

Twin Coast Discovery Route

State Highway 12 Single Stage Business Case

Jacobs

9 October 2019

VERSION 4



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SH12 Rawene to Katui Road

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Glossary

Abbreviation	Term
AEE	Assessment of environmental effects
ATP	Audio Tactile Paving
BCR	Benefit-cost ratio
CAPEX	Capital expenditure
CAS	Crash Analysis System
DOC	Department of Conservation
EEM	Economic evaluation manual
ESR	Environmental and Social Responsibility Screen (ESR)
FNDC	Far North District Council
GPS	Government Policy Statement
HCV	Heavy commercial vehicle
HPT	Historical Places Trust
ILM	Investment logic map
ITS	Intelligent transport systems
IAF	Investment Assessment Framework
MoT	Ministry of Transport
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
NOC	Network operating Contract
NZTA (or the Agency)	The New Zealand Transport Agency
OPEX	Operating expenditure
ONRC	One Network Road Classification
PBC	Programme Business Case
PGF	Provincial Growth Fund
RMA	Resource Management Act
RTO	Regional Tourism Organisation
SH(#)	State Highway (number)

SSBC	Single Stage Business Case
SUP	Shared Use Path
TCDR	Twin Coast Discovery Route
TIF	Tourism Infrastructure Fund
VMS	Variable message sign
WEBs	Wider economic benefits

Key Reference Material

Information sources	Details
Crash data	NZ Transport Agency's Crash Analysis System (CAS) was used to extract crash data for the two five year periods between 2009-2013 and 2014-2018.
KiwiRAP Risk Rating Tool	Ongoing measure of personal and collective risk to corridor users, accessed via the KiwiRAP Analysis Toolset.
Safety Information	NZ Transport Agency's SafetyNet 2017 was used to analyse CAS data using intersection indicator maps, rural roads risk indicator maps, out of context curve maps.
Incident data	NZ Transport Agency's Traffic Road Event Information System (TREIS) was used to obtain SH12 incident/ closure data for the 10 years to June to 2017.
Tourism growth forecasts	The Ministry of Business, Innovation, and Employment (MBIE) provides tourism expenditure reports grouped by Regional Tourism Organisation (RTO).
Accommodation Surveys	Statistics New Zealand provides annual accommodation surveys with the results grouped by Territorial Authority and RTO.
Regional demographics	Statistics New Zealand provides insights into how the Northland Region and Far North District are performing against specific all of government indicators.

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Executive Summary

The Twin Coast Discovery Route (TCDR) is a key visitor journey in Northland, connecting many of the region's visitor experiences, townships and regional gateways. A key component of the route is the State Highway 12 corridor between Rawene and Dargaville. This section of the TCDR traverses the Hokianga Harbour, the landing place of Kupe and ancestral home for many Northland people before traversing through the giant kauri trees of the Waipoua Forest.

Despite the rich cultural history and natural beauty of Northland's west coast, the region is less frequently visited than the more developed east coast resulting in a weakened local economy and less localised employment opportunities for west coast communities.

The purpose of this Single Stage Business Case (SSBC) is to develop a programme of treatments which if implemented would improve the visitor experience along Northland's west coast and provide the visitor infrastructure necessary to support the development of local businesses resulting in a strengthened local economy.

Strategic context

Northland is a growing visitor destination for both domestic and international visitors due to its subtropical climate and proximity to Auckland, a key gateway for international visitors into New Zealand. One of the main workstreams emerging from the Te Tai Tokerau Economic Action Plan was to identify ways to strengthen and grow the visitor industry in Northland to create increased opportunities for employment and support the economic prosperity of the region.

A key outcome of the action plan has been the development of the Twin Coast Discovery Route Programme Business Case (TCDR PBC) and the identification of options which would encourage more visitors to experience the TCDR and Northland's west coast.

This business case builds upon the PBC through developing a deeper understanding of the issues and opportunities relating to investment within the SH12 corridor. The development of this business case (and the identified recommended options) reflects a possible whole of government approach to investment in Northland as the options align with and reflect the intentions of the Government Policy Statement on Land Transport (2018/19-2027/28), the Te Tai Tokerau Economic Action Plan and the intentions of the Provincial Growth Fund (PGF). The PGF has provided investment into the development of the suite of Twin Coast SSBC's, and this business case considers the alignment of the different activities with the outcomes sought by both the Investment Assessment Framework (IAF), and the PGF.

Investment objectives

This SSBC has been developed with extensive input from the Transport Agency and local hapū partners. The investment objectives and recommended option treatments have been developed and refined through a series of hui to ensure that the treatment options developed are fit for purpose and address the needs and concerns of the local community.

Whilst based on the investment objectives developed as part of the TCDR Programme Business Case (PBC), the investment objectives for this SSBC have been refined to reflect the local corridor context, these objectives are:

- *Improving geographic dispersal:* Improvements to the corridor will improve the destination appeal of visitor experiences at the Coastal Settlements of Opononi and Omapere, and the key Waipoua Forest attractions to help facilitate growth in visitor numbers and economic spend by 30% by 2030.
- *Seasonality:* Improvements to the corridor visitor experience will facilitate the growth in visitor numbers and spend at the coastal settlements of Opononi and Omapere and along the corridor outside of peak periods by 30% by 2030.

- *Resilience:* Improvements to the corridor will reduce the effect of closures on the corridor so there are no full closures without viable alternatives of less than 2 hours for all vehicles by 2030.
- *Safety:* Safety will be improved at key locations along the corridor by addressing safety issues in areas where deaths and serious injuries have occurred, and to improve the corridor to at least a medium collective and personal risk rating (as defined by the Kiwi RAP 2013-2017 assessment) by 2030.

Recommended treatment option development

Developed alongside local hapū, stakeholders and the Transport Agency, this SSBC has identified a programme of recommended treatment options. The development of the recommended treatment options are the result of a robust and transparent optioneering process. This focused on developing treatments which are able to work together to improve the visitor experience, safety and resilience of the SH12 corridor.

The growth aspirations will not be delivered solely by the options identified in this business case. Growth in economic activity and visitors to the Hokianga will be driven by other interventions in the economic action plan, the transport interventions however will be the enabler for this growth.

An example of this is the proposal to widening specific sections of the corridor between Rawene and Opononi to ensure that between these locations there are consistent 1m wide sealed shoulders to provide for cycle tourists who are increasingly visiting the region. Shoulder widening also improves safety for all corridor users through reducing run off road crashes and allowing for the installation of Audio Tactile Paving (ATP).

Risks and assumptions

The intention of this SSBC has been to identify options to provide the necessary infrastructure required to create a positive visitor experience and meet the needs of increased visitors to the region. The SSBC has not attempted to identify or understand the best approach to develop and market the region as a tourist product. Therefore, in the development of the business case it has been assumed that these activities will be undertaken by others to ensure that visitors are both aware of the experiences on offer and are willing to travel to the region.

In addition, the development of the recommended treatment options has been undertaken with limited survey and geotechnical information available. Therefore, the feasibility of the recommended options identified will need to be confirmed in the detailed design and pre-implementation phases of their development.

Recommended programme for investment

The recommended programme for investment consists of discrete and interdependent treatments which focus on opportunities to improve the user experience, resilience and safety of the corridor, whilst also providing the infrastructure necessary to support the establishment of local businesses and employment opportunities.

The implementation of the recommended treatments is based on a 10-year programme for investment with priority for investment based around the ability to achieve early intervention and the level of pre-implementation work required. Figure 1 through to Figure 3 show the location of the recommended treatments, alignment to the IAF framework, BCR and indicative cost. In addition, an indicative assessment of the activities against the alignment with the outcomes sought by the PGF are also included.

Many recommended treatments identified in Figure 1 below appear to have a medium to high alignment with the outcomes sought by the PGF. This identifies that the development of these treatments provides a strong alignment in regard to providing the infrastructure necessary to ensure the sustainable development of Northland as a visitor destination and the creation of local employment opportunities.

Recommended programme for investment (years 0 - 2)

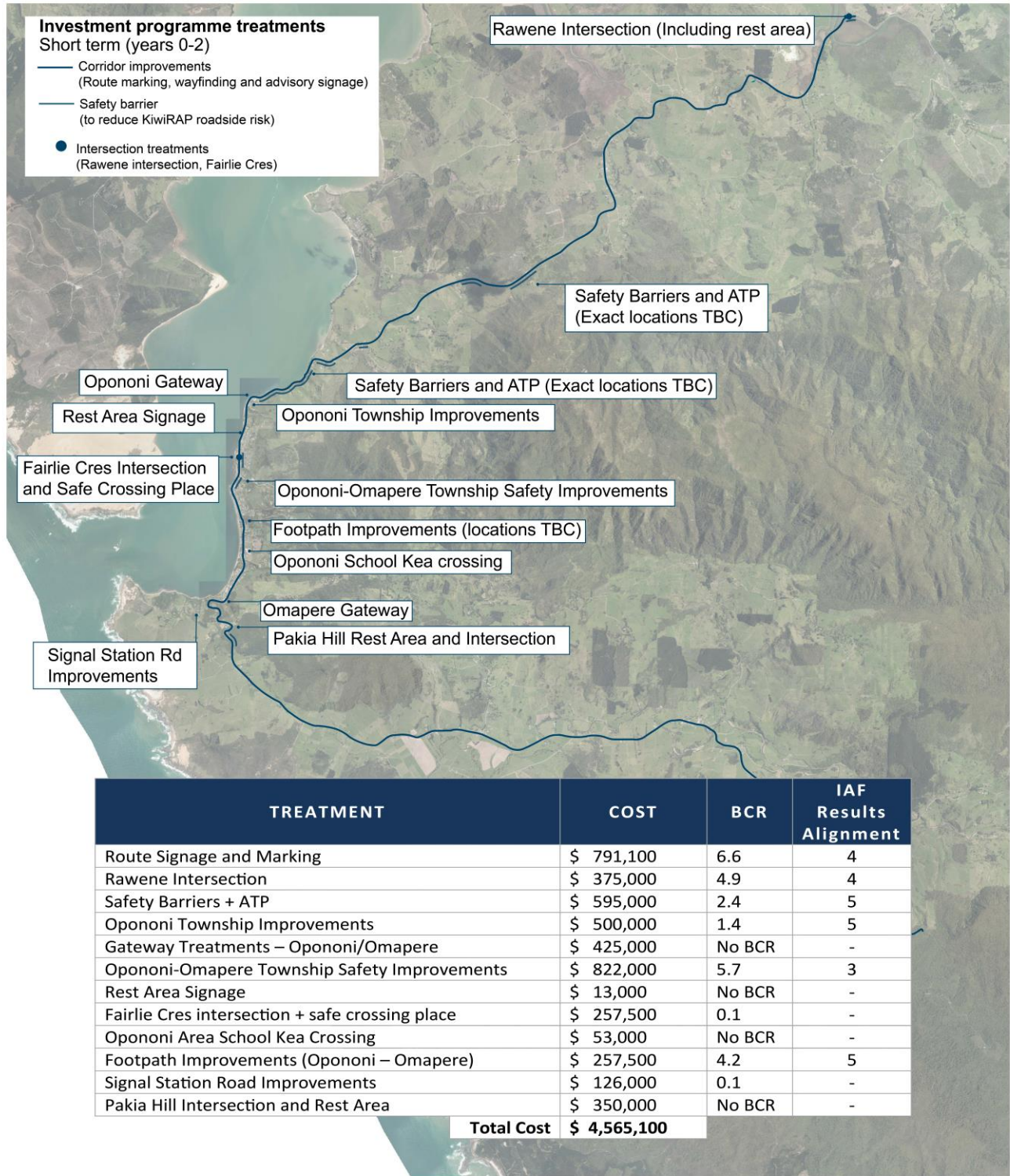


Figure 1: Investment programme (0-2 years)

Recommended programme for investment (years 3 - 5)

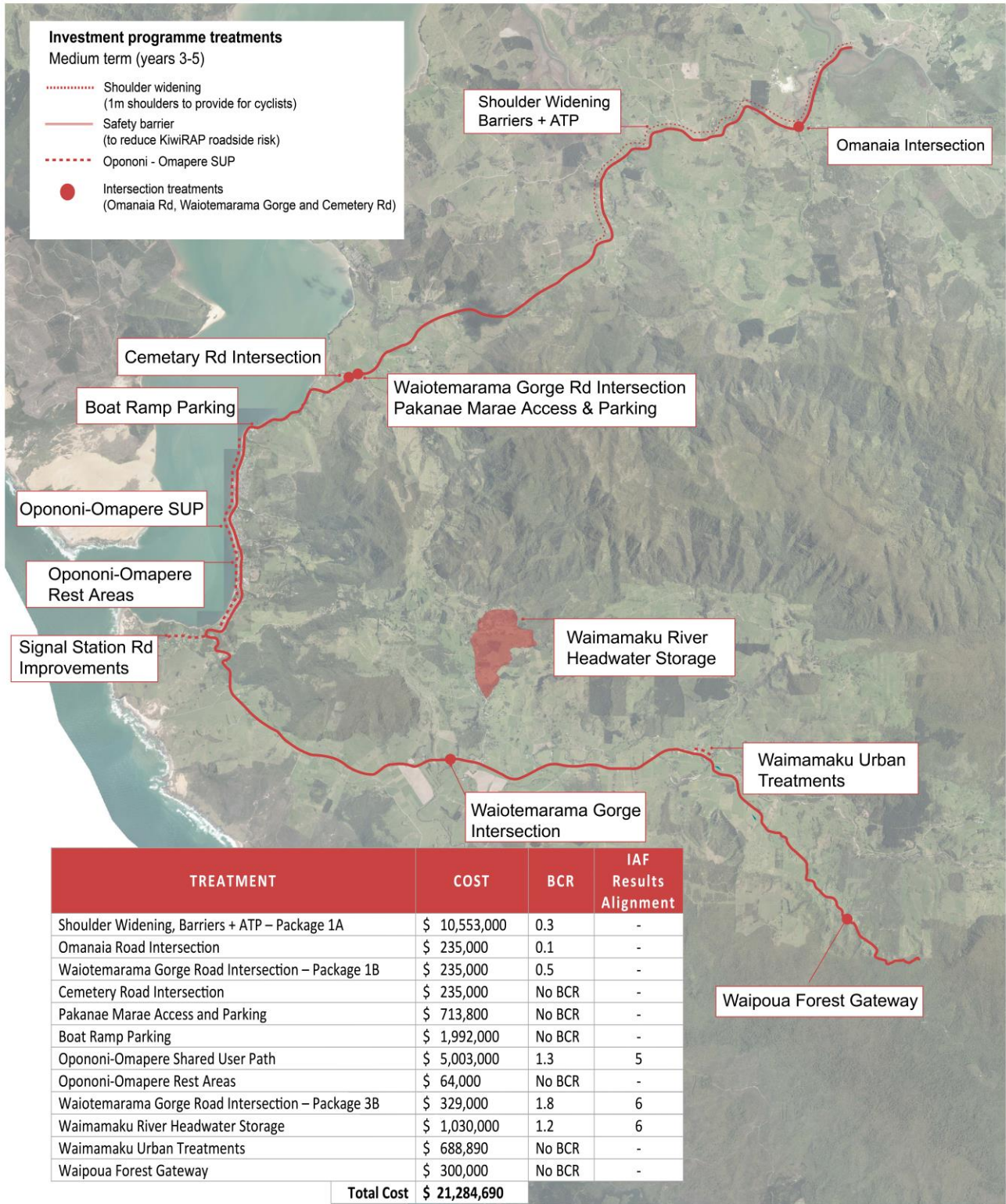


Figure 2: Investment programme (years 3-5)

Recommended programme for investment (years 6 -10)

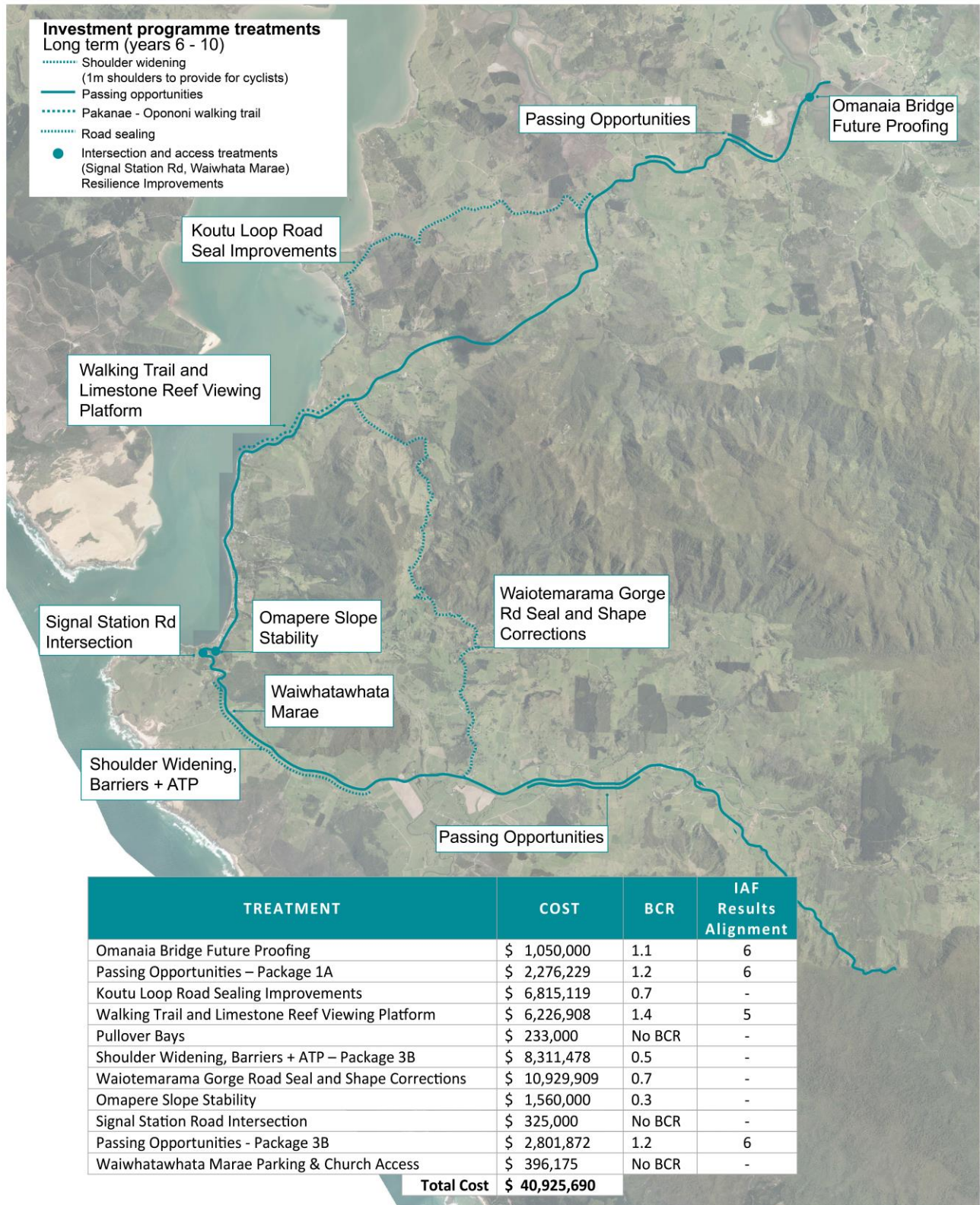


Figure 3: Investment programme (years 6-10)

Key SSBC Outcomes

The outcomes from the recommended options for investment if implemented fully are summarised below against the investment objectives:

Investment objective 1: Improving geographic dispersal

We will improve the road user experience from a perception of x to a perception of y for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys. Improving the destination appeal will contribute to the overall increase of visitors and spend in the area by 30% to 2030.

Focus Area	Improvement	Impact
Opononi township retail parking	Rearrange on-street carparking facilities Directional signage to offroad carparking at i-site and the cultural centre (when constructed)	14 additional on-road carparks Improved utilisation of off-road carparking
New visitor experiences encouraging more dwell time	Improved township amenity Improved pedestrian facilities in Opononi Shared user path along urban corridor Improved pedestrian links north and south of the township Improved picnic/rest area facilities Waimamaku improvements	Potential dwell time increase for visitors estimated at an average of 3 hours based on additional activities available Increase in visitor nights based on new activities
Improved access to existing activities	Wayfinding signage along the corridor Improved intersections at key locations Sealed access to activities along Waiotemarama Gorge Road and Koutu Loop Road Improved access to marae and cultural sites	Increase in visitors to existing activities Increase business investment by hapū and businesses
Improved road user experience	Improved passing opportunities Cycling and pedestrian focussed improvements Improved visitor pull-over areas and rest areas Consistent road environment combined with the other SSBC's	Increase in visitor journeys and dwell time along entire corridor

Investment Objective 2: Seasonality

We will improve the road user experience for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys by reducing the effects of crash and weather-related events from x to y to facilitate off-peak travel. Improvements to the corridor will facilitate the growth in visitor numbers and spend at the coastal settlements of Opononi and Omapere and the corridor outside of peak periods by 30% by 2030.

Focus Area	Improvement	Impact
Seasonal closures	<ul style="list-style-type: none"> Flooding mitigation Off-peak accidents mitigated 	<ul style="list-style-type: none"> Flood event closures reduced by 50% at Waimamaku All accidents reduced resulting in a decrease in accident related closures during off-peak periods by 80%
New visitor experiences encouraging more dwell time	<ul style="list-style-type: none"> Improved township amenity Improved pedestrian facilities in Opononi Shared user path along urban corridor Improved pedestrian links north and south of the township Improved picnic/rest area facilities Waimamaku improvements 	<ul style="list-style-type: none"> Improvements expected to assist in the attractiveness of visitors to the area during off-peak periods Increase in visitor nights during off-peak periods based on new activities
Improved access to existing activities	<ul style="list-style-type: none"> Wayfinding signage along the corridor Improved intersections at key locations Sealed access to activities along Waiotemarama Gorge Road and Koutu Loop Road Improved access to marae and cultural sites 	<ul style="list-style-type: none"> Increase in visitors to existing activities during off-peak periods Increase business investment by hapū and businesses

Investment objective 3: Resilience

We will reduce the effect of closures on the corridor so there are no full closures without viable alternatives of less than 2 hours for all vehicles by 2030.

Focus Area	Improvement	Impact
Corridor Closures	<ul style="list-style-type: none"> Detour routes along Koutu Loop Road and Waiotemarama Gorge Road sealed to allow all vehicles 	<ul style="list-style-type: none"> Reduces travel time by ~60 minutes along upgraded detour routes compared to SH15

Investment objective 4: Safety

We will improve safety at key locations along the corridor by addressing safety issues in areas where deaths and serious injuries have occurred, and to improve the corridor to at least a medium collective and personal risk rating (as defined by the Kiwi RAP 2013-2017 assessment) by 2030.

Focus Area	Improvement	Impact
Risk Rating	Corridor and section specific safety improvements by mode	Consistent collective and personal risk rating of medium and below along the corridor
Appropriate speeds	Self-explaining roads Safer speeds	Average speed decrease through urban area
Decrease DSI's	Reduce the number of crashes resulting in fatal and serious injuries	Injury related crashes reduced by 80% annually

Township Plan

The recommended treatment options through the Opononi and Omapere urban areas have been further considered within the context of a township plan. The township plan further considers and specifies the design context for implementing the treatment options to unlock the full benefits of the investment when measured against the investment objectives, and improve the aesthetic and amenity for residents and visitors.

Recommended Programme Investment Assessment Framework and Economics Assessment

The recommended programme has been assessed against the NLTP Investment Assessment Framework (IAF). The indicative assessment indicates that the recommended programme has a High results alignment and BCR of 1.0 excluding Wider Economic Benefits, and a BCR of 2.2 including Wider Economic Benefits. The programme overall would achieve an IAF rating of 5. The IAF Assessment is shown below:

GPS Priority	Indicative Rating	Indicative Assessment
Safety - a safe transport system free of death and serious injury	High	<p>The programme will provide a step change improvement to the Kiwirap Star rating and personal and collective risk ratings for the corridor. The Far North District rates in the top five regions in the 2018 communities at risk register where it is overrepresented in a high number of risk metrics. These metrics are priorities in the safer journeys areas of high concern, and which feature along this corridor.</p> <p>The improvement to the risk rating will be across modes, by providing investments in improving the safety of active modes, and the persons travelling in vehicles.</p>

GPS Priority	Indicative Rating	Indicative Assessment
<p>Access to opportunities, enables transport choice and access, and is resilient - Thriving regions</p>	<p>High</p>	<p>The Twin Coast Programme is a significant tourist route identified in the Economic Action Plan, and forms an integral component in the Regional Economic Development (RED) Programme for Northland.</p> <p>The investment programme will provide a significant contribution to the economic growth to be captured by the Twin Coast Programme by:</p> <ul style="list-style-type: none"> • improving the visitor and local community experience, ease of access to activities including the new cultural centre in Opononi, • providing opportunities for visitors to stay longer in the area, • acting as an enabler for business activity to grow, • and improving the overall corridor resilience to keep the corridor open for business <p>The Hokianga currently has low socio-economic outcomes in part due to its isolation to markets. The Twin Coast programme, and this SH12 SSBC will provide a significant potential to uplift the outcomes for people living in this community.</p> <p>The investment will also a step change improvement to the Heartland Cycle Trail that is located along the corridor. It further improves the attractiveness and accessibility of touring cyclists along this scenic route, and also connecting the offroad cycle trails that form part of the Twin Coast proposals for investment.</p> <p>For the local community the investment in walking and cycling provides alternative and safe modes where access to reliable and safe vehicles can be restrictive due to socio-economic factors in the area.</p>

1. Introduction

1.1 Purpose of Report

The purpose of the SH12 Rawene to Katui Road (the project) SSBC is to highlight the case for investment and to facilitate the timely planning, approval, funding and delivery of the recommended options.

The SSBC has been developed to satisfy the New Zealand Transport Agency's guidelines for SSBC development and to provide sufficient information to assess the alignment various options to improve the corridor against the Investment Assessment Framework (IAF) and the outcomes sought from the Provincial Growth Fund (PGF).

This SSBC further interrogates the evidence base and case for change presented in the Twin Coast Discovery Route (TCDR) PBC. This SSBC focuses specifically on the SH12 corridor between Rawene and Katui Road, developing and refining investment options that would deliver the best results against the investment objectives.

In developing the recommended option(s) for investment, the SSBC has followed the guidance made available by the Transport Agency and has been informed by ongoing feedback from the Agency and other key stakeholders throughout the development of this project.

To optimise investment in the corridor the project has developed options which compliment investments being made by others through ensuring that the recommended options developed enable access to these investments and provide the visitor infrastructure needed to facilitate the economic growth of the region.

1.1.1 National Land Transport Fund – summary/overview

The National Land Transport Fund (NLTF) is the primary funding mechanism for Crown investment in the land transport system. The National Land Transport Programme (NLTP), reviewed and updated every three years in line with the release of the Government Policy Statement on land transport (GPS), identifies the activities likely to be funded by the NLTF.

Land transport activities which fit the criteria for funding from the NLTF, are assessed and prioritised against competing national priorities, to determine eligibility for funding. Activities with sufficiently high priority are included in the NLTP.

1.1.2 Provincial Growth Fund – summary/overview

In February 2018, the Government announced the Provincial Growth Fund (PGF) to support growth in regional New Zealand. The PGF, administered by the Provincial Development Unit (PDU), aims to enhance economic development opportunities in the regions, create sustainable jobs, contribute to community and Maori well-being, lift potential productivity and help to meet New Zealand's climate change targets.

While the NLTP is the primary funding mechanism for land transport activities, the PGF provides the opportunity to support regional transport projects by:

- enabling a greater number of projects to be supported
- providing a source of funding for local authorities that face significant difficulty in meeting local share requirements
- bringing forward projects that are strategically important to a region's productivity potential and which are outside the NLTP funding criteria, or which are unable to be funded in a sufficiently timely way through the NLTP
- providing a source of funding for projects that do not secure funding through the NLTF but which meet the Government's objectives for the Fund.

PGF applications must demonstrate that the proposal will help achieve the following PGF objectives:

- Creating jobs, leading to sustainable economic growth.
- Increasing social inclusion and participation,
- Enabling Maori to realise aspirations in all aspects of the economy.
- Encouraging environmental sustainability and helping New Zealand to meet climate change commitments alongside productive use of land, water and other resources.
- Improving resilience, particularly of critical infrastructure, and by diversifying the New Zealand economy.

1.2 Project Scope

This SSBC was developed alongside key project stakeholders and the Transport Agency to make sure that all parties are cognisant of the tasks undertaken and the key considerations made in working towards a set of recommended options for investment. Their involvement has allowed for the focusing of efforts directly towards the development of well justified changes and improvements.

In particular, this SSBC:

- Reconfirms the Strategic Case and Programme Business Case PBC problems, benefits and investment objectives (with minor refinement);
- Reconfirms the requirement to invest and demonstrates a clear case for change;
- Is directly informed by customer and stakeholder insights;
- Develops recommended treatment options to a point where they can be objectively evaluated (including a clear base-case 'do minimum' option);
- Provides a robust evaluation of project options;
- Identifies and justifies a recommended programme of works that directly addresses the agreed problems in the corridor;
- Identifies complimentary projects which further address the problems in the wider transport system;
- Assesses the financial implications, risks and economic viability of the recommended treatment options.

In relation to the development of the SH12 corridor the scope of this SSBC identifies issues and opportunities to improve the visitor experience between the Rawene intersection and Katui Road, and specifically in the Opononi – Omapere township. The approach undertaken to achieve this is to develop a range of treatment options which work together to improve the visitor experience, safety and resilience of the corridor.

The treatments developed are required to be fit for purpose, offer value for money and meet the needs of local communities and visitors to the region. Furthermore, the scope of this SSBC is limited to providing infrastructure improvements necessary to support continued development and growth of the visitor experience on offer.

1.3 Project Objectives

Through discussions with the Transport Agency the following project objectives have been identified:

- Opportunities to access the beach areas in Opononi - Omapere for recreational use with the repairs to existing and construction of the new seawall(s), and structures to increase resilience of the foreshore,
- Improving the accessibility, safety, parking, and active mode transport for residents and visitors in the coastal settlements of Opononi and Omapere. These settlements are key service centres for residents and visitors to the Hokianga, as well as providing holiday accommodation,
- Transport and urban investment in the coastal settlements that will encourage an increase in visitor numbers and spending and enhancing the amenity of the area.
- Rural corridor investment to improve the travelling experience for visitors, options for the efficient movement of forestry trucks, improving resilience, and improvements to the corridor's safety risk profile.

1.4 Key Outcomes

The successful delivery of this project will result in the following key outcomes;

1.4.1 Between Rawene and Opononi

- A safer road environment for all road users with the implementation of intersection control improvements (Rawene and Omanaia intersections), shoulder widening, installation of ATP and safety barriers. All of these initiatives will decrease the KiwiRAP risk rating for this section of the corridor and reduce the number of run off road crashes,
- Improved passing opportunities,
- Improved infrastructure to improve the road user experience for touring cyclists,
- Increased corridor resilience through the development of sealed detour routes along Koutu Loop Road and Waiotemarama Gorge Road.
- Safer and improved accessibility to sites of cultural importance that benefit use by the community, and tourist potential,
- A safer pedestrian connection between these localities and the creation of another visitor experience through providing opportunities to view the limestone formation and Hokianga Harbour.

1.4.2 Opononi township

- A safer road environment for all road users through the promotion of safer speeds and the creation of a shared use path,
- Formalising current parking arrangements, resulting in the creation of 14 additional parks and improved access for campervans and tourist coaches,
- Increased parking for boat trailers,
- Enhanced pedestrian connectivity including improved access to the beach, creation of safe crossing places and resurfaced footpaths.

1.4.3 Opononi to Omapere

- Improved connectivity between the two townships for pedestrians and bicycle users through footpath resurfacing and the construction of a shared use path,
- A safer road environment for all road users through the promotion of safer speeds, installation of safety barriers and the creation of safe places to cross the highway,
- Rationalisation and improvements of green spaces along the urban corridor including improved parking and access to the beach.

1.4.4 South of Omapere

- Enhancements to the rest areas at Pakia Hill and South Head, including intersection improvements and increased amenities,
- Installation of passing lanes,
- A safer road environment for all road users through improvements to the Waiotemarama Gorge Road intersection, shoulder widening, installation of ATP and safety barriers. This will decrease the KiwiRAP risk rating for this section of the corridor and will reduce the number of run off road crashes,
- Improved access to and parking at Waiwhatawhata marae and church.

1.5 Corridor Location

To allow a more in-depth assessment of the problems and supporting information across the SH12 corridor, the project area of interest has been broken down into four sections. These are defined by the topography which the corridor passes through and the types of solutions which are required to deliver the outcomes sought.

The sections are identified in Figure 1-1 and described below:

- Section One: Rawene Intersection to Opononi,
- Section Two: Opononi and Omapere urban area (Opononi gateway sign to Pioneers Walk),
- Section Three: Pioneers Walk to the Waipoua Forest Entry Sign, and
- Section Four: Waipoua Forest (Waipoua Forest Entry Sign to Katui Road).



Figure 1-1: SH12 corridor

1.6 Priorities for the Corridor

The SH12 corridor is the main transport corridor connecting the Hokianga Harbour to Whangarei, Auckland and key tourist markets. Its development is therefore a key economic enabler for the development of the region.

Tourism is a key contributor to the Far North's GDP contributing \$512 million in 2018¹ and the development of the TCDR is essential to ensure continued growth.

Given the significance of the corridor to the region's economic growth and the prosperity of local communities the immediate priorities for the corridor are targeted improvements to improve the driver experience and enable access to key community and visitor locations such as the Opononi – Omapere township. In the longer term the emphasis should be focused on establishing visitor infrastructure to support the development of the region as a key visitor destination.

The presence of Kauri dieback within the Waipoua Forest presents a challenge in the ongoing maintenance and development of the corridor. Identifying a way forward which ensures the effective management of Kauri dieback whilst also enabling the continued development of the corridor through the forest is also an immediate priority.

1.7 Governance

The SH12 SSBC is one of eight work streams being undertaken by the Transport Agency in Northland as an outcome of the TCDR PBC. These workstreams include:

- SH11 SSBC,
- SH12 SSBC (this project),
- Rest Area SSBC,
- Passing/ Overtaking SSBC,
- Northland Cycling SSBC,
- Route signage and wayfinding SSBC,
- Township Plans, and
- Waipapa RAB Pre-implementation

The scope of this SSBC has considered for the SH12 corridor activities such as passing opportunities, rest areas, route signage and wayfinding, and the Opononi-Omapere townships. The results from this SSBC have informed these other SSBC's, and vice versa.

The governance structure and relationship of these workstreams is shown in Figure 1-2 below.

¹ Ministry of Business Innovation and Employment. (2018). *Annual Spend grouped by Territorial Authority*. <https://www.mbie.govt.nz/immigration-and-tourism/tourism-research-and-data/tourism-data-releases/monthly-regional-tourism-estimates/latest-update/annual-tourism-spend-grouped-by-territorial-authority/>

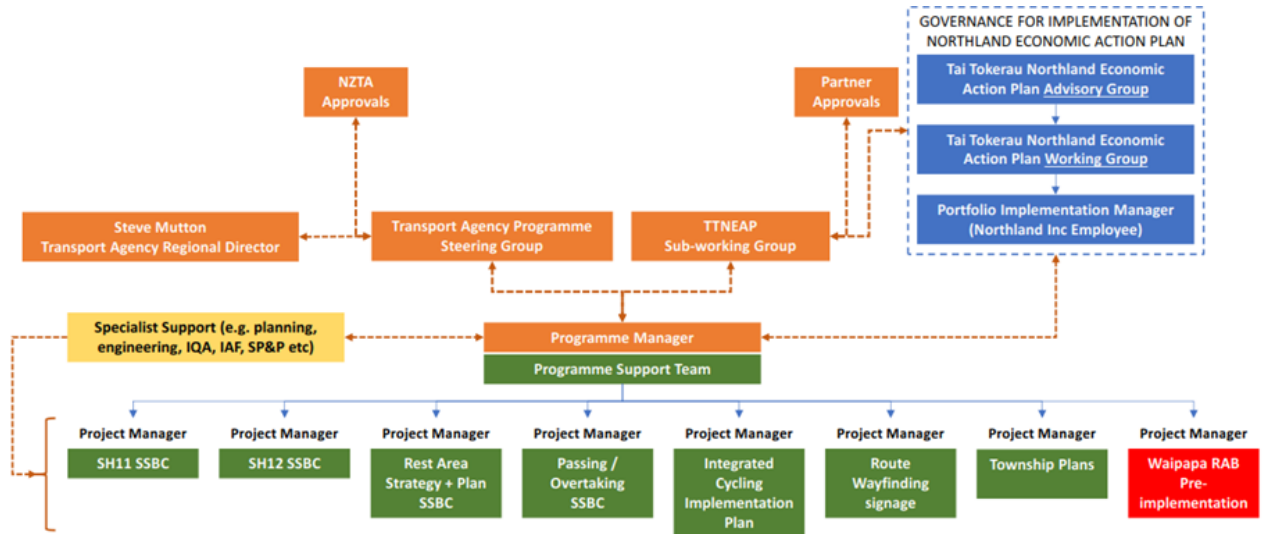


Figure 1-2: Project Governance structure

1.8 Project Team Structure

The project has a dedicated team of specialists responsible for delivering individual elements of it. Figure 1-3 shows the team structure of this SSBC.

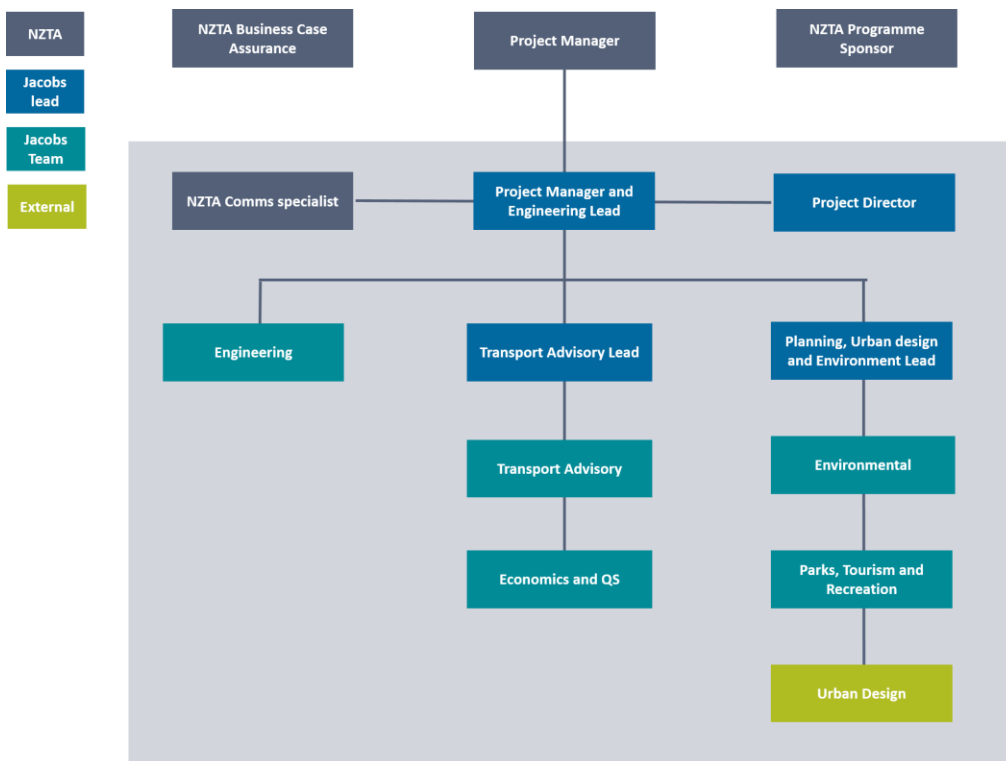


Figure 1-3: Project Team Structure

1.9 Key Project Stakeholders

Based on engagement with stakeholders, the following key stakeholder focus areas have been identified. There is strong support for the outcomes being sought by the SSBC among stakeholders and a clear alignment between the recommended options identified and the wishes of these stakeholders.

Table 1-1 identifies the key project stakeholders and their respective focus areas.

Table 1-1: Key project stakeholders and focus areas

Stakeholder	Area of interest
NZ Transport Agency	As an operator the development of a programme of works that provides for the safe and efficient operation of SH12 and maintains and operates the asset.
	As an investor the development of a programme that has a sound investment base and that represents value for money.
Northland Regional Council	Development of a fundable programme that improves connectivity to and from Northland.
Far North District Council	Focused on the recommended programme effects on the surrounding transport network and will be the lead on some initiatives.
Te Roroa	As joint manager of the Waipoua Forest their focus is on the corridor through the Waipoua Forest, the destination management and development of the forest and how to manage Kauri dieback.
Ngāti Whatua / Ngapuhi hapū	Ngāti Hau, Ngāti Korokoro, Ngāti Te Pou, Ngāti Whārara, Te Māhurehure, Te Poukā Te Hikutu. Interests in the town centre development, economic and cultural development of the Hokianga and the wider region.
Department of Conservation	Manager of DOC vested crown lands and de facto government department responsible for the management of visitor and tourist infrastructure. As joint manager of the Waipoua Forest their focus is on the corridor through the Waipoua Forest, the destination management and development of the forest and how to manage Kauri dieback.
Ministry for Primary Industries	Management of Kauri dieback in the Waipoua Forest
Northland Inc	Ensuring that the recommended options developed meet the needs of local communities and cater for tourist growth.
Local Business and Resident's Association	Ensure that the project focuses on developing options which improve access to key local services and the development of infrastructure which encourages economic development.
Fulton Hogan (as the Network Operations Contractor)	That the recommended options developed are fit for purpose and can easily be accommodated within the terms of the NOC.

1.10 Stakeholder Engagement

The SSBC was developed through a collaborative process with active involvement and participation from key stakeholder groups and hapū partners. The recommended options were developed in partnership with key stakeholders to ensure that these options are both cost effective whilst also meeting the needs of the end user; the local communities and visitors to the region.

Further details of hui, workshops and meetings undertaken throughout the development of this project are contained in Appendix B.

1.10.1 Public consultation

Public consultation with regards to the development of a long list of options was undertaken in May 2019, the outcomes of this consultation are identified in the consultation summary report contained in Appendix C.

1.11 Customer insights

People travel to and within the Hokianga for various reasons, with the focus of this business case being travel by local residents, domestic and international visitors who are the key customers using the corridor and providing the economic growth through increased tourism. Based on the intention of their visit these customers

are likely to access the corridor from different directions with the indicative route taken by each type of visitor shown in Figure 1-4.

As part of the development of this business case, detailed analysis was undertaken to understand how users are likely to interact with the corridor, what their expectations of the corridor and townships are and their likely spending habits. This information is contained in Appendix A.

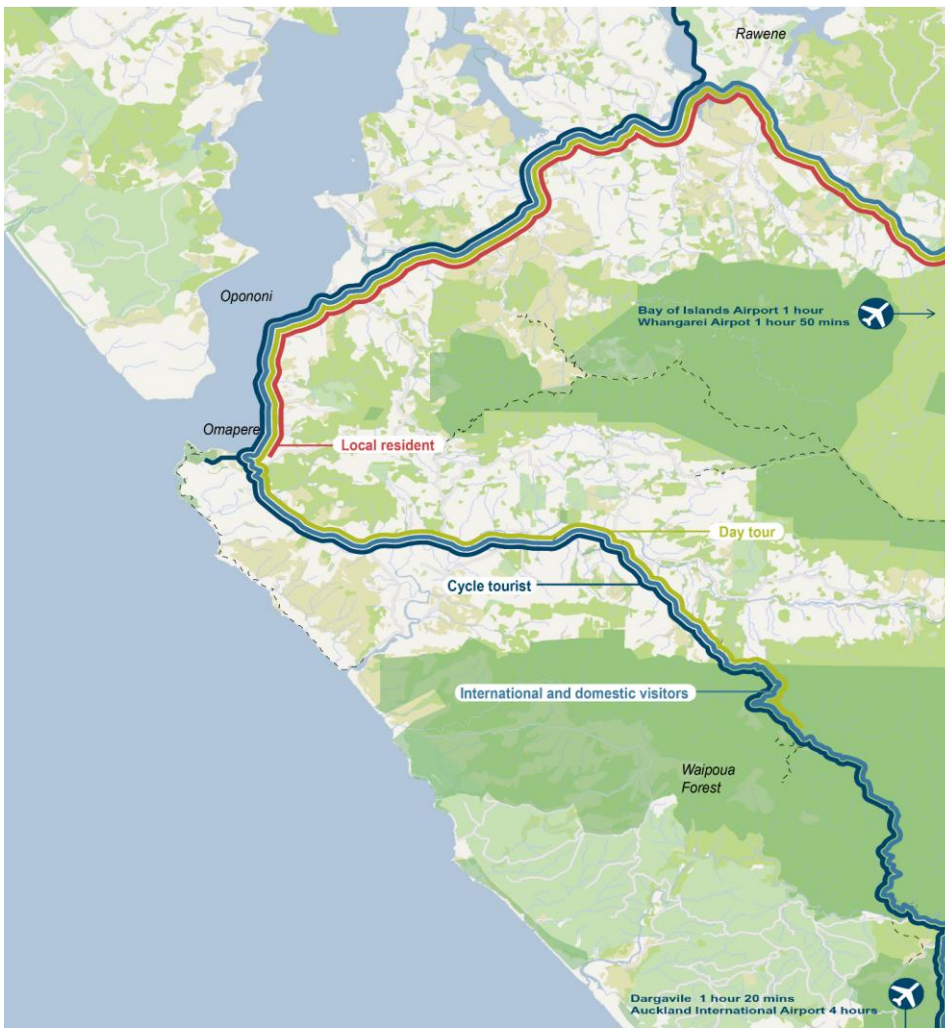


Figure 1-4: Customer Journeys

2. Strategic Context

2.1 Background

State Highway 12 (SH12) is the key transport corridor connecting the west coast of Northland to Whangarei, State Highway 1 and Auckland. The corridor plays a critical role in enabling local communities to access jobs and economic opportunities whilst also allowing domestic and international visitors to explore the Hokianga Harbour and Waipoua Forest. The corridor also forms part of the Twin Coast Discovery Route (TCDR), a developing tourist route within Northland.

Currently there is a mismatch between the corridor's current function as a Primary Collector under the One Network Road Classification (ONRC) and the aspirational development of the corridor becoming one of

Northland’s premier tourist routes. This is due to the need to develop the visitor infrastructure provided along the corridor to a higher standard than the level of service outcome identified in the ONRC.

2.2 Twin Coast Programme Business Case

The Twin Coast PBC was developed as a follow on from the Te Tai Tokerau Economic Action Plan to identify how the Twin Coast Discovery route can be further enhanced both in terms of development of the transport network and the visitor experience on offer. It is acknowledged in the PBC that there is a bias for international and domestic tourists/visitors to favour travel to Whangarei, Bay of Islands, and Kerikeri on the east coast with little travel to the west coast through the SH12 connection. The SH12 SSBC is one of six business cases being developed to address the problem statements identified in the PBC. Figure 2-1 identifies the other five business cases and the time frames associated with their development.

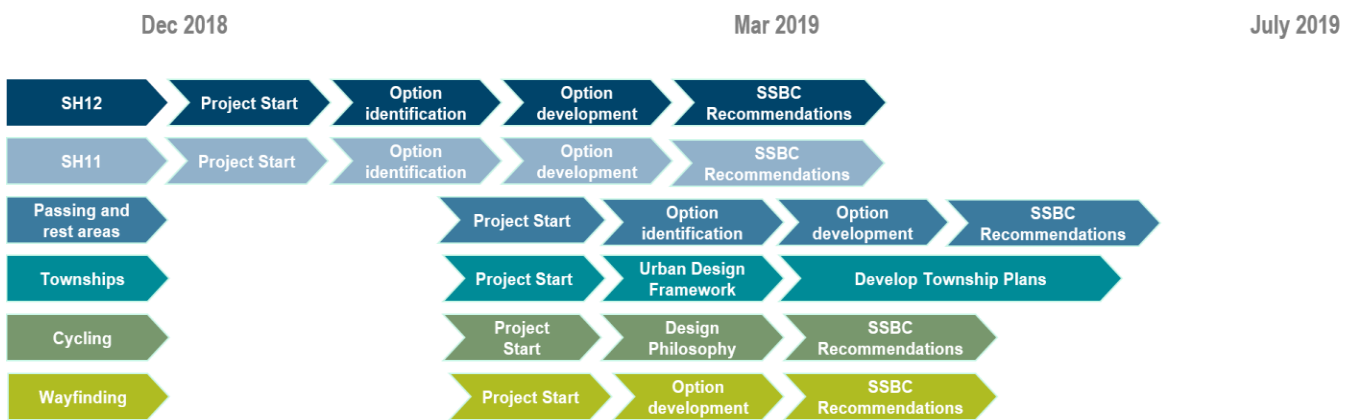


Figure 2-1: TCDR Business Cases

Of the business cases identified both SH11 and SH12 are corridor specific business cases whilst the remaining 4 business cases operate across the whole of the TCDR corridor to ensure that consistent treatments are applied across all projects.

2.3 Provincial Growth Fund

The PGF has been established by the government with the purpose to accelerate regional development, increase regional productivity, and contribute to more, better-paying jobs. This purpose is supported by the following objectives:

- Creating jobs, leading to sustainable economic growth
- Increasing social inclusion and participation
- Enabling Māori to realise aspirations in all aspects of the economy
- Encouraging environmental sustainability and helping New Zealand meet climate change commitments alongside productive use of land, water and other resources
- Improving resilience, particularly of critical infrastructure, and by diversifying our economy.

2.3.1 Existing PGF Funded Projects

Opononi: Manae Footprints of Kupe



Manae Footprints of Kupe is a new visitor/cultural centre in the Opononi which will tell the story of Kupe in a unique and compelling experience which combines live theatre with cinematic effects and projections. Kupe is a larger-than-life figure who features in many Maori migration and arrival legends, and who holds a special place in the local history of the area. The centre will be modelled on a traditional meeting house, adapted to the demands of a high-tech digital theatre and performance space. It will also include formal powhiri and exhibition display spaces. Complementing the visitor centre will be a commercial centre, accommodating cafe/restaurant,

retail, and visitor facilities². This project is predicted to contribute up to \$4.6 million towards a new cultural tourism experience in Opononi and create up to 14 full-time jobs and will provide additional tourism opportunities for Northland's West Coast³.

Waipoua River Road Upgrade

This activity will upgrade the Waipoua River Road to facilitate movements to the visitor centre and campground located at the end of the road itself. The main feature of the upgrade will be the sealing of the road. The amount of the investment from the PGF is \$1.6m.

2.3.2 Tourism Investment Fund

The Tourism Investment Fund is separate to the PGF and supports local communities facing pressure from tourism growth and in need of assistance — areas with high visitor numbers but small ratepayer bases. The fund aims to protect and enhance New Zealand's reputation both domestically and internationally. Supporting robust infrastructure contributes to quality experiences for visitors and maintains the social licence for the sector to operate.

The TIF has funded new public toilets in the Opononi coastal settlement. This is important for the community because they are shared facilities between visiting tourists and locals who access the boat ramp, wharf and other activities. Pressure on the existing toilet facility required new toilets to be provided.

2.4 Realising the Potential

Currently SH12 operates as a primary collector route with its main functions being to enable access to local communities and to facilitate the movement of vehicles onto the more developed highways on the east coast of Northland.

This is reflected the quality of road side amenities provided along the route which although sufficient for the highways current purpose do not support the development of SH12 into becoming one of Northland's premier tourist routes.

In addition, a lack of safe and attractive rest areas and passing bays provides operational challenges if traffic volumes along the route increase (particularly among visiting drivers who are unfamiliar with the route) as there are currently limited passing opportunities along the highway.

² Source <http://www.fitarchitects.com/project/28>

³ Source <https://www.beehive.govt.nz/release/manea-footprints-kupe-receives-pgf-funding>

2.4.1 Impact of under-investing

Within Northland visitor infrastructure, amenities and activities are disproportionately clustered on the east coast closer to the larger population centres and a higher quality transport network (SH1) as shown in Figure 2-2. In addition, due to their location and investment in the SH1 corridor, east coast communities also benefit from a more direct and efficient connection to Auckland than communities on the west coast which contributes to a higher number of visitors preferring to travel along the east coast.

These factors contribute to unequal employment opportunities with the median income on the east coast being between \$20,000 - \$30,000 compared to the median income on the west coast which is below \$20,000.

Under investment in the transport networks servicing communities on the west coast could also result in the lack of business confidence to establish new visitor activities along the SH12 corridor. Private investment in new business is always risk based, and the risk would take into account the government linked investment in an area to support those existing and new business opportunities. Investing in this corridor provides the right signals to business that they will be supported through the provision and upgrade of infrastructure.

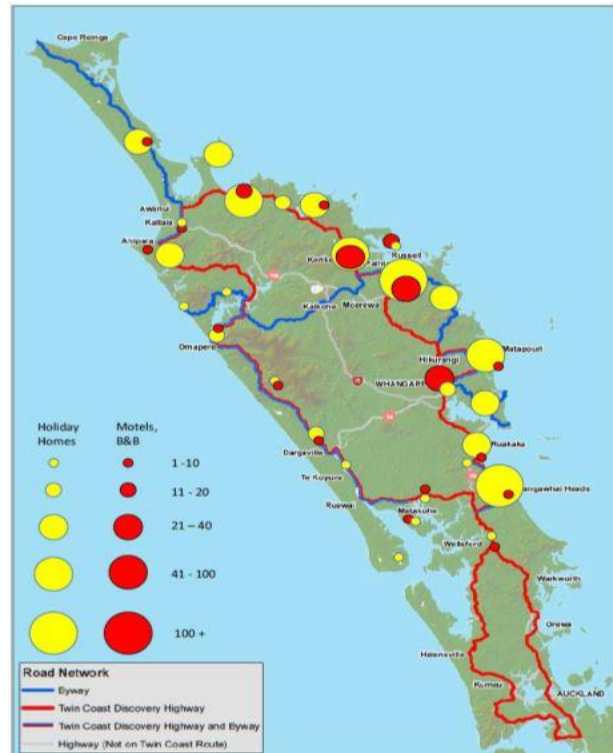


Figure 2-2: Visitor amenity clustering

2.4.2 Tourism

As identified in the Action Plan, tourism in the Northland region is characterised by significant peaks in the summer months and a high proportion of visitor trips visiting only the east coast⁴. Within the corridor the main visitor attractions are centred around the Waipoua forest and the townships of Opononi and Omapere and include the primary intersection from SH12 to and from the township of Rawene.

Rawene is important as a connector for touring cyclists accessing the Hokianga. The Hokianga Harbour Ferry departs and arrives at Rawene and carries passengers and cars across the Harbour to Kohukohu. The service operates seven days a week, approximately once an hour. Touring cyclists utilise this service as part of a north to south journey along SH12 from Cape Reinga.

The main attractions that would attract more visitors to the area are listed below:

- The Waipoua Forest is the largest remaining area of native forest in Northland. There are extensive single and multi-day walking tracks in the forest as well as a visitor centre. The forest attracts over 200,000 visitors annually.
- Development of Opononi – Omapere as a cultural hub and a must-see destination. Manea Footprints of Kupe is likely to encourage more people to stop for longer within the township.

⁴ Ministry of Business, Innovation and Employment. (2018). *Northland Inc Summary Report*. https://gallery.mailchimp.com/7f7416c3cfbb2799f8ff44310/files/e57d9fae-d32e-4273-8150-4840e09fd251/RTO_Factsheet_Northland_Inc_June_2018.pdf

- Arai Te Uru Heritage Walk is located at the end of Signal Station Road and leads out to the Signal Station Point on the southern head of the Hokianga Harbour. The track provides extensive views across the harbour.
- Koutu Boulders are large rounded concretions which are a key draw in other parts of the country, the most famous of which are the Moeraki boulders in the South Island.
- Waimamaku Coastal Track follows a rugged and dynamic coastline from Arai Te Uru Recreation Reserve south to the Waimamaku River. Historically significant, this route used to be the main route for traffic before roads were built inland for travellers heading up the coast from further south
- Hokianga Express Charters provides sandboarding experiences on the large sand dunes at the entrance to the Hokianga Harbour.
- Pakia hill lookout provides a separate vantage point from Sh12 to view SH12. Its use as a rest area, and area for freedom camping is considered a draw, certainly within the context of social media where a significant number of visitor photos of the harbour being posted taking place at Pakia Hill.
- Kayaking, paddle boarding, biking fishing and other business activities focussed on tourists create draws for visitors to plan additional things to do on their visit.

2.4.3 SH12 Opononi Foreshore Coastal Resilience

Coastal erosion has been impacting various locations along the foreshore adjoining SH12 in the Opononi area. The erosion has resulted in embankments being undercut and threatens the state highway potentially resulting in future closures. The Transport Agency has a business case approved for resilience improvements through emergency works to these locations. The funding from this activity class allows for reinstatement and protection of these sections using armoured rock walls but does provide for additional amenity improvements. The most significant site for improving resilience is located opposite the Opononi shops, and I-SITE, and adjoins SH12, the wharf, and a popular swimming beach.

The construction of the resilience works is targeted for August 2019 given the urgent need to protect the state highway access.

3. Problems, Benefits, Investment Objectives and Performance Measures

This section develops the case for investment through linking the need for investment back to the problem statements developed as part of the TCDR Programme Business Case whilst also identifying corridor specific issues and opportunities.

3.1 Twin Coast PBC Problem Statements

During the development of the SSBC for SH12, PBC information and assumptions were reviewed and further developed by the project team to efficiently retest the key problem statements and the evidence that supports them.

The following problem statements (Table 3-1) were identified in the strategic case for the PBC:

Table 3-1: SSBC problem statements

Problem	Problem Statement
1: Destination Appeal	The destination appeal of Northland's visitor industry is focused on a few locations and only at sometimes of the year, which is a lost economic opportunity for all of Northland (50%).
2: Transport Levels of Service	Variability in the customer level of service of the TCDR and key Northland Journeys fail to meet the resilience, safety and road amenity expectations of all users (50%).

The two problem statements identified are interdependent in the development of the SH12 corridor as a high transport level of service lays the foundation for great journeys and visitor experiences which in turn increase the destination appeal of the SH12 corridor.

Figure 3-1 demonstrates the interrelationship between the two problem statements:

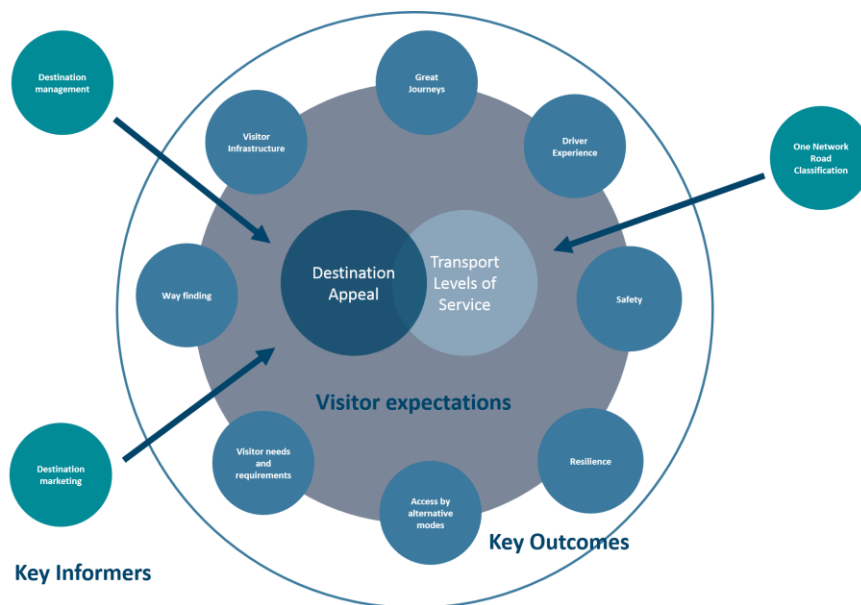


Figure 3-1: SSBC Problem statements and outcomes

The two problem statements are relevant to the SH12 SSBC. It is acknowledged in the PBC that there is a bias for international and domestic tourists/visitors to favour travel to Whangarei, Bay of Islands, and Kerikeri on the east coast with little travel to the west coast through the SH12 connection. Figure 3-2 from the PBC below shows the density of accommodation and attractions are greater on the east coast, compared to the west coast.

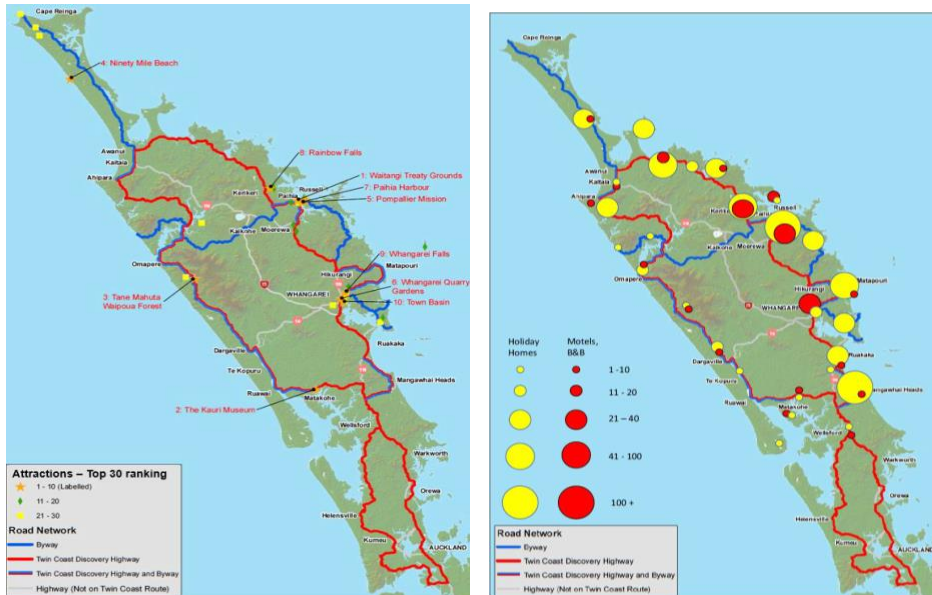


Figure 3-2: Concentration of visitor attractions

Modelled Tourism Flow Data published by the Ministry of Transport in 2005 (Figure 3-3) shows the strong relationship with visitors to Northland originating in Auckland, and the decrease in tourism flows away from SH1 and decreasing past Whangarei and the Bay of Islands.

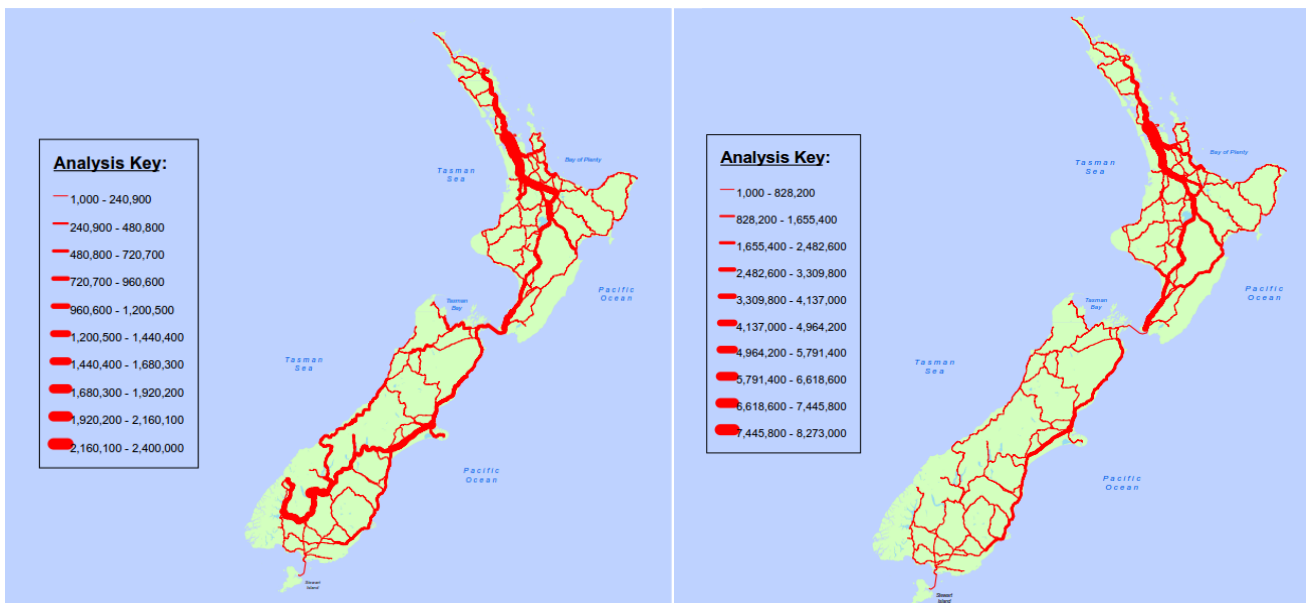


Figure 3-3: Road Flows by International Visitors and Domestic Overnight Visitors 2005 (MoT)

As described in the PBC regional dispersal of visitors is key to increasing the benefit of tourism in other Northland communities, and relieving pressure on places with the highest visitor loads. The Hokianga and Waipoua Forest have a mix of emerging visitor activities and embedded Kauri Forest destinations, combined with its natural beauty that would compel informed visitors to travel from east to west provided the transport infrastructure is suitable and available year-round.

For visitors to the Hokianga, they will make journey decisions based on their travelling experience and availability of destination information. Currently SH12 along the corridor provides a low quality of service in respect of wayfinding, visitor amenities, safety focussed infrastructure, opportunities to pass, on road cycling, visitor parking and pedestrian amenities. The route is also at threat of closure which can result in long detours to access destinations. This can influence the desire for visitors to travel to the area, how long they stay for, their mode of travel, and the experience that they take away with them and is expressed to others, or globally on social media.

3.1.1 Pilot Visitor Travel Survey

In 2018 the Transport Agency published a research report titled “Great Kiwi road trips: enhancing New Zealand’s tourism industry through better visitor journeys” to gain a better understanding of the expectations, motivations, experiences, information preferences and behaviour of visitors (both domestic and international) travelling on New Zealand’s transport network. This research included a pilot visitor travel survey study for Northland to follow the experience of visitors over time to determine their travel behaviour over the course of their travels in Northland including how they travelled and their level of satisfaction with their journeys across the road network. The pilot survey further included a technology-based approach to deliver trip information in an interactive fashion that would entertain the user, and in turn promote different visitor experiences in Northland.

The pilot results showed some important results in considering the user experience for visitors travelling westbound to the Hokianga. Figure 3-4 shows that there were large differences between visitors planned itineraries and their actual travel, indicating that they were being influenced on there travels to visit different attractions:

Figure 3-4: Planned and actual destination, and difference scores (source NZTA RR 649, 2018)

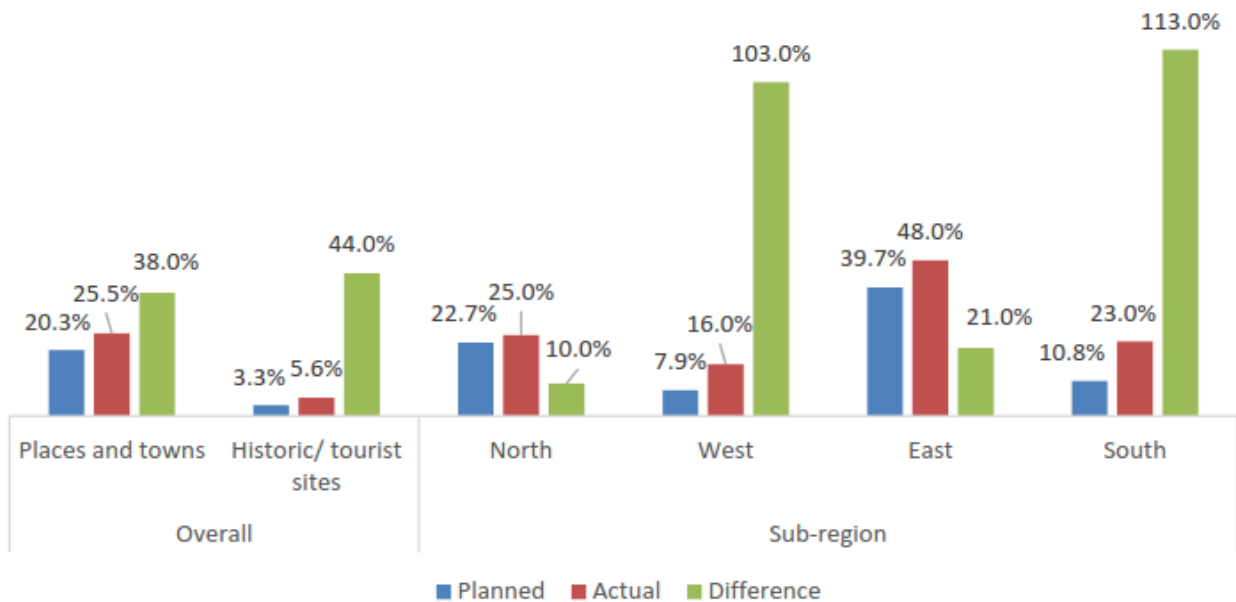
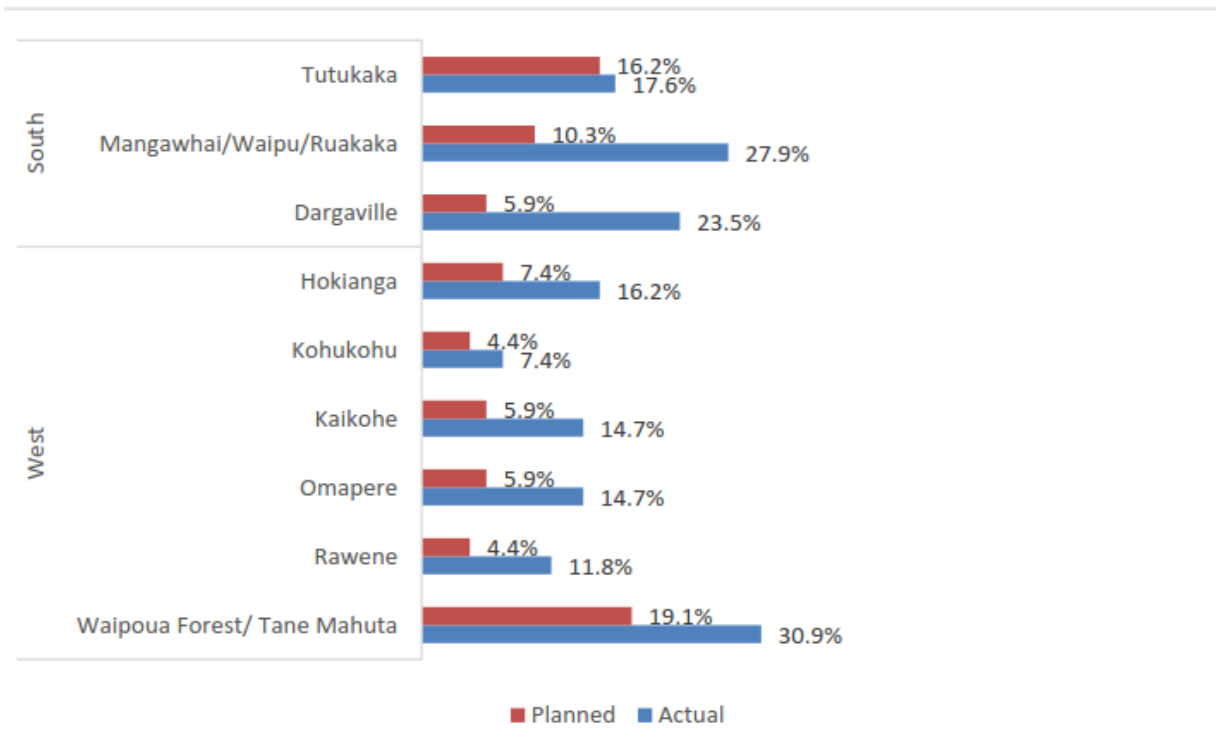
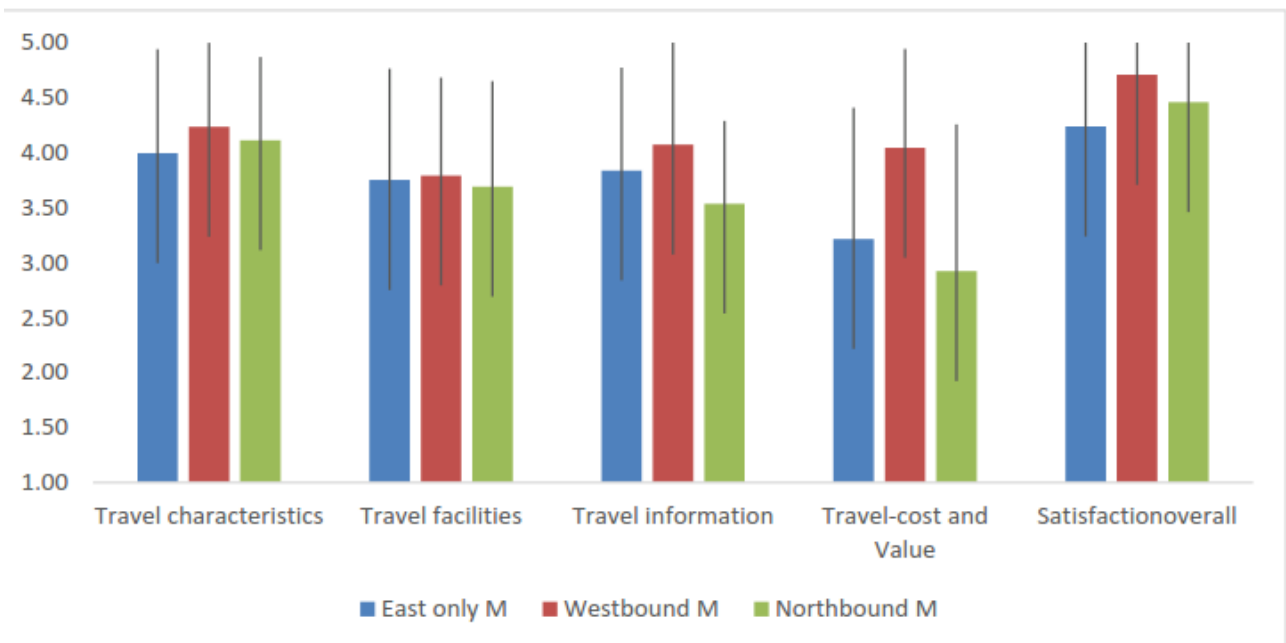


Figure 3-5: Destinations - places, south and west (source NZTA RR 649, 2018)



Visitors that travelled westbound described having a greater level of satisfaction with their journey based on perceptions of the road quality, safety of the journey, comfort driving and enjoyment while driving, compared to east, north and southbound travellers.

Figure 3-6: Satisfaction and direction of travel (source NZTA RR 649, 2018)



The discussion of the results of the pilot in the report outlined some key insights:

- that a majority of visitors to Northland have flexibility in their planned journeys, and that they visit more locations than originally intended. Visitors valued the flexibility to change their journey and being able to 'discover' attractions.
- visitors had a strong desire for cultural and heritage-specific information to interact with, and further supporting this was experiencing different lifestyles related to likelihood to revisit, and experiencing Māori culture related to recommending Northland to others.
- Westbound travellers had a greater satisfaction with their journey supporting a key strategy and initiatives of tourism and heritage agencies in New Zealand to work with transport agencies to better unlock regional dispersal.
- 40% of visitors stayed longer than originally planned and a success factor for investment could include increasing this to 60%.
- Visitors in the study had a realistic perception of the road quality influencing their satisfaction rating. Salient factors such as rest stops and roadside scenery were more influential in their perception ratings.
- The discussion highlighted some key areas for consideration for signature rest stops and key landmarks to mitigate the pressure from extra visitors if greater exploration of the region is achieved.

3.2 Corridor Investment Objectives

A key stage in the option development process was to undertake a review of the evidence provided in the PBC to understand the implications that this has on investing at a corridor specific level.

3.2.1 Crash History

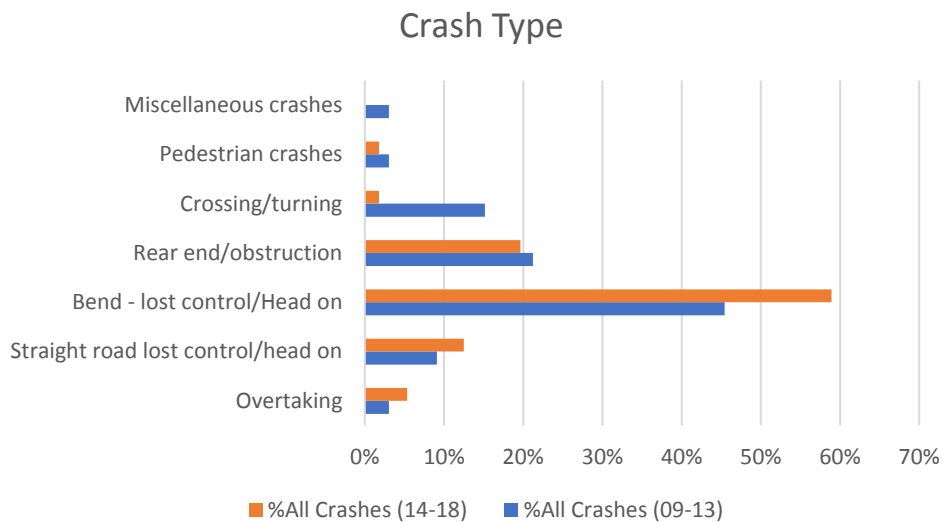
The crash history for the corridor has been interrogated for the five-year periods between 2009-2013, and 2014-2018 and is shown in Table 3-2. Key differences between these five-year periods is the total increase in all crashes by 23, including an increase nine serious crashes between the two periods. There is also a reduction in the number of fatal crashes between the two periods from three to one fatal crash.

Table 3-2: Crashes by severity between 2009-2013 and 2014-2018

Period	Fatal	Serious	Minor	Non-Injury	Total
2009-2013	3	4	9	17	33
2014-2018	1	13	16	26	56

Crashes by type are shown in Figure 3-7. The two key differences between the two periods is there has been an increase in Bend-Lost control / Head on crashes from 45% to 59%, and a decrease in the number of Crossing/Turning crashes from 15% to 1.8%

Figure 3-7: Crash types between 2009-13 and 2014-2018



The crash information shows that there has been an increase in the number of fatal and serious casualties involving motorcycles between the two periods. In 2009-2013 motorcycle casualties numbered three, and this increased to 12 in 2014-2018 including four serious and one fatal casualty.

Additional observations include:

- Alcohol featured in ~30% of crashes between both periods
- In the 2014-2018 period 26% of drivers at fault in injury crashes held a license other than a full-drivers license or were unlicensed
- In the 2014-2018 period 18% of crashes occurred at intersections, and 82% of crashes occurred in the midblock

Fatal and serious crashes by corridor section are shown in Figure 3-3. Crash information is included in Appendix D.

Table 3-3: Fatal and serious crashes by corridor section

Section	Fatal	Serious
Section One	0	4
Section Two	1	5
Section Three	0	3
Section Four	0	1

3.2.2 Roadside risk assessment

Table 3-4 presents the roadside risk assessment for each section of the SH12 corridor based on the KiwiRAP analysis tool. This identifies that section four has a moderate roadside risk for the whole length of the section whilst in Sections 1 and 3 there is a road side risk present for approximately 2/3 of the section.

Table 3-4: Roadside risk assessment

Section	Section length (km)	Roadside risk (left, km)		Roadside risk (right, km)	
		Moderate	Severe	Moderate	Severe
Section One	15 km	9.3 km	2 km	7.5 km	2.7 km
Section Two	4km	No data available, urban area			
Section Three	15km	12.7 km	1.2 km	10 km	4 km
Section Four	20 km	18.3 km	2.0 km	18 km	3.2 km

The roadside risk assessment results in Section 1 achieving a KiwiRAP 3-star rating; Section 3 a 2-star rating for 5km and 3-star rating for 10km and Section 4 achieves a 2-star rating for the whole section.

The crash history combined with the KiwiRAP star rating results in Section 1 of the corridor having a medium – high collective and personal risk. As an urban risk rating has yet to be undertaken in Northland the personal and collective risk of the corridor in Section 2 is unknown, but it is likely that given the criteria that the urban section would qualify for at least a Medium High collective risk rating given the density of crashes that have occurred through this section.

Section 3 has a low – medium risk rating whilst section four through the Waipoua Forest achieves a low risk rating for the first part and a medium – high risk rating south of the Waipoua River

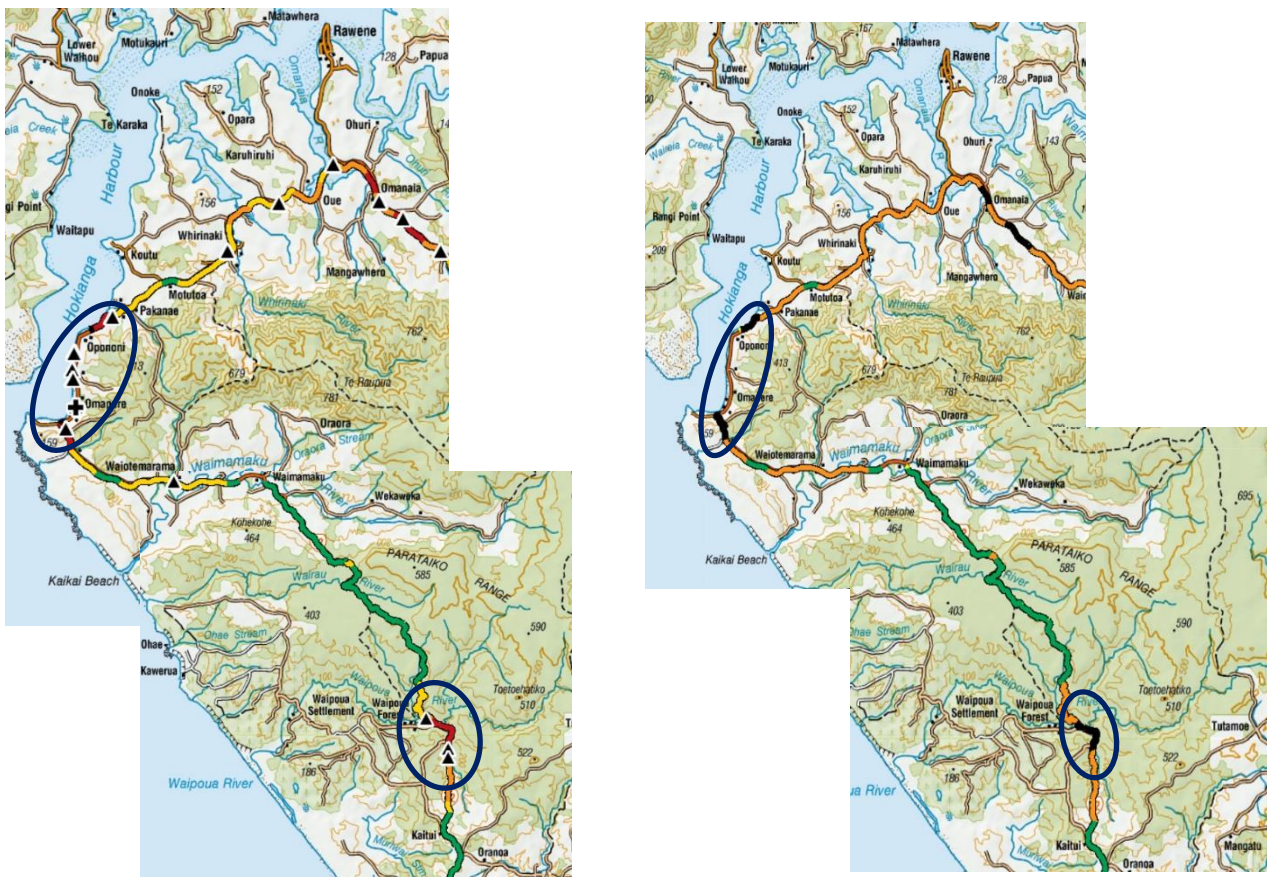


Figure 3-8: Personal (left) and Collective (right) Risk Rating 2013 - 2017

3.2.3 Intersection compliance and sight distance check

Assessment of the intersections located along the corridor and their compliance with the Austroads sight distance standard for rural roads determined that the majority were non-compliant. For most this was typically because of vegetation encroaching on the view shafts, poor signage and line marking, or poor horizontal geometry. The results are reported in Table 3-5.

Table 3-5: Intersection compliance with Austroads rural sight distance standard

Section	Meets requirements	Fails requirements
Section One	2	12
Section Two	1	5
Section Three	1	12
Section Four	0	6

3.2.4 Resilience

Between 2007 and 2017, 15 full and partial closures of SH12 were recorded in the Transport Agency's TRIES system. Eleven of these incidents were due to crashes, 2 incidents were due to fallen trees across the highway and 2 incidents were due to flooding.

Closures/ delays due to crashes occurred on all sections of the corridor whilst the flooding and tree incidents occurred in Sections 1 and 3.

3.2.5 Destination development and management

The National Tourism Infrastructure Assessment⁵ identifies the priorities for the development of visitor infrastructure across New Zealand and the amount of interagency and stakeholder involvement required to develop this infrastructure in relationship to the added value that the infrastructure will bring on a national and regional level (Figure 3-9).

With regards to the context of the SH12 corridor most of the visitor infrastructure requirements are likely to require a medium to high level of interagency coordination due to the multiple land owners and interest in the corridor whilst the value of the infrastructure is likely to only be of benefit to the local and regional economies.

⁵ Deloitte. (2017). *National Tourism Infrastructure Assessment: Tourism Industry Aotearoa*.

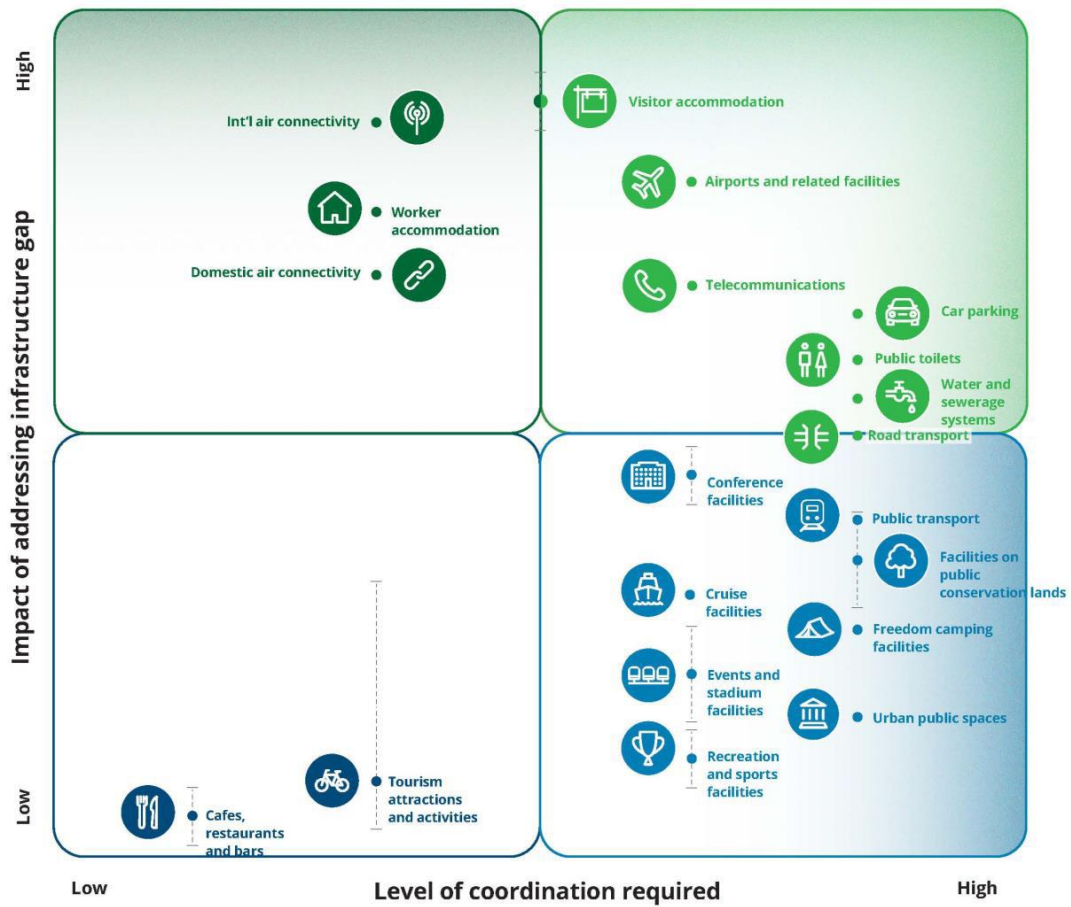


Figure 3-9: Visitor infrastructure requirements

Current visitor facilities and infrastructure along the corridor have been developed in an ad hoc fashion over a prolonged period as the need for new and improved facilities has arisen. Much of the visitor infrastructure along the corridor has evolved from facilities developed for another purpose. For example, community parks have become popular tourist rest areas. Accordingly, the funds set aside to develop and/or maintain these areas is insufficient and does not match the increased demands arising from tourism.

Figure 3-10 shows a typical cross section of the visitor infrastructure provided along the SH12 corridor and identifies that the amenities and infrastructure provided is of varying standards and fails to meet the demand placed on it by increased visitor growth.



Figure 3-10: typical infrastructure provided along the corridor

A key consideration in the development of visitor infrastructure is to appreciate that many of these facilities are mixed use in that they are used by both local residents and visitors to the area. Furthermore, increased demand from visitors may also restrict access and use by local residents.

3.2.6 Localised Corridor Problems

Engagement with the hapū/community has identified a number of corridor specific problems in addition to the high-level problems identified. A map of the problems identified along the corridor are included in Appendix E. A summary of the issues is included in Table 3-6 below:

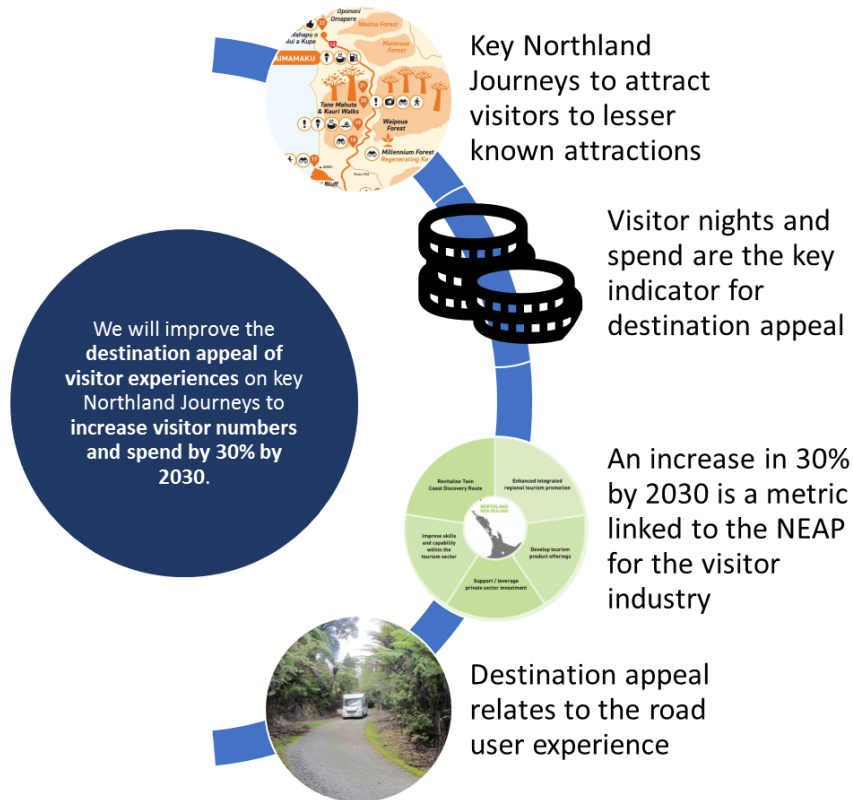
Table 3-6: Corridor specific issues and constraints

Section	Issue
1	Safety issues around Pakanae Cemetery Road during events at the Pakanae Marae, and people walking to the cemetery during funerals
	Potential for inundation at the bridge near Rawene Intersection
	Flooding of the reserve at the Rawene Intersection
	Safety issues at areas where people currently overtake
	Slope resilience at known locations
2	Parking at the Opononi Shops during busy peak periods
	Parking and turning movements at the boat ramp near the Opononi Shops
	Safe crossing places at Opononi Shops, Fairlie Cres and a popular beach, and the Opononi Area School
3	Safety at the Signal Station Road Carpark, a popular tourist spot
	Safe access and parking to the Waiwhatawhata marae and nearby church where roadside parking is the only available option
	Lack of shoulder for cycling on a route also frequently used by local residents, as well as visitors.
4	Lack of passing facilities for vehicles
	Deferred maintenance and capital improvements along the forest section due to the large cost for maintenance to mitigate the spread Kauri dieback disease.

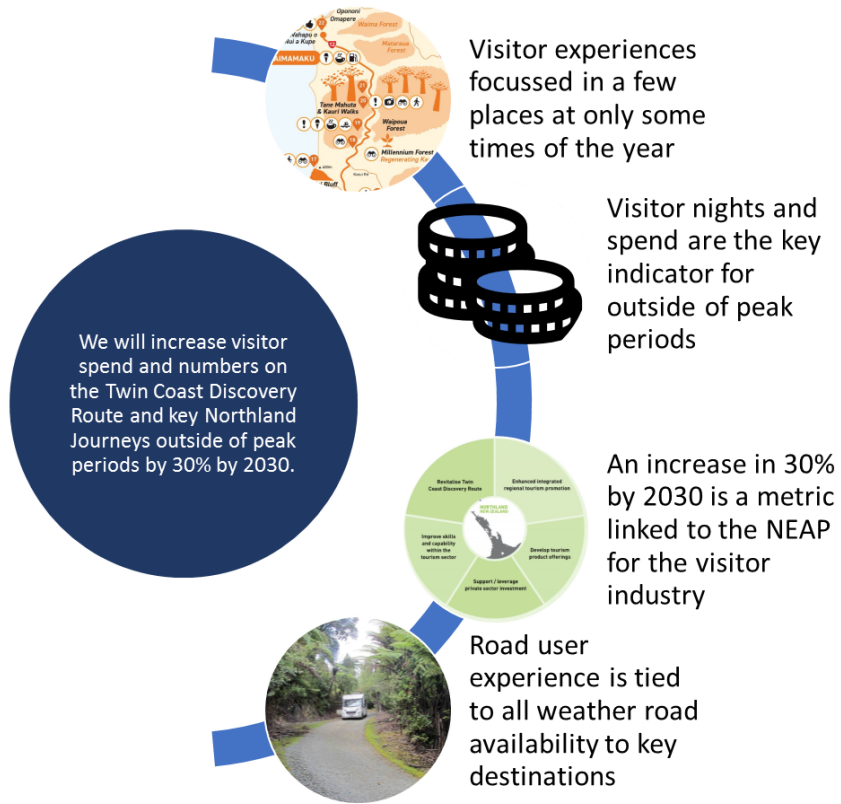
3.3 Twin Coast PBC Investment Objectives

The investment objectives from the Twin Coast PBC have been assessed with the key themes for each being highlighted.

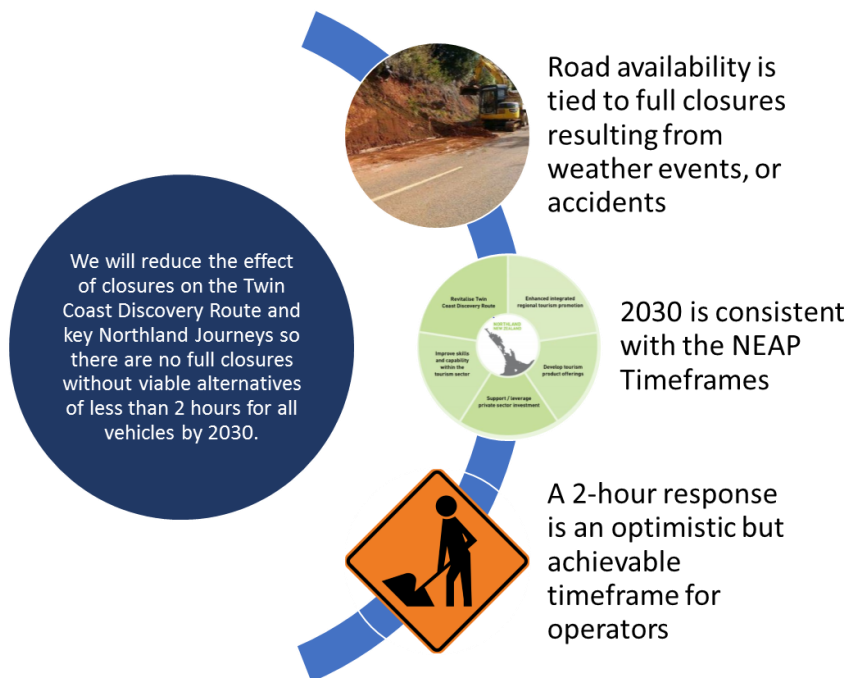
Investment objective 1: Geographic dispersal



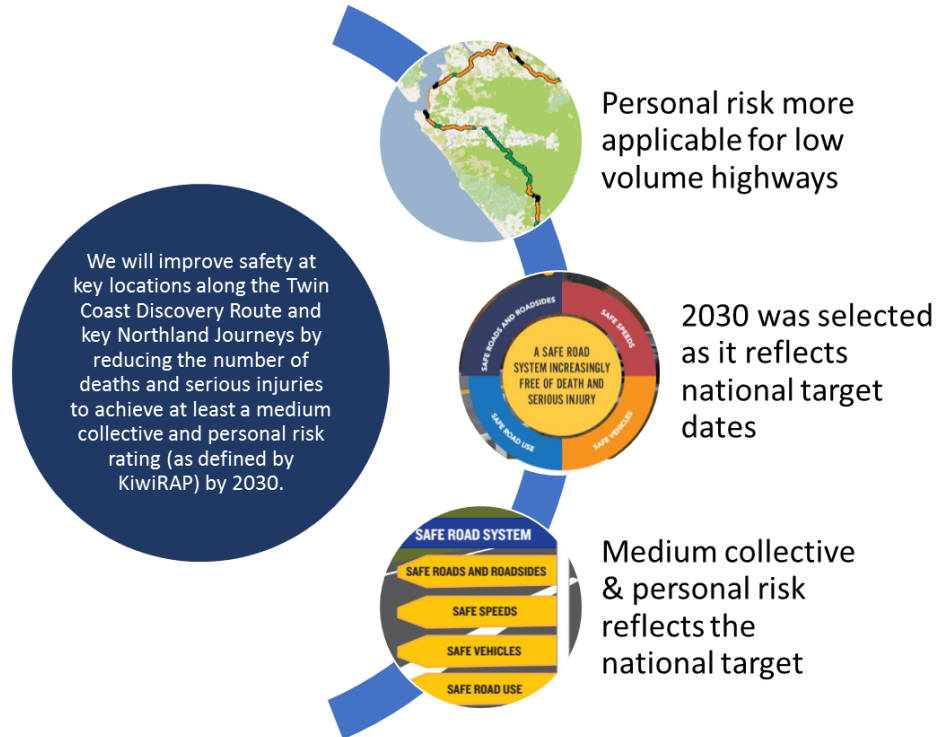
Investment objective 2: Seasonality



Investment objective 3: Resilience



Investment objective 4: Safety



3.4 Corridor Investment Objectives

Investment objective 1: Improving geographic dispersal

As a corridor specific investment objective that links to the Twin Coast PBC we have reframed the geographic dispersal objective:

We will improve the road user experience from a perception of x to a perception of y for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys. Improving the destination appeal will contribute to the overall increase of visitors and spend in the area by 30% to 2030.

In considering a corridor specific investment objective we have focussed upon being explicit in separating out the improvements to the road user experience. This will be the focus for increasing the destination appeal of the key journeys, which have been explicitly stated, and their attractions. We will look to make the investment objective measurable by comparing a before and after perception of the road user experience.

Overall the 30% growth in visitors is an aspiration of the economic action plan and the improvements to the corridor will contribute in part to this growth by improving the destination appeal of visitor experiences at the Coastal Settlements of Opononi and Omapere, and the key Waipoua Forest attractions to help facilitate growth in visitor numbers and spend of 30% by 2030. To assess this contribution to the overall Northland economy we have identified the key measures below.

Key Measures

Baseline – Department of Conservation visitor survey. This survey is to be held over summer and will be used to gauge the appeal of the key DOC managed visitor sites, and the road user experience to the area.

International visitor numbers are estimated using the MBIE International Visitor Survey (Table 3-7), and limited sample sizes. As referenced on the website for the interactive map; “The area of each bubble represents average visitor numbers over the past five years in the year ended the current quarter. Each bubble is clickable, with a tooltip showing average visitor numbers and visitor nights per year, and the total sample size for the five-year period. Note that for many locations sample size is still small even after pooling five years of data; estimates should be treated with caution.” (source MBIE interactive map 20/11/2018)

Table 3-7: Estimated international visitors and visitor nights stayed (source MBIE interactive map)

Location	Annual International Visitor Number	Annual International Visitor Nights	Sample Size
Opononi	6,712 persons	14,152	166 persons
Omapere	4,542 persons	7,434	122 persons
Waipoua Forest	7,645 persons	10,016	224 persons

Investment Objective 2: Seasonality

As a corridor specific investment objective that links to the Twin Coast PBC we have reframed the seasonality objective:

We will improve the road user experience for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys by reducing the effects of crash and weather-related events from x to y to facilitate off-peak travel. Improvements to the corridor will facilitate the growth in visitor numbers and spend at the coastal settlements of Opononi and Omapere and the corridor outside of peak periods by 30% by 2030.

The PBC has highlighted that all weather availability outside of peak periods is key to improving the road user experience to the key journeys long SH12. Visitor spend and visitor numbers travelling to the key attractions is the key measure long-term for the corridor’s contribution to the overall 30% growth target.

Overall the 30% growth in visitors is an aspiration of the economic action plan and the improvements to the corridor will contribute in part to this growth by improving the destination appeal of visitor experiences at the Coastal Settlements of Opononi and Omapere, and the key Waipoua Forest attractions to help facilitate growth in visitor numbers and spend of 30% in the off-peak periods by 2030. To assess this contribution to the overall Northland economy we have identified the key measures below.

Key Measures

Crashes and incidents can result in full or partial closures of the highway, depending upon the nature of the incident and regardless of whether the crash resulted in injury. The graphic below (Figure 3-11) shows the recorded accidents along the corridor, without excluding injury only accidents.

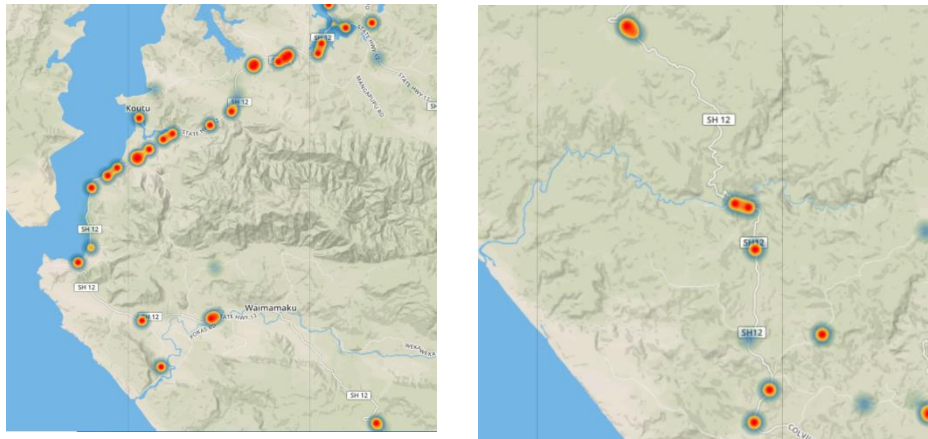


Figure 3-11: Road accidents 2010-2016 (source roadsafetyrisk.co.nz)

The transport Agency's TREIS database shows that the last few years there have been four recorded flood events affecting the corridor (Table 3-8), with three of those occurring to the east of the study area in Taheke.

Table 3-8: TREIS record of closures resulting from flooding to June 2017:

Location	Date/Time	Time closed	Area Affected
012-0017/03.46	12-Jul-2014 03:45:00	1 d, 6 h, 42 m	Taheke
012-0017/11.91	29-Jan-2011 09:00:00	22 h, 20 m	Taheke
012-0017/12.03	23-Jul-2011 07:16:00	5 h, 37 m	Taheke
012-0074/03.97	10-Jun-2014 18:10:00	13 h, 9 m	Waimamaku

Investment objective 3: Resilience

As a corridor specific investment objective that links to the Twin Coast PBC we have reframed the resilience objective:

We will reduce the effect of closures on the corridor so there are no full closures without viable alternatives of less than 2 hours for all vehicles by 2030.

There is one approved heavy vehicle detour route for closures that could affect the corridor that follows SH15 from Kaikohe and identified in Table 3-9. The other routes identified in Table 3-9 follow local roads that may not permit heavy vehicles, tour buses or campervans as they have long sections that are narrow and unsealed.

Table 3-9: Corridor Detour Routes

Origin	Destination	Route	Travel Time	Distance
Kaikohe	Waipoua Forest Kauri Walks Carpark	SH15 – Tangowahine Rd - SH14 - SH12	1h 58min	141km
Kaikohe	Waipoua Forest Kauri Walks Carpark	Kaikohe Rd – Marlborough Rd – SH12	1h 40min	67km
Pakanae	Waipoua Forest Kauri Walks Carpark	SH12 – Waitemarama Gorge Rd – SH12	32 min	24km
Koutu Loop Rd eastern intersection	Waipoua Forest Kauri Walks Carpark	Koutu Loop Rd – SH12	41 min	37km

Mangakahia Road was recently designated State Highway 15 and an improvement programme has been undertaken to bring the road up to state highway standard, particularly for heavy vehicle use. These

improvements to SH15 should improve overall travel times, and legibility to consistent travel times below 2 hours along this detour route.

For the detour routes where there are long sections of unsealed road with narrow carriageway improvement opportunities are limited beyond reforming the carriageway and sealing the road fully. In addition, Waitomarama Gorge Road has a bridge with a 50max restriction that limits some heavy vehicle freight movements.

Investment objective 4: Safety

As a corridor specific investment objective that links to the Twin Coast PBC we have reframed the safety objective:

We will improve safety at key locations along the corridor by addressing safety issues in areas where deaths and serious injuries have occurred, and to improve the corridor to at least a medium collective and personal risk rating (as defined by the Kiwi RAP 2013-2017 assessment) by 2030.

Improving safety along the corridor relates to both the resilience of the corridor and the road user experience. Crashes that have fatal and serious injuries affect the resilience of the corridor through long closures while emergency services attend the scene, and the cause of the crash is investigated. The road user experience is very adversely affected where they are involved in an accident, observe an accident scene, are involved in a 'close call', or perceive the route to be unsafe. Negative perceptions can be spread through word of mouth, social media and various tourism related websites discouraging visitors.

Key measures

KiwiRAP information for 2013-2017 (Figure 3-12) shows that along the corridor the section through Opononi and Omapere has a clustering of fatal and serious crashes. The collective risk is medium high either side of the urban areas.

An urban risk rating for urban areas has yet to be undertaken in Northland, but it is likely that given the criteria the Opononi - Omapere section would qualify for at least a Medium-High collective risk rating.

The second area of Medium-High collective risk is the section of SH12 entering/exiting the Waipoua Forest from the south. This section has a series of out of context curves with limited sightline visibility due to vegetation encroaching onto the highway.

The 10-year crash record shows that a high number of fatal and serious accidents have occurred along the Opononi and Omapere section, the area near Waimamaku, and the corridor section including the Waipoua River Road intersection and the Lookout Road IS. A map showing the crash locations is included in Appendix D.

The High personal risk rating shown in Figure 3-13 aligns with Medium High collective risk rating around the urban areas of Opononi and Omapere, and the road section between the Waipoua River Road, and Lookout Road intersections. Changes to the



Figure 3-12: Collective Risk & 2013-2017 F&S crashes

personal risk rating will be driven by infrastructure changes and be measurable over a shorter period, where the collective risk will be driven by the number of fatal and serious accidents measured over each five-year period.



Figure 3-13: Personal Risk Rating 2013-2017 (source SafetyNet)

3.5 Performance Measures

A key component of any investment decision is the ability to readily measure changes over time against the agreed investment objectives.

To facilitate this several key performance measures (KPIs) were developed as part of the ILM process. these KPIs were developed alongside the respective investment objective to track the performance of this measure over time.

Table 3-10 displays the investment objective, proposed KPIs and measures.

Table 3-10: Performance measures

Investment Objective	Benefit	KPI	Measure	Baseline year	Target
1: Improve geographic dispersal	Increased visitor numbers/spend	30% increase in visitor numbers by 2030	Visitor numbers increase at key sites	2018: Actual westbound travel 16.0% (NZTA RR 649)	2030: Actual westbound travel 30%
			Waipoua Forest ⁶	2012: 100,000	2030: 130,000
2: Seasonality	Increased visitor numbers outside of peak periods	30% increase in off peak visitor numbers	Visitor numbers increase at key sites	2018: Actual westbound travel 16.0% (NZTA RR 649)	2030: Actual westbound travel 30%
		Reduction in weather related full closures along the corridor	Reduction in crash and weather-related from full closures to only partial closures.	4 Weather related full closures up to 2017.	Restricted to only partial closures
3: Resilience	Provides an all-weather alternative route in the event of a state highway closure	Alternative route available to key locations along the corridor.	Alternative route provision under 2 hours travel time for all vehicles.	2019: Restrictions to travel (50max and campervans) and slow speeds on unsealed alternatives (~30kph)	Alternative route available for vehicle classes up to 50max Average travel speed increased to ~60kph
4: Safety	Improved safety reducing the DSI risk	Medium personal and collective risk rating	KiwiRAP roadside risk rating	2017: Varies between low and high depending on specific corridor section	2030: Medium for the entire length of the corridor

⁶ Department of Conservation track counter at Tane Mahuta.

4. Strategic Case for Investment

4.1 Introduction

This chapter summarises the strategic context around investment into the SH12 corridor. It outlines how investment within the corridor is aligned with key national, regional and local policies and objectives, demonstrating that investment in the corridor will help deliver right sized investment into the region.

4.2 Policy and Strategy Alignment

4.2.1 Government Policy Statement on Land Transport (2018/19 – 2027/28)

The Government Policy Statement on Land Transport (GPS) sets out the governments strategic direction for investment in, and the development of the transport network for the next 10 years. The GPS takes a mode neutral approach towards investment in the transport network. Investment is prioritised to develop a transport network which enhances safety and access for all road users whilst also offering value for money and considering the impact on the surrounding environment (Figure 4-1)⁷.

The development of the Twin Coast Discovery Route is closely aligned to the priorities of the GPS as the intent of the project is to identify options to improve the visitor experience along the route whilst also providing localised safety improvements and enabling access to local communities.

In addition to the above there is also a strong linkage between the priorities of the GPS and the objectives of the Provincial Growth Fund (PGF) as one of the priorities underpinning both of these investment mechanisms is to enable access to better economic, social and employment opportunities.

4.2.2 Te Tai Tokerau Economic Action Plan

Underlying the development of the Northland / Tai Tokerau economy is the Tai Tokerau Economic Action Plan (2016). The Action Plan brings into focus a group of projects that together will contribute to transforming Northland's economy. These actions are founded on the opportunities laid out in the Tai Tokerau Northland Growth Study (the Study). The Action Plan is short to medium term, covering 10 years; one that encourages new projects to be included as existing projects come to completion. A broad range of organisations will contribute to the success of the Action Plan, from business and Iwi/Maori through to not-for-profit organisations and local and central government.

The Action Plan identifies four work streams (Figure 4-2), of which Workstream 1 and 3 are relevant to the Twin Coast PBC and SH12 business case.



Figure 4-1: GPS priorities

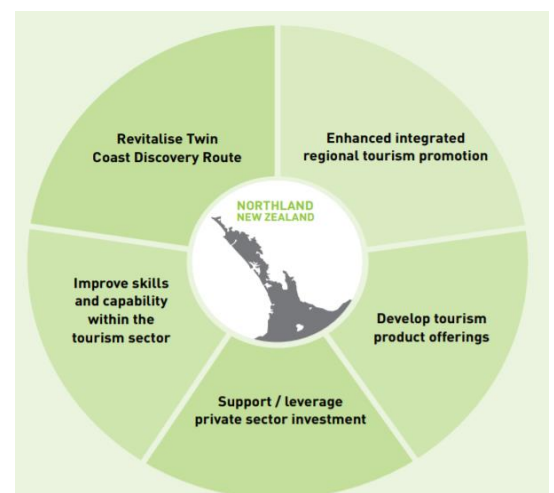


Figure 4-2: Te Tai Tokerau Economic Action Plan workstream one

⁷ Ministry of Transport. (2018). *Government Policy Statement on Land Transport 2018/19 – 2027/28*. <https://www.transport.govt.nz/multi-modal/keystrategiesandplans/gpsonlandtransportfunding/>

Workstream 1. Enablers: To bring Northland’s transport, digital infrastructure, skills and capabilities and water resources to a standard that creates an enabling environment for economic development in Northland.

Workstream 3. Visitor Industry: To reduce the impact of seasonality, improve product dispersal across the region and enhance tourism promotion⁸

4.2.3 Northland Regional Council 30 Year Transport Strategy

The Transport Strategy details the enablers and prohibitors to achieving the regions strategic direction of encouraging and creating growth.

Factors identified as limiting inter-regional connections include;

- High levels of economic deprivation on the West coast compared to the East
- Geographic dispersal resulting in many unfamiliar drivers on roads and decreased safety
- High reliance on roading network with few, if any alternative modes of transportation
- Increasing susceptibility to weather events which compromise route security

For growth to occur investment must be put into improving roading, passenger transport, and travel demand management that will promote a sustainable, integrated, and safe transport system.

4.2.4 Environmental Management Plan (EMP)

The Pakanae Resource Management Council (RMC) have produced an EMP that identifies the key issues in the area, and the associated policy and methods to mitigate the risks. It is reiterated that engagement does not serve to result in economic gain but to reconnect with land they have historically been disenfranchised from. Hapū will advocate for initiatives that prevent further alienation.

Historically communication has been reactive and poorly thought out which has put both the people and environment under pressure. Relationships with cultural landscapes and taonga are at risk because of insufficient management and developers who are not aware of their location. Communication with Hapū should be consistent and begin at the initial stages of development. Hapū recognise the need for developing robust planning processes that consider traditional, spiritual, and physical relationships with land and resources.

RMC identified the following as key issues;

- Pakanae cemetery at risk from coastal erosion – very important site that links together three major cultural sites.
- Significant need for better roads due to negative the effect unsafe roads have on the community.
- Currently the roads are noisy and dusty, which along with the presence of litter results in the degradation of the environmental health of the community.
- Undersized and poorly designed roads result in flooding of adjacent properties.
- The remoteness, lack of local services, and lack of public transport means Hapū are reliant on their cars which contributes to climate change and exacerbates aforementioned issues

The EMP outlines roading as being a medium priority. Hapū policies include; the sealing of all roads, the establishment of a safe road network, consultation with Pakanae RMC on all future roading networks and major upgrades and ensuring adequate signage within the rohe.

⁸ <https://www.northlandnz.com/assets/Resource-Hub/Economic-Action-Plan/2016-Tai-Tokerau-Northland-Economic-Action-Plan.pdf>

Without fulfilment of the above priorities, Hapū will be unable to carry out their duties as kaitiaki of the area. The RMC wish to secure a meaningful relationship with councils and government that will aid in establishing a vision for future management.

4.2.5 Opononi - Omapere Community District Plan (CDP)

The CDP was developed between the FNDC and the local community to outline how residents will work with the council to ensure the sustainable development of the Opononi and Omapere townships. For this to occur, the plan identifies the need to provide a comfortable standard of infrastructure and amenities. The community will lobby for improved highway maintenance and obtain the communities contribution to NRC public transport fund to support a local public transport strategy.

4.2.6 Department of Conservation (DOC) proposal for a Kauri National Park

The plan investigates whether the Waipoua Forest and the surrounding area meets the criteria for the establishment of a national park. Currently 100,000 people visit Tane Mahuta per year and visitor numbers to are currently projected to increase moderately. It is expected the heightened profile of a national park would further increase visitor numbers.

The plan identifies the following social and economic impacts that require mitigation;

- Increased infrastructure demand
- Increased inexperienced drivers through Waipoua Forest thus compromising safety
- Lack of equity in areas where tourism dollars are spent, with Dargaville and Omapere receiving the most benefit
- Remoteness of Waipoua increasing response times in medical situations and vehicle breakdowns
- Kauri dieback

In the development of this proposal it was identified that there is currently a misalignment between the departments plans for the Waipoua Forest and those of Te Roroa.

4.2.7 One Network Road Classification (ONRC)

Currently State Highway 12 operates as a primary collector route under the One Network Road Classification (ONRC) with its main functions being to enable access to local communities and to facilitate the movement of vehicles onto the more developed highways on the east coast of Northland.

Table 4-1 identifies the target level of service outcomes for a primary collector route.

Table 4-1: ONRC Customer Level of Service targets

	ONRC Target	Current situation
Travel time reliability	Generally consistent travel times except when affected by other road users or the weather. This means that journeys along the corridor should be free from disruption due to minor incidents (e.g. crashes, stock on the highway, minor weather events). Disruptions can still be expected due to major crashes or weather events (although these should be rare occurrences)	Travel times along the corridor remain generally consistent and what can be expected from a primary collector highway in a rural setting.
Optimal Speeds	Travel speeds depend on assessed level of risk and recognise mixed use, schools, shopping strips and concentrations of active road users.	Traffic speeds in the Opononi, Omapere and Waipoua Forest area inconsistent with the surrounding environment and land uses.

	ONRC Target	Current situation
Resilience	Route is almost always available except in major weather events or emergencies, alternatives may exist. Clearance of incidents impacting on road users should have a moderate priority. Road users may be advised of issues.	Recorded road closures and disruptions are limited to serious crashes and severe weather events.
Safety	Variable road standards and alignment. Lower speeds and greater driver vigilance required on some roads/sections particularly depending on topography, access, density and use. Active road users should expect mixed use environments with some variability in the road environment, including vehicle speed. Road user safety guidance provided at high risk locations.	<p>Majority of crashes occurred due to inappropriate speeds on bends and vehicles losing control on bends. This suggests road user safety guidance should be considered at high crash locations.</p> <p>Currently narrow shoulders and use of rumble strips provide a low level of service for active modes. low traffic volumes result in it being safe for bicycles 'to take the lane' at known pinch point locations. If the number of bicycle users increase, then localised shoulder widening may need to be considered.</p>
Amenity	Moderate level of comfort, occasional areas of roughness. Aesthetics of adjacent road environment reflects journey experience needs of all road users and adjacent land use.	Road surface generally of a good quality except for the Waipoua Forest. Amenity of road side rest areas below desired standard for a key tourist route.
Accessibility	Land use access for road users generally permitted but some restrictions may apply. Active road users should expect mixed use environments with some variability in the road environment, including vehicle speed.	Constrained road environment and lack of infrastructure development limits safe access to the Pakane Marae and Cemetery, Opononi town centre and key visitor destinations within the Waipoua Forest.

4.2.8 The Impact of Non- Delivery

There are a number of anticipated negative impacts that will be experienced if the proposed investment in the SH12 corridor and associated visitor infrastructure does not occur in the timeframes proposed. These impacts are summarised in Table 4-2.

Table 4-2: impact of non-delivery

Factor	Consequence
NZTA network objectives and ONRC corridor targets	<p>The operational performance of the corridor will continue to lag behind similar corridors within Northland and the rest of New Zealand.</p> <p>This is particularly relevant to the section of the corridor through Waipoua Forest as maintenance has been deferred due to Kauri dieback.</p>
Corridor safety and crash rates	Break-ins at road side rest areas and crash rates along the corridor are likely to increase if left unresolved.
Development of the local tourist product	Tourist numbers travelling along the corridor remain static and there is a mismatch between the tourist product offered and the level of visitor infrastructure provided.

Factor	Consequence
Community and iwi well being	Community and iwi wellbeing stagnates as the area lacks investment in basic visitor and social infrastructure.
Northland productivity, contribution, growth and investment	Northland's economy remains underperforming. economic opportunities and access to jobs is restricted to the main centres.
Waipoua Forest and Kauri dieback	Visitor and roading infrastructure in the Waipoua Forest continues to deteriorate with a lack of investment to support current visitor numbers.

4.3 Opportunities and Constraints

Issues and constraints have been identified along the corridor along with their probability of occurring and impact based on the classifications in Table 4-3. Constraints have been mapped and are shown in Appendix F.

Table 4-3: Uncertainty Log Classifications

Probability	Status
Near certain: The outcome will happen or there is a high probability that it will happen	Policy or funding approval Tenders let Under construction
More than likely: The outcome is likely to happen but there is some uncertainty	Submission of planning consent application imminent Adopted plans*
Reasonably foreseeable: The outcome may happen, but there is significant uncertainty	Adopted plans* Draft plans Development conditional upon interventions going ahead
Hypothetical: There is considerable uncertainty whether the outcome will ever happen	A policy aspiration

Table 4-4: General Uncertainty Log

Factor	Time	Uncertainty	Impact on programme	Comments
Environmental				
Flooding	N/A	Reasonably Foreseeable	Medium	Flooding records of flood susceptible land should be inspected, and high-level drainage should be considered. Flooding has been recorded around Waimamaku, and Koutu in recent years and flooding in Taheke located to the east of the study area affects the access to along SH12.
Outstanding Natural Landscapes	N/A	Almost Certain	Medium	Outstanding landscapes should be avoided in development and planning.

				The landscapes also provide a large opportunity as an attraction for tourists and visitors and will have a direct effect on the economy.
Erosion	N/A	Reasonably Foreseeable	Medium	Erosion prone land should be inspected and reviewed before development. Make certain that steep banks won't slip or that the road could be obstructed. Known areas of slope instability have been identified in the southern section of Omapere and areas to the north of Opononi
Rising Sea Level	Coming Years	Reasonably Foreseeable	High	A higher sea level will increase areas of erosion and reduce potential available land. Considerations should be made to create a longer life term of the highway.
Societal				
Pa Sites, Archaeological and Heritage Sites	N/A	Almost Certain	Medium	Land owners and appropriate hapū must be consulted during planning and before development.
Marae	N/A	Reasonably Foreseeable	Medium	Marae in the area should be informed of development and consulted.
Community needs/aspirations	N/A	Almost Certain	Medium	Community needs should be heard, acknowledged, and responded to.
Provincial growth fund developments	N/A	Almost Certain	Medium	Privately lead developments in the absence of adequate planning.
Tourism Growth	2030	Reasonably Foreseeable	Medium	Development should account for the expected 30% influx of tourists.
Structural				
Gas/Water Pipes	N/A	Almost Certain	Medium	Maps and council must be consulted before development. Be certain of where lines are buried underground.
Sea Wall	August 2019	Almost Certain	Medium	Located in five key sites along the corridor, including in Opononi around the wharf, and fronting the I-Site.

Urban Parking; Changes to private parking	N/A	Reasonably Foreseeable	Medium	Based on the predicted tourism increase, more parking in urban areas will be required.
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4.4 Section Specific Constraints

Section 1 – Rawene Road Intersection to Opononi

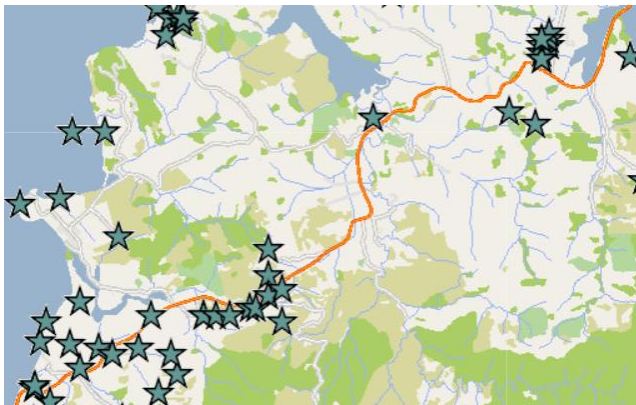
a) Pa Sites

There are five Pa Sites within a one-kilometre distance of the Highway throughout Section 1. These consist of Whiria Pa, Kupe Pa, and three others.

b) Archaeological & Heritage Sites

The NZ Archaeological Association Web Portal shows within Section 1 a cluster of sites near to the corridor on Wharekawa Road in Oue. Sites that may impact activities along the corridor are more concentrated from west of Whirinkaki through to Opononi.

Figure 4-3: Sites located along Section 1 (source Archsite)



Within Section One two registered historic places are listed within the Heritage NZ online database that are within proximity of the corridor.

Table 4-5: Historic Places in Proximity to Section One (source Heritage NZ)

Registration #	Name	Registration Type	Address
431	Church (Methodist)	Historic Place Category 2	Jackson Rd, Whirinaki
442	St Lukes's Chuch (Anglican)	Historic Place Category 2	SH12, Pakanae (within grounds of Pakanae Marae)

c) Flooding

Flooding is a very real concern in Section 1 of the corridor. There are three sections of concern where the Highway runs through flood susceptible land. The first section begins 200m North of the Vujcich Road intersection and ends 200m South of the Mangapara Road intersection. The second section begins 1km East of the Motutoa Road intersection and ends 100m South of the Waihotu Road intersection. The third section begins 250m South of the Waihotu Road intersection and ends 500m South-West of the Pakanae Cemetery Road intersection. Throughout the lengths of carriageway, extra care must be taken to create adequate water drainage for a worst-case flooding scenario.

d) High Natural Character

Along the section between Rawene Road Intersection and Omanaia Road intersection, the SH12 carriageway runs along the Hokianga Harbour coastline which is considered high natural character. Minimal environmental impact should be aspired for along this section so that it may retain its character and amenity value.

e) High Voltage Powerlines

A high voltage powerline traverses the highway approximately 200m West of the Omanaia Road intersection. Care should be taken with 1km of this point along the highway and designers and developers should be aware of restrictions and constraints the powerlines create.

f) Slope Stability

There are sections of slope instability located along this section on both sides of SH12. Higher risk sections have been reinforced with gabion rock walls. Refer to the Preliminary ground investigation memo attached as Appendix Q for more information.

Section 2 – Opononi and Omapere

a) Urban Parking

Increased parking availability is required throughout this section with the influx of domestic and international tourists. As noted in the strategic assessment parking is extremely limited in the Opononi area during the peak summer season.

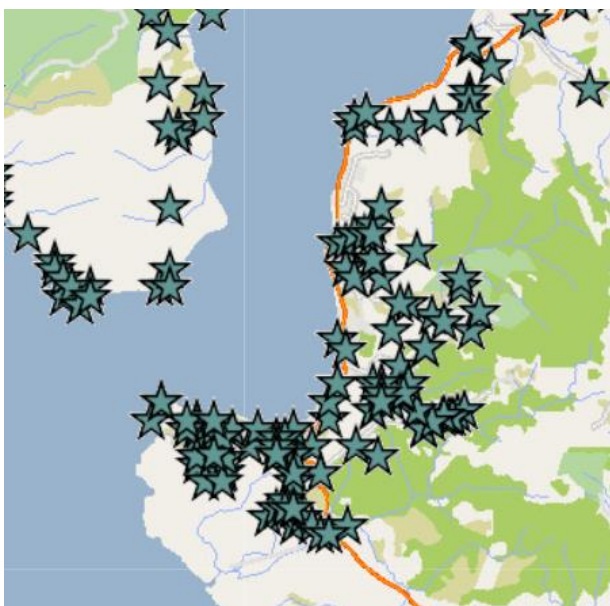
b) High Natural Character

The coast along the entirety of Section 2 is considered as high natural character with views over the Hokianga Harbour. Accordingly, the natural features must be retained with minimal environmental impact arising from any improvement works along this section.

c) Archaeological & Heritage Sites

The NZ Archaeological Association Web Portal shows within Section 2 a density of sites potentially located near to or within the transport corridor along the coast. The density of sites increases towards the Omapere end of Section 2. The Hokianga has a long history of settlement and the coastal areas of this section will contain many sites.

Figure 4-4: Sites located along Section 2 (source Archsite)



Within Section 2 five registered historic places are listed within the Heritage NZ online database that are within proximity of the corridor.

Table 4-6: Historic Places in Proximity to Section 2 (source Heritage NZ)

Registration #	Name	Registration Type	Address
3881	Gordon Andrewes House	Historic Place Category 2	27 SH12, Opononi
2574	House (former Crombies Motel)	Historic Place Category 2	SH12, Omapere
441	Rowe House and outbuildings [Relocated]	Historic Place Category 2	SH12, Kokohuia, Opononi
3945	Spry Andrewes House	Historic Place Category 2	11 SH12, Opononi
2579	Webster House	Historic Place Category 2	SH12, Opononi

d) SLU Points: Potential and Confirmed Ground Contamination

Four points of potential contamination lie along the second section of SH12. The first is located at South Hokianga War Memorial Hall. The second is approximately 75 metres north of Opononi Beach Holiday Park's north-eastern corner where there has been livestock dip or spray race operations. The third point is at the end of Baker Drive where there is a rubbish dump and possibly a quarry. The final point is located by Old Wharf Road and Freese Park Road, where there is a g.a.s. service station.

e) Slope Stability and Erosion

A seawall is to be constructed in five locations to protect the state highway from constant coastal erosion.

Slope stability is identified as a concern for the section of SH12 leading south of Omapere towards Signal Station Road.

Section 3 – Omapere to Waipoua Forest

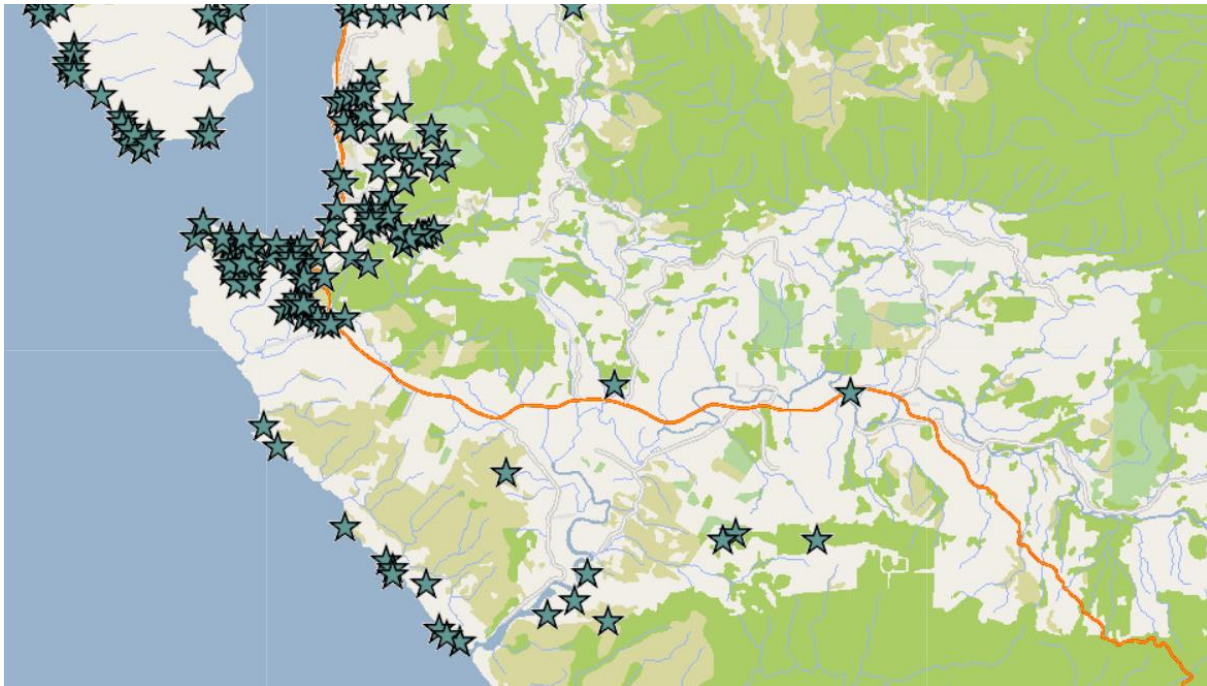
a) Flooding

Flooding is the primary concern throughout Section 3, and there are two sections of SH12 with a flooding risk. The first susceptible section to flooding begins approximately 850m southbound on the SH12 from the Te Hunoke Road intersection. The carriageway is susceptible to flooding for approximately 400m southbound from this point. The second area of concern begins at the Waimamaku Beach Road intersection and ends 100m southbound of the Goodwin Road intersection.

b) Archaeological & Heritage Sites

The NZ Archaeological Association Web Portal shows within Section Three the density of sites are predominantly located in proximity to Signal Station Road and Omapere to Pakia Hill.

Figure 4-5: Sites located along Section 3 (source Archsite)



Within Section Three no registered historic places are listed within the Heritage NZ online database that are within proximity of the corridor.

c) SLU Points: Potential and Confirmed Ground Contamination

The primary points of ground contamination through Section 3 are located approximately 350m west of the Taita Road intersections where service stations are located. An additional point due to livestock dip or spray race operations lies approximately 200m south of where Waitemarama Gorge Road and Pinehill Road intersect. This other point however is situated almost 1km from SH12.

Section 4 – Waipoua Forest to Katui Road Intersection

a) DOC Conservation Land

Almost the full length of Section 4 runs through Department of Conservation (DOC) Conservation Land. Work in this section will likely have to be consulted with DOC to ensure minimal environmental impact.

b) Outstanding Freshwater Bodies

Section 4 runs alongside and crosses many rivers considered as outstanding freshwater bodies. Care must be taken in design and development throughout the section to ensure minimal impact on these.

c) SLU Points: Potential and Confirmed Ground Contamination

There is one SLU Point within proximity of Section 4, which is located approximately 1.5km up Waipoua River Road. This point is categorised as having agrichemicals including spray contractors on commercial premises, pest control operators, and a service station.

d) Land of Significance to Maori

Section 4 runs alongside and through one large area of significant land to Te Roroa and is nationally important. This begins at the Waipoua River Road intersection and runs as far as the Waipoua Settlement Road intersection. Throughout this section of carriageway, care must be taken to minimise environmental impact and cultural impacts.

e) Biological Risk

Identified in 2009 Kauri dieback (*Phytophthora agathidicidia*) is a pathogen which infects Kauri via spores entering the trees root system. As the pathogen's spores are spread with the transport of soil from one area to another, SH12 through the Waipoua Forest is one of the main vectors by which the pathogen spreads within the forest. Maintenance activities of the road corridor is one potential path, as is the uncontrolled stopping of people through the forest area to access areas of the forest outside of designated paths.

Maintenance activities are expensive due to the Kauri dieback risk. Vehicles need to be constantly washed down, and material swept from the road, or dug up needs to be disposed of remotely in Whangarei. Maintenance cannot always be from one end of the corridor to the end but needs to jump between sections from the worst to least affected areas.

Layby areas have been closed to respond to uncontrolled stopping of vehicles. Visitors to the forest were taking advantage of these pull-over areas for slower vehicles to stop fully and access the forest outside of the designated tracks. Closing off the layby's with boulders was necessary to stop this behaviour in these locations.

There is a need to be as vigilant as possible due to there being no known cure for Kauri dieback.

f) Waipoua Forest Management Plan

The Waipoua Forest Sanctuary SH12 Management Plan is to provide the framework, methods and controls that apply to all roading activities (design, construction, operation and maintenance) on State highway 12 within the Waipoua Forest Sanctuary. The plan recognises and provides for the natural and cultural values of the Waipoua Forest Sanctuary and addresses the management of pest plants, weeds and biosecurity threats such as Kauri Dieback Disease within the State highway corridor.

It provides guidelines for design, construction and maintenance of activities associated with State Highway 12 to protect and preserve the forest habitat and the natural character of the State highway road reserve within Waipoua Forest Sanctuary.

5. Treatment and Option Development Process

The optioneering process undertaken is shown below in Figure 5-1.

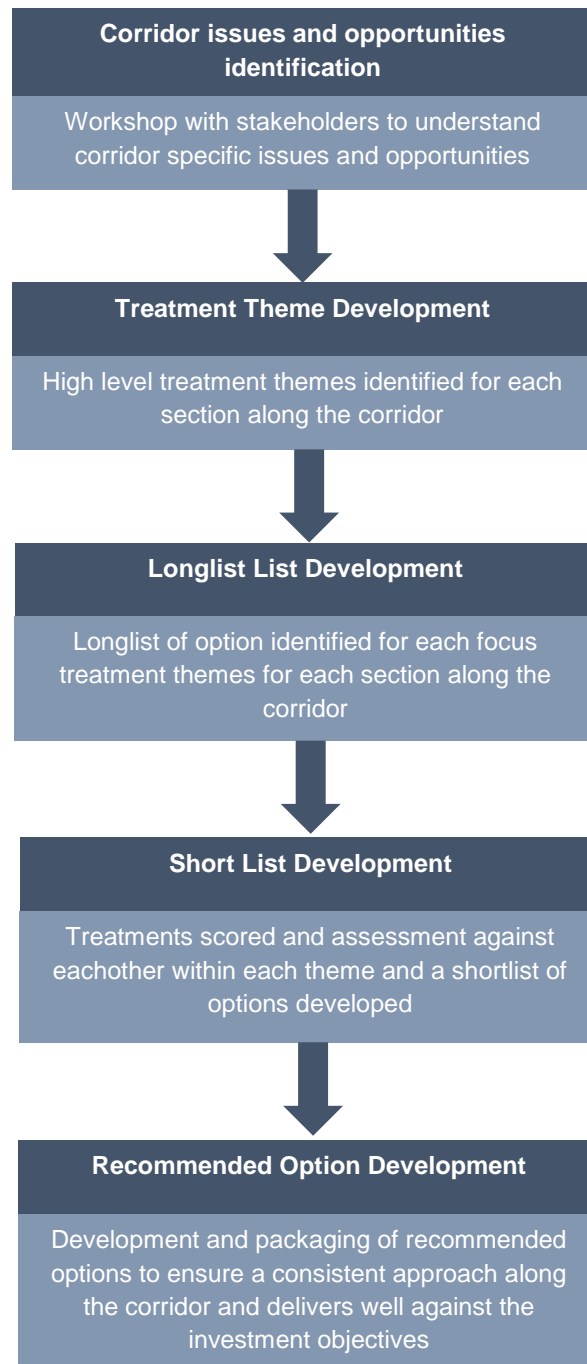


Figure 5-1: Treatment development process

The development of treatment themes and options was tested iteratively with stakeholders and partners through a series of hui. Hapū representatives also represented the community views due to them living in the area, and being community leaders for the ratepayer's association, local tourism investment, and the interests of the local Opononi Area School. The various hui allowed for a frank and robust discussion to be undertaken in the option development process and to ensure that the options developed were supported by all partners and stakeholders.

Table 5-1 provides a summary of hui attendance.

Table 5-1: Hui and attendees

Hui	NZTA	Representatives from other TCDR projects	Local Hapū	Community representatives	DOC	Far North District Council
NZTA MCA development meeting						
Issues, constraints and MCA hui						
Corridor themes hui						
NZTA focus corridor themes hui						
Long List treatment options hui						
Short List-Recommended treatment options hui						
Waipoua Forest treatment options workshop						
Town Centre Design Workshop						
Public Consultation						

5.1 Treatment option Scoring Framework

Scoring was undertaken using the Agency's 7-point scale (+3/-3) which allows for significant granularity to differentiate between multiple options when scored against the pre-determined and weighted criteria. The score descriptions are described in Table 5-2 below.

Table 5-2: Scoring framework

Rating	Definition	Score
Significantly positive	Significantly positively impact, likely resulting in long term improvements	+3
Moderately positive	Moderately positive impact, which may provide improvements and opportunities	+2
Slightly positive	Minor positive impact	+1
Neutral	Similar impact to the do minimum	0
Slightly adverse	Minor adverse impact	-1

Rating	Definition	Score
Moderately adverse	Moderate adverse impact	-2
Significantly adverse	Significant adverse impact with serious long-term impacts	-3

5.2 Corridor Sections

To enable the identification of treatment options within the SSBC, the corridor was broken down into a series of subsections based on the evidence summarised in the strategic assessment and the surrounding topography. The treatments identified within each section have been developed as a series of packages to address the themes identified below to avoid the development of multiple overlapping treatments.

The corridor subsections are:

Section One: Rawene Intersection to Opononi

Section Two: Opononi and Omapere urban area (Opononi gateway sign to Pioneers Walk)

Section Three: Omapere Gateway to the Waipoua Forest Entry Sign

Section Four: Waipoua Forest (Waipoua Forest entry Sign to Katui Road)



Figure 5-2: SH12 corridor

5.3 Identification of corridor specific issues and opportunities

A hui was undertaken hapū partners to understand the specific issues and opportunities present along each section of the corridor. The outcomes of this hui are summarised in Figure 5-3 and Table 5-3.

The issues and opportunities identified have been grouped based on the following corridor themes:

- **Safety and Resilience:** identifying opportunities to improve the safety and resilience of SH12 through sight distance improvements, widened shoulders, ATP, speed reductions, widened centrelines and safety barriers.
- **Enhancing the visitor experience:** identifying opportunities to improve the visitor experience along SH12 e.g. improved rest areas and amenities, wayfinding, widened shoulders for cycling and gateway treatments to towns and key visitor destinations.
- **Enabling access** to key community facilities and visitor destinations, intersections, parking improvements and road widening



Figure 5-3: SH12 issues and opportunities

Table 5-3: Issues and Opportunities

Section	Safety and resilience	Enabling access	Improved visitor experiences
Section One	A: Rawene Intersection	A: Rawene intersection – improved access to Rawene	A: Koutu freedom camping and Koutu boulders
	B: Crash clustering between Rawene and Oue	B: Improved local access	B: Limestone viewing and access
	C: Crash clustering and slope stability	C: Improved local access in Whirinaki – including walking and cycling	
	E: Crash clustering and slope stability	D: Improved access to Koutu	
	F: Pakanae Marae and Cemetery Rd intersections safety concerns	E: Improved access to Pakanae Marae and cemetery	
Section Two	D: Opononi – Omapere crash clustering, crashes due to a number of reasons	F: Improved access and parking around the Opononi shops and wharf	C: Opononi wharf and town centre
Section Three	G: Crash clustering on bends and close calls reported near Waiwhatawhata marae	G: Improved access and parking at Waiwhatawhata marae	D: Signal Station Head and Pakia Hill lookouts
	H: Crash clustering btw Mitchell and Waiotemarama Gorge Rd. Localised flooding along Waiotemarama river	H: Improving access to Mitchell and Waiotemarama Gorge Rds.	E: Waiwhatawhata marae access and parking. Access to nearby church problematic.
		J: Improved local access in Waimamaku.	
Section Four	I: Crash clustering on bends and safety concerns at Tane Mahuta carpark	I: Improved access along the Waipoua Settlement Road	F: Tane Mahuta and Kauri walks
	J: Safety concerns at Kauri walks carpark		G: Te Roroa Waipoua Forest visitor centre, café and camping ground
	K: Crash clustering on bends south of the Waipoua River		H: Waipoua Forest lookout
Corridor Wide	Promotion of safer speeds and a more predictable road environment through consistent road marking and signage	Improved facilities for cycle tourists (e.g. route signage and shoulder widening)	Improved wayfinding, cultural and visitor information signage.
			Installation of interpretation panels at rest areas and other key visitor locations

Following on from the issues and opportunities hui, the long list of treatment themes (Appendix G) was identified. As the scope of the SSBC was to enhance the visitor experience along the SH12, the development of treatment themes was also restricted to the corridor.

A key outcome from developing the treatment themes was the identification of early intervention options (Table 5-4) which, if implemented would have an immediate benefit in addressing the corridor investment objectives. The criteria for these options: able to be constructed in ~12 months, simple design, sufficient impact for safety, tourism and wayfinding, requires no formation widening, affordable, requires minor public consultation.

Table 5-4: Early Interventions

SSBC Theme	Treatment	Dependency	Risk/ opportunity
Safety and Resilience	Safer speeds through local communities	Community plans	Opportunity to create a better user experience through safer speeds
Safety and Resilience	Safer speeds through Waipoua Forest	Confirm feasibility with forest management committee	Opportunity to create a better user experience through safer speeds
Safety and Resilience Visitor experience	Gateway treatments at Whirinaki, Opononi, Omapere and Waipoua Forest	Waipoua Forest: confirm feasibility with forest management committee	Opportunity to create a better user experience through creating self-explaining roads and promoting the local identity of specific places
Safety and Resilience Improving access	Minor intersection treatments to ensure conformance with appropriate standards	Each intersection can be advanced independently	Improved safety of each intersection by improving its conformance with accepted standards
Safety and Resilience Improving access	Kea crossing outside Opononi Area School	Kea crossing needs buy in from the School and local community	Enhance the walking experience for children accessing Opononi Area School and increase the number of children walking as a mode choice.
Safety Improving access	SH12 safe crossing outside Fairlie Cres Opononi	No interdependencies	Improved access to the nearby beach for the local community. Improve the safety of the intersection by improving its conformance with accepted standards.
Safety and Resilience Visitor experience	SH12/Pakia Hill lookout intersection upgrade	No interdependencies	Improved access to a key tourist rest area on the corridor.
Safety and Resilience	ATP consistency along corridor	Impacts on the development/ promotion as a cycle route	Opportunity to create a better user experience through creating self-explaining roads
Safety and Resilience	Inconsistency in line marking along corridor (Particularly in the Waipoua forest)	Waipoua Forest: confirm feasibility with forest	Opportunity to create a better user experience through creating self-explaining roads

5.4 Safety and resilience

As all visitors to the Hokianga undertake most of their travel by road, improving the safety, resilience and user experience of the highway is a key part of improving the visitor experience and encouraging

more people to travel to the region. The treatments developed to improve the safety and resilience of the corridor provide the foundations for necessary to create a great visitor experience.

In Northland the Kiwirap risk rating for state highways is either a 2-star or 3-star rating. There are no 4-star rated roads in Northland. Typically, a 4-star rated road will be a divided and multi-lane, have an adequate horizontal alignment, minor roadside risk, and an adequate shoulder width of 1.7m – 2.4m. For an undivided highway a 4-star rated road will have good horizontal alignment, good overtaking provision with high sight distance (i.e be straight), have low volume, and have a negligible roadside risk.

The cost to move a 3-star rated road to a 4-star rating requires a large investment and would typically be developed on high volume roads. Conservatively given the terrain and current horizontal geometry of the road along the corridor it is expected that ten's to hundreds of millions of dollars would need to be invested in order to move the star rating from a 3-star to a 4-star rated road. This would be cost-prohibitive given the low traffic volumes on SH12. The target for these treatments is to move those highway sections from a 2-star to a 3-star rating, and where the road is currently a 3-star to improve it within the 3-star band (e.g moving from a 3.10 to a 3.60).

The safety and resilience treatment themes developed, focus on creating a predictable road environment, speed management and reducing the risk associated with run off the road crashes. To this extent the two treatment options shown in Table 5-5 were developed in response to the known crash history and KiwiRAP score.

Table 5-5: Safety and resilience treatments

Section	Sub section	Speed management	Treatment One	Treatment Two
Section 1	1.1	80 km/h speed reduction in Whirinaki	Speed management + regulatory signage and curve advisory signage and gateway treatments	Treatment One + shoulder widening, safety barriers to reduce roadside risk and consistent use of ATP/rumble strips
	1.2	Alternative route sealing (Koutu Loop Road)		
Section 2	2.1	50 km/h speed reduction in Opononi - Omapere		
Section 3	3.1	80 km/h speed reduction of Pakia Hill		
	3.2	Alternative route sealing (Waiotemarama Gorge Rd) sealing		
Section 4	4.1	80 km/h speed reduction in Waipoua Forest		

As the corridor currently meets the resilience targets specified by the ONRC customer levels of service, and there is a designated detour route within two hours' drive, the development of resilience treatments was strongly linked to the safety treatments identified above and the Twin Coast PBC investment objective. This is since the majority of closures (or partial closures) on the highway were due to crashes, therefore reducing the crash risk would also have a significant resilience benefit.

5.5 Visitor experience

Development of treatment themes to improve the visitor experience focused on improving the journey experience along the highway and facilitating the development of a number of 'must see' visitor destinations.

5.5.1 Enhancing the journey

The development of the journey experience consists of helping visitors feel connected to the landscape and local culture through developing a consistent approach to wayfinding, information signage and the development of cultural markers to identify significant places along this journey. The approach taken to the development of wayfinding and cultural markers will be led by the Wayfinding

business case whilst this SSBC will identify suitable locations for the placement of wayfinding signage, cultural markers, visitor information and interpretation panels.

In addition, as cycle tourists are a growing key user of the route specific treatments such as cycle route signage and shoulder widening will be developed in order to create a safer and more enjoyable journey for these corridor users.

5.5.2 Township enhancements

Part of enhancing the visitor experience is to ensure that townships along the corridor are developed as attractive places for visitors to break from their journey and spend time. The development of treatments within townships should focus on providing infrastructure improvements such as access to the beach and improved parking which will encourage visitors to stop and stay for longer. The development of these treatments should also provide the confidence for private businesses to invest in the area and develop the range of hospitality and accommodation options which visitors are likely to require.

5.5.3 Development of 'must see' destinations

The development of 'must see' destinations will focus on developing experiences unique to the Hokianga such as viewing Tanae Mahuta, Marae visits or developing places to gain views across the Hokianga. Based on this the development of treatment options will focus on:

- Development of rest areas/ viewpoints to gain unique views across the region, these locations may also include cultural markers and interpretation signage to draw the visitor into the experience,
- Development of gateway locations to announce the arrival at key stops along the journey such as Opononi and the Waipoua Forest. Gateways will feature cultural markers, bi-lingual signage, and landscaping/artwork unique to the destination. Gateways may also include parking/ pull over areas,
- Treatments to enhance the Opononi town centre such as increased pedestrian connectivity, parking improvements, landscaping and increased activities for a wide range of people to encourage visitors to stay in the area for longer.

5.5.4 Enabling access

Treatments developed to improve access to community facilities and visitor destinations along the highway focused on providing safe places to allow vehicles to pass and improving the function of key intersections along the route.

5.5.5 Passing Opportunities

Although the development of a passing strategy for the entire TCDR is being undertaken by Passing and Overtaking SSBC, suitable locations for passing opportunities and uphill crawler lanes will be identified as part of the treatment options developed as part of this SSBC. Proposals thus far in the Passing and Overtaking SSBC include the provision of passing opportunities west of Kaikohe so the provision of additional opportunities along the SH12 corridor will conform with direction that business case. The development of passing opportunities/slow vehicle bays will be undertaken using the guidance provided in the Transport Agency's *Provisional Passing and Overtaking Guidelines (2008)*.

5.5.6 Intersections

Intersection treatments were developed based on the requirement to address safety concerns at some intersection locations whilst also improving access to key community facilities, visitor attractions and developing tourist experiences.

All the intersections along the corridor were evaluated based on their known crash history, compliance with NZTA geometric design guidelines and whether they provide access to the above-mentioned facilities.

5.6 Do Minimum Option (Base Case)

A base case or Do Minimum Option is included and provides the benchmark for determining the relative value and cost of each additional option under consideration.

The base case for the SH12 corridor consists of the following:

- programmed maintenance along the corridor
- the Opononi sea-wall and other sea-wall protection currently being constructed
- the Manae Footprints of Kupe cultural centre that is due for construction start in 2020
- sealing of the Waipoua River Road that has approved funding for construction

5.7 Future Year Assumptions

Future year assumptions were developed based on the aspirations of the Action Plan, and the current traffic and user volumes along the corridor where data was available. This helped to inform the development of the treatment themes to respond to growth.

5.7.1 Data

Historic traffic volume data is available from the NZ Transport Agency Traffic Monitoring System (TMS) at the three locations identified below and in in Figure 5-4:

- 01200062: West of Waiotemarama Gorge Road near Opononi
- 01200079: About 200m south of Weka Road/Goodwin Road in Waimamaku
- 01200089: South of Wairau River Bridge in Waipoua Forest



Figure 5-4: TMS count sites in study area

For each of these locations, daily counts were extracted as far back as data was available. The earliest counts available were from 2001 for the Opononi site and 2000 for the Waimamaku and Waipoua Forest sites. These sites only count for a few weeks each year, so not all months have counts.

In addition to daily count data, 7-day AADT data was available classified by vehicle type. This data was available from 2009.

5.7.2 Growth

TMS daily count data was averaged by year and by month. To account for seasonal fluctuations, two sets of average daily traffic (ADT) were calculated: winter (May through August) and summer (December through March)⁹.

As noted in the previous section, counts were available at all three sites as far back as 2000 or 2001; however, counts were not available for all months or years. Counts were more consistently available beginning in 2009. Counts were not available for 2018 for the Waimamaku and Waipoua Forest sites. Therefore, for consistency, growth has been assessed between 2009 and 2017. What data is available for earlier years shows that traffic has been relatively stable for the last 18 years. This can be seen in the winter counts for the Opononi site, the only set where counts were available for every year between 2001 and 2018.

Figure 5-5 through to Figure 5-9 show the ADTs for different count sites along the highway.

⁹ Seasons were defined as four months rather than three to maximise count availability.

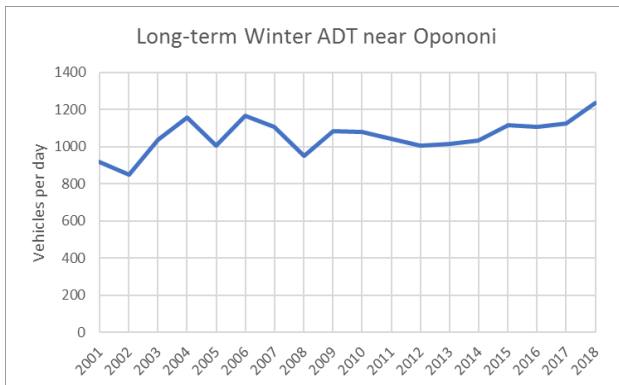


Figure 5-6: Long-term winter ADT counts at Opononi

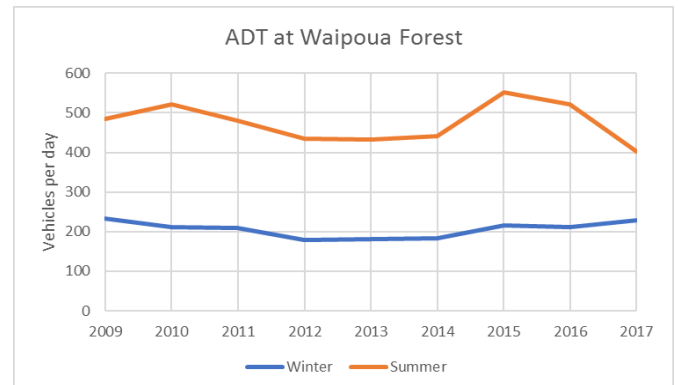


Figure 5-5: Summer and Winter ADT at Waipoua Forest

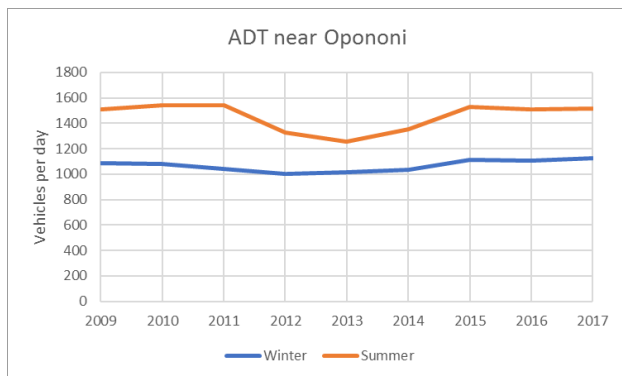


Figure 5-7: Summer and Winter ADT at Opononi site

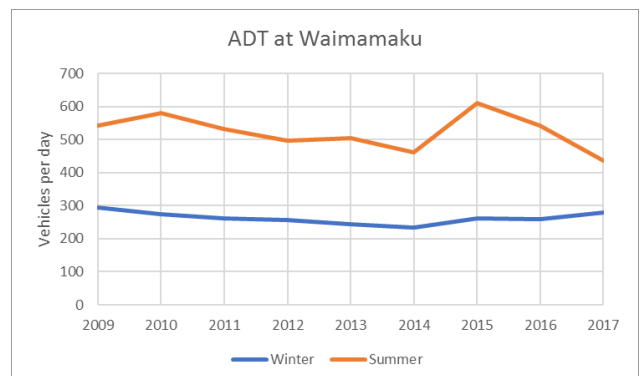


Figure 5-8: Summer and Winter ADT at Waimamaku

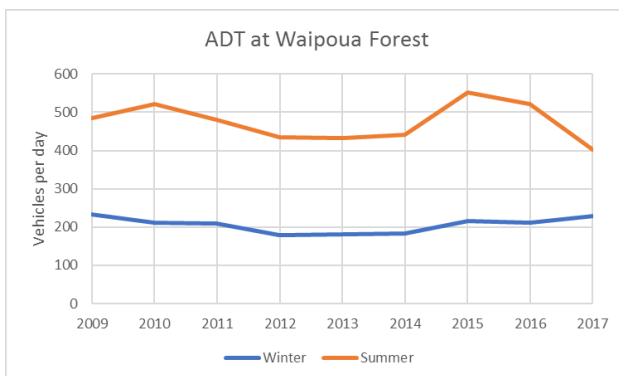


Figure 5-9: Summer and winter ADT at Waipoua Forest site

5.7.3 Vehicle composition

The composition of vehicle traffic on SH12 at the three TMS sites in 2017 is shown in Figure 5-10 through Figure 5-12. There has been a very slight increase in the percentage of cars, between 1% and 3% more compared to 2009, and corresponding small reductions in light, medium, and heavy commercial vehicles (LCV, MCV, HCV).

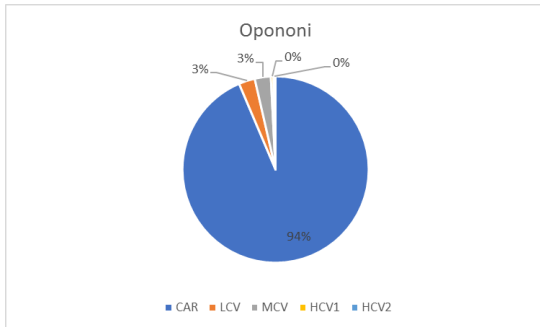


Figure 5-10: Vehicle composition, Opononi site

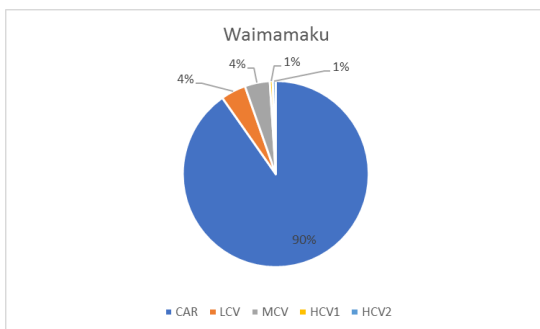


Figure 5-11: Vehicle composition, Waimamaku site

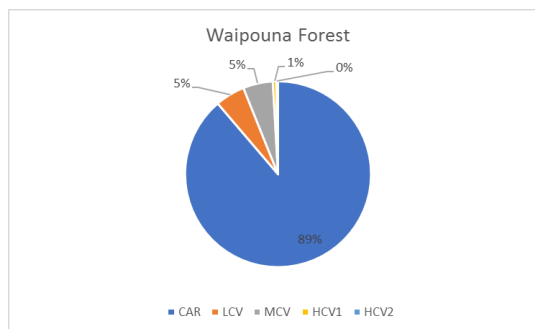


Figure 5-12: Vehicle composition, Waipoua Forest site

5.7.4 Future Growth

The Twin Coast PBC investment objectives included the following growth targets:

- Increase visitor numbers by 30% by 2030, and
- Increase visitor numbers outside of peak periods by 30%.

One interpretation of these targets is that by 2030, the daily traffic on SH12 will increase by 30% if targets are achieved. Figure 5-13 and Figure 5-15 show a representation of what growth could look like if traffic increases linearly from the base year of 2017 to the horizon year of 2030. This model of growth could be used for benchmarking progress toward the investment objectives. This growth is reflected as the change in the number of vehicles per day using the corridor.

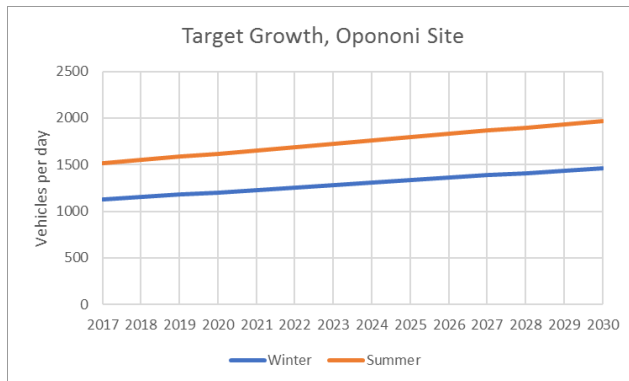


Figure 5-13: Target growth, Opononi site

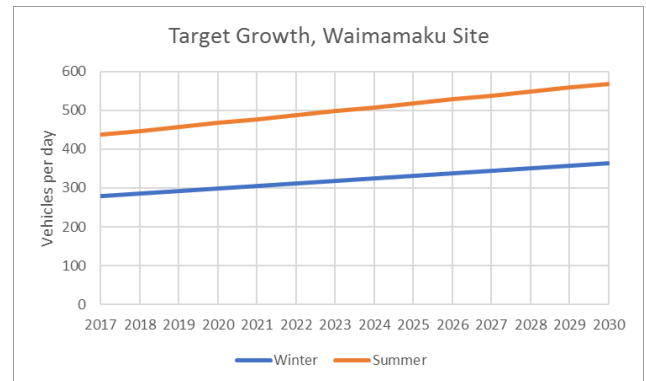


Figure 5-14: Target growth, Waimamaku site

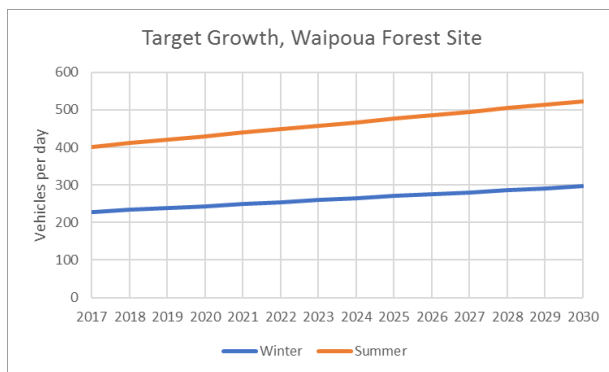


Figure 5-15: Target growth, Waipoua Forest

Table 5-6 shows the linear annual growth rate (2009 to 2017) at each site for summer and winter, as well as the growth rate for the difference between summer and winter, which can roughly be assumed to be tourist traffic.

Table 5-6: Annual linear growth rates by site and season

Site	Winter	Summer	Difference
Opononi	0.6%	-0.1%	-2.1%
Waimamaku	-0.7%	-1.6%	-3.1%
Waipoua Forest	0.0%	-0.8%	-1.7%

These growth rates indicate that since 2009, there has been very little growth in local traffic and a decline in tourist traffic along this section of SH12. At the Opononi site, the winter growth rate for 2001 to 2018 (shown in Table 5-6) is 0.7%, only slightly higher than the 2009 to 2017 rate.

5.8 Assessment Framework

The assessment of the proposed treatments undertaken as part of this project is based upon the Transport Agency’s Multi Criteria Analysis (MCA) for Transport Projects Guidance which focuses on the MCA component of the option development and the assessment of alternatives.

Assessment is undertaken in a number of stages which allow for treatment options to be refined through the long list to short listing process to ensure that the developed treatment options meet the requirements of iwi, the local community and stakeholders.

In the instance of this project, the recommended way forward is a number of treatment packages. These treatment packages consist of several smaller projects which have been grouped together based on the outcomes they are addressing and to ensure that there is a consistent approach to the

development of the corridor. The MCA adopted for this project consists of three elements, described below.

5.8.1 Corridor Investment Objectives

The corridor investment objectives are summarised in Table 5-7. The inclusion of the investment objectives in the MCA is to ensure that treatment themes, and ultimately options can be assessed to identify if they meet the investment objectives.

Table 5-7: Assessment Criteria – Investment objectives

Investment Objectives	Considerations
Objective One: Destination Appeal	We will improve the destination appeal of visitor experiences on key Northland Journeys to increase visitor numbers and spend by 30% by 2030
Objective Two: Visitor Spend	We will increase visitor spend and numbers on the Twin Coast Discovery route and key Northland Journeys outside of peak periods by 30% by 2030
Objective Three: Safety	We will improve safety at key locations along the Twin Coast Discovery Route and key Northland Journeys by reducing the number of deaths and serious injuries to achieve at least a medium collective and personal risk rating (as defined by KiwiRAP) by 2030
Objective Four: Resilience	We will reduce the effect of closures on the Twin coast Discovery route and key Northland Journeys so there are no full closures without viable alternatives of less than 2 hours for all vehicles by 2030.

5.8.2 Additional Criteria

Four additional criteria were included in the MCA, these criteria are summarised in Table 5-8 below and ensure that the options developed were fit for purpose and offer value for money. These criteria have been brought through from the Transport Agency MCA Guidance to provide an assessment that is consistent.

Table 5-8: Additional assessment criteria

Additional criteria	Considerations
Community/ Stakeholders	Ensure development of options which are acceptable to, and meet the needs of communities, the Far North District council and iwi. Includes environmental issues
Strategic Fit	Ensure development of options are aligned with the agreed strategic direction for the area and that the options taken forward service new developments and tourist activities
Constructability	Based on desktop review of issues, site drive over and advice from NOC and council
Value for money	Ensure the development of cost-effective options

5.8.3 Assessment of Effects

The treatment themes and options identified as part of this SSBC have been developed to a concept level only, with a key requirement the treatment/improvement is able to be constructed within the existing SH12 designation.

Therefore, only a high-level desktop environmental and social responsibility screen has been undertaken as the effects of the project are likely to be limited to the current designation.

In addition, the development of the recommended options has only been undertaken to a concept level and done so in-lieu of detailed survey and geotechnical information. Therefore, the detailed design and land acquisition requirements will need to be undertaken in the pre-implementation phase of approved projects.

The ESR screen will be utilised in the MCA assessment for each activity to help guide the likely impact on the feasibility of each activity, but also for the community's acceptance of the impacts of the activity also.

Table 5-9: Assessment criteria – assessment of effects

Assessment of Effects	Considerations
Natural Environment	ESR screen – impact on the natural environment
Built Environment and property	ESR screen – impact on the natural environment
Urban Design	ESR screen – impact on the natural environment
Community and social development	ESR screen – impact on accessibility to key destinations and activities
Cultural	ESR screen – impact to iwi/ cultural values
Safety and resilience	How does the option enhance safety and resilience?
Visitor experience and regional development	How does the option enhance the visitor experience and increase the destination appeal?

6. Treatment Themes Assessment

6.1 Introduction

This section describes the process undertaken to develop and assessment the initial list of treatment themes identified.

6.2 Treatment theme development

Table 6-1 outlines the 92 high-level treatment themes initially identified. These treatment themes were first developed based on feedback from the Transport Agency, local hapū, business owners and the local community. A map of the treatment themes is contained in Appendix G.

A high-level assessment was then undertaken against the 92 treatment themes to identify those that were low performing. Of the 92 treatment themes identified in Table 6-1, 57 consolidated treatment themes were progressed to determine if the development of these treatment themes would be effective in addressing the investment objectives and additional criteria for the corridor. For example, intersections at key locations such as Rawene IS and others were consolidated into a single treatment them called Major/Minor upgrade to key intersection to improve safety, accessibility, and conform with acceptable standards. The list of consolidated treatment themes for analysis are included in

Table 6-1: Initial high-level long list treatment themes

Section	Treatment	Description	Progressed	Reason for inclusion/exclusion
Section One – Rawene IS to Opononi	1.1	Rawene Intersection	Yes	Helps create a better user experience
	1.2	Wayfinding	Yes	Helps create a better user experience
	1.3	Cultural Signage	Yes	Helps create a better user experience
	1.4	Township improvements (Whirinaki)	No	Low justification based on investment objectives
	1.5	Shoulder widening	Yes	Safety improvements and improved benefit for cyclists
	1.6	Footpath/ viewing platform	Yes	High strategic alignment with attracting more visitors
	1.7	Flood mitigation	No	No full road closures from flooding instances
	1.8	ATP	Yes	Safety improvements
	1.9	Safety treatments (Omanaia River)	No	NOC issue
	1.10	Cycle Trail	Yes	Helps create a better user experience
	1.11	Passing opportunities	Yes	Helps create a better user experience
	1.12	Waiotemarama Gorge Road sealing	No	Significant cost for low return
	1.14	Slope stability	No	NOC issue
	1.16	Improvements to bridge approaches	No	NOC issue
	1.18	Gateway treatment (Whirinaki and Oue)	No	Little justification
1.22	Intersections: Waiotemarama Gorge Road	Yes	Safety improvements and improves access	

Section	Treatment	Description	Progressed	Reason for inclusion/exclusion
Section One – Rawene IS to Opononi	1.23	Pakanae Marae	Yes	Improves access to community facilities
	1.24	Intersections: Cemetery Road	Yes	Improves access to community facilities
	1.26	Rawene Ferry Carpark	No	Out of scope
	1.27	Rawene Cemetery Intersection	No	Out of scope
	1.28	Rawene Urupa - Chinese Memorial	No	Out of scope
	1.29	Freedom Camping - Koutu	No	Out of scope
	1.30	Stray animals - fencing	No	NOC issue
	1.31	Rawene Intersection rest area	Yes	Creates a better user experience
	1.32	Safe Speeds	Yes	Safety improvements
	1.33	Advisory Signage	Yes	Safety improvements
	1.34	Dust reduction	No	NOC issue
	1.35	Koutu Road sealing	Yes	Added resilience route
	1.36	Waiotemarama Gorge Road sealing and shape correction	Yes	Added resilience route
Section Two – Opononi & Omapere Townships	2.1	Opononi - Omapere SUP	Yes	Improves access
	2.2	SUP on seawall	Yes	Improves access
	2.3	Omapere Gateway Treatment	Yes	Creates a better sense of place
	2.4	Parking on seawall	Yes	Improves access
	2.5	Improved vehicle access to RSA, I-SITE, Hotel	Yes	Improves access
	2.6	Land reclamation for boat ramp etc	No	Cost prohibitive
	2.7	Safe crossing place - opposite wharf	Yes	Improves access
	2.8	Beach access over seawall	Yes	Improves access
	2.9	Safe crossing place - outside of I-SITE	Yes	Improves access
	2.10	Safe crossing place - Fairlie Cres	Yes	Improves access
	2.11	Intersection improvements - Fairlie Cres	Yes	Improves access
	2.12	Safety barrier	Yes	Safety improvements
	2.13	Intersection improvements - Kokohuia Rd	No	Not justifiable
	2.14	Helicopter landing pad (Opononi School)	No	Outside of scope
	2.15	Intersection improvements - Waihuka Rd	No	Not justifiable
	2.16	Safety improvements – Omapere bends	Yes	Safety improvements
	2.17	Rest area improvements	Yes	Helps create a better user experience
	2.18	Safe crossing place - Omapere	No	Improves access
	2.19	Omapere wharf parking improvements	No	Improves access

Section	Treatment	Description	Progressed	Reason for inclusion/exclusion
Section Two – Opononi & Omapere Townships	2.20	Old Wharf road intersection	Yes	Improves access
	2.21	VMS and active speed signage	Yes	Safety improvements
	2.22	Speed management	Yes	Safety improvements
	2.23	Line marking improvements	Yes	Safety improvements
	2.24	Slow core	Yes	Safety improvements
	2.25	Footpath improvements	Yes	Improves access
Section Three – Omapere to Waipoua Forest	3.1	Speed management on bends	Yes	Safety improvements
	3.2	Signal Station Head car park	Yes	Enhances the visitor experience, security improvements
	3.3	Signal Station Road cycling improvements	Yes	Enhances the visitor experience
	3.4	Signal Station Intersection	Yes	Improves access, safety improvements
	3.5	Pakia Hill Rest area	Yes	Enhances the visitor experience
	3.6	Waiwhatawhata marae access	Yes	Improves access to community facilities
	3.7	Waiwhatawhata Church access	Yes	Improves access to community facilities
	3.8	Shoulder widening	Yes	Safety improvements, enhanced experience for cycle tourists
	3.9	Passing opportunities	Yes	Safety improvements
	3.10	Advisory Signage	Yes	Safety improvements
	3.11	Mitchell Rd intersection	Yes	Safety improvements
	3.12	Intersections: Waiotemarama Gorge Road	Yes	Improves access, safety improvements
	3.13	Headwater flood storage	Yes	Resilience
	3.14	One lane bridge improvements	No	Cost prohibitive due to low traffic volumes and no known reported crashes
	3.15	One lane bridge cycle clip on	Yes	enhanced experience for cycle tourists
	3.16	Improvements to bridge approaches	No	NOC issue
	3.17	Cycle pinch point treatments	No	Low justification (no accident history)
	3.18	Cycle route signage	Yes	Enhanced experience for cycle tourists
	3.19	Gateway treatment – Waimamaku	No	Low justification – community support
	3.20	Waimamaku Township Improvements	Yes	
	3.21	Park and ride to Waipoua Forest	Yes	As per below in section four
	3.22	Waipoua Forest Gateway	Yes	Enhanced user experience
Section Four – Waipoua Forest	4.1	Safer Speeds	No	Waipoua Forest has been removed from the scope of this SSBC
	4.2	Advisory signage	No	
	4.3	Tane Mahuta carpark	No	
	4.4	Kauri Walks car park	No	
	4.5	Look Rd carpark and intersection	No	
	4.6	Shoulder widening	No	

Section	Treatment	Description	Progressed	Reason for inclusion/exclusion
Section Four – Waipoua Forest	4.7	Waipoua Forest Southern Gateway	No	
	4.8	Edge protection safety improvements	No	
	4.9	Amenity relocation to outside of the forest	No	

Table 6-2: Treatment themes by section progressed to next stage of development

	#	Treatment Theme
	1	Do Minimum
Section 1 - Rawene IS to Opononi	2	Speed reduction 80kp/h in Whirinaki
	3	Speed reduction 80 kp/h on coastal approach to Opononi
	4	Increased use of ATP, curve advisory signage and wide centrelines
	5	Cultural signage and visitor information
	6	Wayfinding signage
	7	Provide additional cycle route marking & signage
	8	Major/Minor upgrade to key intersections to improve safety, accessibility, and conform with acceptable standards
	9	Improved passing opportunities
	10	Whirinaki improvements
	11	Slope resilience improvements
	12	Shoulder widening and drain profiling
	13	Upgrade bridge over estuary to account for climate change effects
	14	Widened shoulder and shared path on approach to Opononi
	15	Pedestrian footpath and viewing platform on coastal side to view lime stone reef leading to Opononi
	16	Offline cycle trail separating cyclists from traffic
	17	New rest area facilities
	18	Edge and median barrier protection to prevent run off road, and head-on accidents
	Section 2 - Opononi & Omapere Townships	19
20		Opononi pedestrian improvements
21		Opononi Seawall pedestrian improvements
22		Minor cycling improvements
23		Pedestrian crossings
24		Minor speed management (50kph)
25		Major speed management (50kph) self explaining road

Section 2 - Opononi & Omapere Townships	26	Rest Area improvements
	27	Footpath improvements and drainage profiling
	28	Parking improvements in Opononi
	29	Boat ramp and boat parking improvements
	30	Parking improvements in Omapere
	31	Major online cycling improvements
	32	Separated cycle lane
Section 3 - Omapere to Waipoua Forest	33	Increased use of ATP, curve advisory signage and wide centrelines
	34	Cultural signage and visitor information
	35	Wayfinding signage
	36	Provide additional cycle route marking & signage
	37	Major/Minor upgrade to key intersections to improve safety, accessibility, and conform with acceptable standards
	38	Improved passing opportunities
	39	Waimamaku urban improvements
	40	Park and Ride at Waimamaku
	41	Slope resilience improvements
	42	Shoulder widening and drain profiling
	43	Upgrade one way bridges and approaches for cyclists
	44	Upgrade one way bridges to two way
	45	Improvements to the Pakia Hill lookout rest area and intersection
	46	Separated cycle lane
	47	Amenity pull over / observation areas leading to Omapere
	48	Parking and access improvements to Te Kaiwha marae and nearby church
	49	Edge and median barrier protection to prevent run off road, and head-on accidents
Section 4 - Waipoua Forest	50	Speed reduction to 80kph
	51	Edge protection in areas where its required to prevent run off road, of tree strikes
	52	No stopping restrictions through forest
	53	Wide centrelines where space available
	54	Major/Minor Intersection Improvements
	55	ITS signage highlighting road closures and detours
	56	Shoulder winening if space available
	57	Gateway treatments at each end of the Waipoua Forest; amenity & cultural corridor, appropriate speeds

6.3 Treatment Theme Development

An MCA assessment was developed for the 53 long list treatment themes identified and these were then consolidated further into 49 different treatment themes for Sections 1 to 3 including the do minimum. Eight additional themes were identified for the Waipoua Forest section, but assessment of these ceased when the Waipoua Forest section was removed from this SSBC as discussed in Section 6.5.

Figure 6-1 shows the relative scoring rank of the 49 treatment themes considered for Sections 1 to 3. These options performed well at a high level against the investment objectives and the additional criteria. The full option MCA assessment is included in Appendix H.

These treatment themes were then carried over to the next phase development where various treatment options within each theme were identified.

Figure 6-1: MCA Assessment for Long-list Themes by Section

Section	Treatment Theme	Number	Investment Objectives (High, Medium, Low, None, Negative)				MCA (High, Medium, Low, None, Negative)			
			Economic Development	Driver Experience	Resilience	Safety	Community/ Stakeholders	Strategic Fit	Constructability	Value for money
Section 1 - Rawene IS to Opononi	Do Min	1	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
	Speed reduction 80kp/h in Whirinaki	2	NONE	NONE	NONE	LOW	LOW	LOW	LOW	LOW
	Speed reduction 80 kp/h on coastal approach to Opononi	3	NONE	LOW	NONE	LOW	NEGATIVE	LOW	LOW	LOW
	Increased use of ATP, curve advisory signage and wide centrelines	4	NONE	LOW	NONE	MEDIUM	MEDIUM	LOW	LOW	NEGATIVE
	Cultural signage and visitor information	5	MEDIUM	LOW	NONE	NONE	LOW	LOW	LOW	LOW
	Wayfinding signage	6	MEDIUM	LOW	MEDIUM	NONE	LOW	LOW	LOW	LOW
	Provide additional cycle route marking & signage	7	MEDIUM	LOW	NONE	LOW	LOW	MEDIUM	LOW	LOW
	Major/Minor upgrade to key intersections to improve safety, accessibility, and conform with acceptable standards	8	MEDIUM	MEDIUM	NONE	MEDIUM	LOW	MEDIUM	NEGATIVE	NEGATIVE
	Improved passing opportunities	9	NONE	LOW	NONE	LOW	MEDIUM	LOW	NEGATIVE	NEGATIVE
	Whirinaki improvements	10	NONE	LOW	NONE	LOW	LOW	NONE	LOW	NEGATIVE
	Slope resilience improvements	11	LOW	MEDIUM	MEDIUM	NONE	LOW	LOW	NEGATIVE	NEGATIVE
	Shoulder widening and drain profiling	12	LOW	MEDIUM	NONE	MEDIUM	LOW	LOW	NEGATIVE	NEGATIVE



Section	Treatment Theme	Number	Investment Objectives (High, Medium, Low, None, Negative)				MCA (High, Medium, Low, None, Negative)			
			Economic Development	Driver Experience	Resilience	Safety	Community/ Stakeholders	Strategic Fit	Constructability	Value for money
Section 1 - Rawene IS to Opononi	Upgrade bridge over estuary to account for climate change effects	13	LOW	LOW	LOW	LOW	LOW	LOW	NEGATIVE	NEGATIVE
	Widened shoulder and shared path on approach to Opononi	14	LOW	LOW	NONE	LOW	MEDIUM	LOW	NEGATIVE	LOW
	Pedestrian footpath and viewing platform on coastal side to view lime stone reef leading to Opononi	15	MEDIUM	MEDIUM	NONE	LOW	LOW	LOW	NEGATIVE	LOW
	Offline cycle trail separating cyclists from traffic	16	MEDIUM	LOW	NONE	LOW	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE
	New rest area facilities	17	LOW	LOW	NONE	LOW	NONE	LOW	LOW	LOW
	Edge and median barrier protection to prevent run off road, and head-on accidents	18	NONE	NEGATIVE	NONE	HIGH	NEGATIVE	LOW	NEGATIVE	NEGATIVE
Section 2 - Opononi & Omapere Townships	Gateway treatments at Opononi and Omapere	19	MEDIUM	MEDIUM	NONE	MEDIUM	MEDIUM	LOW	MEDIUM	MEDIUM
	Opononi pedestrian improvements	20	MEDIUM	LOW	NONE	MEDIUM	LOW	LOW	LOW	LOW
	Opononi Seawall pedestrian improvements	21	MEDIUM	LOW	NONE	MEDIUM	LOW	LOW	NEGATIVE	MEDIUM
	Minor cycling improvements	22	LOW	LOW	NONE	MEDIUM	LOW	LOW	MEDIUM	MEDIUM
	Pedestrian crossings	23	LOW	MEDIUM	NONE	MEDIUM	LOW	LOW	MEDIUM	MEDIUM
	Minor speed management (50kph)	24	LOW	LOW	NONE	LOW	NEGATIVE	LOW	LOW	MEDIUM
	Major speed management (50kph) self explaining road	25	LOW	LOW	NONE	MEDIUM	NEGATIVE	LOW	NEGATIVE	MEDIUM
	Rest Area improvements	26	NEGATIVE	LOW	NONE	LOW	LOW	LOW	MEDIUM	NEGATIVE
	Footpath improvements and drainage profiling	27	NONE	LOW	NONE	LOW	LOW	LOW	NEGATIVE	NEGATIVE



Section	Treatment Theme	Number	Investment Objectives (High, Medium, Low, None, Negative)				MCA (High, Medium, Low, None, Negative)			
			Economic Development	Driver Experience	Resilience	Safety	Community/ Stakeholders	Strategic Fit	Constructability	Value for money
Section 2 - Opononi & Omapere Townships	Parking improvements in Opononi	28	MEDIUM	MEDIUM	NONE	MEDIUM	LOW	LOW	NEGATIVE	MEDIUM
	Boat ramp and boat parking improvements	29	LOW	MEDIUM	NONE	LOW	LOW	LOW	NEGATIVE	NEGATIVE
	Parking improvements in Omapere	30	LOW	LOW	NONE	LOW	LOW	LOW	LOW	LOW
	Major online cycling improvements	31	MEDIUM	LOW	NONE	MEDIUM	NEGATIVE	MEDIUM	NEGATIVE	LOW
	Separated cycle lane	32	MEDIUM	MEDIUM	NONE	MEDIUM	NEGATIVE	LOW	NEGATIVE	NEGATIVE
Section 3 - Omapere to Waipoua Forest	Increased use of ATP, curve advisory signage and wide centrelines	33	NONE	LOW	NONE	LOW	NEGATIVE	LOW	LOW	LOW
	Cultural signage and visitor information	34	MEDIUM	LOW	NONE	NONE	LOW	LOW	LOW	LOW
	Wayfinding signage	35	MEDIUM	LOW	MEDIUM	NONE	LOW	LOW	LOW	LOW
	Provide additional cycle route marking & signage	36	MEDIUM	LOW	NONE	LOW	LOW	MEDIUM	LOW	LOW
	Major/Minor upgrade to key intersections to improve safety, accessibility, and conform with acceptable standards	37	MEDIUM	MEDIUM	NONE	MEDIUM	LOW	MEDIUM	NEGATIVE	NEGATIVE
	Improved passing opportunities	38	NONE	LOW	NONE	LOW	MEDIUM	LOW	NEGATIVE	NEGATIVE
	Waimamaku urban improvements	39	LOW	LOW	NONE	LOW	LOW	LOW	LOW	LOW
	Park and Ride at Waimamaku	40	MEDIUM	LOW	NONE	LOW	NEGATIVE	LOW	LOW	LOW
	Slope resilience improvements	41	LOW	MEDIUM	MEDIUM	NONE	LOW	LOW	NEGATIVE	LOW
	Shoulder widening and drain profiling	42	LOW	MEDIUM	NONE	MEDIUM	LOW	LOW	NEGATIVE	NEGATIVE

Section	Treatment Theme	Number	Investment Objectives (High, Medium, Low, None, Negative)				MCA (High, Medium, Low, None, Negative)			
			Economic Development	Driver Experience	Resilience	Safety	Community/ Stakeholders	Strategic Fit	Constructability	Value for money
Section 3 - Omapere to Waipoua Forest	Upgrade one way bridges and approaches for cyclists	43	LOW	MEDIUM	NONE	MEDIUM	LOW	LOW	NEGATIVE	NEGATIVE
	Upgrade one way bridges to two way	44	LOW	MEDIUM	MEDIUM	LOW	LOW	LOW	NEGATIVE	NEGATIVE
	Improvements to the Pakia Hill lookout rest area and intersection	45	LOW	MEDIUM	NONE	LOW	LOW	LOW	NEGATIVE	LOW
	Separated cycle lane	46	MEDIUM	LOW	NONE	LOW	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE
	Amenity pull over / observation areas leading to Omapere	47	LOW	MEDIUM	NONE	MEDIUM	LOW	LOW	LOW	MEDIUM
	Parking and access improvements to Te Kaiwha marae and nearby church	48	LOW	LOW	NONE	LOW	LOW	LOW	NEGATIVE	NEGATIVE
	Edge and median barrier protection to prevent run off road, and head-on accidents	49	NONE	NEGATIVE	NONE	HIGH	NEGATIVE	LOW	NEGATIVE	NEGATIVE

Section 4 (Waipoua Forest) considered the following treatments. These treatments would be considered within any subsequent business case.

Section 4							
Option 50: Speed reduction to 80kph	Option 51: Edge protection in areas where its required to prevent run off road, of tree strikes	Option 52: No stopping restrictions through forest	Option 53: Wide centrelines where space available	Option 54: Major/Minor Intersection Improvements	Option 55: ITS signage highlighting road closures and detours	Option 56: Shoulder winening if space available	Option 57: Gateway treatments at each end of the Waipoua Forest; amenity & cultural corridor, appropriate speeds

6.4 Intersection treatment options

Treatment themes carried through included the ‘Major/Minor upgrade to key intersections to improve safety, accessibility, and conform with acceptable standards’ for Sections 1, 3 and 4. Fairlie Crescent which is located in the urban area of Section 2 was included in this assessment as it was noted as important for the community. An assessment of the intersection treatment options was developed based on the need to address safety concerns at some intersection locations whilst also improving access to key community facilities, visitor attractions and developing tourist experiences. Intersections were assessed separately from the corridor treatment options to begin with but were then brought together in the optioneering process.

All the intersections along the corridor were evaluated based on the known crash history, compliance with NZTA geometric design guidelines and whether they provide access to the above-mentioned facilities. Nine intersections had a known crash history and 31 intersections failed to comply with the Austroads site distance standards for rural roads.

Upon completion of this evaluation, a separate high-level MCA was undertaken to assess how each of the intersections scored against the investment objectives. Intersections which had a known crash history and/or provided access to key community facilities/ visitor experiences were allocated a higher score than those intersections which did not. Based on this assessment 11 intersections were prioritised for development as part of the treatment package across Sections 1 to 3 and identified in Figure 6-2. These intersection options were then assessed together with the corridor treatment options in the next phase of assessment. Three intersections were identified for further development in Section 4; Kauri Walks Carpark, Waipoua River Rd and Lookout Rd. These three intersection options would be included in the separate business case proposed to be developed for the Waipoua Forest section The concept layout of these intersections is attached in Appendix I.

Figure 6-2: MCA Assessment for Intersection by Treatment Type

	Treatment			
	Do Min	Option One	Option Two	Option Three
Investment Objectives				
Investment Objective 1: Economic development	0	+	++	++
Investment Objective 2: Driver experience	0	+	++	+++
Investment Objective 3: Resilience	0	+	++	++
Investment Objective 4: Safety	0	+	++	+++
Additional criteria				
Community/ Stakeholders	0	0	0	0
Strategic fit	0	0	0	0
Constructability	0	0	0	0
Value for money	0	0	0	0

	SH12/Rawene	SH12/Omanaia	SH12/ Koutu Loop	SH12/ Whirinaki School	SH12/ Jackson Rd	SH12 / Koutu Loop Rd	SH12 / Waiotemarama George Rd	SH12 / Pakanae Cemetery Rd	SH12/ Fareline Cres	SH12/ Old Wharf Rd	SH12 / Waiotemarama George Rd	SH12/Kauri Walks carpark	SH12/Waipoua River Rd	SH12/Lookout Rd
	+++	++	++	+	+	+++	+++	++	++	+++	+++	++	++	+
	+++	++	++	+	+	+++	+++	++	++	+++	+++	++	++	+
	+++	++	+	++	++	0	++	0	++	+	+	+	0	0
	+++	++	+	++	++	0	++	0	+++	+	+	+	0	0
	+++	+++	+++	+++	+++	+++	+++	++	++	++	+++	+++	+++	++
	+++	++	++	++	+	+++	+++	+	++	++	++	+++	++	++
	++	++	++	+++	+++	--	--	--	0	0	++	0	--	--
	+++	0	++	0	+	++	++	0		0	0	+++	+++	++

6.5 Removal of the Waipoua Forest

The development of treatment options within the Waipoua Forest was complicated due to the restrictive nature of the *Waipoua Forest Sanctuary Management Plan*, numerous stakeholders and the added complexity surrounding the management of the Kauri dieback disease. The risk is such that the Ministry of Primary Industries is working Te Roroa regarding the impacts applying a Controlled Area Notice could have on further restricting the spread of the disease.

Due to these issues project partners and key stakeholders agreed to remove the Waipoua Forest from the scope of this business case. The memo and meeting minutes discussing this decision are contained in Appendix J. Fundamental in progressing a business case considering the Waipoua Forest fully is recognising the guiding principles that would permit a cross-agency response and deliver the outcomes. These will need further development, but the meeting attended with the Waipoua Forest Management Committee identified the following guiding principles:

- Waipoua Forest is a special ecosystem and is in a highly sensitive environment,
- The Iwi consider the health and well-being of the forest being of paramount importance and connection of Iwi to the Waipoua Forest also needs to be recognised,
- An appropriate Gateway treatment needs to be considered at both ends of the forest,
- Visitor movements and controls need to be in place,
- Public toilet facilities need to be provided,
- Signage highlighting the uniqueness of the Forest needs to be installed,
- Speed management review be undertaken,
- Consideration given for the installation of Pou,
- Lay-by areas at the Gateways could enhance the facility,
- Enhancements support the values and principles of Rangatira Tanga
- Consideration be given to the status of SH12, and
- Consideration of park and ride facilities.

6.6 Treatment Option Development

As noted in Section 6.3 different options were identified within each treatment theme for further assessment in Sections 1 to 3 of the corridor. These options were identified at a more detailed level and allowed for option iterations to be compared against each other, and to assess what treatments would benefit from being packaged together. The themes were further consolidated in Table 6-3 for ease of reference and a total of 117 individual options were identified and assessed.

Table 6-3: Consolidated Treatment Theme by Section

Section	Theme
Section 1	Rawene to Opononi Corridor
	Opononi Approach
Section 2	Opononi Township - Parking
	Opononi Township - Pedestrian Improvements
	Opononi Township - Cycling Improvements
	Opononi Township - Speed Management
	End of Opononi Township to Omapere Speed Management
	End of Opononi to Omapere Rest Areas
	End of Opononi to Omapere Cycling
	End of Opononi to Omapere Pedestrians
Section 3	Omapere Approach
	Intersection, Signage and Pull Over Areas

Section	Theme
Section 3	Signal Station Road
	Pakia Hill Rest Area
	Waimamaku Improvements
	Cycle Improvements

Appendix G provides maps showing the locations of the long list treatment options by corridor location whilst Appendix H contains the MCA assessment scoring of these treatment options. The MCA assessment allowed a comparison of the various options against their performance within the corridor section, and how they would likely perform when combined with other options. This then allowed options to be combined, or to be excluded if they performed poorly.

Unweighted and weighted rankings for the investment objectives were used to help inform the analysis against each other option. For the Transport Agency safety of the transport network is a key priority and as a sensitivity test the investment objective targeted at safety was used to assess the longlist. From this assessment an initial short-list of performing options were identified.

The well performing treatment options in Table 6-5 were then presented to hapū representatives and stakeholders at a hui on the 13th February 2019. Feedback was provided at the hui that helped to inform what options would be acceptable to the community, and to get their general views in respect of the proposed options.

These options were also presented for the Waipoua Forest section and have been included in Table 6-5, acknowledging that further consideration of these options would be considered in a separate business case. Table 6-5 provides a summary assessment of the performance of each option against the different MCA criteria. A High rating was assigned to the alignment with the Investment Objectives if the option scored well (i.e. two or three) against multiple investment objectives. A Medium rating was assigned if the option scored well against at least one of the investment objectives.

An assessment against the PGF alignment was undertaken against the relevant criteria. A High, Medium and Low rating was assigned based on the performance of the option against how well it scored against the following:

- Link to Fund and government outcomes
- Additionality
- Connected to regional stakeholders
- Governance, risk management and project execution

Cost weighting is the combined was a rating based on the options estimated cost: Low - <\$200k, Medium - <\$1m, High - >\$1m.

Table 6-4: MCA assessment for longlist options by treatment theme

Section	Theme	Treatment Option	Option Number	Investment Objectives (High, Medium, Low, None, Negative)				Investment Objectives Unweighted Rank	Weighted Rank Against Safety Investment Objective	MCA (High, Medium, Low, None, Negative)				MCA Criteria Unweighted Rank	Combined Unweighted Rank
				Economic Development	Driver Experience	Resilience	Safety			Community/ Stakeholders	Strategic Fit	Constructability	Value for money		
		Do Min	-	NONE	NONE	NONE	NONE	-	-	NONE	NONE	NONE	NONE	-	-
SECTION 1 RAWENE ROAD TO OPONONI	Rawene to Opononi	SH12/Rawene Rd IS Improvement	1.1	HIGH	HIGH	HIGH	HIGH	1	1	HIGH	HIGH	MEDIUM	HIGH	1	1
		SH12/Omanaia Rd intersection improvement	1.2	NONE	LOW	NONE	MEDIUM	13	10	LOW	LOW	LOW	LOW	13	14
		SH12/ Koutu Loop Rd Improvement (eastern end)	1.3	NONE	LOW	NONE	MEDIUM	13	10	LOW	LOW	LOW	NEGATIVE	17	15
		SH12/ Whirinaki School Rd Intersection Improvement	1.4	NONE	LOW	NONE	NONE	15	18	LOW	LOW	LOW	LOW	13	15
		SH12/ Jackson Rd Improvement	1.5	NONE	LOW	NONE	NONE	15	18	LOW	LOW	LOW	LOW	13	15
		SH12 / Koutu Loop Rd intersection improvement (western end)	1.6	HIGH	MEDIUM	NONE	LOW	9	13	MEDIUM	LOW	LOW	LOW	10	7
		SH12 / Waiotemarama Gorge Rd intersection improvement	1.7	HIGH	MEDIUM	NONE	MEDIUM	5	5	HIGH	MEDIUM	LOW	LOW	4	4
		SH12 / Pakanae Cemetery Rd Intersection Improvement	1.8	HIGH	HIGH	NONE	MEDIUM	2	3	HIGH	MEDIUM	NEGATIVE	NONE	16	6
		Pakanae Marae parking improvements	1.9	HIGH	MEDIUM	NONE	HIGH	2	2	HIGH	MEDIUM	LOW	LOW	4	3
		Pedestrian and lookout access to limestone formation	1.10	HIGH	MEDIUM	NONE	MEDIUM	5	5	HIGH	HIGH	NEGATIVE	MEDIUM	7	5
		Increased use of curve advisory signage and wide centrelines	1.11	NONE	MEDIUM	NONE	MEDIUM	12	9	LOW	LOW	HIGH	MEDIUM	4	11
		Cultural signage and visitor information	1.12	MEDIUM	MEDIUM	LOW	LOW	9	13	LOW	LOW	HIGH	HIGH	3	8
		Wayfinding signage	1.13	MEDIUM	HIGH	LOW	LOW	5	10	HIGH	LOW	HIGH	HIGH	2	2
		Corridor widening, ATP and cycle route	1.14	HIGH	HIGH	NONE	MEDIUM	2	3	LOW	MEDIUM	LOW	MEDIUM	7	8
		Slow vehicle bays	1.15	MEDIUM	MEDIUM	NONE	MEDIUM	9	8	LOW	MEDIUM	LOW	LOW	10	11
		Passing lanes	1.16	MEDIUM	MEDIUM	LOW	MEDIUM	5	5	LOW	MEDIUM	LOW	MEDIUM	7	10
		Sealing of Waiotemarama Gorge Road	1.17	LOW	NONE	MEDIUM	LOW	12	15	LOW	NONE	NEGATIVE	NEGATIVE	18	18
		Sealing of Koutu Loop Road	1.18	LOW	NONE	MEDIUM	LOW	12	15	LOW	NONE	NEGATIVE	NEGATIVE	18	18
		Omanaia Bridge improvement for climate change effects	1.19	LOW	NONE	MEDIUM	LOW	12	15	LOW	MEDIUM	LOW	LOW	10	13
	Opononi Approach	Gateway feature near current 50kph signage on approach to Opononi - Bilingual signage and cultural markers	1.20	HIGH	HIGH	NONE	HIGH	1	1	HIGH	MEDIUM	NEGATIVE	NEGATIVE	7	2
Gateway feature on entry to Opononi (near boat ramp parking) - Bilingual signage and cultural markers		1.21	HIGH	HIGH	NONE	HIGH	1	1	HIGH	MEDIUM	MEDIUM	MEDIUM	1	1	
Gateway feature on entry to Opononi (past boat ramp parking) - Bilingual signage and cultural markers		1.22	HIGH	HIGH	NONE	HIGH	1	1	HIGH	MEDIUM	NEGATIVE	NEGATIVE	7	2	

Section	Theme	Treatment Option	Option Number	Investment Objectives (High, Medium, Low, None, Negative)				Investment Objectives Unweighted Rank	Weighted Rank Against Safety Investment Objective	MCA (High, Medium, Low, None, Negative)				MCA Criteria Unweighted Rank	Combined Unweighted Rank
				Economic Development	Driver Experience	Resilience	Safety			Community/ Stakeholders	Strategic Fit	Constructability	Value for money		
SECTION 1 RAWENE ROAD TO OPONONI	Opononi Approach	Shared path landward side	1.23	LOW	LOW	NONE	LOW	9	9	LOW	NEGATIVE	NEGATIVE	MEDIUM	12	12
		Shared path seaward side	1.24	MEDIUM	LOW	NONE	LOW	8	8	LOW	MEDIUM	NEGATIVE	MEDIUM	7	8
		Pedestrian footpath landward side	1.25	LOW	LOW	NONE	LOW	9	9	LOW	NEGATIVE	MEDIUM	MEDIUM	5	8
		Pedestrian footpath seaward side	1.26	MEDIUM	MEDIUM	NONE	MEDIUM	4	4	MEDIUM	HIGH	NEGATIVE	HIGH	3	5
		Seaward pedestrian path and viewing platform for limestone formation	1.27	MEDIUM	MEDIUM	NONE	MEDIUM	4	4	HIGH	HIGH	NEGATIVE	LOW	4	4
		Widen shoulders	1.28	NONE	LOW	NONE	LOW	12	12	LOW	LOW	MEDIUM	NEGATIVE	7	11
		Widen pullover sites seaward side of the Opononi approach	1.29	NONE	LOW	NONE	LOW	12	12	LOW	LOW	NEGATIVE	NEGATIVE	13	13
		Line marking	1.30	MEDIUM	MEDIUM	NONE	MEDIUM	4	4	LOW	LOW	HIGH	HIGH	2	6
		Boat ramp and boat parking improvements	1.31	MEDIUM	MEDIUM	NONE	MEDIUM	4	4	MEDIUM	MEDIUM	NEGATIVE	NONE	11	7
		Parking improvements into Opononi	1.32	LOW	LOW	NONE	LOW	9	9	LOW	LOW	LOW	LOW	5	8
		Major online cycling improvements	1.33	MEDIUM	LOW	NONE	NEGATIVE	12	14	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE	14	14
		Separated cycle lane	1.34	MEDIUM	MEDIUM	NONE	NEGATIVE	12	15	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE	15	15
SECTION 2 OPONONI AND OMAPERE TOWNSHIPS	Opononi Township - Parking	Extend parking over the new seawall to accommodate vehicle specific parking (tour buses etc)	2.0	MEDIUM	MEDIUM	NONE	NEGATIVE	6	7	HIGH	LOW	LOW	LOW	4	4
		Extend parking over the seawall and reconfigure into angle parking	2.1	MEDIUM	MEDIUM	NONE	NEGATIVE	5	6	HIGH	LOW	LOW	LOW	4	3
		Extend parallel parking over seawall	2.2	MEDIUM	MEDIUM	NONE	LOW	3	3	HIGH	LOW	MEDIUM	LOW	2	2
		Remove all parking from the seaward side of SH12	2.3	NEGATIVE	NEGATIVE	NONE	MEDIUM	7	4	NEGATIVE	LOW	NEGATIVE	NEGATIVE	6	6
		Remove all parking along SH12 with parking confined to the I-Site and privately	2.4	NEGATIVE	NEGATIVE	NONE	MEDIUM	8	5	NEGATIVE	LOW	NEGATIVE	NEGATIVE	7	7
		Reconfigure roadside parking in front of the restaurant/hotel, add footpath and landscaping	2.5	MEDIUM	MEDIUM	NONE	MEDIUM	1	1	HIGH	MEDIUM	MEDIUM	MEDIUM	1	1
		Improved vehicle access to i-Site, hotel, RSA and the future museum	2.6	LOW	LOW	NONE	MEDIUM	4	2	MEDIUM	LOW	MEDIUM	MEDIUM	2	5
	Opononi Township - Pedestrian Improvements	Pedestrian path over the seawall and beside parallel parking (link with pedestrian facilities on the approach to Opononi proposed above)	2.7	MEDIUM	MEDIUM	NONE	MEDIUM	1	1	LOW	LOW	LOW	MEDIUM	8	6
		Pedestrian crossing in front of wharf	2.8	MEDIUM	MEDIUM	NONE	MEDIUM	2	1	HIGH	LOW	LOW	MEDIUM	1	1
		Pedestrian refuge in front of wharf	2.9	MEDIUM	MEDIUM	NONE	MEDIUM	2	1	HIGH	LOW	LOW	MEDIUM	1	1
		Ped crossing in front of i-Site	2.10	MEDIUM	MEDIUM	NONE	MEDIUM	2	1	HIGH	LOW	LOW	MEDIUM	1	1
Ped refuge in front of i-Site		2.11	MEDIUM	MEDIUM	NONE	LOW	6	6	HIGH	LOW	LOW	MEDIUM	1	4	

Section	Theme	Treatment Option	Option Number	Investment Objectives (High, Medium, Low, None, Negative)				Investment Objectives Unweighted Rank	Weighted Rank Against Safety Investment Objective	MCA (High, Medium, Low, None, Negative)				MCA Criteria Unweighted Rank	Combined Unweighted Rank
				Economic Development	Driver Experience	Resilience	Safety			Community/ Stakeholders	Strategic Fit	Constructability	Value for money		
SECTION 2 OPONONI AND OMAPERE TOWNSHIPS	Opononi Township - Pedestrian Improvements	Shared pedestrian zone	2.12	NEGATIVE	NEGATIVE	NONE	NEGATIVE	9	9	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE	9	9
		Ramped access to beach	2.13	MEDIUM	MEDIUM	NONE	MEDIUM	2	1	MEDIUM	LOW	LOW	MEDIUM	5	5
		Stair access to beach	2.14	LOW	MEDIUM	NONE	LOW	8	8	LOW	MEDIUM	LOW	MEDIUM	5	8
		Improved pedestrian path to Footprints of Kupe (to be constructed)	2.15	MEDIUM	MEDIUM	NONE	LOW	6	6	LOW	LOW	MEDIUM	MEDIUM	5	6
	Opononi Township - Cycling Improvements	Shared path seaward side over seawall	2.16	HIGH	HIGH	NONE	HIGH	1	1	HIGH	HIGH	MEDIUM	MEDIUM	2	1
		Shared path landward side	2.17	LOW	LOW	NONE	HIGH	5	2	MEDIUM	MEDIUM	LOW	NEGATIVE	5	5
		Separated cycle path seaward side over seawall	2.18	LOW	LOW	NONE	MEDIUM	6	4	NEGATIVE	NEGATIVE	MEDIUM	NEGATIVE	7	7
		Separated cycle path landward side	2.19	LOW	LOW	NONE	MEDIUM	6	4	NEGATIVE	NEGATIVE	LOW	NEGATIVE	8	8
		Cycle marking and signage through the township / Improved delineation	2.20	MEDIUM	LOW	NONE	LOW	6	6	MEDIUM	MEDIUM	HIGH	LOW	3	3
		Cycle parking	2.21	HIGH	HIGH	NONE	NONE	2	7	MEDIUM	HIGH	HIGH	HIGH	1	2
		Cycle hire centre	2.22	HIGH	LOW	NONE	MEDIUM	2	3	MEDIUM	LOW	LOW	NEGATIVE	6	5
		Cycle hub linking with shared path	2.23	HIGH	HIGH	NONE	NONE	2	7	MEDIUM	LOW	LOW	MEDIUM	4	3
	Opononi Township - Speed Management	Line marking (flush median, narrowing marking)	2.24	HIGH	HIGH	NONE	HIGH	1	1	MEDIUM	LOW	LOW	MEDIUM	3	2
		Speed indicator devices	2.25	HIGH	HIGH	NONE	HIGH	1	1	MEDIUM	LOW	LOW	MEDIUM	1	1
		Ramps through the township (fronting i-Site, hotel, combined crossing)	2.26	HIGH	HIGH	NONE	MEDIUM	2	2	MEDIUM	LOW	LOW	NEGATIVE	7	7
		Speed limit decrease (30/40kph)	2.27	HIGH	HIGH	NONE	MEDIUM	2	2	LOW	LOW	LOW	NEGATIVE	9	9
		Kerb improvements	2.28	HIGH	HIGH	NONE	MEDIUM	2	2	MEDIUM	LOW	LOW	LOW	5	5
		Improved signage to facilities and parking	2.29	HIGH	HIGH	NONE	MEDIUM	2	2	MEDIUM	LOW	LOW	MEDIUM	1	2
		Increased enforcement	2.30	HIGH	HIGH	NONE	MEDIUM	2	2	LOW	LOW	LOW	NONE	7	8
		Frictional or coloured surfacing through Opononi fronting the wharf and i-Site areas	2.31	HIGH	HIGH	NONE	MEDIUM	2	2	MEDIUM	LOW	LOW	LOW	5	5
End of Opononi Township to Omapere Rest	Static / Activated speed warning devices	2.32	HIGH	HIGH	NONE	MEDIUM	2	1	MEDIUM	LOW	LOW	MEDIUM	1	1	
	Line marking changes (wide centreline etc)	2.33	HIGH	HIGH	NONE	MEDIUM	2	1	MEDIUM	LOW	LOW	MEDIUM	1	1	
End of Omapere Rest	Improved vehicle access to all existing rest areas and seal entry and exits	2.34	HIGH	HIGH	NONE	MEDIUM	1	1	MEDIUM	NEGATIVE	LOW	NEGATIVE	5	2	
	Advance rest area signage (existing to the west, ? to the east)	2.35	HIGH	HIGH	NONE	MEDIUM	1	1	MEDIUM	HIGH	LOW	LOW	1	1	

Section	Theme	Treatment Option	Option Number	Investment Objectives (High, Medium, Low, None, Negative)				Investment Objectives Unweighted Rank	Weighted Rank Against Safety Investment Objective	MCA (High, Medium, Low, None, Negative)				MCA Criteria Unweighted Rank	Combined Unweighted Rank
				Economic Development	Driver Experience	Resilience	Safety			Community/ Stakeholders	Strategic Fit	Constructability	Value for money		
SECTION 2 OPONONI AND OMAPERE TOWNSHIPS	End of Opononi to Omapere Rest Areas	Bring up existing rest areas/ viewing areas to current standards	2.36	HIGH	HIGH	NONE	NONE	3	3	LOW	MEDIUM	LOW	LOW	3	3
		Improved entry and exit to main Opononi rest area, all other rest areas down graded to view spots as per strategy	2.37	LOW	NEGATIVE	NONE	NEGATIVE	4	4	LOW	HIGH	LOW	MEDIUM	1	4
		Improved entry and exit to main Opononi rest area, all other rest areas decommissioned	2.38	NONE	NONE	NONE	NEGATIVE	4	4	NEGATIVE	HIGH	LOW	MEDIUM	3	5
	End of Opononi to Omapere Cycling	Targeted shoulder widening through the township	2.39	MEDIUM	MEDIUM	NONE	MEDIUM	2	2	MEDIUM	MEDIUM	HIGH	LOW	2	3
		Minor line marking changes	2.40	MEDIUM	MEDIUM	NONE	MEDIUM	2	2	MEDIUM	MEDIUM	HIGH	HIGH	1	1
		Marked cycle lane	2.41	MEDIUM	MEDIUM	NONE	MEDIUM	2	2	LOW	NEGATIVE	NEGATIVE	NEGATIVE	4	4
		Protected cycle lane	2.42	LOW	LOW	NONE	MEDIUM	5	5	NEGATIVE	NEGATIVE	NEGATIVE	NEGATIVE	5	5
		Shared paths	2.43	HIGH	HIGH	NONE	HIGH	1	1	MEDIUM	MEDIUM	LOW	MEDIUM	3	1
	End of Opononi to Omapere Pedestrians	Fairline Cres pedestrian refuge, Opononi Area School Kea Crossing	2.44	LOW	LOW	NONE	MEDIUM	4	4	HIGH	MEDIUM	MEDIUM	HIGH	1	2
		Pedestrian footpath upgrades to existing	2.45	HIGH	MEDIUM	NONE	MEDIUM	1	1	HIGH	LOW	MEDIUM	MEDIUM	2	1
		Drainage profiling	2.46	LOW	LOW	NONE	MEDIUM	4	4	MEDIUM	LOW	LOW	MEDIUM	5	5
		Footpath improvements	2.47	HIGH	MEDIUM	NONE	MEDIUM	1	1	MEDIUM	LOW	MEDIUM	MEDIUM	3	3
		Driveway sealing and widening in area of the fire station in Omapere	2.48	MEDIUM	MEDIUM	NONE	MEDIUM	3	3	MEDIUM	LOW	MEDIUM	MEDIUM	3	4
		New footpath / shared path from Food market to Signal Station Road	2.49	NEGATIVE	NEGATIVE	NONE	NEGATIVE	6	6	NEGATIVE	NEGATIVE	LOW	NEGATIVE	6	6
	SECTION 3 SOUTH OF OMAPERE TO WAIPOUA FOREST	Omapere Approach	Gateway feature into Omapere near foodmarket	3.1	HIGH	HIGH	NONE	HIGH	1	1	HIGH	MEDIUM	MEDIUM	MEDIUM	1
Gateway feature into Omapere at existing speed signage			3.2	HIGH	HIGH	NONE	HIGH	1	1	HIGH	MEDIUM	LOW	MEDIUM	2	2
Slope Resilience Improvement on Omapere approach			3.3	LOW	LOW	MEDIUM	LOW	3	3	MEDIUM	MEDIUM	NEGATIVE	LOW	3	3
Intersection, Signage and Pull Over Areas		Signal Station Road Intersection Improvement	3.4	HIGH	MEDIUM	NONE	MEDIUM	2	4	MEDIUM	LOW	MEDIUM	MEDIUM	4	5
		SH12 / Pakia Hill Reserve intersection improvement	3.5	HIGH	HIGH	NONE	HIGH	1	1	MEDIUM	MEDIUM	LOW	MEDIUM	4	3
		SH12 / Waiotemarama GOrgE Rd Intersection Improvement	3.6	HIGH	HIGH	NONE	MEDIUM	1	2	MEDIUM	LOW	MEDIUM	MEDIUM	4	4
		Cultural signage and visitor information	3.7	MEDIUM	MEDIUM	LOW	LOW	4	9	LOW	LOW	HIGH	HIGH	2	7
		Wayfinding signage	3.8	MEDIUM	HIGH	LOW	LOW	3	8	HIGH	LOW	HIGH	HIGH	1	1
		Parking and pedestrian improvements to the Church and Kokoahi Marae	3.9	MEDIUM	MEDIUM	NONE	MEDIUM	4	6	HIGH	MEDIUM	MEDIUM	LOW	2	2
		Corridor widening, ATP and cycle route	3.10	HIGH	HIGH	NONE	MEDIUM	1	2	LOW	MEDIUM	LOW	MEDIUM	8	7
Passing lanes	3.11	MEDIUM	LOW	NONE	MEDIUM	6	7	LOW	NEGATIVE	LOW	NEGATIVE	9	9		

Section	Theme	Treatment Option	Option Number	Investment Objectives (High, Medium, Low, None, Negative)				Investment Objectives Unweighted Rank	Weighted Rank Against Safety Investment Objective	MCA (High, Medium, Low, None, Negative)				MCA Criteria Unweighted Rank	Combined Unweighted Rank
				Economic Development	Driver Experience	Resilience	Safety			Community/ Stakeholders	Strategic Fit	Constructability	Value for money		
SECTION 3 SOUTH OF OMAPERE TO WAIPOUA FOREST	Signal Station Road	Amenity pull over / observation areas leading to Omapere	3.12	HIGH	MEDIUM	NONE	MEDIUM	2	4	MEDIUM	LOW	MEDIUM	MEDIUM	4	5
		Cycling improvements and marking along Signal Station Road	3.13	HIGH	HIGH	NONE	MEDIUM	1	1	MEDIUM	LOW	MEDIUM	MEDIUM	2	2
		Footpath provision along Signal Station Road	3.14	LOW	LOW	NONE	LOW	6	2	LOW	LOW	NEGATIVE	NEGATIVE	3	3
		Improvements at the Signal Station Road carpark	3.15	HIGH	HIGH	NONE	NONE	3	3	HIGH	HIGH	HIGH	MEDIUM	1	1
	Pakia Hill Rest Area	Entrance improvements	3.16	LOW	LOW	NONE	LOW	6	3	MEDIUM	MEDIUM	HIGH	LOW	2	3
		Entrance/exit relocation	3.17	MEDIUM	MEDIUM	NONE	MEDIUM	3	1	MEDIUM	MEDIUM	MEDIUM	MEDIUM	2	2
		Pakia Hill amenity improvements - bring up to current standards	3.18	HIGH	MEDIUM	NONE	LOW	3	2	HIGH	MEDIUM	HIGH	MEDIUM	1	1
	Waimamaku Improvements	Cycle marking and improvements through the settlement	3.19	NONE	NONE	NONE	NONE	5	5	NEGATIVE	NEGATIVE	MEDIUM	NEGATIVE	6	6
		Parking improvements near the four square	3.20	MEDIUM	MEDIUM	NONE	LOW	3	3	MEDIUM	LOW	MEDIUM	MEDIUM	2	2
		Pedestrian improvements around the Four Square	3.21	MEDIUM	MEDIUM	NONE	LOW	3	3	MEDIUM	LOW	MEDIUM	MEDIUM	2	2
		Improvements to support the Park n Ride facility	3.22	HIGH	LOW	NONE	MEDIUM	2	1	MEDIUM	LOW	LOW	NEGATIVE	4	4
		Formalise parking fronting daycare centre near one-way bridge	3.23	LOW	NONE	NONE	NEGATIVE	6	6	MEDIUM	LOW	MEDIUM	NEGATIVE	4	5
		Additional head water storage on the Waimamaku River to mitigate flooding issues	3.24	MEDIUM	MEDIUM	HIGH	LOW	1	2	MEDIUM	MEDIUM	MEDIUM	HIGH	1	1
	Cycle Improvements	Heartland cycle route marking and signage	3.25	HIGH	HIGH	NONE	MEDIUM	1	1	MEDIUM	MEDIUM	HIGH	HIGH	1	1
		Cycling clipon's to the one-way bridges	3.26	LOW	NONE	NONE	MEDIUM	3	3	MEDIUM	LOW	LOW	NEGATIVE	3	3
Shoulder widening in targeted pinch point locations		3.27	HIGH	HIGH	NONE	MEDIUM	1	1	MEDIUM	MEDIUM	LOW	MEDIUM	2	2	

Table 6-5: Short-list Treatment Option by Section and Theme

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section One (Rawene to Opononi)	Intersection Improvements	Rawene Intersection	Improve the Rawene intersection to current Austroad standard accommodating for additional right turning capacity, and north to south tourist cyclist movements	Scores well against multiple criteria	Safety Key tourist movements Access to key sites in Rawene and the corridor	Medium	1-3 years
		Omanaia Rd Intersection Improvement	Improve intersection to current standard	Scores well against the safety criteria	Safety	Low	1-3 years
		Whirinaki Rd Intersection Improvement	Improve intersection to current standard and to facilitate movements to cultural and community activities	Scores well against multiple criteria	Safety Community access	Low	1-3 years
		Jackson Rd Intersection Improvement	Improve intersection to current standard	Scores well against the safety criteria	Safety	Low	1-3 years
		Koutu Loop Rd Intersection Improvement (eastern end)	Improve intersection to current standard	Scores well against the safety criteria	Safety	Low	1-3 years
		Koutu Loop Rd Intersection Improvement (western end)	Improve intersection to current standard and to facilitate movements to tourist activities	Scores well against multiple criteria	Safety Key tourist movements Access to key sites	Medium	1-3 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section One (Rawene to Opononi)		Cemetery Rd Intersection Improvement	Improve intersection to current standard and to facilitate movements to cultural and tourist activities	Scores well against multiple criteria	Safety Key tourist movements Access to key sites	Medium	1-3 years
		Waiotemarama Rd Intersection Improvement	Improve intersection to current standard	Scores well against multiple criteria	Safety Access to key sites	Medium	1-3 years
	Resilience	Omanaia Bridge Improvements	Improve the bridge to accommodate for climate change effects but lifting the current height	Scores well against the resilience criteria	Route resilience Climate change effects	High	5-10 years
		Slope Stability Improvements	Improve and tie back retaining walls, retain additional slopes	Scores well against the resilience criteria	Route resilience	High	5-10 years
		Alternative Routes - Waiotemarama Gorge Road & Koutu Loop Road Sealing Improvements	Seal and carriageway improvements.	Scores well only against the resilience and seasonality criteria	Route resilience for closures and seasonality	Very High	5-10 years
	Corridor safety	Safety Improvements along the corridor	Provision of additional safety barriers, ATP, line marking improvements, curve advisory signage	Scores well against safety criteria	Safety	High	1-5 years
	Passing & Overtaking	Passing opportunities & Slow vehicle bays	Provide a series of passing opportunities along targeted sections of the corridor	Scores well against multiple criteria	User experience Safety	Medium	3-5 years
	Heartland Cycle Trail	On road cycling improvements	Initiatives including improved signage; targeted seal widening; line marking	Scores well against multiple criteria	Key tourist movements User experience Safety	High	3-5 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section One (Rawene to Opononi)	Tourism Improvements	Onsite Pakanae Marae parking	Develop additional parking areas within the marae site to facilitate tourism initiatives. Relocation of entranceway to adjoining road	Scores well against multiple criteria	Key tourist movements Economic development User experience Safety	High	3-5 years
		Driver pullover areas to view Hokianga	Widen targeted areas leading to and from Opononi to take advantage of the view of the Hokianga.	Scores well against user experience	User experience Safety	Medium	1-3 years
		Cultural and visitor information	Cultural and visitor information signage provided at targeted locations along the corridor	Scores well against user experience	User experience	Low	1-3 years
Section Two (Opononi & Omapere Townships)	Tourism Improvements	Shared path for active modes	Seaward side shared path extending from Opononi and extending over the seawall through to Omapere for active modes	Scores well against multiple criteria	Key tourist movements User experience Safety	Very High	3-5 years
		Opononi pedestrian crossings	Pedestrian crossing (ramped, refuge) near I-site and the wharf as part of the wider speed management strategy	Scores well against multiple criteria	Key tourist movements User experience Safety	Medium	1-3 years
		Opononi pedestrian footpath improvements	Pedestrian footpaths on the landward side of SH12 linking the northern part of Opononi through to past Mana Footprints of Kupe	Scores well against multiple criteria	Key tourist movements User experience	Medium	3-5 years
		Pedestrian path and lookout sites	Formation of a pedestrian path on the seaward side leading from the boat ramp and lookout areas over the limestone reef and harbour	Scores well against the user experience criteria	Key tourist movements User experience	Very High	3-5 years



Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section Two (Opononi & Omapere Townships)		Opononi parking improvements	Improved parking arrangement along SH12 on both sides linking with the shared and pedestrian improvements	Scores well against the user experience criteria	Key tourist movements User experience	Medium	3-5 years
		Gateway treatments	Gateway treatments leading into Opononi near the existing boat ramp, and Omapere near the existing speed signage	Scores well against multiple criteria	Key tourist movements User experience Safety	High	3-5 years
		I-site cycle hub	Provide a cycle hub for cyclists to accommodate cycle repairs, an EV bike charging station, secure bike parking	Scores well against the user experience criteria	Key tourist movements User experience	Low	0-1 year
		Heartland cycle trail improvements	Targeted improvements for on road tourist cyclists including widening around pinch points, signage and line marking	Scores well against multiple criteria	Key tourist movements User experience Safety	Medium	1-3 years
		Rest area improvements	Improved access and rest area amenities for three existing seaside reserve rest areas along the section	Scores well against the user experience criteria	Key tourist movements User experience	Medium	1-3 years
	Intersection Improvements	Fairlie Cres intersection improvement	Improved configuration for the intersection	Scores well against the safety criteria	Safety	Low	0-1 year
		Old Wharf Road Intersection improvement	Improved configuration for the intersection	Scores well against the safety criteria	User experience Safety	Low	1-3 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section Two (Opononi & Omapere Townships)	Safety	Boat ramp parking improvement	Improved parking arrangement for boats and trailers by extending the existing site through reclamation and extending to the north	Scores well against the safety criteria	User experience Safety	Very High	5-10 years
		Fairlie Cres pedestrian crossing	Pedestrian refuge crossing near the intersection to facilitate access to the beach area for residents	Scores well against the user experience criteria	Safety	Low	0-1 year
		Kea crossing and pedestrian improvements	Kea crossing and pedestrian footpath and drainage profiling improvements fronting Opononi Area School	Scores well against the safety criteria	Safety	Low	0-1 year
		Corridor safety improvements	Provision of line marking improvements, speed advisory signage and targeted initiatives to manage speed through the townships section	Scores well against the safety criteria	Safety	Low	1-3 years
	Resilience	Slope Stability Improvements	Slope stability improvements for landward slope travelling south at of Omapere.	Scores well against the resilience criteria	Route Resilience	Very High	5-10 years
Section Three (Omapere to Waipoua Forest)	Intersection Improvements	Signal Station Rd intersection improvements	Improved configuration for the intersection	Scores well against multiple criteria	Key tourist movements Safety	High	1-3 years
		Waiotemarama Gorge Rd intersection improvements	Improved configuration for the intersection	Scores well against multiple criteria	Key tourist movements Safety	Medium	1-3 years
	Resilience	Waimamaku Gorge headwater storage improvements	Improved storage for the headwaters to mitigate downstream flooding	Scores well against the resilience criteria	Route Resilience	Medium	3-5 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section Three (Omāpere to Waipoua Forest)	Heartland Cycle Trail	On road cycling improvements (SH12 and Signal Station Rd)	Initiatives including improved signage; targeted seal widening; line marking	Scores well against multiple criteria	Key tourist movements User experience Safety	High	3-5 years
	Rest Area Improvements	Pakia Hill rest area improvements	Relocate entrance to the south and close existing. Improve rest area facilities, and cultural and visitor signage	Scores well against multiple criteria	Key tourist movements User experience Safety	Medium	1-3 years
	Tourism Improvements	Pakia Hill cyclist pullover area	Improve existing area opposite rest area used by cyclists to rest, view the harbour and wait for slower members of the group. Widen seal, and provide frangible leaning structure	Scores well against multiple criteria	Key tourist movements User experience Safety	Medium	1-3 years
		Waimamaku urban improvements	Improved line marking, stopping facilities, cycle parking and others through the Waimamaku section. Includes improved parking and footpath arrangements	Scores well against the user experience criteria	Key tourist movements User experience	Medium	3-5 years
		Supporting infrastructure accessing Waipoua Forest access	Alignment with DOC and Hapū in facilitating controlled access to the forest and supporting access, internal development of the site, and signage.	Scores well against multiple criteria	Key tourist movements User experience	High	3-5 years
		Cultural and visitor information	Cultural and visitor information signage provided at targeted locations along the corridor	Scores well against user experience	User experience	Low	1-3 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section Three (Omapere to Waipoua Forest)	Passing & Overtaking	Passing opportunities	Passing opportunities constructed in two locations along the corridor	Scores well against the user experience criteria	User experience Safety	High	3-5 years
	Safety	Corridor safety improvements	Provision of additional safety barriers, targeted seal widening ATP, line marking improvements, curve advisory signage	Scores well against the safety criteria	User experience Safety	High	3-5 years
Section 4 Waipoua Forest to Katui Road	Tourism Improvements	Gateway treatments	Gateway treatments leading into the Waipoua Forest at both ends. Consists of cultural, amenity and speed markers. At the southern end electronic signage will be included to warn of closures and detours. At the northern end will include a pullover rest area.	Scores well against multiple criteria	Key tourist movements User experience Safety Resilience	High	1-3 years
		Kauri Walk carpark entrance improvement	Improve the entrance configuration for the carpark, a popular tourist stop to access the forest	Scores well against multiple criteria	Key tourist movements User experience Safety	High	3-5 years
		Tane Mahuta parking improvements	Improve the number and configuration of carparks near the Tane Mahuta entrance	Scores well against multiple criteria	Key tourist movements User experience Safety	Very High	3-5 years

Section	Package	Option	Description	Investment Objectives	Benefit Outcomes	Cost Weighting	Delivery
Section 4 Waipoua Forest to Katui Road		Supporting infrastructure accessing Waipoua Forest access	Alignment with DOC and Hapū in facilitating controlled access to the forest and supporting access, internal development of the site, and signage.	Scores well against multiple criteria	Key tourist movements User experience	High	3-5 years
	Intersection Improvements	Waipoua River Rd intersection improvements	Improve the configuration of the intersection to support the improved tourist facilities and sealing of the existing formation being funded through the PGF	Scores well against multiple criteria	Key tourist movements User experience Safety	High	1-3 years
		Lookout Rd intersection improvements	Improve the configuration of the intersection	Scores well against multiple criteria	Key tourist movements User experience Safety	High	1-3 years
	Heartland Cycle Trail	On road cycle improvements	Minor improvements for targeted signage, and line marking	Scores well against multiple criteria	Key tourist movements User experience Safety	Low	0-1 year
	Safety	Corridor safety improvements	Speed limit reduction to 80kph, combined with advisory signage, some minor widening at pinch points, and line marking	Scores well against the safety criteria	Safety`	High	3-5 years

7. Recommended Option Development

7.1 Introduction

This section documents the development of the recommended treatment options identified as part of the SH12 SSBC. This captures the benefits, risks, opportunities and costs associated with the development of each treatment option. Treatment options within the urban area of Section 2 were incorporated into the township and green space strategies for Opononi-Omapere townships.

7.2 Recommended treatments

From the MCA assessment and feedback from the hui, 36 recommended treatment options were identified for development across Sections 1 to 3 of the SH12 corridor. These recommended treatments have been developed from the options presented to the hapū partners and shown in Table 6-5, into an implementation programme based on programming, location and the consolidation of similar treatments together into a single activity to achieve efficiencies of scale for both an operational and cost-effective development.

The implementation packages are shown in Figure 7-1 whilst the remainder of the section provides a description of each treatment option, the investment objectives it intends to address and their associated benefits.

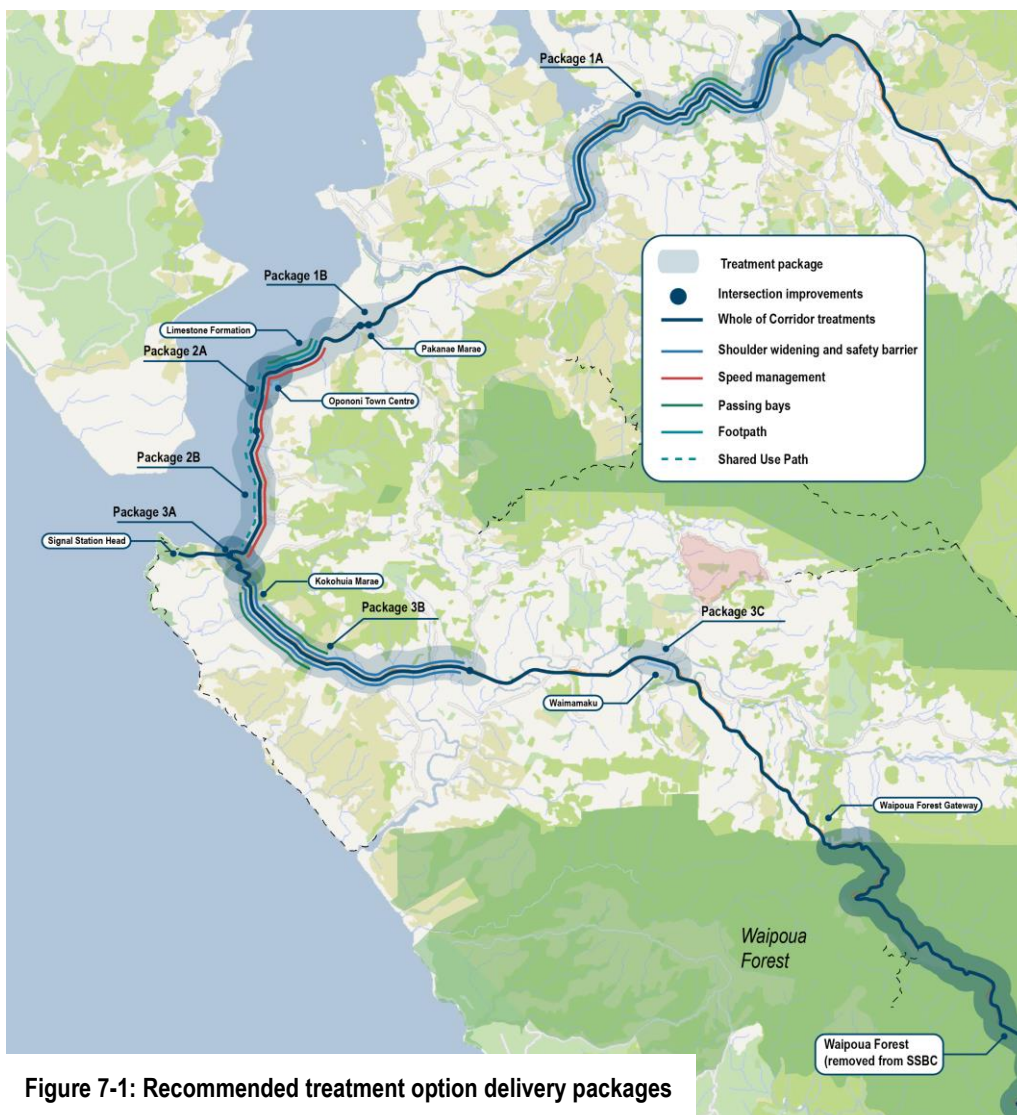


Figure 7-1: Recommended treatment option delivery packages

7.3 Treatment Descriptions

7.3.1 Whole of corridor option

The corridor option identified in Table 7-1 has been developed to create a consistent user experience along the corridor. This option is referred to as Package Four through this section.

Table 7-1: Whole of corridor options

Project Name	Option Components	Description	Investment objective(s)	Benefit
Route Signage and Marking	Cycle route signage and amenities	Higher quality cycling experience between Rawene and Opononi through the provision of cycle route signage and enhanced cycle facilities in Opononi.	1: Destination Appeal 3: Safety	A marked cycle route between Rawene and Opononi will improve the experience for cycle tourists through providing consistent way finding and accurate distances to key destinations. Recreational and touring cyclists place a high value on the coherence of the route.
	Wayfinding and information signage	Increased user experience through improved wayfinding and information signage. Signage to be developed and installed based on direction from the Wayfinding SSBC.	1: Destination Appeal 2: Visitor Spend	Consistent wayfinding and visitor information across the corridor leads to a more enjoyable user experience through easier navigation, identification of key points of interest and increased awareness of services (e.g. fuel, electric charging etc).
	Cultural markers, signage and interpretation panels	Increased cultural and regional awareness through cultural signage and rest area interpretation panels. Signage to be developed and installed based on direction from the Wayfinding SSBC.	1: Destination Appeal 2: Visitor Spend	Visitors to the Hokianga have a more authentic visitor experience through the provision of cultural markers and enhanced information weaving the cultural narrative into the journey.
	Route and advisory signage	Instillation of route information and advisory signage.	3: Safety 4: Resilience	Increased and consistent use of safety signage, VMS, consistent road markings and safer speeds in key locations relate to a safer and more predictable user experience along the corridor.
	Line marking	Consistent line marking across the corridor	3: Safety 4: Resilience	A consistent approach to line marking along the corridor will help create a better user experience through creating a self-explaining road environment.

7.3.2 Section One options

Within Section One, the recommended options are clustered within two geographic locations (Rawene – Jackson Road, package 1A) and (Pakanae – Opononi, package 1B). These recommended options are designed to work together to achieve a consistent user experience along the corridor.

Table 7-2 provides a description of the recommended options proposed in this section of the corridor, along with the investment objectives each option addresses and the benefits of developing each respective option.

Table 7-2: Section One options (packages 1A and 1B)

Project Name	Option Components	Description	Investment objective(s)	Benefit
Package 1A				
Rawene Intersection	Rawene intersection	Improvements to the geometric design and approach sight distances.	1: Destination Appeal 3: Safety 4: Resilience	Improves access to/from Rawene for all road users. Enhances access to the Hokianga Ferry for cycle tourists, locals and travellers. These improvements will increase the safety of this intersection for all road users (know crash history).
	Rawene rest area	Improvements to the Rawene rest area including increased amenities and interpretation signage	1: Destination Appeal 2: Visitor Spend 3: Safety	Rest area improvements will improve the driver experience for cycle tourists, domestic and international visitors through providing an attractive place to pull over and take in the surrounding scenery. Interpretation panels will help mark the start of their journey down SH12 and weave the cultural narrative into their journey. The rest area is ideally located to allow cycle tourists to grab a snack and reorganise their gear after disembarking the ferry and before progressing on their journey down SH12.
Shoulder widening, Safety Barriers + ATP		Widened shoulders to provide a safe cycle route (from 0.5m to 1.0m), ATP and installation of safety barriers.	1: Destination Appeal 2: Visitor Spend 3: Safety	Shoulder widening between Rawene intersection and Jackson Road to achieve consistent wide 1m shoulders. This provides an enhanced user experience for cycle tourists whilst also providing more opportunities for slower vehicles to pull over to allow others to pass. Safety improvements for all road users and reduce the KiwiRAP roadside risk rating.
Omanaia Intersection		Improvements to the geometric design and approach sight distances	3: Safety 4: Resilience	Improved sight distances on approach to the intersection will improve the user along this section of corridor through making the road environment more predictable for all road users whilst also improving access for residents along Omanaia Road.
Passing Opportunities		Installation of slow vehicle passing lanes/ or crawler shoulders	3: Safety 4: Resilience	Slow vehicle passing lanes/ or crawler shoulders between Omanaia intersection and Whirinaki will improve the user experience through providing locations for slower vehicles (e.g. campervans) to pull over and allow other vehicles to pass in hillier areas. This is of benefit to all road users as people are more likely to pull over to allow others to pass if they feel safe doing so.
Package 1B				
Waiotemarama Gorge Road Intersection		Improved sight distances on intersection	3: Safety 4: Resilience	Improved sight distances on approach to the intersection will improve the user experience

Project Name	Option Components	Description	Investment objective(s)	Benefit
		approach through vegetation trimming and slope benching.		along this section of corridor through making the road environment more predictable for all road users whilst also improving access to the marae and residents along Waitotemarama Gorge road.
Koutu Loop Rd Seal Improvements	Sealing and associated safety improvements	Sealing of Koutu Loop Road	1: Destination Appeal 3: Safety 4: Resilience	Sealing of Koutu Loop Road improves access to visitor destinations such as the Koutu Boulders, residential property whilst also increasing the resilience of the corridor though creating a detour route.
Pakanae Marae access and parking		Relocation of marae access to Waitotemarama Gorge Rd, construction of a new mare access way and carpark between the marae and church	1: Destination Appeal 2: Visitor Spend 3: Safety	Relocating the marae access to Waitotemarama Gorge Rd (in combination to the intersection improvements proposed above) will provide a safer access to the marae benefiting the local community and mare visitors. By improving parking at the marae, the safety risk of parking along SH12 is removed whilst also providing parking in a more convenient location.
Safety barriers and ATP		Installation of safety barriers and ATP at locations identified as having a moderate – sever road side risk	3: Safety 4: Resilience	Safety improvements for all road users and reduction in the KiwiRAP roadside risk rating.
Cemetery Road intersection		Improved sight distances (through vegetation trimming) and extension of seal on cemetery road	3: Safety 4: Resilience	Improved sight distances to the cemetery intersection will enable safe access to the Pakanae cemetery particularly during funeral processions.
Walking trail and limestone reef viewing platform		Construction of a footpath and viewing platform on the seaward side of SH12 on the approach to Opononi	1: Destination Appeal 2: Visitor Spend 3: Safety	The provision of a footpath (from Opononi) and viewing platform will provide another key visitor experience at Opononi. Highway safety will also be improved through encouraging people not to walk along the highway to access the limestone formations.
Pullover bays		Passing bays/ pull over location	1: Destination Appeal 2: Visitor Spend 3: Safety	The installation of passing bays on the seaward side of SH12 will improve the user experience by providing safe locations for slower vehicles to pull over to allow others to pass. The passing bays may also be used by visitors looking for locations to pull over and take photos of the Hokianga Harbour.

7.3.3 Safety Assessment

An initial assessment was undertaken using the Transport Agency's KiwiRAP Analysis Tools (KAT). This tool allows 'what if' analysis to be undertaken for each option package to identify how the proposed options perform in addressing the road side risks present along that section of corridor (Table 7-3). This identifies that option package 1A would decrease the road side risk present resulting in the calculated star rating of this section of corridor increasing from 3.11 to 3.69. The star rating for option package 1B would increase from 3.11 to 3.40. Improvement to the Kiwirap star rating is of benefit to the corridor, as there are few roads 4-star rated in NZ other than a small number of divided multi-lane and high-volume expressways and motorways.

Table 7-3: Package 1A and 1B Safety assessment

	Package 1A		Package 1B	
	Before	After	Before	After
Average head-on RPS	14.41	12.58	15.30	13.50
Average intersection RPS	0.05	0.12	0.02	0.14
Average RPS	9.76	5.84	10.76	6.53
Average run-off road RPS	8.27	3.05	9.55	3.35
Average Star Rating (calculated)	3.11	3.69	3.11	3.40
Average Star Rating (published)	2.99	3.00	3.00	3.00

7.3.4 Section Two options

The proposed options within Section Two focus on developing an enhanced visitor experience within the Opononi town centre (package 2A) and along the urban section (package 2B) of the SH12 corridor which links Opononi and Omapere. Safety will be improved along the length of this urban section.

Table 7-4 provides a description of the options proposed in this section of the corridor, along with the investment objectives each option addresses and the benefits of developing each respective option.

Table 7-4: Section two options (packages 2A and 2B)

Project Name	Option Components	Description	Investment objective(s)	Benefit
Package 2A				
	Boat Ramp Parking	Land reclamation to increase the parking area available for boat trailers	1: Destination Appeal 3: Safety	Enlarging the area available for boat parking will make it easier for visitors and commercial operators to launch and retrieve their boats, this will likely result in people spending more time in the area.
Opononi Township Improvements	Parallel parking upgrade	Redevelopment of the parallel parking located alongside the seawall	1: Destination Appeal 2: Visitor Spend 3: Safety	Provides additional parking during peak holiday periods.
	Parking and streetscape improvements outside of the RSA, hotel etc	Formalisation of parking within the Opononi town centre. Upgrade to improve footpath upgrades and landscaping.	1: Destination Appeal 2: Visitor Spend 3: Safety	Provides capacity improvements to current on-road parking demand in the peak season. The parking configuration will encourage appropriate parking use and will be combined with the other townships improvements to improve accessibility for people exiting vehicles and accessing facilities.
	Improved access to the hotel, RSA and I-SITE	Entrance, marking and signage improvements to these key sites in the commercial area.	1: Destination Appeal 2: Visitor Spend 3: Safety	Provides safe access to the hotel and RSA. More pronounced entranceways help create a safer road environment for all road users through making road users aware that vehicles may be preparing to enter/ leave the highway.

Project Name	Option Components	Description	Investment objective(s)	Benefit
Opononi Township Improvements	Pedestrian crossing opposite the wharf	A safe crossing place providing access to the SUP, the wharf, and seawall parking.	1: Destination Appeal 2: Visitor Spend 3: Safety	A key pedestrian desire line is between the shops on the landward side of the highway and the wharf and foreshore. The provision of a pedestrian crossing (and associated improvements) will formalise this desire line creating a safer crossing place and a more predictable road environment.
	Improved pedestrian access to the I-SITE and footprints of Kupe	Footpath upgrades on the footpath linking the I-SITE, footprints of Kupe and town centre.	1: Destination Appeal 2: Visitor Spend 3: Safety	The current footpath between the commercial centre, the I-SITE and future location of the footprints of Kupe is narrow, uneven and has a poor surface. This is unattractive to use and discourages people to explore the township. By providing an enhanced pedestrian experience (particularly when the cultural centre is opened) more people will be encouraged to explore by foot, improving road safety and reducing vehicle movements during busy times.
	Frictional surfacing	Frictional surfacing on the approaches to the pedestrian crossings to encourage slower approach speeds.	1: Destination Appeal 3: Safety	Through promoting the section of highway in the Opononi commercial area as a shared zone (through either frictional surfacing, coloured surfaces, removal of the centre line etc) a more predictable and safer road environment is created for all road users.
	Pedestrian crossing in front of I-SITE	A safe crossing place providing access to the beach, SUP, the wharf, and seawall parking.	1: Destination Appeal 3: Safety	With the development of the cultural centre and concentration of parking at the I-SITE it is likely that there will be an increased number of pedestrians in this area crossing the road to access the beach and SUP.
	Ramped access to beach	Ramped access to the beach developed as part of the seawall to ensure safe access for all users.	1: Destination Appeal 2: Visitor Spend 3: Safety	Providing safe access to the beach for people of all ages and abilities will encourage people to stay in the area longer.
	Cycle parking and repair stand in Opononi town centre	Installation of cycle parking and basic repair facilities in Opononi town centre by the I-SITE.	1: Destination Appeal 2: Visitor Spend	Providing cycle stands and repair facilities will likely encourage touring cyclists to spend more time (and money) within the town centre. The provision of the repair stand will also encourage business to stock more bicycle supplies.
	VMS signage and active speed signs	Installation of VMS and/or active speed management signage on the approach to Opononi and Omapere	3: Safety 4: Resilience	Improved user experience through providing updated information of issues and events along the corridor. Active speed signs encourage safer speeds through built up areas.

Project Name	Option Components	Description	Investment objective(s)	Benefit
Package 2B				
Opononi-Omapere Shared User Path	Opononi Township Shared User Path	The SUP will extend from the Opononi shopping area and extend the length of the urban area through to the end of Omapere. This project will support the shared user path that is included as part of 2B.	1: Destination Appeal 2: Visitor Spend 3: Safety	Locating a SUP on the seawall (seaward side of the parking) connects the proposed footpath to the limestone formations to the wharf and township whilst also removing pedestrians and bicycle users from walking along the edge of the highway and between parked cars.
	Opononi to Omapere Shared User Path	Development of a SUP (approx. 2.5-3m wide) on the seaward side of the highway between Opononi and Omapere. 1: Destination Appeal	2: Visitor Spend 3: Safety	The current footpath linking Opononi and Omapere is narrow, uneven and generally of a poor quality. The development of a SUP will better link the two town centres and encourage more people to explore the area through walking and cycling. The SUP and improvements to the council reserves will also enhance connectivity to the foreshore.
Opononi-Omapere Township safety Improvements		Provision of speed management, barrier, seal edge breaks and minor widening, and line marking	3. Safety	There is an inconsistent speed environment through the urban area, and an inconsistent environment for safety.
Footpath improvements (Opononi-Omapere)		Localised improvements to footpaths within the Opononi – Omapere urban area	1: Destination Appeal 3: Safety	Releveling and resealing of the existing footpath will improve access and safety for footpath users and encourage more people to walk around town.
Opononi-Omapere Rest Areas		Concentrating vehicle access to two main rest areas within the township and associated amenity improvements. All other rest areas to be downgraded to greenspace.	1: Destination Appeal 2: Visitor Spend	Through providing a consistent approach to the development of rest areas/ green spaces within the townships the visitor experience will be increased through having enhanced access to the foreshore. Interpretation panels will also help provide a greater connection to the foreshore and local culture.
Fairlie Crescent Intersection + Safe Crossing Place	Fairlie Cres intersection upgrade	Intersection improvement at Fairlie Crescent	3: Safety	Marking and delineation improvement to the intersection, that accesses one of the main residential areas in Opononi.
	Safe crossing place, Fairlie Cres	Installation of a pedestaling island and curb buildouts to create a safe crossing place near Fairlie Crescent	3: Safety	Fairlie crescent serves the main residential area in Opononi, however the footpath along the highway is located on the seaward side of the road. by providing a safe crossing place we are encouraging more people to walk around Opononi and providing safe opportunities for children to walk to and from school.

Project Name	Option Components	Description	Investment objective(s)	Benefit
Opononi Area School Kea Crossing		Installation of a kea crossing outside Opononi Area School	3: Safety	Outside of Opononi Area School the existing footpath switches sides. The installation of a kea crossing will enable safe access to the school for children and provide a safe place to cross the highway.
Omapere Gateway		Gateway option leading into Omapere from the south.	1: Destination Appeal 2: Visitor Spend 3: Safety	Improves the user experience through emphasising the local character of specific locations along the corridor. The gateway will also help promote safer speeds through the township.
Omapere Slope Stability		Slope stability of the highway on the approach to Omapere	3: Safety 4: Resilience	Improves the resilience and safety of the highway on Pakia Hill through slope stability improvements.
Rest Area Signage		Signage upgrades at key rest areas in the urban area	1. Destination appeal	Improves the visitor experience as described in the Greenspace Strategy

Safety Assessment

A KiwiRAP safety assessment wasn't undertaken as this assessment is only available for rural state highways.

However, there is acknowledged to be a high crash risk along the corridor that would at a minimum mean that the corridor collective and personal risk rating would likely be Medium-High to High. The recommended options are expected to reduce this risk to a Low-Medium to Medium collective and personal risk rating.

7.3.5 Section Three options

Within section three, three distinct option packages have been developed, package 3A focuses on the enhancement of rest areas whilst packages 3B and 3C focus on improving access to key community and visitor facilities whilst also creating a safer and more enjoyable user experience along the highway.

Table 7-5 provides a description of the options proposed in this section of the corridor, along with the investment objectives each option addresses and the benefits of developing each respective option.

Table 7-5: Section Three options (Packages 3A, B and C)

Project Name	Option Components	Description	Investment objective(s)	Benefit
Package 3A				
Signal Station Rd Intersection		Sight distances improvement for Signal Station intersection	1: Destination Appeal 3: Safety 4: Resilience	The Signal Station viewpoint has the potential to become one of the areas 'must do' attractions, however the current intersection has poor sight distances. By improving the sight distances and layout of the intersection the visitor experience is improved through enabling access to this 'must do' viewpoint.

Project Name	Option Components	Description	Investment objective(s)	Benefit
Signal Station Road Improvements	Signal Station Rd cycle route	Marking of cycle route along Signal Station Rd	1: Destination Appeal 3: Safety	The Signal Station view point forms a logical (and spectacular) finish to the Rawene to Omapere cycle route.
	Viewing/ pull over areas along Signal Station Road	Construction of a number of informal pull-over areas along Signal Station Road)	1: Destination Appeal	Signal Station Road has some of the best views of the Hokianga Harbour, however as there are no safe stopping locations along the road many visitors do not have opportunities to fully experience these views. The provision of safe, informal pull over areas would therefore create a better user experience for everyone travelling along Signal Station Road. These pull over areas would also provide safe locations for slower vehicles to pull over and allow others to pass.
	Signal Station Head Carpark	Amenity and security improvements	1: Destination Appeal 3: Safety	Improved amenities and security (CCTV camera) at this carpark would encourage more people to visit this area as security concerns would be addressed. This would result in this view point being one of the 'must dos' when traveling through the area.
Pakia Hill rest area		Re alignment of the entrance/exit from Pakia Hill and rest area improvements	1: Destination Appeal 3: Safety	Pakia Hill Lookout is a key rest area on the corridor and provides the first/last views of the Hokianga Harbour. Improving access to the intersection will encourage more people to stop here and take in the views.
Package 3B				
Waiotemarama Gorge Seal and Shape corrections		Sealing of Waiotemarama Gorge Rd and associated shape corrections and supporting safety improvements	1: Destination Appeal 3: Safety 4: Resilience	Sealing of the Waiotemarama Gorge Rd improves the safety of and access along the Waiotemarama Gorge Rd whilst also providing a detour route around the Opononi – Omapere townships
Waiwhatawhata Marae and Church access		Improved entrance ways and car park formalisation and improved entranceways	2: Visitor Spend 3: Safety	Waiwhatawhata marae is a key tourist attraction on the corridor being one of the only carvNewed marae in Northland. Surrounding ground conditions at the marae and church provide a challenge for visitors to these facilities (particularly during winter). By improving the car parking at these locations access to these locations is improved for locals and visitors alike. As parking improvements at the marae will also include the provision for coaches the marae will be able to cater for larger tourist groups in the future.

Project Name	Option Components	Description	Investment objective(s)	Benefit
Shoulder widening, Safety Barriers + ATP		Widened shoulders to provide a safe cycle route (from 0.5m to 1.0m), ATP and installation of safety barriers.	1: Destination Appeal 2: Visitor Spend 3: Safety	Shoulder widening between Rawene intersection and Jackson Road to achieve consistent wide 1m shoulders. This provides an enhanced user experience for cycle tourists whilst also providing more opportunities for slower vehicles to pull over to allow others to pass. Safety improvements for all road users and reduce the KiwiRAP roadside risk rating.
Waiotemarama Gorge Road Intersection		Improved sight distances on intersection approach through vegetation trimming and slope benching.	3: Safety 4: Resilience	Improved sight distances on approach to the intersection will improve the user experience along this section of corridor through making the road environment more predictable for all road users whilst also improving access to the marae and residents along Waiotemarama Gorge road.
Waimamaku River Headwater Storage		Investigations into increased headwater storage of either the Waimamaku River and/or the Waiotemarama Stream to provide increased flood protection.	3: Safety 4: Resilience	Increased headwater storage will decrease the severity and/or frequency of flooding in the Waimamaku Valley.
Passing Opportunities		Installation of slow vehicle lanes / or crawler shoulders	3: Safety 4: Resilience	Slow vehicle lanes / or crawler shoulders south of Pakia Hill will improve the user experience through providing locations for slower vehicles (e.g. campervans) to pull over and allow other vehicles to pass in hillier areas.
Package 3C				
Waimamaku Urban Options	Footpath improvements	Sealing and increased delineation of the footpath outside of the Four Square and adjacent parking areas.	1: Destination Appeal 3: Safety	Footpath outside of Four Square is currently hap hazard and no existent across car park entrance ways. Sealing of the footpath will reduce slip and trip hazards whilst also improving pedestrian safety.
	Parking improvements	Formalisation of parking beside the Four Square and outside of the day care.	1: Destination Appeal 3: Safety	Construction of a pullover bay outside of the day care would improve safety along the highway through providing a safe place for parents to pull off the highway in order to drop their children off at day care.
Waipoua Forest Gateway		Development of a gateway option into the Waipoua Forest.	1: Destination Appeal 2: Visitor Spend 3: Safety	Improves the user experience through emphasising the local character of specific locations along the corridor. The gateway will also help promote safer speeds through the forest.

Safety Assessment

Table 7-6 identifies that option package 3B would decrease the road side risk present resulting in the calculated star rating of this section of corridor increasing from 2.96 to 3.80. A safety assessment wasn't undertaken for option package 3A or 3C as these packages don't result in an improved star rating as the proposed options don't affect the operation of the highway.

Table 7-6: Package 3B safety assessment

Package 3B	Current Score	With option package
Average head-on RPS	12.69	11.43
Average intersection RPS	0.06	0.07
Average RPS	9.15	4.97
Average run-off road RPS	7.95	2.89
Average Star Rating (calculated)	2.96	3.80
Average Star Rating (published)	2.65	3.00

7.4 Opononi – Omapere urban development plan

7.4.1 Overall urban design intention

The focus of options within the Opononi town centre (packages 1B and 2A) is to develop solutions to improve access and encourage visitors to stop for longer within the township, with design interventions aimed at improving the safety and overall experience for all users of State Highway 12. The SH12 SSBC has been integrated with the team developing the Townships SSBC during the development of their urban design framework and incorporated these principles into the Opononi-Omapere urban development plan.

7.4.2 Coastal erosion and highway resilience

Parts of the Opononi – Omapere shoreline have been identified as being in both in the Coastal Erosion and Coastal Flood Hazard Zones¹⁰. Risk mapping identifies that without adequate protection the townships (and highway) will become increasingly susceptible to coastal flooding and erosion over the next 50-100 years.

Construction is currently underway on sections of seawall (developed under emergency works) to shore up the existing sea wall and protect areas under the greatest threat from coastal erosion. Although the proposed design is intended to protect the township from 1 in 100 year storm events it is not intended to offer a long term solution and some coastal flooding will still occur as storm surges travel up waterways.

In the development of options described in this section it is assumed that the proposed sea wall will offer adequate short-term protection from coastal erosion and flooding. Long term solutions are considered to be outside of the scope of this business case.

In addition to coastal hazards, the stability of the banks (to the south of Omapere) are at risk of slipping in adverse weather events. Measures to mitigate this risk are described in this section.

7.4.3 Design Methodology – Opononi town centre

This will be achieved with a more convenient and attractive access for the township, including ease of parking and a better visitor experience through street scape improvements, and the development of new attractions.

Key interventions along the extent of the project are:

1. Slow vehicle/passing lanes where required and possible,

¹⁰ Northland Regional Council. (2019). *Northland Maps: Natural Hazards*.

2. A 2.5m wide Shared Use Path (SUP),
3. Footpath improvements where required and possible,
4. Specific interventions at focal points with potential for improved pedestrian crossings, picnic areas, parking bays or open spaces.
5. Urban design features to slow down the speed of vehicles passing through the area and improve safety,
6. Additional landscaping and amenity features such as planting areas, trees, playground and exercise stations and infrastructure associated with cycling users (i.e. bike racks) where possible.
7. Gateways to show the entrance/exit to/from Opononi and Omapere

Figure 7-2: Town Centre Concept Design

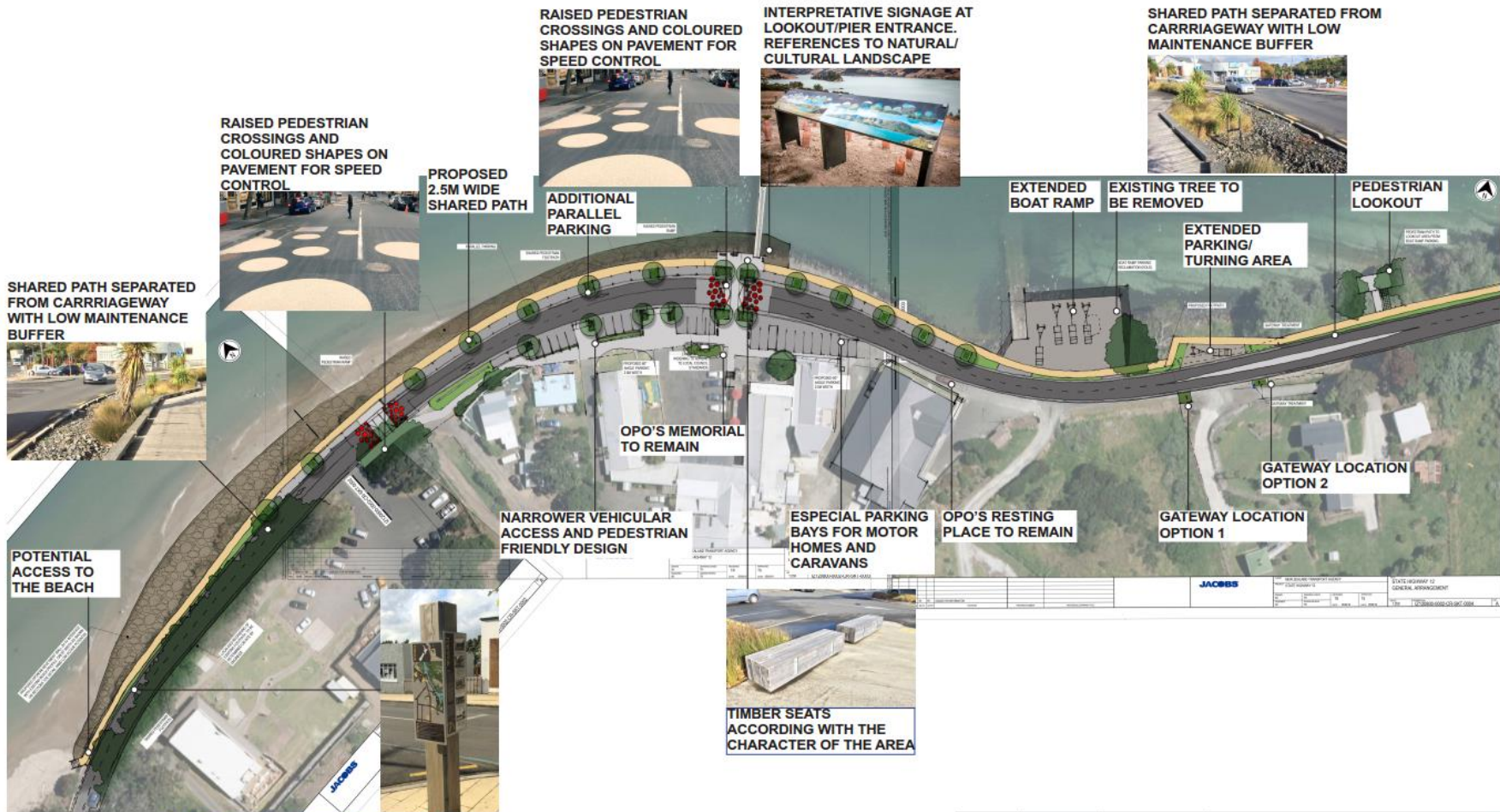


Figure 7-3: Omapere / Opononi School Concept Plan



OPONONI SCHOOL AREA



OMAPERE BOAT RAMP AREA

7.4.4 Design Methodology: Opononi – Omapere Urban Corridor

Within the urban corridor the intention is to strengthen the connectivity between key locations along the corridor, encouraging visitors to spend more time whilst also improving access to key community facilities. The design of treatments within the urban corridor focused on:

- **Opononi – Omapere shared use path:** The shared use path (Appendix L) would provide a high quality walking and cycling path connecting the two townships and providing opportunities for locals and visitors to experience the views along the coastline.

The shared path would provide observation stops and integrate with the open spaces and picnic areas available along the waterfront and will integrate with the Manae Footprints of Kupe to provide an interactive cultural experience.

The shared path will provide a crossing point to the centre and incorporate story boards and other information for visitors to observe key landmarks and locations that will have been presented and discussed, providing an additional cultural experience for visitors to the area.

The cultural centre will celebrate Kupe's voyage to the Hokianga and his journeys across Aotearoa. The centre will present and preserve 1,000 years of Māori history through stories of Kupe's descendants and how New Zealand came to be inhabited by humans, in addition the centre will showcase the local culture and places of historical significance

- **Safe crossing places integrated with speed management:** With the development of the shared user path, the major active link between the two townships will be on the seaward side of the highway. Therefore, it will be necessary to provide safe places to cross the highway to connect the SUP with the Opononi School and major residential catchments (Appendix L).



EXISTING SH-12 AT OPONONI SCHOOL



PROPOSED SUP AND CROSSING FOR OPONONI SCHOOL

Figure 7-4: SUP concept and Opononi School crossing

- **Rest area and greenspace development:** Upgrading of the green spaces which link the two townships. This will provide better opportunities for visitors and locals to connect with their surrounding environment, and could include infrastructure such as exercise equipment, BBQ areas that also integrate with the shared path and other improvements. The development of a greenspace strategy is discussed in section 7.6.

7.4.5 Theme development

In the development of the concept design for the Opononi town centre and the Opononi – Omapere corridor the following themes have been considered within the context of the township plan integrating with the community and enhancing the visitor experience for maximising the overall benefit:

- **Developing a sense of place and sharing the importance of the Hokianga:** known as 'Te Kohanga o Te Tai Tokerau', (the nest of the northern tribes) many Maori are able to trace their ancestry to the discovery and settlement of this harbour, making it the birthplace of the Nation.
- **Connecting with nature:** strengthening the connection with the Hokianga harbour and the Waipoua and Waima Forest Parks and their role in the maintaining the Kauri taonga.

- **Cultural connections:** Telling the story of local Maori (through the Manae Footprints of Kupe and interpretation panels along the foreshore) and directing visitors to local marae and sites of cultural importance

The next phase of the township plan would work with the local community and the Townships SSBC to further develop these narratives to integrate with the planned improvements. Overall themes for developing the township were presented to the community during the consultation and the concept plans included in this report would form the basis for community engagement. The next phase will also work closely with the team developing the Townships SSBC and integrate the intent of the urban design framework underlying their work with the Opononi-Omapere townships plan.

7.4.6 Gateway Treatments

Gateway treatments are planned for the northern and southern entrances to the Opononi – Omapere township and the northern entrance to the Waipoua Forest. These gateways will feature bilingual signage, landscaping reflecting the unique character of the area, local sculpture/ art work and a speed threshold. The intention of these gateways is to help road users become aware that they are entering a place with a unique character and to promote safe speeds throughout the township.

7.5 Passing Opportunities

The identification and development of passing lanes along the corridor was guided by the *Provisional Passing and Overtaking Guidelines* (Transit New Zealand, 2008) and interfacing with the team developing the Passing and Overtaking SSBC. This strategy provides guidance on the development of passing lanes and slow vehicle bays based on the predicted 30-year traffic volumes and surrounding terrain. In addition, the strategy identifies that a consistent strategy for low volume roads (a projected traffic volume of between 2,000 – 4,000 vpd) would see the establishment of slow vehicle bays or passing lanes at 10km centres. Based on this, and the intention for improving passing opportunities along the corridor, the following were identified as possible candidate locations:

- Between the Omanaia Bridge and Karuhiruhi Rd, and
- Between Waitotemarama and Waimamaku.

The suitability of each of these locations was then assessed based on demand, crash history and construction feasibility with the recommendations summarised in Table 7-7 and shown in Appendix K.

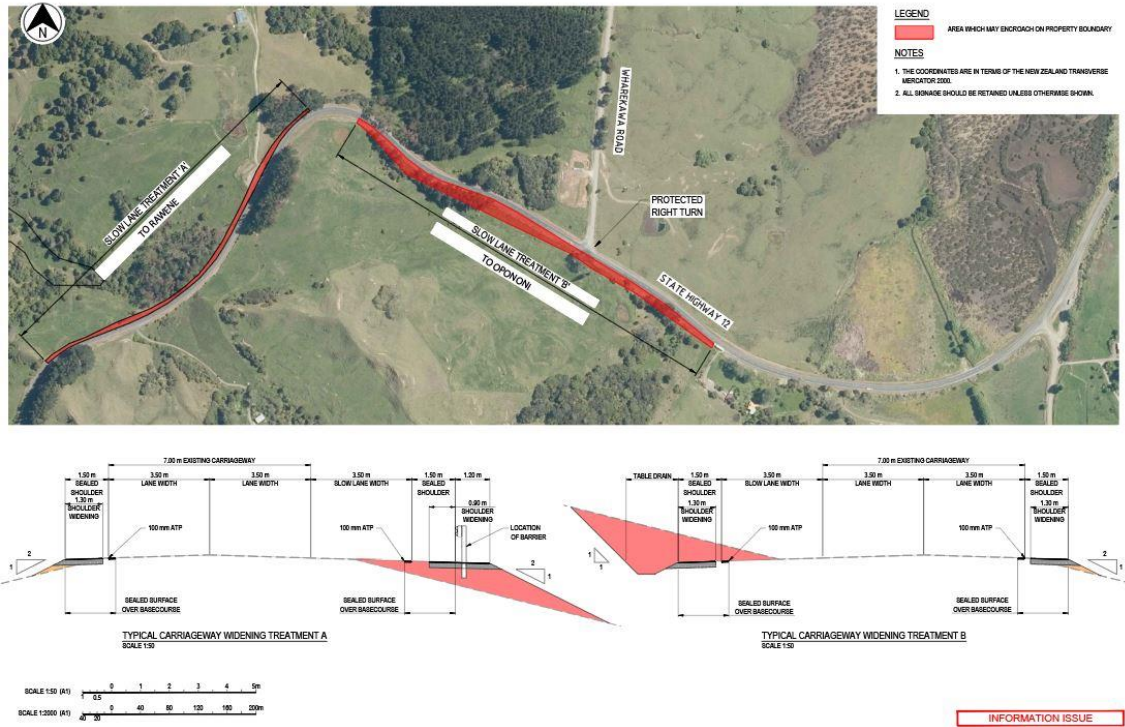
Table 7-7: Passing lane assessment

Location	Recommendation	Justification
Omanaia Bridge - Karuhiruhi Rd	Uphill (inbound) slow vehicle lane (500m)	Higher projected traffic volumes north of Opononi and predicted increase in tourist traffic necessitate need to provide passing opportunities in this location. Based on the surrounding topography uphill slow vehicle lanes are likely to have the greatest benefit as they allow slower vehicles to be passed safely.
	Uphill (outbound) slow vehicle lane (500m)	
Between Waitotemarama and Waimamaku	Passing Opportunities (approx. 1.2km)	Justification for passing opportunities relates to creating a consistent passing strategy along the TCDR. Within this section of the corridor there are limited opportunities to pass slower vehicles due to the surrounding terrain.

Figure 7-5 provides an indicative layout and cross section of what the slow vehicle lanes may look like in the northern section. Whilst Figure 7-6 provides an indicative layout and cross section of slow vehicle bays in the southern section.

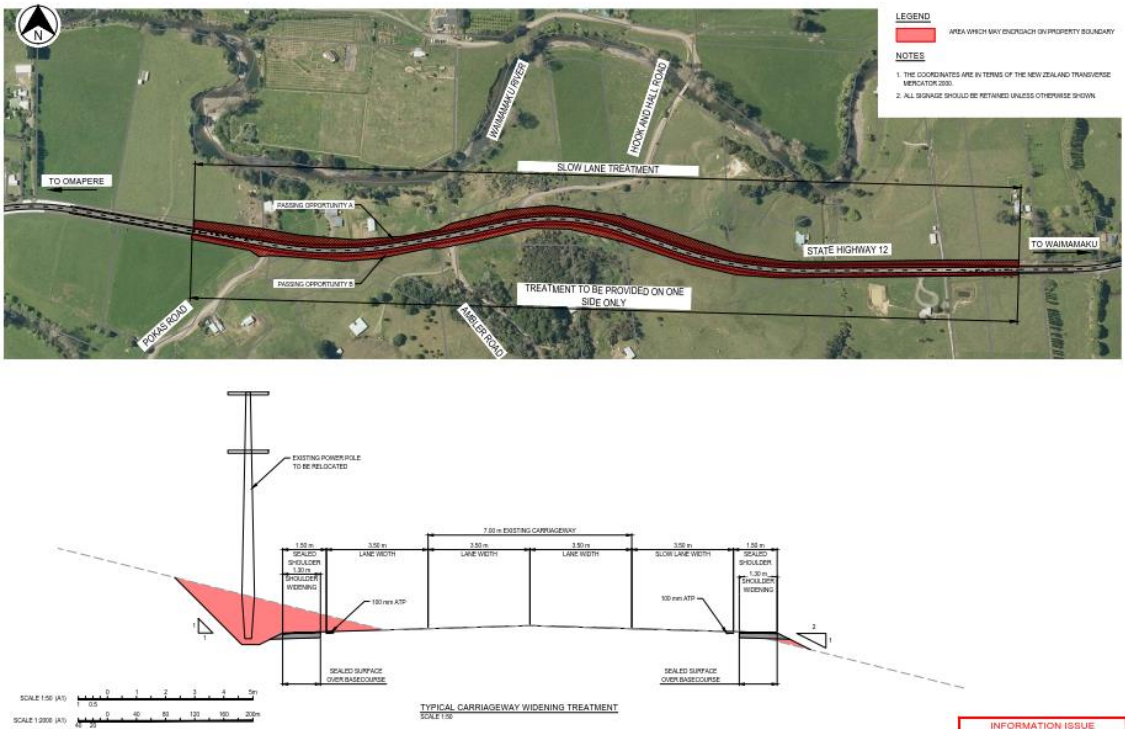
In the development of the concept alignment of the passing opportunities between Waitotemarama and Waimamaku it has been identified that the development of passing opportunities in this location

will require the relocation of approximately 20 power poles. The feasibility of relocating these power poles has not been discussed with the local lines company.



INFORMATION ISSUE

Figure 7-5: Indicative location and cross section of slow vehicle lanes (south of Oue)



INFORMATION ISSUE

Figure 7-6: Indicative location and cross section of passing opps (between Waitotemarama and Waimamaku)

7.6 Greenspace strategy

Along the corridor the Transport Agency is responsible for roadside rest areas outside of urban areas (Rawene intersection and Pakia Hill), whilst the Far North District Council manages greenspaces in urban areas and the Department of Conservation manages carparks and picnic areas on public conservation land.

As the above agencies all develop and maintain greenspace for different purposes no consistent approach has been undertaken as to the management of greenspaces within the corridor. Despite this, visitors to the area are likely to have similar expectations regarding all of the greenspaces which they visit, therefore a consistent approach to the development and maintenance of green spaces need to be undertaken.

7.6.1 NZTA rest area requirements

Part 17 (Stopping Places) of the State Highway Control Manual, identifies that the primary purpose of rest areas along the State Highway is to provide safe and attractive places for motorists to be able to take a break from driving to reduce fatigue. To this extent rest areas should be spaced approximately 1 hour drive apart. Table 7-8 summarises the required components needed to meet Transport Agency requirements for rest areas.

In addition to the above purpose, rest areas/ viewing places may also be developed in conjunction with local authorities in places where visitors are likely to stop to admire the surrounding scenery or to access local attractions.

Within the context of the TCDR, the location and development of rest areas will be guided by the Rest Areas SSBC. During the development of this SH12 SSBC there has been an interface with the team developing the Rest Areas SSBC and it will be necessary during the implementation phase to continue to refer to the Rest Areas SSBC ensure that the development of the rest areas identified below are aligned.

Table 7-8: Rest area requirement

Facilities	Requirement
Signage and access	Rest areas should be able to be accessed from both travel directions with advanced signage developed in accordance with MOTSAM, Part 1
Internal vehicle circulation	Seal or gravel surfacing as appropriate and reflecting likely level of usage. Rest are should be easy for larger vehicles e.g. campervans to access
Pedestrian paths and table areas	All weather surfaces
Tables and seating	Uniform design standard uncovered as a minimum
Rubbish bins	Mandatory – should be large enough as to not overflow between servicing
Public information boards	Desirable
Personal Safety	Rest areas should be at least partially visible to passing traffic

It is not the policy of the Transport Agency to provide toilet facilities at rest areas.

7.6.2 Greenspace assessment

Table 7-9 identifies the current rest areas/ green spaces along the corridor and identifies that most of the green space is concentrated within the Opononi – Omapere township. The development of the existing rest areas and green spaces has occurred in an ad hoc manner with the access provisions and amenities provided varying between location.

In the larger rest areas (Signal Station and Pakia Hill), anti-social behaviour is becoming an issue with reports of car break-ins and burnouts.

Table 7-9: Current green space/ rest areas along the corridor

Location	Size	Vehicle Access	Picnic Tables	Bins	Beach access	Comments
Rawene Intersection	Carpark: 500m ² Green space: 700m ²	Yes	2 - wooden	Yes	N/A	Large pull over area, currently unattractive as a rest area.
Opononi - 1	Carpark: 270m ² Green space: 750m ²	Yes	3 - wooden	Yes	Yes	Formal vehicle access, wooden bollards to prevent vehicles driving on grass
Opononi - 2	Carpark: 0m ² Green space: 1,400m ²	Yes	1 - wooden	Yes	Yes	Formal vehicle access, wooden bollards to prevent vehicles driving on grass
Opononi - 3	Carpark: 0m ² Green space: 2,500m ²	No	1 - wooden	Yes	Yes	Informal vehicle access
Opononi - 4	Carpark: 0m ² Green space: 900m ²	No	1 - wooden	Yes	Yes	Informal vehicle access
Opononi - 5	Carpark: 0m ² Green space: 650m ²	No	No	No	No	Informal vehicle access
Opononi - 6	Carpark: 560m ² Green space: 330m ²	Yes	No	No	No	Pull over are, no amenities
Opononi - 7	Carpark: 0m ² Green space: 680m ²	No	1 - concrete	Yes	No	Informal vehicle access
Opononi - 8	Carpark: 800m ² Green space: 3000m ²	Yes	2 - wooden	No	Yes	Large partially sealed carpark, large amount of greenspace and planting
Signal Station Carpark	Carpark: 1500m ² Green space: 740m ²	Yes	2 - wooden	Yes	N/A	Large DOC carpark, picnic tables in reserve across road. evidence of antisocial behaviour in carpark
Pakia Hill	Carpark: 680m ² Green space: 960m ²	Yes	2, 1 concrete, 1 wooden	Yes	N/A	Large parking area.

7.6.3 Council and community aspirations

Council and community aspirations for the development of green space and recreation facilities within the Opononi – Omapere township is for the development of a shared use path on the seaward side of the highway linking the urban area together. It is intended that this facility will have numerous pull over/ rest bays where people are able to pull off the path to take in the view of the harbour.

As part of this development it is also the aspiration to develop a fitness circuit with exercise equipment in the existing green spaces.

To allow the development of the shared use path it is necessary to restrict vehicle access to the current green spaces to provide for the safety of path users, this will be achieved through either planting between the road and path and/or the instillation of a non-drivable kerb.

In addition to the above, vehicle access to green spaces will be rationalised with vehicle access restricted to the northern rest area and the Omapere reserve.

7.6.4 Proposed greenspace strategy

Within the corridor greenspace fulfils three functions, there are:

1. **Rest areas:** to provide safe places for road users to take a break from their journey,
2. **Community greenspace and recreation facilities:** provision of greenspaces and recreation facilities to meet the needs of the local community, and
3. **Tourist view points and lookout areas:** scenic lookouts and picnic areas primarily developed to cater for visitors to the region.

The proposed greenspace strategy intends to streamline the development of greenspaces along the corridor, concentrating vehicle access to those locations identified in Table 7-10 and restricting vehicle access to other greenspaces. The benefit of doing so is that through concentrating investment into a smaller number of green spaces it is possible to ensure that all of these locations are developed to a consistent standard therefore maximising investment.

In addition, restricting vehicle access to the greenspaces within the Opononi – Omapere township enables these greenspaces to be developed as a part of a beach side fitness circuit proposed by the Far North District Council.

7.6.5 Greenspace with vehicle access

Based on the requirements in Part 17 (Stopping Places) of the State Highway Control Manual it is proposed to develop the locations identified in Table 7-10 into safe and attractive places for people to take a break from their journey and to provide anchor points from which people are able to access key visitor destinations. Due to the multiple users of the corridors e.g. cycle tourists and international visitors the intention is to develop a range of locations for people to stop.

These locations are also shown in Appendix L.

Table 7-10: Greenspaces with vehicle access

Location & Treatments	Facilities provided
Rawene rest area (012-0046/B0.0)	
Parking and access	Investigate flooding of carpark, chip seal and provide parking bays/ landscaping to prevent anti-social behaviour
Signage	Rest area signage at 1km and 500m along the highway.

Location & Treatments	Facilities provided
Green space	Enhanced landscaping
Tables and seating	2 x concrete picnic tables
Rubbish bins	1 x rubbish bins
Amenities	Relocate and enlarge bus shelter
Opononi rest area (012-0061-B/2.7)	
Parking and access	Formalise parking and access
Signage	No signage
Tables and seating	2 x concrete picnic tables
Rubbish bins	1 x rubbish bin
Omapere Reserve (012-0061-B/5.0)	
Parking and access	Enhance parking area, mark parallel carparks and circulation direction.
Signage	Rest area signage at 500m along the highway.
Green space	Enhanced landscaping
Tables and seating	2 x concrete picnic tables
Rubbish bins	1 x rubbish bins
Freese Park (On Freese Rd)	
Parking and access	Enlarge Parking to allow campervans, yellow stopping lines along road side
Signage	Rest area signage at 500m along the highway, Old Wharf Rd intersection and Fraser Rd. Interpretation panels to showcase the lower Hokianga harbour and north head
Green space	Protect green space by preventing vehicle access through use of bollards etc
Tables and seating	3 x concrete picnic tables
Rubbish bins	2 x rubbish bins
Amenities	Water fountain, Pavilion shelter with electric coin operated BBQ
Signal Station Head (End of Signal Station Rd)	
Parking and access	Enlarge Parking to allow campervans, yellow stopping lines along road side
Signage	Rest area signage at 500m along the highway, Old Wharf Rd intersection and Fraser Rd. Interpretation panels to showcase the lower Hokianga harbour and north head
Green space	Protect green space by preventing vehicle access through use of bollards etc
Tables and seating	3 x concrete picnic tables
Rubbish bins	2 x rubbish bins

Location & Treatments	Facilities provided
Pakia Hill rest area (0012-0061-B/7.1)	
Parking and access	Relocate access approx. 25m to the north, tighten approach angle from rest area. Redevelopment of parking area including new retaining walls and access
Signage	Rest area signage at 500m along the highway,
Green space	Protect green space by preventing vehicle access through use of bollards etc
Tables and seating	3 x concrete picnic tables
Rubbish bins	2 x rubbish bins

7.6.6 Other greenspaces

The remainder of the greenspace located within the Opononi – Omapere townships is intended to be developed in conjunction with the shared use path. It is anticipated that part of the planning for the SUP will include the development of a fitness circuit and walking and cycling route. This will feature the instillation of fitness equipment (such as that shown in Figure 7-7), a timing clock and the development of a number of numbered activity locations.



Figure 7-7: Fitness circuit example

Figure 7-8: Parking and greenspace plan opposite the camp ground



Figure 7-9: Fairlie Crescent & Greenspace Plan



Figure 7-10: Greenspace Plan



Scale 1:500

SCALE 1:500

ASB219 SH12 IMPROVEMENTS SSC
 Date: 14 March 2018 | Revision: 1
 Project Manager: [unreadable]

Figure 7-11: Picnic Area / Access to the Beach Plan



Scale 1:500

SCALE 1:500

ASB219 SH12 IMPROVEMENTS SSC
 Date: 14 March 2018 | Revision: 1
 Project Manager: [unreadable]

8. Investment programme

Table 8-1 summarises the recommended treatments identified in the assessment process, and the costs associated with the development of each of these treatment options. The table also provides a summary of how each treatment aligns with the project's investment objectives and alignment with the outcomes sought through the IAF and PGF.

P50 cost estimates have been calculated to identify the costs associated with the development of the recommended treatments. The P50 estimates are based on desktop only and the rates identified in Appendix N, and the full programme for investment is contained in Appendix O¹¹.

Table 8-1: Recommended options cost estimates

Package	Treatment	Estimated Cost
Package 4	Route Signage and Marking	\$ 791,100
Package 1A	Rawene Intersection	\$ 375,000
	Shoulder Widening, Safety Barriers + ATP	\$ 10,553,000
	Omanaia Bridge Future Proofing	\$ 1,050,000
	Omanaia Intersection	\$ 235,000
	Passing Opportunities	\$ 2,276,229
Package 1B	Waiotemarama Gorge Road Intersection	\$ 235,000
	Koutu Loop Road Seal Improvements	\$ 6,815,119
	Pakanae Marae Access and Parking	\$ 713,800
	Cemetery Road Intersection	\$ 235,000
	Walking Trail and Limestone Reef Viewing Platform	\$ 6,226,908
	Pullover bays	\$ 233,000
	Opononi Gateway	\$ 245,000
Safety Barriers and ATP	\$ 595,000	
Package 2A	Boat Ramp Parking	\$ 1,992,000
	Opononi Township Improvements	\$ 500,000
Package 2B	Opononi – Omapere Shared User Path	\$ 5,003,000
	Opononi-Omapere Township Safety Improvements	\$ 822,000
	Footpath Improvements (Opononi-Omapere)	\$ 257,500
	Rest Area Signage	\$ 13,000
	Omapere-Opononi Rest Areas	\$ 64,000
	Fairlie Cres intersection + safe crossing place	\$ 257,500

¹¹ Rates from the Network Operations Contractor were not available during the development of this SSBC, instead rates were based on a similar project undertaken in the last two years.

Package	Treatment	Estimated Cost
Package 2B	Opononi Area School Kea Crossing	\$ 53,000
	Omapere Gateway	\$ 180,000
	Omapere Slope Stability	\$ 1,560,000
Package 3A	Signal Station Rd Intersection	\$ 325,000
	Signal Station Rd Improvements	\$ 126,000
	Pakia Hill Intersection and Rest Area	\$ 350,000
Package 3B	Waiwhatawhata Marae and Church access	\$ 396,175
	Passing Opportunities	\$ 2,801,872
	Shoulder widening, Safety Barriers + ATP	\$ 8,311,478
	Waiotemarama Gorge Road Intersection	\$ 329,000
	Waiotemarama Gorge Seal and Shape Corrections	\$10,929,909
	Waimamaku River Headwater Storage	\$ 1,030,000
Package 3C	Waimamaku Urban Treatments	\$ 688,890
	Waipoua Forest Gateway	\$ 300,000

The planned delivery of the recommended treatments identified above is based on a 10-year programme for investment (Appendix O) with priority for development being allocated in the short term (1-2 years), medium term (3-5 years) or long term (6-10 years) based on the development of interdependent projects (for example the Opononi seawall), and immediate need for the project.

Treatments proposed for development in year one is either those treatments identified as early deliverables (such as safe crossing places), safety improvement projects (to address an immediate concern) or projects associated with the development of the Opononi sea wall (as it is anticipated that this will be constructed in the first year).

8.1 Recommended Options Investment Assessment (IAF)

The recommended treatment options have been evaluated against the Transport Agency's Investment Assessment Framework (IAF). IAF assessment determines the suitability of including the recommended treatments in the 2018-2021 National Land Transport Programme (NLTP) and to help inform the priority for investment against the intended outcomes of the GPS.

The following criteria need to be addressed in order to include a treatment into the NLTP, these criteria are:

- Ensuring a fit-for-purpose business case has been developed,
- Assessment of the business case has been completed by the Transport Agency and rated as Pass or Rework,
- Sufficient evidence has been used to justify the activity,
- The activity is included in a regional land transport plan (RLTP),
- The problem/issue/opportunity is clearly identified in a strategic business case, and
- The requirements of the Land Transport Management Act 2003 have been met,

8.1.1 Activity Classes

Table 8-2 identifies the activity classes which the recommended option treatments align with.

Table 8-2: NLTP activity classes which align with the recommended option treatments

Activity Class	Description
WC 125 - Footpath improvements	Improvements to existing footpaths.
WC 324 – Road improvements	Improvements to the road network over \$1,000,000.00.
WC 325 – Seal extension	Sealing unsealed roads or extending the length of seal.
WC 341 – Low cost, low risk improvements	Improvements to the road network under \$1,000,000.00.
WC 357 – Resilience improvements	Non routine resilience improvements to the road network
WC 452 – Walking and cycling improvements	New walking and cycling projects costing over \$1,000,000.00.

Treatments with no activity class

Based on the current activity classes identified above, the following treatments are unlikely to qualify for funding under the NLTP as they aren't considered to be with the scope of projects which the Transport Agency funds:

- Interpretation panels and cultural markers,
- Pakanae Marae access and carpark,
- Waiwhatawhata Mare and Church access, and
- Some aspects of the gateway treatments.

8.1.2 Assessment criteria

Recommended option treatments were assessed against the NLTF using the results alignment and value for money criteria. This assessment is indicative only and formal NLTF assessment would follow normal NLTF processes for each treatment progressed to implementation.

Results Alignment: The results alignment criteria considers how the issues and opportunities identified in the strategic case align with the GPS and government priorities for investment. The intention of this criteria is not to assess the performance of a specific option but to instead identify how addressing the issue or opportunity identified (in a specific location) aligns with the GPS and national and regional policy objectives.

Table 8-3 identifies the criteria which need to be addressed to achieve a respective rating level. To align with a specific level, addressing the identified issue or opportunity needs to achieve a rating across one or more of the GPS priorities.

Table 8-3: Results alignment criteria

GPS priority	Low	Medium	High	Very High
Safety	Continuous programmes: a higher level of service than required Improvements: a gap in required levels of service	Continuous programmes: a fit-for-purpose level of service	Continuous programmes: a gap in existing levels of service	Directly link to specific priority results sought in the GPS
Access – thriving regions		Improvements: an identified gap of some significance in required levels of services	Improvements: a significant gap in a targeted regional or national context	
Access – liveable cities				
Environment				

8.1.3 Value for Money

The GPS has a strong emphasis on the development of projects which offer value for money and requires that a cost benefit appraisal be undertaken for most activity classes to capture the costs and benefits associated with the development of each of the treatment options.

Table 8-4 shows the alignment between the calculated BCR and appraisal rating.

Table 8-4: Cost-benefit appraisal rating

BCR range	Cost-benefit appraisal rating
BCR = 10 or more All activities with BCR greater than or equal to 10 are in this band	Very High
BCR = 5–9.9 All activities with BCR greater than or equal to 5 and below 10 are in this band.	High
BCR = 3–4.9 All activities with BCR greater than or equal to 3 and below 5 are in this band	Medium
BCR = 1–2.9 All activities with BCR greater than or equal to 1 and below 3 are in this band	Low
BCR = 0–0.9 All activities with BCR greater than or equal to 0 and below 1 are in this band. Projects with a very low cost–benefit appraisal rating will only be approved for inclusion in the NLTP or for funding by exception.	Very Low

8.1.4 Wider economic benefits (WEBs)

The benefit cost ratios (BCRs) identified in the sections below don't take into consideration the WEBs associated with the development of the proposed treatment options. Due to the interrelationship between the different treatment options identified in this and the six other business cases in development, WEBs and the associated BCRs will be calculated on a programme level.

8.1.5 Low cost/ low risk activities

Low cost/ low risk activities (treatments with a combined professional services and implementation fee of under \$1M) are able to use a generic rating of High as the results alignment assessment is undertaken at a programme level. There are a number of options in the recommended programme that would conform with a low risk/ low risk cost threshold, but a separate IAF assessment has been undertaken for each option irrespective of the implementation cost.

8.1.6 IAF Assessment

Table 8-5 contains the IAF assessment undertaken. It identifies the activity class associated with each treatment whilst also providing a rating for each of the treatments (High, Medium or Low) based on their results alignment and value for money.

Table 8-5: IAF assessment

Package	Treatment	Activity class	IAF Rating		Assessment
			Alignment	BCR Rating	
Package 4	Route Signage and Marking	341	Medium	High	Contributes to addressing the corridor safety risk that carries sections of medium-high collective and personal risk ratings and includes route signage that will assist visitors to the region with their journey, including touring cyclists travelling on the Kauri Coast Heartland Cycle Trail.
Package 1A	Rawene Intersection	341	High	Medium	The intersection is a key gateway for the community and visitors accessing the Hokianga from the east, and from the north from Rawene. It has a known crash history and has an adjoining rest area that is well utilised
	Shoulder Widening, Safety Barriers + ATP	324	High	Very Low	Shoulder widening and associated safety improvements between Rawene intersection and Jackson Road would seek to achieve consistent wide 1m shoulders. This provides an enhanced user experience for cycle tourists, and other road users. It will provide a significant improvement to the safety risk rating for this section of the corridor.
	Omanaia Bridge Future Proofing	357	Medium	Low	This addresses a potentially significant gap in the resilience of this regional corridor in response to climate change effects.
	Omanaia Intersection	341	Medium	Very Low	Improves the geometry of an out of context intersection that does not meet current standards, and provides an access function for residents living along this rural road in Oue.
	Passing Opportunities	324	Medium	Low	Improves access and traffic flow, on this key tourist route to the Hokianga.
Package 1B	Waiotemarama Gorge Road Intersection	341	Medium	Very Low	Improves the geometry of an out of context intersection that does not meet current standards, and provides an access function for residents living along this rural road, and tourist activities.
	Koutu Loop Rd Seal Improvements	325	Low	Low	Provides detour route and access to local community on a regionally important state highway corridor.
	Pakanae Marae Access and Parking	N/A	-	-	Reports of close calls due to cars parking along roadside. Project is located on private property and does not qualify for an IAF assessment.
	Cemetery Road Intersection	341	Medium	Very Low	Improves the geometry of an out of context intersection that does not meet current standards, and provides an access function for residents living along this rural road, and local hapū accessing their burial grounds.

Package	Treatment	Activity class	IAF Rating		Assessment
			Alignment	BCR Rating	
Package 1B	Walking Trail and Limestone Reef Viewing Platform	425	High	Low	Increases the use and safety of communities north of Opononi to access key facilities and schools using active modes. Pedestrians currently walk along the road putting themselves at a high risk. Supports increased tourist activity in the area and supports the aspirations of the Twin Coast PBC.
	Pullover bays	341	Medium	-	Provides an opportunity for visitors to stop and view the expanse of the harbour safely.
	Opononi Gateway	341	Medium	-	Improves the user experience through emphasising the local character and defines the threshold for entering the townships. The gateway will also help promote safer speeds through the townships further improving the safety risk when combined with the township safety improvements.
	Safety Barriers and ATP	341	High	Low	It will provide a significant improvement to the safety risk rating for this section of the corridor.
Package 2A	Boat Ramp Parking	N/A	-	-	Not considered for IAF assessment.
	Opononi Township Improvements	341 125	High	Low	Improving the Opononi town centre will enhance the visitor experience is to ensure that townships along the corridor are developed as attractive places for visitors to break from their journey and spend time. Improving the town centre will provide the confidence for private businesses to invest in the area and develop the range of hospitality and accommodation options which visitors will require.
Package 2B	Opononi – Omapere Shared User Path	425	High	Low	Encourages increased walking and cycling including to local school. Increases tourist activity in the area and conforms with the economic action plan for Northland, and economic growth region.
	Opononi – Omapere Township Safety Improvements	341	High	High	The SH12 corridor has a high rate of DSI's over the previous 10 years. The urban section is currently unrated against the urban safety risk rating and Kiwirap, but indications are that this section would qualify as a medium high to high collective safety risk.
	Footpath improvements (Opononi-Omapere)	125	High	Medium	Encourages increased walking and cycling including to the local school.
	Omapere-Opononi Rest Areas	-	-	-	Not considered for IAF assessment.
	Fairlie Cres intersection + safe crossing place	341	Medium	Very Low	Fairlie Cres accesses the main residential catchment in the Opononi – Omapere township however there is currently no safe place to cross the highway to access the footpath on the other side of the road. Further improving the marking and delineation to the intersection will provide conformance with the Austroads standard. The activity will further enhance the speed management corridor along the township corridor

Package	Treatment	Activity class	IAF Rating		Assessment
			Alignment	BCR Rating	
Package 2B	Opononi Area School Kea Crossing	341	Medium	-	The installation of a kea crossing will enable safe access to the school for children and provide a safe place to cross the highway. The activity will further enhance the speed management corridor along the township corridor.
	Omapere Gateway	341	Medium	-	Improves the user experience through emphasising the local character and defines the threshold for entering the townships. The gateway will also help promote safer speeds through the townships further improving the safety risk when combined with the township safety improvements.
	Omapere Slope Stability	357	Medium	Very Low	Addresses identified resilience risk in relation to highway operation on a regionally important route.
Package 3A	Signal Station Rd Intersection	341	Medium	Very Low	Strategically important intersection. The risk profile will be improved by improving the geometry to conform with current standards.
	Signal Station Rd Improvements	341	Medium	Very Low	The road and carparking area access a key tourism destination being the Arai Te Uru Heritage Walk and leads out to the Signal Station Point on the southern head of the Hokianga Harbour. Improvements will enhance the visitor experience
	Pakia Hill rest area	-	Medium	-	Pakia hill lookout provides a separate vantage point from Sh12 to view SH12. Its use as a rest area, and area for freedom camping is considered a draw, certainly within the context of social media where a significant number of visitor photos of the harbour being posted taking place at Pakia Hill
Package 3B	Waiwhatawhata Marae and Church access	N/A	-	-	Not considered for IAF assessment
	Passing Opportunities	324	Medium	Very Low	Improves access and traffic flow, on this key tourist route to the Waipoua Forest.
	Shoulder widening, Safety Barriers + ATP	324	Medium	Very Low	Improves KiwiRAP risk rating for this section of highway,
	Waiotemarama Gorge Rd Intersection	341	Medium	Low	Improves the geometry of an out of context intersection that does not meet current standards, and provides an access function for residents living along this rural road, and tourist activities.
	Waiotemarama Gorge Rd Seal and Shape Corrections	325	Medium	Very Low	Resilience improvements provides detour route around township on a regionally important state highway corridor.

Package	Treatment	Activity class	IAF Rating		Assessment
			Alignment	BCR Rating	
Package 3C	Waimamaku Urban Treatments	341	Medium	-	Improving the Waimamaku urban area will enhance the visitor experience for tourists travelling to and from the Waipoua Forest. May most, in particular touring cyclists, this is their last opportunity to stop before carrying on towards the forest.
	Waimamaku River headwater storage	357	Medium	Low	Addresses identified resilience risk in relation to highway operation on a regionally important route.
	Waipoua Forest Gateway	341	Medium	-	Improves the user experience through emphasising the local character and defines the threshold for entering the Waipoua Forest. The gateway will also help promote safer speeds through the forest further improving the safety risk when combined with the future activities that eventuate out of a separate SSBC for the Waipoua Forest itself.

Table 8-6 identifies the priority order for NLTF funding based on identifying the results alignment and cost-benefit appraisal rating for each of the recommended treatment options.

Table 8-6: Prioritisation of treatments against NLTF objectives

Results alignment	Cost-benefit appraisal	Priority order
Very high	L/M/H/VH	1
L/M/H	Very high (BCR 10+); PV_EoL	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

8.1.7 Funding Assistance Rate (FAR)

Funding Assistance Rates (FAR) are the rates at which the Transport Agency will consider funding transport network improvement projects which are under the ownership of other partner organisations such as local councils. Projects which develop assets owned by the Transport Agency are 100% funded by the agency and require no additional funding from partner organisations

For some of the recommended option treatments proposed it is likely that the asset will be owned by either the Far North District Council or the Department of Conservation. Table 8-7 identifies the FARs for partner organisations.

Table 8-7: FARs for partner organisations

Organisation	2018/2019	2019/2020	2020/2021
Northland Regional Council	54%	54%	54%
Far North District Council	66%	66%	66%
Department of Conservation	51%	51%	51%

8.2 Recommended options Programme IAF Profile

As a programme of options delivered over ten years a programme level IAF assessment has been completed. The programme provides a ratings alignment across a number of the GPS priorities that have then been considered together to provide a single alignment rating (Table 8-8).

Table 8-8: Programme IAF Assessment

GPS Priority	Indicative Rating	Indicative Assessment
Safety - a safe transport system free of death and serious injury	High	<p>The programme will provide a step change improvement to the Kiwirap Star rating and personal and collective risk ratings for the corridor. The Far North District rates in the top five regions in the 2018 communities at risk register where it is overrepresented in a high number of risk metrics. These metrics are priorities in the safer journeys areas of high concern, and which feature along this corridor.</p> <p>The improvement to the risk rating will be across modes, by providing investments in improving the safety of active modes, and the persons travelling in vehicles.</p>
Access to opportunities, enables transport choice and access, and is resilient - Thriving regions	High	<p>The Twin Coast Programme is a significant tourist route identified in the Economic Action Plan, and forms an integral component in the Regional Economic Development (RED) Programme for Northland.</p> <p>The investment programme will provide a significant contribution to the economic growth to be captured by the Twin Coast Programme by:</p> <ul style="list-style-type: none"> improving the visitor and local community experience, ease of access to activities including the new cultural centre in Opononi, providing opportunities for visitors to stay longer in the area, acting as an enabler for business activity to grow, and improving the overall corridor resilience to keep the corridor open for business <p>The Hokianga currently has low socio-economic outcomes in part due to its isolation to markets. The Twin Coast programme, and this SH12 SSBC will provide a significant potential to uplift the outcomes for people living in this community.</p> <p>The investment will also a step change improvement to the Heartland Cycle Trail that is located along the corridor. It further improves the attractiveness and accessibility of touring cyclists along this scenic route, and also connecting the offroad cycle trails that form part of the Twin Coast proposals for investment.</p> <p>For the local community the investment in walking and cycling provides alternative and safe modes where access to reliable and safe vehicles can be restrictive due to socio-economic factors in the area.</p>

8.3 Provincial Growth Fund Alignment

Based on the indicative assessment contained in this section it is anticipated that majority of treatments will be eligible for tier two or three PGF funding. It is anticipated that some treatments (for example the installation of ATP/rumble strips) will not be eligible for full PGF funding as the focus of these treatments is to provide safety improvements which is outside of the PGF criteria. In these cases, PGF funding may be applied for to boost the priority of these treatments if they represent value for money and address a significant gap in the region's infrastructure.

8.3.1 PGF funding overview

Under the PGF, projects can be funded through three tiers based on the targeted outcomes the prospective project aims to address, these funding tiers are:

- **Tier One, Regional;** projects funded from this tier will be part of an all of government approach to stimulate economic growth within a region through the development of regional wide action plans and strategies.
- **Tier Two, Sector priorities;** projects funded through tier two will focus on the development of initiatives which help build the capacity within a specific industry (e.g. tourism) specifically with regards to projects which will 'add value' to the industry and maori businesses.
- **Tier Three, Infrastructure;** projects funded through this tier will focus on the development or improvement of infrastructure needed to support economic growth particularly with regards to projects which have a low priority for local council and NLTF funding.

8.3.2 PGF criteria

The intended purpose of the PGF is to grow the sustainable economic development of the regions and, encourage maori involvement in business, then the development of the recommended option treatment packages will be required to reflect this intention.

In addition to the above, PGF applications are evaluated against the following criteria:

- Lift the productivity of a region or regions,
- Contribute to the PGF objectives,
- Create additional value and avoid duplicating existing efforts,
- Have a link to the regional priorities and be supported by stakeholders, and
- Be well managed, well-governed and have appropriate trade-offs between risk and reward.

8.3.3 PGF Alignment

The assessment has been undertaken to determine the alignment the recommended options with the outcomes of the PGF. Tables 8.8 – 8.11 provide a summary of the PGF assessment for each treatment (grouped by treatment packages). This assessment identifies that although all treatments have some alignment with the PGF criteria there are specific treatments which are likely to have a higher funding priority than others as they provide the infrastructure necessary to support visitor growth and the development of local, maori led businesses. This assessment is indicative only and is intended to assist in progressing funding options. Any applications for PGF or NLTF funding will be subject to the PDU and Transport Agency's respective application assessment processes

Table 8-9: PGF Alignment

Package	Option	Benefits	PGF Assessment	Assessment
Package 4	Route Signage and Marking	<p>Promotes a safe and consistent user experience along the corridor.</p> <p>Enables visitors to easily find their way and access key destinations.</p> <p>Helps create a unique visitor experience through allowing visitors to discover the unique features of the area.</p> <p>Promotes a safe cycle route between Rawene and Opononi. Improves the visitor experience for cycle tourists</p> <p>Promotes a safe and consistent user experience along the corridor.</p>	Medium	<p>Contributes to improving the user experience for visitors to the area. It will encourage people to stop and explore along their journey to the west coast of Northland through the use of cultural and interpretative signage.</p> <p>Being more informed through additional way-finding signage will encourage more discovery of the area by visitors and help to support the activities and businesses that are dependent on the tourism activity.</p>
Package 1A	Rawene intersection	<p>Enhances access to the Hokianga Ferry for cycle tourists, locals and travellers.</p> <p>Rest area improvements will improve the visitor experience for cycle tourists, domestic and international visitors.</p>	Medium	<p>Improves key access point to Rawene and the opportunities that this township provides (ferry access, Chinese urupa etc).</p> <p>Improves the tourism potential by increasing the level of service for touring cyclists travelling south from the Rawene Ferry.</p>



Package	Option	Benefits	PGF Assessment	Assessment
Package 1A	Shoulder Widening, Safety Barriers + ATP	Improve the user experience of the road corridor by improving its perception for safe travel.	Medium	Shoulder widening and associated safety improvements between Rawene intersection and Jackson Road would seek to achieve consistent wide 1m shoulders. This provides an enhanced user experience for cycle tourists, and other road users. It will provide a significant improvement to the safety risk rating for this section of the corridor.
	Omanaia Bridge Future Proofing	Improve the long-term resilience of this critical link.	Medium-High	This addresses a potentially significant gap in the resilience of this regional corridor in response to climate change effects.
	Omanaia Road Intersection	The treatment at Omanaia intersection will provide localised safety improvements and enhance access to local residents.	Low-Medium	Improves the geometry of an out of context intersection that does not meet current standards, and provides an access function for residents living along this rural road in Oue.
	Passing Opportunities	This treatment will create a safer and more enjoyable user experience through providing safe places for slower vehicles (e.g. campervans) to allow faster ones to pass.	Medium	Improves the user experience for both visitors and local residents passing slower vehicles safely. Aligns with the passing and overtaking SSBC which is proposing passing opportunities west of Kaikohe.
Package 1B	Waiotemarama Gorge Road Intersection	This treatment will provide safe access to the Pakanae Marae, a key community facility and developing maori visitor attraction	Medium-High	<p>This treatment has a strong alignment with the PGF as it improves access to a developing maori business and key community facility.</p> <p>Under current NLTF funding these intersections would be given a low priority due to a low crash rate despite the reporting of numerous close calls by hapū.</p>
	Pakanae Marae Access and Parking	This treatment will provide safe access to the Pakanae Marae, a key community facility and developing maori visitor attraction		
	Cemetery Road Intersection	This treatment provides safe access and parking for the Pakanae Cemetery.		
	Koutu Loop Road Sealing Improvements	Sealing of Koutu Loop Rd to improve access for local communities and visitor destinations whilst also increasing resilience through providing a detour route.		

Package	Option	Benefits	PGF Assessment	Assessment
Package 1B	Walking Trail and Limestone Reef Viewing Platform	The provision of a walking trail between Opononi and Pakanae will provide an additional visitor activity and a unique view point over the Hokianga.	High	Increases the use and safety of communities north of Opononi to access key facilities and schools using active modes. Pedestrians currently walk along the road putting themselves at a high risk. Supports increased tourist activity in the area and supports the aspirations of the Twin Coast PBC.
	Pullover Bays	Providing safe pullover/viewing bays will improve the safety and visitor experience along the highway through providing opportunities for visitors to pull over and take in the views of the Hokianga.	Medium	This will help create an enhanced visitor experience, encouraging more people to visit the region. In addition, the pull over bays closer to Opononi are able to provide additional parking during peak periods as people are able to safely walk back to town via the walking trail.
	Opononi Gateway	Improves the user experience through emphasising the local character. The gateway will also help promote safer speeds through the township.	High	Improves the user experience through emphasising the local character and defines the threshold for entering the townships. The gateway will also help promote safer speeds through the townships further improving the safety risk when combined with the township safety improvements.
	Safety Barriers and ATP	Safety improvements for all road users, increased delineation and protection from road side hazards	Medium	Installation of ATP and safety barriers will provide an enhanced user experience for cycle tourists along the corridor whilst also creating a safer and more predictable road environment for visitors and local communities.
Package 2A	Boat Ramp Parking	This treatment will improve access to the boat ramp and provide more space for the parking of boat trailers (through undertaking a small land reclamation) resulting in a safer and more enjoyable user experience.	Medium-High	This is the main boat ramp in the Hokianga, used by both holiday makers and local businesses. The lack of boat parking can cause competition for the space available, impacting local business and leaving a negative experience with holiday makers.
Package 2A	Opononi Township Improvements	The development of the seawall provides an opportunity to rationalise the parking supply on seaward side of the highway whilst also improving pedestrian connectivity within the township and to the beach.	High	Improving the Opononi town centre will enhance the visitor experience is to ensure that townships along the corridor are developed as attractive places for visitors to break from their journey and spend time. Improving the town centre will provide the confidence for private businesses to invest in the area and develop the range of hospitality and accommodation options which visitors will require.

Package	Option	Benefits	PGF Assessment	Assessment
Package 2B	Opononi – Omapere Shared User Path	Provides a high-quality off-road pedestrian and cycle connection between Opononi and Omapere that is likely to be popular with locals and visitors alike.	High	Encourages increased walking and cycling including to local school. Increases tourist activity in the area and conforms with the economic action plan for Northland, and economic growth region.
	Opononi – Omapere Township Safety Improvements	Improves the user experience and safety for all users along this urban corridor.	High	The SH12 corridor has a high rate of DSI's over the previous 10 years. The urban section is currently unrated against the urban safety risk rating and Kiwirap, but indications are that this section would qualify as a medium high to high collective safety risk.
	Footpath improvements (Opononi-Omapere)	The current footpaths linking the two townships are cracked and slumping in places resulting in poor user experience and an increased risk of slips, trips and falls.	Medium	Encourages increased walking within the townships, and improves the perception of the area with visitors.
	Omapere-Opononi Rest Areas	This activity improves the amenities provided and access to green space within the townships. Part of this will focus the vehicle access and amenity development on one location whilst the remaining rest areas will be downgraded to open spaces.	Medium-High	Improving the greenspaces will have benefits for the community and visitors alike. It will improve the economic potential of the area by encouraging visitors to stay longer.
	Fairlie Cres intersection + safe crossing place	Fairlie Cres is the main residential catchment in the Opononi – Omapere township however there is currently no safe place to cross the highway to access the footpath on the other side of the road.	Low-Medium	The development of safe places to cross the highway improves connectivity with the Opononi – Omapere urban area for both local communities and visitors. Providing safe crossing places will enable people to safely access and use the SUP.
Package 2B	Opononi Area School Kea Crossing	Provides safe crossing place between the School and Footpath/SUP.	Medium	The installation of a kea crossing will enable safe access to the school for children and provide a safe place to cross the highway. The activity will further enhance the speed management corridor along the township corridor.
	Omapere Gateway	Improves the user experience through emphasising the local character. The gateway will also help promote safer speeds through the township.	High	Improves the user experience through emphasising the local character and defines the threshold for entering the townships. The gateway will also help promote safer speeds through the townships further improving the safety risk when combined with the township safety improvements.



Package	Option	Benefits	PGF Assessment	Assessment
Package 2B	Omapere Slope Stability	Improves the southern access to Omapere through providing slope stability improvements ensuring that access to Omapere is maintained in all weather.	Medium-High	Maintaining access to the Opononi – Omapere townships during times of adverse weather is critical to ensure that local residents and visitors are able to safely move along the corridor at all times of the year. Although the slips have occurred in this area in the past, slope improvements have a low priority under current funding arrangements.
Package 3A	Signal Station Rd Intersection	Improved access to Signal Station Rd and DOC reserve. Reduction in the number of crashes and near misses.	Medium	Strategically important intersection. The risk profile will be improved by improving the geometry to conform with current standards.
	Signal Station Rd Improvements	Increased patronage to the amenities and attractions at the end of Signal Station Road by improving the safe travel along the corridor and the security and amenity improvements at the carpark.	High	The road and carparking area access a key tourism destination being the Arai Te Uru Heritage Walk and leads out to the Signal Station Point on the southern head of the Hokianga Harbour. Improvements will enhance the visitor experience
	Pakia Hill Intersection and Rest Area	Improved safe access and provision of amenities.	High	Pakia hill lookout provides a separate vantage point from SH12 to view SH12. Its use as a rest area, and area for freedom camping is considered a draw, certainly within the context of social media where a significant number of visitor photos of the harbour being posted taking place at Pakia Hill
Package 3B	Waiwhatawhata Marae and Church access	Waiwhatawhata marae is a key tourist attraction on the corridor being one of the only carved marae in Northland. Surrounding ground conditions at the marae and church provide a challenge for visitors to these facilities (particularly during winter). By improving the car parking at these locations access to these locations is improved for locals and visitors alike. As parking improvements at the marae will also include the provision for coaches the marae will be able to cater for larger tourist groups in the future.	Medium	Upgrades to the church and marae access and parking would benefit local communities and support the development of local maori tourism business contributing to the creation of local jobs and an uplift in the local economy



Package	Option	Benefits	PGF Assessment	Assessment
Package 3B	Passing Opportunities	This treatment will create a safer and more enjoyable user experience through providing safe places for slower vehicles (e.g. campervans) to allow faster ones to pass.	Medium	Improves access and traffic flow, on this key tourist route to the Waipoua Forest.
	Shoulder widening, Safety Barriers + ATP	Shoulder widening between Waiwhatawhata marae and Waitotemarama Gorge Road to achieve consistent wide 1m shoulders. This provides an enhanced user experience for cycle tourists whilst also providing more opportunities for slower vehicles to pull over to allow others to pass.	Medium-High	Widened shoulders will provide an enhanced user experience for cycle tourists along the corridor whilst also creating a safer and more predictable road environment for visitors and local communities.
	Waitotemarama Gorge Road Intersection	The Waitotemarama Gorge Road provides a critical diversion route around Opononi-Omapere in the case of emergencies. The improvement of the SH12 intersections improve access to this route	Medium-High	The upgrade of this intersection has a low funding priority due to the current low traffic volumes using the road. Despite this the Waitotemarama Gorge Road provides a critical diversion route in the case of emergencies and provides access to tourism developments and local residents.
	Waitotemarama Gorge Road Seal and Shape Corrections	Sealing of Waitotemarama Gorge Rd to improve access for local communities and increase resilience through providing a detour route around the Opononi – Omapere townships.	Medium-High	The sealing of Waitotemarama Gorge Rd and Koutu Loop Rd aligns with the PGF as these roads provide access to local communities and tourist destinations through the upgrade of critical infrastructure
Package 3C	Waimamaku Urban Treatments	The urban improvements will look to improve the user experience by improving the walkability of the environment and parking arrangements for people to stop as well as other supporting infrastructure.	Medium	Improving the Waimamaku urban area will enhance the visitor experience for tourists travelling to and from the Waipoua Forest. May most, in particular touring cyclists, this is their last opportunity to stop before carrying on towards the forest.
	Waimamaku River headwater storage	SH12 within the Waimamaku area is flood prone reducing the resilience of this section of the highway. This treatment proposes to mitigate the threat proposed by localised flooding through increasing the head water storage capacity.	Medium-High	Addresses identified resilience risk in relation to highway operation on a regionally important route.



Package	Option	Benefits	PGF Assessment	Assessment
Package 3C	Waipoua Forest Gateway	Improves the user experience through emphasising the local character. The gateway will also help promote safer speeds through the forest	High	The Waipoua Forest is one of the major drawcards to the region. The development of a gateway to the forest would help signify the environmental and cultural significance of the area whilst also being developed to be a key photo point on visitors' journeys.

8.4 Transformational growth of the local workforce

The proposed treatments identified in Table 8-9 would benefit the local community through providing more opportunities for people to visit the region and also stay longer. This would benefit the local community through providing more locally based jobs in the hospitality and tourism industry and encourage greater investment in the region through the establishment of local business or investment in the regions infrastructure.

In addition, the Northland Transport Alliance has a policy of hiring and training local residents to help undertake the work, upskilling the local workforce and ensuring that there is local skilled labour available to carry out any future maintenance.

9. Specialist assessments

9.1 Environmental and Social Responsibility (ESR) Screen and geotechnical risk assessment

Table 9-1 through to Table 9-7 summaries the environmental, social and cultural screen and geotechnical risk assessment associated with the development of each of the recommended treatments. The full ESR screen is contained in Appendix P, and the geotechnical risk assessment is contained in Appendix Q.

Table 9-1: Package 1A risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Rawene Intersection	No identified issues if the upgrade occurs within the existing footprint. If the footprint is expanded, it is likely that the intersection will encroach on the Coastal Marine Area (CMA).	Area likely to have high groundwater and be flood prone. The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Medium – exact extent to be identified as part of the detailed design. A detailed geotechnical assessment is required as part of detailed design.
Shoulder widening, Safety Barriers + ATP	It is likely that due to the extent of earthworks involved this treatment will require a controlled activity consent		Medium – exact extent to be identified as part of the detailed design. A detailed geotechnical assessment is required as part of detailed design.
Omanaia Intersection	No identified issues		Low
Passing Opportunities	It is likely that due to the extent of earthworks involved this treatment will require a controlled activity consent		Medium – High , exact extent to be identified as part of the detailed design. A detailed geotechnical assessment is required as part of detailed design.

Table 9-2: Package 1B risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Safety Barriers + ATP	No identified issues.	No identified issues	N/A
Waioitemarama Gorge Road Intersection	The development of this treatment will require the trimming of exotic vegetation and minor earthworks. It is likely that these activities will not require a resource consent as adjacent landowners (Pakanāe Marae) are supportive of this development.	Area likely to have high groundwater and be flood prone. The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Low A detailed geotechnical assessment is required as part of detailed design.

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Koutu Loop Road Sealing Improvements	No identified issues.	The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Low A detailed geotechnical assessment is required as part of detailed design.
Cemetery Road Intersection	No identified issues.	Area likely to have high groundwater and be flood prone. The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Low
Pakanae Marae and Cemetery access	The development of this treatment will require the creation of a new access way off Waiotemarama Gorge road and minor earthworks to form the driveway and carpark. It is likely that these activities will not require a resource consent as the landowners (Pakanae Marae) are supportive of this development.		Low A detailed geotechnical assessment is required as part of detailed design.
Walking trail and limestone viewing platform	The development of this treatment will likely require new structures to be developed in the CMA. In addition, the limestone formation is identified as and outstanding natural feature on the district plan.	The sediment types within this area are also likely to result in slope instability.	High – it is likely that the development of this treatment will require several consents and in-depth consultation. A detailed geotechnical assessment is required as part of detailed design.
Pull over bays	No identified issues.		Low A detailed geotechnical assessment is required as part of detailed design.
Gateway treatments	No identified issues.	No identified issues	N/A

Table 9-3: Package 2A risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Boat Ramp Parking	The development of this treatment will require a land reclamation in the CMA. In addition, the limestone formation is identified as and outstanding natural feature on the district plan.	The sediment types within this area are also likely to result in slope instability and soft ground conditions.	High – it is likely that the development of this treatment will require several consents and in-depth consultation.

Treatment		ESR assessment	Geotechnical assessment	Risk to programme
Opononi Town Centre Improvements	SUP on seawall (note delivered in SUP)	No identified issues – sea wall being delivered by others.	Investigations as part of the detailed design to ensure that the sea wall can cope of the additional weight of parked vehicles	Low - A detailed geotechnical assessment is required as part of detailed design.
	Parallel parking on seawall	No identified issues – sea wall being delivered by others.		
	Opononi town centre parking and landscaping	No identified issues as long as notifiable trees remain undisturbed.		
	Vehicle access to hotel, RSA, I-SITE	No identified issues as long as notifiable trees remain undisturbed.		
	Pedestrian crossing in front of seawall	No identified issues.		
	Pedestrian crossing in front of I-SITE	No identified issues as long as notifiable trees remain undisturbed.		
	Ramped access to beach	No identified issues – sea wall being delivered by others.		
	Improved pedestrian access to footprints of Kupe	No identified issues as long as notifiable trees remain undisturbed.		
	Cycle parking and repair stand	No identified issues.	No identified issues.	N/A
	Active speed indicator devices	No identified issues.	No identified issues.	N/A
Frictional or coloured surfaces to slow traffic	No identified issues.	No identified issues.	N/A	

Table 9-4: Package 2B risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Opononi-Omapere Township Safety Improvements	No identified issues.	No identified issues.	N/A
Rest Area Signage	No identified issues.	No identified issues.	N/A

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Opononi-Omapere Rest Areas	No identified issues. Potential archaeological sites.	Area likely to have high groundwater and be prone to coastal erosion. The sediment types within this area are also likely to result in slope instability and soft ground conditions.	N/A
Opononi -Omapere Shared User Path	The development of this treatment will likely require new structures to be developed in the CMA. Density of archaeological sites.		High – it is likely that the development of this treatment will require several consents and in-depth consultation. A detailed geotechnical assessment is required as part of detailed design.
Fairlie Cres Intersection + Safe Crossing Place	No identified issues.	No identified issues.	N/A
Opononi Area School Kea Crossing	No identified issues.	No identified issues.	N/A
Footpath Improvements (Opononi-Omapere)	No identified issues.	The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Low - A detailed geotechnical assessment is required as part of detailed design.
Gateway Treatments	No identified issues.	No identified issues.	N/A
Omapere Slope Stability Improvements	Slope stability improvements may require works outside of the State Highway designation. In addition, it is likely that this treatment will involve significant earthworks and removal of native vegetation.	The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Medium – High , exact extent of works to be identified as part of the detailed design. A detailed geotechnical assessment is required as part of detailed design.

Table 9-5: Package 3A risks and opportunities

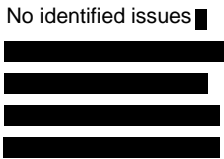
Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Signal Station Rd Intersection	Addition of a right turn lane into Signal Station road may require shoulder widening and minor earthworks.	Sediments may have a low bearing capacity.	Medium – property acquisition may be required to be confirmed as part of the detailed design. A detailed geotechnical assessment is required as part of detailed design.
Signal Station Rd Improvements	Carpark is on DOC owned land.	Sediments may have a low bearing capacity.	Low – development of treatment to be discussed with DOC

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
	Density of archaeological sites.		
Pakia Hill Intersection and Rest Area	Proposal is to relocate the entrance to this rest area which may require crossing private property and minor earthworks.	The sediment types within this area are also likely to result in slope instability and soft ground conditions.	Medium – [REDACTED] [REDACTED] [REDACTED] [REDACTED]

Table 9-6: Package 3B risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Waioatemarama Gorge Road Intersection	<p>Maraeroa – Kupe’s anchor stone is a ‘silent’ maori site thought to be located near this intersection.</p> <p>Intersection upgrade and addition of a right turn lane may require minor earthworks and property acquisition.</p>		<p>Medium – [REDACTED] [REDACTED] [REDACTED] [REDACTED]</p> <p>Location of the Maraeroa to be confirmed as part of the detailed design.</p> <p>A detailed geotechnical assessment is required as part of detailed design.</p>
Shoulder widening, Safety Barriers + ATP	It is likely that due to the extent of earthworks involved this treatment will require a controlled activity consent	Sediments may have a low load bearing capacity and long-term settlement issues.	<p>Medium – exact extent to be identified as part of the detailed design.</p> <p>A detailed geotechnical assessment is required as part of detailed design.</p>
Passing lanes	It is likely that due to the extent of earthworks involved this treatment will require a controlled activity consent		<p>Medium – High, exact extent to be identified as part of the detailed design.</p> <p>A detailed geotechnical assessment is required as part of detailed design.</p>
Waiwhatawhata Marae Access and Parking	Access and parking upgrades to occur on Waiwhatawhata marae – landowner anticipated to be supportive of this treatment.		Low – exact extent of works and landowner support to be confirmed as part of detailed design
Waioatemarama Gorge Road Seal and Shape Corrections	No identified issues – assuming only minor earthworks required.		Waioatemarama Gorge Seal and Shape Corrections

Table 9-7: Package 3C risks and opportunities

Treatment	ESR assessment	Geotechnical assessment	Risk to programme
Waimamaku Urban Treatments	No identified issues 	Sediments may have a low load bearing capacity and long-term settlement issues.	Low
Waipoua Forest Gateway	Property purchase may be required for the gateway treatment location, or the gateway may be located on DOC land.	Sediments may have a low load bearing capacity and long-term settlement issues.	Low – Medium – location of gateway and property ownership to be determined as part of detailed design
Waimamaku River Headwater Storage	Property acquisition will be required as outside of the SH12 designation other effects to be identified as part of the detailed design.	Geotechnical assessment not undertaken as outside of the project area.	High – extent of issues to be determined as part of the detailed design

9.2 Assessment summary

The ESR screen and geotechnical risk assessment summarised above have identified that the majority of treatments which involve physical works are associated with a medium to high level of risk. This is partially due to the lack of detailed survey and geotechnical information being available which has increased the level of uncertainty surrounding the feasibility of these treatment options along with the associated capex costs and whether these options can fit within the current SH12 designation.

Therefore, for all treatments involving physical works it will be necessary to undertake a detailed topographical survey and geotechnical investigation.

10. Risks and assumptions

In the development of the recommended option treatments the following risks and assumptions were identified:

10.1 Assumptions

- **Destination marketing:** A key factor in enabling visitors to make an informed decision about where they chose to travel is ensuring that they are aware of and have enough information about the place they plan to visit before embarking on their journey. In developing the recommended treatments described in this SSBC it is assumed that the visitor experience offered along the TCDR is appropriately marketed to ensure that visitors are aware of and want to visit the region.
- **Town Centre Development:** As the intention of this business case is to provide the infrastructure necessary to create a positive visitor experience it is assumed that the economic and township development activities planned by the Northland Regional Council, Northland Inc and FNDC will be executed. These developments are critical in ensuring that the corridor investment objectives are achieved.
- **Wifi and cellular connectivity:** As many places along the corridor have poor or no cell phone reception and limited internet connectivity it is likely that the appeal of the TCDR as a visitor experience will be limited unless this digital infrastructure is provided as many visitors consider digital connectivity to be critical to having a safe and enjoyable experience.

- **Air connectivity:** Northland is currently serviced by airports at both Whangarei and the Bay of Islands (Kerikeri). The development of these airports is limited by runway size (which restricts larger aircraft from being able to land) and the absence of navigational aids preventing planes from landing in low cloud and adverse weather.

This may limit the attractiveness of the region to high value and/or weekend visitors who are time constrained and therefore prefer to fly.

- **Destination appeal:** The scope and intention of this business case is to identify options to provide the necessary infrastructure required to create a positive visitor experience and meet the needs of increased visitors to the region. The business case has not attempted to identify or understand the best approach to develop and market the region as a tourist product, this is outside of the scope of the project.
- **Wider economic benefits:** The wider economic benefits of the recommended option treatments are inherently linked to the destination appeal of the region as although the recommended treatments will support a positive visitor experience these treatments alone are not enough to encourage people to visit. Therefore, the success of the recommended option treatments will depend on more people visiting the area. However as discussed above many aspects surrounding the destination appeal are outside of the scope of this business case. Therefore, this business case has made no attempt to quantify wider economic benefits as information surrounding how the region (as a tourist product) is going to be developed and marketed is unavailable.
- **Development of hospitality and accommodation:** Currently there is a limited availability of accommodation and hospitality offerings along the corridor. Some people may prefer to stay at larger population centres due to the larger variety of accommodation, food and entertainment options available. It is likely that to develop a successful tourist product the range of hospitality and accommodation options will need to be increased. The development of these options will be led by the private sector and due to the financial investment required it is unclear when this will happen.

10.2 Risks

- **Waipoua Forest:** The Waipoua Forest is a major visitor attraction in the region and the development of sustainable infrastructure within the forest is likely to be a significant factor in the development of a positive visitor experience. However, as the forest has been removed from this business case the plans for the development of the forest and the management of Kauri dieback are not clearly understood along with the impacts this may have on visitor numbers.

This is a particular risk with regards to section three of the corridor as it is likely that any infrastructure and/or facilities required to support visitor experiences and tourism activities in the forest will be developed in this section. Currently it has been assumed that no additional infrastructure is needed.

- **Lack of available survey and geotechnical information:** The recommended treatment options have been developed to concept only due to the absence of detailed survey and geotechnical information. Therefore, it is unclear how feasible it is to develop some of the recommended treatments identified and the costs associated with their development.
- **Destination appeal:** The increased destination appeal of the Hokianga region hinges on a number of factors and these treatments alone are not enough to encourage visitors to the region. To ensure success in the development of a positive visitor experience it will be necessary to address the assumptions made above.
- **Ongoing maintenance:** A risk in the delivery of the proposed programme of treatments is that although capital expenses for these treatments may be obtained from the NTLF and/or the PGF the operational cost associated with these treatments has not been budgeted for.

- **Consultation Risk:** In the development of the recommended option treatments there is a risk that the treatments developed won't be supported by all members of the community which may result in backlash. Although this risk is reduced through having undertaken numerous hui some risk still remains.

11. Programming Strategy

11.1 Capacity to Deliver

There are three components to the complexity for delivering a programme of improvements along SH12:

- a) Capacity that the network contractor can deliver capital state highway improvements per year.

On a year by year basis the delivery of capital improvements across the state highway network ranges from an approved construction cost of ~\$8 million to ~26 million per year across Northland (Figure 11-1).

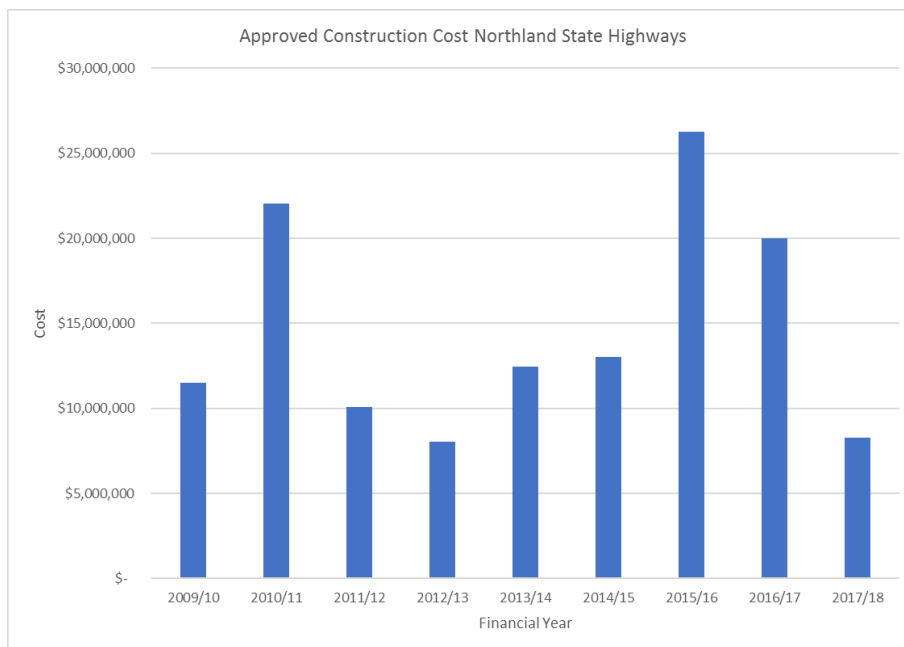


Figure 11-1: Approved construction cost Northland State Highways

This demonstrates that the construction sector can ramp up to deliver a large work programme as required. The programme of activities across each SSBC provides a pipeline of work across Northland whereby businesses can plan for increasing plant and staff to deliver.

11.2 Investment Programme

The programme for delivery identifies activities in the recommended programme, and optimal delivery of the pre-implementation phase, and the implementation phase within the next 10-years. Table 11-1 shows the phasing and timing for the options over the short, medium and long-term periods:

Phase	Colour Code
DBC/Pre-Implementation	
Implementation	



Table 11-1: Programme strategy for delivery

Package	Treatment	Short Term (0-2 years)		Medium Term (3-5 years)			Long Term (6-10 years)				
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
4A	Route Signage & Marking	■	■								
	Rawene Intersection	■	■	■							
1A	Omanaia Bridge Future Proofing									■	■
	Shoulder Widening, Safety Barriers + ATP				■	■	■				
	Omanaia Intersection				■	■					
	Passing Opportunities							■	■		
	Safety Barriers + ATP		■	■	■						
1B	Waiotemarama Gorge Road Intersection			■	■						
	Koutu Loop Rd Sealing Improvements									■	■
	Walking Trail and Limestone Reef Viewing Platform						■	■	■	■	
	Cemetery Rd Intersection			■	■						
	Pakanae Marae and Cemetery access			■	■						
	Pullover Bays									■	■
	Gateway treatment	■	■								
	Boat Ramp Parking				■	■	■				
2A	Opononi Township Improvements	■	■	■							
	Opononi-Omapere Township Safety Improvements	■	■	■							
2B	Opononi -Omapere Shared User Path				■	■	■				
	Fairlie Cres Intersection + Safe Crossing Place	■	■								
	Rest Area Signage	■	■								
	Opononi Area School Kea Crossing	■	■								
	Gateway treatment	■	■								
	Opononi-Omapere rest areas				■	■					
	Footpath Improvements (Opononi-Omapere)	■	■								



Package	Treatment	Short Term (0-2 years)		Medium Term (3-5 years)			Long Term (6-10 years)					
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
2B	Slope Stability Improvements											
3A	Signal Station Rd Improvements											
	Signal Station Rd Intersection											
	Pakia Hill Intersection and Rest Area											
3B	Waiotemarama Gorge Road Intersection											
	Waiotemarama Gorge Road Seal and Shape Corrections											
	Shoulder Widening, Safety Barriers + ATP											
	Passing Opportunities											
	Waiwhatawhata Marae parking and church access											
	Waimamaku River headwater storage											
3C	Waimamaku urban treatments											
	Waipoua Forest Gateway											

11.3 Investment timeframe

Short term (0-2 years)

Treatments proposed within the short term are either timed to address an immediate requirement or to deliver treatments which offer early intervention solutions to develop a more consistent user experience along the highway, improving the amenity of the Opononi town centre and the safety of the Opononi-Omapere urban section, and also supporting the development of community lead ventures.

The programming of these treatment options within the short term reflects engagement with hapū and local community leaders to identify and develop treatments which address their immediate concerns surrounding the development of the highway into a key visitor experience.

Some additional treatments have been proposed for development in the short term to take advantage of the proposed seawall works to provide construction efficiencies and provide a more cost-effective solution for the development of treatments based around the seawall.

Upgrades to the Rawene Road and Pakia Hill rest area intersections are also proposed to start in the short-term as the improvement of these intersections is designed to greatly improve key visitor destinations. The exact timing of these upgrades will be confirmed as part of the detailed design of these treatments.

To ensure that the construction of the proposed treatments is undertaken in an efficient and cost-effective manner it is proposed to stage the construction of a number of treatments. For example, it is proposed to upgrade the Waitemarama Gorge and Cemetery Rd intersections before improvements to the Pakanae Marae are undertaken. This ensures that when complete these improvements will be able to connect to a safe road network

Medium term (3-5 years)

Within the medium term (years 3-5) the focus switches to the development and construction of the main tranche of physical works which focus on additional intersection improvements, improving access to key community facilities and safety improvements along the highway.

Within the medium term, shoulder widening (as part of treatment package 1A) is the first major physical works to be undertaken. This is due to the requirement to achieve consistent 1m wide shoulders between Rawene and Omapere to improve the safety risk profile of this highway section, and improve its function as a touring cycle route.

Urban improvements are planned in Waimamaku to improve the user experience for visitors and the local community. It is timed for when more certainty is known in respect of any changes may occur to activities within the Waipoua Forest where Waimamaku increases in importance as the last available stop before people travel south through the forest.

Long term (6-10 years)

The development of treatments south of Omapere are timed to be undertaken in the long term. This is due to this section of the corridor having a lower traffic volume and concentration of visitor activities than the northern section of the corridor. In addition, as the development of treatments within the Waipoua Forest is still unknown deferring the development of treatment within this area to years 6-10 will allow for these options to be adapted if the need arises to incorporate any planned future developments.

The development of passing opportunities, the Opononi - Pakanae walking trail, large investment resilience improvements to the Omanaia Bridge and Omapere slope stability, and the two local road sealing projects are also proposed for development within the 6-10-year time frame. This is due to a longer planning period being needed to ensure that the development of these treatments reflects the overall strategic direction for the area and to allow for detailed investigations to be undertaken to ensure that the proposed level of expenditure will achieve the desired outcomes.

Priority for delivery of projects within the programme are guided by interventions that deliver high value benefits quickly, to benefit the Northland economy, and improve the safety outcomes for the user of the corridor:

- Interventions that benefit tourism as the primary economic driver
- Road safety risk improved as a key priority for the Transport Agency
- Resilience improvements to secure the route

Figure 11-2 identifies the proposed 10-year programme spend broken down by benefit category.

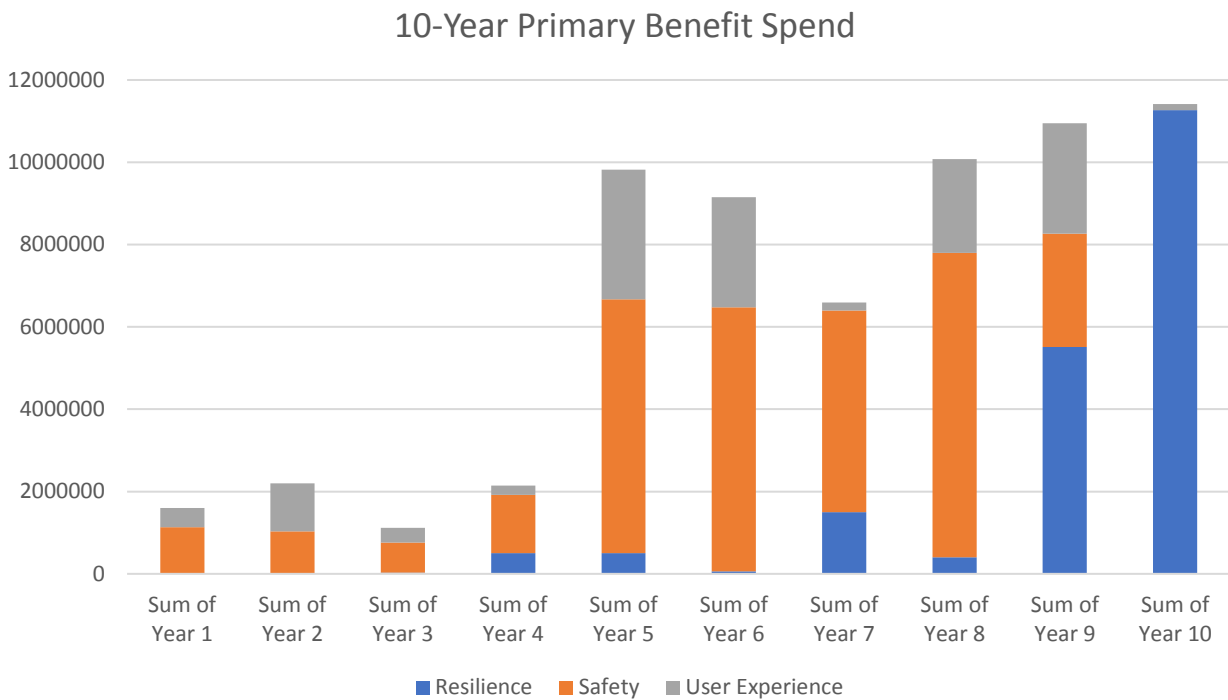


Figure 11-2: Primary benefit spend

The SH12 corridor programme carries an estimated cost of \$67m over 10 years. The spend is split between pre-implementation and implementation phases for each intervention. Pre-implementation phases consider detailed design, consenting, and property purchase. Given the high-level considerations for this SSBC there is the potential to have some optioneering for the delivery of each intervention as part of the pre-implementation phase, such as would be included in the detailed business case. Figure 11-3 shows the cost associated with the pre-implementation phase based on a 10-year programme.

10-Year Pre-Implementation Costs

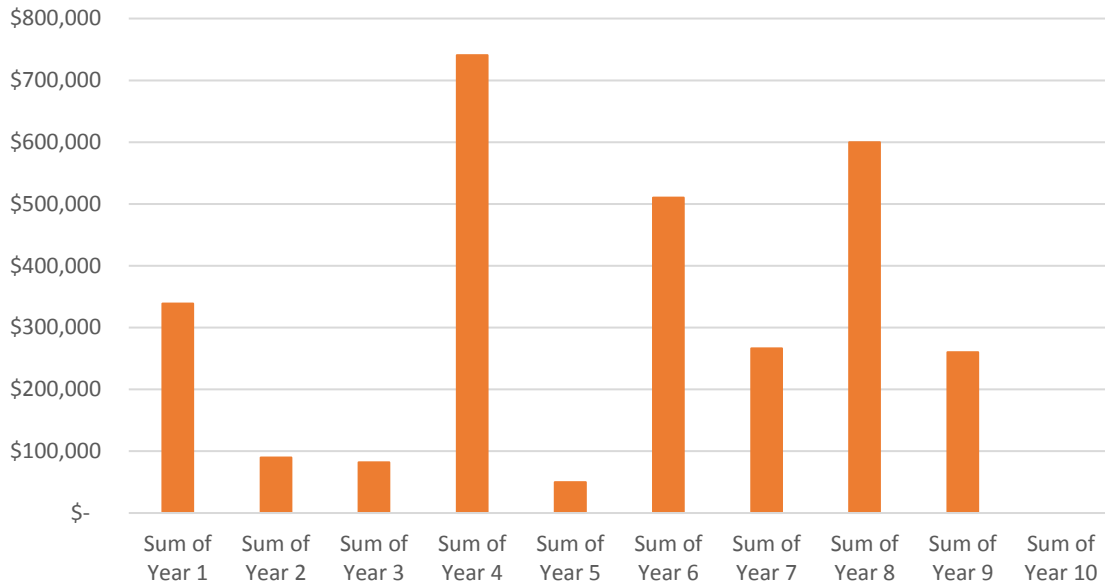


Figure 11-3: 10-year pre-implementation cost

Figure 11-4 shows the implementation coast spread over a 10-year programme. A significant proportion of the cost of implementation is targeted to resilience improvements along the corridor. These carry a significant amount of spend to secure alternative routes, as well as mitigating slope stability, and the effects of climate change.

10-Year Implementation Costs

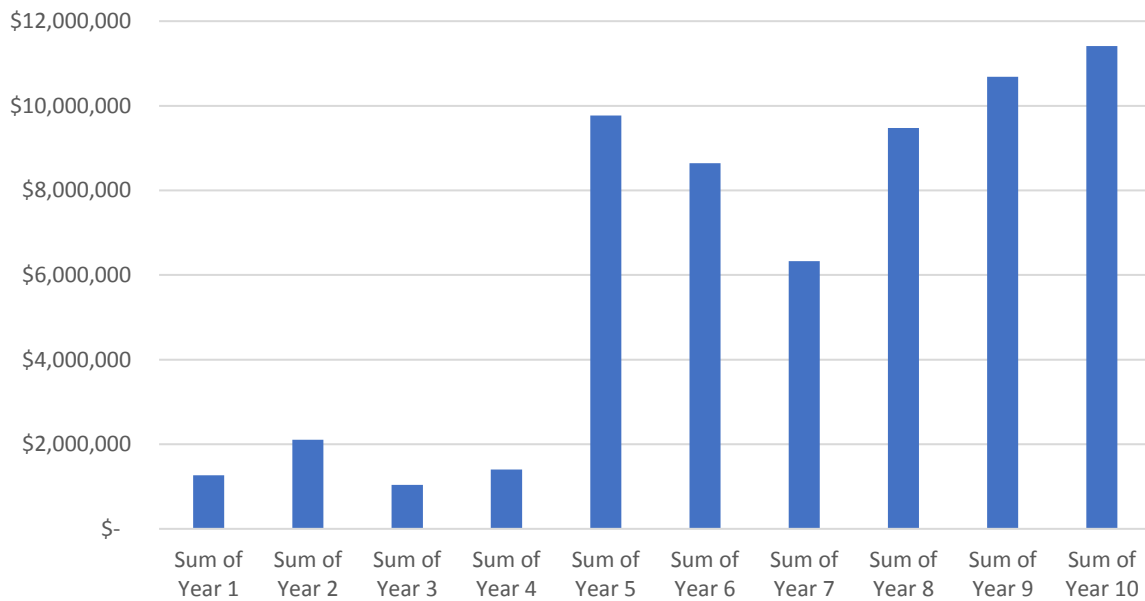


Figure 11-4: 10-year implementation cost

11.4 Implementation Assessment and Risk Review

An as implementation programme the risk review has been undertaken in accordance with the Transport Agency programme business case guidance. It is expected that when delivered each project option will have a risk register developed, either following a general approach, or in accordance with Z44.

Table 11-2: Programme implementation risks

Risks Relating To	Likelihood	Comment
Technical	Medium	<p>There has been limited geotechnical assessment over the site. Ground conditions won't be known fully for each project until further geotechnical analysis is undertaken.</p> <p>Large cost projects in the medium and long-term requires more technical design and lead in for construction which could result in delays.</p>
Operational	Medium	<p>Installation of new electronic signage will place operational requirements on the current contractor to maintain and operate.</p> <p>Construction will have any impact on the operation of the highway. Suitable traffic management and work practices will ensure that the health and safety risk is adequately managed.</p>
Financial	Medium-High	<p>There is a risk to the programme delivery as intended as funding needs to come from multiple parties with different constraints.</p> <p>Cost estimates have been developed at a high level potentially leading to inaccuracies in the overall project cost later. Contingencies have been applied as per the cost estimation manual to help to reduce this risk. There is the potential the costs are less than estimated if the approach has been too conservative. Factors that will affect the cost estimates moving forward is the availability of data at this feasibility and concept stage, including utility information and assumptions in regard to topography and land-use.</p>
Stakeholder/public	Low	<p>Limited consultation with the public has occurred to date. Changes to access may have negative impacts on the public.</p> <p>The recommended improvement packages have been developed closely with partners. The partners have helped to identify those options that they see will target what perceive to be the greatest risk, or opportunity.</p>
Environmental and social responsibility	Low-Medium	<p>Potential to affect sites of cultural, heritage or environmental significance.</p> <p>Works near the coastal environment will need to be managed carefully</p> <p>Any residual environmental impact will be managed through the employment of best practice work methods.</p>

Risks Relating To	Likelihood	Comment
Safety	Low-Medium	<p>The proposed treatments are standard to the networks and do not have any special or significant ongoing maintenance requirements. Consideration will be given to reducing ongoing maintenance requirements during the detailed design phase.</p> <p>Staggered safety improvements (short and medium term) may not provide a reduction in the number of deaths and serious injuries in the short term when compared with the larger cost options to be developed in the medium and long-term.</p>
Economy	Medium	Economic growth as an aspiration for the region and the infrastructure to enable and cater for the growth if it eventuates is key driver for the option and programme development. As lead investment there is a risk of overinvesting if the growth does not eventuate or is slow to be realised.
Land Use	Low	Growth in traffic and users are based on visitor growth. Land-use development forecasts are generally well-known.

12. Economic Case

12.1 Economic methodology employed

A social benefit cost ratio analysis has been undertaken for the recommended treatment options based upon the Transport Agency's Economic Evaluation Manual and accompanying Crash Risk Factors Compendium. The economic analysis has followed the simplified procedures, and these have been applied to treatments for which a BCR could realistically be calculated. In addition, some treatments have been aggregated together for the purpose of calculating the BCR.

Due to the treatments being developed to concept design, as well as the large number of discrete recommended options, the calculation of the BCR for each treatment was undertaken using the simplified procedures. Simplified procedure templates provided a standardised method for deriving the present value costs and benefits for the range of different activities and applying sensitivity analysis. Treatment options costs that exceed an undiscounted cost of \$5m would typically require the full procedures to be applied, but due to the designs being at concept level the simplified procedure was also applied to these projects. Exceptions to this are the resilience projects requiring a significant detour. For these options the full procedures were applied.

Key risks in respect to using the simplified procedures include the discounting to year zero where the programmed construction is completed particularly in the medium to long-term programme, and the under or over estimation of benefits by relying on the prescribed calculations in the worksheets. It is recommended that a full procedures calculation is undertaken for specific projects in the next development phase. This phase will more fully develop the option, and a greater precision in respect of the construction cost will be determined.

Exceptions to this are the resilience projects requiring a significant detour. For these options the full procedures were applied.

12.2 Treatment options assessed

A number of options were unable to be meaningfully calculated as a BCR, these are outlined in Table 12-1 below.

Table 12-1: Treatment options not calculated

Options not Calculated	Reason
Pakanae Marae and Cemetery Access	This option is linked directly to improving the user experience. There is no crash record that applies to these areas, and no comparable benefit that can be calculated in the EEM.
Pull Over Bays	This option is linked directly to improving the user experience with no comparable benefit that can be calculated in the EEM.
Boat Ramp Parking	This option is linked directly to improving the user experience. There is no crash record that applies to these areas, and no comparable benefit that can be calculated in the EEM.
Signal Station Road Intersection	Insufficient 10-year crash record associated with this intersection.
Cemetery Road Intersection	Insufficient 10-year crash record associated with this intersection.
Gateway Treatments – Opononi, Omapere and Waipoua	Gateways have a crash reduction associated with them in urban areas. This has been captured in the Opononi-Omapere Safety Improvements BCR. A separate BCR has not been calculated for the Waipoua Forest Gateway.
Pakia Hill Intersection and Rest Area	Insufficient 10-year crash record associated with this intersection. This option is linked directly to improving the user experience. There is no crash record that applies to these areas, and no comparable benefit that can be calculated in the EEM.
Waiwhatawhata Marae access and parking	This option is linked directly to improving the user experience. There is no crash record that applies to these areas, and no comparable benefit that can be calculated in the EEM.
Opononi Area School Kea Crossing	An individual BCR not calculated. Benefits for crash reduction associated with the safety improvements BCR calculation.
Waimamaku Urban Imporvements	An individual BCR for the Waimamaku urban improvements has not been calculated. The low density of residents, and insufficient crash record meant that the BCR was likely to be very low if calculated.

12.3 Economic summary

Table 12-2 provides a summary of the recommended treatment options and the associated BCR, costs and benefits associated with the implementation of these treatments. As identified in Section 12.2, BCR's have not been calculated for a number of the recommended treatments as these treatments focused on improving the visitor experience for which there is no identifiable benefit stream in the EEM. These treatments are excluded from Tables 12-3, 12-4 and 12-5. Worksheet summaries are included in Appendix M. The economic analysis has utilised where available the NZTA Economic Evaluation Manual's (EEM) simplified procedures to undertake the analysis based on the conceptual detail for the options at this point in time. For future phases full procedures will be required to be used where the EEM specifies this. A consistent ten-year crash history has been utilised in the calculation of the safety benefits for the options. A growth rate of 0% has been applied based on the previous traffic growth calculations for this corridor.

Table 12-2: Economic summary

Package	Treatment	Timing		Economic Efficiency							Project Cost	
		Imp Start Date	Expected Duration of Imp	Time Zero	Base date	Do Min PV Cost	Option Net PV Cost	Net PV Benefits	BCR	% FYRR	PV Do Min Maintenance	PV Option Maintenance
4A	Route Signage & Marking	2021	12	1/07/2019	2019	\$-	\$744,480	\$4,894,697	6.6	55.28	\$-	\$-
1A	Rawene Intersection	2021	6	1/07/2021	2019	\$-	\$353,173	\$1,725,399	4.9	0.4	\$-	\$-
	Omanaia Bridge Future Proofing	2029	12	1/07/2019	2019	\$-	\$987,000	\$1,061,580	1.1	0	\$-	\$-
	Shoulder Widening, Safety Barriers + ATP	2021	12	1/07/2021	2019	\$563,991	\$9,799,089	\$3,039,128	0.3	2.6	\$563,991	\$528,673
	Omanaia Intersection	2024	12	1/07/2019	2019	\$-	\$218,080	\$32,644	0.1	0.0	\$-	\$-
	Passing Opportunities	2027	12	1/07/2019	2019	\$72,600	\$2,638,760	\$2,650,562	1.0	8.2	\$72,600	\$72,600
1B	Safety Barriers + ATP	2021	12	1/07/2019	2019	\$185,203	\$572,055	\$1,387,929	2.4	21.6	\$185,203	\$185,203
	Waiotemarama Gorge Road Intersection	2022	12	1/07/2019	2019	\$-	\$224,848	\$111,011	0.5	0.0	\$-	\$-
	Koutu Loop Rd Seal Improvements	2029	24	1/07/2019	2019	\$161,096	\$6,328,004	\$3,280,091	0.5	3.8	\$161,906	\$72,600
	Walking Trail and Limestone Reef Viewing Platform	2027	12	1/07/2019	2019	\$-	\$5,879,888	\$8,325,697	1.4	6.0	\$-	\$-
2A	Opononi Township Improvements	2021	12	1/07/2019	2019	\$-	\$470,000	\$660,877	1.4	5.0	\$-	\$-
2B	Township Safety Improvements	2020	12	1/07/2019	2019	\$292,761	\$773,247	\$4,422,389	5.7	42.9	\$292,761	\$274,428
	Opononi -Omapere SUP	2024	36	1/07/2019	2019	\$-	\$4,703,057	\$6,239,438	1.3	5.0	\$-	\$-

		Timing		Economic Efficiency							Project Cost	
2B	Fairlie Cres Intersection + Safe Crossing Place	2020	12	1/07/2019	2019	\$-	\$242,050	\$21,496	0.1	0.0	\$-	\$-
	Footpath Improvements (Opononi-Omapere)	2020	24	1/07/2019	2019	\$-	\$242,050	\$1,012,774	4.2	15.0	\$-	\$-
	Slope Stability Improvements	2029	24	1/07/2019	2019	\$-	\$1,560,000	\$479,052	0.3	0	\$-	\$-
3A	Signal Station Rd Improvements	2021	12	1/07/2019	2019	\$50,343	\$118,537	\$9,433	0.1	0.7	\$50,343	\$47,190
3B	Waiotemarama Gorge Road Intersection	2029	12	1/07/2019	2019	\$-	\$309,260	\$550,098	1.8	2.2	\$-	\$-
	Waiotemarama Gorge Road Seal and Shape Corrections	2029	24	1/07/2019	2019	\$216,860	\$9,595,300	\$3,936,188	0.4	2.7	\$216,860	\$297,660
	Shoulder Widening, Safety Barriers + ATP	2026	24	1/07/2019	2019	\$447,584	\$7,832,449	\$3,576,439	0.5	4.0	\$447,584	\$419,555
	Passing Opportunities	2029	12	1/07/2019	2019	\$474,584	\$2,113,522	\$2,520,982	1.2	10.2	\$474,584	\$419,555
	Waimamaku Flooding	2023	24	1/07/2019	2019	\$-	\$769,676	\$1,211,627	1.6	0	\$-	\$-

12.4 Wider Economic Benefits

A wider economics assessment was undertaken for the entire Twin Coast programme of business cases focusing on the impacts of tourism uplift, which was more likely to be affected by the softer types of improvements proposed, including wayfinding, cycle routes, township development as well as more conventional road improvement packages. The spatial distribution of the tourism expenditure was assessed combined with the likely response to the different types of schemes being proposed. In total it was estimated that the value uplift of the interventions being developed in each of the SSBC's would equate to an NPV value of \$545m. This monetised benefit has then apportioned across the SSBC's with this SH12 SSBC being apportioned \$50m as a wider economic benefit through the uplift in tourism spend.

A description of the wider economic benefits and their calculation for the Twin Coast programme of SSBC's will be referenced in the commercial and management cases being developed for the programme.

12.5 Recommended Programme BCR

The discounted costs and benefits of the recommended programme has been calculated excluding and including the wider economic benefit. The recommended programme would achieve a programme BCR of 1.0 with an error of +/- 0.05, and including the WEB's would achieve a BCR of 2.2.

12.6 Recommended treatment option benefits

Table 12-3 summarises the benefit streams associated with the development of the recommended treatment options.

Table 12-3: Treatment option benefits

Package	Treatment	Benefits						
		Travel time Savings	Vehicle Operating Costs	Crash Cost Savings	Walking and Cycling	Resilience	Seal Extn Benefits	Total Benefits
4A	Route Signage & Marking	\$-	\$-	\$4,894,697	\$-	\$-	\$-	\$4,894,697
1A	Rawene Intersection	\$-	\$-	\$1,725,399	\$-	\$-	\$-	\$1,725,399
	Omanaia Bridge Future Proofing	\$-	\$-	\$-	\$-	\$1,061,580	\$-	\$1,061,580
	Shoulder Widening, Safety Barriers + ATP	\$769,206	\$-	\$2,269,922	\$-	\$-	\$-	\$3,039,128
	Omanaia Intersection	\$-	\$-	\$32,644	\$-	\$-	\$-	\$32,644
	Passing Opportunities	\$768,994	\$-	\$1,881,567	\$-	\$-	\$-	\$2,650,562
1B	Safety Barriers + ATP	\$-	\$-	\$1,387,929	\$-	\$-	\$-	\$1,387,929
	Waiotemarama Gorge Road Intersection	\$-	\$-	\$111,001	\$-	\$-	\$-	\$111,001
	Koutu Loop Rd Seal Improvements	\$1,878,662	\$559,166	\$346,137	\$-	\$-	\$496,125	\$3,280,091
	Walking Trail and Limestone Reef Viewing Platform	\$-	\$-	\$5,841,503	\$2,484,194	\$-	\$-	\$8,325,697
2A	Opononi Township Improvements	\$-	\$-	\$4,412	\$656,466	\$-	\$-	\$660,877
2B	Opononi-Omapere Township Safety Improvements	\$-	\$-	\$4,422,389	\$-	\$-	\$-	\$4,422,389
	Opononi -Omapere Shared User Path	\$-	\$-	\$836,428	\$5,403,010	\$-	\$-	\$6,239,438
	Fairlie Cres Intersection + Safe Crossing Place	\$-	\$-	\$21,496	\$-	\$-	\$-	\$21,496
	Footpath Improvements (Opononi-Omapere)	\$-	\$-	\$-	\$1,012,774	\$-	\$-	\$1,012,774
	Slope Stability Improvements	\$-	\$-	\$-	\$-	\$479,052	\$-	\$479,052
3A	Signal Station Rd Improvements	\$-	\$-	\$9,433	\$-	\$-	\$-	\$9,433
3B	Waiotemarama Gorge Road Intersection	\$-	\$-	\$550,098	\$-	\$-	\$-	\$550,098
	Waiotemarama Gorge Rd Seal and Shape Corrections	\$2,348,327	\$940,905	\$26,799	\$-	\$-	\$620,157	\$3,936,188
	Shoulder Widening, Safety Barriers + ATP	\$381,592	\$-	\$3,194,847	\$-	\$-	\$-	\$3,576,439
	Passing Opportunities	\$381,526	\$-	\$2,139,455	\$-	\$-	\$-	\$2,520,982
	Waimamaku River Headwater Storage	\$-	\$-	\$-	\$-	\$1,211,627	\$-	\$1,211,627

12.7 Sensitivity analysis

Table 12-4: Sensitivity analysis

Package	Treatment	Discount Rate BCR		BCR Sensitivity Analysis			
		4%	8%	Growth Rate 2%	Growth Rate 4%	Implementation Cost 20% Higher	Implementation cost 20% Lower
4A	Route Signage & Marking	8.5	5.6	9.8	13.5	6.1	8.4
1A	Rawene Intersection	6.1	4.1	6.4	8.0	4.1	6.1
	Omanaia Bridge Future Proofing	-	-	-	-	-	-
	Shoulder Widening, Safety Barriers + ATP	0.4	0.3	0.5	0.6	0.3	0.4
	Omanaia Intersection	0.2	0.1	0.2	0.2	0.1	0.2
	Passing Opportunities	1.3	0.8	1.4	1.9	0.8	1.3
1B	Safety Barriers + ATP	3.0	2.0	3.6	4.9	2.0	3.0
	Waiotemarama Gorge Road Intersection	0.6	0.4	0.7	0.8	0.4	0.6
	Koutu Loop Rd Seal Improvements	0.6	0.4	0.7	0.8	0.5	0.9
	Walking Trail and Limestone Reef Viewing Platform	1.8	1.2	-	-	1.2	1.8
2A	SUP Support & Active Mode Improvements	1.8	1.2	-	-	1.17	1.8
2B	Township Safety Improvements	7.1	4.7	8.2	10.8	4.7	7.1
	Opononi-Omapere Shared User Path	1.7	1.1	-	-	1.1	1.7
	Fairlie Cres Intersection + Safe Crossing Place	0.1	0.1	-	-	-	-
	Footpath Improvements (Opononi-Omapere)	5.2	3.5	-	-	3.5	5.2
	Slope Stability Improvements	-	-	-	-	-	-
3A	Signal Station Rd Improvements	0.1	0.1	0.1	0.2	-	-
3B	Waiotemarama Gorge Road Intersection	2.2	1.5	2.3	2.9	1.5	2.2
	Waiotemarama Gorge Rd Seal and Shape Corrections	0.5	0.3	0.5	0.6	0.3	0.6
	Shoulder Widening, Safety Barriers + ATP	0.6	0.4	0.7	0.9	0.4	0.6
	Passing Opportunities	1.5	1.0	1.7	2.3	1.0	1.5
	Waimamaku River Headwater Storage	-	-	-	-	-	-

13. Next Steps

13.1 SSBC seeks approval to

This business case has been developed using a fit for purpose methodology to identify a set of interventions for delivering against a range of investment objectives. The objectives are based upon the core functions of the Transport Agency for continually improving the safety of the transport network, keeping the network available to users (resilience), and operating the network as an enabler for the aspirations of the communities it serves and for the benefit of regional productivity and growth.

13.2 Provincial Growth Fund Alignment

The recommended programme has been assessed against the PGF criteria. This assessment is indicative only and is intended to assist in progressing funding options. The indicative assessment indicates that the recommended programme meets eight of the ten PGF criteria. Any applications for PGF funding will be subject to the PDU's application assessment processes.

13.3 Investment Assessment Framework & Economic Assessment

The recommended programme has been assessed against the NLTP Investment Assessment Framework (IAF). The indicative assessment indicates that the recommended programme has a High results alignment and BCR of 1.0 excluding Wider Economic Benefits, and a BCR of 2.2 including Wider Economic Benefits. The programme overall would achieve an IAF rating of 5.

13.4 Community and stakeholder support

Hui and consultation with local residents and stakeholders have identified that there is a high level of support for the development of the recommended treatment options. Hapū and local residents have also expressed an interest in being involved in the development of the treatment options to ensure that they are fit for purpose and that their design fits into the local environment.

13.5 Waipoua Forest Section

As discussed in Appendix J the proposed next steps for the Waipoua Forest include a coordinated approach to the development of visitor infrastructure within Waipoua Forest:

- Develop partnership guiding principles between DOC, Te Roroa, NZTA and FNDC
- Develop in partnership with DOC, Te Roroa, NZTA and FNDC a SSBC

In addition, online improvements have been identified as part of the Cycling SSBC south of the Waipoua Forest. These improvements are approximately \$70k and consist of signage and marking to improve safety and will direct touring cyclists towards the off-road cycle trail at Donnelly's Crossing. This cost has been included in the overall cost of the Route Marking and Signage corridor project for SH12.

13.6 Project Development Programme

The project development programme as specified in Table 13-1 addresses the key considerations when progressing each individual option. Synergies between options have been identified where they could be developed jointly. This is generally based on their being located closely together, and/or are identified for delivery in the same period. In addition, the outcomes of the safety audits completed for the corridor and included in Appendix T shall be referenced when progressing any designs.

Table 13-1: Proposed project development by intervention

Package	Treatment	Project Leadership	Pathway to Implementation
4A	Route Signage & Marking	<p>Route signage will be lead by Northland Inc in partnership with the Transport Agency and the Far North District Council. Line marking will be lead by the Transport Agency.</p> <p>Signage costs identified in this SSBC have been included in the Wayfinding SSBC.</p>	<p>Hapu and community engagement would help to inform the requirements for interpretation panels and other information signage.</p> <p>Design is required to determine final locations and the requirements for corridor safety and advisory signage, and road marking. The design shall reference the safety audits undertaken for this SSBC.</p>
1A	Rawene Intersection	<p>The improvement to the intersection will be lead by the Transport Agency as this will improve safety at this key location. Associated visitor signage and rest area improvements will be informed by the wayfinding and rest area business case teams. Maintenance and operation of the rest area would be the responsibility of the Transport Agency where it sits within the highway designation. Maintenance of the gateway signage would remain with the FNDC, and the bus stop maintenance and operation would remain with the Northland Regional Council.</p>	<p>Concept design for the intersection upgrade progressed to detailed design with ground survey and drainage design. Reference to the outcomes of the safety audit to be made improving signage and street lighting, and interfacing with the Wayfinding SSBC team, and ensuring considering the safety of people cycling when looking to install guardrail..</p> <p>FNDC and hapu engaged to progress the design and messaging on visitor signage, and improvements to the rest area.</p> <p>Northland Regional Council engaged to provide feedback on the formal bus stop located near to the intersection.</p>
	Omanaia Bridge Future Proofing	Transport Agency lead project for long-term resilience	Design phase will include hydraulic modelling to assess flood and climate risk potential

Package	Treatment	Project Leadership	Pathway to Implementation
1A	Shoulder Widening, Safety Barriers + ATP	Transport Agency lead project to improve the risk rating and user experience along the state highway.	A separate SSBC would be required to progress this option due to the high cost. The SSBC shall reference the outcomes of the safety audits undertaken for the corridor.
	Omanaia Road Intersection	Transport Agency lead project in collaboration with the Far North District Council	Design and construction could progress quickly with improvements being low cost. The safety audit shall be referenced in respect of formalising the stockpile area as part of the upgrade, additional sealing and marking.
	Passing Opportunities	Transport Agency lead project	Some optioneering could be encompassed in the pre-implementation phase for considering the extent of slow vehicle passing opportunities.
1B	Safety Barriers + ATP	Transport Agency lead project to improve the state highway safety risk	Design requirements for the safety barriers and location and associated improvements. Construction could be implemented through the
	Waiotemarama Gorge Road Intersection	Transport Agency lead project in collaboration with the Far North District Council	Design and construction could progress quickly with improvements being low cost.
	Koutu Loop Rd Sealing Improvements	Far North District Council lead project	A separate SSBC or some optioneering rolled into the pre-implementation phase for progressing to detailed design. Construction would be tendered due to the high cost.
	Walking Trail and Limestone Reef Viewing Platform	Far North District Council lead project in close collaboration with the Transport Agency. The walking trail would be located within the state highway road reserve.	Some optioneering would be rolled into the pre-implementation phase for progressing to detailed design. Construction would be tendered due to the high cost.
	Cemetery Road Intersection	Transport Agency lead project in collaboration with the Far North District Council	Design and construction could progress quickly with improvements being low cost.

Package	Treatment	Project Leadership	Pathway to Implementation
1B	Pakanae Marae and Cemetery Access	The hapu of Pakanae Marae would be the lead organisation, in collaboration with the far North District Council and Transport Agency in respect of the road access and signage requirements	Design could be progressed with some optioneering. Hapu requirements and consultation rolled into the design process.
	Pullover Bays	Transport Agency lead project in collaboration with the Far North District Council	Locations during the design process identified to minimise the requirements for any land purchase.
	Opononi Gateway Treatment	The project will be lead by the Far North District Council in partnership with the Transport Agency given the projects conformance with the Transport Agency guidelines. The development of any supporting cultural items to support the gateway will be designed in consultation with the local hapu. Maintenance of the gateway will be included in the network operating contract for SH12.	Early public, stakeholder and hapu engagement to confirm the preferred location and design principles around the gateway treatment Consultant engaged to undertake the detailed design incorporated with urban design elements Local designer engaged to design the cultural features to be incorporated into the gateway treatment The design could be packaged with the wider township improvements.
2A	Boat Ramp Parking	This would be lead by Far North District Council, and Far North Holding Ltd who manage the boat ramp on the Council's behalf. He Transport Agency would be a key partner to assess highway impacts.	Additional engagement with the community required to understand the context of the problem and scale, combined with a visual survey Some further optioneering required to be undertaken with partners consisting of Far North Holdings Ltd who manage the boat ramp and wharves, FNDC and NZTA. Progression of the option to detailed design to be agreed by the partners. It is likely consenting for activities in the coastal marine area will be required

Package	Treatment	Project Leadership	Pathway to Implementation
2A	Opononi Township Improvements	The project will be lead by the Far North District Council in partnership with the Transport Agency. Maintenance of the footpaths and crossing places will be managed by FNDC under the current arrangement with the Transport Agency with the Transport Agency paying for the cost of maintenance.	<p>Hapu and stakeholder inputs required to progress design</p> <p>Public engagement would be undertaken to obtain feedback to finalise the design</p> <p>Urban design will feature heavily combined with the infrastructure considerations</p> <p>Delivery of the improvements procured as a package</p> <p>Construction to be undertaken during low season period to minimise disruption for visitors and residents</p>
2B	Opononi-Omapere Township Safety Improvements	The project leadership will be lead by the Transport Agency given the safety improvements are targeted for SH12. The improvements will be in partnership with the Far North District Council and consultation requirements with the public and stakeholders will be shared. Maintenance and operation of any electronic speed warnings and other infrastructure will be included in the network operating contract for SH12.	<p>An additional speed limit review may be required to gather further evidence for reducing the current 70kph speed limit sections</p> <p>Design is required to fully identify the speed management measures to be implemented along the Opononi-Omapere SH12 corridor guided by this SSBC.</p>
	Opononi -Omapere Shared User Path	The shared user path will be lead by the Transport Agency in partnership with the Far north District Council. The shared path will be a significant urban improvement requiring a high amount of collaboration between the two organisations.	<p>Hapu and stakeholder inputs required to progress design</p> <p>Public engagement would be undertaken to obtain feedback to finalise the design</p>

Package	Treatment	Project Leadership	Pathway to Implementation
2B	Fairlie Cres Intersection + Safe Crossing Place	The project will be lead by the Far North District Council in partnership with the Transport Agency. Maintenance of the footpaths and crossing places will be managed by FNDC under the current arrangement with the Transport Agency with the Transport Agency paying for the cost of maintenance.	Hapu and stakeholder inputs required to progress design Public engagement would be undertaken to obtain feedback to finalise the design
	Rest Area Signage	The project will be lead by the Far North District Council in partnership with the Transport Agency. Maintenance of the signs will fall within the respective designated boundaries for each organisation.	Hapu and community engagement would help to inform the requirements for information signage. Limited design is required to determine final locations and compliance with standards.
	Opononi Area School Kea Crossing	The project will be lead by the Far North District Council in partnership with the Transport Agency and the Opononi Area School. Maintenance of the footpaths and crossing places will be managed by FNDC under the current arrangement with the Transport Agency with the Transport Agency paying for the cost of maintenance.	Consultation with the Opononi Area School to assist with finalising the design

Package	Treatment	Project Leadership	Pathway to Implementation
2B	Omapere Gateway Treatment	The Transport Agency will be the lead in partnership with Far North District Council	<p>Early public, stakeholder and hapū engagement to confirm the recommended location and design principles around the gateway treatment</p> <p>Consultant engaged to undertake the detailed design incorporated with urban design elements</p> <p>Local designer engaged to design the cultural features to be incorporated into the gateway treatment</p> <p>The design could be packaged with the wider township improvements</p>
	Opononi-Omapere Rest Areas	Far-North District Council will be the lead organisation, in partnership with the Transport Agency where rest areas are located partly within the state highway road reserve	<p>Rest area upgrade design finalised based upon the outcome of the Rest Area SSBC</p> <p>Consultant procured to deliver this activity as a package including the rest area upgrades, and SUP given the linkage of the rest areas to the SUP</p>
	Footpath Improvements	The project will be lead by the Far North District Council in partnership with the Transport Agency. Maintenance of the footpaths will be managed by FNDC under the current arrangement with the Transport Agency with the Transport Agency paying for the cost of maintenance.	<p>FNDC engaged to prioritise the footpath improvements along the corridor</p> <p>More detailed design required where drainage profiling required</p>
	Slope Stability Improvements	The Transport Agency will be the lead organisation	<p>On-site Geotech investigations required to define scale of the problem</p> <p>Pre-imp phase programmed out in time. Initial investigations would need to define the risk and whether this project is brought forward</p>

Package	Treatment	Project Leadership	Pathway to Implementation
3A	Signal Station Road Improvements	The project will be lead by the Far North District Council in partnership with the Department of Conservation who manage the carpark area. Maintenance of Signal Station Road will be managed by FNDC, and the maintenance and operation of the carpark and security cameras will by the Department of Conservation.	FNDC engaged to prioritise the footpath improvements along the corridor More detailed design required where drainage profiling required
	Signal Station Rd Intersection	The Transport Agency would be the lead organisation	Design and construction could progress quickly with improvements being low cost.
	Pakia Hill Intersection and Rest Area	The project will be lead by the Far North District Council in partnership with the Transport Agency. Maintenance of rest area will be managed by FNDC, and the Transport Agency within the extent of the current highway boundaries.	Hapu and community engagement would help to inform the requirements for improving the rest area. Geotech investigation is required to accommodate the pullover area and intersection upgrade due to the ground conditions. Topo survey or results from the Northland Lidar survey could be used for the design Detailed design and consenting progressed through a pre-implementation phase.
3B	Waiotemarama Gorge Road Intersection	Transport Agency lead project in collaboration with the Far North District Council	Design and construction could progress quickly with improvements being low cost.
	Waiotemarama Gorge Rd Seal and Shape Corrections	Far North District Council lead project	A separate SSBC or some optioneering rolled into the pre-implementation phase for progressing to detailed design. Construction would be tendered due to the high cost.
	Shoulder Widening, Safety Barriers + ATP	Transport Agency lead project to improve the risk rating and user experience along the state highway.	A separate SSBC would be required to progress this option due to the high cost.

Package	Treatment	Project Leadership	Pathway to Implementation
3B	Passing Opportunities	Transport Agency lead project	Some optioneering could be encompassed in the pre-implementation phase for considering the extent of slow vehicle passing opportunities.
	Waiwhatawhata Marae Parking and Church Access	The hapu of Waiwhatawhata Marae would be the lead organisation, in collaboration with the far North District Council and Transport Agency in respect of the road access and signage requirements	Design could be progressed with some optioneering. Hapu requirements and consultation rolled into the design process.
	Waimamaku River Headwater Storage	The Transport Agency would be the lead organisation in partnership with the Northland Regional Council	Design phase will include hydraulic modelling to assess flood and climate risk potential
3C	Waimamaku Urban Treatments	Far North District Council would be the lead organisation in partnership with the Transport Agency	Consultation with the local community to provide input into the design DOC and Te Roroa engaged to discuss plans they may still have for surplus land Consultant engaged to finalise the detailed design
	Waipoua Forest Gateway	The Far North District Council in partnership with the Department of Conservation and the Transport Agency and other members of the Waipoua Forest Management Committee.	Consultation with Te Roroa and DOC to provide input into the design and potential rest area Consultant engaged to finalise the detailed design

13.7 Preliminary Design Philosophy Statement

The Preliminary Design Philosophy Statement (DPS) (Appendix R) gives an indication of the standards and features that would be expected to be applied and developed through the various stages of the project (not limited to the SSBC phase) and provides an indication of the intent behind the indicative design that is developed as part of the SSBC phase. The DPS is a live document that is subject to change as elements of the design are confirmed during later design phases.

14. SSBC conclusions

This SSBC allows a suite of recommended treatments to be promoted for further for investment appraisal. The combination of options progressed in the next 1-5 years will need to be considered against the other SSBC's being developed for the Twin Coast route and prioritised for delivery.

The outcomes from the recommended options for investment if implemented fully are summarised below against the investment objectives:

Investment objective 1: Improving geographic dispersal

We will improve the road user experience from a perception of x to a perception of y for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys. Improving the destination appeal will contribute to the overall increase of visitors and spend in the area by 30% to 2030.

Focus Area	Improvement	Impact
Opononi township retail parking	Rearrange on-street carparking facilities Directional signage to offroad carparking at i-site and the cultural centre (when constructed)	14 additional on-road carparks Improved utilisation of off-road carparking
New visitor experiences encouraging more dwell time	Improved township amenity Improved pedestrian facilities in Opononi Shared user path along urban corridor Improved pedestrian links north and south of the township Improved picnic/rest area facilities Waimamaku improvements	Potential dwell time increase for visitors estimated at an average of 3 hours based on additional activities available Increase in visitor nights based on new activities
Improved access to existing activities	Wayfinding signage along the corridor Improved intersections at key locations Sealed access to activities along Waiotemarama Gorge Road and Koutu Loop Road Improved access to marae and cultural sites	Increase in visitors to existing activities Increase business investment by hapū and businesses
Improved road user experience	Improved passing opportunities Cycling and pedestrian focussed improvements Improved visitor pull-over areas and rest areas Consistent road environment combined with the other SSBC's	Increase in visitor journeys and dwell time along entire corridor

Investment Objective 2: Seasonality

We will improve the road user experience for visitors travelling along the SH12 corridor incorporating the Te Ara Coast to Coast, Ancient Kauri Trail, and Wandering with Ancestors key Northland Journeys by reducing the effects of crash and weather-related events from x to y to facilitate off-peak travel. Improvements to the corridor will facilitate the growth in visitor numbers and spend at the coastal settlements of Opononi and Omapere and the corridor outside of peak periods by 30% by 2030.

Focus Area	Improvement	Impact
Seasonal closures	<ul style="list-style-type: none"> Flooding mitigation Off-peak accidents mitigated 	<ul style="list-style-type: none"> Flood event closures reduced by 50% at Waimamaku All accidents reduced resulting in a decrease in accident related closures during off-peak periods by 80%
New visitor experiences encouraging more dwell time	<ul style="list-style-type: none"> Improved township amenity Improved pedestrian facilities in Opononi Shared user path along urban corridor Improved pedestrian links north and south of the township Improved picnic/rest area facilities Waimamaku improvements 	<ul style="list-style-type: none"> Improvements expected to assist in the attractiveness of visitors to the area during off-peak periods Increase in visitor nights during off-peak periods based on new activities
Improved access to existing activities	<ul style="list-style-type: none"> Wayfinding signage along the corridor Improved intersections at key locations Sealed access to activities along Waiotemarama Gorge Road and Koutu Loop Road Improved access to marae and cultural sites 	<ul style="list-style-type: none"> Increase in visitors to existing activities during off-peak periods Increase business investment by hapū and businesses

Investment objective 3: Resilience

We will reduce the effect of closures on the corridor so there are no full closures without viable alternatives of less than 2 hours for all vehicles by 2030.

Focus Area	Improvement	Impact
Corridor Closures	<ul style="list-style-type: none"> Detour routes along Koutu Loop Road and Waiotemarama Gorge Road sealed to allow all vehicles 	<ul style="list-style-type: none"> Reduces travel time by ~60 minutes along upgraded detour routes compared to SH15

Investment objective 4: Safety

We will improve safety at key locations along the corridor by addressing safety issues in areas where deaths and serious injuries have occurred, and to improve the corridor to at least a medium collective and personal risk rating (as defined by the Kiwi RAP 2013-2017 assessment) by 2030.

Focus Area	Improvement	Impact
Risk Rating	Corridor and section specific safety improvements by mode	Consistent collective and personal risk rating of medium and below along the corridor
Appropriate speeds	Self-explaining roads Safer speeds	Average speed decrease through urban area
Decrease DSI's	Reduce the number of crashes resulting in fatal and serious injuries	Injury related crashes reduced by 80% annually Improved road protection score along the entire corridor

The investments identified would provide a transformational change for the communities living along the corridor. They will improve their overall economic opportunities but will also have positive outcomes for improved road safety, experiencing the area, accessing the retail areas, and the effects on the community from increased visitors.