Northland Rest Area Strategy and Implementation Plan

Single Stage Business Case

NZ TRANSPORT AGENCY

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APPROVAL

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GLOSSARY OF TERMS

ABBREVIATION	TERM
AA	Automobile Association
AEE	Assessment of Environmental Effects
ANPR	Automatic Number Plate Recognition
BCR	Benefit-Cost Ratio
CAPEX	Capital Expenditure
CAS	Crash Analysis System
CLoS	Customer Level of Service
DOC	Department of Conservation
DSI	Death & Serious Injury
EEM	Economic Evaluation Manual
ESR	Environmental and Social Responsibility Screen
FNDC	Far North District Council
GDP	Gross Domestic Product
GPS	Government Policy Statement (on Land Transport) 2018
HCV	Heavy Commercial Vehicle
HNZPT	Heritage New Zealand Pouhere Taonga
ILM	Investment Logic Mapping
ITS	Intelligent Transport System
KDC	Kaipara District Council
KPI	Key Performance Indicator
NLTP	National Land Transport Programme
NOC	Network Operating Contract
NLTF	National Land Transport Fund
NTA	Northern Transport Alliance
NZMCA	New Zealand Motor Caravan Association
P&I	Planning and Investment
PBC	Programme Business Case
PPM	NZ Transport Agency's Planning Policy Manual
PV	Present Value
RAMM	Road Assessment and Maintenance Management
RMA	Resource Management Act
SH(#)	State Highway (number)
SSBC	Single Stage Business Case
TCDR	Twin Coast Discovery Route
TIF	Tourism Infrastructure Fund
VOC	Vehicle Operating Costs
WDC	Whangārei District Council
WEBs	Wider Economic Benefits

EXECUTIVE SUMMARY

OVERVIEW

The *'Northland Rest Area Strategy and Implementation Plan Single Stage Business Case (SSBC)'*, progresses one of the key recommendations of the Twin Coast Discovery Route (TCDR) Programme Business Case (PBC) – the development of a high quality network of rest areas that will support the tourism industry and improve road safety in Northland.

This SSBC sets out a plan of where rest area investment should be targeted, what should be provided at each site and when investment should occur. It is supplemented and informed by an Urban and Landscape Design Framework (ULDF).

The project extent includes all Northland state highways (SH), excluding the full length of SH11 and that part of SH12 between Rawene and Katui Road. Improvements to these corridors are being considered as part of other business cases. The project extent also includes other Northland local roads which are considered to be part of the Twin Coast Discovery Highway. These include the main routes to Mangawhai, Tutukaka and the road that connects Kohukohu and Ahipara.

Consultation

The recommended programme is the outcome of an extensive stakeholder engagement process which took the form of one-on-one meetings, wider group workshops, technical challenge sessions, consultation with other business case teams and seeking feedback from local hapū. The vast size of the project extent, covering the whole of the Northland region, meant that it was imperative to make the most of local knowledge. The overarching approach to the business case was to allow stakeholders in the first instance to tell us what the issues and opportunities were, not the other way around.

PROBLEMS

A review of previous studies, stakeholder workshops, background research and site investigations allowed for a comprehensive understanding of the key issues. The agreed Problem Statements are:

1. **Safety:** Inadequate rest areas result in drivers not taking rest stops which increases the likeliness of fatigue related crashes and DSIs. 50%.
2. **Tourism:** A lack of rest areas at existing or potential tourist spots, plus a lack of storytelling, reduces the destination appeal of Northland resulting in a lost economic opportunity. 50%.

Problem Statement No.1 links with Problem No.2 of the TCDR PBC (Customer Level of Service / safety), whilst Problem Statement No.2 links with Problem No. 1 of the TCDR PBC (tourist appeal).

The weightings were agreed by the wider project team during the second technical challenge workshop (held on the 26th July 2019). The 50:50 ratio reflects how vital the tourism industry is to Northland's economy and its links to the objectives of the Provincial Growth Fund.

Scale of the Problem

The driver fatigue problem is more pronounced in Northland than most other regions of New Zealand. Over the last 10 years Northland saw the 4th highest number of fatigue related crashes, 3rd highest proportional to the total vehicle kms travelled, 4th highest proportional to the population and 4th highest proportional to the number of rest areas[1]. Statistically, the regions where the fatigue problem is worst are (in order): the west coast of the South Island, Gisborne and Manawatu-Wanganui.

The NZ Transport Agency and local councils currently have in place strategies, or are rolling out projects, to address the fatigue problem on the west coast of the South Island[2] and Gisborne[3]. Therefore, in terms of the next priority for improving rest area infrastructure, Northland and Manawatu-Wanganui would be the next on the list.

The fatigue problem won't be fully addressed by just developing rest areas. Improvements to townships (making them more appealing to stop in), wayfinding (so people know a rest stop is coming up), and driver education will also be vital. The NZ Transport Agency already works collaboratively with

[1] CAS data analysis (2008 to 2018)
[2] West Coast Regional Land Transport Plan
[3] https://www.gdc.govt.nz/upgrades-for-seven-rest-areas-on-state-highway-35/

other government agencies in Northland to fund and support community-driven projects that target fatigue management.

Collectively, seven business case programmes[4] will contribute to meet the strategic objectives of the TCDR PBC. The recommended programme of this SSBC therefore must be timed appropriately in order to achieve the optimal value for money outcome. As the TCDR PBC has a key focus on tourism, a whole-journey approach must be adopted to ensure that wider economic benefits are not lost (e.g. where rest areas may help to rejuvenate the economy of smaller townships).

QUALITY OF REST AREA

Following discussions with the NZ Transport Agency, the following five-tier system has been determined and has been proposed to be adopted:

- **Tier 1.** Rest areas with connections to place and a high standard of available facilities. Fewer in numbers but to a high standard. A 'must see' place or viewpoint.
    - **Super Tier 1**. Allowing for place-based rest area design in four prominent locations based on the four compass points. Story telling becomes a catalyst for rest area design containing the desired facilities in a rest area
- **Tier 2**. Local rest area with parking and connections to local features / relevance to the site.
- **Tier 3**. 'Pull over' - A safe place to pull into for a short period of time.
- **Truck Stops**. Truck stops are safe pull over areas that provide toilets, shelter, ample space for trucks to park and ideally lighting.

INVESTMENT OBJECTIVES

Figure 1 shows, as an Investment Logic Map (ILM), how the Investment Objectives were developed.

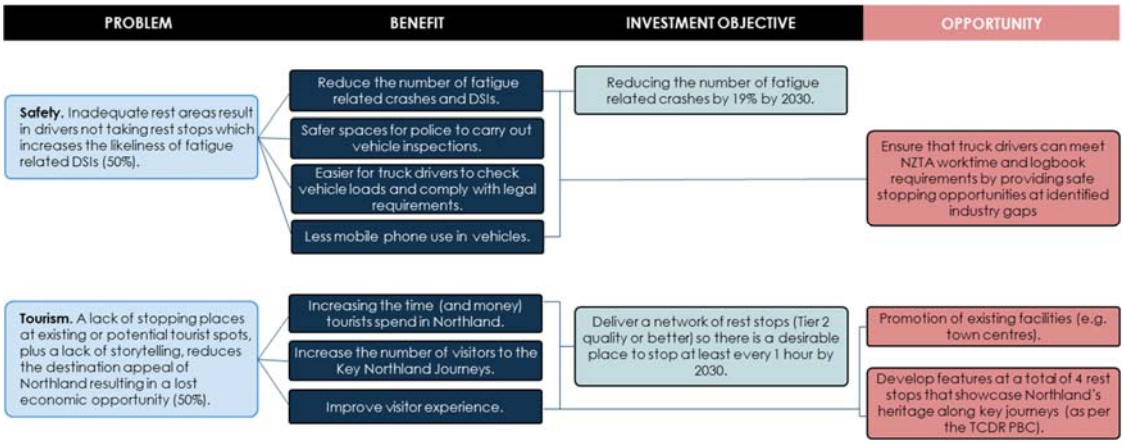


Figure 1: Rest Areas – Investment Logic Mapping

The Investment Objectives for this SSBC are:

1. Reduce the number of fatigue related crashes by 19% by 2030.
2. Deliver a network of rest stops (Tier 2 or better) so that there is a desirable place to stop at least every 1 hour by 2030[5].

[4] Northland Passing and Overtaking Opportunities SSBC, Northland Wayfinding Implementation Plan, SH11 Kawakawa to SH10 Puketona SSBC, SH12 (Rawene to Katui Road) SSBC, Integrated Northland Cycle Plan, Township Plans.
[5] The Tier system is explained later in the SSBC report.

OPTION DEVELOPMENT

The recommended programme was developed through the following process:

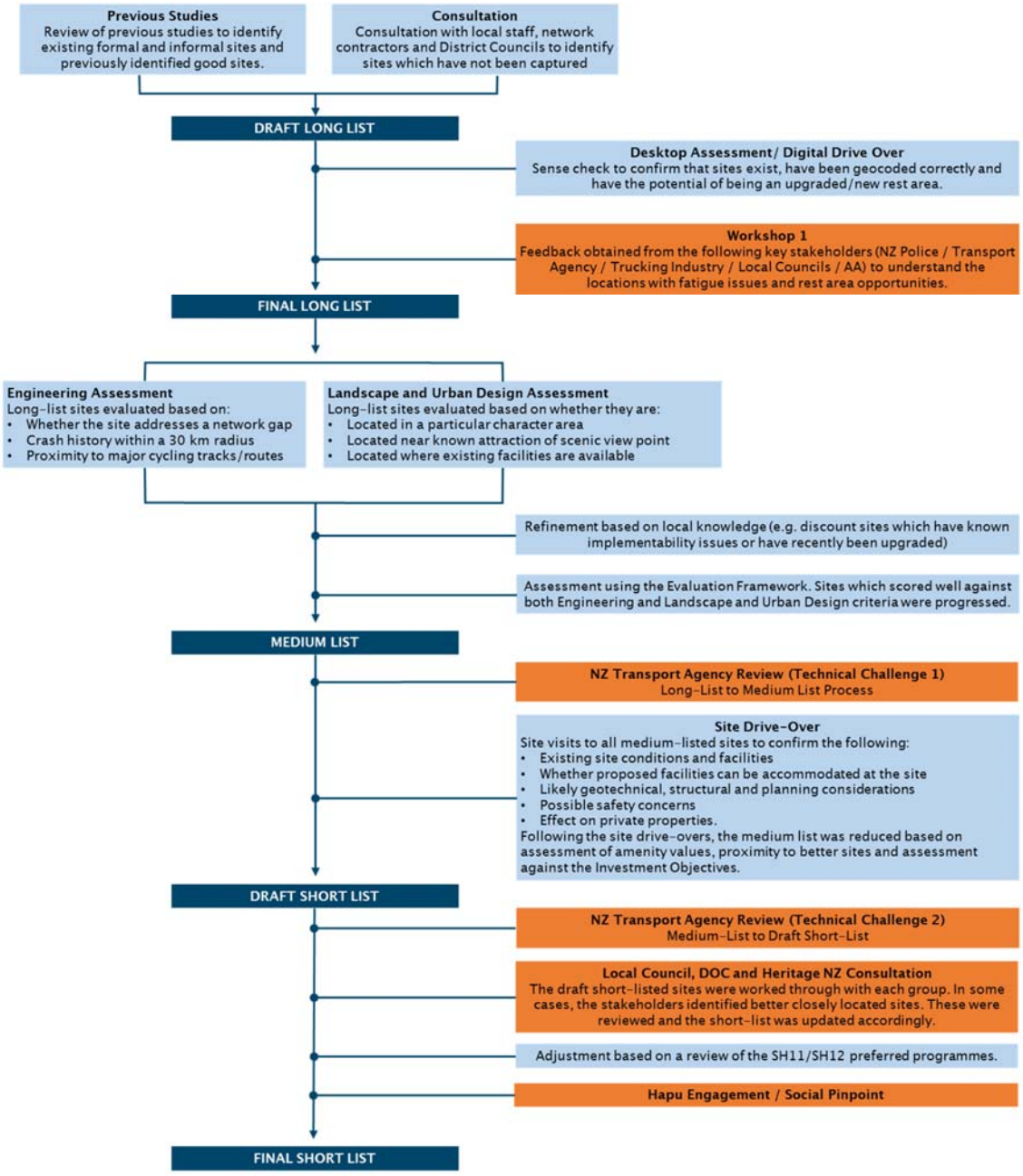


Figure 2: Long-List to Short-List Process

RECOMMENDED PROGRAMME

The recommended programme consists of developing all sites in the final short list, but to establish priorities for investment such that resources are appropriately managed whilst still realising the benefits from the programme. The justification for only considering one programme was:

- A 'whole network' approach has been taken, with spacing considered and therefore to achieve full network coverage all sites are required.
- Extensive consultation has been undertaken to ensure that the right sites have been identified, and they provide the right level of amenity.

- Approximately half of the sites are early implementation projects (toilets, bins, signage improvements etc.)
- The programme has strong certainty of buy-in from multiple parties.
- To some extent, all rest areas provide safety and tourism benefits.

Figure 3 shows the recommended programme.

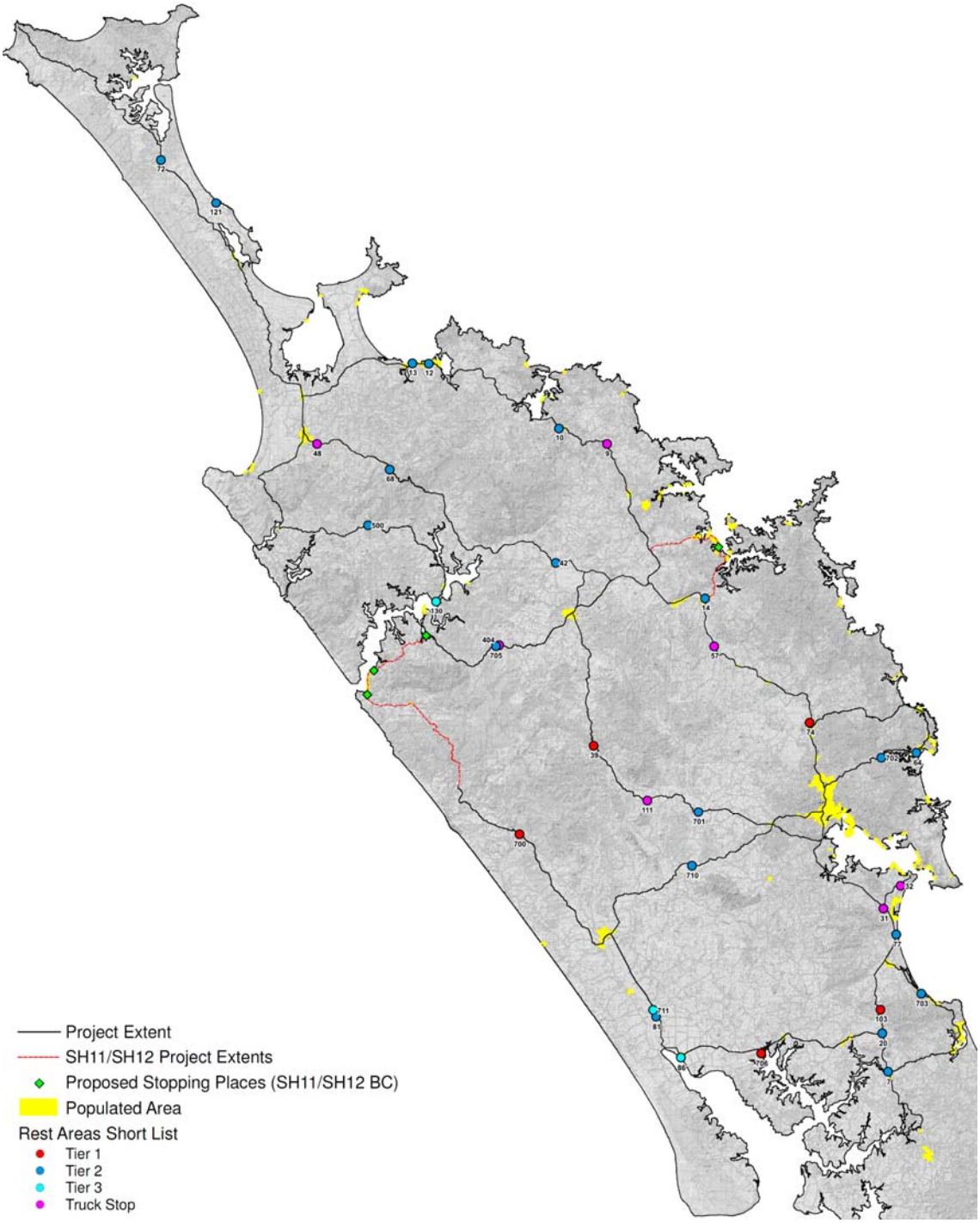


Figure 3: Recommended Programme Rest Area SSBC

DO NOTHING / STATUS QUO

If a 'Do Nothing' approach (i.e. retaining the status quo) is taken, or if the preferred programme is not delivered in full, the following negative impacts could be expected:

- **Economic**. The economic disparity between the east and west coasts of Northland widens, with reduced business confidence to establish new visitor activities on the west coast.
- **Safety**. Fatigue related crashes increase across Northland as traffic volumes rise.
- **Support for the Trucking Industry**. The trucking industry perceive that there is an inadequate network of suitable truck stops, which makes it harder for drivers to comply with worktime and logbook requirements.
- **Reputation**. The project team reiterated during consultation that there is no funding available for any future phases; However, there is potential that an expectation has been created with key stakeholders (including local community, hapū groups, freight and tourism operators, Northland Inc. and local councils) after extensive consultation.
- **Community Impact**. Community and hapū wellbeing declines as the west coast continues to lack investment in basic visitor infrastructure.
- **Landscape**. Informal rest areas remain as out of place features which take away from the aesthetics of the landscape.

Stakeholders agreed during Workshop No.1, that in line with the conclusions of previous studies, a 'Do Nothing' approach is not acceptable to the NZ Transport Agency, partners and key stakeholders.

PROGRAMME ASSESSMENT

Alignment vs Objectives

Table 1 outlines the extent to which the recommended programme aligns with the Investment Objectives.

Table 1: Programme Alignment vs Investment Objectives

IO	ASSESSMENT	COMMENT
1: Safety	STRONG	By 2030, the full programme would be expected to reduce fatigue related crashes by 20% - equating to two fatal injury crashes and four serious injury crashes by 2030[6]. **The recommended programme is expected to fully address the 'Safety' Investment Objective.**
2: Tourism (Network Gaps)	STRONG	• The programme will result in 24 Tier 2 quality or better rest stops across the Northland network by 2030. A further seven truck stops will also be introduced[7]. • The programme will result in a network of high-quality rest areas at least every one hour driving distance, or 50km driving distance, that covers the entire Northland region. The only shown gap is between Awanui and Houhora, where these towns themselves will function as appropriate rest stops. **The recommended programme is expected to fully address the 'Tourism' Investment Objective.**

Overall it is considered that the recommended programme will align strongly with the overarching Investment Objectives of the project.

[6] 0.03 fatal injuries per annum and 0.62 serious injuries per annum
[7] Noting that one truck stop (Site 31) has been recently constructed.

Economics

The economic evaluation of the recommended programme has identified:

- Benefits (40 Year NPV):
    - Safety = $12.1m
    - Tourism = $16.0m
    - **Total = $28.1m**
- Total costs, covering design, construction and maintenance (40 Year NPV): **$19.5m**

The cost benefit appraisal shows that the recommended option results in a benefit cost ratio (BCR) of 1.44, with sensitivity analysis undertaken showing a BCR range of 0.82 to 2.06. The BCR was most sensitive to the number of fatigue related crashes that the programme would save. The only scenario where a BCR < 1 is achieved is where no fatigue crashes would be saved, which given the quality of the recommended interventions, is an unlikely scenario.

The BCR without the wider economic benefits (i.e. tourism) would be 0.62.

Wider Economic Benefits

The recommended programme can also be expected to deliver several strong wider economic benefits, which have been collectively identified across the seven Northland Business Cases; namely:

- **Storytelling.** integrating cultural narratives into the rest area network will build an enhanced sense of local pride and a visitor experience that contains more cultural and educational opportunities, developing Northland's international reputation.
- **Township Rejuvenation**. Investment in rest areas located within small townships could be the catalyst for upgrading other infrastructure or encouraging investment in new tourist ventures.
- **Trucking Industry**. A more enjoyable experience for truck drivers may encourage others to join the workforce, and more generally reduce stress on drivers.
- **Landscape Design**. Decommissioning informal sites (e.g. stockpiles), or introducing new planting to hide them, will improve the aesthetics of the surrounding landscape.
- **Cost Sharing**. There is an opportunity to reduce the overall programme cost by combining rest area improvements with proposed cycling routes.
- **Ecological Protection.** Using rest areas as a means of promoting ecological protection (i.e. to reduce Kauri Die-back issues) can provide an economic benefit.
- **Future Technologies.** Technologies are quickly developing that have the potential to contribute to visitor experience, such as helping with trip planning and directing travellers to stops.

Investment Assessment Framework

Table 2 provides the assessment against the Investment Assessment Framework.

Table 2: Investment Assurance Framework Assessment for the Recommended Programme

GPS PRIORITY	ASSESSMENT	COMMENT
Safety - a safe transport system free of death and serious injury	MEDIUM	• The recommended option will address safety issues affecting communities subject to medium safety risk, and Safer Journeys of medium concern. • Northland is identified in the Communities at Risk Register as being at medium risk for fatigue. The programme would reduce fatigue crashes by 19%. • The programme will also provide better access to health facilities – e.g. walking and cycling trails.
Access to opportunities, enables transport choice and access, and is resilient -Thriving regions	HIGH	• The recommended option will address a gap in an approved RED programme in a high priority RED region. • Northland is identified as a RED[8] area by NZTA

[8] Regional Economic Development area

GPS PRIORITY	ASSESSMENT	COMMENT
		• The Twin Coast Discovery PBC was developed, in part, to enable opportunities in Northland.
Access to opportunities, enables transport choice and access, and is resilient - Liveable cities	MEDIUM	The recommended option addresses a significant gap in access to social or economic opportunities as identified in the Twin Coast Discovery PBC.
Environment - Reduce adverse effects on the climate, local environment and public health	MEDIUM	The recommended option will enable reductions in harm to the environment and people, particularly arising from land transport-related air pollution, noise, through the provision of EV charging facilities, and linking with a cycle trail.

Under the activity class for *Regional, Local Road and State Highway Improvements*, the project is consistent with the requirements for a **Medium** results alignment in response to the Access Strategic priority.

Based on a Medium results alignment combined with a Low Cost-Benefit Appraisal, the priority order for the project would be **6** based on the IAF prioritisation order.

PART A: THE CASE FOR THE PROJECT

1. INTRODUCTION

1.1 OVERVIEW

This report presents the investment story for the *'Northland Rest Area Strategy and Implementation Plan Single Stage Business Case (SSBC)'*, herein referred to as the '**Northland Rest Areas SSBC**' or 'this SSBC'. This SSBC is one of seven business cases being developed by the NZ Transport Agency in Northland as an outcome of the Twin Coast Discovery Route (TCDR) Programme Business Case (PBC).

The development of these seven business cases (and the identified recommended programmes) reflect a whole of Government approach to investment in Northland with projects that 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).

This SSBC focuses on the development of a network of high-quality rest areas that will support the tourism industry and improve road safety. As the rest areas would be located directly off state highways and key local routes, this report has been presented in line with the NZ Transport Agency's standardised business case format. However, it is important to understand that this SSBC has a strong focus around the more holistic social and tourism benefits that are not typically captured by roading projects. Site selection and assessment, therefore, deviates away from purely an engineering-based assessment and considers amenity values and landscape and urban design opportunities.

Given that there are seven business case programmes which contribute to meeting the strategic objectives of the TCDR PBC, the recommended programme of this SSBC must be timed appropriately such that the collectively benefits are achieved with a high value for money outcome. As the TCDR PBC has a key focus on tourism to accommodate the increasing number of visitors to Northland a 'whole journey' approach must be adopted to ensure wider economic benefits (WEBs) are not lost.

1.2 CONTEXT

There are two key economic drivers for the Northland – tourism and the rural economy.

From a tourism perspective, Northland draws in visitors who are attracted by a sub-tropical climate, rich Māori cultural heritage, natural landscapes, contrasting coastlines and adrenaline-fuelled adventures. Tourism is already a key industry, accounting for 9% of regional GDP[9], but there remains great opportunity to rapidly grow this sector[10] by encouraging visitors to explore further and to stay longer. Currently, the visitor industry thrives in isolated pockets on the renowned east coast during the summer, but outside of this area and season, the overall tourism spend is comparatively low.

Northland's economy has also long been underpinned by industries that utilise land and water assets, such as plantation forestry, farming, aquaculture and general manufacturing. This means that the state highway (SH) network is used by an ever-growing number of vehicles that are making long distance trips between Northland and the rest of New Zealand. The Northland economy needs a road network that facilitates safe and reliable journeys for all road users. However, the large distances between towns, and an absence of appealing places to stop, has resulted in Northland seeing a disproportionately high number of fatigue related crashes. There is therefore a systemic need for a quality network of rest areas that will encourage visitors, truck drivers and locals alike to rest.

Different Users, Different Needs

For the freight industry a network of safe and secure truck stops with good facilities (such as toilets, ample parking and lighting) will mean that drivers can adequately adhere to the Transport Agency's worktime and logbook requirements without the need to pull over onto the shoulder of the road.

For visitors, rest areas have the potential to make the journey safer and to add to the overall journey experience. However, simply providing more rest areas in ad-hoc locations[11] is unlikely to address the problem – they need to be in places where people want to stop and need to provide the right facilities. In terms of the visitor experience, rest areas can play two roles – either as a destination in its own

[9] https://ecoprofile.infometrics.co.nz/Northland%2bRegion/Tourism/TourismGdp

[10] As recognised within the Twin Coast Discovery Route (TCDR) Programme Business Case (PBC).

[11] Noted during the 25 February 2019 meeting that historically rest areas have been introduced in locations where it is easy to construct, rather than if they are at location where people want to stop (e.g. with good viewpoints or next to cafes/shops).

right (e.g. a 'photo stop' / connection to a walking trail), or as a means of showcasing Northland's rich culture by storytelling through urban design and information boards.

1.3 PROJECT EXTENT

The project extent includes all Northland state highways, excluding the full length of SH11 and that part of SH12 between Rawene and Katui Road. Improvements to these corridors are being considered as part of other business cases. The project extent, shown as Figure 4, also includes other Northland local roads (connecting Herekino, Tutukaka and Mangawhai) which are considered to part of the Twin Coast Discovery Highway' (excluding byways)[12].

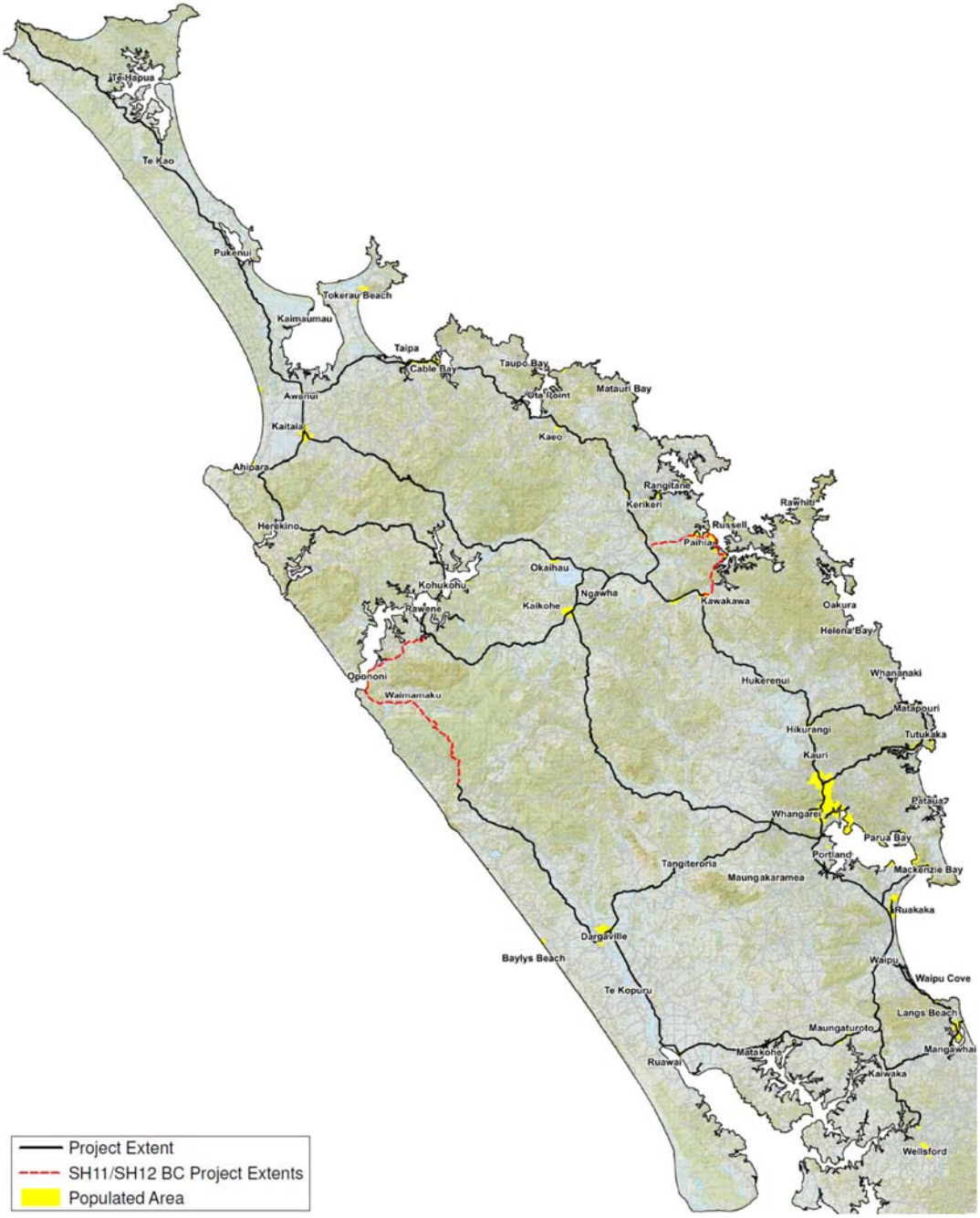


Figure 4: Project Extent

[12] As per the Twin Coast Discovery Highway PBC (Figure 19)

1.4 NORTHLAND REST AREAS SSBC

The Point of Entry for this SSBC was identfied by The NZ Transport Agency when reviewing the existing rest area provisions in Northland and Auckland (*Northland / Auckland North Rest Area Assessment (Stantec, 2015*)). The potential means of improving customer experience and promoting tourism along key Northland journeys was through the TCDR PBC. This SSBC uses those studies as a starting point and seeks to achieve an agreed, and thoroughly assessed, preferred package of interventions that address the core identified problems.

A recommendation of the TCDR PBC was the development of this SSBC and, as such, there is recognition that improvements to rest areas form part of an overall programme that will improve safety and enable tourism growth, particularly to the west coast during off-peak periods[13]. This SSBC, therefore, sets out a plan of where rest area investment should be targeted, what should be provided at each site and when investment should occur.

The preferred option will not simply focus around one long-term solution, but rather is comprised of a suite of individual treatments which could be implemented in the short (0-2 years), medium (2-5 years) or long (+5 years) term in partnership with other land-owners, including the Department of Conservation (DOC), local councils and potentially hapū and private land-owners.

The nature of the business case process means that 'early deliverables' can be identified quickly, and by nature of being easily implementable (i.e. low cost, low risk) can be accelerated through to the pre-implementation and construction stages by the appropriate project owner. Generally, the better expectations can be managed the better for all parties.

1.5 WHAT IS A REST AREA?

A rest area is a location that is accessible from the roadway in which a driver can safely stop their vehicle, without blocking the flow of traffic, and rest for a period of time suitable for meeting their fatigue needs. Ideally, these sites provide a reasonably quiet location with adequate separation from the road, and appropriate facilities to allow drivers to achieve effective rest[14].

For the purpose of this SSBC, an 'informal' rest area has been categorised as one which has not been purposely formed as such, but maybe used as a pull over bay – e.g. a stockpile, remaining sealed area formed following a road realignment or gravel area. A 'formal' rest area is one that has been recognised by the NZ Transport Agency, has existing amenities (including signage) and is maintained.

Figure 5 shows the general difference between formal and informal rest areas.

SH15 Twin Bridges – Formal Rest Area

SH1 Maungataniwha Ranges – Informal Rest Area

Figure 5: Informal and Formal Rest Areas

Truck stops are designed to provide a safe place for heavy vehicle drivers to pull off the road for a rest break or to check their load. At a minimum, truck stops should provide parking areas and rubbish bins, whilst rest areas may also provide toilets, drinking water, sheltered areas and tables.

[13] The holistic and social tourism benefits are often difficult to capture using traditional Economic Evaluation Manual methods. These benefits have been derived by an external party using a 'top down' approach with the estimate based on the increases in tourist revenues with the enhanced activities and extent to which these additional revenues get translated into economic value added or GDP.
[14] Rest Areas and Rest areas – Location, Design and Facilities (2014), Queensland Government

There are restrictions placed on how long the driver of a commercial or heavy motor vehicle may work before taking rest. Restricting work time helps to reduce the risk of fatigue in drivers of commercial and heavy motor vehicles. In general, drivers must:

- Take a break of at least 30 minutes after 5½ hours of work time, no matter what type of work takes place during that period.
- In any cumulative workday, a driver can work a maximum of 13 hours and then must take a continuous break of at least 10 hours (as well as the standard half-hour breaks every 5½ hours).

It is therefore important that a network of truck stops is provided across the region to ensure heavy vehicle drivers are able to meet their legal requirements.

1.6 PROJECT INTERACTIONS

This Northland Rest Areas SSBC is not a new standalone project, but rather builds upon previous work and the outcomes of the Twin Coast Discovery Route PBC. It considers the outputs as part of its option development and assessment process. This SSBC has interdependencies with, and has taken into consideration how best to work with, the:

- **Northland Passing and Overtaking Opportunities SSBC**. This business case was developed in parallel to the Northland Rest Area SSBC with shared communications, workshops and delivery timeframes. It concerns the provision of passing facilities in Northland with the same geographic scope as the Northland Rest Areas SSBC. This means that there are also some inter-relationships, dependencies, opportunities and possibly constraints.

  One way in which the SSBCs are linked is the relationship between the location of rest areas and passing opportunities. If rest areas encourage slow vehicles to pull over, they can present an opportunity for faster vehicles to pass without needing to provide a formal overtaking facility. A risk if the overtaking opportunities and rest area networks are not interlinked, is that drivers may be reluctant to stop at a rest area if it will likely mean that they'll end up back behind the same slow vehicle they just overtook.
- **Northland Wayfinding Implementation Plan**. The Wayfinding Implementation Plan developed options for improved Signage, Digital Wayfinding and Local knowledge / information. The major connection between this SSBC and the Wayfinding Implementation Plan is the role rest area wayfinding can play in maximising potential use (i.e. encouraging people to take a break if stuck behind slow moving traffic).
- **SH11 Kawakawa to SH10 Puketona SSBC**. This business case focuses on the 30km stretch of SH11 from the SH1 intersection at Kawakawa to the SH10 intersection at Puketona. The NZ Transport Agency has been working with key stakeholders to identify options to improve safety and resilience along this corridor and to identify opportunities for economic growth.
- **SH12 Rawene to Katui Road SSBC**. This business case focuses specifically on developing and refining investment options for the SH12 corridor between Rawene and Katui Road. Three rest areas have been identified along this section of SH12.
- **Northland Integrated Cycling Implementation Plan**. This business case focused on evaluating potential cycle routes and enhancing existing cyclist infrastructure. It also looks at improvements to the Pou Herenga Tai (Twin Coast) cycle trail. The link to this SSBC is that potentially rest areas will see higher patronage if they can connect to existing or planned cycle trails.
- **Northland Township Plans**. This project looks at improving safety, access and amenity for eight townships served by state highways. Those townships are Kaikohe, Dargaville, Rawene, Kohukohu, Awanui, Morewa, Horeke and Kawakawa. The interaction to the Northland Rest Areas SSBC is that these townships can function as desirable stopping places, and care has been given to ensure that planned improvements to Townships are not compromised by potential out of town rest area enhancements.
- **State Highway 10 Waipapa Corridor Improvements.** Growth in the region has necessitated improvements to the network at Waipapa in order to improve safety and facilitate growth. A new roundabout is a key feature of the project.

Whilst the projects have interdependencies, there is only a low risk that the potential outcomes of the other business cases will significantly influence the preferred option for the Northland Rest Areas SSBC. Nonetheless, care has been taken (particularly with the SH11 and SH12 business cases) to take a 'whole of network approach' to ensure that strategies align – i.e. to avoid a situation where two rest areas are proposed within close proximity because the project interface is located in the middle.

Another example could be to ensure that proposed cycleways are taken into consideration as part of this SSBC to ensure that future plans are not missed.

Figure 6 provides a diagram which shows how these projects are being managed.

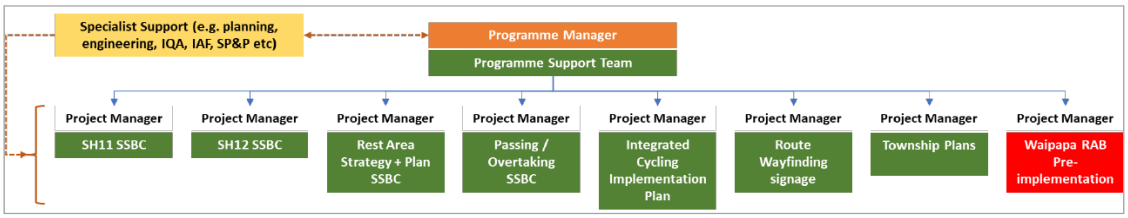


Figure 6: Project Management Structure[15]

Appendix A1 outlines the project leads for potential rest area upgrades.

1.7 KEY CONSIDERATIONS

A key challenge is ensuring a balanced approach between the attractiveness to visitors and its suitability for other users – notably freight operators. The options therefore need to be sufficiently robust to deal with a variable transport environment, without detracting from the aesthetic appeal of high quality rest areas. Given the limitations in terms of space, in most cases it may be more appropriate to provide separate facilities for truck drivers and tourists.

It is also important to move away from a 'provide it and they will come' mentality, but instead look to understand the reasons why people would want to stop. More often than not, drivers simply want to get to their destination as quickly as possible, sometimes regardless of how tired they are, which means we need to provide them with an appealing reason to stop. The rest areas need to be in the right places and provide the right facilities.

Key considerations, ascertained from feedback from stakeholder feedback and a literature review, are:

Right Location

- Does it meet an existing network gap? For instance - providing two rest areas close to one another is unlikely to make twice as many people stop.
- Is there a history of fatigue related crashes within a 20-30km radius of the site?
- Is it near known attractions (e.g. DOC sites or cultural landmarks), provide scenic views or is it next to an existing amenity that people want to stop at (e.g. toilets, café, cycleway or pie shop)?
- Is the site big enough considering the pass-by traffic volumes? Could it be easily upgraded to provide a suitable supply of parking along with amenities such as benches, toilets and shelters?
- Are there any major implementability challenges (topography, access, cultural sensitivities or property) which would present funding or approval risks further along the process?

Right Facilities

- Who are the main target users – tourists, truck drivers, campers, cyclists or locals?
- The desire for toilets at rest areas and truck stops is likely to be very high. Which organisation will be maintaining these toilets, and do they have the necessary funding?
- What are the minimum facilities required for each rest area? These are site-specific considerations relating in part to whether the site has the potential to attract a high number of people or whether it will be more likely used just as a quick pit-stop.

1.8 URBAN AND LANDSCAPE DESIGN FRAMEWORK

This SSBC is accompanied by an Urban and Landscape Design Framework (ULDF), provided as **Appendix D**, which describes the urban and landscape design outcomes sought from rest area development. The ULDF aims to ensure that high level urban and landscape design concepts are appropriately defined, developed and can be implemented as part of the business case process.

[15] Reference: NZ Transport Agency

Urban and landscape design principles were considered as part of the site identification and assessment process, not retrospectively after a list had already been established. This means that there is real opportunity at each of the high amenity (Tier 1 or 2)[16] sites to implement the ideologies presented by the ULDF.

Rest Area Outcome Framework

The Rest Area Outcome Framework, as per the ULDF, is shown as Figure 7.

Figure 7: ULDF Outcome Framework

Table 3 outlines some of the key desired urban and landscape outcomes of the project.

Table 3: ULDF Outcomes for Rest Areas

OUTCOME	HOW THE OUTCOME WILL BE ACHIEVED
Welcome / Farewell – Nau Mai / Haere Mai	• Place and location – signage / artwork • Internal and external wayfinding • Integration with the Wayfinding Business Case
Stories and Narratives	• Celebrate people, history and identity (whakapapa) • Design and artwork • Celebrate significant places • Awareness/appreciation – make the lesser known stories more well known
Connections to land (whenua), water and sky (rangi)	• Provide viewpoints and information • Active and quiet places • Pathways and connections to attractions off site
Celebrate the soul of the place (wairua)	• Placemaking and memory • Sense of place
Connections to the Environment	• Encourage stewardship • Tie into conservation and environmental enhancement efforts • Preservation – sensitive intervention, protection of sites and features

[16] Tier structure for rest areas described later in this report.

2. STAKEHOLDER ENGAGEMENT

2.1 KEY STAKEHOLDERS

Table 4 provides a summary of the investment partners, Treaty Partners and key stakeholders who have a vested interest in the outcomes of the Northland Rest Areas SSBC.

Table 4: Partners and Key Stakeholders

ORGANISATION	ROLE
INVESTMENT PARTNERS	
NZ Transport Agency	The Transport Agency is the road controlling authority for the State Highway network, are a funder of land transport activities and provide access to and regulation of land transport.
Northland Inc.	The Regional Economic Development Agency for Northland encompassing the Regional Tourism Organisation and central government's Regional Business Partner (RBP) Network.
Land owners	Several land owners would be engaged as part of the pre-implementation stage (if funding is approved). The Department of Conservation, Northland territorial local authorities, hapū and private land owners. This is discussed further in Part D Readiness and Assurance.
TREATY PARTNERS	
Local hapū	There are nine iwi tribal boundaries in Northland[17]. The NZ Transport Agency has duties and obligations to hapū in Northland as parties to the Treaty of Waitangi. Māori language, culture, stories and traditions are strong in Northland and rest areas present an opportunity to showcase Northland's rich Māori culture and history. 
STAKEHOLDERS	
Ministry of Business, Innovation and Employment	The PGF is administered by the Provincial Development Unit, part of the Ministry of Business, Innovation, and Employment.
Northland Transportation Alliance (NTA)	The NTA is a collaborative arrangement of Kaipara District Council, Whangārei District Council, Far North District Council, Northland Regional Council and the Transport Agency. The aim of this group is to share resources and deliver better, more cost-effective and 'joined-up' transport options for all Northlanders.[18] Councils are also a road controlling authority and would be responsible for the maintenance of rest areas.
NZ Police	New Zealand Police is working with the community to make New Zealand safe. The key areas of interest for the NZ Police are speed and enforcement.
Department of Conservation (DOC)	Some of the attractions and places where people might stop are administered by DOC. Tohu Whenua is a joint programme between DOC, Heritage New Zealand Pouhere Taonga (Heritage NZ) and the Ministry for Culture and Heritage to promote places that tell stories.
New Zealand Motor Caravan Association	The NZMCA is a membership-based organisation representing the interests of private motor caravan owners in New Zealand.
New Zealand Automobile Association (AA)	The AA "…is regarded as the leading advocate for NZ motorists…and…supports road engineering measures that help combat drowsiness and fatigue, for example…More rest areas and warning signs on roads known to be risky for drowsy driving crashes."[19]
National Road Carriers Association	National Road Carriers provides professional support for those who choose to make a living in the road transport industry, through advocacy, representation and advice.

[17] Te Puni Kokiri, Te Kahui Mangai
[18] https://www.fndc.govt.nz/services/roads-and-stormwater
[19] https://www.aa.co.nz/about/safety-on-the-roads/safer-drivers/staying-focused-and-alert/drowsy-driving/

Other stakeholders include:

- Waipoua Forest Trust
- Heritage New Zealand
- Cycling NZ / Cycling Advocates Network
- Northland Road Safety Group
- Heavy Haulage Association NZ
- Northland Freight Group
- Bus and Coach Association
- Ministry for Culture and Heritage (MCH)
- Chargenet
- Spark Ventures
- Tourism Industry Association
- Rental Vehicle Association
- Tutukaka Coast Promotions Society
- Hokianga Promotions Association
- Local businesses directly affected by the preferred option
- Road Transport NZ

2.2 WORKSHOPS AND MEETINGS

Project Team Meetings

The following key project workshops and meetings have helped to shape this SSBC:

- **Meeting No.1: Project Inception.** The purpose of this meeting (22nd January 2019) was to clarify the scope of the project, agree the programme for delivery and key deliverables, outline the parallel workstreams and to discuss the main tasks going forward.
- **Meeting No.2: Urban Design Kick-Off.** The purpose of this meeting (22nd January 2019) was to gain a better understanding of the requirements for the ULDF and to discuss the main tasks.
- **Meeting No.3: Long list Development.** The purpose of this meeting (25th February 2019) was to provide a project update, outline the process for identifying the long list and discuss possible approaches for developing programmes of options.
- **Meeting No.4: ULDF Review**. The purpose of this meeting (24th July 2019) was to present the draft ULDF to the NZ Transport Agency, review the process for getting to the short list and to identify the way forward for completing the ULDF.

Workshops

- **Workshop 1: Problems and Opportunities.** This workshop (16th April 2019) included representatives from the wider stakeholder group, including the trucking industry, NZ Police, bus operators, the AA, NZMCA, Northland Inc. and NTA. The purpose was to confirm the overarching problems and benefits associated with fatigue management and rest area provisions, develop Problem Statements, identify potential options and discuss the draft evaluation criteria.

Technical Challenges

- **Technical Challenge No.1 – Long-List to Medium-List.** This challenge session (18th June 2019) focused around the long list to medium list process, the suitability of the medium list and whether there are potential gaps or further opportunities. A discussion was also held around possible programmes that could be developed from the medium list. Following this session, the short list was updated prior to the site drive-overs.
- **Technical Challenge No.2 – Medium-List to Short-List**. The first aspect of this session (26th July 2019) was to seek agreement around the wording and weightings for the Problem Statements and investment objectives. The second aspect was to review the medium to short list process and potential programmes of options, along with the methodology for assessing the short list.
- **Technical Challenge No.3 – Programme Assessment and Review**. This challenge session (26th August 2019) focused around the packaging and assessment of various programmes.

Other Engagement Activity with Partners

- **Implementation approach with implementation partners.** A letter was sent to the DOC and the three territorial local authorities outlining the implementation approach once the business case is endorsed. A copy of the letter template is provided at the end of **Appendix A2**.

2.3 PUBLIC CONSULTATION

Communications and Engagement Plan

Engagement with local authorities, the Department for Conservation, local hapū, Heritage NZ, representatives from the trucking industry and NZ Police was purposely undertaken at strategic points during the development of this SSBC. The concept design for rest areas has been co-designed with stakeholders and partners.

A Communications and Engagement Plan was prepared for the project and is provided as **Appendix E**, which sets out and records the stakeholder communication and engagement activities. The engagement objectives and outcomes for the project are outlined in Table 5.

Table 5: Engagement Objectives and Outcomes

OBJECTIVE	OUTCOME
Awareness	Ensure key stakeholders, partners, and communities are aware of the key messages and the timeframes for inputs and outcomes.
Understanding	Key stakeholders and hapū partners understand the NZ Transport Agency's business case process, including programme deliverable and decision making.
Behaviour	Key stakeholders and partners team up with the NZ Transport Agency to deliver the programme in a cohesive and collaborative way.
Participation	Stakeholders, partners, and communities are provided with opportunities to participate in decision making processes, where applicable, to inform business case development.
Reputation	The NZ Transport Agency delivers robust business cases, engages genuinely and effectively with stakeholders and is working on behalf of the Government to give effect to transport priorities.

There could be differences of perception with respect to the proposed implementation plan and staging of delivery. The NZ Transport Agency will work collaboratively with Northland Inc, councils and stakeholders.

The following key messages were developed for the project:

- The NZ Transport Agency and Northland Inc. are working together to raise awareness of the Twin Coast Discovery Route and Northland Journeys (routes).
- The Transport Agency will work collaboratively with councils, partners and stakeholders to deliver the Rest Areas SSBC.
- This SSBC is an enabler for improving economic performance in less visited areas of Northland.

Engagement Process

While the NZ Transport Agency is the contracting body for this project, many of the interventions identified for implementation are on roads controlled by the three local authorities: Whangārei District Council, Kaipara District Council and the Far North District Council. It is therefore essential that the outcomes of the project are supported by the local authorities.

The engagement process has followed a co-design process, where a long list of interventions has been progressively shortened whilst additional context and evidence has been developed in consultation with internal NZ Transport Agency staff, partners and key stakeholders.

One-on-One Stakeholder Meetings

The following additional one-on-one meetings have also been held:

- Meeting with **local authority** representatives on the 13th March 2019. The purpose was to explain the purpose of the business case and understand potential rest area opportunities.
- Meeting with the **SH11 SSBC team** on the 20th June 2019. The purpose was to understand what their emerging preferred option was and how that may influence this SSBC. It was confirmed that the SH11 team were considering:
    - A rest area at the Kawakawa/SH1 intersection.
    - A potential rest area that could be incorporated into a large roundabout project for the SH10/SH11 intersection.
    - The viability of a rest area at Te Haumi Flats, near Paihia has been raised previously by stakeholders.
- Meeting with the **SH12 SSBC team** on the 24th June 2019. The SH12 SSBC team noted that:
    - The Waipoua Forest waharoa (gateway) is not a rest area. A rest area at the northern end may be feasible if car parks are removed from the forest itself in response to Kauri Die-back disease management activities and proposals for enhanced tourism facilities at the Visitor Centre at the southern entrance to the forest.
    - There is a rest area upgrade planned at the ferry and bus terminal at Rawene (within the scope for the Northland Rest Areas SSBC). The site is flood prone but is an option with high community interest.
- Skype meeting with the NZ Transport Agency in relation to the **Weigh in Motion Project** (22nd July 2019). The purpose was to understand the implications of the project on this SSBC and the need for truck stops to support the police enforcement of land transport regulations. Key points raised were:
    - There are currently 13 weigh pits throughout Northland providing good coverage.
    - There is one full commercial vehicle safety centre (akin to the facility located at Beach Road/The Strand in Auckland) which is confirmed to be built at the SH15/SH1 intersection. It is currently awaiting funding.
    - Current best practice for compliance monitoring is via Weigh in Motion sensors (in road) and an Automatic Number Plate Recognition (ANPR) camera system that police utilise with Variable Message Signage to identify vehicles for more accuracy.
    - The new mobile weigh station facilities used by NZ Police in Northland require additional investment (e.g. asphalt paving and grading) above what can reasonably be delivered to meet resting requirements.
- Skype meeting with the **Department of Conservation** on the 24th July 2019. The purpose was to give an overview of the project, identify data needs and to gain general insight around priorities and challenges for DOC sites that would potentially be developed.
- Meeting with **Heritage New Zealand** on the 30th July 2019. The purpose of this meeting was to understand the story-telling opportunities that investment in various rest areas could present. Attendees also provided general local insight around which sites on the draft short list should be given higher priority for investment.
- Meeting with **Far North District Council** (FNDC) on the 30th July 2019. The purpose of the meeting was to gain feedback regarding sites included on the draft short list. FNDC provided insight around local projects, potentially better alternative sites and where they saw priorities for investment. An initial discussion around funding responsibilities was also held.
- Meeting with **Whangārei District Council** on the 31st July 2019. As per the meeting with FNDC, the purpose was to seek feedback around the draft-short list. A key outcome was the alteration to the short list to include better alternative sites on the local roads.
- Meeting with the **Department for Conservation** on the 31st July 2019. The purpose was to discuss the feasibility of improving facilities at five different DOC sites.
- Meeting with **Kaipara District Council** on the 9th August 2019. The purpose of the meeting was to gain feedback regarding sites included on the draft short list.

- Input was provided from the **Bus and Coach Association NZ** in relation to feedback from members who identified that the highest priorities in terms of rest area provisions would be toilets, area information and safe driving tips.
- Input was provided from the **Rental Vehicle Association NZ**. Key feedback related to tourist driving behaviours that create additional risks. The association confirmed that its members were happy to promote positive driver behaviours if suitable material is developed.
- Meeting the **NZ Transport Agency** on the 23rd August 2019. The purpose was to identify all parallel programmes with a safety outcome throughout the network. Several programmes with similar outcomes were identified, most notably the installation of wire medians south of Whangārei on SH1 and a controlled intersection at SH1/SH15 to improve the efficiency of the in-land freight route (SH15). Other relevant programmes discussed included Safer Roads, the ATP programme (rib-line painting of the highway shoulder) and works around resilience routes.

Minutes of meetings are provided as **Appendix A2**.

Hapū Engagement

The project team developed collateral for hapū engagement with project background information and the shortlisted options that have been developed with stakeholders. The material built off previous engagement (e.g. on the townships landscape design framework and work on SH11 and SH12 corridors) and included profiles of each opportunity identified as laying within the areas of strongest interest for each hapū. Specific feedback is detailed in **Appendix B6**.

Public Consultation

The programme shortlist identified in this SSBC was presented to the public via the NZ Transport Agency's website, using an on-line map tool, Social Pinpoint. Participation was promoted via an email to partners and stakeholders. The objective of engagement was to validate what we had heard from stakeholders by checking in with the community.

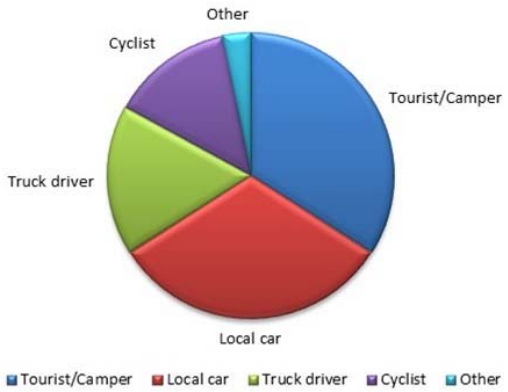
During the three-week engagement period, the project team received 276 visits from 89 unique visitors reviewing the shortlists for rest areas and passing opportunities[20]. Of those visitors, 38 people either provided feedback on the options, left a comment (or responded to the comments of others) or made suggestions about other areas.

Key insights obtained from the feedback were:

- 12 of the shortlisted sites were supported by respondents.
- Four sites had mixed feedback as a result of one respondent's concerns about safe access/egress for three of the sites and the risk of anti-social behaviours at another site. These concerns have been acknowledged and considered as part of the Road Safety Audit. As necessary, the cost estimates for those sites have been updated to reflect the need to include measures that would address potential access/egress issues.

There were three new areas suggested by respondents, which were all located near to other short-listed sites. There was also some support for rest areas identified as part of the SH11 and SH12 SSBCs.

As responses may depend on the type of road user, people were asked to about the type of vehicle they typically use to travel through Northland, noting that people could choose more than one option):



[20] Details of the passing opportunities are outlined in that business case.

Figure 9: Vehicle Preference When Travelling in Northland

3. RELEVANT STRATEGIES

This section provides relevant information from existing studies and strategies. These have been used to inform the direction of the business case and ultimately to understand the strategic alignment of the recommended programme. An overview of the overarching national and regional government strategies is provided within **Appendix A3**.

3.1 TWIN COAST DISCOVERY ROUTE PBC

The NZ Transport Agency in partnership with Northland Inc and key regional and government stakeholders developed an overarching PBC which aimed to improve the economic performance of Northland. The Twin Coast Discovery Route (TCDR) and its seven key Northland Journeys were the focus of the PBC, with the aim of encouraging both international and domestic visitors to visit new places, try new experiences and stay longer in Northland.

The TCDR and the seven Northland Journeys utilise several state highways and local roads in Northland and have been developed to include road-based routes, cycle and walking journeys and coastal recreational modes.

Two key problems identified by the TCDR PBC that are relevant to this SSBC are:

1. The destination appeal of Northland's visitor industry is focused in a few locations and only in a few months of the year which is a lost economic opportunity for all of Northland.
2. Variability in Customer Level of Service on the TCDR and key Northland Journeys fails to meet the resilience, safety and road amenity expectations of all users.

Investment Objectives

The TCDR Investment Objectives are:

- Increase visitor spend on key Northland Journeys by 30% by 2030.
- Increase visitor spend and numbers on the TCDR and key Northland Journeys outside of peak periods by 30% by 2030.
- No full closures without viable alternatives (of less than 2 hours) for all vehicles on the TCDR and key Northland journeys by 2030.
- Reduce the number of deaths and serious injuries (DSI) to achieve at least a medium collective and personal risk rating.
    - The desired outcome of this Investment Objective is a 19% reduction in DSIs.

Rest Areas – Long List

The following rest area upgrades were identified within the long list for the TCDR PBC:

- Improve existing Tokatoka rest area (parking, signage);
- Improve existing Paparoa rest area;
- New rest area: first sight of Kaipara Harbour SH12, near Paparoa;
- New rest area: Dargaville riverside;
- Improve rest area: Maunganui Bluff; advance warning signs;
- Major rest stop at Waipoua forest; and
- Improve facilities at freight rest stops.

Each of these options have been included as part of the long list of this SSBC, with their individual merits evaluated. The PBC also outlined that rest area options were prioritised as follows:

- The highest priority is the further development of a region wide rest area strategy that includes prototypes for "super stops" where a full range of facilities such as toilets, Wi-Fi, picnic facilities, parking and power is provided.

- New rest areas which are strategically located according to the criteria of reducing gaps of rest areas along the road network (typically once every 50km or provision at 1-hour intervals) and located so as not to dissuade vehicles stopping in towns.
- New rest areas where photo opportunities have been identified to increase visitor amenity.
- Improvement of existing rest areas.

These considerations have been carried forward to this SSBC.

3.2 GREAT KIWI ROAD TRIPS

> *"Many a seasoned traveller will exclaim that arriving at the destination itself is only part of the journey and the real allure of travel lies in its ability to create a holistic experience where individuals are able to fulfil their fantasies and actualise their aspirations, all the while enjoying themselves in a new and interesting environment (Otto and Ritchie 1996)."*

The above quote was referenced by the Great Kiwi Road Trip research project (2018), and essentially looks to show how the journey itself is part of the experience.

Generally, the research looked to understand how to create these desired tourist experiences. As part of this research it was established that generally visitors saw more places and sites than they had originally planned. Follow-through on planned visits (both places and specific sites) was 80% for international visitors and 88% for domestic visitors. However, 66.7% of international visitors said they were 'not sure' what places they would visit, compared to 42.9% of domestic visitors.

This is further supported by visitors' behaviour, where they discovered different parts of the region and more locations than originally intended. Lastly, those who explored further (in the case of Northland this would be travelling to the west coast or travelling to the Far North), were found to have greater satisfaction with their visit. These findings support key strategy and initiatives of tourism and heritage agencies in New Zealand to work with transport agencies to better unlock regional dispersal. It also identifies (or reinforces) the growth potential of the Northland region, and consequently the location and type of investment opportunities (e.g. around infrastructure improvements and promotion) that would be most successful.

3.3 NORTHLAND JOURNEYS AND TWIN COAST DISCOVERY HIGHWAY REVITALISATION (TCDHR)

The Northland Journeys and Twin Coast Discovery Highway Revitalisation (TCDHR) project was completed in 2018 and funded by the Northland Regional Council. The aim of the project was to increase the economic contribution of tourism by $20 million per annum from 2020 onwards.

Northland Inc has been leading the non-infrastructure development of the TCDR and its revitalisation as a series of compelling Northland Journeys including new routes and new ways to travel along these routes. The report on revitalisation of the TCDR outlined how Northland could benefit not only from promoting distinctive sub-regions but also by expanding the 800km touring route from one highway into a set of byways encouraging visitors to explore more of the regions. These byways or journeys are between 50km and 150km in length.

Journey development occurred between 2015 - 2017 and the first three new Northland Journeys; 'Where Giants Gather',' The Ancient Kauri Trail' and 'Into the Wide Blue Yonder' were launched in early 2017. The launch received positive local and travel media coverage and growing visitor interest. The other four Northland journeys were launched in late 2017. Each individual journey is highly distinctive and fits within an overall portfolio of compelling journeys throughout the region so that visitors are encouraged to enjoy multiple journeys over multiple visits.

The Northland Journeys are shown as Figure 8.

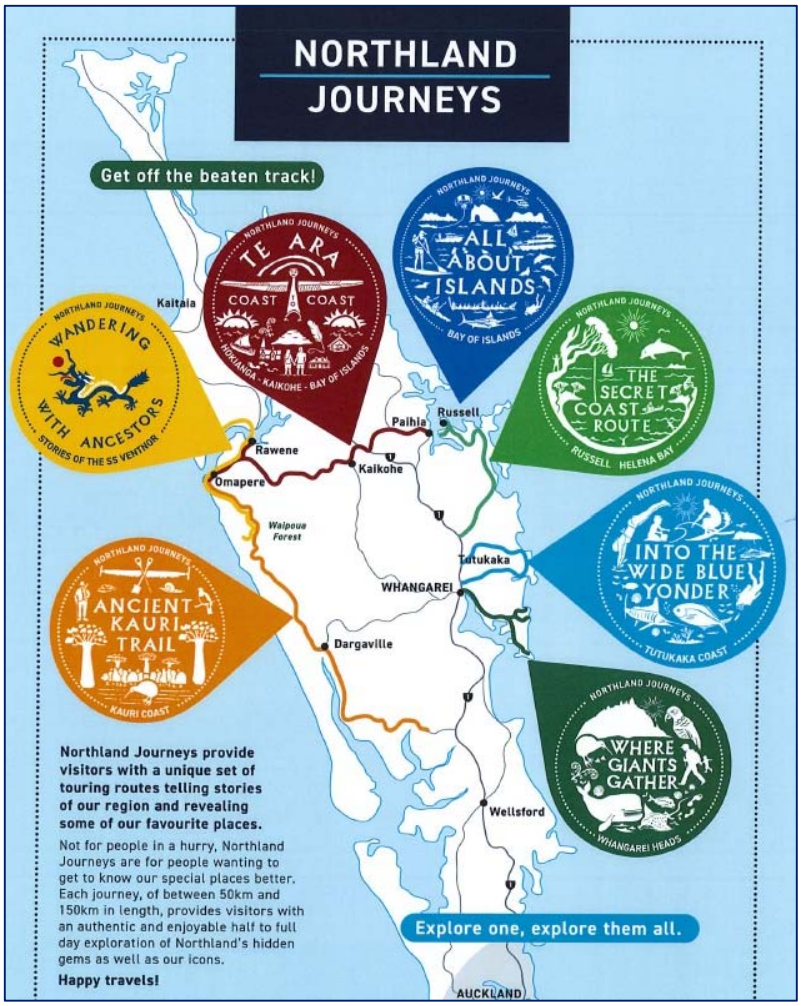


Figure 8: Northland Journeys

Information from this strategy has informed the development of the ULDF principles.

3.4 TAI TOKERAU ECONOMIC ACTION PLAN

The Tai Tokerau Northland Economic Action Plan (TTNEAP) is strongly linked to the TCDR Programme Business Case and has been developed in partnership with Northland Inc and key regional and government stakeholders. In 2014, central government announced a Regional Economic Development programme to assist with growth in the regions.

The TTNEAP identified a range of short to medium term realistic opportunities that will assist in increasing investment, employment and incomes in the region. This SSBC is one of the projects included within the implementation plan of the TTNEAP.

3.5 NORTHLAND / AUCKLAND NORTH REST AREA ASSESSMENT

This 2015 study provided an assessment and inventory of existing rest areas (rest areas, fatigue stops, pull off areas, and truck stops). It identified the Northland network as having, '*a history of fatigue related crashes that is above average when compared to the rest of New Zealand'* and concluded that *'Future proofing Northland's State Highway Network with rest areas and truck stops will help ensure that the Government's 2040 Strategic crash reduction policy is achieved'.*

The focus of the report was to assess the viability of existing rest areas with a focus on known fatigue areas and safety requirements. This report has been used as a starting point for this SSBC by providing an overview of the network conditions, facilities at each rest area and recommended approach for

assessing the suitability of rest areas. The long list of sites was initially drawn up from the list of sites included within this report. The report is provided as **Appendix F**.

3.6 NORTHLAND WALKING AND CYCLING STRATEGY

The purpose of this strategy (2018) was to provide a strong tactical framework to support the development and implementation of district council walking and cycling strategies, and to place these within a regional context by identifying actions that can be taken at a regional level.

The overarching vision for the strategy is for Northland to be one of the world's best coastal walking and cycling destinations where the journeys and stories are as impressive and memorable as the scenery. A variety of new projects are proposed as part of this regional strategy that will connect the regions regional routes into a cohesive network.

This plan developed a programme for delivering the 13 walking and cycling routes prioritised in the Northland Walking and Cycling Strategy. The following trails have been identified to be located close to, in parallel or intersecting with the roads covered by this SSBC:

- Kauri Coast Cycleway – Located parallel to SH12 terminating south of Waipoua Forest (where the section of SH12 in this SSBC starts).
- Kaihu Valley Rail Trail - Located parallel to the section of SH12.
- Waoku Coach Road (Hokianga Connection) – Located close to SH12, connects to Kaihu Valley Rail Trail at its southern end.
- Dargaville to Maungaturoto – located close to SH12, intersecting at three locations.

Appendix A4 provides a map of the proposed projects and the existing walking and cycling routes.

3.7 NORTHLAND CORRIDOR MANAGEMENT PLANS

Corridor Management Plans (CMPs) are living documents and describe the customer service delivery story for specific state highway corridors, as measured against the ONRC performance framework. The relevant CMPs to this SSBC are:

- **Whangārei to Kaitaia CMP.** This covers SH1, SH10, and SH11. The key problem identified for these corridors is safety along certain sections.
- **Northland Primary Collectors CMP**. This covers SH12, SH14 and SH15. Travel time reliability, amenities and accessibility were identified as being moderate to acceptable, however the average safety score (KiwiRAP rating of 2-3 stars) for most of the route was relatively poor.
- **Auckland to Whangārei CMP**. This covers SH1 and SH16. Travel time reliability and accessibility was identified as being generally good, and the amenity levels were high for tourists and locals. Safety scores were typically identified as being above average.

3.8 ELECTRIC VEHICLE CHARGING STRATEGY

Northland is implementing an 'Electric Vehicle (EV) Charging Station Network' in order to support expected growth in electric vehicles[21]. There are currently 15 charging stations within Northland, and it is noted that the first ever EV charging station in New Zealand was located in Whangārei. A map which shows the locations of fast[22] EV charging stations is provided as Figure 9, noting that charging station options could also be available at hotels or campsites).

The final recommended programme, detailed later in the report, includes potential EV charging at the following locations:

- Waro Limestone Reserve
- Ruawai
- Broadwood township
- Kaihu Tavern

[21] https://northlandroadsafety.co.nz/electric-vehicle-charging-stations-northland/
[22] Fully charge an EV in 20-25 mins

- Brynderwyns

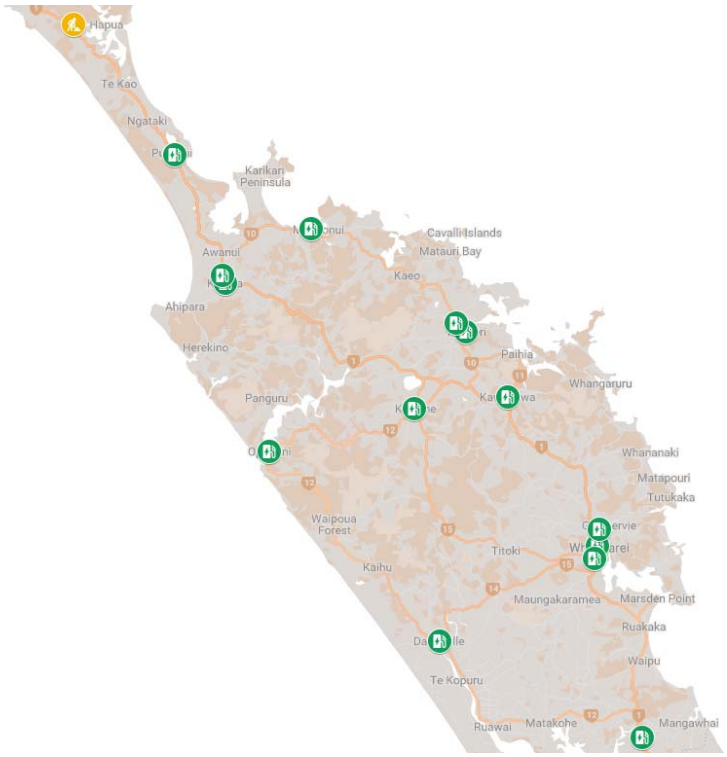


Figure 9: Electric Vehicle Charge Points[23]

Future projections for the EV fleet size were released by the Ministry of Business, Innovation and Employment in 2015. The 'medium' projections are for an increase of around 108,000 electric vehicles on the road by 2040. This means that about 5% of NZ new vehicles will be electric by 2040, compared to 0.5% (as in 2015).

There is an interdependency between this SSBC and the EV charging strategy to ensure any EV proposals are aligned in a manner that address network gaps – which currently appear to be along SH12 (west coast), SH15 and SH1 between Kawakawa and Kaitaia. There is also an opportunity to integrate the strategies and collectively progress EV proposals.

Feebate Scheme[24]

The Government is proposing a feebate scheme for EVs. The purpose of the scheme is to reduce the price of EVs, and to increase the price of high-emissions vehicles, by granting a rebate for the former and levying a fee on the latter. This scheme provides further confidence around likeliness of EV use becoming more prevalent in Northland and across New Zealand.

3.9 KAIWAKA TOWNSHIP IMPROVEMENT PLAN

In 2016 Kaipara District Council (KDC), the NZ Transport Agency and the Kaiwaka community developed a plan to address concerns about traffic and pedestrian safety in Kaiwaka, while also improving the overall attractiveness of the township[25].

The plan details actions or projects to be carried out within the short to medium term (2016-2021) and further aspirational or longer-term actions to achieve the overall vision for Kaiwaka as a safe, connected, green, vibrant and distinctive place. Improving the attractiveness of, and access to, the rest area off SH1 was identified as a recommended short-term project. This project has been carried through to the short list for this SSBC.

[23] https://charge.net.nz/map/
[24] https://www.transport.govt.nz/assets/Import/Uploads/Our-Work/Documents/66aa6b8dc6/Clean-car-discont-Preliminary-SIA-July-2019.pdf
[25] https://www.nzta.govt.nz/media-releases/kaiwaka-township-improvement-plan-finalised-and-implementation-begins/

3.10 SPEED LIMIT STRATEGY

The NZ Transport Agency will be undertaking public engagement in relation to potential speed limit reductions (100kph down to 80kph) along the following corridors:

- SH1 Kawakawa to Moerewa;
- SH11 Puketona to Haruru Falls; and
- SH10 Awanui to Taipa.

3.11 COMMUNITIES AT RISK REGISTER

The Communities at Risk Register[26] has been developed by the NZ Transport Agency to identify communities of road users that are over-represented in terms of road safety risk. The register highlights personal risk to road users using a ranking approach.

The register outlines that Northland has experienced poor safety results in various areas of road safety over the past five years. Of interest to this project is the incidence of fatigue related crashes, which has been 0.5 standard deviations above the national average, therefore qualifying it as Medium concern.

[26] https://www.nzta.govt.nz/assets/resources/communities-at-risk-register/docs/communities-at-risk-register-2018.pdf

4. LITERATURE REVIEW

A review of relevant industry standards/guidelines, previous reports, background documents and previous work was undertaken at the beginning of the project to inform the development of this business case (in particular, the Problem Statements and option assessment). The review included both New Zealand and overseas standards / studies.

The documents that were reviewed are:

1. State Highway Control Manual, Section 3.10 (2013).
2. Northland / North Auckland Rest Area Assessment (2015).
3. Austroads Guide to Road Design Part 6B (2015).
4. Austroads Guidelines for the Provision of Heavy Vehicles Rest Area Facilities (2019).
5. NZ Transport Agency Research Report 649 Great Kiwi road trips: enhancing New Zealand's tourism industry through better visitor journeys (2018).
6. Regional Land Transport Plan 2015-2021 Three Year Review (2018).
7. Twin Coast Discovery Route Programme Business Case (2017).

The following overseas standards were also reviewed:

8. Main Roads Policy and Guidelines for Rest Areas, Western Australia (amended 2018).
9. Roadside Rest Areas Strategy for South Australia, DPTI (2008).
10. Best practice guide for roadside rest areas in Queensland (2014).
11. Queensland Department of Transport and Main Roads: Guideline: Rest areas and Rest areas – Location, Design and Facilities (2014).

A memo which outlines the key information from the reviews and summarises the standards/criteria is provided as **Appendix A5**.

Table 6 provides a summary of how the literature review has informed the development of the evaluation framework, which has been used to assess potential rest area sites.

Table 6: Literature Review

CRITERIA	LITERATURE REVIEW FINDINGS
Spacing	Provision of rest areas at a spacing of every one hour (or approximately every 50km) is typically accepted as a desired spacing on major roads and has been adopted for this SSBC.
Proximity to a town	Rest areas should be strategically located and to ensure that value for money is achieved. As well as encouraging economic growth, new rest areas will not be proposed that conflict or compete with commercial sites. However, consideration will be given to truck stops near towns if the town's infrastructure is not suitable to accommodate a truck stopping area.
Location factors	Factors to be considered when assessing the suitability of a rest area location include: • Crash history – particularly fatigue related crashes. • Location of existing stopping opportunities. • Annual average daily traffic (AADT). • Composition of traffic (including proportion of tourist drivers). • Lengths of road which require high driver concentration. • Spacing to other rest areas / towns. • Services within adjacent rest areas / towns.
Combined vs. separate rest areas	Separate parking for heavy and light vehicle should be established where possible. If the site is dual purpose. A clear separation between motorists and heavy vehicles is required in order to reduce vehicle interaction.
Signage	Advanced warning signs for rest areas are desired to provide visitors with early warning.

<table>
<tr><th>CRITERIA</th><th>LITERATURE REVIEW FINDINGS</th></tr>
<tr><td>Facilities</td><td>The minimum requirements for rest areas have been outlined below.
<table>
<tr><th>Requirement</th><th>Rest Area</th><th>Viewing Place and Historical/Cultural Place</th><th>Truck Stop</th></tr>
<tr><td>Safe access and egress</td><td>Required</td><td>Required</td><td>Required</td></tr>
<tr><td>Advanced signage</td><td>Required</td><td>Required</td><td>Required</td></tr>
<tr><td>Internal vehicle circulation</td><td>Seal / maintain existing gravel</td><td>Seal / maintain existing gravel if appropriate</td><td>Seal</td></tr>
<tr><td>Pedestrian paths</td><td>If appropriate</td><td>If appropriate</td><td>Not required</td></tr>
<tr><td>Tables and seating</td><td>Required</td><td>If appropriate</td><td>Desirable</td></tr>
<tr><td>Rubbish bins</td><td>Required</td><td>If appropriate</td><td>Required</td></tr>
<tr><td>Site boundary</td><td>Required</td><td>If appropriate</td><td>Required</td></tr>
<tr><td>Information Board</td><td>Desirable</td><td>If appropriate</td><td>If appropriate</td></tr>
<tr><td>Toilets</td><td>Desirable</td><td>Not required</td><td>Desirable</td></tr>
</table></td></tr>
</table>

The information above has been used to develop the evaluation framework, which ultimately is used to inform the assessment of sites as a means of identifying a short-list.

5. CONTEXT

5.1 TOURISM

Northland's visitor industry has the sixth highest total visitor nights stayed in the country. Figure 10 provides a representation of visitor nights for each district in Northland.

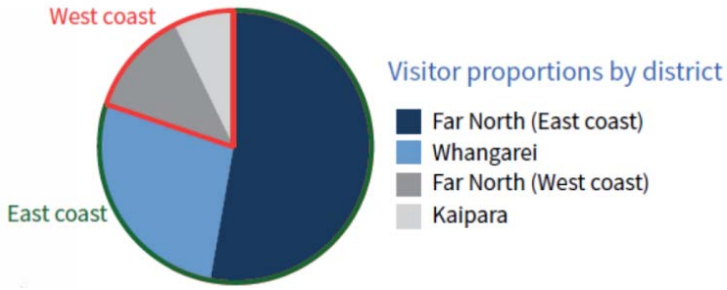


Figure 10: Proportion of Visitor Accommodation in Northland[27]

Domestic tourists account for approximately 70% of the total visitor spend. The large dependence on the visitor industry sector also results in a strong seasonality with the peak economic generation occurring over the summer 'high' period. Figure 11 illustrates the seasonal variation of visitor nights for the period 2010-2018 in Northland. The graph also highlights the difference in visitor numbers on the east and west coasts of Northland.

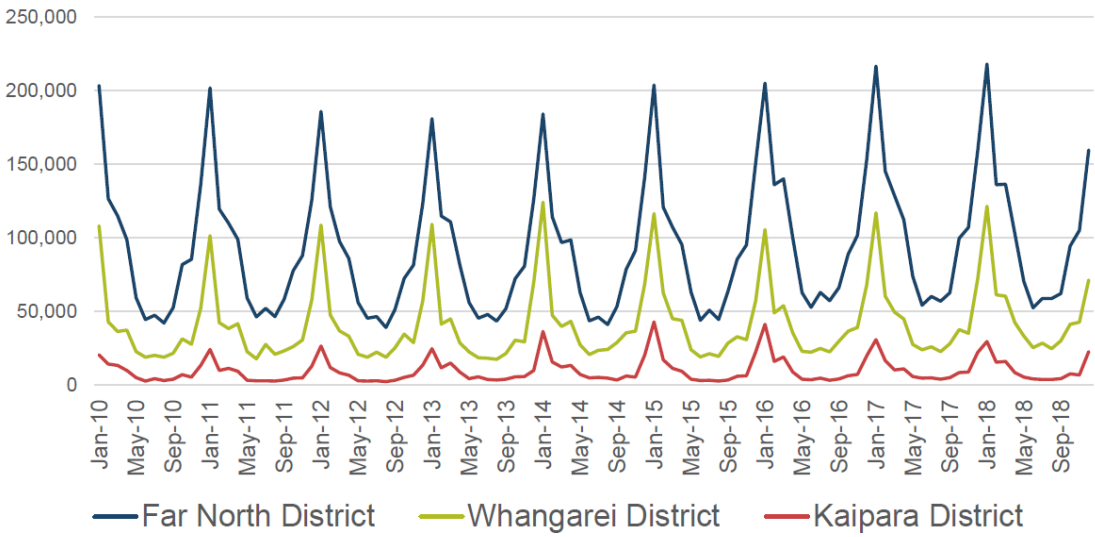


Figure 11: Seasonal Variability of Visitor Nights in Northland (2010-2018)[28]

Expanding the availability of attractions and experiences provides an opportunity to spread economic benefits across a larger proportion of the year. The easier it is for visitors to access and identify attractions and amenities in Northland, the more likely they are to spend time and money.

Key Attractions

Along with generally stunning vistas and the Bay of Islands region, the key attractions for tourists coming to Northland include:

- Tutukaka for surf, diving, big game fishing and as the gateway to the Poor Knights Islands.
- The top of New Zealand – Ninety Mile Beach and Te Rerenga Wairua / Cape Reinga.

[27] Statistics NZ
[28] Statistics NZ

- Historical Hokianga Harbour townships including Rawene, Opononi and Omapere.
- The Waipoua Forest and Tane Mahuta – purportedly the largest tree in the southern hemisphere.
- Kauri Coast - Kai Iwi Lakes, Kauri Museum, Baylys Beach, Manganui Bluff Track

5.2 CUSTOMERS

To enable visitors to the area to have a positive experience they are likely to need the following expectations to be met[29]:

- **Historical and cultural interpretation.** Part of a successful visitor experience is to be able to develop an understanding and appreciation of the local culture, history, and connection of its people and the land. These stories help create a stronger connection to the landscape and should be authentic and focus on the unique aspects of Northland's culture and history. The development of rest areas and iconic gateways along the corridor provide ideal locations to share the region's stories, and its unique landscape, geology and flora and fauna.
- **A range of services in townships**. The services offered at townships should reflect the needs of the visitors that the experience is trying to attract.
- **Digital connectivity**. Visitors will want to share their experiences, and good digital connectively will also make it easier for people to find attractions.
- **Photo stops.** Multiple locations where visitors can stop, take in the view and create lasting memories. These locations might include the redeveloped existing rest areas.

Rest areas provide different services according to the customer that is using the site. Table 7 outlines the variety of customer needs.

Table 7: Customer Needs

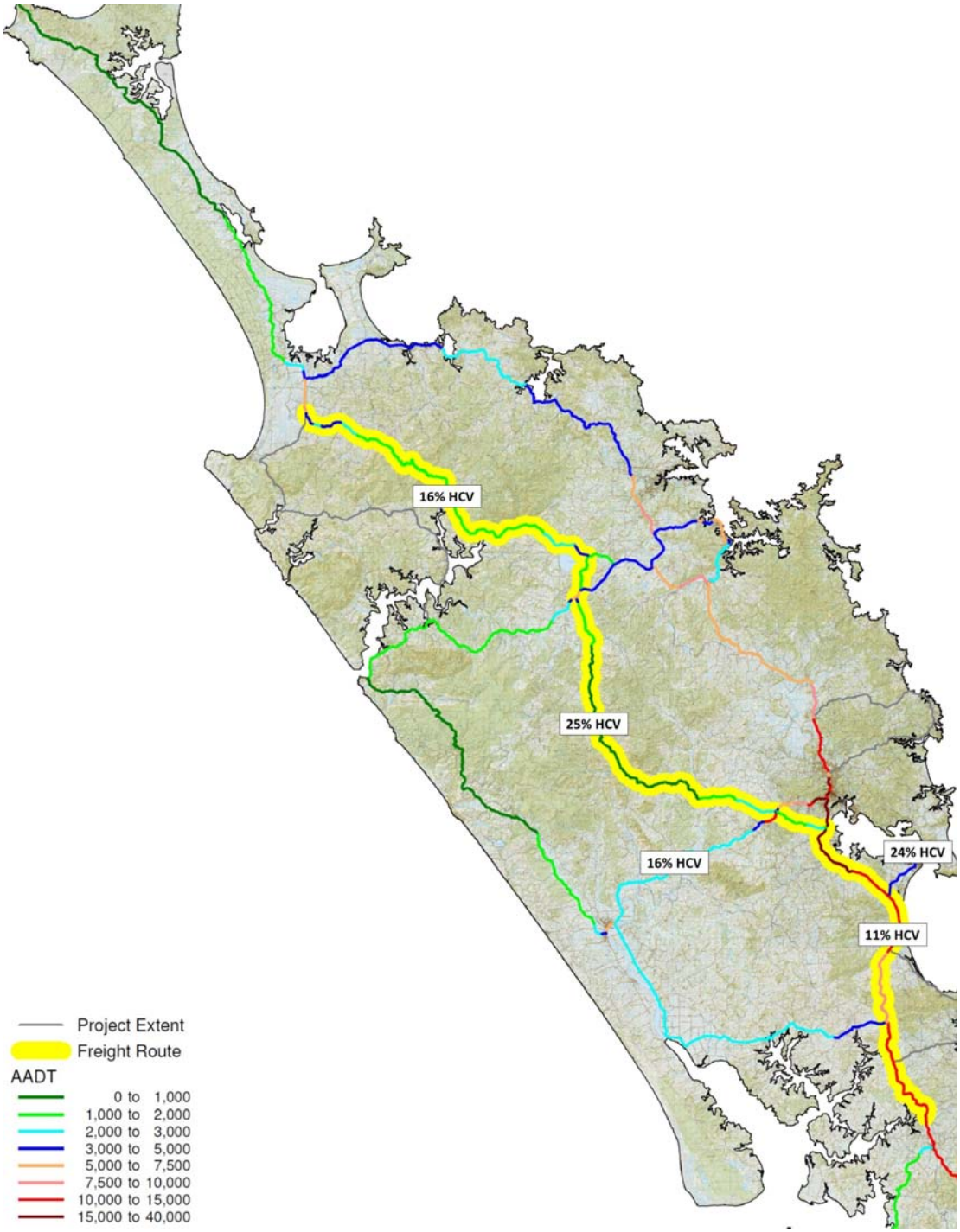
CUSTOMER	NEED
Local	A local is expected to make shorter journeys and may be less likely to suffer from fatigue. They want a place that they can quickly stop in - perhaps to use the toilet or check their vehicle. If the opportunity was presented, they would also like a rest area that connects to local attractions (e.g. walking tracks) that they can visit on the weekends. Locals also want places to stop safety such as cafes or other local amenities.
Truck Driver	A truck driver needs strategically located stops, which provide toilets, rubbish bins, safe access, lighting and enough space to accommodate multiple trucks.
Domestic Tourist	Domestic tourists are highly vulnerable to fatigue, as they are more likely to believe they understand local conditions and have a 'just power through' mentality. This group need rest areas to provide toilets, viewpoints and attractions to stop at. If rest areas are attractive, then they can get imbedded as defined landmarks and stopping points for future journeys. They also may need EV charging.
International Tourist – Tour Group	Tour groups need sites to provide ample space for tour coaches, a suitable number of benches/toilets/bins, good viewpoints and attractive defined short walks. Perhaps most of all - they want that photo-stop opportunity.
International Tourist – Independent Travelers	Independent international visitors are the easiest group to encourage to go 'off the beaten track'. But they need good wayfinding, space for campervans and access direct to attractions such as DOC sites. They also may need EV charging.
Campervan / Freedom Camper	Campers need toilets, access to water, electricity and enough space to park a large vehicle. They would also like an area to camp year-round. They also put pressure on bins and hygiene facilities.
Cyclists	Cyclists want toilets, benches, shelter, bins and access to cycle routes.

[29] Taken from the SH11 SSBC

5.3 TRANSPORT NETWORK

The key traffic and freight routes in Northland comprise of SH1 linking Whangārei to Kaitaia (to the north) and Auckland (to the south) and SH12 linking Kaikohe and Dargaville. These routes are supported by SH14 between Dargaville and Whangārei, SH10 between Pakaraka and Kaitaia, SH15 from Kaikohe to Whangārei and SH15 (Port Marsden Highway).

Figure 12 provides a map which shows the Annual Average Daily Traffic (AADT) and percentage of heavy commercial vehicles (HCV) along with the identified key freight route[30].



[30] 30 Year Transport Strategy for Northland (2010), Map 8

Figure 12: Northland AADTs and HCV Percentage

Northland is only a couple of hours drive away from Auckland Airport, and many international visitors will land and then drive straight to their first overnight destination in Northland. It is important to target rest areas close to the Auckland/Northland border at this specific group of people who would be already fatigued from a long flight and then driven a long distance on unfamiliar roads and with unfamiliar driving conditions[31]. To some extent, the completion of the Puhoi to Warkworth Road of National Significance in 2021 will help reduce congestion and safety issues for visitors travelling to Northland from Auckland and make travel towards Northland more comfortable.

The One Network Road Classifications (ONRC) for each part of the project area is provided as **Appendix A6**.

State Highway Traffic Growth

The typical traffic volumes along state highways within the project area is presented in Table 8.The data shows that there was strong growth between 2013 and 2017, aside from SH1 near Kaitaia.

Table 8: Annual Average Daily Traffic[32]

STATE HIGHWAY	2013	2014	2015	2016	2017	% GROWTH
SH1N – Ruakaka	10,000	10,200	10,900	11,800	12,700	5
SH1N – Kawakawa	5,900	6,000	6,500	7,000	7,200	5
SH1N – Kaitaia	5,000	5,000	5,000	4,400	4,400	-3
SH1 – Te Hapū	200	200	300	300	400	8
SH10	3,500	3,600	3,900	4,100	4,500	5
SH12	1,700	1,800	1,900	1,900	2,000	4
SH14	2,500	2,600	2,700	2,900	3,100	4
SH15	-	-	-	2,500	2,700	5

Freight

Northland's road network carries about 7% of all national road freight.

Key industries in the region such as forestry rely heavily on state highways which do not always have sufficient road width to safely accommodate heavy vehicles. Although traffic volumes on some roads are relatively low, freight vehicles can result in a reduced travel experience for other road users and lead to concerns about safety. This is particularly problematic when the highway is closed for maintenance and traffic is diverted along alternative routes.

The key port in Northland is at Port Marsden. The Port serves as the major export and import hub for forestry, fuels, dairy and fertiliser. Other marinas include Whangārei Town Basin Marina, Opua Marina and Riverside Marina. There are 10 harbours in the region, two of which are on the west coast - Kaipara Harbour and Hokianga Harbour. Estimated export value in 2017 for the Northland economy was $2.57 billion[33].

The geographic distribution of key industries and their transport connections is shown in Figure 13. It shows the widespread distribution of wood mills throughout the region, and a couple of meat and dairy processing plants located near railway lines. According to stakeholders[34], the international price of timber can have an impact on truck movements, with logging trucks heading to sites like Kaitaia when domestic prices provide better value, and to Port Marsden when international prices are high.

[31] Particularly if visitors are arriving from countries that drive on the right-hand side of the road.
[32] NZ Transport Agency
[33] https://whangareinz.com/media/documentsReports/Invest-in-Tai-Tokerau-Northland-New-Zealand-2018.pdf
[34] Workshop No.1 (April 2019)

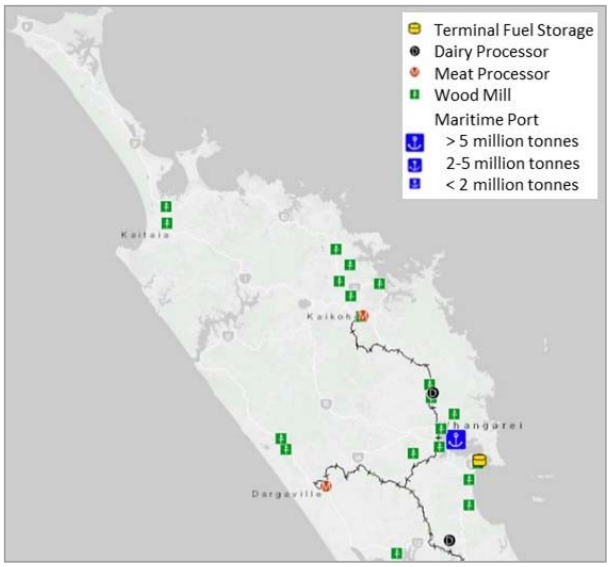


Figure 13: Key Industries and Transport Connections[35]

The North Auckland rail line is 281km in length (152km in Northland), originating in west Auckland and terminating west of Kawakawa at Otiria. Relatively little log and wood freight is transported by rail and the efficiency of the rail network is limited by low clearance, single tracking and speed restrictions. In addition, there is no rail link to Port Marsden – however this is not to say that this may not change in the future.

Public Transport

There are infrequent inter-city bus services operating in Northland. These services connect Auckland to Wellsford, Whangārei, Paihia, Kerikeri, Kaikohe, Kaitaia and Te Rerenga Wairua / Cape Reinga. There are no public transport services which operate along Northland's west coast. This means that visitors and local residents are required to use private vehicles to access the wider region.

There are no passenger rail services within Northland.

Walking and Cycling

Northland is the northern starting point of the Te Araroa Trail, a walking route which runs the entire length of the country from Te Rerenga Wairua / Cape Reinga to Bluff.

There are also many other scenic walks managed by DOC of varying lengths and grades, as well as a series of short walks managed by district councils. DOC manages a total of 119 tracks in Northland across the region which represents 11% of all DOC tracks in New Zealand. Northland has a relatively small number of overnight or multi-day tracks, including the Cape Brett Track and the Te Paki Coastal Track. None of these tracks are currently designated as a 'Great Walk', however the Te Paki route made the final three shortlist (August 2018) for DOC to invest in a new Great Walk.

Northland has a relatively high proportion of short walks (93 tracks, equivalent to 13% of the total). The location of Northland DOC sites is provided within **Appendix A7**.

Cycling is an emerging visitor activity in Northland and has the potential to generate economic benefits for the region. The 84km Pou Herenga Tai/Twin Coast Cycle Trail incorporates the towns of Opua, Kawakawa, Kaikohe, Okaihau and Horeke joining them with off-road rail trail, low use country roads and boardwalk through tidal areas. The first 28km section of this trail (Kawakawa to Okaihau) opened in 2016 and attracted 5,000 visitors over a six-month period. The other major cycling attraction is the start of 'Tour Aotearoa' – a 3,000km cycling or biking route from Te Rerenga Wairua / Cape Reinga to Bluff that is popular year-round.

[35] NZ Transport Agency's MapHub

5.4 EXISTING REST AREAS

Network

The network of existing rest areas is shown within Figure 14. Dots in red refer to formally recognised rest stops by the NZ Transport Agency, whilst green dots are informal sites (e.g. stockpiles, pull-over areas, gravel shoulders) where there has been some evidence of use. The map also shows approximate 50km spacings (determined from the literature review) as overlaid red circles.

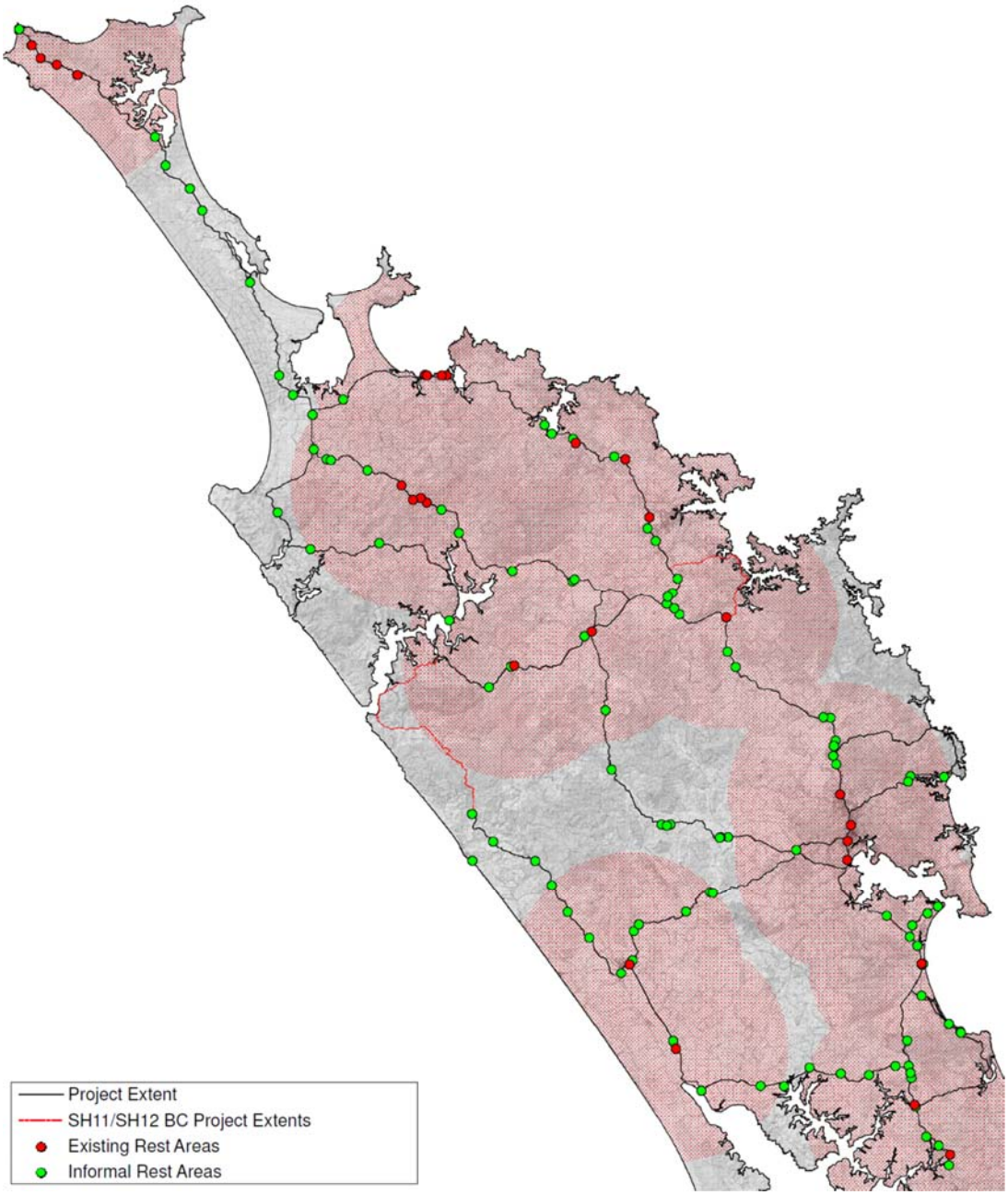


Figure 14: Existing Rest Stops

The maps identifies notable network gaps in the rest area provision – specifically along SH15 and SH12. Indeed, gaps may indeed be more extensive that represented in the map, as many of the existing rest areas are not particularly desirable places to stop.

5.5 ADDRESSING FATIGUE

"Everyone can experience fatigue to some degree whilst driving, but is more likely for young people, shift workers and people with sleep disorders[36]. Fatigue can cause slower reactions, poor risk judgement, excessive speed changes, drifting over the centreline and generally difficulty concentrating. Addressing fatigue aligns directly with the Transport Agency's Safer Journeys strategy to have a safe road system increasingly free of death and serious injury."

In 2018, nationally, fatigue was a factor in 22 fatal crashes and 99 serious injury crashes where the problem was more pronounced in Northland than most other regions. Over the last 10 years Northland has seen the 4th highest number of fatigue related crashes, 3rd highest proportionally according to the total vehicle kms travelled, 4th highest proportional to the population and 4th highest proportional to the number of rest areas[37].
Statistically the regions where the fatigue problem is worst are (in order): the west coast of the South Island, Gisborne and Manawatu-Wanganui.

The NZ Transport Agency and local councils currently have in place strategies, or are rolling out projects, to address the fatigue problem on the west coast of the South Island[38] and Gisborne[39]. Therefore, in terms of the next priorities for improving rest area infrastructure, Northland and Manawatu-Wanganui should be the next to prioritise.

The NZ Transport Agency works with partners and stakeholders to fund and support community-driven projects to improve safety on Northland roads, including fatigue management. !

Figure 15: 2015 Northland Road Safety Fatigue Management Campaign !

5.6 ENVIRONMENT

Landscape

Unlike other regions of New Zealand, Northland does not have a main mountain range. Instead, it has an irregular landscape of ranges and lowlands created by volcanic activity over a long period. The area is characterised by a myriad of plentiful rugged coastal areas, harbours that stretch well inland and Kauri forest remnants formed by volcanic activity creating a disjointed rolling hill and fertile plain system. The natural landscape and rich cultural heritage combine to draw visitors into Northland. The road network winds its way through the region to complement landform features.

The character of Northland relates to the:

- Unique topography – a peninsula at the northernmost edge of New Zealand, with beautiful harbours, bays, lakes, rivers, sand dunes and estuaries;
- Scenic vistas;
- Biodiversity (Kauri, Kiwi and glow worms)
- Mild sub-tropical climate – the 'winterless north';
- Geology – sands, clays, aggregates etc; and
- People – a unique Māori and European settler history.

Generally, the form of the landscape can make journeys longer and more tiring than non-locals may expect.

[36] https://www.nzta.govt.nz/safety/driving-safely/fatigue/
[37] CAS data analysis (2008 to 2018)
[38] West Coast Regional Land Transport Plan
[39] https://www.gdc.govt.nz/upgrades-for-seven-rest-areas-on-state-highway-35/

6. PROBLEM STATEMENTS

This section outlines the Problem Statements for the Northland Rest Areas SSBC, and how they were collaboratively developed with the stakeholder group.

6.1 TWIN COAST DISCOVERY PBC

This SSBC stems from the TCDR PBC, which was intended to be an investment map for various options that would holistically provide the greatest benefit to the region.

The Problem Statements of the TCDR PBC were:

- **Problem 1**: The destination appeal of Northland's visitor industry is focused in a few locations and only at some times of the year, which is a lost economic opportunity for Northland (60%).
- **Problem 2**: Variability in the customer level of service of the Twin Coast Discovery Highway and key Northland Journeys fails to meet the resilience, safety and road amenity expectations of all users (40%).

The Investment Objectives of the TCDR PBC were:

- **IO1**: Increase visitor numbers and spend on key Northland Journeys by 30% by 2030.
- **IO2**: Increase visitor spend and numbers on the TCDR and key Northland Journeys outside of peak periods by 30% by 2030.
- **IO3**: No full closures without viable alternatives (of less than 2 hours) for all vehicles on TCDR and key Northland Journeys by 2030.
- **IO4**: Reduce the number of deaths and serious injuries on TDCR and key Northland journeys by 19% to achieve at least a medium collective risk and personal risk rating by 2030.

In general terms the Investment Objectives of the TCDR focus around **visitor numbers**, **resilience** and **safety**. Where possible the Problem Statements and Investment Objectives of this SSBC have been linked back to those identified within the original TCDR PBC.

6.2 NORTHLAND REST AREAS SSBC

A review of previous studies, stakeholder workshops, background research and site investigations have allowed for a comprehensive identification of the key issues. This understanding was built on through stakeholder inputs during Workshop No.1, where the main causes, effects and consequences for problems were identified. This information was then used as the building blocks for the Problem Statements. The process is shown within Figure 16.

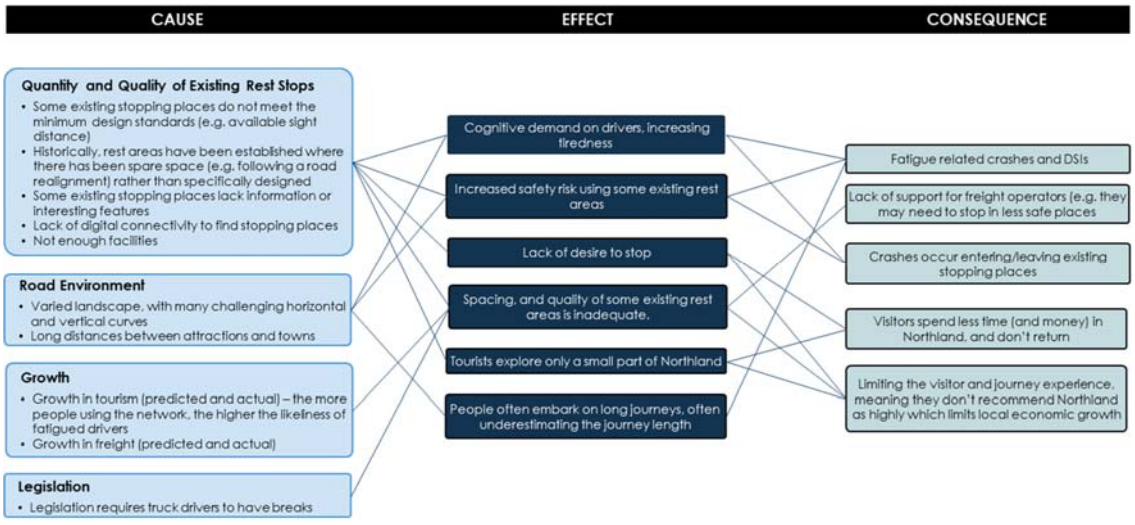


Figure 16: Rest Areas - Problem Development

The wording of the Problem Statements was refined following feedback from the NZ Transport Agency prior, and during Technical Challenge No.2 (July 2019).

The agreed Problem Statements are:

1. **Safety:** Inadequate rest areas result in drivers not taking rest stops which increases the likeliness of fatigue related crashes and DSIs. 50%.
2. **Tourism:** A lack of rest areas at existing or potential tourist spots, plus a lack of storytelling, reduces the destination appeal of Northland resulting in a lost economic opportunity. 50%.

Problem Statement No.1 links with Problem No.2 of the TCDR PBC (CLoS / safety), whilst Problem Statement No.2 links with Problem No. 1 of the TCDR PBC (tourist appeal).

The weightings were agreed by the wider project team during the second technical challenge workshop (held on the 26th July 2019). The 50:50 ratio in part reflects how vital the tourism industry is to Northland's economy.

7. PROBLEM 1: SAFETY

This section provides the evidence base which substantiates the 'safety' problem (50% weighting), with information structured in the following manner:

- The **cause** of the problem – what are the main causes which contribute to the problem?
- The **effect** of the problem – to road users, ease of access, commercial activity, the surrounding environment etc.
- The **consequence** of the problem – what are the health, environmental and economic effects created by the problem?

7.1 OVERVIEW

Table 9 provides a summary of the key causes, consequences and effects of the core **safety** problem, as identified by the wider stakeholder group.

Table 9: Safety Problem – Key Causes, Consequences and Effects

INADEQUATE REST AREAS RESULT IN DRIVERS NOT TAKING REST STOPS WHICH INCREASES THE LIKELINESS OF FATIGUE RELATED CRASHES AND DSIS	
Cause	• Long and tiring journeys • Quality and locations of rest areas • Safe access to rest areas • Toilet provisions
Effects	• High driver cognitive demands • Safety risk accessing rest areas • Lack of desire to stop
Consequences	• Fatigue related crashes resulting in death and serious injury

7.2 CAUSES

Long and Tiring Journeys

Most of the causes of the safety problem revolve around driver fatigue. The NZ Transport Agency[40] and Ministry of Transport[41] identify the main causes of fatigue being:

- Time spent driving/working — research shows that the longer people spend driving without a break, the greater their level of fatigue. Also, the time spent in other activities such as work, school, and so on, can increase fatigue and affect subsequent driving.
- Sleep loss. This is the most common cause of fatigue.
- Circadian rhythms – i.e. the body clock telling us to feel very sleepy between 3am and 5am and to experience a secondary period of sleepiness between 3pm and 5pm. 33% of all fatigue related crashes in Northland occurred overnight (9pm to 6am) which is notably disproportionate to the amount of traffic that occurs during that time.

The provision (or non-provision) of travel facilities can be a contributing factor in the cause of fatigue related crashes. If no facilities are provided then there are no options for drivers to address sleep loss, circadian rhythms, and length of time spent on the driving task.

The wide and spread-out nature of towns, attractions and industries throughout Northland also means that long journeys are commonplace for all road users. For example, the distance between either Whangārei or Paihia (main places for overnight stays) and Tāne Mahuta (major destination on the west coast) is one hour 45 minutes. The distance between Port Marsden and Kaitaia (which is a major freight route) is two hours 45 minutes by truck. These long distances can often equate to long and tiring driving experiences due also to the winding terrain.

[40] https://www.nzta.govt.nz/assets/resources/factsheets/24/docs/24-fatigue.pdf
[41] https://www.transport.govt.nz/mot-resources/new-road-safety-resources/fatigue/

Vertical and Horizontal Alignment

Research indicates that the road environment also plays a role in the driving task demands; specifically, that changes in road alignment can be demanding and lead to driver errors[42]. The road alignment in Northland is varied. The available data from NZ Transport Agency's KiwiRAP analysis tool (refer to Table 10 below) indicates that about half of SH1, SH10, and SH14 are either rolling or mountainous in terrain. Additionally, about half of SH10 and SH14 also contain out of context curves. This shows that, of the corridors that have KiwiRAP data, most have a significant proportion of challenging road environment for drivers to negotiate. Local roads, where KiwiRAP was not available, also generally have challenging driving conditions due to the terrain.

Table 10: Vertical and Horizontal Alignment[43]

STATE HIGHWAY	PERCENTAGE OF CORRIDOR ROLLING OR MOUNTAINOUS	PERCENTAGE OF CORRIDOR HORIZONTALLY OUT OF CONTEXT (EASY TO SEVERE)
1 (North of Whangārei)	47%	37%
1 (South of Whangārei)	50%	24%
10	52%	43%
14	50%	42%
15 (Port Marsden Highway)	0%	38%

Roadside Conditions

Much of SH10 and SH14 have a significant proportion of two-star roads (refer to **Appendix A8** for the star ratings maps). A description of the features of a two-star undivided road is:

> *"Major deficiencies in some road features such as poor roadside conditions and / or minor deficiencies such as insufficient overtaking provision, narrow lanes, and / or poorly designed intersections at regular intervals."*[44]

Poorer roadside conditions increase stress on the driver which adds to fatigue. Table 11 provides an overview of the star ratings for state highways (where information was available) in Northland.

Table 11: State Highway Star Ratings (Available Data)

STATE HIGHWAY	% BELOW 3 STAR (OF RATED ROAD ONLY)	AVERAGE STAR RATING
1 (North of Whangārei)	34%	-
1 (South of Whangārei)	13%	-
10	44%	3.00
14	70%	2.91
15 (Port Marsden Highway)	0%	3.37

Quality and Locations of Rest Areas

Based on the literature review, it was identified that rest areas every 50km (or approximately every 1 hour) is typically accepted as a desired spacing on major roads. For the purpose of this SSBC, this standard has been used as a baseline, noting that this is a guide only and each part of the route should be assessed on a case-by-case basis. As such, the final recommended programme may not necessarily meet this guideline for all sections of every part of the project area.

Table 12 shows the current distribution of rest areas across Northland, noting that some areas (such as along SH10) see occasionally high concentrations of rest areas (e.g. close to the beaches).

[42] Elvik et al (2009) Handbook of Road Safety Measures, page 233.
[43] NZTA KiwiRAP Analysis Tool
[44] http://www.kiwirap.org.nz/scoring_bands.html

Table 12: Quantity of Rest Areas and Spacings

STATE HIGHWAY	TOTAL LENGTH (KM)	NUMBER OF EXISTING REST AREAS	REST AREAS WITH SUBSTANDARD SPACING (>50KM SPACING)
SH1	339	19	4
SH10	104	10	0
SH12	122	9	2
SH14	55	0	-
SH15	100	0	-

Many of the existing (both formal and informal) rest stops are in ad-hoc locations having been developed off the back of a separate infrastructure project (e.g. a road realignment or community parks). This has meant that limited funds are often set aside to maintain sites, resulting in facilities that are often insufficient to meet existing and potential future demands. Many facilities are also used by multiple users (locals / tourists / campers / truck drivers), who have different needs.

Safe Access to Rest Areas

The High-Risk Rural Roads Guide (HRRRG)[45] provides four definitions for a high-risk rural road. Included in these is when a rural road has a road protection score (RPS) greater than 10 (medium-high or high). Various engineering infrastructure elements are considered in the assessment of a road protection score, including alignment, seal width, and offset and severity of roadside hazards[46].

The HRRRG also states that as there is a "*…strong relationship between the RPS and crash rate (injury crashes per 100 million vehicle kilometres of travel) means that KiwiRAP RPSs or star ratings can be used as a surrogate but more proactive measure of personal crash risk*." Therefore, accesses to rest areas that are in sections of state highway with RPS in excess of 10 are more likely to have a higher crash rate. Figure 17 identifies the locations of existing rest areas that are along sections of state highways where there is a medium-high or high (both > 10) road protection score.

Figure 17: Rest Areas along State Highways where Road Protection Score > 10

[45] https://www.nzta.govt.nz/assets/resources/high-risk-rural-roads-guide/docs/high-risk-rural-roads-guide.pdf
[46] http://www.kiwirap.org.nz/scoring_bands.html

Whilst there are several rest areas located on roads with higher bounds of risk, there is a relative lack of supporting crash data to suggest that there are any inherent safety issues at any of the accesses to existing rest areas. Notwithstanding, **Appendix A9** provides a map which shows where crashes have occurred within 200m of an existing rest area[47]. Generally, there is a higher incidence of crashes at the southern end of SH1, likely due to the higher exposure (traffic volume) of vehicles in this area.

Toilet Provisions

Figure 18 shows the location of public toilet facilities in Northland.

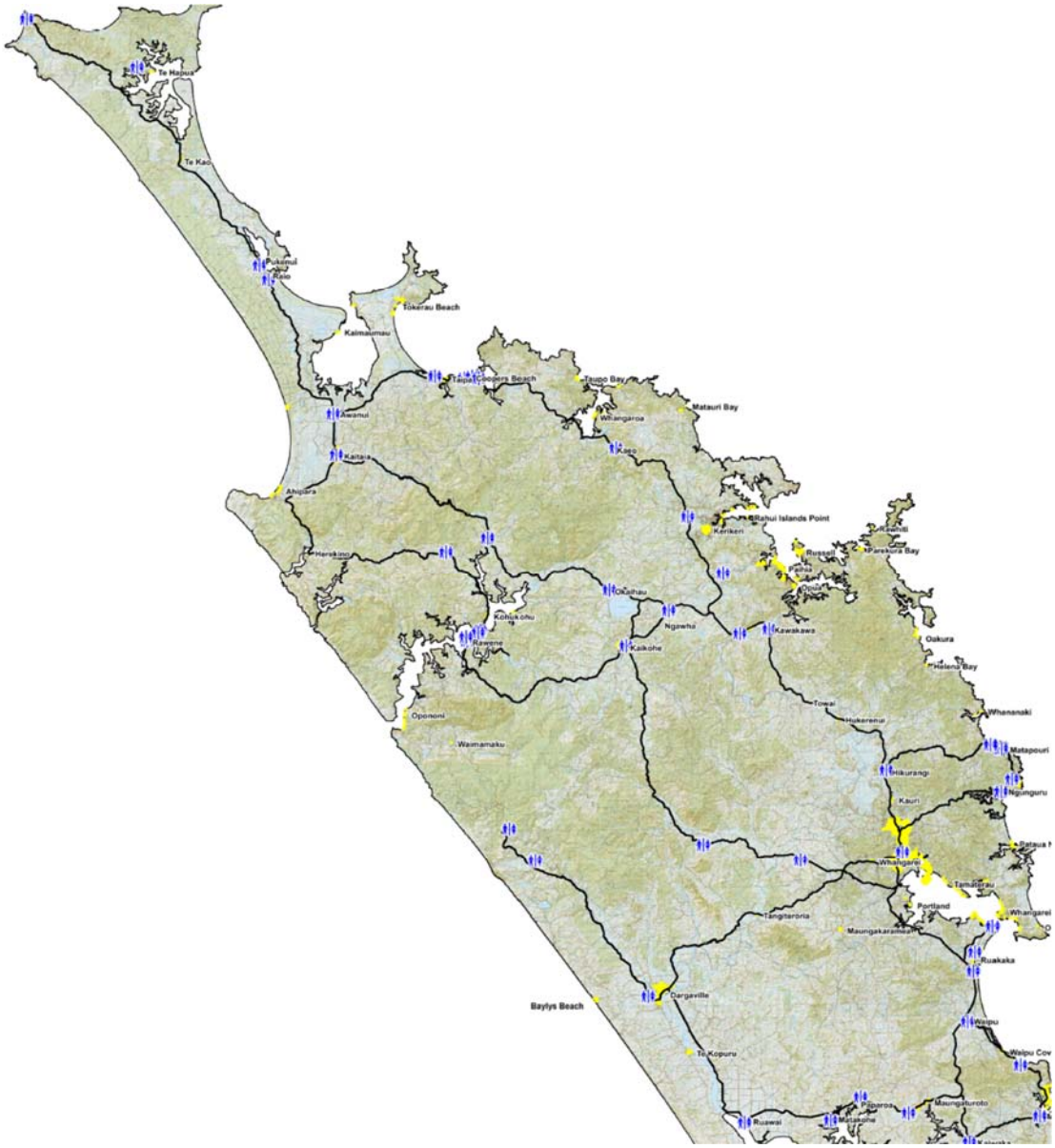


Figure 18: Public Toilets

As shown, there are long stretches where there are no public toilets. For example, between Ruakaka and Dargaville there are none; some 77km through rolling or mountainous terrain (SH14). Drivers, therefore, are not encouraged to stop, take breaks, stretch their legs. Elsewhere, whilst the map may suggest that there is a good network of toilets (mostly available in the townships) a number of these are of low quality (e.g. long drop style at the Kohukohu ferry terminal), are poorly signed, not always

[47] 'Rest area' including truck stops and informal pull over areas.

operating, or simply not known about. The colourful public toilets in Kawakawa are however a tourist destination in their own right, having been designed by Austrian artist Friedensreich Hundertwasser[48].

7.3 EFFECTS

High Driver Cognitive Demands

Drivers who get tired perform the driving task with less precision. Lack of sleep leads to impaired performance, attention and reaction time, leading to errors with the potential for road crashes, especially for shift workers and teenagers[49]. Austroads highlights the comparability of fatigue and alcohol ingestion, citing work by Arndt (2001) who found "*…For mean tracking, tracking variability, and speed variability, 18.5 and 21hours of wakefulness produced changes of the same magnitude as 0.05 and 0.08% blood alcohol concentration, respectively (p.337")*[50].

Without rest areas, drivers do not have the opportunity to refresh in order to safely continue driving.

Safety Risk Accessing Rest Areas

As identified within the Auckland North / Northland Rest Area Assessment, the accessways to several existing rest areas are sub-standard. In this regard, Elvik et al (2009) discusses the relative safety risks of various intersection elements. In summary, it states the relative worth of the following treatments and states their worth, which are shown in Table 13.

Table 13: Summary of Safety Effects of Junction Design[51]

DESIGN FIELD	SAFETY RISK COMMENTS FROM ELVIK ET AL (2009)
Changes to the angle between roads.	Skewed accesses seem to be related to more crashes than 90° angle junctions.
Changes to the gradients of roads approaching accesses.	Results indicate that accesses with steep gradients have more crashes than those with no, or small gradients.
Measures to improve sight conditions at intersections.	Sight distance improvements seem to give a weak, statistically insignificant reduction in the number of injury crashes and about 16% reduction in non-injury crashes.
Changes to the roads cross profile (lane width, median, shoulder) and curvature.	Various effects listed, of interest to the Northland Rest Areas SSBC is the value of a wider shoulder in rural areas at the top of a T-intersection.

Access and intersection treatments are also discussed in the NZ Transport Agency's *Planning Policy Manual*. Some of the key safety considerations noted include compliance with the required sight distance, consistency with spacing requirement and compliance with geometric design standards. This demonstrates that the design of accesses and intersections is an important factor in relation to safety of movements on/off the state highways.

Lack of Desire to Stop

During Workshop No.1 it was identified that an effect of the existing rest stop facilities was that drivers were more likely to not want to stop. The assertion that travellers who do not see any places worthwhile to stop at are more likely to just keep travelling to their end destination.

It is noted in the rest area guidelines for the Queensland Government that "*…In order for drivers to be able to stop and rest, it is important to ensure that opportunities are made available that allow drivers to stop and rest regularly and safely."* This shows that there is an assumed relationship between the provision of a facility and the desire of drivers to stop. This may be related to safety moving on/off the road, or simply being reminded that a rest area is available.

Truck Stop Facilities

During Workshop No.1 there was a feeling expressed by representatives of the trucking industry that current gaps in the provision of truck stops (with appropriate facilities such as toilets) was resulting in a perceived lack of support to the operators. The trucking industry representatives at the workshop

[48] https://teara.govt.nz/en/photograph/7817/kawakawa-public-toilets
[49] National Highway Traffic Safety Administration & National Centre on Sleep Disorders Research 1999, as stated in AGRS05
[50] Arndt et al. (2001) as quoted in AGRSO5. This study compared the effects of alcohol ingestion and prolonged wakefulness on a simulated driving task among 19-35-year-old healthy males.
[51] Elvik et al (2009)

also gave specific feedback about the locations where they felt truck stop provisions (or upgrades) were required.

7.4 CONSEQUENCES

Fatigue Related Crashes and DSIs

Over the last full five-year period (2014-2018), fatigue has been a primary cause in 14 crashes on Northland state highways which resulted in fatality and 27 crashes which resulted in serious injury. Of the 319 crashes over the last five years on Northland state highways that included fatigue as a primary cause, 87% related to the fatigue of the car driver, 10% the fatigue of a Ute driver and 3% the fatigue of a truck driver.

A heatmap of the fatigue related crashes is presented as Figure 19, with the existing rest areas overlaid. This map helps provide a steer as to where rest areas could best help address the fatigue problem (i.e. before the 'hot' red areas). As would be expected, there is a strong correlation between traffic volumes and the number of fatigue crashes.

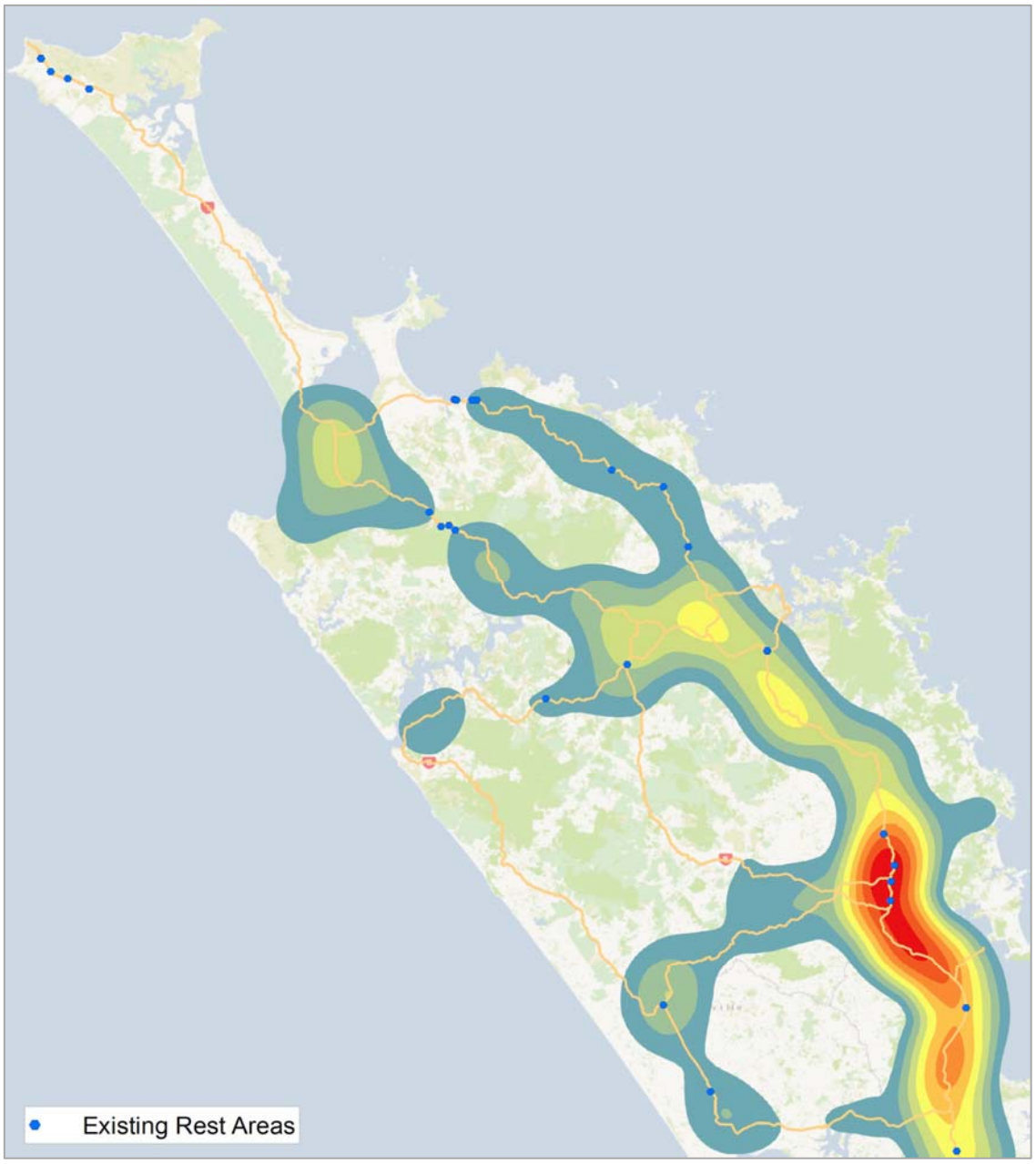


Figure 19: Fatigue Crash Heatmap

Table 14 presents a summary of the crash statistics for Northland state highways from 2014 to 2018.

Table 14: Fatigue Crash Statistics

ROAD	LAST FIVE YEARS					2014-2018				
	2014	2015	2016	2017	2018	FATAL	SERIOUS	MINOR	NON-INJURY	TOTAL
SH 1	36	47	37	45	41	13	20	65	115	**213**
SH 10	5	4	7	9	5	0	1	10	22	**33**
SH 12	6	12	5	10	7	1	3	14	23	**41**
SH 14	4	5	3	3	4	0	2	11	8	**21**
SH 15	3	1	4	1	2	0	1	5	5	**11**
Total	**54**	**69**	**56**	**68**	**59**	**14**	**27**	**105**	**173**	**319**

Around 10% of the fatigue related crashed occurred during the peak summer holiday period of the 21st December to 12th January (2014/2015 to 2018/2019) - a period covering 6% of the days in the year. This does not suggest a significant seasonal issue.

Fatigue is more related to the time of travel – with 33% of crashes occurring during the overnight travel period of 9pm to 5am.

7.5 SUMMARY

Addressing fatigue related crashes in Northland will play a large part in addressing the overall national problem, as Northland sees a disproportionately high number of fatigue related crashes when considering its population and traffic volumes. The challenging nature of the terrain, increasing freight activity, and Northlands attraction to a growing number of international tourists who may be unfamiliar with the driving conditions means that the fatigue problem will get worse unless changes are made. The changes required would be a mix of education, wayfinding and rest area upgrade.

Getting people to stop at least once (e.g. at the halfway point) of their journey would go a long way to solving the fatigue problem. For this reason, it may be important to focus investment at key strategic points – for example, a stop on the Brynderwyns Ranges represents the halfway point for a journey between Auckland Airport and the Bay of Islands (Paihia) – the most popular visitor journey. For other key journeys:

- Taheke represents the approximate halfway point between Paihia and Tane Mahuta; and
- For the journey from Paihia to Te Rerenga Wairua / Cape Reinga - Cable Bay/Coopers Beach represents the 1-hour point and Te Kao the 2 hour point of an approximate 2 hour 45 minute journey.

There is a strong, high-quality, evidence base that identifies that fatigue is a problem for Northland and is there is likely to be a strong link to the quantity and quality of rest areas provisions. With increasing freight and tourism travel, the problem is likely to get worse.

8. PROBLEM 2: TOURISM

This section provides the evidence base which substantiates the 'tourism' problem (50% weighting). In line with the TCDR PBC, there was a feeling expressed amongst stakeholders during the development of this SSBC that tourists are discouraged from exploring Northland's west coast due, in part, to a lack of supporting infrastructure to areas of natural beauty. This reduces the amount of time visitors stay in Northland and limits the region's economic potential.

Table 15 provides a summary of the key causes, consequences and effects as identified by the wider stakeholder group.

Table 15: 'Tourism Potential' Problem – Key Causes, Consequences and Effects

A LACK OF REST AREAS AT EXISTING OR POTENTIAL TOURIST SPOTS, PLUS A LACK OF STORYTELLING, REDUCES THE DESTINATION APPEAL OF NORTHLAND RESULTING IN A LOST ECONOMIC OPPORTUNITY.	
Causes	• Poor spatial distribution of rest areas • Tourists are unaware the site exists
Effects	• Lack of desire to stop • Tourists keep only to the 'beaten track'
Consequences	• Visitors spend less time (and money) in Northland, and don't return • Limiting the visitor and journey experience

8.1 CAUSES

Poor Spatial Distribution of Rest Areas

Historic Development of Rest Areas

The focus of this problem cause is the location of existing rest areas being in places which do not provide good amenity values – i.e. they do not provide a feature that makes people want to stop.

The NZ Transport Agency's Highway Rest areas Strategy[52] states that historically "*…rest areas have happened rather than being planned, never-the-less a large number are located in the right place to perform their intended function (e.g. excess land on curve, old road alignments, stockpile sites etc)*". This has resulted in many rest areas simply being places for vehicles to pull clear of the live lane.

An example of where a rest area may have happened rather than being planned is shown in Figure 20. This site has no facilities nor photo opportunities and therefore is not inviting to tourists. Whilst it is better to have some sort of facility, rather than none, the site still needs to be maintained – and that maintenance funding could be better placed elsewhere.

Figure 20: Informal Rest Area formed from a Road Realignment

[52] Located in the NZ Transport Agency's State Highway Control Manual

Informal pull-over areas can be used by those who wish to check a map or to retrieve something from the boot of a car but are unlikely to actively encourage drivers to take a break.

Connections to Viewpoints / DOC Sites

Northland is known for its picturesque landscape and also has a relatively high proportion of short walks managed by DOC (93 tracks, equivalent to 13% of the total). The location of Northland DOC sites is provided within **Appendix A7**. However, there is a disconnect between the location of rest areas and the location of these sites with tourism potential.

As shown in the literature review, tourists are more likely to stop, and stop for longer, when there is an "activity" at the rest area, whether it be a photo opportunity or a short walk.

Tourists Unaware the Site Exists

Visitors get information about a destination from a variety of sources before and during their visit including online, printed material, information centres, word of mouth and from road signs. Wayfinding facilitates safer journeys and clear directions enhances the dispersal of visitors and their connection with the people, the place and culture of Northland. Wayfinding provides opportunities to raise awareness of the area's attractions and features and encourage people to stop and visit.

The *Great Kiwi Road Trips* study found that visitors reported a lack of signage for rest areas, particularly advanced warning signage. It was anecdotally portrayed that by the time the rest area sign has been seen and discussed with the vehicle passengers about whether they want to stop, they had already passed the rest area.

Visitors may pull off onto the road shoulder if they need a rest but are unaware that a formal rest area is only a short drive away. These people may pull over in unsafe locations, creating a safety risk to themselves and other road users. A greater awareness of where rest areas are will reduce this happening, which is a factor that will be addressed through implementation of the Wayfinding Implementation Plan.

Wayfinding Implementation SSBC

The Wayfinding Implementation SSBC case outlines that people find their way using different means and that this has and will continue to change over time. To make tourists better aware that sites of interest exist, a range of wayfinding methods were identified, broadly under the following categories:

- Direct sharing of local knowledge and information person to person, using maps or distribution of printed media.
- Provision of physical signage to show travellers where to go or how to reach their destination.
- Digital media so that people can find content online to direct them to their destination.

8.2 EFFECTS

Lack of Desire to Stop

In addition to a route choice factor, the standard of rest areas is likely to affect the desire of drivers to stop. If the facilities don't meet the needs of the target road users, they will be underutilised and provide minimal road safety or amenity benefit.

If a tourist is unaware a site exists, or unaware of what amenities (or connections to local attractions) the site provide, then they are more likely to continue onwards.

Tourists Keep to the 'Beaten Track'

An effect identified as a result of a poor quality network of rest areas is that tourists tend to keep to a beaten track; that being along the eastern coast of Northland between Whangārei, the Bay of Islands, and then to Te Rerenga Wairua / Cape Reinga. Figure 21 shows that there is a strong preference for tourists to travel along the eastern coast of Northland, rather than the west coast.

There will likely be multiple factors, aside from the standard and frequency of rest areas, contributing to the route choice of tourists in Northland, such as specific destinations and attractions that is directing traveller route choice.

NZTA Research Report 649 found that "…66.7% of international visitors were not sure what places and sites they would visit (compared with 42.9% of domestic visitors who were unsure). This indicates that

most international visitors have some flexibility in where they might travel to when visiting Northland, yet there is a clear route preference that has emerged through the analysis of route choice.

GPS route finder, and phone apps (including google maps) also can have a tendency to influence tourist route choices between the east and west coast based on travel times (and places to stop of the way, including townships).

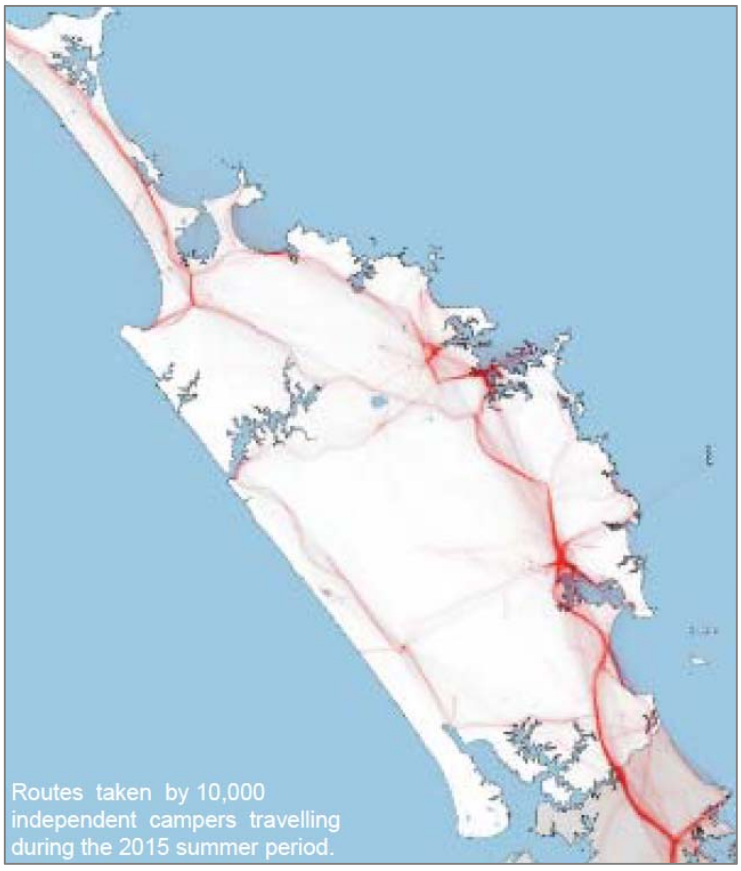


Figure 21: Predominant Campervan Routes[53]

8.3 CONSEQUENCES

Visitors Spend Less Time (and money) in Northland, and Do Not Return

Rest areas can be a valuable commodity by providing a means for tourists to access some of Northland's attractions – be it to specific DOC areas, sites of cultural and historic significance or simply scenic viewpoints that would otherwise be missed. Without the rest area (or safe car park) several of these attractions would remain either inaccessible or unnoticed. This main consequence of not taking advantage of Northland's tourism potential, for which rest area investment plays a role, are:

- **Fewer international visitors, or limited growth**. Northland's share of total international spending in New Zealand has fallen from 3.1% in 2010/11 to 2.3% in 2017/18.
- **Seasonality in visitor numbers**. Northland's visitor industry is highly seasonal, with a peak over the summer months, especially January. Northland is largely seen as a summer holiday destination by both domestic and international visitors. Visitor spend in Northland is four to five times higher in summer than in the winter season. The opportunity for growth in the visitor industry is highlighted by the very low troughs outside of peak times. The seasonality of the Northland tourism industry, and economic divide between the east and west coast was highlighted previously in Figure 11.

[53] Wayfinding SSBC

- **Clear economic divide between the west and the east**. Relatively low population density and geographic remoteness have contributed to economic under performance particularly in Northland's west and far north areas.
- **Growing disparity between visitors heading to the east and west coasts**. Both accommodation and popular attractions are more concentrated on Northland's east coast compared with the west coast and Far North. Potential reasons for this relate to attractions not being well known, visitors perceiving lower quality supporting infrastructure or believing the journey to be long and tiring. Fewer visitors to the west coast and Te Rerenga Wairua / Cape Reinga leads to a lost economic opportunity. Figure 22 shows the disparity in tourist expenditure across the region.

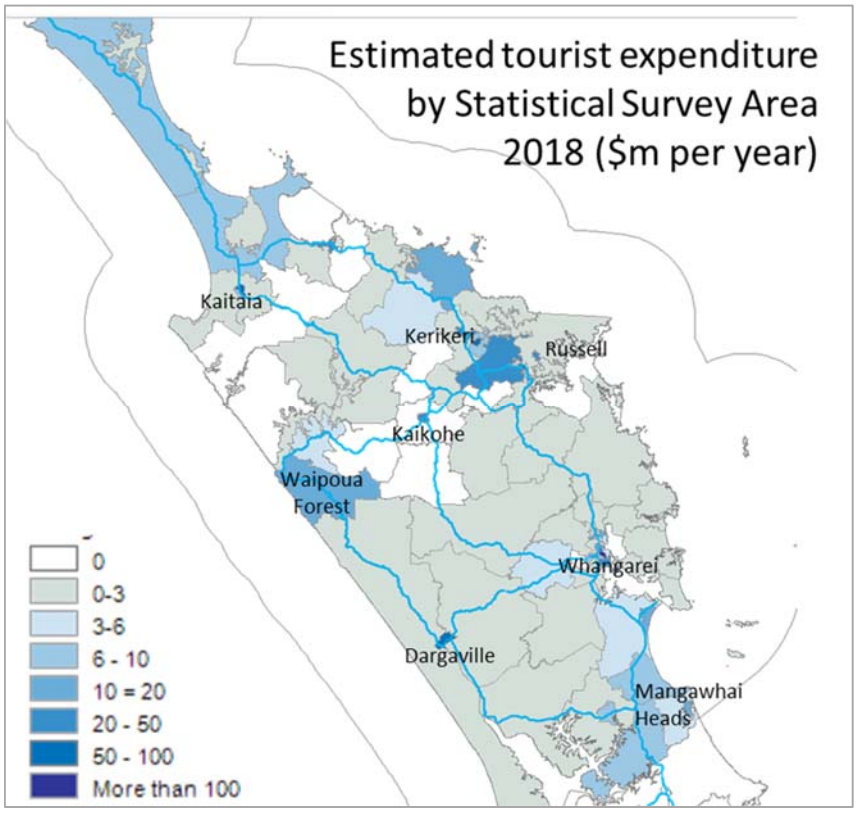


Figure 22: Estimated Tourist Expenditure by Statistical Survey Area

9. INVESTMENT OBJECTIVES

9.1 BENEFITS OF INVESTMENT

The benefits of investment were identified during Workshop No.1 and further developed by the project team after consideration of the problem statements and benefits:

- **Safety:** Reduce the number of fatigue related crashes by encouraging people to stop more, providing a safe place to pull over to use their phone and improve compliance with mandatory worktime and logbook requirements.
- **Tourism:** Getting visitors to stay longer and spend more in Northland by delivering better access to tourist destinations and giving better cultural experiences through storytelling.

9.2 INVESTMENT LOGIC MAP

An Investment Logic Map (ILM) was developed to identify and clarify the links between problems and benefits. Benefits were developed to demonstrate the links between the benefits and key performance measures that can be used to measure success.

Figure 23 provides an ILM which shows the development of the Investment Objectives.

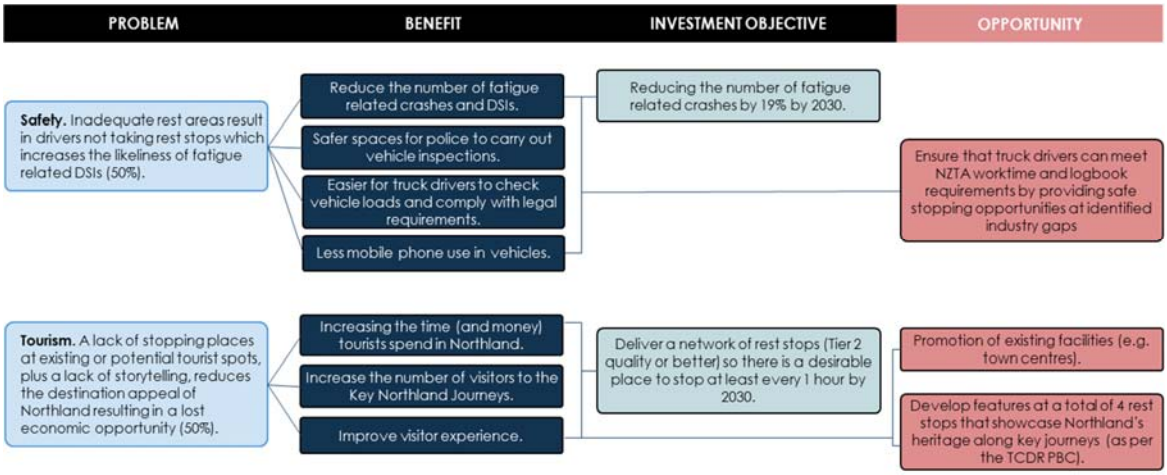


Figure 23: Rest Areas – Investment Logic Mapping

The alignment of the Problems and Investment Objectives against national, regional and local policies is presented within **Appendix A3**.

Investment Objectives

The Investment Objectives for this SSBC are:

1. Reduce the number of fatigue related crashes by 19% by 2030[54].
2. Deliver a network of rest stops (Tier 2 or better) so that there is a desirable place to stop at least every one hour by 2030.

The key opportunities that would be presented by rest area investment would be:

1. Ensure that truck drivers can meet the NZ Transport Agency's worktime and logbook requirements by providing safe stopping opportunities at identified industry gaps.
2. Promotion of existing facilities (e.g. town centres).
3. Develop features at four rest stops that showcase Northland's heritage along key journeys.

[54] This target, both the percentage reduction and timeframe (2030), is consistent with the crash reduction target of the TCRD PBC and Northland Passing and Overtaking Opportunities SSBC.

9.3 KEY PERFORMANCE INDICATORS

The Key Performance Indicators (KPIs), as identified by the project team, are outlined in Table 16.

The purpose of the table is to provide further clarity around what benefits investment would provide, and how, in real-terms, these benefits could be identified.

Table 16: Key Performance Indicators

KPI	MEASURE	BASELINE	EXPECTED RESULT AND TARGET	REPORTING DATES
Safety	The number of fatigue related DSIs and crashes	319 fatigue related crashes between 2014-2018. Of these crashes, 14 resulted in fatality and 27 in serious injury	19% reduction in fatigue related crashes and DSIs. 2030 target date.	Annual monitoring of crash data during and post construction.
Network gaps	Frequency of rest stops and truck stops per kilometre.	Notable gaps in the current network along SH12 and SH15 where rest area gaps exceed 50km (or 1-hour drive) – see Figure 14	A network of rest stops (Tier 2 or better) so that there is a desirable place to stop at least every 1 hour by 2030.	Post Implementation.
Logbook Requirements	The trucking industry noted key locations along SH1 and SH15 where truck stops would address gaps (see **Appendix A2**)		Meeting all the identified gaps by the trucking industry along the key freight routes. 2030 target date.	Post Implementation.
Heritage / Cultural Values	Number of rest areas that showcase cultural values	Currently zero rest areas showcase cultural values through urban design. A few stops provide storyboards but cannot be said to significantly promote cultural values	Develop features at a total of four rest stops that showcase Northland's heritage along key journeys. 2030 target date.	Post Implementation.
Visitors staying longer and travel further	GPS tracking	Potential GPS tracking of campervans to identify a new heatmap (as per Figure 21).	Increase visitor spend and numbers on the west coast and key Northland journeys by 30%. This is a TCDR PBC Objective – 2030 target date.	Annual monitoring of visitor nights and / or post implementation study.
	Number of visitor nights	Visitor nights on the west coast account for around 20% of all Northland visitor nights.		

10. OPPORTUNITIES

This section shows how the benefits for rest area development can go beyond addressing just the main identified issues. Key opportunities include how 'storytelling' can help make both locals and visitors better identify with Northland's rich heritage and how rest area development can be a catalyst for other local township rejuvenation projects.

10.1 STORYTELLING

Existing Issues

Northland is rich in culture and has numerous historic landmarks as a result. However, several of these landmarks are not well known or signposted to visitors and locals alike. An example is the monument for Jane Mander[55] on SH1, as shown in Figure 24.

There is also typically no cohesion between rest areas. Visitors who stop at one rest area could be encouraged to stop at the next rest area / nearby attractions through signage at the first rest area showing the features at the next one. This would complement the storytelling and give other opportunities for stopping but this has not been implemented yet in Northland.

Figure 24: Existing Cairn to Jane Mander[56]

Of the 12 rest areas assessed in the *Auckland North/Northland Rest Areas report* in 2015, only 33% (4) contained public information.

A Research Report[57] indicated that international visitors who desire a culturally different experience are willing to travel further (whereas domestic visitors may be more inclined to focus on rest, refreshment, and relaxation). Therefore, '*visitors with a lower knowledge of an area and less experience of travelling in New Zealand conditions may be travelling further and trying to do more in their time, physically and mentally.*[58]' The consequence, therefore, of failing to provide cultural perspective from the transport sector may theoretically also be contributing to increased driver fatigue.

A lack of storytelling also influences local pride as residents may not be aware of the history and key people who have helped shaped to development of the region.

Opportunities

Northland has been described as the birthplace of New Zealand, where the statutory foundations of our nation were laid, and where inspiration continues to be found in the landscape and its people for writers and artists alike. Within this context there are many opportunities available to connect and design possible rest area with this history in mind.

Linking storytelling with rest area improvements may enhance experiences and build lasting memories for those who travel across Northland. As well as delivering a more emotional connection and increasing the likeliness of people recommending visiting Northland to other, storytelling can inspire a sense of stewardship and interest in persevering the characteristics that make Northland special.

Opportunities are not limited to cultural and historical heritage, but could also include natural and geological heritage – for example, Northland is home to the Kauri and endangered shorebirds and the Hochstetter frog etc.

[55] Jane Mander (1877-1949) is one of Northland's foremost female authors.
[56] Google Streetview
[57] https://www.nzta.govt.nz/assets/resources/research/reports/649/649-Great-Kiwi-road-trips.pdf
[58] https://www.nzta.govt.nz/assets/resources/research/reports/649/649-Great-Kiwi-road-trips.pdf

10.2 TOWNSHIP REJUVENATION

Rest areas with high amenity values are typically ones which provide scenic viewpoints of either rivers or hillside scenery. By nature of where the viewpoints are, several of these sites can be found just outside of existing Townships.

Following consultation with local hapū and councils it became apparent that there was a desire to encourage people to stop in the smaller townships to enhance local economic prospects. In those cases, the trade-offs between amenity and social impact need to be considered.

Development of new sites could act as a catalyst to encouraging new businesses to open, or for cost share opportunities to upgrade utilities such as wastewater systems. The short list of sites, described in the following section, includes several sites within local townships (e.g. Tangiteroria).

10.3 TRUCKING INDUSTRY

Freight drivers are required to stop and rest depending on their task and how long they have been driving for. The laws, at least in part, have been developed to address the issue of fatigue on roads, and to manage the workload of drivers. Ultimately, the relevant legislation means that drivers must stop after certain periods of time, even if they do not wish to. Stakeholders identified that in order to comply with worktime and logbook requirements drivers travelling along certain routes have little choice other than to pull over onto the side of the road, or into informal laybys, which presents personal safety risks for the drivers.

The NZ Transport Agency's worktime[59] and rest requirements for commercial operators[60] are:

- In general, drivers must take a break of at least 30 minutes after 5½ hours of work time, no matter what type of work takes place during that period.
- In any cumulative workday drivers can work a maximum of 13 hours and then must take a continuous break of at least 10 hours (as well as the standard half-hour breaks every 5½ hours).
- A cumulative workday is a period during which work occurs and that a) does not exceed 24 hours; and b) begins after a continuous period of rest time of at least 10 hours.
- A cumulative work period of 70 hours can be undertaken before a continuous break of at least 24 hours must be taken.
- Breaks cannot be accounted for with the time waiting at the destination to load unload trucks.

Penalties for breaching logbook or work/rest time requirements can be significant for an individual and/or a company. In addition, offences may have an adverse effect on a transport operators star rating under the Operator Rating System (where applicable).

Upon conviction, maximum penalties for court offences such as producing a logbook that is not clear and legible, making a false statement in a logbook, exceeding work time limits, or not meeting minimum rest requirements, include fines of up to $2000 and disqualification of classes 2–5 and/or P endorsement for at least one month on each charge[61].

10.4 LANDSCAPE DESIGN

There are currently a significant number of informal stops across Northland that are formed from stockpiles, which by their natural, are unappealing from environment and landscaping perspectives. These sites are generally not in keeping with the local environment.

Implementation of the recommendations of this SSBC could see the formalisation of some of the informal sites, and more generally with a new network of high-quality rest areas there becomes less of a need for the remaining informal sites to exist.

There is therefore an opportunity to decommission many of these stockpile sites through landscaping. This would improve the visual amenity, provide environmental benefits, promote the use of the new upgraded rest areas and potentially reduce the maintenance requirements for local authorities.

[59] Work time includes all time spent working regardless of whether it is time spent driving or doing other work.
[60] https://www.nzta.govt.nz/commercial-driving/commercial-safety/work-time-and-logbook-requirements/
[61] https://www.nzta.govt.nz/assets/resources/factsheets/02/docs/02-work-time-and-logbook-guide-for-transport-operators-and-drivers.pdf

10.5 INTEGRATION WITH OTHER STRATEGIES

The development of this SSBC in parallel with other Northland Business Cases allows for a better understanding of the interdependencies between various programmes, and whether there are opportunities to accelerate various projects where they align with two or more business cases. A specific example would be for where a rest area project aligned with a proposed walking/cycling project.

Opportunities would not be limited to those identified through these business cases. Kaipara District Council is progressing plans for a 36-kilometre cycleway along the route of the historic Kaihu Valley rail line between Dargaville and Donnelly's Crossing, in partnership with Te Roroa and DOC[62]. This project would integrate well with plans for a new rest area along SH12.

Otherwise, part of the overall problem is a lack of awareness of where sites are. By linking with the Wayfinding Business Case there is opportunity to improve signage. There is also an opportunity to integrate rest area upgrades with the regional EV strategies.

10.6 OTHER OPPORTUNITIES

Other opportunities are outlined in Table 17.

Table 17: Other Opportunities

OPPORTUNITY	DESCRIPTION
Ecological protection	There is an opportunity to align the development of rest areas with the protection of ecological areas, for example through the provision of information boards.
Historic appreciation	The development of rest areas is an opportunity to provide appreciation/awareness to visitors. Treatments such as information boards at rest areas can outline local history and significance of the area (e.g. can lead to better understanding of the nation's history, tikanga, why places are special and how to respect these places).
Future technologies	Technologies are quickly developing that have the potential to contribute to visitor experience, such as helping with trip planning and directing travelers to stops. It may be possible to incorporate technology into designs, even if to be delivered at a future stage (such as being capable of providing wifi etc.). A lack of digital connectivity means that it is harder to find rest areas.

[62] https://kaiparalifestyler.co.nz/cycleway-would-boost-business/

11. CONSTRAINTS

Table 18 sets out the various constraints identified in the scope of the project area. This area is contained within the boundaries of the Kaipara, Far North, and Whangārei Districts, in the Northland Region. This information will be used to inform option development in the next stage.

The constraints are all covered by the NZ Transport Agency's Environmental and Social Screen tool.

Table 18: Project Constraints

CONSTRAINT CATEGORY	CONSTRAINT IDENTIFICATION
Land Use	Private properties could be affected where brand new rest areas are proposed. Private accessways and minor local roads could also be affected where rest areas are proposed within the shoulder area. Rest areas may be proposed at or near existing business or town centres (e.g. Petrol Stations) to maximise the use of existing facilities. Introduction of new rest areas at these locations would require extensive consultation to obtain permission and agreement from the private property owners. There is also a risk that the business is sold in the future which may impact on the functioning and amenity of the rest area.
Cultural and Historic Heritage	As Northland has many sites of significance to Māori, rest areas proposed at or near such sites require careful consideration of Māori cultural values and require the permission from hapū. In addition, rest areas proposed at or near iwi land, heritage sites and archaeological sites will also require planning consents and permission from relevant authorities (e.g. Heritage NZ, District Council).
Natural Hazards	The coast, rivers and adjacent cliffs/banks are natural hazards which could affect the implementability of rest areas and its users. Therefore, consideration should be given to the potential safety and operational issues that could be resulted by natural events such as flooding and landslides during extreme weather.
Natural Environment	Several rest areas are proposed near DOC reserves, rivers and coastal areas as these provide attractive and scenic viewpoints for rest areas users. Implementation of such rest areas will require planning consents and permission from relevant authorities (e.g. DOC, District Councils) due to the potential impact on the natural environment.
Infrastructure	The facilities proposed at rest areas (e.g. toilets, lighting, water, car charging etc.) require utility services such as power, water and wastewater at these sites. Where these services are currently not provided, installation of such services at the site could result in high costs, thereby resulting in high construction costs.
Social / Recreational	There is a need to consider the social impacts that any out of town rest area may have on local economies.
Competing Interests	Several rest areas are proposed near existing businesses, town centres and recreational activities to maximise the use of existing facilities. Whilst this provides the opportunity to easily turn already established areas into rest areas, this could result in competing interests between the current users and the new rest area users. This could lead to safety issues particularly at locations which results in the mixing of heavy and light vehicles (e.g. truck stops near a well-used restaurant/shop).

PART B(I): OPTION DEVELOPMENT

12. OPTIONS DEVELOPMENT

This section outlines the methodology followed to determine the short list of rest areas. This process saw the number of potential sites reduce from an initial 127 (long list) to a final 33 (short list). Figure 25 outlines the process taken to identify the short list of rest areas, which includes both long list and medium list stages.

The process of getting from the long list to short list was a methodical and flexible one, which was premised on extensive stakeholder engagement process aimed at making the best use of local knowledge. A review of previous studies, a literature review and a desktop analysis were the starting points, whereafter stakeholders were engaged at key points along the way via workshops and one-on-one meetings.

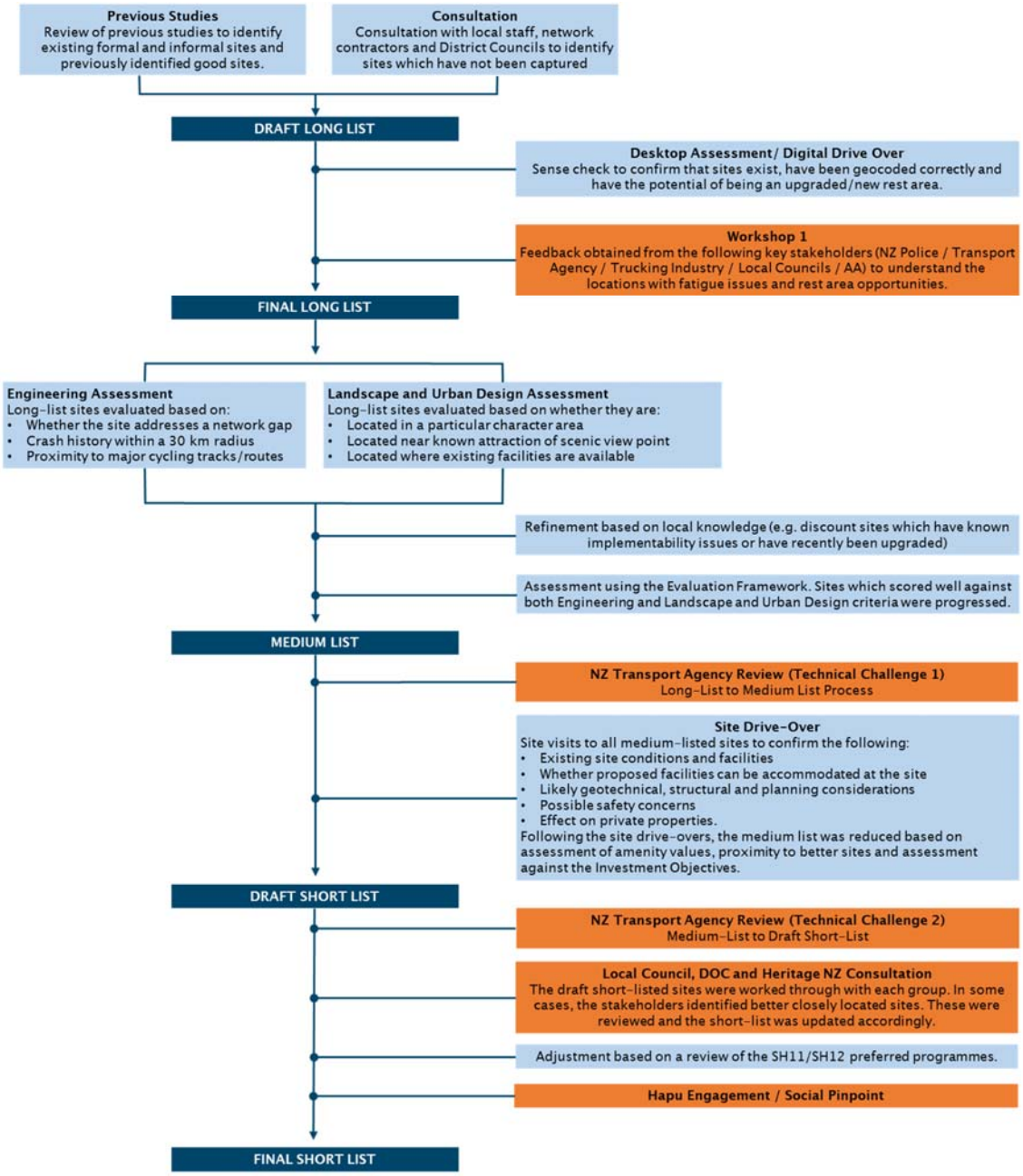


Figure 25: Long list to Short list Process

The fluid and adaptive approach taken means that we have arrived at a short list with a high degree of confidence that the right sites have been selected and the right level of amenity is being proposed. To this end, there is a high likelihood of stakeholder buy-in with few, or no, revisions to the preferred programme. Whenever changes to the short list were response to stakeholder feedback, these were communicated back in the form of meeting minutes or emails (see **Appendix A2**).

12.1 LONG LIST

The long list of 127 sites, as shown in Figure 26, was essentially a list of all existing informal and formal rest areas that were identified in the region. Any new potential sites were also added to the long list. The full long-list is provided as **Appendix B1**.

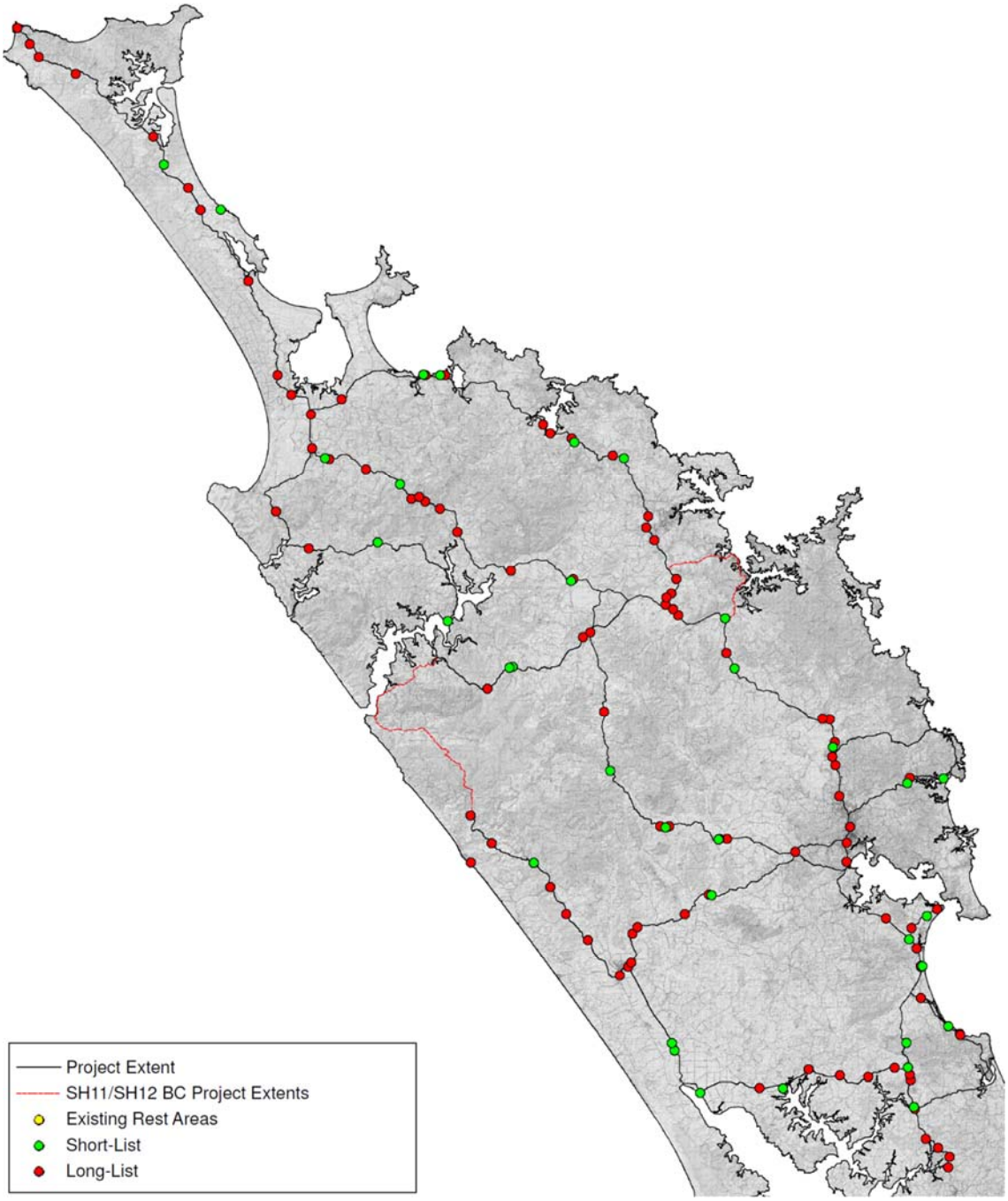


Figure 26: Long List

As it was essentially an inventory, the long list could be developed prior to the Problems and Investment Objectives being confirmed. Once the problems were confirmed, the next stage (long list to medium list), evaluated the alignment of each site against the Investment Objectives as a part of a first cut in the optioneering process.

The long list, which grew as the project progressed, was identified through a review of previous studies/strategies, insights from local staff/councils, a desktop 'digital drive-over' and feedback from Workshop No.1.

Evaluation Framework

The long list to medium list process encompassed the following a two-staged assessment:

1. Urban and Landscape Design (or 'Amenity') assessment. The evaluation considered whether the site was located within a scenic area, had access to recreational areas or connected to key existing local amenities (e.g. shops, near toilets etc.). Essentially the assessment looked to answer the question "would people want to stop here?".

2. Engineering assessment. For each site, an assessment against the 'primary criteria' that forms the Evaluation Framework was undertaken – as provided in Table 19 below[63].

Table 19: Evaluation Framework ('Engineering Criteria')

CRITERIA		DETAILS
Primary Criteria	Proximity to other rest areas	Distance to adjacent rest areas exceeds 1 hour / 50 km spacing
	Located near crash clusters	Fatigue related crashes from CAS
	Located in a character area	See Urban and Landscape Design Framework for details
	Near known attractions	Direct access to known attractions or scenic view
	Near a key cycle trail	Direct access or located near a key cycle trail
Secondary Criteria	AADT	>5,000vpd
	Safety of access	Sight distance available at access meets Austroads requirements.
		The accessway is sealed as per NZTA PPM Diagram D
	Personal safety	Full or partial visibility from passing vehicles to prevent concealment of any perceived risk to personal safety
	Potential cost	Low (<$100k), Medium (<$500k), High (>$500k)
		Will land acquisition be required?
	Potential timing	Short term (0-24 months), medium term (2-5 years), long term (5+ years)
	Availability/access to power	Existing overhead or underground power.
	Likely utilisation based on existing land use nearby	Located close to other traffic generators
	Near local amenities	Coffee shop, dairy, town centre, toilets
	Attractive rest area layout	Sealed area, marked parking spaces, landscaped, tidy layout
	Adequate amenity	Benches, seats, rubbish bins, toilets
	Connection to existing cycle trails	Direct access to existing or proposed cycle trails/network
	EV Charging	EV charging points provided
	Located at or near a sensitive area	Archaeological sites, heritage areas, DOC sites
	Contained within the road reserve or private land	District council GIS road reserve boundaries

[63] The Evaluation Framework was developed based following the literature review and was presented to the key stakeholders at Workshop No. 1. Stakeholders agreed that the Framework suitably captured the key considerations.

The long list assessment is provided as **Appendix B1**.

12.2 MEDIUM LIST

The desktop based long list assessment saw 127 potential sites reduced to 51, which included a mix of tourist rest areas and truck stops. To provide further confidence that the right sites were selected, and to provide a means of reducing the list further (i.e. medium list to short list), a site drive-over of all remaining sites was undertaken.

The drive-overs allowed for a better understanding of site conditions and how well each site would meet the overarching Investment Objectives. Data captured included an inventory of existing facilities, evidence of use, available space for expansion, sight distances or general safety issues.

Post drive-over meetings and a review of findings allowed for some sites to be discounted. Conversely during the site drive-over some new sites were also identified and added into the short list. The approach for discounting sites was as follows:

- **Amenity Value**. Does the site provide an amenity (such a viewpoint, DOC site, café etc.) that makes it an appealing place to stop?
- **Alignment against the Investment Objectives**. To what extent would a new or improved rest area site help to reduce fatigue related DSIs or reduce rest area network gaps such that tourists will be encouraged to explore Northland further?
- **Engineering Review**. Can any safety deficiencies be addressed without significant cost? Does the site provide enough space to accommodate potential demand without the need for land acquisition or significant earthworks?

Specific reasons have been given for why sites have been discounted on an engineering basis. In some cases, sites have been discounted on the basis that there is a better site located close by, or if it is an existing site that requires no upgrade (e.g. a park).

The rationale for discounting sites is provided within **Appendix B2**.

12.3 SHORT LIST

Incorporating Feedback

The draft short lists were presented to Local Authorities (FNDC/KDC/WDC), DOC, Heritage NZ, local hapū groups and the NZ Transport Agency. A final refinement of the short lists was undertaken based on the feedback. A summary of the feedback, and how it has been incorporated into the development of the final short list is described within **Appendix B3**.

Alignment with Other Business Cases

At this stage in the short-listing process it was important to consider how recommended programmes for this SSBC would align with the recommended programmes of other business cases. In terms of the rest areas, the following sites were proposed in the SH11 and SH12 business cases:

- **SH11 - Te Haumi Flats Safety and Beautification Improvements**. This project would see the potential enhancement of the existing pull off area, located on NZ Transport Agency owned land. The project was originally identified in 2012, and a concept design was prepared. There are however some reservations around the viability of the 2012 concept due to risks relating to archaeology and cultural heritage impacts. This is not a site included as part of the scope for this SSBC.
- **SH12 – Pakia Hill Rest Area and intersection upgrade**. An early implementation initiative (est. cost $350k) located just south of Omapere.
- **SH12 – Rawene Intersection Rest Area**. An early implementation initiative (est. cost $350k), which would see additional amenities introduced at the existing rest stop.
    - This site is located at the interface between the project areas for the Northland Rest Areas and SH12 Business Cases. This site was independently picked up by the Northland Rest Areas project team as a site that provides good opportunity for development. **To avoid double up, this site has been discounted from the short list for this SSBC**.
- **SH12 – Limestone Reef Viewing Platform**. Formation of a pedestrian path on the seaward side leading from the boat ramp and lookout areas over the limestone reef and harbour.

Response to the Road Safety Audit

A Road Safety Audit (RSA) was carried out in September 2019 of all sites included on the draft short-list. The main issues which either affected the cost estimates or whether a site progressed to the final short-list were:

- **Site 78 (SH1 Okaihau)** - an existing stockpile that is currently informally used as a truck stop, was removed from the short-list. The RSA identified the following safety issues, which would be prohibitively expensive to address:
    - Lack of rest area signage increases risk of rear end crashes (Significant)
    - Concealed entrance in 100kph environment (Significant)
    - Proximity to intersection of SH1/Waiare Road (Significant)
    - Insufficient sight distance if exiting at 'no exit' (Serious)
    - Excessive advertising signage may distract drivers (Moderate)

  In acknowledgement that this is an existing site with evidence of use, simply removing the site from our programme does not remove the safety issues. We therefore recommend that the NZ Transport Agency monitor safety at this site, consult with representatives of the trucking industry around its importance and potentially consider decommissioning this site. If the site is retained, the following should be considered:
    - Moving the 70/100 speed limit change further east.
    - Fully form the site with channelisation and provide internal signage as to the exit only restriction on the eastern access.

  For context, this site was included in the original short-list as a means of providing truck drivers with a quality stopping point between Kawakawa (SH1)/Kaikohe (SH15) and Kaitaia. With this site removed, truck drivers could potentially stop in the Okaihau township, but they would need to undertake reversing manoeuvres to return to the state highway.

  Based on our literature review, the general philosophy was that, where possible, trucks should not be encouraged into townships and that separate rest areas should be provided for light vehicles and HCVs. An alternative site could be at 1199 SH1 Okaihau – however development of this site would require community consultation and safety issues relating to the proximity of the access to the SH1/Settlers Way intersection would need to be addressed.

- **Site 57 (SH1, Maromaku Truck Stop)** - an existing stockpile that is currently informally used as a truck stop. The main safety issue identified related to insufficient sight distance and presence of an unprotected drop-off (Significant).

  To address this issue a guard rail will be required to protect against the drop (noting that this issue remains independent of the status of the rest area) and the road shoulder will need to be widened. It is expected that these changes can be contained within the existing road corridor designation. The cost estimates were updated to reflect this.

- **Site 705 (SH 12, Taheke Tavern)** – this tavern is currently closed. The main safety issue identified by the RSA related to insufficient sight distance (Moderate).

  This site has previously been identified by local hapū for significant upgrade, and there is potential partnership opportunities. The project could also form part of a wider township rejuvenation programme. Access issues should be addressed in the next design stage once the site revitalisation plans are more developed. If safety issues cannot be resolved, it is acknowledged that the site may have to be removed from the programme.

- **Site 701 (SH15, Titoki)** – an existing local store that could be upgraded with a partnership agreement as well as part of potential township rejuvenation. The main safety issue identified by the RSA was the location of rest area its proximity to school (Significant).

  The main objective was to include a stop in Titoki and this site was labelled as a suggested option. An alternative site is in the park bordered by Tokiri Road and SH15. This site would be a similar cost to develop, and people could park on street. However, there is more uncertainty as to whether making changes within the park/reserve would be acceptable to the community.

  Community consultation should present alternative options, with communication of the relative benefits and disadvantages of each.

The Road Safety Audit is provided as **Appendix J**.

12.4 NON-INFRASTRUCTURE OPTIONS

Whilst this business case is focused on rest area upgrades, which would be purely physical infrastructure measures, it is important to not lose sight of potential measures that can support the Investment Objectives that are not physical infrastructure. These include:

- Driver and tourist education programmes.
- Digital wayfinding and journey planning (covered by the Wayfinding Implementation Plan).
- Vehicle safety measures and technology for potentially fatigued drivers.
- Rest Areas identified via mobile phone apps.

Ultimately the recommend programme from this SSBC, as well as all other parallel SSBCs for Northland are to be reviewed by the NZ Transport Agency as a combined package. It is recommended that the recommended programme of interventions for Northland consider also non-infrastructure solutions.

12.5 DO NOTHING / STATUS QUO

If a 'Do Nothing' approach (i.e. retaining the status quo) is taken, or if the preferred programme is not delivered in full, the following negative impacts could be expected:

- **Economic**. The economic disparity between the east and west coasts of Northland widens, with reduced business confidence to establish new visitor activities on the west coast.
- **Safety**. Fatigue related crashes increase across Northland as traffic volumes rise.
- **Support for the Trucking Industry**. The trucking industry perceive that there is an inadequate network of suitable truck stops, which makes it harder for drivers to comply with worktime and logbook requirements.
- **Reputation**. The project team reiterated during consultation that there is no funding available for any future phases; However, there is potential that an expectation has been created with key stakeholders (including local community, hapū groups, freight and tourism operators, Northland Inc. and local councils) after extensive consultation.
- **Community Impact**. Community and hapū wellbeing declines as the west coast continues to lack investment in basic visitor infrastructure.
- **Landscape**. Informal rest areas remain as out of place features which take away from the aesthetics of the landscape.

Stakeholders agreed during Workshop No.1, that in line with the conclusions of previous studies, a 'Do Nothing' approach is not acceptable to the NZ Transport Agency, partners and key stakeholders.

12.6 FINAL SHORT LIST

Table 20 provides the final short list of sites. The sites are ordered according to the name of the road and geographically arranged from north to south. Each site has also been given a 'Tier', in line with a tier structure described in the next section of the report.

Appendix B4 provides the site profiles for each of the short-listed sites. The profiles provide:

- Overview of existing site conditions.
- Project owners / lead organisation.
- Proposed upgrade, along with indicative costs.
- An evaluation of the environmental and social considerations that typically form part of an Environmental and Social Responsibility (ESR) Screen.
- Operational and maintenance requirements.
- Property impacts.

Following discussions with the NZ Transport Agency, the following five-tier system has been determined and has been proposed to be adopted:

- **Tier 1.** Rest areas with connections to place and a high standard of available facilities. Fewer in numbers but to a high standard. A 'must see' place or viewpoint.
    - **Super Tier 1**. Allowing for place-based rest area design in four prominent locations based on the four compass points. Story telling becomes a catalyst for rest area design containing the desired facilities in a rest area
- **Tier 2**. Local rest area with parking and connections to local features / relevance to the site.
- **Tier 3**. 'Pull over' - A safe place to pull into for a short period of time.
- **Truck Stops**. Truck stops are safe pull over areas that provide toilets, shelter, ample space for trucks to park and ideally lighting.

Table 20: Final Short List

LOCATION	TIER	NOTES	AMENITY
SH1, Kaiwaka (ID:7)	2	Improvements to the existing Kaiwaka Rest Stop. This was also identified as part of the Kaiwaka Township Improvement Plan, and links well with planned renewal/upgrade of the wharf.	River & possibly kayaks
SH1 / SH12 (ID:20)	2	[redacted] SH1/SH12 intersection.	[redacted]
SH1 Brynderwyns (ID:103)	1	Potentially two options – developing the existing rest stop, or developing both the existing northern and a new southern site (at the former café). Wastewater challenges for the southern site, which would need to be resolved. Potential to connect the northern and southern sites. Concept design has previously been developed.	View over the Brynderwyns
SH1 Te Uretiti (ID:77)	2	Development of the 'Day Site', rather than the camping site, at Uretiti Beach. Would require upgrade of the track, and facilities such as benches and toilets. Access to the beach track is provided from the 'Day Site'.	Beach and walking track
SH1/SH15 (ID:31)	Truck	Fuel station and bakery recently constructed as part of the new SH1/SH15 roundabout. Included for completeness.	Fuel station
SH1 Hikurangi (ID:74)	1	Waro Limestone Reserve ('The Rockman'). Existing, but small, DOC car park that accesses the walkway. Upgrade to a Tier 1 quality site.	Limestone Reserve and walkway
SH1 Maromaku (ID:57)	Truck	Upgrade of the existing Hikurangi stockpile to a formal truck stop.	-
SH1 Kawakawa (ID:14)	2	Existing rest stop near to the Pou Herenga Tai Cycle Trail. Improve signage and landscaping.	War Memorial / cycle trail
SH1 Okaihau (ID:42)	2	Most of the essential facilities are already provided. Small town centre which will benefit with people stopping at this location.	Cafes and township
SH1 Raetea DOC Site (ID:68)	2	Tier 2 rather than Tier 1 due to Kauri dieback issues and need to avoid people walking into the bush. Currently closed during the winter periods and there has been some record of misuse.	DOC site, river and campsite
SH1 Kaitaia (ID:48)	Truck	Good large site that could accommodate multiple trucks. Secluded from passing traffic - can be addressed through vegetation control.	-
SH1 Rarawa Beach (ID:121)	2	Potential options – development of beach campsite, or beach fronting car park. Potential cultural and technical challenges associated with developing a car park on the dunes, fronting the beach. Otherwise, consideration of developing site at the nearby town of Houhora.	White sand beach
SH1 Te Kao (ID:72)	2	[redacted] Already used as a stop for tour coaches and tourists. Extension of seal and information boards recommended.	[redacted]
SH10 Tākou Bay (ID:9)	Truck	Exiting gravel stockpile/truck pull-over. Evidence of use, but in need to tidy up and formalising. Opportunity to link with the story of the landing of the Mataatua waka.	-
SH10 Kaeo (ID:10)	2	Existing rest area that requires maintenance and tidy up. Potential opportunity to integrate some facilities with those in the town centre. Current toilets in Kaeo are in poor condition.	Park and township

LOCATION	TIER	NOTES	AMENITY
SH10 Coopers Beach (ID:12)	2	Coopers Beach North. Five mine walk to the town, with a children's playground already in place. Introduce toilets/water, seating, rubbish bin.	Beach
SH10 Cable Bay (ID:13)	2	Upgrade of existing site. Current Transport Infrastructure Funding (TIF) application already in place for new toilets.	Beach and toilets
SH12 Matakohe (ID:706)	1	Kauri Museum. Recently received TIF funding to upgrade toilets and already has EV charging. From previous engagement (with the NZ Transport Agency), the local community want a rest stop.	The Kauri Museum
SH12 Ruawai (ID:86)	2	Toilets already exist, but the site would benefit from upgrading surface material and information boards. Connects to a new cycleway.	Toilets and cycleway
SH12 Donovan's Bluff (ID:81)	2	South of Tokatoka. Good existing site with nice views. Upgrade to provide toilets, rubbish bins and cycle facilities.	View of the harbour
SH12 Tokatoka (ID:711)	3	Potential to upgrade land parcel opposite pub (existing stockpile) as part of the proposed Wharf upgrade. DOC site with a short walk located nearby. Potential flooding issues. The northbound unsealed parking area has previously been used as a coach turning circle.	Tokatoka Scenic Reserve
SH12 Kaihu (ID:700)	1	Strategically located between the access roads to the Maunganui Bluff Track (north) and Kai Iwi lakes (south). Local history, potential link to new cycleway and a popular place for locals.	Historic tavern, food and toilets.
SH12 Taheke Tavern (ID:705)	2	Halfway point between Paihia and Tāne Mahuta. Upgrade to include information boards and bins. Opportunity for site to be maintained, in full or in part [redacted]	Historic tavern, food and toilets.
SH12 Taheke (ID:404)	Truck	Addresses a gap in the truck stop provisions. Good site with enough space for a few trucks to park.	-
SH14 Tangiteroria (ID:710)	2	A site within the township preferred to an out of town site to act as a catalyst to reinvigorate local economy. The local pub closed due to private wastewater issues and there may be an opportunity to address these in a way that allows the pub to reopen and host rest area users. Potential opportunity to connect the site to the community sports complex, a locally funded initiative that is well used.	Recreation park and the township
SH15 Titoki (ID:701)	2	[redacted] Upgrade to include information boards. Any upgrade would need to consider safe access as the site is on a bend – could be included as part of wider safety measures for the town.	Township, waterfall
SH15 Parakao (ID:111)	Truck	Good site in terms of the existing facilities (toilets, dairy, seating) and already used as a truck stop. Upgrade to include rubbish bins, marked parking spaces and a turnaround area.	Shop and toilets
SH15 Twin Bridges (ID:39)	1	Already formed parking area that is used by tourists. Located in a nice secluded area with access to the river. Requires basic facilities including bins and toilets. Access from a one-way bridge with limited space for vehicles to travel in both directions.	Views, river access
SH15 (ID:32)	Truck	Currently a truck service area which could be expanded. A trigger point for development may be related to increased activity at the port.	-
Waipu Cove (ID:703)	2	Upgrade of sealed area that is well used during the summer and provides a direct connection to a walking track.	Walking track, beach
Scows Landing (ID:702)	2	Upgrade of existing rest area at Scows Landing. An historic mining site and site of the former Kiripaka township, before it was relocated to Hikurangi after the coal had been removed. Improve access and signage.	Recreational area and local history
Ngunguru (ID:64)	2	Small existing site opposite toilets. Upgrade to include more seating/picnic benches and cycle facilities.	Beach
Kohukohu Ferry (ID:130)	3	Provide better toilet facilities, additional parking space and shelter. There are however land tenure issues due to historic concession granted to the ferry operator – not insurmountable but will require negotiation.	Ferry, area of historic significance
Broadwood (ID:500)	2	Broadwood Town Centre that has good amenities inc. a general store and monument. The existing rest area is near the river, but footbridge needs structural improvements (funding allocated in Far North LTP).	Township

LOCATION	TIER	NOTES	AMENITY
		Gateway to Northern Hokianga and is the last fuel opportunity before reaching Rawene. Some noted personal security issues in Broadwood.	

Figure 27 identifies the locations of the short-listed sites.

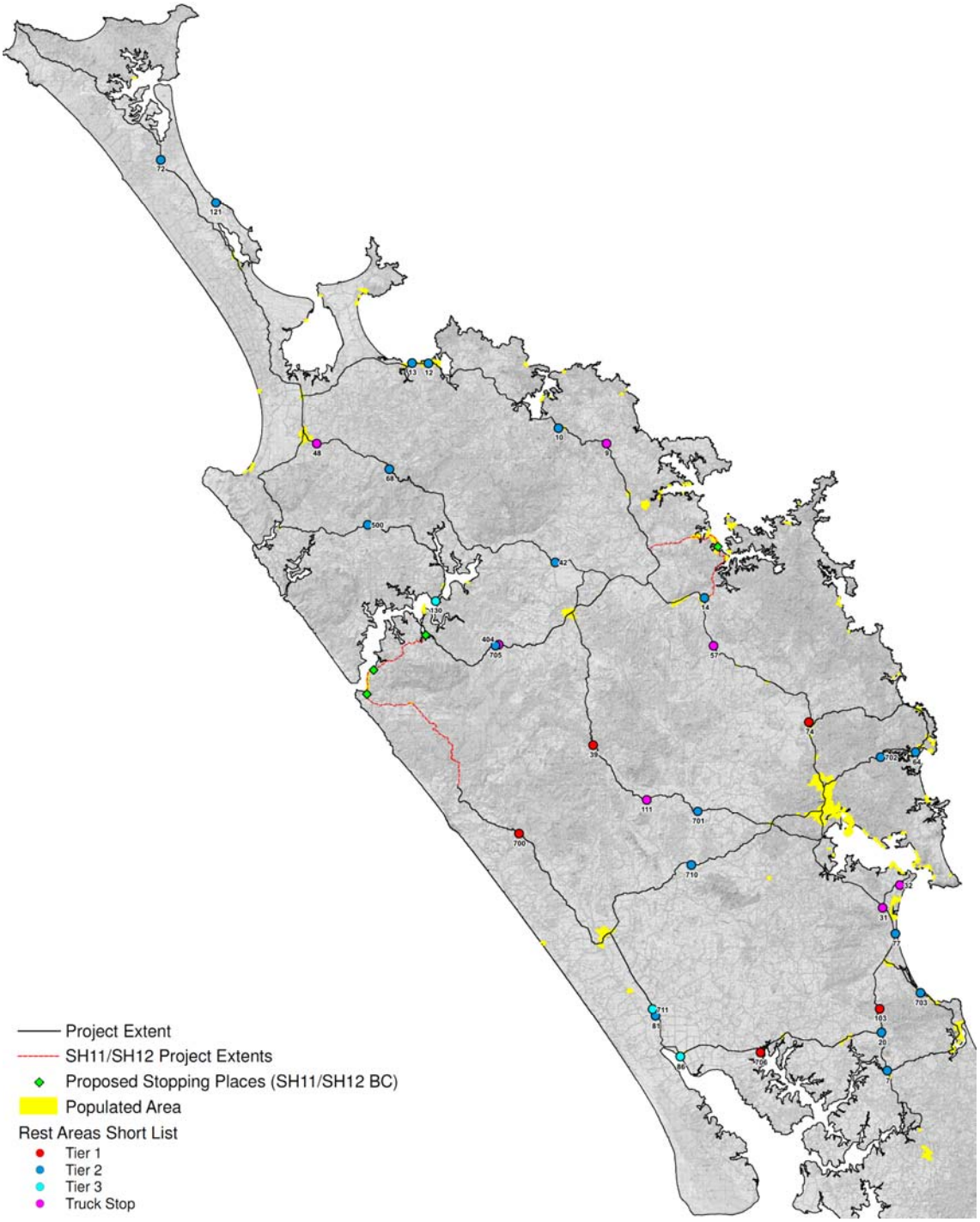


Figure 27: Final Short List

Should the recommended programme be approved and progressed by the relevant project partners and stakeholders (with funding obtained), during the next stage the following sub-options should be evaluated:

- Brynderwyns Rest Area (ID:39). Consideration of developing a specific northbound rest stop at the site of a former café, which provides excellent views.
- Rarawa Beach site (ID: 121). Consider options of developing the campsite, the beachfront car park or an alternative site in Houora.

12.7 ROLE OF TOWNSHIPS

In recognition of the place function that many townships offer, as well as that rest areas should be strategically located to encourage economic growth, the following towns are recommended to be considered as part of the rest area network:

- Paparoa and other townships on resilience routes for the State Highway network
- Te Rerenga Wairua / Cape Reinga Lookout (northern compass point)
- Whangārei
- Whangārei Falls
- Russell
- Waitangi Treaty Grounds
- Opononi Pier
- Arai-Te-Uru Recreation Reserve
- Waipoua Forest
- Dargaville
- Matapouri
- Paihia
- Kerikeri
- Rainbow Falls
- Ngawha
- Ninety Mile Beach
- Te Paki Sand Dunes

**Note this list is not considered to be exhaustive.*

13. AMENITY & CULTURAL VALUES

13.1 TOURISM POTENTIAL

Figure 28 shows how the short list of sites provide direct links to attractions across the region, which when integrated with a wayfinding and tourism strategy, would actively help unlock the potential of several 'hidden gems.'

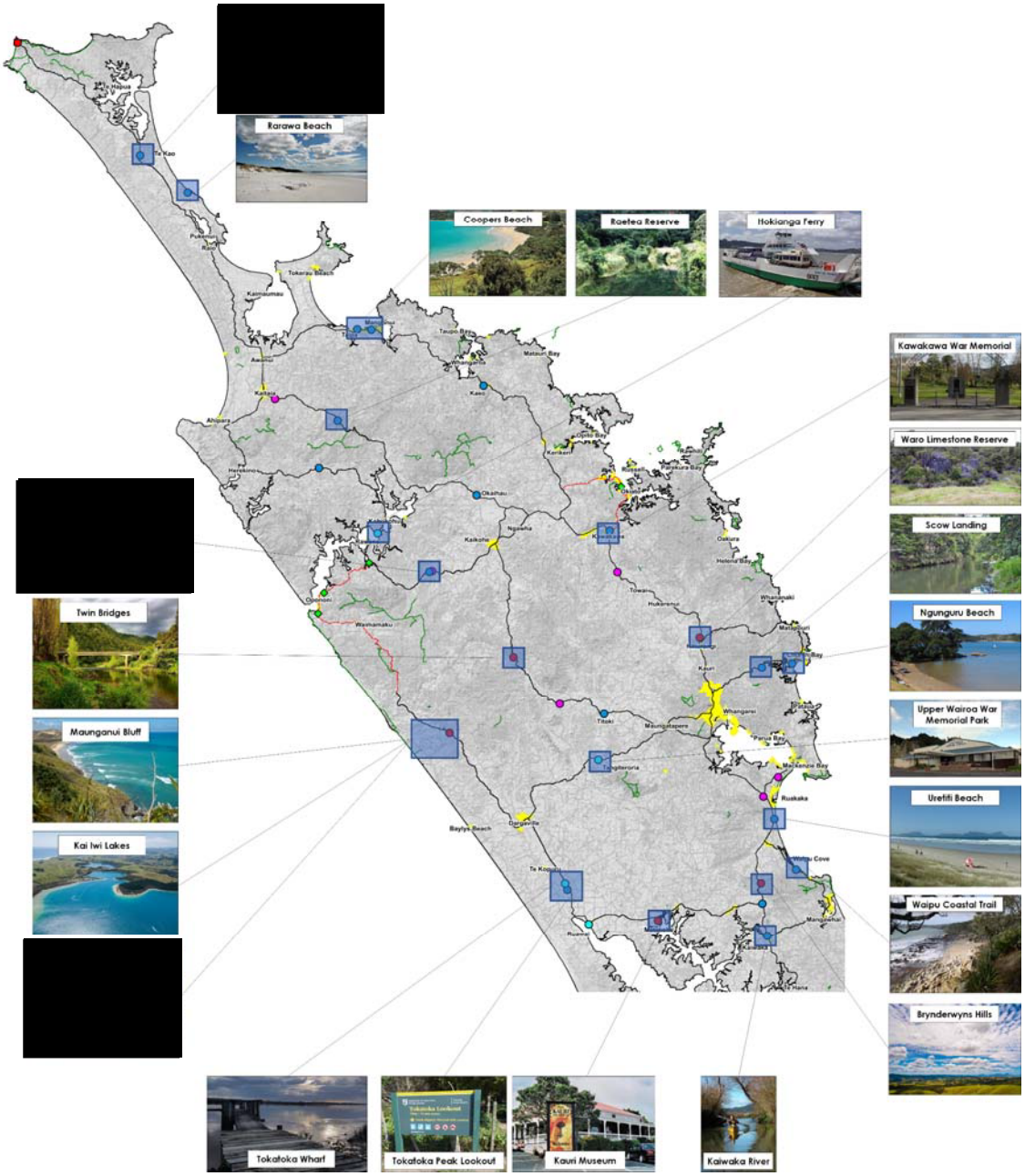


Figure 28: Linkages to Key Attractions

Rest area development can also act as a catalyst for reinvigorating local economic prospects of smaller towns such as Kaiwaka, Ngunguru, Broadwood, Tangiteroria, Titoki, Kaihu and Taheke.

13.2 STORIES TO BE TOLD

The opportunities for storytelling was considered at the forefront when selecting the sites, rather than as a coincidental after-thought once the short list was developed. Table 21 outlines some of the cultural aspects and local history that can be showcased at various sites[64]. Additional stories are outlined within the site profiles included as **Appendix B4**.

Table 21: Storytelling Opportunities

LOCATION	STORIES TO TELL
SH1, Kaiwaka (ID:7)	• Te Ika a Ranganui. At this site, close to Kaiwaka in 1825 Hongi Hika wreaked vengeance against Ngati Whatua for the defeat at Moremonui in 1807.
SH1 Te Kao (ID:72)	• Piwhane/Spirits Bay (spirt gathering point) and Te Rerenga Wairua/Te Rerenga Wairua / Cape Reinga (spirit departure point).
SH1 Waro Limestone (ID: 74)	• Ngati Hau, Ngati Kahu O Torongare and Ngati Wai used the rocks for ritual purposes and now declare them as waahi tapu • By 1925, Hikurangi was the most important coal producing area in North Auckland
SH10 Tākou Bay (ID:9)	• Waka landing site – Tākou Bay • Kaeo Mission. In 1827, during a period of intense Māori political activity, missionaries abandoned the site fleeing to Sydney. The mission was pillaged according to the law of muru, and today nothing remains aside from a cairn.
SH10 Kaeo (ID:10)	
SH10 Cable Bay (ID:13)	• Waka landing site – Mangonui
SH12 Matakohe (ID:706)	• The kauri gum industry became established around Matakohe in 1867-70.
SH12 Ruawai (ID:86)	• Stories associated with the timber trade and the river.
SH12 Donovan's Bluff (ID:81)	• Tokatoka Peak. The great Ngati Whatua war chief Taoho was said to have had his home near the top of the great rock. Historian James Cowan has recorded a Ngati Whatua war chant calling on warriors to stand as firm as "the steadfast rock, the rock of Tokatoka's height."
SH12 Tokatoka (ID:711)	
SH12 Kaihu (ID:700)	• History: ▪ Māori history relating to kauri gum digging ▪ Chinese settlers and the SS Ventnor ▪ The Tavern dates from 1899/1900 • Nature - Tane Mahuta, Waipoua Forest, Kai Iwi Dune Lakes and Maunganui Bluff.
SH12 Taheke (ID:705)	• Stories: ▪ Curse of Kupe. ▪ There is a famous narrative about a maiden who was given up by her dog whilst hiding from an admirer under the waterfall. • Religion: ▪ Roman Catholic Mototi Marae ▪ Wesley Mission ▪ Waima (Whiowhio) • Early Treaty issues: ▪ Signing the treaty ▪ Dog Tax wars. This was a confrontation in 1898 between the Crown and a group of Northern Māori, opposed to the enforcement of a 'dog tax'. ▪ Land trades • Historic Taheke Tavern[65]
SH12 Taheke (ID:404)	
SH15 Twin Bridges (ID:39)	• Ngatokimatawhaorua canoe.
Scows Landing (ID:702)	• Ship building at Scows Landing • Scows Landing reserve has remnants of coal mining heritage at Kiripaka
Kohukohu Ferry (ID:130)	The area is reclaimed land (from the saw dust of saw milling operations) and the site is known as Kupe's Curse (according to legend) – this is one of three key Kupe story telling points. The most significant Kupe story is at Omapere (Kupe's Rock).

[64] Information provided by Heritage NZ.
[65] http://www.ourhokianga.com/Tahekehotelvisit.htm

13.3 NARRATIVES

Stories can also be told intrinsically through design themes and interventions – not solely relying on written words. Three main narratives have emerged through the ULDF process. The themes represent a cross section of the Northland identity:

- History;
- The natural world; and
- Māori and modern culture.

Firstly, that Northland is where New Zealand as a nation was 'born'.

Secondly that the Brynderwyn Hills are the entrance to Northland from the south. A concept rest area has already been designed (*Te Hurihanga-nui-a-Kawharu*') to tell a story from the natural world, of the Karearea (New Zealand Falcon). The proposed rest area includes parking, new pathways, and a toilet, with the landing of the Karearea symbolic in a Waharoa (gateway), that leads customers down to a viewing platform formed in the image of the bird itself, with views to the landscape beyond.

Thirdly that Kauri has played a significant historic and present day role in the development of Northland, both in the kauri gum and forestry industries, most prominently in the writings of Jane Mander in her novels, 'The Story of a New Zealand River' and 'Allen Adair' and that Tāne Mahuta, a giant Kauri stands as New Zealand's foremost tree.

As identified within the ULDF, the proposed way forward is to align these narratives with compass points – as shown within Figure 29.

Figure 29: Narratives to Align with Compass Points

14. FEATURES AND TYPOLOGIES

14.1 TYPOLOGIES

Table 22 provides an overview of the features that would be included for each Rest Area typology and that target road user group.

Table 22: Rest Area – Target Customers and Facilities.

TYPE	POTENTIAL CUSTOMERS	POSSIBLE FACILITIES
Tier 1	• International tourists • Domestic tourists • Freight customers (dependent on size / accessibility) • Locals • Cyclists • Walkers	**Do Minimum** • Road signage • Toilets / water • Wayfinding - Interpretation signage / directional signage • 'Journey Pathways' – in site movement network • Seating • Litter bins • Planting for shelter / screening • Parking area – asphalt • Storytelling opportunities **Potential Additional Facilities** • Car charging points • E-bike charging points • Cycle / ped facilities – (parking, cell phone charging, shelters, pathway linkages to viewpoints or tracks) • Permanent food outlet e.g. Café dependent on locality e.g. far enough from a town / city centre • Toilets / water / showers • Art – dependent on context and suitability / heritage features retained on site • Planting for amenity
Tier 2	• International tourism • Domestic tourism • Local customers • Cycle customers • Pedestrian customers	**Do Minimum** • Parking area – asphalt / gravel • Cycle and pedestrian facilities – (pathway linkages to viewpoints or tracks) • Toilets / water • Interpretation signage / directional signage • Seating • Litter bin • Planting for screening from the road • Storytelling opportunities
Tier 3	• International tourism • Domestic tourism • Local customers • Cycle customers • Pedestrian customers	**Do Minimum** • Road signage • Gravel surface • Informal parking • Planting to replace that removed (if any) • Storytelling opportunities
Truck Stops	• Freight customers	**Do Minimum** • Road signage • Parking area – asphalt / gravel with the necessary amount of space to meet trucking demand • Toilets / water • Lighting • Safe entry/egress

Drivers must be able to enter and leave sites safely in accordance with the Austroads Design Guidelines[66] and 'Diagram D' within the Planning Policy Manual. 'Diagram D' has been provided within **Appendix G**. Where there is only a heavy vehicle stopping place provided, a sealed area with safe entrance and exit represents the minimum requirements. These areas need to provide a sufficient clearance from the live lane to allow for inspection and safe adjustment of loads.

14.2 TIER 1 SITES

As a network, four 'Super Tier 1' rest areas are proposed to align with the four compass points:

- **South:** Brynderwyns Southern Gateway: Te Hurihanga-nui-a-Kawharu
- **North:** Te Rerenga Wairua / Cape Reinga Lighthouse (already existing)
- **West:** Kaihu, celebrating the forests in the west
- **East:** The Bay of Islands region.

Tier 1 rest stops have also been identified at **Twin Bridges** (SH15), the **Kauri Museum** (SH12) and the **Waro Limestone Reserve** (SH1). Each Super Tier 1 or Tier 1 site would be a destination in its own right and are locations where cultural values can be best presented.

The sites are also strategically positioned such that the distance between the represents reasonable driving times:

- Auckland Airport to Brynderwyns (Southern Compass Point) - 1 hour 45 minutes.
- Brynderwyns to Kaihu (Western Compass Point) – 1 hour 20 minutes.
- Kaihu to Paihia (Eastern Compass Point) – 2 hours 15 mins.

Along each key journey are also several high-quality intermediate rest areas and townships that will help further break up the trip.

Concept designs for the following sites are included within **Appendix B5**:

- Kaihu;
- Waro Limestone Reserve;
- Brynderwyns Southern Gateway; and
- Twin Bridges.

[66] Part 5: Intersections at Grade (or its successor).

PART B(II): PROGRAMME DEVELOPMENT

15. SITE ASSESSMENT

15.1 CRITERIA

The purpose of the site assessment was to help establish whether there were any significant risks associated with the development of individual sites. An overarching objective of the site assessment process was that it not only focused on key risks, but also around the benefits and opportunities presented by investing in various sites.

The site assessment criteria were adapted from the Transport Agency's *'Multi Criteria Analysis for Transport Business Cases Guidance Document*' (February 2017). The criteria used reflected either the key benefits being sought (i.e. alignment with Investment Objectives), or the aspects which correspond to the main project risks. The draft criteria were presented for initial feedback during Technical Challenge No.2 on the 26th July 2019. A summary of the criteria is provided within Table 23.

Table 23: Site Assessment Criteria

GROUP	CRITERIA	CONSIDERATIONS
Investment Objectives	Safety	Reducing the number of fatigue related crashes by 19% by 2030.
	Tourism	Deliver a network of rest stops (Tier 2 quality or better) so there is a desirable place to stop at least every 1 hour by 2030.
Implementability	Engineering degree of difficulty	How straightforward is it to implement? Are there any technical risks involved in this option?
	Consentability	What is the level of complexity in gaining statutory approvals and how significant are the costs of mitigation? Is a new designation or alteration required? Could the option include activities prohibited under the policies and rules of the District or Regional Plan?
	Value for money	What is the likely BCR? Are there any factors that might affect the ability to operate or maintain the option over its projected life?
Assessment of Effects	Cultural impact	Assessed by Treaty Partners
	Strategy alignment	Considering council, DOC, and Heritage NZ strategies – how well does the programme meet overarching objectives. How does the option enhance the visitor experience, increase the destination appeal, and impact economic growth? (TCDR objectives)
	Property / land use impacts	Is land acquisition required? Is the site located near sensitive land? Is there any Māori land required?
	Environmental Effects	To what extent does the option impact on the natural environment as described in the ESR screen? To what extent does the option impact on the social environment, including human health?
	Urban Design	How does the site align with the Urban Design Guidance for design of highway stopping places?
	Community / Stakeholders	How acceptable/desirable is the option to councils, local hapū, and communities? Are there real or anticipated objections?

By this point in the process, sites included within the long list had already been scored against the Investment Objectives whilst those in the medium list had been evaluated against the evaluation framework. This meant that all sites included within the short list would to some extent, support the Investment Objectives and be unlikely to have any fatal implementability or environmental effect flaws.

Each final short listed site was evaluated against the agreed site assessment criteria, with input from various technical specialists (transport engineering / environmental / planning) respective to their area of expertise.

15.2 SCORING

Table 24 presents the scoring scale that was used for the site assessment. In simple terms, the lower the score the better the option – i.e. higher the benefit or lower the cost/risk.

Table 24: Site Assessment Scoring

SCORE	DEFINITION
1	The option presents few difficulties on the basis of the criterion being evaluated and may provide significant benefits in terms.
2	The option presents only minor aspects of difficulty on the basis of the criterion being evaluated and may provide some benefits.
3	The option presents some aspects or reasonable difficulty in terms of the criterion being evaluated and problems cannot be avoided. There are few apparent benefits.
4	The options include clear aspects of difficulty in term of the criterion being evaluated, and very few perceived benefits.
5	The options include significant difficulties or problems in terms of the criterion being evaluated and no apparent benefits.

15.3 RESULTS

Appendix B6 provides the results of the site assessments[67].

No sites were discounted following the assessment, however those that were identified as having a greater level difficulty compared to the expected benefits were noted.

Key Comments

- Throughout this SSBC process, feedback has been received from Treaty Partners in regard to cultural sensitivities and any sites with notable negative feedback has been discounted at an earlier stage. Whilst there is a good degree of certainty that all sites would have limited cultural impact, individual cultural impact assessments should be undertaken during the next stage of the project.
- The 'safety' criteria were scored based on the number of fatigue related crashes that have been reported within 10km of the rest area in the past five years. Generally, sites on the west coast typically scored lower against this criterion, purely as a reflection of the lower traffic volumes.
- In contrast, sites on the West Coast typically scored higher against *'Investment Objective No.2 – Tourism'*, and 'Strategic Alignment' as these sites fill network gaps and encourage visitor dispersal to the west coast.
- Feedback from Technical Challenge No. 3 held on 26th August 2019 was that environmental effects should at some stage take account of whole of life effects (i.e. emissions from vehicles). In addition, society is moving away from "environmental effects" being associated with just construction. Environmental effects should also consider social/human health impacts such as community severance and cumulative effects of construction.
    - No sites scored lower than a 3 (neutral score) as it was considered none of the identified sites would likely result in highly unfavourable environmental effects – both when assessed traditionally and when assessed considering social and human health impacts.
- The Rangiora Ferry Terminal (ID130) scored poorly against strategic alignment as it competes with the rest area in the township of Kohukohu. Project partner and stakeholder feedback, as well as the literature review, presented a clear message that investment should not be placed in rest areas that compete with townships. Note that this site was retained in the final short list due to its historic importance which was also recognised by stakeholders and project partners.

[67] Within Appendix B6: E = Early Implementation; M = Medium Term and L = Long Term

16. RECOMMENDED PROGRAMME

16.1 OVERVIEW

The recommended programme has been developed from feedback from the NZ Transport Agency and stakeholders, as well as estimated economic benefits, the level of intervention required and the ease for which various upgrades can be implemented.

The recommended programme consists of developing all sites in the final short list but to establish priorities for investment such that resources are appropriately managed whilst still realising the benefits from the programme.

Why Consider Only One Programme?

The justification for only considering one programme was as follows:

- Extensive consultation has been undertaken to ensure that the right sites have been identified, and they provide the right level of amenity.
- The programme has strong certainty of buy-in from multiple parties.
- To some extent, all rest areas will provide some safety and tourism benefit.
- A 'whole network' approach has been taken, with spacing considered and therefore to achieve full coverage all sites are required.
- Approximately half of the sites are early implementation projects (toilets, bins, signage improvements etc.)

Short List to Recommended Programme Approach

Figure 30 shows how a flexible approach to incorporating stakeholder feedback, and site assessment, led to the development of the final recommended programme.

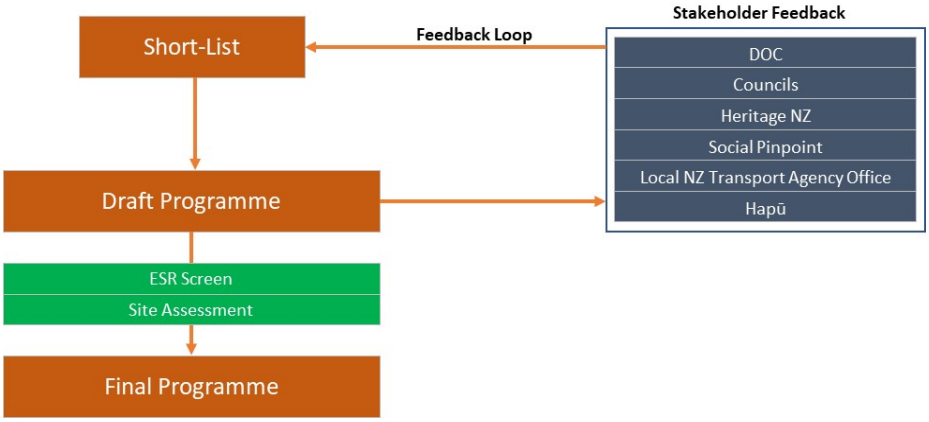


Figure 30: Short List to Recommended Programme

16.2 TIMEFRAMES

Early Implementation (0-2 Years)

Early implementation (0-2 years) projects are those which are low-risk, low-cost and are timed to address an immediate requirement. Examples of projects which could be programmed for early implementation are:

- Improved wayfinding signage.
- Improving the attractiveness of sites – trimming vegetation.
- Sealing an existing unsealed site.
- Provision of basic facilities – bins, benches, picnic tables, shelters, and / or toilets.

Medium Term (3-5 Years) and Long Term (5+ Years)

The rationale behind whether the remaining projects should be programmed as either medium term or long term was based around the following considerations:

- The relative number of fatigue related crashes the rest area may help reduce.
- The amenity value of the site relative to other sites (based on feedback from local hapū, Heritage NZ and general amenity metrics).
- Feedback during Technical Challenge No.3 based on the draft programme.
- Feedback from the trucking industry around preferred sites.
- Tier 1 sites have all been included as a medium (3-5 years) project. The rationale is that these are the sites with the highest potential to meet the Investment Objectives but would be more technically challenging and require a greater level of consultation to implement than the early implementation projects.
- Connections with other projects such as wharf renewals, cycleways, township improvement plans and PGF funded projects.

16.3 RECOMMENDED PROGRAMME

The total capital cost (including design, construction and implementation) by timeframe:

- Early Implementation (0-2 Years) = $5.4m
- Medium Term (3-5 Years) = $10.1m
- Long Term (5+ Years) = $2.7m

Table 25 provides the recommended programme, along with the associated P50 costs. The cost for each site reflects the standard of the rest area and what amenities are provided at each.

Table 25: Recommended Programme

SITE	TIER	PROGRAMME	CAPITAL COST[68]	OWNERSHIP
SH1, Kaiwaka (ID:7)	2	Short Term	$187,000	Kaipara District Council
SH1 / SH12 (ID:20)	2	Long Term	$362,000	NZ Transport Agency
SH1 Brynderwyns (ID:103)	1	Medium Term	$1,421,000	NZ Transport Agency
SH1 Uretiti (ID:77)	2	Long Term	$52,000	Department of Conservation
SH1 / SH15 (ID:31)	Truck	Short Term	$519,000	NZ Transport Agency
SH1 Waro Limestone Reserve (ID:74)	1	Medium Term	$968,000	Department of Conservation
SH1 Maromaku (ID:57)	Truck	Medium Term	$1,483,000	NZ Transport Agency
SH1 Kawakawa (ID:14)	2	Short Term	$76,000	Far North District Council

[68] Includes 30% contingency

SITE	TIER	PROGRAMME	CAPITAL COST[68]	OWNERSHIP
SH1 Okaihau (ID:42)	2	Short Term	$66,000	Far North District Council
SH1 Raetea DOC Site (ID:68)	2	Long Term	$479,000	Department of Conservation
SH1 Kaitaia (ID:48)	Truck	Medium Term	$1,197,000	NZ Transport Agency
SH1 Rarawa Beach (ID:121)	2	Long Term	$64,000	Department of Conservation
SH1 Te Kao (ID:72)	2	Short Term	$677,000	Far North District Council
SH10 Tākou Bay (ID:9)	Truck	Medium Term	$996,000	NZ Transport Agency
SH10 Kaeo (ID:10)	2	Long Term	$365,000	Far North District Council
SH10 Coopers Beach (ID:12)	2	Short Term	$335,000	Far North District Council
SH10 Cable Bay (ID:13)	2	Short Term	$418,000	Far North District Council
SH12 Matakohe (ID:706)	1	Short Term	$15,000	Kaipara District Council
SH12 Ruawai (ID:86)	2	Medium Term	$819,000	NZ Transport Agency
SH12 [redacted]	2	Medium Term	$585,000	Kaipara District Council
SH12 Tokatoka (ID:711)	3	Medium Term	$116,000	Kaipara District Council
SH12 Kaihu (ID:700)	1	Medium Term	$708,000	Kaipara District Council
SH12 [redacted]	2	Short Term	$441,000	Far North District Council
SH12 Taheke (ID:404)	Truck	Medium Term	$643,000	NZ Transport Agency
SH14 Tangiteroria (ID:710)	2	Long Term	$820,000	Kaipara District Council
SH15 Titoki (ID:701)	2	Short Term	$356,000	Whangarei District Council
SH15 Parakao (ID:111)	Truck	Short Term	$284,000	NZ Transport Agency
SH15 Twin Bridges (ID:39)	1	Medium Term	$823,000	Far North District Council
SH15 Port Marsden (ID:32)	Truck	Long Term	$392,000	NZ Transport Agency
Waipu Cove (ID:703)	2	Short Term	$480,000	Whangarei District Council
Scows Landing (ID:702)	2	Short Term	$1,106,000	Whangarei District Council
Ngunguru (ID:64)	2	Long Term	$214,000	Whangarei District Council
Kohukohu Ferry (ID:130)	3	Medium Term	$322,000	Far North District Council
Broadwood (ID:500)	2	Short Term	$401,000	Far North District Council

Appendix B4 provides a breakdown of the features currently proposed for each site, and a breakdown of the total capital costs for each site. There is opportunity during the next stage of the process there to add or remove certain rest area features, which would have cost implications.

The recommended programme includes 14 short-term, 12 medium-term and 8 long-term projects as shown in Figure 31. The map is colour-coded as follows: Early Implementation projects, Medium Term projects and Long-Term projects.

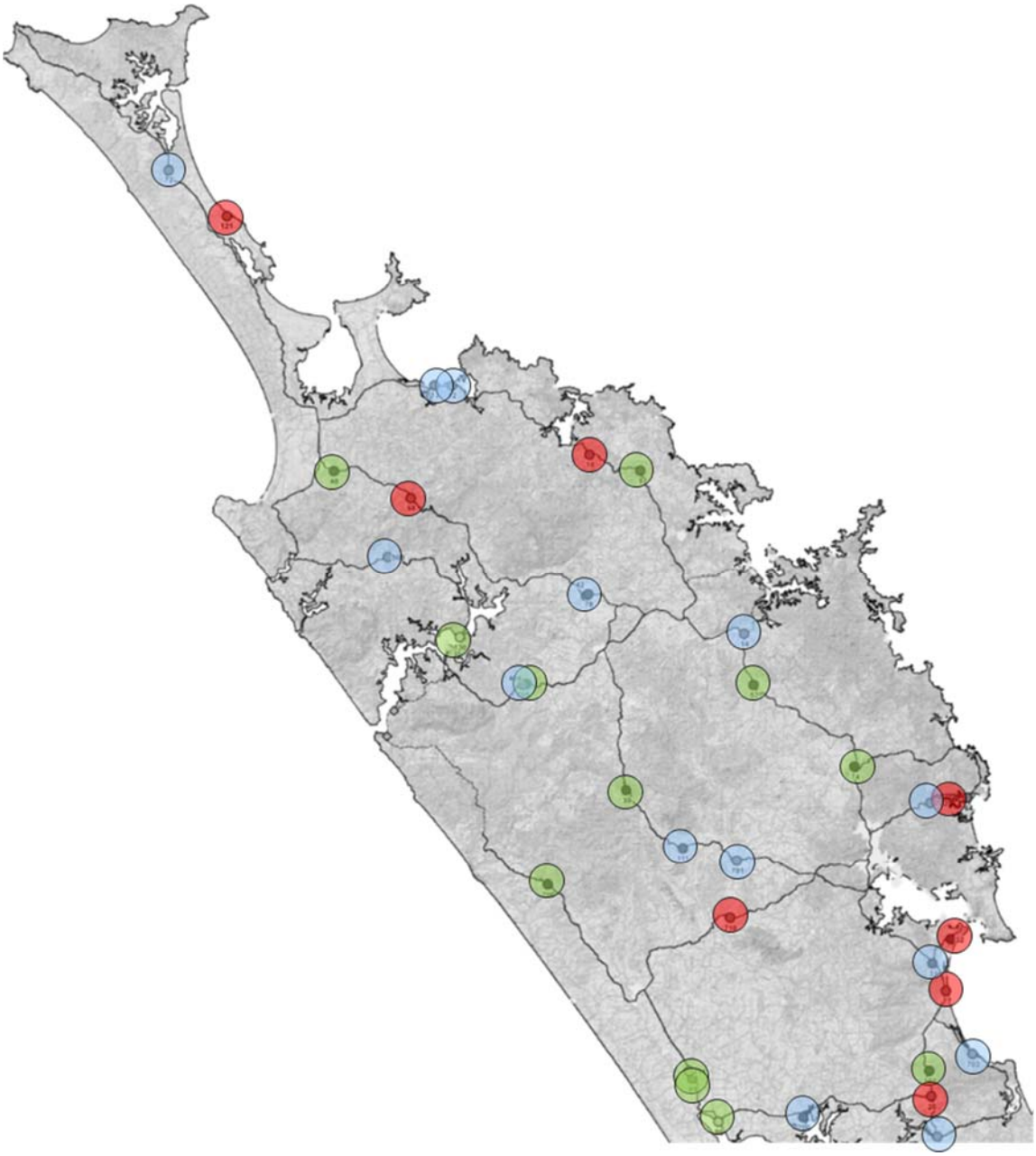


Figure 31: Recommended Programme

PART C: RECOMMENDED PROGRAMME ASSESSMENT

17. PROGRAMME ASSESSMENT

This section outlines the extent to which the recommended programme (1) meets the Investment Objectives; (2) supports key identified opportunities; (3) aligns with customer needs; (4) provides the right facilities in the right locations; and (5) aligns with the Investment Planning Assessment Framework / PGF Funding Assessment.

17.1 INVESTMENT OBJECTIVES

Table 26 shows how the full programme of interventions will meet the Investment Objectives:

1. Reducing the number of fatigue related crashes by 19% by 2030.
2. Deliver a network of rest stops (Tier 2 quality or better) so there is a desirable place to stop at least every 1 hour by 2030.

Table 26: Programme Alignment vs Investment Objectives

IO	SCORE	COMMENT
1: Safety	STRONG	By 2030, the full programme would be expected to reduce fatigue related crashes by 20% - equating to, based on current trend, 2 fatal injury crashes and 4 serious injury crashes between 2020-2030[69]. See the Economic Analysis for an overview of how these values were derived. **The recommended programme is expected to fully address the 'Safety' Investment Objective.** Hence a 'Strong' score has been derived.
2: Tourism (Network Gaps)	STRONG	• The programme will result in 25 Tier 2 quality or better rest stops across the Northland network by 2030. A further 7 truck stops will also be introduced[70]. • As identified in **Appendix C1**, the programme will result in a network of high-quality rest areas at least every 1 hour driving distance, or 50km driving distance, that covers the entire Northland region. The only shown gap is between Awanui and Houhora, where these towns themselves will function as appropriate rest stops. **The recommended programme is expected to fully address the 'Tourism (Network Gaps)' Investment Objective.** Hence a 'Strong' score has been derived.

Overall the programme strongly meets the Investment Objectives.

Appendix C1 provides maps which show how the network gaps and fatigue crash hotspots align with the locations of sites included within the preferred programme.

17.2 KEY OPPORTUNITIES

Table 27 shows how the full programme of interventions will meet the Investment Objectives:

1. **Opportunity No.1**: Ensure that truck drivers can meet NZTA worktime and logbook requirements by providing safe stopping opportunities at identified industry gaps.
2. **Opportunity No.2**: Promotion of existing facilities (e.g. town centres).
3. **Opportunity No.3**: Develop features at a total of 4 rest stops that showcase Northland's heritage along key journeys (as per the TCDR PBC).

Table 27: Programme Alignment vs Key Opportunities

NO.	SCORE	COMMENT
1: Logbook requirements	STRONG	The package of options should be presented to trucking industry representatives for buy-in, but there is an expectation that the network would satisfy their requirements given their input in engagement to date. Hence a 'Strong' score has been give as the programme would address the gaps identified by the stakeholder.

[69] 0.03 fatal injuries per annum and 0.62 serious injuries per annum
[70] Noting that one truck stop (Site 31) has been recently constructed.

NO.	SCORE	COMMENT
2: Promotion of existing facilities	STRONG	The recommended programme will provides several opportunities to support the economic prosperity of smaller townships, to link with existing facilities and to showcase local history. Specifically, the following townships would benefit: Kaihu, Tokatoka, Taheke, Broadwood, Tangiteroria, Kaiwaka, Titoki, Ruawai and Okaihau.
3: Storytelling	STRONG	The following rest areas have been identified as candidates for showcasing Northland's heritage along key journeys: • Brynderwyns (SH1 - Site 103) • Twin Bridges (SH15 - Site 39) • [redacted] (SH12 – Site 700) • Waro Limestone Reserve (SH1 – Site 74) Further key points for storytelling opportunities will be at Te Rerenga Wairua / Cape Reinga within the Bay of Islands Region (see Figure 32).

Overall the programme strongly meets the key identified opportunities. Figure 32 shows how the programme will align with the proposed 'compass point' narratives.

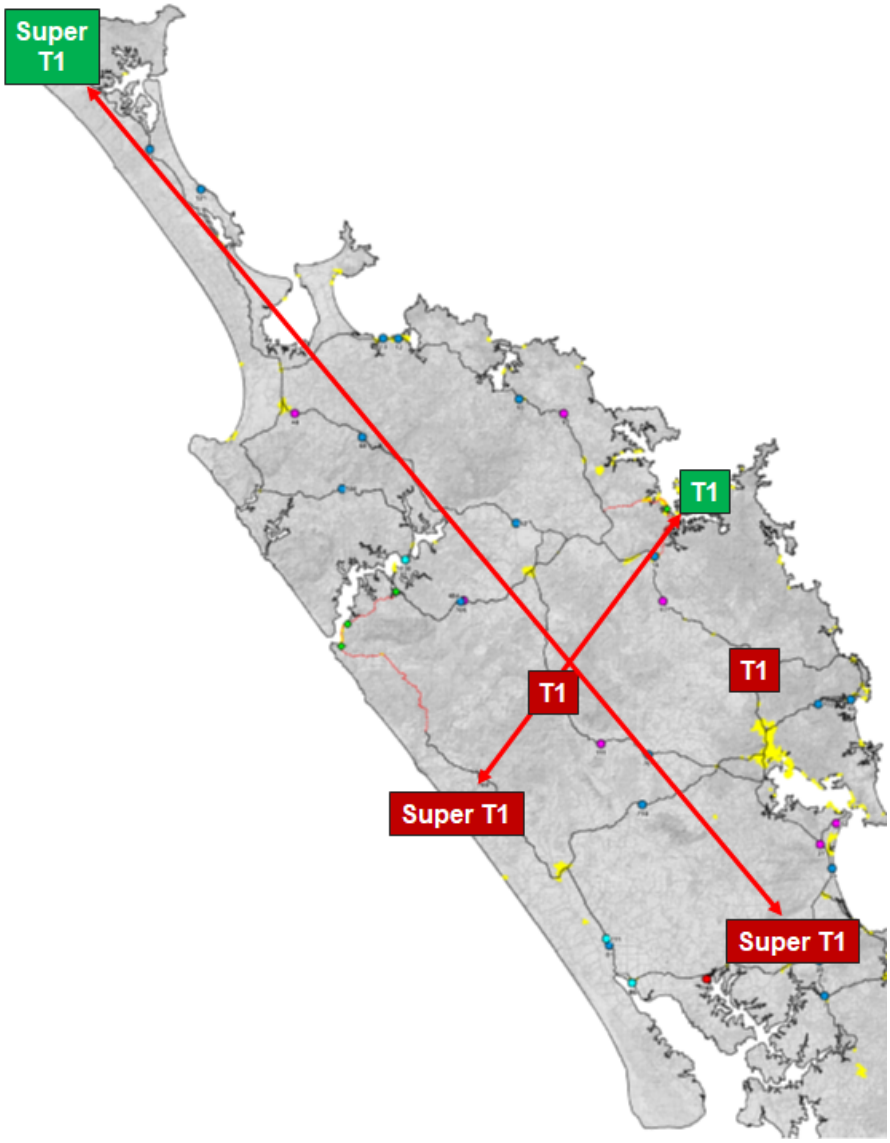


Figure 32: Alignment with the Compass Points Philosophy

17.3 CUSTOMER NEEDS

Table 28 outlines how the preferred programme will meet customer needs (as described in Part A).

Table 28: Programme Alignment vs Customer Needs

CUSTOMER	ADDRESSING THEIR NEED
Local	The recommended programme has been developed to tie in local businesses where possible (such as the local taverns in Kaihu, Tokatoka and Takahe). The programme also provides better links to local walking tracks such as at the Waro Limestone Reserve, Scows Landing and Waipu Cove. Wherever possible, sites will also look to celebrate the local history, culture and environment.
Truck Driver	The recommended programme includes the provision of 7 new truck stops and improvements to one existing truck stop. The truck stops will be designed to ensure safe access and will provide toilets, bins, and space would be maximised (within the constraints for land acquisition) in order to accommodate as many trucks as possible. The truck stop network aligns with the recommendations of the trucking industry and should therefore address any existing strategic gaps in the network.
Domestic Tourist	Many domestic visitors may have favourite locations that they plan on visiting. The recommended option puts focus on areas of Northland that may have previously been largely unexplored by domestic visitors. The Wayfinding Business case will also play a role.
International Tourist – Tour Group	The recommended programme will provide opportunities to develop coach parking, and major rest areas will provide rubbish bins, picnic tables, toilets. The Tier 1 and Tier 2 rest areas will provide those 'photo-stop' opportunities with viewpoints, connections to DOC tracks or local historic points of interest.
International Tourist – Independent Travelers	The recommended programme provides traveler information boards wherever possible, and a network of sites which connect to several high value, but less known, tourist sites as shown within Figure 28. EV charging and campervan parking would also be provided where appropriate.
Campervan / Freedom Camper	The recommended programme will provide opportunities for campervan specific treatments at selected locations. These include items such as larger parking spaces, areas where freedom camping can occur, and information on facilities in the area.
Cyclists	Rest areas will provide, where possible, toilets, benches, shelter, bins and cycle stands (where a demand is anticipated). The programme also provides a link to planned cycling routes such as the Kaihu Valley rail trail.

Overall the programme strongly aligns with the needs for all customers.

17.4 RIGHT LOCATION, RIGHT FACILITIES

Table 29 provides a link back to the original principles that were applied to developing the overall rest area strategy - namely choosing sites that are in the right location and provide the right facilities.

Table 29: Programme Alignment vs 'Right Location, Right Facilities' Principles

RIGHT LOCATION	
FACTOR	ASSESSMENT
Does it meet an existing network gap?	Yes. See **Appendix C1**.
Is there a history of fatigue related crashes close to the sites?	Fatigue is a widespread issue. The collaborative package of rest areas is targeted to reduce at least 20% of fatigue related crashes.
Is it near known attractions?	Each rest area site provides some sort of amenity. The long list to medium list process is where this factor was addressed.
Are sites located along an existing or planned walking/cycling route?	The recommended programme links with the following cycle routes: • Kaihu Valley rail trail • Pou Herenga Tai – Twin Coast Cycle Trail • Ngunguru Old Coach Trail • Ruawai Trail

RIGHT LOCATION	
FACTOR	ASSESSMENT
Is the site big enough?	This factor was considered as part of the short listing process. Generally, no land acquisition is currently proposed as part of any option. Should demand dictate (i.e. if a rest area becomes very popular), local authorities may wish to increase the size of sites through property purchase – however costs would vary per site.
Are there any major implementability challenges?	Sites with major challenges were discounted as part of the medium to short list process, following the site drive-overs. An overview of the technical challenges for each site are provided within the individual site summaries – see **Appendix B4**.
RIGHT FACILITIES	
Factor	Assessment
Do the facilities meet the specific needs to various user groups?	Yes. See Table 28.
Which organisation will be maintaining these toilets, and do they have the necessary funding?	Partners (e.g. councils, DOC, hapū) have had visibility and provided input into the recommended programme. They will be responsible for the future maintenance of the sites.
What are the minimum facilities required for each rest area?	These are site-specific considerations relating in part to whether the site has the potential to attract a high number of people or whether it will be more likely used just as a quick stop. **Appendix B4** provides the individual site summaries, and the recommended facilities for each site.

17.5 ASSESSMENT PROFILE

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.

The framework, presented in Figure 33, consists of a business case review and a two-factor assessment - Results Alignment and Cost-Benefit Appraisal. The purpose of this process is to assess the significance of the problem relative to the goals and outcomes of the Government Policy Statement on Land Transport (GPS) 2018.

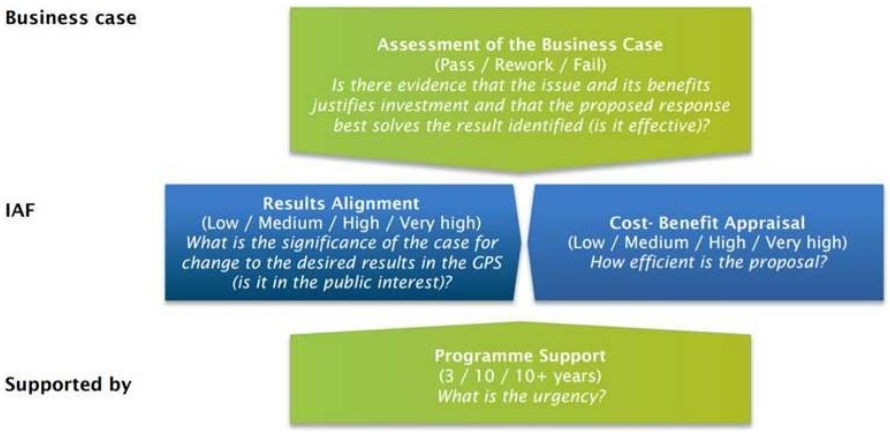


Figure 33: Investment Assessment Framework, 2018-21 NLTP

Results Alignment

Table 30 provides the assessment criteria, and Table 31 provides the project assessment.

Table 30: Results Alignment as defined by the 2018-21 Investment Assessment Framework

GPS PRIORITY	LOW	MEDIUM	HIGH	VERY HIGH
Safety Access – thriving regions Access – liveable cities Environment	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 Improvements: an identified gap of some significance in required levels of services	Continuous programmes: a gap in existing levels of service Improvements: a significant gap in a targeted regional or national context	Directly link to specific priority results sought in the GPS

Table 31: Investment Assurance Framework Assessment for the Recommended Programme

GPS PRIORITY	ASSESSMENT	COMMENT
Safety - a safe transport system free of death and serious injury	MEDIUM	• The recommended programme will address safety issues affecting communities subject to medium safety risk, and Safer Journeys of medium concern. • Northland is identified in the Communities at Risk Register as being at medium risk for fatigue. The programme would reduce fatigue crashes by 20%. • The programme will also provide better access to health facilities – e.g. walking and cycling trails.
Access to opportunities, enables transport choice and access, and is resilient -Thriving regions	HIGH	• The recommended programme will address a gap in an approved RED programme in a high priority RED region. • Northland is identified as a RED[71] area by NZTA • The Twin Coast Discovery PBC was developed, in part, to enable opportunities in Northland.
Access to opportunities, enables transport choice and access, and is resilient - Liveable cities	MEDIUM	The recommended programme addresses a significant gap in access to social or economic opportunities as identified in the Twin Coast Discovery PBC.
Environment - Reduce adverse effects on the climate, local environment and public health	MEDIUM	The recommended programme will enable reductions in harm to the environment and people, particularly arising from land transport-related air pollution, noise, through the provision of EV charging facilities, and linking with cycle trails.

Under the activity class for *Regional, Local Road and State Highway Improvements*, the project is consistent with the requirements for a **Medium** results alignment in response to the Access Strategic priority. As the programme is more than $1m in cost, and therefore cannot be categorised as low-cost low-risk.

Cost Benefit Appraisal

The cost benefit appraisal, detailed in the next section, shows that the recommended option results in a BCR of **1.44.**

Overall Assessment Profile

The recommended programme has been assessed against the NLTP Investment Assessment Framework (IAF). The assessment indicates that the recommended programme has a **medium** results alignment and a low BCR, indicating that the recommended programme will potentially be included in the NLTP.

The priority order for the project would be **6** based on the IAF prioritisation order (refer to Table 32).

[71] Regional Economic Development area

Table 32: Prioritisation for Improvement Categories

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

17.6 PGF FUNDING ASSESSMENT

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.

Table 33 presents an indicative PGF funding assessment for the collective Tier 1, Tier 2 and Tier 3 sites. The scoring scale is: Yes (Y), Somewhat (S) or No (N).

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 assessment indicates that the recommended programme meets potentially all ten PGF criteria. Any applications for PGF funding will be subject to the Provincial Development Unit (PDU) application assessment processes.

Table 33: PGF Funding Assessment

PGF OBJECTIVE	TIER 1	TIER 2	TIER 3
PGF Objective 1 - Jobs	S	S	N
PGF Objective 2 – Social Inclusion	Y	S	S
PGF Objective 3 – Māori aspirations	Y	S	N
PGF Objective 4 - Sustainability	S	S	S
PGF Objective 5 - Resilience	Y	S	S
Lift productivity of a region or regions	GOOD	MODERATE	MODERATE
Create additional value and avoid duplicating existing efforts	S	S	S
Have a link to the regional priorities and be supported by stakeholders	Y	Y	Y
Be well managed, well governed and have appropriate trade-offs between risk and reward[72]	TBC	TBC	TBC
Overall PGF Alignment	Y	Y	Y

[72] Dependent upon which activities are taken forward by the appropriate owner.

18. ECONOMIC ANALYSIS

This section presents an overview of the economics analysis for the project. The economic evaluation has been carried out in accordance with the full procedures of the Economic Evaluation Manual (EEM), with the recommended programme against the Do Minimum using a 40-year analysis period and a 6% discount rate. The Do Minimum is to continue with the current maintenance programme for existing rest areas.

The benefit-cost-ratio (BCR) of the project is **1.44**.

18.1 OVERVIEW

The potential benefits of new or upgraded rest areas are several:

- Improved safety for tired drivers – a chance for rest and recovery;
- Increased visitation to relatively lesser known tourist sites – both in terms of visitor numbers and the time they spend at each site.
- Visitors spend longer in Northland, spend more along the way and recommended visiting Northland to others.
- Social and economic benefits to townships where enhanced rest area provisions are provided.
- Increased recognition of and pride by showcases Northland's history, heritage and environment.
- Walking and cycling benefits - many of the selected sites link directly to DOC sites, proposed cycle trails and walking tracks.

The approach taken to measurement in this business case is two-fold:

- Acknowledge but not quantify that rest areas will make a significant contribution to the expected $640 million extra productivity (in PV terms) from the wider programme of work.
- Provide a high-level estimate for the safety benefit for the overall programme.

18.2 ASSUMPTIONS

The key assumptions which have informed the economic assessment are:

- The network will provide a 20% saving in fatigue related crashes. This is based off:
    - Currently around 6% of people above to drive past a good quality rest area will stop. This is based off TomTom travel time data (see **Appendix C2** for further details). Therefore 6% of all people, whether they are fatigued or not, will stop.
    - If you are fatigued, you are more likely to stop. If a good quality rest area is provided, and there is good wayfinding, 25% of those who are feeling tired will stop (on the basis that there is a baseline of 6% of non-tired drivers who stop). *This is an assumption that will be tested as part of the sensitivity analysis.*
    - Of those tired people who do stop, 80% be refreshed enough so that they won't have the fatigue related crash they otherwise would have. *This is an assumption that will be tested as part of the sensitivity analysis.*
    - 25% x 80% = 20% saving.
- The Rest Area strategy is well integrated with the Wayfinding Business Case and that improved driver education will mean that when tired, drivers will pull over if there are good facilities.
- Only fatigue related crashes within a 10km radius downstream of the site will be considered. This is based on a maximum 10-minute driving time. The network will provide a quality network of desirable places to stop at least every 50km. *This is an assumption that will be tested as part of the sensitivity analysis.*
- The proportion of crash reduction related to fatigue, and the affected radius, could conceivably be higher. Possibly up to 50% of tired drivers would pull over with the right combination of signage, education and rest area infrastructure. And the radius of crash reduction could longer

than 10km downstream. However, to take a conservative approach, the analysis only considers crash savings 10km downstream of a site[73].

- Potentially rest area upgrades could also reduce crashes related to causes other than fatigue. One potential benefit could be the reduction in overtaking crashes, as rest stops/truck stops could encourage slower vehicles such as freight and campervans to pull over – effectively providing a passing opportunity. Again, as a means of taking a conservative approach (i.e. to reduce the likeliness of overstating benefits), only fatigue related crashes have been considered. Furthermore, in relation to the benefit for overtaking – this may not align with the overarching objective of wanting all road users to stop and rest – i.e. it is not appropriate to claim a benefit for an effect that may otherwise be undesirable.
- To fulfil the input requirements of crash cost analysis, the seal shoulder widths have been based off information from the mobileroads database. Other road data including Average Daily Traffic (ADT), ONRC, posted speed limit and road geometry was also derived from mobileroads.
- The economic assessment does not explicitly measure the frustration effects of not being able to find somewhere to stop, the increase in local pride (a welfare effect), nor the 'seeding' potential of the investment i.e. the initial increase in tourism may stimulate a higher than average growth rate in tourist spending.

A network wide approach has been taken to the economic evaluation. There is a recognition that most of the safety benefits gained would be along SH1 (where there are higher traffic volumes and more fatigue related crashes) but more tourism benefits for sites on the west coast and Far North. In this sense, particularly considering the 50:50 weightings for the safety and tourism problem and how a network without gaps will bring about be optimal benefits, it is not considered that there is a situation where 'safety issues on SH1 could be seen to be funding investment elsewhere'.

18.3 COST ESTIMATES

A breakdown of the P50 capital cost estimates (construction + design + implementation) for the preferred programme, broken down into the implementation timeframes, is provided within Table 34.

Table 34: Indicative Cost Estimates

PROGRAMME	CAPITAL COST
0-2 Years	$5.4m
3-5 Years	$10.1m
5+ Years	$2.7m
Total	$18.2m

The capital cost estimates for individual sites are provided within **Appendix C3**.

Maintenance costs have been based on estimate provided by KDC. These were based on maintenance rates of 5% of capital expenditure (CAPEX) for most items and average known scheduled rates for specific other items. Various cost items have been categorised as either annual costs (such as toilet maintenance) or periodic (every 10 years, relating to fixing seal).

The cost estimate is indicative at this stage, based only on a desktop review of sites. There are general unknowns regarding the cost to items such as toilets and wastewater connections (although a 30% contingency has been applied to cover uncertainties).

There would be opportunities to reduce the capital costs and maintenance costs by having gravel rather than asphalt surfacing (particularly at truck stops), reducing the amount of lighting provided (on the basis safety isn't notably compromised) or removing toilets.

[73] The number of crashes within a 10km has be multiplied by 50% to cover crashes which may not be in the right direction of travel.

18.4 BENEFITS

The economic analysis has considered only **tourism** and **safety** benefits of the programme. Walking and cycling benefits would also be achieved to some degree due to the link that several of the individual sites provide to DOC walking trails and cycle routes.

Tourism

The wider economic benefits of the Twin Coast Discovery Route programme were evaluated by *Richard Paling Consultants*, using a top down approach as a means of allocating tourism related benefits across the full range of Northland Business Cases.

The analysis, provided as **Appendix C4**, looked at the combined impacts of the proposed scheme elements in terms of broadening the areas benefitting from tourism and extending the tourist season away from the key summer months. The total allocation of discounted benefits, assuming no growth in benefits beyond 2030, was $640m. The combined allocation to the Wayfinding, Rest Areas and Passing Opportunities Business Case was $122m, disaggregated as per Table 35.

Table 35: Possible Wider Economic Benefits for Wayfinding, Passing Opportunities & Rest Areas[74]

BUSINESS CASE	PER CENT OF TOTAL FOR GROUP	INCREASED ANNUAL TOURIST EXP ($M)	INCREASED ANNUAL GDP ($M)	TOTAL DISCOUNTED GDP OVER 40 YEARS ($M NPV)
Wayfinding	62%	5.4	3.9	90
Passing places	19%	1.0	0.8	16
Rest areas	19%	1.0	0.8	16
Total	100%	7.4	5.3	120

The recommended programme will deliver a comprehensive network of high-quality rest areas that meet a wide range of stakeholder expectations. As such, for the purpose of the economic analysis the identified full 40-year NPV **tourism benefit of $16m** for rest areas has been applied, this derived based on the growth of 2.3% per annum over a 40 years period.

Safety

The analysis methods for determining the crash benefits of options for the rest areas were treated as mid-block treatments and were dependent upon the number of injury crashes that occurred over the most recent ten-year period (2009-2018). Based on a review of the crash data, all rest areas were applicable for the Method A of the EEM Crash Compendium for Do Minimum.

The crash cost benefits were derived by applying 20% crash saving (as per assumptions).

The total (40-year NPV) **safety benefit is $12.1m**.

18.5 WIDER ECONOMICS BENEFITS

Along with the tourism benefit, the recommended programme can also be expected to deliver several strong wider economic benefits, which have been collectively identified across the seven Northland Business Cases; namely:

- **Storytelling.** Building a sense of local pride and adding to the tourism experience (a better cultural experience and one in which people will recommend to others).
- **Township Rejuvenation**. Investment in rest areas located within small townships could be the catalyst for economic growth, upgrading other infrastructure or encouraging new tourist ventures to setup.
- **Trucking Industry**. A more enjoyable experience for truck drivers may encourage others to join the workforce, and more generally reduce stress on drivers.
- **Landscape Design**. Decommissioning informal sites (e.g. stockpiles), or introducing new planting to hide them, will improve the aesthetics of the surround landscape.

[74] Table 8.1 of Richard Paling Consulting Report

- **Cost Sharing**. There is opportunity to reduce the overall programme cost by combining rest area improvements where they are located along proposed cycling routes.
- **Ecological Protection.** Using rest areas as a means of promoting ecological protection (i.e. to reduce kauri dieback issues) can provide an economic benefit.
- **Future Technologies.** Technologies are quickly developing that have the potential to contribute to visitor experience, such as helping with trip planning and directing travellers to stops. Better digital connectively (i.e. phone signal and wifi at rest stops) can make it easier for people to (a) find rest stops and (b) share the 'photo stop' movement on social media.

18.6 BCR

The economic evaluation of the recommended programme has identified:

- Total Benefits (40 Year NPV):
  - Tourism = $16.0m
  - Safety = $12.1m
  - **Total = $28.1m**
- Total Costs (40 Year NPV[75]) =
  - Construction + Design = $14.1m
  - Maintenance = $5.4m
  - **Total = $19.5m**

The **benefit-to-cost ratio (BCR)** of the programme is **1.44**.

The BCR without the wider economic benefits (i.e. tourism) would be 0.62.

18.7 SENSITIVITY ANALYSIS

Several sensitivity tests have been undertaken to provide a likely BCR range for the project, focusing around the following most influential factors:

- The economic discount rates.
- Increased or decreased the fatigue crash reduction rate.
- Increased project cost. One of the main risks is relation to the cost depends upon supplier competitiveness and the final pavement requirements.
- Increased or decreased tourism benefit.

Table 36 provides the economic sensitivity analysis.

Table 36: Economics Sensitivity Analysis

VARIABLE	VARIANCE	UPPER	BASE	LOWER	BCR RANGE
Discount Rate	+/- 2%	8%	6%	4%	1.43 - 1.47
Construction Costs	+/- 20%	+20%	0%	-20%	1.27 - 1.65
Fatigue Crash Saving	+/- 20%	0%	20%	40%	0.82 - 2.06
Tourism benefit	+/- 20%	+20%	0%	-20%	1.27 - 1.60

The sensitivity analysis has shown that the BCR is most sensitive to the number of fatigue crashes that the programme would save. The only scenario where a BCR < 1 is achieved is where no fatigue crashes would be saved, which given the quality of the recommended interventions, is an unlikely scenario.

[75] NPV will be lower than the base P50 construction costs, as the NPV depreciates the further into the future the project is constructed.

19. DESIGN PHILOSOPHY

19.1 DESIGN PHILOSOPHY STATEMENT

The Design Philosophy Statement (DPS) for the Northland Rest Areas is included as **Appendix H**. The DPS was prepared to outline the standards, guidelines and key criteria that will be used across all stages of this project (i.e. not just limited to the SSBC stage). The DPS is a live document which means it gives the Transport Agency, project partners, and key stakeholders the opportunity to comment on the initial design criteria for the designs. By receiving these comments during the early design development project phase, the team were able to ensure that the designs meet expectations.

Safe System Approach

The Safe System approach to road safety management is based on the principle that our life and health should not be compromised by our need to travel. No level of death or serious injury is acceptable in our road transport network.

Safe Systems are designed with the human being at its centre, taking human fallibility and vulnerability into account. The goal of Safe Systems is to ensure that mistakes do not lead to a crash; or, if a crash does occur, it is sufficiently controlled to not cause a death or a life-changing injury. The Transport Agency, in embracing this approach, developed the Safer Journeys strategy and has the vision of a *"a safe road system increasingly free of death and serious injury"*.

Key Standards, Guidelines and Criteria

The following key standards, guidelines and criteria have been identified for this project:

- **Safety in Design:** ZHMS-01 Minimum Standard Safety in Design for Road Projects.
- **Safe System Approach:** Safer Journeys for motorcycling on New Zealand roads, NZ Transport Agency, 2nd edition December 2016; Safe system guidelines for RoNS (TM2503) May 2012; Austroads Guides to Traffic Management and Road Design; Austroads Rural Road Design.
- **Design Standards:** State Highway Geometric Design Manual (SHGDM); Austroads Guide to Road Design series; NZTA Road Traffic Standards (RTS); Code of Practice for Temporary Traffic Management (COPTTM); NZTA Manual of Traffic Signs and Markings (MOTSAM); NZTA Traffic Control Devices (TCD) Manual; NZTA Pedestrian Planning Guide; Local Road and Access Design Standards.
- **Urban and Landscape Design Elements:** Stantec Urban and Landscape Design Framework (ULDF) for Northland Rest Areas; Land Transport Management Act (2003); NZTA Environmental Plan (2008); NZTA Environmental and Social Policy (2011); Bridging the Gap – NZTA Urban Design Guide; NZTA Landscape Guidelines (2014); New Zealand Urban Design Protocol; Ministry of Justice National Guidelines for Crime Prevention through Environmental Design (CPTED) and National Guidelines for Injury Prevention through Environmental Design (IPTED); Heritage NZ Pouhere Taonga Act (2014).
- **Resource Consenting:** District council resource consents; Northland Regional Council (NRC) resource consent.

The DPS outlines that, with respect to property requirements, efforts will be made to minimise the project footprint and subsequently the amount of land take required. However, some identified rest area sites are not owned by the Transport Agency and all acquisition processes if required will take place in accordance with the Public Works Act 1981. Land purchase work and consultation works are a high-risk item in which enough time needs to be allowed for in the negotiations.

19.2 ELEMENTAL DESIGN PHILOSOPHY

The overarching design philosophy for the Super/Tier 1 rest area sites is to successfully combine aesthetics with form in order to provide safe, engaging and informative places for people to dwell. This approach has allowed us the opportunity to provide interventions that perform to expected highway engineering standards whilst exploring culturally and geographically significant aspects that may be incorporated into the design.

In line with the Investment Objectives of this SSBC, safety is paramount. The sites need to reduce stress, offer respite and rejuvenation ready for the onward journey and promote wellbeing through design that is sensitive to a variety of visitor needs. This can come from providing peaceful places, visually stimulating places, distracting places (e.g. children's playgrounds) and invigorating places offering opportunities to 'stretch the legs'.

Not only are rest areas important for safety reasons, along New Zealand's scenic routes they also provide opportunities for tourists to be able to stop and enjoy the view, to photograph it, as well as visit areas of interest such as a site of cultural or natural significance. The sites have been chosen to take advantage of existing resources and showcase some of the 'hidden gems' that New Zealand has to offer in Northland. The sites can tell stories and become stories themselves.

Figure 36: Twin Bridges (Tier 1) Concept

The Twin Bridges site design encompasses elements and aspirations described above by:

- Providing an inviting location to dwell with tables, chairs and shelters, covered BBQ area and a children's play area.
- Providing opportunities to explore the immediate locale by developing access to the water's edge and providing trails points.
- Providing comfortable area to freshen up with formal toilet facilities.
- Enhancing the cultural connection with relevant surface treatment designs and interpretive signboard.

Figure 37: Waro Limestone Reserve (Tier 1) Concept

The Waro Limestone Reserve site design encompasses elements and aspirations described above by:

- Providing an inviting location to dwell with tables, chairs and shelter.
- Providing opportunities to explore the immediate locale by developing access to the existing path network.
- Providing comfortable area to freshen up with formal toilet facilities.
- Enhancing the cultural connection with relevant surface treatment designs, lighting of the rock formations and interpretive signboard.
- Installing additional soft landscaping to screen the highway elements and reduce noise intrusion.

These concept designs are provided as **Appendix B5**.

20. RISK REVIEW

20.1 UNCERTAINTY LOG

The general uncertainty log for the project is provided as Table 37.

Table 37: General Uncertainty Log

FACTOR	TIME	UNCERTAINTY	PROGRAMME IMPACT	COMMENTS
CONNECTIONS WITH OTHER PROGRAMMES				
Kauri Die-back	Coming years	Reasonably foreseeable	Investment in the Raetea DOC Site (ID: 68) may not see the full realisation of benefits due to park closures in response to the presence of Kauri Dieback and known risks with hunters accessing the forest from the camping ground.	Facilities have been placed close to the road to avoid this impact.
Significant upgrade of intersection of SH1 and SH12 at Kawakawa	Coming years	More than likely	A significant intersection upgrade is planned that will support journeys to the west coast. This will potentially reduce the costs for planned upgrade of the Kawakawa Rest Area site (ID:14).	
Ruapekapeka Pa Investment	Coming years	More than likely	If this work goes ahead there will be opportunities to promote visits to the pa at the Waro Limestone Reserve site (ID: 74) which is nearby Ruapekapeka Road.	The Pa has received IVL funding[76].
[redacted] (ID:705)	Coming years	Reasonably foreseeable	[redacted]	No feedback was received from hapū on this proposal.
Kaihu Valley Rail Trail Cycleway	Coming years	Reasonably Foreseeable	Kaipara District Council has plans for a 36-kilometre cycleway along the route of the historic Kaihu Valley rail line between Dargaville and Donnelly's Crossing, in partnership with Te Roroa and the Department of Conservation	The council have indicated that the Kaihu rest area (ID: 700) could be integrated with the cycleway's development
[redacted]	Coming years	Near certain	[redacted]	An additional site (ID:32) has been identified nearer to the port beside GAS station.
CONNECTIONS WITH PROJECTS THAT ARE NOT FUNDING DEPENDENT				
Cable Bay (ID: 13) upgrades	Coming years	Reasonably foreseeable	FNDC has applied for TIF funding for road and facilities improvements which will increase the appeal of the site and potentially boost benefits.	In order to avoid conflict with the TIF funding application, upgrades are restricted to the immediate car parking area identified in the concept

[76] https://www.mbie.govt.nz/immigration-and-tourism/tourism/tourism-funding/international-visitor-conservation-and-tourism-levy/projects-funded-by-the-ivl/

FACTOR	TIME	UNCERTAINTY	PROGRAMME IMPACT	COMMENTS
				designs. This will ensure that the concept designs do not overlap, are complimentary and yet independent.
Waipu Cycleway	Coming years	Reasonably foreseeable	The community are fund raising to deliver the cycleway in partnership with WDC. The exact route is still being developed but there is strong community support to include the Waipu Estuary site (ID: 703).	There are plans to introduce a footbridge along the roadside and over a culvert (2019-2020).
Kaipara Kickstart	Coming years	Reasonably foreseeable	A road improvement programme aligning with agricultural vehicle demands and the renewal of aging wharf infrastructure along the Kaipara and Wairoa rivers has been approved by the Provincial Growth Fund. This work is expected to foster local economic development initiatives such as adventure kayaking and tourism water taxi services that could make the Ruawai, Matakohe, Tokatoka and Kaiwaka sites more valuable rest area sites, if private investment occurs in the future as a result of these enabling works.	This programme includes several projects, some of which are already funded while others are conditional on the outcome of an investigation phase or on future funding. Funding approved to date includes that for 50 MAX/HPMV network improvements but the prioritisation of specific structures may be influenced by the funding status of other initiatives.
OTHER				
Land-owner resistance	Coming years	Reasonably foreseeable	Several sites are either on or adjoining or potentially impacting private property, Sites include: [redacted]	The [redacted] is currently not open due to wastewater constraints at the site that require investment. The rest area identified will support community connectivity.
ENVIRONMENT				
Flooding from the Wairoa River	Coming years		The site at [redacted] (and at the nearby existing [redacted] site) are prone to inundation during flooding events. Kaeo has also seen flood events.	The sites have been designed to mitigate the risks associated with flooding.

20.2 RISKS AND ASSUMPTIONS

Several risks and assumptions were identified as part of the SH12 SSBC are also applicable to this SSBC. These risks and assumptions are outlined within **Appendix I**.

Ownership

A key risk that was raised at Technical Workshop No.3 was the ongoing maintenance and whole of life costs for the recommended programme. Resistance could come from local councils for leading and maintaining relevant sites, with additional maintenance costs potentially perceived as a burden. If there is no ownership for the rest area sites, the desired level of amenity will be unlikely to be achieved, which will reduce the benefits of the programme.

Figure 38 shows the core considerations identified to determine the lead partner for each individual site. Four themes for funding application and implement approach were also recognised:

- Partnerships;

- Concessions;
- Kaitiakitanga and our commitments to mana whenua; and
- Consistency with other projects and similar circumstances.

Figure 38: Considerations for Lead Project Partner

20.3 ENVIRONMENT

To gain an understanding of the environmental effects of the rest areas, a planning assessment has been undertaken for the final short-listed sites. This assessment focused on hazards, natural environment, cultural and historic heritage, land use and land ownership.

Table 38 provides a summary of the assessment findings of the ESR Screen, which are also captured within the individual site assessment forms (**Appendix B4**).

Table 38: Summary of Planning Assessment

FEATURE	SUMMARY OF FINDINGS
Hazards	• Fourteen sites are located within flood susceptible land or flood hazards (ID10, ID13, ID31, ID32, ID48, ID64, ID68, ID81, ID103, ID121, ID500, ID702, ID703, ID711). • Ten sites are located at or near contaminated sites (ID7, ID20, ID31, ID42, ID72, ID86, ID500, ID701, ID705, ID710). • Five sites are location within erosion prone land or a coastal erosion hazard (ID13, ID77, ID103, ID121, ID703). • One site (ID12) is located on land with coastal landslide instability hazard. • No identified hazards at ten sites (ID9, ID14, ID39, ID57, ID74, ID111, ID130, ID404, ID700, ID706).
Natural environment	• Three sites are located within a conservation area (ID12, ID13, ID121). • Four sites are located at or near an Outstanding Landscape Area / Outstanding Natural Features (ID68, ID74, ID703, ID711). • Three sites are located at or near a High Natural Character Area (ID64, ID130, ID703). • One site (ID7) is located adjacent to a reserve management unit.
Cultural Historic heritage	• Three sites are located at or near recognised historic sites (ID48, ID404, ID705). • Two sites are located at a heritage resource (ID20, ID700). • Two sites are located adjacent to a river and are recognised as significant to Ngāti Kuri (ID81, ID711). • Three sites have been identified as wahi tapu (ID39, ID74, ID103).
Land use	• Eight sites are rural production zones (ID9, ID10, ID39, ID48, ID57, ID72, ID500, ID705).

FEATURE	SUMMARY OF FINDINGS
	• Four sites are located in a road zone (ID10, ID57, ID404, ID500). • Three sites are located in a coastal marine zone / general coastal zone (ID12, ID39, ID130). • Five sites are located in a conservation zone / reserve (ID12, ID13, ID39, ID68, ID121). • One site is located in a recreational activities zone (ID14). • One site is located in a commercial zone (ID42).
Land ownership	[redacted]

20.4 CONSENTING

A constraints analysis has been undertaken to identify any significant risks to the design and cost to develop each site, which is also linked to and informs the consenting process. The constraints analysis informs the planning review of potential consenting triggers.

In the next stage a planning review will be undertaken to identify the consenting triggers for each of the three district councils as well as the regional council. Existing designations may be extended for those sites immediately abutting state highways that are wholly within the road corridor and district plan matters will address outline plan of works applications. For sites located on private land and/or where regional consents are triggered on designated land, resource consents will be required.

The constraints analysis for each site is included as part of the site summaries provided within **Appendix B4**.

PART D: READINESS AND ASSURANCE

21. COMMERCIAL CASE

21.1 NEXT STAGE

This SSBC has followed a consistent streamlined (risk-based) approach that has been used for the other parallel business cases (i.e. SH11 SSBC, SH12 SSBC. Passing and Overtaking SSBC, Wayfinding SSBC, Integrated Cycling Implementation Plan and Township Plans). The primary objective was to identify a short list of desirable rest area treatments and seek stakeholder buy-in around the preferred 0-2 year, 3-5 year and 5+ year investment programmes. Design for this SSBC was limited to a 'concept level' for the Tier 1 sites and excluded any extensive technical on-site investigations.

The recommended investment programme will be examined and adjusted once all business cases have been completed, with projects being assessed and prioritised across the wider programme. This final decision around the programmes will be informed by the environmental screen, consenting strategy and geotechnical investigations.

The recommended investment programme will be examined and adjusted once all business cases have been completed, with projects being assessed and prioritised across the wider programme. This final decision around the programmes will be informed by the environmental screen, resourcing, consenting strategy and geotechnical investigations.

Pre-Implementation and Detailed Design

Going forward the next phases for the Rest Areas programme would be Pre-Implementation and Scheme/Detailed Design.

Once the scheme designs have been finalised (including peer reviews), the next stage is pre-implementation and detailed design. This phase will focus on (i) refining the design to avoid effects; and, (ii) developing appropriate mitigation measures and methods, to manage any environmental effects.

The following considerations will shape and inform the final strategy:

- **Technical Risks.** Issues that require further consideration during the technical investigations, concepts for and decisions any structural forms, detailed design, consultation and resource consent applications.
- **Procurement Approach.** The recommended programme may influence the procurement approach adopted to deliver the detailed design.
- **Need for, and extent of, land acquisition.** The design for rest areas will look to avoid any land acquisition, but in some cases (e.g. the [redacted]) there may be some encroachment over property boundaries. It may be possible to amend designs to avoid any land purchase if a lower level of amenity is acceptable.

RMA Application

Leading up to lodgement of RMA applications the process would likely follow:

- Consultation on proposed mitigation and design with landowners and stakeholders.
- Confirm / finalise the project design.
- Finalise assessment of effects.
- Finalise land requirement plans.
- Review property strategy (developing land purchase / entry agreement as necessary).
- Finalise RMA lodgement documentation in consultation with relevant authorities.

The proposed approach enables whole of project mitigation discussions to occur, which enables the development of complementary and efficient mitigation methods to be adopted. Equally, this allows design and construction flexibility issues to be considered. Thus, transparent communications across the Project team should be maintained when making decisions about design and mitigation. The risk register will focus on managing both consenting and construction risks.

21.2 COMMUNICATIONS AND ENGAGEMENT

Initial engagement with key stakeholders and the local hapū has been undertaken. Going forward, the Package Leads should develop a stakeholder engagement plan that encompasses the requirements for business cases. This will provide the basis for a coordinating ongoing consultation and communications with affected landowners and stakeholders.

The consultation phase should be developed in tandem with a property consultant, to enable effective integration of any property issues with the RMA consenting phase.

Private Property Impacts

The scope of this SSBC excludes engagement with private land-owners but outlined the potential need for land acquisition in future stages of the project, should funding be secured. Partners and stakeholders identified several locations which were independent of their land ownership status (e.g. the taverns).

21.3 RISK ALLOCATION AND TRANSFER

The key risk types that could delay the project are:

- **Technical risks** where effects either lead to significant design change or cause significant cost escalation (by introducing or increasing the scope of mitigation).
- **Programme risks** caused by, for example, discussions with affected parties and stakeholders, staff resourcing, or hearings and appeal processes.
- **Property effects** type issues which cause either design change or cost escalation (by introducing or increasing the scope of mitigation).
- **Reputation risks** caused by strong local opposition to project.

Table 39 outlines how these risks will be managed.

Table 39: Commercial Management Risk

RISK	MANAGEMENT APPROACH
Technical	Robust technical reviews and robust submissions for statutory approvals
Programme	Careful programme management against realistic deliverables
Property	Early engagement with potentially affected landowners
Reputational	Ensure pro-active and regular stakeholders, treaty partners and public communications

21.4 CONTRACT MANAGEMENT

The contract for the scheme and detailed design is likely to extend to lodgement of RMA applications and include provision for the successful consultancy team to then provide services and resources for the follow-on phases up to grant of consent.

The RMA consenting phase will likely focus on maintaining levels of constructability and design flexibility to better enable subsequent procurement decision making.

21.5 PROCUREMENT OF IMPLEMENTATION PHASE

Selecting a delivery model for the detailed design and construction (pre-implementation and implantation phases) requires careful consideration of the activities involved and the capability and capacity of resources to deliver them.

Given the size, complexity and risk profile of the next phases, it is recommended that either a staged delivery model or a design and build are considered. A brief description and comparison between the benefits and disbenefits of these models is outlined in Table 40.

Table 40: Delivery Model Options

DELIVERY MODEL	DESCRIPTION	BENEFITS	DISBENEFITS

Staged	• Delivery through two separate contracts:
	  ▪ Detailed Design and construction monitoring
	  ▪ Construction phase
	• Supplier selected using price / quality assessments.
	• Lump sum or schedule of prices.
	• Roles well defined and understood. The purchaser is more able to control the scope. Risk largely managed by the purchaser.
		• A high degree of purchaser control is possible.
		• Greater and earlier certainty over final outputs and costs possible.
		• Contract management is simplified as decisions are solely made by the purchaser.
		• Transaction costs for both supplier and the purchaser are reduced.
			• Separation of designer and builder may not encourage innovation.
			• Ongoing and significant involvement of the purchaser in project management.
			• Less coordination between the design and construction phases.
			• Design errors may be costly to fix.

Design Build	• Delivery through a single supplier to complete all detailed design and construction.
	• Includes options to:
	  ▪ Design and construct
	  ▪ Design, novate and construct
	• Lump sum with one price to the supplier for the delivery of outputs.
	• Risk transferred to the supplier. Purchaser less involved in design and construction.
		• Quicker start times and potentially completion times can be achieved with earlier construction.
		• Purchaser can focus on outcomes via a concept design
		• Outputs can be clearly defined, technical and financial.
		• Purchaser needs less design resource.
		• Overlapping design and construction increases the potential for innovation.
			• Proposal preparation costs for potential suppliers can be high which may be reflected in price.
			• Risks may increase around design quality, outcomes and cost.
			• Standards must be clearly defined.
			• Greater supplier exposure to risk that may increase the price.
			• Post contract award variation may increase costs.
			• May reduce flexibility.
			• The number of potential suppliers may be reduced because of the requirement to accept greater risk.
			• Additional resources may be required for contract management.

22. MANAGEMENT CASE

This section provides an indicative management case for this SSBC.

It is important to recognise that the management of individual activities (i.e. individual rest area projects) which form the recommended programme would be led by the relevant parties (i.e. the Transport Agency, councils, or DOC) working in partnership with hapū and private land-owners as appropriate.

22.1 DELIVERY PLAN

As discussed earlier in this business case there remains more assessment to be undertaken before implementation can commence. Project leads will take the lead role on funding applications and project planning. **Appendix B4** outlines who the lead organisation would be for each of the individual rest area sites.

Appendix A2 includes a copy of the letter template used to communicate how the recommended programme was developed and the next steps for implementation that was communicated to implementation partners.

It is proposed each of the recommended options would undertake the following tasks:

1. Procure scheme and detailed design stage services, including:
    a. Detailed design;
    b. Land acquisition; and
    c. Resource consent application.
2. Procure construction services.
3. Construction.
4. Benefits realisation, operation and maintenance.

22.2 ASSURANCE & ACCEPTANCE

Overview

The design should be subject to the normal project review processes with no specific unusual engineering or operational considerations prevailing. The reviews would include:

- Economics peer review;
- Lighting design peer review; and
- Road safety audit.

The Project design will be subject to the normal project review processes with no specific unusual engineering or operational considerations prevailing. Consideration needs to be given to toilet and rubbish bin maintenance etc. With regards to post consenting decision making, formal construction funding acceptance would take place in the normal way for each of the project lead organisations. This process will occur after consenting.

Key aspects of the project are local hapū interests and landownership, which are likely to require the existing relationships to continue to be strengthened in preparation for the consenting and then construction stages. This element of the Project is potentially complex and accordingly discussions about how this aspect is handled will be required.

The independent review of this SSBC is provided as **Appendix K**. A peer review of the cost estimates is provided as **Appendix L**.

RMA and Other Statutory Documentation

The RMA documentation, to be produced during the next stage, will be reviewed by the following parties:

- Legislative issue documentation
- The cultural and natural environmental issues and management documentation will be reviewed by the following parties:
    - Safe & Sustainable Transport Team as appropriate to review technical reports and advise on their alignment with relevant policy, guides, specifications and standards.
    - Legal review.
    - Planning and Investment review.

Project Management review of any proposed conditions to ensure that constructability not compromised and to retain flexibility for ensuing phases. The post RMA consenting implementation process (specimen and detailed, and construction) has not been determined. It is anticipated that these ensuing phases will be subject to normal quality assurance processes.

Project Management

The Project Management Service Team will need to review any proposed conditions to ensure that constructability is not compromised and to retain flexibility for ensuing phases. The post RMA consenting implementation process (specimen and detailed, and construction) has not been determined. It is anticipated that these ensuing phases will be subject to normal quality assurance processes. To manage retention of suitable levels of flexibility for these phases (post consenting), it is proposed that the Project Management Services team have a review role of the Project, focussing on the scope of proposed resource consents (including designations) and any proposed consequent designation and consent conditions.

22.3 COST MANAGEMENT

The project design includes mitigation and design risk factors that are already allowed for in the current concept-level project cost. The environment effects assessment together with topographic and geotechnical investigations will help provide certainty around the scope of any further mitigation needed. The risk register will be maintained and if required, the cost estimate revised.

22.4 CHANGE CONTROL

Senior decision making will likely be required for this Project at the following stages:

Table 41: Senior Decision Makers

STAGE	WHO	DESCRIPTION
RMA consent documentation including final designs	Will depend on project initiative lead.	Approval to lodge final design, and proposed conditions of consent including the mitigation package.
Property Strategy (in parallel with approval of RMA consent documentation)		Approval of proposed approach to handling property acquisition and approach to managing RMA risks.
Designation Decision		Approval of designation decision including conditions

22.5 ISSUES MANAGEMENT

Issues are proposed to be managed through the risk register process, with the top risks reported monthly. Going forward, issues that have potential strategic implications or may create precedents should be escalated within the relevant project initiative lead organisation, as per normal process.

There are potential environmental issues in relation to Kauri dieback that would need to be discussed with DOC as a means of developing an effective environmental management plan.

22.6 POST IMPLEMENTATION MONITORING

Once the project is complete it is expected that post implementation monitoring assessment / benefits realisation will be undertaken. This assessment will measure how well the project overall has delivered on its objectives. This is to be undertaken by each relevant project initiative lead organisation.

Visitor numbers will be used as a measure of general performance[77], along with a review of fatigue related crashes using the CAS database. Crash analysis should be undertaken at least one every five years after construction to allow for a comparison against the base data (2014-2018).

A repeat of the visitor survey which informed the Great Kiwi Road Trips study is potentially another means of understanding the extent to which rest areas have helped actively boost tourism across Northland. If counters are deemed to be too expensive, visitor numbers could be manually surveyed at each rest area at regular intervals - e.g. first Saturday of the month from 12-2pm. This would allow seasonal variation in visitor numbers to be accurately recorded.

A record of when each rest area is completed or upgraded would also be important.

[77] Counters could be installed as part of construction at the rest areas forming the option delivered.

23. FINANCIAL CASE

This section includes a summary of the financial impacts and effects of the proposed project. Funding options and potential revenues are also considered.

23.1 PROJECT DELIVERY

Project delivery costs at this stage are based on a concept level design for the early and medium-term rest area treatments. The assessments have been informed by desktop environmental, geotechnical and topographical considerations, along with a site assessment.

A summary of the expected costs for project delivery are provided below:

- Early implementation measures to commence mid-2020 over a period of 18-24 months.
- Property costs (based on aerial photos without input of a property consultant).
- Design costs including consultancy fees and NZTA-managed costs.
- Construction costs.

It has been assumed that no land acquisition would be required for any of the sites. Where development is intended on private land, it has been assumed that an agreement with the landowner can be reached given the mutual benefits for all parties. The use of concessions on these sites can help with on-going maintenance issues – concessions are already in place in at least one of the recommended sites (Kohukohu Ferry) using this mechanism to support enhanced outcomes through more effective partnering is recommended. Going forward, input from a property consultant may be required.

23.2 FUNDING OPTIONS

The National Land Transport Fund (NLTF) is the primary funding source, which is administered by the NZ Transport Agency and funds transport projects which have been identified in the NLTP. Other potential funding sources are:

- The Provincial Growth Fund.
- Tourism Investment Fund (TIF) which funds activities for councils facing tourism pressure.
- Low Emission Vehicles Contestable Fund[78], for rest areas where electric vehicle charging points would be desirable.
- Concession agreements with local providers for on-going maintenance.

At this stage it cannot be assumed that funding is available from any source.

The NZ Transport Agency have also not made a commitment to manage any of the infrastructure on local roads, and all future ongoing maintenance of rest areas would be the responsibility of local councils or landowners (e.g. DOC).

NLTF Funding

The NLTF is the primary mechanism for Crown investment in on the New Zealand 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 projects 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.

If approved, the project could be eligible for NLTP funding from the NZ Transport Agency as it achieves a **medium** results alignment. However, this is subject to an assessment against other national priorities at the time of the funding application.

[78] https://www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/summaries-of-all-projects-approved-for-co-funding/

Generally, the project aligns with Government's focus on providing increased access to economic and social opportunities and a transport system that is a safe system.

Provincial Growth Fund

The PGF is a Government fund established to stimulate economic growth within regional New Zealand. The PGF is administered by the Provincial Development Unit, part of the Ministry of Business, Innovation, and Employment.

Whilst the NLTP is the primary source for land transport initiative, if a project can generate additional benefits for regional development, the PGF could be accessed. In this instance, the PGF could accelerate the progression of the project (if not sufficiently prioritised in the NLTP) if it is considered strategically important to Northland. Else, it may provide a source of funding if this project cannot secure funding via the NLTP if it meets the Government's criteria and objectives for the PGF.

Assessment

There are criteria that a project is assessed against in a PGF application; namely projects must:

- Lift the productivity of a region or regions
- Contribute to the PGF 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
- 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.

Tourism Infrastructure Fund

The Tourism Infrastructure Fund is separate to the PGF and supports local communities facing pressure from tourism growth and for areas with a high proportion of visitors in relation to the number of local ratepayers. The fund can be used to help provide infrastructure that enhances the visitor experience and is open to councils and not-for-profit community organisations.

Over the last few years the TIF has funded the following projects in Northland:

- $147,905 to build new toilet facilities on a freedom camping site near Kaimaumau (Round 1).
- $639,000 of funding for the provision of toilet facilities across five locations in the Region (Round 2).
- $344,000 of funding for the upgrade of an existing carpark at Kawakawa to support the Hundertwasser Park Centre – Te Hononga project (Round 2).
- $234,000 of funding for the construction of a boardwalk and toilets at Baylys Beach (Round 2).
- $149,100 of funding for the provision of toilet and car parking facilities at Maungaturoto (Round 2).
- $103,584 of funding for the provision of toilet facilities and footpaths at Matakohe (Round 2).
- $412,800 of funding for the construction of car parking facilities at Tamaterau (Round 2).
- $539,000 for new carpark and toilets to increase capacity and bus parking at Abbey Caves (Round 3).

All the above projects relate to either new car parking or toilets, which are typically the most prominent features of the proposed rest area upgrades.

Cable Bay Car Park – TIF Application

Consultation with FNDC identified that[79] there is an ongoing TIF application to enhance the car park at Cable Bay. A key consideration is that the TIF funding (up to approximately $500k) is conditional on no other applications to Government being made for funding. There is, therefore, a need to provide a clear scope of what facilities (e.g. toilets) should be included within the TIF application to make optimal use of the fund.

Concessions

Concessions are used by implementation partners as a way of enhancing the amenity of public places and sharing the costs associated with on-going maintenance to relieve the pressure on existing budgets. The Transport Agency has existing agreements that can be adapted for the sites that are developed

Low Emission Vehicles Contestable Fund

The Low Emission Vehicles Contestable Fund, administered by the Energy Efficiency and Conservation Authority (EECA), is one way the Government is helping to accelerate the uptake of electric vehicles (EVs) and other low emissions vehicles. The fund offers up to $7m a year to co-fund projects with private and public sector partners in areas where commercial returns aren't yet strong enough to justify full private investment.

The fund has already been used to facilitate the introduction of five medium speed EV charging stations at Waipapa, Mangonui, Kaikohe, Houhora and Waitiki, with a contribution of $149,125. The project was a partnership between Far North District Council, Top Energy, Northpower and ChargeNet.

23.3 PROJECT REVENUES

There is an opportunity for the rest areas project to generate revenue by allowing space within sites for potential retail (café/coffee shop) opportunities.

23.4 ON-GOING MAINTENANCE

The proposed works will result in new assets and therefore a corresponding change to the ongoing maintenance and operation.

The addition of a new paved areas, and amenities such as toilets, will result in ongoing maintenance costs. The State Highway Control Manual specifically states that one of the main reasons the Transport Agency have historically avoided participating in the provision of toilet facilities at rest areas is due to the vandalism that occurs at such facilities, and consequently the high maintenance and repair costs. Therefore, there are risks in the provision and maintenance of these facilities.

Ongoing maintenance requirements will not be covered by the Transport Agency and would need to be owned, funded and managed by local councils or DOC (as applicable). There will also be some variance in the periodic maintenance costs depending on the final form and amenities provided within the rest area.

[79] Via correspondence with Northern Edge Consultants