Waka Kotahi Connecting Tairāwhiti Programme Business Case

Response to the Tairāwhiti Economic Action Plan
Item 6.1: Upgrade of SH35 and connecting routes
Item 6.3: Upgrade of SH2

July 2018

VERSION FINAL

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NZ Transport Agency
Published [month and year]

ISBN [number]

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Contents

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

List of tables

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

List of figures

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

List of appendices

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GLOSSARY OF TERMS

ABBREVIATION	FULL NAME
AEE	Assessment of Environmental Effects
BCR	Benefit Cost Ratio
DBC	Detailed Business Case
DSI	Death or Serious Injuries
EEM	Economic Evaluation Manual
FAR	Funding Assistance Rates
GDC	Gisborne District Council
GPS	Government Policy Statement
HBRC	Hawke's Bay Regional Council
HCV	Heavy Commercial Vehicle
HDC	Hastings District Council
ILM	Investment Logic Map
KiwiRAP	Kiwi Road Assessment Programme
KPI	Key Performance Indicator
LoS	Level of Service
MCA	Multi Criteria Analysis
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
NZTA (or The Agency)	The New Zealand Transport Agency
ODC	Ōpōtiki District Council
ONRC	One Network Road Classification
PBC	Programme Business Case
RLTS	Regional Land Transport Strategy

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RMA	Resource Management Act
SMART (objectives)	Specific, measurable, assignable, realistic and time-related
WDC	Wairoa District Council
WEIs	Wider economic impacts

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EXECUTIVE SUMMARY

The Connecting Tairāwhiti Programme Business Case has developed a programme in conjunction with key stakeholders which seeks to connect people to markets and improve access to social, tourist and economic opportunities. It is a direct response to actions 6.1 and 6.3 of the Tairāwhiti Economic Action Plan. This PBC is intended to be an investment map to provide details on the type of options that holistically will provide the greatest benefits to the region.

The study area encompasses almost 2,200 km of roading network and serves a variety of customers.

It is evident that SH2 and SH35 and its associated communities are experiencing similar types of problems. So that an integrated transport response could be developed, the approach has been to deliver both the SH35 and SH2 PBCs together, within a single business case.

Three key problems are addressed in the Connecting Tairāwhiti PBC – safety, resilience and access.

1

The unforgiving nature of terrain combined with typically long journeys and poor driver behaviour is resulting in high personal safety risk

2

Due to relative isolation and lack of viable alternatives, when transport infrastructure is closed there is a significant impact on communities and economic productivity

3

The nature of access in the region constrains the ability to realise community and economic opportunities

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NZ TRANSPORT AGENCY WAKA KOTAHI

Connecting Tairāwhiti

NZ TRANSPORT AGENCY WAKA KOTAHI

Problem

The unforgiving nature of terrain combined with typically long journeys and poor driver behaviour is resulting in high personal safety risk.

1

KEEPING OUR ROADS SAFE

CRASH BY TYPE

PERSONAL RISK

COLLECTIVE RISK

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NZ TRANSPORT AGENCY WAKA KOTAHI

Connecting Tairāwhiti

NZ TRANSPORT AGENCY WAKA KOTAHI

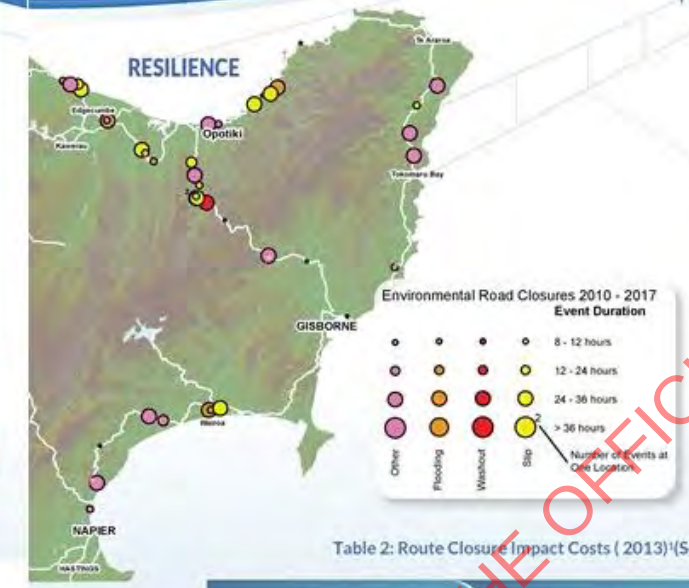
KEEPING OUR ROADS OPEN

Problem

Due to relative isolation and lack of viable alternatives, when transport infrastructure is closed there is a significant impact on communities and economic productivity.

2

RESILIENCE



"When the Waioeka Gorge closed, it was costing my business $25,000 per week in additional driver and accommodation costs"

Table 2: Route Closure Impact Costs (2013)[1](Source ITTP, Table 12)

ROUTE	1 Day Delay COST	1 Day Delay RISK	1 Week Delay COST	1 Week Delay RISK	1 Month Delay COST	1 Month Delay RISK
SH2 Gisborne to Opotiki	L	$35,000	L	$900,000	M	$3,400,000
SH2 Gisborne to Napier	L	$67,000	M	$2,100,000	L	$8,300,000
SH35 Gisborne to Eastern Bay of Plenty	L	$93,000	M	$2,500,000	M	$9,900,000

[1] Gisborne and Hawkes Bay – Route Security Study - Opus (2103)

"Our children struggle to get competitive sports exposure as teams often default our home games due to the perceived risks on SH2 between Napier and Wairoa"

"When the road is closed, our communities are isolated and can't readily access urgent medical care or specialist appointments"

"If our produce is delivered to the distribution centre after the time stamp, we lose the entire load"

NZ TRANSPORT AGENCY WAKA KOTAHI

Connecting Tairāwhiti

NZ TRANSPORT AGENCY WAKA KOTAHI

Problem

The nature of access in the region constrains the ability to realise communities and economic opportunities.

3

ACCESSING OUR COMMUNITY & ECONOMIC OPPORTUNITIES

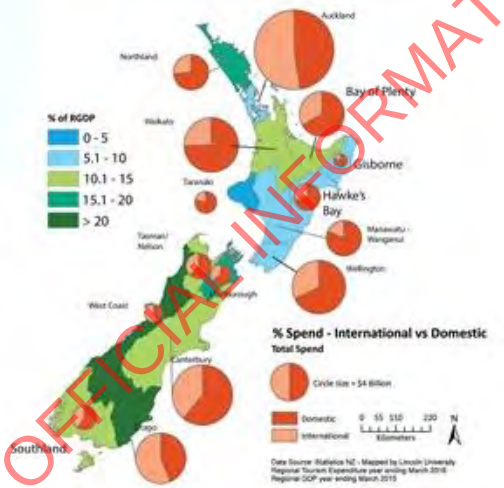
ACCESS MAP

"The drive around East Cape road is beautiful but challenging"

"There is a currently a shortfall of truck drivers and machine operators. It is also noted that several people stated they have sold equipment because they couldn't get the drivers to operate it. This raises serious concerns about the economic impact on the region's main industries such as forestry, horticulture, general road freight, and transport and the ability to meet their growing needs"

Source: Tairāwhiti Road Freight Transport Survey May 2015

Regional tourism expenditure as a percentage share of regional GDP (year ending March 2015)



2022 TRANCHE 2 HPMV MAP

CUSTOMER SURVEY CAMPAIGN

Regional comparison for: Thinking about the State Highways with which you are most familiar, how would your rate the State Highways in New Zealand on a scale of 1 to 5 where 1 is 'Very Poor and 5 is 'Excellent'?

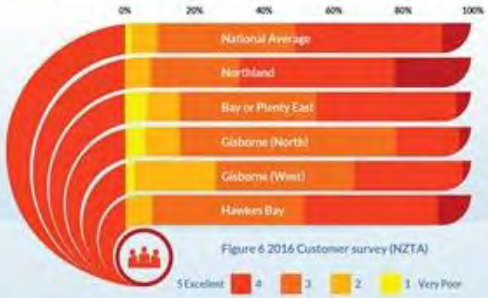


Figure 6 2016 Customer survey (NZTA)

INDICATIVE COST FOR HEAVY VEHICLE OPERATIONS

OPERATING COST	BAY OF PLENTY	TAIRĀWHITI REGION
Maintenance Cost	40c/km	60c/km
Tyres	12c/km	22c/km
Fuel	40c/km	45c/km
TOTAL	92c/km	127c/km

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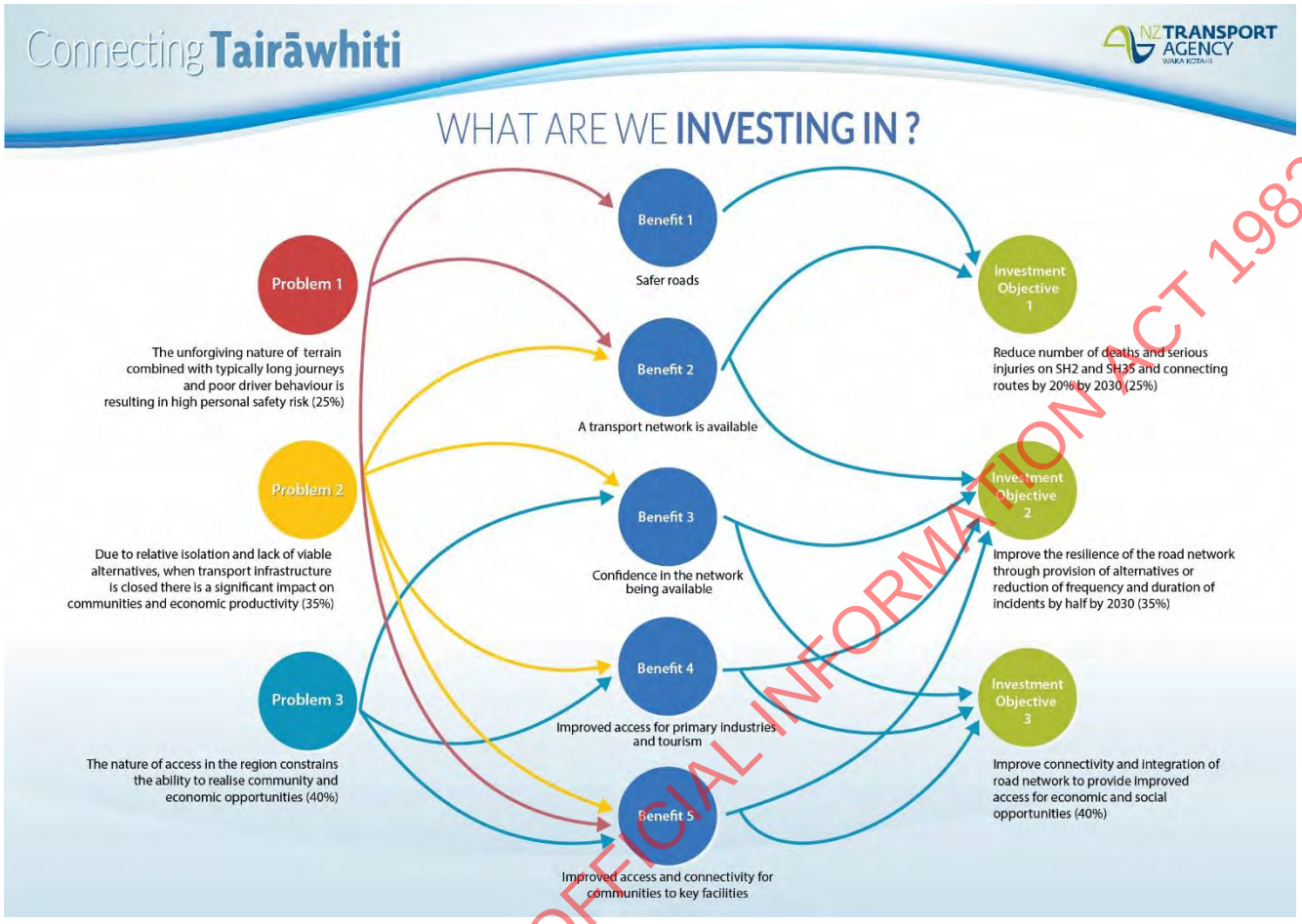
By focusing the programme to address the safety, resilience and access problems, a wide range of benefits will be unlocked.



Three sets of workshops were held with stakeholders to understand the key issues and investment objectives for the PBC. At total of 169 options were assessed using multi criteria analysis and these were then packaged into eight programmes for further assessment.

Programme eight (P8) was selected as the recommended programme as it addressed all the investment objectives and was considered the best value for money. The programme recognises the unique challenges of the terrain and the unforgiving nature of the roads. It identifies the key transport enablers as well as community, visitor industry and economic development options to transform the region's economy. It focuses on keeping the roads open, strengthening the existing freight corridors on SH2 and SH35 and improving local access roads connecting to SH35. Safety is embedded throughout the options.

The programme is broken down into seven workstreams: community, visitor industry, cycling and walking, road network, alternative modes, economic development and ancillary options. It includes a combination of location specific and network wide packages.

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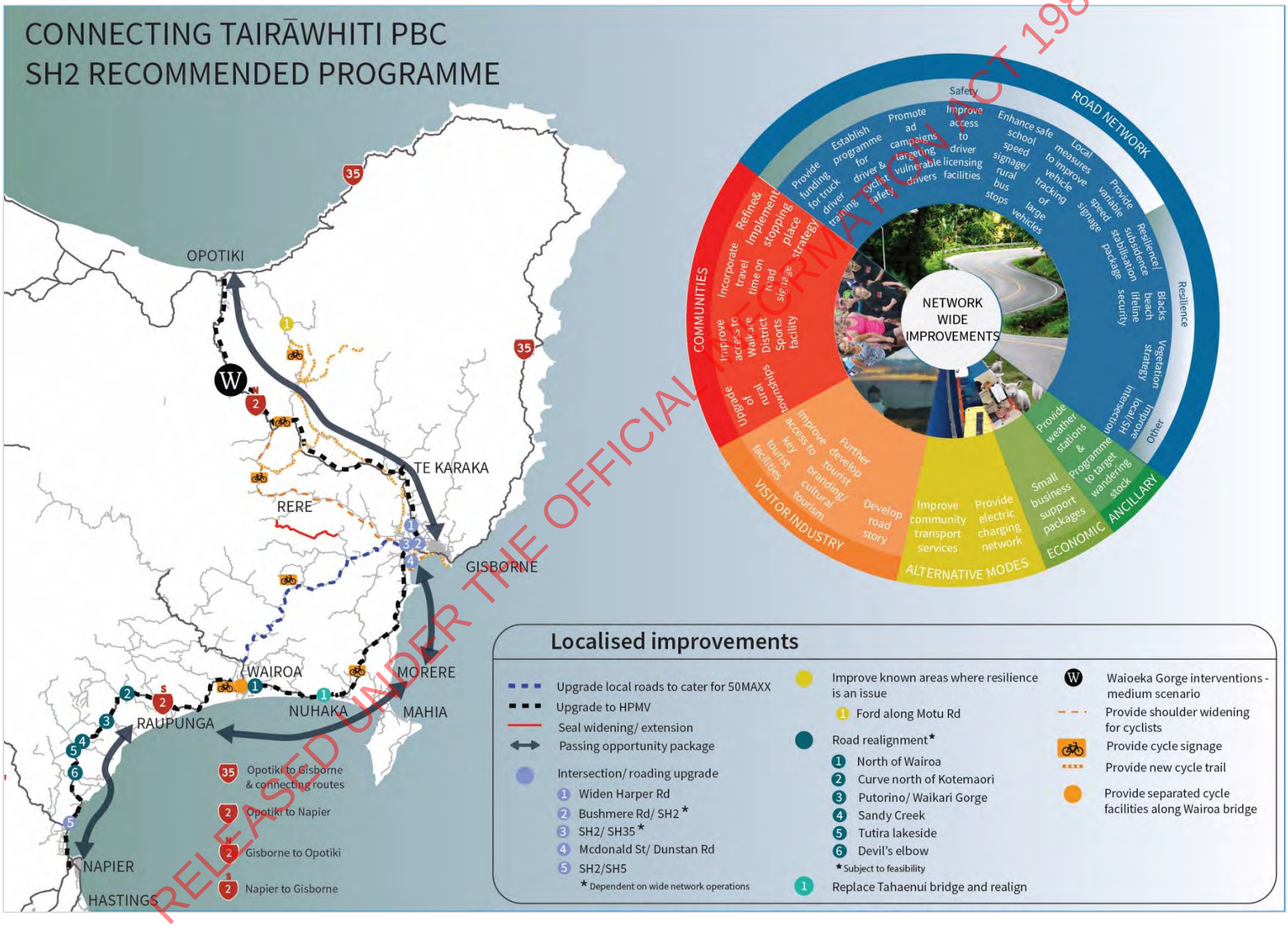

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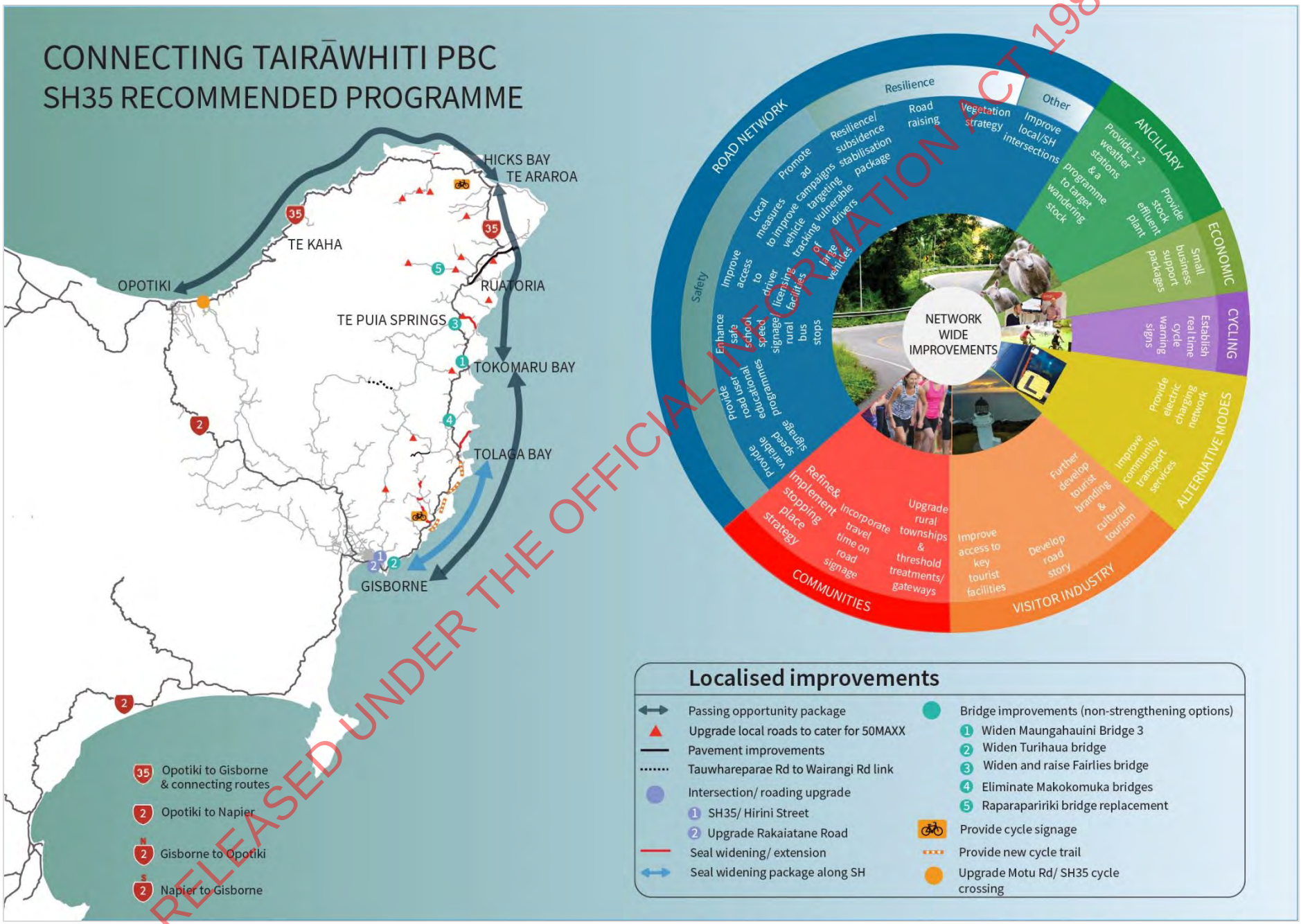

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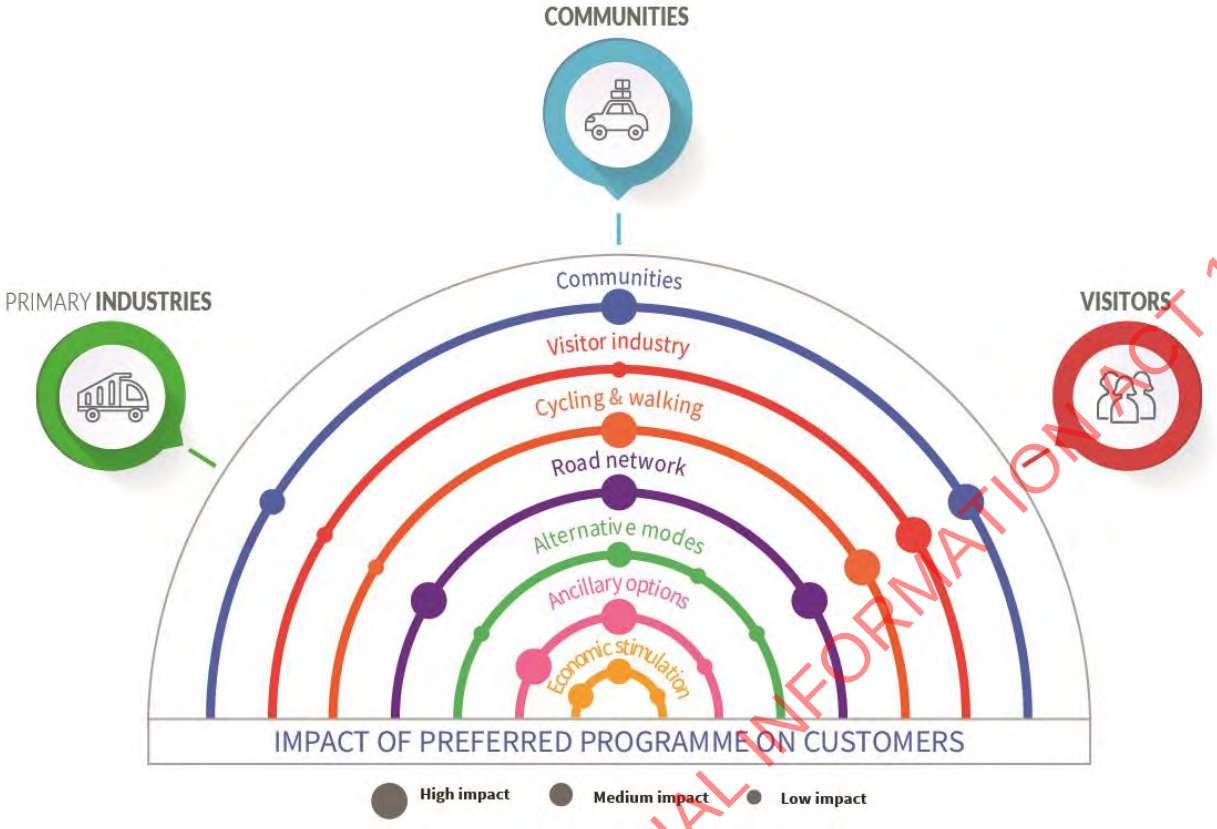
The recommended programme delivers a balanced investment to all customer groups.



The total benefits for the recommended programme are projected to be in the order of **$395M (NPV)** of which $160M is attributable to wider economic impacts.

The total cost for the recommended programme is between **$255 to $375M (NPV).**

This results in a BCR of 1.1-1.6.

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The programme delivers the following outcomes with respect to the investment objectives. The outcomes are consistent with the Government Policy Statement (GPS) on land transport with the programme delivering improved safety performance and enhanced access through a focus on resilience and increased access to economic and social opportunities.

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PART A
The Strategic Case for Change

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1. INTRODUCTION

1.1 Scope and purpose

This Programme Business Case (PBC) has been developed by the NZ Transport Agency in consultation with district and regional councils and key network users. It considers the case for investment to support regional economic growth by connecting people and markets through improving the transport system.

The PBC directly responds to the Tairāwhiti Economic Action Plan, developed by Activate Tairāwhiti in partnership with local government, Māori and local business leaders. It specifically addresses:

- Item 6.1: Upgrade SH35 and its connecting routes for forestry, tourism and economically underused land in the region
- Item 6.3: Upgrade SH2 inter-regional connections from Bay of Plenty through Tairāwhiti down to Hawke's Bay for horticulture and tourism.

The project has been named "Connecting Tairāwhiti" in all project documentation. This highlights the purpose of the PBC to improve both intra- regional connections within Tairāwhiti as well as inter-regional connections with the rest of New Zealand.

The PBC considers three key journeys:

- Ōpōtiki to Gisborne (SH2)
- The East Cape (SH35 and connecting routes)
- Gisborne to Napier (SH2)

As such the study area encompasses the full Tairāwhiti region, as well the eastern Bay of Plenty (Ōpōtiki) and the Hawke's Bay (Wairoa and north of Napier). For the purposes of this report, 'study area' is used when referring to the whole Napier-Tairāwhiti/Gisborne-Ōpōtiki area (and its three key state highway journeys). Tairāwhiti/Gisborne is used when referring to the actual Tairāwhiti/Gisborne District.

Within the study area, it is evident that the transport network and associated communities are experiencing similar types of problems including safety, resilience and access to social, economic and tourist opportunities. So that a holistic transport response could be developed, the approach has been to deliver both the SH35 and SH2 PBCs together, within a single integrated business case. This PBC also incorporates the outcomes of the Integrated Transport Priority Plan (ITPP).[1]

This integrated approach has allowed the potential economic benefits of the programme to be assessed at a regional level through a single programme. The recommended programme reporting has been split so that the programme components for SH2 and SH35 are specifically defined to

[1] Item 6.2 of the Tairāwhiti Economic Action Plan

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respond to the actions from the 6.1 and 6.3 from the Tairāwhiti Economic Action Plan. However, the overall economics assessment has been prepared for the full study area.

1.2 Project objectives

The Tairāwhiti economy has historically been one of New Zealand's poorest performers over the last ten years, and recent statistics are showing signs that the economy is growing slower than the rest of the country. The region is also ripe with opportunities with a strong primary industry advantage, rich cultural history and strong community pride.

The Connecting Tairāwhiti PBC is an integrated transport approach that recognises the importance of improving intra-regional and inter-regional transport access for Tairāwhiti within a multi-modal environment. The journeys within the study area utilise many State Highways and local roads in the eastern Bay of Plenty, Tairāwhiti and northern Hawke's Bay regions.

This PBC has been developed with stakeholders and investors to ensure a coordinated approach for investment. The PBC process is shown in Figure 1.

Figure 1 PBC process

The PBC:

- Confirms the strategic case problems and benefits
- Develops investment objectives
- Is informed by customer insights
- Investigates options and alternatives
- Identifies the key projects that will support the programme outcomes
- Seeks the early approval of decision-makers

Connecting Tairāwhiti Investment Map

- This PBC is an investment map and highlights the types of activities that if undertaken collectively could result in significant benefits for the study area. It is expected that additional options will be developed over time. This PBC does not preclude the inclusion of these options, rather it provides a benchmark to test how the new options may support the investment objectives.
- This PBC seeks to ensure that investment is made at the right time, in the right place, to the right level to enable growth at both a local and strategic level

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1.3 Work to date

1.3.1 Gisborne Regional Land Transport Plan (RLTP) 2015-2018

The Gisborne RLTP was developed in partnership with NZTA, Gisborne Council, Gisborne Regional Transport Committee and New Zealand Police. It identified key transport issues in the Gisborne Region and propose transport activities to address these issues. The RLTP identified the following issues:

- Economic development
- Safety and personal security
- Access and mobility
- Public health
- Environmental and cultural sustainability

It ranked the regional priorities as:

- Reduce deaths and serious injuries
- Promote route security and reliability
- Promote affordable alternative transport options to the private motor vehicle

These problems were used as an input into the Connecting Tairāwhiti problem and benefit mapping.

1.3.2 Gisborne Strategic Case

In 2014, the New Zealand Transport Agency developed the "Strategic Case" for transport investment within the Gisborne region. The Strategic Case provides an overview of existing transport conditions and forms the initial step in developing the 'case for change' for investment through the identification of regional transport problems, identifying the impacts of not addressing the problem and the benefits that could be gained from investing in solutions.

The Strategic Case concluded that there was a case for investment within the region and recommended that Programme Business Cases (PBCs) be advanced to further refine the strategic case and investigate a programme of options that resolve identified issues. At that time specific activities were accelerated through to the investigation phase which meant that a full Gisborne Regional Programme Business Case (PBC) was not progressed.

This PBC has used the Gisborne Strategic Case problem and benefit mapping as input into the Connecting Tairāwhiti problem and benefit mapping.

1.3.3 Tairāwhiti Economic Action Plan

The Gisborne/Tairāwhiti Economic Action Plan (the Plan) was launched on Tuesday 28 February 2017 and forms a catalyst for transformational change within the region. The Plan's development was led by the Tairāwhiti Action Plan Governance Group and is supported through the Government's Regional Growth Programme.

The vision underpinning the Tairāwhiti Economic Action Plan is:

> "**Vision to 2022**: Working together, Tairāwhiti will harness our natural and human resources to initiate transformative economic change".

To achieve its vision, the Plan identified a series of enabling actions that seek to address some of the key challenges that the region faces over the next five years, which includes the need to connect people

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and markets through reliable transport networks. It also seeks to tap into the regions potential through primary industry and tourism (see Table 1).

Table 1: Tairāwhiti Economic Action Plan – Identified Sector and Enabling Actions

ACTIONS	SUB-ACTIONS
SECTOR ACTIONS	Tapping the regions potential in the primary production sector particularly through value added production Promoting the region as a place to enjoy great lifestyle opportunities and as a great place to visit.
ENABLING ACTIONS	***Connecting with people and markets through reliable transport and digital networks***
	Building our capacity to support business development, growth and capital investment.

The Plan identifies that industry within the region is reliant on reliable and efficient road transport connections to operate competitively in international and national markets. The Plan identifies the following opportunities and goals from investing in improved transport connections within the region:

Opportunity

Tairāwhiti young and fertile soils are a boon for primary production but pose challenges for providing key infrastructure such as roads and digital connections.

Improved transport connections (SH35 and SH2) and digital access will reduce the costs to businesses and improve market access

Goal

Improve our transport and digital connections to ensure our major industries have the ability to be competitive internationally and get our products, services and offerings to customers at the right time

By investing in the transport network, the plan aims to benefit the Tairāwhiti region by:

- Reducing costs to business
- Increasing business efficiency
- Improving the ability to attract talent
- Improving access to networks and ideas
- Leveraging under-utilised Māori land.

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1.3.4 Integrated Transport Priority Plan

In March 2018, the Integrated Transport Priority Plan (ITPP) was completed by the Transport Agency and partners which addressed Item 6.2 of the Tairāwhiti Economic Action Plan. This plan identified transport issues and prioritised solutions that would maximise value to landowners and increase productivity of under-used land in the region.

The scope was constrained to the identification of a suite of complementary, prioritised roading solutions that would increase the efficient movement of product from origin to market within the Tairāwhiti region. This was focused on resilience and efficiency. The report also identified several recommendations for issues/opportunities to be investigated as part of the other PBC processes. As such the ITPP has been used to inform the resilience options for this PBC. The recommendations have also been considered throughout the development of a long list for the Connecting Tairāwhiti Programme Business Case.

1.3.5 Tairāwhiti Māori Economic Development Report

The 2017 Tairāwhiti Māori Economic Development Report was undertaken by Kimihia He Oranga (KHO) with funding support from Te Puni Kōkiri. The research presents a view of regional economic development opportunities for Tairāwhiti Māori, whanau, hapū and iwi. The report articulates the economic aspirations of Tairāwhiti Māori and provides key insights into strategic issues and development principles that may benefit the Tairāwhiti economy.

1.3.6 Matariki Hawke's Bay Regional Economic Development Strategy and Action Plan

The 2016 Matariki Action Plan developed a strategy to help raise the region's employment opportunities and incomes. The ongoing focus is on working together to grow jobs across the region, increase household incomes and raise Hawke's Bay economic performance into the top quarter of New Zealand regions. The strategic directions for the plan include:

- Improve pathways to and through employment
- Identify and support existing businesses wanting to grow
- Promote greater innovation, productivity and agility
- Become a beacon for investment, new business, and skilled migrants
- Lead in the provision of resilient physical, community, and business infrastructure
- Enhance visitor satisfaction and increase spend

This plan identified that SH2 between Ōpōtiki and Napier is a key link for the region and its current condition is an impediment to economic development. The Plan also highlighted that other land transport improvements such as improvements to SH38 and a Napier Port Access project would be of major benefit to the region. Therefore, this Plan has been used as an input into the development of the Connecting Tairāwhiti PBC.

1.3.7 Toi Moana Bay of Plenty Economic Action Plan

The 2016 Toi Moana Bay of Plenty Economic Action Plan identified a range of short to mid-term opportunities that could increase job opportunities in the region, attract investment and lift incomes. Nine key areas were prioritised for development including agribusiness, aquaculture, education and skills, forestry and wood processing, geothermal, horticulture, Māori land utilisation, visitor economy and water management. This confirmed the economic growth sectors and issues for this part of the study area in the Connecting Tairāwhiti PBC.

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2. PROGRAMME CONTEXT

This chapter outlines the geographic, economic, social, environmental and transport context to the PBC. The chapter is not intended to describe or analyse the key problems or opportunities but rather provide a relevant context to the area where investment is being sought.

2.1 Customer context

Following workshops and discussions with stakeholders three main groups of customers were identified for this PBC, as detailed in Figure 2. Each of these groups has a unique set of drivers and impacts which need to be considered during option development for this business case. The trips on the network consist of:

- inter-regional journeys of which freight is a significant component
- intra-regional journeys which includes access to jobs and general community access to key social facilities such as schools and medical centres

Figure 2 Customers using SH2 and SH35 and connecting routes

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2.2 Geographic and environmental context

Tairāwhiti has a wealth of sites with cultural, environmental and historic significance that are potential opportunities for economic development

A key consideration is how to sensitively and sustainably develop these opportunities

The study area shown in Figure 3 is located on the north eastern corner of the North Island and forms the easternmost region within New Zealand. Tairāwhiti/Gisborne District itself is bounded by the Wharerata Hills on its southern extent and Te Urewera on its western extent. To the north, the District is separated from Ōpōtiki District in the Bay of Plenty by the Raukumara Ranges. To the south, the District is separated from the Wairoa District by heavily dissected hill country. Tairāwhiti/Gisborne District covers an area of 8,350 square kilometres (km²), making up 3% of New Zealand's total land area. Ōpōtiki District covers an area of 3,089km², while Wairoa District covers an area of 4,077km². Together, the three Districts, along with the Mohaka Ward (an area of 3,449km² which covers the northern part of Hastings District, between Napier and Wairoa) comprise 19,001km², collectively constituting 7% of the New Zealand's land area.

Figure 3: Regional boundary map

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The topography of the study area comprises a hilly to mountainous interior, with small but fertile low-lying river plains (such as the Poverty Bay Flats) and coastal flats. The region is sparsely populated and relatively isolated, and its geographical location, topography and geology creates a challenging environment, with the hill country prone to erosion and subsidence. Most of larger settlements within the region are located along the coastline, predominantly on river mouths, including Gisborne, Wairoa, Ōpōtiki, Tokomaru Bay and Tolaga Bay.

There are many rivers within the study area that interact with key transport routes, including the Mohaka, Wairoa, Nuhaka, Waipaoa, Taruheru, Waimata, Uawa, Waiapu and Motu Rivers. SH2 passes through the Waioeka Gorge which follows the Waioeka River down to Ōpōtiki. The Gorge is characterised by steep slopes rising from a narrow valley, with the State Highway passing over the river at several locations along its alignment. While the westerly flowing rivers (towards the Bay of Plenty) have heavily forested catchments, the easterly flowing rivers have catchments that often contain a mix of pastoral and exotic plantation forestry, prone to flooding and erosion.

The western part of the Study Area includes Ōpōtiki District, part of the Bay of Plenty Region. Forming the eastern side of the Bay of Plenty, the Ōpōtiki District predominantly comprises rugged hill/mountainous terrain that rises to the ranges that form the spine of the East Coast, the highest point being Mt Hikurangi, in the Raukumara Range, which at 1754m is the highest non-volcanic mountain in the North Island. Dissected by fast-flowing rivers, the largest being the Motu, the only flat areas in the District are the coastal riverine floodplains and terraces. Ōpōtiki township is situated on the largest flat at the conjunction of the Otara and Waioeka Rivers. Sandy beaches, lower hills and larger flats are characteristic of the southwest area of the District; pebbly or rocky beaches and high hills coming right down to the sea are characteristic of the northeast. Current human population is therefore concentrated in the coastal southwest.

The southern part of the Study Area extends into the Hawke's Bay Region, and includes Wairoa District, the northern part of Hastings District (Mohaka Ward) and part of Napier City. The Hawke's Bay Region wraps around Hawke Bay, that extends for 100 kilometres from Mahia Peninsula in the north to Cape Kidnappers in the south. The Wairoa District comprises the northern part of the Hawke's Bay Region and is characterised by heavily dissected hill country rising to the forested inland ranges, with floodplains (primarily those of the Wairoa and Nuhaka Rivers) and coastal flats. Wairoa District also contains the Mahia Peninsula, a large block of sedimentary rock joined to the North Island by a sandy marshy neck (tombolo). Lake Waikaremoana, New Zealand's 16th largest lake, is situated in northern Hawke's Bay, created by a massive landslide 2200 years ago.

Wairoa District adjoins Hastings District to the southwest, the northern part of which comprises heavily dissected hill country, with no river flats, deeply incised rivers, eroding coastal cliffs, and a few but fragmented areas of more gentle land. It is only south of Tangoio that a narrow coastal plain develops, gradually widening out towards Napier and the Heretaunga Plains.

The Study Area is rich in cultural heritage. Rawhiti (the east) saw some of the first Māori to land after their epic Pacific navigations in the fourteenth century. There is a strong cultural and spiritual relationship of iwi with the natural and physical environment of the East Coast. The waka of Maui-Tikitiki-a-Taranga who fished up the Ika-a-Maui (North Island) is said to rest atop of Mt Hikurangi, the ancestral mountain of the Ngāti Porou people. Maungapōhatu, the sacred mountain of the Tūhoe people, is at the extreme western boundary of the region, in the Huiarau Range. The rivers and coast were a rich source of food, and the area was interspersed with numerous Māori settlements. There are numerous operational marae on the East Coast, with many superb examples of Māori architecture. A summary of the cultural and heritage significance for the study area is shown in Figure 4 and the environmental significance in Figure 5.

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Figure 4 Heritage Significance for the study area

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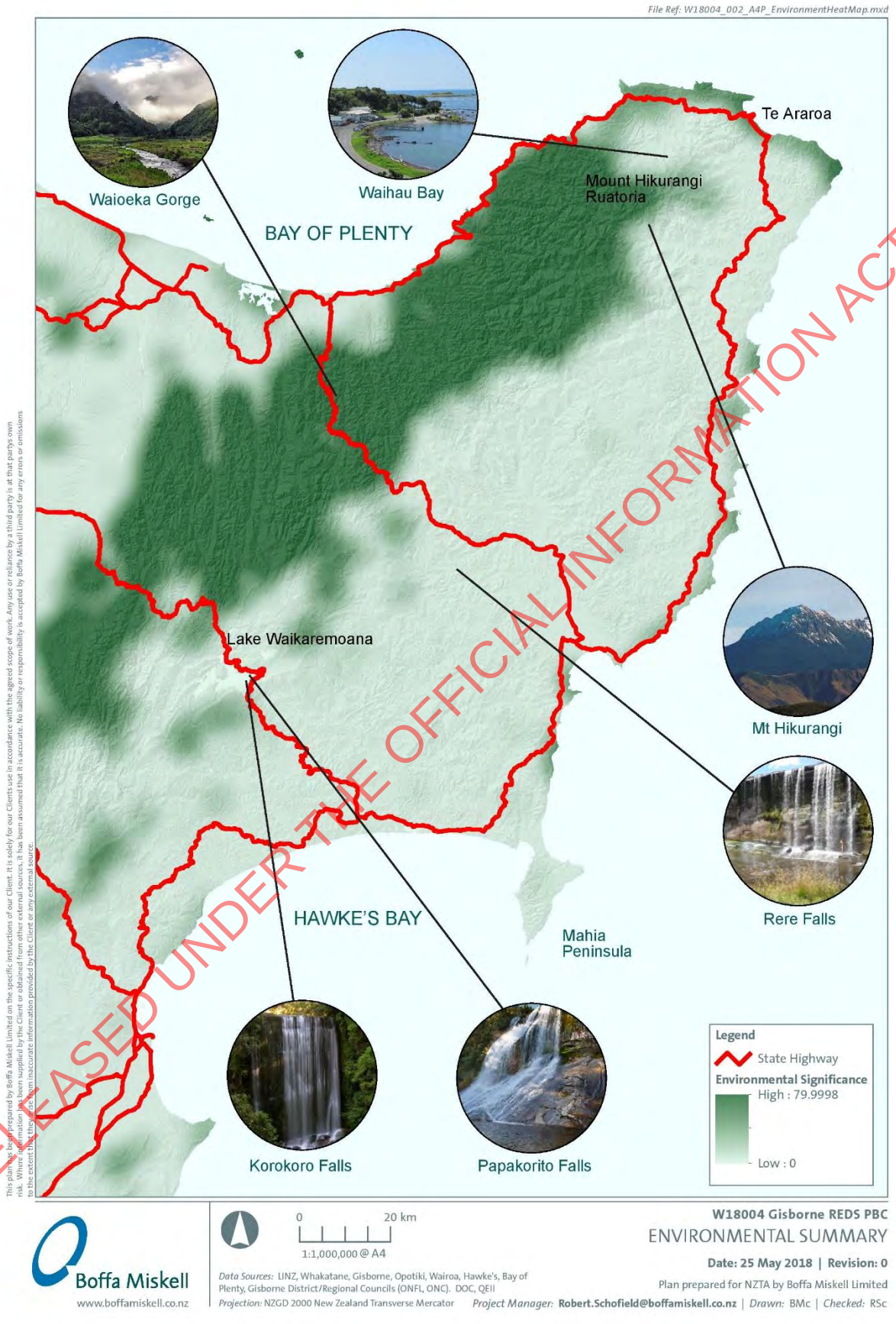
Figure 5 Environmental significance for the study area



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2.3 Socio-economic context

The Tairāwhiti region's historical socio-economic outlook shows high deprivation, low income, high unemployment, poorer educational outcomes and evidence of population decline.

Key considerations for the PBC are:

- Diversification of economic offerings
- Employment and/or upskilling opportunities

2.3.1 People and communities

As of the 2013 Census, the total resident population within the Tairāwhiti District was estimated to be 43,600 people, with three quarters of the population living within Gisborne city. Neighbouring districts of Wairoa and Opotiki have usual resident populations of around 8,000 and 8,500 residents respectively. While Hastings District had a population of approximately 73,000 usually resident people, most of these live on the Heretaunga Plains: the population in the Mohaka ward, in the north of the District adjoining Wairoa District, is about 5,300 people. Together, the total population of the study area in 2013 was about 65,400, or around 2% of the total North Island population.[2]

Table 2: Stats NZ total population forecast (medium growth)

Year at 30 June	2013[3]	2018	2023	2028	2033	2038	2043
Area							
Opōtiki district	8780	8800	8550	8220	7790	7260	6670
Gisborne district	47000	48500	49400	50000	50300	50200	49900
Wairoa district	8300	8140	7890	7610	7250	6810	6310
Hastings district	76700	80000	82100	83900	85200	86000	86300

The study area has one of the lowest population densities in the North Island, with only 3.9 people/km2 compared with 15.9 people/km2 for the entire North Island. Most of the population live in the urban areas and settlements, located on the coastal fringe or river flats.

Tairāwhiti itself is a young community with higher proportions of youth and lower proportions of middle age and elderly communities when compared with national averages. This both represents an

[2] http://archive.stats.govt.nz/StatsMaps/Home/People%20and%20households/2013-census-quickstats-about-a-place-map.aspx

[3] 2013 includes census stats for total population not usually resident

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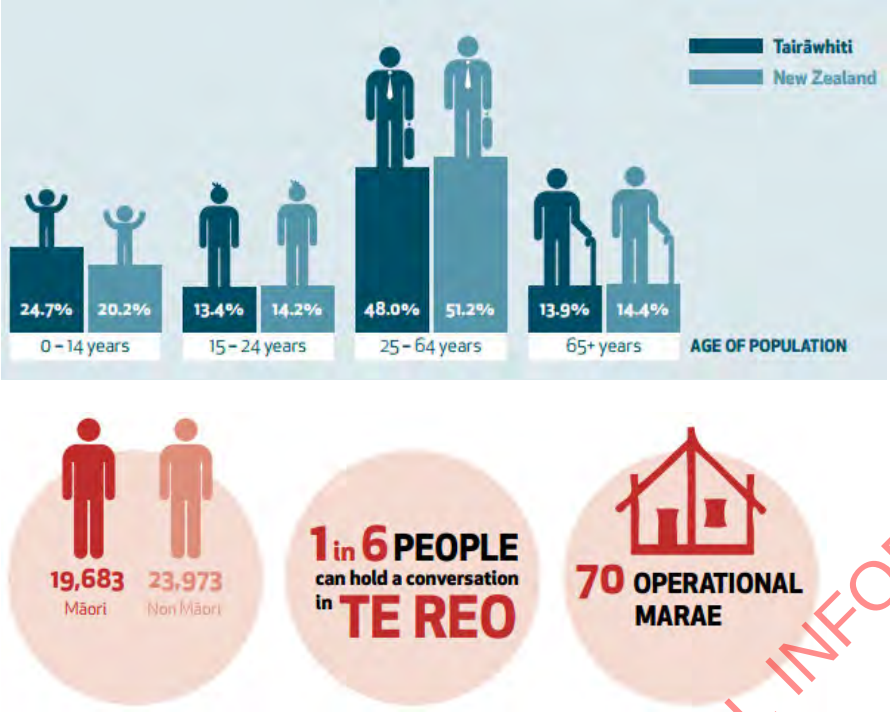
opportunity but means the community has a higher proportion of dependants. This is shown in Figure 6.

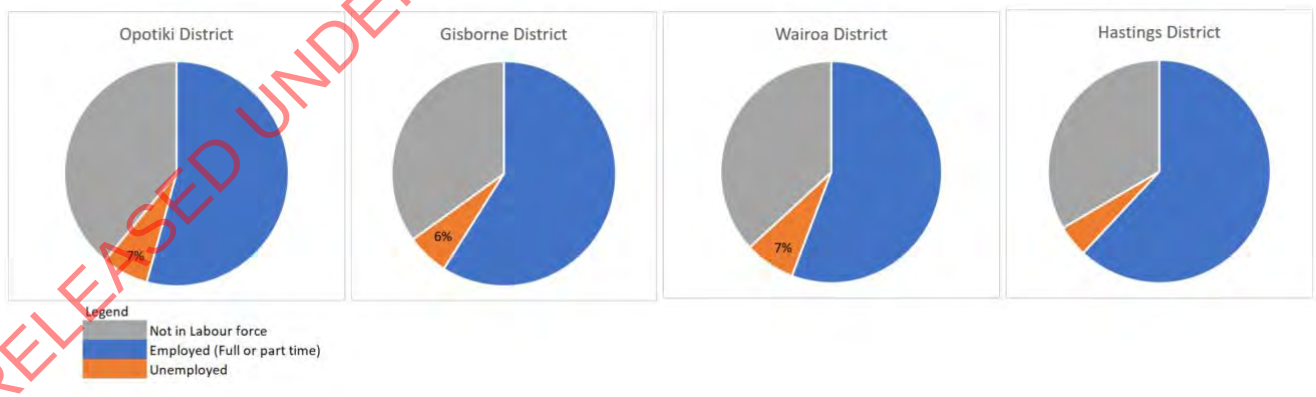
Figure 6: Tairāwhiti population demographics (source: Tairāwhiti Economic Action Plan)



2.3.2 Employment and income

Nationally unemployment sits at around 5%. Figure 7 shows that within the PBC study area, unemployment is generally higher than the national average with Ōpōtiki and Wairoa having an unemployment rate of 7% which is largely typical of a small rural community. Tairāwhiti/Gisborne has an unemployment rate of 6%, slightly more than the national average while the Hastings District is in line with the national average.

Figure 7: Employment statistics by district (2013 census data)



The employment rates in Gisborne, Hawke's Bay and Bay of Plenty compared nationally are shown in Figure 8. It shows these regions are amongst the lowest for employment growth. Sheep, beef cattle and grain farming accounts for 5.9 per cent of employment in the region, compared with 1.2 per cent for the rest of New Zealand. Like most parts of New Zealand, employment in sheep farming has been declining in Gisborne.

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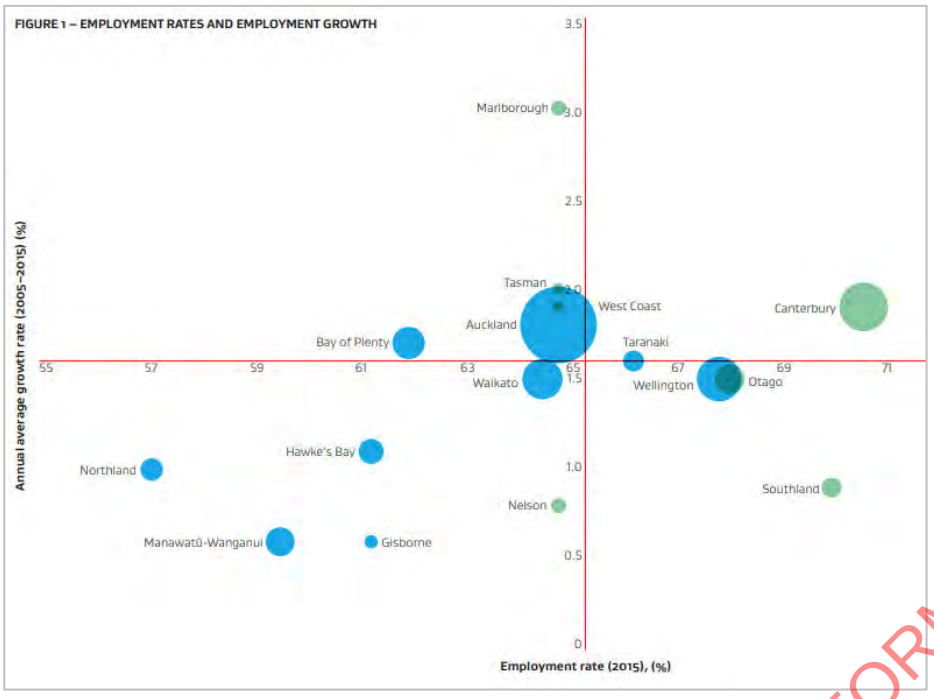
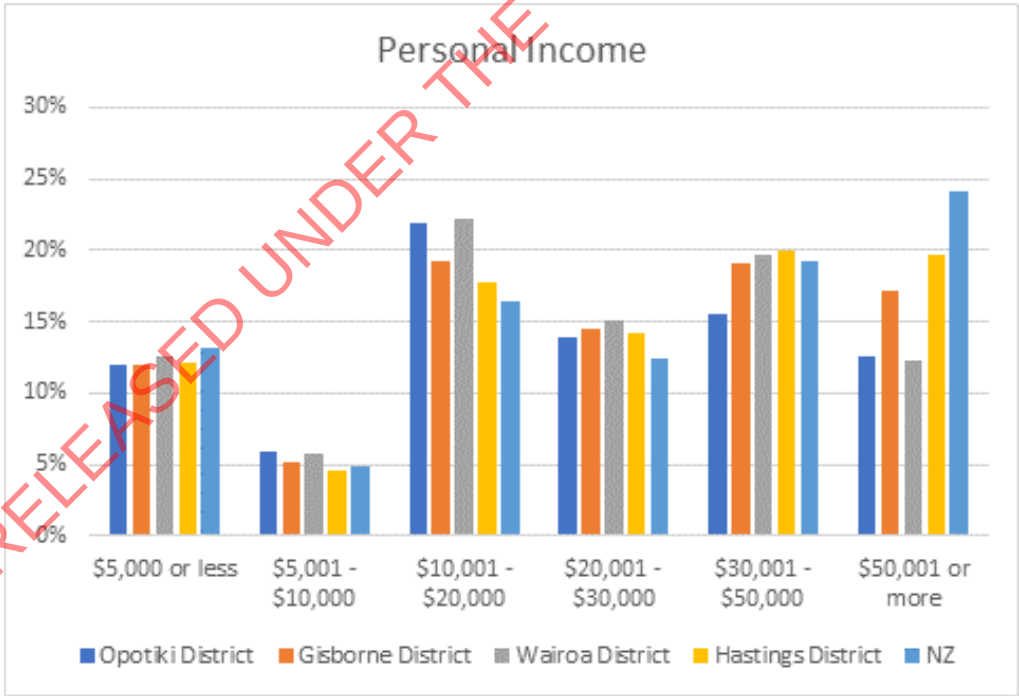
Figure 8: Employment rates and Employment growth (2013 census data)



When considering income of employed members of the community, similar trends are evident. Wairoa and Ōpōtiki Districts have higher proportions of low personal income (less than $20,000 per year) and smaller proportions of people within the higher income brackets (greater than $50,000 per year). The Tairāwhiti Gisborne District generally shows a higher profile of personal income than the neighbouring rural districts but lags the Hastings District. All districts within the study area have a lower income profile compared with national averages.

Figure 9: Personal Income by district (2013 census data)



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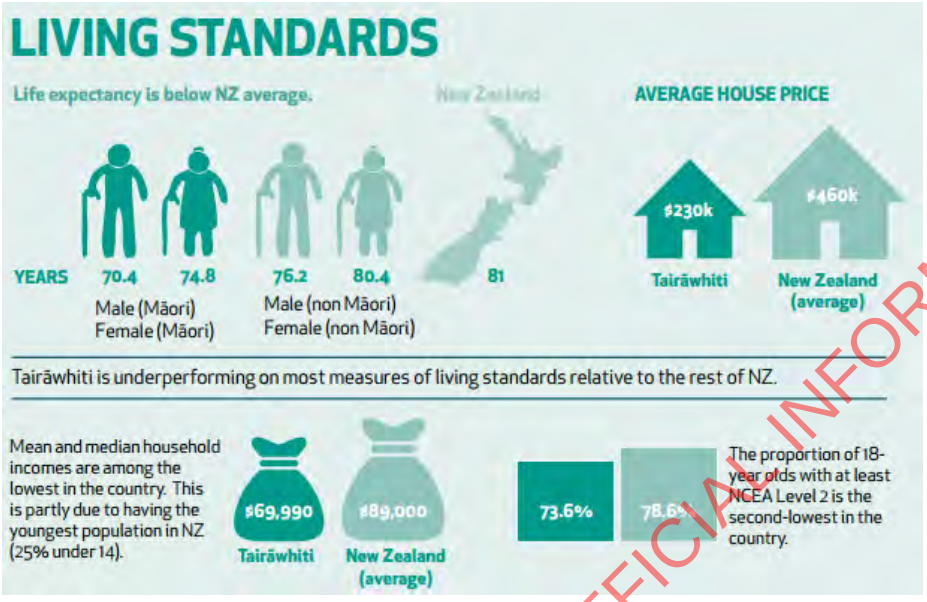
2.3.3 Living Standards

Tairāwhiti is underperforming on most measures of living standard relative to the rest of New Zealand. General life expectancy is lower than national averages, particularly for the Māori population. Education rates are generally lower in the region compared with national averages and are the second lowest in the country.

While personal and household incomes lag behind the rest of the country, the cost of living is lower in the region with average house prices around half of the national average as shown in Figure 10.

Figure 10: Living Standards in Tairāwhiti (source: Tairāwhiti Economic Action Plan)



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2.4 Tairāwhiti Economic context

Tairāwhiti/Gisborne has lowest GDP per capita of all NZ regions

Strong advantage in primary sectors of forestry, sheep farming and horticulture

Tairāwhiti has a strong advantage in the primary sector, especially forestry and logging, sheep farming, horticulture and agricultural support services industries.

Gross Domestic Product (GDP) within the Tairāwhiti district (as shown in Table 3) was $1.6bn in 2015 equating to 0.7% of national GDP as shown in Table 3. The economy has seen some modest growth driven by the logging industry, resulting in a 15.7% increase between 2009 and 2014, although this was lower than national GDP growth of 22.4% over the same period. Gisborne's GDP per capita ($36,955) is the lowest of all New Zealand's regions, and significantly lower than the national average ($51,319).

Table 3: Key Economic Indicators for Tairāwhiti Region - 2015 (Source: MBIE Regional Data)

Indicator	Tairāwhiti/Gisborne District	New Zealand
Regional GDP ($m)	$1,626	$229,718
GDP per capita ($)	$36,955	$51,319
Total Employment	24,227	2,504,814
Employment Rate	56.6%	65.0%
Unemployment Rate	6% (2013 census) 9.2% (2015 MBIE)	5.7%

The forestry industry is one of the largest contributors to the economy and 14% of New Zealand logging export volume originates within the region. Of all New Zealand's regions, the Tairāwhiti/Gisborne economy is the most reliant on forestry/logging, with the industry comprising 1.7% of employment in the region compared with 0.2% nationally. The region also has a higher than national employment within wood manufacturing, representing 1.9% of employment within the region compared with 1.2% within the rest of New Zealand. Although forestry employment has been growing, employment in wood manufacturing has been declining.

The Poverty Bay flats consists of 18,000 ha of NZ's most productive horticulture land (in particular fruit growing). There

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is currently 3,000ha of irrigated land on the Flats that produces $160m in regional GDP annually and employs 1,100 people, equating to approximately 10% of the Tairāwhiti workforce. Fruit and agriculture produce originating between Tolaga Bay and the Gisborne area travels to Ōpōtiki via SH35 and SH2 for packing and further distribution. There is anecdotal evidence that horticulture in the Poverty Bay area is on the increase with low value crops being replaced with high yield crops such as apples and kiwifruit.[4]

Although the tourism sector within Tairāwhiti is relatively undeveloped, there are many attractions, including scenic reserves, East Cape and Waioeka Gorge, as well as cycle tourism, fishing, surfing, camping, hunting and nature trails. The East Cape, Lake Waikaremoana, Waioeka Gorge, Rere Falls, the rock slide, Mt Hikurangi and Mahia Peninsula are some of the key tourism sites within the wider study area. The region also has some significant tourism assets in its strong cultural heritage and history, the many beaches and fishing rivers, and expansive pristine native forests in the region's mountains.

Eastland Port (located within Gisborne City) is a key destination for exporting goods from the region. Eastland Port is the 3rd largest log exporter within New Zealand, with exports from the port growing from 480,000 to 2.07 million tonnes in the past 10 years primarily due to increasing forestry harvests[5]. The Port has committed to expanding its port handling capacity to support forecast logging growth within the region, including twin berth development.[6]

The 2014 National Freight Demand Study provides a snapshot of New Zealand's current freight task and a forecast of what New Zealand's future freight task will look like over the next 30 years. The study estimates a total freight load of 4.7 million tonnes was shifted into, from and around the Gisborne region by road in 2012, with a further 0.02 million tonnes by rail (prior to the line closure). Approximately 3.2 million tonnes (68%) of freight were intra-regional movements during this period. Figure 11 visually shows freight movements occurring to and from the Gisborne region within the 2012 period.

Figure 11: 2012 Inter-Regional Freight Movements within the Gisborne Region

[4] Phone conversations with Leaderbrand 02/05/18, Riversun 17/05/18

[5] http://www.activateTairāwhiti.co.nz/assets/Uploads/He-huarahi-hei-whai-oranga-Tairāwhiti-economic-action-plan-.pdf

[6] http://www.twinberth.nz/twin-berth-development/

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2.5 Study area Visitor context

The PBC study area includes sections within two different Regional Tourism Organisations namely;

- Tairāwhiti/ Gisborne – covering the Gisborne District and Bay of Plenty region east of Ōpōtiki and south to the Mohaka River
- Hawke's Bay Tourism Limited– south of the Mohaka River

SH35 from Opotiki to Gisborne and SH2 from Gisborne to Napier form part of the Pacific Coast Highway tourist route. The Tairāwhiti Gisborne area is also commonly called East Coast and Eastland. The area is best known for its untouched nature, spectacular surf beaches, inland wilderness, fertile vineyards and farms, marae and settlements, gorgeous lakes and rivers and Gisborne, a city thriving with cafés, hotels and historic sites.

Tairāwhiti means "the coast upon which the sun shines across the water"

(Source: Tairāwhiti Gisborne – The First Light)

"The drive around East Cape is beautiful, but challenging"

(Source 100% New Zealand)

Tairāwhiti is a region of many firsts. In addition to welcoming the sun, Gisborne saw some of the first Māori to land after their epic Pacific navigations in the fourteenth century. It is also where, in 1769, Captain James Cook anchored his ship Endeavour and came ashore for the first meeting on land between Māori and Pākehā

Major tourism activities are included in Figure 12 and include:

- Motu Cycle trails – Part of the national cycleway as a Great Ride
- Gisborne City
- Historic wharfs at Tolaga Bay, Tokomaru Bay, Hicks Bay
- The East Cape – light house and first spot to see the sun rise
- Vineyards around Gisborne
- Waioeka Gorge – Walking tracks and historic sites
- Mt Hikurangi – highest mountain in the region

The coastal road trip from Whakatane to Gisborne on SH35 and then through to Napier via SH2 forms the southern section of the Pacific Coast Highway. The marketing boasts that "The trip takes you off the beaten track to some of the North Island's most beautiful and remote coastal areas"[7]

[7] 100% New Zealand - https://www.newzealand.com/int/feature/pacific-coast-highway-north-island/

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Figure 12: Tourism activities in Tairāwhiti and Hawke's Bay regions

From Mahia in the north to Porangahau in the south, the Hawke's Bay region is popular with both domestic and international visitors. The region is blessed with fertile soils, and a warm temperate climate, Hawke's Bay's prosperity is founded on its land-based economy. The region is famous for both the thousands of acres of farms, orchards, and vineyards, but also the infamous Hawke's Bay Earthquake of 1931 which changed the cityscapes of Napier and created a unique Art Deco architecture within the city.

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The region has several key attractions within the study area which include:

- Lake Waikaremoana – One of New Zealand's 'Great Walks'
- Wairoa - largest town in Northern Hawke's Bay and a handy place to stop off or prepare for adventures in Te Urewera
- Morere Hot Springs a collection of mineral hot pools
- Mahia Peninsula - a bustling summer refuge and a magnet for fishermen, divers, and surfers

In a national tourism context, both the Tairāwhiti and Hawke's Bay tourism RTOs are relatively small players contributing around between 0.5% and 2% respectively of total tourism monthly spend as shown in Table 4. The Tairāwhiti region is growing in line with national averages (9%) while the Hawke's Bay region lags at 5%.

Table 4: Tourism Spend by RTO (source: MBIE 2017 data)

RTO	Spend Year End (Feb)	Year to Year Growth	February Spend	Month to Month Growth
Activate Tairāwhiti	$190 m	9%	$17 m	6%
Hawke's Bay Tourism	$611 m	5%	$61 m	-2%

Both regions exhibit a seasonal bias towards the summer months. The Tairāwhiti/Gisborne region is more pronounced with a spike in the December/January period likely related to summer festivals in the region. The Hawke's Bay region peaks between November to March with decrease visitation and spend in winter months.

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2.6 Transport context

2,220 km of road network passing through largely unforgiving and challenging terrain

Partial operation of freight railway service

Two ports - Eastland Port and Port of Napier

Recreational cycle facilities

The roading network within the study area comprises 2,220km of local and State Highway routes. 331km (approximately 15% of the roading network) is state highway, with the remainder comprising local urban roads and rural roads servicing isolated communities.

The existing network is considered suitable to the size and scale of activities within the region. Much of the existing road network comprises a "fish-bone' pattern, with limited alternative parallel routes to existing regional State Highway routes. As such, local roads primarily operate as feeder routes onto the State Highway which provides key connections for both inter- and intra-regional road transport.

The One Network Road Classification system (ONRC), divides New Zealand's roads into six categories based on how busy they are, whether they connect to important destinations, or are the only route available. Within the PBC study area, the classification of the State Highways varies from a regional highway (SH2 between Gisborne and Napier), an arterial (SH2 Opotiki to Gisborne) and a primary collector (SH35) as shown in Figure 13.

Figure 13: ONRC road classification

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While traffic volumes on much of the state highway network within the study area are lower than typically expected for the given classification, the classification reflects the regional connectivity provided by the State Highways and economic and social importance of the routes.

Traffic volumes on the state highway network are outlined in Figure 14.

Figure 14: Traffic volumes on State Highways (2016)

2.6.1 Journeys

SH2 Gisborne to Napier

The journey between Gisborne and Napier is around 215km and takes around three hours of driving in a typical vehicle. The route is a typical rural highway through challenging terrain. The route, combined with the vast distance generally provides challenging driving conditions, including narrow road width, winding geometry, minimal stopping areas, and steep drop offs in close proximity. There are 'out of context' curves[8] throughout the corridor, adding to driving difficulty.

The route is generally undulating and windy in parts and passes through several highly constrained sections such as the Devil's Elbow, Putorino/Waikare Gorge, Mohaka Viaduct and Morere Hill.

[8] Out of context curve is a curve that is unexpected or inconsistent with the road network

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Much of the corridor is 100km/h with small sections of lower speed limit through the townships the corridor passes through. The routes pass through several small rural communities with Wairoa representing the only urban centre situated along the route, around half way between Gisborne and Napier.

Traffic volumes on the route vary according to proximity to the main centres. To the north of Napier, SH2 caters for around 13,000 vehicles per day (vpd), dropping to around 5,000 vpd immediately north of the SH5 connection. Traffic volumes crossing the Mohaka River are around 2,000 vpd before increasing to around 8,000 vpd within the Wairoa township. North of Wairoa, traffic volumes decrease to around 2,000 vpd before increasing closer to the Gisborne Centre. Traffic volumes around Gisborne (SH2 north of Bell Road) increase to around 6,000 vpd of which approximately 8% are heavy vehicles.

SH2 Ōpōtiki to Gisborne

The journey between Opotiki and Gisborne is around 140km and takes just under 2 hours to drive in a typical vehicle. The journey is broadly characterised in two parts; the winding and constrained route through the Waioeka Gorge, followed by easier terrain through the rural hills and river flats hinterland of Ōpōtiki to the north and Gisborne (via the Poverty Bay Flats) to the south.

Traffic volumes north of Gisborne are relatively low with an annual daily traffic (ADT) of less than 1000 vpd through the Waioeka Gorge; although traffic volumes steadily increase on the approach to Gisborne city, increasing to 5,000vpd per lane between Te Karaka to Gisborne.

Much of the corridor operates with a posted speed limit of 100 km/h except for where reduction in speed limits is required within urban areas or where the road passes through rural settlements.

Heavy vehicle volumes represent a relatively high percentage of traffic movements through the area, ranging between 12%-21% of all traffic movements on the route. An increase in heavy vehicle traffic on approaches to Gisborne is caused by freight trucks (including livestock, agriculture, horticulture, viniculture and logs) merging at the Tiniroto Rd, Wharekopae Rd and the SH2 intersection.

SH35 Opotiki to Gisborne

Traffic volumes are generally around 2,000 vehicles per day for much of the corridor, increasing to 4,000 vehicles per day within the Gisborne urban area. Within the vicinity of the Eastland Port, vehicle movements increase significantly to 19,000 vehicle movements per day, reflecting limited route choices across the Turanganui/Waimata River for urban traffic.

Heavy vehicle movements consist of a relatively high percentage of traffic movements on rural sections of SH35, accounting for between 15-25% of traffic movements. Within urban sections, heavy vehicles as a percentage of total traffic volumes decline however, the actual freight movements equate to 1,100 freight movements per day.

Much of the corridor is 100km/h with small sections of lower speed limit through the townships the corridor passes through. The Ōpōtiki end of the corridor ranges between 50km/h and 100km/h, with speed limits through towns ranging between 50km/h and 70km/h.

SH35 is the only road that circuits the East Cape of the North Island from Ōpōtiki in the Eastern BoP to Gisborne on the east coast. It serves most of the regional rural population and is the only transport route linking local communities throughout the East Cape. SH35 is the key connection for East Cape community services including healthcare, education, and food and fuel access as well as for exporting local products.

The corridor is generally consistent in nature, being a two-lane opposing road, narrow for large sections, with frequent bends and steep undulating topography and geometry. The section of the

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corridor between Hicks Bay and Ruatoria is, with a few exceptions relatively flat however, the vast majority of the corridor has very challenging driving conditions, including narrow road width, winding geometry, minimal stopping areas, and steep drop-offs in close proximity. There are 'out of context' curves throughout the corridor, adding to driving difficulty.

The surrounding geography of the corridor also varies, with areas of flat rural pasture, coastal and peri-urban/urban environment, interspersed with steep sections of surrounding landscape. Wairau Bay, Ruatoria and Tokomaru Bay have generally steep terrain on both sides. The corridor has a concentration of urban environment around Gisborne with sporadic sections of peri-urban areas and rural areas in-between.

2.6.2 Multi-modal network

Walking and cycling

The Study Area includes the Motu Trail which is part of the Nga Haerenga New Zealand Cycle Trail and is of national significance.

In addition, SH35 is a popular recreational/visitor cycle route and follows the pacific coast highway route. Within the study area there are many bike parks such as the Pan Pac Eskdale Mountain Bike Park and the Wairoa Gorge Mountain Bike Park, both providing opportunities for recreational cycling. Within Gisborne city, popular walkways and trails include Titirangi Domain – Kaiti Hill, Whataupoko reserve and the city riverbank walkway along the Taruheru and Turanganui riverbank.

Public Transport

The study area has very few options for public transport. There are public bus services operated within the Gisborne and Napier urban areas. The Gizzybus service is operated by Gisborne District Council and does not currently operate on weekends or public holidays with no service provided for rural or coastal townships. The bus service within Napier is more extensive.

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An intercity bus service connects regions such as Gisborne and smaller towns e.g. Wairoa to Napier/Wellington and Auckland, however this is typically operated at a level of service of one bus a day. There is currently no public bus service along SH35. School bus services do operate throughout the study area.

Ports

Both Gisborne and Napier have a seaport within the respective city.

EASTLAND PORT

Eastland Port in Gisborne is primarily an export port dealing predominantly with the export of logs. Its proximity to the main forest areas in the Gisborne region helps to reduce transport costs. With the increasing logging freight volumes, increasing demand is being placed on the Eastland Port. While there are issues with handling the logs within the Port, the most significant issue appears to be storage prior to export. Storage areas at the Port and at Matawhero to the west are being expanded to cater for demand.

Eastland Port primarily handles the export of logs, accounting for around 97 per cent of export from the Port by volume and 76 per cent by value in 2012. Other exports include small quantities of fruit, vegetables and processed wood product.

The Eastland Port is unable to accommodate container freight.

PORT OF NAPIER

The Port of Napier is the second biggest export port in the North Island. It handles a range of cargo in both bulk and containerised forms, including logs, wood products, meat, dairy, fruit and vegetables and manufactured goods. The Port of Napier has seen an increasing freight demand in recent times, playing a significant role following the Kaikoura Earthquake and subsequent damage to CentrePort (Wellington). The Port of Napier is situated on the Rail network via the Palmerston North-Gisborne Line (PNGL).

Rail corridor

The Palmerston North-Gisborne Line (PNGL) is a secondary main line, providing railway connections between key urban areas within the Gisborne and Hawke's Bay region and the North Island Main Trunk railway in Palmerston North. The Gisborne to Napier portion of the network was completed in 1942 and primarily operated a freight movement function however, the line was closed in 2012 following several large washouts north of Wairoa resulting in significant damage to rail infrastructure. Given the high costs for repairing the line and the rising maintenance costs from aging infrastructure, KiwiRail subsequently announced the line would be closed indefinitely.

In October 2016, it was announced that KiwiRail would reopen a section of the line between Wairoa and Napier and in early 2018 announced the reopening following support from the Regional Infrastructure Growth fund. The Wairoa-Napier line is intended to operate on weekends transporting timber to the Port of Napier.

It is our understanding that the Wairoa to Gisborne section of the track has recently been leased for tourism activities. The section between Gisborne and Muriwai has been used for the occasional steam train excursion trip.

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3. WHO ARE OUR PARTNERS AND STAKEHOLDERS?

3.1 Key stakeholders

Our aim was to work closely with partners and stakeholders to develop a robust Programme Business Case (PBC) to support the Tairāwhiti (Gisborne) Economic Action Plan. The level of engagement for this PBC has been scaled to match the size of the geographical area and PBC timelines to ensure meaningful engagement with as many stakeholder groups as possible. It is expected that this is a first step and further detailed engagement will occur as individual projects are progressed following the completion of the PBC.

There were four key groups of stakeholders for this project as shown in Figure 15.

Figure 15 Connecting Tairāwhiti Stakeholder framework

The PBC has been developed in collaboration with key local government, business and industry representatives. Key representatives from Gisborne, Hawke's Bay and the Bay of Plenty have been included in the process as detailed in Figure 16.

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Figure 16 Stakeholder Groups

Stakeholder group	Stakeholder

Technical stakeholder	• NZTA staff from offices in Wellington, Gisborne, Hawke's Bay and Bay of Plenty
	• Regional or District Councillors
	• Regional or District Council Officers
	• Economic Development
	• Tourism
	• Environment/DOC
	• Transport Industry representatives – RTA, Heavy Haulage, Cycling and the AA
	• Primary industry
	  ○ Farming
	  ○ Silviculture (forestry)
	  ○ Horticulture
	  ○ Agriculture
	  ○ Apiculture (bees/honey)

Māori	GDC, WDC, HDC and HBRC Council Māori Relationship Managers
Community and Industry stakeholders	One on one interviewing with • Ministry of Education • KiwiRail • Courier companies • Individual freight companies • Individual primary industry companies • Tourism
Wider community engagement	Responses received from the website. www.nzta.govt.nz/ConnectingTairāwhiti Additional feedback received from previous consultations by Gisborne District Council.

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3.2 Technical Stakeholders

Based on engagement with the technical stakeholders, the following key focus areas have been identified. Generally, there is strong alignment between stakeholders regarding the focus areas for the corridors. Details of stakeholders are included in Table 5.

Table 5 Connecting Tairāwhiti stakeholders

Stakeholders	Focus areas
NZ Transport Agency	Development of a programme that has a sound evidence base, provides for the safe and resilient operation of the transport network and represents a good investment.
Communities	Improved access to key facilities.
District councils / regional councils	A safe and resilient state highway network and good connections with local roads. Improved access to key facilities.
Economic development	Transport as an enabler for economic development. Equitable and reliant transport network that provides investor confidence Creation of jobs and rejuvenation of smaller towns.
Tourism RTO	Access to tourism facilities, experience on the journey.
DOC	Access to key attractions. Impacts of the highway network on significant ecological areas.
Transport industry	Efficient and reliable access to markets. Road safety for all users. Cycling facilities.
Primary industries	Efficient and reliable access to markets. Reduction of operating costs.
Māori partners	Cultural assessment of the corridor and road safety on the corridor. Opportunities for economic development in partnership with Maori.

3.2.1 Workshop collaboration

The PBC has been developed through a collaborative process with active involvement from a technical stakeholder group. Three workshops were held, and attendance is detailed in Figure 17.

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Figure 17 Summary of workshop participation

	NZTA	GDC	WDC	ODC	HDC	HBRC	KHO*	TPK**	T-Roads	RTA	AA	Federated Farmers	Horticulture	Forestry	Tourism
Workshop 1	✓	✓	✓	A	✓	✓	✓	A	✓	✓	✓	✓	✓	A	A
Workshop 2	✓	✓	✓	✓	✓	✓	✓	A	✓	✓	✓	✓	✓	✓	A
Workshop 3	✓	✓	✓	A	✓	✓	A	A	A	✓	A	✓	✓	✓	A

* Kimihia He Oranga (KHO) ** Te Puni Kokiri (TPK) A - Apologies but received information

Some stakeholders declined to attend the workshops, however they were individually interviewed to give feedback on any key issues. All participants received workshop briefings and minutes of the meeting regardless of attendance. Post workshop feedback was also received via the project email and incorporated into the PBC process where appropriate. The stakeholder involvement in each workshop is detailed in the following sections.

3.2.2 Workshop 1

The purpose of this workshop was to better understand the problems associated with the study area (real or perceived), the benefits of resolving those problems, and to explore what options might be used as a strategic response to remedy those problems.

Key stakeholders were invited to participate in the identification and clarification of the problems along the corridor, confirm the case for change and to identify the benefits of investment. They also contributed to the development of the option long list. A record of invitees and outcomes of the workshop are included in **Appendix B.**

3.2.3 Workshop 2

The purpose of this workshop was to finalise the option long list and develop packages of options to address the project investment objectives. The project team presented analysis of a series of foundation programmes for stakeholders to use as input into the development of stakeholder programmes. Key stakeholders were also invited to comment on the wording of the problem and benefit statements. A record of invitees and outcomes of this workshop are included in **Appendix B.**

3.2.4 Workshop 3

The purpose of this workshop was to present the draft recommended programme. Stakeholders were invited to provide feedback on the programme and the prioritisation. A record of invitees and outcomes of this workshop are included in **Appendix B.**

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3.3 Whakatūtaki Māori / Māori engagement

Nā te tāpuhipuhi ake o te kaupapa nei, ko te PBC, kua whakawhiti kōrero te rōpū whakahaere ki ngā whakahaere Māori e rua, arā, ko Te Puni Kōkiri, ko Kimihia He Oranga. Ko te Kimihia He Oranga he kāhui māngai o ngā pakihi, o ngā iwi, o ngā hapū, o ngā hapori me ngā tari kāwanatanga i Te Tairāwhiti whānui. Kua tukuna atu he tono, he pūrongo hoki ki ngā māngai o aua whakahaere Māori. Kāore anō kia whakawhānuitia te whakatūtaki Māori ki ētahi atu rōpū Māori i tēnei wā. Ko te whakaaro, mā mātau e whakawhiti kōrero ki a rātau a muri atu, a te wā kia kawea whakamua i a kaupapa takitahi, kia whakatewhatewhatanga ai, ā, kei reira i tētahi take hei kōrerotanga. Ko te whainga o te PBC kia hanga i tētahi anga hei whakatūtaki a muri e whakarārangi Wāhanga C o te pūrongo nei. Kati, i te 8 o te Haratua 2018, i hui mātau ko ngā Pouahurea Māori o ngā Kaunihera kia kōrero ai e pā ana ki te rautaki whakatūtaki Māori. I taua hui, i reira ngā kanohi o te Kaunihera o Ahuriri, o te Kaunihera o Te Wairoa, o te Kaunihera ā Rohe o Te Matau a Mauī hoki, me ā rātau tirohanga o ngā kanohi tokorima. I te whakaae te katoa, ko te āhua o te whakatūtaki Māori he mea arotau, he mea ū hoki kia āta kōrerorero tae atu ki te tautuhi putanga, te tautuhi putanga mea angitu mō te hoahoarua, mō te whakangaorua pitomata hoki.

Due to the high-level nature of this PBC, the project team has engaged with two Maori organisations Te Puni Kōkiri and Kimihia he Oranga (KHO) which is a Tairāwhiti collective of businesses, iwi, hapū, communities and government agencies. Representatives from both agencies have been invited to the workshops and sent the briefing material. Wider Māori engagement has not been undertaken at this stage. It is anticipated that meaningful engagement would happen in the next stages of the process when individual projects are taken forward for further investigation and there is something specific to engage on. What this PBC aimed to do however, was to create a framework for future engagement which is detailed in Part C of this report. As such, a meeting was held on 8 May 2018 with the Council Māori Relationship Managers' to discuss the future Māori engagement strategy. Representatives from Napier City Council, Wairoa District Council and the Hawke's Bay Regional Council were at this meeting and represented the views of all five managers. It was agreed that Māori engagement must be meaningful and timely to allow full discussions including identifying outcomes, co-design opportunities and potential for co-investment.

3.4 Community and industry stakeholders

Over thirty individuals were interviewed as part of this PBC to gain further insight into industry and community issues. The information gained from these interviews was then incorporated into the identification of the option long list, development of the programme and prioritisation of projects.

A full list of stakeholder communications is included in **Appendix A.**

3.5 Wider community engagement

A project website was established for the project at www.nzta.govt.nz/ConnectingTairāwhiti

It included a "Have your say" page for the community to make suggestions about how to improve the region's roading network. This was advertised in the Gisborne Herald. Responses were collected, reviewed and incorporated into the option long list or prioritisation process as appropriate.

The common themes from the responses are shown in Figure 18 below. Note the size of the word equates to the number of responses.

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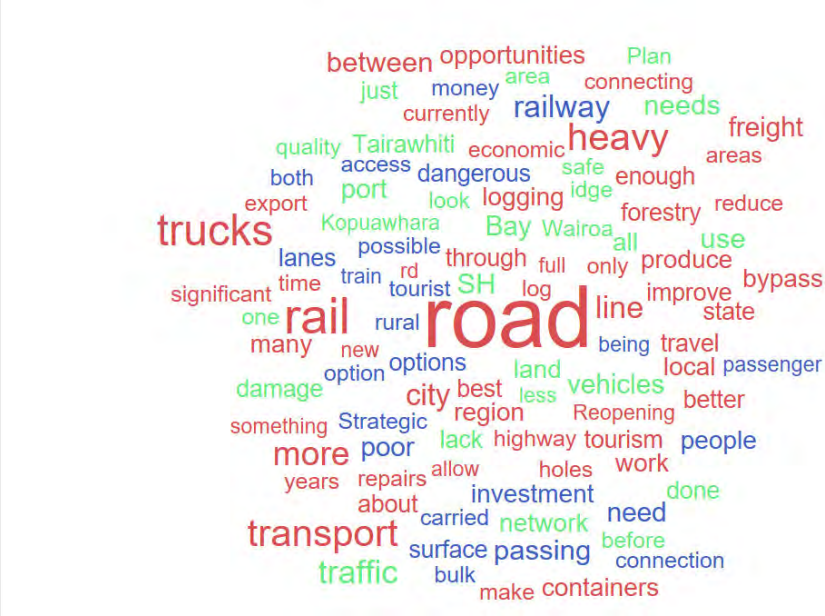
Figure 18 Summary of key issues from wider community engagement



Rail, heavy trucks, safety and surface conditions were common themes to responses from the wider community. A more detailed analysis is included in **Appendix C**.

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4. WHAT ARE WE TRYING TO ACHIEVE?

This first stage in the PBC process is shown in Figure 19. Understanding the underlying problems in the Tairāwhiti region was critical to setting the PBC up for success.

Figure 19 PBC Process

4.1 Defining the problem

4.1.1 Investment Logic Map process

The purpose of the first workshop was to confirm the identified problems, benefits and investment objectives for the Tairāwhiti region. As the study area is large and includes a diverse range of stakeholders, it was decided to hold two sessions to ensure that there was adequate time to explore the problems over the entirety of the network.

The two sessions were:

- 10 April 2018 – Wairoa workshop focusing on SH2 Gisborne to Napier
- 11 April 2018 – Gisborne focusing on SH2 Ōpōtiki to Gisborne and SH35 and its connecting roads

An analysis of existing problems within strategic documentation such as the Gisborne Strategic Plan, Regional Land Transport Plans (RLTP) and the ITTP as well as a review of the Government Policy Statement on Land Transport was provided to the workshop participants as a starting point for problem identification. Participants at the two different workshops identified common problem themes. An integrated set of problem statements and investment objectives has therefore been developed for various journeys which form part of the transport network.

Three problem statements were developed by the team based on the problem themes and key issues identified by stakeholders as shown in Figure 20.

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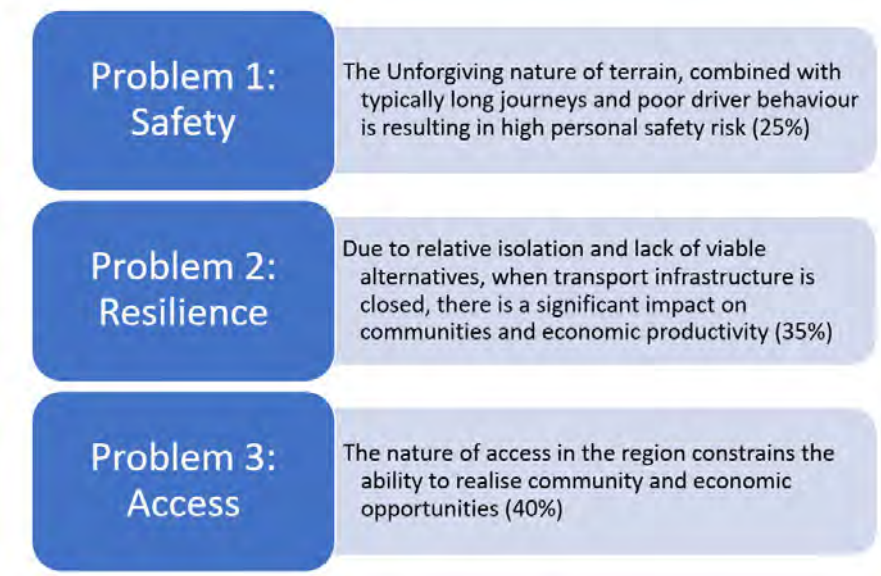
Figure 20 Connecting Tairāwhiti problems



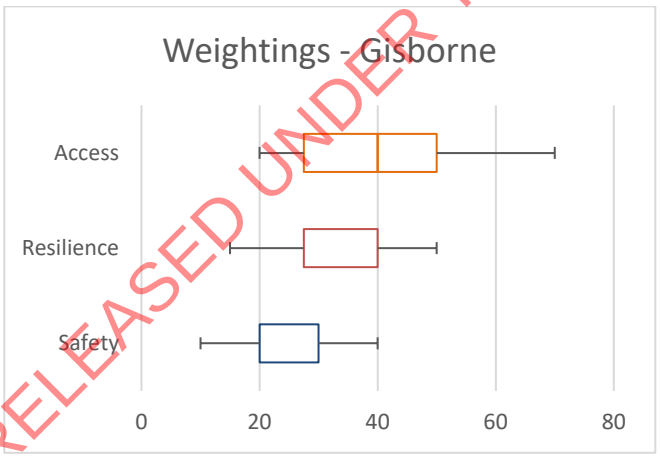
Full minutes of the workshops are included in **Appendix B**

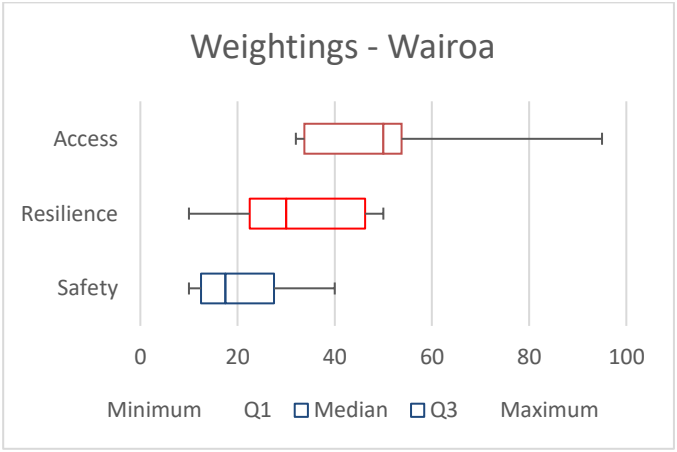
4.1.2 Relative weighting

As part of the workshop activities, each attendee was asked to provide their individual ranking of the relative weighting of each problem. This provided insight into the range of priorities within the stakeholder groups.

Results for both the Gisborne and Wairoa sessions are included Figure 21. At the Gisborne session, access and resilience were the key issues with 40% and 35% weightings respectively and road safety contributing to 25% weighting. In Wairoa, access was considered a higher priority at 50% with resilience at 30% and safety 20%.

Figure 21: Problem weighting from workshop 1





The weightings developed by the stakeholder group were used during the Multi Criteria Assessment (MCA) process to assess individual projects and programmes against the investment objectives.

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4.2 Problem 1: Road safety

Problem 1: Safety

The unforgiving nature of terrain, combined with typically long journeys and poor driver behaviour is resulting in high personal safety risk (25%)

Road safety is a key theme which emerged from the stakeholder workshop and various transport strategies within the region. The safety issue included the unforgiving nature of the route with windy sections and narrow roads, personal safety and perceived safety sharing the roads with a high number of heavy vehicles.

The cause, effect and consequences of the problem statement are summarised within Table 6.

Table 6 Safety – Cause, Effect and Consequences

Cause	Effect and Consequence
• The existing road network is located through unforgiving terrain with extensive sections of windy and narrow roads • The relative isolation of communities results in people commonly required to travel long distances to access facilities and employment • Poor driver behaviour such as not driving to the conditions and driving under the influence • Perceived safety risk of sharing the narrow road with heavy vehicles and other road users.	• The geographical isolation of communities and type of terrain cannot be physically changed and there is a limit to the type of affordable engineering improvements that can be made to address safety • The low volumes on SH2 and SH35 and poor driver behaviours contribute to result in a high personal risk to sections of the roading network • A combination of the longer driving distances and difficult driving conditions results in fatigue being a major concern for the community • General road users report personal safety concerns from sharing the narrow roads with heavy trucks travelling at speed

Analysis has looked at crash data from the Crash Analysis System (CAS) for the road network within the PBC study area. At a network level, crash statistics have been reported in the Kiwi Road Assessment Programme (KiwiRAP) risk ratings for both personal and collective risk.

The risk mapping highlights roads that are of higher risk than others and the road, vehicle, speed and driver/rider contribution to the risk.

Collective risk is a measure of the total number of fatal and serious injury crashes per kilometre over a section of road. Because collective risk is measured in terms of the number of crashes per kilometre, in general roads with higher traffic volumes have a higher collective risk.

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Personal risk is a measure of the risk to an individual using a section of road. Unlike collective risk, personal risk takes traffic volumes into account.

The associated risk rating thresholds are detailed in Figure 22. A medium personal and collective risk rating is generally considered acceptable for the State Highway network.

Figure 22: Collective and personal risk thresholds

RISK RATING	COLLECTIVE RISK Average annual fatal and serious injury crashes per km	PERSONAL RISK Average annual fatal and serious injury crashes per 100 million vehicle-km	COLOUR
Low	≤0.039	<4	
Low-medium	0.04≤0.069	4≤4.9	
Medium	0.07≤0.10	5≤6.9	
Medium-high	0.11≤0.189	7≤8.9	
High	0.19+	9+	

The current collective and personal risk statistics for the study area are shown in Table 7.

Table 7 Current collective and personal risk

SECTION	COLLECTIVE RISK	PERSONAL RISK
SH2	100% Low / Low Medium	75% Low / Low Medium (25% is medium and above)
SH35	100% Low / Low Medium	60% Low/Low Medium (40% is medium and above)

Both SH2 and SH35 corridors perform satisfactorily from a collective risk perspective with all the network operating at low or low-medium risk levels. This is likely because of the low traffic volumes within the region compared with other sections of State Highway around New Zealand.

Several sections within the corridor operate with medium-high and high personal risk. SH35 performs poorly reflecting geometric constraints, deteriorating pavement condition and low traffic flows relative to the number of crashes thus increasing personal risk rating. Three sections have been identified on the SH2 route between Gisborne and Napier representing the Mohaka section, Morere and Wharerata.

Figure 23 and Figure 24 set out collective and personal risk ratings for 5km sections of the SH2 and SH35 corridors based on the past five years of crash history and latest traffic volumes.

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Figure 23: Collective risk map

Figure 24: Personal l risk maps

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Figure 25 sets out the location of deaths and serious injury crashes in the study area based on the movement type in each crash. The predominant crash type within the study area involves cornering / run off road type crashes

The crash history for the study area over the last five years has been analysed to determine common themes and trends between crashes. Analysis suggests the following trends and patterns:

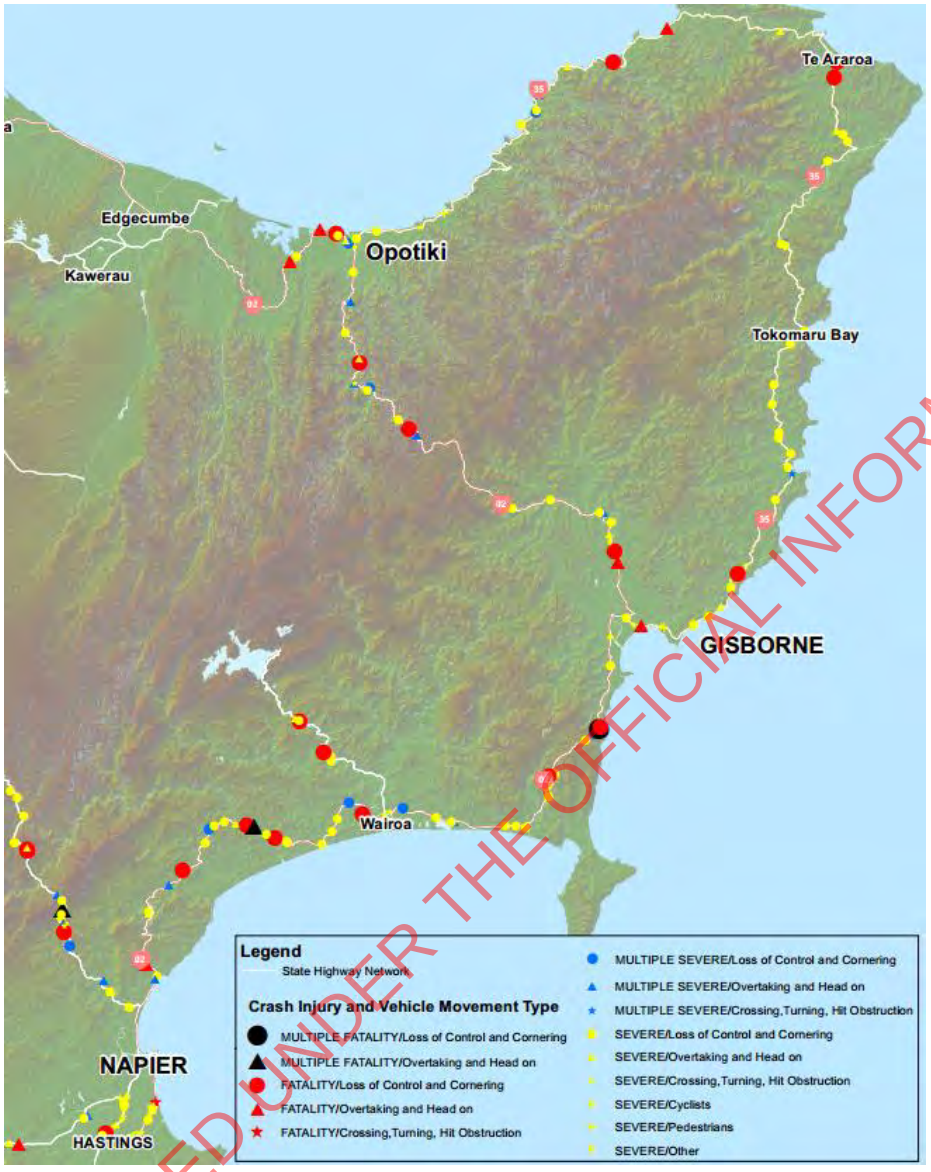
- 80% of crash types for high severity crashes involved bend / lost control and head on crashes.
- SH35 has no history of Deaths or Serious Injuries (DSI) crashes relating to passing / overtaking. SH2 reports one fatality and 3 serious injuries have occurred because of passing movements.
- While heavy vehicles account for a large portion of traffic on the SH2 and SH35 corridors only 15% of crashes involve heavy vehicles, which is below national averages.
- Two high severity crashes involving cyclists have occurred within the study area of which one resulted in a fatality (involving suicide) and the other crash resulted in a serious injury.
- 25% of DSI has alcohol as a factor which is overrepresented compared with national averages.

In addition to the NZTA Crash Analysis System (CAS) database, evidence has been analysed from customers using the network on a day to day basis. Anecdotal evidence suggests the following:

- Road Crashes are generally underreported due to the remoteness of the study area and limited cell phone reception.
- Seatbelts are a major factor in high severity crashes with a significant portion of DSI involving people not wearing seatbelts

- The vehicle fleet is generally older contributing to the road safety issues
- There are many unlicensed drivers in the study area
- Customers perceive reduced personal safety due to the challenging and narrow road terrain combined with a high proportion of larger vehicles sharing the network
- Wandering stock is considered a contributor to crashes, particularly on SH3

Figure 25: DSI crashes by movement type and severity



PanPac Forest Products Limited is situated on SH2 around 2km north of the intersection with SH5. As part of the Health and Safety procedures, PanPac staff record near miss incidents. Several near miss incidents have been recorded at the SH2/SH5 intersection. Issues at the intersection generally involve turning traffic not giving way to through traffic on SH2.

Regional vehicle fleet information has been investigated using the NZTA vehicle registration database as shown in Figure 26.

Each of the regions within the PBC study area has been compared to the New Zealand average to determine the general condition of the fleet. The regional data suggests a generally older vehicle fleet

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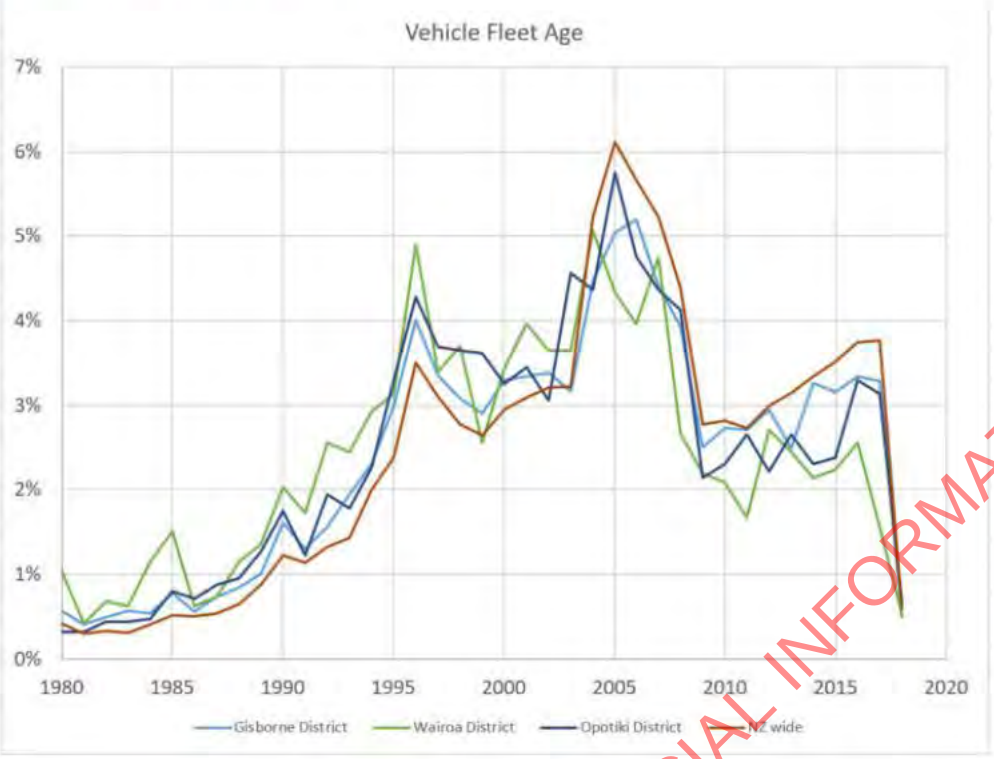
compared with the national average for all districts in the PBC area with Wairoa and Ōpōtiki indicating the oldest vehicle fleets.

Figure 26: Vehicle fleet by region



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Summary of the road safety problem

The evidence suggests a clear road safety problem in the region. The corridor exhibits isolated areas of high personal risk. The crash problem can be attributed to both environment and social factors which include:

- A high proportion of crashes involve cornering and run off road type crashes. This is in part due to the physical nature of the road and condition of the pavement.
- Social issues such as driving under the influence of alcohol, unlicensed drivers, an older vehicle fleet and users not wearing seatbelts add to the safety problem experienced in the study area.
- Anecdotally, the crash problem is bigger than expected with a high proportion of underreporting.

4.3 Problem 2: Network resilience

Problem 2: Resilience

Due to relative isolation and lack of viable alternatives, when transport infrastructure is closed, there is a significant impact on communities and economic productivity (35%)

Problem 2 relates to the resilience of the road network within the study area, which is identified as a problem for both the local and regional roading network. Resilience is a key challenge and the impacts of road closures has a significant impact on both the communities and freight movements to, from and through the region. A state highway closures affects all modes.

Given the location and relative isolation of the study area, there is an identified need to provide reliable road freight services to support local economic operations and transport roading connections for those living in, working in or visiting the region. The provision of reliable and effective links is also important for people and goods travelling between Gisborne and other parts of New Zealand. Unplanned network closures have implications on the ability for producers to transport goods and services from source to their intended markets (both local and regional destinations). This is particularly problematic for products with a limited life-span, such as horticultural produce.

The cause, effect and consequences of the problem statement are summarised within Table 8.

Table 8 Resilience – Cause, Effect and Consequences (Source ITTP, Table 10)

Cause	Effect and Consequence
• The existing road network and surrounding environment is located on unstable and highly erodible soils that are vulnerable to failure, particularly during high rainfall and storm weather events. • The existing rural local roading network primarily functions to provide access to forestry or farms and lacks network connectivity or permeability. There are limited alternative routes on the state highway network in the event of unplanned closures (SH35 and SH2 north of Gisborne). • Communities within the Tairāwhiti region are geographically dispersed and rely on roading connections as important lifelines.	• Natural events such as slips, flooding, high weather events or structures failures can lead to unplanned closure of the road network for both local and regional roads within the region, resulting in severance and isolation of businesses and communities who need to move goods and access key facilities such as shops and medical facilities. • In the event of closures due to weather conditions, it is common for multiple locations to be blocked simultaneously, preventing freight from being distributed through the area. • The forestry, agriculture and produce (fruit) industries rely on the road network being available to send products to market and maintaining a sustainable/viable business. The loss of transport connections within both the local and regional network results in financial loss for local industries, impacting on the productivity and competitiveness of the region. • Many local industries operate on a "just-in-time" basis that relies on accessible and reliable transport connections. Unreliable transport connections results in a loss of business confidence for both existing and prospective investors within the region, inhibiting potential for economic growth and business profitability.

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4.3.1 The evidence

The problem around network resilience is focused on both occurrence and consequence of closures within the study area. The NZ Transport Agency collects and records data on road closure incidents. Within the study area, data on full road closures, partial closures and delay events has been analysed.

Unplanned closures

Figure 27: Road closures within the PBC study area

Figure 27 sets out closures from the past five years. Incidents have been broadly categorized by type including crash (road crash related closures), Environmental (slips, dropout, flooding, rockfall, etc), operational (maintenance) or other (public event, police operation).

A large portion of closures occur because of road crashes and are distributed around the network in a similar pattern to areas of higher personal crash risk as shown in Figure 24.

Road closures from environmental factors are generally clustered around specific areas of challenging geological conditions resulting in slips, rock falls, dropouts or areas of high flooding risk. The study area comprises highly erodible soils and it is estimated that 26% of Gisborne district's land is susceptible to severe soil erosion, compared with only 8% of all land in New Zealand[9]. Highly erodible soils coupled with frequent heavy rainfall events impact on the stability of the road and surrounding environment, resulting in regular road closures, pavement degradation and increased maintenance costs.

Key hotspots for closures from environmental factors include:

- **Waioeka Gorge**: A section of SH2 winding through a gorge with tight horizontal alignment. The site is prone to slips, rockfalls and washouts. In 2017, 1000m3 of debris fell across both lanes of the Gorge blocking the route to traffic for over a week before partial restoration
- **Devil's Elbow**: A section of SH2 prone to slips and washouts.
- **Lake Tutira section**: A section of SH2 prone to flooding.
- **Nuhaka**: A small township on SH2 which is prone to flooding.
- **Raupunga**: The alignment on either side of the valley is prone to slips and dropouts.

[9] Eastland Wood Council – Economic Impact Assessment of the Forest Industry in the Gisborne-Tairāwhiti Region (2013) - http://eastlandwood.co.nz/reports/general-reports/

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- **Maraenui**: A highly constrained and narrow section of SH35 that is prone to slips
- **Tikitiki**: A section of SH35 parallel to the Waiapu River prone to slips and drop outs

In addition to the sites outlined above, many sites experience less frequent/lower consequence incidents. SH2 has many incidents related to ice and snow during winter months. Table 9 sets out the number of closures and average duration separated by incident type and section of the State Highway network. Crash related closures account for a significant portion of overall incident numbers. Due to the remoteness of the study area, average road closures from crash vary between 4-8 hours. The average closure time for all incident types is 55-60 hours and reflects the isolated nature of the network and difficulties for emergency and repair personnel to access these sites.

Table 9: Frequency and average duration of road closures over a five-year period (2013-2017)

	SH35		SH2 (Ōpōtiki to Gisborne)		SH2 (Gisborne to Napier)	
Incident type	Number of incidents	Average duration (hours)	Number of incidents	Average duration (hours)	Number of incidents	Average duration (hours)
Crash	16	4	10	8	23	7
Drop Out					1	98
Fallen tree/s across highway	1	2	1	0	2	12
Flooding	2	161	1	11	4	23
Object/Obstruction	1	0			1	6
Other	1	7			1	4
Police Operation & public event			1	0	1	28
Power Lines Down	1	1	1	1		
Rock falls			1	20		
Slip	7	241	6	128	2	27
Snow and Ice			1	189	1	297
Washout			1	178		
TOTAL	**29**	**59**	**23**	**59**	**36**	**55**

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The data shows:

- The duration of road closures is highly dependent on the type on incident. Closures from environmental factors generally involve longer durations. This is likely a result of damage caused to the road corridor which requires remedial work and extended periods of traffic management. Flooding, drop outs, slips and washouts all show large average durations due to a handful of incidents of long durations while work was completed to remedy the issues. In addition, repair work often must wait until the weather has settled before remediation works can take place.
- Slips and washouts account for a significant portion of closures on SH2 between Ōpōtiki and Gisborne and SH35 with long durations. SH2 between Gisborne and Napier has a history of occurrences but are generally less significant over this section.
- Flooding incidents are isolated to a handful of locations on the corridor on SH35 and SH2 Gisborne to Ōpōtiki. Snow and ice incidents are prevalent on the SH2 with long closure / warning times.

Lack of alternatives

Like many rural State Highways, the study area has several areas where there is a history of frequency closures to the transport network, but it is the lack of alternatives and strong reliance on the state highways which heightens the disruption to business and communities in the region.

Figure 28 shows area of high frequency of incidents, sections with a lack of alternatives and highlights sections which have both a high frequency and no alternatives as 'high resilience risk' sections.

SH35 is a 330km coastal road connecting a string of small communities and townships. Local Roads provide connection between farmland, forestry and townships and the SH35 corridor in a fishbone arrangement. Communities and business are inherently reliant on SH35 for access with almost no alternative routes over the length of the corridor. The exception being small sections at Tolaga Bay, Te Puia Springs, Te Kaha and close to Ōpōtiki. Lack of alternative modes such as rail, ferries and coastal shipping mean that the road corridor is currently the only transport option.

For much of the SH35 corridor, once a closure occurs, the alternative route is to double back and use SH2 to complete a reverse circle to the desire destination. The full loop is around 470km or around seven hours of driving time.

On SH2 between Gisborne and Opotiki, an alternative route is provided for the southern section of the corridor via Wharekopae Road, although about a third of this route is unsealed, with some tight curves and narrow widths. A fully sealed alternative is only a 19km section provided via Patutahi and Waipaoa settlements. North of the Matawai township, through the Waioeka Gorge, no suitable convenient alternatives are provided. The Motu road provides an alternative route however, this road is not to a sufficient standard to use as a detour with a narrow-unsealed carriageway, tight horizontal curves and is often limited to 4x4 vehicles only: it is also part of the national cycleway. The only suitable alternative is to use SH35 (330km or five hours) to connect Opotiki and Gisborne which all vehicle types can use. No alternative modes are provided over this section.

On SH2 between Napier and Wairoa, limited suitable alternatives are available north of the SH2/SH5 intersection at Eskdale. There are several unsealed routes parallel to the highway in places however, these are not considered appropriate as alternatives to the State Highway in the event of closures. The rail corridor currently provides limited weekend services between Napier and Wairoa. Use of the rail corridor is only practical for a small portion of customers and no passenger services are currently

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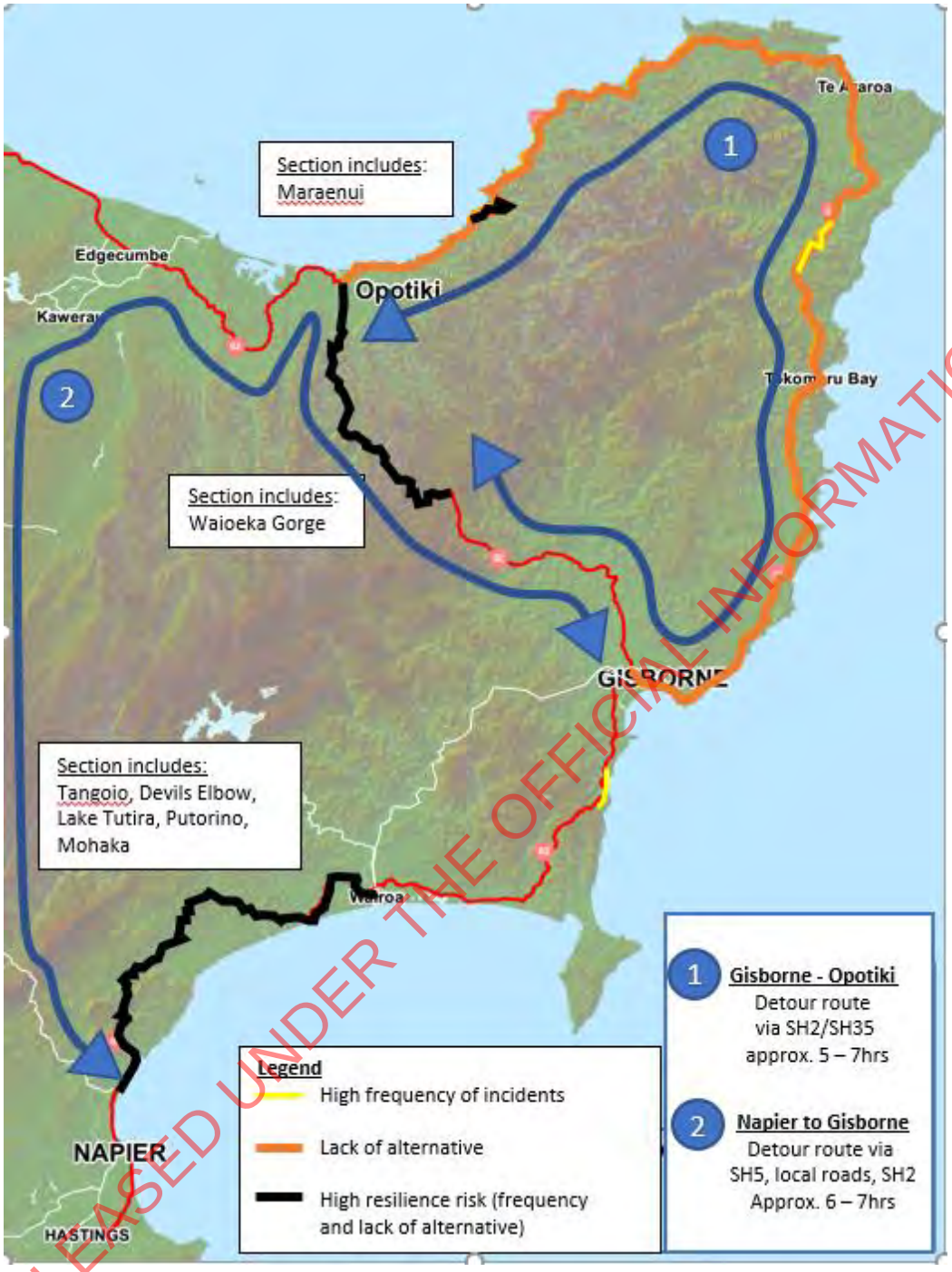
available. North of Wairoa, Tiniroto Road provides an alternative route to SH2 connecting Wairoa to Gisborne.

Figure 28: Resilience risk



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Impacts of closures

The importance of the state highway network in supporting key economic activities and the availability of alternative routes in the event of unplanned road closures is summarised within Table 10.

Table 10: Key Routes within the study area

Route	Key functions	Freight commodities	Availability of alternative routes
SH2 Gisborne to Ōpōtiki	Only direct route between Gisborne and upper North Island Key freight route, particularly for horticulture produce to/from Auckland and Port of Tauranga	Domestic and export produce (including squash and kiwifruit) Forestry (Logs) Consolidated general freight	Only alternative route is SH35 and no economically viable alternative freight transport route
SH2 Gisborne to Napier	Key freight route between Gisborne and Hakes Bay and lower North Island Forestry industry's main route to Port of Napier Tourist route between Napier and Gisborne	Groceries Forestry (logs) Consolidated general freight	No economically viable alternative freight transport mode since recent partial closure of Gisborne to Napier rail line. No current coastal shipping alternatives. Limited practical alternative routes south of Wairoa
SH35 Gisborne to Opotiki	Provides lifeline access to/from Gisborne for local communities Significant route for forestry industry Tourist route to East Cape	Logs Forestry supplies Roading chip	Only alternative route is SH2 and no economically viable alternative freight transport route (i.e. no rail)

Closures and the associated disruption to the transport network have a variety of effects on different customer bases as discussed in the following sections

AGRICULTURE PRODUCERS

Many agriculture providers including fruit growers, livestock providers and other agricultural industries such as seafood and apiculture experience significant cost in the event of a closure. Direct costs incurred by these businesses include additional time and cost associated with using significant detours. Due to the nature of the products, additional time affects the value of the product due to limited shelf life and just in time delivery. In addition to the reduced value of product, unreliability of transport affects suppliers through undermining customer confidence and impacting on supplier agreements and contracts.

FORESTRY INDUSTRY

The forestry industry is highly reliant on the roading network to transport logs from the forestry areas through to the processing facilities or the Port for export. Unprocessed timber is relatively low in value and not time sensitive. On many occasions logs can be stockpiled as opposed to using longer alternative routes. Stockpiles at the Port and processing facilities mean that minor closures do not have a fundamental effect on production. The cost of road closures to the industry relates to both the

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cost associated with transport costs (either a longer detour route or sunk cost associated with equipment not being used), but also the inability of forestry crews to assess the site.

COMMUNITY IMPACTS

Given the isolation of many communities in the study area, and high reliance on the state highway corridor for access, the effect of a closure can have a crippling effect on the local communities living in the vicinity. Closures can isolate communities from local amenities such as shops, schools, medical facilities and access to jobs. They can also restrict basic supply chains and remove the ability for tourists to access the area. The impact of these unplanned closures was also a common talking point in both stakeholder interviews and workshops. These are some perspectives:

- The Wairoa community reported occasions whereby children have been separated from parents when a closure has occurred, and the parents have been stranded in Napier or Gisborne whilst the children are at school.
- The rural communities had many anecdotes whereby people have not been able to attend a driver's licensing appointment due to unreliability of the roads. The nearest driver licensing facility to undertake a practical test is in Gisborne or Hastings. As the appointment bookings have a large lead time this has left people in the community further isolated. In some instances, people have received infringements for driving without a licence and been charged thus potentially further affecting future employment.

ECONOMIC IMPACTS OF CLOSURES

The economic effects of closures to the SH2 route between Ōpōtiki and Gisborne were demonstrated with the long-term closure of SH2 through the Waioeka Gorge in 2012 for over a month and the subsequent limited capacity which continued until 2013. The East Coast Regional Economic Potential study[10] estimated that the closure of the route increased freight transport costs alone by around $1.8 million or almost $0.5 million per week. The constrained working hours for the temporary diversion route over the subsequent year would also have resulted in increased costs for operators forced to change the timings of their journeys away from the most convenient times for themselves or their customers. The constrained opening times for the route meant that instead of driving through the night in Auckland to allow deliveries at the start of work the following morning (taking advantage of less congested roads), operators would have to supply the loads at times which were less convenient for the customers thus further reducing the efficiency of their transport operations.

The ITPP detailed how the Gisborne and Hawke's Bay Route Security Study (2013) identified areas vulnerable to unplanned closures within the state highway network, outlining both the likely cause of the vulnerability and the possible length of closure[11] to identify potential vulnerability risk (based on NZTA Risk assessment procedures). The assessment indicates that routes with the most vulnerable areas are SH2 Gisborne to Napier and SH35 north of Gisborne. These routes also the highest number of network vulnerabilities that could result in closures greater than one day.

The study also undertook an analysis of economic impacts of road closures (determined by travel time delay costs, operator and commercial costs and regional costs), a summary of which is provided within Table 11. The assessment indicates:

- Although the SH35 corridor supports relatively low traffic volumes, it has the highest overall cost of closure for all potential disruption periods due to the high travel time delay costs are resulting

[10] Paling et all, 2014. East Coast Regional Economic Study: Stage 2.

[11] The possible closure duration for each vulnerable area has been assessed based on historical road closures of a similar type, existing risk assessments and local practitioner knowledge. The assessment of the likelihood of a delay on a certain route has been completed based historic road closures statistics, the number of vulnerabilities on the route and the likely closure timeframe for each vulnerability.

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from substantially longer alternative routes.

- The consequences of closures on SH2 north of Gisborne (to the Bay of Plenty boundary) has lower financial consequences due to lower travel time delay costs than all other routes.

Table 11: Route Closure Impact Costs (2013)[12] (Source ITTP, Table 12)

Route	1 Day Delay		1 Week Delay		1 Month Delay	
	Risk	Costs	Risk	Cost	Risk	Cost
SH2 Gisborne to Ōpōtiki	L	$35,000	L	$900,000	M	$3,400,000
SH2 Gisborne to Napier	L	$67,000	M	$2,100,000	L	$8,300,000
SH35 Gisborne to Eastern Bay of Plenty	L	$93,000	M	$2,500,000	M	$9,900,000

LOCAL ROAD RESILIENCE ISSUES

Local roads within the study area primarily operate as feeder routes for economic activities, providing direct connections between key product sources (i.e. forestry and agricultural activities) and regional distribution routes (i.e. SH35 / SH2). The rural nature of the region coupled with a lack of network permeability or alternative routes to economic sources means unplanned closures on the local road network can significantly impact on the efficiency of industry operations and the ability for communities to access work.

Discussions with technical stakeholders as part of the ITPP project, noted unplanned local road closures are particularly an issue for forestry harvesting activities during winter months, when high periods of rainfall can lead to drop-outs, slips and flooding. Feedback provided through one-on-one engagement with industry representatives indicates route closures can result in estimated lost revenue of up to:

- $1,000.00 per truck per day; and
- $5,000.00 per crew per day.

At present, information on the frequency and duration of local road closures within the network is limited, and it is recognised that more robust records are required to monitor unplanned road closures in the future.

Preventative maintenance expenditure history

An analysis of approved funding for minor events, preventative works and resilience improvements is shown in Figure 29.[13]

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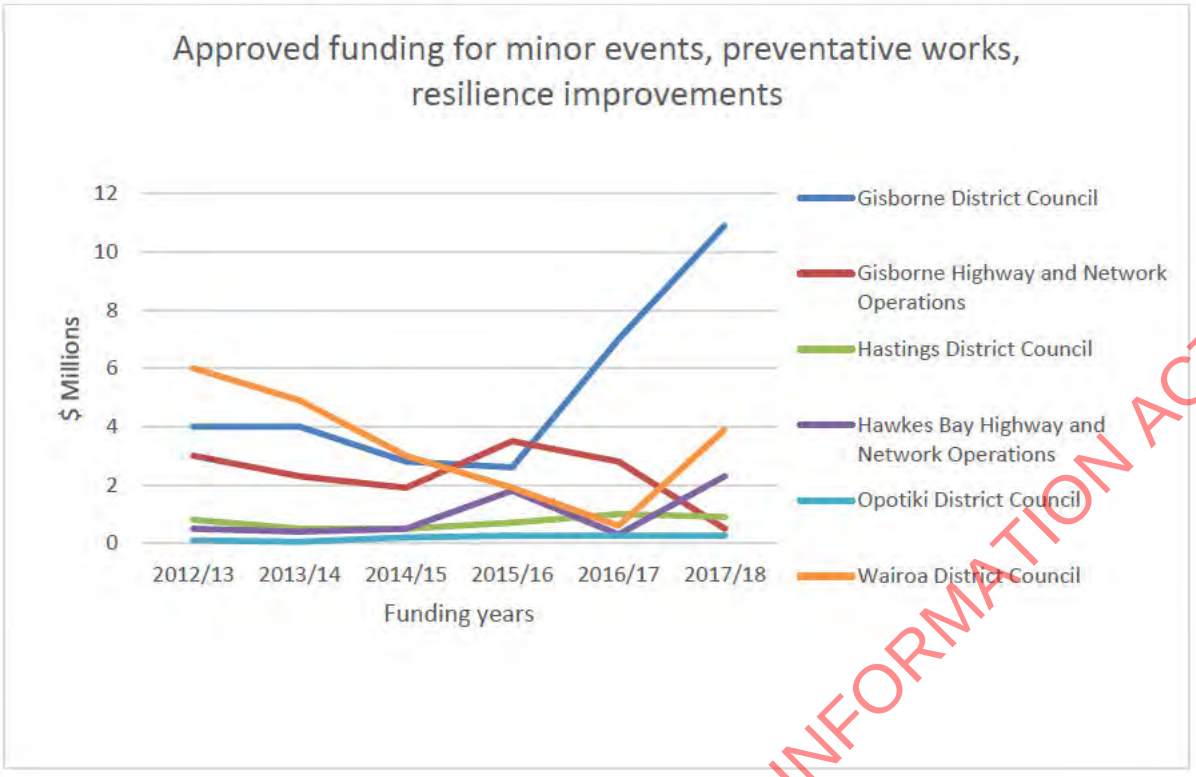
[12] Gisborne and Hawke's Bay – Route Security Study – Opus (2013). Note this was the best information available at time of publication

[13] Extracted from NZTA TIO system

Figure 29 Approved NZTA funding for minor events, preventative works and resilience improvements



The graph shows the indicative spend for preventative and resilience improvements. The trend is showing additional spend in the most recent years. Targeted programmes in the PBC could reduce this spend by providing permanent solutions for resilience hotspots.

Summary of resilience problem

The evidence suggests resilience is an issue on the SH2 and SH35 corridor. Closures are clustered around a few locations with the impact of these dependant on the frequency and availability of a suitable alternative route.

Closures within the region have a significant influence on businesses and communities due to several factors including:

- Lack of alternative modes
- Lack of viable detour routes
- Physical isolation of communities and businesses
- Nature of business - transport contributes to a significant portion of the value of the product

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4.4 Problem 3: Access

Problem 3: Access

The nature of access in the region constrains the ability to realise community and economic opportunities (40%)

The Tairāwhiti Economic Action Plan identifies 'access' as a key enabler to achieving transformational change in the region's prosperity. This sentiment resonates for both economic opportunities and communities living in the region. The problem statement identifies access as the key to realising community and economic opportunities. For the purposes of investigating the access problem, specific evidence and constraints have been considered in detail for the following users:

- Freight (primary industries)
- Tourism
- Communities

The cause, effect and consequences of the problem statement are summarised within Table 12.

Table 12 Access – Cause, Effect and Consequences

Cause	Effect and Consequence
• Rural communities are geographically isolated from key facilities and employment opportunities • Primary industries rely on the freight roading network to move goods • The challenging driving conditions are constraining the tourist industry	• Communities are dependent on the roads as lifelines. They require travel reliability and alternative modes of travel to ensure access for all • As the roading network has limited alternative routes, when the road is closed primary industries cannot deliver their goods which reduces market competitiveness, investor confidence and potential future growth. The route is currently limited for HPMV reducing the freight efficiency of the network • The isolation of the study area limits the type of traveller attracted to the area. Limited access to tourism attractions and facilities and the lower customer experience reported along the route is further constraining tourism growth

Regional customer surveys were undertaken by the Transport Agency in 2016 and 2018. The customers were asked to rate their State Highways and the results are shown Figure 30 and Figure 31.

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Figure 30 2016 Customer survey (NZTA)

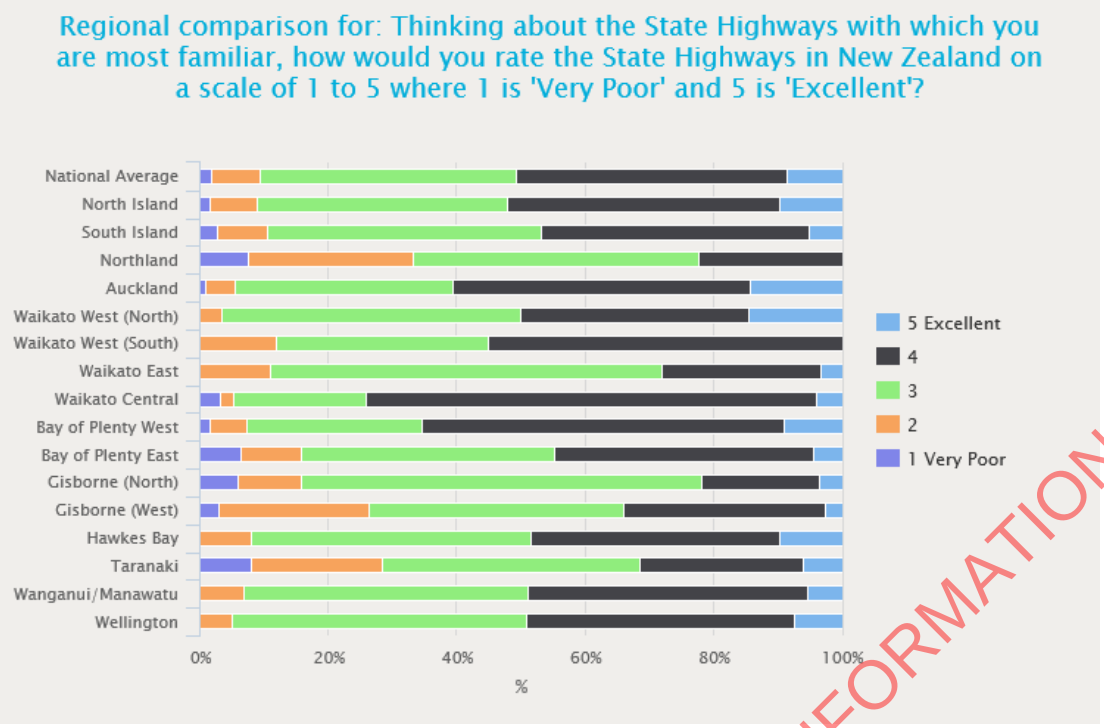
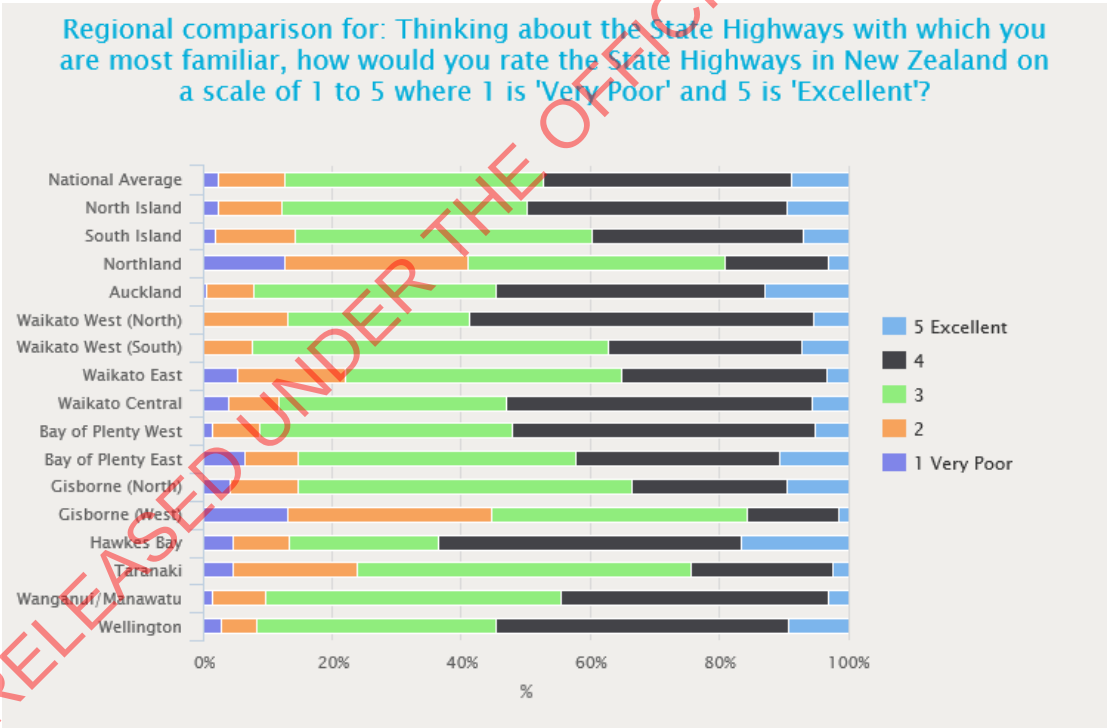


Figure 31 2018 Customer Survey (NZTA)



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For Gisborne North

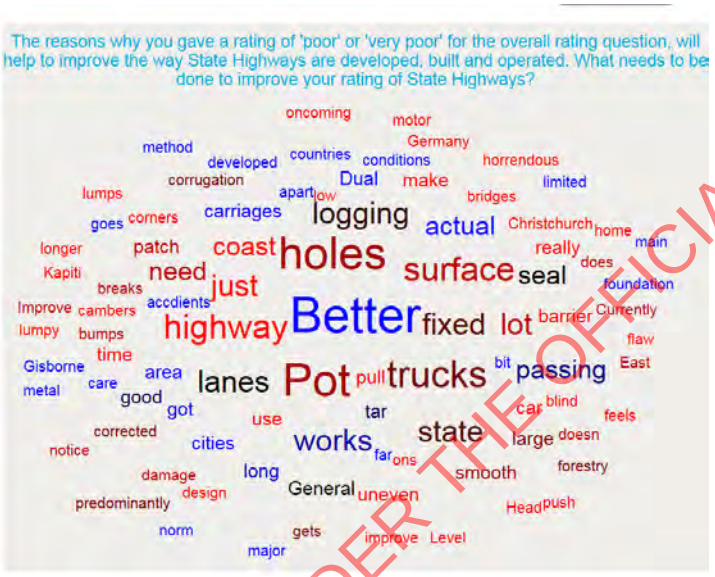
- Customer Satisfaction has been relatively flat over the two years, 2016-2018.
- 4% of customers rated the State Highways in the region as excellent in 2016. In 2018 this had increased to 9%. This can be partly attributed to the higher level of investment on SH35 by Tairāwhiti Roads.

However, for Gisborne West

- Customer Satisfaction of State Highways in the region has significantly deteriorated.
- In 2016 approximately 26% of customers rated State Highways as poor (24%) or very poor (2%)
- By 2018, around 45% of customers rated State Highways as poor (32%) or very poor (13%). Common verbatim responses for this question incorporated topics such as uneven terrain, holes, road works, passing opportunities, intersections, bumpy surface and logging trucks.

Overall satisfaction comments from customers for the Gisborne/Hawke's Bay region is shown in Figure 32. The common responses focused on the condition of the road and the type of vehicles on the roads (logging and trucks). However, the overarching response is that the customers believe State Highways need to be better.

Figure 32 NZTA Overall customer satisfaction comments (2018)



Note that the size of the words corresponds to the number of responses

Freight

Primary industry in the region is highly reliant on the transport network. Due to the low value of cargo, the cost of transport often contributes to a significant portion of the commodity price meaning business in the region is highly sensitive to transport to remain competitive with neighbouring regions.

The cost of doing business in the study area is widely considered to be higher than in neighbouring regions. This undermines the profitability of business and further inhibits investment in the region.

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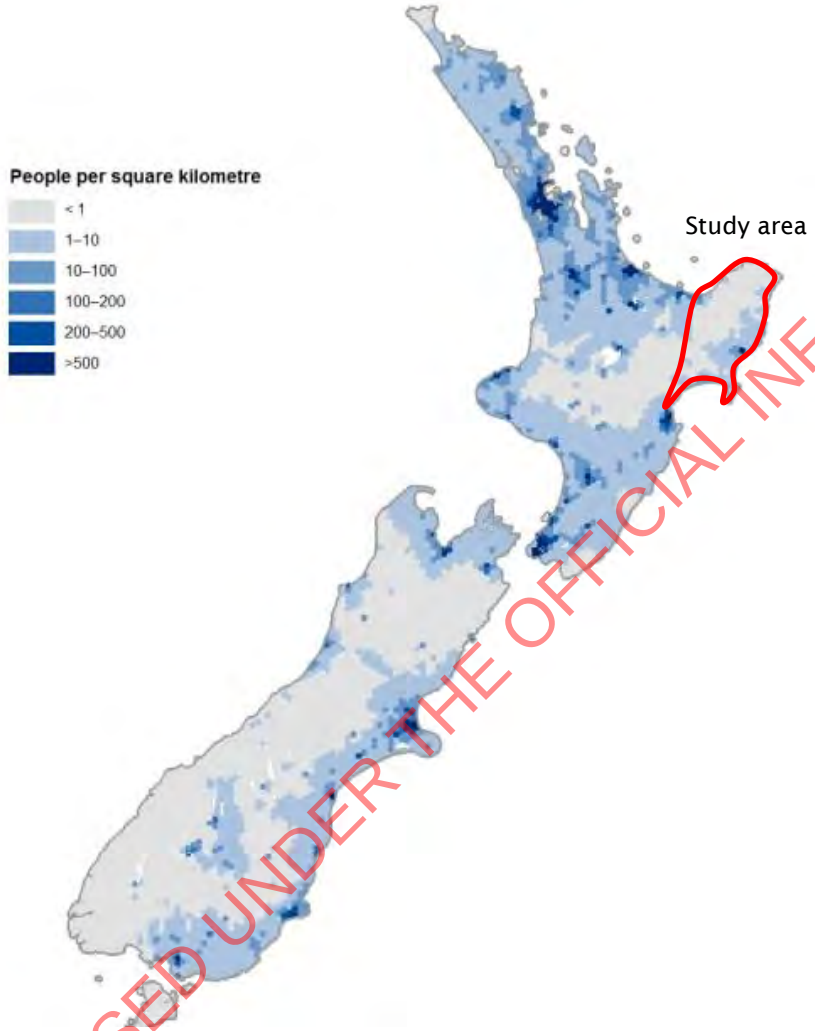
The additional transport costs of doing business from Tairāwhiti (compared with locations near major ports) is estimated at $40 per metric tonne or around $36m per annum[14]. Several factors contribute to the high cost of doing business in the region:

Geographic challenges

The study area suffers from a relative isolation from the rest of the North Island as shown in Figure 33 by the lower relative population density and distance to main centres. Domestic commodities from the region are required to travel further to market than other areas ultimately resulting in higher travel costs.

Figure 33: North Island population density (source: Statistic New Zealand)



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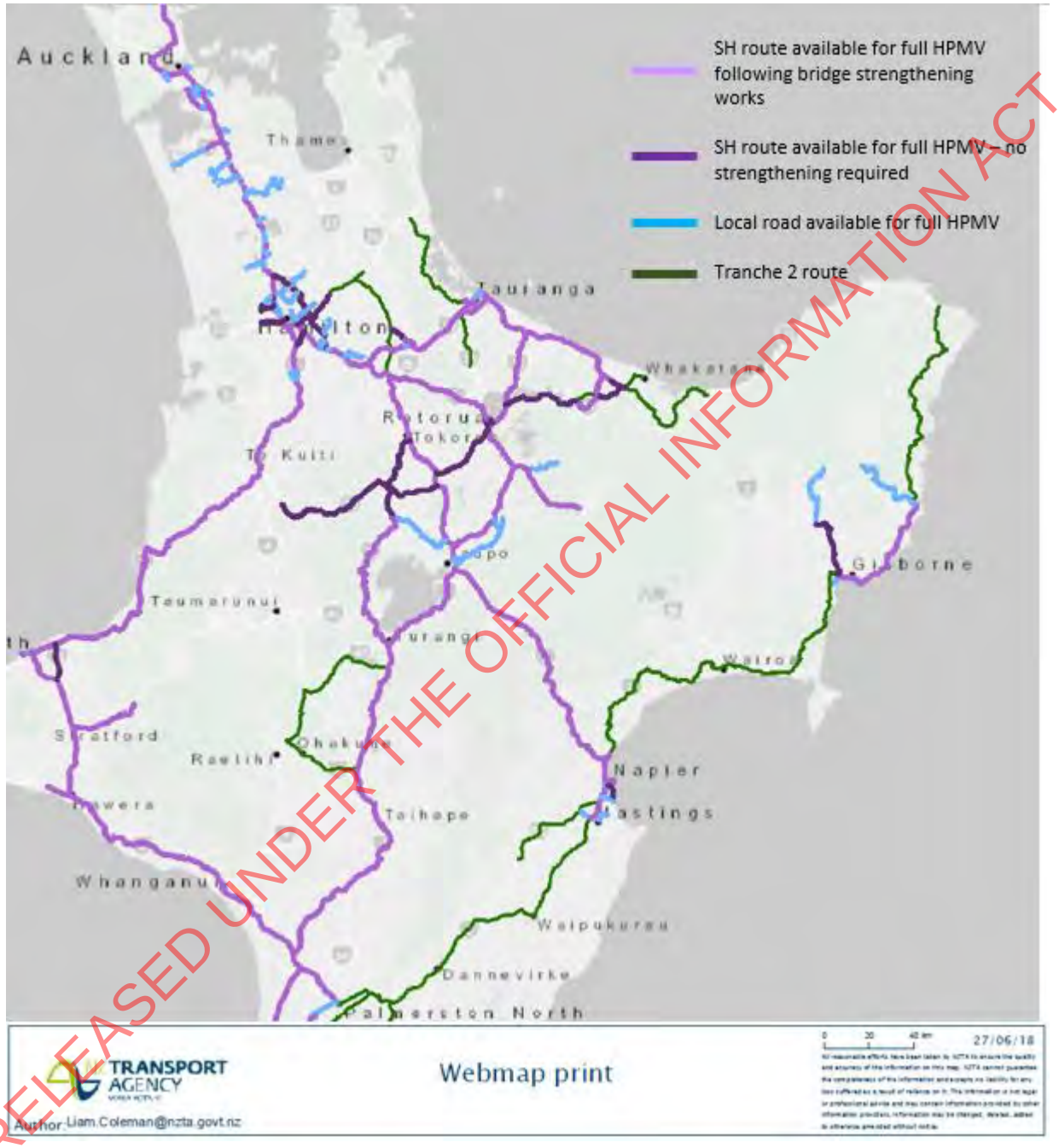
[14] Tairāwhiti Economic Action Plan, 2017

Lack of high capacity road network

Within the study area, the high-performance motor vehicle (HPMV) network is limited and disjointed as shown in Figure 34. A visible gap exists in the network when compared to the rest of the upper north island. HPMVs can increase productivity of freight movement by 10-20%, with a 16% reduction in the number of trips for some freight tasks and a 16% reduction in distribution costs[15].

Figure 34: HPMV network for the wider region



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[15] New Zealand Transport Agency – National Case for High Productivity Motor Vehicles: Programme Business Case

General road condition

Poor road surface conditions have a significant impact on the costs of doing business within the region, including increased wear and tear on commercial fleet vehicles, lower freight speeds, variable journey times and in some cases full route closures. The "Roads in Crisis" report published by the Eastland Wood Council in July 2017, indicates the costs of transporting goods within the East Coast region is approximately 40% higher than similar activities within the Bay of Plenty region as shown in Table 13. Additional transport costs are transferred onto producers, which in turn reduces profitability and the attractiveness of investing within the region.

Table 13 Indicative Cost for Vehicle Operations

Operating Cost	Bay of Plenty	Tairāwhiti Region	% Difference
Maintenance Cost	40c/km	60c/km	+50%
Tyres	12c/km	22c/km	+80%
Fuel	40c/km	45c/km	+13%
Total	**92c/km**	**127c/km**	**+38%**

This increase in operating costs within the study area was regularly reflected in many discussions with freight operators and it was anecdotally reported that the operators experienced approximately twice the wear on this part of the network.

Lack of transport options

Industry in the Tairāwhiti region have limited land transport choice when it comes to transport of goods to market. As a result, primary industries are heavily reliant on the road network. With the recent reopening of the Wairoa to Napier section of the PNGL, freight movements between Wairoa and Napier have a rail alternative to SH2. The service is primarily catering for the transport of logs from the surrounding forest areas in Wairoa to the Port of Napier. At present, only weekend services will be provided which are not expected to suit a larger range of customers. It is noted that KiwiRail will review scheduling based on future demand.

The rail corridor between Wairoa and Gisborne was shut in 2012 following a significant weather event. KiwiRail has not reopened this section and there is no current intention to reopen the line.

For freight travelling between Gisborne and Ōpōtiki, no alternative is currently provided other than use of the State Highway corridor.

Coastal shipping caters for export movements of freight to other regional ports such as Napier, Tauranga and Marsden Point. Shipping currently has limited ability to cater for freight movement through the region. The Gisborne to Napier coastal shipping study[16] considered coastal shipping as an alternative to the SH2 corridor between Gisborne and Napier concluding that a service could be economically beneficial to the country provided the volumes were high enough. No such service currently exists.

A lack of competition in the transport market inevitably leads to an increase in the cost of freight movement. Prior to 2012, road transport industry responded to a concerted effort by rail to capture

[16] Warwick Taylor, 2010. Gisborne to Napier Coastal Shipping study.

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market share in the region by dropping rates. Such competition is not possible when alternatives are unavailable.

Driver resource

The Tairāwhiti Road Freight Transport Survey was undertaken by Eastland Wood Council in May 2018 to provide a stocktake of the issues facing road transport operators in the region. 28 companies employing 545 drivers responded representing general freight, livestock, produce carting and logging. Key findings from this survey include:

- Currently the industry is 53 drivers short, i.e. approximately a 10% deficit to requirements
- Most roles required to meet projected growth are for Class 4 & 5 drivers.
- Over the next two years respondents have indicated a need for 180 drivers, which shows a significant number above what has previously been identified, through the Labour Market Report (2016)
- The age of drivers ranged from 20 years to 80+ years, with 30% of all drivers over the age of 60, i.e. near or at 'retirement' age
- Whilst the region has two quality training providers, results indicated, companies rely on 'walk-ins' and word of mouth to recruit
- The main issues facing the industry are the image of the industry in terms of a career pathway, and recruitment - particularly regarding working through the licence classes and getting 'on the road' experience.
- 79% of respondents cited roading infrastructure and road conditions as the biggest challenge facing the industry
- It is noted that several respondents stated they have sold equipment because they couldn't get drivers to operate it.

The primary industries rely heavily on being able to move goods from the study area for domestic or export use. The critical lack of people resources in this industry could significantly affect the ability to realise future economic opportunities.

Tourism

Access to tourism attractions and facilities and the customer experience on the transport network are key enablers to the tourism industry in the region.

As outlined in the context section, both the Tairāwhiti and Hawke's Bay regions account for a small proportion of the New Zealand tourism market. The region is not considered to be included on a typical international tourist's itinerary and is more reliant on domestic tourism and more self-sufficient campervan type international travellers. Annual statistics about visitors show that:

- **Hawke's Bay RTO**: $636m total with $167m international (26%)[17]
- **Gisborne RTO**: $151m total with $29m international (19%)

At a national level, total tourism spend is $28B with around 41% coming from international visitors. In addition to having a small overall contribution to national tourism, in the study area, tourism plays a comparatively small proportion of the overall regional GDP as seen in Figure 35.

[17] Monthly Regional Tourism Estimates (MRTE), Ministry of Business, Innovation and Employment

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Figure 35: Regional tourism expenditure as a proportion

Based on the economic performance of the Hawke's Bay and Tairāwhiti regions, an opportunity exists to develop the visitor industry to attract additional customers. The visitor industry was identified by the Tairāwhiti Economic Action Plan as a key focus and area of focus to achieve the regions aspirations.

Through feedback form regional tourist authorities, issues with the transport network inhibiting the visitor industry include:

- **Difficult driving conditions** – Roads are windy, narrow and distances between attractions are large. A lack of passing opportunities creates animosity between local traffic and visiting drivers.
- **Lack of driver amenities** – Lack of appropriate stopping places, facilities such as coffee stops and petrol stations.
- **Limited travel choice** – Visitors are reliant on private vehicles with a lack of alternatives. Intercity buses provide limited access to the main centres, but some areas like SH35 are inaccessible. Self-driving is often considered intimidating for some international tourists. The region tends to only appeal to more confident drivers, therefore limiting its appeal.
- **Limited access to key attractions** – Routes to key attractions are often of a low standard for example the route to the East Cape is unsealed and as a result, visitors experience difficulty in accessing the attraction.

For this PBC we are considering visitors to be in three broad subsets:

- Domestic visitor
- Repeat domestic visitor e.g. visiting a bach or regular campground
- International visitor

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Each of these types of visitors has a different expectation of their experience in the Tairāwhiti region. This PBC therefore will need to develop a programme that considers all types of visitors and recommend options that will address a wide range of needs.

Road amenity

Road amenity can be considered as the customers' overall perception of the journey. A visitor would have different expectations compared to a freight operator. Road amenity includes measures such as:

- level of comfort
- roughness
- preservation or enhancement of the character of scenic/tourist routes (national and regional one network road classification (ONRC)
- aesthetics of adjacent road environment
- specific provision for cyclists or pedestrians
- clean, safe and secure facilities and environment

The corridor management plans (CMP) have assessed the road amenity of a significant part of the SH2 and SH35 routes. A summary of the assessment is included in Table 14.

Table 14: CMP road amenity

CORRIDOR	KEY FINDINGS
SH2 Ōpōtiki to Gisborne [18]	SH2 between Opotiki and Gisborne is the major transport route linking the Gisborne Region and the Tauranga/ Bay of Plenty. Considering the ONRC rating of SH2 as an arterial road, the following conclusions can be made of the corridor: • The section of SH2 through the Waioeka Gorge comprises a high level of resilience risk • The road surface through the Waioeka Gorge ranges from good to average, with only a few isolated stopping areas • The travel time reliability of SH2 between Opotiki and Gisborne is relatively good • A 2-star rating is given for the length of the route through the Waioeka Gorge due to roadside hazards, narrow width and winding, steep geometry. This falls below the targeted KiwiRAP rating In addition, the corridor has a relatively short section that is not available for HPMV. Bringing the full corridor up to HPMV standard will open opportunities for business expansion and investment.
SH35 Ōpōtiki to Gisborne via East Cape [19]	The SH35 corridor between Opotiki and Gisborne is classified as a Primary Collector road for most of the route with a short section of Regional Arterial on the approach to Gisborne.

[18] 2018 – 2028 Palmerston North to Napier to Gisborne Corridor Management Plan

[19] 2018 – 2028 Opotiki to Gisborne via East Cape Corridor Management Plan

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CORRIDOR	KEY FINDINGS
	This section of the state highway provides a lane in both directions and comprises narrow sections with frequent bends and steep undulating topography and geometry. The corridor is generally subject to closure due to storms and flooding, resulting in disruption to business sustainability and extensive detours for all other users. Considering the ONRC rating of SH35 as a primary collector road, the following conclusions can be made of the corridor: • Most of the corridor has a high level of resilience risk, with SH2 being the most viable route in the event of a closure. • The general amenity of the corridor ranges from average (between Waihau Bay and Tolaga Bay) with the remainder of the route being good. It is noted that the road surface condition between Gisborne to Tolaga Bay is relatively good but reveals signs of subsidence in areas • The star rating of the corridor ranges from 2 to 3. Specifically, between Tokomaru Bay and Tolaga Bay, the corridor is considered to have an excellent safety rating with the route between Tolaga Bay and Gisborne being average • For most of the length, the level of direct access on the corridor is in line with its classification as a Primary Collector • Considering the ONRC rating of SH35 as a primary collector road, the corridor has a poor resilience particularly between Opotiki and Hicks Bay
SH2 Gisborne to Napier [20]	The majority of the SH2 corridor between Napier to Gisborne is classified as a Regional Collector road, continuing briefly to Napier as a National High-Volume route. Considering the ONRC rating of SH2, the following conclusions can be made of the corridor: • The section of SH2 between Eskdale and Gisborne has a high resilience risk, primarily due to the significant length of the state highway diversion and availability of suitable local road alternatives • Sh2 between Wairoa and Gisborne has a high level of rutting in comparison to the rest of the journey • Most of this route has a good level of accessibility, this excludes a small section north of Wharerata which is classified as average • The section of SH2 between Napier and Tamatea is unrated in relation to the level of safety. Safety related pinch points exist along the corridor and include but are not limited to busy intersections, unforgiving roadsides, and out-of-context curve alignment. Specifically, SH2 between Tamatea and Westshore which comprises a poor level of safety. The remainder of the corridor varies between a good and average level of safety rating;

Communities

The problem around access for the community hinges around people's ability to access key facilities such as hospitals, schools, shops, recreational facilities and community facilities. Issues around access can be attributed by the following:

[20] 2018 – 2028 Tauranga to Gisborne Corridor Management Plan

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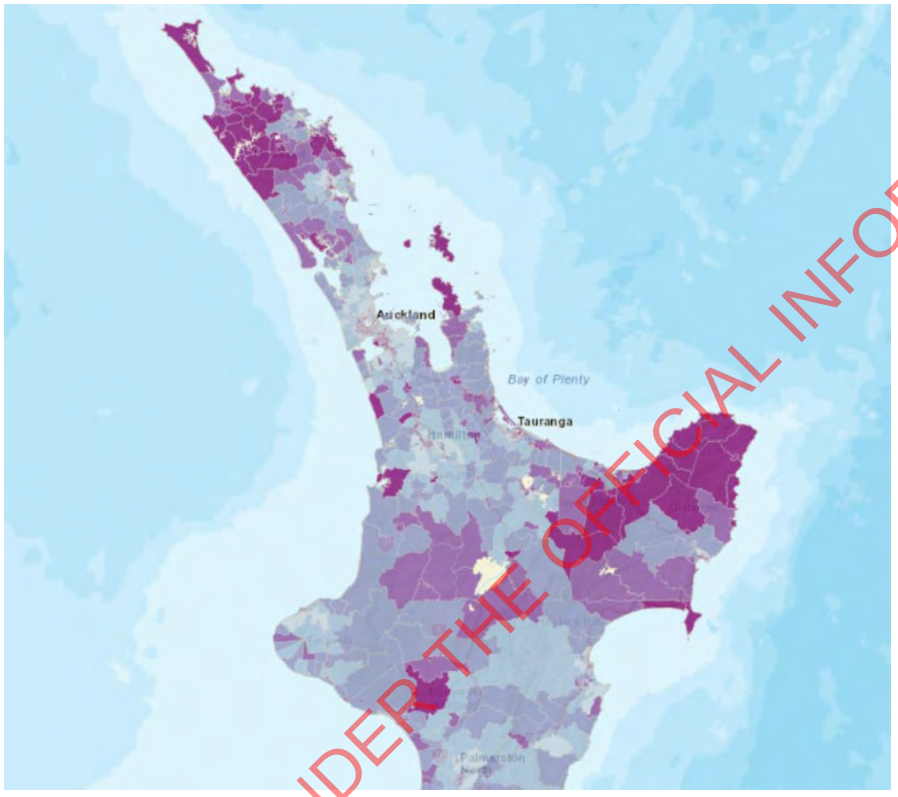
- Physical isolation
- Lack of travel options with limited public transport
- Amenity of the journey

Statistics New Zealand ranks each area unit within the country on the level of deprivation based on a variety of factors. The deprivation index provides a holistic look at community conditions within any given area considering factors such as employment, crime, housing, health, education and access. When looking at the Tairāwhiti region and neighbouring areas, large areas rank at the highest deprivation levels throughout the country. Figure 36 shows the deprivation index for the North Island. The darker the purple, the higher the deprivation ranking. The East Cape north of Gisborne is the worst ranking part of the study area indicating the highest level of deprivation seen in the country. South of Gisborne, the Wairoa district indicates high levels of deprivation.

Figure 36: 2013 Deprivation index



Part of the Deprivation index looks at access for the community. When ranking access for each area, the distance to the three nearest:

- GP's or A&E clinics
- Supermarkets
- Service stations
- Primary and intermediate schools
- Early Childhood Education centres

Ranking against the Access criteria is highly relevant for the PBC access problem. The East Coast ranks badly from an access perspective with large distances to facilities and limited services serving the numerous small communities along the SH35 route.

South of Gisborne, several areas rank on the lower end of the access spectrum as shown in Figure 37. The Wairoa area suffers from a lower level of access than much of the rest of the North Island.

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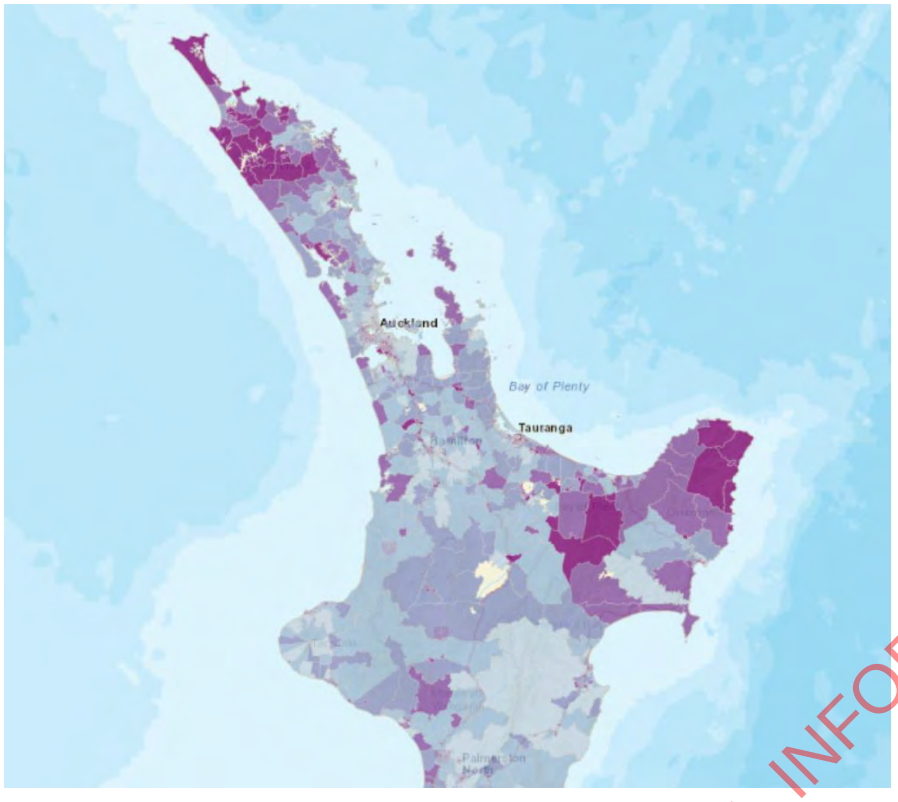
Figure 37: Access ranking



Communities along SH2 and SH35 are faced with long journeys to access key community facilities.

Communities have reported many examples of isolation during the workshops including:

- Wairoa children struggle to find competitive sports matches and frequently have opponents default matches due to perceived distance and reliability issues on SH2 between Napier and Wairoa
- Communities are not able to access medical specialist appointments or driver licensing centres due to road closures or inability to drive to the appointment. It was noted that community transport options were popular where the service existed.

Lack of options

Communities living within the study area face a lack of travel options.

- No passenger rail services are provided within the study area.
- Limited bus services are available. Selected intercity bus services travel between Ōpōtiki and Napier via SH2. No public services make use of SH35.
- Given the distances involved and inhospitable nature of the state highway, cycling and walking is generally used on local roads.

The communities within the study area are highly dependent on the motor vehicle for transport. While there is a high reliance, given the socio-economic conditions, people do not always have access to a motor vehicle. The 2013 population census (Figure 38) shows the Ōpōtiki, Gisborne and Wairoa districts having a greater proportion of households with no access to a motor vehicle than the national average.

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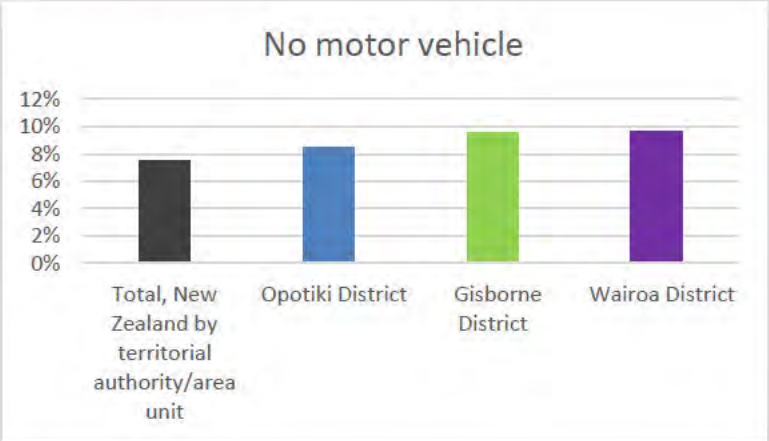
Figure 38: Access to motor vehicle



Summary of Access problem

The evidence confirms access as a key issue for many customers using the transport network. There are similarities between issues faced from each sector:

- Freight – Large distances and poor road conditions and lack of transport choice make costs to industry comparatively higher than other regions.
- Tourism – Difficult driving conditions, lack of amenity and poor access to key attractions are a disadvantage to the tourism industry in the region.
- Communities – Relative isolation of communities, socio economic conditions and lack of transport choice are limiting access to key facilities.

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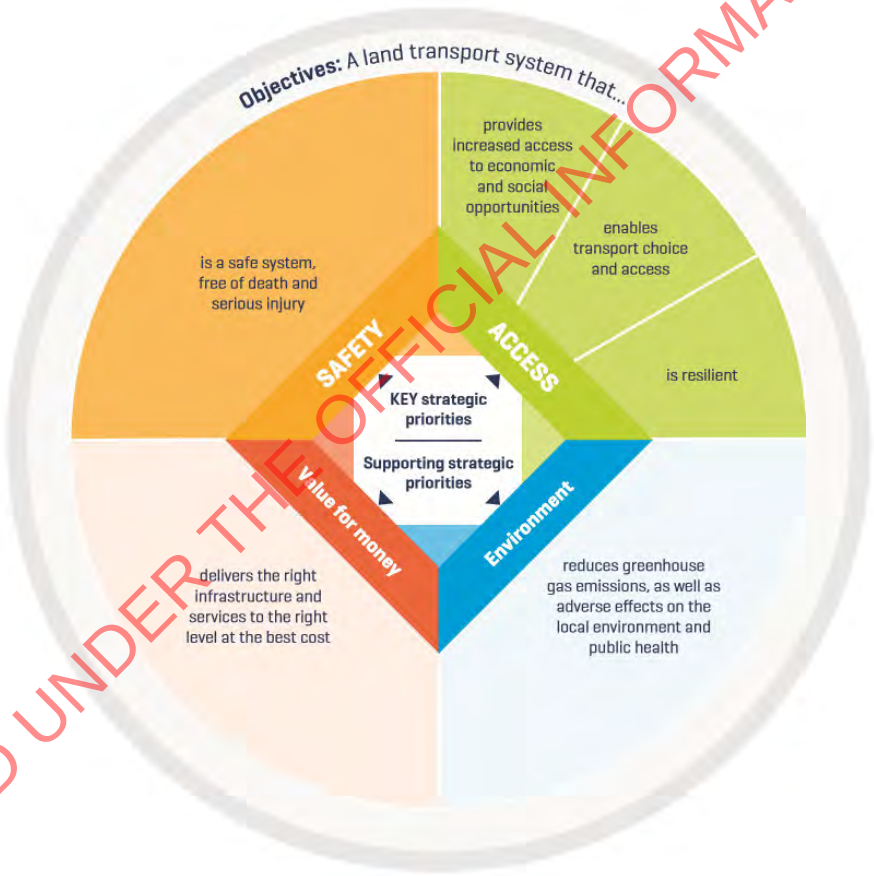
4.5 Alignment to existing strategies

This section describes how the proposed assessment outcomes align to relevant national, regional, sector and organisational strategies. The strategies with the most direct impact on this PBC are outlined below.

4.5.1 Government Policy Statement on Land Transport Funding

The GPS 2018/2019 – 2027/2028 took effect on 1 July 2018. The document sets out a 10-year strategic direction to drive improved performance from the land transport system. The GPS presents a change to the strategic objectives outlined in the 2015-2018 GPS. The Government's commitments make it clear that transformation of the land transport system is a priority. The GPS prioritises a safer transport system free of death and injury, accessible and affordable transport, reduced emissions and value for money as shown in Figure 39.

Figure 39 Strategic direction of the GPS 2018



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Improved safety is a fundamental objective for the GPS as it seeks to improve safety outcomes for all road users. The analysis shows that the Connecting Tairāwhiti study area has a high personal safety risk which can be attributed to a combination of unforgiving terrain and poor driver behaviour. Therefore, the programme will need to include activities to directly address safety issues for vulnerable users (e.g. cyclists), specific locations and crash factors.

The access section of the GPS has a new focus that prioritises improving New Zealanders' access to economic and social opportunities. This includes regional development that supports thriving regions.

Access as defined in the GPS is underpinned by three sub objectives which include:

- A land transport system that provides increased access for economic and social opportunities
- A land transport system that enables transport choice and access
- A land transport system that is resilient

Problem 2 (Resilience) and Problem 3 (Access) as defined for the Connecting Tairāwhiti PBC are wholly consistent with the GPS access objective. This is a regional based economy heavily reliant on primary industries such as forestry, horticulture and to a lesser extent tourism. There is significant evidence showing repetitive resilience issues in the study area and the resulting economic and social impacts of these road closures. There are limited alternatives for the road network and currently the area is not well served by alternative options to private vehicles. Communities are geographically isolated which is exacerbated by lack of transport choice and limited access to key facilities. Lack of access and increasing costs associated with this access has resulted in a loss of competitiveness for industries. Tourism is also disadvantaged due to difficult driving conditions, lack of amenities and poor access to key attractions.

Therefore, the programme will include a focus on activities that improve the safety, resilience and access which aligns with the strategic direction of the GPS. Value for money and better environmental outcomes will underpin the selection of activities to be included in the programme.

4.5.2 One network road classification (ONRC)

The ONRC has been developed by the Road Efficiency Group (which is a collaboration between road controlling authorities across New Zealand) as a classification system that identifies the level of service, function and use of local road networks and State Highways.

This classification has been used to inform the type of measures that would be suitable for SH2 and SH35.

4.5.3 Tairāwhiti Economic Action Plan

The Economic Action Plan represents this region's priorities for the next five years and provides a unified plan in seeking transformational change in the region's prosperity.

The Action Plan, as shown in Figure 40, identifies key enabling actions, of which transport plays an important role.

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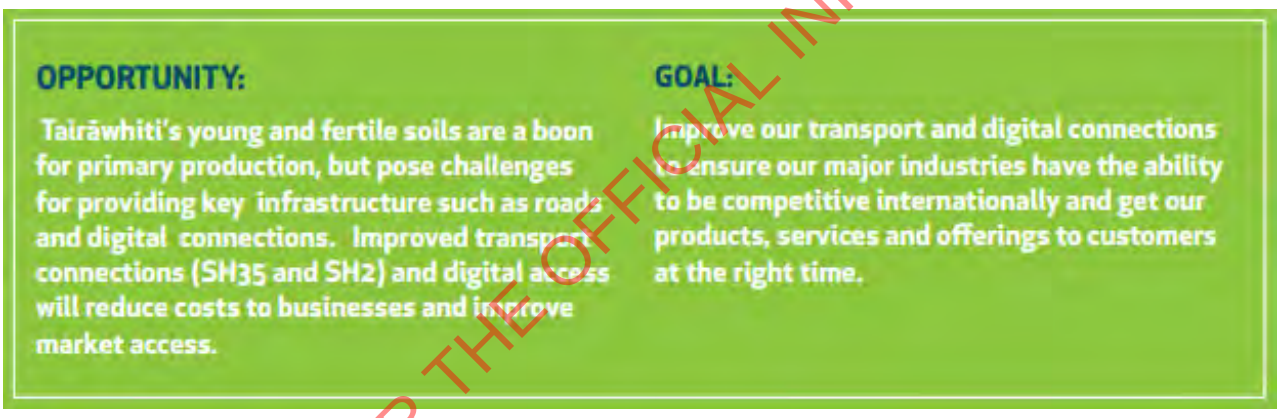
Figure 40 Tairāwhiti actions

The Action plan identifies transport connections as a key component to 'Connecting People with markets' as detailed in Figure 41.

Figure 41: Connecting people with markets



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4.5.4 Tourism 2025

This national tourism strategy has been produced by Tourism Industry Aotearoa. The Tourism 2025 growth framework was established to identify the parts of the tourism system that need to be worked on in alignment across the country. Two key areas are seasonality and dispersal as shown in Figure 42 which directly correlate to the issues faced in the study area.

Following a review of this strategy two years after inception, two additional areas of emphasis have been included.

Both additional areas are also relevant to the study area - in particular the need to create new opportunities outside of popular regions for new growth.

It is important that any visitor industry options correlate with the priorities of Tourism 2025.

Figure 42 Tourism 2025 areas of emphasis

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4.6 Issues and constraints

Issues and constraints which may impact the programme of works are summarised in the uncertainty log presented within **Appendix D**.

The role of the Uncertainty Log is to identify areas of uncertainty that exist in the context of the PBC and that may be within the sphere of influence of the project. The uncertainty log includes the assumptions made that might influence the understanding of the problem statements and which may affect the effectiveness and feasibility of the alternatives and options developed.

The Uncertainty Log was progressively developed through the project. Issues have been added from stakeholder meetings, evidence gathered and analysis that has been undertaken by the project team.

The key uncertainties for the programme include:

- Factors affecting transport and network demand
    - Proposed Eastland Port expansion
    - Development of new wood processing facilities
    - Increasing agriculture productivity following regeneration of the Gisborne aquifer
    - Increased small scale logging productivity
    - Residential population forecast increases
    - Future land-use changes
- Factors affecting supply and cost of transport:
    - Uptake of High Productivity Motor Vehicles
    - Global warming and associated environmental effects
    - Seasonal variations and weather patterns
    - Low population base outside of urban areas limiting the feasibility and provision of public transport options
    - Potential re-establishment of the Gisborne to Wairoa railway line
    - Potential development of a new port on the East cape e.g Hicks Bay, Tologa Bay or Te Araroa
    - Driver shortage from reduction in skilled and capable freight drivers
    - Fluctuations in fuel prices
    - Fluctuations in the market value of products

All uncertainties were considered by the project team during the development and assessment of options and programmes.

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5. HOW WILL WE MEASURE SUCCESS?

The success of the PBC will be a prioritised investment map which connects people to markets and improves access for all customers. To achieve that goal, PBC benefits have been identified and SMART investment objectives developed to measure how well the programme is addressing the problems.

5.1 Investment benefits

As part of the ILM process the investment benefits for the PBC were identified as shown in Table 15

Table 15 Investment benefits

Benefit	Description
Benefit 1: Safer roads	This benefit recognises the improvement in safety along the network. This could include a physical reduction in crashes as well as a positive change in customer perception of safety
Benefit 2: A transport network is available	Reducing the frequency and length of unplanned road closures enables goods and services to reach the intended destination on time, minimising potential economic loss. This benefit also recognises that the region is geographically dispersed and that many of the local communities and industries are at a risk of severance in the event of significant unplanned road closures. By investing in providing a more resilient and reliable network, the risk of isolation in the event of significant unplanned closure events will be reduced.
Benefit 3: Increased confidence in the network	This benefit recognises that with prioritised investment, all users will have increased confidence in the reliability of the transport network which will increase investor confidence in the region.
Benefit 4: Improved access for primary industries and tourism	This benefit recognises that investing in transport improvements that support improved efficiency and effective movement of people and freight would reduce the costs of doing everyday business within the region. Reducing the cost of transporting goods and services would support economic competitiveness of exported goods and encourage economic growth through expansion of existing industries or attracting new inward investment within the region. Providing enhanced or new transport connections that improve the economic return on activities that are currently considered unviable (i.e. forests with no or poor transport linkages) will support economic productivity within the region. An improved transport network would support growth in the transport industry by removing some of the perceived challenges in visiting this destination.
Benefit 5: Improved access and connectivity for communities to key facilities	Investment in the transport network to provide safe, reliable access in conjunction with increased travel choice would improve community access and reduce the effects of isolation.

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5.2 Investment Objectives

The investment objectives (investment benefits, measures and targets) for the programme of activities were developed with, and agreed by, members of the project team and key external stakeholders.

Investment Objective 1: Safety	Reduce numbers of deaths and serious injuries on SH2 and SH35 by 20% by 2030 (25%)

Problem 1 identified personal risk issues on sections of SH2 and SH35. The crash problem can be attributed to several environment and social factors.

Whilst zero crashes are the ultimate aim for any programme, the terrain, low traffic volumes and general form and function of the roads constrain affordable treatments for the study area. It was therefore considered that a realistic target for reducing deaths and serious injuries would be to improve the network to operate below a medium personal risk. This equates to a 20% reduction in DSIs.

The investment objective therefore takes a holistic view to the safety problem rather than focusing on a specific over represented factor. This approach allows a safe system approach to be adopted targeting multiple facets including changes to physical infrastructure, enforcement and educational programmes. The programme is intended to complement other safety workstreams in the study area.

Deaths and serious injuries are the focus as these incidents carry the biggest social cost to communities. This approach is consistent with NZ Transport Agency strategies and the GPS on land transport funding.

The unforgiving nature of the road and large size of study area results in wide spread of crash locations. This programme will address hotspots, but there are still likely to be isolated crashes due to factors such as fatigue, driver error and loss of control. Options will need to consider how to address the randomised nature of crashes in the study area. A timeframe of 2030 is chosen as for the target to reflect a realistic period to address some of the safety hotspots and for educational programmes to take effect.

Investment Objective 2: Resilience	Improve the resilience of the transport system through provision of alternatives or reduction of frequency and duration of incidents by half by 2030 (35%)

Problem 2 confirms resilience as a key issue within the study area for both SH2 and SH35. Road closures occur from both road crashes and environmental incidents. As road safety is dealt with in

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investment objective 1, Investment objective 2 focuses on closures from environmental factors such as slips, flooding, washouts, rock falls and drop outs.

Due to the nature of the study area, large portions of SH2 and almost the entire length of SH35 have no viable alternative route in the event of a road closure.

It is the impact of closures which is important to highlight in the study area. With a heavy reliance on the road corridor for both business and communities, incidents have an amplified impact on customers.

Investment objective 2 sets out to adopt a holistic approach to reducing the impact of closures on customers in the region through minimising the occurrence of closures, improving responses and providing alternative routes where feasible.

A large proportion of the land mass within the eastern section of the study area is on the move towards the sea which makes eliminating resilience incidents a challenge. As such, a reduction target of 50% has been adopted to reflect the ability of the programme to address hot spots and provide some wider preventative measures.

Investment Objective 3: Access	Improve connectivity and integration of transport system to provide improved access for economic and social opportunities (40%)

The evidence confirms access as a key issue for customers using the transport network. The study area is generally performing poorly from an economic standpoint and communities along SH2 and particularly SH35 are experiencing higher levels of deprivation.

Access is a key issue facing businesses, tourism and communities. Isolation and large distance is common between all customers which amplifies other issues such as business competitiveness and access to people and resources. While the distance is undoubtedly a key factor, nothing can feasibly be done to address the physical separation of journeys through the region. However, the journey itself can be improved.

Issues such as the condition of the road and subsequent increased transport cost, lack of amenities and lack of transport choice are specific to each of the customer groups and provide opportunities for the PBC to address.

Investment objective three recognises similarities in the access issue but is intended to remain general enough to capture the subtle differences in the access problem through the defining of KPIs that assess accessibility and effects on economic measures such as GDP.

Stakeholder discussions

The problems and investment objectives were discussed with Stakeholders at Workshop 1 and the project team collated all the views and developed a draft set of statements. These were shared at Workshop 2 for agreement.

There was general agreement that overall the set of problem statements were representative of the evidenced problems. Specific feedback included:

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1 Investment objective 3: strengthen to include a "connected and integrated" network
2 Inclusion of "improvement of road conditions" in the measures.
3 There was a discussion about the inclusion of journey time reduction (in either time or km travelled) into the Problems or Investment objectives.

The first two items were incorporated into Investment Objective 3 measures.

The project team carefully considered the request to include a specific measure to reduce journey time. It is recognised that customers would value a reduction in travel time however, a reduction of travel time is a benefit of solving our three identified problems of safety, resilience and access. It is not in itself an evidenced problem.

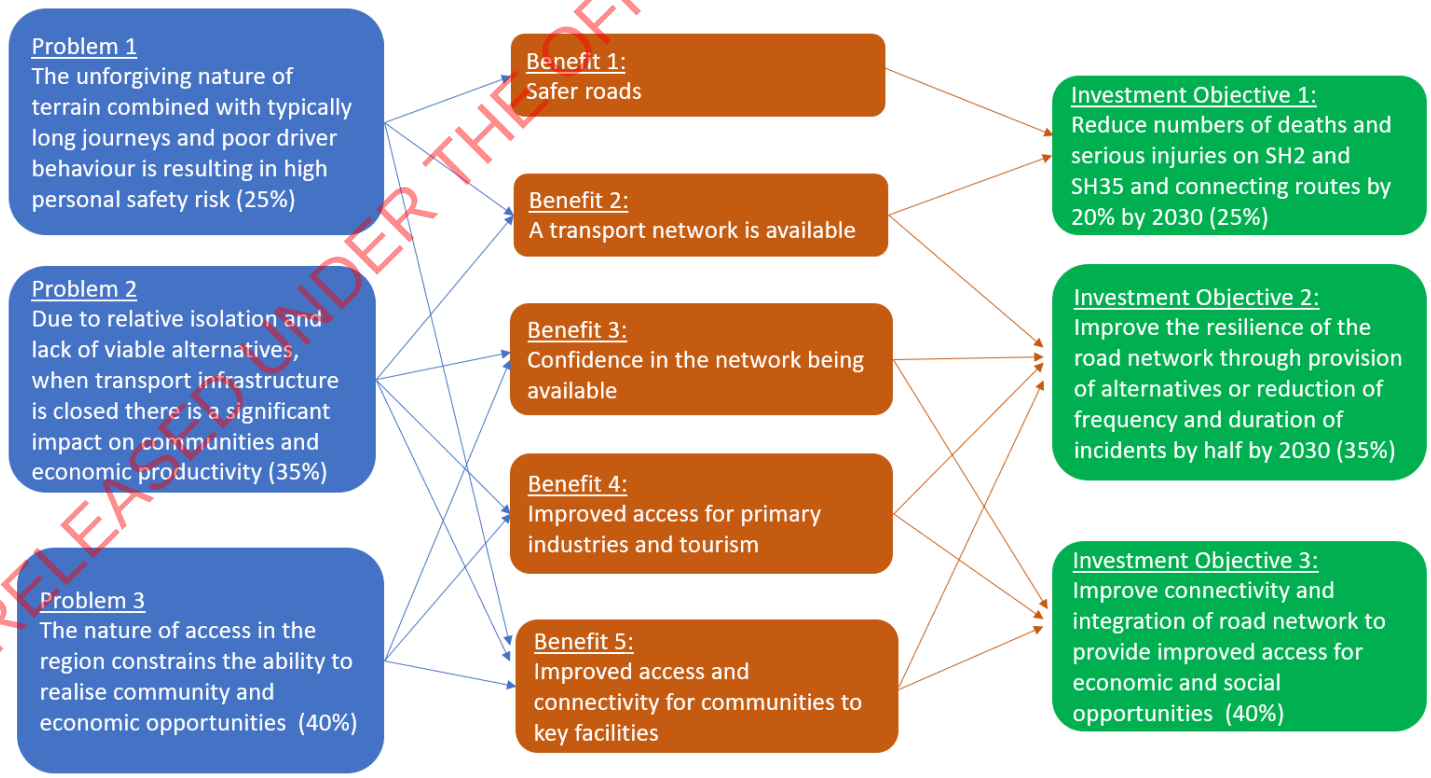
In addition, the One Network Road Classification (ONRC) has identified the customer levels of service to include mobility (travel time reliability, resilience of the route) safety, amenity (travel quality and aesthetics) and accessibility. Reduction in travel time in itself is not defined as a customer level of service.

It should be noted however, that reduction in journey time is a potential benefit of some of the identified measures including efficient freight access to markets (including reduction in transport costs) and improving community access to key facilities. It is also a potential benefit of solutions such as realignments. Therefore, it is implicitly incorporated in the existing statements.

5.3 Investment objective summary

An ILM is provided in Figure 43 mapping the problems described above to benefits of investment and ultimately the investment objectives identified.

Figure 43 Connecting Tairāwhiti problems, benefits and objectives



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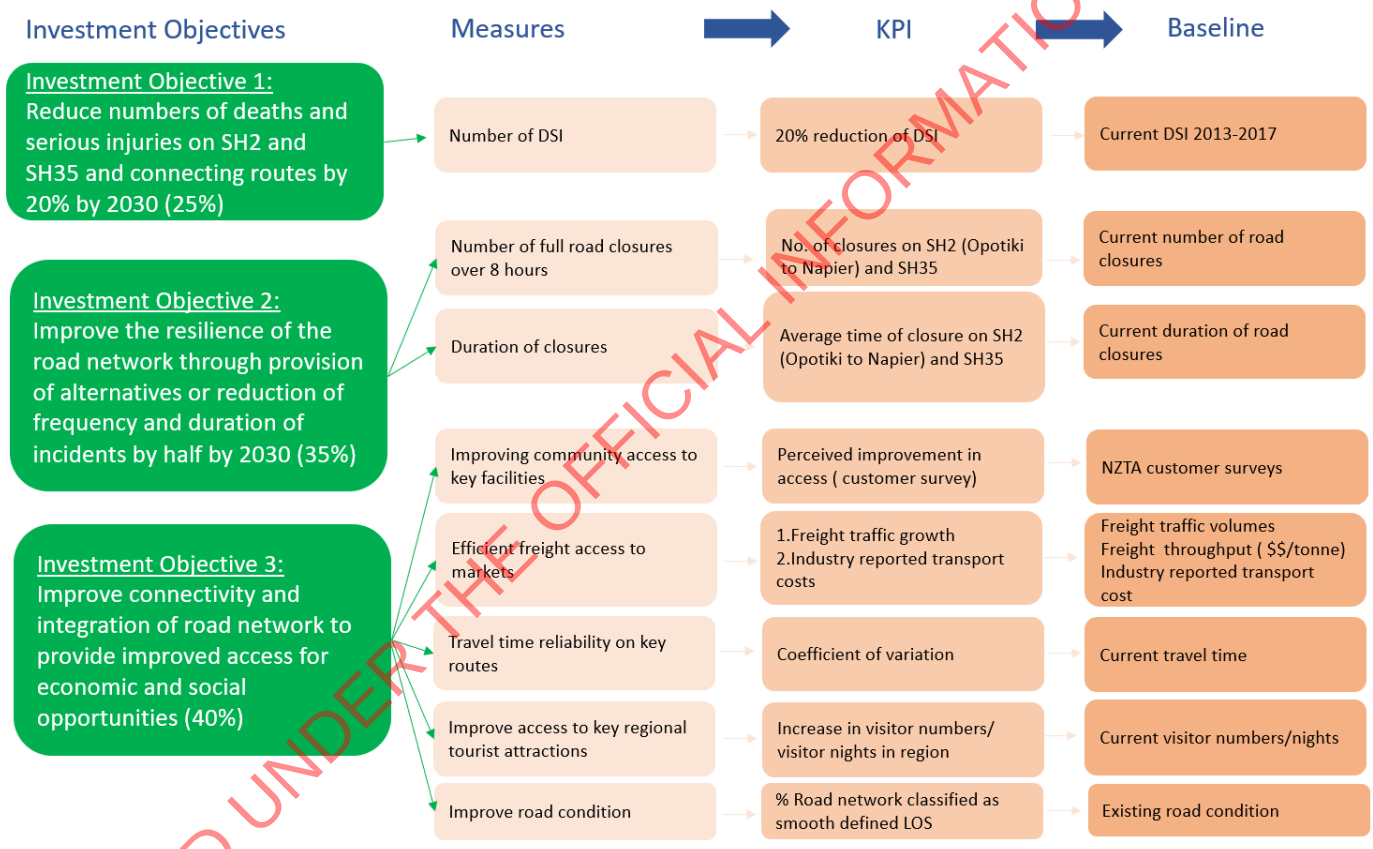
5.4 Key performance attributes and measures

The key performance indicators (KPIs) for the project are largely derived from the Transport Agency's framework for performance measures. These measures are deemed to be appropriate in terms of providing appropriate and measurable outcomes for how each contribute to the benefits of solving the problems.

Of note are the measures for Investment Objective 3 which measures access in several ways including community access, efficient freight access, travel time reliability, tourism access and improved road conditions. These are detailed further in Figure 44. This objective is likely to require specific data collection to measure the efficacy of the programme.

Figure 44 Performance measures



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PART B – DEVELOPING THE PROGRAMME

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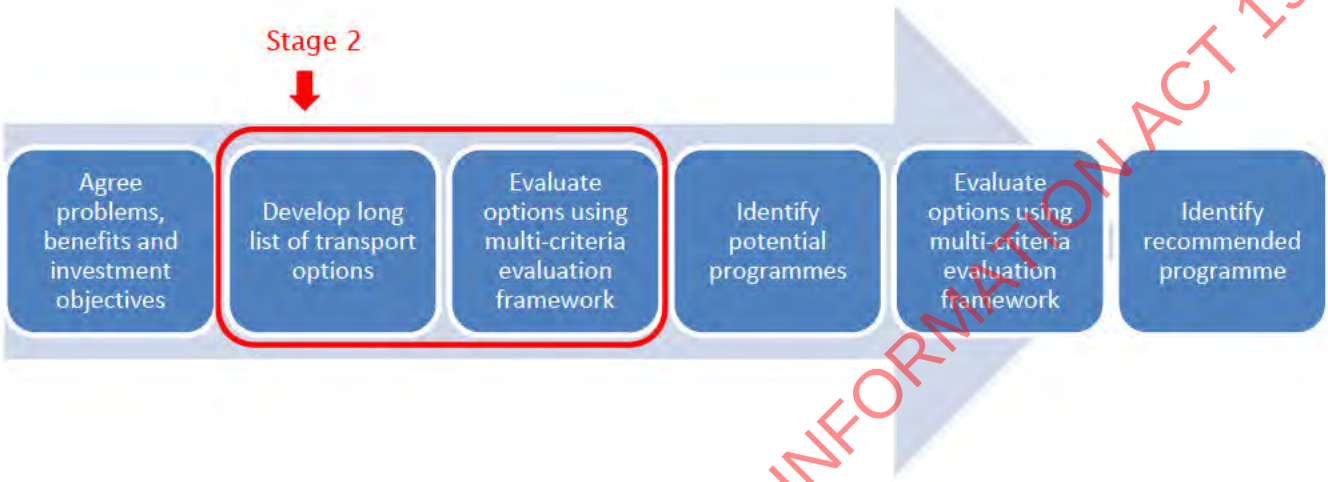
6. OPTION DEVELOPMENT

The second stage in the PBC process was to develop and evaluate the long list of options to respond to the identified problems as shown in Figure 45. A full option evaluation report is included in **Appendix E**.

Figure 45 PBC Process.



6.1 Methodology

To ensure that appropriate programmes were developed, a long list of options was initially identified and assessed at a high level against agreed criteria.

The methodology adopted for the development of the options long list was:

- Development of the option assessment criteria based on NZTA guidelines
- Initial development of the 'options long list' by project team and stakeholders during the first pair of workshops held on 10th April 2018 (in Wairoa) and 11th April 2018 (in Gisborne)
- Further engagement with key stakeholders and feedback from one on one interviews to further refine and identify new options
- Assessment of options by project team against the MCA criteria
- Presentation of option results and endorsement of assessment criteria at Workshop 2 on 10th May 2018 in Gisborne
- Inclusion of one new option from feedback received from the public submission via the Connecting Tairāwhiti website
- Final refinement of options at Workshop 3 on 6th June (Gisborne) and 7th June (Wairoa)

Every option was assessed against the MCA criteria. This allowed the options to be ranked relative to each other, with the ranking informing the compilation of programmes.

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6.2 Assessment framework

A Multi Criteria Analysis (MCA) was used to assess all options included in the long list. These criteria were taken from NZ Transport Agency guidelines for option evaluations for business cases. This allowed the options to be ranked against each other with the option ranking informing the development of programmes.

The full assessment criteria framework is included in **Appendix F** and a summary of the headline assessment categories is shown in Table 16 below.

Table 16 MCA assessment criteria

Objectives	Headline categories	Considerations
Investment objectives		Assessed against the three investment objectives of safety, resilience and access
Implementability	Feasibility	How straightforward is it to implement this alternative / option, including social, cultural and environmental interventions?
	Affordability	Costs, funding and BCRs
	Public / stakeholders	How acceptable is the alternative?
Assessment of Effects	Safety	Safety enhancement, personal safety and safety in design
	Cultural and historical heritage	To what extent does the option impact on cultural and iwi values?
	Built environment	To what extent does the option impact on the environment, including heritage buildings?
	Natural environment	To what extent does the option impact on the natural environment?
	Social	To what extent does the option impact on accessibility, human health and property?
	System integration	Integration with service providers, urban and landscape design and wider transport system effects.
	Economy	Potential to develop economic growth

6.3 Option long list

A list of 169 options was developed with the project team and stakeholder groups to address the investment objectives and needs of the different customer types using the road network.

The first two investment objectives focussed on keeping the existing roads safe and open for all road users. Therefore, the option list initially concentrated on upgrading the existing road network by way of seal extensions, realignments, providing additional passing opportunities and upgrading existing cycle routes. The third investment objective focussed on enhancing the access to social and economic opportunities around the regions and connecting people to markets. Options included improving access to key existing tourist facilities, way finding signage and journey information and establishing gateways near rural townships along the state highway network.

The options were initially grouped into eight categories as shown in Table 17. The full list of initial options is included in **Appendix G**.

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Table 17 Option categories

CATEGORY	TYPE OF OPTIONS
Community	• Upgrade amenity of rural towns • Gateway treatments for rural towns on the state highway
Visitor industry	• Improved of access to key tourism sites • Tourism branding • Development of cultural tourism
Cycling and walking	• Cycle signage • Cycle infrastructure for nationally and regionally significant locations
Roading improvements (including minor and major improvements)	• Passing opportunities • Realignments • Intersection upgrades • Seal widening • Safety improvements • Resilience packages • Wayfinding
Information and technology service	• Driver education programmes • Improved access to driver licensing facilities • Variable speed signage • Mobile phone applications
Other modes	• Re-establishment of rail between Gisborne and Wairoa for resilience to SH2 • Establishment of a port on East Cape • Community transport • Bridle paths on SH35
Economic stimulation	• Investor advice • Small business support packages
Other options	• Rural bus stops and safe schools programme • Increased budget • Vegetation management • Use of state highway as innovation highway

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6.4 Option Assessment

An initial assessment was undertaken for each 'head' criteria including customers, investment objectives, implementability and assessment of effects. A seven-point assessment system was used, ranging from +++ for a strongly positive performance to --- for a strongly negative performance.

The long list of options was assessed against the MCA and each criterion was allocated one score from a seven-point scale as outlined in Table 18.

Table 18 Assessment scoring scale

Rating	Definition	Score	Scale
Significantly positive	Significant positive impact, likely resulting in long term improvements	+3	+++
Moderately positive	Moderate positive impact, which may provide improvements and opportunities	+2	++
Slightly positive	Minor positive impact	+1	+
Neutral	Similar impact to the do-minimum	0	0
Slightly adverse	Minor adverse impact, which can be mitigated or managed	-1	-
Moderately adverse	Moderate adverse impact, that may be managed or mitigated	-2	--
Significantly adverse	Significant adverse impact with serious long-term effects	-3	---

For the assessment of effects section of the MCA the following scoring assumptions have been applied for this PBC as detailed in Table 19.

Table 19 Option MCA principles

Objectives	Headline Categories	Key principles for assessment
Investment objectives	IO1 Safety	Options were evaluated with respect to the scale and likely effect of the safety improvement. At this stage a detailed crash reduction analysis was not undertaken, but engineering judgement was applied by the experienced evaluation team. Cycle options were scored more highly if they removed cyclists from the state highway. Similarly cycle infrastructure for nationally significant routes was scored higher than regional routes. Cycle routes on forestry haulage routes were scored negatively. Passing lanes were scored positively for reducing driver frustration and providing a more forgiving road. Capacity improvements that provided a transformational change e.g 4 lanes were scored more highly than a localised realignment. Rail or coastal shipping for resilience scored a low positive for potentially reducing the number of vehicles on the network. Driver education packages scored positive for addressing driver behaviour and some of the crash trends of alcohol and loss of control crashes.

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	IO2 Resilience	Options that were considered to provide greater resilience were ranked higher. The more network coverage for an option the higher the score e.g four lanes scored higher than individual realignments. Similarly, given the number of environmental hazards such as slips and rock falls that occur in the area, options that were aimed at addressing the key sites such as the ITPP subsidence stabilisation/ resilience packages were scored highly positively. No options were scored negatively.
	IO3 Access	Options that involved improving the existing road network such as seal widening were typically scored a low positive rating whereas more significant infrastructure improvements such as realignments, bridge replacements or intersection improvements were largely scored higher. Significant investment into the Waioeka gorge was allocated a high positive as this area is well-known for resilience issues and regular closures resulting in a loss of economic opportunities. Options to expand the existing HPMV route were also allocated the highest positive score. New cycle trails and improvements to tourist facilities (access, branding and stopping places) were scored positively as it enhanced the tourist offering. No options were scored negatively.
Implementability	Feasibility	An assessment was made with respect to the feasibility to implement an option. Consideration was given to the ease with which resource consents could be obtained and practicality of construction. Options that required land (such as 4 lanes on SH2 and large realignments) were typically scored the lowest. Projects with technical challenges such as musical highways and solar surfaces were also scored negatively. Business as usual activities such as intersections and seal widening were awarded a neutral score or minor negative score.
	Affordability	Cost estimates for individual options were not developed at this stage, although for most of the larger options feasibility cost estimates were available from previous work. Activities which were likely to have a low BCR, or significant costs were typically awarded the lowest scores. Business as usual activities were typically neutral scores.
	Public / stakeholders	An assessment of the likely reaction from external organisations and the wider community to an option was made. This included the public, key stakeholders and freight users. It was acknowledged that options would generate different perspectives from the public. However, there were some options that stakeholder could view negatively, such as artificially forced driver behaviour (e.g variable speed signage)
Assessment of Effects	Safety	Assessed the same as investment objective 1
	Cultural and historical heritage	Where the option had the potential to but no certainty that it would adversely affect a value (as it would depend on the location, extent and nature of the work), it was scored with a – rating.
	Built environment	Built environment has been assessed as per the urban design and landscape criterion of the environment and social responsibility (ESR) screen. The assessment assumed that there would be a neutral impact if an option is designed carefully to avoid negative impact, or positive if the option improved town, communities or streetscapes
	Natural environment	Natural environment is based on the ESR screen. For physical options, a neutral score has been assumed as the base position as it is believed that most of the options should have limited or balanced adverse and positive effects. A graded negative score has been applied to options where there are large physical works (one-way bridges, cycle trails and road expansions). Resilience options have generally been assessed as neutral on the basis that these options may have some negative impact, but this should be avoided or mitigated in design.
	Social	Options that improved accessibility such as capacity improvements, realignments and new cycle trails scored positively. Activities within the road corridor generally were assumed to have a neutral impact.
	System integration	Options that facilitated more efficient freight movements scored positively. In general, most road improvements scored at least minor positive scores due the improvement to the road network. Larger schemes had minor negative scores if they had potential to negatively impact the urban design of their surroundings.
	Economy	Assessed the same as investment objective 3

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The application of the assessment framework to the long list options identified the following key outcomes:

- Generally, the higher cost options had greater benefits, but also greater negative effects.
- The best performing option in the MCA was to provide cycle trail connections near the Gisborne town centre, followed by upgrades to the Jolly Stockman/ SH35 intersection, upgrading SH2 to cater for HPMV to improve freight efficiencies, rural community improvements and intersection upgrades.
- In general, the cycling options performed well when compared with other options due to the attractiveness for tourists and communities, safety improvements and health benefits.
- The transformational change options such as four lanes or 2+1 lanes performed well against the investment objectives but also had very negative implementability and natural environment scores.
- Of the major roading projects, key realignments and intersections performed in the top third of options.
- The economic stimulation options which typically included business support interventions such as seed funding for small businesses and investment advice for primary industry owners showed no noticeable effect on the first two investment objectives (safety and resilience) but overall showed a positive effect for the third investment objective to improve access for social and economic opportunities.
- The visitor industry options were assessed to not have a noticeably positive effect on any of the investment objectives, although these may represent opportunities for combination with an ultimate programme to maximise investment in the corridor at small additional cost.
- The resilience options that considered rail and access to ports performed well against the investment objectives but were assessed lower for implementability.
- The worst performing options were providing a monorail from Wairoa to Gisborne, musical highways along SH2, provision of solar surfaces along SH35 and the provision of a cycle trail from Whatatutu Road to Tauwhareparae. This was predominantly due to incompatibility with the investment objectives.

The conclusion of this option long list assessment is that a wide range of options could address the corridor problems, ranging from operational improvements through to large scale capital intensive interventions. Generally, the assessment has shown that the options which require the greatest investment deliver the most benefits; the better performing options against each of the investment objectives will go forward to the development of programmes for improving the corridor. It is at this stage that the economic efficiency of each of the options will be quantified. It is to be noted that whilst some of the options may have not ranked as highly in the assessments but when combined as part of a holistic response have merit within the PBC programme.

"The sum of the whole is greater than the sum of the parts"

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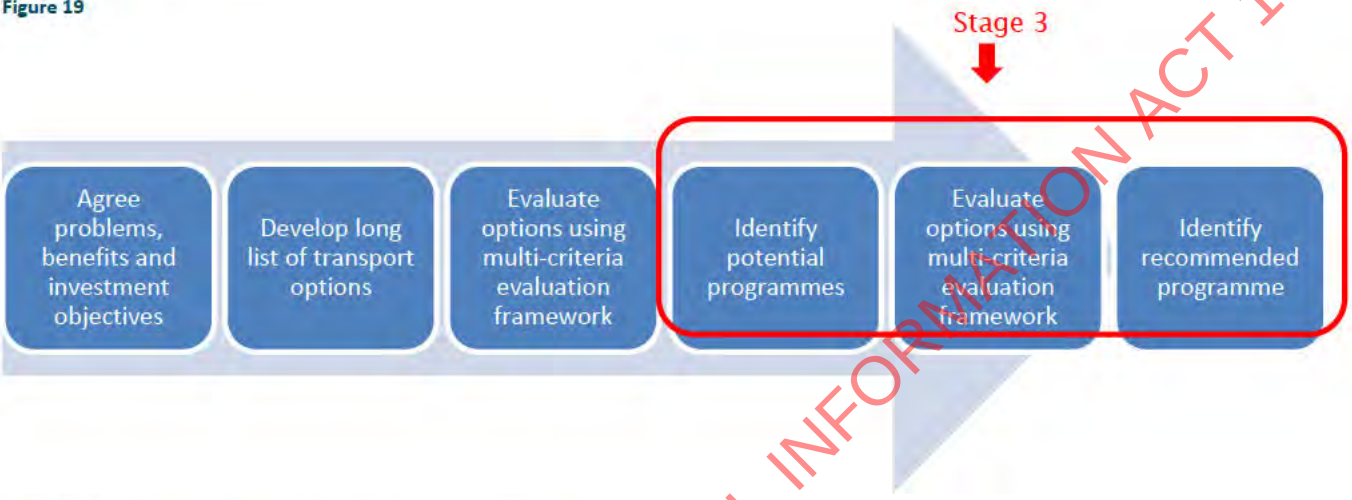
7. PROGRAMME DEVELOPMENT

The final stage in the PBC process was to develop the recommended programme which best addressed the key problems of safety, resilience and access to social, tourism and economic opportunities as shown in Figure 46.

Figure 46 PBC Process – Stage 3

Figure 19



7.1 Development process

The Connecting Tairāwhiti PBC is a programme of works to deliver on the investment objectives of improving safety, resilience and access to social and economic opportunities. The programme is a package of works with a mix of economic development and supporting infrastructure options.

This section summarises how the proposed programmes were developed using a robust and transparent manner. The assessment of long list options against the above criteria and relative scoring between options was a key consideration when developing each programme. Further consideration was given to the performance of packages of options and to the prioritisation of options within these packages. The process of programme development is shown in Figure 47.

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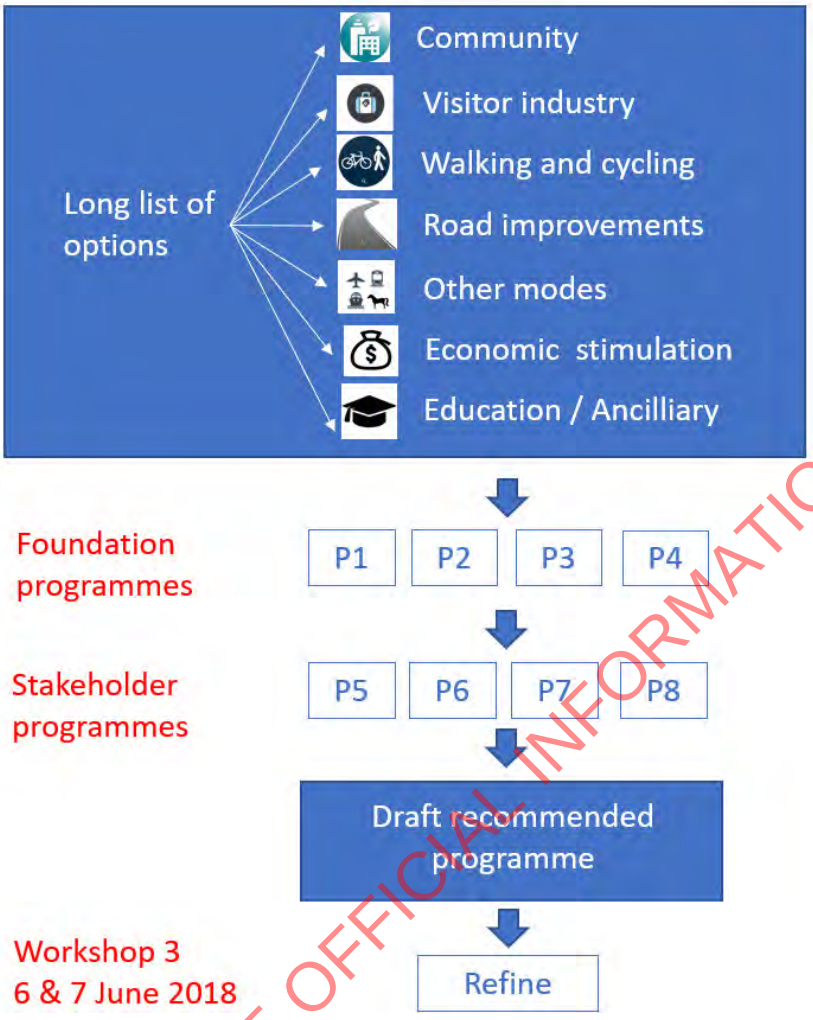
Figure 47 Programme development process



Initially four foundation programmes (P1-P4) were developed. These included:

- P1 – Safety
- P2 – Resilience
- P3 – Economic development (high infrastructure investment scenario)
- P4 – Low cost (low infrastructure investment scenario)

These programmes were assessed using the MCA to establish the effectiveness of each programme. Fundamental to each programme was the incorporation of a range of options from some or all workstreams depending on the focus of the programme. The results of these programmes were presented at the second workshop for stakeholders to review and use as input for the development of stakeholder programmes. At the workshop, there was general agreement that these programmes had individual merits, but overall none of them addressed all the investment objectives.

With the knowledge of how each foundation programme performed with respect to the MCA, stakeholder groups were then asked to develop programmes that best responded to all the investment objectives. Groups were asked to take the best aspects of each foundation programme (as well as any other options that they felt would be appropriate) to create a preferred programme. Using this approach, two further programmes (P5 & P6) were developed:

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- P5 – Stakeholder group 1 – "No more Band-Aids"
- P6 – Stakeholder group 2 – "Connected experiences"

The stakeholder groups both identified that the infrastructure options that provided either four lanes or a 2+1 lane arrangement (which included one lane in each direction and an alternating directional passing lane) from Napier to Ōpōtiki were aspirational infrastructure solutions but could provide transformational change to the region. As the effect of four lanes had already been assessed in P3, a further programme testing the 2+1 lane configuration (P7) was created as a sensitivity to Stakeholder Group 1 Programme (P5):

- P7 – Stakeholder group 1 – "No More Band-Aids & 2+1 road configuration"

As part of this process some additional options were developed, and these were included into the option long list for consideration as part of the new programmes.

After reviewing the output from the stakeholder groups, it was apparent that the stakeholder programmes could be further enhanced to provide additional options. Therefore, a balanced programme was also developed by the project team for consideration:

- P8 – "The enabler"- further enhancement of P6 programme which had the highest MCA ranking

A summary of the key features of the individual programmes is included in Figure 48 and details of each programme are included in **Appendix H**.

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Figure 48 Summary of programmes

Programme		Low investment Medium investment High investment	Community	Visitor Industry	Cycling & Walking	Road network	Alternate modes	Economy	Other	Highlights
Foundation Programmes	P1	Safety								Programme focused on safety options and included infrastructure such as: • Passing lanes • Intersection upgrades • Increased maintenance budget • Cycling infrastructure
	P2	Resilience								Programme focused on resilience: • Realignments • 50max and HPMV • Passing lanes • Intersection and road improvements • Stabilisation and subsidence management • Waioeka Gorge – high intervention
	P3	Economic development								Large scale infrastructure solution with a transformational change • 4 lanes from Napier to Opotiki • Intersection upgrades • 50max and HPMV • Rail between Napier and Gisborne
	P4	Low Cost								• Low cost infrastructure solution: • Cycle signage • Vegetation management • HPMV • Waioeka Gorge low intervention

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Programme		Low investment Medium investment High investment	Community	Visitor Industry	Cycling & Walking	Road network	Alternate modes	Economy	Other	Highlights
Stakeholder Programmes	P5	Stakeholder group 1: "No More Band-aids"								• Valued realignments, seal widening and passing opportunities • Valued rail from Gisborne to Wairoa • HPMV and 50max upgrades • Pacific Coast Highway branding/improvements • Walking and cycling improvements • Aspiration for a 2+ 1 lane arrangement from Opotiki to Napier
	P6	Stakeholder group 2: "Connected Experiences"								• Visitor industry - important to improve access and branding and provide safe roads for when visitors get to the region • Cycling projects including Motu Trail • Seal widening, passing opportunities and rest areas/stopping opportunities • Selected realignments • Speed reductions through small communities • HPMV and 50 max upgrades • Note this group identified a 30-50 year long term aspiration for 4 lanes from Opotiki to Napier
	P7	"No More Band-aids & 2+1 road alignment"								• Sensitivity of P5 with a 2+1 roading alignment
Additional	P8	"The Enabler"								Used P6 as a base then further enhanced this programme with: • Additional road realignments, intersection improvements and passing opportunities • Additional business support and community options • Additional signage options

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7.2 Do minimum programme

A "Do minimum" programme has been developed for this corridor, against which the preferred programmes are assessed. The do minimum was developed through engagement with relevant areas of NZTA and Tairāwhiti Roads.

The do minimum scenario included:

- Business as usual activities such as maintenance as defined in the Asset Management Plans (AMPs) or Network Operation Contracts (NOCs)
- Projects planned by Safe Roads – Wairoa to Bayview

The ITPP activities are largely excluded from the Do minimum as they are yet to be funded.

7.3 Programme assessment

A three-stage programme assessment approach was used as shown in Figure 47. Firstly, the foundation programmes were assessed against the MCA criteria and then the programmes developed in collaboration with the technical stakeholder group were assessed against the same criteria. The third step was the consideration of other factors outside of the MCA. Key principles used in the programme MCA are outlined in Table 20. These are based on the seven-point scale described in Section 6.4 above.

Table 20: Programme Assessment

Criteria	Principles
Customers	Programmes were given a "+++" rating if they would comprehensively address that group. No effect was allocated "0"
Investment objectives	The ratings were given on the overall ability of the programme to address individual objectives. The more balanced the programme, the more even the spread across the investment objectives.
Feasibility	It was assumed all programmes had a base position of a "- "rating compared to the do minimum.
Affordability	BCR of <1 = 0, BCR 1-2 is a "+', BCR 2-3 is "++' and BCR>3 is "+++"
Assessment of effects	Safety – base position is "0" with neutral effect on safety
	Cultural and historical heritage - base position assumed as neutral effect with programmes being implemented sensitively
	Built environment –programmes assumed to generally have at least a minor positive effect "+" on the built environment. It was considered the freight programme (P8) would have a neutral effect.
	Natural environment - it has been assumed that the base position is neutral as it is believed that most of the options should have limited or at least balanced adverse and positive effects.
	Social – it has been assumed that on balance the programmes will at least have a minor positive impact "+"
	System integration – programmes have a base position of neutral effect on transport. Exceptions are P3, P4, P7, P8 with higher proportion of transport related options and a minor positive effect "+"
	Economy –the options have been designed to increase visitor spend therefore it is assumed that the programmes at minimum have a minor positive effect on the economy. Programmes with more comprehensive visitor options have ranked higher in this category.

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7.3.1 Foundation programme assessment

The foundation programmes were developed to best address an individual investment objective, a transformational scenario and a low-cost scenario.

The four foundation programmes included:

- P1: Safety programme
- P2: Resilience programme
- P3: Economic development programme
- P4: Low cost programme

The results of the initial MCA are shown in Figure 49.

Figure 49 Foundation programme MCA

SH2/ SH35 Programme Business Case		PROGRAMMES			
Section					
Option number		P1	P2	P3	P4
Option	DoMin	Safety	Resilience and access to community	Economic development	Low cost improvements
Investment Objectives					
Summary					
Objective 1 - Reduce number of DSI's along SH2 and SH35 by 50% by 2030	0	++	++	+++	+
Objective 2 - Reduce frequency and impact of closures such that there are no full road closures of more than 12 hours with no alternative route	0	+	++	+++	0
Objective 3 - Improve access for economic and social opportunities	0	+	++	+++	+
Feasibility	0	-	-	--	0
Affordability	0	-	-	---	0
Stakeholders/Customers	0	0	0	0	0
Safety	0	++	++	+++	+
Cultural and Historic Heritage	0	0	0	0	0
Built Environment	0	0	-	--	0
Natural Environment	0	-	-	--	0
Social	0	0	-	--	0
System Integration	0	+	0	+	0
Economy	0	+	++	+++	+
Ranking (by subgroup)		3	2	1	4
Average Score	0	5	5	6	4
Cost					
Cost (lower bound) ($M)					
Cost (upper bound) ($M)					
Cost (lower bound NPV 2025) ($M)		$ 164	$ 142	$ 3,413	$ 52
cost (upper bound NPV 2025) ($M)		$ 246	$ 235	$ 5,168	$ 108
Benefits					
Total benefits		$ 130	$ 83	$ 68	$ 21
Transport benefits		$ 130	$ 83	$ 68	$ 21
% of transport benefits					
Wider Economic benefits		$ -	$ -	$ -	$ -
% of Wider economic benefits					
Benefit Cost Ratio					
BCR(lower cost)		0.8	0.6	0.0	0.4
BCR (upper cost)		0.5	0.4	0.0	0.2

Not surprisingly these programmes performed strongly against some criteria, but not so well against others. P4 had the least impact as many of the elements were minor in nature and therefore had the least impact on the environment. As well as having a low impact, P4 also had a low benefit against the investment objectives. P1 performed well against safety investment objectives and P2 performed

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strongly against the resilience criteria. P3 performed well against all investment objectives however, it also had the greatest impact on the environment and cost the most for implementation.

The foundation programmes showed that a low-cost option achieved little and that an economy focussed programme was very expensive to implement. The safety and resilience focussed programmes delivered well against a single objective. The foundation programmes highlighted the need for a combination of the foundation programmes if all outcomes sought from the programme were to be delivered.

7.3.2 Further programme assessment

The foundation programmes P1-P4 and qualitative MCA scoring was presented to the stakeholder group who then developed P5-P7. An additional P8 was developed by the project team to further enhance the highest scoring stakeholder programme incorporating feedback received during the workshop. These additional programmes were all assessed against the same criteria. Interestingly, although developed separately by each stakeholder group, the programmes all show common themes and aim to include a balanced range of options to address all the project objectives. The full programme assessment is included in Figure 50.

Following the assessment of all programmes the top four programmes in the MCA were:

- Programme 7– "No more Band-Aids & 2+1 road alignment" (sensitivity of stakeholder programme)
- Programme 3 – Economic development focussed (foundation programme including 4 lanes from Napier to Ōpōtiki)
- Programme 8 – 'The Enabler' (Project Team post workshop)
- Programme 6 – Connected experiences (Stakeholder programme)

The remaining four programmes did not perform as well as the above programmes as they were either specifically focussed on a single objective (P1 and P2), did not perform well against the investment objectives (P4), or performed slightly worse than a very similar programme (P5).

It is noted that the P5 and P6 stakeholder programmes had many common themes however, the P5 programme also included a test for the re-establishment of rail between Gisborne and Wairoa. The MCA reported lower implementability/feasibility scores for P5 when compared to P6. This is attributed to the uncertainty associated with the rail line with respect to the cost for repairing infrastructure and viability of developing a sustainable, consistent rail demand. It should be noted that a viable rail service to address resilience could remove a modest amount of heavy vehicle trips from the state highway network. However, as this service would not suit all industries, a significant number of heavy vehicle movements would be retained on the network and the recommended programme would still require significant roading improvements. Therefore, the effects of a rail resilience option are essentially independent to the roading programme. Should a rail service be demonstrated to be viable it would be complementary to the roading programme and could provide additional benefits to the overall programme.

Of the top four programmes from an MCA perspective the following conclusions can be drawn:

- P3 and P7 are the two best performing programmes. They deliver best against the investment objectives and whilst they have the greatest impact in achieving these outcomes, overall, they perform the best in an unweighted MCA assessment. Both perform particularly poorly against the affordability criteria however, this is only one criteria in the MCA.
- P6 and P8 perform very similarly, delivering a little less against the investment objectives, but having less impact in achieving the outcomes.

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- P8 performs similarly to P6 in relation to economic viability with a BCR range (transport benefits only) of 0.5-0.8 showing that the additional investment associated with P8 is still returning value for money.

In summary, P7 performs the best in the MCA, which is due to it delivering better outcomes than any other programme.

Figure 50 Programme assessment

SH2/ SH35 Programme Business Case		PROGRAMMES							
Section									
Option number		P1	P2	P3	P4	P5	P6	P7	P8
Option	DoMin	Safety	Resilience and access to community	Economic development	Low cost improvements	Stakeholder group 1 " No More Bandaids"	Stakeholder group 2 "Connected Experiences "	Stakeholder group 1.2 (2+1)	" The Enabler" programme
Investment Objectives									
Summary									
Objective 1 - Reduce number of DSI's along SH2 and SH35 by 50% by 2030	0	++	++	+++	+	++	++	+++	++
Objective 2 - Reduce frequency and impact of closures such that there are no full road closures of more than 12 hours with no alternative route	0	+	++	+++	0	++	++	+++	++
Objective 3 - Improve access for economic and social opportunities	0	+	++	+++	+	++	++	+++	++
Feasibility	0	-	-	--	0	-	-	--	-
Affordability	0	-	-	---	0	-	-	---	-
Stakeholders/Customers	0	0	0	0	0	0	0	0	0
Safety	0	++	++	+++	+	++	++	+++	++
Cultural and Historic Heritage	0	0	0	0	0	0	0	0	0
Built Environment	0	0	-	--	0	-	-	--	-
Natural Environment	0	-	-	--	0	-	-	--	-
Social	0	0	-	--	0	-	-	--	-
System Integration	0	+	0	+	0	+	+	+	+
Economy	0	+	++	+++	+	++	++	+++	++
Ranking (by subgroup)		7	6	2	8	5	3	1	3
Ranking (over whole project list)		7	6	2	8	5	3	1	3
Average Score	0	5	5	6	4	6	6	6	6
Cost									
Cost (lower bound) ($M)									
Cost (upper bound) ($M)									
Cost (lower bound NPV 2025) ($M)		$ 164	$ 142	$ 3,413	$ 52	$ 243	$ 219	$ 1,732	$ 242
cost (upper bound NPV 2025) ($M)		$ 246	$ 235	$ 5,168	$ 108	$ 355	$ 314	$ 3,378	$ 350
Benefits									
Total benefits		$ 130	$ 83	$ 68	$ 21	$ 178	$ 168	$ 73	$ 187
Transport benefits		$ 130	$ 83	$ 68	$ 21	$ 178	$ 168	$ 73	$ 187
% of transport benefits									
Wider Economic benefits		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
% of Wider economic benefits									
Benefit Cost Ratio									
BCR(lower cost)		0.8	0.6	0.0	0.4	0.7	0.8	0.0	0.8
BCR (upper cost)		0.5	0.4	0.0	0.2	0.5	0.5	0.0	0.5

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Comparison of economic efficiencies

Whilst affordability is only one aspect of the criteria, it is an important consideration for the successful implementation of a programme. Figure 51 compares the benefits and costs for each programme against the economic efficiency BCR 1.0. Programmes to the left of the line have a BCR >1.0, so programmes nearing the top left quadrant are considered to deliver the best value for money.

From the sole metric of a BCR, P8 has the highest BCR. P3 and P7 perform well against the investment objectives, however, are incredibility expensive and have very poor BCRs. Figure 52 excludes the poorly performing P3 and P7 to show the remaining programmes in more detail. This shows that P5 and P8 deliver the highest benefits and overall could expect similar benefits.

Figure 51 Comparison of relative economic efficiency

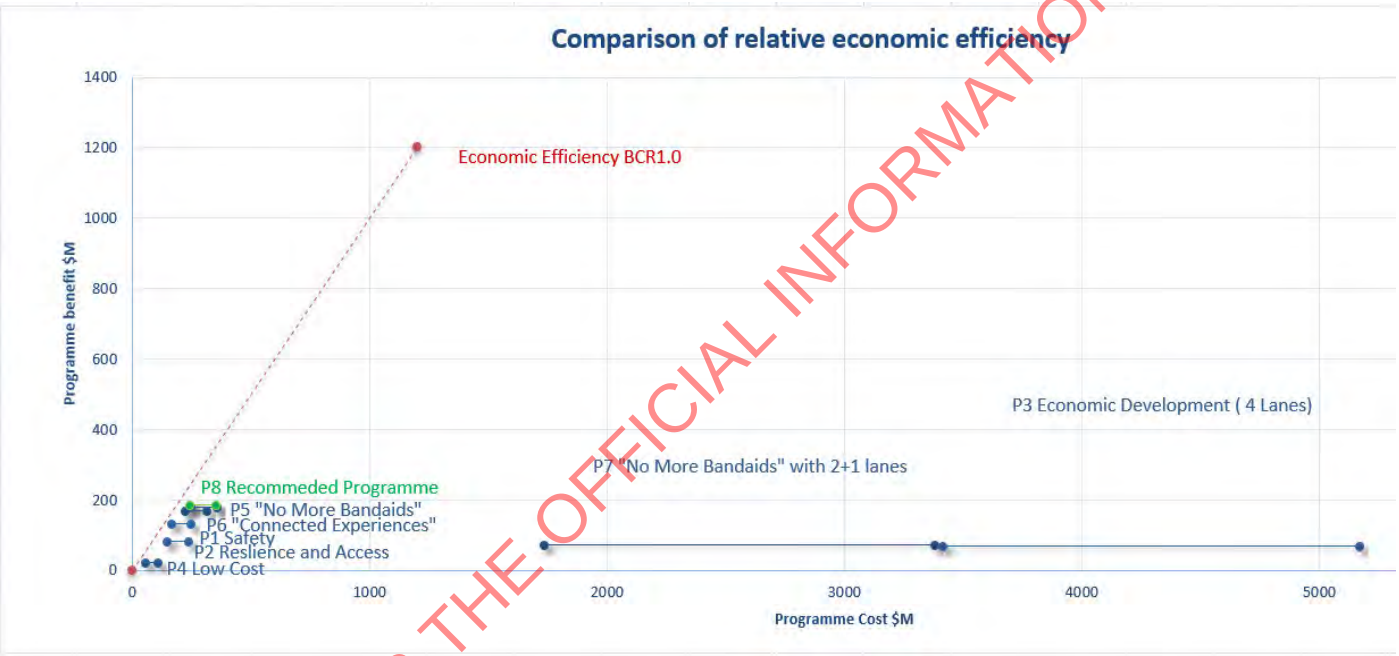
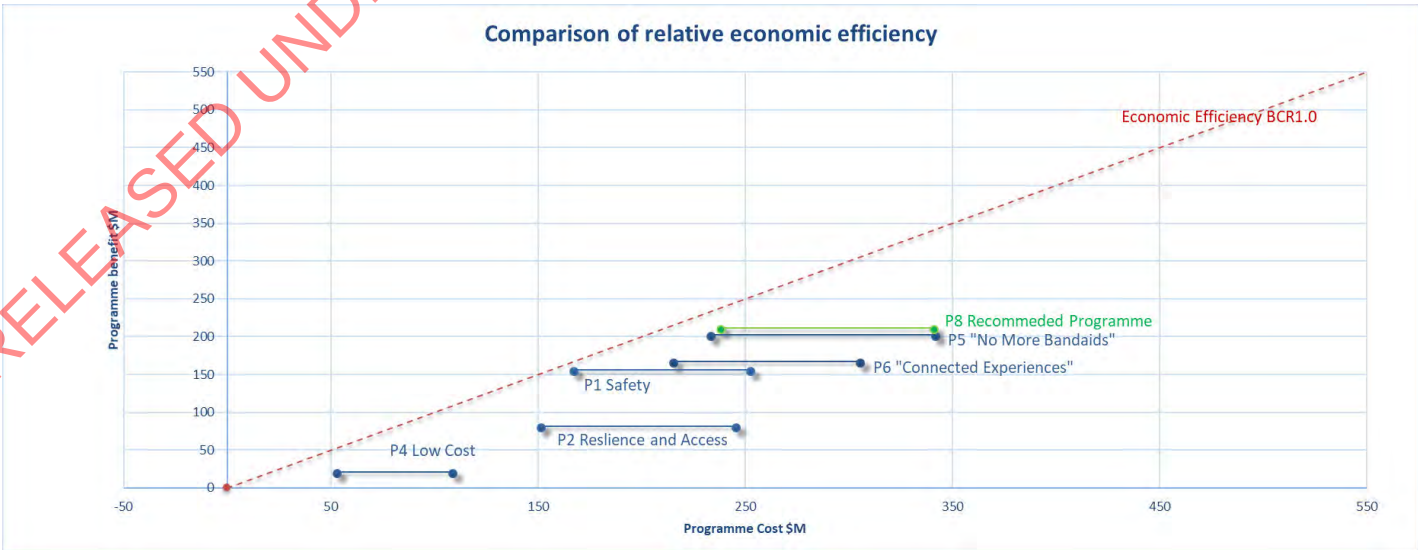


Figure 52 : Comparison of economic performance (zoom in)



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It is noted the PBC programme is likely to attract wider economic benefits due to the improvement to access for the community, tourism and economic development. These benefits would further increase the BCRs of the programmes.

7.4 Sensitivity tests

Sensitivity testing of the MCA was done by doubling the weighting for each of the investment objective and assessment criterion to understand how the rankings may change if one criterion was considered more important than another. The results are summarised in Figure 53 and shows the ranking of 1 (highest) to 8 (lowest) for each of the programmes.

The testing showed that for the top four ranked programmes:

- P3 and P7, the two best performing programmes in the MCA drop to the two worst performing of all eight programmes if affordability is more valued
- Both P3 and P7 also drop outside of the top four when more weighting is given to impacts the natural and built environments
- P6 and P8 performance remain relatively consistent with neither dropping out of the top three ranking for any sensitivity test demonstrating these programmes are stable.

Figure 53 Sensitivity tests

	Safety	Resilience and access to community	Economic development	Low cost improvements	Stakeholder group 1 " No More	Stakeholder group 2 "Connected	Stakeholder group 1.2 (2+1)	" The Enabler" programme
	P1	P2	P3	P4	P5	P6	P7	P8
Sensitivity Testing								
Objective 1 – Reduce number of DSI's along SH2 and SH35 by 50% by 2030	7	6	2	8	5	3	1	3
Objective 2 – Reduce frequency and impact of closures such that there are no full road closures of more than 12 hours with no alternative route	7	6	2	8	5	3	1	3
Objective 3 – Improve access for economic and social opportunities	7	6	2	8	5	3	1	3
Feasibility	8	7	5	6	4	1	3	1
Affordability	4	5	8	1	5	2	7	2
Stakeholders/Customers	7	6	2	8	5	3	1	3
Safety	7	6	2	8	5	3	1	3
Cultural and Historic Heritage	7	6	2	8	5	3	1	3
Built Environment	1	7	8	5	4	2	6	2
Natural Environment	7	6	8	4	3	1	5	1
Social	4	8	7	6	5	2	1	2
System Integration	6	7	2	8	5	3	1	3
Economy	7	6	2	8	5	3	1	3

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7.5 Recommended programme

After completing all the analyses, P8 "The enabler" has been identified as the recommended programme. P8 provides an excellent balance of delivering strongly against the investment objectives and resulting in a moderate impact to achieve the objectives. This is highlighted in the economic performance of the programme, with it being one of the strongest of all the options. It is also consistently one of the top ranked programmes against the investment objectives and provides a balanced response to the problems facing the area.

Whilst other options provided greater outcomes against the investment objectives, they achieved them at a level of cost that provided a very poor return on investment.

P5 performed similarly to P8 however, it performed measurably worse in the implementability and feasibility criteria. This was largely due to the uncertainty about the feasibility and cost of re-opening the rail line from Gisborne to Wairoa. It is therefore recommended that P8 remains the recommended option and further analysis is undertaken on the potential economic benefit of the rail line opening to determine if this warrants further development.

Recommended programme

Programme 8 has been selected as the recommended programme for this business case

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8. RECOMMENDED PROGRAMME

The Connecting Tairāwhiti recommended programme is an investment map which seeks to improve access to social, tourist and economic opportunities. The programme recognises the unique challenges of the terrain and the unforgiving nature of the roads. It identifies the key transport enablers as well as community, visitor industry and economic development options to holistically transform the region's economy. It focuses on keeping the roads open, strengthening the existing freight corridors on SH2 and SH35 and improving local access roads connecting to SH35. Safety is embedded within most options e.g. the resilience works for Waioeka Gorge include safety considerations such as edge protection.

Within the study area, it is evident that the transport network and associated communities are experiencing similar types of problems. So that a holistic transport response could be developed, the approach has been to deliver both the SH35 and SH2 PBCs together, within a single integrated business case. The options for SH2 and SH35 are however shown separately in the following sections. A full list of options in the recommended programme is included in **Appendix I**. The recommended programme has seven cornerstones as shown in Table 21. Collectively they all have an integral role in delivering programme wide benefits

Table 21 Cornerstones of the Recommended Programme

PROGRAMME CORNERSTONE		BENEFIT FOR THE RECOMMENDED PROGRAMME
	Community	These options enhance community access through improvement of rural town amenity, stopping places, signage and gateway treatments.
	Visitor industry	These options enhance the visitor experience to the region through improved access to key attractions, enhanced route branding and the opportunity for development of cultural tourism along the route.
	Cycling and walking	These options focus on improved access to cycling in the region through enhancements of existing facilities and the provision of new facilities to promote recreational and tourist activities. The options address both national and regionally significant facilities and form an important component in tourist offerings.
	Road Network	Fundamentally these options address safety, resilience and access. They seek to: • Keep the road open addressing journey reliability, disruption to businesses and community severance • Improve the quality of the journey through safety improvements, wayfinding, more passing opportunities and road upgrades
	Alternative modes	The programme recognises the importance of community transport options in lieu of public transport alternatives as well as increasing the electric charging stations on the network. Note the PBC scope excludes a case for investment for alternate modes such as rail and ports. It does however consider access to these modes and recognises potential additional opportunities.
	Economic stimulation	These options capture the non-transport stakeholder options that improve access to economic opportunities
	Ancillary	This category captures non-transport options that focus on providing holistic improvements to social or economic opportunities such as education and targeted capital investment

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8.1 Network wide interventions

As part of this programme there are number of network wide interventions which are applicable to both SH2 and SH35. These include:

- Improvement to the amenity of rural towns and gateway treatments for key towns along state highways
- Driver education package with emphasis on truck drivers, cyclists and vulnerable drivers such as tourists and young drivers
- Rural school bus stop and safe school speed package to address our vulnerable road users
- Small business support package to assist the translation of ideas into economic opportunities
- Further development of tourist branding and a "road story" along SH2 and SH35. This includes the opportunity of cultural tourism
- Refinement of a stopping place strategy to provide safe access and appropriate facilities for both visitors and the freight industry
- Ancillary options such as improved access to driver licensing, expansion of the electric vehicle network, vegetation management and options to target wandering stock which is a safety issue on both state highways

8.2 SH2 recommended programme

The SH2 component of the PBC focuses on improving the journey along SH2.

Key features are shown in Figure 54 and include:

- Resilience focus at the Waioeka Gorge to keep the northern inter-regional route open
- Improved cycle facilities to support the existing Motu trail, Rere Falls and within Gisborne
- Comprehensive realignment package between Napier and Gisborne to address some of the challenging terrain
- Comprehensive passing opportunities package along SH2 to address driver frustration due to slower vehicles. Safety benefits are estimated to be between 25%-50% of the total benefits for these types of opportunities
- Completion of HPMV compatibility on SH2 to link the region into the national HPMV network and ensure the movement of freight is as efficient as possible
- Upgrade of the alternate route on Tiniroto Road to be 50max compatible
- Improvement of access to key tourist locations. The exact locations require Māori and stakeholder engagement, but it is envisaged this might include road sealing, seal widening, safety improvements and intersection upgrades

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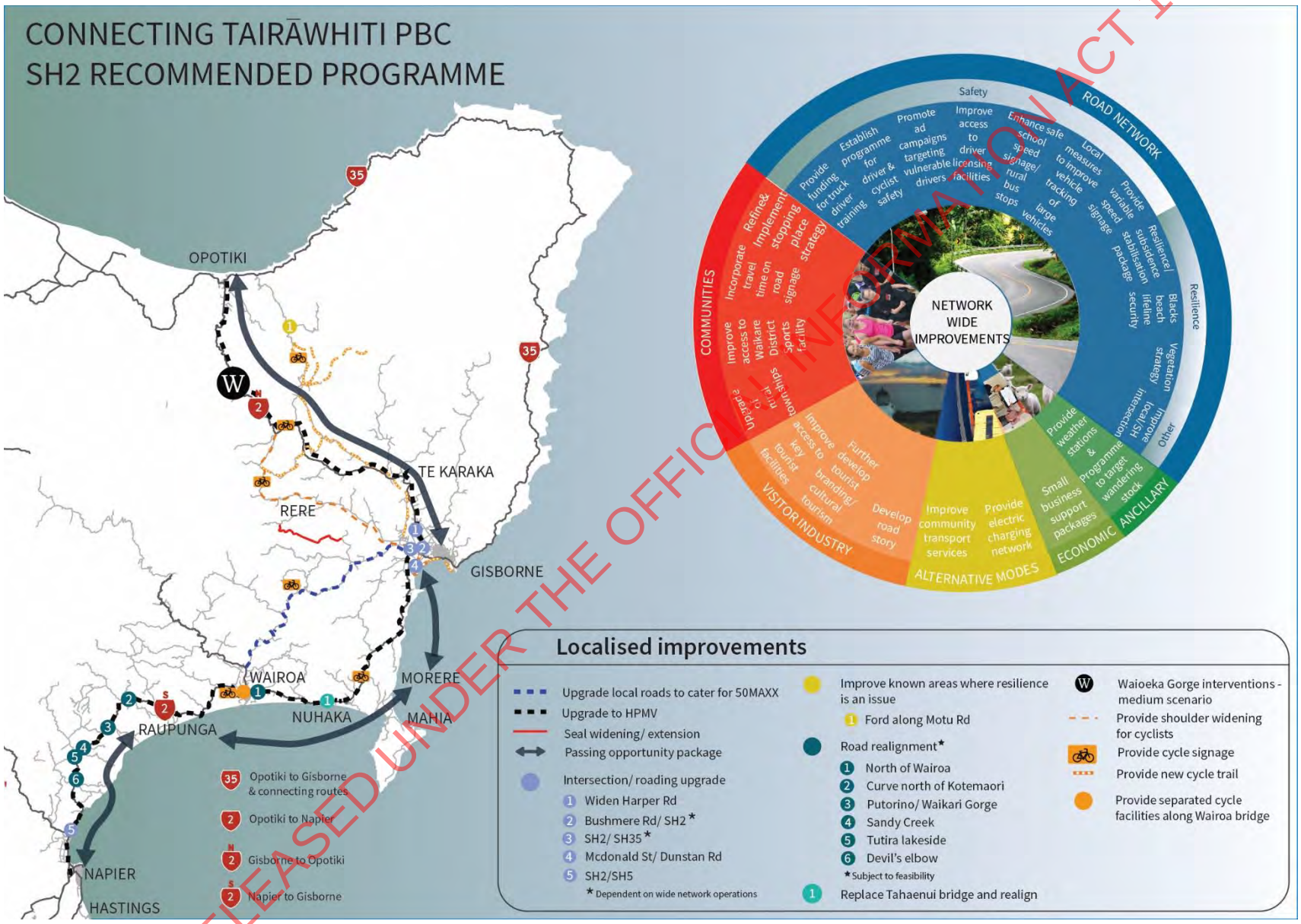
Figure 54 SH2 Recommended Programme



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8.3 SH35 and connecting routes recommended programme

The SH2 component of the PBC focuses on improving the journey along SH35 and its connecting routes.

Key features are shown in Figure 55 and include:

- Comprehensive resilience package to keep SH35 open
- New cycle trail opportunity between Gisborne and Tolaga Bay plus an upgrade to the Motu Road/SH35 cycle crossing
- Upgrade of local access road to cater for 50max to support the forestry industry
- Passing opportunities package for SH35 to increase the ability to safely pass slower vehicles and reduce driver frustration
- Bridge improvements to remove one-way bridges or widen existing bridges
- Intersection upgrades including SH35/Hirini Street and an upgrade to Rakaiatane Road
- Seal widening package between Gisborne and Tolaga Bay
- Improvement of access to key tourist locations. The exact locations require Māori and stakeholder engagement, but it is envisaged this might include road sealing, seal widening, safety improvements and intersection upgrades.

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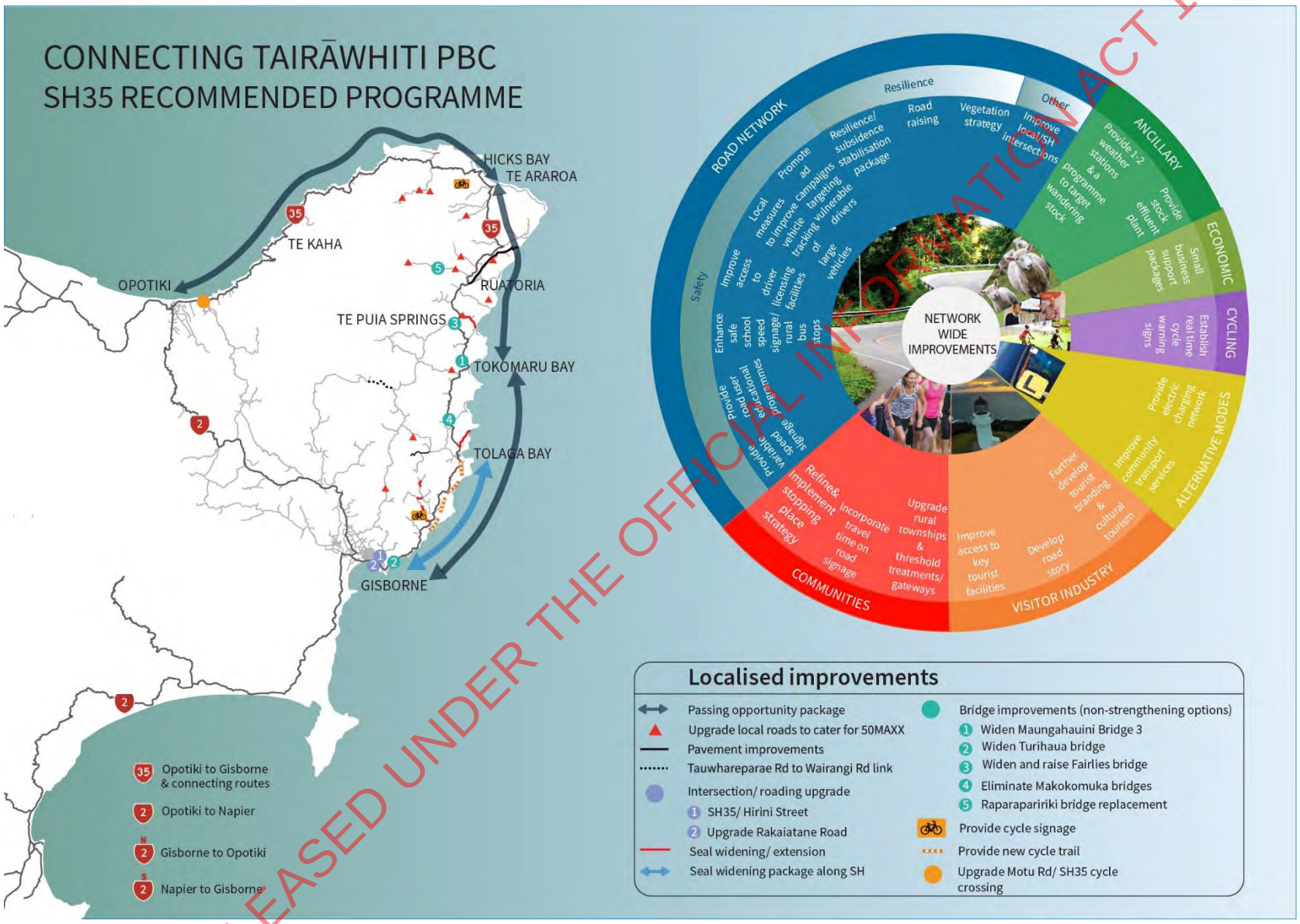
Figure 55 SH35 and connecting routes recommended programme



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8.4 Programme implementation strategy

The programming strategy for the recommended programme was discussed with stakeholders at Workshop 3 (6 & 7 June 2018). As part of this session stakeholders individually completed a prioritisation exercise for the options within the recommended programme. These results were collated to understand the relative weightings. This was used as an input to the programme prioritisation.

The general principles for programming are shown in Table 22. An overarching principle for the entire programme is to agree on the long-term form and function for the state highways in the study area so that future investments (bridge replacements, rehabs, minor improvements etc) can be leveraged to slowly get a consistent form e.g during regular maintenance on SH35 undertake additional incremental work to increase the seal width at that location. As such the key PBC outputs could be included in Asset Management Plans (AMP) and renewal plans.

Table 22 Recommended prioritisation principles

PROGRAMME TIMING	PRIORITISATION PRINCIPLES
Short term <5 years	• Safety projects – including passing opportunities, best performing realignments and intersection upgrades • Resilience projects – focused on corridors with multiple users and providing benefits for the movement of people and goods. Prioritised known resilience sites are increasing the operational risk for business or severance risk to communities • Lifeline projects to benefit vulnerable communities e.g Blacks beach • Projects with significant impact to improve economic opportunity such as HPMV and 50 max packages • Cycling signage and infrastructure which is either associated with the state highway or nationally significant routes • Non-transport options that provide significant potential to improve access to social and economic opportunities. These include community, visitor industry and economic stimulation packages. These are often non-transport solutions and there is no benefit to further delaying their implementation. • Projects that have a BCR>1.0
Medium term 5-10 years	• Projects that have an economic trigger in this medium time range e.g. access roads associated with forest harvests • Second tier roading upgrades – predominately road enhancing options such as realignments • Regionally significant cycling infrastructure • Projects that have a lower BCR than short term activities
Long term >10 years	• Projects that have an economic trigger in the long-term range • Projects with a longer implementation timeframe

It should be noted that these are the suggested priorities based on the level of analysis undertaken to date. As further information is obtained from more detailed investigations, the priorities might require adjustment to reflect funding opportunities, effects of weather events or changes to industry forecasts in the region.

The full prioritised programme of works is shown in **Appendix I**. A summary of the general prioritisation by programme cornerstones is shown in Table 23 below.

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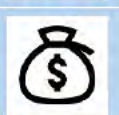
Table 23 General prioritisation of cornerstone categories

PROGRAMME CORNERSTONE		GENERAL PRIORITISATION
	Community	Short term
	Visitor industry	Short term
	Cycling and walking	Short to medium term
	Road Network	Short to medium term. Few long-term options.
	Alternative modes	Short term
	Economic stimulation	Short term
	Ancillary options	Short term

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9. RECOMMENDED PROGRAMME ASSESSMENT

9.1 Programme outcomes

The recommended programme investment outcomes are shown below. Overall the programme achieves the transport objectives.

9.1.1 Investment objective 1 – Safety

Table 24 shows that the recommended programme is expected to achieve in the order of 22% reduction of DSIs by 2030.

Table 24 Programme outcomes - Investment objective 1

INVESTMENT OBJECTIVE		KPI	BASELINE	TARGET	RECOMMENDED PROGRAMME OUTCOME	
1	Reduce numbers of deaths and serious injuries on SH2 and SH35 and connecting routes by 20% by 2030	DSI per annum	26	21 (20% reduction)	20	22% reduction

The recommended programme has addressed the most significant safety concern areas including:

- History of DSI on SH2 from passing/overtaking movements has been addressed through the provision of passing lane packages
- Over representation of alcohol in crashes has been addressed through education projects and community transport

Crashes are spread evenly across the whole study area, but personal risk is increased on SH2 between Napier and Gisborne and on SH35 between Gisborne and Te Araroa. A significant proportion of the proposed programme including road realignments, seal widening, signage improvements and intersection upgrades are focused in these areas. This will provide a safer driving experience for all road users.

9.1.2 Investment Objective 2 – Resilience

Table 25 shows that the proposed programme will reduce the frequency and duration of road closures by half by 2030. Closures related to crashes have been excluded from this assessment as crashes are considered separately under Investment Objective 1.

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Table 25 Programme outcomes - Investment objective 2

Investment objective	KPI	Baseline (excluding crashes)	Target	Recommended programme outcome	% Reduction
Improve the resilience of the road network through provision of alternative routes or reduction of frequency and duration of incidents by half by 2030	Full road closures per year	7	3-4 (50% reduction)	4	44% reduction
	Reduced duration of closure (hours p.a.)	185	93 (50% reduction)	90	52% reduction

Due to the general unstable terrain, resilience issues in the study area are an ongoing issue and can occur anywhere along the network. Resilience mapping reports key hotspots in the Waioeka Gorge, on SH2 between Tutira and Mohaka and along SH35. The recommended programme has therefore targeted resilience options to focus on these known locations. It also includes additional features such as new weather stations to provide more up to date weather information along the network. This will greatly enhance the route security for road users.

9.1.3 Investment objective 3 – Access

This investment objective seeks to improve connectivity and integration of the road network to provide improved access for economic and social opportunities. Access can be measured in several (mostly qualitative) ways and discussion is included in Table 26.

Table 26 Programme outcomes - Investment objective 2

Investment objective	KPI	Recommended programme outcome
Improve connectivity and integration of road network to provide improved access for economic and social opportunities	Improve access for tourists	Analysis has been undertaken to understand the potential effect on tourism should the recommended programme be implemented. Evidence suggests an increase in tourism activity for this package is in the order of a 4% additional contribution to GDP. This equates to an increase of $90M over 40 years. Refer to **Appendix J** for additional information.
	Efficient freight access to markets	The recommended programme includes a comprehensive package to improve the roading network including road realignments, passing lanes, seal widening and resilience measures. This will improve connectivity within the study area. Using an increase in speed and a corresponding decrease in travel time, an average reduction of around 8% travel time could be expected. This would translate to reduced vehicle operating costs which would improve competitiveness and freight access to markets. In the future, the freight impact could be captured through a long-term monitoring study to assess the changes in industry reported travel costs and freight throughput.
	Improve access for communities	Like freight vehicles, the communities will benefit from the introduction of the road network improvement package. The programme has been designed to address some of the key concerns raised in workshops such as access to driver licensing facilities, community transport, safety and more reliable journeys. This effect will be best monitored through customer surveys.

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9.2 Programme risk

The uncertainties established in Section 4.6 have been referenced by the project team throughout the development of the programme to ensure the programme is robust and as flexible as possible to respond to external changes. The key programme risks are highlighted in Table 27.

Table 27: Risk register

Risk	Description	Consequence	Likelihood
Preferred programme is unaffordable	There is a risk that items identified within the programme are considered unaffordable or may not attract NLTP (or other) funding due to lower assessment profile resulting in problems for implementation. The projects range in levels of individual viability. However importantly, the overall PBC programme is achieving a transport BCR of 0.6-0.9 and a BCR of 1.1-1.6 with the inclusion of wider economic impacts. This indicates that an investment programme comprising of these types of solutions will holistically deliver value for money, and some items whilst delivering less benefits still form an integral part to the transport response.	High	Med
Financial risk	Financial risks for delivering the programme are currently considered high as a confirmed funding plan has not been developed by relevant funding parties. There are known local funding constraints which may limit the ability for local government shares to proposed local road improvements. In addition, there are other third-party funding requirements which may not be forthcoming, and the programme benefits are not fully realised. The PBC accepts this risk.	High	High
Stakeholder support	Stakeholders feel the programme does not deliver improvements in the right location or within a timely timeframe. The technical stakeholders have been involved in the development of the programme and the ultimate prioritisation process. Options have been included into the assessment throughout the process. Additional engagement with communities and stakeholders will be undertaken as each individual activity is progressed thus further mitigating this risk.	Med	Med
Delivery risk	Some projects have a limited scope definition at this stage, therefore inherent delivery risks remain in all cases until the specific pre-implementation phase is complete. This is particularly the case for larger, state highway improvements or identified capital investment projects which may require land-take, or potentially affect sites of cultural, heritage or environmental significance.	Med	Med
Costs	The costs have been developed at a high-level and may change following detailed investigation. Costs are presented as a low to high range. Typically, this is a minimum of +/- 30% but for some options with less clarity on scope it could be a larger range. The BCRs are therefore also presented as a range.	Med	Med

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9.3 Programme financial case and value for money

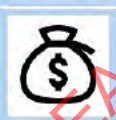
9.3.1 Indicative costs

Costs were developed for each individual option that made up the recommended programme. These individual costs were then combined to give a total cost.

These costs were developed through knowledge of Transport Agency projects and previous costings for similar options and feedback from other stakeholders. All cost estimates are expressed as a range; upper-bound and lower-bound values have been provided. Given the strategic nature of a programme business case, detailed option development has not been undertaken and therefore a cost range best represents the costs at this stage in the programme life cycle.

Table 28 shows the estimated cost per workstream within the programme. Costs have been further split to estimate the contributions for Transport Agency, Councils (all regional and district) and third-party agencies:

Table 28 Summary of costs

Programme Cornerstone		Total Programme cost $M (NPV)	
Cost ($M NPV)		Lower	Upper
	Community	6	13
	Visitor industry	16	23
	Cycling and walking	17	25
	Road Network	213	309
	Alternative modes	1	1
	Economic stimulation	1	2
	Ancillary Options	1	2
TOTAL COSTS		**255**	**375**

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9.3.2 Transport Benefits

This BCR analysis has been based on assumptions appropriate for a programme at this stage, with further benefits envisaged as more detailed analysis is undertaken.

The Economic Evaluation Manual (EEM) assessment is primarily for transport benefits and is based on a 6% discount rate and a 40-year evaluation period. In addition, a consistent assumption of an opening year of five years from programme commencement (2023) has been used to allow comparison between options. This period has been selected as most projects within the programme are relatively small and require shorter time frames for implementation. The opening years can be refined for each option in future stages of the programme once more detailed information about the option and subsequent implementation is known. The benefits for each programme were calculated on a case by case basis following the broad assumptions set out below:

- Safety benefits were calculated by applying a crash reduction factor of between 10 % and 70% depending on the intervention proposed on each section.
- Travel time benefits have been calculated based on estimated reduction in travel time depending on the level of intervention
- Resilience benefits and benefits from upgrading for HPMV's are incorporated into this benefit stream [21]

The recommended programme is shown in Table 29 and is expected to achieve around $**235M NPV transport benefits**. This is the highest score for all programmes tested.

Table 29 Recommended programme transport benefits

SH2/ SH35 Programme Business Case	
Section	
Option number	P8
Option	" The Enabler" programme
Investment Objectives	
Average Score	6
Cost	
Cost (lower bound) ($M)	
Cost (upper bound) ($M)	
Cost (lower bound NPV 2025) ($M)	$ 254
cost (upper bound NPV 2025) ($M)	$ 374
Benefits	
Total benefits	$ 235
Transport benefits	$ 235
% of transport benefits	
Wider Economic benefits	$ -
% of Wider economic benefits	
Benefit Cost Ratio	
BCR(lower cost)	0.9
BCR (upper cost)	0.6

[21] Additional road user benefits from Richard Paling "Gisborne PBC – Assessment of the Wider Economic Impacts of Transport Improvements"

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9.3.3 Wider Economic Impacts (WEI)

General

One of the programme investment objectives for the Connecting Tairāwhiti Programme Business Case (PBC) related to improving access to social and economic opportunities. The recommended programme includes projects to address this problem and is therefore seeking 'transformational' investment to respond to community and economic needs. However, not all the economic benefits associated with this investment are quantifiable through the traditional road user transport benefits identified in the EEM and therefore alternative approaches have been considered to assess these additional benefits.

As part of the development of this PBC an assessment of the **potential** wider economic impacts has been undertaken and the detail is provided in **Appendix J**. This assessment examines the potential economic effects of various accessibility enhancements including the possible impacts on the key sectors of tourism, forestry and horticulture and general improvements to the connectivity of the area.

This report specifically considers three additional groups of benefits:

- Additional road user benefits - resilience and HPMVs. Note this benefit stream has been incorporated into the transport benefit stream in Section 9.3.2
- Wider benefits broadly within the framework set out in the EEM which includes imperfect competition benefits and connectivity benefits
- Other wider economic benefits for which no formal guidelines for assessment exist which includes the impacts on key industries. Note there is currently no endorsed methodology for this scale of assessment of wider economic impacts, so this report considers one approach for quantification.

Recommended programme impacts

This analysis concluded that there could be in the order of **$160M of benefits** (net present value) attributable to the wider economic impacts as outlined in Table 30.

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Table 30 Potential wider economic impacts for the recommended programme

Summary of assessment of wider economic impacts for Recommended Programme ($m NPV)		
Wider benefits assessed	**Total Benefits ($m NPV)**	**Notes**
Imperfect competition benefits	10	5 per cent of conventional economic benefits
Connectivity benefits	40	Benefits from the reduced travel times and improved travel reliability on the main road connections between Gisborne and the rest of New Zealand especially via SH2 south given the larger travel time savings and proximity to the urban centres of Napier and Hastings
Benefits broadly within EEM guidelines	***50***	
Tourism benefits	90	Reflects both the improvements in the accessibility of the area especially from the south combined with several proposals to enhance specific tourist features
Forestry benefits	10	Reflects improved accessibility to the port of Gisborne for road vehicles using SH2 and SH35
Horticulture	10	Reflects the benefits of improved road connections to Napier for exports and for movements to the lower North island via SH2 South and to a lesser extent for movements to the upper North Island by SH2 North. Also includes the benefits to horticulture of making SH2 suitable for HPMVs
Other wider economic impacts for which there are no EEM guidelines	***110***	
Total wider benefits	**160**	

With these wider economic impacts added to the traditional transport benefits the project benefits exceed the costs as shown in Figure 56.

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Figure 56 Combined benefit stream for recommended programme

SH2/ SH35 Programme Business Case		
Section		
Option number		P8
Option	DoMin	" The Enabler" programme
Investment Objectives		
Cost		
Cost (lower bound) ($M)		
Cost (upper bound) ($M)		
Cost (lower bound NPV 2025) ($M)		$ 254
cost (upper bound NPV 2025) ($M)		$ 374
Benefits		
Total benefits		$ 395
Transport benefits		$ 235
% of transport benefits		
Wider Economic benefits		$ 160
% of Wider economic benefits		
Benefit Cost Ratio		
BCR(lower cost)		1.6
BCR (upper cost)		1.1

Other opportunities that could complement the recommended programme

The wider economic impacts identified that there is potential for positive economic impacts as investment in other modes in response to the resilience problem (such as coastal shipping and rail). Further, more detailed analysis is required to understand the costs associated with achieving these benefits and to enhance the robustness of the potential benefits which is outside of the current scope. This PBC has not explored this further, however recognises this as an opportunity for others to explore further. Importantly the recommended PBC programme has considered these impacts and would complement further investment in these other modes if a case for investment was made.

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9.3.4 BCR analysis

A BCR range has been estimated for the recommended programme. Three BCR scenarios have been presented in Table 31.

Table 31 Recommended programme BCR

Scenario	Costs	Benefit Stream	Cost range ($M NPV)	BCR Range
1	Roading costs associated with projects that have a transport EEM benefit	Transport benefits (EEM) $235M[22]	$170-240	1.0 - 1.4
2	Full recommended programme costs	Transport benefits (EEM) $235M	$255 – $375	0.6 - 0.9
3	Full recommended programme costs	Transport + wider economic impacts $395M	$255 – $375	1.1 - 1.6

Scenario 1 determines a BCR for the transport projects within the programme that have traditional road user EEM benefits. This is therefore a subset of the full recommended programme and has a BCR of 1.0-1.4 indicating that the benefit of these traditional transport schemes is broadly proportional to the investment required.

Scenario 1 BCR does not however account for the remaining projects within the recommended programme which are considered an integral part of the programme response to the identified safety, resilience and access problems. Therefore Scenario 2 includes the full costs of the recommended programme and the transport EEM benefits. As expected this returns a lower BCR of 0.6-0.9 due to the increased costs.

However, as indicated in previous sections, there are additional benefits associated with all projects in the programme which can be captured through the wider economic impact assessment. This was measured using an alternative method to the EEM benefits and captures additional benefits such as improved connectivity and potential growth to the economic sector. Scenario 3 calculates the BCR based on the total recommended programme costs and the total benefit stream consisting of transport and wider economic impacts. This results in an estimated BCR of 1.1-1.6 and provides a holistic view of the benefits that the programme could achieve.

The comparison of the economic efficiency of the full recommended programme with and without the inclusion of wider economic impacts is shown in Figure 57 (Scenario 2 and 3). Note Scenario 1 is not included in this graph as it does not include the full list of projects included in the programme and is not directly comparable.

[22] These transport benefits include the traditional EEM assessment benefits as well as Resilience and HPMV assessment.

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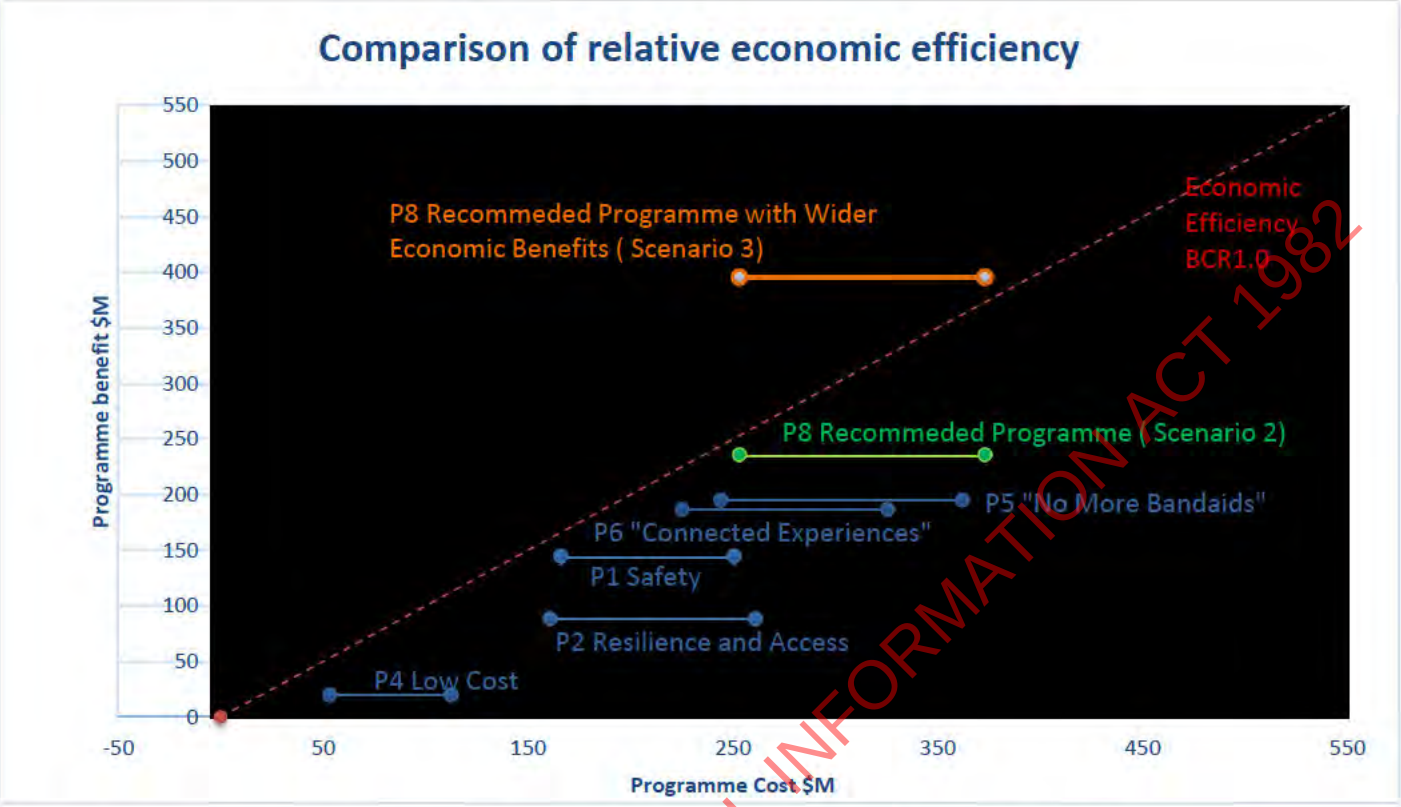
Figure 57 Economic efficiency of the recommended programme



The analysis shows the benefits could potentially double with the inclusion of the wider economic impacts resulting in the recommended programme balancing the cost of achieving the investment outcomes. As a key objective is to improve the access to social, tourism and economic opportunities it is important to consider the overall BCR for the programme to ensure the full customer benefits are captured along the key journeys.

9.3.5 Affordability

The recommended programme is expected to achieve an overall BCR of 1.1-1.6 including wider economic impacts which includes improved connectivity for communities and primary industries. This indicates that the programme's benefits are likely to exceed the costs for implementation. However, it should be noted that this programme is to be implemented in a constrained funding environment and a detailed funding plan has not been developed. Therefore, the affordability cannot be confirmed until an agreement on funding sources and contributions has been agreed between partners.

9.4 Sensitivity analysis

In addition, four other scenarios were tested to determine the sensitivity of the recommended programme. These included:

- A discount rate of 4% (this project used a discount factor of 6%)
- A discount rate of 8%
- Implementation by 2026 (additional four years construction period)
- The Gisborne to Napier rail in operation

The costs, benefits and associated BCRs for each scenario are provided in Table 32 below.

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Table 32 Sensitivity analysis

	Benefits	Benefits + WEBS	Lower bound cost	Upper-bound cost	Lower bound BCR (EEM)	Upper bound BCR (EEM)	Lower Bound BCR (including WEI)	Upper bound BCR (including WEI)
Base	187	397	247	367	0.6	0.9	1.1	1.6
Discount rate 4%	191	402	253	375	0.6	0.9	1.1	1.6
Discount rate 8%	184	394	240	355	0.6	0.9	1.1	1.6
Implementation by 2026 (four- year construction period)	182	392	216	321	0.6	0.8	1.2	1.8
Napier to Gisborne Rail line - reduction in traffic	177	387	247	367	0.5	0.7	1.1	1.6

A change in the discount factor has a direct impact on the NPV cost and benefit of the programme. With a higher discount factor of 8%, the cost of the programme increased to $241mil (lower bound) and $359mil (upper bound), with the reverse occurring using a lower discount factor (4%). This resulted in no change to the BCR.

A delay to the implementation of the programme was also tested by adding an additional four-year construction period. This resulted in a decrease in benefits as these are not realised until the implementation period is completed. At the same time the NPV cost of the project was reduced. Overall, this resulted in an increase of the BCR to 1.4 – 2.1 which is a little higher than the current programme BCR of 1.1 – 1.6. This does not significantly change the affordability of the programme.

Finally, rail as a resilience option has been raised in various stakeholder discussions therefore a sensitivity test has been undertaken to assess the effect that rail could have on this programme with respect to the reduction of traffic. This sensitivity test has assumed a full freight service from Napier to Gisborne. Using estimates from KiwiRail we have approximated the annual freight movements to be at a peak of 600,000 tonnes per year. This equates to approximately 65 trucks per day or 8% of existing average annual daily heavy traffic volumes. As such, benefits of projects relating to this section of the route have been reduced by 8% to determine the overall benefit of this programme if the Gisborne to Napier freight rail service was open. As shown in Table 32 above, the reduction of traffic from the completion of the freight rail link has minimal impact on this programme.

The results of the sensitivity tests indicate that the BCR of this programme remained constant if these factors were in place.

9.5 Assessment profile

This PBC has been assessed against the Investment Assessment Framework (IAF) 2018-2021 as this programme will be substantially delivered into 2018-2021. It has been assessed in conjunction with the GPS 2018/19-2027/28.

9.5.1 Results alignment

This PBC contains a wide range of options to form a holistic programme to address the identified problems of safety, resilience and access. As such it has been assessed against the regional, local road and state highway improvement category in discussion with the NZTA Design Practice Solution

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team. Table 33 details the assessment of the alignment of the PBC to the GPS and overall shows that the Connecting Tairāwhiti PBC has a high alignment.

Table 33 Results alignment for Connecting Tairāwhiti PBC

STRATEGIC PRIORITY	DISCUSSION	ASSESSMENT
Safety – a safe transport system free of death and serious injury	Safety is a key issue for customers on the SH2 and SH35 networks. The programme includes a wide range of activities to address the risk of personal safety. These activities have been selected as part of the programme as they directly address issues for vulnerable users (e.g. cyclists), crash factors (e.g. type of crash or alcohol) or address specific locations where the personal risk is high. Activities include: • Intersection upgrades at key locations • Realignments at six hot spot locations on SH2 • Heavy vehicle route improvements • Driver training programmes (general and heavy vehicle) • Real time cyclist warning signs at SH35 pinch points • Shoulder widening and new off-road trail for cyclists who have a high representation in the crash statistics for this study area • Safe school speeds and rural bus stop upgrade for pedestrians on the connecting routes of SH35 • Widening of a few bridges along the network to better accommodate heavy vehicles	High
A land transport system that provides increased access to economic and social opportunities, increased transport choice and is resilient. Thriving regions	The Tairāwhiti region has been identified as a REDs area. The PBC is a direct response to the Tairāwhiti Economic Action Plan which seeks to enable economic development through improvement of the SH2 and SH35 roading network. The underlying premise of this PBC is therefore to improve access to social and economic opportunities and improve regional economic development. The programme achieves: • Significant resilience improvements in key areas such as SH35 and Waioeka Gorge to keep the roads open • Addresses the unforgiving road between Napier and Gisborne with a significant package of realignments and passing opportunities therefore improving intra-regional and inter-regional access • Provision of package of improvements to address the resilience of the Waioeka Gorge thus improving links to the north of the study area • Comprehensive HPMV measures on SH2 and 50 max programmes on SH35 and Tiniroto Road to allow higher efficiency in the movement of freight along the key road networks. This improves access for the forestry industry in particular • Improved access to key tourist destinations thus improving access for both tourists and locals to enjoy the outstanding natural offerings of the region • Improved intersection performance to better utilise freight corridors • Cycling package to improve signage, make journeys on the State Highways safer and provide alternative off-road access.	High

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	• Education package for drivers, truck drivers and cyclists to improve the sharing of the road • Community access improvements such as township amenity upgrades, improved community transport and gateway treatments • Small business support such as seed funding and investment advice to support economic growth.	
Environment – reduce greenhouse gas emissions, as well as adverse effects on the local environment and public health	The PBC includes a comprehensive walking and cycling package which aims to increase the provision of both urban and tourist cycle facilities within the study area which aligns with the Government's aim to improve public health and reduce emissions. The activities within the programme also include a vegetation strategy incorporating the use of vegetation for dewatering to help resilience issues on SH35 and re-vegetation along the edge of sections of SH35 to assist with the retention of soil. This clearly aligns with the aim to reduce local environment effects. The programme also supports the expansion of electric charging sites within the study area. Finally, as the size of the geographical area results in challenges for providing a fixed public transport option, the programme promotes the expansion of community transport schemes to provide additional mobility options for smaller communities to access the services they require.	Med
	OVERALL ASSESSMENT	**High**

9.5.2 Cost benefit appraisal

The programme reports the following benefits as shown in Table 34.

Table 34 Recommended programme BCR

Scenario	Costs	Benefit Stream	Cost range ($M NPV)	BCR Range
1	Roading costs associated with projects that have a transport EEM benefit	Transport benefits (EEM) $235M[23]	$170-240	1.0-1.4
2	Full recommended programme costs	Transport benefits (EEM) $235M	$255 – $375	0.6-0.9
3	Full recommended programme costs	Transport + wider economic impacts $395M	$255 – $375	1.1-1.6

This programme is primarily about improving access for community, tourism and economic opportunities. As such the application of wider economic impacts is very relevant as it allows the

[23] Transport benefits include the traditional EEM assessment benefits as well as additional road user benefits of resilience and HPMV assessment.

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inclusion of potential economic impacts associated with the accessibility enhancements. It considers the potential impacts on several industries including tourism, forestry and horticulture. Therefore, the full benefit stream of BCR 1.1-1.6 has been used for this assessment profile.

9.5.3 Prioritisation for improvement activities

The IAF has determined a prioritisation profile as shown in Table 35 below. With a results alignment of high and a cost-benefit appraisal of Low (BCR1-2.9), this PBC is likely to be a **Priority order 5.**

Table 35 IAF Prioritisation for improvement activities

RESULTS ALIGNMENT	COST- BENEFIT APPRAISAL	PRIORITY ORDER
Very high	L/M/H/VH	1
L/M/H	Very high (BCR 10+)	2
High	High (BCR 5-9.9)	3
High	Medium (BCR 3-4.9)	4
Medium	High (BCR 5-9.9)	4
High	Low (BCR 1-2.9)	5
Medium	Medium (BCR 3-4.9)	5
Medium	Low (BCR 1-2.9)	6
Low	High (BCR 5-9.9)	7
Low	Medium (BCR 3-4.9)	8
Low	Low (BCR 1-2.9)	Exclude

9.5.4 Funding

The Connecting Tairawhiti Programme is aligning to a priority 5 which means it is eligible to be included in the National Land Transport Plan. Because of the size, complexity and range of opportunities, an individual assessment of each activity, along with discussions with funding partners will need to be undertaken before funding requests are made.

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PART C DELIVERING AND MONITORING THE PROGRAMME

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10. MANAGEMENT CASE

The Connecting Tairāwhiti PBC has identified a comprehensive programme of improvements for SH2, SH35 and its connecting roads to address key problems associated with safety, resilience and access for community, tourism and economic opportunities. This section of the report outlines the proposed next steps and approach for delivering projects identified in the business case.

It is intended that this PBC is an investment map for the region and that the projects will holistically provide a response to the identified problems. Some projects will individually perform well economically, and others will have a low individual economic benefit. However, their value should not be underestimated as they still form an integral part of the overall programme.

This PBC by nature is a snapshot in time- however, it is intended that the programme is "live" and as such the projects have been deliberately packaged to allow types of measures to be delivered as a "best fit" for the network. An example of this is the realignments package which has an associated cost for infrastructure improvements. Priority realignment areas have been identified by the stakeholders and these are reflected as specific options within this PBC. It is intended that each of these realignments would go through to an Indicative Business Case (IBC) or Detailed Business Case (DBC) for further investigation. As part of this process specific community and Māori engagement would take place and other alternatives would be explored at these locations to ensure the solution is the best fit for the network. It is possible that this process could identify that one of these locations is not feasible for realignments. It is however considered that the overall total level of investment in realignments is still warranted for the network so at this stage it is expected that other potential realignment locations would be explored; effectively becoming the next priorities on the list.

Ultimately, the realisation of benefits of this programme will result from the coordinated implementation of options from all workstreams.

10.1 Programme governance and reporting

The PBC has identified a range of activities for implementation, both on the local road network and regional state highways, and the collaborative approach undertaken through the PBC provides an integrated and cohesive approach to delivering transportation improvements within the region.

This is a strategic study focussed on improving safety, resilience and access for over 2220km of road network. It is expected that implementation of the projects resulting from the PBC will be delivered via a range of management and governance structures depending on the location, scale and organisational responsibility of each.

Like other projects within the Tairāwhiti Economic action plan, some projects will be led by central government, some will be driven by local government and some could be led by Māori. Some could be privately run, either by business or by not-for-profit organisations. However, what brings the projects together is that they all meet the criteria identified in this study as being important drivers to support improvements in the region's economy.

Many of the proposed options are considered business as usual for both NZTA and Tairāwhiti Roads, however funding will still need to be secured. For many of the roading projects these will need to be included on appropriate RLTP funding programmes. It is anticipated that each workstream will be scoped in further detail by the appropriate partners to develop the work programme. In the case of the townships, other transport modes and visitor industry projects the key first step will be the development of an implementation plan to confirm owners and regional priorities.

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10.1.1 Local road improvements

Elements of the recommended programme relating to local roads fall under the responsibility of the relevant road controlling authority (i.e. Tairāwhiti Roads). In some cases, due to the specific location or the potential engineering or operation solution, a joint approach may be required involving more than one agency. In such cases, specific governance arrangement will be required at the time.

Many interventions included in the recommended programme are already included in the Tairāwhiti region Asset Management Plan or are currently under investigation by relevant road controlling authorities (i.e. Eastland Port Access), whether in planning or implementation phase. Responsibility for delivering these interventions should rest with the governance arrangements already in place for these projects.

10.1.2 State Highway network

Identified interventions on the State Highway will require further definition and assessment through the development of a single stage indicative/detailed business case. Responsibility for progressing activities will rest with the Transport Agency.

10.1.3 Non-infrastructure projects

As this PBC is ultimately seeking to improve economic performance in the region, there are some projects included that are outside the core business of the Transport Agency. Suggested owners have been provided in the option list in **Appendix I**. However, these will need to be confirmed and plans implemented to ensure timely progress.

Examples of alternative or partnering project owners might include Māori partners, Ministry of Business, Innovation and Employment (MBIE), Regional Tourism Office (RTO), Ministry of Education (MoE) and Department of Conservation (DoC).

10.2 Proposed direction for financial, management and commercial plans

Due to the complexity and range of projects, this PBC itself will not deliver a financial or operation plan. These will need to be worked through by the respective project owners on a case by case basis to support funding applications.

However, some key considerations for these plans are detailed in Table 36.

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Table 36 Key considerations for delivering the PBC

CONSIDERATION	DISCUSSION
Financial plan	This is the mechanism for funding projects. A large part of the PBC will be suitable for traditional funding paths such as the NLTF. Due to the regional economic considerations of this PBC it is likely that some projects might qualify for alternate government funding e.g stimulus or growth funding or MBIE Tourist Infrastructure Fund (TIF). Additional funding sources to be investigated could include: • Māori partnerships • DoC community fund • Te Puni Kōkiri Moving the Māori Nation fund • Council community funds
Co-funding prospects	Some projects might best be delivered as partnerships. Other elements for consideration are opportunities that might attract co-funding. This may speed up project delivery as if external contributions are forthcoming then NZ Transport Agency will generally prioritise their funding assistance rate (FAR) rated cost share.
Operations	An issue frequently raised by stakeholders is the ability for the region to afford to maintain what is built. The management plans will need to carefully consider how a project would be funded through its lifetime. Projects need to seek out operational opportunities such as handing the maintenance of local asset over to the customers for a period. Some of the proposed resilience activities may alter the focus or extent of existing maintenance activities within the region. For example, investing in capital resilience improvements will reduce the cost of reactive maintenance (i.e. clearing slips) which allows current funds to be allocated to other/new maintenance activities.
Asset management plans	It is noted that some of the ITPP projects included in this programme will likely be integrated into future local AMP e.g. the Tairāwhiti Roads AMP.

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10.3 Programme performance and review

Monitoring of the network forms a critical element of determining the efficacy of improvements against the investment objectives. The investment objectives identified through this PBC have been developed in such a manner that they can be attributed to investment within the network and can be assessed and monitored over the lifetime of the investment period.

Monitoring of the programme will be managed by the Transport Agency but could involve reporting through to the Regional Advisory Group and Regional Land Transport Committee. It is important that the data sources outlined in Table 37 are retained into the future for consistency and trend analysis.

Table 37 Programme performance data requirements

DATA ITEM	REQUIREMENT
Crash data	The Crash Analysis System (CAS) includes information on crashes as reported to the Transport Agency by NZ Police. This provides information on DSI crashes. Note there is anecdotal evidence with respect to under reporting of crashes, particularly with respect to truck roll overs. This is an issue to be considered by Tairāwhiti Roads and the Transport Agency going forward.
Traffic count data	The Transport Agency and the local authorities collect a significant amount of traffic count data across the State Highway road network. Annual reporting of traffic count data on the State Highway network is currently undertaken and published by the NZTA, although this could be undertaken at more regular intervals on key routes to monitor changes in network conditions (i.e. commercial traffic) developing from economic activity within the region.
Travel time data	The Transport Agency regularly collects travel time data (TomTom) across the State Highway network. This has been used as a baseline for network performance within the relevant State Highway Corridor Management Plans. It is important that this is retained and analysed on a quarterly basis to understand how travel time is changing on key journeys
Route closure data	The NZTA TREIS database provides data on the frequency and duration of unplanned road closures across the regional road network (including local and regional routes). The effectiveness of proposed resilience improvements in the road network (preventative maintenance projects) can be measured through frequency and duration of closures pre- and post-implementation
Network condition	Surveys undertaken by the Transport Agency in September 2017 provide baseline data on local road conditions (Level of Service) and alignment to the "One Network Road Classification". Road network conditions should be reviewed on a regular basis, particularly on routes with key logging demands, to determine changes in Levels of Service and road surface condition within the road network compared with baseline data. Information on State Highway surface conditions are regularly undertaken through existing maintenance contracts. This provides a measurable and consistent approach to monitoring network conditions over the period of the PBC
Customer satisfaction	Surveys of customer satisfaction are regularly undertaken and monitored by the Transport Agency. These have been used as a baseline for of network performance for road condition within the region. It is important that relevant data relating to road conditions is retained and analysed on a quarterly basis to understand how customers are responding to ongoing changes and investment to improving road surface conditions within the network. It is important for this study that the survey also considers the wider issue of access and is not just confined to road condition.
Industry reported travel costs	Ad-hoc data has been collected to date, primarily from freight groups. A formalised process would be beneficial to the programme.
Increase in visitor number/nights	Monthly Regional Tourism Estimates (MRTEs) are available through the MBIE website.

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10.4 Stakeholder engagement and communications plan

10.4.1 Future Māori engagement

Ko te kaupapa pakihi o te Connecting Tairāwhiti te wāhanga tuatahi o te tukanga nei, ā, mā nga tūtohutanga e tautuhi ai ngā tūmomo whiringa torowhānui e whai painga ai te rohe whānui tonu. Ko te whakatūtaki Māori te pūtake kia tutuki te PBC. Kāore anō kia tinana ngā whakatūtaki tae noa mai ki nāianei, heoi anō, ka kōrerorero tahi mātau ko ngā Pouahurea Māori tokorima kia whakatakoto te huarahi mō tētahi rautaki a mua. Ko te pūtake o te whakatūtaki Māori he mea arotau, he mea reretahi mai i te tīmatatanga o te tukanga kia whanaketia ai, rangapū mai, te otinga. Ko te āhua o te whakatūtaki Māori he mea arotau, he mea ū hoki kia āta kōrerorero tae atu ki te tautuhi putanga, te tautuhi putanga mea angitu mō te hoahoarua, pitomata hoki mō te whakangaorua. He tukanga hangahanga te manakotanga kia hua ai te whakatūtaki Māori mō te tukanga kia whakauruurutia ai, ā, ka tino ari ki a ngāi Māori ki ngā kaupapa e puta mai ana.

The Connecting Tairāwhiti programme business case is the first stage in this process and the recommended programme will identify the type of options that could holistically provide benefits for the region. Māori engagement is fundamental to the success of the PBC. No significant engagement has been undertaken to date, however consultation with five council Māori Relationship Managers has informed the development of a future engagement strategy. The premise of Māori engagement is that it is meaningful, coordinated and at the beginning of the process so that the solution can be developed in partnership. This will allow full discussions including the identification of outcomes, co-design opportunities and potential for co-investment. A structured process is preferred to ensure that Māori engagement for the programme is integrated and Māori have visibility of the projects coming on line.

E whai ake nei ko te tukanga te whakatūtaki Māori a muri e marohitia ana:

- He kōrero whakataki ki ngā kaiārahi Māori hei tuku i tētahi pūrongo o te PBC nei, ā, kia tino ari i ngā tukanga ka whai ake.
- Mō ia kaupapa hou, i te wā o te whakarite kaupapa, ka tautuhihia ngā rōpū Māori tika, ā, ka mahia tētahi mahere kia hua ai te kōrerorero tōmua. Ko te korahi o te whakatūtakitanga nei ka whakaaroarotia mō tēnā kaupapa, mō tēnā kaupapa i a hua ai ka hangai pū te kaupapa, pai ake pea te whakatūtakitanga whai aro i te whakatūtakitanga ā rōpū.
- Mā te Kotahi Waka e rapu huarahi te whakatūtakitanga, kia tikanga te reretahi karawhiu, kia riterite tono ai ki a ngāi Māori, ko ngā kaimahi, ko te whakapaunga wā hoki.

The proposed future Māori engagement process is therefore:

- Preliminary discussions with identified Māori leaders to provide a briefing of this PBC and to provide visibility of the next steps.
- For each new project, during the project set up, the appropriate Māori groups will be identified, and a plan implemented to ensure early conversations are held. The scale of this engagement will be considered on a case by case basis to ensure it best fits the project e.g. personal engagement on a specific project may be preferable over large sessions.
- The Transport Agency will seek to engage in a coordinated manner, so Māori have consistency with personnel and demands on their time.

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10.4.2 General engagement

The PBC has been developed through a Programme Business Case approach to ensure effective and efficient engagement with key investment partners and stakeholders within the region. This has allowed the project team to gain a greater insight into the key problems, constraints, interdependencies and drivers for businesses and communities with the region, and to identify potential improvements that support the needs of the region.

The geographic breadth of this PBC means there are many stakeholders. At a programme-wide level, stakeholders are also likely to be problem owners, for example road controlling authorities as well as major infrastructure operators. As this PBC progresses through various delivery schemes, a detailed plan to coordinate engagement should be developed. Specific engagement plans should be developed as part of detailed business case or another implementation mechanism.

The Stakeholder Engagement and Communications Plan developed for this PBC will form a basis for future communications. Utilising the same key stakeholders will provide continuity and coherence between work completed to date and future work streams. It will also help continue to keep these projects in consideration for the relevant funding streams.

10.5 Next steps

The Connecting Tairāwhiti PBC assesses the benefits for the implementation of the recommended programme over 40 years, but most projects have been prioritised for implementation within a ten-year planning horizon.

A programme of this nature is complex and will involve multiple partners and funding streams. An initial assessment of project owners is included in the option list in **Appendix I**. A critical first task for programme delivery will be to confirm the owners for the items.

The programme has been packaged to allow either a whole package to be developed or for a package to be segmented into individual projects to secure funding. The designated owners will need to develop a funding plan which will identify:

- What funding stream is applicable to the project?
- How the future work will be delivered e.g Detailed Business Case?
- For projects that do not follow the NLTF or PGF funding processes then an assessment of how a case for investment will be made

It is noted that some capital projects are located within urban areas and will be dependent on the local Network Operating Plan to ensure that the intention of the capital projects remains consistent with the wider network context.

As previously detailed, the use of wider economic impacts within PBCs is an emerging practice so it is recommended that additional assessment is undertaken to further understand the effects of this potential benefit stream.

Activities identified within the medium-long term include improvements that are triggered or influenced by known future economic activities or are considered economically unviable under current network conditions and funding arrangements. The priority, viability and need for these projects could change depending on wider long-term "triggers" identified by stakeholders. Key trigger point and the potential impact on the Connecting Tairāwhiti recommended programme are noted within Table 38.

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Table 38 Potential future triggers for the PBC

TRIGGERS	IMPACT
Development of commercial shipping on the East Cape	Existing travel patterns relating to economic activity within the region may change because of the development of a new wharf and could foreseeably lead to an increase in harvesting activities within the northern region as harvesting activities become more profitable (i.e. lower freight costs). Any change in freight movement resulting from the development may result in additional benefits for activities located within the north of the cape that are not currently considered economically viable (e.g. maintenance, resilience or passing opportunities).
Regeneration of the Aquifer	The regeneration of the Poverty Bay Flats aquifer could potentially lead to greater harvesting yields and subsequently increased inter-regional freight movement originating within the Gisborne region. This may trigger the need for stronger inter-regional connections.
Rail operations	The Napier-Wairoa line has been reopened for freight movements and current forecasts are showing peak forestry tonnage around 600K tonnes/ annum. There are no current proposals to re-establish an interregional rail connection between Gisborne and Napier at this stage. Should this rail operation be re-established within the region, this may result in changes to freight movement within the Gisborne urban area that would need to be planned for and prioritised accordingly.
Developer contributions	Developer contribution could impact on the programming of longer term activities such as seal extensions. Where developer contributions are available, NZTA will prioritise FAR contributions.
Other regional businesses cases	Investment in outcomes e.g. funds may be diverted away from this PBC to other regional business cases.
Network Operating Plans (NOP)	The findings of the (NOPs) may impact on the programming of PBC activities. Should the NOP result in outcomes that conflict with proposed PBC capital improvements funds may be diverted away to other projects.

10.6 Additional opportunities

The PBC approach involved significant engagement with technical stakeholders, community and industry representatives from around the region. Through the engagement process there were some key opportunities identified for the region and these are detailed in the sections below.

10.6.1 Re-instating rail from Gisborne to Wairoa

OPPORTUNITY	RECOMMENDATION	IMPACT	OWNER
Re-establishment of inter-regional rail line between Gisborne and Wairoa.	Develop a rail business case to understand the viability of this alternative mode.	Additional potential wider economic impacts for the Connecting Tairāwhiti recommended programme. Further resilience for SH2	KiwiRail

There are currently no proposals to re-establish an inter-regional rail connection between Gisborne and Wairoa. The line is currently reputed to have been leased for recreational activities.

Throughout this PBC process, we heard from stakeholders that they supported the option to re-open this section of the rail line to provide an alternative mode for freight and remove heavy vehicles from

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the state highway network. It was therefore included as a potential long list option to address the resilience of SH2 and improve access to economic opportunities.

The scope of this PBC does not include a business case for rail. However, the impact of including a rail option as a resilience option to SH2 was considered through the overall MCA process. In addition, discussions were held with the rail provider (KiwiRail) and potential users from the horticulture and forestry industries to understand the potential demand for this scheme.

High-level discussions with KiwiRail highlighted:

- External funding would be required to re-instate the rail lines following storm damage
- A new operation would need to be independently sustainable i.e. operate without subsidies

There was support in principle from the horticulture industry for chilled container rail access to the Napier Port for exports however, the nature of this industry is that there are very high seasonal demands for a short period of time. Discussions with forestry representatives in Gisborne indicated that the Gisborne Port was already servicing their requirements and there was currently limited demand for sending processed product to Napier Port. We also identified freight industry issues about moving these full loaded containers to the rail head.

The results of this high-level investigation indicated that there was significant uncertainty about the cost for reinstatement and viability of developing a sustainable, consistent rail demand. As noted in Section 7.3, the inclusion of rail within this PBC could remove a modest amount of heavy vehicle trips from the state highway network however, as this service would not suit all industries, a significant number of heavy vehicle movements would be retained on the network and the recommended programme would still require significant roading improvements. Therefore, the effects of a rail resilience option are essentially independent to the roading programme. Should a rail service be demonstrated to be viable it would be complementary to the roading programme and could provide additional benefits to the overall programme.

It should be clearly noted that whilst the PBC has not taken forward the rail option, there remains significant stakeholder support for the option. The PBC considered rail in a narrower capacity of just resilience and there are additional potential uses such as passenger transport, tourism and heritage railways. In addition, there is evidence of potential improvement schemes such as alternate railhead locations and extensions of the rail line to the Gisborne Port to provide better access between the inland port and processing areas and the port itself. As the high level indicative wider economic assessment showed, there are also sources for potential wider economic impacts if a sustainable rail service can be developed (refer to **Appendix J**).

Therefore, the reinstatement of rail between Wairoa and Gisborne remains a significant opportunity for the region. A possible next step would be for the development of a rail business case.

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10.6.2 Coastal shipping

OPPORTUNITY	RECOMMENDATION	IMPACT	OWNER
Development of a commercial wharf on the East Cape	Develop case for investment	Additional potential wider economic impacts for the Connecting Tairāwhiti recommended programme. Re-prioritisation might be required for SH35 activities	Private industry

There was support from stakeholders for a coastal shipping solution for the region. There are several potential schemes for the East Cape including ports at Tolaga Bay, Hicks Bay or Te Araroa. The high level indicative wider economic assessment has shown significant potential benefits for the region should coastal shipping become viable (refer to **Appendix J**).

At this stage there is insufficient information to include the effects of such schemes into the PBC programme of works. However, coastal shipping does remain a significant opportunity for the region.

The scenario does act as a trigger for the PBC and should a port be implemented then an action would be for Tairāwhiti Roads to evaluate any changes to traffic volumes and routes on the network and reassess priorities for projects. The main schemes proposed along SH35 are for resilience purposes and passing lane and seal widening opportunities. Regardless of the logging movements, the local access roads would need to be maintained and SH35 must stay open, so it is considered that the projects in the programme are largely independent to shipping options. Therefore, the value for money of the Connecting Tairāwhiti recommended programme remains unchanged.

10.6.3 Upgrade of SH38

OPPORTUNITY	RECOMMENDATION	IMPACT	OWNER
Upgrade of SH38 to access Lake Waikaremoana	Follow progress of its progress through other business cases and programmes	Complementary to the Connecting Tairāwhiti PBC. Would further enhance access to a key tourist destination, adding additional benefit to the programme outcomes	Transport Agency

The stakeholders identified the upgrade of SH38 as a significant opportunity to improve access to an area of natural beauty for both locals and visitors to the study area. This would further enhance a regional drawcard which may attract visitors elsewhere in the study area. SH38 is not included within the Connecting Tairāwhiti PBC scope. However, it is acknowledged that the benefits from the scheme would be complementary to the objectives of this programme. We understand SH38 is currently under investigation as part of other Transport Agency processes. It is recommended that the progress of these investigations is followed as this remains a significant opportunity for the region.

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10.6.4 Dissemination of the principles of the Connecting Tairāwhiti PBC

OPPORTUNITY	RECOMMENDATION	IMPACT	OWNER
Dissemination of the PBC projects and outcomes	Develop an internal/external briefing plan for the PBC	If customers, investors, road maintenance contractors and the government departments are all working to the same end plan there are additional implementation efficiencies to be gained.	Transport Agency

The success of the PBC extends further than securing funding and implementing the projects. There are wider efficiencies to be gained through it being used as an investment map for the region.

An opportunity is for the PBC to be used to agree on the long-term form and function of the State Highways and connecting routes and then leverage future investments (bridge replacements, rehabs, minor improvements etc) to slowly get a consistent form. For example, when regular maintenance is scheduled, a conversation should be had to understand if there is an opportunity to do some incremental work to achieve a wider PBC goal such as localised seal widening. There are also potential synergies through coordinating and combining workstreams to ensure minimal disruption to everyday customers on the network. To this end, it is recommended that a "briefing plan" is developed to ensure that the ethos of the PBC is well understood and can be collectively delivered. Potential parties might include Network Operating Contractors and councils. In addition, the key PBC outputs should be included in Asset Management Plans (AMP) and renewal plans.

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APPENDIX A: CONNECTING TAIRAWHITI STAKEHOLDERS

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APPENDIX B: WORKSHOP MINUTES

- Workshop 1 Wairoa, 10 April 2018
- Workshop 1 Gisborne, 11 April 2018
- Workshop 2: Gisborne, 10 May 2018
- Workshop 3: Gisborne 6 June 2018
- Workshop 3: Wairoa 7 June 2018

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APPENDIX C: WIDER ENGAGEMENT FEEDBACK

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APPENDIX D: UNCERTAINTY LOG

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APPENDIX E: OPTION AND ALTERNATIVES REPORT

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APPENDIX F: MCA CRITERIA

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APPENDIX G: OPTION LONG LIST

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APPENDIX H: PROGRAMME ASSESSMENT

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APPENDIX I: RECOMMENDED PROGRAMME OPTION LIST

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APPENDIX J: WIDER ECONOMIC ASSESSMENT REPORT

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