

2018-2028 TRANSPORTATION ASSET MANAGEMENT PLAN
He Rautaki Whakahaere Rawa mō Ngā Ara Kawenga

STRATEGIC CASE GENERAL VOLUME KAUPAPA RAUTAKI (HE PUKAPUKA MATUA)



Mountain to Sea
Te Kaunihera-ā-Rohe o Ngāmotu
NEW PLYMOUTH DISTRICT COUNCIL
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AAPA	Australian Asphalt Pavement Association	MOTSAM	Manual of Traffic Signs and Markings
ADDT	Annual Average Daily Traffic	NAASRA	National Association of Australian State Roading Authority
AEP	Annual Exceedance Probability	NAS	National Asphalt Association
AMP	Asset Management Plan	NLTP	National Land Transport Plan
AP	Annual Plan	NPDC	New Plymouth District Council
Capex	Capital Expenditure	NRB	National Research Bureau
CBD	Central Business District	NZTA	New Zealand Transport Agency
CCTV	Closed Circuit Television	O&M	Operations and Maintenance
CE	Chief Executive	ONRC	One Network Road Classification
CI	Condition Index	Opex	Operational Expenditure
Communitrak	Annual survey performed by NRB	PBC	Programme Business Case
COO	Chief Operating Officer	PII	Pavement Integrity Index
DoIA	Department of Internal Affairs	RAMM	Roading Asset Maintenance & Management
DSI	Deaths and Serious Injuries	RCA	Road Controlling Authority
dTIMS	Deighton Total Infrastructure Management System	REG	Roading Efficiency Group
EAM	Enterprise Asset Management	RLTP	Regional Land Transport Plan
ECM	Enterprise Content Management	RRPM	Raised Reflective Pavement Marker
EMP	Edge Marker Post	RTS	Road Traffic Standards
FAR	Funding Assistance Rate	RUL	Remaining Useful Life
GCRC	Gross Current Replacement Cost	SCATS	Sydney Coordinated Adaptive Traffic Systems
GPS	Government Policy Statement	SDC	Stratford District Council
HGV	Heavy Goods Vehicle	SH	State Highway
HPMV	High Productivity Motor Vehicles	SPR	Special Road
ILM	Investment Logic Map	STDC	South Taranaki District Council
IS	Infrastructure Strategy	STE	Smooth Travel Exposure
KiwiRAP	New Zealand Road Assessment Programme	TA	Territorial Authority
KPI	Key Performance Indicator	TNZ	Transit New Zealand
LED	Light Emitting Diode	TRC	Taranaki Regional Council
LoS	Level of Service	TSA	Treatment Selection Algorithm
LTMA	Land Transport Management Act 2003	UDC	Urban Development Capacity
LTP	Long Term Plan	VKT	Vehicle Kilometres Travelled
LTSV	Long Term Strategic View	VPD	Vehicles per Day
MoT	Ministry of Transport	WC	Work Category

This General Transportation Asset Management Plan (AMP) outlines how we will deliver the services required for the district's ratepayers and road users to go about everyday business and life. Within the plan, we define the key problems affecting the district's transport activities and the benefits of investment to address those problems. We outline how proposed works fit with the district's community outcomes, regional transport strategies and the Government Policy Statement on transport. We also detail the level of investment required and how we will measure the success of our activities.

In this AMP, we outline our strategic approach to transportation and detail the transport investment planned in a programme of works for the district. We have developed this programme by building a strategic case and a series of programme cases articulating what will be done to address defined Problems. This approach helps us and our co-investor, the New Zealand Transport Agency, determine that we are doing the right work at the right time, for the right reasons.

To inform the AMP we have completed two Investment Logic Mapping (ILM) processes. The first, Keeping New Plymouth Moving and Growing, focused on the implications of the district's high growth and the strategic responses required over the next 30 years. While the available evidence supports the Problems identified, we recognise that there are gaps in the evidence, particularly in relation to how the network as a whole will perform with increasing traffic volumes and the potential impact on travel times. To contribute to the overall understanding of the causes and effects of each problem and the options available, we require an in-depth network modelling exercise. Modelling the network and applying the current growth predictions will allow decision makers to effectively identify the best value for money when allocating investment toward the solutions to problems identified.

The second ILM, Operations and Maintenance, focused on levels of service over the next 10 years. Operations, maintenance, renewal and minor improvements to assets is essential if the network is to remain in a safe and fit-for purpose condition and meet community expectations. It is also prudent to consider whole-of-life costs to maximise asset life and minimise costs. This is achieved by investing at the right time, in the right places and on the right activities as well as providing efficiency gains and value for money.

Considered in unison, the two ILMs guide the strategic context and operational detail of this AMP. The full ILMs can be found in Appendices 2 and 3.

A one page overview of the AMP including the identified Problems, strategic response and the programme business cases that links to each of the detailed expenditure forecast categories can be found in Appendix 12.

Expenditure Forecast Highlights

- Total network GCRC (excluding land) is \$777.3m.
- The overall 10-year expenditure forecast for the 2018-28 LTP totals \$283.8m.
- The overall 3-year expenditure forecast for the 2018-21 NLTP totals \$83.3m.
- Subsidies (NZTA and others) for the 2018-21 NLTP is forecast at \$28.9m (34.7% of total expenditure).

No Enhancement Case

The programmes included in the AMP seek funding for a Core Programme level of investment. Therefore, there is no commentary included to demonstrate the rationale and evidence of the value proposition for an enhanced funding request.

The AMP formed part of the supporting documentation submitted to NZTA in November 2017 for our 2018-2021 NLTP bid for subsidies. The content of the AMP was assessed and accepted by NZTA in early 2018 and on 01 May 2018 the Chief Executive of NZTA confirmed that the Transportation Agency Board endorsed the indicative investment included in the AMP and it will form part of the NLTP to be adopted on 31 August 2018.

Note: All financial forecasts are shown in inflation adjusted dollar values.

2. DISTRICT OVERVIEW

An overview of the location of the district is shown in the map in Figure 1.

Figure 1 District location map



2. DISTRICT OVERVIEW

2.1 Population & growth

With a population of 83,400 in 2018, the New Plymouth district has approximately two thirds of Taranaki's population. Statistics New Zealand projections are for 'high' growth in the district through to 2021 and 'medium-high' growth until 2048. If these forecasts are accurate, the district will grow by 27 per cent- to 106,100 by 2048.

Previous projections for the district were for a static or declining population. The increase in expected population has required a significant shift in our thinking and focus on long-term planning.

The age profile within the New Plymouth district is also changing over time. We anticipate an increase in the number of people aged 65 and over, from 18 per cent (15,000) of the total population in 2018, to approximately 25 per cent (26,500) in 2048. This shift may bring an increased demand for infrastructure that is highly accessible, and will likely mean a greater proportion of the population will be on a fixed income.

2.2 Economic growth

Driven by the oil and gas and agriculture sectors and the associated secondary industries, such as food processing and engineering, Taranaki's economy is expected to grow at the same rate as the national economy over the next 10 years. Continued activity in the oil and gas and agriculture sectors will continue to place pressure on infrastructure such as Port Taranaki and the Airport. It will also continue to place pressure on the roading network that connects these sites with production sites and with northern and southern corridors.

2.3 Transportation Assets Summary

The total quantities and value of our transportation assets is shown in Table 1.

Table 1 The category, quantity and value of our transportation assets

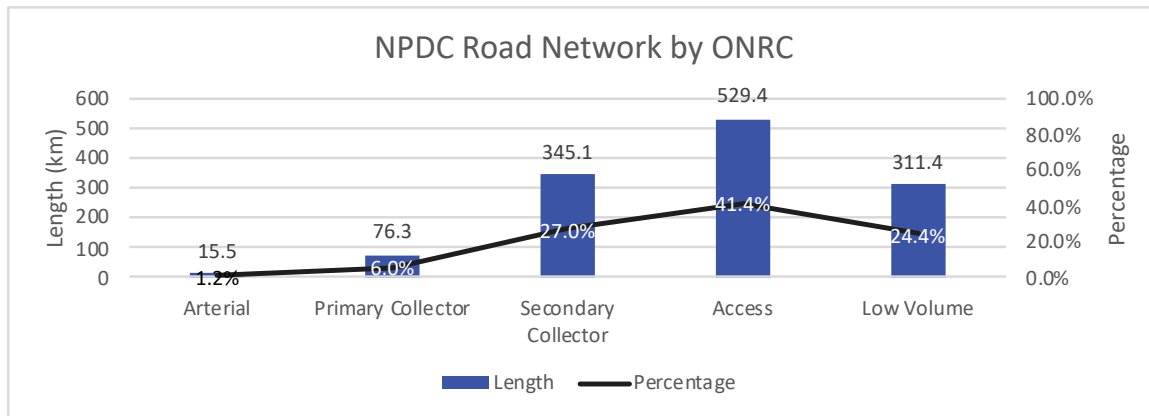
AMP Volume		Quantity	Gross Current Replacement Cost (GCRC) (\$)	Annual Depreciation (\$)	Optimised Depreciated Replacement Cost (ODRC) (\$)
1	Land Value	220,218 ha	579,345,832	-	579,345,832
1		1,278 km	470,357,898	6,048,165	343,846,482
2	Bridges & Large Culverts	272 No	121,430,679	1,369,001	47,037,317
2	Retaining Walls	354 No	21,006,374	299,023	15,433,780
3	Footpaths	529 km	69,905,118	908,690	39,303,403
4	Storm water Drainage Culverts	61 km	23,606,978	327,480	7,785,644
4	Surface Water Channels	577 km	38,457,562	480,787	19,228,781
5	Traffic Facilities	various	27,131,320	1,460,122	10,012,055
6	Street Furniture	various	5,435,364	261,335	2,999,407
Totals			1,356,677,125	11,154,603	1,064,992,701

2. DISTRICT OVERVIEW

We have recently applied the One Network Road Classification (ONRC) to the district's roads. Developed by the Roothing Efficiency Group which is a joint local government and NZ Transport Agency initiative, the ONRC provides a consistent framework to classify all New Zealand roads. Its national classification system, customer outcomes, and performance measures focus on the road user. The ONRC is explained in Appendix 1.

The graph in Figure 2 shows the classification of the district's existing roads in accordance with the ONRC framework.

Figure 2 ONRC Categories by length



2.4 Organisational Structure

A range of staff are involved in preparing and delivering the AMP and providing support services for asset management. How these responsibilities are allocated, managed and delivered is shown in the hierarchical diagram in Table 2.

Table 2 Organisational structure

	Elected Members (Council)		
	Approval of key resolutions, policy, LTP, AP and AMPs to ensure Council's responsibilities to the community are being met in an effective and efficient way.		
Tier 1	Chief Executive		
	Overall management of the organisation's activities to ensure Council objectives are met.		
Tier 2	Chief Operating Officer Manages delivery the services and plans defined in the asset management plans.	Group Strategy Manager Manages production of our LTP, 30-year Blueprint and District Plan.	Chief Financial Officer Manages our information technology services, legal services, records management, property assets, payroll, accounts, rates, procurement and risk management.
Tier 3	Infrastructure Manager Manages day-to-day operations, maintenance, renewal and augmentation of the transportation system in accordance with the NLTP, LTP, AP and AMP. Overall management of resources to achieve plans including balance of internal and contract resources. Providing advice and guidance on tactical infrastructure asset management to the COO and CE.	Infrastructure Planning Lead Preparation of strategic asset management plans, asset management objectives, levels of service and the Infrastructure Strategy.	Information Services Manager Support and solutions development for asset management software and systems.
			Business Services Manager Preparation and monitoring of financial budgets and targets related to asset management planning.
Tier 4	Asset Operations Planning Lead Preparation of the tactical aspects of the AMPs, maintaining the asset inventory and asset records, developing annual work programmes, conducting asset condition assessments and asset valuations.		
	Manager Transportation Delivery of day-to-day operations, maintenance and minor renewals of the transportation network. Management of internal and contract resources.		
	Manager Infrastructure Projects Delivery of major projects and technical investigations for the renewal and augmentation of the transportation network.		

3.1 New Plymouth District Council (NPDC)

Strategic Direction, Community Outcomes and Key Directions

Our strategic direction is:

*Building a lifestyle capital:
He Whakatūtū Haupū Rawa Hei Āhua Noho
Putting people first, caring for our place, and supporting a prosperous community.*

Our Community outcomes are:

- **PEOPLE/He Tangata:** Putting people first / Aroha ki te Tangata.
We're here to support our community and put them first. We're people friendly, focused on excellent customer service and having real time conversations. People are our priority.
- **PLACE/ Tiakina:** Caring for our place / Manaaki whenua, manaaki tangata, haere whakamua.
Our place is a beautiful natural landscape and we want to protect it for future generations. We value biodiversity and have a strong focus on sustainability. Our people love to be active and enjoy an outdoors lifestyle.
- **PROSPERITY/ Āwhina:** Supporting a prosperous community / Awhi mai Awhi atu, tātou katoa.
We support a vibrant economy. We invest in resilient infrastructure, amenities and services, to support industry and development. It's easy to do business here.

To achieve our strategic direction and community outcomes our key directions are:

- **Environment:** Enhance the natural environment with biodiversity links and clean waterways
- **Communities:** Strengthen and connect local communities
- **Citizens:** Enable engaged and resilient citizens
- **Growth:** Direct a cohesive growth strategy that strengthens the city and townships

- **Industry:** Strengthen and manage rural economy, industry, the port and airport
- **Talent:** Grow and diversify new economies that attract and retain entrepreneurs, talented workers and visitors
- **Central City:** Champion a thriving central city for all
- **Destination:** Become a world-class destination

National Policy Statement on Urban Development Capacity 2016 (NPS-UDC)

The NPS-UDC defines New Plymouth District as a high growth area, with approximately 10% forecast population growth projected between 2013 and 2023. As a result, we are required to 'unlock' new growth areas. The development of new growth areas will both exacerbate existing problems in the transportation network and create new pressures.

3.2 Taranaki Regional Council (TRC)

TRC's Regional Land Transport Plan for Taranaki 2015-2020 has seven key transportation focused objectives as detailed in Table 3. TRC's objectives and the Problems and Benefits we identified as a part of our IML mapping processes (see Section 1) are closely aligned.

Table 3 TRC RLTP 2015-2020 transportation objectives

Number	Issues	Objectives
1	Ensuring a regionally and nationally integrated transport network	An integrated and collaborative approach to transport and land use planning that maximises transport effectiveness.
2	Facilitating growth and economic development	An effective, efficient and resilient land transport system that enhances economic wellbeing, growth and productivity in the Taranaki region and beyond.
3	Reducing the safety risk on Taranaki's transport network	A safe transport network increasingly free of death and serious injury.
4	Maintaining and improving accessibility and travel options throughout the region	A people-focused, multi-modal land transport system that caters for the different and changing needs of transport users, connects communities and enables participation.

5	Ensuring network resilience and responsiveness in the context of internal and external pressures	A land transport system that is robust, responsive to changing needs and resilient to external influences.
6	Reducing negative environmental and community impacts arising from transport	An energy efficient and environmentally sustainable land transport system
7	Addressing these issues in an environment of constrained funding and affordability yet rising costs	An adaptable and flexible approach to managing and developing the land transport system that optimises funding options to best meet the needs of the region in an affordable way.

3.3 New Zealand Transport Agency (NZTA)

The NZTA website highlights the following key strategic responses for Taranaki:

1. Maintaining the network.

Keeping land transport networks available for people to get where they want to go easily, reliably and safely is a primary objective of transport investment within and beyond the Taranaki region.

2. Integrated transport planning.

The Transport Agency and New Plymouth District Council are working closely to understand the transport network impacts of residential growth north of the city between Bell Block and the airport.

3. Investing in inter-regional freight efficiency.

Investment in HPMV routes, safety and resilience projects becomes more important to the freight task.

4. Encouraging cycling and walking.

Cycling investment over the next three years is expected to concentrate on encouragement and education, with the aim of maintaining their high rates of active transport to schools, currently at 69%. Under current proposals, some of the key arterial cycling routes will also be strengthened by widening and/or improving cycle lanes.

5. Growing public transport.

Together with Taranaki Regional Council, the Transport Agency has invested in providing residents with viable alternative transport options. This has proved successful, with 21% growth recorded in public transport use over the last three years. \$9m of investment is planned to consolidate this growth.

6. Making journeys safer.

The range of projects on State Highway 3 will improve safety on this key route, while continued investment in cycling and walking will further improve safety for these transport modes in Taranaki.

The transportation related objectives of both TRC and NZTA are also closely aligned. The two sets of high level Benefits identified in our Investment Logic Mapping processes will greatly assist NZTA and TRC to achieve these objectives.

There is no misalignment between the organisational goals of our two key partners and the investment Benefits we have identified.

3. STRATEGIC CONTEXT

3.4 Long Term Strategic View

NZTA's Long Term Strategic View (LTSV) provides a long range view of New Zealand's land transport system, the priority challenges and opportunities it faces, and the interventions needed to enhance it. It is the first step towards developing a shared view that will allow stakeholders in the sector to work more effectively together in shaping the future of the transportation system.

The LTSV focuses on strategic context, inter-regional journeys, growth centres and regional economic development areas. Because New Plymouth has been identified as a growth centre, the LTSV includes a section dedicated to our district's local issues, incorporating how these issues will be addressed (as shown in the table below).

Table 4 LTSV focus areas, identified issues and solutions

Focus Areas	Identified Issues	Solutions
<ul style="list-style-type: none"> • Inter-regional journeys 	<ul style="list-style-type: none"> • Poor urban travel time predictability (Northgate and single Waiwhakaiho River Crossing) 	<ul style="list-style-type: none"> • SH3 – Mt Messenger and Awakino Gorge Improvement Project
<ul style="list-style-type: none"> • Growth centres 	<ul style="list-style-type: none"> • Significant resilience issues (Northgate and single Waiwhakaiho River Crossing) 	<ul style="list-style-type: none"> • SH3 Waitara – Bell Block Improvement Project
<ul style="list-style-type: none"> • Regional economic development areas 	<ul style="list-style-type: none"> • Safety high risk urban corridors (SH3 Bell Block to Waitara) 	<ul style="list-style-type: none"> • Keeping New Plymouth Moving & Growing Business Case
<ul style="list-style-type: none"> • Expected population growth areas (Area Q, Areas K/L) 		<ul style="list-style-type: none"> • Transport System-Wide Interventions: support development of New Plymouth Network Operating Framework as a tool for optimising performance
<ul style="list-style-type: none"> • Expected business growth areas (Areas N and R) 		
<ul style="list-style-type: none"> • Existing employment centres (CBD, the Valley, De Havilland Drive Area) 		



3.5 Summary of Alignment to Existing Strategies & Organisational Goals

Table 5 shows a summary of the existing transportation strategies and organisational goals with commentary on each item.

Table 5 Summary of existing transportation strategies and organisational goals

Organisation	Organisational Strategies	Comments
Ministry of Transport (MoT)	Government Policy Statement (GPS) on land transport 2015/16-2024/25	MoT has stated that the overall strategic direction for land transport under the GPS is to drive improved performance from the land transport system by focussing on economic growth and productivity, road safety and value for money.
		The Benefits and attributes identified in the Investment Logic Mapping processes of improved network performance, efficiency and safety closely align with the objectives of the GPS.
NZ Transport Agency (NZTA)	National Land Transport Programme 2015-2018 (NLTP)	NZTA has identified the need to unlock economic productivity in Taranaki by way of a three year financial package.
		The Benefits and attributes identified in the Investment Logic Mapping processes of improved network performance, efficiency and safety closely align with the objectives of NZTA's NLTP.
NZ Transport Agency (NZTA)	Land Transport Strategic Vision (LTSV)	Ensuring that the issues faced by the district are reflected and supported in the LTSV so that coordinated responses can be planned e.g. Airport Drive Improvement Project to be coordinate with the SH3 Waitara – Bell Block Improvement Project and the growth areas at Area Q and Area K/L.
Taranaki Regional Council	Regional Land Transport Plan for Taranaki 2015-2020 (RLTP)	The RLTP has identified the following as priorities: <ul style="list-style-type: none"> • An effective, efficient and resilient land transport system that enhances economic wellbeing, growth and productivity; • A safe transport network increasingly free of death and serious injury; and • A people focussed, multi-modal land transport system.
		The Benefits and attributes identified in the Investment Logic Mapping processes of efficiency, improved economic outcomes, safety and multi-modal directly address these RLTP priorities.
New Plymouth District Council	District Blueprint (30 year spatial plan)	The District Blueprint and subsequently the Draft District Plan have identified areas to accommodate New Plymouth's growth over the next 30 years.
	Draft District Plan (encompasses Framework for Growth 2008)	The Benefits and attributes identified in this Investment Logic Mapping process address the key issues that are likely to be exacerbated as New Plymouth grows.
Venture Taranaki	Taranaki's Regional Economic Development Strategy 2010-2035	Sets out the goal "To connect Taranaki locally, nationally and internationally" to enable economic growth. A review of the Taranaki road, rail and air gateways was identified to assist in the delivery of the above goal. This reinforces the need for an effective and efficient roading network if growth is to be supported.

3.6 Strategic Fit (medium)

The Problems and Benefits identified in our ILM processes align strategically very well with the Government Policy Statement 2015/16-2024/25, and with NZTA's Strategic Fit for Investment Management guidance. This alignment is evident in Table 6.

Table 6 Alignment of Strategic Case with the GPS and LTMA

Government Policy Statement	Keeping New Plymouth Moving and Growing ILM	Operations & Maintenance ILM
<p><i>2015/16-2024/25 (GPS)</i></p> <ul style="list-style-type: none"> Economic growth and productivity Road safety Value for money <hr/> <p><i>Land Transport Management Act 2003 (LTMA)</i></p> <p>The purpose of this Act is to contribute to a land transport system that is:</p> <ul style="list-style-type: none"> Effective Efficient Safe 	<p>Key Benefits:</p> <ul style="list-style-type: none"> Improved network performance. Improved safety. Improved economic outcomes. More viable transport choices. 	<p>Key Benefits:</p> <ul style="list-style-type: none"> An easy to understand and efficient (economically viable) network for all transport modes. A resilient network. A safe network.

4. DEFINING THE PROBLEMS & CONSEQUENCES

We have explored land transportation problems and consequences for the district at both a strategic level (Keeping New Plymouth Moving and Growing Investment Logic Mapping) and at a tactical level (Operations, Maintenance, Renewals and Minor Improvements Investment Logic Mapping). Combined, this mapping forms a complete picture of the challenges ahead, from the high level to the detail.

4.1 Keeping New Plymouth Moving and Growing – High Level Investment Logic Map (ILM)

To gain a better understanding of current issues we facilitated an ILM workshop with key strategic stakeholders in September 2016. The stakeholder panel identified and agreed on the following key strategic problems:

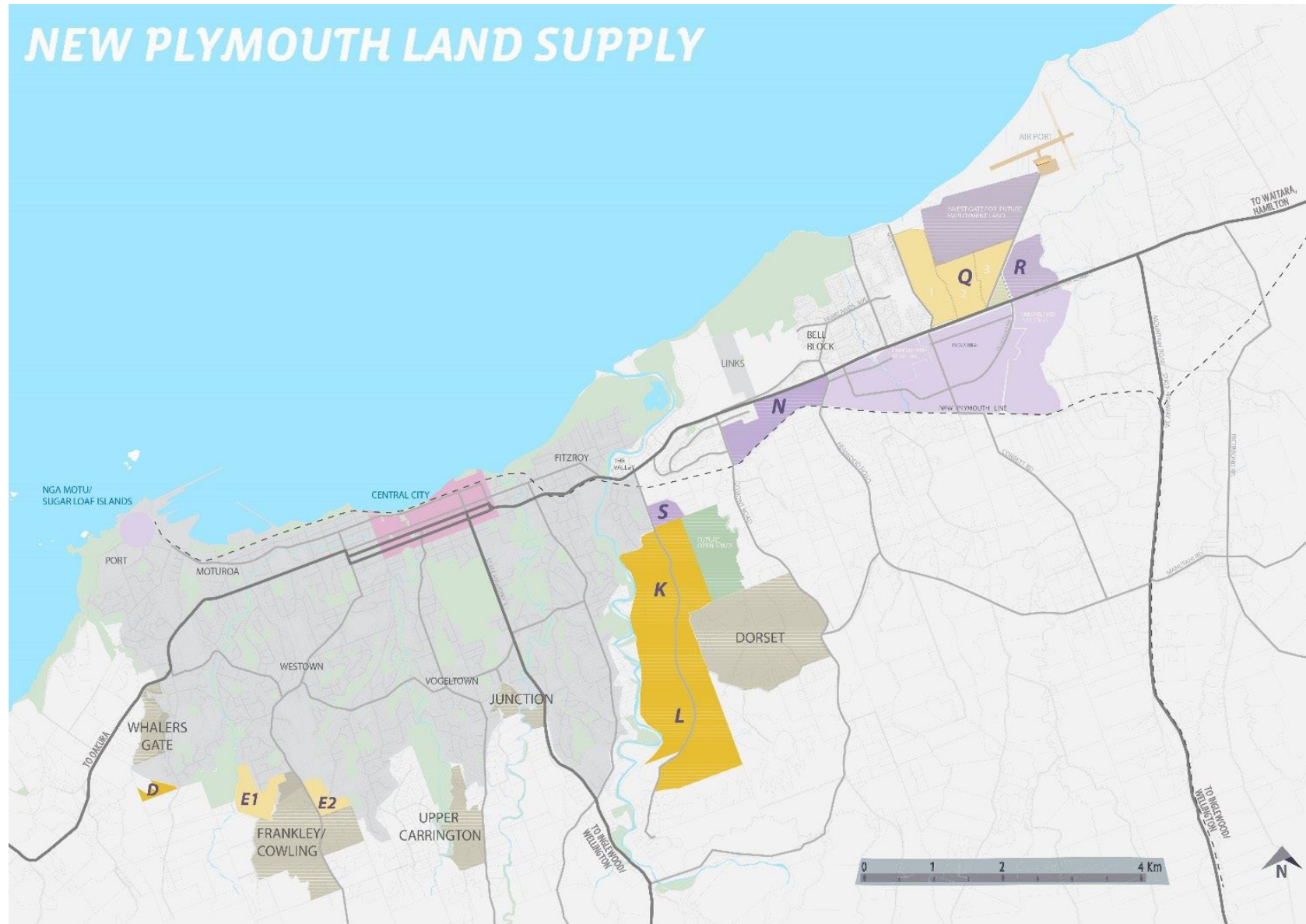
Problem one: Capacity limitations of key and strategic arterial routes do not meet current demand and will not support future growth.

As the population of the New Plymouth district continues to grow the demand placed on the roading network will also continue to grow. There are already known limitations to the existing network. These limitations are likely to be exacerbated as the population within the district grows. The growth areas are shown on the map in Figure 3.



4. DEFINING THE PROBLEMS & CONSEQUENCES

Figure 3 New Plymouth City Growth Areas 2016



4. DEFINING THE PROBLEMS & CONSEQUENCES

Problem two: Natural landforms, arterial layout and poor alternative mode permeability are limiting city connectivity.

The New Plymouth district is dissected by numerous river valleys resulting in undulating topography, which provides additional challenges for walkers and cyclists. The central business district is separated from urban New Plymouth by double-laned state highways. The use of alternative modes of transport such as cycling and public transport is limited because only high demand routes are serviced with alternative mode infrastructure.

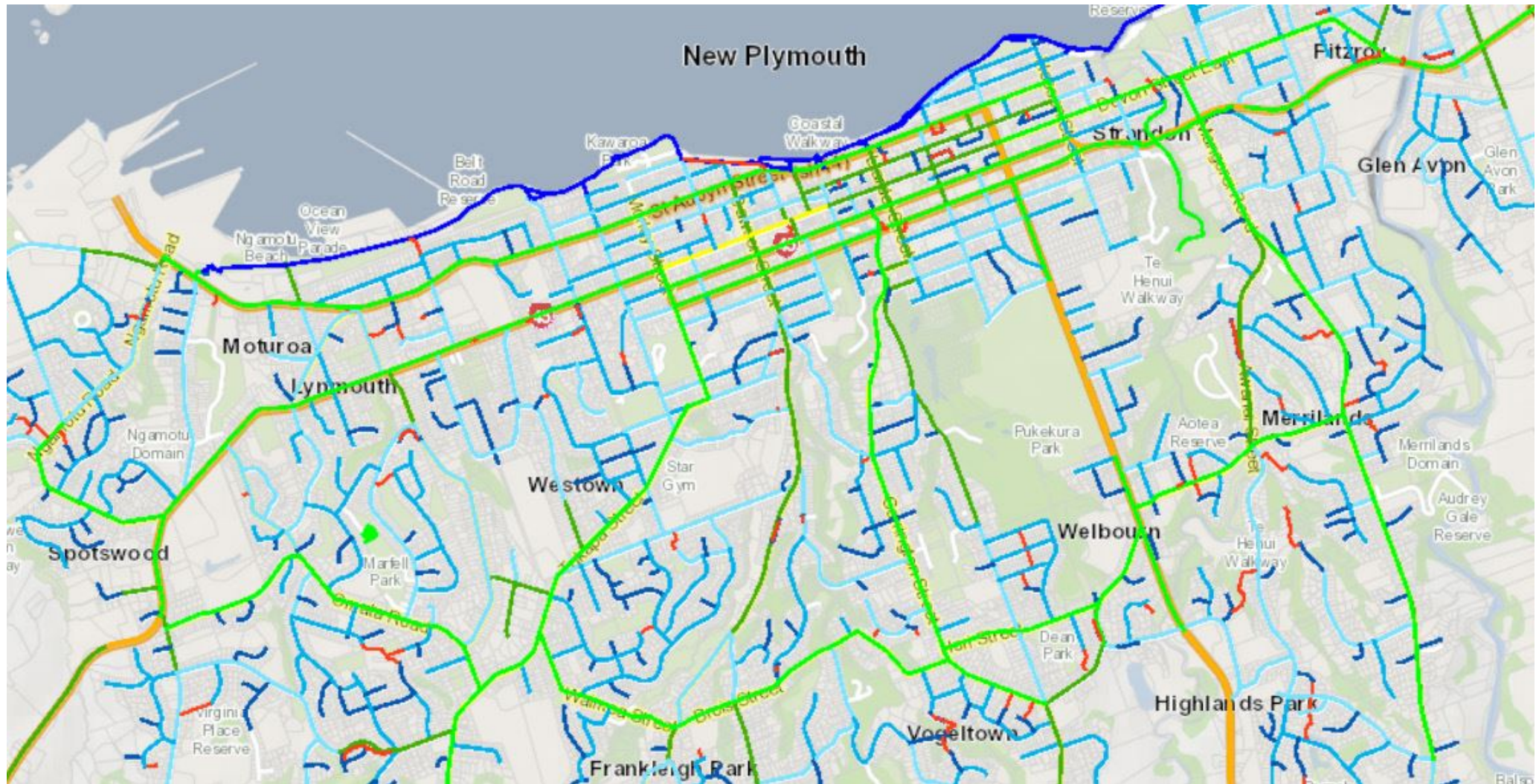
Problem three: Complex roads and a high number of modal conflict points are driving high actual and perceived personal and collective risk.

There are safety issues within New Plymouth in relation to cyclists, intersections and around schools. There is a common perception that the roading network is not safe for cycling which deters many younger and older riders. These issues are illustrated in Figures 4 and 5.



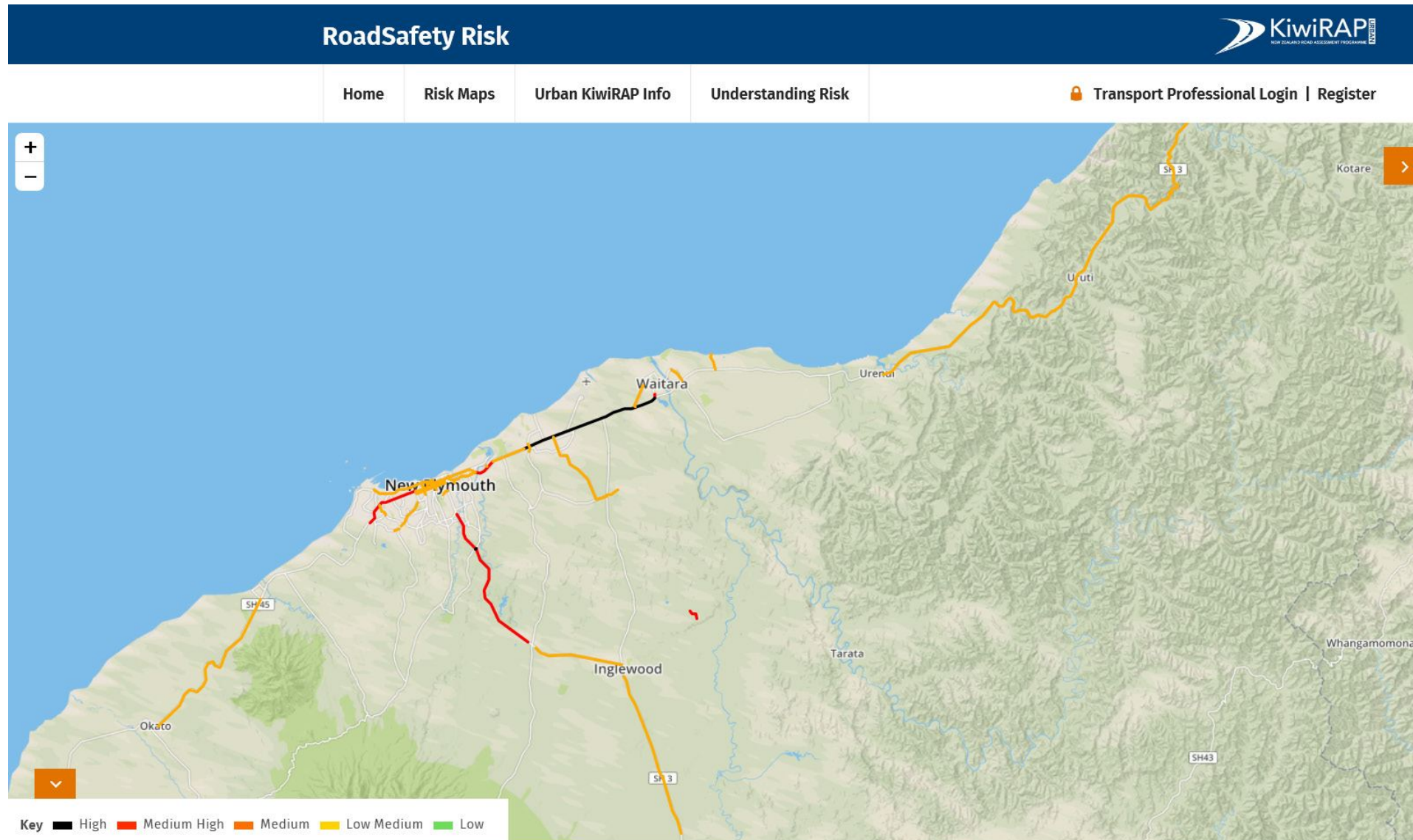
4. DEFINING THE PROBLEMS & CONSEQUENCES

Figure 4 Cycle lanes (green) within the New Plymouth urban roading network



4. DEFINING THE PROBLEMS & CONSEQUENCES

Figure 5 KiwiRAP website screenshot demonstrating the road safety risk for vehicles throughout the district

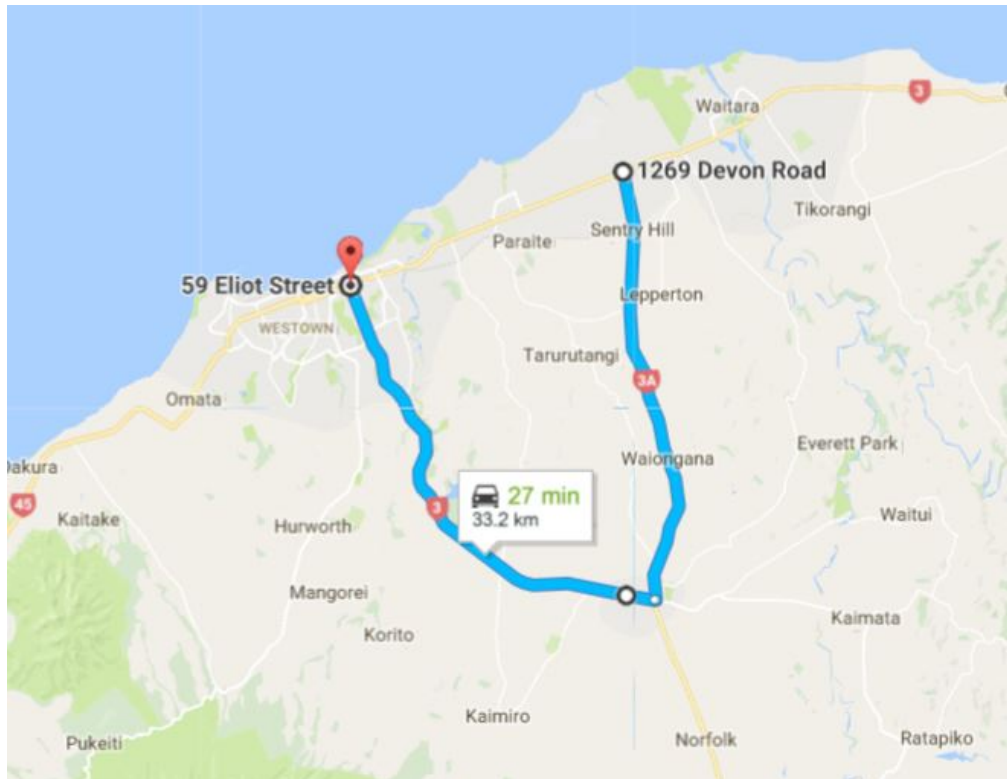


4. DEFINING THE PROBLEMS & CONSEQUENCES

Problem four: A lack of viable alternative routes during major events results in significant delays and risks transport and utility severance.

Movement east to west is currently restricted by having only one crossing point over the Waiwhakaiho River via State Highway 3 as shown on the map in Figure 6. New Plymouth is also at risk of disconnection should the river crossing fail.

Figure 6 Alternative east west route



The Keeping New Plymouth Moving and Growing Investment Logic Map 1 is attached as Appendix 2A.



4.2 Operations, Maintenance, Renewals and Minor Improvements – Tactical Investment Logic Mapping (ILM)

We facilitated a second Investment Logic Mapping (ILM) workshop with a more tactical focused group of stakeholders in 2017. The stakeholder panel identified and agreed on the following key tactical problems:

Problem one: The changing expectations of the community require reprioritisation of investment to meet the agreed and future Level of Service for all transport modes.

As the population demographics change and expectations for additional an improved alternative modes of transport grow, investment in cycling/pedestrian facilities and improved provision for mobility scooters and bus services will be needed. Greater expectations are also placed on network availability.

Problem two: Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.

Population and economic growth will increase demand on the existing network, especially on key corridors. The expectation is that travel times will not be affected adversely. Therefore, travel time measurement and identification of potential solutions will be a focus.

Problem three: Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

We need to maintain the standard, resilience and accessibility of the network in order to provide the requirements our customers expect, in a challenging environment with aging assets.

Problem four: Driver behaviour, safe system approach and other factors are resulting in a high proportion of Death and Serious Injury (DSI) crashes for vulnerable road users.

Promoting road safety and identifying and delivering safety improvements is key to keeping road users of all transport modes safe.

The consequences of not addressing the identified problems are listed below:

Problem one:

- Unsafe walking and cycling facilities will increase the likelihood and consequence severity of DSIs, particularly as the community grows.
- Active and alternative transport behaviour stalls or declines.

Problem two:

- The transportation network will not support the growth areas and will not be fit for purpose.
- Increase in congestion and longer journey times from poor road layouts.

Problem three:

- Increased cost and difficulty to maintain current road structures. Increase in number of complaints.
- Unsafe failures left unattended for unacceptable periods

Problem four:

- Unsafe transportation network with increased likelihood and consequence severity of DSIs,
- Vulnerable road user safety and protection compromised to unacceptable level.

General:

- Levels of service may need to be reduced and safety may be compromised.
- Increased structural failure of assets leading to higher whole-of-life asset cost.
- Increased reactive maintenance leading to higher whole-of-life asset cost and increased disruption to the community.
- Increased financial burden for future generations due to under-investment.

The Investment Logic Map 2 is attached as Appendix 3A.

5.1 Keeping New Plymouth Moving and Growing

The potential Benefits of successfully investing to address the Problems discussed in section 5 were identified as part of a second facilitated ILM workshop held on 18 December 2016. The stakeholder panel identified and agreed the following potential Benefits:

Benefit one: Improved transportation network performance (50%)

Ensuring the performance of the network accommodates future growth was identified as the greatest benefit.

Benefit two: Improved safety outcomes (15%)

New Plymouth's medium to high rate of deaths and serious injuries was identified as requiring immediate focus.

Benefit three: Improved economic outcomes for the district (20%)

It was agreed that the existing transportation network would stifle growth and limit private investment.

Benefit four: More viable transport choices (15%)

A well connected network has been identified as highly desirable strategic direction for the district.

The Benefit Map is attached as Appendix 2B.

5.2 Operations, Maintenance, Renewals and Minor Improvements

The potential Benefits of successfully investing to address the problems discussed in section 5 were identified as part of a facilitated ILM workshop held on 13 April 2017. The stakeholder panel identified and agreed the following potential Benefits:

Benefit one: An easy to understand and efficient (economically viable) network for all transport modes (60%)

Ensuring the network is easy to use, delivers against customers' needs, available to the required standard when needed at an affordable and economically viable level.

Benefit two: A resilient network (20%)

The quality and value of the network is maintained at satisfactory levels and faults are repaired in reasonable time frames.

Benefit three: A safe network (20%)

Network users in all transport modes are presented with a safely designed, constructed and maintained network.

The Benefit Map is attached as Appendix 3B.

6.1 Keeping New Plymouth Moving and Growing (strategic)

The benefits, investment KPIs and measures identified in the Investment Logic Mapping for Keeping New Plymouth Moving and Growing are summarised in Table 7.

Table 7 Keeping New Plymouth Moving and Growing ILM summary

Benefits	Investment KPI	Measures
Improved transport network performance	Increased effectiveness	Increase in number of people throughput, all modes on selected routes.
		Decrease or no increase in journey time for all vehicles; peak vs non-peak, selected routes.
	Increased network availability	Increase in journey time reliability for all vehicles.
		Decrease in number of vehicle trips affected where no alternative route exists.
Improved safety outcomes	Improved infrastructure quality	An improvement in the overall risk rating of selected roads.
	Improved actual safety	Decrease in the number of deaths and serious injury crashes.
	Improved safety perception	Improvement in user safety perception percentage rating obtained via survey.
Improved economic outcomes for the district	Increased business Investment	An increase in the number of people employed in New Plymouth.
	Transportation network supports future growth	An increase in the number of urban dwellings (lots) within the District.
More viable transport choices	Increased use of alternative modes	Increase in modal share for all alternative modes, district wide.
	Improved community perception	Improvement in community satisfaction rating with alternative mode infrastructure servicing the district.
	Improved alternative mode infrastructure	Increase in length of alternative mode infrastructure available within the district (by mode).

6.2 Operations, Maintenance, Renewals and Minor Improvements (tactical)

The benefits, investment KPIs and measures identified in the Investment Logic Mapping for Operations, Maintenance, Renewals and Minor Improvements are summarised in Table 8.

In addition to the investment KPIs shown in Table 8, the 2018-2028 Long Term Plan contains the expected Levels of Service. These are shown in Table 9 and referenced in Table 8 where applicable.

Table 8 Operations, Maintenance, Renewals and Minor Improvements ILM summary

Benefits	Investment KPI	Measures
An easy to understand and efficient (economically viable) network for all transport modes	1. Network availability	1.1 Meet ONRC performance measures - ONRC Classification 1.2 Increased Mode Share 1.3 Increased Access to Public Transport
	2. Customer satisfaction	2.1 Number of customer complaints 2.2 Quality cycle network safe for users (Communitrak Survey) – LoS6 2.3 Quality roading network for users – quality (Communitrak Survey) – LoS2 2.4 Quality roading network for users – easy, quick, safe access - (Communitrak Survey) 2.5 Arterial/Primary Collectors >10,000 ADT – Structural Asphalt
	3. Maintains travel time reliability with increased activity	3.1 Maintains Travel time reliability
A resilient network	4. Value for money	4.1 Sealed Road Pavement Rehabilitation - \$/total km of sealed road/annum 4.2 Chipseal Resurfacing - \$/m2 4.3 Asphalt Resurfacing - \$/m2 4.4 Unsealed Road Metalling - \$/total km of sealed road/annum 4.5 Overall Network Cost (excluding emergency works) - \$/km
	5. Response times	5.1 Respond to requests in reasonable timeframe – LoS5
	6. Network audits of condition	6.1 ONRC Amenity Customer Outcome 1 – Smooth Travel Exposure 6.2 ONRC Amenity Customer Outcome 2 – Peak Roughness 6.3 Quality footpath network safe for users – LoS4 6.4 Pavement Integrity Index (PII) 6.5 Condition Index (CI) 6.6 50MAX Bridge Capability 6.7 Bridge Condition Indicator
A Safe Network	7. Crashes	7.1 ONRC Safety Customer Outcome 3 – Personal Risk per 100M VKT (LoS1)

6. OUTCOMES SOUGHT

Table 9 Levels of Service

What you can expect	How we measure performance	Actual 2016/17	2018/19	2019/20	2020/12	By 2027/28
We provide a local roading network that is safe for all road users.	The change from the previous financial year in the number of fatalities and serious injury crashes on the district's local roading network.	2.5 DSI per 100 million vehicle kilometres travelled	1 or less DSI per 100 million vehicle kilometres travelled	1 or less DSI per 100 million vehicle kilometres travelled	1 or less DSI per 100 million vehicle kilometres travelled	1 or less DSI per 100 million vehicle kilometres travelled
We provide good quality district roads.	The average quality of ride on the district's sealed local road network, as measured by smooth travel exposure.	84.3% for arterial road and 91-93% for all other categories	85% for arterial roads and 90% for all other categories	85% for arterial roads and 90% for all other categories	85% for arterial roads and 90% for all other categories	85% for arterial roads and 90% for all other categories
	The percentage of residents satisfied with the overall quality of the district's roads (NRB survey*)	83%	85%	85%	85%	85%
We appropriately maintain the district's sealed roads.	The percentage of the sealed local road network that is resurfaced (target based on reseal cycle of 16.5 years.)	3.80%	5.70%	5.70%	5.70%	5.70%
We provide a high quality and safe footpath network.	The percentage of footpaths that meet the levels of service and service standards in current condition surveys, as set out in the Transportation Asset Management Plan.	90.2% good or excellent condition	More than 90% of footpath length surveyed in good or excellent condition.	More than 90% of footpath length surveyed in good or excellent condition Less than 1% of footpath length recorded as failed	More than 90% of footpath length surveyed in good or excellent condition.	More than 90% of footpath length surveyed in good or excellent condition.
		0.9% failed.	Less than 1% of footpath length recorded as failed	Less than 1% of footpath length recorded as failed	Less than 1% of footpath length recorded as failed	Less than 1% of footpath length recorded as failed

6. OUTCOMES SOUGHT

What you can expect (continued)	How we measure performance	Actual 2016/17	2018/19	2019/20	2020/12	By 2027/28
We respond to service requests in a timely manner.	The percentage of roading and footpath related customer service requests responded to within target timeframes. ¹	96.8% based on 4,657 customer service requests	95%	95%	95%	95%
We provide a quality and safe cycle network.	The percentage of residents satisfied with the quality and safety of the district's cycle network (NRB Survey*).	88%	85%	85%	85%	85%

¹ Service request timeframes:

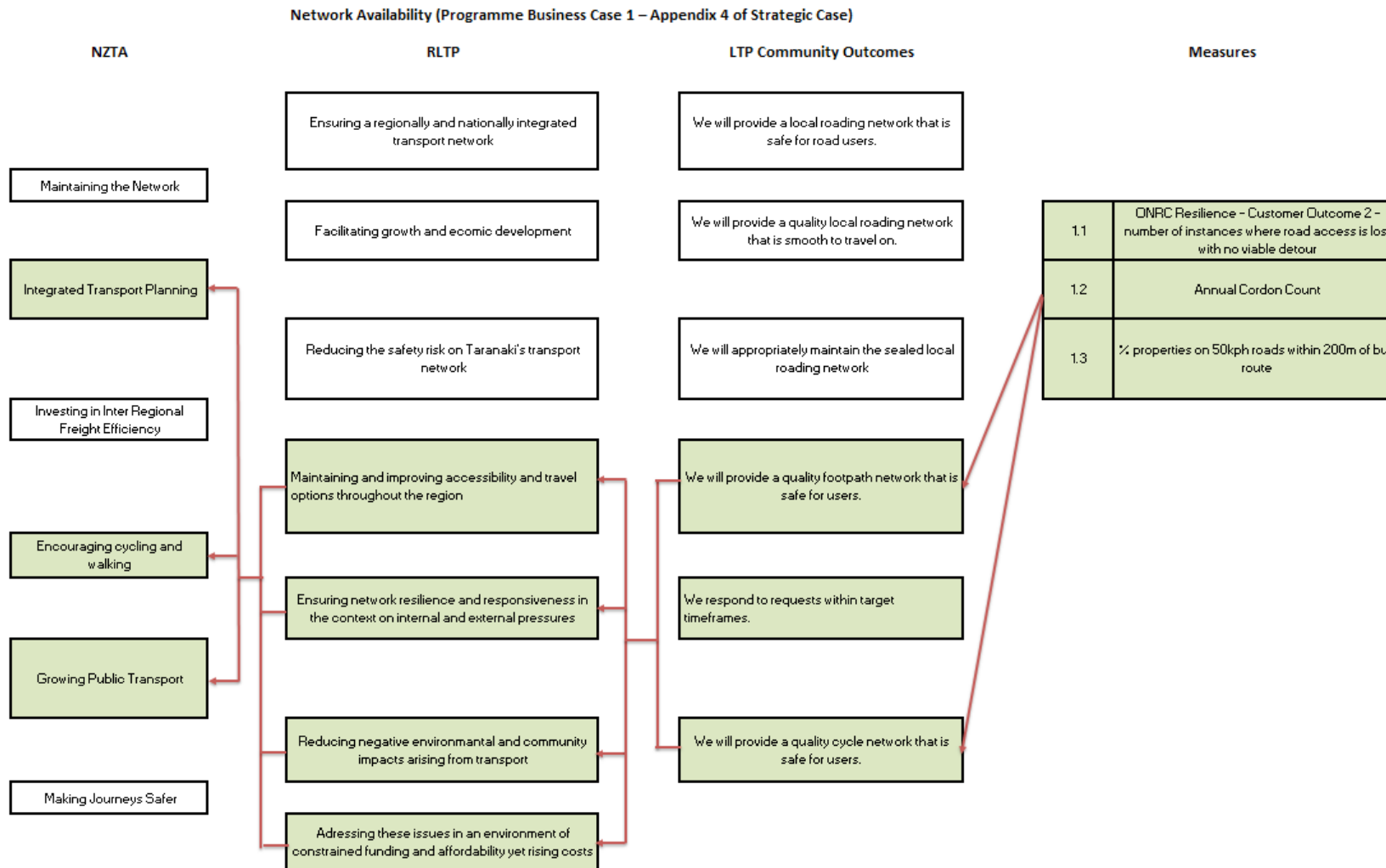
- one day for an electrical fault with traffic signals, flooding, diesel spills, chemical spills or a slip to be cleared;
- three days for street lighting faults and potholes;
- five days for traffic counts, bus shelter repairs, road marking enquiries, culvert maintenance, rubbish bins, reinstatement of footpaths and debris in the roadside channel;
- Ten days for road surface faults, kerb and channel repairs, new kerb and channel, missing road signs and vegetation clearing.

* All NRB survey targets are excluding 'don't know' responses.

6. OUTCOMES SOUGHT

The diagrams in Figures 7 - 13 show how the measures defined in each of the seven Programme Business Cases link with the LTP Community Outcomes, RTLTP Objectives and NZTA Objectives.

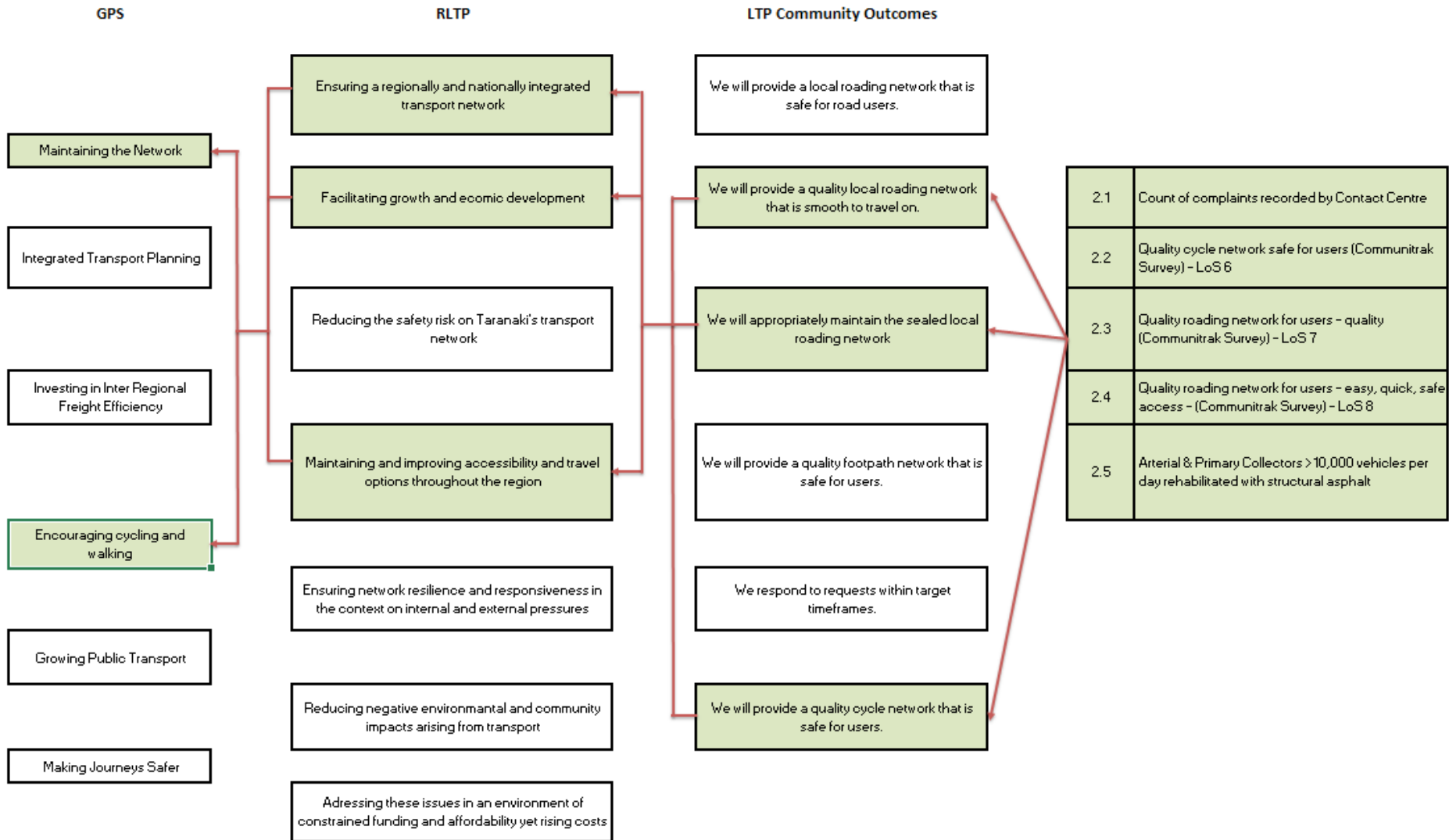
Figure 7 Network Availability Measures links to NZTA, RLTP and LTP objectives



6. OUTCOMES SOUGHT

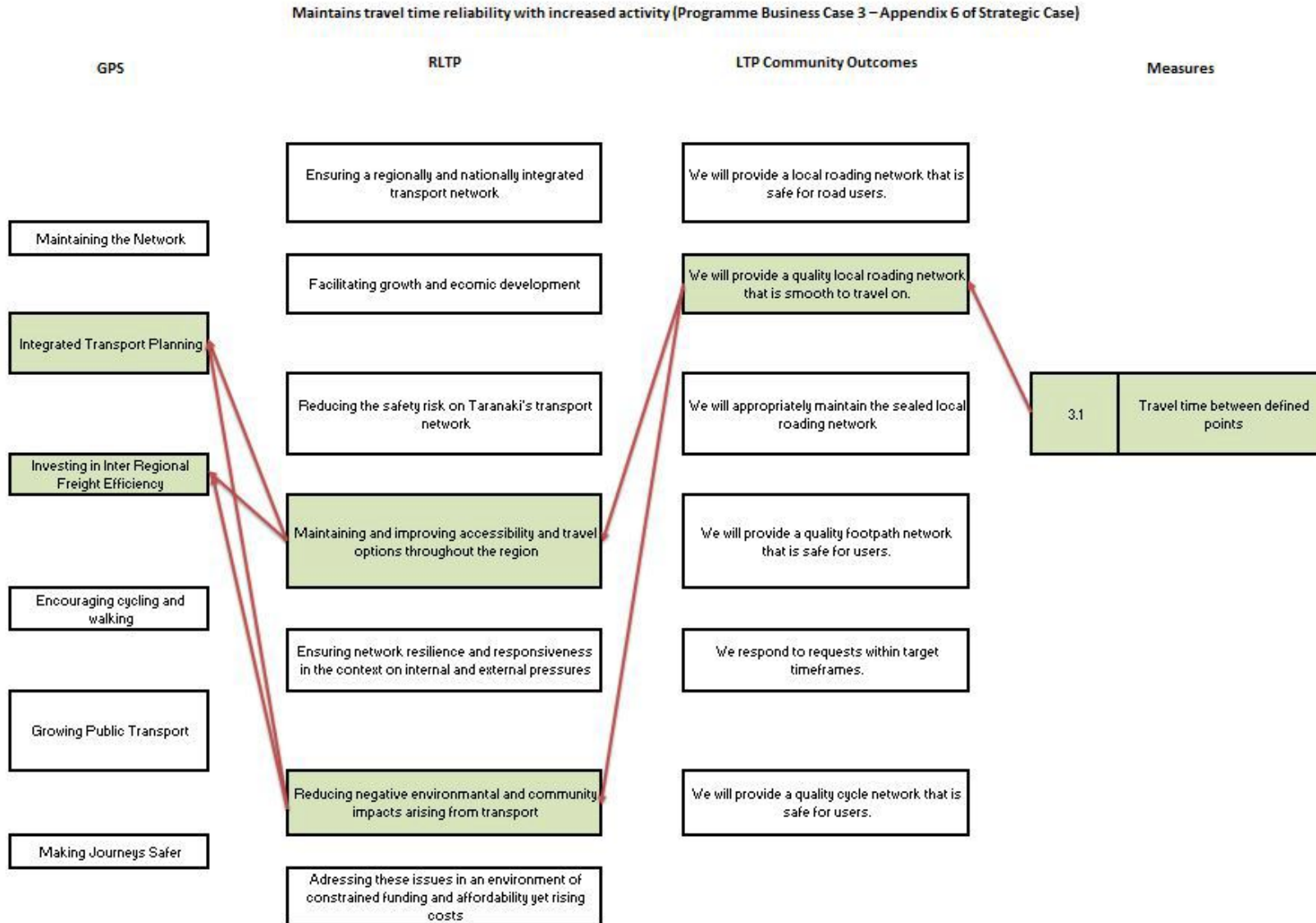
Figure 8 Customer Satisfaction Measures links to NZTA, RLTP and LTP objectives

Customer satisfaction (Programme Business Case 2 – Appendix 5 of Strategic Case)



6. OUTCOMES SOUGHT

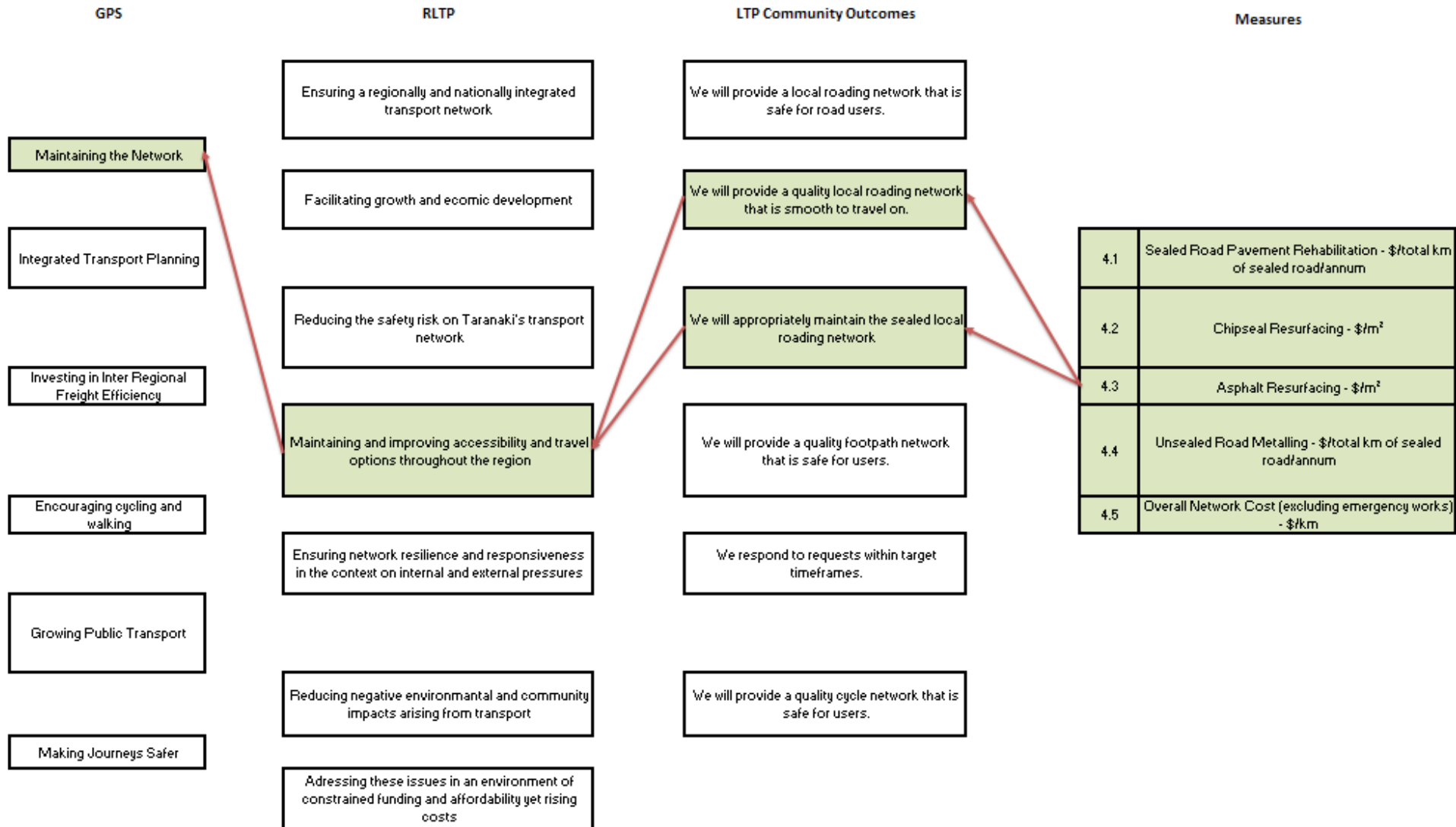
Figure 9 Maintain travel time reliability with increased activity Measures links to NZTA, RLTP and LTP objectives



6. OUTCOMES SOUGHT

Figure 10 Value for Money Measures links to NZTA, RLTP and LTP objectives

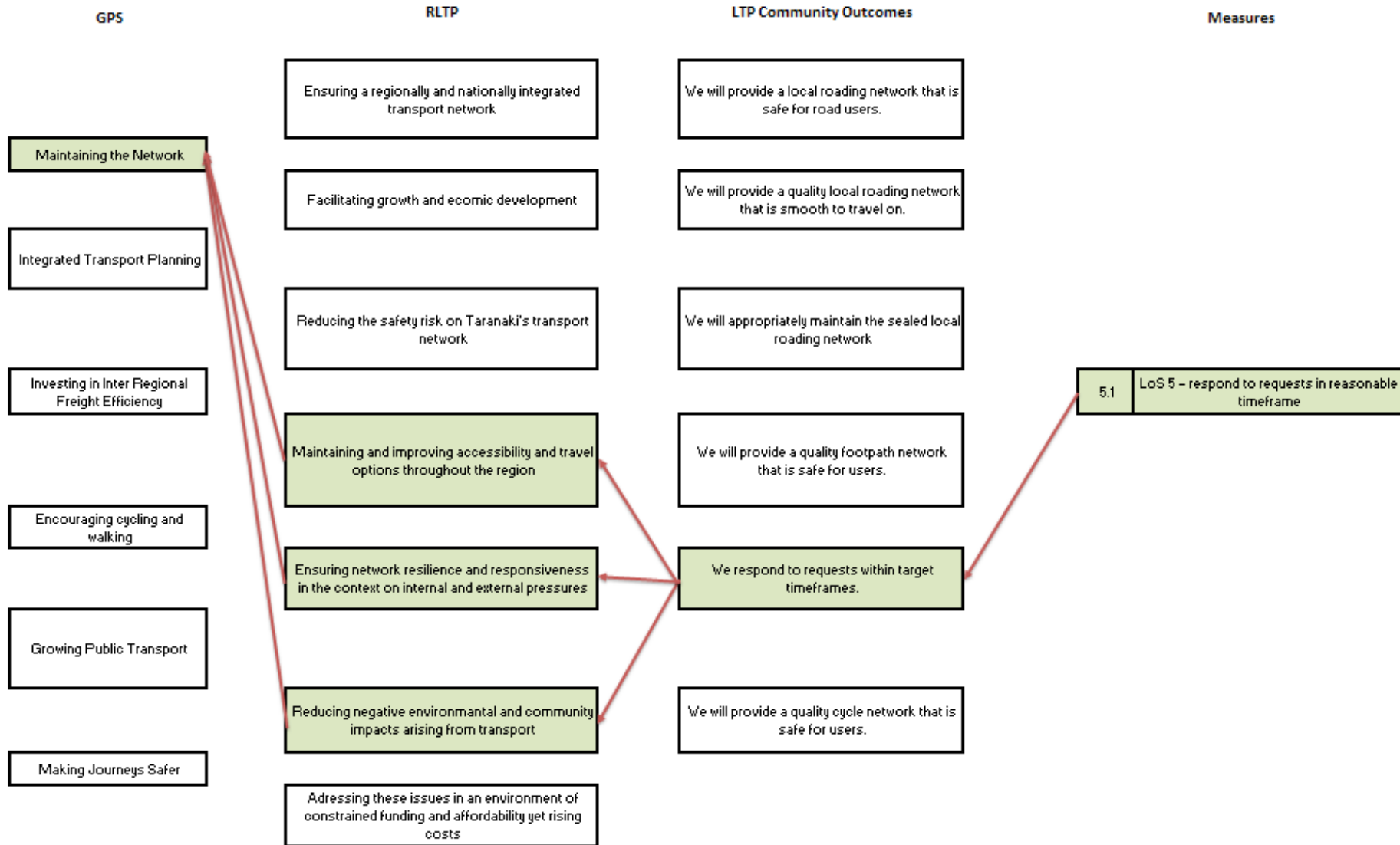
Value for money (Programme Business Case 4 – Appendix 7 of Strategic Case)



6. OUTCOMES SOUGHT

Figure 11 Response Times Measures links to NZTA, RLTP and LTP objectives

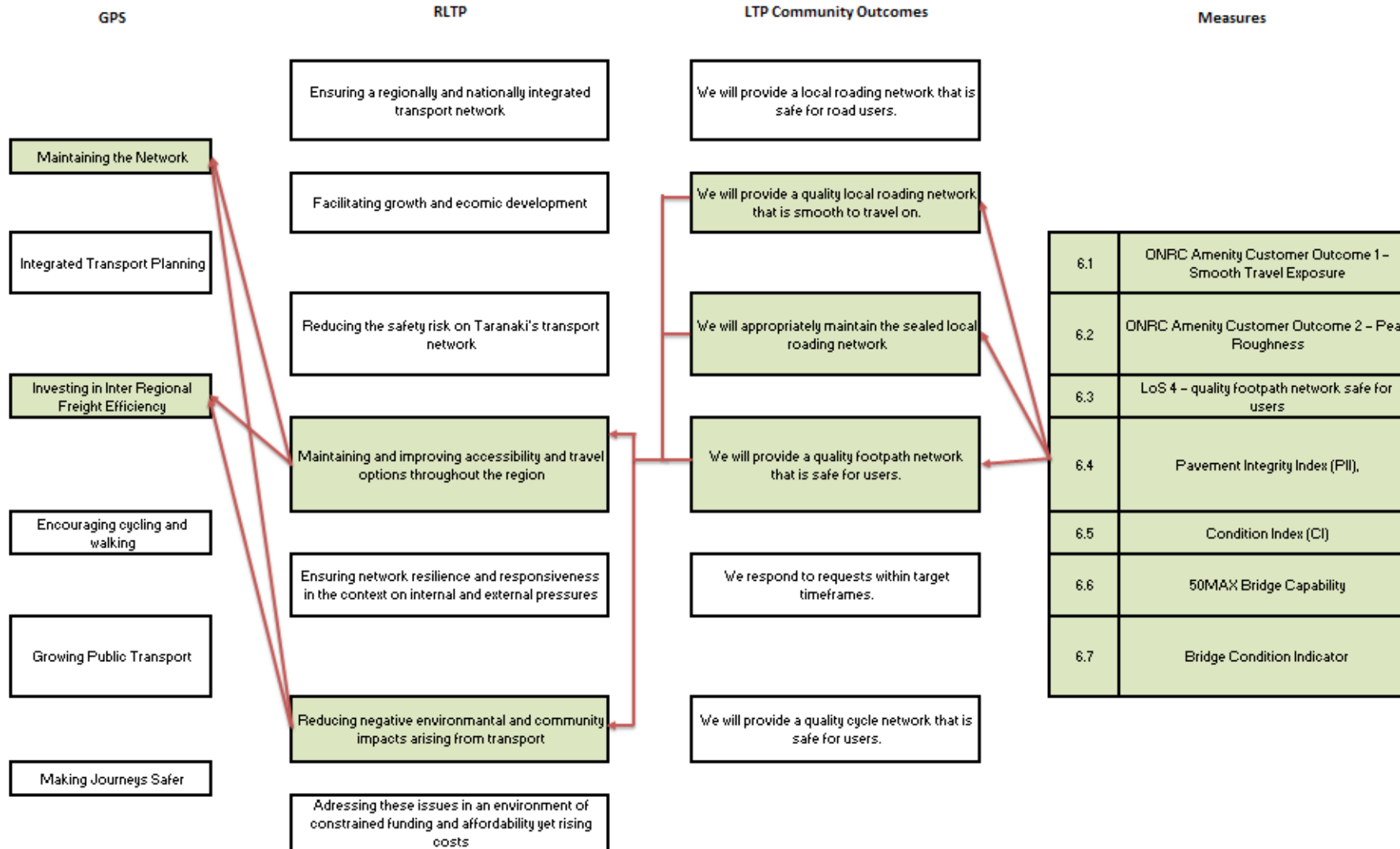
Response times (Programme Business Case 5 – Appendix 8 of Strategic Case)



6. OUTCOMES SOUGHT

Figure 12 Network Audits of Condition Measures links to NZTA, RLTP and LTP objectives

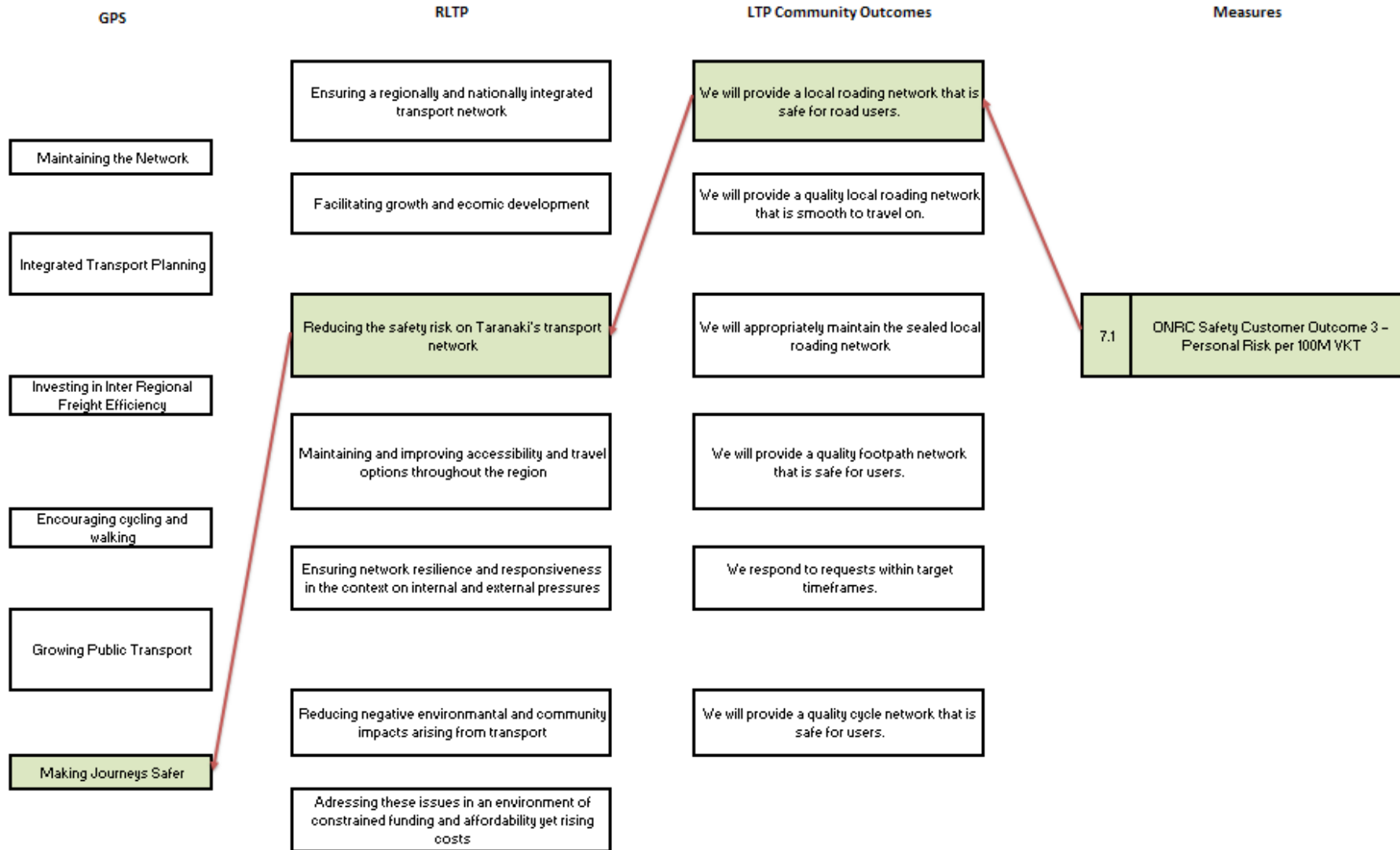
Network audits of condition (Programme Business Case 6 – Appendix 9 of Strategic Case)



6. OUTCOMES SOUGHT

Figure 13 Crashes Measures links to NZTA, RLTP and LTP objectives

Crashes (Programme Business Case 7 – Appendix 10 of Strategic Case)



7.1 Keeping New Plymouth Moving and Growing (strategic)

While the available evidence supports the Problems identified there are gaps in the evidence, particularly around how the network as a whole will perform with increasing traffic volumes. To contribute to our overall understanding of the causes and effects of each Problem and the options available, we require an in-depth network modelling exercise. Modelling the network and applying the current growth predictions will help decision makers identify the best value for money when investing in solutions to each identified Problem.

We have currently proposed such an investigation and have submitted a separate strategic case to NZTA (highlights summarised in this document). The total investment required for the investigation is \$400k (FAR 51%) for financial year 2018/19 in NZTA work category 002 – Transport model development.

7.2 Operations, Maintenance, Renewals and Minor Improvements (tactical)

The Programme Business Cases found in Appendices 4-10 test the existing evidence base and identify our evidence gaps. A Programme Business Case has been produced for each of the seven Investment KPIs covering the following areas:

- a. Link to strategic case
- b. Levels of service
- c. Compilation and testing of evidence
- d. Gap assessment
- e. Development of options
- f. Testing of options
- g. Preferred programme
- h. Improvement plan

The evidence gaps associated with the investment KPIs identified in the Programme Business Cases in Appendices 4-10 are summarised in the tables 10 - 16.

Table 10 Network Availability identified gaps summary

Investment KPI	Measure	Identified Gaps
Network Availability	Meet ONRC performance measures - ONRC Classification	No data yet exists to analyse if any gaps exist.
	Increased Mode Share	Although there is not yet enough reliable cordon count data, data in the graph above shows that investment in cycling and walking facilities will significantly increase usage, supporting long term aims of reducing road traffic movements and encouraging fitness etc. We therefore conclude that further investment in the improvement and addition of new cycling and pedestrian is required.
	Increased Access to Public Transport	This will need to be discussed with TRC to ensure alignment with their goals.

7. STATUS OF EXISTING EVIDENCE BASE & IDENTIFIED GAPS

Table 11 Customer Satisfaction identified gaps summary

Investment KPI	Measure	Identified Gaps
Customer Satisfaction	Number of customer complaints	We consider the annual tolerable maximum number of customer complaints to be 40. Anything above this level would indicate that network maintenance levels are not satisfactory and that the network condition is deteriorating at an unacceptable rate.
	Quality cycle network safe for users (Communitrak Survey) – (LoS6)	Satisfaction levels have been 85% or greater over the last the last three years. We consider maintaining performance at 85% will provide the level of quality and safety the community expects.
	Quality roading network for users – quality (Communitrak Survey) – (LoS2)	We consider maintaining performance at 85% will provide the level of quality the community expects.
	Quality roading network for users – easy, quick, safe access - (Communitrak Survey)	We consider maintaining performance at 85% will provide the community the ability to drive around the district quickly, easily and safely at the appropriate levels.
Customer Satisfaction	Arterial/Primary Collectors >10,000 ADT – Structural Asphalt	Currently, none of the district’s arterial and primary collector roads with >10,000 vehicles per day are constructed from structural asphalt. New Plymouth is designated a high growth district. As the population grows, we anticipate that unless structural AC is applied, the quality and safety of these road surfaces will fall below that expected by the community. An increased need for public transport will cause more seal dragging and chip loss caused by buses. Arterials and primary collectors are the most highly used roads in the district. Improved quality, including smoother and more durable surfaces will provide benefit to pedestrians and especially to cyclists. Proactively installing structural AC roads will avoid both undue/accelerated degradation and the costs associated with disruption and road closures for repairs at a later date.

7. STATUS OF EXISTING EVIDENCE BASE & IDENTIFIED GAPS

Table 12 Maintains Travel Time Reliability with Increased Activity identified gaps summary

Investment KPI	Measure	Identified Gaps
Maintains travel time reliability with increased activity	Maintains Travel time reliability	Once information about travel times is available an assessment of baseline and target performance can be made to identify if any gaps exist.

Table 13 Value for Money identified gaps summary

Investment KPI	Measure	Identified Gaps
Value for Money	Sealed Road Pavement Rehabilitation - \$/total km of sealed road/annum	The current three year average of \$960/km/annum represents good value for money when compared against the peer group average cost of \$1,320/km/annum. We therefore consider a target value of \$1,000/km/annum to be appropriate. The actual value achieved will affect the total amount of sealed road rehabilitation achievable based on the approved 2018-21 NLTP value for WC214.
	Chipseal Resurfacing - \$/m2	The current four year average of \$5/m2 is good value for money and we consider it should be the target value. The actual value achieved will affect the total amount of chipseal resurfacing achievable based on the approved 2018-21 NLTP value for WC212.

Value for Money	Asphalt Resurfacing - \$/m2	The current four year average of \$60/m2 is good value for money. We therefore consider it the appropriate target value. The actual value achieved will affect the total amount of asphalt resurfacing achievable based on the approved 2018-21 NLTP value for WC212.
	Unsealed Road Metalling - \$/total km of sealed road/annum	The current three year average of \$2,545/km/annum is high in comparison to the peer group average of \$1,470/km/annum. Therefore, we consider a value of \$2,300/km/annum should be targeted to make savings in this category. The actual value achieved will affect the total amount of unsealed road metalling achievable based on the approved 2018-21 NLTP value for WC211.
	Overall Network Cost (excluding emergency works) - \$/km	The current five year average of \$9,600/km/annum is good value as it compares closely to the equivalent peer group and Taranaki Region averages. It is also lower than the national average. We consider that a target vale of \$10,000/km/annum is an appropriate target as this will include additional provision for bridge and structure renewals that was omitted from the 2015-18 NLTP.

7. STATUS OF EXISTING EVIDENCE BASE & IDENTIFIED GAPS

Table 14 Response Times identified gaps summary

Investment KPI	Measure	Identified Gaps
Response Times	Respond to requests in reasonable timeframe (LoS5)	We consider the current level of performance (95%) against the current response times for the different types of service requests to be acceptable in maintaining customer satisfaction levels.

Table 15 Network Audits of Condition identified gaps summary

Investment KPI	Measure	Identified Gaps
Network Audits of Condition	ONRC Amenity Customer	ONRC Amenity Customer Outcome 1 (CO1) – Smooth Travel Exposure (STE) – NPDC performance of 83.4% in 2014/15 and 84.3% in 2015/16 for Arterial roads is higher than the peer average but closely aligned to the NZ average. Therefore, we consider that the target value for Arterial roads should be 85% to provide a user experience consistent with the wider NZ average of 84.2%. NPDC performance for the other road classes is consistently higher than the peer group average performance. Therefore, a target value of 90% for all other road classes is appropriate to provide consistent user experience across the Region.
	Outcome 1 – Smooth Travel Exposure	
	ONRC Amenity Customer Outcome 2 – Peak Roughness	ONRC Amenity Customer Outcome 2 (CO2) – Peak Roughness – TBC

Network Audits of Condition	Quality footpath network safe for users (LoS4)	Our targets to maintain a safe footpath network for users and to prevent footpath condition deteriorating to unacceptable levels are <1% failed (currently 0.95%) and >90% in good and excellent condition (currently 90.22%).
	Pavement Integrity Index (PII)	NPDC performance has been consistently higher than the peer group and NZ scores by 1 to 2%. NPDC’s average PII score over the four year period 2011/12 – 2014/15 was 96.3%. Therefore, we consider a target value of =>95% is appropriate to ensure the integrity of roading assets will not deteriorate to an unacceptable level and will align more closely with the peer group and NZ averages.
	Condition Index (CI)	NPDC’s performance has consistently been marginally higher than the peer group and NZ averages. Therefore, setting a target value of =>98% is appropriate and will maintain it at similar value to recent average performance.
	50MAX Bridge Capability	The target is for no change to the 26 bridges that currently have 50MAX weight restrictions.
	Bridge Condition Indicator	Bridge Condition Indicator – TBC

7. STATUS OF EXISTING EVIDENCE BASE & IDENTIFIED GAPS

Table 16 Crashes identified gaps summary

Investment KPI	Measure	Identified Gaps
Crashes	ONRC Safety Customer Outcome 3 – Personal Risk per 100M VKT (LoS1)	DSIs per 100 million vkt have previously been as low as 1. Numbers averaged at 2.7/annum between 2002 and 2015 with an overall decreasing trend but have been in an upward trend since 2011. Between the years 2011-2015, the number of crashes involving vulnerable users has risen significantly. This could be attributed to an increased number of pedestrians and cyclists using the network under the Let's Go initiative.

The Asset Management Plan volumes provide further details about each asset category and the activity management plans for each component of identified investment:

- Volume 1 - Pavements
- Volume 2 - Bridges and Structures
- Volume 3 – Footpaths & Cycle ways
- Volume 4 - Storm Water Drainage
- Volume 5 – Traffic Services
- Volume 6 – Street Furniture

To continue to develop and improve the Asset Management Plans, Strategic Cases, Programme Business Cases and associated data gathering/cleansing and analysis, we propose additional investment of \$100k per annum over the 2018-21 NLTP. This will give greater certainty to investment planning and decisions and will improve our demonstration of ONRC requirements. It will attract 51% FAR in NZTA work category 003 – Activity management planning improvement.



8. THE TRANSPORT OUTCOMES WE ARE INVESTING IN

Going forward, our investment will target the Benefits identified in our Investment Logic Mapping processes (Appendix 2B and 3B). Any investment will also be made in alignment with the strategic directions of the Government Policy Statement on Land Transport Funding, TRCs Regional Land Transport Plan, and our own Long Term Plan. A breakdown of the next steps under each Investment KPI is given below:

Network Availability

We will develop a programme for network resilience projects for the 2021-24 NLTP based on the data collected during the 2018-21 NLTP period. Refer to Appendix 4 for more information.

Customer Satisfaction

Our preference is to allocate spending similar to the 2015-18 NLTP approved allocation. This requires a total investment of \$40.2m or average of \$13.4m per annum spread over the investment lines shown in Tables 17 and 18. This is an average annual increase from the 2015-18 NLTP values of \$1.33m per annum—mainly attributable to inflation and increases for structure renewals (215), minor events (140), sealed road resurfacing (212) and sealed road rehabilitation (214) and the addition of footpath maintenance and renewals (125). The annual average expenditure of \$13.4m is only \$0.7m more than the annual average expenditure of \$12.7m over the years 2011/12 – 2016/17.

During the 2018-21 NLTP, we will assess the level of customer complaints and other network quality measures to test if we are achieving the desired outcomes. We will propose adjustments to investment levels for the 2021-23 NLTP if required. As the network grows, additional O&M investment will be required and will be factored into future NLTP bids.

Table 17 NLTP Maintenance expenditure forecast comparison

NZTA Work Category (O&M)	Description	2015-18 NLTP Approved Allocations (\$)	Proposed 2018-21 NLTP (\$)
111	Sealed pavement maintenance	5,949,067	6,149,000
112	Unsealed pavement maintenance	188,510	206,000
113	Routine drainage maintenance	1,285,656	1,375,000
114	Structures maintenance	812,666	825,000
121	Environmental maintenance	1,475,037	1,580,000
122	Traffic services maintenance	4,028,221	3,623,000
123	Operational traffic management	123,778	138,000
124	Cycle path maintenance	38,525	77,000
125	Footpath maintenance and renewal	0	1,802,000
131	Level crossing warning devices	93,233	99,000
140	Minor events	807,762	1,546,000
151	Network and asset management	3,479,021	3,708,000
	Total	18,281,476	21,128,000

8. THE TRANSPORT OUTCOMES WE ARE INVESTING IN

Table 18 NLTP Renewals expenditure forecast comparison

NZTA Work Category (Renewals)	Description	2015-18 NLTP Approved Allocations (\$)	Proposed 2018-21 NLTP (\$)
211	Unsealed road metalling	1,135,528	1,329,000
212	Sealed road resurfacing	8,616,538	9,316,000
213	Drainage renewals	2,472,393	2,658,000
214	Sealed road pavement rehabilitation	3,037,992	4,202,000
215	Structures component replacements	124,366	693,000
222	Traffic services renewals	692,571	890,000
Total		16,079,388	19,088,000

Refer to Appendix 5 for more information.

Travel Time Reliability with Increased Activity

We will identify a preferred programme based on our evaluation of the options. We will continue to monitor improvement Plan-Travel time into the future to assess the effectiveness of any investment and to identify further potential investment options.

Refer to appendix 6 for more information.

Value for Money

Our preferred option is the same as that identified in Customer Satisfaction above. Our value for money measures will measure the financial efficiency of our service delivery.

Actual values will be monitored over the 2018-21 NLTP period and compared with peer group performance levels. Future targets and investment levels will be adjusted based on the actual performance achieved.

Refer to Appendix 7 for more information.

Response Times

Our preferred option is to maintain the current level of performance which is 95% against the current response times for the different types of service requests. This will only be possible if current 2015-18 NLTP investment levels are sustained.

We will monitor our actual performance levels over the 2018-21 NLTP period and compare them with peer group performance levels where possible. Future targets and investment levels will be adjusted based on the actual performance achieved.

Refer to Appendix 8 for more information.

Network Audits of Condition

Setting the target values selected is the preferred option. Spending similar amounts to the current 2015-18 NLTP values (refer to Programme Business Case 1 in Appendix 4) is our preferred programme.

We will monitor our actual performance levels over the 2018-21 NLTP period and compare them with peer group performance levels. Future targets and investment levels will be adjusted based on the actual performance achieved.

Refer to Appendix 9 for more information.

Crashes

The appropriate option is to match the target to the best performance achieved over recent years. This may be challenging to realise, but can be achieved with targeted investment and good road safety education programmes. Therefore, we consider a set target of 1 DSI crash per 100 million vkt to be appropriate, based on the best annual historical performance.

Based on the analysis of crash locations, we may require additional and more significant specific safety related expenditure at particular locations. We will submit individual business cases for these as and when they arise.

We will also monitor DSI crash rates over future years to assess the effectiveness of our expenditure programme and the future levels of NLTP investment required.

We promote road safety by contributing to the TRC led Roadsafe Taranaki initiative and through the Let's Go programme.

8. THE TRANSPORT OUTCOMES WE ARE INVESTING IN

Refer to Appendix 10 for more information.

O&M and Maintenance

Investment at similar levels to the current 2015-18 NTLTP values should be sufficient to maintain the existing network to the required safety standards (refer to Appendix 5 - Programme Business Case #2). However, additional expenditure will be required in future NLTTPs to make any required improvements to the existing network and maintain extensions to the network while continuing to meet targets.

Improvements (Capex)

2018-21 NTLTP forecast expenditure values are shown in Table 19.

Table 19 Improvements expenditure forecast summary

NZTA Work Category	Description	Proposed 2018-21 NLTP (\$)
341 Low cost/low risk	Minor Improvements- Small, isolated geometric road and intersection improvements (RD1015)	2,306,000
341 Low cost/low risk	Small road widening improvements (RD1005)	1,722,000
341 Low cost/low risk	Let's Go Model Communities - Infrastructure Construction (Local Roads) (RD1035)	1,481,000
341 Low cost/low risk	Extension to coastal walkway from between Bell Block & Waitara (RD2024)	8,547,000
324 Road improvements	LED Light conversion (RD1025)	2,349,000
324 Road improvements	Airport Drive Improvements (RD2001)	204,000
	Total	16,609,000

Surplus Management

Any surplus occurring as a result of either meeting targets efficiently, actual costs being less than estimated, or deferrals being made will be used for items such as minor resilience improvements, bank stabilisation and retaining wall improvements. This will be subject to discussion/agreement with NZTA.



9. FINANCIAL FORECAST

Tables 20, 21 and 22 show the full 10 year Opex and Capex forecasts. More details about the expenditure forecasts are included in each of the asset category AMP volumes 1-6.

Table 20 Total Opex forecast summary excluding NZTA subsidies

Total Opex Forecast (\$000)											
Category	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Total Personnel costs	1,237	1,262	1,287	1,313	1,339	1,366	1,394	1,510	1,540	1,572	13,821
Total General operating expenditure	830	749	770	791	813	836	860	884	909	936	8,378
Total Direct costs of activities	6,948	7,026	7,832	7,252	7,411	7,582	7,756	8,119	8,321	8,530	76,776
Shared Services (Overhead)	3,543	3,488	3,565	3,857	3,989	4,024	4,073	4,179	4,221	4,326	39,264
Total	12,558	12,525	13,454	13,213	13,553	13,808	14,082	14,691	14,992	15,362	138,238

Table 21 Opex Forecast - Maintenance Only excluding NZTA subsidies

Opex Forecast - Maintenance Only (\$000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Pavement	4,307	4,394	4,488	4,587	4,687	4,798	4,908	5,026	5,150	5,280	47,623
Bridges & Structures	269	275	281	287	293	300	307	314	322	330	2,978
Footpaths & Cycle Ways	25	26	26	27	27	28	29	29	30	31	278
Storm Water Drainage	449	458	468	478	489	501	511	524	537	551	4,966
Traffic Services	1,328	1,294	1,238	1,221	1,249	1,279	1,308	1,339	1,372	1,407	13,035
Street Furniture	303	309	316	322	330	337	345	353	362	371	3,348
Total Maintenance	6,681	6,756	6,817	6,922	7,075	7,243	7,408	7,585	7,773	7,970	72,228

9. FINANCIAL FORECAST

Table 22 Capex forecast summary excluding NZTA subsidies

Capex Forecast (\$000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Renewals											
Pavement	4,835	4,959	5,054	5,165	5,278	5,385	5,529	5,662	5,804	5,955	53,626
Bridges & Structures	626	638	652	666	901	3,281	714	731	749	768	9,726
Footpaths & Cycle Ways	586	603	613	627	641	653	671	687	704	723	6,508
Storm Water Drainage	865	889	905	925	945	963	990	1,014	1,039	1,066	9,601
Traffic Services	2,764	427	435	444	454	463	475	487	499	512	6,960
Street Furniture	201	207	210	215	220	224	230	236	242	248	2,233
Total Renewals	9,877	7,723	7,869	8,042	8,439	10,969	8,609	8,817	9,037	9,272	88,654
Growth											
Pavement	1,954	1,823	1,895	5,807	1,979	2,016	2,073	5,658	2,177	2,232	27,614
Bridges & Structures	-	-	-	430	-	-	-	-	-	-	430
Footpaths & Cycle Ways	207	674	600	494	505	517	529	542	555	569	5,192
Storm Water Drainage	-	-	-	-	-	-	-	-	-	-	-
Traffic Services	-	-	-	-	-	-	-	-	-	-	-
Street Furniture	-	-	-	-	-	-	-	-	-	-	-
Total Growth	2,161	2,497	2,495	6,731	2,484	2,533	2,602	6,200	2,732	2,801	33,236
Levels of Service											
Pavement	646	731	431	318	560	573	587	601	616	632	5,695
Bridges & Structures	303	309	316	322	330	337	345	353	362	371	3,348
Footpaths & Cycle Ways	184	1,972	7,270	412	421	430	441	451	462	474	12,517
Storm Water Drainage	-	-	-	-	-	-	-	-	-	-	-
Traffic Services	-	-	-	-	-	-	-	-	-	-	-
Street Furniture	-	-	-	-	-	-	-	-	-	-	-
Total Levels of Service	1,133	3,012	8,017	1,052	1,311	1,340	1,373	1,405	1,440	1,477	21,560
Total Capex	13,170	13,230	18,380	15,825	12,233	14,842	12,584	16,421	13,209	13,551	143,450

9. FINANCIAL FORECAST

Tables 23 and 24 show the full 10 year NZTA contribution forecast. More details about the expenditure forecasts are included in each of the asset category AMP volumes 1-6.

Maintenance

Table 23 Maintenance Subsidies Summary

Opex Subsidies Forecast (\$000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Pavement	2,204	2,248	2,296	2,347	2,398	2,455	2,511	2,571	2,635	2,701	24,366
Bridges & Structures	137	140	143	146	149	153	157	160	164	168	1,519
Footpaths & Cycle Ways	13	13	13	14	14	14	15	15	15	16	142
Storm Water Drainage	229	234	239	244	249	256	261	267	274	281	2,533
Traffic Services	677	660	631	623	637	652	667	683	700	718	6,648
Street Furniture	-	-	-	-	-	-	-	-	-	-	-
Total Maintenance	3,260	3,295	3,323	3,373	3,447	3,530	3,610	3,696	3,788	3,884	35,207

9. FINANCIAL FORECAST

Table 24 Capex Subsidies Summary

Capex Subsidies Forecast (\$'000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Renewals											
Pavement	2,456	2,504	2,558	2,614	2,671	2,733	2,796	2,863	2,934	3,008	27,137
Bridges & Structures	319	325	333	340	459	1,674	364	373	382	392	4,960
Footpaths & Cycle Ways	299	307	313	320	327	333	342	351	359	369	3,319
Storm Water Drainage	441	453	461	472	482	491	505	517	530	544	4,896
Traffic Services	2,205	214	218	222	227	232	238	244	250	256	4,306
Street Furniture	50	52	53	54	55	56	58	59	60	62	558
Total Renewals	5,770	3,855	3,936	4,022	4,221	5,519	4,303	4,407	4,515	4,631	45,176
Growth											
Pavement	566	582	538	2,524	562	572	589	2,406	618	635	9,592
Bridges & Structures	-	-	-	-	-	-	-	-	-	-	-
Footpaths & Cycle Ways	105	344	306	252	258	264	270	276	283	290	2,648
Storm Water Drainage	-	-	-	-	-	-	-	-	-	-	-
Traffic Services	-	-	-	-	-	-	-	-	-	-	-
Street Furniture	-	-	-	-	-	-	-	-	-	-	-
Total Growth	671	926	844	2,776	820	836	859	2,682	901	925	12,240
Levels of Service											
Pavement	-	-	-	-	-	-	-	-	-	-	-
Bridges & Structures	154	157	161	164	168	172	176	180	185	189	1,706
Footpaths & Cycle Ways	107	1,110	1,112	114	117	119	122	125	128	132	3,185
Storm Water Drainage	-	-	-	-	-	-	-	-	-	-	-
Traffic Services	-	-	-	-	-	-	-	-	-	-	-
Street Furniture	-	-	-	-	-	-	-	-	-	-	-
Total Levels of Service	261	1,267	1,273	278	285	291	298	305	313	321	4,891
Total Capex	6,716	6,078	6,076	7,101	5,352	6,663	5,489	7,423	5,761	5,911	62,307

Note: All subsidy forecasts are from the NZTA NLTP, except for Street Furniture Renewals which is a contribution from TRC.

9. FINANCIAL FORECAST

Table 25 shows the NZTA contribution forecast by NZTA work categories for the 2018-21 NLTP.

Table 25 NZTA subsidy forecast for 2018-21 NLTP

NZTA Subsidy Forecast (\$000)				
Work Category Description	NZTA Work Category	18/19	19/20	20/21
Sealed Pavement Maintenance	111	1,027	1,048	1,071
Unsealed pavement maintenance	112	34	35	36
Drainage maintenance	113	229	234	239
Structures maintenance	114	137	140	143
Environmental Maintenance	121	267	273	278
Traffic Services management	122	638	619	590
Operational traffic management	123	23	24	24
Cycle path maintenance	124	13	13	13
Footpath Maintenance and Renewal	125	299	307	313
Level crossing warning devices	131	16	17	17
Minor Events	140	257	262	268
Network & Asset Management	151	618	630	644
Unsealed Road Metalling	211	221	227	231
Sealed Road Resurfacing (local road)	212	1,550	1,593	1,621
Drainage renewals	213	441	453	461
Sealed Road Pavement Rehabilitation	214	700	714	730
Structures component replacement	215	319	325	333
Traffic services renewals	222	148	152	155
Airport Dr/SH3 intersection	324	51	53	-
LED Upgrade Project	324	1,996	-	-
Minor improvements	341	774	2,031	2,005
Let's Go Model Communities - Activities and Infrastructure State Highways	432	107	110	112
SH traffic signals	n/a	60	62	63
Total		9,925	9,323	9,349



10. ESTABLISHING OPTIMAL VALUE FOR MONEY

The Programme Business Case in Appendix 4 – Value for Money sets out a number of KPIs associated with targeting expenditure for different activities. The target values are based on comparing our actual performance with peer groups, with the Taranaki region and with national performance statistics.

The graph in Figure 14, *Overall network cost (excluding emergency works)* shows that NPDC expenditure per km of road is at a current five year average of \$9,600/km/annum. This is good value as it compares closely to both the equivalent peer group and Taranaki region averages. It is also lower than the national average. Therefore, we consider a target value of \leq \$10,000/km/annum as appropriate, equating to \leq \$12.8m/annum for the 1,278km of maintained roads. The proposed average expenditure of \$13.4m per annum concerts to \$10,485/km/annum. The increase is mainly due to the inclusion of footpath maintenance and renewal in the 2018-21 NLTP.

Figure 14 Overall network cost (excluding emergency works) per km

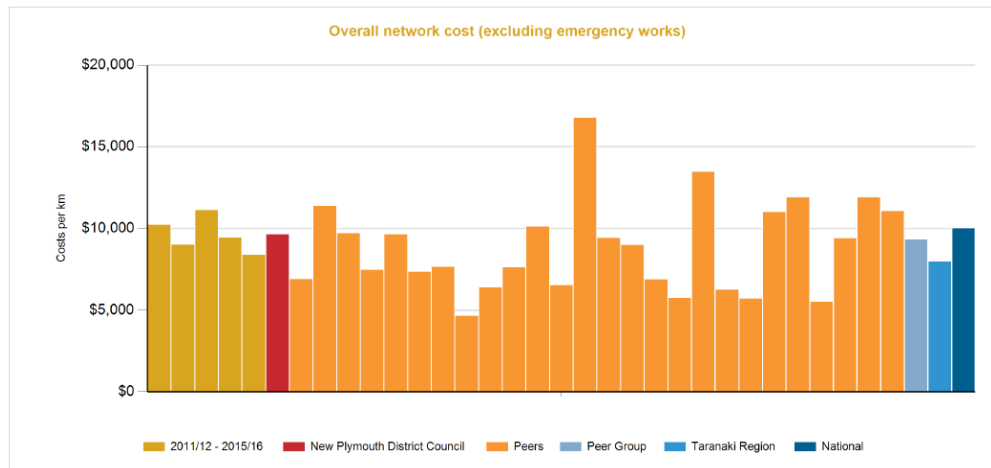


Figure 12: Overall network cost (excluding emergency works) per kilometre - Sourced from NZ Transport Agency TIO Work Category funding reports



10. ESTABLISHING OPTIMAL VALUE FOR MONEY

We recently conducted the NZTA Smart Buyer Assessment as shown in Figure 15.


Figure 15 Smart Buyer Assessment Tool Results

Smart Buyer Principles Assessment Tool

This assessment is based on the Smart Buyer Principles identified in the Road Maintenance Task Force Report. That statement of principles is included at the end of this document.

Score the following by ticking the appropriate box - (1) Disagree to (5) Strongly Agree
Whenever you score yourself "4 or 5" think of an example you can use to justify your score to an independent auditor or the other attendees at this workshop

Assessment statement Our Organisation	Score				
	1	2	3	4	5
1. Fully understands the different contracting models available		✓			
2. Holds meetings that updates the contracting industry on the forward works programme and any changes it is taking in approach and proactively engages with the contracting industry to ensure that gains optimal value out of any changes being implemented			✓		
3. Has sufficient robust data (or is in the process of gathering robust data) on our networks that enables optimal integrated decision-making			✓		
4. Has access to expertise that fully enables best use of the data available		✓			
5. Is open to alternative solutions to those proposed in the contract documents			✓		
6. Understands risk and how to allocate and manage it		✓			
7. Has a Council that is prepared to pay more now to achieve a lower whole of life cost				✓	
8. Actively pursues value for money & does not always award contracts to the lowest price				✓	
9. Is able to manage supplier relationships / contracts to ensure that expenditure is optimal and sustains infrastructural assets at appropriate levels of service			✓		
10. Supports ongoing skill and competency training and development for its staff				✓	
11. Actively participates in gatherings to share and gain knowledge within the sector				✓	
12. Is effective in keeping up with best practice in procurement including best practice RFP / contract documentation			✓		
13. Regularly seeks and receives candid feedback from suppliers on its own performance as a client and consistently looks to improve its performance			✓		
14. Explores opportunities for collaboration by either sharing in-house resources with neighbours, or by procuring together or tendering together. That exploration could be through an LGA s17A evaluation of transport function delivery options.				✓	
Number of ticks in each column		3	6	5	
Multiplying factor	x1	x2	x3	x4	x5
Total Score in Column		6	18	20	
Total Score					44



Our overall score of 44 indicates significant scope for improvement. As a result, we have identified a number of opportunities for improvement, including the following.

- We are now considering new procurement strategies in conjunction with adjacent RCAs (SDC and STDC) based on common opportunities. We are also forming relationships with the RCAs to the north of Taranaki e.g. Waikato, to explore common and mutual benefits, such as contracts that may cover works on NPDC roads.
- We have made recent changes to our professional services contract with Opus, bringing many asset management services back in-house. Our contractual relationship with Opus is now based on leveraging appropriate skills and sharing target cost and saving methodologies.
- We are also developing the concept of becoming a supply chain leader rather than just a conventional client. This will assist managing risk across whole supply chains and ensure a coordinated and cohesive understanding of contractual interdependencies and relationships amongst all parties in the supply chain. Target unit rates in the AMP and programme business cases reflect some of the potential savings that we believe achievable.
- We will develop a new procurement strategy to take advantage of the identified opportunities.

For projects involving values over \$1.0m, we will produce individual business cases to analyse options and solutions that demonstrate best value for money on a case-by-case basis e.g. Airport Drive Improvement project at estimated value of \$3.42m.

11. ESTABLISHING THE AFFORDABILITY OF THE AMP

53

Transportation services are funded through general rates, a uniform annual charge and road user revenue collected and distributed by the New Zealand Transport Agency (NZTA). Capital improvements are loan-funded with financial assistance, while the renewal and replacement of assets come from financial assistance and renewal reserves.

Our Financial Strategy is included in the LTP. The purpose of the FS is to provide prudent financial management by guiding the Council to consider proposals for funding and expenditure against affordability. The theme of the FS is to 'strike the right balance' between rates affordability, maintaining the service levels expected by the community while supporting a strong and resilient economy. The LTP process takes all these considerations into account and through the FS provides a level of funding balanced with affordability to support the delivery of the activities contained in the AMP.



12. ESTABLISHING THAT COUNCIL CAN EFFECTIVELY IMPLEMENT THE AMP

The Infrastructure Group is largely responsible for managing the resources to implement and deliver the activities included in the AMP. A diagram of the key positions responsible for delivery can be found in Section 2.4. – Organisational Structure.

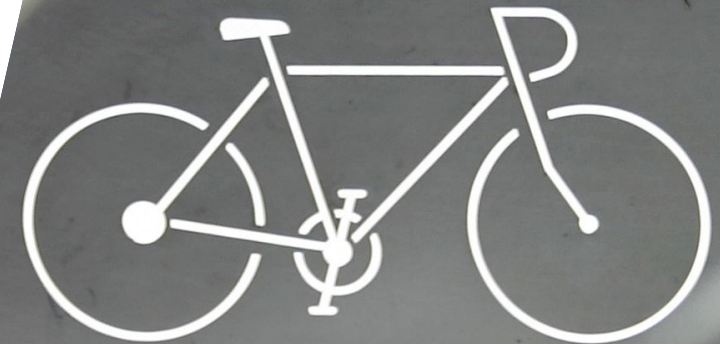
The Infrastructure Manager is responsible for day-to-day operations, and maintenance, renewal and augmentation of the transportation system in accordance with the LTP, AP and AMP. This manager is also responsible for overall management of resources to achieve plans, including the balance of internal and contract resources.

The Transportation Manager is responsible for the delivery of day-to-day operations, and maintenance and renewals of the transportation network, including managing internal and contract resources. The Network Delivery Lead in the transportation team has a team of Contract Engineers responsible for coordinating and managing the internal and external resources required for delivery. Last year we changed our professional services contract with Opus bringing many asset management services back in-house. Our contractual relationship with Opus is now based on leveraging appropriate skills and sharing target cost and saving methodologies.

The Infrastructure Projects Manager is responsible for delivering major projects and technical investigations for the renewal and augmentation of the transportation network. Last year the Infrastructure Projects team was expanded as part of our strategic plan to match resources to our workload. We also implemented improved project and financial tracking and forecasting systems.

13. ESTABLISHING SUPPLIER CAPACITY AND CAPABILITY TO DELIVER THE AMP

As mentioned in Section 10 – Establishing Optimal Value for Money, we are working on becoming a supply chain leader rather than just a conventional client. This will assist risk management across whole supply chains and ensure a coordinated and cohesive understanding of contractual interdependencies and relationships amongst all parties in the supply chain. Target unit rates in the AMP and programme business cases reflect some of the potential savings that we believe achievable. We will develop a new procurement strategy to take advantage of the identified opportunities. We will include all parties involved in the supply chain in capacity and capability planning to deliver the activities included in the AMP. This will allow longer term partnerships with contractors to be formed and improved term contracts to be developed, to the mutual benefit of all parties in the supply chain.



Risk management identifies potential risks to transportation assets, analyses the consequence and likelihood of those risks occurring, and details how we are managing those risks through various treatments.

The risk management process also identifies who is responsible for managing each of the identified risks. This process then informs policy and planning and ensures that risk is managed in a way that enables consistent achievement of our key business objectives and community outcomes.

Our risk assessments are conducted, recorded, managed, escalated and monitored in accordance with ECM#1479536 – Corporate Risk Management Framework: Policy & Process. A summary of how the policy and process operate and a list of the current key risks relevant to our assets is included in Section 7 of the Asset Management Strategy. The list includes risks that are applicable across all asset categories and those particular to Transportation.

14.1 Sources of Risk

We are exposed to are many and varied sources of risk. As a framework for risk identification and analysis, there are nine identified sources of risk that are relevant to all Council activities:

People and knowledge

- Inability to attract and retain skilled staff
- Ineffective employment relations
- Poor staff knowledge, skills, engagement
- Inadequate human resource planning

Health and Safety

- Failure to provide a safe work environment
- Non-reporting of incidents/accidents, and/or not identifying trends from those reported
- Inadequate focus on Health and Safety, especially at high risk workplaces

Governance, reputation, legislative compliance and control

- Ineffective relationship with our community (with reputational risk being a contributor)

- Ineffective relationship with and between elected members
- Implications of the election cycle e.g. the learning curve for new members as they become familiar with the functions and requirements of local government
- Failure to comply with legislative requirements
- Lack of internal control

Planning and strategy

- Inadequate business improvement planning
- Inadequate planning to meet future requirements (growth, renewals, changing levels of service) as documented in the Long-Term Plan, Annual Plan, and Annual Report
- Inadequate emergency response/business continuity planning

Financial

- Fraud (misappropriation of Council funds)
- Inability to secure funding or credit
- Inappropriate or inadequate procurement practices
- Lack of internal control

Information management

- Inadequate management of technology and systems
- Poor staff knowledge of systems
- Viruses, hacking, unauthorised access, inappropriate use of IT systems

Property and assets

- Facilities do not meet requirements
- Failure to deliver on key projects
- Inadequate asset information and management
- Inadequate insurance cover
- Poor safety and security at public facilities: accidents, criminal activity, unacceptable behaviours, abuse

Environment

- Natural hazards
- Security
- Hazardous and toxic materials
- Public health outbreak
- Emergency/disaster management
- Waste and refuse

Operations and service delivery

- Poor operations or customer service (including poor contractor management and performance)

Property and assets

- Facilities do not meet requirements
- Failure to deliver on key projects
- Inadequate asset information and management
- Inadequate insurance cover
- Poor safety and security at public facilities: accidents, criminal activity, unacceptable behaviours, abuse

Appendix 11 includes an extract from the risk registers of risks relevant to transportation assets.

14.2 Minor Emergency Events

Risk #59 noted in Appendix 11 identifies the following risk:

There is unbudgeted expenditure because of ongoing repairs of damage to the transport network due a natural catastrophe, resulting in a need to revisit future year budgets.'

The Operations, Maintenance and Renewal programme in the AMP does include a provision for minor emergency events (Work Category 140) at approximately \$500k/annum. Examples of qualifying activities include, but may not be limited to:

Any activities that would otherwise qualify as **Emergency Works** except that the total cost of the works is less than \$100,000 per event per Approved Organisation or Transport Agency (state highways) region, including:

- removal of rocks and slip material from roads and cycle ways that have resulted from minor events;
- repairs to road and cycleway surfaces in response to minor events; and
- Reinstatement of network facilities damaged as a result of a minor event.

Other potential activities that are not in the above list should be discussed with the Transport Agency for eligibility.

The NZTA definition of Emergency Works includes events that qualify for NLTP funding as Emergency Works will:

- Be of unusually large magnitude or severity for the particular area in which they occur (as a guide, they would be expected to have an annual return period greater than 1 in 10 years);
- Originate from natural, short duration triggering events, including very high intensity rainfall, severe wind, severe drought in government declared drought areas or seismic events;
- Have reduced, or will reduce within a 12 month period, levels of transport service significantly below those that existed prior to the event;
- Involve a total cost of \$100,000 or more per event per Approved Organisation or Transport Agency (state highways) region; and
- Be clearly defined, named and described, with a separate funding application required for each event.

In accordance with the NZTA Emergency Funding Policy, the cost of emergency works will attract the normal FAR for claims having a value of up to 10% of the total approved maintenance programme. For claims in excess of 10% the FAR will increase by an additional 20% up to a maximum of 95%, unless the event is classed as an extreme event when a 100% FAR would apply.

The NZTA Emergency Funding Policy does create a risk in terms of our capacity to complete the programme should funding for emergency works be required. If Emergency Works expenditure is required, to contain overall Council expenditure within approved budgets we would either need to make a corresponding reduction in the maintenance programme, and/or use alternative funding, or increase budget levels. This risk could be mitigated if NZTA changed their policy to applying a FAR of 100% to all Emergency Works.

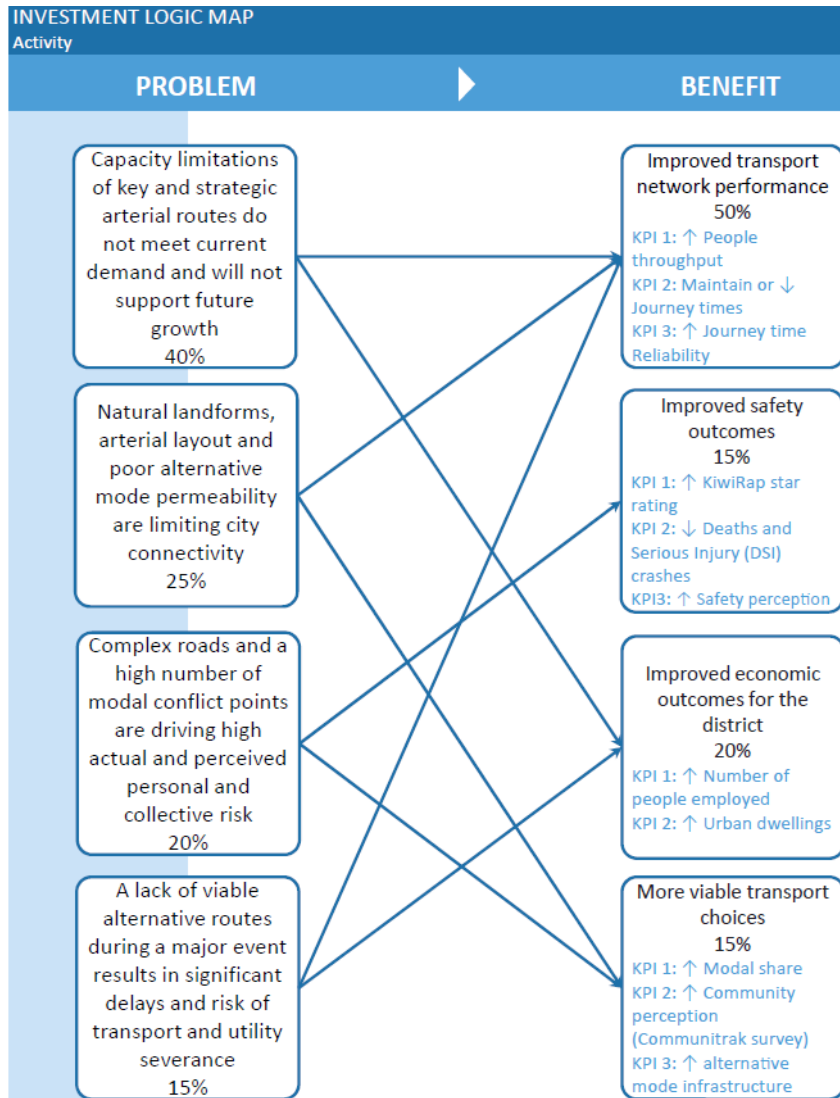
Appendix 1 - One Network Road Classification

Figure 16 ONRC Diagram

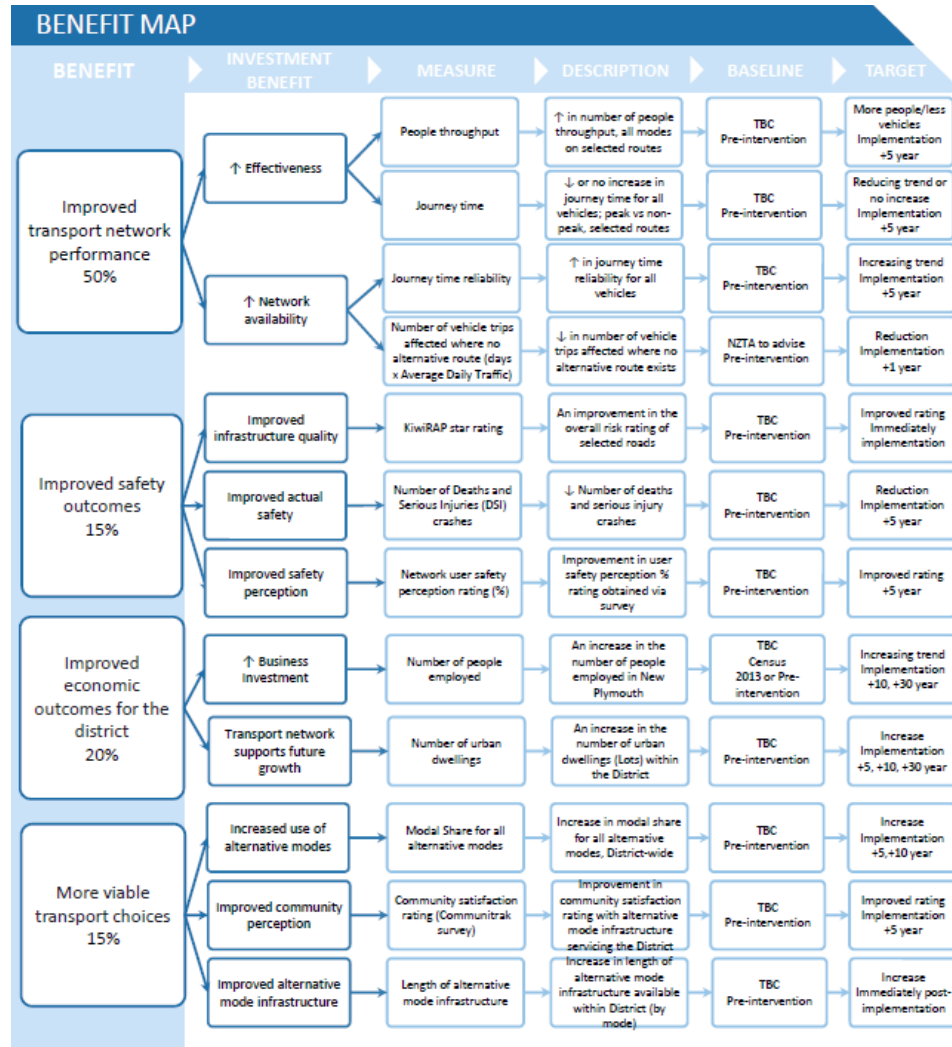


Appendix 2A – Investment Logic Map 1 Part A (Keeping NP Moving and Growing)

Figure 17 Keeping New Plymouth Moving and Growing ILM

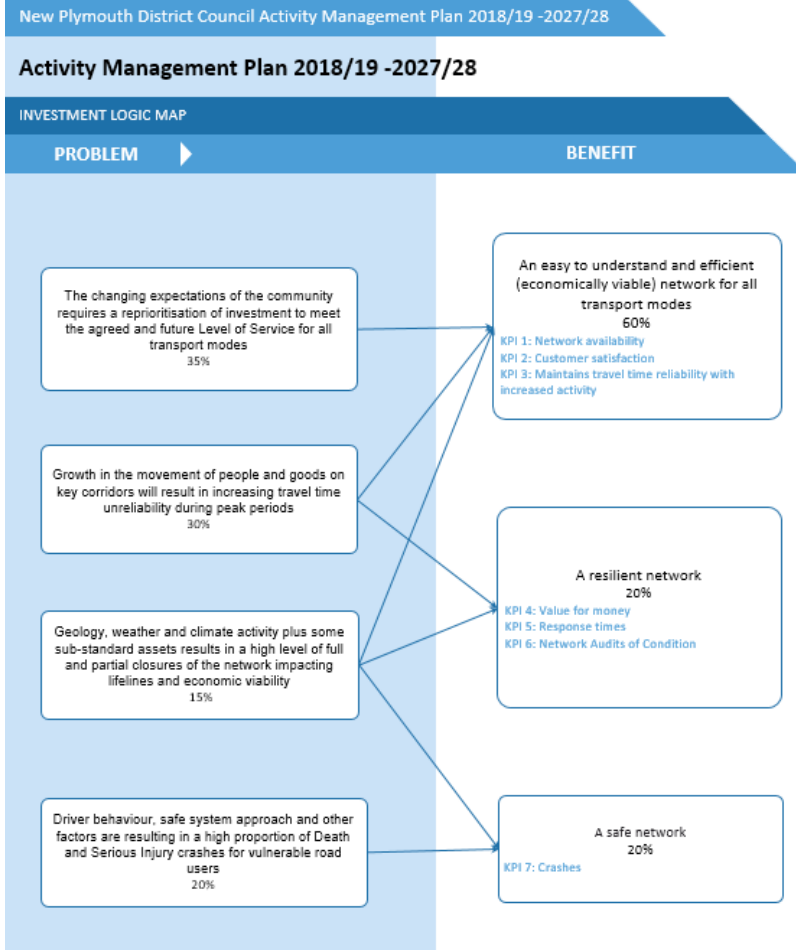


Appendix 2B – Investment Logic Map 1 Part B (Keeping NP Moving and Growing)
 Figure 18 Keeping New Plymouth Moving and Growing Benefits Map



Appendix 3A - Investment Logic Map 2 Part A (Operations and Maintenance)

Figure 19 Operations, Maintenance, Renewals and Minor Improvements ILM



Investor: Dion Cowley
Facilitator: Tim Eldridge
Accredited Facilitator: No - Registered Business Case Professional

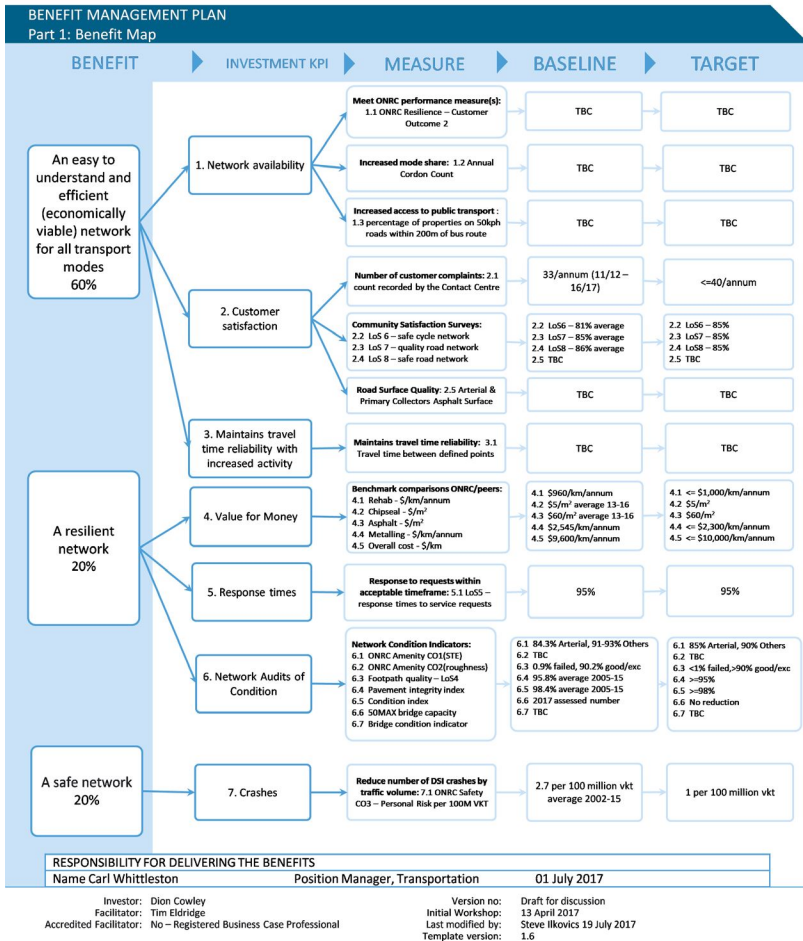
Version no: Draft for discussion
Initial Workshop: 11 April 2017
Last modified by: Steve Ilkovic - 22 June 2017
Template version: 1.3

Appendix 3B - Investment Logic Map 2 Part B (Operations and Maintenance)

Figure 20 Operations, Maintenance, Renewals and Minor Improvements Benefits Map

New Plymouth District Council Activity Management Plan 2018/19 -2021/22

Activity Management Plan 2018/19 -2021/22



Appendix 4 – Programme Business Case 1 Network Availability

Table 26 Network Availability Measures

Benefit	An easy to understand and efficient (economically viable) network for all transport modes
Investment KPI	Network Availability
Measure(s)	<ul style="list-style-type: none"> Meet ONRC performance measures - ONRC Classification Increased Mode Share Increased Access to Public Transport

Table 27 Network Availability KPIs

KPI No	KPI	Baseline Performance	Target Performance
1.1	ONRC Resilience – Customer Outcome 2 – number of instances where road access is lost with no viable detour	TBC	TBC
1.2	Annual Cordon Count	TBC	TBC
1.3	% properties on 50kph roads within 200m of bus route	TBC	TBC

Link to Strategic Case

Strategic case problem(s):

- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.
- Growth in the movement of people and goods on key corridors will result in increased travel time unreliability during peak periods.
- The changing expectations of the community requires reprioritisation of investment to meet the agreed and future Level of Service for all transport modes

Strategic case benefit:

- An easy to understand and efficient (economically viable) network for all modes.

Investment KPI:

- Network availability.

The availability of the network for vehicle users will be measured by network resilience ONRC Customer Outcome 2.

Cyclist and pedestrian usage of the network is related to the quality and perception of the facilities available. It encourages fewer vehicle movements on the network and has health benefits for the community.

The availability of public transport provides better movement around the district for those without private vehicles. It also encourages fewer vehicle movements.

Levels of Service

1.1 ONRC Resilience – Customer outcome 2 – No historical data is available to measure against this outcome. Data will be collected from 01 July 2017 and reviewed regularly to identify if any trends exist and if we should consider potential improvement to the network.

1.2 Annual Cordon Count –the annual cordon count at the locations specified by NZTA has only taken place for two years. The data obtained from these counts is inconsistent because of the different weather conditions experienced on the data collection days. We plan to utilise future cordon count data to analyse and measure mode share performance, to identify improvements/additions (capex) to cycling/pedestrian facilities plus in ongoing encouragement and education programmes (O&M).

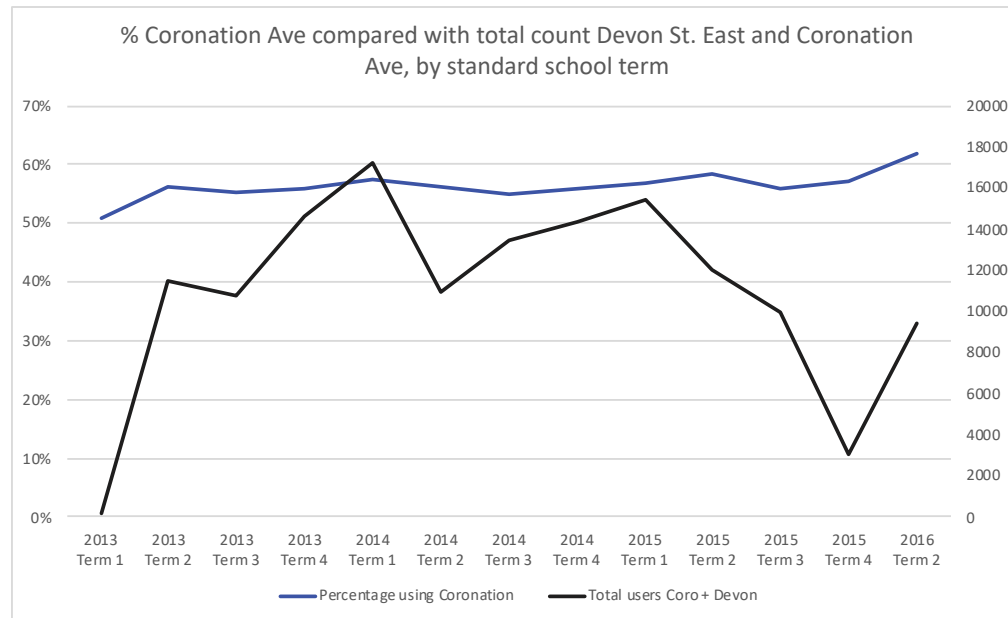
1.3 The percentage of properties within the defined urban area within 200m of bus route – this gives an indication of the existing bus service coverage and will assist in identifying future enhancements to services, with TRC to consider extending bus routes where data indicates opportunities.

Compilation and Testing of Evidence

1.1 No data yet exists for analysis or testing.

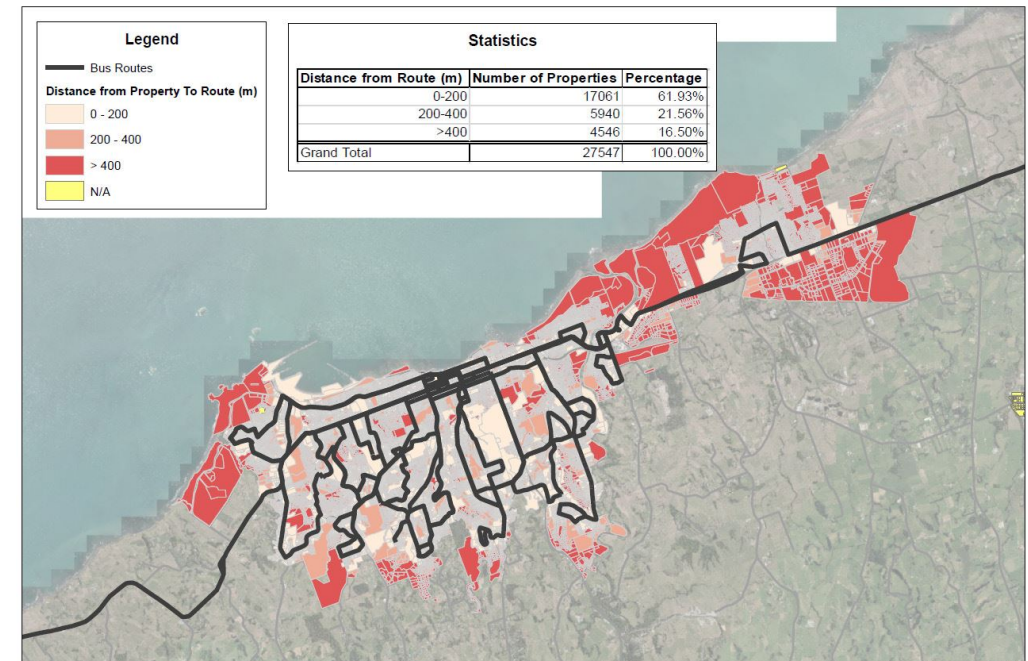
1.2 Not enough NZTA defined cordon count data yet exists to analyse or test. However, existing mode share data from previous cyclist and pedestrian counts is useful as a guide to identifying investment opportunities for improvements. The graph in Figure 21 shows the difference in numbers of cyclists and pedestrians measured at the Coronation Avenue counter and at the Coronation Avenue and Devon Street East counters combined. This clearly shows that there is a far higher percentage of users at the Coronation Avenue location, which has recently been installed with improved cycling lane facilities.

Figure 21 Cyclist usage comparison



1.3 Bus Route Proximity – An analysis of the percentage of properties in the defined urban area within 200m of public bus service routes is shown on the map in Figure 22.

Figure 22 Bus Route Proximity to Properties



Gap Assessment

- 1.1 No data yet exists to analyse or determine if any gaps exist.
- 1.2 Even though not enough reliable cordon count data yet exists it is evident from the data shown in the graph above that investment in cycling and walking facilities will significantly increase usage, supporting long term aims of reducing road traffic movements and encouraging fitness etc. Therefore, we can conclude that further investment in the improvement and addition of new cycling and pedestrian is required.
- 1.3 This will need to be discussed with TRC to ensure alignment with their goals.

Development of Options

- 1.1 Options will be developed when data has been gathered and analysed to identify any gaps and develop options.
- 1.2 Following the success of the ‘Let’s Go’ project and the momentum gained from the programme of investing in the improvement of cycling and pedestrian facilities, we intend to continue investing at similar levels over the NLTP period. This is consistent with national and regional strategies for increasing and improving mode share on local roads and state highways. The approved 2015-18 NLTP values are shown in Table 28. Other options would be to reduce or increase investment levels from 2015-18 NLTP levels.

Table 28 Let’s Go 2015-18 NLTP approved values

Description	2015-18 NLTP Approved Budget (\$)
Let’s Go – Education & Encouragement	1,080,000
Let’s Go – Infrastructure Construction	525,000
Let’s Go – Infrastructure Construction – Urban Cycle Way	147,000
Total	1,752,000

- 1.3 This will need to be discussed with TRC to ensure alignment with their goals.

Testing of Options

- 1.1 No data yet exists to analyse or determine if any gaps exist.
- 1.2 Even though not enough reliable cordon count data yet exists, it is evident from the data in the graph above that investment in cycling and walking facilities will significantly increase usage, supporting long term aims of reducing road traffic movements and encouraging fitness etc. We can conclude that further investment in the improvement and addition of new cycling and pedestrian facilities at levels similar to the 2015-18 NLTP is required. Reducing investment levels would reverse the improvement already made. It is likely that increasing investment would not result in a proportionate increase in benefits so it is discounted on this basis.
- 1.3 This will need to be discussed with TRC to ensure alignment with their goals.

Preferred Programme

- 1.1 A programme for network resilience projects for the 2021-24 NLTP will be developed based on the data collected during the 2018-21 NLTP period.
- 1.2 Our preference is for a programme of works at investment levels similar to the 2015-18 NLTP. This would consist of investment on the local and SH road networks to deliver a number of improvements, such as a continuation of the ‘Let’s Go’ initiative. It would also contribute towards other initiatives including the regional Roadsafes Taranaki campaign.
 - Education & Encouragement – Local Roads - The programme of improvements, education, safety campaigns and skills training has been operating for more than seven years. This will continue with the funding submission forming part of STDC application for Taranaki wide activities.
 - Construction - Local Roads - The proposed local road investment relates to the on-going commitment by NPDC and the NZTA to encourage active travel. This investment represents an ongoing investment in small capital works that will continue upgrading pathways and on road walking and cycling facilities. Continued improvement will create an integrated, permeable transport network that provides for all transport users. The expected benefits are increased uptake in active transport modes, improved community health, decreased need for expensive network capacity upgrades and increased attractiveness of the district for workers. A network of links to Inglewood, Bell Block and Waitara will also be considered.

- State Highways – The proposed SH investment relates to the on-going commitment by NPDC and the NZTA to encourage active travel. This programme of improvements is on the district’s State Highways and will encourage more people cycling, walking and taking the bus resulting in increased flexibility and reliability of the network and reducing peak demand on vehicle lanes. There are also benefits for health, tourism and community cohesion.

The proposed investment programme is shown in Table 29.

Table 29 Let’s Go 2018-21 NLTP Expenditure Forecast

NZTA Work Category	Description	Proposed 2018-21 NLTP (\$)
432 (Promotion, education and advertising) – Submitted as part of STDC application as Taranaki wide	Let’s Go – Activities and Infrastructure – Education & Encouragement – local roads (58% FAR)	566,000
341 (Low Cost/Low Risk)	Let’s Go Implementation – Activities and Infrastructure - Construction – local roads (51% FAR)	1,480,000
Total		2,046,000

1.3 This will need to be discussed with TRC to ensure alignment with their goals.

Further details about footpaths and cycle ways can be found in Volume 2 of the AMP.

Improvement Plan

During the 2018-21 NLTP period, we will gather and analyse data on the measures described in the programme business case to develop future options for investment in resilience and mode share projects.



Appendix 5 – Programme Business Case 2 Customer Satisfaction

Table 30 Customer Satisfaction Measures

Benefit	An easy to understand and efficient (economically viable) network for all transport modes
Investment KPI	Customer satisfaction
Measure(s)	<ul style="list-style-type: none"> Number of customer complaints Community Satisfaction Surveys Road Surface Quality

Table 31 Customer Satisfaction KPIs

KPI No	KPI	Baseline Performance	Target Performance
2.1	Count of complaints recorded by Contact Centre	33 per annum average 2011/12 – 2016/17	<=40 per annum
2.2	Quality cycle network safe for users (Communitrak Survey) – LoS 6	The average performance between 2005/06 and 2016/17 was 81%	85%
2.3	Quality roading network for users – quality (Communitrak Survey) – LoS 7	The average performance between 2005/06 and 2016/17 was 85%	85%
2.4	Quality roading network for users – easy, quick, safe access - (Communitrak Survey) – LoS 8	The average performance between 2005/06 and 2016/17 was 86%	85%
2.5	Arterial & Primary Collectors >10,000 vehicles per day rehabilitated with structural asphalt	zero	200m/year

Link to Strategic Case

Strategic case problem(s):

- Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.
- The changing expectations of the community requires reprioritisation of investment to meet the agreed and future Level of Service for all transport modes.
- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability

Strategic case benefit:

- An easy to understand and efficient (economically viable) network for all modes

Investment KPI:

- Customer satisfaction

The number of customer complaints received and the measured levels of customer satisfaction with the transportation network are directly linked to the level of investment in network operation & maintenance and improvement activities.

Levels of Service

The graphs shown in Figure 23 show the historical performance for these KPIs. [Note: the customer complaints data for 2016/17 is to mid-April 2017].

Figure 23 Number of complaints

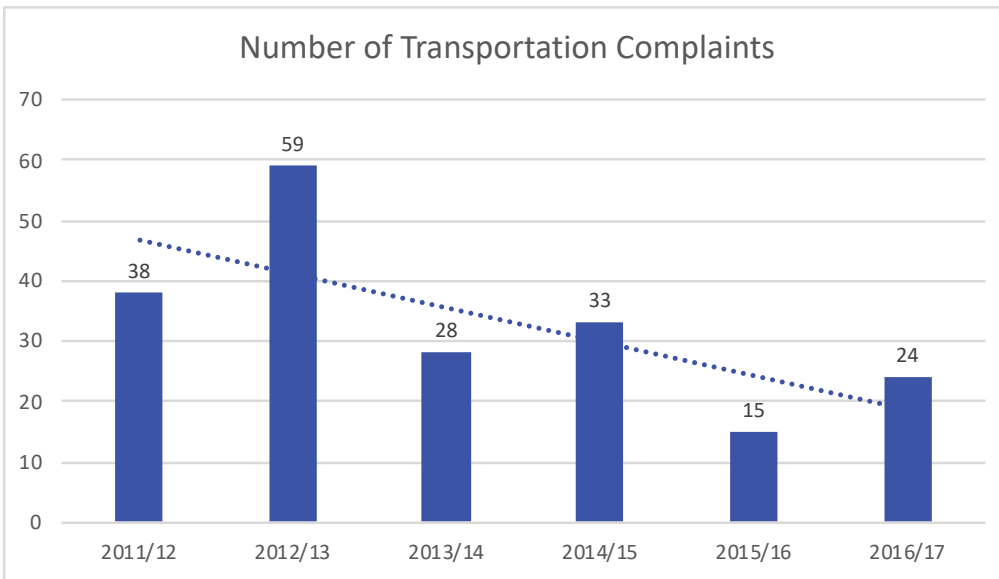


Figure 24 Satisfaction with cycle network

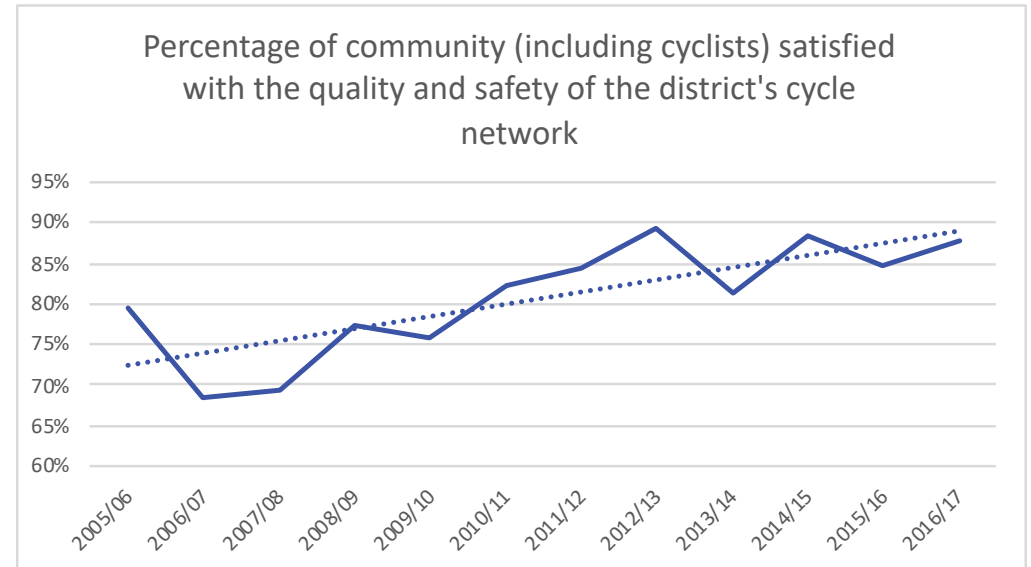


Figure 25 Satisfaction of overall network quality

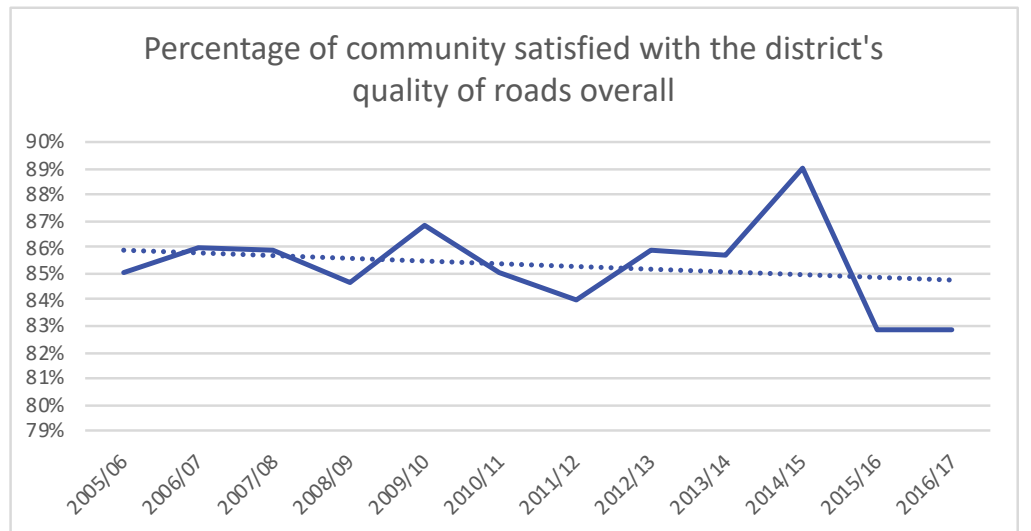
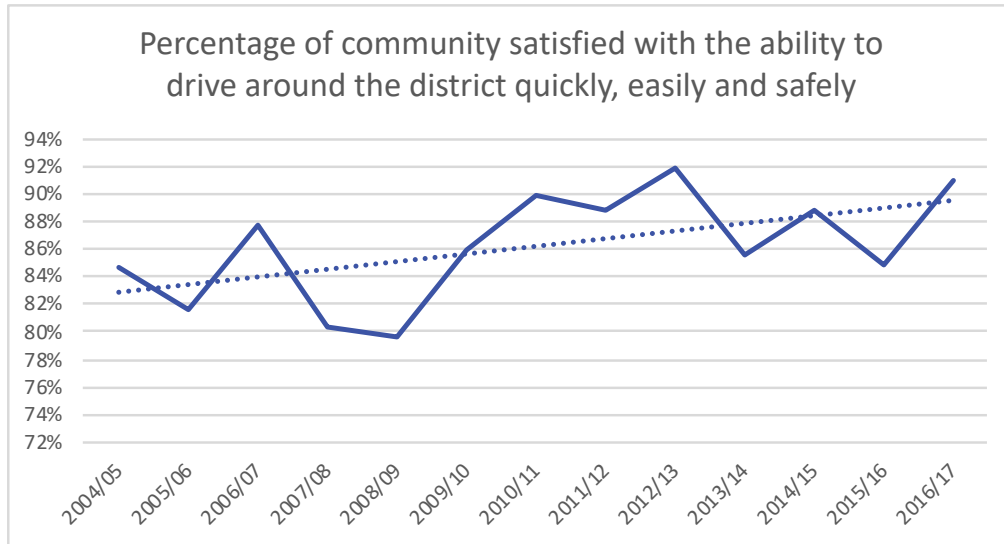


Figure 26 Satisfaction on network movement



Compilation and Testing of Evidence

2.1 The graph Number of Transportation Complaints above indicates an average annual number of customer complaints of 33. [Note: this may be higher when the full count for 2016/17 is available].

2.2 The Percentage of community (including cyclists) satisfied with the quality and safety of the district’s cycle network graph indicates that the average annual satisfaction score is 81% and has been steadily increasing since 2007/08. This is due to the investment in the districts cycle network over the last few years as part of the Let’s Go project. Table 32 shows the 2015 LTP targets and actual performance. Target levels were set to decrease by 1% per annum from the actual 81% performance in 2013/14.

Table 32 Cycle network satisfaction targets and performance

	2013/14	2014/15	2015/16	2016/17	2017/18	2018-2025
Target			80%	79%	78%	77%
Actual	81%	88%	85%	88%		

2.3 The graph *Percentage of community satisfied with the district’s quality of roads overall* above indicates that the average annual satisfaction is 85% and has been steadily decreasing since 2005/06. This correlates with the general decrease in O&M expenditure over the same period, which has resulted in a decrease in quality for the district’s roads. Table 33 shows the 2015 LTP targets and actual performance. Target levels were set to decrease by 1% per annum from the actual 85% performance in 2013/14.

Table 33 Road network satisfaction targets and performance

	2013/14	2014/15	2015/16	2016/17	2017/18	2018-2025
Target			84%	83%	82%	81%
Actual	85%	89%	83%	83%		

2.4 The *Percentage of community satisfied with the ability to drive around the district quickly, easily and safely* graph indicates that the average annual satisfaction is 86% and has been steadily increasing since 2008/09. The table below shows the 2015 LTP targets and actual performance. Target levels were set to decrease by 1% per annum from the actual 85% performance in 2013/14.

Table 34 Road network movement satisfaction targets and performance

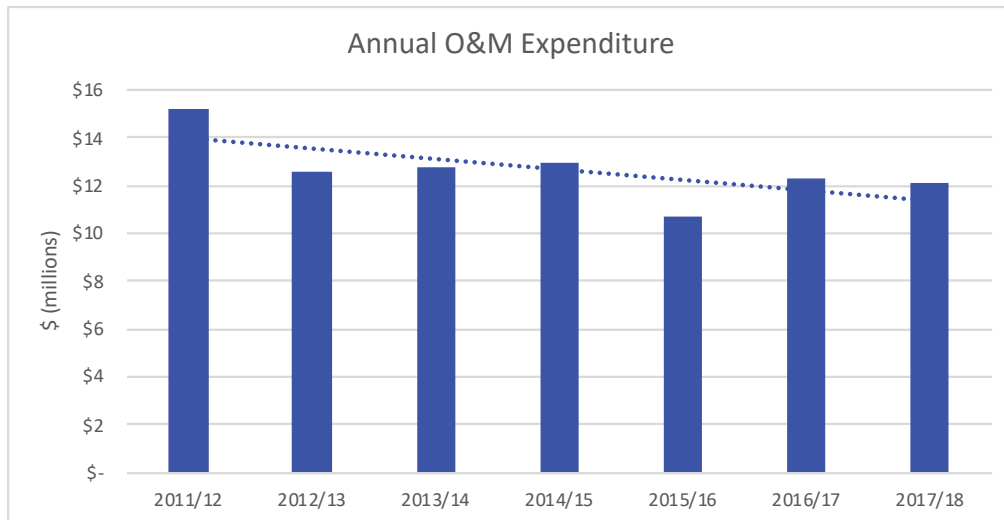
	2013/14	2014/15	2015/16	2016/17	2017/18	2018-2025
Target			85%	84%	83%	82%
Actual	86%	89%	85%	91%		

2.5 Arterial & Primary Collectors with >10,000 vehicles/day rehabilitated with structural asphalt.

This will be an improvement programme aimed at increasing customer satisfaction by providing a smoother, more durable and quieter road surface. The whole of life asset cost would also be improved as the surface would be more durable and cheaper to replace when required. We currently have 5km of Arterial and Primary Collector roads with >10,000 vehicles/day. We estimate rehabilitation with a structural asphalt construction will cost approximately \$125/m2. An additional \$250k per annum has been included for this programme, which would allow up to 50% of these roads to be rehabilitated over a ten year period. Roads would be rehabilitated when deterioration of the existing thin flexible surface requires resurfacing.

The actual and future approved overall annual operations and maintenance expenditure is shown in the graph O&M Expenditure in Figure 27. The average annual expenditure over the period is \$12.7m. The total approved allocation for the 2015-18 NLTP is \$34.3m or an average of \$11.4m per annum. This shows a downward trend in overall expenditure, but at the same time an increase in customer satisfaction with the ability to drive around the district quickly, easily and safely and a decrease in customer complaints. However, there has been a general decrease in the satisfaction with overall road quality. This indicates that O&M expenditure has been targeted at resolving the most important safety and access issues while satisfaction in the general quality of the roads has fallen.

Figure 27 Annual O&M expenditure



The graph in Figure 28 - Overall network cost (excluding emergency works) below shows that NPDC expenditure per km of road is marginally higher than the peer group average, slightly higher than the Taranaki region and below the national average.

Figure 28 Overall network cost (excluding emergencies) per km

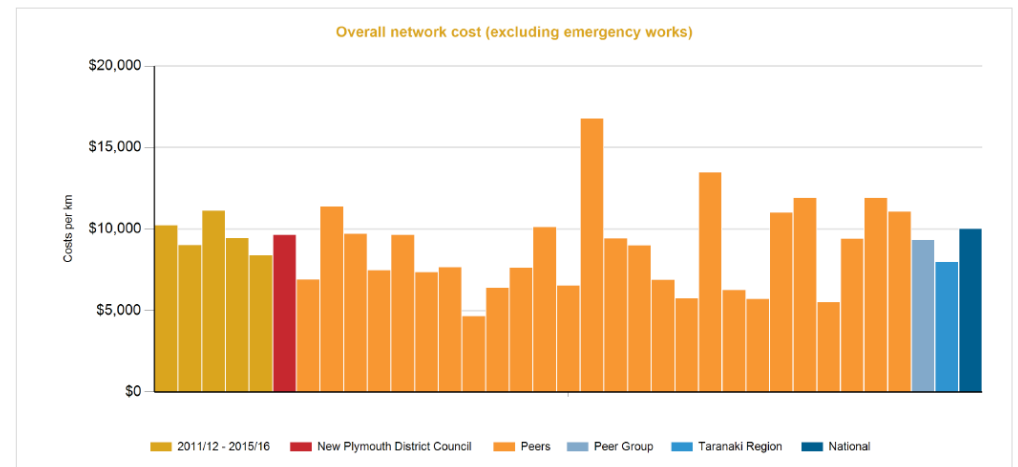


Figure 12: Overall network cost (excluding emergency works) per kilometre - Sourced from NZ Transport Agency TIO Work Category funding reports

Gap Assessment

- 2.1 We consider the annual tolerable maximum number of customer complaints to be 40. Anything above this level would indicate that network maintenance levels are not satisfactory and that the network condition is deteriorating at an unacceptable rate.
- 2.2 Satisfaction levels have been 85% or greater over the last the last three years so we consider that maintaining performance at 85% will provide for the level of quality and safety required by the community.
- 2.3 Maintaining performance at 85% will provide for the level of quality required by the community.
- 2.4 Maintaining performance at 85% will also provide the community with an appropriate level of ability to drive around the district quickly, easily and safely.
- 2.5 Currently, none of the district's arterial and primary collector roads with >10,000 vehicles per day are constructed from structural asphalt. New Plymouth is designated a high growth district. As the population grows, we anticipate that unless structural AC is applied, the quality and safety of these road surfaces will fall below that expected by the community. An increased need for public transport will cause more seal dragging and chip loss caused by buses. Arterials and primary collectors are the most highly used roads in the district. Improved quality, including smoother and more durable surfaces will provide benefit to pedestrians and especially to cyclists. Proactively installing structural AC roads will avoid both undue/accelerated degradation and the costs associated with disruption and road closures for repairs at a later date.

The current approved allocations in the 2015-18 NLTP are \$18.2m for operations and maintenance and \$16.1m for renewals (total of \$34.3m). This level of expenditure is broadly in line with the peer group average, Taranaki region average and national average investment levels.

Development of Options

The three options available are:

- (i) To spend less than the 2015-18 NLTP approved allocation of \$34.3m.
- (ii) To spend at a similar rate to the 2015-18 NLTP approved allocation of \$34.3m.
- (iii) To spend more than the 2015-18 NLTP approved allocation of \$34.3m.

Testing of Options

- (i) To spend less than the 2015-18 NLTP approved allocation of \$34.3m—we anticipate that this would result in an increase in customer complaints and a decrease in each of the community satisfaction metrics. It would also be accompanied by a general deterioration in the condition of the assets, resulting in more expensive repairs being required at a later date and a general increase in whole of asset life costs.
- (ii) To spend at a similar rate to the 2015-18 NLTP approved allocation of \$34.3m—spending similar amounts to the current 2015-18 NLTP values should be sufficient to maintain assets at their current overall condition, maintain the number of customer complaints below the tolerable maximum of 40/annum and customer satisfaction levels at or above target values. Investment would be targeted at improving the condition of the more critical assets i.e. higher ONRC classified roads and would be optimised to give the best value for money e.g. coordinated with other utility renewals to guard against premature excavation into newly re-surfaced roads. Better targeting of expenditure at existing levels may increase levels of community satisfaction with the ability to drive around the district quickly, easily and safely.
- (iii) To spend significantly more than the 2015-18 NLTP approved allocation of \$34.3m—this would result in exceeding the customer complaint and satisfaction levels which is unnecessary.

Preferred Programme

Spending similar amounts to the current 2015-18 NLTP approved allocation is the preferred programme. This will require a total investment of \$40.2m or an average of \$13.4m per annum spread over the investment lines in the tables below. This is an average annual increase of \$1.97m per annum from the 2015-18 NLTP values, which is mainly attributable to inflation and increases for structure renewals (215), minor events (140), sealed road resurfacing (212), sealed road rehabilitation (214) and the addition of footpath maintenance and renewals (125). The annual average expenditure of \$13.4m is only \$0.7m more than the annual average expenditure of \$12.7m over the years 2011/12 – 2016/17.

Table 35 NLTP maintenance expenditure comparisons

NZTA Work Category (O&M)	Description	2015-18 NLTP Approved Allocations (\$)	Proposed 2018-21 NLTP (\$)
111	Sealed pavement maintenance	5,949,067	6,149,000
112	Unsealed pavement maintenance	188,510	206,000
113	Routine drainage maintenance	1,285,656	1,375,000
114	Structures maintenance	812,666	825,000
121	Environmental maintenance	1,475,037	1,580,000
122	Traffic services maintenance	4,028,221	3,623,000
123	Operational traffic management	123,778	138,000
124	Cycle path maintenance	38,525	77,000
125	Footpath maintenance and renewal	0	1,802,000
131	Level crossing warning devices	93,233	99,000
140	Minor events	807,762	1,546,000
151	Network and asset management	3,479,021	3,708,000
Total		18,281,476	21,128,000

Table 36 NLTP Renewals expenditure comparisons

NZTA Work Category (Renewals)	Description	2015-18 NLTP Approved Allocations (\$)	Proposed 2018-21 NLTP (\$)
211	Unsealed road metalling	1,135,528	1,329,000
212	Sealed road resurfacing	8,616,538	9,316,000
213	Drainage renewals	2,472,393	2,658,000
214	Sealed road pavement rehabilitation	3,037,992	4,202,000
215	Structures component replacements	124,366	693,000
222	Traffic services renewals	692,571	890,000
Total		16,079,388	19,088,000

This level of expenditure corresponds with KPI 4.5:

Table 37 Overall network cost KPI

KPI	Baseline Performance	Target Performance
Overall Network Cost (excluding emergency works) - \$/km	\$9,600/km/annum average over 3 years 2013/14 – 2015/16	<= \$10,000/km/annum and stay above 90% on national average

The 1,278km of maintained roads would require a total annual expenditure of \$12.8m to meet the <=\$10,000/km/annum target performance. The proposed expenditure of \$13.4m per annum represents a cost of \$10,485/km/annum. The increase is mainly attributable to the addition of footpath maintenance and renewal (125) to the 2018-21 NLTP.

The Long Term Plan includes a Department of Internal Affairs mandated Level of Service to show the percentage of the sealed local road network that is resurfaced each year. For the 2018-2028 LTP this is set at 5.7%, which equates to targeting resurfacing on a 17.5 year cycle. The values included in the above tables correlate with this Level of Service and ensure it will be met to maintain sealed road surfaces to the acceptable and safe standard expected and accepted by the community.

Refer to the AMP Volumes for further details of the work programmes and annual expenditure forecasts.

Improvement Plan

During the 2018-21 NLTP the level of customer complaints and other network quality measures will be measured and assessed to test if the desired outcomes are being achieved. Adjustments will be proposed to investment levels for the 2021-23 NLTP if required. As the network grows additional O&M investment will be required and this will be factored into future NLTP bids.



Appendix 6 – Programme Business Case 3 Travel Time Reliability with Increased Activity

Table 38 Travel Time Reliability with Increased Activity Measures

Benefit	An easy to understand and efficient (economically viable) network for all transport modes
Investment KPI	Maintains travel time reliability with increased activity
Measure	Maintains Travel time reliability

Table 39 Travel Time Reliability with Increased Activity KPIs

KPI No	KPI	Baseline Performance	Target Performance
3.1	Travel time between defined points	TBC	TBC

Link to Strategic Case

Strategic case problem(s):

- The changing expectations of the community requires reprioritisation of investment to meet the agreed and future Level of Service for all transport modes.
- Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.
- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

Strategic case benefit:

- An easy to understand and efficient (economically viable) network for all modes

Investment KPI:

- Maintains travel time reliability with increased activity

As the district population grows, in order to maintain travel time reliability on our roads while we experience increased traffic activity, we will need to measure travel times to provide robust data analysis to support developing options for investment decisions.

Levels of Service

Once information about travel times is available an assessment of baseline and target performance can be made.

Compilation and Testing of Evidence

We plan to liaise with NZTA to explore and set up a solution for our local roads alongside the existing NZTA service at <http://www.journeys.nzta.govt.nz/taranaki/traffic-dashboard/new-plymouth-to-wellington>. NZTA already have a number of points set up on the State Highways using BlipTrack monitoring equipment. Over the 2018-21 NLTP period we will consider if we need to install any additional BlipTrack monitoring points on our local road network and then include provision in the 2021-24 NLTP. The needs will be identified as part of the Keeping New Plymouth Moving and Growing project.

Gap Assessment

Once information about travel times is available an assessment of baseline and target performance can be made to identify if any gaps exist.

Development of Options

Options will be developed when the gap assessment has been conducted.

Testing of Options

Options will be tested following development.

Preferred Programme

A preferred programme will be identified based on an evaluation of the options.

Improvement Plan

We will continue to monitor travel time to assess the effectiveness of any investments made and to identify further potential investment options.

Appendix 7 – Programme Business Case 4 Value for Money

Table 40 Value for Money Measures

Benefit	A resilient network
Investment KPI	Value for Money
Measure	Benchmark comparisons against ONRC measures and peer group performance

Table 41 Value for Money KPIs

KPI No	KPI	Baseline Performance	Target Performance
4.1	Sealed Road Pavement Rehabilitation - \$/total km of sealed road/annum	\$960/km/annum average over 3 years 2013/14 – 2015/16	\$1,000/km/annum and check if in similar range to peer group RCAs
4.2	Chipseal Resurfacing - \$/m2	\$5/m2 average over 4 years 2012/13 – 2015/16	\$5/m2
4.3	Asphalt Resurfacing - \$/m2	\$60/m2 average over 4 years 2012/13 – 2015/16	\$60/m2
4.4	Unsealed Road Metalling - \$/total km of sealed road/annum	\$2,545/km/annum average over 3 years 2013/14 – 2015/16	<= \$2,300/km/annum and check if in similar range to peer group RCAs
4.5	Overall Network Cost (excluding emergency works) - \$/km	\$9,600/km/annum average over 3 years 2013/14 – 2015/16	<= \$10,000/km/annum and stay above 90% on national average

[Link to Strategic Case](#)

Strategic case problem(s):

- Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.
- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

Strategic case benefit:

- A resilient network

Investment KPI:

- Value for money

The targets set by the other measures determine the overall level of expenditure required for transportation operation and maintenance. The measures defined here provide an indication of the value for money being obtained from the investment.

Levels of Service

4.1 Sealed Road Pavement Rehabilitation – we undertake relatively small volumes of rehab so the ONRC Cost Efficiency 1: Pavement Rehabilitation measure is not appropriate for NPDC. A better measure is the cost spent per km per annum on sealed road pavement rehabilitation.

4.2 Chipseal Resurfacing – The use of all four metrics in the ONRC Cost Efficiency 2: Chipseal Resurfacing is not considered necessary. However it is important to ensure that the cost of chipseal resurfacing undertaken is as efficient as possible. Cost per square meter is considered a good indicator of efficiency.

4.3 Asphalt Resurfacing – The use of all four metrics in the ONRC Cost Efficiency 3: Asphalt Resurfacing is not necessary. However, it is important to ensure that the cost of the asphalt resurfacing undertaken is as efficient as possible. Cost per square meter is considered a good indicator of efficiency.

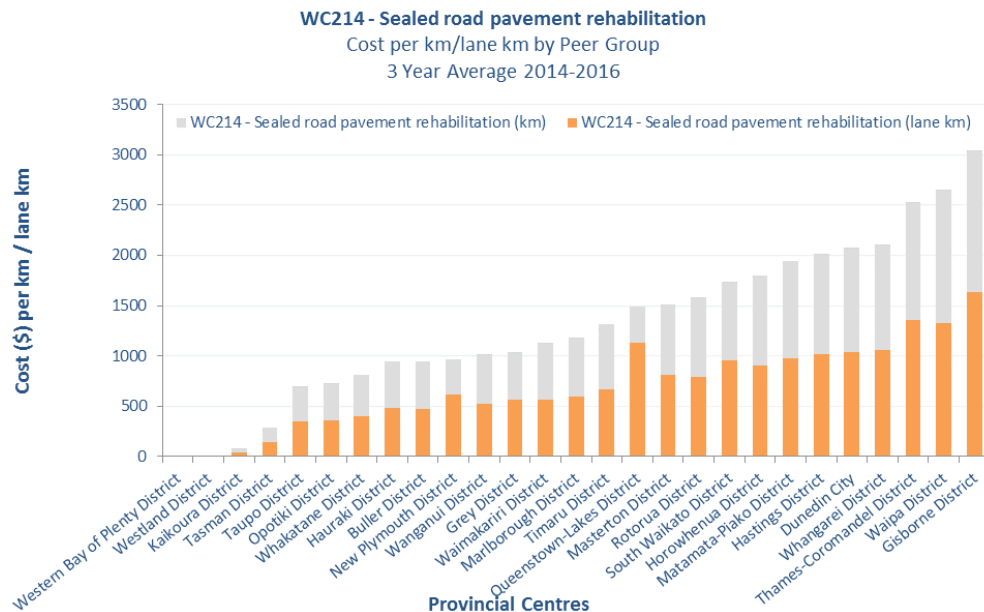
4.4 Unsealed Road Metalling - The ONRC Cost Efficiency 4 – Unsealed Road Metalling measure was not returning any data at the time of writing the programme business case. Also, the measure is not thought to be totally appropriate. A better measure of efficiency is the cost of unsealed road metalling per total km of unsealed road per annum.

4.5 Overall Network Cost – The ONRC Cost Efficiency 5 – Overall Network Cost (\$/lane km) and Cost by Work Category (\$/vkt) are not considered to be totally appropriate measures. A better measure is the overall network cost/km/year (excluding emergency works).

Compilation and Testing of Evidence

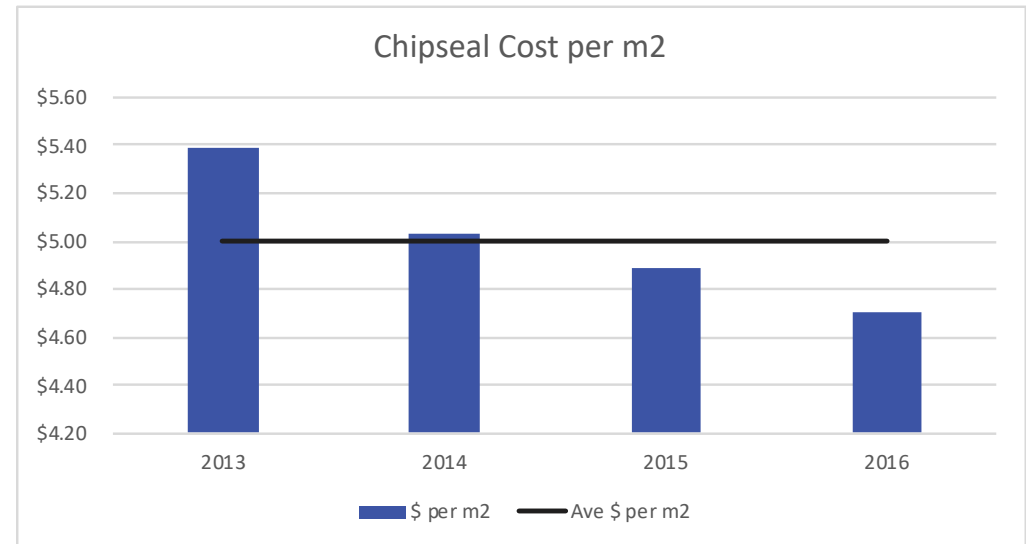
4.1 Sealed Road Pavement Rehabilitation - The graph in Figure 29 shows the provincial centre peer group 3 year average performance for sealed road pavement rehabilitation for years 2013/14 – 2015/16. NPDC costs for sealed road pavement rehab is \$960/km for the total of 1,109km of sealed road. This equates to an annual expenditure of just over \$1.0m. Our performance compares well with the peer group average of \$1,320/km.

Figure 29 Sealed Road Pavement Rehab Peer Group Comparison



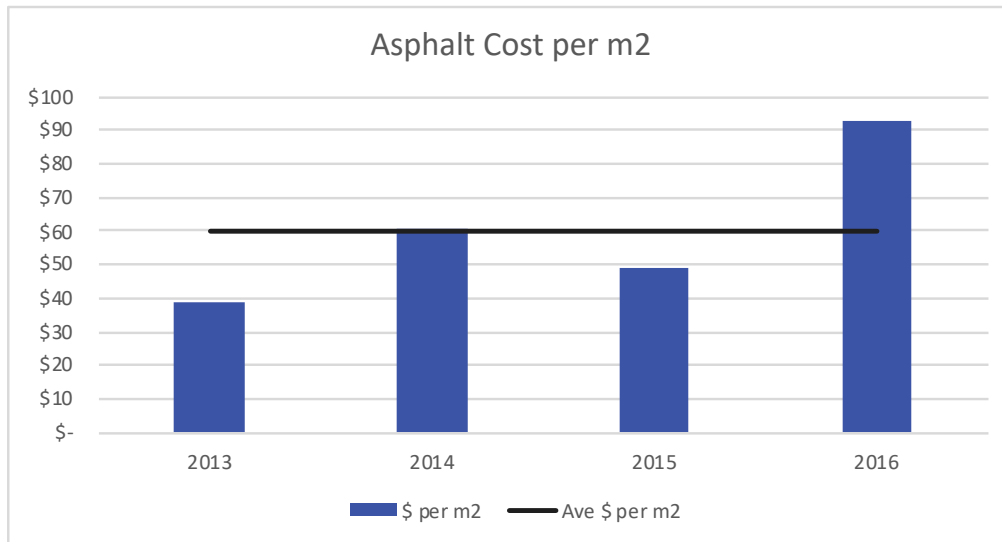
4.2 Chipseal Resurfacing - The graph in Figure 30 shows the annual cost/m² of chipseal for the 4 years 2012/13 – 2015/16. The average cost during this period is \$5/m². There was no peer group data available at the time of writing the programme business case.

Figure 30 Chipseal cost per square metre



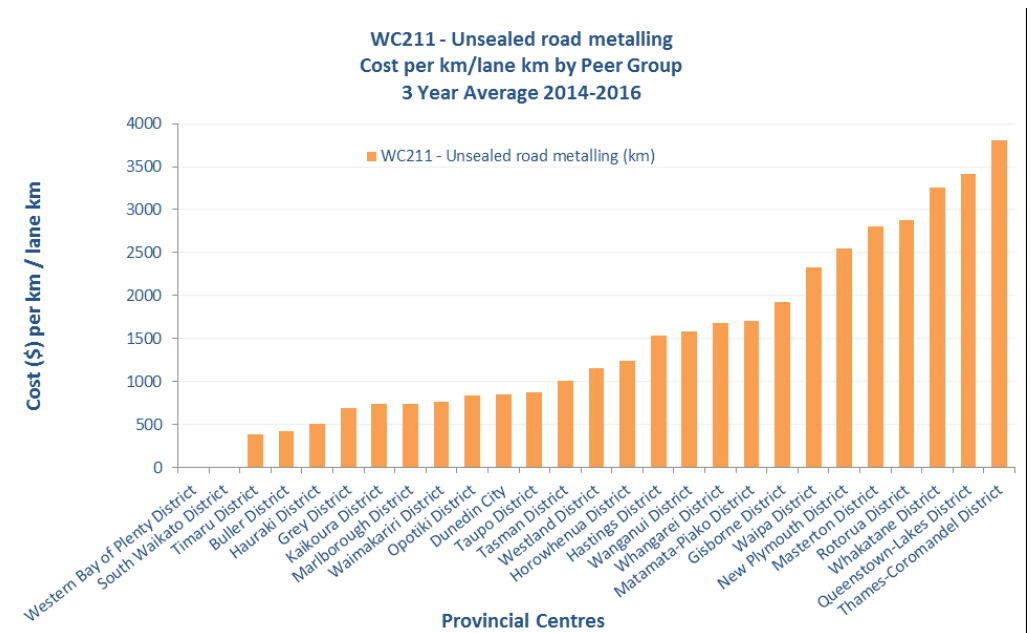
4.3 Asphalt Resurfacing - The graph in Figure 31 shows the annual cost/m² of asphalt for the 4 years 2012/13 – 2015/16. The average cost during this period is \$60/m². There was no peer group data available at the time of writing the programme business case.

Figure 31 Asphalt cost per square metre



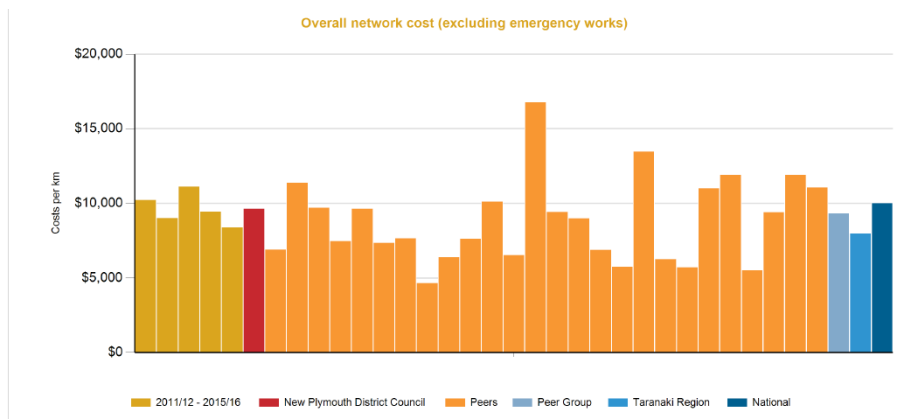
4.4 Unsealed Road Metalling - The graph in Figure 32 shows the provincial centre peer group performance for unsealed road metalling. NPDC costs for unsealed road metalling is an average of \$2,545/km/annum over the three years 2013/14 – 2015/16 for the total of 169km of unsealed road. This equates to an annual expenditure of approximately \$430k. Our performance is towards the higher end when compared to the peer group average of \$1,470/km.

Figure 32 Unsealed road metalling peer group comparison



4.5 Overall Network Cost - The graph in Figure 33 shows the overall cost of running the network/km (excluding emergency works) for the 5 years 2011/12 to 2015/16. NPDC average costs over these five years is \$9,600 per km for the total road length of 1,278km. This equates to a total average cost over this period of \$12,268,800 per annum. This is slightly higher than the peer group average and the Taranaki Region average but is lower than the national average.

Figure 33 Overall network cost (excluding emergency works) per km



Gap Assessment

4.1 Sealed Road Rehabilitation – The current three year average of \$960/km/annum is considered to represent good value for money when compared against the peer group average cost of \$1,320/km/annum. Therefore, we consider a target value of \$1,000/km/annum appropriate. This actual value achieved will affect the total amount of sealed road rehabilitation achievable based on the approved 2018-21 NLTP value for WC214.

4.2 Chipseal Resurfacing - The current four year average of \$5/m² is considered good value for money and an appropriate target value. The actual value achieved will affect the total amount of chipseal resurfacing achievable based on the approved 2018-21 NLTP value for WC212.

4.3 Asphalt Resurfacing - The current four year average of \$60/m² is considered good value for money and the appropriate target value. The actual value achieved will affect the total amount of asphalt resurfacing achievable based on the approved 2018-21 NLTP value for WC212.

4.4 Unsealed Road Metalling – The current three year average of \$2,545/km/annum is considered high in comparison to the peer group average of \$1,470/km/annum. To make savings in this category, we consider a value of \$2,300/km/annum should be targeted. The actual value achieved will affect the total amount of unsealed road metalling achievable based on the approved 2018-21 NLTP value for WC211.

4.5 Overall Network Cost – The current five year average of \$9,600/km/annum is considered good value as it compares closely to the equivalent peer group and Taranaki Region averages. It is also lower than the national average. We consider a target value of \$10,000/km/annum appropriate, as this will include additional provision for bridge and structure renewals that was omitted from the 2015-18 NLTP.

Development of Options

The options available are the same as those defined in the customer satisfaction programme business case. The value for money measures will measure the financial efficiency with which the services are delivered.

Testing of Options

The option tests are the same as those described in the customer satisfaction programme business case. The value for money measures will measure the financial efficiency with which the services are delivered.

Preferred Programme

The preferred option is the same as that identified in the customer satisfaction programme business case. The value for money measures will measure the financial efficiency with which the services are delivered.

An additional component of the value for money programme is to complete the five year project to renew and upgrade the full streetlight lantern stock with LED lanterns that commenced in 2015. The project delivers a range of benefits including improved lighting, lower power consumption and longer life lanterns.

Table 42 LED Lighting conversion expenditure forecast

NZTA Work Category	Description	Proposed 2018-21 NLTP (\$)
324 Road improvements	LED Light conversion	2,349,000

Improvement Plan

Actual values will be monitored over the 2018-21 NLTP period and compared with peer group performance levels. Future targets and investment levels will be adjusted based on the actual performance achieved.

Appendix 8 – Programme Business Case 5 Response Times

Table 43 Response Times Measures

Benefit	A resilient network
Investment KPI	Response times
Measure	Response to requests within acceptable timeframe

Table 44 Response Times KPIs

KPI No	KPI	Baseline Performance	Target Performance
5.1	LoS 5 – respond to requests in reasonable timeframe	Current performance is 95%	Maintain at 95%

Link to Strategic Case

Strategic case problem(s):

- Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.
- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

Strategic case benefit:

- A resilient network

Investment KPI:

- Value for money

Levels of Service

Responding to service requests and resolving network faults is fundamental to maintaining the network in a safe and fit for purpose condition for customers. This is closely linked to customer satisfaction with the network. Network faults occur when regular scheduled maintenance fails to prevent the fault occurring, resulting in reactive maintenance activities. The number of network faults can also be correlated with the overall quality of the road, which is linked to the level of renewals investment. Service request timeframes are specified below:

- One day for an electrical fault with traffic signals, flooding, diesel spills, chemical spills or a slip to be cleared;
- Three days for street lighting faults and potholes;
- Five days for traffic counts, bus shelter repairs, road marking enquiries, culvert maintenance, rubbish bins, reinstatement of footpaths and debris in the roadside channel; and
- 10 days for road surface faults, kerb and channel repairs, new kerb and channel, missing road signs and vegetation clearing.

Compilation and Testing of Evidence

Our current performance in relation to responding to service requests with the specified timeframes is 95%. No peer group data is available for comparison. It is also likely that other RCAs have different response time targets.

Gap Assessment

We consider the current level of performance (95%) against the current response times for the different types of service requests is acceptable to maintain customer satisfaction levels.

Development of Options

The three options available are (refer to customer satisfaction programme business case for O&M investment level analysis):

- Increase current response times and/or decrease response percentage target.
- Maintain current response times and response percentage target.
- Decrease current response times and/or increase response percentage target.

Testing of Options

(i) Increase current response times and/or decrease response percentage target – we anticipate that this would be required if 2015-18 NLTP investment levels were reduced, causing in an increase in service requests as a result of general deterioration in the condition of the network assets. This may also result in more expensive repairs being required at a later date and a general increase in whole of asset life costs. The increased volume of service requests would make it difficult to respond in the specified time frames at 95% performance level and increased volumes of reactive maintenance would detract from our capacity to sustain proactive maintenance.

(ii) Maintain current response times and response percentage target – if current 2015-18 NLTP investment levels are sustained it is anticipated that responses to service requests could be maintained at the current performance level. We aim to exceed the 95% performance level at 2015-18 NLTP approved investment levels through better investment targeting and optimised maintenance.

(iii) Decrease current response times and/or increase response percentage target – this would only be possible in 2015-18 NLTP if investment levels were increased significantly, resulting in a general increase in network condition and requiring less reactive maintenance.

Preferred Programme

Maintaining the current level of performance of 95% against the current response times for the different types of service requests is our preferred option. This will only be possible if current 2015-18 NLTP investment levels are sustained.

Improvement Plan

We will monitor actual performance over the 2018-21 NLTP period and compare it with peer group performance levels where possible. Future targets and investment levels will be adjusted based on the actual performance achieved.



Appendix 9 – Programme Business Case 6 Network Audits of Condition

Table 45 Network Audits of Condition Measures

Benefit	A resilient network
Investment KPI	Network Audits of Condition
Measure	Network condition indicators

Table 46 Network Audit of Condition KPIs

KPI No	KPI	Baseline Performance	Target Performance
6.1	ONRC Amenity Customer Outcome 1 – Smooth Travel Exposure	84.3% Arterial, 91-93% Others	85% for Arterial roads and 90% for all other categories.
6.2	ONRC Amenity Customer Outcome 2 – Peak Roughness	TBC	TBC
6.3	LoS 4 – quality footpath network safe for users	0.9% failed, 90.2% good/excellent	Less than 1% of footpath length recorded as failed during ratings surveys. More than 90% of footpath length to be in good or excellent condition. Targets to maintain footpaths in safe condition for community.
6.4	Pavement Integrity Index (PII),	95.8% average 2005-15	>= 95% to prevent roads deteriorating to unacceptable standard.
6.5	Condition Index (CI)	98.4% average 2005-15	>= 98% to prevent roads deteriorating to unacceptable standard.

6.6	50MAX Bridge Capability	26 bridges currently with 50MAX restrictions	No reduction in 50MAX rated bridge numbers
6.7	Bridge Condition Indicator	TBC	Await development of bridge condition index – workshop with Opus

Link to Strategic Case

Strategic case problem(s):

- Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.
- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

Strategic case benefit:

- A resilient network

Investment KPI:

- Value for money

Levels of Service

Measuring asset condition is crucial for a number of reasons, including setting renewal expenditure levels, setting O&M expenditure levels, managing whole of life cycle costs, ensuring the network is safe for users, and maintaining appropriate levels of customer satisfaction. Condition indicators also provide data about the resilience and life expectancy of assets and can be used for comparison against recognised benchmarks and peer performance.

The following measures have been selected to provide good detailed and overall indication of network condition and performance.

6.1 ONRC Amenity Customer Outcome 1 (CO1) – Smooth Travel Exposure – this is similar to existing LoS2: provide a quality local network that is smooth to travel on. The LoS provided aggregated data for the whole network whereas ONRC Amenity CO1 provided smooth travel exposure data for each of the ONRC road types. This measure provides data on the percentage of the different types of roads that are exposed to ‘smooth travel’ as defined by set NASSRA threshold values for each type of road. This measurement will allow differential targeting of investment between the different road types that reflect traffic volume and criticality.

6.2 ONRC Amenity Customer Outcome 2 (CO2) – Peak Roughness – this measure provides data on the concentration of road roughness by assessing the percentage of roads that exceed the recommended NASSRA threshold for each type of road. This data combined with the roughness measures for each section of road provides data that can assist targeting investment at improving the roughest sections of road.

6.3 LoS 4 – Quality footpath network safe for users – this measure is based on the existing LoS but additional detail will be added to give a better definition.

6.4 Pavement Integrity Index (PII) - PII is a weighted sum of the pavement defects identified during inspection, divided by the total lane length. It combines surface faults with pavement faults such as rutting and shoving. It is a good overall indicator of network integrity and has been measured by NPDC and NZTA for a number of years.

6.5 Condition Index (CI) - Condition rating involves a visual inspection where defects are identified, measured and recorded in a standard and objective manner. Condition rating is undertaken on the road network with a 10% sample being inspected every 500m. CI gives a good overall indicator of the ongoing condition of the network.

6.6 50MAX Bridge Capability – 50MAX is the new generation of truck based on using additional axles in comparison to the 44-tonne class 1 heavy vehicles.

6.7 Bridge Condition Indicator – this is currently being developed and will be designed to give each bridge a rating based on condition and criticality and an overall score.

Compilation and Testing of Evidence

6.1 ONRC Amenity Customer Outcome 1 (CO1) – Smooth Travel Exposure (STE) – Table 47 shows NPDC smooth travel exposure performance for 2014/15 and 2015/16 with comparison figures for peer group and NZ average. The graph in Figure 34 shows similar data with the inclusion of individual peers and the Taranaki Region average. This data indicates that NPDC STE is generally similar to the NZ average with the exception of Access roads having a higher score. It also indicates that the STE for all NPDC roads is higher than the peer average scores. The values indicate that slight improvement in STE between 2014/15 and 2015/16 with the largest gains being on the Secondary Collector and Low Volume Roads.

Figure 34 STE Comparisons

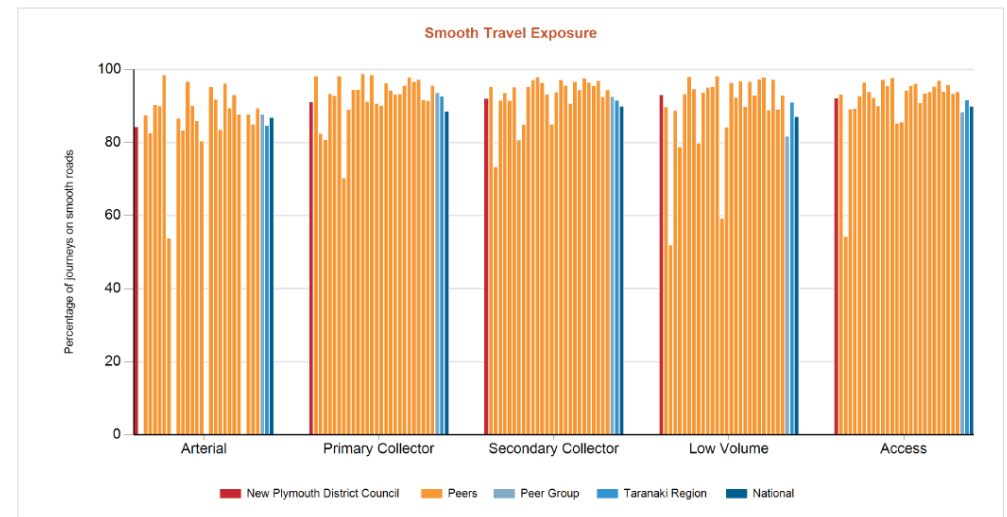


Table 47 STE Statistics

	Arterial	Primary Collector	Secondary Collector	Access	Low Volume
NPDC Lane Km	30	152	621	713	386
NPDC 2014/15	83.40%	91.00%	91.60%	92.80%	91.30%
NPDC 2015/16	84.30%	91.30%	92.20%	93.20%	92.20%
NPDC Change	0.90%	0.30%	0.60%	0.40%	0.90%
Peer Average 15/16	81.70%	86.80%	88.20%	90.50%	89.40%
NZ Average 15/16	84.20%	91.60%	92%	90.90%	91.70%

6.2 ONRC Amenity Customer Outcome 2 (CO2) – Peak Roughness – the graphs in Figures 35 and 36 show the percentage of roads in 2015/16 in each class that are above the threshold limits.

Figure 35 Urban peak roughness performance

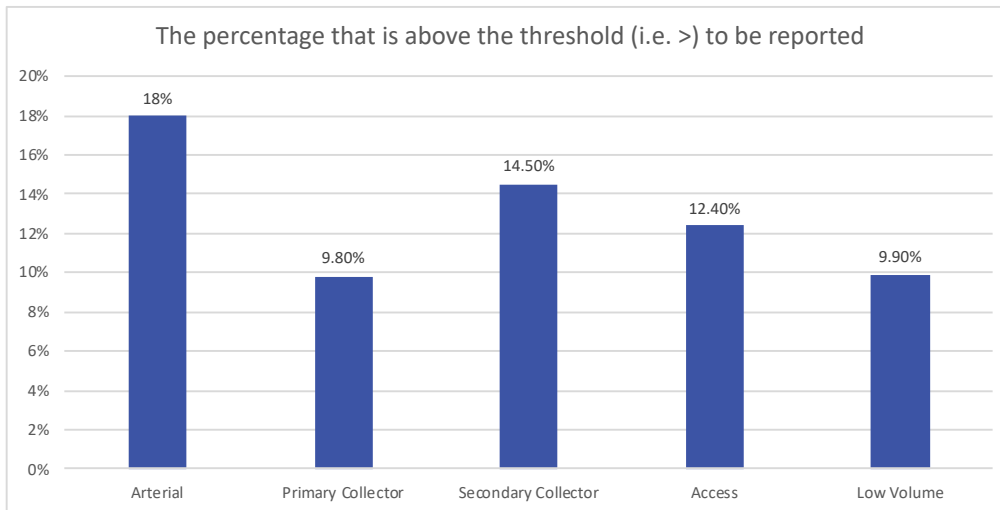
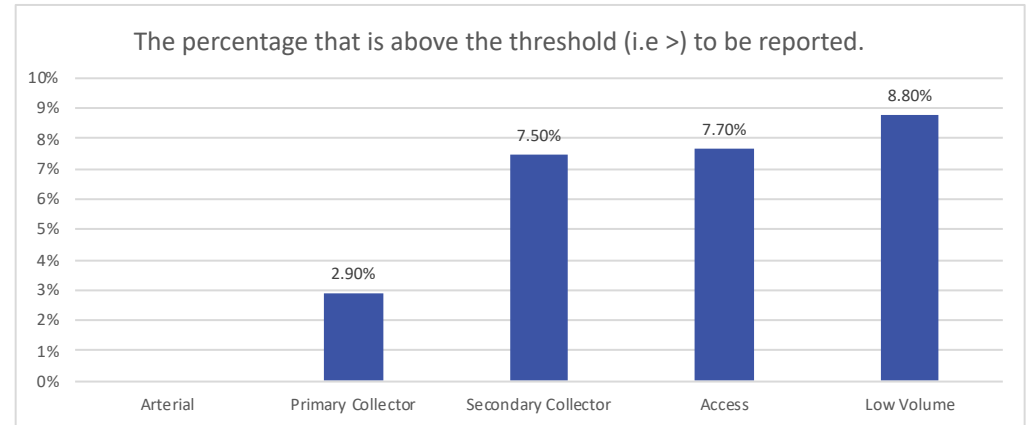


Figure 36 Rural peak roughness performance



The graphs in Figures 37 and 38 show the 85th percentile roughness counts for peak roughness performance when compared against our peer group RCAs and Regional/National averages.

Figure 37 Rural peak roughness comparisons

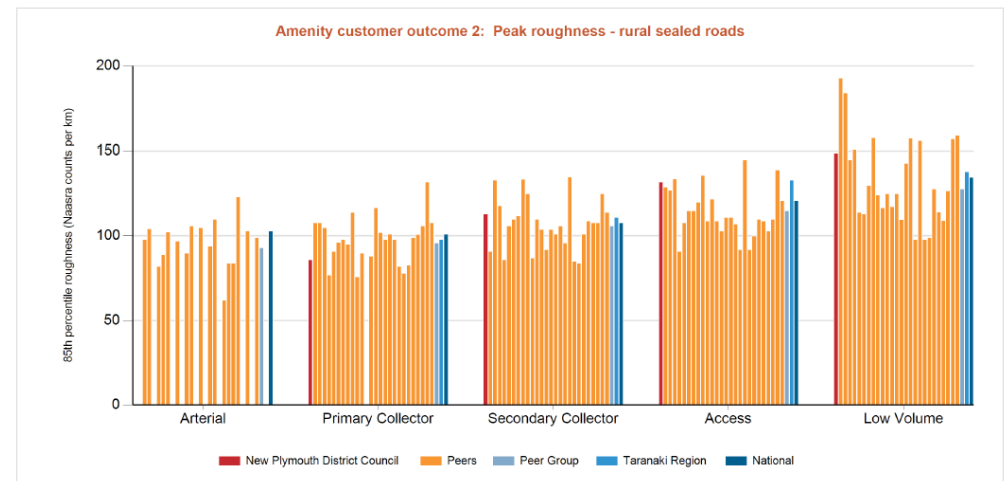
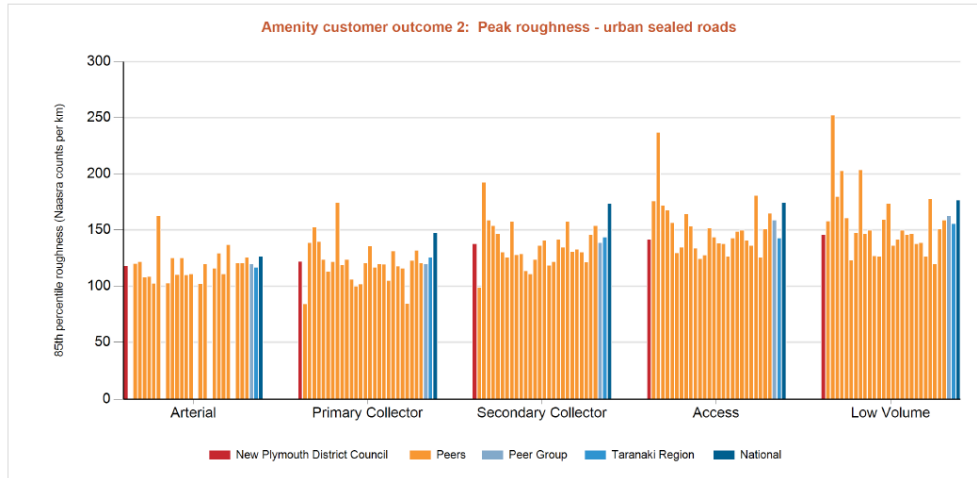


Figure 38 Urban peak roughness comparisons



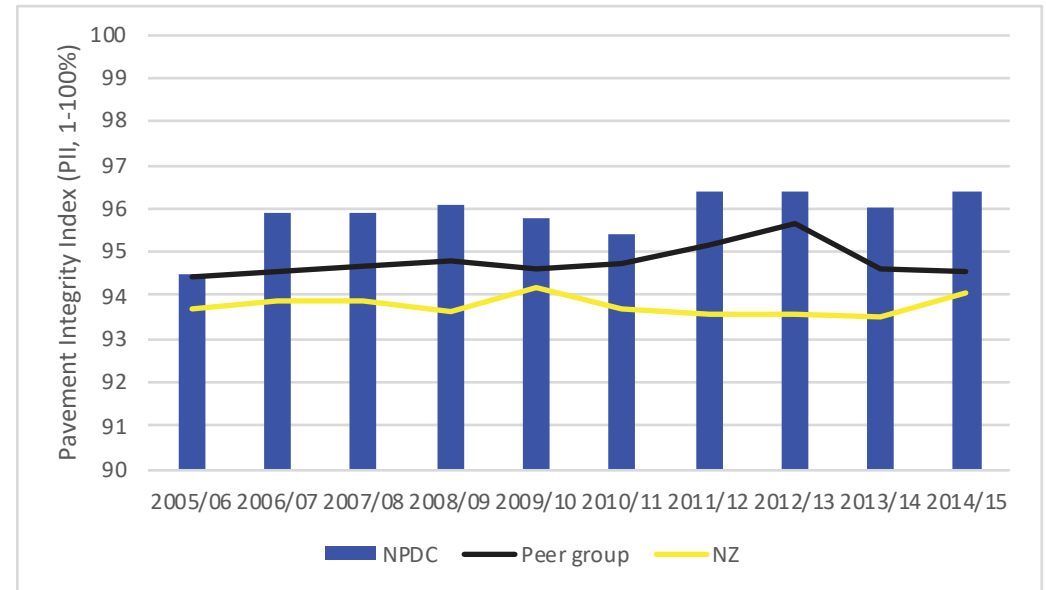
LoS 4 – Quality footpath network safe for users – the data in Table 48 shows the length of failed footpath identified during condition surveys and the length and percentage of footpath in the different condition grades. There is no current published data available for peer group comparison.

Table 48 Footpath condition grades

Condition grade	Length (m)	%	Length Failed (m)	Length Failed (%)
0 – Not Known	3,416	0.65	25	0.73
1 – Excellent	55,663	10.53	60	0.11
2 - Good	421,323	79.69	3,469	0.82
3 - Average	45,434	8.59	1,227	2.7
4 - Poor	2,763	0.52	202	7.31
5 – Very Poor	96	0.02	35	36.46
Totals	528,695	100	5,018	0.95%

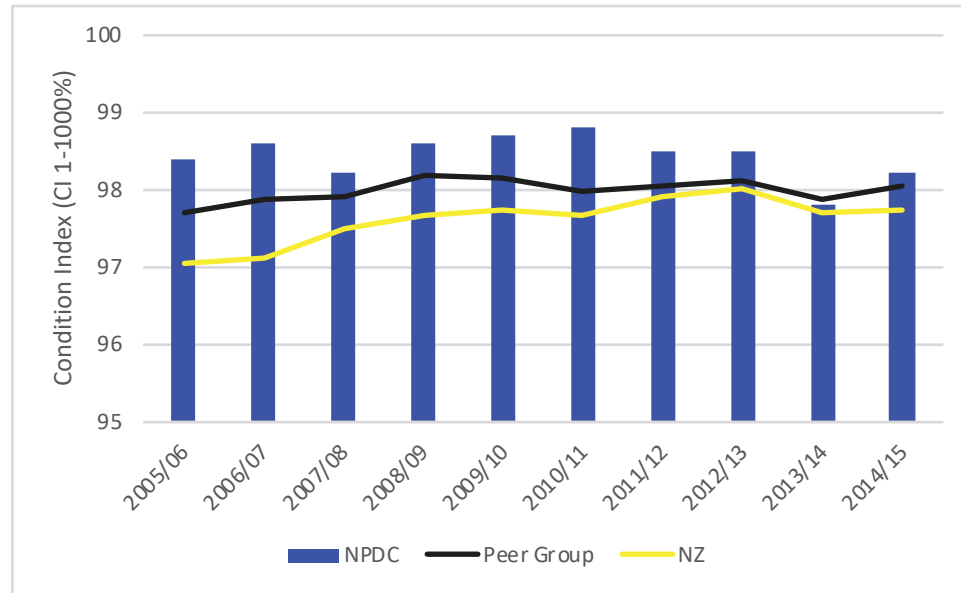
6.3 Pavement Integrity Index (PII) – the graph in Figure 39 shows the NPDC PII score compared against peer group and NZ averages. It shows that the PII for NPDC roads have been consistently higher than peer group and NZ scores.

Figure 39 Pavement integrity index comparisons



6.4 Condition Index (CI) - the graph below in Figure 40 shows the NPDC CI score compared against the peer group and NZ averages. This indicates that the condition index for NPDC roads has been marginally higher than the peer group and NZ scores but has been decreasing since 2010/11. The graph also shows a steady improvement in the CI score across NZ up to 2012/13.

Figure 40 Condition index comparisons



6.5 50MAX Bridge Capability – there is currently a total of 26 bridges in the district that have 50MAX weight restrictions.

6.6 Bridge Condition Indicator – this is currently being developed and will be designed to give each bridge a rating based on condition and criticality, and an overall score.

Gap Assessment

6.1 ONRC Amenity Customer Outcome 1 (CO1) – Smooth Travel Exposure (STE) – NPDC performance of 83.4% in 2014/15 and 84.3% in 2015/16 for Arterial roads is higher than the peer average but closely aligned to the NZ average. It is therefore considered that the target value for Arterial roads should be 85% to provide user experience consistency with the wider NZ average of 84.2%. NPDC performance for the other road classes is consistently higher than the peer group average performance. Therefore, we consider a target value of 90% for all other road classes appropriate to provide user experience consistency across the Region.

6.2 ONRC Amenity Customer Outcome 2 (CO2) – Peak Roughness – TBC

6.3 LoS 4 – Quality footpath network safe for users – To maintain a safe footpath network for users and to prevent footpath condition deteriorating to unacceptable levels targets of <1% failed (currently 0.95%) and >90% in good and excellent condition (currently 90.22%).

6.4 Pavement Integrity Index (PII) – NPDC performance has been consistently higher than the peer group and NZ scores by 1-2%. NPDC average PII score over the four year period 2011/12 – 2014/15 was 96.3%. Therefore a target value of =>95% is appropriate to ensure that the integrity of the roading assets will not deteriorate to an unacceptable level and will be more closely aligned with peer group and NZ averages.

6.5 Condition Index (CI) – NPDC performance has consistently been marginally higher than the peer group and NZ averages. Therefore, setting a target value of =>98% is appropriate and will hold it at a similar value to recent average performance.

6.6 50MAX Bridge Capability - the target is no change to the value of 26 bridges that currently have 50MAX weight restrictions.

6.7 Bridge Condition Indicator – TBC

Development of Options

The three options available are:

- (i) Set target values lower than those selected.
- (ii) Set the target values selected.
- (iii) Set target values higher than those selected.

Testing of Options

(i) Set target values lower than those selected – we anticipate this would cause an increase in service requests and complaints and a drop in customer satisfaction resulting from a general deterioration in the condition of the network assets. This may also result in more expensive repairs being required at a later date and a general increase in whole of asset life costs. Some minor additional safety issues may also result from setting lower targets. A reduction in 2015-18 NLTP investment levels could be achieved if targets were lowered.

(ii) Set the target values selected – we anticipate that service requests, customer complaints and customer satisfaction would continue at current levels. Maintaining expenditure at 2015-18 NLTP investment levels (refer to Programme Business Case #1) would be required to meet the targets.

(iii) Set target values higher than those selected – we anticipate that service requests and customer complaints would reduce and customer satisfaction would increase. Expenditure exceeding 2015-18 NLTP investment levels would be required to meet higher target levels.

Preferred Programme

Setting the target values selected is our preferred option. Spending similar amounts to the current 2015-18 NLTP values (refer to Programme Business Case #1) is our preferred programme.

Improvement Plan

We will monitor actual performance over the 2018-21 NLTP period and compare it with peer group performance levels. Future targets and investment levels will be adjusted based on the actual performance achieved.



Appendix 10 – Programme Business Case 7 Crashes

Table 49 Crashes Measures

Benefit	A safe network
Investment KPI	Crashes
Measure	Reduced number of deaths and serious injury (DSI) crashes

Table 50 Crashes KPIs

KPI No	KPI	Baseline Performance	Target Performance
7.1	ONRC Safety Customer Outcome 3 – Personal Risk per 100M VKT	DSIs per 100 million vkt have been as low as 1 previously and an average of 2.7/annum between 2002 and 2015	1 or less DSI per 100 million vehicle kilometres travelled (use other measures i.e. DSIs at intersections and DSIs for vulnerable users to analyse where key issues may exist)

Link to Strategic Case

Strategic case problem(s):

- Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.
- Driver behaviour, safe system approach and other factors are resulting in a high proportion of Death and Serious Injury crashes for vulnerable road users.

Strategic case benefit:

- A safe network

Investment KPI:

- Crashes

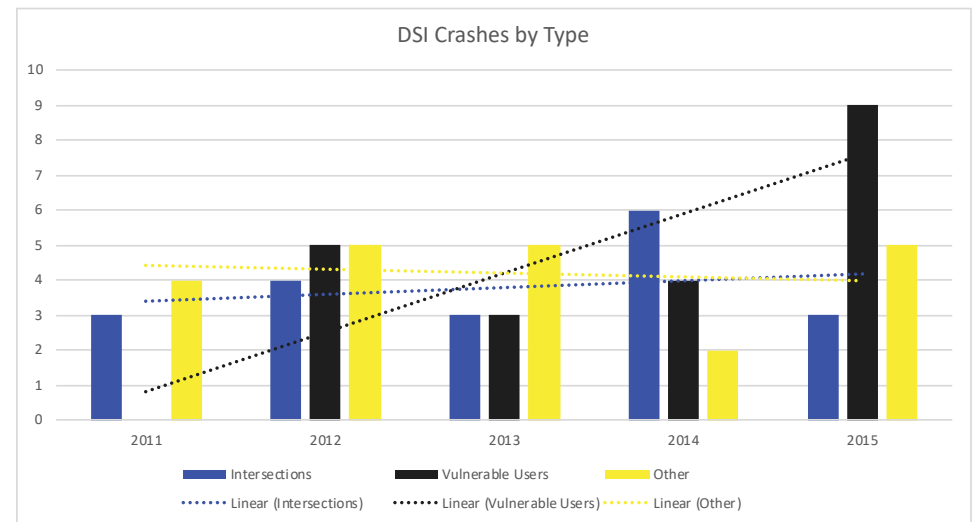
Levels of Service

The overall number of crashes involving Death and Serious Injury (DSI) measured by the vehicle kilometres travelled (vkt) is thought to be the most appropriate measure for safety. This will ensure it is related to traffic volume which is believed to be the main causal factor for crashes. The proportion of DSIs involving intersections and vulnerable users and the actual locations of DSI crashes will also be taken into consideration when analysing data to identify particular improvement solutions that will make our roads safer.

Compilation and Testing of Evidence

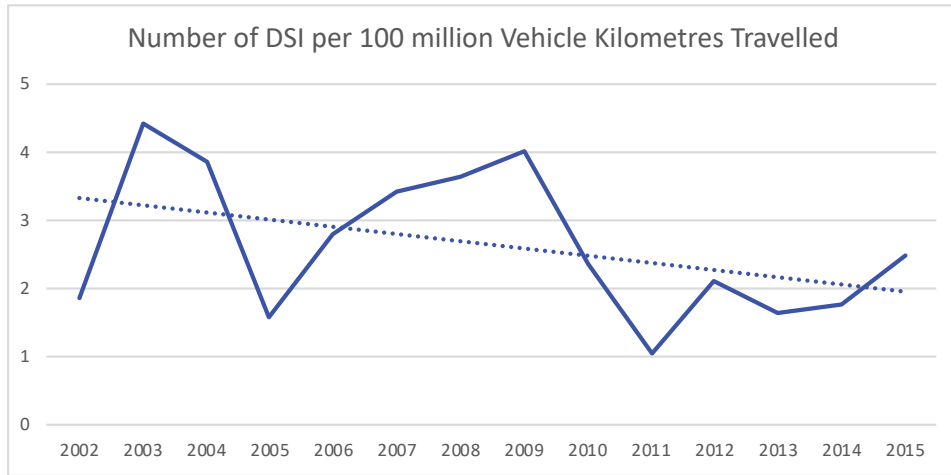
The graphs in Figures 41 and 42 show the number of crashes involving DSIs per 100 million vkt for the 14 years 2002-2015 and the DSI crash types for the five years 2011-2015.

Figure 41 DSI Crashes by types



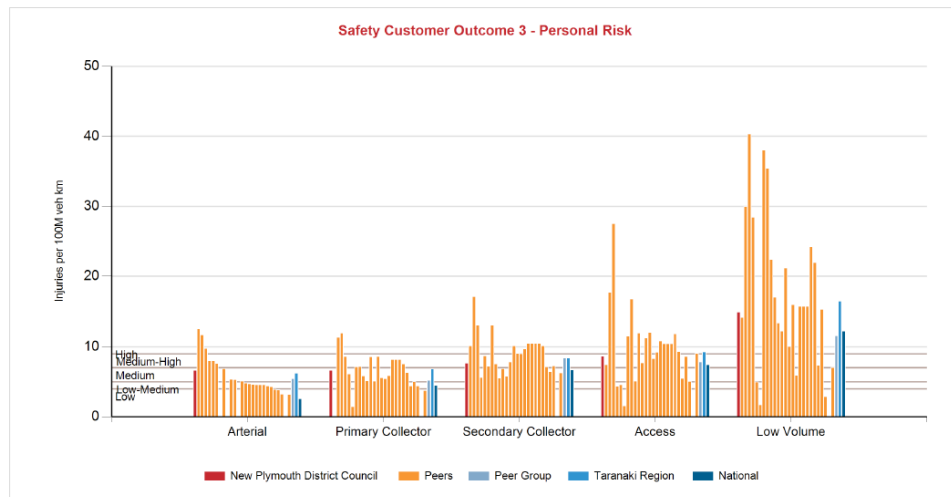
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Figure 42 DSI Crashes by km travelled



The graph in Figure 43 shows the comparison of personal risk between peer RCAs, Taranaki Region and National performance. This shows that NPDC has higher personal risk in all road categories compared with national and peer group averages.

Figure 43 Personal risk comparisons



Gap Assessment

DSIs per 100 million vkt have previously been as low as 1. Between 2002 and 2015 they averaged 2.7/annum, with an overall decreasing trend but an upwards trend since 2011. Between 2011 and 2015, the number of crashes involving vulnerable users rose significantly. This may be attributable to the increased number of pedestrians and cyclists using the network in response to the Let's Go initiative.

Develop Options

DSIs have a high societal value so the tolerable number and target should be as low as possible. All reasonable, practicable steps should be taken by the RCA to reduce DSI crashes to an absolute minimum. The options available are:

- (i) Set a target of zero DSI crashes/annum.
- (ii) Set a target based on best recent annual DSI crash performance of 1 DSI crash/annum.
- (iii) Set a target based on historical average performance of 2.7 DSI crashes/annum.

Testing of Options

- (i) Set a target of zero DSI crashes/annum – we do not consider this an achievable target, as some crashes are caused by poor driver behaviour. Although a lot can be done to improve road user education it is unlikely that this would lead to zero DSI crashes.
- (ii) Set a target based on best recent annual DSI crash performance –this is a reasonable target if 2015-18 investment levels in O&M and renewals are sustained (refer to Programme Business Case #1) in combination with a programme of road safety improvements.
- (iii) Set a target based on historical average performance of 2.7 DSI crashes/annum – this option does not provide an acceptable level of safety to our community. Safety is a prime consideration and all reasonable steps should be taken to reduce DSI crashes to the lowest sustainable level.

Preferred Programme

Matching the target to the best performance achieved over recent years is considered to be the appropriate option. This may be challenging to realise but with targeted investment and good road safety education programmes it is achievable. Therefore, based on the best annual historical performance, we believe setting a target of 1 DSI crash per 100 million vkt to be an appropriate target.

O&M and Maintenance

Investment at similar levels to the current 2015-18 NTLP values (refer to Programme Business Case #1) should be sufficient to maintain the existing network to the required safety standards. However, improvement to the existing network will be required to meet or exceed the target.

Improvements (Capex)

In addition to the maintenance, operations and renewals programme a number of safety related improvements are proposed for the 2018-21 NLTP as shown in Table 51.

Table 51 Improvements Forecast expenditure 2018-21 NLTP

NZTA Work Category	Description	Proposed 2018-21 NLTP (\$)
341 Low cost/low risk	Minor Improvements- Small, isolated geometric road and intersection improvements (RD1015)	2,306,000
341 Low cost/low risk	Small road widening improvements (RD1005)	1,722,000
341 Low cost/low risk	Let's Go Model Communities - Infrastructure Construction (Local Roads) (RD1035)	1,481,000
341 Low cost/low risk	Extension to coastal walkway from between Bell Block & Waitara (RD2024)	8,547,000
324 Road improvements	LED Light conversion (RD1025)	2,349,000
324 Road improvements	Airport Drive Improvements (RD2001)	204,000
	Total	16,609,000

The Airport Drive improvement item is associated with NZTA plans to improve the interstation of SH3 and De Havilland Drive and the plans for the development of the adjacent land (Areas Q and R).

We promote road safety by contributing the TRC led Roadsafe Taranaki initiative and through the Let's Go programme.

Analysis of crash locations may mean additional and more significant specific safety related expenditure is required at particular locations. Individual business cases will be submitted for these as and when they arise.

Improvement Programme

We will monitor DSI crash rates over future years to assess the effectiveness of our expenditure programme and the future levels of NLTP investment required.

Appendix 11 – Transportation Risk Register

Table 52 Risk Summary

ID	Team	Type of risk	Description	Inherent risk assessment - Consequence	Inherent risk assessment - Likelihood	Inherent risk rating	Current treatment	Residual risk assessment - Consequence	Residual risk assessment - Likelihood	Residual risk rating
53	Transport	Financial	Increased community expectations over time require levels of service above those in the Long Term Plan, resulting in unplanned increases in cost and reprioritisation of resource allocation.	Major	Almost certain	9	Any new service level request now needs to be justified with a Business Case. Document systems and guidelines re current Levels of Service, including in the RAMP, for the use of staff/consultants/contractors covering the full range of Transport activities.	Minor	Likely	5.5
54	Transport	Operations and service delivery	We are unable to meet planned levels of service because of increasing costs and budgetary constraints, resulting in community discontent and the potential for service disruption if key assets fail.	Major	Almost certain	9	Ensure that the discussion with the community during the Long Term Plan and Annual Plan processes clearly outlines the relationship between budgets (and rate increases) and Levels of Service.	Minor	Likely	5.5

ID (cont.)	Team	Type of risk	Description	Inherent risk assessment - Consequence	Inherent risk assessment - Likelihood	Inherent risk rating	Current treatment	Residual risk assessment - Consequence	Residual risk assessment - Likelihood	Residual risk rating
56	Transport	Financial	Financial pressure on our transport activities increases because of legislative change e.g. with increased vehicle dimension or mass limits, resulting in new compliance costs.	Catastrophic	Possible	6.5	Expectation that any significant change would provide sufficient lead in time to allow financial preparations to be made. Also look at innovative ways to achieve compliance at the least possible cost. Accept some corporate/ reputational risk with having a reactive rather than a pro-active management approach.	Minor	Possible	3
58	Transport	Financial	We are found liable for an event that causes damage to property or serious harm/death to individuals because of our design of new network assets or the failure of existing ones, resulting in financial loss.	Catastrophic	Possible	6.5	Best practice regarding design, supported by inspections of the network to identify deficiencies and remedy them, along with a rapid response to calls from the public logging issues with the network.	Major	Unlikely	5
59	Transport	Financial	There is unbudgeted expenditure because of ongoing repairs of damage to the transport network due a natural catastrophe, resulting in a need to revisit future year budgets.	Catastrophic	Moderate	8	Identify alternative funding from a reserve to assist with financial impact.	Moderate	Moderate	6

ID (cont.)	Team	Type of risk	Description	Inherent risk assessment - Consequence	Inherent risk assessment - Likelihood	Inherent risk rating	Current treatment	Residual risk assessment - Consequence	Residual risk assessment - Likelihood	Residual risk rating
60	Transport	Financial	The New Zealand Transport Agency withdraws or reduces its subsidies for roading maintenance and other initiatives because of factors including: The One Network Roding Classification (ONRC) system and NZTA's Investment Framework, resulting in a need to allocate more funding to Transport than planned.	Catastrophic	Possible	6.5	Internal processes, and ensuring they follow the New Zealand Transport Agency's requirements for business cases ('One Network Road Classification'). Supported by ongoing relationship management and communication, and an expectation that the Agency will signal early on any significant changes to its funding models that will have financial implications for local government.	Major	Possible	5.5

Appendix 12 – AMP Overview

Problem Statements

Problem one:

The changing expectations of the community requires reprioritisation of investment to meet the agreed and future Level of Service for all transport modes.

As the population demographics change and expectations for additional an improved alternative modes of transport grow, investment in cycling/pedestrian facilities and improved provision for mobility scooters and bus services will be needed. Greater expectations are also placed on network availability.

Problem two:

Growth in the movement of people and goods on key corridors will result in increasing travel time unreliability during peak periods.

Population and economic growth will increase demand on the existing network, especially on key corridors. The expectation is that travel times will not be affected adversely and therefore travel time measurement and identification of potential solutions will be a focus.

Problem three:

Geology, weather and climate activity plus some sub-standard assets results in a high level of full and partial closures of the network impacting lifelines and economic viability.

The standard, resilience and accessibility of the network need to be maintained to provide the expected requirements of our customers in a challenging environment with aging assets.

Problem four:

Driver behaviour, safe system approach and other factors are resulting in a high proportion of Death and Serious Injury crashes for vulnerable road users.

Promoting road safety and identifying and delivering safety improvements is key to keeping road users of all transport modes safe.

Benefits

An easy to understand and efficient (economically viable) network for all transport modes (60%).

Ensuring the network is easy to use, delivers against customers' needs, available to the required standard when needed at an affordable and economically viable level.

A resilient network (20%)

The quality and value of the network is maintained at satisfactory levels and faults are repaired in reasonable time frames.

A Safe Network (20%)

Network users in all transport modes are presented with a safely designed, constructed and maintained network.

Consequences

Problem one:

- Unsafe walking and cycling facilities will increase the likelihood and consequence severity of DSIs, particularly as the community grows.
- Active and alternative transport behaviour stalls or declines.

Problem two:

- The transportation network will not support the growth areas and will not be fit for purpose.
-
- Increase in congestion and longer journey times from poor road layouts.

Problem three:

- Increased cost and difficulty to maintain current road structures.
- Increase in number of complaints.

Problem four:

- Unsafe transportation network with increased likelihood and consequence severity of DSIs,
- Vulnerable road user safety and protection compromised to unacceptable level.

General:

- Levels of service may need to be reduced and safety may be compromised.
- Increased structural failure of assets leading to higher whole-of-life asset cost.
- Increased reactive maintenance leading to higher whole-of-life asset cost and increased disruption to the community.
- Increased financial burden for future generations due to under-investment

Strategic Responses

Maintenance & Operations

Investment required at similar level to the approved 2015-18 NLTP value of \$18.3 to maintain a safe and fit for purpose transportation network to meet customer expectations and to prevent network deteriorating to unacceptable condition. 2018-21 NLTP requirement is \$18.7m.

Renewals

Investment required at increased level to the approved 2015-18 NLTP value of \$16.1m to maintain a safe and fit for purpose transportation network to meet customer expectations and to prevent network deteriorating to unacceptable condition. 2018-21 NLTP requirement is \$18.8m. The increases include an additional \$1.0m for structural AC rehab of arterial/primary collector roads, \$500k for structure renewals, \$500k for environmental renewals and \$400k for sealed road resurfacing. This level of investment is similar to 2012-15 NLTP approved values.

For the aggregate maintenance, operation and renewals requirement of \$37.6m for our maintained road length of 1,278km this translates to \$9,800/km/annum which is broadly in line with the peer group average, Taranaki region average and national average investment levels.

Capital Improvements

Low cost/low risk investment for road widening, geometric and intersection safety improvements, bridge/culvert minor improvements and Let's Go infrastructure construction of \$5.6m required to improve safety and reduce the likelihood and consequences of DSIs, maintain network in fit-for purpose state and maintain emphasis on multi-modal transportation options.

Completion of the LED streetlight conversion is included at \$2.0m.

Realignment of Airport Drive associated with NZTA improvement of the SH3/Airport Drive intersection is included at \$3.2m.

The total aggregate cost for capital improvement of \$10.8m is \$2.1m higher than the approved 2015-18 NLTP value of \$8.7.

Other

\$400k is included for investigation and study of the options for Keeping New Plymouth Moving and Growing.

\$300k is included for continued development and improvement of the AMP and associated studies to meet ongoing NZTA and ONRC requirements.

Table 53 Overview of AMP structure

Investment KPI	KPI#	KPI Description	Baseline Performance	Target Performance	AMP Volume Reference
1. Network Availability (Programme Business Case 1 – Appendix 4 of Strategic Case)	1.1	ONRC Resilience – Customer Outcome 2 – number of instances where road access is lost with no viable detour	TBC	TBC	Vol 1 – Pavements
	1.2	Annual Cordon Count	TBC	TBC	Vol 3 – Footpaths & Cycle ways
	1.3	% properties on 50kph roads within 200m of bus route	TBC	TBC	Vol 6 – Street Furniture
2. Customer satisfaction (Programme Business Case 2 – Appendix 5 of Strategic Case)	2.1	Count of complaints recorded by Contact Centre	33 per annum average 2011/12 – 2016/17	<=40 per annum	Vol 1 – Pavements Vol 2 – Bridges & Structures Vol 3 – Footpaths & Cycle ways Vol 4 – Stormwater Drainage Vol 5 – Traffic Services Vol 6 – Street Furniture
	2.2	Quality cycle network safe for users (Communitrak Survey) – LoS 6	The average performance between 2005/06 and 2016/17 was 81%	85%	Vol 3 – Footpaths & Cycle ways
	2.3	Quality roading network for users – quality (Communitrak Survey) – LoS 7	The average performance between 2005/06 and 2016/17 was 85%	85%	Vol 1 – Pavements
	2.4	Quality roading network for users – easy, quick, safe access - (Communitrak Survey) – LoS 8	The average performance between 2005/06 and 2016/17 was 86%	85%	Vol 1 – Pavements
	2.5	Arterial & Primary Collectors >10,000 vehicles per day rehabilitated with structural asphalt	zero	200m/year	Vol 1 – Pavements

Investment KPI (cont.)	KPI#	KPI Description	Baseline Performance	Target Performance	AMP Volume Reference
3. Maintains travel time reliability with increased activity (Programme Business Case 3 – Appendix 6 of Strategic Case)	3.1	Travel time between defined points	TBC	TBC	Vol 1 – Pavements
4. Value for money (Programme Business Case 4 – Appendix 7 of Strategic Case)	4.1	Sealed Road Pavement Rehabilitation - \$/total km of sealed road/annum	\$960/km/annum average over 3 years 2013/14 – 2015/16	\$1,000/km/annum and check if in similar range to peer group RCAs	Vol 1 – Pavements
	4.2	Chipseal Resurfacing - \$/m2	\$5/m2 average over 4 years 2012/13 – 2015/16	\$5/m2	Vol 1 – Pavements
	4.3	Asphalt Resurfacing - \$/m2	\$60/m2 average over 4 years 2012/13 – 2015/16	\$60/m2	Vol 1 – Pavements
	4.4	Unsealed Road Metalling - \$/total km of sealed road/annum	\$2,545/km/annum average over 3 years 2013/14 – 2015/16	<= \$2,300/km/annum and check if in similar range to peer group RCAs	Vol 1 – Pavements
	4.5	Overall Network Cost (excluding emergency works) - \$/km	\$9,600/km/annum average over 3 years 2013/14 – 2015/16	<= \$10,000/km/annum and stay above 90% on national average	Vol 1 – Pavements
5. Response times (Programme Business Case 5 – Appendix 8 of Strategic Case)	5.1	LoS 5 – respond to requests in reasonable timeframe	Current performance is 95%	Maintain at 95%	Vol 1 – Pavements Vol 2 – Bridges & Structures Vol 3 – Footpaths & Cycle ways Vol 4 – Stormwater Drainage Vol 5 – Traffic Services Vol 6 – Street Furniture

Investment KPI (cont.)	KPI#	KPI Description	Baseline Performance	Target Performance	AMP Volume Reference
6. Network audits of condition (Programme Business Case 6 – Appendix 9 of Strategic Case)	6.1	ONRC Amenity Customer Outcome 1 – Smooth Travel Exposure	84.3% Arterial, 91-93% Others	85% for Arterial roads and 90% for all other categories.	Vol 1 – Pavements
	6.2	ONRC Amenity Customer Outcome 2 – Peak Roughness	TBC	TBC	Vol 1 – Pavements
	6.3	LoS 4 – quality footpath network safe for users	0.9% failed, 90.2% good/excellent	Less than 1% of footpath length recorded as failed during ratings surveys. More than 90% of footpath length to be in good or excellent condition. Targets to maintain footpaths in safe condition for community.	Vol 3 – Footpaths & Cycle ways
	6.4	Pavement Integrity Index (PII),	95.8% average 2005-15	>= 95% to prevent roads deteriorating to unacceptable standard.	Vol 1 – Pavements
	6.5	Condition Index (CI)	98.4% average 2005-15	>= 98% to prevent roads deteriorating to unacceptable standard.	Vol 1 – Pavements
	6.6	50MAX Bridge Capability	26 bridges currently with 50MAX restrictions	No reduction in 50MAX rated bridge numbers	Vol 2 – Bridges & Structures
	6.7	Bridge Condition Indicator	TBC	Await development of bridge condition index – workshop with Opus	Vol 2 – Bridges & Structures
7. Crashes (Programme Business Case 7 – Appendix 10 of Strategic Case)	7.1	ONRC Safety Customer Outcome 3 – Personal Risk per 100M VKT	DSIs per 100 million vkt have been as low as 1 previously and an average of 2.7/annum between 2002 and 2015	1 or less DSI per 100 million vehicle kilometres travelled (use other measures i.e. DSIs at intersections and DSIs for vulnerable users to analyse where key issues may exist)	Vol 1 – Pavements



2018-2028 TRANSPORTATION ASSET MANAGEMENT PLAN

He Rautaki Whakahaere Rawa mō Ngā Ara Kawenga

STRATEGIC CASE (GENERAL VOLUME) KAUPAPA RAUTAKI (HE PUKAPUKA MATUA)