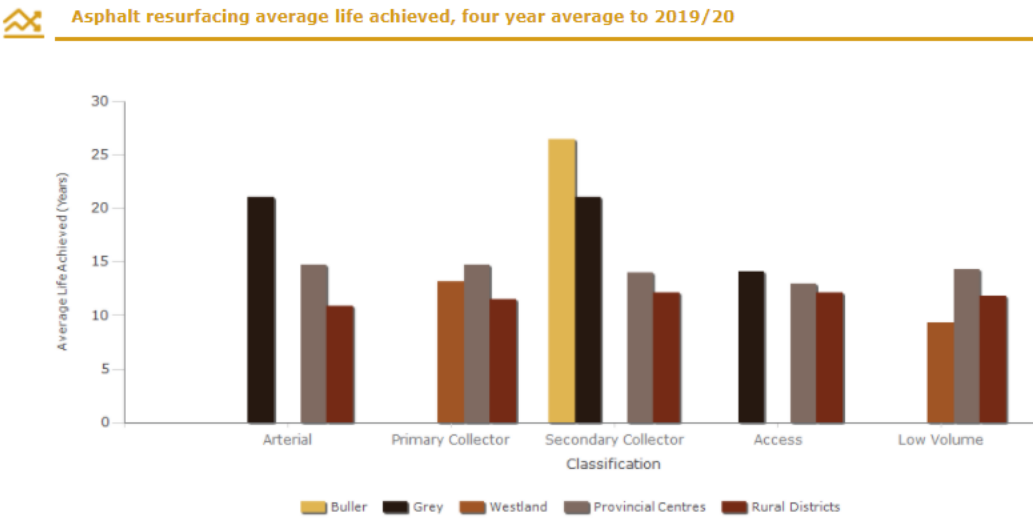


Figure 23: Surfacing - Average life achieved: Asphalt

5.6.3 NETWORK AND ASSET MANAGEMENT

Figure 24 below shows that each of the West Coast councils are spending well below their peer group, approximately half the average for provincial centres.

Evidence shows that an increase in expenditure in this area is supported to improve quality of data and subsequent decision making.

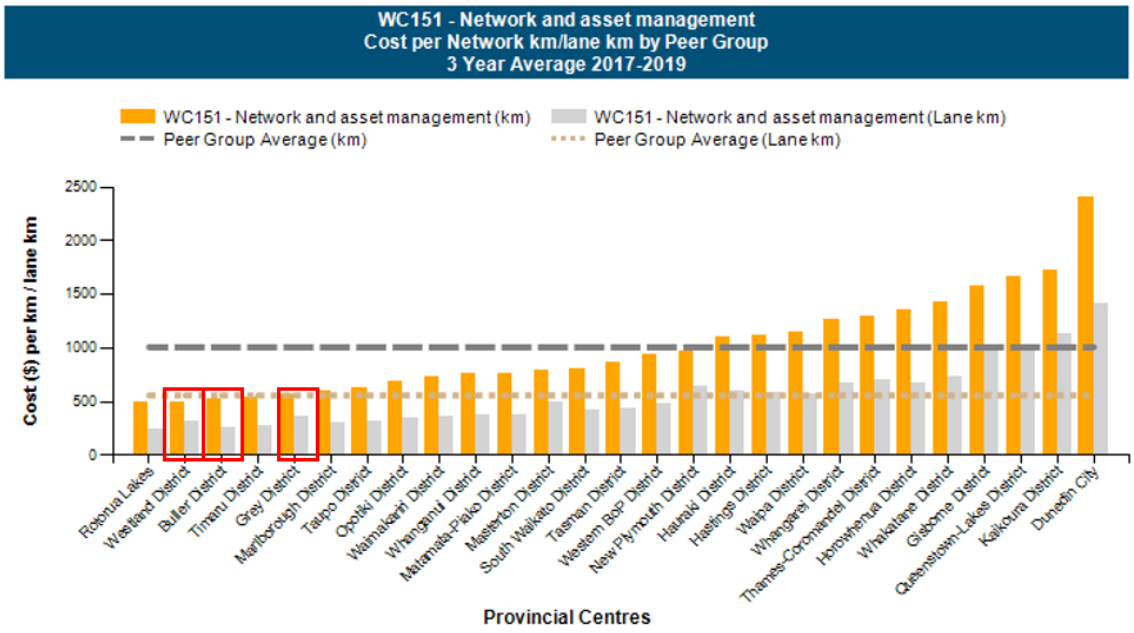


Figure 24: Network and Asset Management Expenditure Comparison

6 The Benefits of Investment

6.1 Overview

In August 2019, Rationale Ltd facilitated ILM workshops in Hokitika, Greymouth and Westport to identify the problems faced and expected benefits of investment for each council. Individual ILMs were developed (refer Appendix 3) with a subsequent combined regional ILM focussed on collective issues.

Common issues across the individual ILMs was data quality and the ability of the Councils to attract and retain resources. Changing network demand and constraints was also a common theme as was affordability.

Westland DC also identified the frequency and increased severity of weather events as having an impact on the road network.

Following stakeholder and community engagement in late 2019, a regional combined ILM focussed on investment objectives for the AMP was developed.

See Figure 4: Combined Transport PBC development process in Section 2.4 for an overview of the ILM process.

6.2 Preliminary Combined ILM – Ability of the Councils to Plan & Deliver

The preliminary ILM focused on the three council's individual ability to effectively plan and make good investment decisions now and into the future. These challenges are important to consider for the C.TAMP where they may inhibit the ability to realise the investment objectives.

The problem statements were then developed to prepare a combined ILM with a focus on planning and delivery of the land transport activity:

1. **Poor / incomplete data inhibits the ability to deliver evidence-based forward works programmes and present the case for funding, creating investment uncertainty (35%).**

   All Councils acknowledged they have considerable issues with poor/incomplete data. This is impacting on their ability to present a robust case for increased investment to Waka Kotahi and other potential funders. By addressing this problem, we can increase investor confidence and gain a better understanding of where investment is required as a priority across their networks.

   Appendix 5 includes the ONRC Data Quality results for 2019/20.

   The results are summarised below as spider charts, showing percentage at the expected standard and comparing each of the West Coast councils with its provincial centres peer group.

   The charts also show a target score for each council of '82% of expected standard'. Whilst meeting expected standard in relation to 100% of measures is the overall aim, 82% is considered a challenging but achievable goal with a focus on areas of 'high importance' such as maintenance activity records and accuracy of asset condition data.

   Overall, the charts show each of the West Coast councils scoring well below their peer groups with general areas of data poor performance being in the maintenance activity (records) and in demand (traffic counting & estimation).

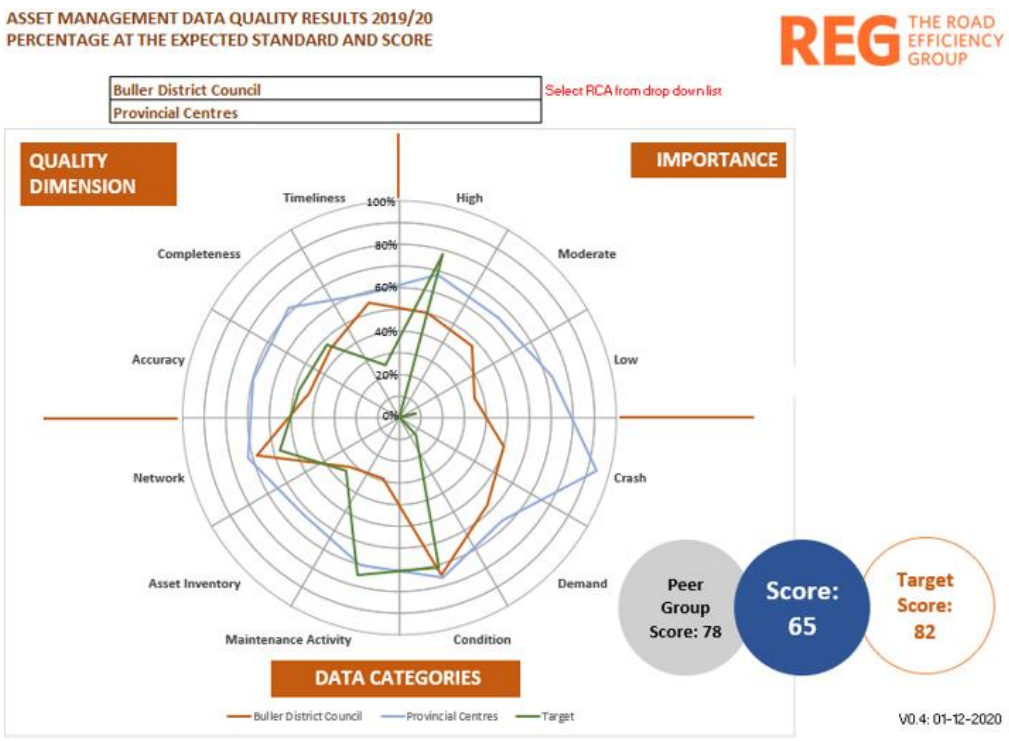


Figure 25: Asset Management Data Quality Results 2019/20 – Buller

Figure 25 above shows Buller DC to be performing below the standard of its peer group in all areas of data quality. Particular areas for improvement include maintenance activity data (20% of expected data quality standard) and completeness / accuracy of data (45% and 43% respectively of expected standard).

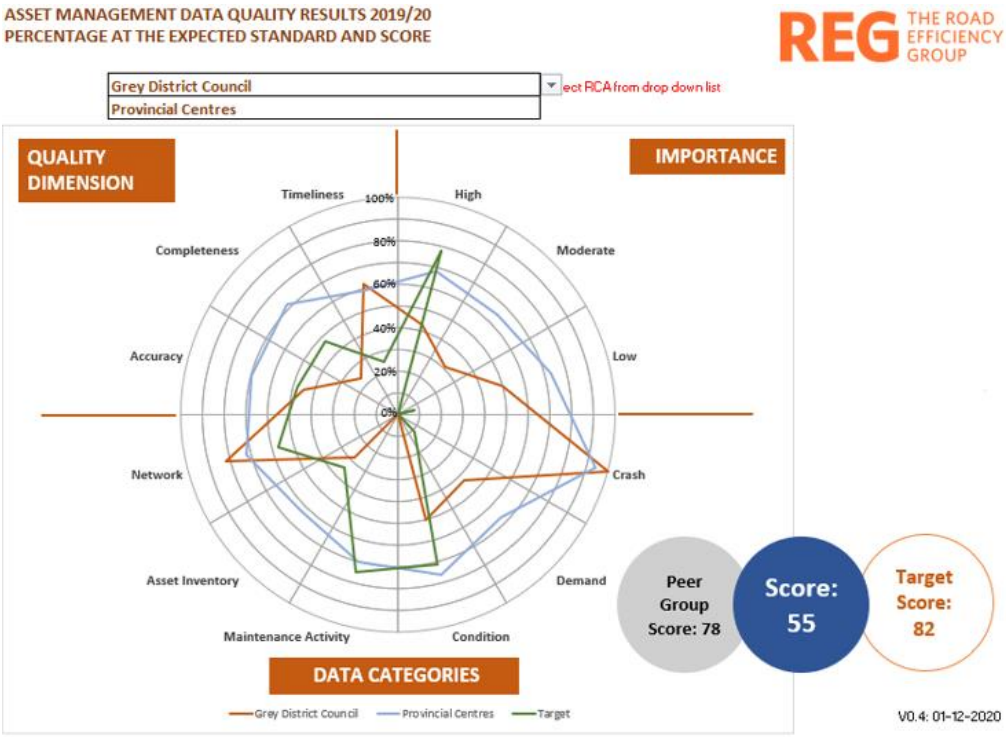


Figure 26: Asset Management Data Quality Results 2019/20 – Grey

Figure 26 above shows Grey DC to be performing below the standard of its peer group in several areas of data quality. Particular areas for improvement include maintenance activity data (where data has not been collected) and completeness of data (24% of expected standard). Grey also scores particularly low in the data category of Asset Inventory at 28% of expected standard.

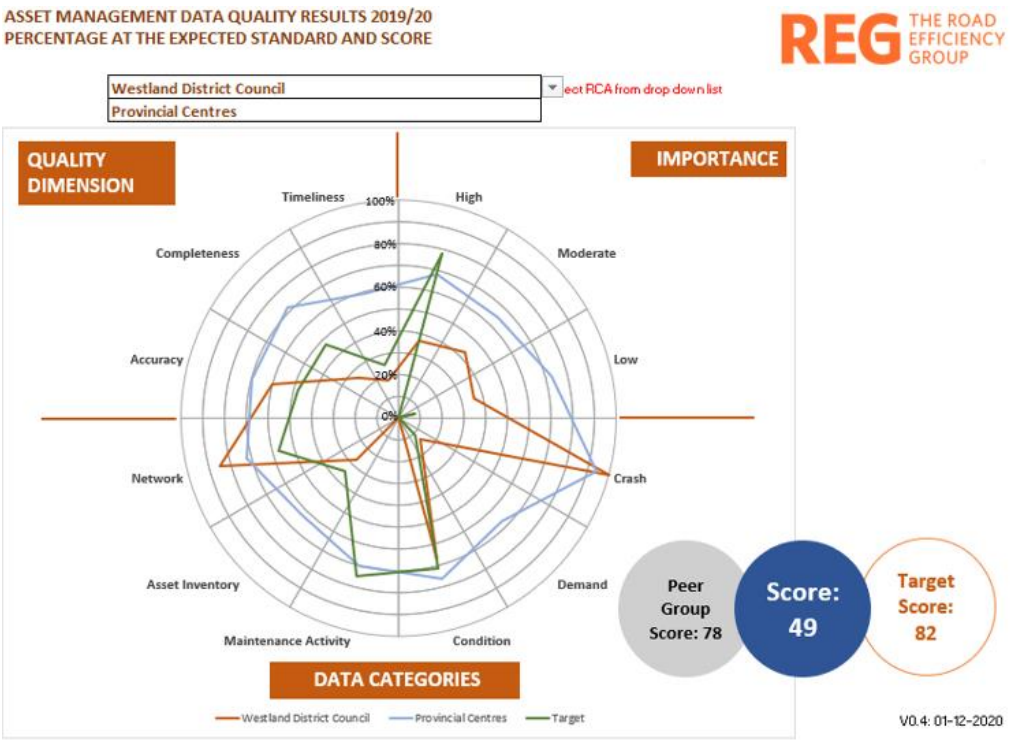
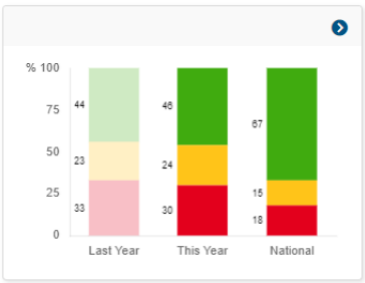


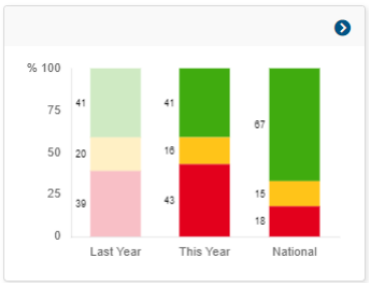
Figure 27: Asset Management Data Quality Results 2019/20 – Westland

Figure 27 above shows Westland DC to be performing below the standard of its peer group in most areas of data quality. Timeliness and completeness of data are particular areas for improvement (18% and 26% of expected standard respectively). Data has not been previously collected for maintenance activities and demand (at 14%) is another area that needs to be addressed.

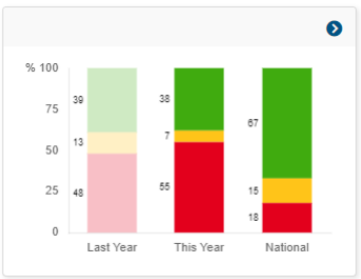
The overall results for 2019/20 below show a slight improvement over the last year for Buller (overall score of 64 to 65), the same result for Grey (at 55) and a slight fall in data quality for Westland (overall score went from 52 to 49). All councils show a higher level of 'major issues' when compared nationally although, when compared to the 2016/17 results, each council has improved performance in this area.



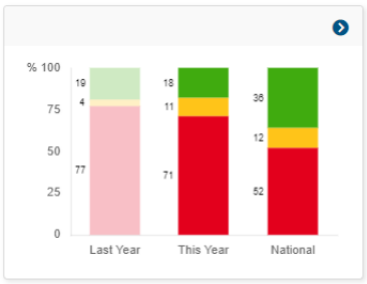
Buller (2019/20)



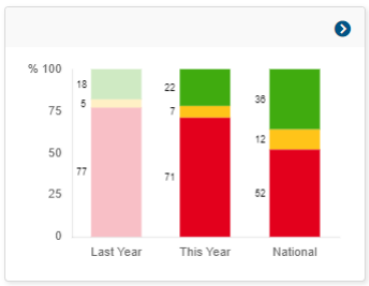
Grey (2019/20)



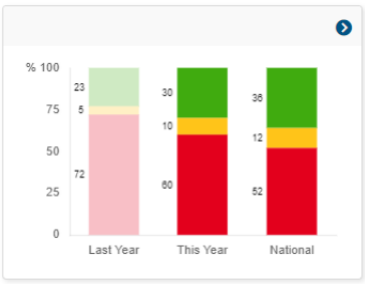
Westland (2019/20)



Buller (2016/17)



Grey (2016/17)



Westland (2016/17)

Figure 28: ONRC Data Quality results (PMRT) 2019/20

Each council now needs to further improve in this critical area of data quality.

It is noted that the Waka Kotahi Asset Management Data System (AMDS) is to be rolled out and implemented across NZ by 2024. The aim of the AMDS is to improve the management of land transport infrastructure asset information that supports consistent data standards and best decisions about our land transport assets. The West Coast councils will be required to implement the AMDS once in place and prior to the 2024/27 funding round.

This is also an area identified in each of the West Coast councils' NZTA Investment Audit Reports[14]. Buller DC and Grey DC were identified as having shortfalls in the data collection and management to support investment with Westland DC requiring improvement in their financial processes.

A joint assessment of 'asset management maturity was undertaken in June 2020 to assess the maturity of the current asset management practices in meeting current and future needs. This is outlined in detail in C.TAMP Part B: Integrated Approach to Asset Management. The West Coast councils are currently operating at a 'Core' to 'Intermediate' level of asset management maturity. The aim is to continue improvement in asset management, working towards an overall 'intermediate' level of asset management over the period 2021 – 2024 where the asset management system scope is well defined and documented with strategic context analysed and implications on the asset management system documented.

Investment will be required to enable a higher level of asset management maturity to be delivered through facilitating improved understanding of level of service costs, data collection and analysis, planning, decision making and risk management.

2. **Environmental, economic, social and cultural pressures on the network require investment to be made, however, a lack of clarity is causing delays for both action and funding (30%).**

   Due to the unique geography of the west coast, each district is likely to feel the impacts of climate change over the coming years (increasing frequency and severity of weather events). This can have economic, social and cultural impacts.

   By addressing this problem through effective planning and decision making, all TLAs will have a higher degree of financial resilience, sustainability and surety.

3. **Mounting network pressures will increase costs, by how much is uncertain and funding constraints may threaten the ability to deliver an effective, efficient, safe transport network (20%).**

   Each council is facing pressure in delivering appropriate levels of service on the networks. By taking a combined approach and better understanding of their individual pressures, the investment could be used to ensure the whole network is efficiently and effectively utilised, improving levels of service and distribution of economic benefits.

[14] NZTA Investment Audit Reports: Buller 2017, Grey 2017, Westland 2018

The council's ability to maintain and fund new transport infrastructure is constrained. 85% of the West Coast region is conservation land from which councils receive no income from rates. The small population base that is ageing and forecast to decline, coupled with the region's relative socio-economic disadvantage will place even greater pressure on council's ability to maintain and fund new infrastructure.

4. **West Coast roading teams are under resourced, vulnerable to change and struggle to recruit, with a focus on operational and reactive work, inhibiting their ability to be strategic and plan (15%).**
   The West Coast councils struggle with recruiting and adequately resourcing their roading teams to enable them to both deal with operational and reactive works, while at the same time collecting data and planning strategically to create a robust forward works programme.

   The right people will deliver the skills to think strategically, to plan and to undertake investment analysis, identified as a strategic response in the ILM.

   It is recognised that, to improve network and asset management, we will need to invest to:

   - Uplift the capability and capacity of council roading teams through improved collaboration and targeted recruitment of key skills that can provide value to all three councils.
   - Continue to improve strategic planning and investment capability by 'freeing up' resources that are overly operational focused at present.
   - Procure technical engineering services (internal and external) to deliver the pavement and structures programme.

Refer to Appendix 3 for the individual district council ILMs and preliminary combined ILM.

6.3 Stakeholder Engagement

6.3.1 OVERVIEW

A stakeholder workshop was held in October 2019 structured around the three key themes of:

- Freight
- Tourism
- Resilience

The objectives of the workshop were to:

- Inform interested parties about the project and to ensure they are aware, informed and supportive.
- Understand the problems/constraints being encountered, as appropriative to the three themes of freight, tourism and resilience:
  - Where are the problem areas?
  - Are there any roading network issues likely to inhibit growth?
  - How is network use likely to change over time?
- Gather appropriate/useful data that can be used to identify projects, or groups of projects, that are worth investing in.

A number of interested parties attended, across the three themes, including:

- NZ Police
- Development West Coast
- New Zealand Walking Access Commission
- New Zealand Motor Caravan Association

- Freigth opertars - Aratuna Freight & Johnson Bros Transport, Reg Pres - Road Transport Assn
- Westland Milk Products
- Fulton Hogan West Coast
- Rosco: Civil defence coordinator
- Service Engineering Ltd

From the findings of the workshop, maps were developed to identify key areas of interest, key routes, known problem areas and key bridges / assets.

These maps have since been further developed into a GIS interactive format (https://arcg.is/1ey8LL).

6.3.2 KEY ISSUES

The table below outlines the key issues that were raised for the freight, resilience and tourism activities on the West Coast:

Table 6: Stakeholder Workshop – Key Issues

Key Issues		
Freight	**Tourism**	**Resilience**
• Bridges under capacity (50Max) and do not support use of HPMVs - – more efficient, less emissions, more economic • Deferred maintenance of bridges, some old and in poor condition • State Highways are the critical element of the freight routes – seen as being more important than the local roads by freight operators • One lane bridges on main arterials / state highways • Inconsistencies in axle limits across region • Milk tankers can get stuck on local roads – limited capacity to turn around • Insufficient Stock Effluent sites	• State Highways are considered the 'spine' in the roading network • Increasing number of tourists (FIT) • Recent events have had flow on effect into tourism with tour operators showing some reluctance. • Increasing number of cyclists – safety issues - road / shoulder width • Growth in tourism will flow through to freight • Electric vehicle infrastructure • Poor quality signage • Maintenance of shoulders / lack of pull-off areas	• Lifelines resilience • Seismic capacity of bridges to be reviewed • Bridges under capacity (50Max) – do not support use of HPMVs • Deferred maintenance of bridges, some old and in poor condition • State Highways are the critical element of the freight routes – seen as being more important than the local roads by freight operators • One lane bridges on main arterials / state highways

Figure 29: Resilience issue mapping at the stakeholder workshops

6.4 Community Survey

A community survey that sought to understand how West Coasters experience their local road networks was carried out between 30 October and 16 December 2019. In total, 316 people responded providing information that will help all three councils to better understand, operate and make decisions on their local roads. It was interesting to note that 36% of respondents were happy to see their rates increase to help maintain the roading network.

Through engagement with the councils and stakeholders five key areas of interest were focused on for the survey, the community responses for each of these areas summarised below. A summary of the community survey results is in Appendix 4, and detailed statistics can be found at: https://bit.ly/37icWc1

In general, respondents were satisfied with the road network on the West Coast, though there are some obvious areas for improvement. The quality of local footpaths and the desire for improved pedestrian and cycling facilities featured in the responses to several questions (predominantly among urban rather than rural respondents). Rural people were also more concerned with the condition of the road, repairs and safety while younger people were much more likely to cite the need for improved pedestrian and cycle facilities than older demographics.

This information was used to prioritise the investment programme and complements the findings of sealed road investigations that finds some areas in need of immediate maintenance and renewal to achieve current level of service targets. Feedback regarding unsealed roads also pointed to the need for improved outcomes across the region, with potholes and corrugations cited in several responses. Though again, these issues appear to be isolated with overall feedback showing an acceptable level of satisfaction with the roading network.

Figure 30: Community survey responses

Respondents were asked what they think does and does not work well in the West Coast roding networks, the distribution of responses is presented here with summary information provided below.

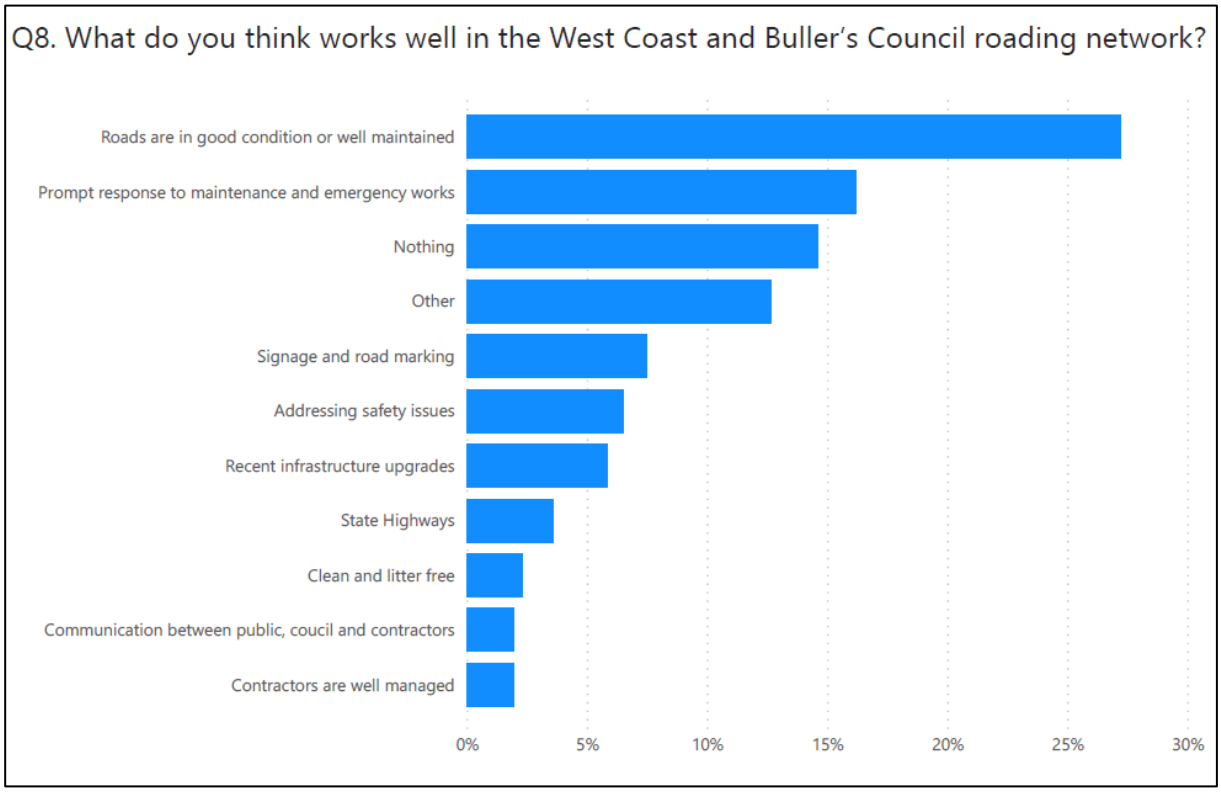


Figure 31: Community survey responses - what works well?

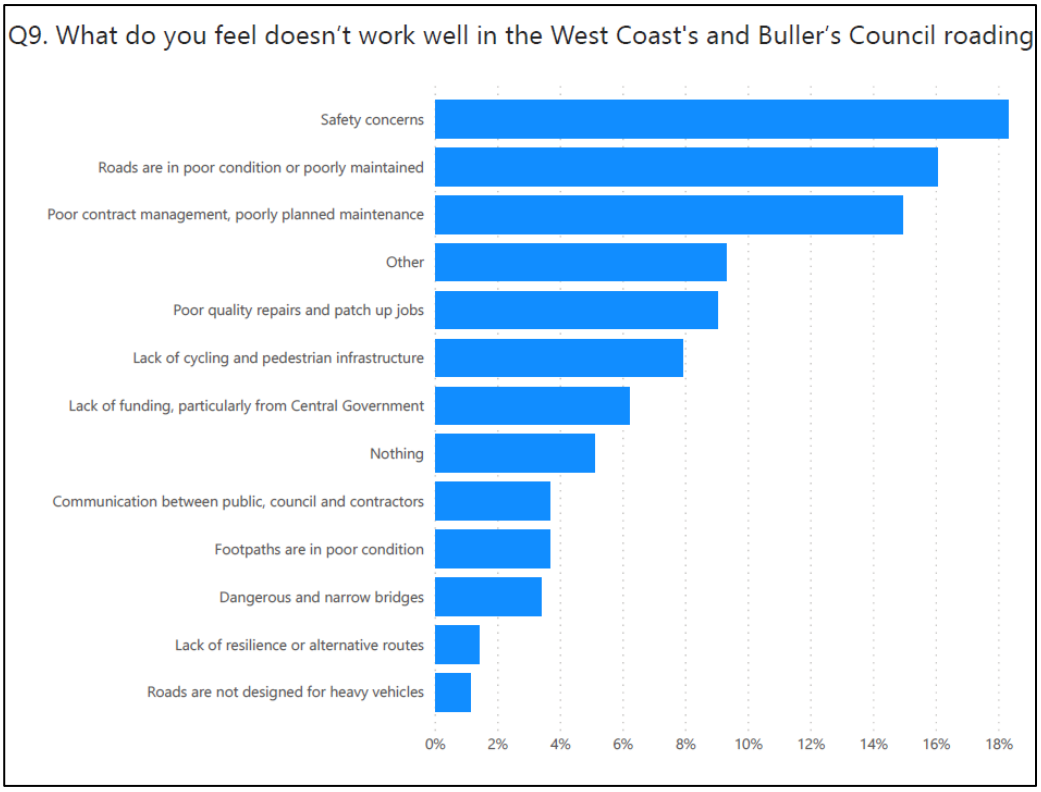


Figure 32: Community survey responses - what doesn't work well?

Table 7: Community survey responses for areas of interest

Area of interest	Survey outcomes
Maintenance and Renewals	Not highly prioritised by the community, though when asked what doesn't work well 15% of people responded, 'poor contract management and poorly planned maintenance'. The most common issues identified were for road surface and quality The quality of local footpaths and the desire for improved pedestrian and cycling facilities featured in the responses to a number of questions, more prominent in urban-based responses. Rural people were more concerned with the condition of the road, repairs and safety. The response to emergency works was seen as more positive by rural people Younger people were also much more likely to site the need for improved pedestrian and cycle facilities than older demographics
Resilience	Featured in some responses with two specific areas mentioned: • Jacksons Bay Road (Westland) • Greymouth to Stillwater (Grey) However overall community responses did not focus heavily on the resilience of the local road network in the region. *It is noted that, throughout the development of this strategic case, the issue of resilience in relation to the state highway has been raised numerous times*

Area of interest	Survey outcomes
Tourism	Tourism related issues did not feature highly and almost all responses relating to tourism related to safety: • better signage • speed limits • vehicle volumes on popular routes • dangerous and narrow bridges • narrow and winding roads • tourist driving behaviour on unfamiliar roads The ability to fund the required improvements and infrastructure locally was identified.
Freight	Did not factor highly in the community survey responses though specific issues largely related to heavy vehicles on narrow roads causing safety issues and freight movements degrading road quality were identified.

6.5 West Coast Combined Transport Network ILM

The final combined ILM, informed by the stakeholder workshop and community engagement, identifies four key problems that restrict the West Coast councils from delivering an effective, efficient and safe land transport network that supports regional growth and liveable communities.

Considering the preliminary ILMs, the stakeholder workshop, community survey and ongoing engagement with the councils, problem statements and investment objectives were defined and weighted. These weightings were updated following the impact of Covid-19 on visitor numbers, and the receipt of evidence and recommendations for asset condition, particularly bridges. This review resulted in the weightings for tourism and asset condition benefit statements being switched in the final ILM presented here.

Refer to Figure 33 below for the West Coast Combined Transport Asset/Activity Management ILM.

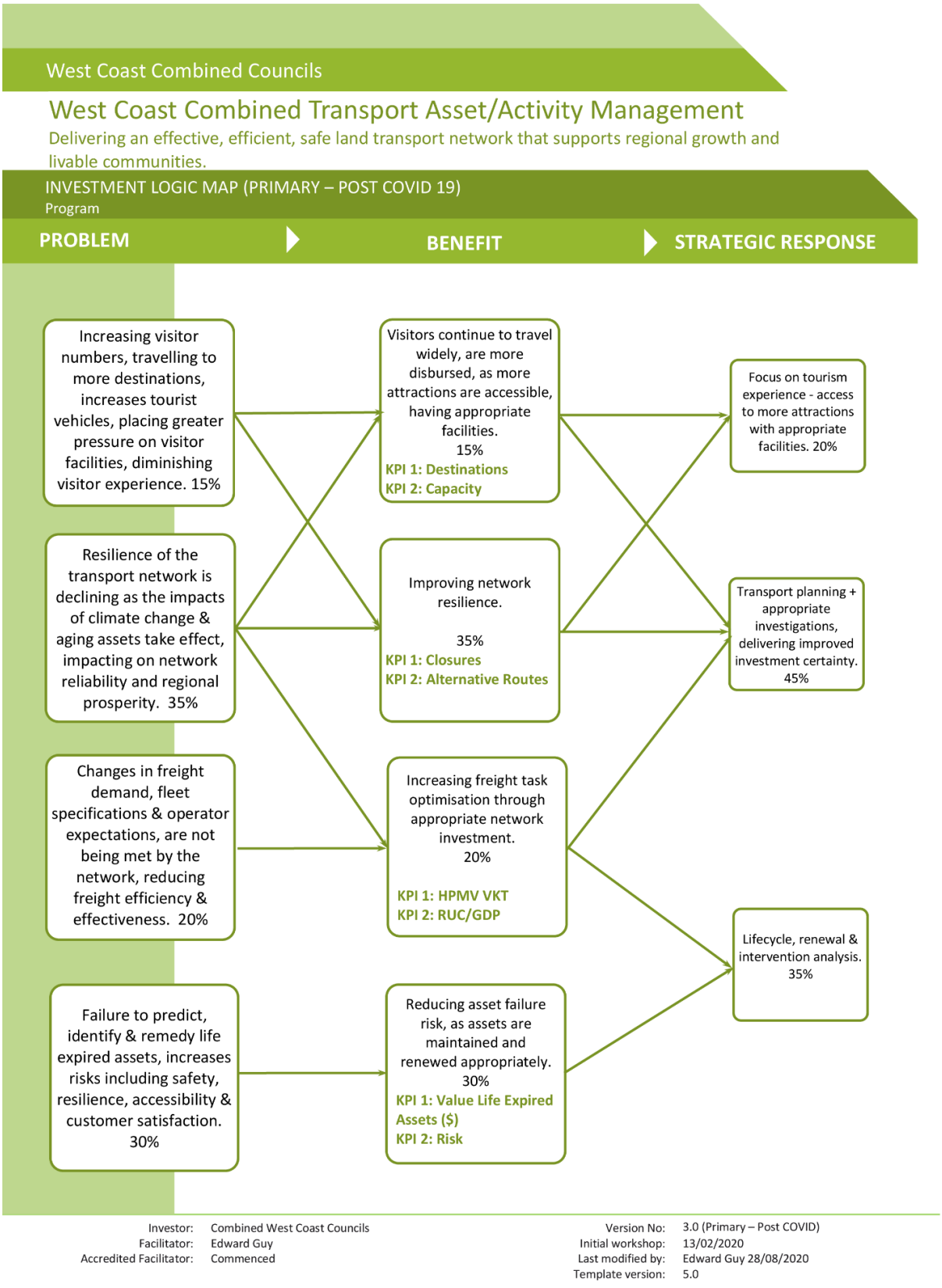


Figure 33: West Coast Combined Transport Asset/Activity Management ILM

6.5.1 PROBLEM STATEMENT 1

Resilience and safety of the transport network is declining as the impacts of climate change & aging assets take effect, impacting on network reliability and regional prosperity (35%).

The Evidence

Due to location, topography, and geology the intensity and number of natural events impacts on the security of the network and raises the risks to West Coast communities including isolation and business disruption. With predictions that the frequency and intensity of natural events is likely to increase with climate change and seismic events, improving the resilience of transport and communications infrastructure is vital.

Projected changes in rainfall show a marked seasonality and variability across regions. It is very likely that for winter and spring there will be an increase in rainfall for the west of both the North and South Islands. Moderately extreme rainfall is likely to increase in most areas, with the largest increases being seen in areas where mean rainfall is also increasing, such as the West Coast[15].

Figure 34: Coastal erosion at Jackson Bay, Westland District

Waka Kotahi's National Resilience Programme Business Case[16]states that the West Coast is among the regions with the highest numbers of extreme and major hazard risks. These include:

- Extreme weather
- Coastal erosion
- Landslips and rockfall
- Flooding
- Coastal inundation
- Ice and snow

Further, the 2017 West Coast Lifelines Vulnerability and Interdependency Assessment[17] states that the West Coast road network is perhaps the key lifeline utility in the region. Road closures have a significant impact on the freight and tourist sectors which are critical economic drivers for the region.

In 2019 an estimated $1.7m of damage was caused to roading infrastructure in Westland by a storm event that caused highl localised flooding and damage to pavements and bridges. At Dorothy Falls on Lake Kaniere metres of gravel was flushed over the falls across the road and bridge causing significant damage.

The lack of alternate routes, and a large number of roads that cross rivers, are close to the coast, and on the side of steep slopes make the road network particularly vulnerable to disruption. A disruption event at a single point on the network, as has happened recently on the state highway network at Franz Josef and Mt Hercules, can sever the local road network affecting communities, the economy and tourism. Storms in April 2019 left the Westland district severely impacted when local bridges and roads were washed out in the Styx Valley and Milltown, including the bridge across the Arahura River at Milltown. '*Reinstating the Milltown bridge was a priority so Trustpower could repair damage to its weirs and tunnels in the Wainihinihi area, which had been blocked by landslides'*[18]

[15] https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Climate-change-projections-2nd-edition-final.pdf

[16] Waka Kotahi (2020) National Resilience Business Case https://www.nzta.govt.nz/assets/Highways-Information-Portal/Technical-disciplines/Resilience/nrpbc/National-Resilience-PBC.pdf

[17] West Coast Civil Defence Emergency Management Group (2017) West Coast Lifelines Vulnerability and Interdependency Assessment – Supplement 6: Transportation Lifelines Assets https://westcoastemergency.govt.nz/wp-content/uploads/2018/06/6-Transportation.pdf

[18] https://www.odt.co.nz/regions/west-coast/storm-leaves-17m-roading-bill

Regionally, the state highway network is of the greatest importance for resilience, although the Vulnerability and Interdependency Assessment identifies some critical local road links that provide access to local communities and businesses:

- Westland District: Haast to Jackson Bay
- Grey District: Ikamatua to Cobden and Stillwater to Jacksons (both state highway alternatives)
- Buller District: Karamea Highway

Future impacts of climate change through sea level rise and more frequent and severe weather events will exacerbate existing issues and increase the risk of temporary and permanent disruption to the land transport network. Seismic risk is relatively high due to proximity to the Alpine Fault.

6.5.2 PROBLEM STATEMENT 2

Failure to predict, identify and remedy life expired assets, increases risks including safety, resilience, accessibility and customer satisfaction (30%)

The Evidence

As part of the PBC and 2021 C.TAMP development, two key areas of investigation and assessment were commissioned:

- Sealed road pavements (20-year Forward Works Plan)
- Bridges and structures (Lifecycle Management Plan)

These documents provide evidence for the forward programme in each district.

Figure 35: William Stewart Bridge, Grey District

Sealed road pavements:

- In general, the condition of sealed roads in each district is good, with some isolated sections of rehabilitation needed.
- However, the current level of investment is not adequate to ensure ensure these levels of service are maintained. The Forward Works Plan recommends uplift of resurfacing activities in each district.

Bridges and structures:

- An ageing bridge stock in all three districts, with many assets at or approach their end-of-useful life, means that the next 10-years of investment is likely to be focused on bridges and other road structures.
- Deferred maintenance on bridge structures has led to a backlog of work, as recognised in previous AMPs, with a consequent increased need for condition-based component replacement and bridge replacement works.
- A need to urgently increase maintenance activities to avoid further deterioration of existing structures.
- Freight level of service deficiencies on priority bridges, with many currently posted with weight and speed restrictions for heavy vehicles, and a lack of HPMV and 50MAX capacity across the region.
- The seismic ratings of many bridges do not meet modern standards.

The historic issues identified are in large the result of council roading team capability (structural engineering) and capacity (staff resources) issues. As identified through the individual and combined ILM development, each Council recognises its limitations in asset management and planning with resources stretched and the focus consequently generally being on day to day and reactive tasks.

The quality of data about bridges and other road structures is varied across the three councils, and some information is not yet available or incomplete within each district. The assessments carried out

over the last three years have started to provide a better understanding of the current condition and investment needs, but more information is needed, particularly where bridge replacements are proposed.

6.5.3 PROBLEM STATEMENT 3

Changes in freight demand, fleet specifications and operator expectations, are not being met by the network, reducing freight efficiency and effectiveness (20%).

The Evidence

Increasing freight volumes and modern HPMV and 50MAX vehicles are placing pressure on ageing infrastructure, particularly bridges, across the region. Key routes on the local road network have weight and speed restrictions on bridges, and bridge capacity is regularly leading to over dimension and overweight permits being declined (Sir Stanley Gooseman Bridge in Grey District only has 73% of permits approved).

These level of service limitations impact freight productivity and limit the ability to improve efficiency through fewer movements of larger vehicles.

The following figures taken from the Draft South Island Freight Plan 2015 show the demand for freight on the West Coast and the projected growth in the South Island over the next 20 years.

Figure 36: Freight restriction on Tidal Creek No.2 Bridge, Buller District

Key Infrastructure	West Coast	NZ
Road density (length per 1000km² area, 2010)	104	215
Heavy Vehicle km travelled per km of network (2011)	131 329	97 686

Figure 37: West Coast freight projections

6.5.4 PROBLEM STATEMENT 4

Increasing visitor numbers, travelling to more destinations, increases tourist vehicles, placing greater pressure on visitor facilities, diminishing visitor experience (15%)

The Evidence

As outlined in Section 3.2, international tourism was expected to grow by 34% from 520,000 to 697,000 and domestic tourism by 25% from 350,000 to 438,000 between 2016 and 2021. The current 40% market share of domestic visitors is anticipated to grow in light of the current Covid-19 pandemic.

Growth in tourism drives increased demand and expectations for tourism infrastructure, which requires further investment. For many visitors, driving on local roads is as much a part of the iconic West Coast experience as visiting popular attractions. Many tourists are on self-drive holidays, driving rented campervans and cars. Safety is a key issue, and many tourists find the winding and sometimes narrow road conditions to be unfamiliar and difficult.

Figure 38: Waiuta historic mining settlement, Buller District

Significant investment in tourist destinations such as walking and cycle tracks, improved access and amenities at key destinations attractions will contribute to future growth which will create transport system capacity issues in all districts, particularly in the peak December – April period.

High volumes of tourist traffic share the road with local residents, freight vehicles and increasing numbers of cyclists further exacerbating safety concerns. Local tourism operators and the freight industry have cited a need for improved safety and amenity features such as scenic pull over areas and passing lanes.

Some roads in the region do not currently meet the level of service that is, or will be, expected of them and can be a disincentive for repeat visits to the West Coast.

7 Investment Objectives and Business Needs

Best practice is for these objectives to be SMART objectives, in that they are specific, measurable, achievable, relevant and time bound.

The Councils recognise that this is not simply about doing something for the least cost, but rather about providing a package of works that is good value for money and effective.

Following the identification of Problem Statements, potential benefits and Investment Objectives have been developed.

7.1 Investment Objective One

Improving network resilience (35%)

7.1.1 WHERE ARE WE NOW?

Much of the West Coast is reliant on the 'spine' formed by the state highways while district roads serving local communities are interconnected through the state highway network. There is no alternative north-south route. In 2019 the Waiho River bridge south of Franz Josef township was destroyed during a severe rain event, closing the route and causing major disruption to the entire region and economic loss, primarily related to freight and tourism.

That is not to say that other local roads are not important for resilience. A single road link that provides sole access to a community of 25 people is of critical importance to those people for access to goods and services and economic, social and healthcare needs.

Figure 39: Flood remedial works on Styx River, Westland District

Road network closures isolate the West Coast from neighbouring regions, and communities from each other. Many residents live in small rural communities or on farms and are reliant on private vehicles and the local road network for access to food, jobs, healthcare and education.

The nature of this north-south network lends itself to tourists making a one-way trip through the region as part of an overall trip through the South Island. Disruption at one part of the network can lead visitors to cancel their visit to the region altogether, instead opting to take an alternate route up or down the South Island.

7.1.2 WHAT DO WE NEED?

To reduce the number and duration of road closures, we need:

- A more resilient network that is less susceptible to road closures and restrictions.
- Improved resilience on key local routes that act as alternatives to the state highway.
- Efficient maintenance programmes including pavements, structures and drainage with targeted renewals programmes for key routes and critical assets.
- Civil defence / Lifelines preparedness.

7.2 Investment Objective Two

Reducing asset failure risk, as assets are maintained and renewed appropriately (30%)

7.2.1 WHERE ARE WE NOW?

As discussed bridges are a key focus of this PBC, ageing assets and a lack of maintenance and renewals has resulted in life-expired assets, and bridges that do not meet modern level of service requirements for freight.

To support evidence-based forward works programmes, there is a big push for improved data and data analysis to understand asset lifecycles as part of the annual works programmes. It is noted that

Waka Kotahi And REG are introducing an Asset Management Data Standard (AMDS) to improve the management of land transport infrastructure asset information. The AMDS project will develop and implement a national, shared data standard for land transport infrastructure assets. It will be a way of defining and describing land transport assets, their attributes, characteristics, properties, location and performance to enable efficient and effective end-to-end life cycle asset management.

Each of the West Coast Councils acknowledges that there will be implications and costs associated with enhancing / improving asset /RAMM data to meet this new standard.

Figure 40: Moonlight Creek Bridge, funded for condition-based replacement (PGF)

7.2.2 WHAT DO WE NEED?

- Improvements in the collection, storage and use of asset data to meet the Waka Kotahi AMDS
- Regular asset condition assessments to better inform FWP.
- Planned renewals and maintenance programmes

7.3 Investment Objective Three

Increasing freight task optimisation through appropriate network investment (20%)

7.3.1 WHERE ARE WE NOW?

The movement of freight across the West Coast is vital to the local economy.

Coal is the primary mineral extracted in the region and is moved on local roads and state highways for transportation out of the region by rail. Primary industry is dominated by dairying which has a heavy reliance on the local road network for access to farms and factories across the region, with the finished product exported out of the region by rail or road.

The geographically dispersed nature of primary sector industry (mining, agriculture and forestry) requires heavy vehicles to drive on low volume roads that are narrow and winding and often not designed with these vehicles in mind. This increases the need for maintenance on these routes and in some parts of the region small freight vehicles are needed to access properties before offloading goods onto large trucks for cartage out of the region.

Figure 41: Crooked River No.2 Bridge renewals, Grey District

7.3.2 WHAT DO WE NEED?

Parts of the local road network, such as the Stillwater to Ikamatua route are a primary route instead of the State Highway network due to a lack of restrictions. Also, the Stillwater to Jacksons route via Lake Brunner is a preferred freight route due to its directness and travel time saving.

In 2017/18, 3.1million tonnes of freight was exported from the West Coast to other regions (all modes) with 1.7 million tonnes imported[19]. Unequal incoming and outgoing freight flows on the road network reduce the efficiency of freight on the West Coast. Much of the goods that are exported from the region do so by rail, while many commodities come in via road. So, many vehicles travelling out of

[19] Ministry of Transport National Freight Demand Study 2017/18

the region are 'pushing fresh air' with unused capacity. There is an opportunity to improve the efficiency of freight by increasing the number of HPMV and 50MAX trucks and the number of roads that these vehicles can travel on to reduce the overall number of trips and travel time.

Targeted capital works programmes to increase the capacity of bridges on key routes will better provide for the transport of freight.

Freight movement data (future demand) to allow regional consistency in network assessments for freight capacity / restrictions will allow appropriate prioritisation of improvements.

7.4 Investment Objective Four

Visitors continue to travel widely, are more disbursed, as more attractions are accessible, having appropriate facilities (15%)

7.4.1 WHERE ARE WE NOW?

There has been significant PGF funding in the region targeting tourism including the provision of tourism infrastructure at the Oparara Arches (Buller), at Punakaiki and the Hokitika Gorge. The $3.5million upgrade of Croesus Road to provide access from Blackball to the Paparoa Track (Great Walk) is due to open in October 2020. Significant investment is also being made in the upgrade and development of cycle trails.

Figure 42: Access road to Waiuta tourist attraction

The glaciers are in the top three reasons given by international visitors for their trip to New Zealand, not just the West Coast. Alongside these, there are many lakes, rivers, lagoons, and historic settlements that are major attractions across the region. Many people visit the West Coast for its day and multi-day walks including two of New Zealand's Great Walks, the Heaphy Track and Paparoa Track & Pike 29 Memorial Track. Old Ghost Road is a mountain bike and tramping track attracting cyclists from around the world.

The dispersed nature of tourism across the West Coast is leading to large increases in traffic volumes on local roads, especially as more attractions are developed and promoted. There is a need to upgrade and maintain road infrastructure around new and existing tourism icons to support safer travel and improve the journey experience of visitors.

Projects such as multi-modal improvements to Lake Matheson and the Peak View lookout for Fox Glacier in Westland, an alternative attraction following the indefinite closure of the Fox Glacier access road in 2019 after it was washed out, and road improvements north of Karamea to access the Heaphy Track are examples of current / planned work in this area.

Initiatives such as education through communications and road signage are underway to assist drivers unfamiliar with the West Coast road conditions.

7.4.2 WHAT DO WE NEED?

- Access to key tourist attractions across the region and appropriate infrastructure along key routes and at various attractions will encourage visitors to stay longer.
- Targeted safety improvements will support the growth of tourism.

7.5 Benefits of Investment

Key benefits, KPIs and measures, along with how the project will deliver on the Investment Objectives are summarised in the table below.

More detailed performance measures will be established in line with the Waka Kotahi IDMF Benefits Framework to that align with the Ministry of Transport's Transport Outcomes Framework.

Table 8: Expected benefits of investing in the investment objectives

Investment objective (ILM Benefits)	Strategic response / How we will get there	How we can measure benefits realisation (KPIs)	How investment will deliver on the investment objectives
Improving network resilience	Transport planning + appropriate investigations, delivering improved investment certainty	• No. of unplanned road closures • No. of instances where road access is lost. • Availability of a viable alternative to high-risk and high-impact route.	• Appropriate infrastructure will enhance the road network to provide access for tourism and drive freight task efficiency, so contributing to economic development. • Improved reliability of the network will create more resilient communities during emergency events. • Improved access and availability will enable better access to key services and economic and social development. • Improvements in the road will be an 'enabler' to the development of other projects and initiatives. • Improvements in the road will also be an 'enabler' to existing economic activities, such as domestic tourism and freight operations. • Improved availability will enable better access to key services. • Investment in the roading network will provide incentive and confidence for people to invest in the region, driving economic development.
Reducing asset failure risk, as assets are maintained and renewed appropriately	Lifecycle, renewal & intervention analysis	• No. of assets with Value Life Expired and poor condition. • Seismic capacity.	
Increasing freight task optimisation through appropriate network investment	Lifecycle, renewal & intervention analysis	• HPMV vkt. • RUC / GDP. • Structures posted with restrictions	
Visitors continue to travel widely, being more disbursed, as more attractions are accessible, having appropriate facilities	Focus on tourism experience - access to more attractions with appropriate facilities	• No. of visitors. • Utilisation of attractions.	

7.6 Preliminary Risks

There are a number of risks that will need to be managed through the delivery of this Programme Business Case to ensure achievement of the investment objectives:

Table 9: Outline risk analysis

Main risks	Consequence	Likelihood	Comments and risk management strategies
Buy-in from elected members	High	Low	• A change in approach may lead to some uncertainties. • Each council will have its own agenda. • Ongoing communication with each Council will reduce this risk.
Capacity and capability to deliver	Medium	High	• Resourcing is an ongoing issue across the region. • Collaboration of resources across the region, potentially also in the 3-waters activity, will allow for efficiencies and better support delivery of the works programmes.
The preferred programme is not affordable	High	Medium	• Apply the business case approach to the AMP development and ensure it is aligned with the RLTP business case. • Ongoing communication with Councils and Waka Kotahi will aid in securing funding.
The cost of the preferred programme exceeds that provided for in the AMP	Medium	Medium	• Budgets are exceeded and work programmes have to be reduced. • Investment objectives not delivered. • Risk reduced through well planned development of renewals and new works.
Covid-19 Impact, in particular from the tourism industry	Medium	High	• Uncertainty regarding the scale and duration of Covid-19 impacts • Ongoing need to support Covid-19 recovery by improving access to economic opportunities and communities. • Need to monitor the situation

7.7 Key Constraints and Dependencies

The following constraints and dependencies could potentially affect the outcomes:

Table 10: Key constraints and dependencies

Constraints & Dependencies	Notes
Staff capability and capacity	With a more collaborative approach and a combined effort for forward works planning, there may be some change in staff roles that will need to be defined.

Constraints & Dependencies	Notes
Small ratepayer base for funding	The small number of residents relative to the size of the road network and users of the road network through visitors to the region limit the ability of the three councils to effectively deliver a high level of service to all road user groups (local, non-local and freight). Central Government support and co-funding with other partners will be necessary to deliver on the outcomes.
Elected member support	Any significant change in approach to funding, priorities or collaboration will need the support of councillors at the three district councils.

Economic Case

Buller District Council, Grey District Council and Westland District Council

8 Economic Case – Exploring the Preferred Way Forward

8.1 Summary

The purpose of the Economic Case is to identify the preferred programme that optimises value for money. This section will set out the steps undertaken to arrive at the preferred programme.

Having determined the strategic context for investment and established a case for change, this part of the business case:

- Generates a wide range of options for Westland, Grey and Buller districts
- Undertakes an assessment of those options to identify a preferred way forward.

As described in the Strategic Case, community and stakeholder engagement informed the investment objectives for the preferred programme. This engagement also identified a range of improvement projects and packages that were assessed for inclusion in the forward programme.

Alongside this, investigation and assessment of roads and structures in each district provided an evidence base about the current condition of assets and the need for investment over three, 10 and 20 years. The 20-year Forward Works Plan and Structures Lifecycle Management Plan for each district are key guiding documents for this PBC.

Four programme options were developed:

1. Option 1: Status quo (business as usual).
2. Option 2: Optimised status quo (do-minimum) – uplift of expenditure in some work categories, particularly bridges, sealed roads, traffic services and asset management.
3. Option 3: Preserving our assets – an enhanced maintenance programme that increases investment in maintenance and condition-based renewals and replacement of key assets, Bridge structures are a core focus of this programme alongside substantial uplift in investment to improve asset management capability and capacity in council roading teams.
4. Option 4: Improved levels of service – further builds on Option 3 with a range of targeted level of service improvements, including investment in town centres and tourism facilities.

Option 3: Preserving our assets was identified as the preferred way forward following multi-criteria analysis.

This option is well aligned with the 2017 PBC's preferred option 'Preparing for step change' and will build on Option 2 to achieve benefits for asset condition, freight levels of service, road safety and resilience. Investing in the capability and capacity of the council's roading teams to carry out asset management strategy and planning is a core element of Option 3.

Condition-based replacement of bridges and other structures is a core focus of this option, level of service improvements will be achieved through replacement of existing bridges to latest design standards. This option includes detailed investigations and assessment of bridges, carriageways and intersections, and the development of business cases for level of service-based improvements.

9 Developing the Programme Options

9.1 The path to the Preferred Programme

As shown in Figure 4 of the Strategic Case (Section 2.4), the Economic Case was developed through:

- Council staff engagement to assess the 2018-21 programme and identify minimum level of change needed to continue this programme into 2021-24.
- Key stakeholder workshops (see Section 6.3).
- Community surveys (see Section 6.4).
- Detailed investigation and assessment with improved data collection and analysis (see Section 6.5.2).

These inputs highlighted the need for increased investment in maintenance and renewals to ensure assets are adequately maintained and level of service expectations achieved. From this, the four programme options described in this chapter were developed:

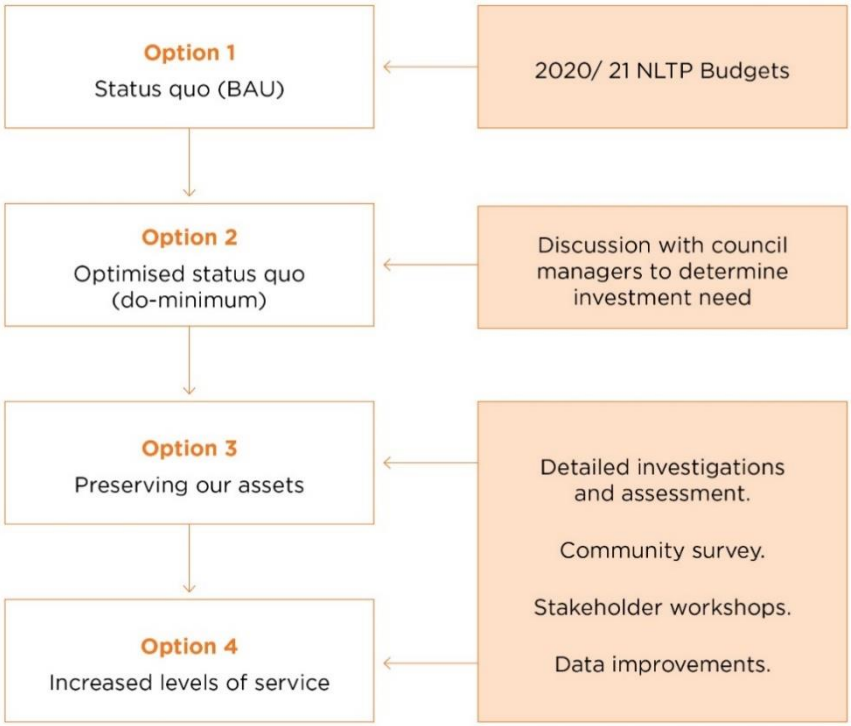


Figure 43: Programme option inputs

9.1.1 BUILDING OUR EVIDENCE BASE

The 2017 PBC found that each district was lacking in robust data and evidence to inform asset management planning, and provide confidence that investments are targeted and reflect value for money. Subsequently, a collaborative approach was taken to procure services for detailed investigations and assessment of roads, bridges, and structures.

The findings and recommendations of these investigations are summarised in the following documents, provided separately to this PBC:

1. **20-Year Forward Works Plan (FWP):** recommends a programme of investment in maintenance, resurfacing and rehabilitation of sealed roads in each district. The FWP was developed through:
    - Treatment length validation survey
    - Surface life analysis

- Field validation of candidate sites drawing on recent high-speed data collection results
- Falling weight deflectometer analysis for potential pavement renewals

For each district a renewal programme was developed, then validated and optimised before a final programme was proposed for each district.

The FWP recommends an increase in expenditure for each district for sealed road resurfacing (WC211) and rehabilitation (WC214) over 20-years. The level of expenditure for each district is detailed in Section 9.2 under Option 3: Preserving our assets.

See Appendix 8 for summaries of the Forward Work Programme for each district.

2. **Road Structures Lifecycle Management Plans (LCMP):** propose a 10-year programme for maintenance (WC115), component replacements (WC215), condition-based replacement of bridge and structure renewals (WC216), and bridge replacements (WC322) for each district. It identifies structures approaching the end of their useful lives and many that are in poor condition that has not been adequately maintained.

   The LCMP recommends substantial increase in investment across the three work categories above to address a backlog of urgent maintenance, increase future maintenance to an appropriate level, and invest in condition-based renewal and replacement of structures.

   Given the scale of the bridge replacement programme for each district, detailed investigations of priority structures are needed to agree preferred options for each asset and develop a programme of investment that is practical and achievable.

9.1.2 DISTRICT IMPROVEMENT PACKAGES

In addition to the maintenance and renewals programme, an initial longlist of 104 improvement options were identified. These were developed largely through the community survey and stakeholder engagement process with input from council staff to further inform the key issues and opportunities. See Sections 6.3 and 6.4 of the Strategic Case for key messages from stakeholder and community engagement.

The longlist was diverse, demonstrating opportunities for investments that will achieve a wide range of benefits for the districts and region, and importantly for the West Coast's residents, businesses, and visitors.

The longlist of investments was shortlisted using multi-criteria analysis; each option was assessed against:

- Investment Objectives and Benefits (see ILM in Strategic Case Section 6.5)
- Government Policy Statement on Land Transport Priorities
- Waka Kotahi's Arataki Step Changes
- Investment Decision Making Framework (IDMF) Enduring Outcomes

The MCA process and engagement with each council developed a shortlist of five improvements for each district, 15 for the region. Some of these are standalone projects (e.g. a road corridor or bridge), while others cover an entire route or urban area and have many individual project options identified.

The proposed packages and projects for each district are summarised in the tables below, the preferred options identified following MCA of the shortlist are included in the programme options assessed in this Economic Case.

Table 11: Buller District improvement packages and projects

Project/Package	Description
Waiuta Access Road	DoC has invested over $2M in decontaminating the historic Waiuta gold mining settlement and developing the area for tourism. Waiuta will be a Tohu Whenua[20] site, a place that is historically and culturally significant to New Zealand. The existing access road has a 6km unsealed section that exposes visitors to a lot of risks that need to be addressed to improve safety. The route includes steep drop offs to a river gully with no guard rails, narrow sections with no shoulder for safe two-way vehicle movements, and limited sight lines around sharp narrow corners flanked by bluffs. Many visitors, domestic and overseas, have limited experience driving on steep, narrow, winding unsealed roads. With increased traffic the current access road is dangerous and not fit-for-purpose as an important future tourist route.
Cape Foulwind & Lighthouse Road Intersection	Lighthouse Road provides access to Cape Foulwind Lighthouse and coastal walkways, there are also many residences and holiday homes in the area. The existing intersection at Cape Foulwind Road has a constrained layout due to the now disused limestone haulage road and rail lines that used to cross here. Turning bays into Lighthouse Road are inadequate for vehicle volumes, and both signage and design of the intersection could be improved to increase safety.
Westport Town Centre	Buller District Council has secured funding from the Provincial Growth Fund to develop a walking and cycling connection between the town centre and river front over the rail lines. There are investment opportunities in the town centre to improve urban walking and cycling routes. Cycle trails such as the Kawatiri River and Coastal Trails are currently severed by the town centre; these improvements will enhance safety and journey experience for locals and visitors.
Karamea Highway Bridges	Tidal Creek No.2 and Little Wanganui Bridges on the Karamea Highway have just nine years of useful life remaining and have restrictions for HPMV vehicles. As the only road access route connecting Karamea and surrounding areas these bridges are important for maintaining access to the local communities, ensuring economic productivity of agriculture and horticulture businesses, and access for visitors to the area with the popular Heaphy Track and Oparara Arches Basin attracting a large number of people each year.
Kohaihai Road	The final 4km northern Kohaihai Road is the last unsealed section of the West Coast's north-south route that runs all the way to Jackson Bay. This stretch of road provides access to the southern end of the Heaphy Track, one of New Zealand's 9 Great Walks. Doc has developed car parking and visitor facilities at the northern end. Many visitors are on self-drive holidays, with visitor numbers expected to return and increase this is an opportunity to improve the level of service here.

[20] www.tohuwhenua.nz

Figure 44: Karamea Highway – Kohaihai Road unsealed transition

Table 12: Grey District improvement packages and projects

Project/Package	Description
William Stewart Bridge	One of the district's largest structures, William Stewart Bridge (50/50 owned by GDC and WDC) provides access to a productive farming community which has limited economically viable alternate routes for access. The bridge structure is in poor condition, is currently posted with restrictions for Class 1 Heavy Vehicles and cannot carry HPMVs and has low seismic resilience. *During development of this PBC William Stewart Bridge was funded for replacement through the PGF, see Section 9.1.3 below.*
Jacksons to Stillwater route	The 55km route from Jacksons to Stillwater is the primary freight route for vehicles travelling to Greymouth and Buller, it is also the main access road for communities at Lake Brunner and an increasingly important tourist route for visitors. The route has a varied level of service for carriageway width, road markings and traffic services. There are also two intersections (at Kumara-Inchbonnie and Bell Hill Road) that are at 90-degree angle with poor delineation and signage and pose safety issues to drivers unfamiliar with the area. Freight movements are limited on the route due to bridge restrictions, with HPMV vehicles unable to cross all bridges and many over-weight permit applications declined each year.
Stillwater Rail Overbridge	The rail overbridge at Stillwater is in poor condition, has heavy vehicle restrictions and poor seismic resilience. This bridge is a key structure in the local road network, linking the Jacksons to Stillwater and Stillwater to Ikamatua routes in this shortlist. At present over-dimension vehicles cannot use the state highway alternate route due to dimension restrictions where the road runs under the rail to the east and west of Stillwater.

Project/Package	Description
Stillwater to Ikamatua route	The primary focus on this route is HPMV capacity on two bridges: Moonlight Creek and Rough River Bridge (50/50 owned by GDC and BDC). Both have structural and condition issues due to their age and lack of maintenance. *During development of this PBC Moonlight Creek and Rough River Bridges were funded for replacement through the PGF, see Section 9.1.3 below.*
Greymouth Town Centre	Greymouth Town Centre Redevelopment Plan and associated documents have set the long-term vision for the town centre while some funding has been secured from Waka Kotahi to undertake short-term temporary trials for pedestrian improvements. The C.TAMP will identify opportunities for transport investments that support this vision and meet the strategic objectives outlined in this business case.

Figure 45: William Stewart Bridge

Table 13: Westland District improvement packages and projects

Project/Package	Description
Haast to Jackson Bay Road	Route is the only access to communities, businesses and farms south of Haast, and is an important tourist route for visitors accessing Jackson Bay and attractions along this stretch of coast. The road has existing issues with resilience (coastal erosion, rockfall, and flooding), pavements (defects and corrugated sections), and structures (age, pier slumping, structural condition).
Cron Street, Franz Josef	Cron Street is the key north-south local road in Franz Josef serving an important function for access to emergency services and residential development in the north, and for visitors accessing tourism, hospitality, and accommodation businesses in the area. The existing road layout is too narrow to safely support the number of pedestrians, parked cars and vehicle movements using this road. *During development of this PBC Cron Street was funded for improvement through the PGF, see Section 9.1.3 below.*

Project/Package	Description
Woodstock Rimu Road, Hokitika	Woodstock Road is an on-road section of the West Coast Wilderness Trail which has increasing use by the visitor and local cyclists. Two corners have safety issues due to narrow width, no shoulder, gradient and poor sightlines. These pinch points have the potential to place cyclists in harm's way, particularly where there is traffic travelling in both directions, or large vehicles such as trucks or campervans passing.
Hokitika Gorge access (Kaniere-Kowhitirangi Road to Whitcombe Valley Road)	DoC has invested in facilities at the Hokitika Gorge including a large visitor car park (~$400k) and walking tracks. The route from Hokitika to the gorge, especially the section from Kaniere-Kowhitirangi Road travelling south has a mixed level of service with varying widths and road markings, poorly marked intersections, and a lack of high-quality wayfinding for tourists.
Old Christchurch Road	Old Christchurch Road was previously sealed in sections before investment stopped leaving a final unsealed section of the route. This was divided into three distinct sections for assessment: 1. Rural residential section with dust impacts on neighbouring properties. 2. Multi-modal section where cyclists briefly share the road with vehicles as they move between off-road trail segments. 3. Steep and windy section that is narrow for two-way traffic and heavy vehicles. *During development of this PBC Old Christchurch Road was funded for seal extension through the PGF, see Section 9.1.3 below.*

Figure 46: Woodstock Rimu Road - narrow road shared by cyclists and drivers

9.1.3 PROVINCIAL GROWTH FUND INVESTMENT

During the development of this PBC, each district received PGF funding for transport activities that were assessed as part of this programme. While not a part of the investment programme options below, these projects are considered when assessing the options as they represent a considerable amount of each roading team's forward programme over the next three years.

Projects funded by the districts are:

Buller District

- Tidal Creek No.2 Bridge replacement.
- Walking and cycling rail overbridge from Brougham Street to the river in Westport.

Grey District

- Rough River Bridge replacement (50/50 ownership with BDC).
- Moonlight Creek Bridge replacement.
- William Stewart Bridge replacement (50/50 ownership with WDC).

Westland District

- Old Christchurch Road seal extension.
- Cron Street widening and seal extension.

This funding provides a significant boost to each district for investment in their forward programme. However, given the scale of these projects, there is a risk that the already constrained staff and contractor resources will be challenged to plan and deliver these projects alongside the business as usual transport programme, and other improvements proposed as part of this Economic Case. This risk is further discussed in the Commercial and Management Cases.

Figure 47: Rough River Bridge

9.1.4 SPECIAL PURPOSE ROADS

There are two Special Purpose Roads (SPR) on the West Coast:

1. Karamea Highway (including Karamea-Kohaihai Road) in Buller District
2. Haast to Jackson Bay Road in Westland District

Both roads are part of the national transition of SPR roads to local road status, and subsequent change in funding from the current 100% funding assistance rate (FAR) to the normal rate of each local authority. This transition is planned to occur on 1 July 2024.

A transition plan has been developed for Buller and Westland to show the recommended transition approach and identify core investment activities to be completed ahead of 2024 (described below). As at September 2020 Waka Kotahi have indicated to the two councils that the preferred approach to future investment in the SPR's is:

- Complete major capital works, pavement renewals, and low-cost low-risk projects ahead of 30 June 2024 while the roads have 100% FAR status.
- Major capital works after 1st July 2024 assessed on a case by case basis using a means tested principle for an enhanced FAR where appropriate.
- From 1st July 2024 emergency works managed as per Waka Kotahi's existing emergency policy which considers the scale of event and financial hardship in each financial year.

At the time of writing no agreement has been reached between Waka Kotahi and Buller District Council or Westland District Council for the transition of the SPRs to Local Road status, and the responsibility for funding specific activities following any transition. As such, while the forward programme and financial assessment in this document have been developed on the assumption of a 1st July 2024 transition, this is not an endorsement from either council of Waka Kotahi's preferred approach as communicated in September 2020.

A summary of the transition plans and proposed work programmes is provided in Appendices 6 and 7 with full copies of the Transition Plans included in the C.TAMP Part C: Local Input to Asset Management.

9.1.4.1 Karamea Highway – Buller District

The Karamea Highway SPR is comprised of two sections of highway, the Karamea Highway (50km) and Karmea-Kohaihai Road (12km). The Karamea Highway Transition Plan (December 2019) identified and assessed a number of feasible forward works programmes and recommended a preferred way forward for the SPR transition. This recommended substantial investment for major improvements, particularly bridge replacements, with a $7.8M estimated cost 2021-31:

Table 14: Karamea Highway Major Improvement Projects

Activity	Projects and status
Low Cost / Low Risk	For the period 2019-21 Waka Kotahi committed to fund $1M per year for low-cost/low-risk improvement works on Karamea Highway, including: • Drop out repairs along the highway – currently tendered. • Drainage works along the highway – to be programmed. • Installation of safety barriers on selected road bends – underway. • Pavement improvements – currently in design and tender phases. • Upgrade and seal extension of Kohaihai Road – design complete and BDC is tendering for construction.
Bridge replacements	Three major structures are proposed for replacement on the SPR from 2022-31: • Tidal Creek No.2 – received $1.8M PGF funding in July 2020 for replacement. • Little Wanganui – not yet funded, included in 2021-24 programme with estimated $4.8M replacement cost (WC322). • Tobin Creek Culvert – not yet funded, included in 2021-24 programme with estimated $860,000 replacement cost (WC216). With Tidal Creek No.2 Bridge funded by PGF the estimated $7.8M cost to implement the Major Improvement Items is reduced.
Guard rail installation on bridge approach	Safety risks on approach to Whisky Creek and Glasseye Creek Bridges include:

Activity	Projects and status
	• Tight corners at bottom of gullies. • Poor delineation. • Little protection other than short lengths of timber sight rails. With increasing vehicle traffic, it is necessary to improve delineation and provide guardrails on all four ends of each bridge. The Transition Plan recommends this work is completed by 2024 and has an estimated cost of $360,000. • Whisky Creek Bridge – safety improvements not yet funded, estimated replacement cost is $145,000. • Glasseye Creek – safety improvements tendered for construction.
The "Bluffs" section of Karamea Highway	Prone to slips, slumps and flooding, however due to difficulties accurately planning and forecasting the nature and location of failure it is not practical to invest in Major Improvement Works along the Bluffs section of the Karamea Highway. Transition Plan recommends maintaining levels of service through continued low cost / low risk investment. Future failures from extreme weather conditions are likely to be funded under Emergency Works. The proposed Transition Programme retains SPR Emergency Works at 100% FAR through to 2031.

Figure 48: Little Wanganui Bridge

9.1.4.2 Haast to Jackson Bay Road – Westland District

The Haast-Jackson Bay SPR connects SH6 near Haast south to Jackson Bay. It is approximately 49km long passing through several communities which are home to around 250 people. It is the only land-based corridor providing access to these communities.

The Haast-Jackson Bay Transition Plan (February 2018) identified and assessed a number of feasible forward works programmes and recommended a preferred way forward for the SPR transition:

Table 15: Haast to Jackson Bay Major Improvement Projects

Activity	Projects and status
Pavement rehabilitation	Pavement is significantly deteriorated on 'corduroy' sections requiring increased investment in maintenance and renewals. Two trial sites are

Activity	Projects and status
	currently in place to determine a preferred option and falling weight deflectometer data has been collected. $150,000 per annum, $450,000 total, has been allocated to Pavement Rehabilitation activities (WC214) which is unspent to date. **Progressing with a preferred option and procuring contractor services is an urgent WDC action for 2020 so planned investments can be completed in the current 2020-21 NLTP funding cycle.**
Structure renewals	Principle inspections of bridges on the Haast-Jackson Bay SPR are underway, at present the Arawhata Bridge is recommended to be sandblasted and painted to protect the steel structure from corrosion. $1.3M of maintenance and renewals work has been estimated for Arawhata Bridge. Okuru and Waiatoto Bridges do not have recommended works in the recent Structures Lifecycle Management Plan. Note that $259,000 of maintenance and renewals work has previously been estimated for Okuru Bridge – WDC to confirm if this is still required. **WDC need to confirm the 2020/21 and forward programme for these three bridges based on recent inspection findings.**
Emergency works	Following Cyclones Fehi and Gita in 2018 $500,000 Emergency Works funding was allocated to address coastal erosion issues through shoreline protection works at Jackson Bay. **To date, this work has not been progressed and is an urgent item for WDC to procure services for in 2020 to ensure work is completed in the current 2018-21 NLTP funding cycle.**
Resilience improvements (WC357)	The route is faced by a range of hazards caused by extreme weather events: • Jackson Bay Bluffs – slips are a frequent risk to the road below, given the unpredictable nature of where and when a slip will fall the preferred option is to continue post-event clean up. • Surface flooding at Mussel Point – this rarely closes the road and the cost to mitigate issues outweigh expected benefits. • Okuru River Mouth erosion – erosion sites move regularly on this coastline making it difficult to plan mitigation, the current monitoring approach should be reviewed considering recent erosion (1-2m in 24 hours) close to the road. **$235,000 is approved for resilience work here if needed – WDC to confirm.**

As noted above, funding allocated to the 2018-21 programme remains unspent. It is important that pavement rehabilitation and emergency works are advanced quickly in the current financial year to avoid the potential for maintenance, renewal and improvement projects recommended in the forward programme to be delayed leading to negative investment outcomes.

Figure 49: Coastal erosion and shoreline protection at Jackson Bay

9.2 Programme Options

Four distinct programme options have been identified:

Option 1: Status quo (business as usual)

This option continues the 2020/21 status quo expenditure. This option will not deliver the benefits sought and does not reflect the step change sought by the 2017 C.TAMP. For some work categories, the level of expenditure will see a deterioration of asset condition and customer levels of service.

Option 2: Optimised status quo (do-minimum)

Under this option, the business as usual approach to activity management would be continued, with some pragmatic changes to specific work category expenditure. This is the core road maintenance programme.

This option is effectively continuing with the current programme, and some targeted increases to ensure that existing assets are maintained and renewed to a satisfactory level without substantial improvement.

Option 3: Preserving our assets

This option is well aligned with the 2017 C.TAMP Programme Business Case's preferred option 'Preparing for step change' and will build on Option 2 to achieve benefits for asset condition, freight levels of service, road safety and resilience. Condition-based replacement of bridges and other structures is a core focus of this option, level of service improvements will be achieved through replacement of existing bridges to latest design standards. This is an enhanced road maintenance programme.

This option includes detailed investigations and assessment of bridges, carriageways and intersections, and the development of business cases for the future level of service-based improvements.

Substantial increase in investment for asset management capability and capacity in council roading teams, and the evidence each council has available for decision making continues to improve through increased investment and collaboration is made here.

Option 4: Increased levels of service

This option builds on Options 2 and 3 by seeking to deliver key improvements to the transport system that will deliver an overall higher level of service. The key feature of this option is the level of service-based improvements and replacements to bridges, with emphasis on HPMV and 50MAX capacity. Additional investment is proposed for tourism and urban amenity improvements including carriageway widening on key routes, streetscape improvements, intersection realignment and development of walking and cycling routes.

Option 4 is not costed as the bridge, carriageway and intersection improvements identified require detailed investigations and assessments and business cases to identify preferred options. The cost is assumed to be substantially higher than Options 2 and 3.

The following sections present these four programme options at NLTP Work Category level for each district, and in Buller and Westland a separate programme is provided for Local Roads and the Special Purpose Roads.

The tables include the budget set for Work Categories under each programme option, and a summary outlining the reasons for change (increase or decrease) or retaining the status quo. The most substantive change in investment for the region is over Sealed Roads, Bridges and Structures, and Network and Activity/Asset Management. For each district additional supporting information has been provided to describe the level of investment required, and what this investment will achieve.

9.3 Buller District NLTP Programme Options

9.3.1 LOCAL ROAD NLTP WORK CATEGORIES

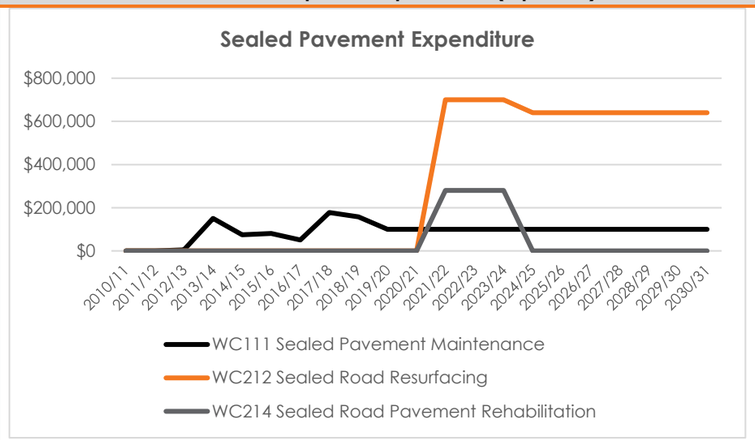
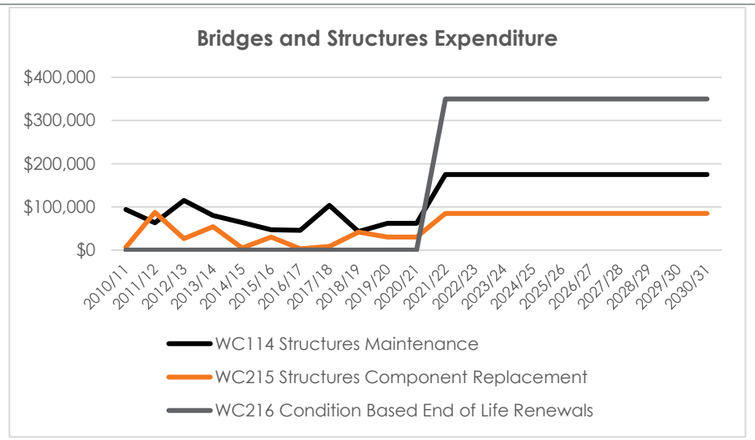
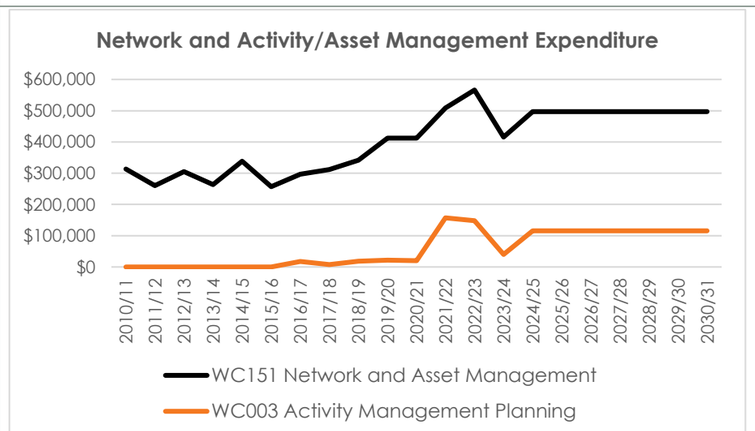
Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Investment Management			
WC003 Activity Management Planning $20,000 per annum Continued funding of regional Activity Management Plan only.		**2021/22 $157,000, 2022/23 $148,000, 2023/24 $40,000 (total 2021-24 $346,000)** The Activity Management Planning budget has been reviewed to build on progress made with improved data collection, strategic planning, and business case development achieved through collaboration in 2018-21. In addition to the continued $20,000 annual investment in the regional Activity Management Plan, uplift in this work category will fund: • Asset Management Policy • Common customer satisfaction and road user feedback system. • Establish level of service targets and implementation plans. • Asset performance and service gap analysis • Development of network operating plans • Risk management, climate change, resilience, critical asset planning • ONRC Road Closure & Access Measures • Bridge Lifecycle Management Plan (2nd Generation) • Bridge Lifecycle Management System • Maintenance intervention strategies • 20-Year Forward Works Plan (2nd Generation) • REG ONF implementation • Regional Capability & Collaboration Business Case & Transition • Regional Procurement Strategy This budget assumes the current model of collaboration continues, however the proposed increase to collaboration is expected to result in cost savings. These may begin to be realised in years two and three of the 2021-24 programme. At this time the scale of cost savings are not known.	
Maintenance			
WC111 Sealed Pavement Maintenance $365,000 Current level of expenditure is achieving level of service targets with pavement assessment activities finding the network to be in relatively good condition for its age and traffic volumes.			
WC112 Unsealed Pavement Maintenance $375,000	**Increase to $400,000 per annum.** Unsealed roads in the district are in overall good condition, a slight uplift in investment is proposed for 2021-24 to continue achieving current level of service targets, and to provide a consistent level of maintenance for Buller's rural communities primarily through grading and pothole repairs. This is in response to assessed condition of unsealed roads, customer service requests, and community survey feedback.		
WC113 Routine Drainage Maintenance $330,000	**$330,000 in 2021/22 with 2% annual increase from 2022-31.** The total 2021-24 budget is slightly below 2018-21 levels, however an annual 2% increase on current investment is proposed for the next 10-years. Buller experiences significant storm damage to drainage assets, and the frequency and intensity of storms are predicted to increase. Uplift in maintenance will avoid deterioration of drainage channels, and negative impacts on the network that may lead to increased need for renewals due to a lack of maintenance.		
WC114 Structures Maintenance $62,000	**Increase to $175,000 per annum.** As discussed in Section 5.5.2, the Road Structures Lifecycle Management Plan has identified a significant backlog of maintenance activities that need to be addressed in the next five years. It recommends substantial uplift in annual expenditure to avoid further growth in maintenance backlog, address identified issues, and set an appropriate level of forward expenditure relative to the condition and age of Buller's bridge assets. Without immediate uplift the condition of assets will continue to worsen, increasing future costs and risk of asset failure, reducing economic productivity and resilience, and resulting in more assets in need of early replacement.		
WC121 Environmental Maintenance $350,000 Current level of expenditure is appropriate for routine care and maintenance of the road corridor.			

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC122 Traffic Services Maintenance $250,000	**Increase to $275,000 per annum.** Annual uplift is to enhance the maintenance of traffic signs, road delineation marker posts, and pavement markings. There are identified condition issues across the local road network, these maintenance activities will improve condition and contribute positively to safety outcomes, especially for visitor drivers.		
WC124 Cycle Path Maintenance $10,000 Current level of expenditure is appropriate for the maintenance of cycle paths over the next three years, with the increase in length of trails and shared paths it is expected the maintenance budget will increase in 2024-27.			
WC125 Footpath Maintenance $185,000 Buller's overall footpath programme is unchanged from 2018-21 at $600k per annum for maintenance and renewals – now split into WC125 and WC225. Buller is currently running a high renewals programme to address condition issues across the network, from 2024 onward the current level of combined maintenance and renewals investment is forecast to progressively reduce to $300k per annum as a result of the current investment. Over time the programme will also shift from a renewal to a maintenance focus.			
WC131 Rail Level Crossing Devices $4,100 Kiwi Rail set the forward programme for rail level crossing device maintenance; the current budget is considered appropriate.			
WC140 Minor Events $200,000 Fixed budget for the response to minor natural events.			
WC151 Network and Asset Management $412,500	**2021/22 $508,500, 2022/23 $566,000, 2023/24 $416,000 (total $1.49m 2021-24)** The increase to WC151 is to provide for an improved level of internal resourcing to for BDC's roading team to take on some roles that have previously been procured by external providers (e.g. asset and activity management planning), and to deliver the enhanced programme. External professional service providers will still be required to successfully deliver Option 3, including technical engineering services, data and analytics, detailed investigations and assessment, and potential for some business case development. This uplift will provide for greater internal capability and capacity, and ensure the right external services are procured where needed. A detailed breakdown of WC151 budget is provided in Appendix 10.		
Renewals			
WC211 Unsealed Road Metalling $150,000 Current level of expenditure is achieving level of service targets on the network.			
WC212 Sealed Road Resurfacing $475,000	**Increase to $625,000 per annum.**	**Increase to $700,000 per annum.** Increase is based on 20-Year FWP recommendations for an enhanced resealing programme to address condition issues and maintain the level of service targets.	
WC213 Drainage Renewals $145,000 Annual spending has fluctuated over the last 10-years, the current budget is appropriate relative to actual expenditure to deliver a forward renewal programme.			
WC214 Sealed Road Pavement Rehabilitation		**$160,000 per annum.** Based on 20-Year FWP recommended rehabilitation treatment lengths on the network for 2021-24.	
WC215 Structures Component Renewals $30,000	**Increase to $85,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to address: renewals backlog, urgent component replacements , and a new 'status quo' to preserve current assets and avoid need for early condition-based replacement.		
WC216 Condition based replacement of bridge and structure renewals		**$350,000 per annum.** The LCMP recommends eight structures for condition-based replacement in 2021-24, and a further seven by 2031.	

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC222 Traffic Services Renewals $42,000	**$42,000 in 2020/21 with 5% annual increase from 2022-31.** There is a need for renewal of existing signage and delineation on local roads to improve wayfinding and safety on key tourist routes in the district. Westport Town Centre improvements: wayfinding to safely connect cyclists through the urban area between the Kawatiri River Trail and Coastal Trail sections.		
WC225 Footpath renewals $415,000 As stated in WC125, Buller's footpath programme is unchanged from 2018-21, the previous budget for renewals that was previously part of WC125 is allocated here. This increased renewal programme has improved Buller's level of service achievement for footpaths ranked as grade one or two from 77% in 2015/16 to 89% in 2018/19. From 2024/25 the combined WC125 and WC225 budget will be progressively reduced to $300,000 in 2028/29 as this level of investment does not need to be sustained. Over time the emphasis will shift from renewals to maintenance.			
Improvements			
WC341 Low cost low risk improvements total cost $1.165m 2021-24, individual projects: • Denniston Road / Boswell Street intersection $30k • Derby Street / Cobden Street intersection $10k • Marine Parade $100k • Marine Parade / Tasman Street intersection $10k • Domett Street / Abattoir Road Corner $20k • Denniston Road improvements for heavy vehicles $165k • Star Tavern – Omau intersection $340k • **Walking and cycling $**325k (see WC451 & WC452 below)			Option 4 improvements not funded 2021-24 here: Waiuta access road: edge markers and safety rails, widening for safe overtaking points and improved sightlines at corners. Airport access intersection alignment.
Walking and cycling improvements			
WC451 Walking facilities & WC452 Cycling facilities Combined here as improvement projects are generally focused on outcomes for both walking and cycling.		Proposed budget for 2021-24: • $175k 2021/22 • $75k 2022/23 • $75k 2023/24 Funding sought (via low cost low risk improvements) to invest in walking and cycling improvements in Westport. Projects identified to date for investment include: • Brougham Street pedestrianisation and cycle connectivity to provide access to the PGF funded rail overbridge. • Kawatiri Cycle Trail to The Riverbank trail connectivity. • The Riverbank to Floating Basing trail. • Orowaiti Bridge to Snodgrass Road. • Brougham Street / Palmerston Street Pedestrian & Cyclist safety improvements • Westport town centre on-road cycle lanes on Russell Street and The Esplanade. • Priority investments identified in Buller's Walking Action Plan. The timing of specific projects is to be determined; funding sought via the NLTP will complement council funding for improvement projects.	
Road Safety			
WC432 Promotion, education and advertising $30,000	**$30,000 + 2% annual increase** The current level of expenditure is generally adequate, slight annual uplift in line with GDC and WDC will allow for increasing levels of activity across the region.		
Public Transport			
WC511 Bus Services $52,000			

Status quo (business as usual)		Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
	Option 1	Option 2	Option 3	Option 4
Total Cost 2021-24	$12.88m ($4.29m/year)	$14.26m ($4.75m/year)	$16.30m ($5.43m/year)	
BDC	$3.61m ($1.20m/year)	$3.99m ($1.33m/year)	$4.56m ($1.52m/year)	
Waka Kotahi	$9.27m ($3.09m/year)	$10.27m ($3.42m/year)	$11.74m ($3.91m/year)	
Maintenance 2021-24	$4.58m ($1.53m/year)	$5.02m ($1.67m/year)	$5.02m ($1.67m/year)	
Operations 2021-24	$3.15m ($1.05m/year)	$3.47m ($1.16m/year)	$3.47m ($1.16m/year)	
Renewals 2021-24	$3.77m ($1.26m/year)	$4.39m ($1.46m/year)	$6.15m ($2.05m/year)	

9.3.2 BULLER DISTRICT COUNCIL – LOCAL ROADS: DETAILED REVIEW OF CHANGES TO KEY WORK CATEGORIES UNDER OPTION 3

Investment Area	Local Roads - Historic and Proposed Expenditure (Option 3)	Change in Expenditure	Discussion
Sealed Roads Continuation of comparable maintenance and rehabilitation activities/expenditure. Reduced long-run historical quantities for resealing is offset by increased unit rates/costs.		**WC111 Sealed Pavement Maintenance** 2010/11 – 2019/20 average expenditure was $387k per annum, and the 2020/21 budget is $365k. For 2021/22 – 2030/31, the proposed budget is $365k, a continuation of the status quo.	BDC's investment in pavement patching, pothole repairs and unsealed shoulder maintenance will continue to be achieved through current expenditure in this work category.The 20-Year FWP identified that BDC's sealed pavements are in overall good condition and do not need urgent maintenance uplift.
		WC212 Sealed Road Resurfacing 2010/11 – 2019/20 average expenditure was $485k per annum, and the 2020/21 budget is $475k. For 2021-24 – 2030/31 the proposed budget is $700k, a $225k (47%) increase).	The 20-Year FWP recommends a renewal need of 14km per year, which is lower than the recent long-run average of 20km (ref surface life analysis). Further, the asphalt renewal programme is a priority as most lengths were resurfaced before 2000. It is expected that under the a new resurfacing contract, the unit rates will reduce, so for this revised analysis the same rates as GDC and WDC were used instead of BDC's current rates which were relatively high and had proposed an initial budget of $800k, now reduced to $700K. From 2024/25 onward, the annual budget is further reduced to $640k Costs are higher than pre 2018-21 due to increased oil costs and local supply/demand and competition imbalances.
		WC214 Sealed Road Pavement Rehabilitation For 2021/22 – 2030/31, the proposed budget is $160k per annum. This is in line with historic expenditure, though data for 2018-21 shows no budget for rehabilitations.	This is based on the recommendation from the 20-Year FWP to allow for 500m rehabilitation length annually for this period.
Bridges and Structures Significant uplift in maintenance, renewals and condition-based replacement to address significant condition and lifecycle issues.		**WC114 Structures Maintenance** 2010/11 – 2019/20 average expenditure was $71k per annum, and the 2020/21 budget is $62k. For 2021/22 – 2030/31, the proposed budget is $175k, a $113k (182%) increase.	The 2020 Structures LCMP identified a backlog of $117k of routine maintenance work. If investment is not increased now the backlog of urgent maintenance work will continue to increase, and the overall condition of BDC's bridges will further decline. This raises the likelihood of condition-based replacement of bridges before the end of their expected useful life.
		WC215 Structures Component Replacement 2010/11 – 2019/20 average expenditure was $29k per annum, and the 2020/21 budget is $30k. For 2021/22 – 2030/31, the proposed budget is $85k, a $55k (183%) increase).	The 2020 Structures LCMP identified a backlog of up to $2m of component replacement need, some of this is non-urgent. As for increased investment in structures maintenance activities, structures component replacement is urgently needed to maintain existing structures. This approach provides net present value benefits compared to a lack of investment and need for condition-based replacement of structures over the next 10-20 years.
		WC216 Condition Based End of Life Renewals (new work category) A new work category, the recommended investment in condition-based and end-of-life bridge renewals, is $350k per annum for 2021/22-2030/31.	The 2020 LCMP recommends seven bridges/structures for condition-based replacement in the next 10-years. An average annual budget has been set as the programming of these replacements is not yet known. Annual budgets will likely vary once the timing of replacements is planned.
Network and Activity/Asset Management Ongoing uplift to improve performance and close the gap between BDC's its peer group.		**WC003 Activity Management Planning** For 2018/19 – 2020/21 BDC has invested $20,000 per annum for the development of the combined West Coast Activity Management Plan and Programme Business Case. The preference is for major uplift in strategic planning supported by evidence and, so the forward investment sought for 2021-24 is $346k ($115k annual average).	WC003 has recently funded the development of the AMP for NLTP cycles, for 2021-24 BDC will undertake a wider range of activities in this work category. This includes: • Activity Management and Asset Management Plans. • 2024-27 Programme Business Case. • Customer satisfaction, level of service, and network operating plan development. • Bridge lifecycle management planning. • Pavement programme development and evidence. • Capability and Collaboration implementation and transition. A detailed breakdown of costs is provided in Appendix 10.
		WC151 Network and Asset Management BDC, alongside the other two councils, has increasingly invested in Network and Asset Management capability. This increase in investment is to build on the improvement achieved during 2018-21. In 2020/21 the budget is $412,500, to achieve the forward programme and invest in continued improvement the total investment sought for 2021-24 is $1.49m ($497,000 annual average).	The increase to WC151 is recommended to: • Recruit experienced roading staff into existing revised roles and established new junior role. • Engage professional service providers to carry out investigations, data collection, analytics, and asset management planning to support BDC's team to increase the level of asset management knowledge and capability in the organisation. Support further collaboration across the three West Coast councils, including more formal partnerships as described in the PBC Commercial Case. A detailed breakdown of costs is provided in Appendix 10.

9.3.3 SPECIAL PURPOSE ROAD NLTP WORK CATEGORIES

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Investment Management			
WC003 Activity Management Planning WC003 has not been funded on the SPR, though a substantial amount of improvement planning is undertaken relating to this part of the network.	**2021/22 $18,000, 2022/23 $17,500, 2023/24 $4,500 (total 2021-24 $39,000)** The Activity Management Planning budget has been reviewed to build on progress made with improved data collection, strategic planning, and business case development achieved through collaboration in 2018-21. In addition to the continued $20,000 annual investment in the regional Activity Management Plan, uplift in this work category will fund: • Establish level of service targets and implementation plans. • Asset performance and service gap analysis • Development of network operating plans • Risk management, climate change, resilience, critical asset planning • ONRC Road Closure & Access Measures • Bridge Lifecycle Management System • REG ONF implementation		
Maintenance			
WC111 Sealed Pavement Maintenance $132,000 Current level of expenditure is achieving level of service targets with pavement assessment activities finding the network to be in relatively good condition for its age and traffic volumes.			
WC112 Unsealed Pavement Maintenance $9,000	**$0 from 2021/22** With the seal extension on Kohaihai Road (4.5km of the network) out for tender unsealed pavement maintenance will not be required on the SPR.		
WC113 Routine Drainage Maintenance $60,000	**$60,000 in 2021/22 with 2% annual increase from 2022-31.** Expenditure in the last 5-years has been relatively high, and over 10-years annual expenditure has steadily increased. This level of investment with ongoing uplift will allow for appropriate investment in cleaning and clearing of channels and routine maintenance, repair and reinstatement of surface water channels due to storm impacts.		
WC114 Structures Maintenance $13,000	**Increase to $36,000 per annum.**	**Increase to $52,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to: address maintenance backlog, undertake urgent maintenance, and a new 'status quo' moving forward to preserve asset condition and avoid need for early replacement.	
WC121 Environmental Maintenance $100,000 Current level of expenditure is appropriate for routine care and maintenance of the road corridor.			
WC122 Traffic Services Maintenance $10,000 Current level of investment is achieving levels of service through maintenance activities.			
WC140 Minor Events $100,000 Fixed budget for the response to minor natural events.			
WC151 Network and Asset Management $49,500	**2021/22 $58,000, 2022/23 $64,000, 2023/24 $47,000 (total $168,000 2021-24)** The increase to WC151 is to provide for an improved level of internal resourcing to for BDC's roading team to take on some roles that have previously been procured by external providers (e.g. asset and activity management planning), and to deliver the enhanced programme. External professional service providers will still be required to successfully deliver Option 3, including technical engineering services, data and analytics, detailed investigations and assessment, and potential for some business case development. This uplift will provide for greater internal capability and capacity, and ensure the right external services are procured where needed. A detailed breakdown of WC151 budget is provided in Appendix 10.		
Renewals			

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC211 Unsealed Road Metalling $12,200	**$0 from 2021/22** With the seal extension on Kohaihai Road (4.5km of the network) out for tender unsealed road metalling will not be required on the SPR.		
WC212 Sealed Road Resurfacing $117,000	**Increase to $200,000 per annum.** Increase is based on 20-Year FWP recommendations for an enhanced resealing programme to address condition issues and maintain the level of service targets. Annual amounts vary based on the recommended programme.		
WC213 Drainage Renewals $31,600 Annual spending has fluctuated over the last 10-years, the current budget is appropriate relative to actual expenditure to deliver a forward renewal programme.			
WC214 Sealed Road Pavement Rehabilitation $99.900		**20-Year FWP recommends:** • 2021/22 $288,000 • 2022/23 $351,000 • 2023/24 $416,000 20-Year FWP recommends rehabilitation on the network, annual sums vary based on the recommended programme.	
WC215 Structures Component Renewals $3,000	**Increase to $8,300 per annum.**	**Increase to $12,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to address: renewals backlog, urgent component replacements , and a new 'status quo' to preserve current assets and avoid need for early condition-based replacement.	
WC216 Condition based replacement of bridge and structure renewals	**2021-24 $280,000 per annum for Tobin Creek Culvert estimated $840,000 replacement cost.**		
WC222 Traffic Services Renewals $30,100 Current level of investment is achieving levels of service through renewal activities.			
Improvements			
WC322 Replacement of bridges and other structures	**2021-24 $1.6m per annum 2021-24 ($4.8m total) for Little Wanganui Bridge replacement on the Karamea Highway SPR.**		
WC341 Low cost low risk improvements total cost $1.2m 2021-24, individual projects: • Repair edge slumps $165k • Repair edge slumps and underlying edge geostability on Seven Sister section $200k • Geometric improvement through the Seven Sisters section – corners 1, 3, 5 and 7 $800k • Pull over areas for safe vehicle passing $40k			

	Option 1	Option 2	Option 3	Option 4
Total Cost 2021-24	$5.15m ($1.72m/year)	$9.48m ($3.16m/year)	$10.29m ($3.43m/year)	
Maintenance 2021-24	$942k ($314k/year)	$988k ($329k/year)	$1.04m ($345k/year)	
Operations 2021-24	$479k ($160k/year)	$499k ($166k/year)	$499k ($166k/year)	
Renewals 2021-24	$881k ($293k/year)	$1.95m ($649k/year)	$2.72m ($905k/year)	

9.4 Grey District Programme NLTP Options

9.4.1 LOCAL ROAD NLTP WORK CATEGORIES

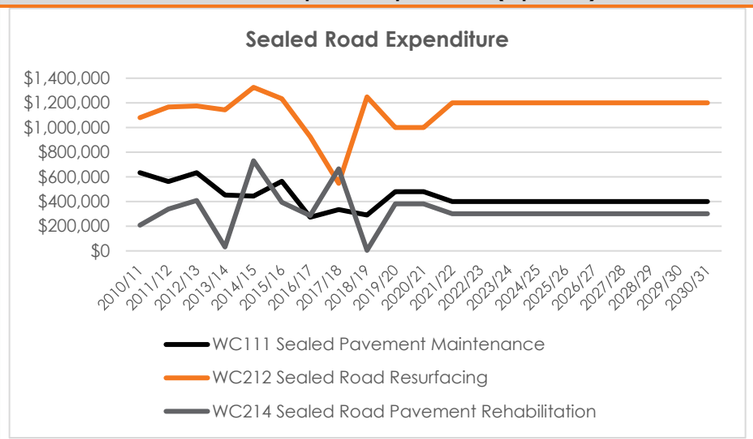
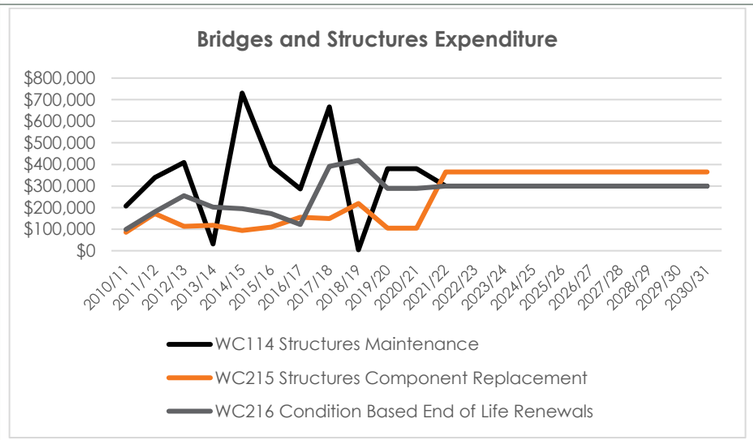
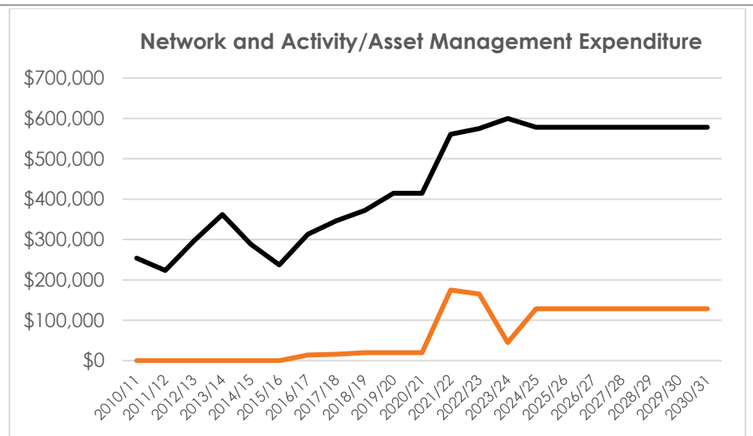
Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Investment Management			
WC003 Activity Management Planning $20,000 per annum Continued funding of regional Activity Management Plan only.		**2021/22 $175,000, 2022/23 $165,000, 2023/24 $45,000 (total 2021-24 $385,000)** The Activity Management Planning budget has been reviewed to build on progress made with improved data collection, strategic planning, and business case development achieved through collaboration in 2018-21. In addition to the continued $20,000 annual investment in the regional Activity Management Plan, uplift in this work category will fund: • Common customer satisfaction and road user feedback system. • Establish level of service targets and implementation plans. • Asset performance and service gap analysis • Development of network operating plans • Risk management, climate change, resilience, critical asset planning • ONRC Road Closure & Access Measures • Bridge Lifecycle Management System • REG ONF implementation • Regional Capability & Collaboration Business Case & Transition • Regional Procurement Strategy This budget assumes the current model of collaboration continues, however the proposed increase to collaboration is expected to result in cost savings. These may begin to be realised in years two and three of the 2021-24 programme. At this time the scale of cost savings are not known.	
Operation and Maintenance			
WC111 Sealed Pavement Maintenance $480,000	**Decrease to $400,000 per annum** The 20-Year FWP finds GDC's sealed road network to be in relatively good condition for traffic volumes and age, a reduction is proposed to a level that will allow for existing levels of service to be maintained, while enabling investment in the increased bridge maintenance and renewal programme.		
WC112 Unsealed Pavement Maintenance $170,000	**Increase to $230,500 per annum** Unsealed roads are not achieving current level of service targets, an uplift in investment is proposed to improve grading and pothole repair activities. This is in response to assessed condition of unsealed roads, customer service requests, and community survey feedback.		
WC113 Routine Drainage Maintenance $230,000	**Decrease to $200,000 per annum** GDC's lined and earth channel drainage is in overall good condition with a slight decrease in maintenance investment adequate to maintain overall levels of service.		
WC114 Structures Maintenance $105,000	**Increase to $365,000 per annum** As discussed in Section 5.5.2, the Road Structures Lifecycle Management Plan has identified a significant backlog of maintenance activities that need to be addressed in the next five years. It recommends substantial uplift in annual expenditure to avoid further growth in maintenance backlog, address identified issues, and set an appropriate level of forward expenditure relative to the condition and age of Grey's bridge assets. Without immediate uplift the condition of assets will continue to worsen, increasing future costs and risk of asset failure, reducing economic productivity and resilience, and resulting in more assets in need of early replacement.		
WC121 Environmental Maintenance $420,000	**Decrease to $400,000 per annum** A small decrease in environmental maintenance makes funding available for the core bridge and pavements programme and can be achieved without negative impacts for levels of service.		
WC122 Traffic Services Maintenance $300,000	**Increase to $340,000 per annum** Increase is to enhance the maintenance of traffic signs, road delineation marker posts and pavement markings. At a network level condition issues have been identified, increased maintenance activities will contribute to safety outcomes, especially for visitor drivers on key tourist routes.		

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC124 Cycle Path Maintenance $15,000 Current level of expenditure is appropriate for the maintenance of cycle paths.			
WC125 Footpath Maintenance $200,000 Grey District's previous budget for WC125 was $500k, this is now split into $200k for maintenance and $300k for renewals, so no overall change is requested. See WC225 for discussion about need for continued investment in renewals.			
WC131 Rail Level Crossing Devices $22,000	**Increase to $37,500 per annum** Based on 10-year average expenditure, Kiwi Rail set the forward programme for rail level crossing maintenance, so this uplift is to avoid underfunding.		
WC140 Minor Events $150,000 Fixed budget for the response to minor natural events.			
WC151 Network and Asset Management $415,000	**2021/22 $560,500, 2022/23 $575,500, 2023/24 $600,000 (total 2021-24 $1.74m)** The increase to WC151 is to provide for an improved level of internal resourcing to for GDC's roading team to take on some roles that have previously been procured by external providers (e.g. asset and activity management planning), and to deliver the enhanced programme. External professional service providers will still be required to successfully deliver Option 3, including technical engineering services, data and analytics, detailed investigations and assessment, and potential for some business case development. This uplift will provide for greater internal capability and capacity, and ensure the right external services are procured where needed. A detailed breakdown of WC151 budget is provided in Appendix 10.		
Renewals			
WC211 Unsealed Road Metalling $160,000		**Increase to $200,000 per annum** As per WC112, levels of service on the unsealed road network are relatively poor and a source of community feedback for improvement. Under-investment has created a need to move into an increased re-metalling programme to avoid further deterioration and backlog of works.	
WC212 Sealed Road Resurfacing $1,000,000		**Increase to $1.2m per annum.** Increase based on 20-Year FWP recommendations for an enhanced resealing programme to address condition issues and maintain level of service targets.	
WC213 Drainage Renewals $150,000	**Decrease to $120,000 per annum** As per WC113, a slight decrease in drainage renewal expenditure can be achieved without negative impact on levels of service.		
WC214 Sealed Road Pavement Rehabilitation $380,000		**$300,000 per annum** Based on 20-Year FWP recommended rehabilitation treatment lengths on the network for 2021-24.	
WC215 Structures Component Renewals $289,000	**Increase to $300,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to address: renewals backlog, urgent component replacements, and a new 'status quo' to preserve current assets and avoid the need for early condition-based replacement.		
WC216 Condition based replacement of bridge and structure renewals		The LCMP recommends seven structures for condition-based replacement in 2021-24, and a further 14 by 2031, to enable this the following budgets are recommended: **2021/22 $600,000** **2022/23 $844,000** **2023/24 $705,000** **2024-31 $550,000**	

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC222 Traffic Services renewals $200,000 With the increase to WC122 for traffic services maintenance, the current budget for renewals is appropriate.			
WC225 Footpath renewals $300,000 Grey District's previous budget for WC125 was $500k, this is now split into $200k for maintenance and $300k for renewals, so no overall change is requested. Annual depreciation on footpaths is $342,600 per annum and the most recent condition assessment finds at least 4% of footpaths are in very poor condition, these assets have a replacement value of $515,100. Maintaining the renewals budget at $300k is necessary to avoid backlogs and achieve Grey's level of service target for footpath condition (80% of footpaths at service standard of 'fair' or better), in 2018/19 79% of footpaths achieved this level of service.			
Improvements			
WC322 Replacement of bridges and other structures			LoS-based replacement of bridges and other structures, this may be a wholly LoS-based replacement, or condition-based replacement with LoS improvements beyond latest design standards.
WC341 Low cost low risk improvements total cost $2.85m 2021-24. Individual projects: • Stillwater to Jacksons improvements $750k. • Greymouth Town Centre improvements $500k. • Safety improvements as recommended by the Stantec Road Safety Audit $600k. • Resilience improvements on bridges – based on independent seismic assessment report $900k. • Surface treatment on bridges $100k.			
Road Safety			
WC432 Promotion, education and advertising $30,000	**$30,000 + 2% annual increase** The current level of expenditure is generally adequate, slight annual uplift in line with BDC and WDC will allow for increasing levels of activity across the region.		

	Option 1	Option 2	Option 3	Option 4
Total Cost 2021-24	$17.98m ($5.99m/year)	$19.13m ($6.38m/year)	$22.08m ($7.36m/year)	
GDC	$6.65m ($2.22m/year)	$7.08m ($2.36m/year)	$8.17m ($2.72m/year)	
Waka Kotahi	$11.33m ($3.78m/year)	$12.05m ($4.02m/year)	$13.91m ($4.64m/year)	
Maintenance 2021-24	$4.05m ($1.35m/year)	$4.68m ($1.56m/year)	$4.68m ($1.56m/year)	
Operations 2021-24	$3.58m ($1.19m/year)	$4.16m ($1.38m/year)	$4.16m ($1.38m/year)	
Renewals 2021-24	$7.44m ($2.48m/year)	$7.38m ($2.46m/year)	$10.01m ($3.34m/year)	

9.4.2 GREY DISTRICT COUNCIL – LOCAL ROADS: DETAILED REVIEW OF CHANGES TO KEY WORK CATEGORIES UNDER OPTION 3

Investment Area	Local Roads - Historic and Proposed Expenditure (Option 3)	Change in Expenditure	Discussion
Sealed Roads Increased resealing activities with a decrease in maintenance and rehab expenditure.		**WC111 Sealed Pavement Maintenance** 2010/11 – 2019/20 average expenditure was $465k per annum, and the 2020/21 budget is $480k. For 2021/22 – 2030/31, the proposed budget is $400k, an $80k (17%) decrease.	The 20-Year FWP identified that GDC's sealed pavements are in overall good condition with structural number averaging 4.8 across the Network and few sections showing short surface life or poor condition deterioration.
		WC212 Sealed Road Resurfacing 2010/11 – 2019/20 average expenditure was $1.08m per annum, and the 2020/21 budget is $1m. For 2021/22 – 2030/31, the proposed budget is $1.2m, a $200k (20%) increase.	The 20-Year FWP recommends a renewal need of 20km per year, uplift in the budget is based on current rates for resurfacing. The FWP recommends asphalt surfaces on low volume and access roads are resurfaced with chip, this has been accounted for in the forward projection.
		WC214 Sealed Road Pavement Rehabilitation 2010/11 – 2019/20 average expenditure was $345k per annum, and the 2020/21 budget is $380k. For 2021/22 – 2030/31, the proposed budget is $300k, an $80k (21%) decrease.	A nominal $300k per annum budget has been recommended, this will allow for treatment of 950m per year for any sites that justify treatment. At present, Lake Brunner Road and Bright Street have been assessed as having short surface lives and condition deterioration.
Bridges and Structures Significant uplift in maintenance, renewals, and condition-based replacement to address significant condition and lifecycle issues.		**WC114 Structures Maintenance** 2010/11 – 2019/20 average expenditure was $132k per annum, and the 2020/21 budget is $105k. For 2021/22 – 2030/31, the proposed budget is $365k, a $260k (248%) increase.	The 2020 Structures LCMP identified a backlog of $137k of routine maintenance work. If investment is not increased now the backlog of urgent maintenance work will continue to increase, and the overall condition of GDC's bridges will further decline. This raises the likelihood of condition-based replacement of bridges before the end of their expected useful life.
		WC215 Structures Component Replacement 2010/11 – 2019/20 average expenditure was $232k per annum, and the 2020/21 budget is $289k. For 2021/22 – 2030/31, the proposed budget is $300k, an $11k (4%) increase).	The 2020 Structures LCMP identified a backlog of $820k of component replacement need, some of this is non-urgent. As for increased investment in maintenance activities, structures component replacement is urgently needed to maintain existing structures. This approach provides net present value benefits compared to a lack of investment and need for condition-based replacement of structures over the next 10-20 years.
		WC216 Condition Based End of Life Renewals A new work category, the recommended investment in condition-based and end-of-life bridge renewals is $2.15m ($715k per annum) over 2021-24, and $550k per annum 2024-31.	The 2020 LCMP recommends seven bridges/structures for condition-based replacement in the next 3-years. An average annual budget has been set as the programming of these replacements is not yet known. Annual budgets will likely vary once the timing of replacements is planned. An uplift in WC114 and 215 will help to avoid the list of recommended condition-based replacements from growing.
Network and Activity/Asset Management		**WC003 Activity Management Planning** For 2018/19 – 2020/21 GDC has invested $20,000 per annum for the development of the combined West Coast Activity Management Plan and Programme Business Case. The preference is for major uplift in strategic planning supported by evidence and, so the forward investment sought for 2021-24 is $385k ($128k annual average).	WC003 has recently funded the development of the AMP for NLTP cycles, for 2021-24 GDC will undertake a wider range of activities in this work category. This includes: • Activity Management and Asset Management Plans. • 2024-27 Programme Business Case. • Customer satisfaction, level of service, and network operating plan development. • Bridge lifecycle management planning. • Pavement programme development and evidence. • Capability and Collaboration implementation and transition. A detailed breakdown of costs is provided in Appendix 10.
		WC151 Network and Asset Management GDC, alongside the other two councils, has increasingly invested in Network and Asset Management capability. This increase in investment is to build on the improvement achieved during 2018-21. In 2020/21 the budget is $415,000, to achieve the forward programme and invest in continued improvement the total investment sought for 2021-24 is $1.74m ($578,000 annual average).	The increase to WC151 is recommended to: • Recruit experienced roading staff into existing revised roles. • Engage professional service providers to carry out investigations, data collection, analytics, and asset management planning to support GDC's team to increase the level of asset management knowledge and capability in the organisation. • Support further collaboration across the three West Coast councils, including more formal partnerships as described in the PBC Commercial Case. A detailed breakdown of costs is provided in Appendix 10.

9.5 Westland District NLTP Programme Options

9.5.1 LOCAL ROAD NLTP WORK CATEGORIES

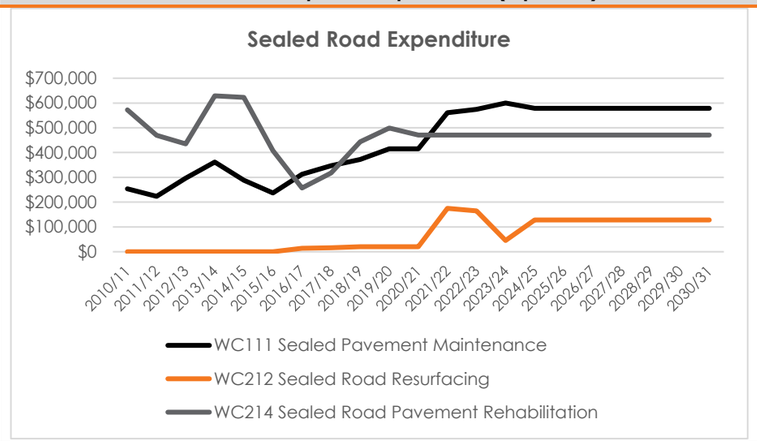
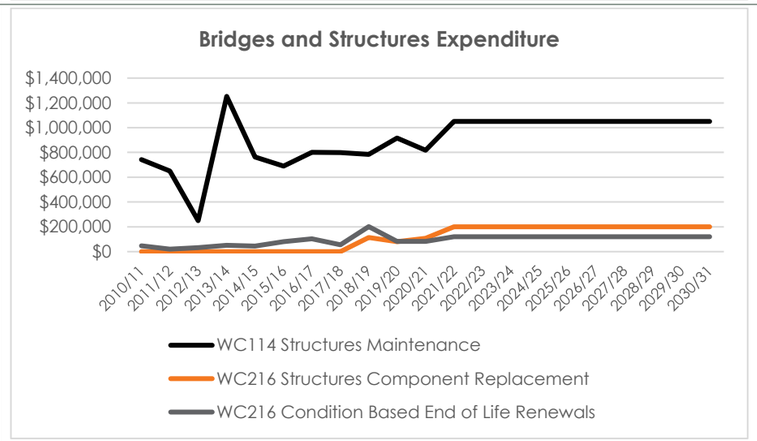
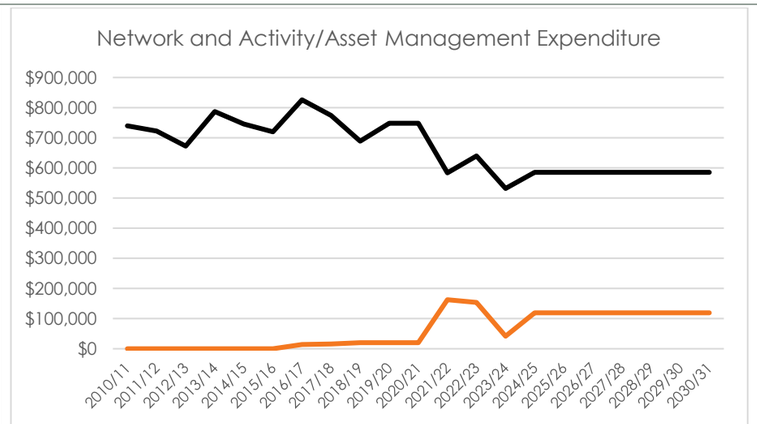
Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Investment Management			
WC003 Activity Management Planning $20,000 per annum Continued funding of regional Activity Management Plan only.		**2021/22 $162,500, 2022/23 $153,000, 2023/24 $42,000 (total 2021-24 $358,000)** The Activity Management Planning budget has been reviewed to build on progress made with improved data collection, strategic planning, and business case development achieved through collaboration in 2018-21. In addition to the continued $20,000 annual investment in the regional Activity Management Plan, uplift in this work category will fund: • Common customer satisfaction and road user feedback system. • Establish level of service targets and implementation plans. • Asset performance and service gap analysis • Development of network operating plans • Risk management, climate change, resilience, critical asset planning • ONRC Road Closure & Access Measures • Bridge Lifecycle Management System • REG ONF implementation • Regional Capability & Collaboration Business Case & Transition • Regional Procurement Strategy This budget assumes the current model of collaboration continues, however the proposed increase to collaboration is expected to result in cost savings. These may begin to be realised in years two and three of the 2021-24 programme. At this time the scale of cost savings are not known.	
Maintenance			
WC111 Sealed Pavement Maintenance $471,000 Current level of expenditure is achieving level of service targets with pavement assessment activities finding the network to be in relatively good condition for age and traffic volumes.			
WC112 Unsealed Pavement Maintenance $350,000	**Decrease to $275,000 per annum.** Current level of expenditure is has achieved improvement and levels of service, a decrease in expenditure can be made while still achieving targets.		
WC113 Routine Drainage Maintenance $64,500	**Increase to $210,000 per annum.**	**Increase to $285,000 per annum.** Frequent storms have caused WDC's 10-year expenditure to be substantially higher than the BAU budget, this level of activity and associated maintenance is expected to continue. So, the 10-year average spend has been used to set the forward budget.	
WC114 Structures Maintenance $83,000	**Increase to $120,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to: address maintenance backlog, undertake urgent maintenance, and a new 'status quo' moving forward to preserve asset condition and avoid the need for early replacement.		
WC121 Environmental Maintenance $281,500 Current level of expenditure is appropriate for routine care and maintenance of the road corridor.			
WC122 Traffic Services Maintenance $148,500	**Increase to $160,000 in 2021/22 with 5% annual increase from 2022-31.** Annual uplift is to enhance the maintenance of traffic signs, road delineation marker posts, and pavement markings. There are identified condition issues across the local road network, these maintenance activities will improve condition and contribute positively to safety outcomes, especially for visitor drivers.		
WC124 Cycle Path Maintenance $15,000	**Increase to $20,000 with 5% annual increase.** Due to increasing length of cycle facilities in the district.		

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC125 Footpath Maintenance $67,500	**Increase to $100,000 per annum.** Westland's investment in footpath maintenance and renewals has been historically low and the condition of footpaths in most towns in the district are well below level of service targets. With the separation of footpath maintenance and renewals the forward programme has been removed and uplift recommended across both work categories to improve performance.		
WC131 Rail Level Crossing Devices $12,000	**Decrease to $8,000 per annum.** Based on 10-year average expenditure, Kiwi Rail set the forward programme for rail level crossing maintenance.		
WC140 Minor Events $150,000 Fixed budget for response to minor natural events.			
WC151 Network and Asset Management $749,000 Note: $417,000 of internal overheads and admin charges have not been previously claimed against the NLTF, these should be considered part of BAU and so are added here.	**2021/22 $583,500, 2022/23 $639,500, 2023/24 $532,000 (total 2021-24 $1.76m)** The increase to WC151 is to provide for an improved level of internal resourcing to for WDC's roading team to take on some roles that have previously been procured by external providers (e.g. asset and activity management planning), and to deliver the enhanced programme. External professional service providers will still be required to successfully deliver Option 3, including technical engineering services, data and analytics, detailed investigations and assessment, and potential for some business case development. This uplift will provide for greater internal capability and capacity, and ensure the right external services are procured where needed. A detailed breakdown of WC151 budget is provided in Appendix 10.		
Renewals			
WC211 Unsealed Road Metalling $286,500	**Decrease to $250,000 per annum.** Recent investments in the unsealed road network have addressed a backlog of work and the network is now in good condition, this level of investment can be reduced while still maintaining levels of service.		
WC212 Sealed Road Resurfacing $817,000		**Increase to $1.05m** Based on 20-Year FWP recommendations, annual amounts vary based on recommended programme.	
WC213 Drainage Renewals $159,000	**Increase to $170,000 in 2021/22 with 2% annual increase from 2022-31.** As for WC113, frequent storm activity requires a higher level of renewals than the BAU budget allows, this increase will provide a more appropriate budget to maintain levels of service on the network, particularly with storms expected to become more frequent and severe over time.		
WC214 Sealed Road Pavement Rehabilitation $106,000		**$200,000 per annum.** Based on 20-Year FWP recommended rehabilitation treatment lengths on the network for 2021-24.	
WC215 Structures Component Renewals $212,000	**Increase to $250,000 per annum.** Road Structures Lifecycle Management Plan recommends level of investment needed to address: renewals backlog, urgent component replacements, and a new 'status quo' to preserve current assets and avoid the need for early condition-based replacement.		
WC216 Condition based replacement of bridge and structure renewals		**$250,000 per annum** The LCMP recommends 12 structures for condition-based replacement in 2021-24.	
WC222 Traffic Services Renewals $127,000	**$127,000 in 2021/22 with 5% annual increase from 2022-31.** Annual uplift is to enhance the renewal of traffic signs, road delineation marker posts, and pavement markings. There are identified condition issues across the local road network, these maintenance activities will improve condition and contribute positively to safety outcomes, especially for visitor drivers. Key routes such as the Hokitika Gorge need renewal of signage, particularly at key intersections.		
WC225 Footpath renewals	**Annual budget of $100,000** New work category, based on community feedback and performance against LoS targets an increased to both maintenance and renewals of footpaths is proposed for Westland.		

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Improvements			
WC322 Replacement of bridges and other structures			LoS-based replacement of bridges and other structures, this may be a wholly LoS-based replacement, or condition-based replacement with LoS improvements beyond latest design standards.
WC341 Low cost low risk improvements total cost $745,000 2021-24. Individual projects: • 2021/22 $285,000 – Fox Creek Culvert replacement and Hau Road guardrail improvements. • 2022/23 $110,000 – Waitaha Valley Road safety widening. • 2023/24 $350,000 – Kainere-Kowhitirangi Road safety improvements.			Option 4 improvements not included in 2021-24 programme: **Hokitika Gorge access road** • Intersection road markings and/or realignment to improve safety – preferred option to be determined by do-minimum assessment. **Woodstock Rimu Road** Safety improvements for cyclists on route, options identified to date: • Off-road cycle path. • Carriageway widening to provide on-road cycle lane / shoulder through narrow corners.
Road Safety			
WC432 Promotion, education and advertising $30,000	**$30,000 + 2% annual increase** The current level of expenditure is generally adequate, slight annual uplift in line with BDC and GDC will allow for increasing levels of activity across the region.		
Public Transport			
WC511 Bus Services $30,000			

	Option 1	Option 2	Option 3	Option 4
Total Cost 2021-24	$13.67m ($4.56m/year)	$14.02m ($4.67m/year)	$15.90m ($5.30m/year)	
BDC	$5.19m ($1.73m/year)	$5.32m ($1.78m/year)	$6.04m ($2.01m/year)	
Waka Kotahi	$8.47m ($2.83m/year)	$8.70m ($2.90m/year)	$9.86m ($3.29m/year)	
Maintenance 2021-24	$3.60m ($1.20m/year)	$4.04m ($1.35m/year)	$4.27m ($1.42m/year)	
Operations 2021-24	$3.66m ($1.22/year)	$3.22m ($1.07m/year)	$3.12m ($1.07m/year)	
Renewals 2021-24	$5.12m ($1.71m/year)	$5.49m ($1.83m/year)	$7.31m ($2.44m/year)	

9.5.2 WESTLAND DISTRICT COUNCIL – LOCAL ROADS: DETAILED REVIEW OF CHANGES TO KEY WORK CATEGORIES UNDER OPTION 3

Investment Area	Local Roads - Historic and Proposed Expenditure (Option 3)	Change in Expenditure	Discussion
Sealed Roads		**WC111 Sealed Pavement Maintenance** 2010/11 – 2019/20 average expenditure was $465k per annum, and the 2020/21 budget is $471k. For 2021/22 – 2030/31, the proposed budget is unchanged at $471k.	The 20-Year FWP identified that WDC's sealed pavements are in overall good condition with structural number averaging 3.56 across the Network and few sections showing short surface life or poor condition deterioration.
		WC212 Sealed Road Resurfacing 2010/11 – 2019/20 average expenditure was $765m per annum, and the 2020/21 budget is $817. For 2021/22 – 2030/31 the proposed budget is $1.05m, a $233k (29%) increase.	The 20-Year FWP recommends a renewal need of 25km per year, uplift in the budget is based on current rates for resurfacing. The FWP notes that upcoming resurfacing is big chip which is increasing the cost over previous small chip surfacings.
		WC214 Sealed Road Pavement Rehabilitation 2010/11 – 2019/20 average expenditure was $19k per annum, and the 2020/21 budget is $107k. For 2021/22 – 2030/31, the proposed budget is $200k, a $93k (88%) increase.	A nominal $200k per annum budget has been recommended, this will allow for treatment of 500m per year for any sites that justify treatment. The FWP recommends several sites for monitoring based on inspection results.
Bridges and Structures		**WC114 Structures Maintenance** 2010/11 – 2019/20 average expenditure was $71k per annum, and the 2020/21 budget is $83k. For 2021/22 – 2030/31, the proposed budget is $120k, a $37k (45%) increase.	The 2020 Structures LCMP identified a backlog of $795k of routine maintenance work. If investment is not increased now the backlog of urgent maintenance work will continue to increase, and the overall condition of WDC's bridges will further decline. This raises the likelihood of condition-based replacement of bridges before the end of their expected useful life.
		WC215 Structures Component Replacement 2010/11 – 2019/20 average expenditure was $164k per annum, and the 2020/21 budget is $212k. For 2021/22 – 2030/31, the proposed budget is $250k, a $38k 18%) increase).	The 2020 Structures LCMP identified a backlog of up to $4m of component replacement need, some of this is non-urgent. As for increased investment in maintenance activities, structures component replacement is urgently needed to maintain existing structures. This approach provides net present value benefits compared to a lack of investment and need for condition-based replacement of structures over the next 10-20 years.
		WC216 Condition Based End of Life Renewals A new work category, the recommended investment in condition-based and end-of-life bridge renewals is $250k per annum for 2021/22-2030/31.	The 2020 LCMP recommends twelve bridges/structures for condition-based replacement in the next 10-years. An average annual budget has been set as the programming of these replacements is not yet known. Annual budgets will likely vary once the timing of replacements is planned. An uplift in WC114 and 215 will help to avoid the list of recommended condition-based replacements from growing.
Network and Activity/Asset Management		**WC003 Activity Management Planning** For 2018/19 – 2020/21 WDC has invested $20,000 per annum for the development of the combined West Coast Activity Management Plan and Programme Business Case. The preference is for major uplift in strategic planning supported by evidence and, so the forward investment sought for 2021-24 is $358k ($119k annual average).	WC003 has recently funded the development of the AMP for NLTP cycles, for 2021-24 WDC will undertake a wider range of activities in this work category. A detailed breakdown of costs is provided in Appendix 10.
		WC151 Network and Asset Management In 2020 WDC identified $417k per annum of admin charges and overheads the council was spending on Network and Asset Management that were not being claimed against the NLTF. To better visualise the long-term trend, this amount has been added to the TIO budget for each year back to 2010/11. WDC, alongside the other two councils, has increasingly invested in Network and Asset Management capability. This increase in investment is to build on the improvement achieved during 2018-21. In 2020/21 the budget is $749,000, to achieve the forward programme and invest in continued improvement the total investment sought for 2021-24 is $1.76m ($585,000 annual average).	The increase to WC151 is recommended to: • Recruit experienced roading staff into existing revised roles. • Engage professional service providers to carry out investigations, data collection, analytics, and asset management planning to support GDC's team to increase the level of asset management knowledge and capability in the organisation. • Support further collaboration across the three West Coast councils, including more formal partnerships as described in the PBC Commercial Case. A detailed breakdown of costs is provided in Appendix 10.

9.5.3 SPECIAL PURPOSE ROAD NLTP WORK CATEGORIES

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
Investment Management			
WC003 Activity Management Planning $20,000 per annum	**2021/22 $12,500, 2022/23 $11,500, 2023/24 $3,000 (total 2021-24 $27,000)** The Activity Management Planning budget has been reviewed to build on progress made with improved data collection, strategic planning, and business case development achieved through collaboration in 2018-21. In addition to the continued $20,000 annual investment in the regional Activity Management Plan, uplift in this work category will fund: • Establish level of service targets and implementation plans. • Asset performance and service gap analysis • Development of network operating plans • Risk management, climate change, resilience, critical asset planning • ONRC Road Closure & Access Measures • Bridge Lifecycle Management System • REG ONF implementation • Regional Procurement Strategy		
Maintenance			
WC111 Sealed Pavement Maintenance $122,500	**Decrease to $100,000 per annum.** Previous level of expenditure is has achieved improvement and level of service targets with pavement assessment activities finding the network to be in relatively good condition for age and traffic volumes. A decrease in expenditure is appropriate to maintain levels of service.		
WC113 Routine Drainage Maintenance $22,000	**Increase to $31,000 per annum.** The SPR is highly exposed to frequent storms that require a higher level of investment than previously planned for, storms are expected to become more severe and frequent over time.		
WC114 Structures Maintenance $34,000		**2021/22 $370,000, 2022/23 $400,000, 2023/24 onward $50,000** 2020 Bridge Inspections and Road Structures Lifecycle Management Plan recommend: address maintenance backlog, undertake urgent maintenance, and a new 'status quo' moving forward to preserve asset condition and avoid the need for early replacement. The uplift in investment in 2021/22 and 2022/23 is to cover urgent concrete spalling repairs on Okuru and Waiatoto Bridges.	
WC121 Environmental Maintenance $69,000	**Decrease to $60,000 per annum.** Slight decrease in expenditure is appropriate for routine care and maintenance of the road corridor.		
WC122 Traffic Services Maintenance $23,000	**Decrease to $10,000 per annum.** Limited amount of traffic services on route, lower maintenance activities will achieve target LoS.		
WC140 Minor Events $100,000	**Increase to $150,000 per annum.** This road is particularly susceptible to storm events, the previous budgets have been shown to be light, increase is proposed given the likelihood of continued minor events.		
WC151 Network and Asset Management $49,500	**2021/22 $44,000, 2022/23 $48,000, 2023/24 $40,000 (total $132,500 2021-24)** The increase to WC151 is to provide for an improved level of internal resourcing to for WDC's roading team to take on some roles that have previously been procured by external providers (e.g. asset and activity management planning), and to deliver the enhanced programme. External professional service providers will still be required to successfully deliver Option 3, including technical engineering services, data and analytics, detailed investigations and assessment, and potential for some business case development. This uplift will provide for greater internal capability and capacity, and ensure the right external services are procured where needed. A detailed breakdown of WC151 budget is provided in Appendix 10.		
Renewals			

Status quo (business as usual)	Enhanced status quo (do-minimum)	Preserving our assets	Increased levels of service
WC212 Sealed Road Resurfacing $159,000		**Decrease to $150,000 per annum based on 20-Year FWP recommendations for an enhanced resealing programme to address condition issues and maintain the level of service targets. Annual amounts vary based on recommended programme.**	
WC213 Drainage Renewals $27,000 As WC113 maintenance has been increased the current budget for drainage renewals is expected to be sufficient for 2021-24.			
WC214 Sealed Road Pavement Rehabilitation $150,000 Nominal amount recommended by the 20-Year FWP to allow for sites that are identified and justify treatment.			
WC215 Structures Component Renewals $53,000		**2021/22 & 2022/23 $75,000, 2023/24 $975,000, 2023-24 onward $75,000** 2020 Bridge Inspections recommend rust treatment and painting of the Arawhata Bridge, this has been scheduled for the 2023/24 year. Outside of this the annual budget has been increased to $75,000	
WC222 Traffic Services Renewals $11,000	**Decrease to $10,000 per annum.** Slight decrease, the forward programme for renewals on this route can be met with this investment.		
Improvements			
WC341 Low cost low risk improvements projects 2021-24: • 2021/22 $1.6m – Haast-Jackson Bay Road sea erosion improvements, SPR road status LED board. • 2022/23 and 2023/24 – Haast-Jackson Bay sea protection $500,000 per annum.			

	Option 1	Option 2	Option 3	Option 4
Total Cost 2021-24	$3.05m ($1.02m/year)	$4.59m ($1.53k/year)	$6.77m ($2.26m/year)	
Maintenance 2021-24	$836k ($279k/year)	$1.67m ($554k/year)	$1.67m ($554k/year)	
Operations 2021-24	$627k ($209k/year)	$342k ($114k/year)	$342k ($114k/year)	
Renewals 2021-24	$1.20m ($400k/year)	$2.17m (722k/year)	$2.14m ($712k/year)	

9.6 West Coast Programme Option Assessment

	Option 1 Status quo (business as usual)	Option 2 Enhanced status quo (do-minimum)	Option 3 Preserving our assets	Option 4 Increased levels of service
Alignment with Transport Outcomes Framework 2018				
Healthy and safe people	No immediate change in safety, but potential for deterioration as traffic volumes increase over time. **Slight impact negative.**	Improvements to safety outcomes as more assets meet current level of service targets, and detailed investigations are completed to identify and address issues. **Slight impact positive.**	Improvement to safety outcomes as assets are assessed to identify issues, and appropriately maintained, renewed and replaced. **Moderate impact positive.**	Improvement to safety outcomes particularly on priority tourist and freight routes because of investment in improvement and replacement of existing carriageways and intersections. **Large impact positive.**
Resilience and security	Continued deterioration of resilience of critical assets. **Moderate impact negative.**	No deterioration of resilience in the short-term, but potential for future deterioration as replacement of assets is deferred. **Slight impact negative.**	Resilience of assets is improved as maintenance and renewals are carried out, and assets are replaced to improve condition. **Moderate impact positive.**	Resilience of assets is improved as maintenance and renewals are carried out, and assets are replaced to improve condition. **Moderate impact positive.**
Economic prosperity	No immediate change in economic outcomes, potential for future growth opportunities to be missed. **Moderate impact negative.**	No immediate change in economic outcomes, potential for future growth opportunities to be missed. **Slight impact negative.**	Economic prosperity is improved as condition-based replacement of bridges to latest design standards increase weight limits. **Moderate impact positive**.	Economic prosperity is improved through level-of-service based replacement of bridges that are limited for freight. Investment in priority tourist routes sees visitors travel more widely and stay longer. **Large impact positive.**
Environmental sustainability	No change in environmental sustainability. **Neutral.**	No change in environmental sustainability. **Neutral.**	No change in environmental sustainability. **Neutral.**	No change in environmental sustainability. **Neutral.**
Inclusive access	Potential deterioration of inclusive access outcomes, particularly due to life expired bridges and others with weight restrictions in place. **Moderate impact negative.**	Small-scale improvements to accessibility because of minor works and targeted uplift in routine maintenance and renewals activities. **Slight impact positive.**	Improvement in inclusive access outcomes as network restrictions are reduced and assets are appropriated renewed. **Moderate impact positive.**	Improvement in inclusive access outcomes as network restrictions are reduced and assets are appropriated renewed. **Moderate impact positive.**
Assessment against Investment Objectives				
Improving network safety and resilience, through alternative routes, network improvements, renewals and targeted maintenance (35%)	**Moderate impact negative.**	**Slight impact negative.**	**Moderate impact positive.**	**Large impact positive.**
Reducing asset failure risk, as assets are maintained and renewed appropriately, reducing risk (25%)	**Large impact negative.**	**Slight impact positive.**	**Large impact positive.**	**Large impact positive.**
Increasing freight task optimisation through appropriate investments in the network (25%)	**Large impact negative.**	**Slight impact negative.**	**Moderate impact positive.**	**Large impact positive.**
Visitors continue to travel widely, being more dispersed, as more attractions are accessible, having appropriate facilities (15%)	**Slight impact negative.**	**Slight impact positive.**	**Moderate impact positive.**	**Moderate impact positive.**
Critical Success Factors				
Achievability / Feasibility	**Large impact positive.**	**Moderate impact positive.**	**Slight impact negative.**	**Large impact negative.**
Potential affordability	**Large impact positive.**	**Moderate impact positive.**	**Slight impact negative.**	**Large impact negative.**
Potential value for money	**Large impact negative.**	**Moderate impact positive.**	**Large impact positive.**	**Large impact positive.**
Supplier capacity and capability	**Large impact positive.**	**Moderate impact positive.**	**Slight impact positive.**	**Moderate impact negative.**
Urgency	**Moderate impact negative.**	**Large impact positive.**	**Large impact positive.**	**Slight impact positive.**
Decision	**Discounted**	**Possible**	**Preferred**	**Discounted**

9.7 The Preferred Way Forward: Preserving Our Assets

The assessment presented in the preceding section provided the rationale for the selection of Option 3: 'Preserving our assets' as the preferred option. Option 3 is well aligned with the Transport Outcomes Framework and provides benefits for all the investment objectives.

Two risks to successful delivery are identified:

1. There is a need for staff capability and capacity to deliver the programme that none of the Local Authorities presently have. People are needed to deliver the increased investment in structures, pavements, and traffic services.
   This issue is exacerbated by the PGF funding recently secured by each Council which has already increased the scale of their immediate road transport investment programme.
2. The proposed increase in expenditure may be unaffordable requiring an increased portion of annual rates revenue for land transport activities to support the Local Authorities share (see the Financial Case).

Despite these risks, Option 3 is recommended to signal the preferred direction for each district, and the level of investment that is needed to preserve existing assets and meet level of service targets on the network.

Option 2: 'Enhanced status quo (do-minimum)' is identified as a possible option and is likely to be more achievable and affordable compared to Option 3. However, it less well aligned with the Transport Outcomes Framework and does not fully achieve the investment objectives.

Benefits of investment

- Builds on the 2017 C.TAMP preferred option 'Preparing for step change'.
- Is an enhanced road maintenance programme that effectively addresses issues that have been identified through detailed investigations and are supported by an improved evidence base developed over the last three years.
- Addresses a large backlog of maintenance and renewals on bridges across the region and provides for condition-based renewal of end-of-life bridges. Continued uplift in maintenance and renewals avoids a further increasing backlog and reduces the likelihood of more structures requiring early replacement.
- While there is a focus on road maintenance and addressing condition-issues, there are flow on benefits for:
    - Freight levels of service through targeted investment in bridges.
    - Road safety through traffic services, intersection design, and bridge safety improvements.
    - Resilience outcomes as the risk of asset failure is reduced and structures are adequately maintained and renewed ensuring access to remote communities.
- Uplift in internal roading team asset management capability and capacity, enhanced transport collaboration between the three councils, and procurement of specialist services to continue improvement in data and evidence for asset management and strategic planning.

Risks of not investing in the preferred option

Bridges and structures

- Primary risk is continued under-investment in bridges resulting in worsening condition, a growing backlog of maintenance and renewals, and potential for asset failure on the network.
- If condition-based replacement of bridges (WC216) is not invested in the need for substantial uplift in maintenance and renewals is increased so that the remaining useful life of these

assets can be temporarily extended. Deferment of condition-based replacement in 2021-24 places increased pressure on the 10-year replacement programme, likely increasing overall cost and reducing value for money in the long-term.

Network and activity/asset management

- The three councils have made substantial progress in the 2018-21 NLTP period in this space, with improvements in data and evidence, internal asset management capability, and procurement of specialist services (eg. activity management planning, business cases, structures investigations, pavement programme development, road safety audits).
- Without continued uplift in investment there is the risk that the proposed programme cannot be delivered due to a lack of technical resources and in-house capacity to oversee activities.
- Further, with improved data and evidence there is now an opportunity to undertake long-term strategic planning and invest in information and technology capability and systems. This up-front investment now will deliver long-term value for money as the three councils can progress towards a more proactive rather than a reactive environment.

Local road levels of service and safety

- While pavement condition is in overall good condition, at present budgets this is expected to decline over time creating a backlog of maintenance and reseal needs. The proposed uplift in investment, supported by detailed investigations and analysis as part of the 20-year Forward Works Programme, is to maintain current levels of service.
- The current reduction in visitors to the area is not permanent, when international visitors return traffic numbers are expected to return to an increasing long-term trend. Currently all three districts have issues with pavement surface quality, road marking and signage condition, and intersection design on priority tourist routes. Investment in pavements and traffic services are important to ensure a safe journey experience for residents and visitors.

Commercial Case

Buller District Council, Grey District Council and Westland District Council

10 Commercial Case – Preparing for the Potential Deal

10.1 Summary

The West Coast Regional Transport Efficiency Business Case (2016) and subsequent 'deep dive' by Rationale identified the three West Coast Councils experience significant challenges attracting and retaining staff resources with the right capability to plan and deliver their transport programmes. Meanwhile, the transport network is experiencing increasing pressures from users, while at the same time maintenance, renewals and level of service improvements are being deferred due to a lack of staff resources.

The 2016 Business Case identified a progression of options for the type and depth of collaboration between the three councils. At present, the collaboration is sitting in the 'Transport Asset Manager Group' stage, with this commercial case exploring opportunities to progress to a more ambitious approach.

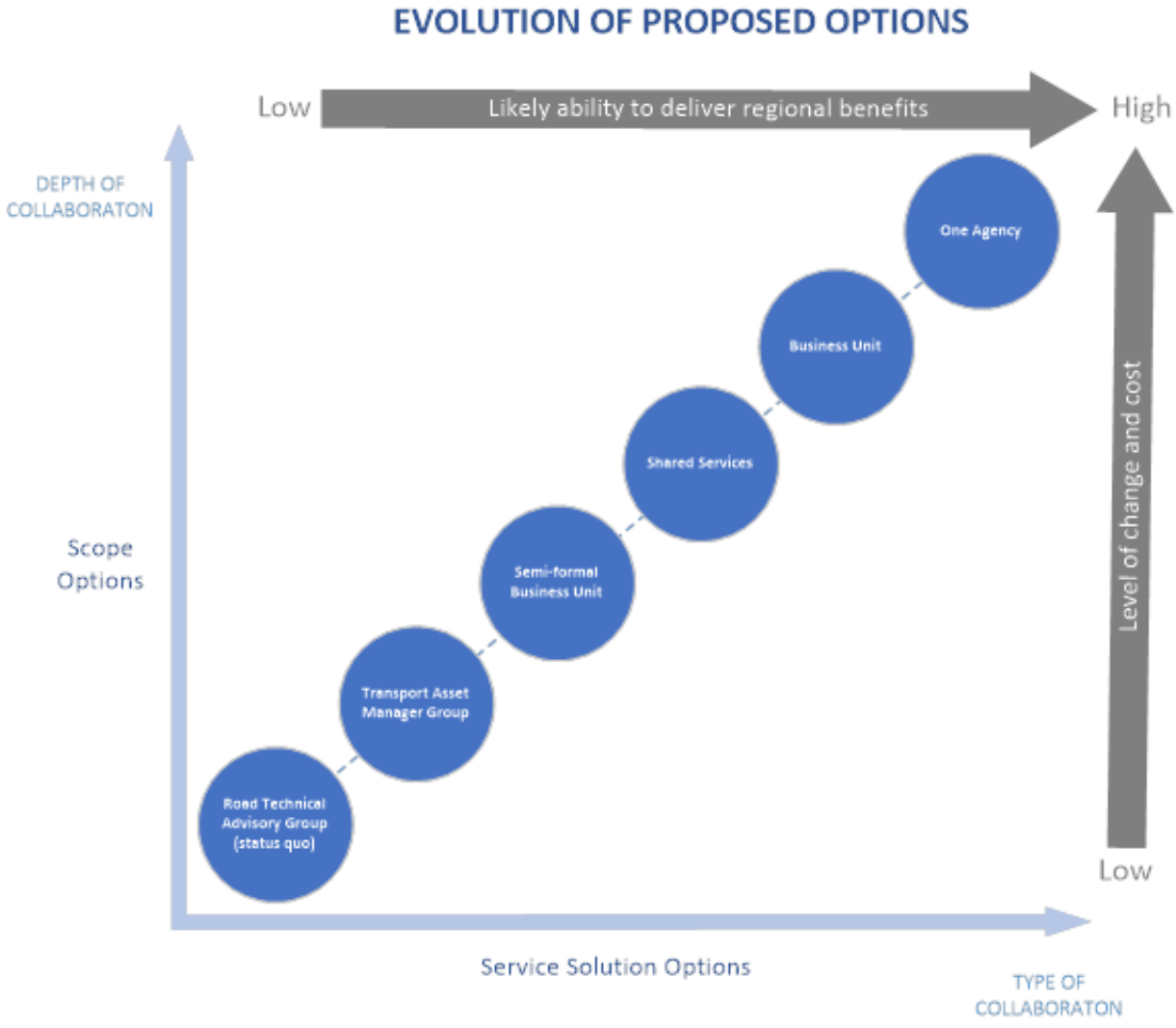


Figure 50: 2016 DIA Business Case proposed options for collaboration

At the time of writing three potential options for improving the capability and capacity of the three councils roading teams to deliver the preferred programme have been identified. These vary in terms of the type of collaboration, but generally seek to:

- Uplift the capability and capacity of council roading teams through improved collaboration and targeted recruitment of key skills that can provide value to all three councils.
- Continue to improve strategic planning and investment capability by 'freeing up' resources that are overly operational focused at present. Councils have been recruiting staff with asset management expertise.
- Investment in procuring technical engineering services (internal and external) to deliver the pavement and structures programme, and recruitment of staff to develop skills alongside external providers, enhancing councils roading team capability.
- Regional packages of work, such as investigations and assessment or renewals programmes, to increase the attractiveness of tenders to the marketplace and drive increased competition (quality and price) among suppliers.
- Continue an individual approach to maintenance contracts. Buller has moved to a cost-plus approach which Westland will also implement in their next contract round, Grey have more time ahead of their contract renewal and will look to identify the pros and cons of moving to a cost-plus model based on the experience of the other two councils. There is an identified issue with competitiveness in maintenance contractor procurement; Buller received just one tender to their 2020 tender process.

10.2 Procurement

The Procurement Strategy of each council and Waka Kotahi's Procurement Manual will be followed in the procurement of the various services needed.

Each of the Councils has reviewed their Procurement Strategy in the last two years, which have been approved by Waka Kotahi.

As part of the Improvement Plan in this C.TAMP a Regional Procurement Strategy should be investigated for procurement of professional service contracts. This approach is expected to lead to more targeted procurement activities and deliver better outcomes and better value for money. The delivery model of individual projects and works will be dependent on scope and scale.

10.3 Skills / Services Needed

A gap analysis was workshopped with the three councils to identify the current state, current need, and future need (10 years) for key skills and resources needed to effectively deliver the West Coast land transport programme. The analysis identified a range of deficiencies, especially for strategic planning and investment management, technical engineering skills, and information management / data. The gap analysis provided a basis for identifying key issues and optioneering.

The numbers below reflect current state and future need assessed on a 1-5 scale reflecting relative capability and capacity.

Table 16: Skills Gap Analysis

Skills	Current State	Current Need	Future Need (10 years)	Future Gap
Network Management				
Governance	1.5	3	3	-100%
Customer Management	1	3	3	-200%
Partnerships (NZTA, WRC, iwi)	1	2	2	-100%

Skills	Current State	Current Need	Future Need (10 years)	Future Gap
Corridor Management	1.5	3	3	-100%
Procurement	2	3	3	-50%
Contract Management	1.5	3	3	-100%
Financial Management	2	3	3	-50%
Emergency Management	2	2	2	0%
Strategy, Planning & Investment Management				
30 Year Strategies	1	2	3	-150%
Policy (Bylaws, NZS4404, RMA)	1	2	2	-100%
Asset Management	2	4	4	-100%
Investigations/Investment Analysis/Business Case Dev.	1	2	4	-200%
Technical Engineering Skills				
Structural/Bridge	1	3	4	-267%
Pavements & Geometrics	1	2	3	-150%
Geotech	1	2	3	-150%
Hydrology	1	2	3	-150%
Survey	1	2	3	-150%
Information Management - Data, Analytics, Predictions				
Information Management Ownership	1	2	4	-200%
Data Specification	1	2	4	-200%
Data Capture (RAMM)	1	2	4	-200%
Data Management (RAMM)	1	2	4	-200%
Data Analysis - Information (RAMM)	1	3	4	-267%
Predictive Modelling	1	3	4	-267%
Operations and Maintenance				
Contract Management - Contractor	2	3	3	-50%
Contractors	2	4	4	-100%
Skilled Supervision	2	3	3	-50%
Skilled Labour	2	3	3	-50%
Labourers	2	3	3	-50%
Capital Works - Renewals & Improvements				
Project Management	1	2	2	-100%
Design	1	2	2	-100%
Construction	2	3	3	-50%

10.4 The Benefits of Investment

To address this, an ILM was developed that would guide investment and actions around staff resources, regional collaboration, and procurement. Key problems identified were:

- Location, scale of the activity, career pathways, industry demand for skilled people and the financial rewards limits our ability to attract the people we need.
- The skills required to justify investments for tourism, heavy vehicles, and life expired assets are not available, meaning opportunities are being missed.
- Council roading teams are small, under resourced, and lack succession planning, meaning they are vulnerable to change and lack resilience.
- The skills required to collect data, manage and use the required technology are not available, diminishing the ability to plan and eroding the confidence of our investors.

Four investment objectives were agreed by the three councils and Waka Kotahi:

- Enhanced data acquisition, validation and use.
- Improved evidence base for investment analysis and decision making provides investor confidence and value for money.
- Skills are available to deliver the transport investment programme (bridges, pavements, and asset management).
- Attracting and retaining transport infrastructure skills.

These objectives form the basis for assessment of options that address identified capability and capacity gaps and identify a preferred solution and collaboration pathway to address these.

10.5 Programme Options

A longlist of potential options to address current problems and achieved the desired benefits was developed through a collaborative workshop process. These options include all layers of resourcing including in-house, professional services, and contactors. And explored a range of delivery solutions from 'go it alone' to a mix of regional contract, partnership, and alliance models.

The longlist options were assessed against the investment objectives above, and critical success factors, to develop a shortlist of potential options for multi-criteria analysis. Eight options were identified:

- Option 1: Status quo – Regional Asset Management.
- Option 2: Regional Strategy Planning and Investment Team
- Option 3: Regional Performance Team – strategy, planning, investment management and data management.
- Option 4: Regional Performance and Engineering Centre of Excellence – one provider.
- Option 5: Regional Performance and Engineering Centre of Excellence – best of breed model.
- Option 6: Regional Performance, Engineering and Network Management Business Unit.
- Option 7: Regional Non-Asset Owning Council Controlled Organisation.
- Option 8: Regional Non-Asset Owning Council Controlled Organisation and Regional Training Centre.

10.6 The Potential Way Forward

Multi-criteria analysis identified two potential options to continue with for further assessment: Options 4 and 5. Both propose a regional collaboration for the delivery of technical engineering and asset management services. The team will comprise in-house resources from each council, a key difference between the two options being a single or multiple professional service provider contracts for specific areas of expertise.

Option 5 sees the development of a Regional Formal Partnership / Business Unit and is focused on building technical engineering skills and capability, with council roading teams able to consider design and provide technical engineering direction to contractors.

Option 3 (do-minimum) should be retained also as a baseline approach, while Option 8, which involves forming a non-asset owning CCO and scored relatively well, has been discounted at this stage. The preference is to progress with step changes that will still achieve substantial benefits and reflect a significant change from the business as usual approach of just a few years ago.

In November 2020, the three organisations collectively endorsed an approach of ongoing collaboration around transport network and activity/asset management activities and sought further development and assessment of potential options for more formalised arrangements. There is a desire to continue investigating opportunities in 2021/22 to maintain the momentum developed through the collective effort in delivering this PBC and the C.TAMP. It is recommended that a Detailed Business Case be completed that fully explores the options presented here and identifies a preferred option that delivers on the investment objectives and achieves value for money for all three districts.

WEST COAST - CAPABILITY and COLLABORATION

Multi-Criteria Analysis

				Activity options				
	Option 1	Option 2	Option 3 - Do Min	Option 4	Option 5	Option 6	Option 7	Option 8
	Status Quo - Regional Asset Management	Regional Strategy, Planning & Investment Team	Regional Performance Team - Strategy, Planning, Investment Management + Data Management	Regional Performance & Engineering Centre of Excellence - One Provider	Regional Performance & Engineering Centre of Excellence (Best of Breed Model)	Regional Performance, Engineering & Network Management Business Unit	Regional Non-Asset Owning CCO	Regional Non-Asset Owning CCO + Regional Training Centre
FTEs	1	3	5 + Management	8 + Management	9 + Management	12 + Management	Unknown	Unknown
WHAT: Focus on What Activities Provide the Most Benefit and Value.	Regional Transport Asset/Activity Management							
		Regional Strategy, Planning & Investment Management						
			Regional Data Acquisition & Validation					
				Regional Technical Engineering Skills.				
						Regional Network Management		
							All Transport Activity	
HOW: What are the Best Options for Delivering the Services.	Multiple - Ad Hoc Contracts	One Professional Services Contract - External Partnership Mode						
					Multiple Individual Professional Service Contracts - Best of Breed Service Provider			
HOW: Where should the services be delivered from.	Anywhere.	West-Coast Office						
				Co-Located: Prof Services co-located in a West Coast Office.				
							Integrated Regional Co-Located Model: RCA + Prof Services + Contractor	
WHO: What Organisation is best to Lead the Services.	Everyone	Professional Service Provider						
					Regional Formal Partnership (Business Unit)			
							Non Asset Owning CCO	
Investment Objectives	30%	8	7	6	5	4	3	2	1
		8	20	44	60	70	78	79	84
Improved evidence based investment analysis and decision making (2) (Investor confidence & value for money)	30%	20	30	50	60	70	80	70	70
Enhanced data acquisition, validation and use (1) (Evidence-base)	15%	0	20	70	80	90	90	90	90
Skills are available to deliver the transport investment programmes (bridges, pavements, asset management) (3)	20%	10	20	40	60	70	80	80	90
Attracting and retaining transport infrastructure skills	35%	0	10	30	50	60	70	80	90
Business Needs	**Detail**	40%	6	4	4	1	1	6	8	3
IDMF - Critical Success Factors			67	73	73	87	87	67	60	80
Achievability Feasibility		100%	H	H	M	M	M	L	L	L
Potential affordability		100%	H	H	H	M	M	L	L	M
Potential Value for Money		100%	L	L	M	H	H	M	L	H
Supplier Capability & Capacity		100%	M	M	M	H	H	H	H	H
Urgency										
Investor Confidence		100%	L	M	M	H	H	H	H	H
Risks	**Detail**	30%	7	7	3	1	1	4	4	4
			67	67	83	89	89	72	72	72
Political	Reputational risk to the RCAs.	100%	L	L	L	M	M	H	H	H
Economic	Increase in overall cost for RCAs.	100%	L	L	L	M	M	H	H	H
Social	Health risks/poor service to communities.	100%	H	H	M	L	L	L	L	L
Technological	Technological Failure	100%	H	H	M	L	L	L	L	L
Environmental	Resilience Failure	100%	H	H	M	L	L	L	L	L
Legal	Likelihood of legal action.	100%	L	L	L	L	L	M	M	M
Overall Ranking			8	7	6	2	1	4	5	3
Overall Score			49	55	68	79	82	72	69	79

Figure 51: MCA analysis of Capability and Collaboration Options

Financial Case

Buller District Council, Grey District Council and Westland District Council

11 Financial Case – Ascertaining Affordability and Funding Requirements

11.1 Impact on the financial statements

The estimated annual cost to implement the preferred programme and the change in cost from Option 1: 'Status quo' (business as usual) for each district from 2021-31 is presented below. Council and Waka Kotahi's share is based on new funding assistance rates (FAR) announced in August 2020 (see Section 11.2). Council's share is presented as a proportion of rates revenue using 2020/21 Annual Plan data, and 2018-28 Long-Term Plan projections.

For BDC and WDC the tables below assume the transition of the SPRs from 100% to normal FAR in 2024/25, this is a pragmatic approach to ensure that council's 10-year funding is sufficient for the projected programme. As stated in Section 9.1.4, this is not an endorsement from either council of Waka Kotahi's preferred approach to SPR transition as communicated in September 2020.

Buller District

Table 17: Buller District financial projection 2021-31

	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
	SPR 100% funded by Waka Kotahi			**SPR transitions to local road status funded at 72% by Waka Kotahi**						
Estimated annual budget for Option 3: 'Preserving our Assets' ($000's)										
BDC share	$1,617	$1,487	$1,460	$1,847	$1,833	$1,819	$1,806	$1,890	$1,796	$1,800
Waka Kotahi share	$7,693	$7,465	$6,872	$4,748	$4,713	$4,678	$4,644	$4,860	$4,618	$4,628
Total	$9,310	$8,953	$8,331	$6,595	$6,546	$6,498	$6,450	$6,750	$6,414	$6,427
Change in budget for Option 3: 'Preserving our Assets' v Option 1: 'Status quo' ($000's)										
BDC share	$332	$348	$278	$180	$183	$186	$190	$291	$197	$200
Waka Kotahi share	$2,671	$2,818	$2,116	$463	$471	$479	$488	$747	$506	$515
Total	$3,003	$3,166	$2,394	$643	$654	$666	$678	$1,038	$703	$716
Impact of Option 3: 'Preserving our Assets' on BDC rates revenue										
Total share of rates revenue	10.7%	9.6%	9.2%	11.6%	11.4%	11.0%	10.8%	11.1%	10.6%	10.6%
Increase in rates (v Option 1)	2.2%	2.3%	1.7%	1.1%	1.1%	1.1%	1.1%	1.7%	1.2%	1.2%

Table 18: Buller District financial comparison of the preferred 2021-24 and 2018-21 programmes – Local Roads only

Work Category – Local Roads Budgets only	2018-21	2021-24	Change
Network and Activity/Asset Management			
003 Activity Management Planning	$60,00	$346,000	+286,000 (+476.4%)
151 Network and Asset Management	$1,167,000	$1,491,000	+$324,000 (+27.8%)
Sealed Roads			
111 Sealed Pavement Maintenance	$1,238,000	$1,095,000	-$143,000 (-11.5%)
212 Sealed Road Resurfacing	$1,442,000	$2,100,000	+$658,000 (+45.6%)
214 Sealed Road Pavement Rehabilitation	$0	$480,000	+$480,000
Unsealed Roads			
112 Unsealed Pavement Maintenance	$1,184,000	$1,200,000	+$16,000 (+1.4%)
211 Unsealed Road Metalling	$442,000	$450,000	+$8,000 (+1.8%)
Bridges and Structures			
114 Structures Maintenance	$167,000	$525,000	+$358,000 (+214.8%)
215 Structures Component Renewals	$102,000	$255,000	+$153,000 (+150.8%)
216 Condition Based Replacement of Bridge and Structure Renewals	-	$1,050,000	New work category
Drainage			
113 Routine Drainage Maintenance	$1,043,000	$1,010,000	-$33,000 (-3.2%)
213 Drainage Renewals	$363,000	$435,000	+$72,000 (+20.0%)
Environmental			
121 Environmental Maintenance	$1,044,000	$1,050,000	+$6,000 (+0.6%)
Traffic Services			
122 Traffic Services Maintenance	$766,000	$825,000	+$58,000 (+7.6%)
222 Traffic Services Renewals	$137,000	$132,000	-$5,000 (-3.5%)
Walking and Cycling			
124 Cycle Path Maintenance	$30,000	$30,000	-
125 Footpath Maintenance	$1,725,000	$555,000	-$1,170,000 (-67.8%)
225 Footpath Renewals	-	$1,245,000	New work category
Other			
131 Rail Level Crossing Devices	$12,000	$12,000	-
140 Minor Events	$600,000	$600,000	-
341 Low-Cost Low-Risk Improvements	$720,000	$1,165,000	+$445,000 (+61.8%)
432 Promotion, Education and Advertising	$96,000	$92,000	-$4,000 (-4.4%)
511 Bus services	$106,000	$106,000	-

Grey District

Table 19: Grey District financial projection 2021-31

	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Estimated annual budget for Option 3: 'Preserving our Assets' ($000's)										
GDC share	$2,691	$2,783	$2,697	$2,663	$2,663	$2,663	$2,663	$2,664	$2,664	$2,664
Waka Kotahi share	$4,582	$4,739	$4,592	$4,534	$4,534	$4,535	$4,535	$4,535	$4,536	$4,536
Total	$7,274	$7,522	$7,289	$7,196	$7,197	$7,198	$7,198	$7,199	$7,200	$7,201
Change in budget for Option 3: 'Preserving our Assets' v Option 1: 'Status quo' ($000's)										
GDC share	$474	$566	$480	$446	$446	$446	$446	$447	$447	$447
Waka Kotahi share	$807	$964	$817	$759	$759	$760	$760	$760	$761	$761
Total	$1,282	$1,530	$1,297	$1,204	$1,205	$1,206	$1,206	$1,207	$1,208	$1,209
Impact of Option 3: 'Preserving our Assets' on GDC rates revenue										
Total share of rates revenue	15.0%	14.9%	13.9%	13.3%	12.8%	12.4%	12.0%	11.7%	11.7%	11.7%
Increase in rates (v Option 1)	2.7%	3.0%	2.5%	2.2%	2.2%	2.1%	2.0%	2.0%	2.0%	2.0%

Table 20: Grey District financial comparison of the preferred 2021-24 and 2018-21 programmes

Work Category – Local Roads Budgets only	2018-21	2021-24	Change
Network and Activity/Asset Management			
003 Activity Management Planning	$60,000	$385,000	+$325,000 (+541.7%)
151 Network and Asset Management	$1,202,000	$1,735,000	+$533,000 (+44.3%)
Sealed Roads			
111 Sealed Pavement Maintenance	$1,250,000	$1,200,000	-$50,000 (-4.0%)
212 Sealed Road Resurfacing	$3,248,000	$3,600,000	+352,000 (+10.9%)
214 Sealed Road Pavement Rehabilitation	$764,000	$900,000	+136,000 (+17.8%)
Unsealed Roads			
112 Unsealed Pavement Maintenance	$693,000	$692,000	-$1,000 (-0.3%)
211 Unsealed Road Metalling	$485,000	$600,000	+115,000 (+23.8%)
Bridges and Structures			
114 Structures Maintenance	$430,000	$1,095,000	+$665,000 (+154.9%)
215 Structures Component Renewals	$997,000	$900,000	-$97,000 (-9.7%)
216 Condition Based Replacement of Bridge and Structure Renewals		$2,149,000	New work category
Drainage			
113 Routine Drainage Maintenance	$570,000	$600,000	+$30,000 (+5.2%)
213 Drainage Renewals	$386,000	$360,000	-$26,000 (-6.8%)
Environmental			
121 Environmental Maintenance	$1,202,000	$1,200,000	-$2,000 (-0.2%)
Traffic Services			
122 Traffic Services Maintenance	$911,000	$1,020,000	+$109,000 (+12.0%)
222 Traffic Services Renewals	$700,000	$600,000	-$100,000 (-14.3%)
Walking and Cycling			
124 Cycle Path Maintenance	$48,000	$45,000	-$3,000 (-6.1%)
125 Footpath Maintenance	$1,500,000	$600,000	-$900,000 (-60.0%)
225 Footpath Renewals		$900,000	New work category
Other			
131 Rail Level Crossing Devices	$81,000	$113,000	+$31,000 (+38.2%)
140 Minor Events	$450,000	$450,000	-
341 Low-Cost Low-Risk Improvements	$2,725,000	$2,850,000	+$125,000 (+4.6%)
432 Promotion, Education and Advertising	$08,000	$91,812	-$16,000 (-15.0%)

Westland District

The funding of major capital projects post 1st July 2024 on the SPR is uncertain so the WDC and Waka Kotahi share presented here is subject to change.

Table 21: Westland District financial projection 2021-32

	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
	SPR 100% funded by Waka Kotahi			**SPR transitions to local road status funded at 62% by Waka Kotahi**						
Estimated annual budget for Option 3: 'Preserving our Assets' ($000's)										
WDC share	$2,036	$1,995	$2,009	$2,041	$2,048	$2,055	$2,063	$2,071	$2,079	$2,088
Waka Kotahi share	$6,112	$4,978	$5,535	$4,326	$4,337	$4,349	$4,362	$4,375	$4,389	$4,403
Total	$8,148	$6,973	$7,544	$6,367	$6,385	$6,404	$6,425	$6,446	$6,468	$6,492
Change in budget for Option 3: 'Preserving our Assets' v Option 1: 'Status quo' ($000's)										
WDC share	$305	$264	$278	$310	$317	$324	$332	$340	$348	$357
Waka Kotahi share	$498	$431	$454	$505	$517	$529	$541	$554	$568	$583
Total	$804	$694	$732	$815	$834	$853	$873	$894	$917	$940
Impact of Option 3: 'Preserving our Assets' on WDC rates revenue										
Total share of rates revenue	12.8%	12.1%	11.9%	11.8%	11.7%	11.5%	11.3%	11.4%	11.4%	11.5%
Increase in rates (v Option 1)	1.9%	1.6%	1.6%	1.8%	1.8%	1.8%	1.8%	1.9%	1.9%	2.0%

Table 22: Westland District financial comparison of the preferred 2021-24 and 2018-21 programmes – Local Roads only

Work Category – Local Roads Budgets only	2018-21	2021-24	Change
Network and Activity/Asset Management			
003 Activity Management Planning	$60,000	$358,000	+$298,000 (+496.5%)
151 Network and Asset Management	$2,186,000*	$1,755,000	-$431,000 (-19.7%) *includes $417,000 per annum previously unclaimed
Sealed Roads			
111 Sealed Pavement Maintenance	$1,413,000	$1,413,000	-
212 Sealed Road Resurfacing	$2,517,000	$3,150,000	+$633,000 (+25.1%)
214 Sealed Road Pavement Rehabilitation	$300,000	$600,000	+$300,000 (+100.0%)
Unsealed Roads			
112 Unsealed Pavement Maintenance	$931,000	$825,000	-$106,000 (-11.4%)
211 Unsealed Road Metalling	$860,000	$750,000	-$110,000 (-12.7%)
Bridges and Structures			
114 Structures Maintenance	$368,000	$360,000	-$8,000 (-2.1%)
215 Structures Component Renewals	$636,000	$750,000	+$114,000 (+17.9%)
216 Condition Based Replacement of Bridge and Structure Renewals	-	$750,000	New work category
Drainage			
113 Routine Drainage Maintenance	$494,000	$855,000	+$362,000 (+73.3%)
213 Drainage Renewals	$477,000	$517,000	+$40,000 (+8.3%)
Environmental			
121 Environmental Maintenance	$845,000	$845,000	-
Traffic Services			
122 Traffic Services Maintenance	$445,000	$504,000	+$59,000 (+13.2%)
222 Traffic Services Renewals	$381,000	$400,000	+$19,000 (+5.1%)
Walking and Cycling			
124 Cycle Path Maintenance	$35,000	$63,000	+$28,000 (+80.1%)
125 Footpath Maintenance	$243,000	$300,000	+$57,000 (+23.3%)
225 Footpath Renewals	-	$300,000	New work category
Other			
131 Rail Level Crossing Devices	$36,000	$24,000	-$12,000 (-33.3%)
140 Minor Events	$450,000	$450,000	-
341 Low-Cost Low-Risk Improvements	$1,390,000	$745,000	-$645,000 (-46.4%)
432 Promotion, Education and Advertising	$90,000	$92,000	+$2,000 (+2.0%)
511 Bus services	$90,000	$90,000	-

11.2 Funding sources

Activities undertaken by a council or other approved organisation that qualify for funding from the National Land Transport Fund (NLTF) the funding assistance rate (FAR) determines the proportion of approved costs that will be paid from the fund.

FARs vary by approved organisation, and are based on network length, capital value, rating units and socio-economic deprivation. Buller and Westland's current FAR for the SPR's is 100%, these will transition to normal FAR on 1 July 2024.

2020-24 NLTP Funding Assistance Rates for the West Coast councils are:

Table 23: Funding Assistance Rates

	2020/21	2021/22	2022/23	2023/24
Buller	66%	72%	72%	72%
Grey	58%	63%	63%	63%
Westland	59%	62%	62%	62%

The combined approach to activity and asset management planning will provide shared funding for some activities. This will enhance value for money at a region and district level and is expected to improve the affordability of procurement and project management as duplication will be reduced and costs shared. The competitiveness of the procurement process may also improve as larger projects and programmes of work will be publicly tendered, generating increased supplier interest.

11.3 Overall affordability

The proposed cost of the 2021-24 programme for each territorial authority is:

- Buller (Local Roads & SPR) Total $26.59m - $4.56m BDC share, $22.03 Waka Kotahi
- Grey Total $22.08m - $8.17m BDC share, $13.91m Waka Kotahi
- Westland (Local Roads & SPR) Total $22.67m - $6.04m WDC share, $16.62m Waka Kotahi

A letter of support at an operational level from the Chief Executive of each Council accompanies the submission of the West Coast Councils Combined Transport Programme Business Case 2021-24 to Waka Kotahi. Formal support from the Elected Members of each Council will be sought for the final PBC.

Management Case

Buller District Council, Grey District Council and Westland District Council

12 Management Case – Preparing for Successful Delivery

Programmes of this nature benefit from a clear and well-structured operating and decision-making framework.

The West Coast Councils require a framework that:

- Enables the programme objectives.
- Is achievable despite known constraints (which include funding and resources).
- Provides strong value for money.
- Fosters collaboration between the three councils.

12.1 Programme Governance and Workstream Structure

Provision of the right resources with the capability and capacity to deliver will be key to the success of the preferred programme. The six workstreams developed for delivery of this PBC and the C.TAMP are proposed to continue as the basis for collaboration and delivery of the preferred programme for 2021-24. These workstreams encompass the skills and resources that are required to deliver the transport activities, and the structure will help to ensure that collaboration continues to increase.

A collaborative approach across the councils will 'share the load' which is of key importance among teams where resourcing is a daily issue. As such, it has been agreed that a leader from one council will be assigned to each workstream, with a mutual reliance between councils to ensure delivery. The allocated leader will act in a collective role for the three councils and will work closely alongside project managers, stakeholders and technical specialists to ensure its delivery.

The nominated workstream leaders will form the Programme Control Group with responsibility as the primary review and integration, ensuring work is thought through and coordinated at an organisational level. The PCG will be the main forum for decisions, financial approvals and responsibility for the improvement programme.

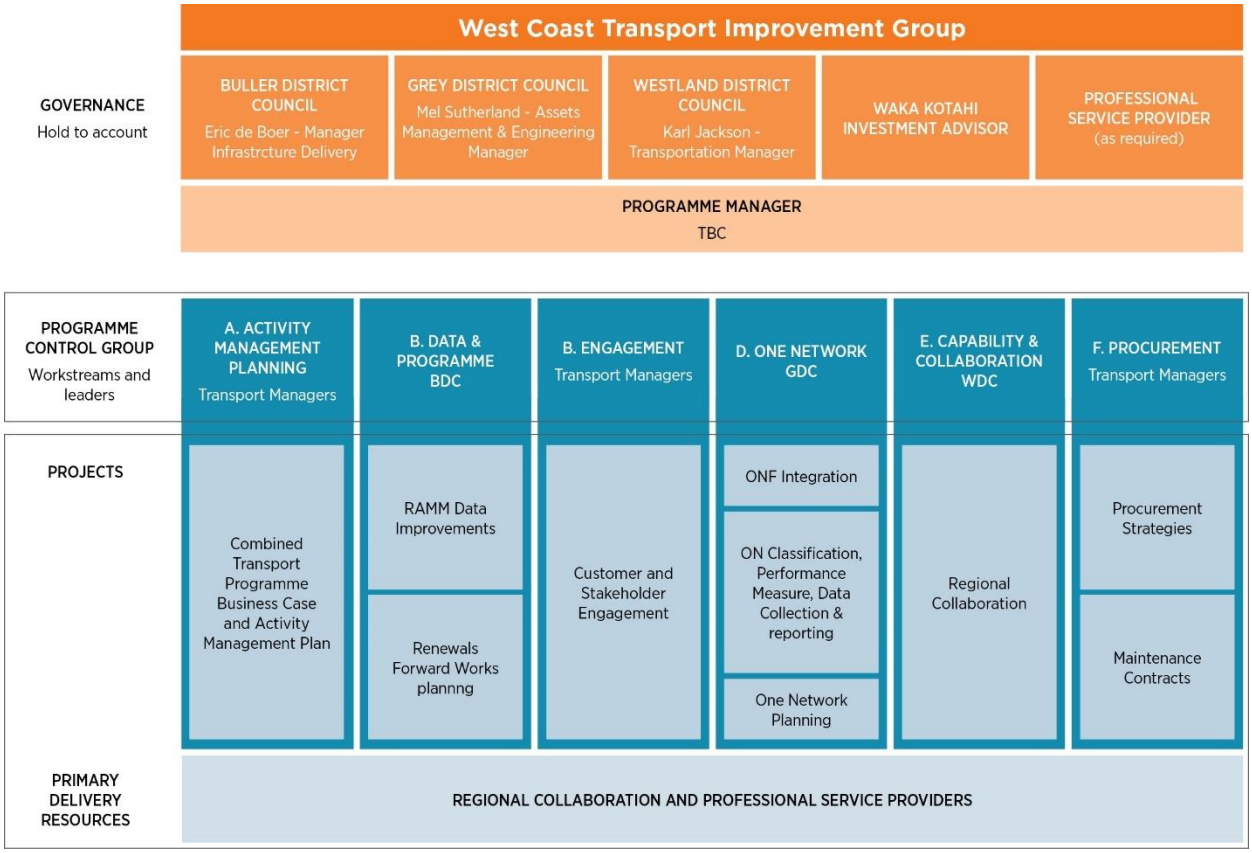


Figure 52: Proposed programme governance and structure

12.2 Programme delivery

Based on the potential collaboration approaches identified in the Commercial Case, and the need for a range of asset management, technical engineering, and data/information technology services to deliver the preferred programme, a proposed approach to delivery is presented below.

Under this approach, the level of collaboration between the council roading teams will increase from the current state to cover a wider range of activity and asset management, procurement, technical engineering, and data and evidence activities. Professional service providers will be contracted to deliver specific services the councils lack or to increase resources.

Councils will continue to be responsible for the management and delivery of their own operations and maintenance, and renewals and improvements activities.

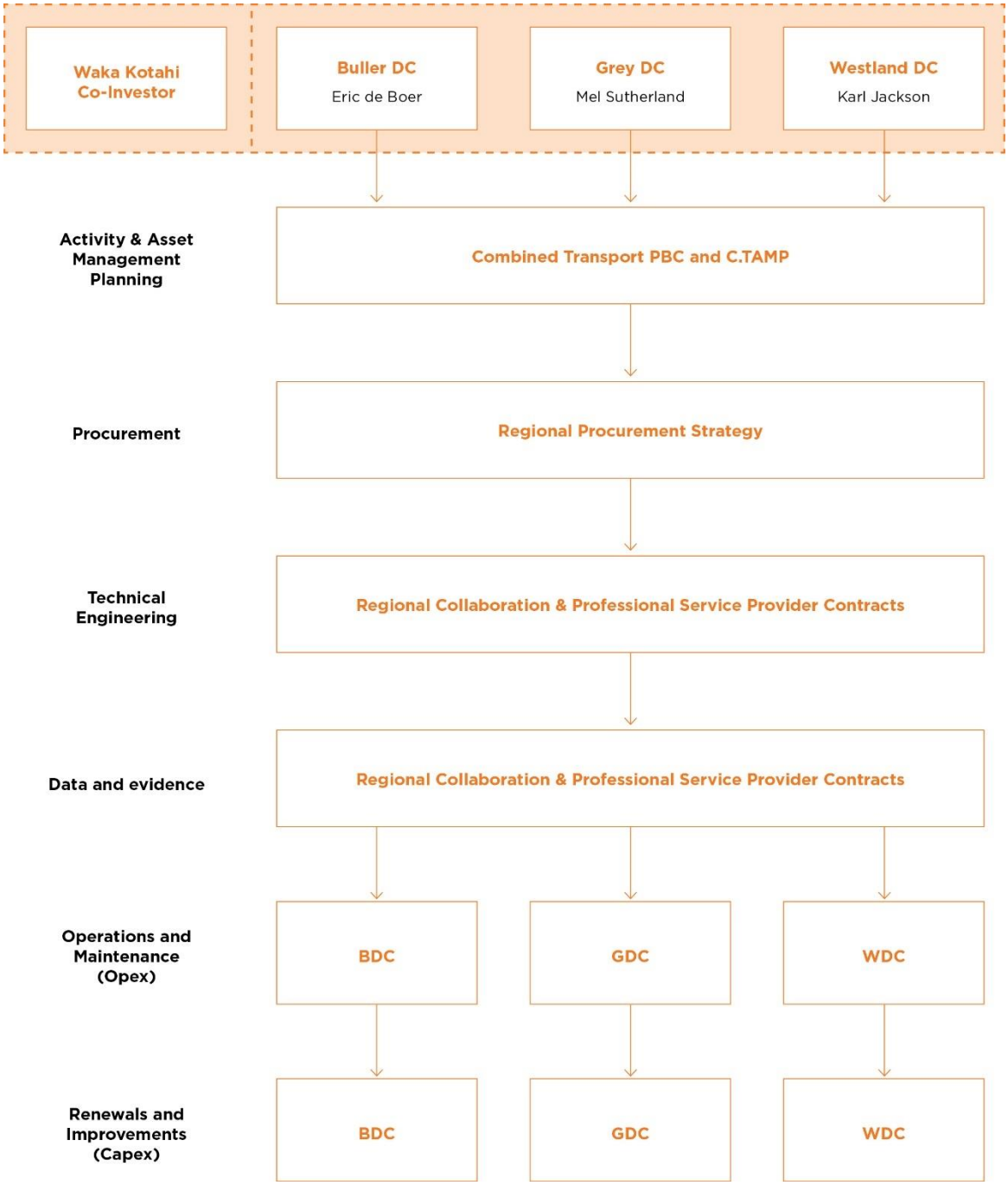
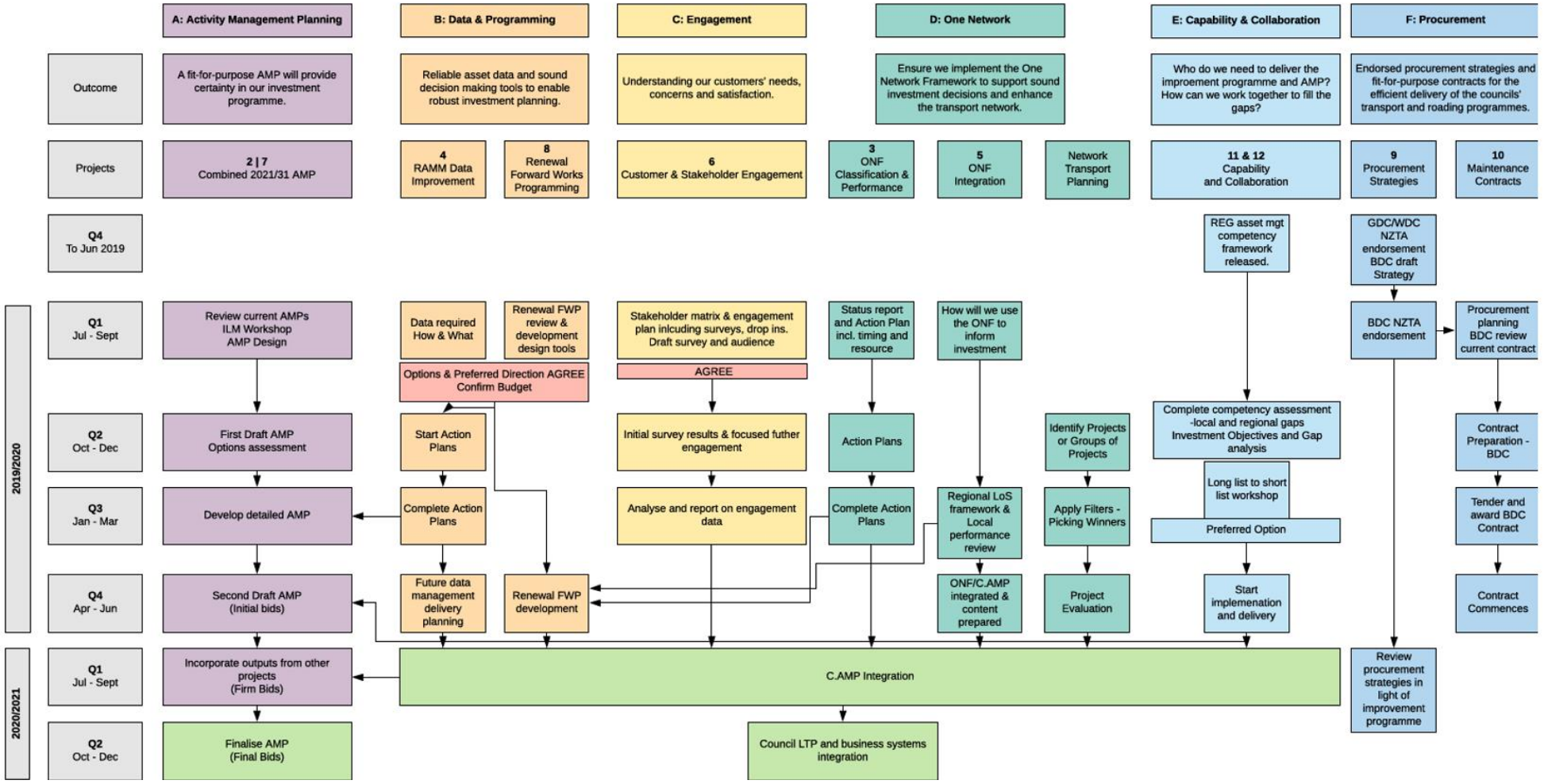


Figure 53: Proposed programme delivery structure

Appendix 1: Programme Milestones



Appendix 2: The Communities at Risk Register (CAR)

The Communities at Risk Register (CAR) is produced by Waka Kotahi and highlights the personal risk to road users.

The table below shows Buller DC to be of high concern.

All deaths and serious casualties						
2019 Register						
PERSONAL RISK DSI/100MVKT	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI	PERSONAL RISK DSI/100MVKT	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
14	Wairoa District		17	10	NORTHLAND	181
12	Waitomo District		25	6	AUCKLAND	652
11	Kaipara District		30	7	WAIKATO	381
10	Far North District		77	7	BAY OF PLENTY	172
10	Buller District		20	8	TARANAKI	76
10	Gisborne District		38	8	MANAWATŪ-WHANGANUI	188
9	Opotiki District		13	10	GISBORNE	38
9	Masterton District		16	8	HAWKE'S BAY	112
9	Horowhenua District		33	6	WELLINGTON	204
9	Dunedin City		82	6	TASMAN NELSON MARLBOROUGH	94
9	Stratford District	1 STDEV	10	8	WEST COAST	47
9	Auckland Rural North		83	6	CANTERBURY	361
9	Kawerau District		3	7	OTAGO	195
9	Clutha District		29	7	SOUTHLAND	86
9	South Wairarapa District		10			
8	Otorohanga District		9	6	NATIONAL	2789
8	Manawatu District		36			
8	South Waikato District		30			
8	Whangarei District		73			
8	Auckland Rural South	0.5 STDEV	64			

Speed (too fast for the conditions)

2019 Register

PERSONAL RISK DSI/100MVKT	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI
4	Wairoa District		5
4	Masterton District		6
4	Kaipara District		10
4	Far North District		27
4	Buller District		7
3	Waitomo District		7
3	Gisborne District		13
3	Opotiki District	1 STDEV	4
2	Horowhenua District		9
2	Whanganui District		8
2	Auckland Rural North		22
2	Westland District		5
2	Taupo District		13
2	Waimate District		4
2	Kaikoura District	0.5 STDEV	2
2	Whangarei District		19
2	Auckland Rural South		18

PERSONAL RISK DSI/100MVKT	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
3	NORTHLAND	56
1	AUCKLAND	157
2	WAIKATO	92
2	BAY OF PLENTY	44
2	TARANAKI	17
2	MANAWATŪ-WHANGANUI	47
3	GISBORNE	13
2	HAWKE'S BAY	29
2	WELLINGTON	51
2	TASMAN NELSON MARLBOROUGH	22
2	WEST COAST	15
1	CANTERBURY	70
1	OTAGO	34
1	SOUTHLAND	16
1	NATIONAL	663

Urban intersections

2019 Register

PERSONAL RISK DSI/100MVKT	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI
6	Matamata-Piako District		5
6	Buller District		2
6	Opotiki District		1
5	Dunedin City		26
5	Wairoa District		1
5	Waimate District		1
5	Invercargill City		10
4	Hauraki District		3
4	Ruapehu District	1 STDEV	1
4	Wellington City		26
4	Tararua District		2
4	South Taranaki District		3
4	Waipa District		5
4	Horowhenua District		3
4	Kawerau District		1
3	Christchurch City		81
3	Whanganui District		6
3	Taupo District		3
3	Marlborough District		4
3	Kaipara District		2
3	Nelson City		8
3	Gisborne District	0.5 STDEV	6
3	Hutt City		15

PERSONAL RISK DSI/100MVKT	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
3	NORTHLAND	16
2	AUCKLAND	193
3	WAIKATO	42
3	BAY OF PLENTY	23
3	TARANAKI	11
3	MANAWATŪ-WHANGANUI	24
3	GISBORNE	6
3	HAWKE'S BAY	16
2	WELLINGTON	52
3	TASMAN NELSON MARLBOROUGH	15
4	WEST COAST	4
2	CANTERBURY	93
3	OTAGO	34
2	SOUTHLAND	11
3	NATIONAL	540

Rural road loss of control and/or head-on (speed zones >70km/hr)

2019 Register

PERSONAL RISK DSI/100MVKT	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI
13	Wairoa District		14
11	Waitomo District		20
10	Gisborne District		23
9	Kaipara District		20
8	Masterton District		7
8	Buller District		13
8	Clutha District		23
8	Stratford District		7
8	Far North District	1 STDEV	49
7	South Wairarapa District		7
7	Auckland Rural South		41
7	Auckland Rural North		53
7	Otorohanga District		6
7	Opotiki District		8
6	Gore District		7
6	Horowhenua District		18
6	Tararua District		15
6	Whangarei District		34
6	South Waikato District		18
6	Thames-Coromandel District	0.5 STDEV	16
6	Taupo District		30

PERSONAL RISK DSI/100MVKT	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
8	NORTHLAND	103
3	AUCKLAND	125
5	WAIKATO	199
4	BAY OF PLENTY	74
6	TARANAKI	34
5	MANAWATŪ-WHANGANUI	93
10	GISBORNE	23
6	HAWKE'S BAY	55
4	WELLINGTON	41
4	TASMAN NELSON MARLBOROUGH	41
6	WEST COAST	31
4	CANTERBURY	118
5	OTAGO	93
5	SOUTHLAND	48
4	NATIONAL	1078

Motorcyclist involved

2019 Register

PERSONAL RISK DSI/100MVKT	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI	PERSONAL RISK DSI/100MVKT	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
364	South Wairarapa District		4	170	NORTHLAND	31
300	Stratford District		4	116	AUCKLAND	134
269	Wairoa District		3	132	WAIKATO	70
265	Buller District		5	118	BAY OF PLENTY	34
234	Otorohanga District		3	161	TARANAKI	13
232	Grey District		4	123	MANAWATŪ-WHANGANUI	32
213	Kaipara District		6	110	GISBORNE	4
204	Auckland Rural North		19	153	HAWKE'S BAY	22
193	Masterton District	1 STDEV	3	143	WELLINGTON	47
180	Tararua District		5	139	TASMAN NELSON MARLBOROUGH	20
177	Waitomo District		3	210	WEST COAST	12
171	Opotiki District		2	77	CANTERBURY	60
166	Thames-Coromandel District		6	112	OTAGO	31
163	Nelson City		6	74	SOUTHLAND	9
158	Whanganui District	0.5 STDEV	5			
155	Wellington City		19	111	NATIONAL	520
153	Far North District		12			
150	Upper Hutt City		4			

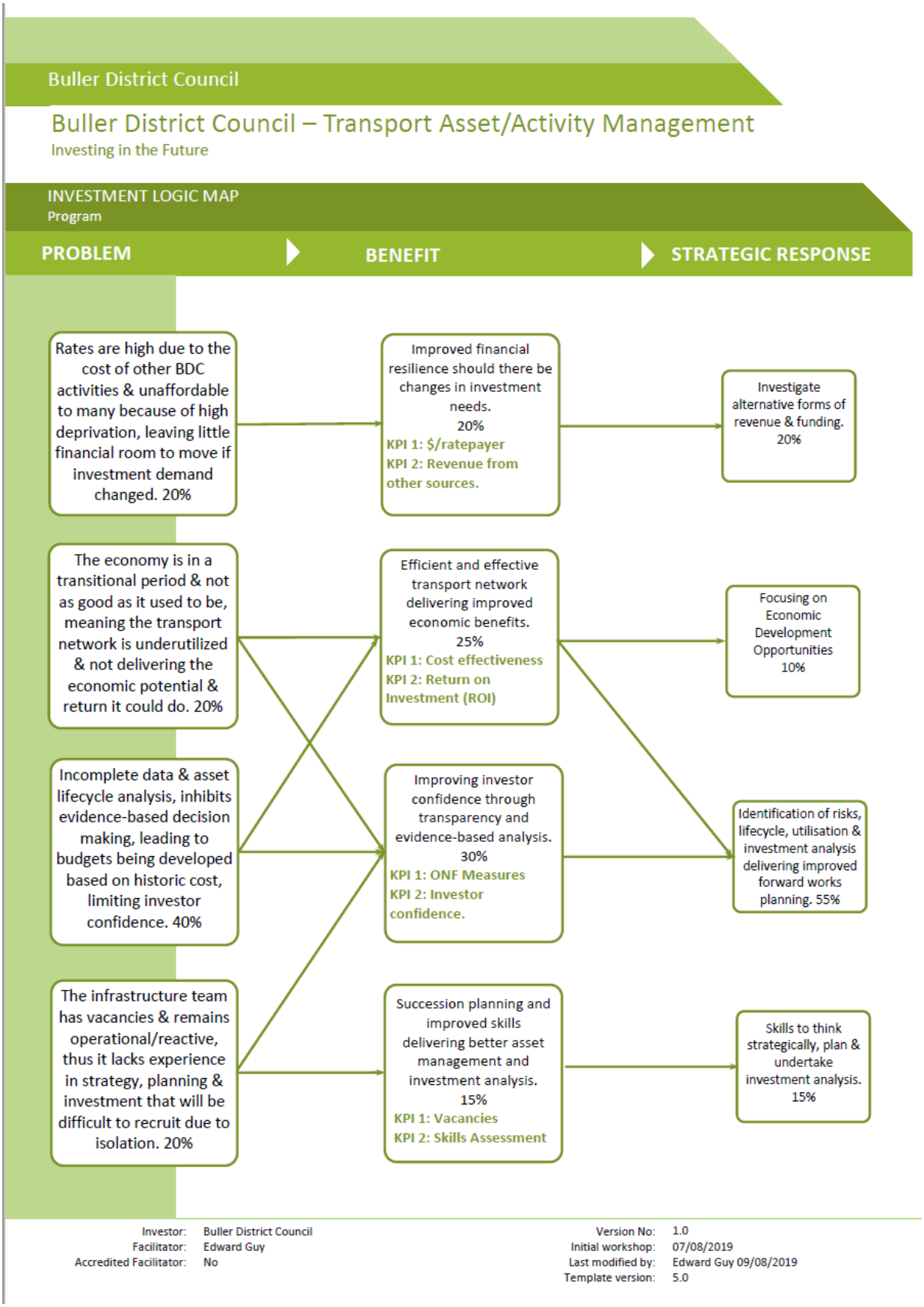
Cyclist involved

2019 Register

PERSONAL RISK DSI/Mhrs	Ranking Territorial Authority	Standard Deviation	COLLECTIVE RISK 5yr AVG DSI
22	Westland District		1
20	Auckland Urban Central		26
19	Gisborne District		3
18	Taupo District		3
18	Nelson City		6
17	Grey District		1
12	Invercargill City		2
12	Auckland Urban West	1 STDEV	5
11	Tauranga City		4
11	Auckland Urban North		9
11	Wellington City		16
11	Napier City		3
10	Hamilton City		6
10	Waipa District		2
10	Queenstown-Lakes District		3
10	Tasman District		3
9	Carterton District		1
9	South Taranaki District		1
9	Rotorua District		2
9	Matamata-Piako District	0.5 STDEV	1
9	Marlborough District		3

PERSONAL RISK DSI/Mhrs	Road Safety Regions	COLLECTIVE RISK 5yr AVG DSI
7	NORTHLAND	4
10	AUCKLAND	51
7	WAIKATO	15
7	BAY OF PLENTY	8
8	TARANAKI	4
2	MANAWATŪ-WHANGANUI	6
19	GISBORNE	3
6	HAWKE'S BAY	8
6	WELLINGTON	25
12	TASMAN NELSON MARLBOROUGH	11
16	WEST COAST	2
3	CANTERBURY	34
6	OTAGO	11
6	SOUTHLAND	3
7	NATIONAL	183

Appendix 3: Preliminary TLA and Combined ILMs (Oct 2019)



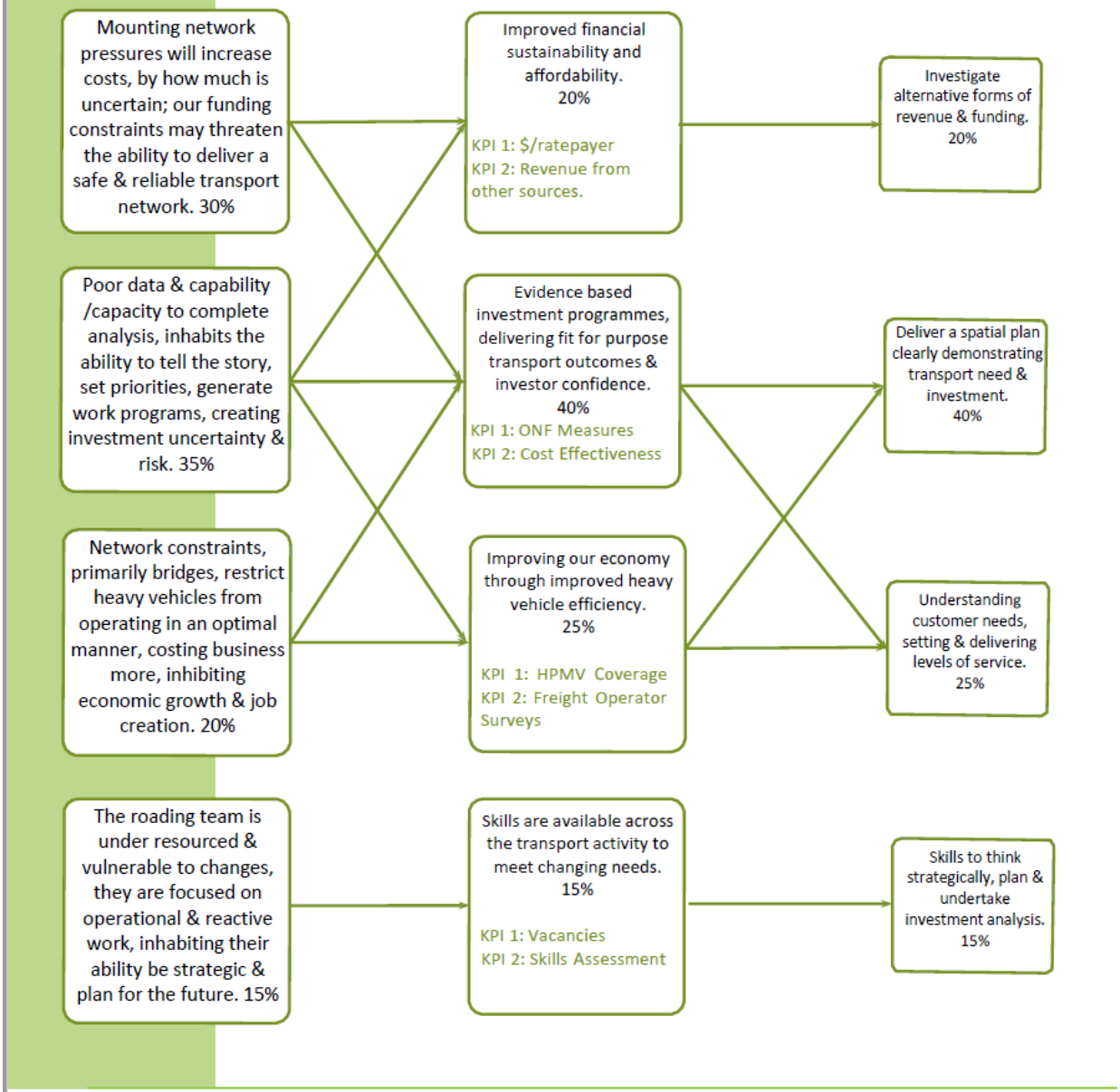
Grey District Council

Grey District Transport Asset/Activity Management

Investing in the future.

INVESTMENT LOGIC MAP

Program



Investor:	Grey District Council
Facilitator:	Edward Guy
Accredited Facilitator:	No

Version No:	1.1
Initial workshop:	6/08/2019
Last modified by:	Edward Guy 20/08/2019
Template version:	5.0

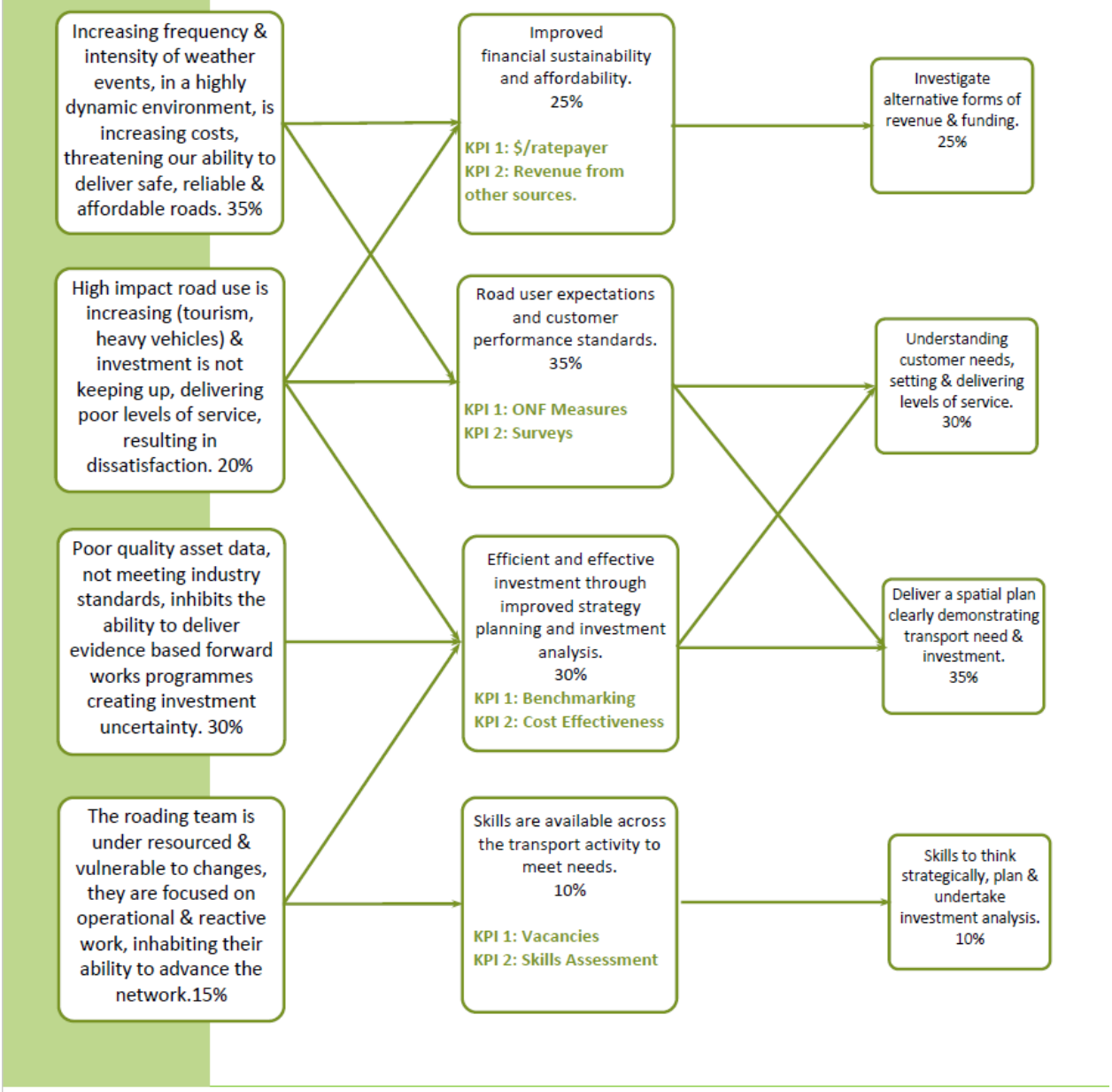
Westland District Council

Westland District Transport Asset/Activity Management

Investing in the future.

INVESTMENT LOGIC MAP

Program



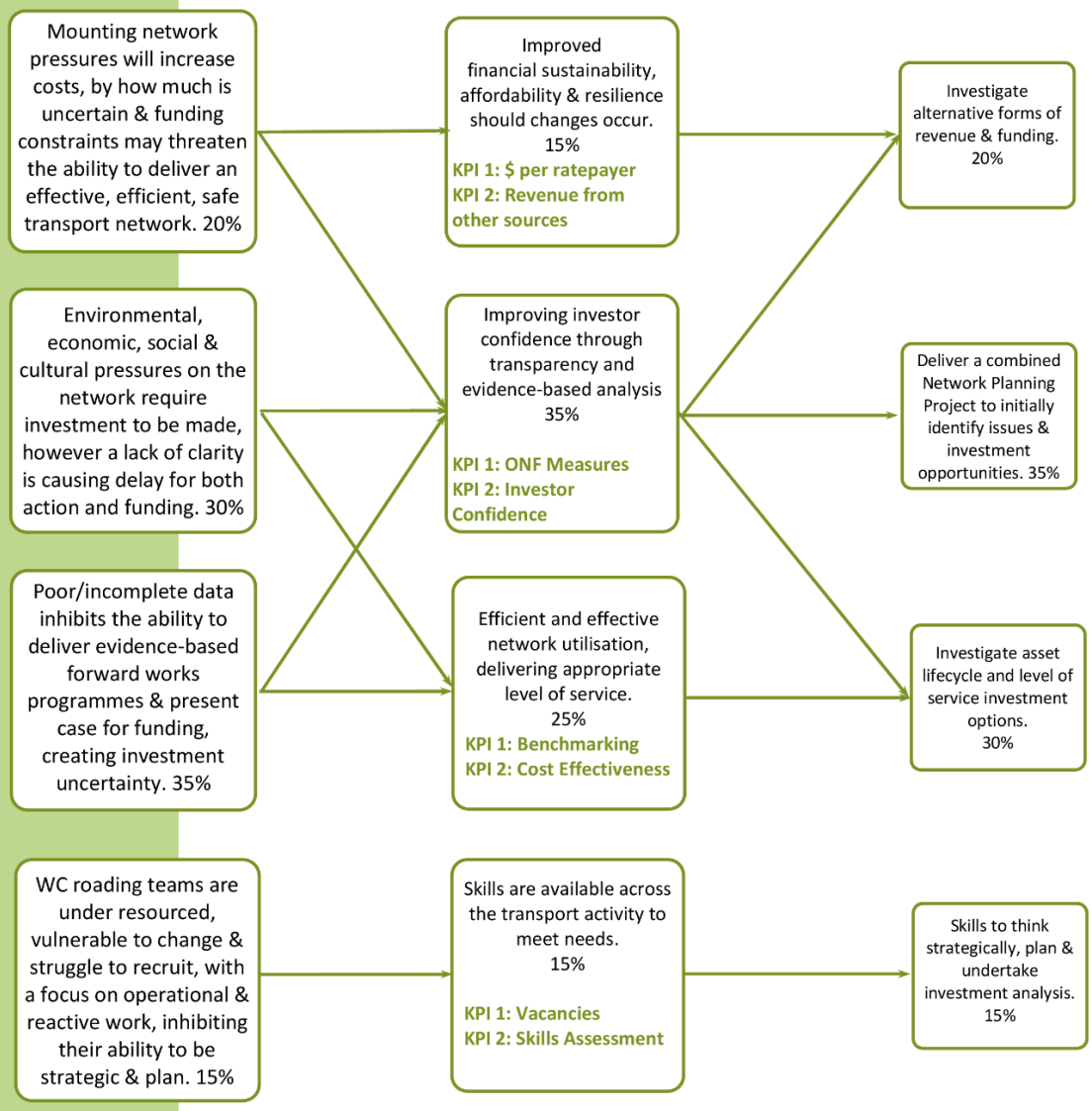
Investor:	Westland District Council	Version No:	1.1
Facilitator:	Edward Guy	Initial workshop:	7/08/2019
Accredited Facilitator:	No	Last modified by:	Edward Guy 9/08/2019
		Template version:	5.0

West Coast Combined Councils

West Coast Combined Transport Asset/Activity Management

Delivering an effective, efficient, safe land transport network that support regional growth and livable communities.

INVESTMENT LOGIC MAP (PRELIMINARY)
Program



Investor:	Combined West Coast Councils	Version No:	1.0 (Preliminary)
Facilitator:	Edward Guy	Initial workshop:	7/08/2019 – 9/08/2019
Accredited Facilitator:	No	Last modified by:	Edward Guy 09/09/2019
		Template version:	5.0

Appendix 4: Summary of Community Survey Results

The West Coast Roading survey was carried out between 30 October and 16 December and aimed at getting a more detailed understanding of how West Coasters experience their Council-owned roads, bridges and footpaths.

All 316 responses have been tagged and loaded into an online interactive platform. This gives users the ability to investigate the data by a range of demographics, in this case:

- District
- Age
- Gender
- Rural/Urban split

These results are now publicly available at https://bit.ly/37icWc1.

Specific issues mentioned in the survey have also been mapped using GIS software and can be seen here – https://arcg.is/1ey8LL.

These results will be used as a key part of customer evidence and combined with other sources of information and analysis to help inform the business case currently under development.

Key insights

There was a considerable variation in the issues that came through in this survey. How people experience the network defines how they respond, and most responses came from an individual angle, with little regard for the whole of network operation.

This makes sense – someone is far more likely to be worried about a pothole on their local road than the renewals and maintenance of the whole network. As such, this information offers key insights to how the customer experiences the road but can't be used as a single piece of evidence to understand the state of the roads. It will be used alongside a range of key sources of information and evidence to help build the CAMP business case.

The quality of local footpaths and the desire for improved pedestrian and cycling facilities featured in the responses to several questions, though it should be noted that this was more prominent in those who identified as urban over rural. Rural people were more concerned with the condition of the road, repairs and safety. Younger people were also much more likely to cite the need for improved pedestrian and cycle facilities than older demographics

Tourism related issues did not feature highly and almost all responses relating to tourism related to the roads not being suitable for visiting drivers, or the fact that the tourism industry or government needed to pay for tourism related upgrades and maintenance.

The response to emergency works was seen as more positive by rural people, which is to be expected given the nature of the rural roads and their vulnerability to weather events and slips etc. Rural people were also more likely to site safety issues than their urban counterparts.

34% of respondents were happy to see their rates increase to help maintain the roading network, while 44% were against the idea. Interestingly the younger demographic was more likely to see their rates increase (50%), with the percentage dropping as the demographic age increased.

Lessons learned

This survey was always intended to be a high-level investigation into understanding how West Coasters experience their Council-owned roads, bridges and footpaths. In that it was successful, allowing each Council to better understand their customer with a much higher level of detail than before.

Very few people from outside the district answered the survey. With tourism such an important part of the West Coast economy it would be well worth targeting visitors in a future iteration of the survey.

There were no respondents under 18 and few from the 18-34 age bracket. Putting extra effort in to reach the younger demographics would ensure the results had a more even demographic spread. As the survey was held during the Christmas school holidays, it was always going to be difficult to reach school aged students; this should be considered in future.

There was no paid promotion of the survey in local media or as paid promotions of Social Media. In future, it would be valuable to earmark an advertising budget to help promote the survey. This could be particularly effective in using social media through demographic targeting.

Next steps

Should Councils with to carry out a follow-up survey, there are several things they could so to both increase engagement and target specific issues for more detail. These are outlined below:

Survey platform

The platform used for the survey was Survey Monkey (https://www.surveymonkey.com/). This was perfectly adequate for the purposes of the current survey and would likely work for any reasonably straightforward follow-up survey.

There are options available that combine survey questions with mapping software, enabling respondents to document specific areas and specific issues, the results of which can be beneficial for roading teams. Two platforms available are Maptionnaire (https://maptionnaire.com/) and Social Pinpoint (https://www.socialpinpoint.com/).

Specific Issues

By not asking respondents about specific issues we were able to get a high-level view of how people feel about the roads, but if Council wanted to learn about specific issues raised a follow-up survey would be worthwhile targeting issues raised in the survey. These issues could include:

- Tourism
- Freight
- Road safety
- Pedestrian/cycling facilities
- Road condition
- State Highways
- Signage and road markings
- Bridges
- Resilience
- Maintenance
- Contract management
- Emergency response
- Specific locations

Visitors

The survey had very few responses from non-residents and visitors. Insight from these users would be useful, however, it could be difficult to filter out their comments relating to state highways vs individual district roads. In order to gather more responses from this group, they would need to be specifically targeted. Actions could include:

- Print out hard copy collateral including promotional flyers and hard copy surveys
- Locate collateral in popular locations for visitors such as:
    - Petrol stations
    - Cafes
    - Supermarkets
    - Accommodation providers/campgrounds
    - I-sites

    - Doc offices/trailheads
    - Attractions
- Work closely with tourism providers to inform them of the survey and, importantly, the benefits of having responses from visitors.

Promotion

The key to getting good engagement is to ensure as many people are aware of the survey as possible. For this survey each Council used a range of channels available to them, these include:

- Council website
- Social media posts (multiple)
- Media advisories x 2
- Emails to stakeholders
- Emails to staff
- Council newsletters (multiple)
- Email bulletins (multiple)
- Hard copy surveys

To access a larger audience, the following methods could be employed in a future survey:

- Paid advertising (Radio/newspapers)
- Paid promotional posts on social media
- More hard copy collateral (as mentioned above)
- Community meetings/drop-in sessions
- Presentations at schools/rest homes

Younger demographics

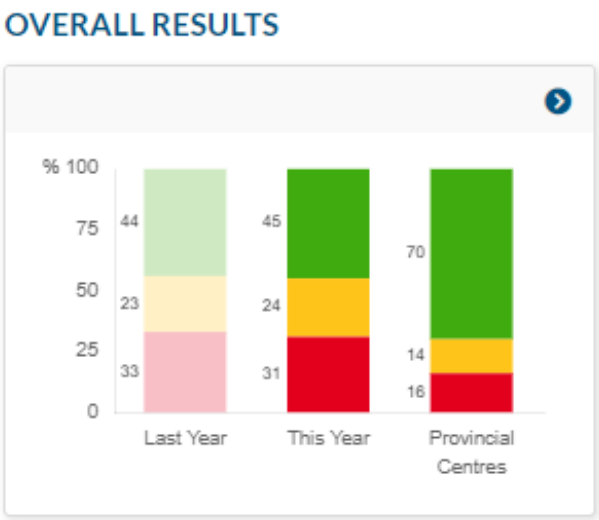
Gaining good engagement from the younger demographic (under 35) is often difficult in public surveys; however, this is an area that should be specifically targeted to ensure a more representative demographic spread.

This can be more resource intensive than older demographics and may still not result in great levels of engagement, but younger people's views are critical as they will be directly affected by the decisions made around infrastructure in future.

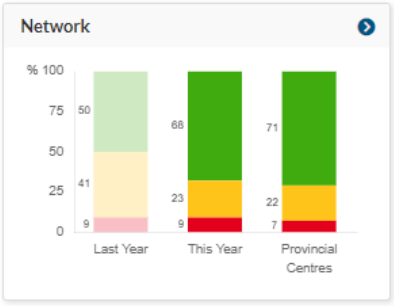
School students can be reached by working with schools to get their involvement. Offering to present at schools or visit classes to explain the survey and why it's being undertaken would likely see a higher number of that segment take part. For those over 18 options include drop-in sessions after work at local bars or sports clubs.

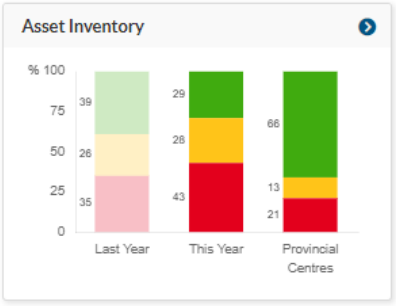
Appendix 5: 2019/20 Data Quality Results

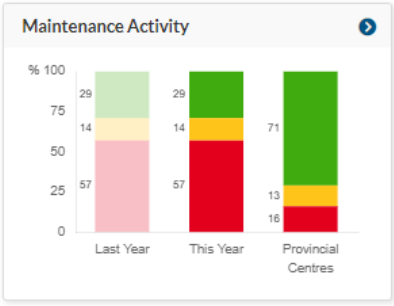
Buller

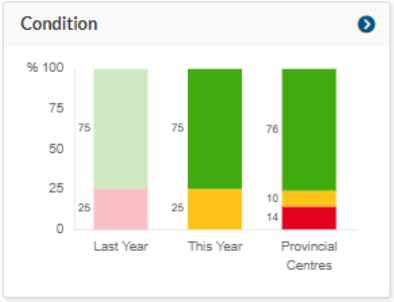


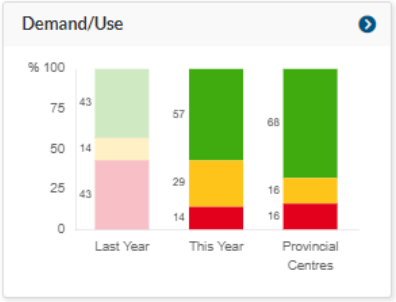
RESULTS BY DATA CATEGORY

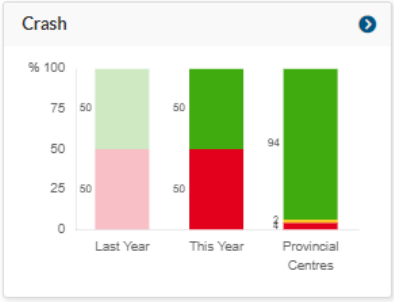




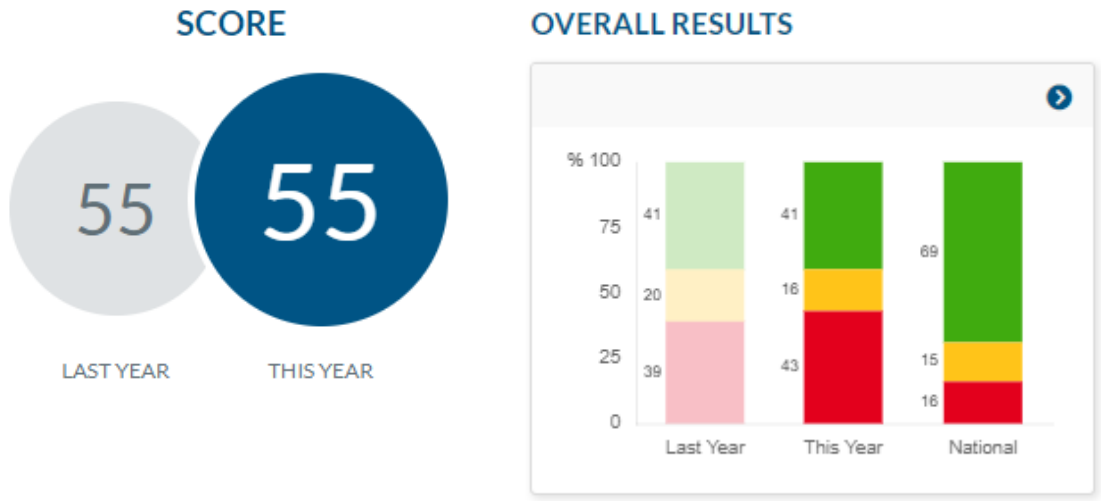








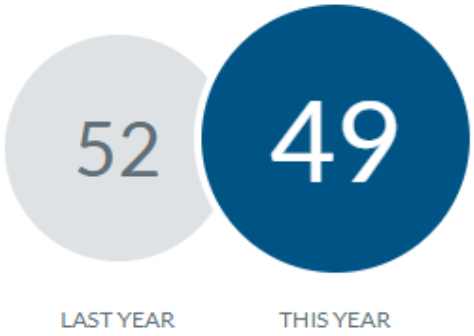
Grey



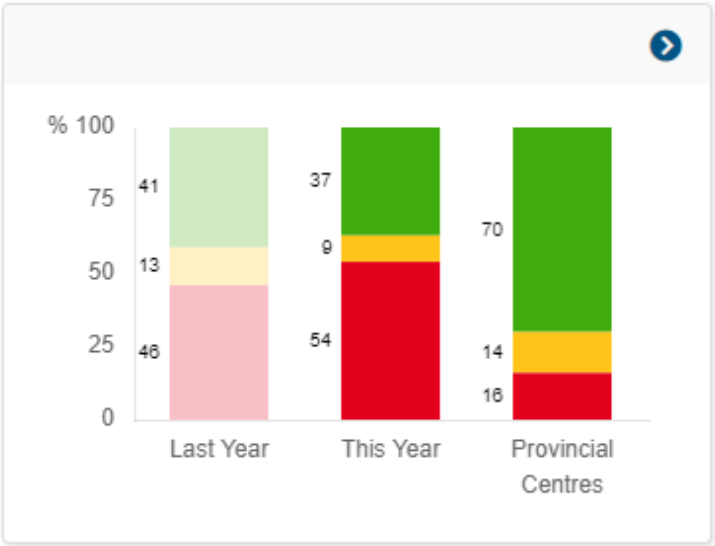
RESULTS BY DATA CATEGORY

Westland

SCORE



OVERALL RESULTS



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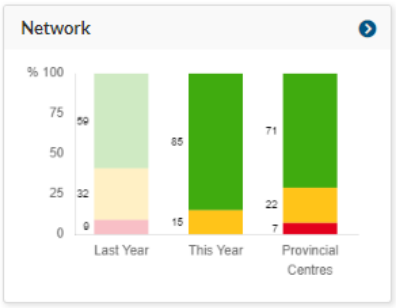
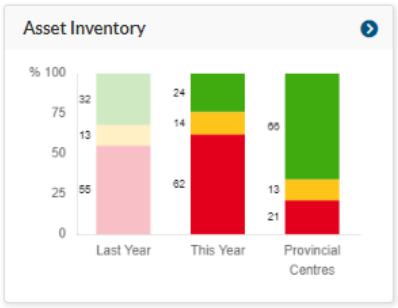
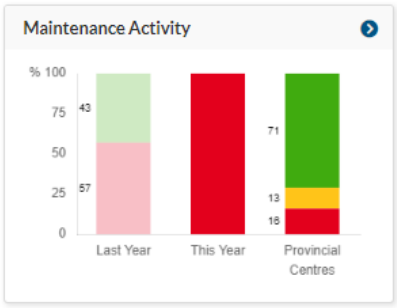
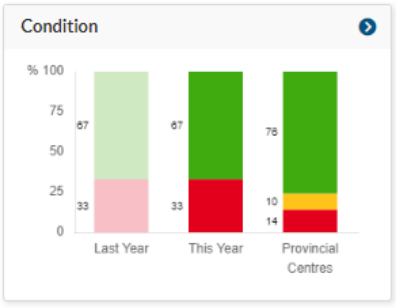
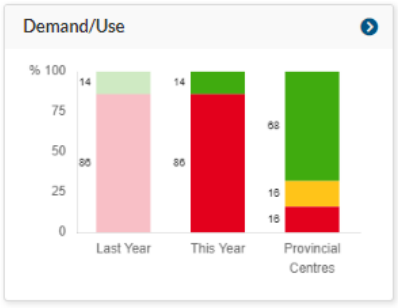
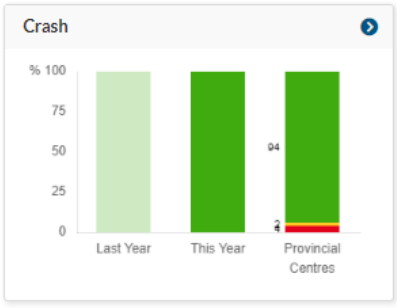












Appendix 6: Buller SPR Transition Plan Summary

BULLER SPR TRANSITION PLAN SUMMARY

BULLER DISTRICT COUNCIL
Te Kaunihera O Kawatiri

OVERVIEW

The Karamea Highway SPR is comprised of two sections of highway, the Karamea Highway (50km) and Karmea-Kohaihai Road (12km).

The SPR is currently funded at 100% FAR and is proposed to move to normal FAR (72% in Buller District) on 1st July 2024.

The Karamea Highway Transition Plan (December 2019) identified and assessed a number of feasible forward works programmes, and recommended a preferred way forward for the SPR transition.

The Transition Plan for Karamea Highway highlights two key items for consideration:

1. Substantial investment needed for major improvements, particularly bridge replacements ($7.8M estimated cost 2021-31).
2. The susceptibility of the road to extreme weather conditions that are unpredictable and unaffordable for BDC to fund through Emergency Works at normal FAR.

As at September 2020 Waka Kotahi have indicated to BDC that the preferred approach to investment in the SPR is:

- Complete major capital works, pavement renewals, and low-cost low-risk projects ahead of 30 June 2024 while the roads have 100% FAR status.
- Major capital works after 1st July 2024 assessed on a case by case basis using a means tested principle for an enhanced FAR.
- From 1st July 2024 emergency works managed as per Waka Kotahi's existing emergency policy which considers the scale of event and financial hardship in each financial year.

MAJOR IMPROVEMENT PROJECTS

	2018-21	2021-24	2024-31
Pavements and Carriageways	• Upgrade and seal extension of Kohaihai Road – design complete and BDC is tendered for construction. • Pavement improvements – in design and tender phase. • Drop out repairs – currently tendered. • Safety barrier installation – underway. • Drainage works – to be programmed.	Forward Work Programme: • $213k per annum pavement rehabilitation ($640k total, WC212) • $190k per annum resealing programme ($570k total, WC214)	Forward Work Programme: • $110k per annum pavement rehabilitation ($770k total, WC212) • $210k per annum resealing programme ($1.47m total, WC214)
Bridge Replacements		Condition-based replacement (WC216): • Tobin Creek Culvert ($860k). Level of Service replacement (WC322): • Little Wanganui Bridge ($4.8m). PGF funding: • Tidal Creek No.2 ($1.8m funding secured)	
Safety Improvements	Glasseye Creek Bridge delineation and guardrails – safety improvements tendered for construction.	Whisky Creek Bridge delineation and guardrails – estimated cost $145,000.	
Resilience and Emergency Works	Prone to slips, slumps and flooding, however due to difficulties accurately planning and forecasting the nature and location of failure it is not practical to invest in Major Improvement Works along the Bluffs section of the Karamea Highway. Transition Plan recommends maintaining levels of service through continued low cost / low risk investment. Future failures from extreme weather conditions are likely to be funded under Emergency Works. The proposed Transition Programme retains SPR Emergency Works at 100% FAR through to 2031.		


Karamea-Kohaihai Road


Little Wanganui Bridge


Tidal Creek No.2 Bridge

WESTLAND SPR TRANSITION PLAN SUMMARY

OVERVIEW

The Haast-Jackson Bay SPR connects SH6 near Haast south to Jackson Bay. It is approximately 49km long passing through several communities which are home to around 250 people. It is the only land-based corridor providing access to these communities.

The SPR is currently funded at 100% FAR and is proposed to transition to normal FAR (62% in Westland District) on 1st July 2024.

The Haast-Jackson Bay Transition Plan (February 2018) identified and assessed a number of feasible forward works programmes and recommended a preferred way forward for the SPR transition.

As part of the transition, Waka Kotahi allocated funding for major improvement, emergency works and pavement rehabilitation for 2018-21.

As at August 2020 some of this work has not been actioned, this document provides a summary of specific activities, the status of each, and the proposed way forward for the current 2018-21 programme, and subsequent 2021-24 programme.

As at September 2020 Waka Kotahi have indicated to WDC that the preferred approach to investment in the SPR is:

- Complete major capital works, pavement renewals, and low-cost low-risk projects ahead of 30 June 2024 while the roads have 100% FAR status.
- Major capital works after 1st July 2024 assessed on a case by case basis using a means tested principle for an enhanced FAR.
- From 1st July 2024 emergency works managed as per Waka Kotahi's existing emergency policy which considers the scale of event and financial hardship in each financial year.

MAJOR IMPROVEMENT PROJECTS

Pavement rehabilitation

Pavement is significantly deteriorated on 'corduroy' sections requiring increased investment in maintenance and renewals. Two trial sites are currently in place to determine a preferred option and falling weight deflectometer data has been collected.

$150,000 per annum, $450,000 total, has been allocated to Pavement Rehabilitation activities (WC214) which is unspent to date.

Progressing with a preferred option and procuring contractor services is an urgent WDC action for 2020 so planned investments can be completed in the current 2020-21 NLTP funding cycle.

Structure renewals

Principle inspections of bridges on the Haast-Jackson Bay SPR are underway, at present the Arawhata Bridge is recommended to be sandblasted and painted to protect the steel structure from corrosion. $1.3M of maintenance and renewals work has been estimated for Arawhata Bridge.

Okuru and Waiatoto Bridges do not have recommended works in the recent Structures Lifecycle Management Plan. Note that $259,000 of maintenance and renewals work has previously been estimated for Okuru Bridge – WDC to confirm if this is still required.

WDC need to confirm the 2020/21 and forward programme for these three bridges based on recent inspection findings.

Emergency works

Following Cyclones Fehi and Gita in 2018 $500,000 Emergency Works funding was allocated to address coastal erosion issues through shoreline protection works at Jackson Bay.

To date this work has not been progressed and is an urgent item for WDC to procure services for in 2020 to ensure work is completed in the current 2018-21 NLTP funding cycle.

Resilience

The route is faced by a range of hazards caused by extreme weather events:

- Jackson Bay Bluffs – slips are a frequent risk to the road below, given the unpredictable nature of where and when a slip will fall the preferred option is to continue post-event clean up.
- Surface flooding at Mussel Point – this rarely closes the road and the cost to mitigate issues outweigh expected benefits.
- Okuru River Mouth erosion – erosion sites move regularly on this coastline making it difficult to plan mitigation, the current monitoring approach should be reviewed considering recent erosion (1-2m in 24 hours) close to the road.

$235,000 is approved for resilience work here if needed – WDC to confirm.

Arawhata Bridge

Jackson Bay coastal erosion

Okuru River Mouth erosion adjacent to road

Appendix 8: 20-Year Forward Work Programme Summaries

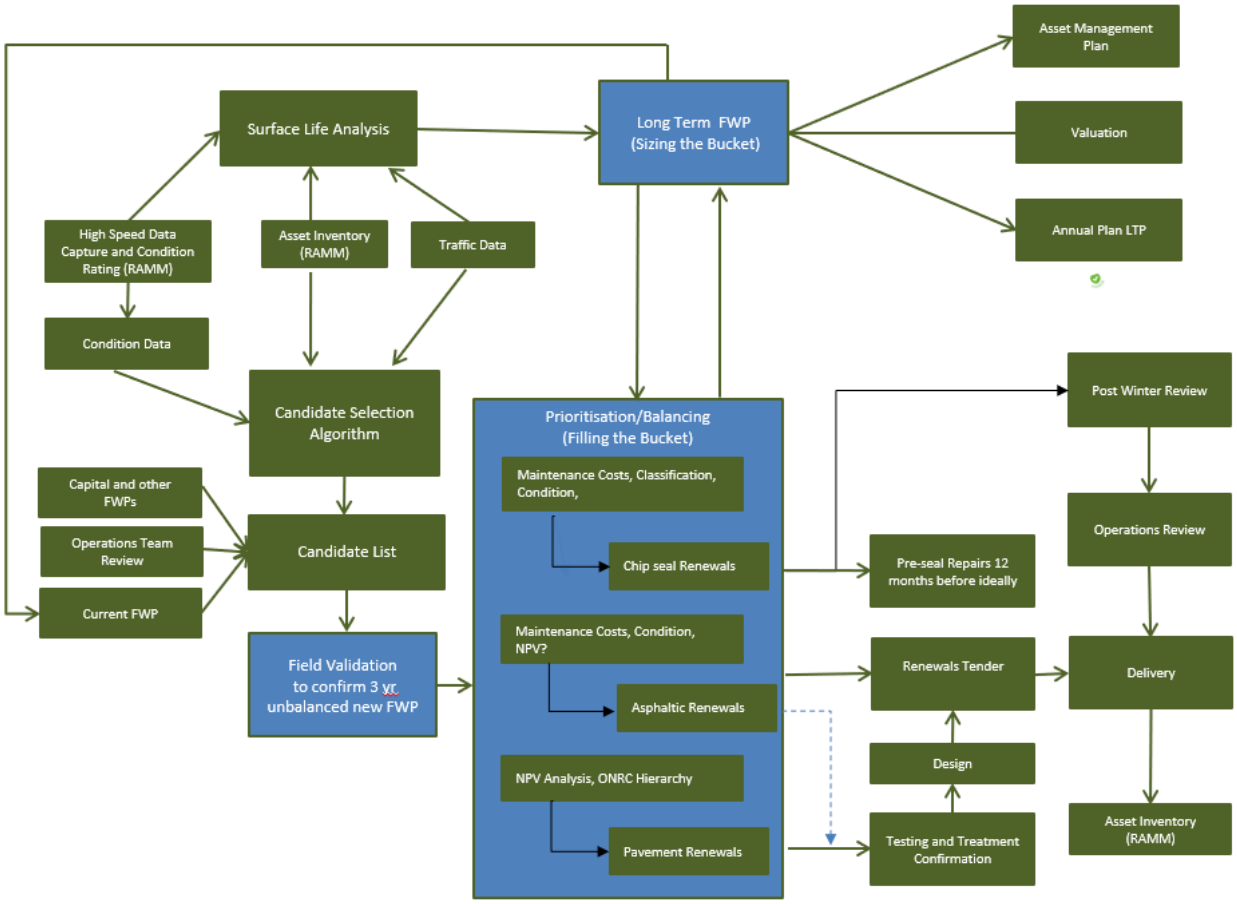
Buller Renewal Forward Work Programme Development

FWP Process Workshop

The workshop was held 13th December at Grey District Council. Attendees were;

- Eric de Boer (Buller DC)
- Brian Murphy (Buller DC)
- Karl Jackson (Westland DC)
- John Bainbridge (Westland DC)
- Andrew Kaye (Grey DC)
- Mike Tapper (Beca)
- Tony Garchow (Beca)

The FWP development process diagram is attached:



Treatment Length Validation Survey

- Step 1: Desktop assessment – Beca reviewed the treatment lengths in relation to the surfacing records recorded in RAMM. A key filter were treatment lengths for which the proportion of the sealing record did not equal 100%.
- Step 2: Field Validation – a random sample was validated in the field to determine if surface type, age and treatment length locations were correct. This was undertaken between 26th and 28th November 2019.

- Step 3: Database Updates - 144 TL's were added and 150 TL's adjusted as a result of the field validation. The majority of these were related to urban roads within Westport and Reefton area for which the intersections of minor roads with the major road were split into a treatment length and disabled.

Surface Life Analysis

Desktop analysis was completed using a combination of all three networks analysed separately. The networks were looked at by traffic use category and material and chip size.

The Buller results for average surface life in years were as follows:

Buller	Surface Type	<100vpd	100-500	500-2000	>2000
Rural	Grade 3	19	19	19	
	Grade 4	18	19	17	
	Grade 5 or 6	17	15		
	Two coat 3/5	16	13		
	Two coat 4/6	13	14		
	AC				
Urban	Grade 3	23	20		
	Grade 4	20	18	18	
	Grade 5 or 6	17	16	15	
	Two coat 3/5		13		
	Two coat 4/6	15	15	14	
	AC	23	22	22	

Westland seal life achieved averages were typically two years less than for Grey and Buller. Buller averaged around 17 years for resurfacings. On 305 km of sealed network, this averages at 18km per year including the SPR network. The SPR has a seal life in the order of 14 years due to the rural traffic, exposed nature and vulnerability to cracking. The local road network is performing well and analysis of surviving surfacings shows lives in excess of 20 years are being achieved given the low traffic volumes.

The combined Councils were given a life cycle table consistent across all three councils as follows:

		<100vpd	100-500	500-2000	>2000
2nd coats and Resurfacings					
	Grade 3	19	17	15	14
	Grade 4	17	15	13	12
	Grade 5 or 6	15	13	11	11
	Two coat 3/5	16	14	12	12
	Two coat 4/6	14	12	10	10
	AC	20	18	16	14
1st Coats	Grade 3	5	4	3	2

	Grade 4	4	3	2	2
	Grade 5 or 6	3	2	1	1
	Two coat 3/5	7	5	4	3
	Two coat 4/6	5	3	2	2

FWD Analysis

The FWD analysis was undertaken looking at 148 km of the sealed road network.

The analysis gave the following results for the SPR:

Length in km	Possible Concern	Moderate	Good
85th %ile Central Deflection	> 2.0 mm	> 1.5mm	< 1.5mm
	0.0 km	0.0 km	48.5 km
85th %ile Curvature	> 0.45 mm	> 0.30 mm	< 0.30 mm
	1.4 km	13.3km	33.7 km
Average Structural Number	< 1.2	< 1.5	> 1.5
	0.0 km	0.0 km	48.5 km

The analysis gave the following results for the local Buller road network:

Length in km	Possible Concern	Moderate	Good
85th %ile Central Deflection	> 2.0 mm	> 1.5mm	< 1.5mm
	2.0 km	7.6 km	82.2 km
85th %ile Curvature	> 0.45 mm	> 0.30 mm	< 0.30 mm
	7.4 km	21.5km	62.9 km
Average Structural Number	< 1.2	< 1.5	> 1.5
	0.0 km	0.0 km	91.9 km

Overall, the results for the network are good. Curvature is high for a number of sections, but none show short programmed surface lives or poor condition deterioration. This would suggest basecourse shear issues given the low pavement deflections and high curvature. Sound resurfacing cycles are recommended to maintain the waterproofing.

The Karamea Highway shows poor results for curvature between 0.35 and 0.51, typically located north of Little Wanganui. However, deflection is low at with deflections averaging 0.7 mm and the highest average deflection for a treatment length being 1.3mm. Structural number is averaging 4.1 which is a very good result and no sections under 3. Typically, anything over 3 is classed as moderately strong.

This suggests pavement improvement works are likely to be pavement shape improvements rather than strengthening being necessary as well. This should be confirmed on a site by site basis at design stage. Sections north of chainage 34.55 have not been surfaced since around 2000 showing good surface life being achieved however site drive over has noted several sections suffering from loss of shape. These have been noted in the FWP as potential pavement renewals for shape correction. In addition, validation comments have noted some slumping, typically in the fill areas along the bluff which require regular maintenance for smoothing.

There is a conservative approach to lives in the surfacing renewal programme for these more recent surfacings which would be in line with the curvature results.

Overall, the approach for the SPR should be conservative resurfacing cycles of around 12-14 years depending on the chip size to minimize pavement deterioration. Pavement shape correction may be required or resurfacing with heavy maintenance may suffice.

For the local road network, given its condition, an 18 year lifecycle has been adopted for programming purposes as an average, giving a renewal need of around 14 km per year.

It is proposed that Buller allow a nominal sum for pavement reconstruction on the local network in the next three year NLTP programme for any sites that do come up and can justify a treatment. We propose a nominal $170K per year which would treat 500m per year. These have been addressed in the FWP with the addition of a dummy road scheduling these into the FWP.

AC Renewal Need

Each Council was to identify and supply sites for future AC surfacing for high stress areas. Buller District advised that they intended to AC the intersection of Palmerston and Henley Streets.

For those AC sites with FWD testing undertaken, none show a shortened surface life. All central deflections are below 1.2mm average deflection and no curvature above 0.4mm. This suggests no pavement strengthening is required to support premature asphalt surfacing failure due to deflection.

Denniston Track has 545m of AC surfacing dating back to 1992. This is due for resurfacing in 20/21 and 23/24. There is a further 550m of TAC resurfacing on Palmerston St from 1995 scheduled for resurfacing for 22/23. These will place a high cost of resurfacing renewals in the period 20/21 - 23/24 of some $250K annually.

Pavement Renewal Programme

The sections flagged for the most of concern results in orange and moderate results in yellow are shown below.

Road Name	Start	End	Length	85th Deflection	85th curvature	Ave SNP
BACK RD (KONGAHU)	211	311	100	1.75	0.59	2.56
DON ST	61	123	62	1.76	0.52	2.84
EASTONS RD	408	768	360	1.60	0.35	3.62
GANNONS RD	808	1808	1000	2.16	0.51	3.36
GANNONS RD	1808	2240	432	1.57	0.45	2.82
GANNONS RD	2274	3274	1000	1.52	0.44	3.13
GREENFIELD ST	161	336	175	1.59	0.39	2.98
KARAMEA HIGHWAY	39000	39572	572	1.29	0.49	3.19
KARAMEA HIGHWAY	40000	40793	793	1.37	0.51	3.22
KOHAIHAI	2794	3552	758	1.87	0.47	2.99
MAIN ST	0	195	195	1.72	0.58	3.04
OPARARA RD	0	1000	1000	2.01	0.61	3.00
OPARARA RD	4902	5902	1000	1.79	0.50	2.98
RUSSELL ST	803	1029	226	1.57	0.38	3.09
STEPHEN RD	0	932	932	1.63	0.54	2.94

STEWART ST	0	419	419	1.80	0.53	3.30
THOMPSON RD	0	1000	1000	1.56	0.52	3.16
THOMPSON RD	1000	1996	996	1.60	0.53	3.24

All these sites are currently surfaced with chipseal. None of these sites are currently programmed with a significantly short seal life or have significant condition faults reported.

This would indicate that no sites on the local road network would currently justify pavement renewal on the basis of the FWD survey although these sections should be monitored. However, it is recommended to have a nominal amount for possible strengthening or shape correction if needed.

As discussed previously, the Karamea Highway has some loss of shape (Tidal Creek to Little Wanganui, Granite Creek to Maori Point. Again, an allowance for potential shape correction sites has been allocated to the Karamea Highway at identified locations.

Candidate Site List for Field Validation

The candidate list was generated based on the existing surface records, condition data and incorporated the revised surface life analysis.

Long Term FWP incl Field Validation

The field validation involved review of the draft years for 2020/2021, 2021/2022 and 2022/2023. For Buller the inspection was undertaken by Tony Garchow (Beca) and Brian Murphy (BDC) during the week ending 20th of March. Some remote sites were not inspected at this time and were reviewed by Brian once the COVID 19 level was reduced to 3/2 and he was able to undertaken the field inspection.

The following table shows the length per financial year pre and post field validation.

Year	Per Field Validation Length	Post Field Validation Length
2020/2021	11.373	4.16
2021/2022	18.674	27.78
2022/2023	48.520	26.80

Deferred candidate sites were put into the estimated treatment year prior to desktop balancing being undertaken.

Buller District Council have since revisited the programme for 2020/2021 and are estimating the length will be in the order of 17 kilometres.

Treatment rates, initially used, were in accordance with the latest asset valuation and are being review by Council. We are awaiting feedback.

Long Term FWP

The long term forward works programme has been split into the local road sealed network (256km) and the Karamea Highway special purpose road (48km).

based on a renewal need of 16km per year.

The balancing has been achieved by pushing out lower hierarchy treatment lengths, and then within those urban ahead of rural with some holding back where condition or FWD results are poor. When bringing treatment lengths forward, the opposite prioritisation has applied.

There has been no balancing in the asphalt programme. The FWP shows most of the asphalt surfacings are collector roads which were last resurfaced since prior to 2000. This was affecting the total renewal budget averaging $500K in the five years from 2019/20.

From this programme we have applied some rates as follows,

Activity	Rate/m2
Pavement Renewal	45.00
Chipseal large chip (RSB)	8.30
Chipseal multi chip (RSM)	8.50
Chipseal small chip (RSS)	6.90
Chipseal second coat (SC)	8.40
Thin AC (TAC)	70.00

It should be noted that the rates are based on the current contract rates that Buller have with their maintenance contractor and were procured while bitumen prices were very high. These have significantly reduced, and it is expected that cheaper rates will be procured in the contract coming to market shortly. The SPR rates can be higher than the local road network rates due to the remoteness.

The FWP summary is shown below.

Buller DC Total	2019/20	2020/21	10 year FWP 21/22 – 30/31	
	km	km	Annual Length km	Annual Cost
POT RHAB	0.00	0.00	0.38	$114,489
PROJ	0.00	0.05	0.02	$0
RHABCS	0.00	0.00	0.53	$172,489
RSB	3.70	1.83	7.60	$347,639
RSM	2.02	4.68	8.17	$491,716
RSS	1.22	2.35	0.89	$37,600
SC	0.61	0.00	0.52	$25,235
TAC	0.47	0.42	0.12	$163,172
Grand Total	**8.02**	**9.33**	**18.23**	**$1,352,339**

The SPR FWP summary is shown below.

Karamea Hway SPR	2019/20	2020/21	10 year FWP 21/22 – 30/31	
	km	km	Annual Length km	Annual Cost
POT RHAB	0.00	0.00	0.38	$114,489
PROJ	0.00	0.00	0.00	$0
RHABCS	0.00	0.00	0.03	$9,185

RSB	0.10	0.43	0.73	$41,030
RSM	0.38	0.66	2.42	$141,942
RSS	1.01	0.58	0.43	$20,070
SC	0.00	0.00	0.10	$5,547
TAC	0.00	0.10	0.00	$0
Grand Total	**1.49**	**1.77**	**4.09**	**$332,263**

This works on a resurfacing base of around 14 years over the 20 year FWP. As discussed earlier, the higher curvature results suggest a conservative resurfacing cycle is required to maintain pavement integrity.

The Karamea Highway has some loss of shape (Tidal Creek to Little Wanganui, Granite Creek to Maori Point. Again, an allowance for potential shape correction sites has been allocated to the Karamea Highway at identified locations.

Buller DC Local Roads	**2019/20**	**2020/21**	**10 year FWP 21/22 – 30/31**	
	km	**km**	**Annual Length km**	**Annual Cost**
POT RHAB	0.00	0.00	0.00	$0
PROJ	0.00	0.05	0.02	$0
RHABCS	0.00	0.00	0.50	$163,304
RSB	3.60	1.40	6.87	$306,608
RSM	1.64	4.02	5.74	$349,774
RSS	0.21	1.77	0.47	$17,529
SC	0.61	0.00	0.42	$19,688
TAC	0.47	0.32	0.12	$163,172
Grand Total	**6.53**	**7.56**	**14.14**	**$1,020,076**

Chipseal average for BDC only (excl the SPR) averages around $695K for 21/22 – 30/31. This is based on an average 13.6 km per year. On the 255km of sealed road network excl the SPR, this equates to a 19 year life cycle.

Denniston Track has 545m of AC surfacing dating back to 1992. This is due for resurfacing in 20/21 and 23/24. There is a further 550m of TAC resurfacing on Palmerston St from 1995 scheduled for resurfacing for 22/23. These will place a high cost of resurfacing renewals in the period 20/21 - 23/24 of some $250K annually.

It is proposed that Buller allow a nominal sum for pavement reconstruction on the local network in the next three year NLTP programme for any sites that do come up and can justify a treatment. We propose a nominal $170K per year which would treat 500m per year. These have been addressed in the FWP with the addition of a dummy road scheduling these into the FWP.

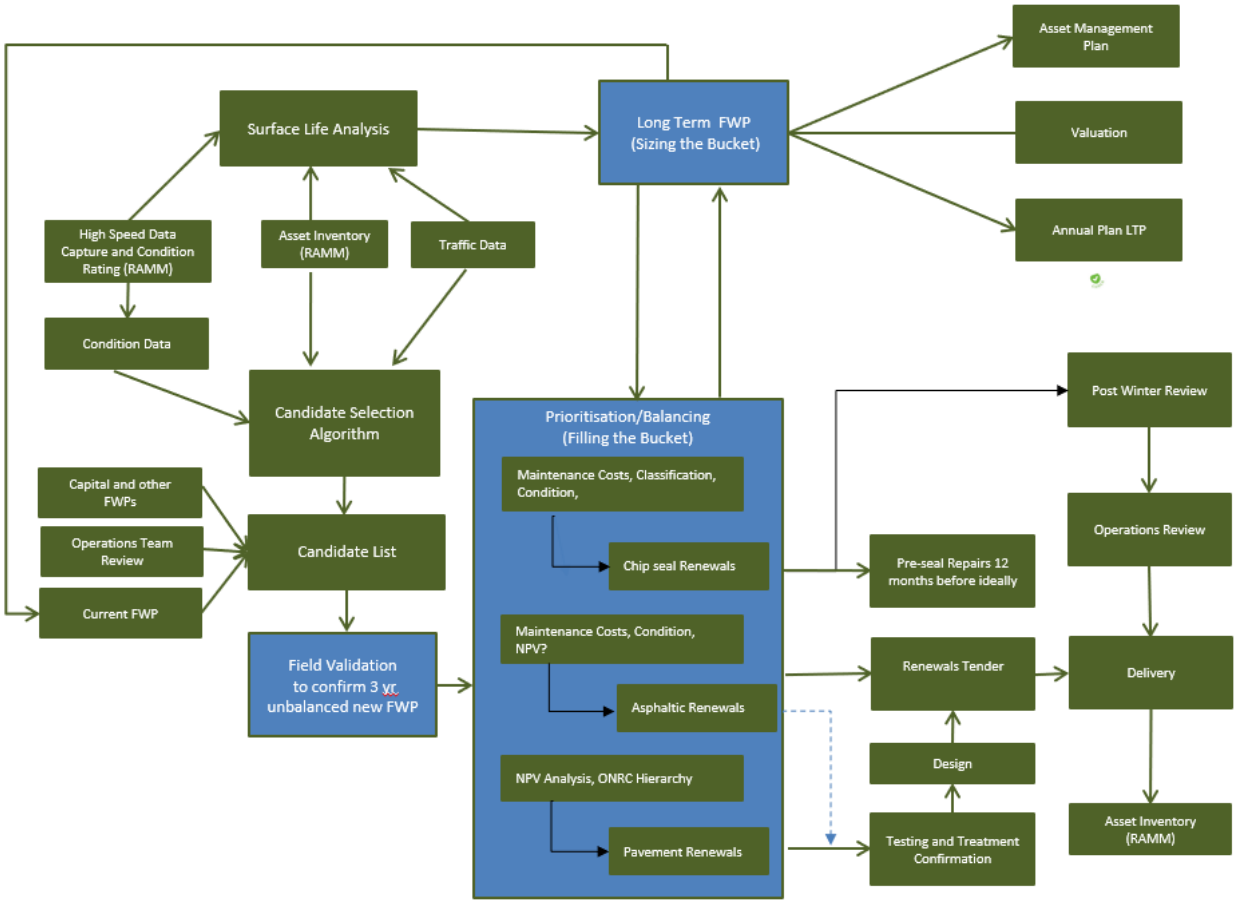
Grey Renewal Forward Work Programme Development

FWP Process Workshop

The workshop was held 13th December at Grey District Council. Attendees were;

- Eric de Boer (Buller DC)
- Brian Murphy (Buller DC)
- Karl Jackson (Westland DC)
- John Bainbridge (Westland DC)
- Andrew Kaye (Grey DC)
- Mike Tapper (Beca)
- Tony Garchow (Beca)

The FWP development process diagram is attached:



Treatment Length Validation Survey

- Step 1: Desktop assessment – Beca reviewed the treatment lengths in relation to the surfacing records recorded in RAMM. A key filter were treatment lengths for which the proportion of the sealing record did not equal 100%. 27 TL's were updated, and 135 TL's were established and disabled.

- Step 2: Field Validation – a random sample was validated in the field to determine if surface type, age and treatment length locations were correct. This was undertaken between 26th and 28th November 2019.
- Step 3: Database Updates - 149 TL's were added and 189 TL's adjusted as a result of the field validation. The majority of these were related to urban roads within area for which the intersections of minor roads with the major road were split into a treatment length and disabled.

Surface Life Analysis

Desktop analysis was completed using a combination of all three networks analysed separately. The networks were looked at by traffic use category and material and chip size.

The Grey results for average surface life in years were as follows:

Westland	Surface Type	<100vpd	100-500	500-2000	>2000
Rural	Grade 3	21	16	16	
	Grade 4	19	17	12	
	Grade 5 or 6	18	13	18	
	Two coat 3/5	15	15	9	
	Two coat 4/6	13		19	
	AC	18			
Urban	Grade 3	20	15	13	
	Grade 4	22	19	20	13
	Grade 5 or 6	18	24	16	20
	Two coat 3/5	15	13	15	
	Two coat 4/6	14	15	13	
	AC	20	18	16	22

Westland seal life achieved averages were typically two years less than for Grey and Buller. Grey averaged around 17 years for resurfacings. On 380 km of sealed network, this averages at 22km per year.

The combined Councils were given a life cycle table consistent across all three councils as follows:

		<100vpd	100-500	500-2000	>2000
2nd coats and Resurfacings					
	Grade 3	19	17	15	14
	Grade 4	17	15	13	12
	Grade 5 or 6	15	13	11	11
	Two coat 3/5	16	14	12	12
	Two coat 4/6	14	12	10	10
	AC	20	18	16	14

1st Coats	Grade 3	5	4	3	2
	Grade 4	4	3	2	2
	Grade 5 or 6	3	2	1	1
	Two coat 3/5	7	5	4	3
	Two coat 4/6	5	3	2	2

FWD Analysis

The FWD analysis was undertaken looking at 87km of the sealed road network.

The analysis gave the following results:

Length in km	Possible Concern	Moderate	Good
85th %ile Central Deflection	> 2.0 mm	> 1.5mm	< 1.5mm
	0.1 km	5.7 km	81.2 km
85th %ile Curvature	> 0.45 mm	> 0.30 mm	< 0.30 mm
	4.4 km	11.2 km	71.5 km
Average Structural Number	< 1.2	< 1.5	> 1.5
	0.0 km	0.0 km	87.0 km

Overall, the results for the network are very good. Curvature is high for a number of sections, but three sections show shorter programmed surface lives or poor condition deterioration:

- Lake Brunner Road 17.45 – 18.00
- Lake Brunner Road 18.00 – 19.00
- Bright Street 1.18 – 1.30

Structural number is averaging 4.8 which is a very good result. Typically, anything over 3 is classed as moderately strong. This suggests pavement improvement works required will be focused on pavement shape improvements rather than strengthening being necessary as well. This should be confirmed on a site by site basis at design stage as the FWD results are only over a small sample.

AC Renewal Need

Each Council was to identify and supply sites for future AC surfacing for high stress areas. Grey District did not advise of any intended sites.

For those AC sites with FWD testing undertaken, none show a shortened surface life. All central deflections are below 0.9mm average deflection and no 85%ile curvature above 0.23mm. This suggests no pavement strengthening is required to support premature asphalt surfacing failure due to deflection.

It is recommended that any urban asphaltic sections at secondary collector level or below be resurfaced in a small chip surfacing to reduce cost. This has been undertaken in the FWP and figures included in this discussion.

Pavement Renewal Programme

The sections flagged for the most of concern results in orange and moderate results in yellow are shown below.

Road Name	Start	End	Length	85th Deflection	85th curvature	Ave SNP
AHAU STREET	0	507	507	1.51	0.43	3.73
AHAU STREET	507	729	222	1.53	0.50	3.75
BRIGHT STREET	1184	1305	121	2.25	0.51	5.21
CARROLL STREET	15	124	109	1.55	0.31	3.44
LAKE BRUNNER ROAD	8670	9669	999	1.76	0.49	4.51
LAKE BRUNNER ROAD	12000	13000	1000	1.96	0.48	5.05
LAKE BRUNNER ROAD	13000	13609	609	1.55	0.44	5.06
LAKE BRUNNER ROAD	17449	18000	551	1.67	0.49	4.26
LAKE BRUNNER ROAD	18000	19000	1000	1.66	0.47	4.98
NELSON QUAY	379	509	130	1.74	0.54	3.13
NELSON QUAY	509	632	123	1.82	0.50	2.47
NELSON QUAY	632	742	110	1.49	0.50	2.99
RANFURLY STREET NORTH 1	4	124	120	1.70	0.46	5.60
RANFURLY STREET NORTH 1	247	375	128	1.81	0.33	5.77
SCHOOL LANE	0	59	59	1.99	0.44	2.60

All these sites are currently surfaced with chipseal. Three sections show shorter programmed surface lives or poor condition deterioration:

- Lake Brunner Road 17.45 – 18.00
- Lake Brunner Road 18.00 – 19.00
- Bright Street 1.18 – 1.30

This would indicate these sites may currently justify pavement renewal on the basis of the FWD survey although these sections should be justified on a site by site basis using the usual NPV calculations.

From the drive-over field survey only Taylorville Road 6.48 – 7.66 has been programmed for a pavement renewal in 2021/22 for shape correction.

It is proposed that Grey allow a nominal sum for pavement reconstruction in the NLTP programme for any sites that do come up and can justify a treatment. We propose a nominal $250K per year which would treat 800m per year or 0.2% of the network. This allowance has been cut back in the first 3 years to assist in funding the asphaltic programme.

Candidate Site List for Field Validation

The candidate list was generated based on the existing surface records, condition data and incorporated the revised surface life analysis.

Long Term FWP incl Field Validation

The field validation involved review of the draft years for 2020/2021, 2021/2022 and 2022/2023. For Grey the inspection was initially undertaken by Tony Garchow (Beca) and Andrew Kaye (GDC) on the 19th and 20th of March. As a result of the introduction of COVID 19 level 4, the completion was put on hold. Tony Garchow completed the balance of the validation during the week ending 29th May 2020.

The following table shows the length per financial year pre and post field validation.

Year	Per Field Validation Length	Post Field Validation Length
2020/2021	38.804	19.29
2021/2022	32.765	27.11
2022/2023	41.943	27.21

Deferred candidate sites were put into the estimated treatment year prior to desktop balancing being undertaken.

Grey District Council have since revisited the programme for 2020/2021 and are estimating the length will be in the order of 16 kilometres.

Treatment rates, initially used, were in accordance with the latest asset valuation and are being review by Council. We are awaiting feedback.

Long Term FWP incl Field Validation

The long term forward works programme has been based on a renewal need of 20 km per year.

The balancing has been achieved by pushing out lower hierarchy treatment lengths, and then within those urban ahead of rural with some holding back where condition or FWD results are poor. When bringing treatment lengths forward, the opposite prioritisation has applied.

There has been no balancing in the asphalt programme. This was affecting the total renewal budget. There is 8km of network scheduled for AC treatment, half of which is low volume and access roads with AADT of less than 600 vpd. These could potentially be resurfaced in small chip or deferred. This 21/22 – 23/24 programme is predominantly secondary collectors and above that are due for renewal.

The 2020/21 programme has been assumed to be provisional.

From this programme we have applied some rates as follows,

Activity	Rate/m2
Pavement Renewal	45.00
Chipseal large chip (RSB)	6.45
Chipseal multi chip (RSM)	6.21
Chipseal small chip (RSS)	4.44
Chipseal second coat (SC)	6.21
Thin AC (TAC)	71.24

The FWP summary is shown below.

Grey DC	2019/20	2020/21	10 year FWP 21/22 – 30/31	
	km	km	Annual Length km	Annual Cost
POT RHAB	0.00	0.00	0.00	$0
PROJ	0.00	0.92	0.00	$0
RHABCS	0.00	0.00	0.71	$236,413
RSB	4.85	8.88	14.34	$671,318
RSM	9.57	3.13	3.85	$196,969

RSS	0.00	0.00	1.14	$41,700
SC	0.00	3.55	0.43	$15,938
TAC	0.00	0.00	0.23	$199,997
Grand Total	**14.42**	**16.48**	**20.70**	**$1,362,335**

The chipseal programme averages $985K annually for the 10 years with asphalt $200K per year. The allowance for pavement renewal averages $230K

Westland Renewal Forward Work Programme Development

FWP Process Workshop

The workshop was held 13th December at Grey District Council. Attendees were;

- Eric de Boer (Buller DC)
- Brian Murphy (Buller DC)
- Karl Jackson (Westland DC)
- John Bainbridge (Westland DC)
- Andrew Kaye (Grey DC)
- Mike Tapper (Beca)
- Tony Garchow (Beca)

Treatment Length Validation Survey

- Step 1: Desktop assessment – Beca reviewed the treatment lengths in relation to the surfacing records recorded in RAMM. A key filter were treatment lengths for which the proportion of the sealing record did not equal 100%. 34 treatment lengths were updated, and 15 new treatment lengths created. In general, the treatment lengths reflected surfacing records as completed.
- Step 2: Field Validation – a random sample was validated in the field to determine if surface type, age and treatment length locations were correct. This was undertaken between 26th and 28th November 2019.
- Step 3: Database Updates - 73 TL's were added and 163 TL's adjusted as a result of the field validation. The majority of these were related to urban roads within Hokitika for which the intersections with a major road were split and disabled.

Surface Life Analysis

Desktop analysis was completed using a combination of all three networks analysed separately. The networks were looked at by traffic use category and material and chip size.

The Westland results for average surface life in years were as follows:

Westland	Surface Type	<100vpd	100-500	500-2000	>2000
Rural	Grade 3	16	15	14	
	Grade 4	15	12	11	
	Grade 5 or 6	14	14	13	
	Two coat 3/5	13	11	13	
	Two coat 4/6	14	12		
	AC			14	
Urban	Grade 3	19		16	
	Grade 4	14	12	12	
	Grade 5 or 6	14	14	11	
	Two coat 3/5	19	12		
	Two coat 4/6		12		
	AC			18	

Westland seal life achieved averages were typically two years less than for Grey and Buller and averaged around 15 years for resurfacings. This may have been down to an earlier intervention strategy. On 380 km of sealed network, this averages at 25 km per year. Utilising an average of 17 years average life, this equates to an annual renewal; need of 22km per year.

The combined Councils were given a life cycle table consistent across all three councils as follows:

		<100vpd	100-500	500-2000	>2000
2nd coats and Resurfacings					
	Grade 3	19	17	15	14
	Grade 4	17	15	13	12
	Grade 5 or 6	15	13	11	11
	Two coat 3/5	16	14	12	12
	Two coat 4/6	14	12	10	10
	AC	20	18	16	14
1st Coats	Grade 3	5	4	3	2
	Grade 4	4	3	2	2
	Grade 5 or 6	3	2	1	1
	Two coat 3/5	7	5	4	3
	Two coat 4/6	5	3	2	2

FWD Analysis

The FWD analysis was undertaken looking at 230km of the sealed road network.

The analysis gave the following results:

Length in km	Possible Concern	Moderate	Good
85th %ile Central Deflection	> 2.0 mm	> 1.5mm	< 1.5mm
	22.6km	28.1km	179.6km
85th %ile Curvature	> 0.45 mm	> 0.30 mm	< 0.30 mm
	38.8km	82.1km	109.4km
Average Structural Number	< 1.2	< 1.5	> 1.5
	12.2km	33.8km	184.3km

Overall, the results for the network are good. Curvature is high for a number of sections, but none show short programmed surface lives or poor condition deterioration.

The Haast-Jackson Road shows very good results with deflections averaging 0.76mm and the highest average deflection for a treatment length being 1.08mm. Structural number is averaging 3.56 which is a very good result. Typically, anything over 3 is classed as moderately strong.

Having said that it is proposed that Westland allow a nominal sum for pavement reconstruction in the next three year NLTP programme for any sites that do come up and can justify a treatment. We propose a nominal $200K per year which would treat 500m per year.

AC Renewal Need

Each Council was to identify and supply sites for future AC surfacing for high stress areas. Westland did not provide any additional sites.

For those AC sites with FWD testing undertaken, none show a shortened surface life. All central deflections are below 1.2mm average deflection and no curvature above 0.4mm. This suggests no pavement strengthening is required to support premature asphalt surfacing failure due to deflection.

Pavement Renewal Programme

The sections flagged for the most of concern results in orange and moderate results in yellow are shown below.

Road Name	Start	End	Length	85th Deflection	85th curvature	Ave SNP
ADAMSON ROAD	0	860	860	1.91	0.60	1.16
BUTLER ROAD	0	1133	1133	1.79	0.61	1.61
CONDON ROAD	0	1653	1653	1.66	0.48	1.23
COOK FLAT ROAD	1731	4103	2372	1.91	0.60	1.16
GAY STREET	3	468	465	1.49	0.48	1.19
GUNN ROAD	0	1887	1887	1.63	0.59	1.45
HADDOCK ROAD	3	653	650	1.71	0.54	1.74
HADDOCK ROAD	653	2280	1627	1.82	0.52	1.59
HAMPDEN STREET	1391	1731	340	1.78	0.43	1.19
HOFFMAN STREET	0	132	132	2.16	0.37	0.77
HOFFMAN STREET	147	348	201	1.57	0.39	1.10
JOHNSTON ROAD	1678	4844	3166	1.57	0.49	1.48
JOHNSTON ROAD	4844	7786	2942	1.62	0.48	1.33
LA FONTAINE ROAD	5972	13305	7333	2.17	0.49	0.33
MUNICIPAL ROAD	4300	6463	2163	1.86	0.56	1.43
PETERSEN ROAD	4320	8500	4180	1.93	0.56	1.26
SEWELL STREET	1108	1341	233	1.81	0.53	1.38
ST JAMES STREET	83	156	73	2.01	0.66	0.80
ST JAMES STREET	156	320	164	1.88	0.43	1.46
TRAMWAY STREET	0	177	177	1.85	0.49	1.53
TRAMWAY STREET	430	677	247	1.51	0.51	1.72
TUI STREET	604	824	220	2.06	0.59	2.61

All these sites are currently surfaced with chipseal. None of these sites are currently programmed with a short seal life or have significant condition faults reported.

This would indicate that no sites would be currently justify pavement renewal based on the FWD survey although these sections should be monitored.

Candidate Site List for Field Validation

The candidate list was generate based on the existing surface records, condition data and incorporated the revised surface life analysis.

Long Term FWP incl Field Validation

The field validation involved review of the draft years for 2020/2021, 2021/2022 and 2022/2023. For Westland these were scheduled to have been inspected by Tony Garchow in association with Karl Jackson during the week ending 27th of March. As a result of the COVID 19 level four, this was not able to be undertaken.

Once the COVID 19 level was reduced to 3 it was determined that in order to have the field validation completed within the required time frame that John Bainbridge of Westland District Council would complete it. The validation was completed during late April/May with the final provide to Beca on the 20th May 2020.

The following table shows the length per financial year pre and post field validation.

Year	Per Field Validation Length	Post Field Validation Length
2020/2021	28.268	8.382
2021/2022	19.587	11.684
2022/2023	57.471	14.661

Deferred candidate sites were put into the estimated treatment year prior to desktop balancing being undertaken.

Westland District Council have since revisited the programme for 2020/2021 and are estimating the length will be in the order of 23 kilometres.

Treatment rates, initially used, were in accordance with the latest asset valuation.

Long Term FWP

The long term forward works programme has been based on a renewal need of 25km per year.

The balancing has been achieved by pushing out lower hierarchy treatment lengths, and then within those urban ahead of rural with some holding back where condition or FWD results are poor. When bringing treatment lengths forward, the opposite prioritisation has applied.

There has been some balancing in the asphalt programme. This was affecting the total renewal budget. To balance this, sections have been pushed out, but all show no condition deterioration currently in the condition rating results.

It should be noted that only 130km of the network is surfaced in small chip surfacing, 98km in large chip (grade 3 or 4), 153km in two coat surfacings with the remainder in AC. This implies that the predominant next resurfacing will be in big chip which is increasing the cost over the previous small chip surfacings. This is accentuated in that many of the older seals are in small chip meaning much of the resurfacing programme for the next 10 years will be large chip. This reverts to predominantly small chip in the second half of the 20-year programme.

The 2020/21 programme has been assumed to be provisional and in Westland's case we have proposed some balancing at a network level.

From this programme we have applied some rates as follows,

Activity	Rate/m2
Pavement Renewal	45.00
Chipseal large chip (RSB)	6.45
Chipseal multi chip (RSM)	6.21
Chipseal large chip (RSS)	4.44
Chipseal second coat (SC)	6.21
Thin AC (TAC)	71.24

The FWP summary is shown below

Westland DC - Total	2019/20	2020/21	10 year FWP 21/22 – 30/31	
	km	**km**	**Annual Length km**	**Annual Cost**
POT RHAB	0	0	0.00	$0
PROJ	0	0	0.00	$0
RHABCS	0	0	0.00	$0
RSB	21.78	19.67	23.46	$888,005
RSM	0	0	0.34	$12,621
RSS	0	0	1.33	$81,562
SC	1.98	6.68	0.00	$27,406
TAC	0	0.14	0.12	$146,864
Grand Total	**23.76**	**26.497**	**25.25**	**$1,156,458**

Westland DC SPR	2019/20	2020/21	10 year FWP 21/22 – 30/31	
	km	**km**	**Annual Length km**	**Annual Cost**
POT RHAB	0	0	0.00	$0
PROJ	0	0	0.00	$0
RHABCS	0	0	0.00	$0
RSB	5.09	6.911	2.07	$111,490
RSM	0	0	0.04	$1,383
RSS	0	0	0.00	$0
SC	0	0.999	0.00	$3,412
TAC	0	0	0.00	$0
Grand Total	**5.09**	**7.91**	**2.11**	**$116,285**

Westland DC Local Roads	2019/20	2020/21	10 year FWP 21/22 – 30/31	
Excl SPR	**km**	**km**	**Annual Length km**	**Annual Cost**
POT RHAB	0	0	0.00	$0
PROJ	0	0	0.00	$0
RHABCS	0	0	0.00	$0
RSB	16.69	12.76	21.38	$776,515
RSM	0	0	0.30	$11,238
RSS	0	0	1.33	$81,562
SC	1.98	5.68	0.00	$23,994
TAC	0	0.14	0.12	$146,864
Grand Total	**18.67**	**18.5**	**23.14**	**$1,040,173**

The summary shows a total average renewal requirement of $1.15M for the 10-year FWP. Note this averages $1.2M for the first five years due to more of the AC programme being undertaken in this period. The second five years averages some $1.1M per year.

This excludes any allowance for pavement renewals in the programme at this stage. An allowance of 0.5 km per year (0.13%) would require an additional $0.2M per year based on the unit rate of $45 per m2.

Appendix 9: Road Structures Lifecycle Management Plans, WSP, 2020

Provided separately as part of the West Coast submission to Waka Kotahi.

Appendix 10 Network and Activity/Asset Management Detailed Budgets

Detailed budgets for Work Category 003 Activity Management Planning and 151 Network and Asset Management are provided below.

Buller District WC151 Network and Asset Management Detailed Budget (Local Roads & SPR Combined)

Type	Item	2021/22	2022/23	2023/24	Total	Comments
Professional Service Business Unit	Staff & administration	$222,675	$222,675	$222,675	**$668,026**	2018-21 budget has not reflected actual staffing and overhead costs.
Asset Management	RAMM management	$20,000	$20,000	$20,000	**$60,000**	Increased in-house function with specialist external support as required.
	Traffic counting	$16,300	$16,300	$16,300	**$48,900**	Standard monthly fee.
	HSD roughness, rutting & texture	$31,500	-	$31,500	**$63,000**	
	RAMM rating	-	$30,000	-	**$30,000**	Including footpaths, assumes repeat of data collected in 2020/21.
	Falling weight deflectometer	-	$26,000	-	**$26,000**	
	RAMM licensing	$30,850	$32,392	$34,012	**$97,254**	5% increase per annum.
	Pocket RAMM rental	$9,000	$9,450	$9,922	**$28,372**	5% increase per annum.
	Pocket RAMM contractor	$2,500	$2,625	$2,756	**$7,881**	5% increase per annum.
	ONRC inspections	$9,660	$9,660	$9,660	**$28,980**	Could be undertaken by in-house and/or contractor staff.
	Bridge inspections	$45,000	$50,000	-	**$95,000**	
	Contract review(s) (or similar)	-	-	$5,000	**$5,000**	Maintenance contract extension review.
	Asset revaluation	$30,000	-	-	**$30,000**	Via RAMM, last 2018/19 as at June 2019.
	AMDS implementation	-	-	-	**-**	Unbudgeted
Consultant Fees	Strategies and Plans	$25,000	$25,000	$25,000	**$75,000**	Multi-modal focus.
	Professional services	$10,000	$10,000	$10,000	**$30,000**	
	River protection works	$10,000	$10,000	$10,000	**$30,000**	
	Overweight & HPMV assessments	$16,000	$16,000	$16,000	**$48,000**	
	Bridge investigations projects	$15,000	$15,000	$15,000	**$45,000**	
	SPR bridge business cases	$30,000	-	-	**$30,000**	
	Special projects	-	-	-	**-**	Unbudgeted
	Business Cases	-	$100,000	-	**$100,000**	SPR future investment programme.
	Business System improvements	$7,500	-	-	**$7,500**	Procurement systems and process improvements.
	Procurement support	-	-	-	**-**	Covered by IHPS.
Others (Network Management)	CAR Manager notifications	$3,150	$3,150	$3,150	**$9,450**	
	Advertising	$1,500	$1,500	$1,500	**$4,500**	
TOTAL WC151		**$535,635**	**$599,752**	**$432,476**	**$1,567,864**	

Buller District WC003 Activity Management Planning Detailed Budget (Local Roads & SPR Combined)

Improvement Programme Item	2021/22	2022/23	2023/24	Total	Comments
Programme Management	$20,000	$20,000	$20,000	**$60,000**	Combined 1/3 share
2024-27 Combined West Coast Transport PBC & AMP (3rd generation)	-	$25,000	$15,000	**$40,000**	Combined 1/3 share
Asset management policy (combined)	$5,000	-	-	**$5,000**	Combined 1/3 share
Common customer satisfaction & road user feedback system	-	$7,500	-	**$7,500**	Combined 1/3 share
Establish levels of service targets & implementation plans	$7,500	-	-	**$7,500**	Combined 1/3 share
Asset performance and service gap analysis	$7,500	-	-	**$7,500**	Combined 1/3 share
Development of Network Operating Plan(s)	-	$7,500	-	**$7,500**	Combined 1/3 share
Risk management, climate change, resilience, critical assets	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
ONRC Road Closure & Access Measures	$10,000	-	-	**$10,000**	Combined 1/3 share
Bridge management system (lifecycle)	$35,000	-	-	**$35,000**	Combined 1/3 share
Bridge lifecycle management plan (2nd generation)	-	$15,000	-	**$15,000**	Combined 1/3 share
Maintenance intervention strategies (MIS)	$15,000	$15,000	-	**$30,000**	Combined 1/3 share – scope: unsealed roads, drainage, footpaths, cycleways, traffic services.
20-Year Forward Work Plan development (2nd generation)	-	$10,000	$10,000	**$20,000**	Combined 1/3 share – includes incremental improvement
Data quality improvement activities and tools	$30,000	$30,000	-	**$60,000**	Combined 1/3 share
REG ONF implementation	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
Capability & Collaboration implementation & transition	$15,000	$15,000	-	**$30,000**	Combined 1/3 share
Procurement Strategy (combined)	$10,000	-	-	**$10,000**	Combined 1/3 share
TOTAL WC003	**$175,000**	**$165,000**	**$45,000**	**$385,000**	

Grey District WC151 Network and Asset Management Detailed Budget (Local Roads & SPR Combined)

Type	Item	2021/22	2022/23	2023/24	Total	Comments
Professional Service Business Unit	Staff & administration	$300,000	$300,000	$300,000	**$900,000**	2018-21 budget has not reflected actual staffing and overhead costs.
Asset Management	RAMM management	$30,000	$30,000	$30,000	**$90,000**	Based on new continuous service agreement.
	Traffic counting	$20,000	$20,000	$20,000	**$60,000**	Recently engaged AgFirst.
	HSD roughness, rutting & texture	$34,000	-	$34,000	**$68,000**	
	RAMM rating	-	$20,000	-	**$20,000**	Excludes footpaths, assumes repeat of 2020/21 work completed by Stantec.
	Footpath rating	-	$10,000	-	**$10,000**	Repeated by previous provider.
	Falling weight deflectometer	-	$16,000	-	**$16,000**	
	RAMM licensing	$30,850	$32,392	$34,012	**$97,254**	5% increase per annum.
	Pocket RAMM rental	$9,000	$9,450	$9,922	**$28,372**	5% increase per annum.
	Pocket RAMM contractor	$2,500	$2,625	$2,756	**$7,881**	5% increase per annum.
	ONRC inspections	-	-	-	**-**	Undertaken by in-house staff.
	Bridge inspections	$60,000	$60,000	$60,000	**$180,000**	
	Contract review(s) (or similar)	-	-	$5,000	**$5,000**	Maintenance contract extension review.
	Asset revaluation	-	-	$30,000	**$30,000**	Inaugural via RAMM, last 2019/20.
	AMDS implementation	-	-	-	**-**	Unbudgeted
Consultant Fees	Strategies and Plans	$25,000	$25,000	$25,000	**$75,000**	Multi-modal focus.
	Overweight & HPMV assessments	$10,000	$10,000	$10,000	**$30,000**	Partially completed in-house.
	Bridge investigations projects	$15,000	$15,000	$15,000	**$45,000**	Post inspection, pre-design investigations.
	Business Cases	$20,000	$20,000	$20,000	**$60,000**	
	Procurement support	-	-	-	**-**	Covered by IHPS.
Others (Network Management)	CAR Manager notifications	$3,150	$3,150	$3,150	**$9,450**	5% increase to $262.50 per month.
	Advertising	$1,000	$1,000	$1,000	**$3,000**	
TOTAL WC151		**$560,500**	**$574,617**	**$599,840**	**$1,734,958**	

Grey District WC003 Activity Management Planning Detailed Budget

Improvement Programme Item	2021/22	2022/23	2023/24	Total	Comments
Programme Management	$20,000	$20,000	$20,000	**$60,000**	Combined 1/3 share
2024-27 Combined West Coast Transport PBC & AMP (3rd generation)	-	$25,000	$15,000	**$40,000**	Combined 1/3 share
Asset management policy (combined)	$5,000	-	-	**$5,000**	Combined 1/3 share
Common customer satisfaction & road user feedback system	-	$7,500	-	**$7,500**	Combined 1/3 share
Establish levels of service targets & implementation plans	$7,500	-	-	**$7,500**	Combined 1/3 share
Asset performance and service gap analysis	$7,500	-	-	**$7,500**	Combined 1/3 share
Development of Network Operating Plan(s)	-	$7,500	-	**$7,500**	Combined 1/3 share
Risk management, climate change, resilience, critical assets	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
ONRC Road Closure & Access Measures	$10,000	-	-	**$10,000**	Combined 1/3 share
Bridge management system (lifecycle)	$35,000	-	-	**$35,000**	Combined 1/3 share
Bridge lifecycle management plan (2nd generation)	-	$15,000	-	**$15,000**	Combined 1/3 share
Maintenance intervention strategies (MIS)	$15,000	$15,000	-	**$30,000**	Combined 1/3 share – scope: unsealed roads, drainage, footpaths, cycleways, traffic services.
20-Year Forward Work Plan development (2nd generation)	-	$10,000	$10,000	**$20,000**	Combined 1/3 share – includes incremental improvement
Data quality improvement activities and tools	$30,000	$30,000	-	**$60,000**	Combined 1/3 share
REG ONF implementation	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
Capability & Collaboration implementation & transition	$15,000	$15,000	-	**$30,000**	Combined 1/3 share
Procurement Strategy (combined)	$10,000	-	-	**$10,000**	Combined 1/3 share
TOTAL WC003	**$175,000**	**$165,000**	**$45,000**	**$385,000**	

Westland District WC151 Network and Asset Management Detailed Budget (Local Roads & SPR Combined)

Type	Item	2021/22	2022/23	2023/24	Total	Comments
Professional Service Business Unit	Staff & administration	$339,229	$339,229	$339,229	**$1,017,688**	2018-21 budget has not reflected actual staffing and overhead costs.
	SPR – Internal Fixed	$25,664	$25,664	$25,664	**$76,992**	Proportion based on SPR network length.
Asset Management	RAMM management	$30,000	$30,000	$30,000	**$90,000**	Based on new continuous service agreement.
	Traffic counting	$20,000	$20,000	$20,000	**$60,000**	Initial estimate – undertaken by maintenance contractor.
	HSD roughness, rutting & texture	$38,000	-	$38,000	**$76,000**	
	RAMM rating	-	$20,000	-	**$20,000**	Excludes footpaths, assumes repeat of 2020/21 work completed by Stantec.
	Falling weight deflectometer	-	$26,000	-	**$26,000**	
	RAMM licensing	$30,850	$32,392	$34,012	**$97,254**	5% increase per annum.
	Pocket RAMM rental	$9,000	$9,450	$9,922	**$28,372**	5% increase per annum.
	Pocket RAMM contractor	$2,500	$2,625	$2,756	**$7,881**	5% increase per annum.
	ONRC inspections	-	-	-	**-**	Undertaken by in-house staff.
	Bridge inspections	$60,000	$60,000	-	**$120,000**	
	Contract review(s) (or similar)	-	-	-	**-**	
	Asset revaluation	-	$40,000	-	**$40,000**	Via RAMM.
	AMDS implementation	-	-	-	**-**	Unbudgeted
Consultant Fees	Strategies and Plans	$25,000	$25,000	$25,000	**$75,000**	Hokitika CBD and multi-modal focus.
	Overweight & HPMV assessments	$20,000	$20,000	$20,000	**$60,000**	
	Bridge investigations projects	$25,000	$25,000	$25,000	**$75,000**	
	Procurement support	-	-	-	**-**	Covered by IHPS.
Others (Network Management)	CAR Manager notifications	-	-	-	**-**	Covered by IHPS.
	Advertising	$2,500	$2,500	$2,500	**$7,500**	
TOTAL WC151		**$627,743**	**$687,861**	**$572,084**	**$1,887,689**	

Westland District WC003 Activity Management Planning Detailed Budget (Local Roads & SPR Combined)

Improvement Programme Item	2021/22	2022/23	2023/24	Total	Comments
Programme Management	$20,000	$20,000	$20,000	**$60,000**	Combined 1/3 share
2024-27 Combined West Coast Transport PBC & AMP (3rd generation)	-	$25,000	$15,000	**$40,000**	Combined 1/3 share
Asset management policy (combined)	$5,000	-	-	**$5,000**	Combined 1/3 share
Common customer satisfaction & road user feedback system	-	$7,500	-	**$7,500**	Combined 1/3 share
Establish levels of service targets & implementation plans	$7,500	-	-	**$7,500**	Combined 1/3 share
Asset performance and service gap analysis	$7,500	-	-	**$7,500**	Combined 1/3 share
Development of Network Operating Plan(s)	-	$7,500	-	**$7,500**	Combined 1/3 share
Risk management, climate change, resilience, critical assets	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
ONRC Road Closure & Access Measures	$10,000	-	-	**$10,000**	Combined 1/3 share
Bridge management system (lifecycle)	$35,000	-	-	**$35,000**	Combined 1/3 share
Bridge lifecycle management plan (2nd generation)	-	$15,000	-	**$15,000**	Combined 1/3 share
Maintenance intervention strategies (MIS)	$15,000	$15,000	-	**$30,000**	Combined 1/3 share – scope: unsealed roads, drainage, footpaths, cycleways, traffic services.
20-Year Forward Work Plan development (2nd generation)	-	$10,000	$10,000	**$20,000**	Combined 1/3 share – includes incremental improvement
Data quality improvement activities and tools	$30,000	$30,000	-	**$60,000**	Combined 1/3 share
REG ONF implementation	$10,000	$10,000	-	**$20,000**	Combined 1/3 share
Capability & Collaboration implementation & transition	$15,000	$15,000	-	**$30,000**	Combined 1/3 share
Procurement Strategy (combined)	$10,000	-	-	**$10,000**	Combined 1/3 share
TOTAL WC003	**$175,000**	**$165,000**	**$45,000**	**$385,000**	