Thursday, 19 November 2020

Te Hui o Te Kaunihera ā-Rohe o Heretaunga
Hastings District Council
Strategy and Policy Committee Meeting

Kaupapataka

Open Attachments Under Separate Cover

Te Rā Hui: Meeting date:	**Thursday, 19 November 2020**
Te Wā: Time:	**1.00pm**
Te Wāhi: Venue:	**Council Chamber** **Ground Floor** **Civic Administration Building** **Lyndon Road East** **Hastings**

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TE KAUNIHERA Ā-ROHE O HERETAUNGA

Project Number: 2-S5493.00

Active Transport Programme Business Case

Hastings District Council

28 July 2020

CONFIDENTIAL

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Contents

List of Figures

List of Tables

Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case

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Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case

Executive Summary

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay which one of the largest apple, pear and stone fruit producing areas in New Zealand and is known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

The Hawke's Bay lifestyle has drawn people to the region and the ease and convenience of driving has led to challenges with the active transport network. As a result of this, there was a need to look to improve active travel in the Hastings District.

A workshop was undertaken with stakeholders and partners who identified and agreed with the following problem:

100% **Problem one:** Gaps in levels of service* and the perception that walking and cycling is unsafe and inconvenient is limiting its uptake, resulting in high car dependency

*LOS – Safety LOS, inconsistent LOS (unmet expectation of comfort and quality) and network gaps between destinations and communities

The potential benefits of successfully addressing these problems were also developed and agreed upon. The stakeholder panel identified the following potential benefits and weightings:

70% **Benefit one:** Increased use of active travel modes

30% **Benefit two:** Improved perception of active travel

The problem and benefits were validated by the evidence, most notably:

- Underutilisation of the active travel network is also a result of network gaps between destinations and communities. Inconsistent and low safety levels of service have resulted in less people using active travel.
- Driving is easy and convenient due to free car parking, unrealised cost of driving and relatively uninterrupted journey times by car. This paired with poor overall perception of active modes, the view that active modes are a means of recreation rather than a mode of transport and the view that the network is unsafe has resulted in high car dependency.

- These gaps in the network, an unmet expectation of the level of service and perception issues are currently contributing to reduced health and wellbeing outcomes and reduced social and economic opportunities for vulnerable populations due to reduced access to transport choices for elderly, children and those without access to a vehicle.

The Hastings District, which is located within the Hawkes Bay region, has the lowest rates of adult physical activity and second highest level of obesity of any region in New Zealand (Ministry of Health, 2020).

Napier-Hastings is a relatively low-income region and has a significant degree of socio-economic deprivation. This needs to be taken into consideration, in future urban development planning for the area. (HPUDS, 2009)

The national cycling programme identified Hastings as having an 80% fit for purpose network and compared to regional and national levels, Hastings has significant active travel network coverage.

Although DSI's for vulnerable road users are nearly half the rates in similar districts, the perception that the network is unsafe and inconvenient has contributed to slow uptake of active modes, reduced physical activity and increased obesity rates.

Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist[1]	20.4%	17.5%
Total	**33.6%**	**43.4%**

Increasing employment in the region will result in increased demands for travel to employment. Accommodating this demand within existing travel patterns dominated by private vehicle use would require significant investment and would result in increased pollution and congestion. This would also restrict access to increasing employment opportunities for those unable to access private vehicles through disability or deprivation.

There is strong strategic alignment with key national, regional and local strategic drivers around increased access for economic and social opportunities, mode shift, transport choices and access to modes such as public transport, walking and cycling. There has also been an increasing shift toward reducing the adverse effects on the climate, local environment and public health which has strong strategic alignment with the Strategic Case.

The Strategic Case was followed by the development of a Programme Business Case (PBC) which is an evidence based living document that guides the direction for future investment in active transport projects.

The PBC recommends a package of transport interventions including new walking and cycling infrastructure, safety and level of service improvements, communication, engagement and measures to address travel behaviours such as travel demand management. These interventions will build upon past successes and will allow Hastings District Council (HDC) to meet new and emerging challenges, particularly in a time when COVID-19 has changed the way we view active transport.

Two investment objectives were agreed upon and applied to the development of the PBC:

- Increase use of active transport - Increase the number of people using active travel by - increasing active travel for trips to work by X%, increasing active travel for trips to school by X% and increasing active travel for recreation by X%.
- Improve the perception of active transport as safe and convenient – Improve perception of active travel by - Improving walking and cycling provision by x%, reducing pedestrian and cyclist crash rate (visible to community) by X% and having zero deaths.

The percent of increase or decrease within these investment objectives will be determined once the baseline data has been collected.

A total of eight potential programme options were developed and assessed against their ability to address the problems and achieve the objectives. One programme focus emerged as the most effective. This programme is balanced in nature and invests equally across new infrastructure, level of service and safety improvements, and soft measures, focusing on improving the perception of walking and cycling, increasing safety and changing travel behaviours.

The recommended strategic programme focus has the following delivery philosophy:

- HDC will build on what has been done well;
- HDC will change the things that are not working;
- Let's do the hard work first;
- Equitable approach to active transport infrastructure improvements;
- The ease and convenience of driving and parking needs to be addressed;
- The right active transport infrastructure for the right target audience; and
- HDC will maximise opportunities for improvement.

The recommended programme performs well against all the investment objectives, and has strong alignment to relevant national, regional and local plans and strategies. The recommended programme has been assessed using the latest NZTA Assessment Framework criteria. It has not been possible to produce an indicative benefit cost ratio due to the scale and scope of this PBC. It is anticipated that efficiency will be assessed during subsequent phases as more detailed estimates of the costs and benefits can be determined.

The PBC has two key purposes:

- It has been used to identify quick wins and short-term measures that have the greatest potential to address travel behaviours, support mode shift through improved transport / land-use integration, will improve safety and the level of service of walking and cycling facilities and will meet the investment objectives; and
- It sets a framework for how the problems on the active transport network will be addressed by focusing on new infrastructure improving active transport choice and connectivity.

Through implementation of the recommended programme it will be safer and more convenient for people to make more trips using active transport. Implementation of this programme alongside the Hastings District Council (HDC) Network programme, including travel demand management and travel behaviour change measures, will result in a mode shift over time, making active transport the easy and preferred modes of choice.

The "quick wins" focus on assessing and developing an approach for increasing separation and level of service of existing facilities, mode shift, vulnerable users, addressing severance issues, developing neighbourhood/greenway corridors, access management on active travel corridors and increasing the uptake of bike purchase schemes.

Short-term projects see an increase in resources to implement the outcomes of the studies and plans developed in the "quick wins" phase as well increasing communication and

engagement. The focus of these projects is around implementing policy change to support transportation / land-use integration, travel behaviour change measures, and improving wayfinding amenity, existing footpath and bicycle facilities, walking and cycling around schools and community severance. The evidence suggests that high car dependency, perceptions and human behaviour are a key cause of many of the problems identified on the active transport network. This phase of projects aims to address these issues through implementation of travel demand management and parking demand management measures. Some new infrastructure projects are included in this phase focused on improving the level of service and safety of facilities first, then increasing connectivity.

Later stages build upon this approach with additional new infrastructure in later years.

The midpoint of the **Capex component of the programme totals $86.9M, equating to an average expenditure of $8.7M per year**. In addition, there are **operational expenditure components totalling $4M, equating to an average expenditure of $403k per year**. Soft measures have been developed with a 10-year delivery in mind which will require consideration if timelines for implementation are adjusted.

There is significant opportunity for cost sharing of the active transport infrastructure with Waka Kotahi, HBRC and public-private partnerships which is anticipated to be around $44.6M. This would be a significant increase to the current annual expenditure for active transport as the 2019/20 budget allocated $1.7M. While this is an ambitious programme, **new infrastructure projects could be extended into a 20-year programme which would bring annual programme expenditure in line with current levels.**

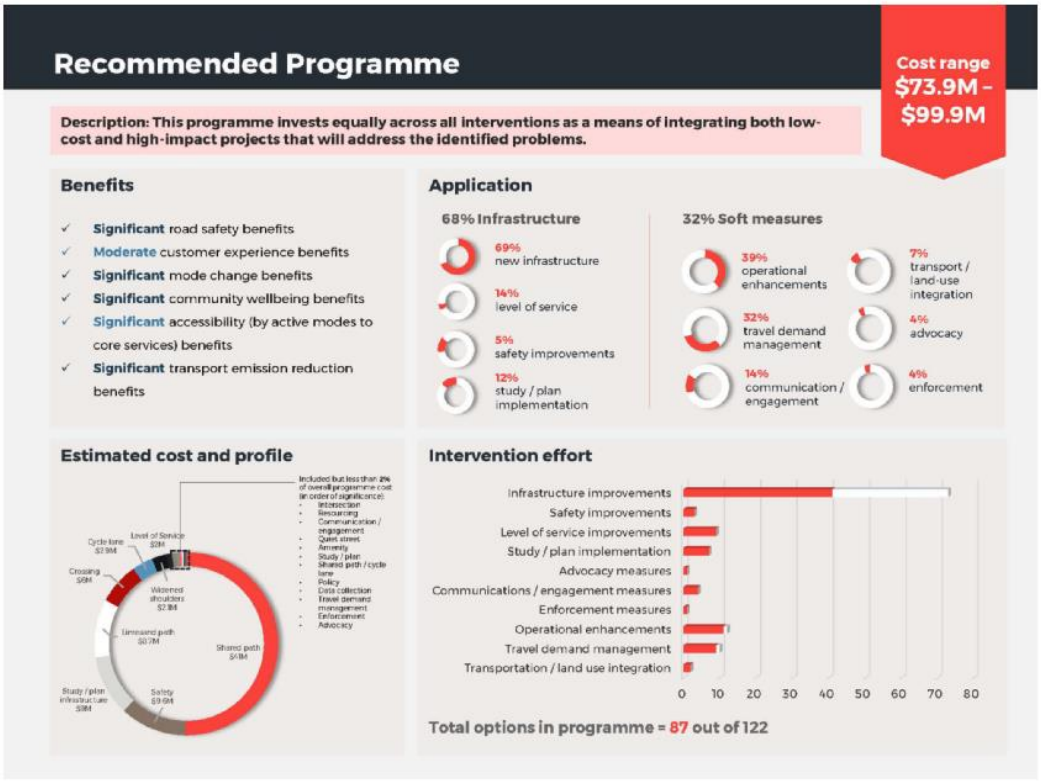
Category	Total	Annual
Capital expenditure (Capex)	$86.9M	$8.7M
Operational expenditure	$4M	$403k (10 years)
Potential cost sharing	- $44.6M	- $4.5M
Overall programme cost	$42.3M	$4.23M

The PBC is a key stage in developing the Council's transport investment programme for the Long Term Plan. However, the next steps will see individual projects or activities developed and will go through statutory processes to proceed (e.g. NLTP, RLTP, and LTP).

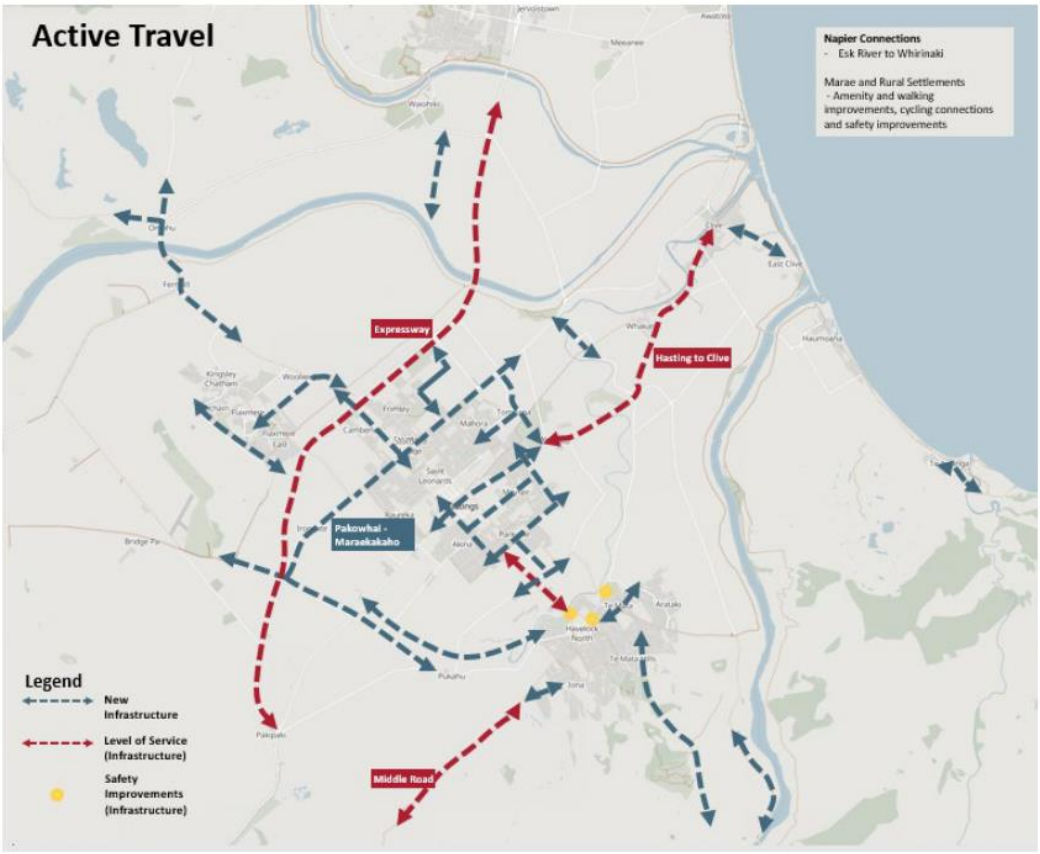
Results alignment has been assessed as **High** as per the Investment Assessment Framework (2018).

A summary of the recommended programme and location of new infrastructure is provided below.

Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case



Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case



Refer to Appendix F – Waka Kotahi NZ Transport Agency SBC Investment Questions for the checklist of requirements against the strategic case assessment questions and Appendix M – Waka Kotahi NZ Transport Agency PBC Investment Questions for the checklist of requirements against the PBC assessment questions.

Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case

PART A – STRATEGIC CASE

1 Introduction

1.1 Purpose

A Strategic Business Case (SBC) was commissioned by Hastings District Council (HDC) to improve active transport within Hastings District. This active transport SBC and Programme Business Case (PBC) were undertaken in parallel with the HDC network SBC and PBC. This SBC outlines the strategic priorities and determines the need for investment and the case for change and sets the direction for the subsequent PBC (Section 4).

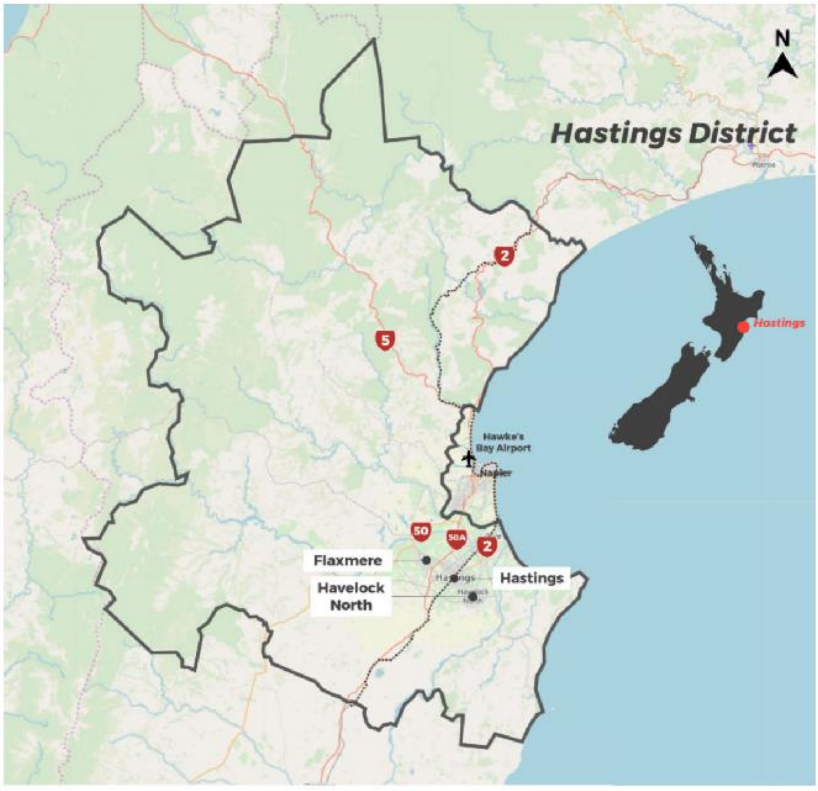
Primary, the purpose of this strategic business case is to:

- Provide a clear case for change and a compelling reason to improve the active transport network,
- Define the problems identified by the project stakeholder, the evidence for these problems, and associated benefits; and
- Recommends the next steps prior to Programme development

1.2 Scope

The physical extents of this SBC comprise Hastings District, located in the Hawke's Bay Region, focused on the main urban areas of Hastings, Havelock North and Flaxmere (Figure 1).

Figure 1 Map of Hastings District



1.3 Key Partners and Stakeholders

ILM workshop participants were selected due to their ongoing involvement in the Hastings Active Transport Working Group. They represent a diverse cross-section of active transport stakeholders and are involved in active transport operational and strategic decision-making.

The key partners to the business case who will have a responsibility for delivering on the investment and key stakeholders who have helped determine the problems and benefits and guide the development of the programmes are shown in Table 1 and Table 2.

The following table lists the key partners for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications

Table 1 Key partners

The following table lists the key stakeholders for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current local context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications
Hawke's Bay Regional Council (HBRC)	Historic and current regional context, regional active transport network stakeholder
Hastings Police	School community policing, active transport safety
Cycle Aware Network (CAN) Hawke's Bay	Cycling advocate
Hawke's Bay District Health Board (HBDHB)	Health outcomes of active transport, major employer implementing a travel plan
Disability Action Group	Accessibility / mobility impaired
Napier City Council	Adjacent council, regional active transport network stakeholder
Local School Principal	School representative
Bike on New Zealand	Cycle advocate for the school environment

Table 2 Key stakeholders

Key stakeholders who also provided technical support at the Investment Logic Map (ILM) workshop included:

- Hastings District Council (HDC)
- Hawke's Bay Regional Council (HBRC) / Bike NZ
- Sport Hawke's Bay (Sport HB)

2 Context

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay, known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

In 2010 the Hastings District became new Zealand's first "Model Community" and by January 2011 the programme was branded "iWay", a network of urban pathways and on-street facilities. Building upon this, Hawke's Bay Trails is one of 22 Great Rides in New Zealand, with nearly 200km of off-cycle trails connecting the region and over 700,000 trip counts recorded on the trails in 2019.

2.1 Strategic Drivers

The project's alignment to existing key relevant strategies and plans is summarised below.

2.1.1 Government Policy Statement (GPS) 2018-2028 (MoT 2018)

The GPS identifies several national land transport objectives that are relevant to this investment, notably a land transport system that:

- *Provides increased access for economic and social opportunities:* Supporting tourism is specifically noted in the investment priorities and the planning direction
- *Enables transport choice and access:* Specifically, increased mode shift, fit-for-purpose and safe (real and perceived) walking and cycling infrastructure
- *Reduces the adverse effects on the climate, local environment and public health:* Notably reduced significant negative effects on water quality and biodiversity from construction and ongoing use of transport infrastructure, and increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives

The project has a strong alignment to the GPS and relates to mode neutrality, accessibility, safety and affordable transport for all residents and users of the project corridor. The business case approach aims to provide a value for money solution that address the needs from the key stakeholders.

2.1.2 Draft Government Policy Statement (GPS) 2021-2031 (MoT 2020)

The GPS identifies four strategic priorities that will guide land transport investments from 2021-2031. Several national land transport objectives that are relevant to this investment, notably a land transport that:

- *Developing a transport system where no-one is killed or seriously injured:* We need to create a transport system in both urban and regional areas that protect people. This priority gives effect to, but is not limited to, the *Road to Zero: the 2020-2030 Road Safety Strategy (Road to Zero).*
- *Providing people with better transport options to access social and economic opportunities:* Highly liveable cities and towns are people-friendly places with healthy environments that improve wellbeing and economic prosperity. The transport system contributes to liveable cities and towns by providing people with good travel options. This requires all parts of the transport system, be it roads, rail, public transport, and walking and cycling routes, to work together.
- *Improving freight connections for economic development:* Efficient, reliable, safe, mode-neutral and resilient freight transport – within cities, between regions and to ports – is vital for a thriving economy. The transport system needs to

support the movement of freight by the most appropriate mode, improving interregional corridors, and increasing resilience.

- *Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access:* Vehicles that run on fuel are the fastest growing source of harmful climate pollution – emitting almost 70 per cent of our total transport emissions. Prioritising a reduction in greenhouse gases emitted by transport will help to achieve the Government's emission reduction targets and protect public health.

2.1.3 *Keeping Cities Moving (WKNZTA 2019)*

Keeping Cities Moving is Waka Kotahi's plan to improve travel choice and reduce car dependency and contributes to the GPS objectives by increasing the wellbeing of New Zealand's cities by growing the share of travel by public transport, walking and cycling.

Keeping Cities Moving includes an action plan of 34 interventions that will focus on leveraging mode-shift through:

- Spatial and place-based planning
- Policy and regulatory interventions
- Network design, management and optimisation
- Investment in infrastructure, platforms and services
- Economic tools; and
- Education, engagement and awareness interventions

2.1.4 *Vision Zero (MoT 2020)*

Vision Zero is the Ministry of Transports strategy where no-one is killed or seriously injured in road crashes, and where no death or serious injury while travelling on our roads is acceptable. Vision Zero builds on the Safe System (Safe Speeds, Safe Roads, Safe Vehicles, Safe Road Users) holistic approach to road safety, which requires people to think about the road system in its entirety, from infrastructure projects to policy and regulation.

2.1.5 *Climate Change Response (Zero Carbon) Amendment Act (MfE 2019)*

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement. This will limit the global average temperature increase to 1.5° Celsius above pre-industrial levels and allow New Zealand to prepare for, and adapt to, the effects of climate change.

The changes do four key things. They:

- set a new domestic greenhouse gas emissions reduction target for New Zealand to reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
- establish a system of emissions budgets to act as stepping stones towards the long-term target
- require the Government to develop and implement policies for climate change adaptation and mitigation
- establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

2.1.6 *Hastings District Plan (HDC n.d.)*

Section 2.5 'Transportation Strategy of the Hastings District Plan (the District Plan) identifies the importance of establishing a safe and efficient use of the transport network. This can be

achieved by traffic management on the network, and the control of land use activities alongside the network.

2.1.7 Hastings Council Long Term Plan 2018-2028 (HDC 2017a)

The Hastings District Council's Long Term Plan sets out the Council's plans and spending with the following aims being relevant to this investment:

- *Accessible range of safe transport options*
- *Safe walking and cycling facilities*
- *Efficient movement of goods*
- *Infrastructure supporting economic growth*

2.1.8 Hawke's Bay Regional Cycle Plan (HBRC 2015)

The Hawke's Bay Regional Cycle Plan vision is to "*normalise cycling in Hawke's Bay to such an extent that the region is nationally and internationally recognised as providing the most bike-friendly experience in New Zealand*". By encouraging uptake in active travel, this business case increases the benefits from cycling in the areas of liveability, health and tourism.

2.1.1 Hawke's Bay Regional Public Transport Plan 2019-2029 (Draft) (HBRC 2019a)

The Regional Land Transport Plan (RLTP) vision for transport in Hawke's Bay is: *"A safe, resilient and efficient transport system that supports the development of our economy and contributes to social wellbeing in our community"*. It aims to promote increased numbers of trips being undertaken on public transport, lessening the reliance on private motor vehicle travel and contributing to reduced congestion and carbon emissions on the road network. The Draft Regional Public Transport Plan 2019-2029 builds upon this strategic alignment by supporting the RLTP's vision.

2.1.2 Hawke's Bay Regional Council Climate Emergency Declaration (HBRC 2019b)

The Hawke's Bay Regional Council (HBRC) joined other councils around the country when it announced a climate emergency for the Hawke's Bay region on 26 June 2019, recognising there is a small window of time to action and avoid the most damaging effects of the climate crisis in the longer term.

In declaring a climate emergency, the Regional Council is making climate change a focus in all its decision-making and relevant work programmes.

2.1.3 Local Government Leaders' Climate Change Declaration (LGNZ 2017)

Local government leaders declared an urgent need for responsive leadership and a holistic approach to climate change. The declaration asked NZ government to make climate change a priority to develop and implement an ambitious transition plan for a low carbon and resilient NZ. All local governments are committed to developing and implementing action plans to reduce greenhouse gas emissions and support resilience. Plans will promote walking, cycling, public transport and other low carbon transport options.

This business case clearly promotes the development and implementation of active transport to reduce greenhouse gas emissions and support resilience.

2.2 Previous Programmes and Investment

In 2010, Hastings and New Plymouth were selected by Waka Kotahi for the Model Communities Programme, a focused investment in cycling infrastructure, education and encouragement. In 2011, iWay was developed, with the programme focusing on developing

key arterial routes to the urban areas, complementary on road cycle lanes on key collector routes, shared pathway projects, improved connectivity and education programmes including training, campaigns and other safety programmes (HDC 2017). By mid-2012, the network was completed with more than 100km of new pathways including key routes to Flaxmere, Hastings, Havelock North and Clive (iWay 2020). In the urban areas of Hastings District, most routes are on road cycle lanes.

A key outcome of that programme was a "20% increase in cyclists since before the iWay project began" (iWay 2020).

Some of the key learnings[1] from iWay which will help the development of this programme are:

- Look to provide possible opportunities to strengthen network continuity within the route hierarchy.
- Consistency of the standard of infrastructure provision (within a hierarchy of routes) is important to pedestrians and cyclists and also promotes better understanding of expected behaviour for drivers.
- Reported safety perception when walking and cycling has remained high across the study period (around 82% of people feel safe) and has increased significantly from the pre-iWay level of around 28% (2008).
- That where possible and appropriate, off-road provision should be made in preference to on-road cycle lanes.
- In some cases, the desired mode shift did not occur where less desirable improvements (such as TDM, behaviour change and parking management interventions to discourage driving) were not fully implemented alongside cycleways and footpaths.
- A lack of bike shelters and storage facilities.

2.3 Geographic Context

Hastings, Flaxmere and Havelock North consist of relatively flat and rolling countryside, with Te Mata Peak providing some steeper areas. The relatively flat topography is favourable for active transport users, with the steeper areas such as Te Mata Peak providing recreational users the challenges they seek.

2.3.1 Population

Hastings District has a population of estimated at 85,000 people which is a 9.5% increase from 5 years prior (SNZ 2019). with 60% of that population residing in the key urban areas of Hastings, Havelock North and Flaxmere.

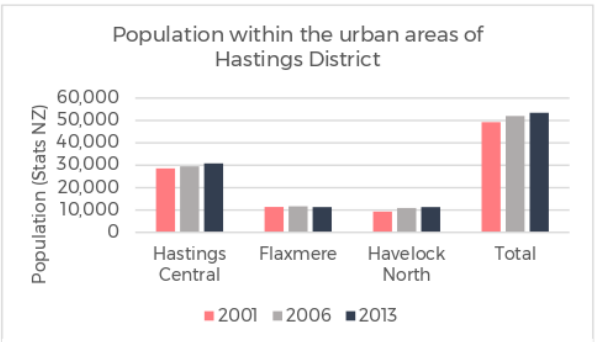


Figure 2 Population in 2001, 2006 and 2013 (SNZ 2013a)

Over the next 25 years, Hastings District's population is expected to increase to nearly 100,000. To support the vision for delivering a safe, attractive and connected active transport network for Hastings District, HDC needs to ensure the active transport system is fit for purpose. That means providing safe facilities and transport choices to all road users.

[1] based on the initial three-year intensive monitoring and evaluation period undertaken (HDC 2014

While population growth is expected to remain steady, there is expected to be significant growth of the 65+ age populations, who are expected to increase from 35% of the population in 2013 to 45% of the population in 2043. Growth in the population in the 65+ age group is expected to be equal to total population growth over this period. This will have significant impact on the transportation network and how residents use transport in the upcoming years.

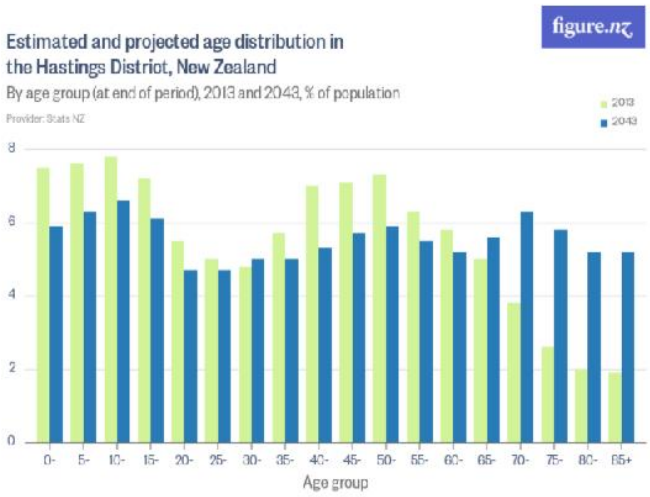


Figure 3 Projected age distribution in Hastings District (FNZ 2017)

2.3.2 Land Use

Hastings District is dominated by rural and plains production land use, which surround the urban and commercial areas of Hastings, Havelock North and Flaxmere. Growth areas are made up of industrial and residential areas, with the majority of industrial growth areas surrounding Hastings and Flaxmere.

The District includes large areas of rural land uses, where private vehicles are likely to remain the only viable transport option. However, most of the District's population lives in the three urban areas, of which there are 58 schools, multiple commercial centres and several areas of employment. This land use pattern means that most journeys are likely to be short and within distances that could be covered by active travel.

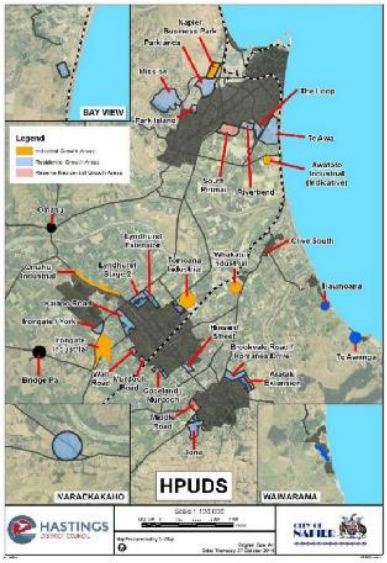


Figure 4 Land use within Hastings District (HDC et al 2017)

2.3.3 Social and Economic Context

Napier-Hastings is a relatively low-income region and has a significant degree of socio-economic deprivation. This needs to be taken into consideration, in future urban development planning for the area (Bevin 2009).

Previous investment has been geographically focused on urban areas resulting in communities on the urban fringe and low socio-economic communities such as Flaxmere, Camberley and Frimley, coastal and marae communities receiving less investment in active transport facilities. Many of these previously underinvested and underserved communities

also suffer from severance issues due to the location of key corridors such as Flaxmere and SH2 (Expressway).

Key industries in the region include primary production and processing, commercial business services and wholesale/retail trade. Hastings District is one of the largest apple, pear and stone fruit producing areas in New Zealand, and therefore has an important relationship with Napier Port. Napier Port is the fourth largest export port in New Zealand by overseas export volumes, additionally it hosts cruise ships (HBRC 2018). The district is also an important grape growing and wine producing area, attracting many tourists to the region.

Employment in the region is expected to increase by 18% between 2015-2045, with particular focus on the commercial and industrial sectors, which are forecast to grow by 21% and 15%, respectively between 2015-2045 (Bevin 2009).

Increasing employment in the region will result in increased demands for travel to employment. Accommodating this demand within existing travel patterns dominated by private vehicle use would result in increased pollution and congestion. A poor environment for active transport will restrict access to increasing employment opportunities for those unable to access private vehicles through disability or deprivation.

2.4 Transport Context

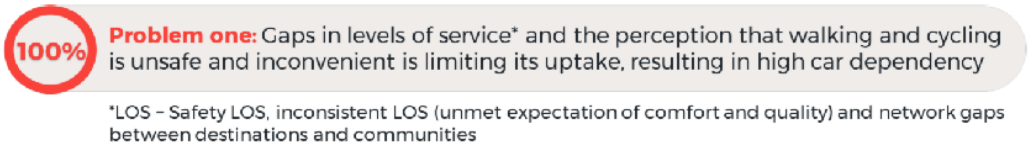
The main customers of the active transport network are commuters between Napier, Hastings, Havelock North, and Flaxmere, school students, tourists and recreational users, and seasonal cruise ship passengers. Tourists visit wineries around Hastings and Havelock North via bicycle as a popular activity.

Large employment centres include Hawke's Bay District Health Board (Hastings), Whakatu Industrial area, Hawkes Bay Airport (Napier), and Napier Port (Napier), with Napier only located 20km north east of Hastings. In total over 6,500 people were recorded as commuting into the Hastings Central area in the 2013 Census, as shown in Figure 11.

3 The Need for Investment

3.1 Defining the problem

Key stakeholders were invited to take part in a facilitated investment logic mapping (ILM) workshop, held on 19 December 2019, to gain a better understanding of current issues and business needs. The stakeholder panel (refer to Section 1.3) identified and agreed one key problem and two benefits. The evidence validating the problems is included in section 3.3.



This problem captures the concern that there is a lower proportion of people travelling to work and school using active transport, and a higher dependency on cars, which is reducing social and economic opportunities for vulnerable populations[2]; reducing health and wellbeing outcomes, particularly air quality, mental and physical health, and underutilising the existing investment into active travel.

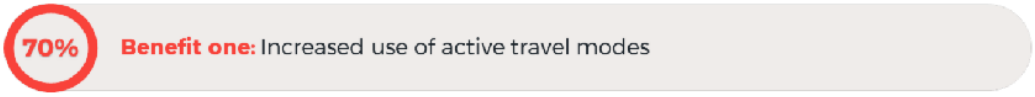
[2] Accessibility for elderly, children and those without access to a vehicle.

Poor customer levels of service (CLoS) and the perception that walking and cycling is unsafe and inconvenient have been identified as the possible causes of poor uptake of active transport and a high dependency on cars.

Key stakeholders at the workshop concluded that high vehicle use is impacting the perception of walking and cycling safety, the health and wellbeing of the community and environmental targets set out by local and national government. The ILM is in Appendix A – Investment Logic Mapping.

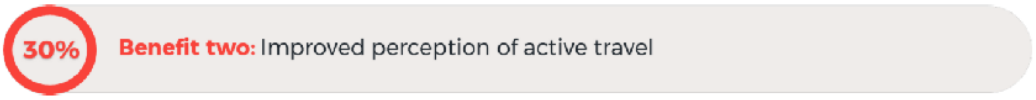
3.2 Benefits of Investment

The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:



Benefit one has been weighted 70% from resolving the identified problem. Increased use of active travel for trips to school, work and recreational purposes will result in improved health outcomes such as increased physical activity levels and reduced obesity rates. Using active travel as a mode of transport will also result in improved environmental outcomes such as air and noise quality and will reduce transport related emissions and overall environmental impact.

Increasing use of active travel modes will also result in increased utilisation of the existing iWay infrastructure.



Benefit two has been weighted 30% as resolving the identified problem. Improved perception of active travel is the result of addressing views around safety, convenience, quality and comfort of walking and cycling. By addressing gaps in the level of service, improving amenities and reducing the pedestrian and cyclist crash rate, views on using active travel will shift over time, ultimately improving the perceptions around walking and cycling.

The Benefit Map is part of the ILM and is attached as Appendix D.

3.3 Evidence

In validating the problem statement, there are a number of factors to define and explore; including:

- Definition of 'gaps in levels of service' which includes traffic volumes, crash history, Active transport facilities and comfort of active transport users;
- Perception of the safety of walking and cycling including urban form, road safety perceptions, fear of crime, end of trip facilities and convenience of active modes; and
- Limited active travel uptake which includes active travel uptake, geographic factors, mode share / high car dependency and equity and access.

This information is provided in section 3.3.1, 3.3.2 and 3.3.3.

3.3.1 Gaps in levels of service

Traffic Volumes

Key routes for traffic include the Hawkes Bay Expressway (State Highway 2), Omahu Road, Havelock Road/Heretaunga Street East, Pakowhai Road, St Aubyn Street, and Southampton Street, which all have sections carrying over 10,000 vehicles per day. These routes are classified as Arterial Routes or higher in the One Network Road Classification (WKNZTA 2020).

Concentrations of heavy vehicles are greater in areas accessing the Whakatu Industrial Estate and Napier Port (WKNZTA 2018). Growth in productivity, particularly residential, industrial and regional industries such as horticulture, viticulture and Napier Port, along with an increase in the number of cars per household is contributing to growing demands on the Hastings District transportation network (Heretaunga Plains Strategy). Although the road network is experiencing additional pressure, there is limited congestion with only localised peak congestion as identified in the Heretaunga Plains Transport Strategy on SH 2, Omahu Rd, Heretaunga St / Havelock Rd, Karamu Rd, St. Aubyn St and intersections around the Whakatu area.

Since 2017, Hawke's Bay has also seen a rise in VKT on sealed urban and rural local roads, as well as sealed urban state highways. However, this is not the case for rural state highways which indicates increased demand has primarily occurred in urban areas and the more remote parts of the district.

On arterial and collector routes in and between the urban areas of Hastings District, traffic volumes and traffic speeds are high and there is narrower or no shoulders creating a high risk of exposure. This results in people not feeling safe or comfortable when using on-street cycling facilities and may reduce their use.

Crash History

Since 2015, there has been an increasing trend in the number of injury crashes in Hastings District, particularly on urban roads. The 10-year DSI trend has been decreasing in rural areas.

In terms of active modes, often classed as vulnerable road users, these make up 33.6% of deaths and serious injuries (DSIs), however, these modes are significantly underrepresented when compared to New Plymouth, Nelson and Palmerston North[3], with vulnerable road users making up 43.4% of total DSIs in these urban areas, as shown in Table 3.

Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist[4]	20.4%	17.5%
Total	**33.6%**	**43.4%**

Table 3 Vulnerable Road Users

Active users are a lower proportion of crash casualties in Hastings District than in other districts. However, in the Hastings District cycling is perceived to be unsafe and mode share is lower than other districts. Further information is needed to understand why cycling is perceived as unsafe. However, cycling infrastructure on high volume, high speed traffic routes with no or limited separation may contribute to this perception.

[3] Similar urban areas in terms of size of area, population and active transport networks.
[4] Including mopeds & pillion passengers

Active Transport Facilities

The quality and comfort of the active travel network can be defined as the ease of getting from an origin to a destination along existing streets and pathways, such that pedestrians and cyclists are not required to undertake complex manoeuvres, diversions or be exposed to poor surfaces.

Figure 11 summarises the different facilities used within the urban and rural environment in the Hastings District. Facilities recorded include shoulders, cycle routes, cycle paths and cycle lanes.

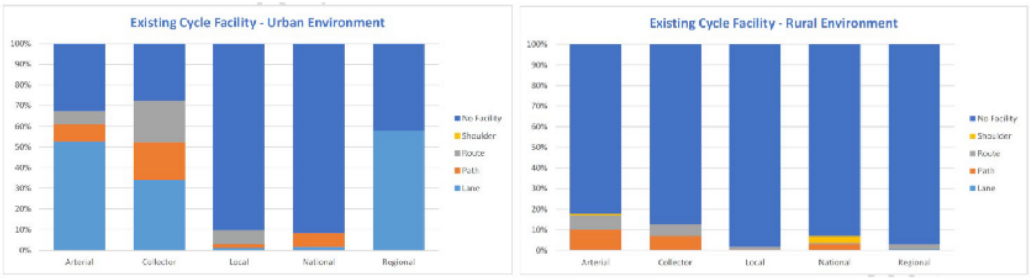


Figure 5 Cycling facilities on road corridors in the Hastings District (HDC 2017)

Figure 6 shows that **within the District's urban areas, 60% of arterial and collector routes have some form of facility** and, in rural areas, 20% of arterial and collector routes have some form of cycling facility. In urban areas, these facilities are usually on road cycle lanes. For example, St Aubyn Street and Southampton Street have Class 3[5] on-road cycle lanes (HDC, iWay 2018). However, **many cycle facilities on arterial and collector routes are inconsistent, especially at intersections**. Intersections are critical points for safety and iWay have identified **that the majority of intersections in Hastings District require further improvements to accommodate active transport**.

The national cycling programme identified Hastings as having an 80% fit for purpose network. This emphasises the importance of giving people safe and easy transport choices, regardless of the reason for their journey (WKNZTA 2017). In the past, Waka Kotahi largely focused on cycling as a mode of transport, however in working with the Ministry of Business and Innovation (MBIE) and the Ministry of Health (MoH), the focus has shifted toward collaboration and achieving co-benefits of active travel including regional economic development, tourism, safety, health, social wellbeing and environment.

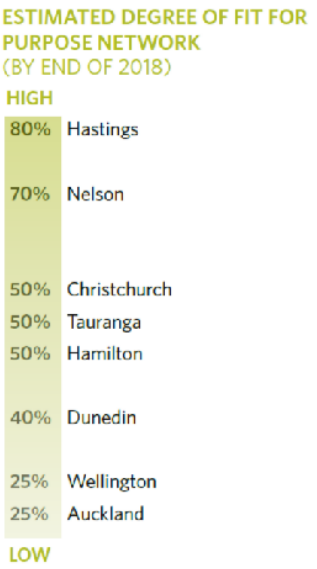


Figure 6 Hastings supports a range of government outcomes and was identified as being a fit for purpose network (WKNZTA 2017)

Typical traffic volumes on arterial and collector routes are over 5,000 and 3,000 vehicles per day, respectively and several arterial routes in the District carry over 10,000 vehicles per day (WKNZTA 2020a). As shown in Figure 8 Guide to facilities for traffic conditions (AT 2019)., at these traffic volumes,

[5] Cycle lanes on the carriageway legally designated by a painted cycle symbol (WKNZTA 2020b)

protected cycleways are the preferred provision for cycling, regardless of traffic speed. While the District has a network of cycle facilities covering many routes, the level of infrastructure is typically lower than desirable, primarily due to lack of separation on high speed high volume routes. Infrastructure also has gaps, especially at intersections, where the Level of Service is further reduced.

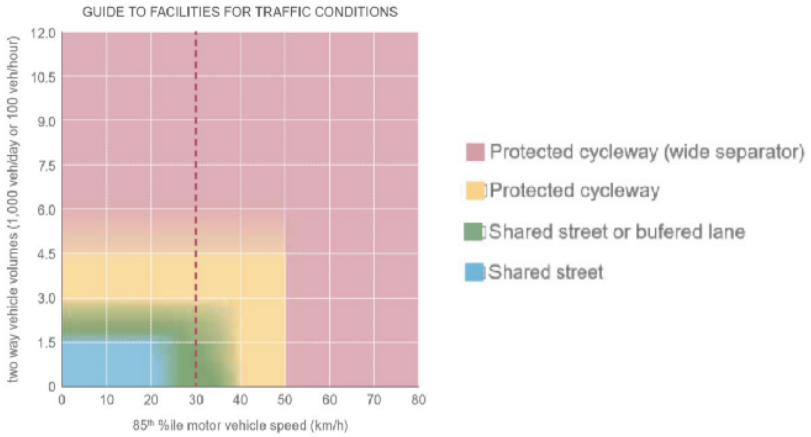


Figure 7 Guide to facilities for traffic conditions (AT 2019).

Comfort of active transport users

A lack of confidence and fear to use active modes are in many cases a result of participants being **uncomfortable with driver behaviour, and the perceived lack of regard and awareness of cyclists and pedestrians**. This perception has been reported in the perception survey, highlighting the issue of co-habitation on the road.

Where there is good cycling infrastructure, people who drive will feel more comfortable driving near people who are cycling and walking. A 2013 study in San Francisco found that whether or not drivers rode bikes themselves, over 80 percent of drivers felt moderately or very comfortable when driving near bikes with a protected bike lane (WKNZTA 2016). Only half of the drivers in the study said they felt comfortable on roads without cycling infrastructure (WKNZTA 2016).

3.3.2 Perception of walking and cycling as unsafe and inconvenient

Urban form

Cycling and walking are sensitive to distance and time, low density residential zones typically result in increased distances and times between destinations, however, low density does not necessarily mean poor connectivity (Cheyne et al 2015). Directness of path between two points are related to the characterises of street design. Good connectivity is highly correlated with walkability (Cheyne et al 2015). New active mode routes should offer advantages in terms of directness/permeability and journey time. (ESCC 2014).

Hastings and Havelock North have highly connective road networks based on a grid structure. However, **the existing road network does not generally offer active users advantages in connectivity as no restrictions are made on motorised users**. Flaxmere's road network is less connected, however, active user paths to and through parks and reserves offer improved connectivity for active users.

A large number of studies found that shorter distances between home and school are associated with increased active transport to school (Condon 2013). Two Australian studies

reported that children are more likely to walk or cycle to school at least once a week, if they lived within 800 metres of their school (Condon 2013).

Hastings has been designed so that most houses are within 2 km of Hastings Central School as seen in Figure 8, potentially an easy distance to walk or cycle between home and school although still a distance for some. Active travel accessibility to jobs is also very high. There are 7,000 jobs in the Hastings Central Census Area Unit and every resident is within 3 km. Many jobs in Hastings are within a distance accessible by active transport.

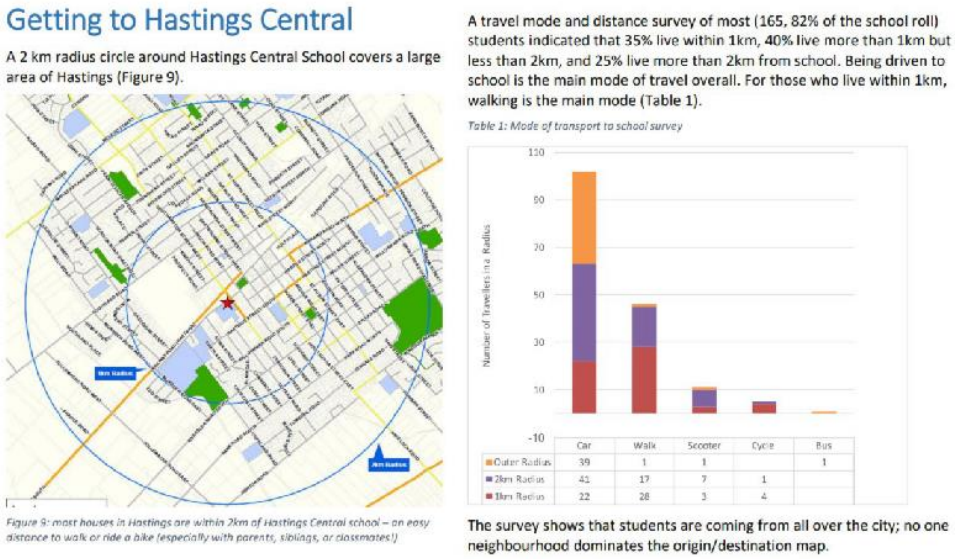


Figure 8 Location of Hastings Central School and the relative distance students travel (HCS 2018)

Road Safety Perceptions

The perception of safety in relation to walking and cycling is an important determinant of uptake in active travel[6] Walking and cycling are statistically safe ways to travel (MoT, 2015); however, negative perceptions and experiences may discourage people from using a particular route or encourage them to drive instead of walk or cycle, especially if the walking and cycling infrastructure is poor. Cheyne et al (2015) noted that parents participating in a perception survey expressed concerns about letting their children cycle on the road on their own, due to their lack of skills and experience on the road but also because parents did not trust other road user behaviour.

Findings from a comprehensive study by Muggeridge in 2012 suggest that although people in Hastings **generally have positive attitudes towards walking and cycling, these are not necessarily translated into high levels of active transport, or high intentions to walk and cycle as a form of transport** (Muggeridge 2012). As seen in Figure 10, **driver behaviour, traffic volume and traffic speed were dominant factors in influencing walking and cycling safety perceptions**. Other studies have found that traffic speed, volume, and proximity are key deterrents to active travel and particularly for commenting cyclists, cars passing too closely increases anxiety.

[6] The perception of safety in relation to cycling is often considered of greater importance than the actual safety of cycling, as the risk perceived is likely to be a more important determinant of cycling than the actual risks associated with cycling (Muggeridge, 2012)

Figure 9 Factors influencing safety perceptions (Muggeridge 2012)

Some of the things that can improve perceptions of safety and comfort is by providing dedicated space for active users, either on the road or separated off road, and increasing the separation to motorists.

Fear of Crime

Another barrier to the uptake of walking and cycling is the fear of crime and one's personal safety, particularly for women, elderly and those with disabilities. Children and students use of active transport is often over-ridden by parents, who are concerned about 'stranger danger'. A poor design of the urban environment such as lack of surveillance, poor lighting, overgrown vegetation and disrepair adds to fearful attitudes towards walking and cycling. The issue of darkness can also be associated with the built environment, as many participants agreed that better lighting would make them perceive walking in the dark as safer. Darkness was particularly important in Hastings and Flaxmere, but to a lesser extent in Havelock North. Havelock North was thus perceived as safer than the other two neighbourhoods, with people saying they would not mind walking alone at night there but would not do it in Hastings or Flaxmere (Cheyne et al 2015).

End of trip facilities

All active mode routes should be clearly signed and have trip end facilities provided, such as cycle parking (ESCC 2014). End of trip facilities include showers and changing facilities, and secure sheltered bicycle parking. A lack of secure or sheltered bicycle storage contributes to fear of crime in the form of bike theft. Showers and changing facilities reduce the concern over body odour for those who cycle or walk further; **those who have access to showers are 1.76 times more likely to cycle to work than those without the same facilities** (Cheyne et al. 2015).

The Hawkes Bay DHB built additional secure cycle storage and started charging for car parking, these differences encouraged people to switch from motor vehicle use to active mode use. By adding additional amenities and making active modes more desirable such as providing end of trip facilities like showers, secure bike storage and lockers, map of facility locations and repair stations and bike pumps encouraged people to use active modes more. (Cheyne et al. 2015). By increasing those facilities for staff, **between 2015 and 2018 Hawkes Bay BDHB cycling mode share increased by 6% and walking mode share increased by 3%.**

School travel plans have indicated possible interventions to improve active travel to school. These interventions include improved end of trip facilities, such as all-weather bike and scooter stands. However, at present, **only 63% of the urban schools in the district have at**

least partial access to the iWay network and nearly 40% schools in urban and over 80% schools in rural area have no coverage.

Convenience of active modes

Motor vehicle use has been made so convenient, that active transport seems inconvenient in comparison. As seen in Figure 10, for the Hasting district, 'getting there quick' (i.e. directness/journey time) and 'convenience' (e.g. shops en route) are considered important factors that influence mode choice when travelling to school, work or shops. Parking is easy and cheap, which also means the car is often the most convenient option, when compared with public transport or active modes.

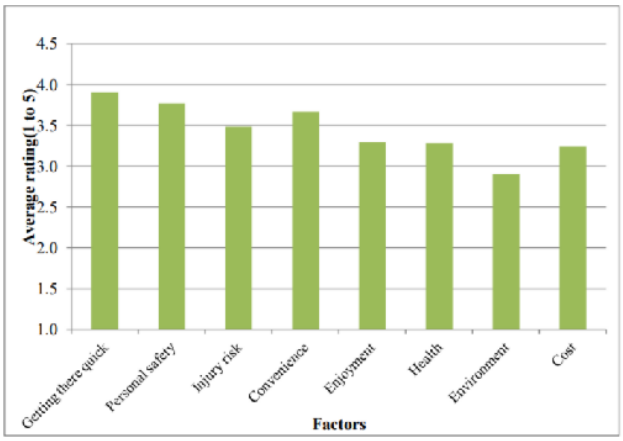


Figure 10 Factors influencing choice of mode of transport (Muggeridge 2012)

School travel plans in the Hastings district have noted that student travel behaviours have changed. Between 1990 and 2014, the number of primary school students being driven to school in New Zealand increased from 31% to 55%, while travel by walking fell from 42% to 29% and cycling from 12% to 2% (MoT 2015). Parents drive their children because of ingrained travel habits, safety perceptions, and busy schedules including after school activities (HCS 2018).

Almost 80% of people travel to the shops via motor vehicle, in the same survey it was determined that just over 15% of people would walk or cycle to the shops.

The HBDHB travel survey concluded that the reasons people use motor vehicle is primarily for convenience and flexibility.

Interventions that increased the convenience of active modes or decreased the convenience of travel by car could increase active mode share.

3.3.3 Limited active travel uptake, resulting in high car dependency

Geographic Factors

Poor weather and climate, such as reduced daylight hours, wind and rain reduces the likely number of cyclists to 64% of the normal levels. Topography was another highly correlated factor to cycle use (Cheyne et al 2015).

The District's climate is dry and mild, and its topography is flat. The natural environment is ideal for active travel. Yet this is not reflected in the limited uptake of active travel.

Active Travel Uptake / Mode Share

In 2010, New Plymouth and Hastings were selected by Waka Kotahi as model walking and cycling communities. New Plymouth District is comparable to Hastings District due to its flat topography, and population (74,184 district, 54,800 urban area).

Based on travel to work data from the 2013 Census, **active mode share in the Hastings District is 9%.** This compares to 10% for the Hawkes Bay Region and New Plymouth District. Active mode share includes the walking mode share is higher than the cycling mode share in Hastings District and the comparison areas.

Hawke's Bay District Health Board (HBDHB) and Hastings District Council (HDC) both have travel plans in place and have collected data on their staff travel behaviours. According to the HBDHB 2018 Travel Survey, 29% of staff commute less than fifteen minutes and 56% commute fifteen to thirty minutes (HBDHB 2018) (see Appendix B – HBDHB Travel Survey Data Key Findings). HDC's 2017 Staff Travel Plan indicates that 55% of staff reported that their trip to/from work was less than fifteen minutes and of these respondents, 15% do not have family or work requirements (HDC 2017b). As these two employers represent a significant number of employees in the Hastings District, this data indicates there is an opportunity to shift some of these trips to active modes.

More people use private vehicles in Hastings District to complete their trips, in comparison with Hawke's Bay and New Plymouth District. **Nearly 90% of total trips in Hastings in 2013 were completed using private vehicles.** Total commuting to and from Hastings is in Figure 11.

Most people commuting into Hastings Central are coming from the urban areas within Hastings District which would result in a total commute distance of less than 8km, or 30 minutes by bicycle.

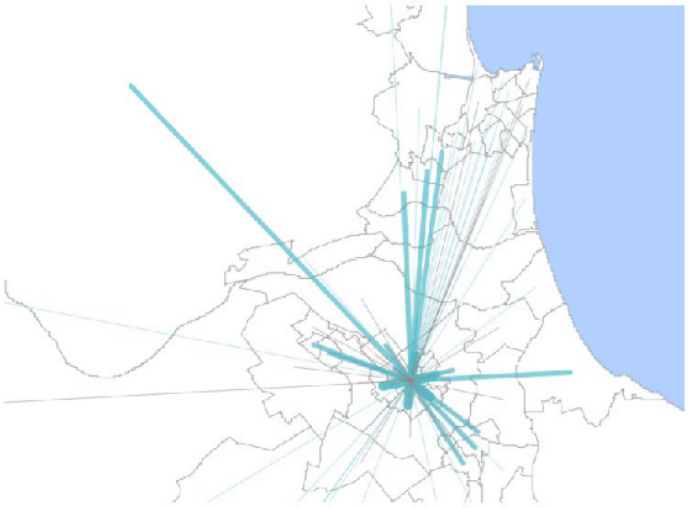


Figure 11 Total commuting to and from Central Hastings (SNZ 2015)

Hastings District has the lowest proportion of people walking to work, in comparison with Hawke's Bay and New Plymouth District. Hawke's Bay and Hastings District have a similar proportion of people cycling to work; however, both have a lower proportion than New Plymouth District.

This dataset **indicates both a dominance of the car in Hastings and an opportunity for change** given the projected increase in population in the coming decades.

The **average annual daily cycle volume has increased**, as counted at nine permanent count stations in the Hastings District. Over 1,500 average daily cycle trips were recorded, in 2016, and as shown in Figure 12, there are a few locations where a decrease in cycle numbers were observed, which indicates areas for improvements along the iWay cycle network.

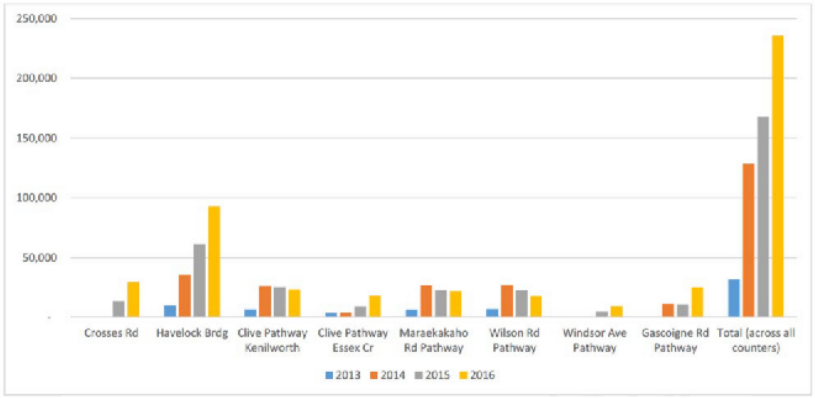


Figure 12 Annual Average Daily Cycle Volume at recording stations in Hastings District (HDC 2017)

Cycle and pedestrian volumes are seasonal, with the highest number of cyclists observed during the summer.

Recent investments in the active mode network have resulted in increased active travel and increasing active mode share in the District. However, active travel in Hastings District does not match that achieved in the rest of the Hawkes Bay Region or Waka Kotahi's other model community, New Plymouth.

Other key areas which area contributing to mode share:

- Road congestion, increased petrol and parking costs, availability of electric bicycles and scooters, bike sharing, and provision of more dedicated cycling infrastructure has increased active mode share in Hastings District since 2006.
- Public transport patronage in Hastings District increased between 2009 and 2015 but has since declined to levels seen in 2012. This trend is consistent with regional New Zealand, and due partly to improved economic conditions, therefore more people are employed and using a vehicle.[7]
- The use of the Total Mobility scheme[8] has increased since 2010, in line with the shift in population demographic in the Hastings District.

[7] Car ownership per capita has increased 7% in Hawke's Bay. The most significant declines in patronage have occurred on bus routes servicing areas with higher unemployment rates.
[8] The Total Mobility Scheme (TMS) provides subsidised passenger services travel for Hawke's Bay residents who are unable to use public transport due to a significant, permanent impairment.

High Car Dependency

The Hawkes Bay Region has light vehicle[9] ownership rates higher than the New Zealand average of 0.8, as shown in Figure 13.

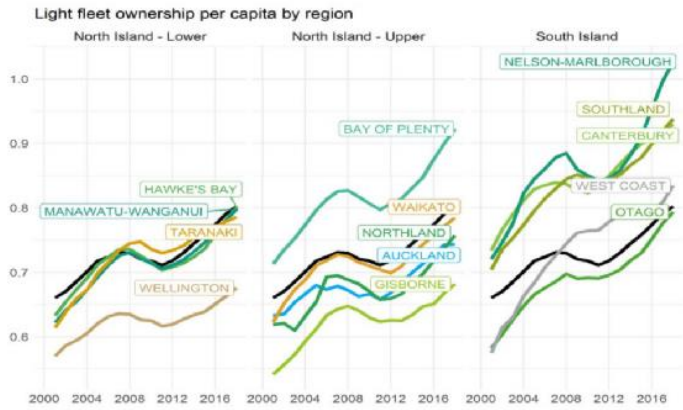


Figure 13 Light fleet ownership per capita by region (MoT 2018a)

However, as of the 2013 Census, over 2,000 (8%) households in the Hastings District did not have a light vehicle and over 9,000 (37%) have just one vehicle. Forty-two percent of households in the Hastings District have three or more people living in the household which indicates there are parts of the population that are already disadvantaged by not having access to a vehicle to travel. A network that encourages high car dependency reduces social and economic opportunities for the transport disadvantaged, those who choose not to drive and vulnerable populations such as the elderly and children, by minimising their access and choice on how to travel.

As noted in Section 2.3.3, Napier-Hastings is a low-income region and the high cost can be a barrier to vehicle ownership. A land transport system that makes travel by active modes difficult increases dependency on cars in order to access social and economic opportunities.

See Appendix C – Household size and motor vehicles per household data for further details.

Equity and access

With reduced social and economic opportunities due to reduced access to transport choices for vulnerable populations[10], both the mental and physical health of an individual's wellbeing are affected.

[9] Light vehicles include light passenger vehicles such as cars and light commercial vehicles such as vans and utes.
[10] Accessibility for elderly, children and those without access to a vehicle.

A significant portion of the adults are not meeting the recommended physical activity guidelines of at least 30 minutes of exercise on at least five days in the past week[11]. As seen in Figure 14, **the Hawkes Bay Region has the lowest rates of adult physical activity[12] and second highest level of obesity of any region in New Zealand** (MoH 2020).

Although walking is the most common type of physical activity for sport, exercise or recreation among adults in New Zealand, this has been found to be predominantly driven by physical and emotional wellbeing reasons, rather than social motivations (FNZ 2018, FNZ 2018a).

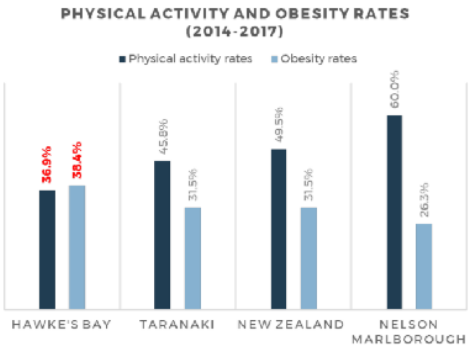


Figure 14 Physical activity and obesity rates for New Zealand and selected regions (MoH 2018)

The effects of inequitable transport access are further evident in the loneliness rates of the Hawke's Bay population, where 17.9% are lonely some, most or all of the time in 2018 (1.4% above the national average loneliness rate) (SNZ 2019a)[13]. The rate at which the New Zealand population have seen face-to-face by mental health and addiction services also peaks at the age of 15, declines until the age of 70, and then increases again (FNZ 2016). For many elderly, the only means of autonomous transport is through walking which also provides a means of social interactions with others in the community.

These all attribute to the need to provide a quality walking and cycling network, particularly for the elderly and those who are transport deprived due to either not having access to a vehicle, or not enough vehicles for the household (see household size and motor vehicles per household data in Appendix C – Household size and motor vehicles per household data for more details).

3.4 Investment Objectives

Investment objectives were developed by the project team and agreed upon with the stakeholders as part of the strategic case and were further developed during the PBC. They include the benefit, measure and target when fully developed.

Benefit 1: We will increase the number of people using active travel by:

- increasing active travel for trips to work by X%,
- increasing active travel for trips to school by X% and
- increasing active travel for recreation by X%.

Benefit 2: We will improve perception of active travel by:

- improving walking and cycling provision by x%,
- reducing pedestrian and cyclist crash rate (visible to community) by X% and
- having zero deaths.

3.4.1 Key Performance Indicators

It is important that the benefits of investment can be assessed and measured, to demonstrate that the proposal will deliver the expected outcomes.

[11] Hawke's Bay Regional Cycling Plan 2015: The recommended guidance is for at least 30 minutes of exercise on at least five days in the past week.
[12] Physical activity (aged 15+ years) is defined as doing at least 30 minutes of brisk walking or moderate-intensity physical activity (or equivalent vigorous activity), for at least 10 minutes at a time, at least five days a week.
[13] Loneliness data is over a four week period in 2018.

These KPIs provide a measurable basis for monitoring how well the potential new programmes achieves the benefits over time.

It is also recommended that once a transportation emission baseline is conducted that a KPI be added to reduce transport emissions.

Benefit	Investment KPI / Benefit	Measure	Description
Increased use of active travel modes (70%)	Increased use of active transport **Access – people: increase/ maintain** **Pollution and greenhouse gases: decrease/maintain**	**Mode shift from single occupancy private vehicle** **Access to key destinations** Increased use of active travel (walking, cycling, scooting) for trips to school Increased active travel for trips to work	School - Increased active travel trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data Work - Census data, employer travel survey data and community travel survey
	Increased physical activity levels **Physical health: support**	**Physical health benefits from active modes** Increased active travel for recreation	HDC to continue conducting cycle counts, and measure future and historic counts, categorising off-peak commute times as recreational trips Community travel survey
Improved perception of active travel (30%)	Improved perceptions of active travel (safety and convenience) **Access – people: increase/ maintain**	**Access – perception** Improved perceptions of active travel (safety and convenience)	New community survey data on perceptions of active travel (safety and convenience)

3.5 Key Findings

The following summarises the key findings from the review of the evidence. Based upon this evidence it is recommended to progress to a programme business case.

Within the Hastings District, most people live in the three largest urban areas, the climate is mild with infrequent rain, and the topography is very flat. The street network and existing active travel infrastructure provide a very connective transport network for active modes. However, active mode share is lower in Hastings than it is in comparable cities in New Zealand.

Cycle facilities in the urban areas are typically painted cycle lanes with no protection, contributing to a low level of service which is exacerbated by gaps in the cycle network, particularly at intersections. This poor level of service contributes to low uptake and negative public attitudes towards active transport.

Low rates of active transport use contribute to congestion, pollution, and poor health as people choose to travel by private vehicle. Concerns about the safety of cycling also

contribute to deprivation and isolation as people who cannot access a motor vehicle are unable to access social and economic opportunities. This contributes to high levels of social deprivation in the district. Poor health and low levels of physical activity in the District are reinforced by a transport network that discourage active travel as part of a normal day.

PART B – DEVELOPING THE PROGRAMME

4 Summary of Approach

The development of the programme involved several stages and processes. A summary of the programme development approach and evaluation process is provided in Figure 15.

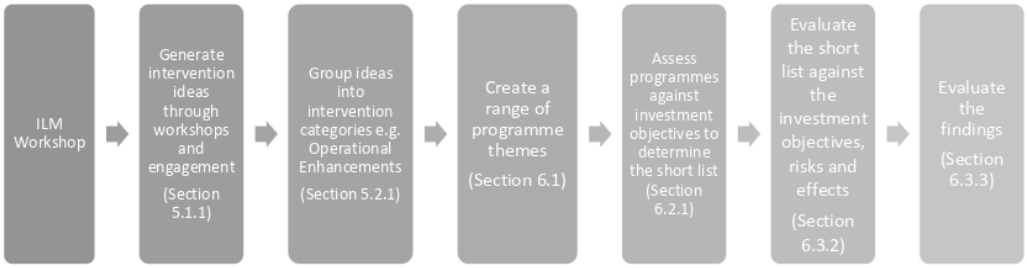


Figure 15 Active Transport Business Case Programme Development Process

5 Ideas, Alternatives and Options

5.1 Alternative and Option Generation

As part of the Investment Logic Mapping (ILM) workshop, stakeholders were asked to identify and agree on a series of problem statements and benefits relating to active modes within the Hastings District. A resulting ILM was developed (Appendix A – Investment Logic Mapping). During the workshop, stakeholders were invited to identify a range of options or ideas (from a transport planning perspective), with the intervention hierarchy in Figure 16 in mind, that could be considered to address the agreed problems to achieve the benefits sought for both the Network and Active Transport business cases which ran in parallel as part of the same process.

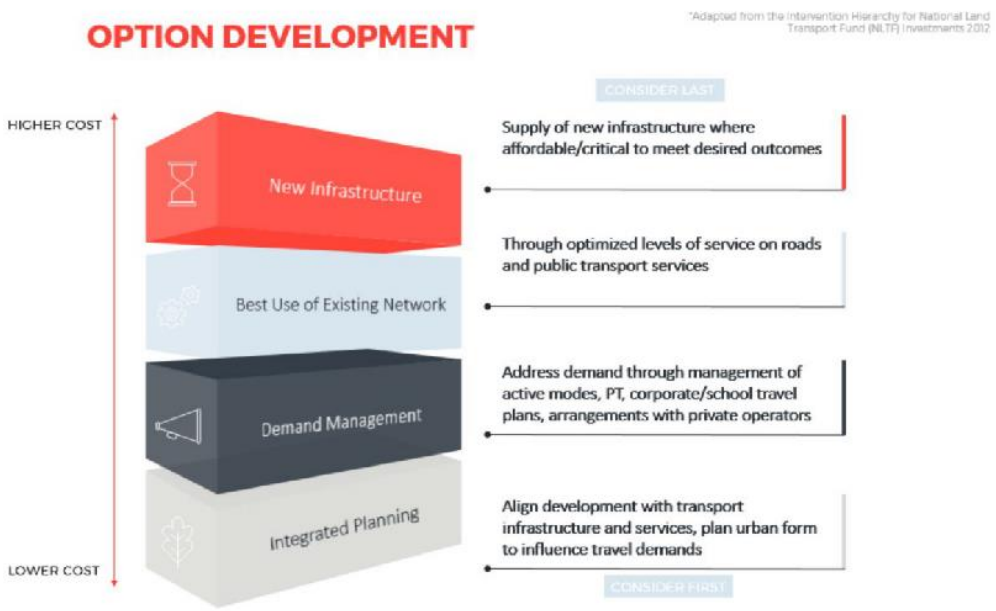


Figure 16 Option development (intervention hierarchy)

5.1.1 Idea Generation

As part of the ILM workshop, stakeholders were invited to identify a range of ideas, options or activities that could be considered as part of a "long-list" of potential programmes. that may address the problems and achieve the benefits identified through the Investment Logic Map process.

Stakeholders were encouraged to provide "blue-sky" thinking to ensure all ideas were identified at an early stage. This approach ensured that the ideas were not limited to just those that achieved a high alignment to the benefits but may include types of intervention to target specific community outcomes, complementary measures, or services that may provide alternative options for active transport in the Hastings District.

The ideas from the two ILM workshops were combined to ensure alignment with the proper programme (network or active transport) and resulted in 52 new ideas. When merged with options and alternatives from the document review, there were a total of 320 ideas between both the network and active transport programmes. An additional 11 options were generated during an internal workshop held with HDC staff on 29th January 2020 based on previous work and audits.

The ideas for addressing the problems for active transport included connectivity, level of service, safety, amenity, communication, policy, transport and land-use integration, travel demand management and mode shift options.

5.1.2 Alternatives

A Transport Planning alternative is a strategic way of responding to the problem and delivering the benefits. These could include ways that:

- Change demand – ways in which travel can be reduced;
- Modify productivity – optimising the way the transport system operates; and
- Infrastructure supply – developing new services or building things.

Following the idea generation process the project team reviewed the options and developed additional alternatives that would deliver low cost and high value alternatives according to the intervention hierarchy in Figure 16. This ensured adequate optimisation, integrated planning and demand management alternatives were integrated into the programme development process.

5.1.3 Alternative and Option Feedback

In addition to this, feedback on ideas to address the issues were also provided through:

- Engagement with māna whenua (see 5.1.3.1)
- A public open day held on the 12th March 2020
- Online feedback forum ("my voice my choice") which was open to the public between the 12th of March to the 19th of March 2020.

5.1.3.1 Iwi Engagement Feedback

HDC engaged with representatives from local iwi who serve as Pou Ahurea Matua to seek feedback on both the wider transport network and active transport in Hastings District. Feedback relating to the active transport network largely included reference to three locations to be of relevance to this project. These are:

- Waipatu Marae / Waipatu Community Plan
- Kahurānaki Marae Committee, Te Haukē; and
- Bridge Pā and Raukawa Valley

In addition, the key issues related to active transport that need to be addressed through this project are:

- Lack of walking and cycling connections into centres including Hastings, Havelock North and Flaxmere,
- Safety concerns due to narrow shoulders in cycling areas (Cycling clubs and Iron Māori use the Raukawa Valley and surrounding area for training); and
- Action from HDC and HBRC to engage in Papakainga development to provide solutions, and not put it solely into the hands of the whānau.

5.1.3.2 Online Engagement Feedback

A public open day was held on the 12th of March and an online survey was also posted on the same day to provide communities with an opportunity to provide feedback for those who could not attend. The key findings from this engagement are outlined below.

Problem statement: There exist gaps in the network between communities and destinations, creating a perception that cycling is unsafe and/or inconvenient.

The following feedback was captured to address the perception that cycling is unsafe and/or inconvenient:

- Cycle provision on all bridges (with bridge widening where possible).
- Physical separation between cycle paths and road if necessary.
- Reduce road parking to increase the width of cycle lanes.
- Safe cycle/walking paths linking to schools for students from ALL sides of town/village. Run an education campaign with Sport Hawke's Bay to create school cycling corridors across the district.
- Improve connectivity of footpaths.
- More controlled crossing points for major road intersections.
- Implement a way of controlling roundabouts to enable safety of cyclists (or signalise them); and
- Ensure trucks are kept on main roads.

It was noted that making alternative transport the most convenient and safest option for future commuting means diverting the focus from private vehicles to alternatives and allowing a greater share of the road network capacity. This relies on bold action from the Council, combined with the need to educate the public that the future is in alternative transport.

It was also noted that Hastings HIVE Limited have already invested in the future of shared office spaces to encourage the use of alternative transport. However, their facilities for commuters are not currently used, as empty bike sheds attest (even with charging points).

5.2 Alternative and Option Assessment

5.2.1 Option rationalisation process

Due to the significant number of ideas identified through the process, the long list of options was rationalised into the key alternative 'categories' shown within Table 4. Projects that were identified as complete, planned, were underway or would be implemented through other workstreams or partners were removed. Additionally, a number of ideas were removed as it was identified that they would not address the problems or there is not currently enough demand to justify the implementation of some of the options (i.e., bus only lanes, prioritising public transport during peak times). In total 161 options were removed before splitting the network and active transport programmes out.

Table 4 HDC Active Transport Programme Options

Active Transport Options (121)	
Infrastructure (73)	East-West Links (13)
	City North-South Links (9)
	Clive Links (3)
	Coastal Links (4)
	Expressway Corridor (3)
	Flaxmere Links (8)
	Hastings to Clive Corridor (2)
	Havelock Links (8)
	Havelock to Bridge Pā Corridor (5)
	Havelock to Hastings Corridor (3)
	Havelock to Whakatu Corridor (4)
	Napier Connections (3)
	Pakowhai-Maraekakaho Corridor (4)
	Te Mata Peak Corridor (2)

	Whakatu Links (2)
Safety Improvements (3)	Havelock Links (3)
Level of Service (LOS) Improvements (8)	Havelock to Hastings Corridor (1)
	Havelock to Whakatu Corridor (1)
	Middle Road Corridor (2)
	Pakowhai-Maraekakaho Corridor (3)
	Marae and Rural Settlements (1)
Study / Plan Implementation – Infrastructure (7)	Increased separation and LOS of on-street bicycle facility infrastructure (1)
	Safe schools infrastructure (1)
	Neighbourhood streets/greenways infrastructure (1)
	Infrastructure addressing community severance issues (1)
	Vulnerable user project infrastructure (1)
	Mode shift infrastructure (1)
	Parking management infrastructure (1)
Productivity, Demand, and Soft Measures (30)	Advocacy (1)
	Communications and Engagement (4)
	Enforcement (1)
	Operational Enhancements (12)
	Travel Demand Management (TDM) (10)
	Transportation / Land-use Integration (2)

6 Programme Option Development and Assessment

6.1 Programme Development

Options, ideas and alternatives identified by stakeholders were developed a potential long list of eight (8) programmes. Table 5 provides an overview of the programme options that were developed and how they align to the level of measures and/or focus for that programme. For example, one ✓ = low use of focussed measures in programme, ✓✓ =

secondary focus or moderate use of measures in programme and ✓✓✓ = highest priority/emphasis of measures in programme).

Table 5 HDC Active Transport Intervention Themes

Programme Options		Intervention Themes			
		Soft Measures, Behaviour Change and Travel Demand Management Measures	Infrastructure Investment Measures	Measures focused in coastal, marae and previously underinvested communities	Growth Area Measures
1	Soft Measures Focus	✓✓✓	✓	✓✓	✓✓
2	Infrastructure Investment Focus	✓	✓✓✓	✓✓	✓✓
3	Previously Underinvested Focus	✓✓	✓✓	✓✓✓	✓
4	Growth Area Focus	✓✓	✓✓	✓	✓✓✓
5	School Focus	✓✓	✓✓	✓✓✓	✓✓
6	Workplace Focus	✓✓✓	✓✓	✓	✓✓
7	Recreation Focus	✓	✓✓	✓✓	✓
8	Balanced Programme	✓✓	✓✓	✓✓	✓✓

Full descriptions of the programmes can be found in Appendix G – Programme Descriptions.

6.2 Programme Assessment

A two-step approach has been used in the programme option evaluation:

- An initial assessment of the long list of programmes consisting of assessing each programme against the investment objectives to ensure any programme that moved forward to the short list aligned with the desired outcomes.; and
- A full assessment of the remaining "short-listed" programmes using a Multi Criteria Analysis (MCA) including alignment to investment objectives, risks and effects.

6.2.1 Multi-Criteria (MCA) Categories

The criteria used to determine the evaluation and scoring system were developed by the project team alongside our technical experts and HDC and should also be agreed upon by the stakeholders. These categories are outlined in Table 6. More detailed descriptions of the

risk and effect criteria used within the assessment can be found in Appendix H – Risks and Effects Descriptions.

The criteria consist of 3 main parts:

- Investment Objectives - The investment objectives are based on problems, benefits, measures and KPIs previously identified in the strategic case.
- Risks - are related to the implementability, complexity and overall risk of the options within the programme; and
- Effects - are related to the impact of the options within the programme to the various criteria.

The specific criteria are shown in Table 6.

Table 6 MCA Criteria Categories

Investment Objectives	Risks	Effects
• **Increase use of active transport** - Increase the number of people using active travel by - increasing active travel for trips to work by X%, increasing active travel for trips to school by X% and increasing active travel for recreation by X%. • **Improve the perception of active transport as safe and convenient** – Improve perception of active travel by - Improving walking and cycling provision by x%, reducing pedestrian and cyclist crash rate (visible to the community) by X% and having zero deaths.	• Deliverability / Feasibility • Affordability • Stakeholder / Customers	• Social • Cultural • Economic • Environment • System Integration

6.2.2 MCA Scoring

All programmes were scored against a "Do minimum" programme which is further explained in Appendix G – Programme Descriptions.

Both the investment objectives and effects use a 7-point assessment (plus fatal flaws) criteria including positive and negative scores. Options that have better outcomes than the "Do minimum" programme were scored positively, and options that have an adverse outcome will have a negative score. A score of zero is considered to represent a negligible difference from the "Do minimum" programme.

The risks are assessed using a 5-point criteria with only negative options, as positive scores are not considered appropriate for these categories.

Scoring descriptions are outlined in *Table 7*.

Investment Objectives	
Score	Description
3	Significant positive alignment
2	Moderate positive alignment
1	Minor positive alignment
0	Neutral alignment
-1	Minor adverse alignment
-2	Moderate adverse alignment
-3	Significant adverse alignment
-10	Fatal Flaw

Risks	
Score	Description
0	Insignificant risk or complexities
-1	Minor risk or complexities
-2	Moderate risk or complexities but achievable
-3	Significant risk or highly complex.
-10	Fatal Flaw

Effects	
Score	Description
3	Significant positive effect
2	Moderate positive effect
1	Minor positive effect
0	Negligible effect
-1	Minor negative effect
-2	Moderate negative effect
-3	Significant or appalling negative effect.
-10	Fatal Flaw

Table 7 MCA Scoring

6.2.1 Programme Alignment with Investment Objectives

The scoring of the programmes was assessed against the "Do Minimum" programme. The criteria for assessment of alignment with the investment objectives is outlined in Table 6. Justification for the scoring can be found in Appendix I – Programme Alignment with Investment Objectives Justification.

Scoring for this first assessment uses the following weightings as part of the stakeholder agreed benefits:

- Increase the use of active transport 70%
- Improve the perception of active transport as safe and convenient 30%

Using these weighting, three programmes demonstrate the best alignment with the investment objectives resulting in the highest positive weighted scores. A summary of those findings is provided in Table 8 and Table 9.

Table 8 HDC Active Transport Programme Alignment with Investment Objectives

Programme Option		Soft Measures Focused Programme	Infrastructure Investment Focused Programme	Previously Underinvested Programme	Growth Area Focused Programme	School Focused Programme	Workplace Focused Programme	Recreation Focused Programme	Balanced Programme
Investment Objective 1	Increase use of active transport	0	1	1	1	1	1	0	2
Investment Objective 2	Improve the perception of active transport as safe and convenient	0	1	0	1	0	0	-1	1
Weighted Scoring		0.00	1.00	0.70	1.00	0.70	0.70	-0.30	1.70
Rank		7	2	4	2	4	4	8	1

Table 9 Key Long List Evaluation Findings

Programme Name	Key Evaluation findings	Proceed/Discard
Soft Measures Focus	Second worst ranked programme for alignment to the investment objectives Lack of infrastructure projects misaligned the programme in achieving outcomes related to the perception of safety and convenience Risks: May not achieve a change in perception, travel behaviour may change, however, safety concerns would not be addressed.	Discard
Infrastructure Investment Focus	Minor alignment with both investment objectives resulted in an overall moderate score and ranking	Proceed to short list
Previously Underinvested Programme	Minor alignment with the increasing use of active transport investment objective and a neutral score related to perceptions resulted in a low scoring positive overall score. Risks: May not achieve a change in perception, travel behaviour may not change, safety concerns would be addressed only in specific communities.	Discard
Growth Area Focus	Minor alignment with both investment objectives resulted in an overall moderate score and ranking	Proceed to short list
School Focus	Minor alignment with the increasing use of active transport investment objective and a neutral score related to perceptions resulted in a low scoring positive overall score. Risks: May not achieve a change in perception, travel behaviour may not change, safety concerns would be addressed only in specific corridors related to schools.	Discard
Workplace Focus	Minor alignment with the increasing use of active transport investment objective and a neutral score related to perceptions resulted in a low scoring positive overall score. Risks: May not achieve a change in perception, travel behaviour may not change, safety concerns would be addressed only in specific corridors related to the CBD and workplaces.	Discard
Recreation Focus	Neutral alignment with increasing active transport which is weighted at 70% and minor adverse risk related to perceptions resulted in a negative overall score and ranking Lowest scoring programme. Risks: May not achieve a change in perception, travel behaviour would be unlikely to change, safety concerns would be addressed only in specific recreation-based locations.	Discard
Balanced Programme	Moderate alignment with the increasing use of active transport which is weighted at 70% and minor alignment with improving perceptions resulted in a high overall ranking, Highest scored and ranked programme.	Process to short list

The three programmes which are identified as proceeding to the shortlist were then assessed further for their alignment with the full criteria which includes the investment objectives, risks and effects.

6.3 Short List Programme Evaluation

6.3.1 Short List Programme Profiles

A full profile of the three programmes on the short list showing benefits, application, estimate costs and level of interventions are provided in Figure 17, Figure 18 and Figure 19.

Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case

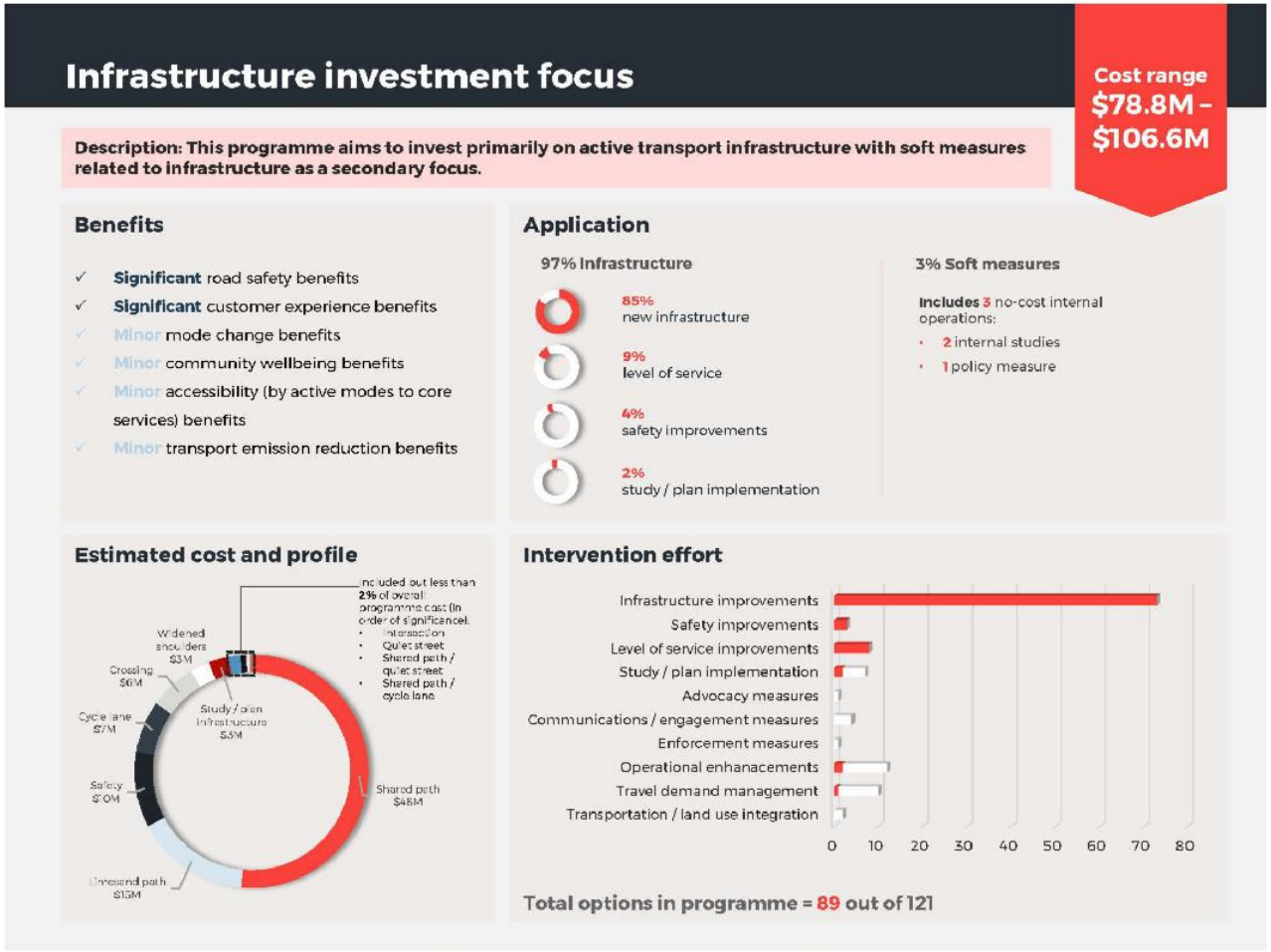


Figure 17 Infrastructure investment focus programme profile

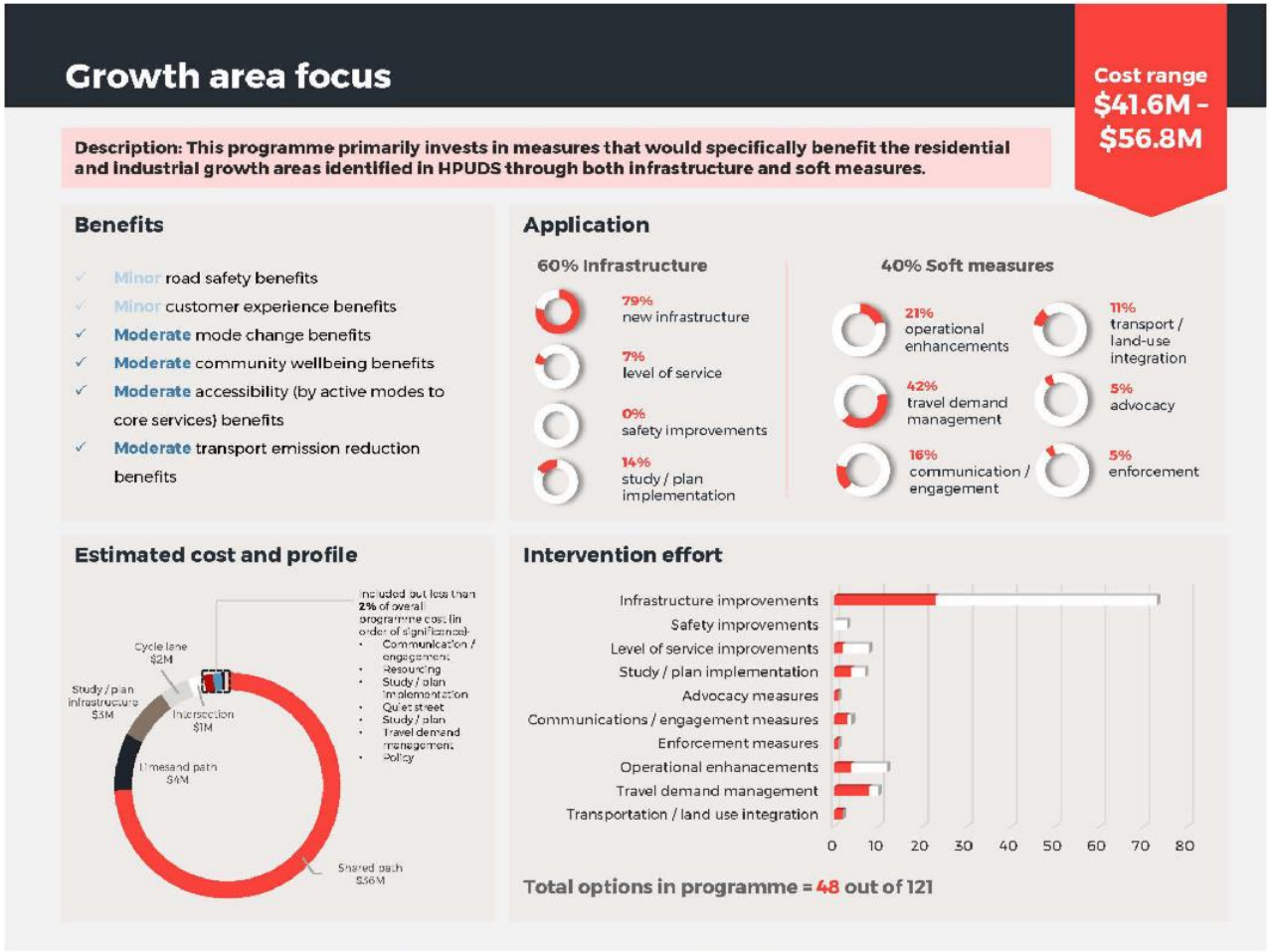


Figure 18 Growth area focus programme profile

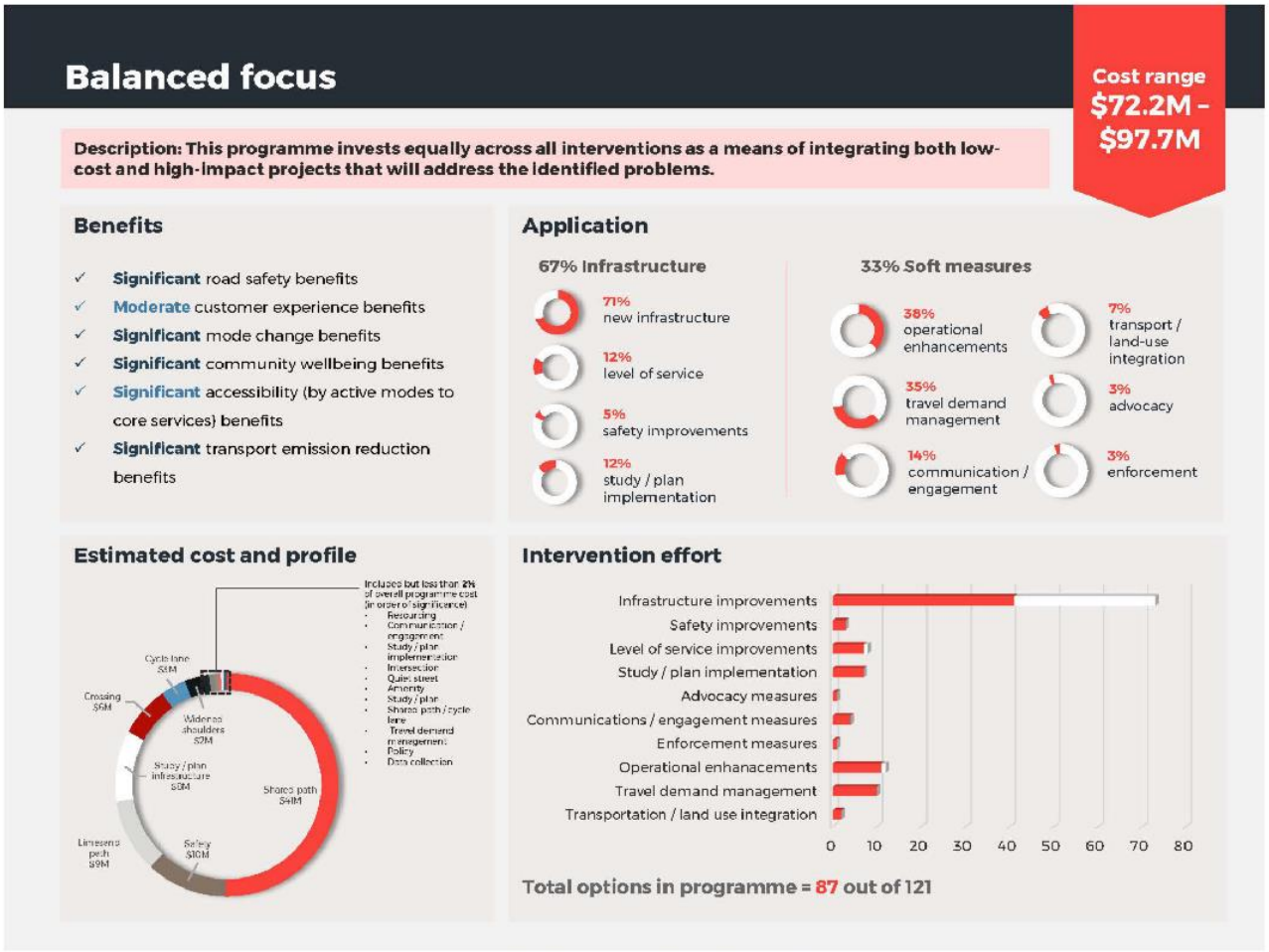


Figure 19 Balanced focus programme profile

6.3.2 Short List Evaluation

The short list evaluation framework used an MCA approach, using several sub-criteria under the following main criteria:

- The risk / implementability of the programme; and
- The effects caused by the programme

Descriptions of the risks and effects can be found in Appendix H – Risks and Effects Descriptions.

Using the MCA scoring from section 6.2.2, the outcome of the short list programme evaluation is provided in Table 10.

Table 10 Short List Programme Evaluation

Programme Option		Infrastructure Investment Focus	Growth Area Focus	Balanced Programme
Investment Objectives	Increase use of active transport	0	0	3
	Improve the perception of active transport as safe and convenient	1	1	2
Risks / Implementability	Feasibility	-2	-1	0
	Affordability	-3	-1	-2
	Stakeholders / Customers	-2	-1	0
Effects	Social	1	0	2
	Cultural	-1	0	1
	Economic	2	1	2
	Environment	1	2	2
	System Integration	0	1	2

6.3.3 Short List Evaluation Findings

Findings that were either significantly positive or negative are noted below:

Investment Objectives

- The Balanced programme was ranked as significantly positive for increasing the use of active transport investment objective as it will significantly improve connectivity and severance issues, increase separation and level of service on key routes and address travel and parking demand management.

Risks / Implementability

- The Infrastructure Investment focused programme has moderate adverse feasibility risks due to potential issues with delivery risk, resourcing and timeframes related to a heavy infrastructure focus.
- The Infrastructure Investment focused programme has high risk and the Balanced programme has moderate adverse affordability risk compared to the growth focused programme as the cost ranges are quite high. The Infrastructure Investment focused programme, in particular, is likely financially unfeasible.
- The Infrastructure Investment focused programme has medium risk associated with stakeholders and customers as additional infrastructure alone is unlikely to significantly address the current active transport network problems.

Effects

- The Balanced programme scored the highest regarding social effects due to its moderately positive impact on liveability, connectivity and accessibility to core services.
- Both the Infrastructure Investment Focused and Balanced programmes will have moderately positive economic effects as our cycle facilities are a significant draw for tourists and these programmes will increase our active transport network.
- The Growth Area Focused and Balanced programmes will have moderately positive effects related to the environment as they contain significant travel demand management, transportation / land use integration and operational enhancements that support a mode shift and encourage walking and cycling.
- Regarding system integration, the Balanced programme scored moderately positive due to the inclusion of operational enhancements and transportation / land use integration measures that will realise opportunities for mutual benefit and efficiencies.

6.3.4 Scoring and Ranking - Sensitivity tests

The base MCA scoring has been applied with equal weighting applied to each of the three criteria groups:

- Investment Objectives (I/O) 33%
- Risks / Complexity (R) 33%
- Effects (E) 33%

Descriptions of the sensitivity tests are in Appendix J – Sensitivity Test Descriptions.

The outcome of those tests is provided in Table 11.

Table 11 Sensitivity Test Ranking from MCA comparison

Active Transport PBC	Infrastructure Investment Focused Programme	Growth Area Focused Programme	Balanced Programme
Raw Scores	3	2	1
S1 - with 33/33/33	3	2	1
S2 - I/O-50%/R - 25%/E-25%	3	2	1
S3 - I/O-70%/R - 15%/E-15%	3	2	1
S4 - I/O-50%/R - 10%/E-40%	3	2	1
S5 - I/O-50%/R - 40%/E-10%	3	2	1

The sensitivity test outcomes indicate that the Balanced programme is the highest scoring programme across all tests. In summary:

- The Balanced programme scored quite high across investment objectives, risks and effects. This indicates the programme will deliver the most benefit with the least risk and effects.
- The Infrastructure Investment and Growth Area focused programmes had negative weighted scores across all the sensitivity tests. This indicates they will not achieve the benefits required due to their increased risk and effects.
- Although the Growth Area Focused programme ranked lower, there is still a need to ensure the philosophy behind these programmes carries through to the preferred programme. Active transport infrastructure needs to anticipate and respond to growth.

6.4 Fine Tuning the Short List

Following engagement with stakeholders, further assessment was conducted with the project team to ensure the short list included an infrastructure option related to the *Accessible Streets Regulatory Package* which is currently under consultation and one operational enhancement option was removed. These two changes to the short list have resulted in the recommended programme which is outlined in further detail in *Figure 20*.

7 Recommended Programme

7.1 Recommended Programme Elements

Following engagement with stakeholders and fine tuning of the short list, we are now considering some options that reflected a better breakdown of infrastructure and soft measures that would address the problems and deliver the most benefits. These specific projects are listed below, but are not final and still need to be considered by the stakeholder group in the next stages.

The high-level recommended options list is in Table 12. Further details related to implementation of the programme are in section 7.3.3.

Table 12 Active Transport high-level recommended option list

Type	Theme	Options	Description
New Infrastructure (41)	East-West Links (5)	Kenilworth Rd	Caroline Rd - Karamu Rd
		Lyndhurst Rd	Nottingley Rd - Pakowhai Rd
		Orchard Rd	Murray Pl - end
		Richmond Rd	Tomoana Rd - Pakowhai Rd
		Collinge Rd	Karamu Rd - Willowpark Rd, Willowpark Rd - Jellicoe St
	City North-South Links (7)	Jellicoe St	Grove Rd - Collinge Rd
		Karamu Rd	Kenilworth Rd - St Aubyn St
		Karamu Rd	St Aubyn St - Eastbourne St

		Maddison St	Heretaunga St - Willowpark Rd
		Princes St	Jervois St - Heretaunga St
		Tomoana Rd	Frederick St - Richmond Rd (to NEC)
		Willowpark Rd	Akina Park - Collinge Rd
	Clive Links (1)	School Rd	Lawn Rd - end path
	Coastal Links (3)	Clifton Rd	Kuku St - path end
		Waimarama Rd	Missing segment along Waimarama Rd
		Whirinaki Connection	Esk River - Whirinaki Rd end
	Expressway Corridor (3)	Expressway Crossing	Orchard Rd - Manchester St
		Sports Park	Connectivity to Sports Park w/NZTA along expressway
		Expressway (SH2)	Paki to Taradale
	Flaxmere Links (7)	Henderson Rd	Flaxmere Ave - Omahu Rd
		Henderson Rd	Flaxmere Ave - Swansea Rd
		Omahu Rd	Kirkwood Rd - SH50
		Portsmouth Rd	Wilson Rd - end
		Portsmouth Rd	Stock Rd - Wilson Rd
		SH50	Gordon St - Hotel
		Taihape Rd	end of path - SH50
	Hastings to Clive Corridor (2)	Karamu Rd (SH51)	Napier Rd - Kenilworth Rd
		SH51	Napier Rd - Clive
	Havelock Links (3)	Brookvale Rd	Romanes Dr - Guthrie Rd
		Iona Rd	Middle Rd - Palmerston Rd
		Te Mata Rd	Duart Rd - Karanema Dr
	Havelock to Bridge Pā Corridor (3)	Karamu Stream / Anderson Park Connection	Havelock Rd - Railway Rd Sth

		Longlands Rd	Te Aute Rd - SH2
		Maraekakaho Rd	Stock Rd to SH2
	Havelock to Hastings Corridor (2)	Howard St Development	Howard St - Havelock Rd
		St Georges Rd	Havelock Rd - Southland Drain
	Havelock to Whakatu Corridor (1)	Te Ara Kahikatea	Peanut - Railway Xing
	Napier Connections (1)	Ngaruroro Explorer	SH50 - Pakowhai Rd + Franklin Rd
	Pakowhai-Maraekakaho Corridor (2)	Maraekakaho Rd	York Rd - Ngatarawa Rd
		Stortford Lodge Roundabout	
	Te Mata Peak Corridor (1)	Te Mata Peak Rd - Simla Ave	Te Mata Rd - Te Mata Peak top
Safety Improvements (3)	Havelock Links (3)	Havelock Rd/Karanema Dr	Safety improvements at intersection for active travel
		Napier Rd/Crosses Rd	Safety improvements at intersection for active travel
		Napier Rd/Karanema Dr	Safety improvements at intersection for active travel
Level of Service (LOS) Improvements (8)	Havelock to Hastings Corridor (1)	Heretaunga/Havelock Rd	Traffic calming and closing of some intersections along Heretaunga St to prioritise pedestrians
	Middle Road Corridor (2)	Gilpin to School Road	Widen shoulder and upgrade facilities on link to Heartland ride
		School Road to District line	Widen shoulder and upgrade facilities on link to Heartland ride
	Pakowhai-Maraekakaho Corridor (3)	Pakowhai Rd	Lyndhurst to Evenden
		Pakowhai Rd	St Aubyn Intersection
		Pakowhai Rd	Omahu to St Aubyn
	Marae and Rural Settlements (1)	Marae and Rural Settlements	Amenity and walking improvements, cycling

		connections, safety improvements
	Footpath Level of Service (LoS) (1)	Increased LoS and footpath improvement package (Accessible Streets)
Study / Plan Implementation – Infrastructure (7)	Increased separation / LOS infrastructure (1)	Increased separation and LoS of on-street bicycle facilities implementation
	Safe schools infrastructure (1)	Safe Schools Policy Implementation
	Neighbourhood streets/greenways infrastructure (1)	Neighbourhood streets/greenways implementation
	Community severance infrastructure (1)	Implementation of projects addressing community severance issues
	Vulnerable user infrastructure (1)	Vulerable user project implementation
	Mode shift infrastructure (1)	Mode Shift Plan Implementation
	Parking management infrastructure (1)	Parking Management Plan Implementation
Productivity, Demand, and Soft Measures (28)	Advocacy (1)	Advocate for a regional Transportation Management Association (TMA)
	Communications and Engagement (4)	Increase regular iWay communications, promotions and events
		Targeted, personalised awareness and education campaigns
		Travel Demand Management education
		Events that celebrate car-free travel
	Enforcement (1)	Increase enforcement for cars parking on footpaths and bike facilities
	Operational Enhancements (11)	Increase separation and LoS of on-street bicycle facilities
		Travel and perception survey
		Active transport in all policies and plans
		Safe Schools Policy

		Identify neighbourhood streets/greenways
		Address community severance issues
		Workplace and school travel planning support (1 FTE)
		Cycle skills training support (0.6 FTE)
		LoS Policy/Manual
		Vulnerable user gap analysis
		Wayfinding
	Travel Demand Management (TDM) (9)	Shared scooter/bike schemes
		Bike purchase schemes
		End of trip facilities
		Access management
		TDM / Mode Shift Plan
		Mode Shift Plan Implementation (soft measures)
		TDM / Mode Shift support (1 FTE)
		Parking Management Plan
		Parking Management Plan Implementation (soft measures)
	Transportation / Land-use Integration (2)	Universal design
		Parking requirements and limits

7.1.1 Distribution of infrastructure projects within the Recommended Programme

Further analysis of the distribution of infrastructure projects within the Recommended Programme revealed the following:

Table 13 Distribution of infrastructure in the Recommended Programme

Location	Indicative Cost	% of Cost	Count	%	Count Underserved / Underinvested	Underserved / Underinvested %
Urban	$48.8M	59%	24	41%	4	19%
Rural	$18.4M	22%	17	29%	10	48%
District-wide	$8.9M	11%	4	7%	1	5%
Fringe (Growth Areas)	$4.7M	6%	10	17%	2	10%
Suburban	$2.1M	3%	4	7%	4	19%

Table 13 indicates infrastructure improvements in the Recommended Programme are primarily focused on urban connections. Urban and growth area infrastructure projects comprise of 65% of the indicative infrastructure cost, with an additional 11% going toward projects that will be distributed across various transects within the District such as safe schools infrastructure.

As noted in sections 2.2 and 2.3.3, previous investment has focused on urban areas which has resulted in some suburbs and rural areas being underserved and underinvested which has resulted in a lack of active transport infrastructure in communities such as Flaxmere.

Rural infrastructure is focused on previously underserved and underinvested communities. In reviewing particular projects within rural locations, 18.6% of the indicative cost is allocated toward addressing previously identified gaps in the regional network. The remainder focus on improving safety and addressing gaps in the existing network on routes seeing growing utilisation.

This distribution aligns with the delivery philosophy in section 7.3.1.

7.1.2 New options included in the Recommended Programme

As part of the option development process outlined in Section 5, new ideas, alternatives and options were generated, many of which were included in the Recommended Programme as outlined in Table 13. Options identified or re-affirmed in the ILM workshops and developed by the project team as part of the SC and PBC process are identified as new. This is very much in line with the delivery philosophy outlined in section 7.3.1.

Table 14 New options included in Recommended Programme

Programme Options	Count	Percent of options	Indicative Cost	Percent of cost
Infrastructure	39	66%	$70.9M	86%
Productivity, Demand, and Soft Measures	28	100%	$4M	100%
Total	67	55%	$74.9M	86%

7.2 Programme Overview

The recommended programme for Hastings District Council (HDC) Active Transport includes two elements:

- Development of the Hastings District active transport network
- A package of soft measures to complement the active transport network development and to address travel behaviour.

The recommended programme for active transport development has been established on the basis of findings from the shortlist assessment. The following sections summarise the recommended programme.

It should be noted that the Active Transport PBC has been conducted alongside a Network PBC which includes other measures related to active transport, particularly focused on increasing the uptake of active travel and increasing community wellbeing. Please refer to the Network PBC for more information on these components.

7.3 Programme Scope

The preferred programme contains a combination of investment in infrastructure and non-infrastructure measures. The total cost of the Programme is $73.9-99.9M, over approximately 10 years, an average expenditure per year of $8.7M. When including shared costs of particular infrastructure projects which is likely to consist of approximately $44.6M, the average annual expenditure is reduced to $4.2M. Further discussion on the financial case is in section 7.6.

A full profile of the recommended programme showing benefits, application, estimate costs and level of interventions is illustrated in Figure 20.

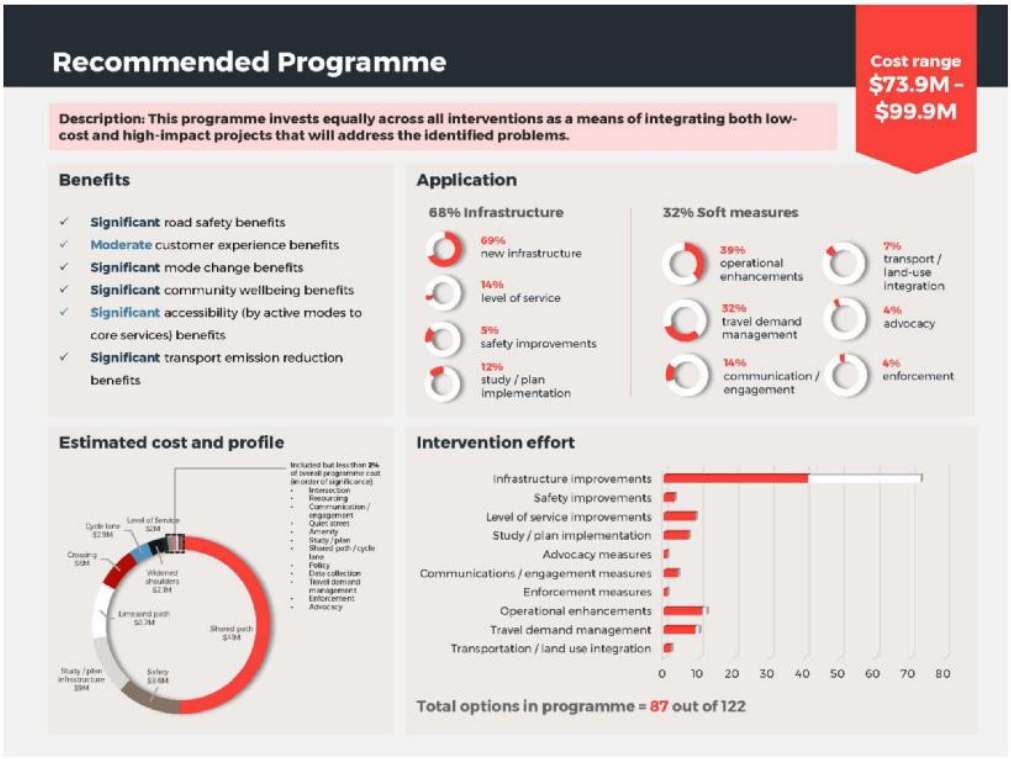


Figure 20 Recommended HDC Active Transport Programme

7.3.1 Delivery Philosophy

Throughout the duration of the Strategic Case and PBC processes, significant feedback was received from stakeholders which indicated a desire take the learnings from the Model Communities programme and build upon the successes while also recognising areas for improvement. A philosophy was discussed and agreed upon with Waka Kotahi as outlined below:

- **HDC will build on what has been done well.** Some of the existing active transport infrastructure and most of the education programmes are very popular and successful. HDC will expand and continue to improve these.
- **HDC will change the things that are not working.** Travel behaviour change requires a comprehensive approach including significant soft measures including appropriate resources, media/comms, events, travel demand management and parking demand management. Very few stick approaches have been implemented to date and HDC requires a different approach in order to achieve mode shift.
- **Let's do the hard work first.** Projects that will improve safety or increase separation for on-street cycling facilities, including addressing difficult segments and intersections, need to be prioritised.
- **Equitable approach to active transport infrastructure improvements.** Significant investment has been made in active transport infrastructure in particular communities in the Hastings District while others have received significantly less investment. A more equitable distribution to active travel infrastructure needs to be considered.

- **The ease and convenience of driving and parking needs to be addressed.** Significant soft measures have been included in the programme to ensure an integrated transportation planning approach to address high car dependency.
- **The right active transport infrastructure for the right target audience.** There is an opportunity to build up connections on low traffic neighbourhood streets and ensure there are facilities that accommodate both the strong and fearless as well as the interested but concerned.
- **HDC will maximise opportunities for improvement.** HDC will embed active transport into Council processes so that opportunities for improving walking and cycling are made alongside other Council projects. HDC will also use Active Transport projects to improve streetscape appeal, amenity and safety for all users.

The delivery philosophy was integrated into the distribution of infrastructure projects in section 7.1.1 as well as the prioritisation of the recommended implementation plan in Appendix L – Active Transport Detailed Implementation Plan.

7.3.2 Recommended approach to the development of the Hastings District transport network

Using the philosophy outlined above, the following outline the recommended approach. This approach was also used in the prioritisation of the implementation plan.

Focus on travel behaviour change and demand management measures to address high car dependency

Developing a comprehensive programme of work to increase the appeal of walking and cycling as a viable mode of transport while also implementing measures to address current travel behaviours can begin shifting trips from primarily single occupancy cars to more sustainable modes of transport. These measures provide a range of benefits including increased safety, improved mental and physical health and reduced impact on the environment. These measures will complement the recommended policy and transportation / land-use integration initiatives further outlined in the HDC Network PBC.

Prioritise safety improvements, increase separation for on-street cycling facilities and improving the level of service of existing walking and cycling facilities

As demonstrated in section 3.3.2, the perception of walking and cycling as a mode of transport is a barrier to increased use of active modes. The initial focus of active transport infrastructure should be on improving the level of service and safety by increasing the separation of on-street cycle facilities. Footpaths will also require improvements to ensure vulnerable users have the ability to safely move through the district including the potential addition of new users based on the outcome of the Accessible Streets Regulatory Package. Improving safety on key corridors and intersections as well as implementing travel demand management initiatives will reduce risk and DSI's.

7.3.3 Recommended implementation plan

The following section outlines the "quick wins" recommended implementation phasing for the HDC Active Transport programme. The subsequent phases including interdependencies are in Appendix K – Active Transport Implementation Plan and a detailed recommended implementation plan can be found in Appendix L – Active Transport Detailed Implementation Plan.

7.3.3.1 Quick wins, 2021-22

A number of projects were identified as key drivers for future decision making and success. These projects are implementable in the first year of the programme and have a few interdependencies with other projects.

Table 15 'Quick wins' focus for network programme, 2021-22

Type	Indicative Cost	Description	Interdependencies
Study / Plan	**$90k**	Travel Demand Management / Mode Shift Plan	Implementation of plan outcomes - $375k in infrastructure and $375k in soft measures TDM / Mode Shift support (1 FTE) Travel Demand Management education Targeted, personalised awareness and education campaigns Regional Transportation Management Association (TMA) Access management
Travel Demand Management	**No cost**	Consider access management measures on active travel corridors	Travel Demand Management / Mode Shift Plan Walking and cycling projects
Travel Demand Management	**No cost**	Encourage uptake of bike purchase schemes e.g. NZTA/SBC employer e-bike scheme	Travel Demand Management / Mode Shift Plan Walking and cycling projects
Study / Plan	**$50k**	District-wide gap analysis for vulnerable users in key activity areas	$1M in implementation of plan outcomes Increased LoS and footpath improvement package (Accessible Streets) Universal Design Policy
Study / Plan	**No cost** (internal)	Identify neighbourhoods that have severance issues due to SH and expressway locations and explore ways to address this through tactical urbanism and the NZTA Innovating Streets Programme	$1M in implementation of plan outcomes Increase separation and LOS of on-street bicycle facilities Walking and cycling projects Targeted, personalised awareness and education campaigns Increase staff to support workplace and additional school travel planning across the district (1 FTE) Workplace and school travel plans
Study / Plan	**No cost** (internal)	Identify neighbourhood streets/greenway	Walking and cycling projects

		corridors for active travel; increase traffic calming and reduce speeds	Targeted, personalised awareness and education campaigns
Study / Plan	**$40k**	Conduct an audit of current on-street bicycle facilities and identify opportunities to increase separation and LOS to increase uptake of active travel	$2M in implementation of plan outcomes Walking and cycling projects Targeted, personalised awareness and education campaigns Workplace and school travel plans
Study / plan Implementation	**$300k** $2M total	Increased separation and LOS of on-street bicycle facilities implementation	Audit of current on-street bicycle facilities
New Infrastructure	**$150k** $2.8M total	Flaxmere Links	Other Flaxmere Links Neighbourhood Severance Study Travel Demand Management / Mode Shift Plan
New Infrastructure	**$192k**	Clive Links	Workplace and school travel plans Travel Demand Management / Mode Shift Plan

Total indicative cost of 'quick wins' - $822,000

The map in Figure 21 illustrates the general location of active transport network development for the recommended programme.

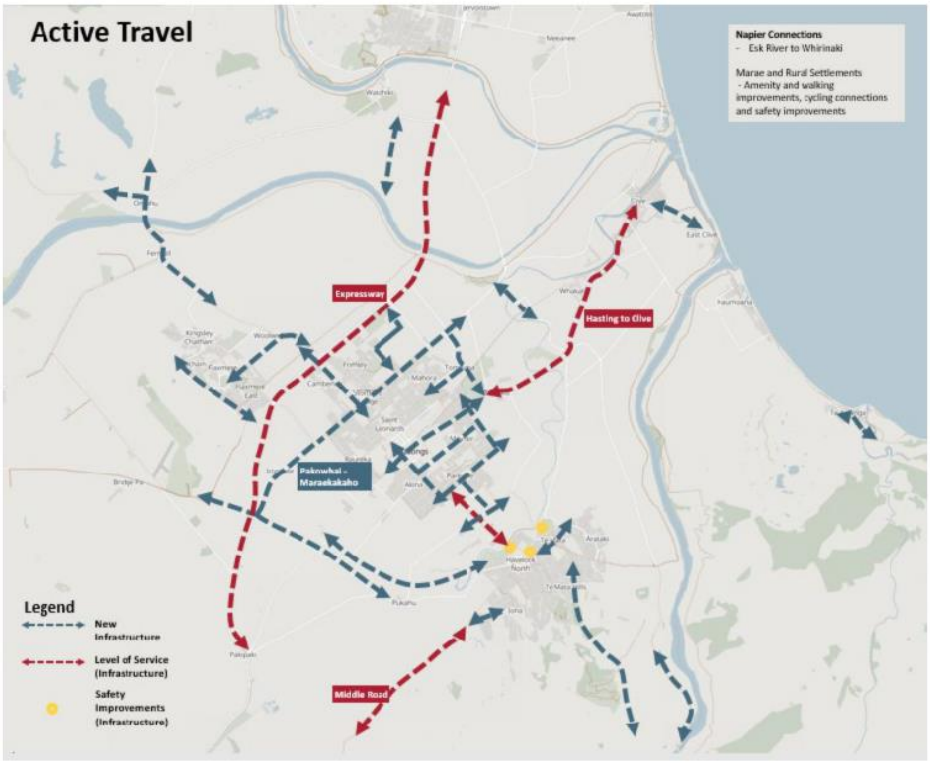


Figure 21 Recommended active transport infrastructure

7.4 Results Alignment

The results alignment is an assessment of investment proposals against the outcomes sought from the GPS. The question that needs to be asked when assessing the results alignment of the programme are: What is the significance of the case for change to the desired results in the GPS (is it in the public interest)?

This programme generally sits within several activity classes and seeks to contribute to travel behaviour change and planned active transport investment over a wide area. The activities within this programme would have to go through a process of prioritisation and funding approval, and requiring a BCR at an activity-level (i.e. projects). The programme also includes low cost and low risk activities not requiring BCR assessment.

Alignment for each high-level option type is shown below with alignment scored, one ✓ = low alignment of the option type, ✓✓ = moderate alignment of the option type, ✓✓✓ = high alignment of the option type and ✓✓✓✓ = very high alignment of the option type.

This PBC spans multiple activity classes under the framework and alignment for them is shown below:

Table 16 HDC Active Transport Programme predicted results alignment

2018-21 NLTP Activity Class and Strategic Priority	Investment benefit	Draft GPS Priority (2021/22–2030/31)	Alignment
Demand Management Programmes Access - liveable cities Environment	Access – people: increase/ maintain Pollution and greenhouse gases: decrease/maintain	Providing people with better transport options to access social and economic opportunities Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access	✓✓✓
Walking and cycling improvement activities Walking Facilities **Access - liveable cities** **Environment** Cycling Facilities **Safety** **Access - liveable cities** **Environment**	Physical health: support Access – people: increase/ maintain Comfort and customer experience – access: improve/maintain	Providing people with better transport options to access social and economic opportunities Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access	✓✓✓
Low cost, low risk programmes	Access – people: increase/ maintain Pollution and greenhouse gases: decrease/maintain Physical health: support Access – people: increase/ maintain Comfort and customer experience – access: improve/maintain	Providing people with better transport options to access social and economic opportunities Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access	✓✓✓

The results alignment for Hastings District Council Active Transport Programme is estimated to be High, as a result of the alignment with the priorities of the activity classes above.

7.5 Programme Risks and Opportunities

Due to the interconnectedness of these projects and the network and active transport programmes, we recommend a risk workshop be completed prior to commencement of work on these programmes to fully realise the risks and identify risk mitigation. It is also recommended that a risk assessment be performed as part of the implementation of major projects included in this programme.

At the time of this report, a number of projects are underway which will provide further insight as to how to best deliver the Programme including a regional network operating plan (NOP), an update to the Heretaunga Plains Transport Model, the Hawke's Bay Regional Transport Study PBC and the Karamu Master Plan project. These projects not being completed at the time of this report are a risk, however, completion of these projects will provide more clarity on what the risks and opportunities for this programme may be.

A high-level assessment of potential risks includes:

Risks / Opportunities	Description
Infrastructure construction risk	Cost inflation will drive up the cost of delivering infrastructure elements, limiting the amount of the programme that can be delivered for a fixed budget
Financial risks	Shifts in priorities for funding or limitations on available funds may mean funding levels in this PBC will not be provided
Stakeholder/ public risks	Government or regional priorities may change and the programme may not deliver what is promised
	Travel behaviour change, TDM and parking management measures may be too controversial resulting in lack of support to implement necessary measures
	Lack of education and awareness of the potential of travel behaviour change, TDM and parking management measures
Soft measures risks	Resourcing may not be funded to the level required to implement and sustain travel behaviour change and mode shift
	The expected benefits arising from policy initiatives may not be delivered as a result of lack of urgency from decision makers, political interference or external issues
	Transportation / Land-use integration (soft measures) may not be delivered as a result of lack of urgency from decision makers, political interference or external issues

Benefits Realisation	Opportunity to develop continuous improvement loops to improve processes and deliver on outcomes

Table 17 Risks / Opportunities

7.6 Recommended Programme Financial Case

The indicative cost estimate of the network programme is $73.9-99.9M, which does not account for inflation.

Table 18 Total and annual expenditure of recommended programme

Category	Total	Annual
Capital expenditure (Capex)	$86.9M	$8.7M
Operational expenditure	$4M	$403k (10 years)
Potential cost sharing	- $44.6M	- $4.5M
Overall programme cost	$42.3M	$4.23M

The midpoint of the Capex component of the programme totals $86.9M, equating to an average expenditure of $8.7M per year. In addition, there are operational expenditure components totalling $4M, equating to an average expenditure of $403k per year. Soft measures have been developed with a 10-year delivery in mind which will require consideration if timelines for implementation are adjusted. Further details are outlined in *Figure 20*.

As outlined in Table 15, there is a significant opportunity for cost sharing of the active transport infrastructure with Waka Kotahi, HBRC and public-private partnerships which are anticipated to be around $44.6M. This would reduce the overall programme to a total of $42.3M or $4.23M per year over ten years. This would be a significant increase to the current annual expenditure for active transport as the 2019/20 budget allocated $1.7M. While this is an ambitious programme, new infrastructure projects could be extended into a 20 year programme which would bring annual programme expenditure in line with current levels.

It is expected that elements of the recommended programme will be funded under standard arrangements between the Waka Kotahi and HDC. The exception may be activities or projects which do not meet Waka Kotahi's funding criteria, which could be considered for council funding without subsidy from Waka Kotahi.

A range of procurement and financing options will be considered including public private partnerships and traditional procurement. Funding arrangements and costs will be refined following the completion of further work and discussions with Waka Kotahi. In addition, wider public consultation and elected member discussions will be undertaken as part of the HDC Long Term Plan (2021-2031) process.

A level of flexibility is needed during this time of uncertainty with the COVID-19 pandemic, reduced council budgets, changing demands on various modes and changing road user needs. The programme has been prioritised and should be implemented to the extent that council transport budgets allow.

7.7 Affordability

The affordability of the programme cannot be confirmed until the development of further work has been completed, alongside the agreement on levels of funding for transport activities in the HDC Long Term Plan. It also depends on the outcome of the Regional Land Transport Plan (RLTP) and the National Land Transport Programme/ National Land Transport Fund (NLTP/NLTF).

It is considered that the recommended programme will be efficient and fundable through the NLTF. Implementation would be staged over the ten-year Long Term Plan period so that priority packages can be triggered first within affordable funding scenarios. Affordability will need to be confirmed through the inclusion of individual components of the programme in the NLTP.

PART C – DELIVERY AND MONITORING THE PROGRAMME

8 Recommended Programme Management Case

This section of the document outlines how the preferred programme will be delivered through the project partners and the key activities to take the next steps for the programme forward.

The following sections discuss key management case questions.

8.1 Programme Governance

The Programme of investment is a partnership between Hastings District Council and Waka Kotahi. Each organisation has a role in planning, funding and delivering initiatives of the recommended programme. While funding, planning and delivery are expected to involve a partnership between the organisations, HDC plays the most central role in coordinating and delivering the active transport programme.

Successful delivery will require the continuation and evolution of the successful collaborative partnership and working arrangement between HDC and Waka Kotahi.

The senior responsible owner for the HDC Active Transport PBC is the HDC Transportation Manager. Implementation of the PBC sits with the HDC Strategic Transport Engineer, in collaboration with other HDC transport team members. It is recommended that overall governance of the HDC Active Transport PBC be provided through the existing HDC Active Transport Working Group.

8.2 Programme Delivery

8.2.1 General Approach

At the time of this report, a number of projects are underway which will provide further insight as to how to best deliver the Programme including a regional network operating plan (NOP), an update to the Heretaunga Plains Transport Model, the Hawke's Bay Regional Transport Study PBC and the Karamu Master Plan project.

New active transport infrastructure has been grouped by proximity to links and corridors. Further investigation will be required within each grouping to identify the preferred location and treatment of each option.

Generally, major projects will follow the NZTA Business Case process. This will provide further detail and investigation to ensure the desired outcome.

8.2.2 Programme Staging

The Active Transport programme has been grouped into quick wins, short, medium and long-term projects based on prioritisation with the project team and according to the delivery philosophy with soft measures being prioritised. While a timeline has been provided, implementation of new infrastructure will require a level of flexibility to ensure alignment with the LTP process and funding levels.

8.2.3 Monitoring of the Programme Timing and Triggers

The approach to delivering the programme will be flexible due to the geographic coverage of the Programme, the number of projects, the impacts of other delivery priorities and to also enable benefits realisation optimisation. Monitoring and evaluation tools and processes will be further developed as a critical element for the successful delivery of the programme.

Triggers will also be determined based on the effectiveness of planned interventions which could then impact the preferred delivery of similar or related projects in the future. Within the governance arrangement there will be a feedback mechanism that allows changes to be made to optimise outcomes.

8.2.4 Delivery Responsibility and Resourcing

Delivery of the Programme will be undertaken by the HDC transport team in partnership with other appropriate internal delivery teams and will be funded between HDC and Waka Kotahi, on a proportional cost, depending upon the nature of the project.

The initial focus for the Programme will be to:

- Implement the quick wins
- Undertake the studies and plans outlined in the Programme to inform the associated infrastructure components of the Programme
- Identify the optimal delivery programme, e.g. packaging of works
- Undertake further assessment to identify preferred routes and treatments in collaboration with stakeholders, the community and māna whenua

9 Stakeholder Engagement and Communications Plan

The stakeholder engagement and communications plan is critical to the success of the 2020 HDC Active Transport Programme. Outlined below is not the plan itself, but rather an overview of the principles, key issues and general approach to engagement for this strategy. It sets out the framework from which a more detailed plan and ultimately communications plans will be developed for individual projects.

9.1 Engaging Early

It is important to note that improvements to the active transport network will benefit people living locally and throughout the region. The project team will engage early with all interested and affected stakeholders so the improvements can best address their needs while achieving the strategic transport objectives of the project partners.

9.2 Key Stakeholders

Key stakeholders will be engaged prior to the general public as they can help to improve the projects. Mana whenua are key stakeholders in the implementation of the strategy and will be engaged early by HDC staff.

In addition, there are a number of other stakeholder groups represent parties who are affected by, or have an interest in, this strategy and its implementation. These include, but are not limited to the HDC Active Transport Working Group members such as Hawke's Bay Regional Council, Napier City Council, Sport Hawke's Bay, Hawke's Bay DHB, walking and cycling advocacy groups, vulnerable user groups, business associations, resident's associations, youth representatives, educational institutions and other community groups.

HDC will facilitate the identification and engagement with these stakeholders.

9.3 Community Engagement

The people living in the community will play a crucial role in shaping the implementation of these improvements. Where possible, HDC will undertake a number of public feedback phases where people can input into the project early and throughout the iterative process. HDC will implement a travel behaviour change programme to increase demand for active

transport, create broader community interest in the projects and meaningful engagement as part of the project implementation process.

The information will be clear, accurate and disseminated widely so as many people as possible are aware of the public consultation. Not only will this help to improve the projects, but it will build excitement and anticipation for people who will see a vision of using active transport as a viable means of transport with safer and high quality active transport infrastructure.

9.4 Promoting the Existing and Future Active Transport Improvements

A big component of the plan will be to celebrate the existing and future active transport infrastructure through positive PR, events and other communications channels. These activities will help illustrate the life cycle of a project from inception to completion and the reasons why HDC and project partners are in investing in active transport.

10 Programme Performance and Review

Monitoring plans, using Waka Kotahi's template, will be completed for each package of projects. The plans will cover what monitoring tools will be required for each project, and when. The monitoring tools used for evaluating project benefits are:

Permanent automatic cycle counters – additional counters should be installed on high profile projects, depending on location
Temporary automatic cycle counters
Traffic volumes and speed where speed calming measures are implemented as part of a project
A new annual community travel and perception survey to collect baseline and changes in perceptions of active transport and the network
Audit of footpaths using existing HDC footpath LOS standard
Audit of cycling facilities using new HDC cycling LOS assessment (to be created)

Other potential monitoring could include:

- Manual counts of pedestrian and cyclists using camera footage, capturing age, gender and whether riding on the footpath, cycle facility (if existing) or road
- Intercept surveys with pedestrians and cyclists to capture satisfaction with cycle facilities
- Walk scores
- Reduction in VKT
- Reduction in transport emissions
- Improved health outcome indicators (obesity, physical activity rates, other)
- Improved wellbeing indicators

In addition to project-specific monitoring, HDC undertakes cycle and pedestrian monitoring across the region. There are a number of permanent automatic cycle counters throughout the region and cycle counts are gathered annually using temporary automatic cycle counters.

It has been noted that there are parts of the district that do not have any counters. More equitable dispersal of counters would give a better reflection of active transport across the district.

10.1 Benefit Realisation

As part of the strategic case, a benefits map was created to establish various investment benefits (KPI's), measures, baselines and high-level targets. This information can be found in Appendix D – Benefit Mapping.

It is recommended that before significant changes are made to the active transport network, specific targets should be identified and where necessary, baseline data will need to be collected. This will ensure that KPI's which include measures beyond walking and cycling counts such as active travel trips to school, work, and recreation, health outcomes and perceptions can be accurately measured and monitored. A transport emission baseline has not been established so it is recommended that either a district-wide emission inventory or a regional emissions inventory be conducted to establish a baseline for transport emissions.

For major projects, a more detailed and site specific benefit realisation plan should be developed and submitted at subsequent phases of the Business Case Approach.

Accurately understanding what is being achieved by the Programme will help to guide the appropriate scope of future projects, as well as provide assurance to Waka Kotahi that the National Land Transport Programme investment is providing value, in terms of contributing to targeted performance measures.

11 Next Steps

The recommended programme is not an investment programme, as individual projects or activities still need to be developed and will still need to go through statutory processes to proceed (e.g. NLTP, RLTP, and LTP). However, it provides an indication of the broad location, type and level of investment that is likely to be required to address the transport problems identified through the Strategic Case.

Whilst the full recommended programme represents a potentially large investment over a ten-year period, the approach aimed to cluster locations, tackle multiple problems through a single business case, align implementation with wider programmes (such as maintenance and renewal programmes), and phase implementation representing better value for money solution than existing practices.

Although the HDC Long Term Plan covers a ten year planning horizon, it is refreshed and reviewed through the Annual Plan process and is reconsidered every three years. HDC views this PBC as a living document that can be updated and refreshed as assumptions or significant changes occur (such as the location and scale of housing and employment growth or the timing and impact of technological change or increases in available funding), which could significantly alter the strategic direction or timing of implementation/further development of subsequent phases.

Successful delivery of this programme will involve ongoing collaboration with project partners throughout the life of the programme, to ensure a one network approach is adopted that maximises value for money and best achieves the outcomes identified by all partner agencies. The governance structure in section 8.1 will help to enable successful delivery.

12 Recommendations

The HDC Active Transport PBC has undertaken a review of the key transport problems, challenges and opportunities related to the Hastings active transport system.

The Balanced Programme was deemed the best programme in terms of addressing the investment objectives, risks and effects which was fine tuned into a recommended programme.

This PBC will be refined through the development of further work, with an immediate focus on quick wins and short-term projects as outlined in section 7.3.3.

It is recommended that:

- HDC Active Transport Working Group endorse the PBC
- HDC Executive Leadership Team endorse and approve funding of the Programme through the LTP process
- Waka Kotahi support for the PBC and its ongoing development
- HDC progress further work within existing funding arrangements as per the prioritised programme. Further applications and phases to follow.

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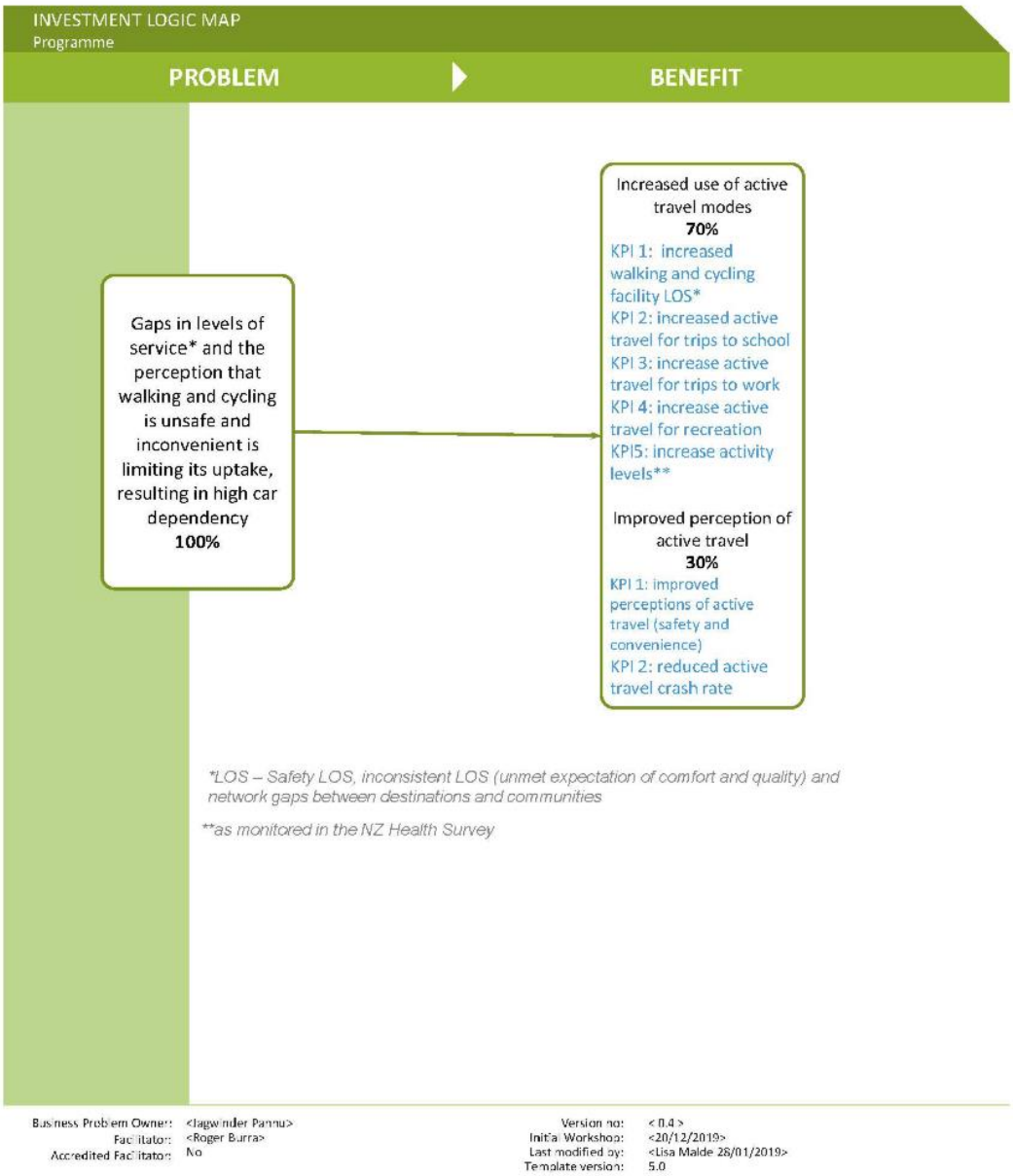
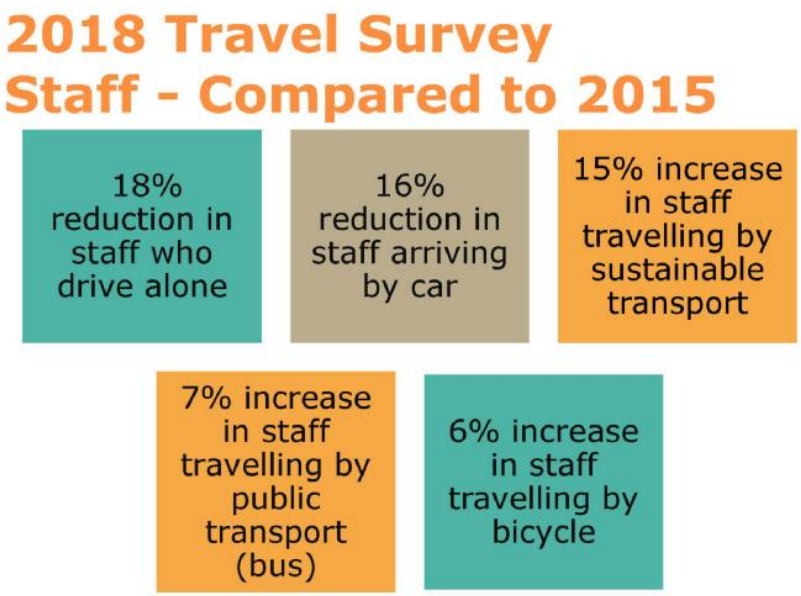
Appendix A – Investment Logic Mapping

Normalising Active Travel for All

Delivering Community Wellbeing



Appendix B – HBDHB Travel Survey Data Key Findings



2018 Travel Survey
Staff - Ideal Means of Travel

Top Choice
32% of staff would like to travel by bicycle

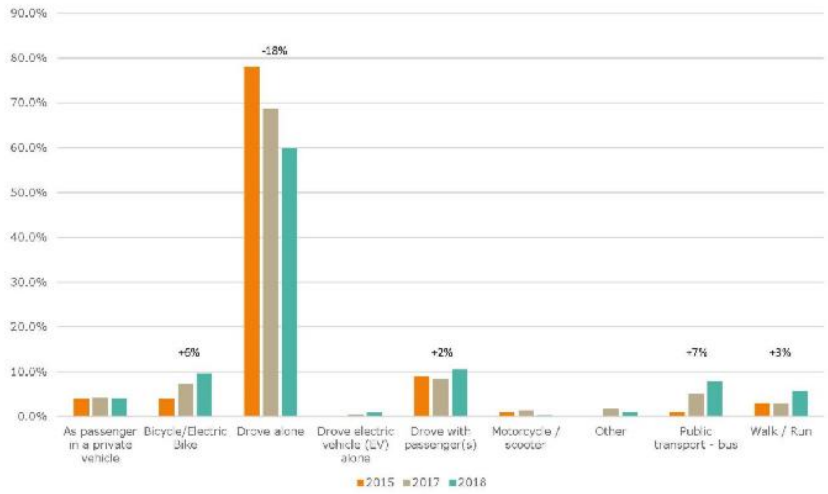
Second Choice
26% of staff would like to travel by public transport

5% decrease in staff wanting to drive alone

8% increase in staff wanting to travel by public transport

7% increase in staff wanting to travel by bicycle

Staff Travel Mode



Desired mode shift was 10% - once a fortnight

Appendix C – Household size and motor vehicles per household data

Population and household data has been extracted from the New Zealand Census data and is summarised below, along with some key figures from the Heretaunga Plains Urban Development Strategy study.

Table 1 Study area household growth trends

	Population	Household	Cars	Household occupancy	Cars per household	Cars per person	Cars per person over 15
1996	118,410	42,528	60,712	2.78	1.43	0.51	0.67
2001	119,739	43,938	65,940	2.73	1.50	0.55	0.72
2006	124,965	46,149	74,119	2.71	1.61	0.59	0.77
2015*	130,320	50,911		2.58			
2026*	136,644	55,070		2.48			
2045*	138,575	58,925		2.35			

* Source: growth forecasts from Heretaunga Plains Urban Development Strategy

It can be seen from growth trends in household types that have been extracted from the previous 15 year census data that the number of people per household has decreased, the number of cars per household has increased, as has the number of cars per person. The Heretaunga Plains Urban Development Strategy projections shows that the trends in average number of persons per household is expected to continue.

6.3 Household projections

Household projection totals are based on those adopted for HPUDS for the period 2009 to 2045, with intervals of 2011, 2015, 2021 and 5 yearly to 2045. The periods have been adjusted to match the HPTS timelines and census years to derive projection target totals for 2009, 2011 and thereafter five yearly to 2046 as shown in Table 10.

Table 10 HPUDS household projections

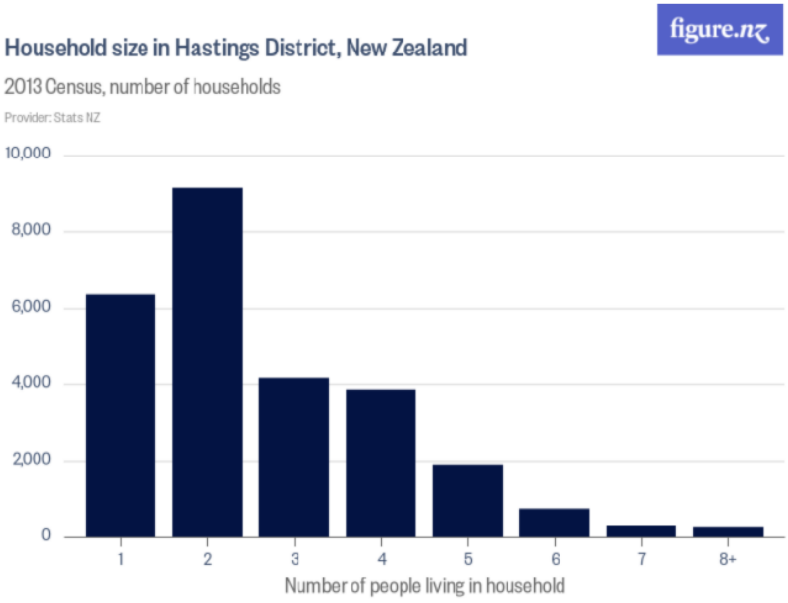
	2009	2011	2016	2021	2026	2031	2036	2041	2046
Projected households	48603	49295	51281	53130	55070	56660	57800	58505	59030
Inter-period increase		692	1986	1849	1940	1590	1140	705	525

The increase in households has been allocated to greenfield/coastal sites, infill and rural (see Table 6).

Table 11 Household growth by type and location

Napier	2016	2021	2026	2031	2036	2041	2046	Total
Greenfields/coastal	578	333	349	267	169	109	63	1868
Infill	514	398	466	413	339	199	170	2499
Rural	193	102	63	44	18	16	12	448
Hastings	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**	**Total**
Greenfields/coastal	627	499	524	401	253	163	94	2561
Infill	557	398	466	413	339	199	170	2542
Rural	209	120	73	52	21	19	14	509


Motor vehicles per household in Hastings District, New Zealand
figure.nz
2013 Census, number of households
Provider: Stats NZ
10,000
8,000
6,000
4,000
2,000
0
0
1
2
3 or more
Motor vehicles available to people in household


Household size in Hastings District, New Zealand
figure.nz
2013 Census, number of households
Provider: Stats NZ
10,000
8,000
6,000
4,000
2,000
0
1
2
3
4
5
6
7
8+
Number of people living in household

Appendix D – Benefit Mapping

BENEFIT MAP

BENEFIT	INVESTMENT BENEFIT (KPI's)	MEASURE	DESCRIPTION	BASELINE	TARGET
Increased use of active travel modes 70%	Increased walking and cycling facility LOS*	Use current footpath LOS and create new cycling LOS assessment for cycle facilities	Increased walking and cycling safety LOS and consistent facility LOS* (for high demand, low LOS routes? key corridors?)	Current walking and cycling facility LOS benchmarked against similar regions and national data (where available)	XX%
	Increased use of active travel for trips to school (same as network KPI)	Increased active travel trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data	Increased use of active travel (walking, cycling, scooting) for trips to school	2018 Census - New Zealand Walk - 22% Cycle – 4% Other – 1% 2018 Census – Hastings Walk - 18% Cycle – 5% Other – 2% 2018 Census – Napier Walk - 21% Cycle – 6% Other – 2% New Plymouth Nelson Palmerston North School Travel Plans (Generalised - Overall) Walk - 24% Cycle – 6% Scooter – 6%	XX% increase in use of active travel for trips to school
	Increase active travel for trips to work (same as network KPI)	Census data, employer travel survey data and community travel survey	Increased active travel for trips to work	2013 Census – Hastings Actual count, not % 2018 Census – Hastings Will be % not actual count 2018 Census – National Walk or jog – 5.2% Public Transport – 4.2% Cycle – 2%	XX% increase in use of active travel for trips to work

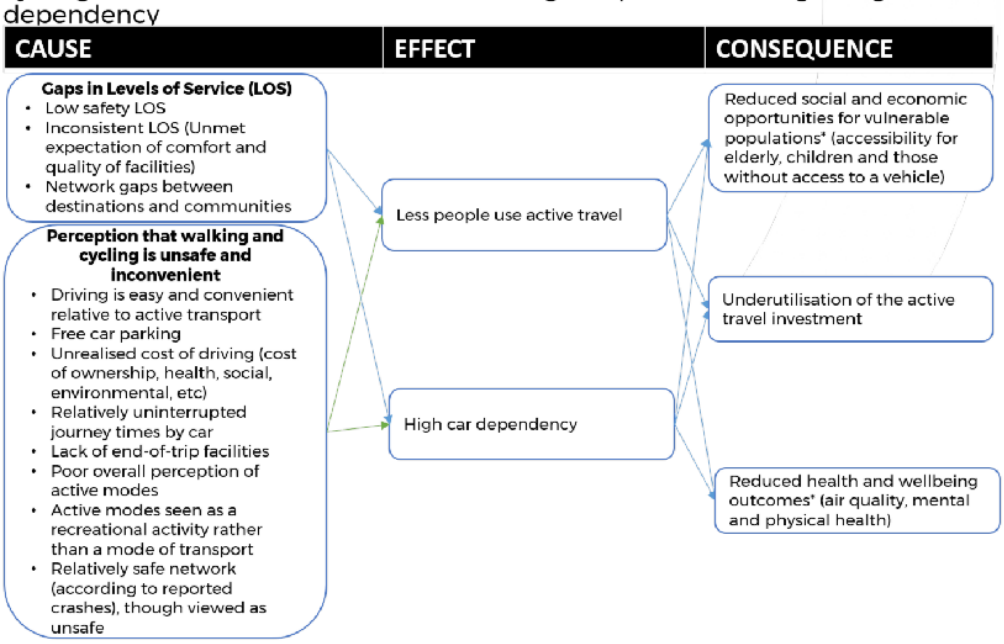
				2018 HBDHB Travel Survey Walk or jog – 6% Public Transport – 8% Cycle – 10% 2017 HDC Travel Survey Walk or jog – 6.5% Public Transport – 1% Cycle – 3.5% Baseline community travel survey – primary mode to/from work	
	Increase active travel for recreation	HDC to continue conducting cycle counts, and measure future and historic counts, categorising off-peak commute times as recreational trips Community travel survey	Increased active travel for recreation	XX recreational trips Baseline community travel survey – recreational trips	XX% increase in active travel recreational trips
	Increase activity levels (as monitored in the NZ Health Survey)	Obesity and physical activity rates as reported by Ministry of Health in NZ Health Survey	Increased activity levels	Physical Activity Rates 2011-14 Hawke's Bay - 45.3% 2014-17 National – 49.5% Hawke's Bay – 36.9% Taranaki – 45.8% Nelson Marlborough – 60% Obesity Rates 2011-14 Hawke's Bay - 34.3% Obesity Rates 2014-17 National – 31.5% Hawke's Bay – 38.4% Taranaki – 31.5% Nelson Marlborough – 26.3%	XX% increase in physical activity levels

Improved perception of active travel 30%	Improved perceptions of active travel (safety and convenience)	New community survey data on perceptions of active travel (safety and convenience)	Improved perceptions of active travel (safety and convenience)	XX – new community survey baseline data	XX% improved perception of active travel
	Reduced active mode crash rate	Reported active mode crashes benchmarked against other regions and national data	Reduced pedestrian and cyclist crash rate (visible to community)	CAS DSI Crash Analysis 2015-19 Hastings Pedestrians – 5.3% Wheeled Pedestrians – 1.6% Cyclists – 6.3% New Plymouth/Nelson/ Palmerston North Avg % Pedestrians – 13.6% Wheeled Pedestrians – 0.4% Cyclists – 11.9%	XX% Reduce crash rate by 50% in 5 years

Appendix E – Cause, Effect and Consequences Mapping

Active Travel Problem Statements

Problem 1 – Gaps in levels of service* and the perception that walking and cycling is unsafe and inconvenient is limiting its uptake, resulting in high car dependency



Appendix F – Waka Kotahi NZ Transport Agency SBC Investment Questions

Meet Requirements?	Strategic Case Investment Questions and Response Sections
Yes	Is it clear what the problem is that needs to be addressed (both the cause and the effect)? See section 3.1, Appendix E – Cause, Effect and Consequences
Yes	Is there evidence to confirm the cause and effect of the problem? See section 3.2, Appendix E – Cause, Effect and Consequences
Yes	Does the problem need to be assessed *at this time*? See section 3.2
Yes	Is the problem specific to this investment (or should a broader perspective be taken)? See section 2.1
Yes	Have the benefits that will result from fixing the problem been adequately defined? See sections 3.2, Appendix D – Benefit Mapping
Yes	Are the benefits of high value to the organisation(s) (furthering its (their) objectives)? See section 2.1
Yes	Will the KPIs that have been specified provide reasonable evidence that the benefits have been delivered? See section 3.4.1, and Appendix D – Benefit Mapping
Yes	Are the KPIs both *measurable* and *totally attributable* to this investment? See section 3.4.1 and Appendix D – Benefit Mapping
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 3.4.1 and Appendix D – Benefit Mapping

Appendix G – Programme Descriptions

Do Minimum
This programme does not include any new active transport infrastructure or soft measures. It includes implementation of the Asset Management Plan (AMP), maintenance programmes and education and awareness initiatives that are currently in place.

Soft Measures, Behaviour Change and TDM Focus
This programme is focused on low-cost measures that will address high car dependency and support the use of active transport. Infrastructure that supports this work as a secondary focus.

Infrastructure Investment Focus
This programme aims to invest primarily on active transport infrastructure with soft measures related to infrastructure as a secondary focus.

Previously Underinvested Areas Focus
This programme is geographically focused on communities within the Hastings District that have previously received less investment such as coastal and marae communities, and underserved communities such as Flaxmere, Camberley, Frimley. The programme is balanced between hard and soft measures.

Growth Area Focus
This programme primarily invests in measures that would specifically benefit the residential and industrial growth areas identified in HPUDS through both infrastructure and soft measures.

School destination focus
This programme is geographically focused on improvements near schools, community centres and residential areas. The programme is balanced between hard and soft measures.

Workplace focus
This programme is geographically focused on improvements near employment centres, residential areas and the CBD. Commuter connections are also prioritised. The programme is balanced between hard and soft measures.

Recreation focus
This programme aims to invest in geographic areas renowned for their draw as a recreational hot spot including Te Mata Peak, regional connections and Middle Rd. The programme is balanced between hard and soft measures.

Balanced Programme
This programme invests equally across all interventions as a means of integrating both low-cost and high-impact projects that will address the identified problems.

Appendix H – Risks and Effects Descriptions

The short list evaluation framework used an MCA approach, using several sub-criteria under the following the main criteria:

- The risk / implementability of the programme; and
- The effects caused by the programme

	Criteria	Explanation
Risks/ Complexity	Deliverability / Feasibility	Delivery risk, resourcing, timeframes, complexity
	Affordability	Affordability against RLTP/NLTP budgets (10 years)
	Stakeholder/Customers	Acceptability of the option to key partners and general public
Effects	Social	Impact on liveability, connectivity and accessibility to core services
	Cultural	Impacts on iwi values, ways of living that enhance hauoratanga (wellbeing) and equitable access for marae-based communities
	Economic	Impact to local economy, degree of enablement of sustainable business and tourism, attracting visitors, business and growth
	Environment	Greenhouse gas emissions, potential to impact on environmentally sensitive areas
	System Integration	Transport and land-use integration, realising opportunities for mutual benefit and efficiencies

Appendix I – Programme Alignment with Investment Objectives Justification

Programme Option	Do Minimum	Soft Measures Focused Programme	Infrastructure Investment Focused Programme	Previously Underinvested Programme	Growth Area Focused Programme	School Focused Programme	Workplace Focused Programme	Recreation Focused Programme	Balanced Programme
Investment Objective 1 Increase use of active transport	Moderate Adverse Effect/Risk	Neutral	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Neutral	Moderate Positive
Objective 1 Justification Current state: According to the 2013 Census, active mode share in the Hastings District is 9%. Nearly 90% of total trips in Hastings in 2013 were completed using private vehicles.	Current trends and high car dependency will continue. Low focus on measures to address problems related to this investment objective.	Major focus on soft measures will address travel behaviour. Low focus on infrastructure and safety will not encourage active travel. Low focus on measures to address problems related to this investment objective.	Moderate focus on connectivity, LoS and safety will increase use. High car dependency will remain due to minimal soft measures. Minor focus on measures to address problems related to this investment objective.	Minor infrastructure focus in communities that previously received less investment such as coastal and marae communities, and underserved communities such as Flaxmere, Camberley, Frimley. Low safety focus, moderate use of soft measures.	Minor infrastructure focus near growth areas identified in HPUDS on the periphery of existing developed areas. Low safety focus, moderate use of soft measures. Minor focus on measures to address problems related to this investment objective.	Minor infrastructure focus near schools, community centres and residential areas. Low safety focus, moderate use of soft measures. Minor focus on measures to address problems related to this investment objective.	Minor infrastructure focus near employment centres, residential areas and the CBD. Commuter connections are also prioritised. Low safety focus, moderate use of soft measures. Minor focus on measures to address problems related to this investment objective.	Minor infrastructure focus on recreational links such as marae and rural settlements, coastal areas, Havelock North and regional connections. Low safety focus, low use of soft measures. Low focus on measures to address problems related to this investment objective.	Moderate infrastructure focus across the district, high safety focus, moderate use of soft measures. Moderate focus on measures to address problems related to this investment objective.

Investment Objective 2 Improve the perception of active transport as safe and convenient	Significant Adverse Effect/Risk	Neutral	Minor Positive	Neutral	Minor Positive	Neutral	Neutral	Minor Adverse Effect/Risk	Minor Positive
Objective 2 Justification Current state: Active mode users are a lower proportion of crash casualties in Hastings District than in other districts. Negative perceptions and experiences may discourage people from using a particular route or encourage them to drive instead of walk or cycle.	Current trends and perception issues will continue.	Major focus on soft measures will change travel behaviours. Low focus on safety and infrastructure won't address underlying issues. Low focus on measures to address problems related to this investment objective.	Significant focus on safety, connectivity and LoS will improve perceptions. Underlying travel behaviour and traffic volume issues won't be addressed. Minor focus on measures to address problems related to this investment objective.	Focus on specific suburban and rural areas may change perception locally, though not across the network. Low focus on measures to address problems related to this investment objective.	Focus on the periphery of existing developed areas may change perception in those areas, though not across the network. Minor focus on measures to address problems related to this investment objective.	Focus near schools, community centres and residential areas may change perception in those areas, though not across the network. Low focus on measures to address problems related to this investment objective.	Focus on employment centres, residential areas, the CBD or commuter connections may change perception in those areas, though not across the network. Low focus on measures to address problems related to this investment objective.	Focus on recreational links such as marae and rural settlements, coastal areas, Havelock North and regional connections may change perception in those areas, though not across the network. Low focus on soft measures. Low focus on measures to address problems related to this investment objective.	Significant focus on safety, connectivity, LoS and travel behaviour through soft measures will improve perceptions. Minor focus on measures to address problems related to this investment objective.

Appendix J – Sensitivity Test Descriptions

A range of sensitivity tests were undertaken to understand the sensitivity of the different criteria in scores and programme ranking. These sensitivity tests were agreed upon by the project team. The tests include:

1 Investment objectives, risks/implementability and effects equally weighted at 33% (S1)
2 Investment objectives weighted at 50%, risks/implementability at 25% and effects at 25% (S2)
3 Investment objectives weighted at 70%, risks/implementability at 15% and effects at 15% (S3)
4 Investment objectives weighted at 50%, risks/implementability at 10% and effects at 40% (S4)
5 Investment objectives weighted at 50%, risks/implementability at 40% and effects at 10% (S5)

Appendix K – Active Transport Implementation Plan

The phase in which projects are listed is when they should begin, however implementation may carry into subsequent phases. Further details can be found in Appendix L – Active Transport Detailed Implementation Plan.

Short-term projects for 2022-2025

Type	Indicative Cost	Description	Interdependencies
Study / Plan	**$50k**	Parking Management Plan	Implementation of plan outcomes - $50k in infrastructure and $125k in soft measures Parking requirements and limits Travel Demand Management / Mode Shift Plan
Study / plan Implementation	**$125k** $250k total	Parking Management Plan Implementation (soft measures)	Parking Management Plan Parking requirements and limits Travel Demand Management / Mode Shift Plan
Travel Demand Management	**No cost** (internal)	Assess parking requirements in residential areas and consider limited or 'maximum' on-site parking for both customers and staff in commercial areas	Parking Management Plan Travel Demand Management / Mode Shift Plan Implementation of Parking Management Plan outcomes
Policy	**No cost** (internal)	Universal Design Policy	Vulnerable Users Gap Analysis Study Implementation of Vulnerable Users Gap Analysis Study outcomes Increased LoS and footpath improvement package (Accessible Streets)
Resourcing	**$225k** 675k total	Increase staff to support mode shift and behaviour change initiatives across the district (1 FTE)	Travel Demand Management / Mode Shift Plan Implementation of Travel Demand Management / Mode Shift Plan outcomes
Study / plan Implementation	**$125k** $375k total	Mode Shift Plan Implementation (soft measures)	Travel Demand Management / Mode Shift Plan Travel Demand Management / Mode Shift infrastructure

			Travel Demand Management / Mode Shift resourcing
Policy	**No cost** (internal)	Increase provision of end of trip facilities, on-site cycle parking and secure bike storage in District Plan	Travel Demand Management / Mode Shift Plan Workplace and school travel plans
Travel Demand Management	**No cost** (internal)	Shared scooter/bike schemes	Travel Demand Management / Mode Shift Plan
Amenity	**$50k** $250k total	Increase provision of wayfinding in town centres and on iWay network	Travel Demand Management / Mode Shift Plan Workplace and school travel plans
Policy / Plan	**$40k**	Develop a Multi-Modal Level of Service Policy/Manual	Walking and cycling projects
Resourcing	**$100k** $300k total	Increase staff support for cycle skills training (0.6 FTE to start)	Travel Demand Management / Mode Shift Plan Workplace and school travel plans
Resourcing	**$70k** $490k	Increase staff to support workplace and additional school travel planning across the district (1 FTE)	Travel Demand Management / Mode Shift Plan Workplace and school travel plans
Policy	**No cost** (internal)	Establish and implement a Safe Schools Policy that increases the LOS of active travel around schools, prioritises a safe road environment and reduces speeds within 1km of schools	Workplace and school travel plans
Policy	**No cost** (internal)	Promote the increased use of active travel in all policies and plans	Other active transport policies Workplace and school travel plans All walking and cycling projects
Data Collection	**$7k** $20k total	Implement annual community-wide travel and perception survey to increase understanding of perception and mode share challenges	All walking and cycling projects Targeted, personalised awareness and education campaigns
Enforcement	**No cost** (internal)	Increase enforcement for obstructing footpaths and bike facilities	All walking and cycling projects

Communication / Engagement	**$200k** $700k total	Encourage/create days and events that celebrate car-free travel e.g. PARKing day, cyclovia, block parties to reclaim the street for social purposes	Walking and cycling perception Mode shift perception
Communication / Engagement	**$30k** $100k total	Educate public officials, businesses about TDM strategies they can implement	Travel Demand Management / Mode Shift Plan Implementation of Travel Demand Management / Mode Shift Plan outcomes
Communication / Engagement	**$30k** $100k total	Targeted, personalised awareness and education campaigns	Walking and cycling perception Mode shift perception
Communication / Engagement	**$170k** $500k total	Increase regular comms, promotions and events with iWay partners, focus on good news stories	Walking and cycling perception Mode shift perception
Advocacy	**No cost** (internal)	Advocate for a regional Transportation Management Association (TMA) to implement comprehensive TDM / mode shift plan	Travel Demand Management / Mode Shift Plan Implementation of Travel Demand Management / Mode Shift Plan outcomes
Study / plan Implementation	**$50k**	Parking Management Plan Infrastructure	Parking Management Plan Parking Management Plan soft measures
Study / plan Implementation	**$200k** $375k total	Mode Shift Plan Infrastructure	Travel Demand Management / Mode Shift Plan Implementation of Travel Demand Management / Mode Shift Plan soft measures
Study / plan Implementation	**$400k** $1M total	Vulnerable user project implementation	Vulnerable Users Gap Analysis Study Increased LoS and footpath improvement package (Accessible Streets)
Study / plan Implementation	**$400k** $1M total	Implementation of projects addressing community severance issues	Severance assessment
Study / plan Implementation	**$500k** $1.5M total	Neighbourhood streets/greenways infrastructure	Neighbourhood streets/greenways assessment
Study / plan Implementation	**$500k** $1M total	Safe Schools Policy Implementation	School travel plans

			Workplace and school travel plan resource
Level of Service	**$1M** $2M total	Increased LoS and footpath improvement package (Accessible Streets)	Vulnerable Users Gap Analysis Study Vulnerable user project implementation
Safety	**$1.7M** $5M total	Amenity, walking and cycling connections, safety improvements at marae and rural settlements	Walking and cycling perception Mode shift perception
Level of Service	**$1.25M** $3.6M total	Level of Service improvements including shoulder widening, intersection improvements and corridor improvements	Walking and cycling perception Mode shift perception
Safety	**$2M** $4.6M total	Safety Improvements for active transport at key intersections	Walking and cycling perception Mode shift perception
New Infrastructure	**$500k** $1M total	Pakowhai-Maraekakaho Corridor	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$550k** $1.3M total	Havelock to Hastings Corridor	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$750k** $1M total	Havelock Links	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$3.1M**	Hastings to Clive Corridor	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$1.1M** $1.7M total	Coastal Links	Overall connectivity and walking and cycling perception
New Infrastructure	**$435k** $2.2M total	Hastings City North-South Links	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$468k** $1.5M total	Hastings City East-West Links	Overall connectivity, walking and cycling perception and potential mode shift perception

Total indicative cost of short-term projects - $18.9M

Medium-term projects for 2025-2028

Type	Indicative Cost	Description	Interdependencies
New Infrastructure	**$2.2M** $4.4M total	Havelock to Bridge Pā Corridor	Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	**$34.6M**	Expressway Corridor	Overall connectivity, walking and cycling perception and potential mode shift perception

Total indicative cost of medium-term projects - $51.7M

Long-term projects for 2028-2031 or beyond

Type	Indicative Cost	Description	Interdependencies
New Infrastructure	$3M	Te Mata Peak Corridor	Te Mata Peak CMP currently underway Overall connectivity, walking and cycling perception and potential mode shift perception
New Infrastructure	$2M	Napier Connections	Overall connectivity, walking and cycling perception and potential mode shift perception

Total indicative cost of long-term projects - $15.4M

Appendix L – Active Transport Detailed Implementation Plan

Type	Option	Option Description	Indicative Cost	Quick wins 2021-22	Short-term projects 2022-25	Medium-term projects 2025-28	Long-term projects 2028-31+
New Infrastructure	Hastings City East-West Links	New Infrastructure	$ 1,495,100		$ 467,500	$ 627,600	$ 400,000
New Infrastructure	Hastings City North-South Links	New Infrastructure	$ 2,235,000		$ 435,000	$ 1,160,000	$ 640,000
New Infrastructure	Clive Links	New Infrastructure	$ 192,000	$ 192,000			
New Infrastructure	Coastal Links	New Infrastructure	$ 1,720,000		$ 1,120,000	$ 600,000	
New Infrastructure	Expressway Corridor	New Infrastructure	$ 34,582,500			$ 34,582,500	
New Infrastructure	Flaxmere Links	New Infrastructure	$ 2,839,250	$ 150,000	$ 1,371,250		$ 1,318,000
New Infrastructure	Hastings to Clive Corridor	New Infrastructure	$ 3,120,000		$ 3,120,000		
New Infrastructure	Havelock Links	New Infrastructure	$ 1,050,000		$ 750,000	$ 300,000	
New Infrastructure	Havelock to Bridge Pā Corridor	New Infrastructure	$ 4,448,000			$ 2,220,000	$ 2,228,000
New Infrastructure	Havelock to Hastings Corridor	New Infrastructure	$ 1,330,000		$ 550,000	$ 780,000	
New Infrastructure	Havelock to Whakatu Corridor	New Infrastructure	$ 240,000			$ 240,000	
New Infrastructure	Napier Connections	New Infrastructure	$ 2,010,000				$ 2,010,000
New Infrastructure	Pakowhai-Maraekakaho Corridor	New Infrastructure	$ 1,004,000		$ 500,000	$ 504,000	
New Infrastructure	Te Mata Peak Corridor	New Infrastructure	$ 3,000,000				$ 3,000,000

Safety	Havelock Links	Safety improvements at intersection for active travel	$ 4,600,000		$ 2,000,000	$ 2,600,000	
Intersection	Havelock to Hastings Corridor	Traffic calming and closing of some intersections along Heretaunga St to prioritise pedestrians	$ 1,040,000		$ 400,000	$ 340,000	$ 300,000
Widened Shoulder	Middle Road Corridor	Widen shoulder and upgrade facilities on link to Heartland ride	$ 2,100,000		$700,800	$ 600,000	$ 799,200
Level of Service	Pakowhai-Maraekakaho Corridor	Improve Level of Service	$ 446,000		$ 146,000	$ 300,000	
Safety	Marae and rural settlement projects	Amenity and walking improvements, cycling connections, safety improvements	$ 5,000,000		$ 1,700,000	$ 1,650,000	$ 1,650,000
Level of Service	Footpath improvements	Increased LoS and footpath improvement package (Accessible Streets)	$ 2,000,000		$ 1,000,000	$ 1,000,000	
Study / Plan Implementation	Increased separation and LoS of on-street bicycle facilities infrastructure	Increased separation and LoS of on-street bicycle facilities infrastructure	$ 2,000,000	$ 300,000	$ 1,000,000	$ 700,000	
Study / Plan Implementation	Safe Schools Policy Infrastructure	Safe Schools Policy Infrastructure	$ 2,500,000		$ 800,000	$ 900,000	$ 800,000
Study / Plan Implementation	Neighbourhood streets/greenways infrastructure	Neighbourhood streets/greenways infrastructure	$ 1,500,000		$ 500,000	$ 500,000	$ 500,000
Study / Plan Implementation	Implementation of projects addressing community severance issues	Implementation of projects addressing community severance issues	$ 1,000,000		$ 500,000	$ 250,000	$ 250,000

Study / Plan Implementation	Vulnerable user project infrastructure	Vulnerable user project infrastructure	$ 1,000,000		$ 400,000	$ 300,000	$ 300,000
Study / Plan Implementation	Mode Shift Plan Infrastructure	Mode Shift Plan Infrastructure	$ 375,000		$ 200,000	$ 175,000	
Study / Plan Implementation	Parking Management Plan Infrastructure	Parking Management Plan Infrastructure	$ 50,000		$ 50,000		
Advocacy	Regional Transportation Management Association (TMA)	Advocate for a regional Transportation Management Association (TMA) to implement comprehensive TDM / mode shift plan	$ -		$ -		
Communication / Engagement	Increase regular iWay communications, promotions and events	Increase regular comms, promotions and events with iWay partners, focus on good news stories	$ 500,000		$ 170,000	$ 165,000	$ 165,000
Communication / Engagement	Targeted, personalised awareness and education campaigns	Targeted, personalised awareness and education campaigns focused on transport users most willing to change their behaviour - focus on health and environmental benefits, workplace and school-based (safe journeys/routes), etc	$ 100,000		$ 30,000	$ 35,000	$ 35,000
Communication / Engagement	Travel Demand Management education	Educate public officials, businesses about TDM strategies they can implement	$ 100,000		$ 30,000	$ 35,000	$ 35,000

Communication / Engagement	Events that celebrate car-free travel	Encourage/create days and events that celebrate car-free travel e.g. PARKing day, cyclovia, block parties to reclaim the street for social purposes	$ 700,000		$ 200,000	$ 250,000	$ 250,000
Enforcement	Keep cars, wheelie bins, construction signs, etc off footpaths and bike facilities	Increase enforcement for obstructing footpaths and bike facilities	$ -		$ -		
Study / Plan	Increase separation and LoS of on-street bicycle facilities	Conduct an audit of current on-street bicycle facilities and identify opportunities to increase separation and LOS to increase uptake of active travel	$ 40,000	$ 40,000			
Data Collection	Travel and perception survey	Implement annual community-wide travel and perception survey to increase understanding of perception and mode share challenges	$ 20,000		$ 7,000	$ 6,500	$ 6,500
Policy	Active transport in all policies and plans	Promote the increased use of active travel in all policies and plans	$ -		$ -		
Policy	Safe Schools Policy	Establish and implement a Safe Schools Policy that increases the LOS of active travel around schools, prioritises a safe road environment and reduces speeds within 1km of schools	$ -		$ -		

Study / Plan	Identify neighbourhood streets/greenways	Identify neighbourhood streets/greenway corridors for active travel; increase traffic calming and reduce speeds	$ -	$ -			
Study / Plan	Address community severance issues	Identify neighbourhoods that have severance issues due to SH and expressway locations and explore ways to address this through tactical urbanism and the NZTA Innovating Streets Programme	$ -	$ -			
Resourcing	Workplace and school travel planning support	Increase staff to support workplace and additional school travel planning across the district (1 FTE)	$ 490,000		$ 70,000	$ 210,000	$ 210,000
Resourcing	Cycle skills training support	Increase staff support for cycle skills training (0.6 FTE to start)	$ 300,000		$ 100,000	$ 100,000	$ 100,000
Policy	LoS Policy/Manual	Develop a Multi-Modal Level of Service Policy/Manual	$ 40,000		$ 40,000		
Study / Plan	Vulnerable user gap analysis	District-wide gap analysis for vulnerable users in key activity areas	$ 50,000	$ 50,000			
Amenity	Wayfinding provision	Increase provision of wayfinding in town centres and on iWay network	$ 250,000		$ 50,000	$ 100,000	$ 100,000
Travel Demand Management	Shared scooter/bike schemes	Shared scooter/bike schemes	$ -		$ -		
Travel Demand Management	Bike purchase schemes	Encourage uptake of bike purchase schemes e.g. NZTA/SBC employer e-bike scheme	$ -	$ -			

Policy	End of trip facilities	Increase provision of end of trip facilities, on-site cycle parking and secure bike storage in District Plan	$ -		$ -		
Travel Demand Management	Access management	Consider access management measures on active travel corridors	$ -	$ -			
Study / Plan	TDM / Mode Shift Plan	Develop a TDM / Mode Shift Plan for Hastings District to reduce congestion and demand including parking controls, carpooling, incentives, etc. (move to policy once complete)	$ 90,000	$ 90,000			
Study / Plan Implementation	Mode Shift Plan Implementation	Mode Shift Plan Implementation (soft measures)	$ 375,000		$ 125,000	$ 125,000	$ 125,000
Resourcing	TDM / Mode Shift support	Increase staff to support mode shift and behaviour change initiatives across the district (1 FTE)	$ 675,000		$ 225,000	$ 225,000	$ 225,000
Study / Plan	Parking Management Plan	Develop and implement a parking management plan which includes a review of limiting on-street parking in neighbourhoods near the city centre and parking pricing scheme to reduce the ease and convenience of driving	$ 50,000		$ 50,000		
Study / Plan Implementation	Parking Management Plan Implementation	Parking Management Plan Implementation (soft measures)	$ 250,000		$ 125,000	$ 125,000	
Policy	Universal design	Encourage universal design, particularly in areas	$ -		$ -		

		identified as ped/bike areas or corridors					
Travel Demand Management	Parking requirements and limits	Assess parking requirements in residential areas and consider limited or 'maximum' on-site parking for both customers and staff in commercial areas	$ -		$ -		

Appendix M – Waka Kotahi NZ Transport Agency PBC Investment Questions

Meet Requirements?	Programme Business Case Investment Questions and Response Sections
Yes	Briefly explain the range of strategic alternatives and options that have been explored, including whether these include consideration of demand, supply and productivity responses. See section 5.1.2, 5.2 and 5.2.1
Yes	Briefly explain the strategic options and alternatives that are proposed and whether there is a clear rationale for the selection of the preferred programme. See section 5.1.2, 5.2, 5.2.1, 6, 6.2, 6.3 and 7
Yes	Briefly explain why the proposed alternatives and options are likely to be the most effective response to the problem. See section 6.3
Yes	Briefly explain whether the proposed alternatives and options are feasible. See section 7

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Project Number: 2-S5493.00

Active Transport Strategic Business Case

Hastings District Council

26 February 2020

CONFIDENTIAL

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Revision	Details
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03	Final document to client

Contents

List of Figures

List of Tables

Project Number: 2-S5493.00
Hastings District Council Active Transport
Strategic Business Case

Disclaimers and Limitations

This report ('**Report**') has been prepared by WSP exclusively for Hastings District Council ('**Client**') in relation to the Active Travel and Network Business Cases ('**Purpose**') and in accordance with the Short Form Agreement with the Client dated 15 November 2019. The findings in this Report are based on and are subject to the assumptions specified in the Report Offer of Services dated 15 November 2019. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

In preparing the Report, WSP has relied upon data, surveys, analyses, designs, plans and other information ('**Client Data**') provided by or on behalf of the Client. Except as otherwise stated in the Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable in relation to incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

Executive Summary

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay which is known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

The district is one of the largest apple, pear and stone fruit producing areas in New Zealand and the area boasts an attractive lifestyle known for its food, wine and beaches.

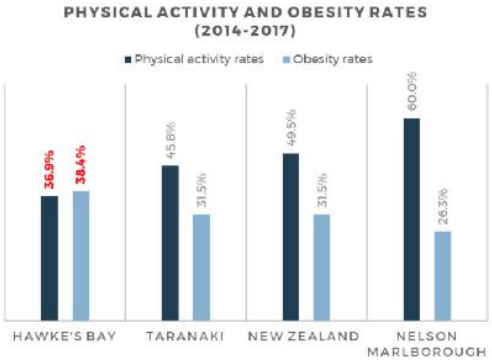
The following problem was identified and agreed through a facilitated ILM workshop with relevant stakeholders and partners:

100% **Problem one:** Gaps in levels of service* and the perception that walking and cycling is unsafe and inconvenient is limiting its uptake, resulting in high car dependency

*LOS – Safety LOS, inconsistent LOS (unmet expectation of comfort and quality) and network gaps between destinations and communities

Evidence gathered through the compilation of this Strategic Case largely supports the problem as defined, notably:

- Underutilisation of the active travel network is also a result of network gaps between destinations and communities. Inconsistent and low safety levels of service has resulted in less people using active travel.
- Driving is easy and convenient due to free car parking, unrealised cost of driving and relatively uninterrupted journey times by car. This paired with poor overall perception of active modes, the view that active modes are a means of recreation rather than a mode of transport and the view that the network is unsafe has resulted in high car dependency.
- These gaps in the network, an unmet expectation of the level of service and perception issues are currently contributing to reduced health and wellbeing outcomes and reduced social and economic opporunities for vulnerable populations due to reduced access to transport choices for elderly, children and those without access to a vehicle.



The Hastings District, which is located within the Hawkes Bay region, has the lowest rates of adult physical activity and second highest level of obesity of any region in New Zealand (Ministry of Health, 2020).

Napier-Hastings is a relatively low income region and has a significant degree of socio-economic deprivation. This needs to be taken into consideration, in future urban development planning for the area. (HPUDS, 2009)

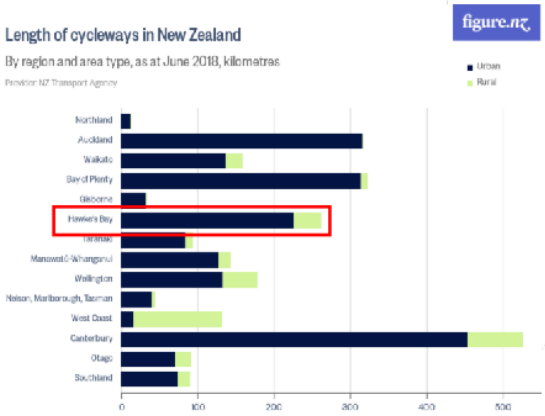
ESTIMATED DEGREE OF FIT FOR PURPOSE NETWORK
(BY END OF 2018)

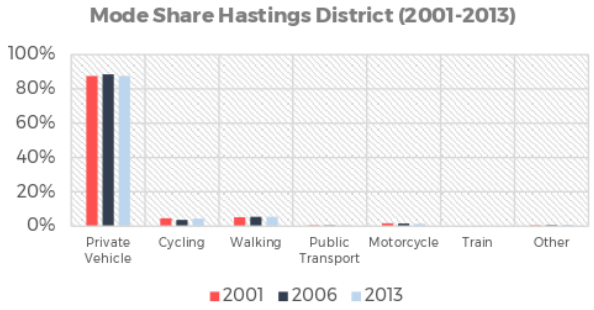
HIGH

80%	Hastings
70%	Nelson
50%	Christchurch
50%	Tauranga
50%	Hamilton
40%	Dunedin
25%	Wellington
25%	Auckland

LOW

National cycling programme investment priorities and approach summary





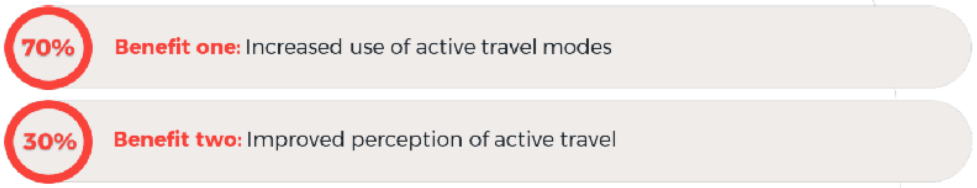
The national cycling programme identified Hastings as having an 80% fit for purpose network and compared to regional and national levels, Hastings has significant active travel network coverage.

Although DSI's for vulnerable road users are nearly half the rates in similar districts, the perception that the network is unsafe and inconvenient has contributed to slow uptake of active modes, reduced physical activity and increased obesity rates.

Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist	20.4%	17.5%
Total	**33.6%**	**43.4%**

Increasing employment in the region will result in increased demands for travel to employment. Accommodating this demand within existing travel patterns dominated by private vehicle use would require significant investment and would result in increased pollution and congestion. This would also restrict access to increasing employment opportunities for those unable to access private vehicles through disability or deprivation.

The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:



There is strong strategic alignment with key national, regional and local strategic drivers around increased access for economic and social opportunities, mode shift, transport choices and access to modes such as public transport, walking and cycling. There has also been an increasing shift toward reducing the adverse effects on the climate, local environment and public health which has strong strategic alignment with this Strategic Case.

Results alignment has been assessed as **High** as per the Investment Assessment Framework (2018).

It is recommended that this proposal should progress to develop a programme business case.

Refer to Appendix F for the checklist of requirements against strategic case assessment questions.

PART A – STRATEGIC CASE

1 Introduction

1.1 Purpose

This document is a Strategic Business Case (SBC), commissioned by Hastings District Council (HDC) to outline the need for investment and the case for change to improve the active transport network within Hastings District, and encourage people to walk and cycle more often.

The purpose of this strategic business case is to:

- Provide a clear case for change and a compelling reason to improve the active transport network;
- Define the problems identified by the project stakeholder, the evidence for these problems, and associated benefits; and
- Recommend the next steps.

1.2 Scope

The physical extents of this SBC comprise Hastings District, located in the Hawke's Bay Region, focused on the main urban areas of Hastings, Havelock North and Flaxmere.

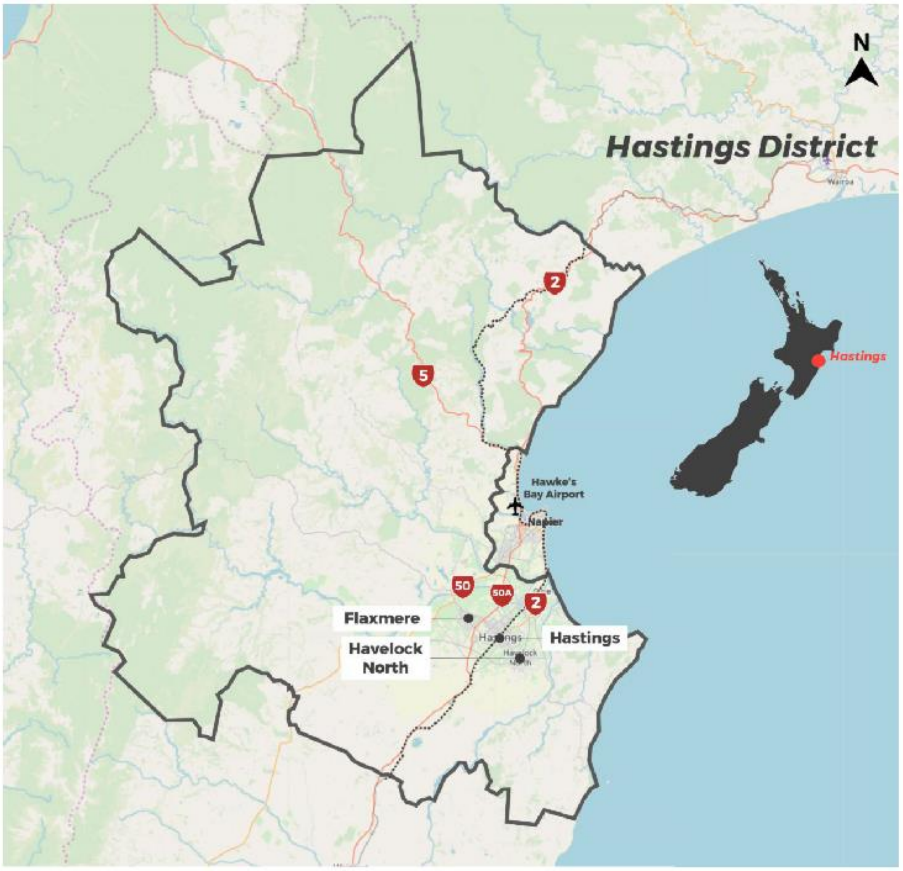


Figure 1-1: Map of Hastings District

1.3 Key Partners

The following table lists the key partners for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications

1.3.1 Key Stakeholders

The following table lists the key stakeholders for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current local context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications
Hawke's Bay Regional Council (HBRC)	Historic and current regional context, regional active transport network stakeholder
Hastings Police	School community policing, active transport safety
Cycle Aware Network (CAN) Hawke's Bay	Cycling advocate
Hawke's Bay District Health Board (HBDHB)	Health outcomes of active transport, major employer implementing a travel plan
Disability Action Group	Accessibility / mobility impaired
Napier City Council	Adjacent council, regional active transport network stakeholder
Local School Principal	School representative
Bike On New Zealand	Cycle advocate for the school environment

Technical support at the Investment Logic Map (ILM) workshop was also provided by:

- Hastings District Council (HDC)
- Hawke's Bay Regional Council (HBRC) / Bike NZ
- Sport Hawke's Bay (Sport HB)

ILM workshop participants were selected due to their ongoing involvement in the Hastings Active Transport Working Group. They represent a diverse cross-section of active transport stakeholders and are involved in active transport operational and strategic decision-making.

2 Context

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay, known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

2.1 Strategic Drivers

This section summarises the key policy documents that provide the strategic direction for transport within New Zealand and specifically Hastings. In confirming the strategic fit, this section identifies additional strategic and policy documents.

The project's alignment to existing key relevant strategies and plans is summarised below.

2.1.1 National Alignment

2.1.1.1 Government Policy Statement (GPS) 2018-2028 (MoT 2018)

The GPS identifies several national land transport objectives that are relevant to this investment, notably a land transport system that:

- *Provides increased access for economic and social opportunities:* Supporting tourism is specifically noted in the investment priorities and the planning direction
- *Enables transport choice and access:* Specifically, increased mode shift, fit-for-purpose and safe (real and perceived) walking and cycling infrastructure
- *Reduces the adverse effects on the climate, local environment and public health:* Notably reduced significant negative effects on water quality and biodiversity from construction and ongoing use of transport infrastructure, and increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives

The project has a strong alignment to the GPS and relates to mode neutrality, accessibility, safety and affordable transport for all residents and users of the project corridor. The business case approach aims to provide a value for money solution that address the needs from the key stakeholders.

2.1.1.2 Keeping Cities Moving (WKNZTA 2019)

Keeping Cities Moving is Waka Kotahi's plan to improve travel choice and reduce car dependency. The Plan outlines how Waka Kotahi, in partnership with others, will help address the causes of car dependency and in doing so contribute to the GPS objectives by increasing the wellbeing of New Zealand's cities by growing the share of travel by public transport, walking and cycling.

Keeping Cities Moving includes an action plan of 34 interventions that will focus on leveraging mode-shift through:

- Spatial and place-based planning
- Policy and regulatory interventions
- Network design, management and optimisation
- Investment in infrastructure, platforms and services
- Economic tools; and
- Education, engagement and awareness interventions

2.1.1.3 Vision Zero (MoT 2020)

Vision Zero is a national approach where no-one is killed or seriously injured in road crashes, and where no death or serious injury while travelling on our roads is acceptable. Vision Zero builds on the Safe System (Safe Speeds, Safe Roads, Safe Vehicles, Safe Road Users) holistic approach to road safety, which requires people to think about the road system in its entirety, from infrastructure projects to policy and regulation.

2.1.2 *Regional and Local Government Alignment*

2.1.2.1 Hastings District Plan (HDC n.d.)

Section 2.5 'Transportation Strategy of the Hastings District Plan (the District Plan) identifies the importance of establishing a safe and efficient use of the transport network. This can be achieved by traffic management on the network, and the control of land use activities alongside the network.

2.1.2.2 Hastings Council Long Term Plan 2018-2028 (HDC 2017a)

The Hastings District Council's Long Term Plan sets out the Council's plans and spending with the following aims being relevant to this investment:

- *Accessible range of safe transport options*
- *Safe walking and cycling facilities*
- *Efficient movement of goods*
- *Infrastructure supporting economic growth*

2.1.2.3 Hawke's Bay Regional Public Transport Plan 2019-2029 (Draft) (HBRC 2019)

The Regional Land Transport Plan's (RLTP) vision for transport in Hawke's Bay is: *"A safe, resilient and efficient transport system that supports the development of our economy and contributes to social wellbeing in our community"*. It aims to promote increased numbers of trips being undertaken on public transport, lessening the reliance on private motor vehicle travel and contributing to reduced congestion and carbon emissions on the road network. The Draft Regional Public Transport Plan 2019-2029 builds upon this strategic alignment by supporting the RLTP's vision.

2.1.2.4 Heretaunga Plains Urban Development Strategy (HPUDS) (HDC et al 2017)

HPUDS considers the following growth drivers and the relative demands they place on land in both Hastings and Napier:

- Commercial and industrial
- Retirement sector
- Rural residential development
- Urban residential development
- Intensification (infill)
- Affordability and sustainability

In the move towards more compact urban form for the Heretaunga Plains subregion, an increasing proportion of the residential growth has been identified to take place through intensification, by redevelopment within existing residential and rural residential areas. Current development allocation levels are expected to transition to the following by 2045: 60% intensification (10 – 20% intensification of brownfields); 35% greenfield; and 5% in rural areas.

2.1.2.5 Local Government Leaders' Climate Change Declaration (LGNZ 2017)

Local government leaders declared an urgent need for responsive leadership and a holistic approach to climate change. The declaration asked NZ government to make climate change a priority to develop and implement an ambitious transition plan for a low carbon and resilient NZ. All local governments are committed to developing and implementing action plans to reduce greenhouse gas emissions and support resilience. Plans will promote walking, cycling, public transport and other low carbon transport options.

This business case clearly promotes the development and implementation of active transport to reduce greenhouse gas emissions and support resilience.

2.2 Previous Investment

In 2010 Hastings and New Plymouth were selected by Waka Kotahi, NZ Transport Agency (Waka Kotahi) for the Model Communities Programme, a focused investment in cycling infrastructure, education and encouragement. In 2011, iWay was developed, with the programme focusing on developing key arterial routes to the urban areas, complementary on road cycle lanes on key collector routes, shared pathway projects, improved connectivity and education programmes including training, campaigns and other safety programmes (HDC 2017). By mid-2012, the network was completed with more than 100km of new pathways including key routes to Flaxmere, Hastings, Havelock North and Clive (iWay 2020). In the urban areas of Hastings District, most routes are on road cycle lanes.

There has been a "20% increase in cyclists since before the iWay project began" (iWay 2020).

2.3 Geographic Context

Much of Hastings, Flaxmere and Havelock North is relatively flat, rolling countryside, with Te Mata Peak providing some steeper areas. The relatively flat topography is favourable for active transport users, with the steeper areas such as Te Mata Peak providing recreational users the challenges they seek.

2.3.1 Population

Hastings District had a population of over 73,000 people in the 2013 census (SNZ 2013). The current population is estimated at 85,000 people which is a 9.5% increase from 2013 (SNZ 2019). Hastings Districts includes three urban areas; Hastings and Havelock North which have grown steadily and Flaxmere, which has experienced little growth between 2001 and 2013.

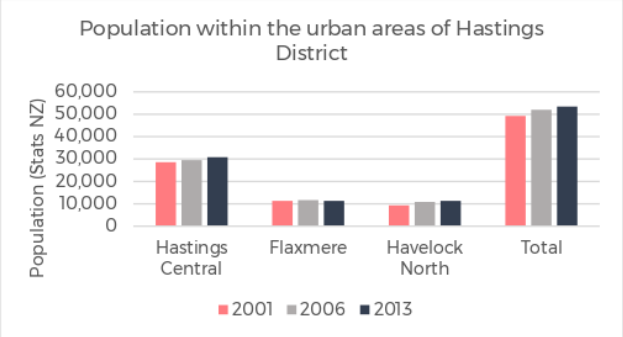


Figure 2-1 Population in 2001, 2006 and 2013 (SNZ 2013a)

Over the next 25 years, Hastings District's population is expected to increase to nearly 100,000. To support the vision for delivering a safe, attractive and connected active transport network for Hastings District, HDC needs to ensure the active transport system is fit for purpose. That means providing safe facilities and transport choices to all road users.

While population growth is expected to remain steady, there is expected to be significant growth of the 65+ age populations, who are expected to increase from 35% of the population in 2013 to 45% of the population in 2043. Growth in the population in the 65+ age group is expected to be equal to total population growth over this period. This will have significant impact on the transportation network and how residents use transport in the upcoming years.

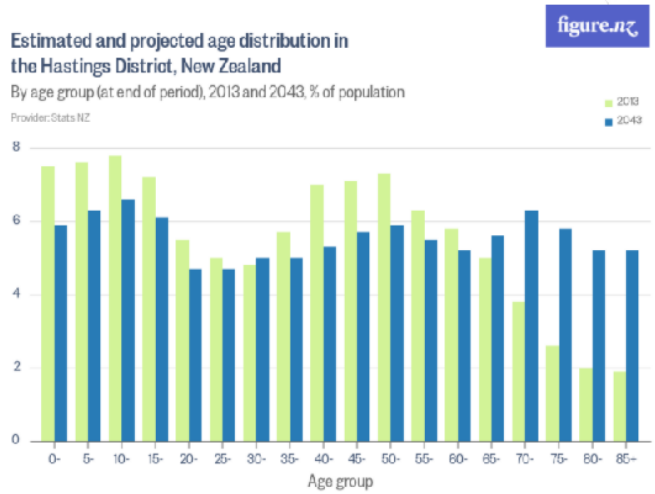


Figure 2-2 Projected age distribution in Hastings District (FNZ 2017)

2.3.2 Land Use

Hastings District is dominated by rural and plains production land use, which surround the urban and commercial areas of Hastings, Havelock North and Flaxmere.

The urban areas of Hastings, Havelock North and Flaxmere are made up of residential, commercial and scheduled activities (schools). There are currently 58 schools in Hastings District, including 22 in Hastings, 8 in Havelock North and 6 in Flaxmere.

Growth areas are made up of industrial and residential areas, with the majority of industrial growth areas surrounding Hastings and Flaxmere.

The District includes large areas of rural land uses, where private vehicles are likely to remain the only viable transport option. However, most of the District's population lives in the three urban areas which have multiple schools and commercial centres and several areas of employment. This land use pattern means that most journeys are likely to be short and within distances that could be covered by active travel.

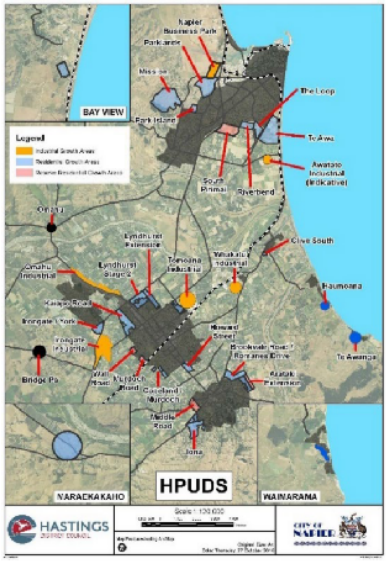


Figure 2-3: Land use within Hastings District (HDC et al 2017)

2.3.3 Social and Economic Context

Napier-Hastings is a relatively low-income region and has a significant degree of socio-economic deprivation. This needs to be taken into consideration, in future urban development planning for the area. (Bevin 2009)

Key industries in the region include primary production and processing, commercial business services and wholesale/retail trade. Hastings District is one of the largest apple, pear and stone fruit producing areas in New Zealand, and therefore has an important relationship with Napier Port. Napier Port is the fourth largest export port in New Zealand by overseas export volumes, additionally it hosts cruise ships (HBRC 2018). The district is also an important grape growing and wine producing area, attracting many tourists to the region.

Employment in the region is expected to increase by 18% between 2015-2045, with particular focus on the commercial and industrial sectors, which are forecast to grow by 21% and 15%, respectively between 2015-2045 (Bevin 2009).

Increasing employment in the region will result in increased demands for travel to employment. Accommodating this demand within existing travel patterns dominated by private vehicle use would result in increased pollution and congestion. A poor environment for active transport will restrict access to increasing employment opportunities for those unable to access private vehicles through disability or deprivation.

2.4 Transport Context

The main customers of the active transport network are commuters between Napier, Hastings, Havelock North, and Flaxmere, school students, tourists and recreational users, and seasonal cruise ship passengers. Tourists visit wineries around Hastings and Havelock North via bicycle as a popular activity.

Large employment centres include Hawke's Bay District Health Board (Hastings), Whakatu Industrial area, Hawkes Bay Airport (Napier), and Napier Port (Napier), with Napier only located 20km north east of Hastings. In total over 6,500 people were recorded as commuting into the Hastings Central area in the 2013 Census, as shown in Figure 2-2.

Most people commuting into Hastings Central are coming from the urban areas within Hastings District. This would give a total commute distance of less than 8km, or 30 minutes by bicycle.

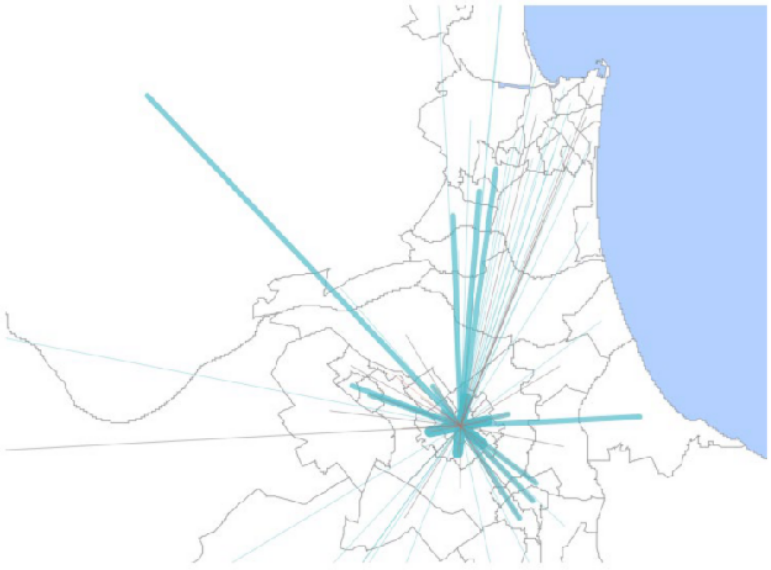


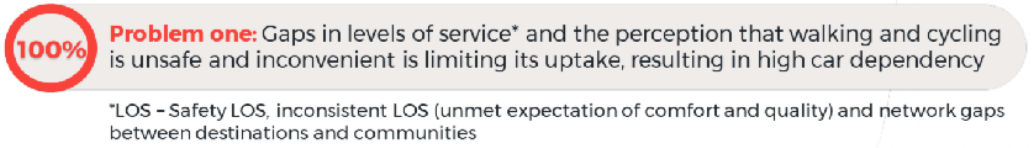
Figure 2-4: Total commuting to and from Central Hastings (SNZ 2015)

Hawke's Bay District Health Board (HBDHB) and Hastings District Council (HDC) both have travel plans in place and have collected data on their staff travel behaviours. According to the HBDHB 2018 Travel Survey, 29% of staff commute less than fifteen minutes and 56% commute fifteen to thirty minutes (HBDHB 2018) (see Appendix B). HDC's 2017 Staff Travel Plan indicates that 55% of staff reported that their trip to/from work was less than fifteen minutes and of these respondents, 15% do not have family or work requirements (HDC 2017b). As these two employers represent a significant number of employees in the Hastings District, this data indicates there is an opportunity to shift some of these trips to active modes.

3 The Need for Investment

3.1 Defining the problem

In defining the need for investment, key stakeholders were invited to take part in a facilitated investment logic mapping (ILM) workshop, held on 19 December 2019, to gain a better understanding of current issues and business needs. The stakeholder panel (refer to Section 1.3.1) identified and agreed the following key problem.



This problem captures the concern that there is a lower proportion of people travelling to work and school using active transport, and a higher dependency on cars, which is reducing social and economic opportunities for vulnerable populations[1]; reducing health and wellbeing outcomes, particularly air quality, mental and physical health, and underutilising the existing investment into active travel.

Poor customer levels of service (LoS) and the perception that walking and cycling is unsafe and inconvenient have been identified as the possible causes of poor uptake of active transport and a high dependency on cars.

Key stakeholders at the investment logic mapping workshop concluded that high vehicle use is impacting the perception of walking and cycling safety, the health and wellbeing of the community and environmental targets set out by local and national government. The Investment Logic Map is attached as Appendix A.

3.2 Evidence

The aim of this section is to consider the evidence available to support the identified problems and potential benefits. This will be used to assess the size and significance of the problems and, along with the strategic context, support the case for change.

3.2.1 Gaps in levels of service

Traffic Volumes

Key routes for traffic include the Hawkes Bay Expressway (State Highway 2), Omahu Road, Havelock Road/Heretaunga Street East, Pakowhai Road, St Aubyn Street, and Southampton Street, which all have sections carrying over 10,000 vehicles per day. These routes are classified as Arterial Routes or higher in the One Network Road Classification (WKNZTA 2020).

Concentrations of heavy vehicles are greater in areas accessing the Whakatu Industrial Estate and Napier Port (WKNZTA 2018). Growth in productivity, particularly residential, industrial and regional industries such as horticulture, viticulture and Napier Port, along with an increase in the number of cars per household is contributing to growing demands on the Hastings District transportation network (Heretaunga Plains Strategy). Although the road network is experiencing additional pressure, there is limited congestion with only localised peak congestion as identified in the Heretaunga Plains Transport Strategy on SH 2, Omahu

[1] Accessibility for elderly, children and those without access to a vehicle.

Rd, Heretaunga St / Havelock Rd, Karamu Rd, St. Aubyn St and intersections around the Whakatu area.

Since 2017, Hawke's Bay has also seen a rise in VKT on sealed urban and rural local roads, as well as sealed urban state highways. However, this is not the case for rural state highways which indicates increased demand has primarily occurred in urban areas and the more remote parts of the district.

On arterial and collector routes in and between the urban areas of Hastings District, traffic volumes and traffic speeds are high enough that physically separated cycle tracks are the preferred provision for cycling.

Crash Analysis

Since 2015, there has been an increasing trend in injury crashes in Hastings District Council, particularly along urban roads. However, the 10-year DSI trend has been decreasing along rural roads.

Active modes, often classed as vulnerable road users make up 33.6% of deaths and serious injuries (DSIs), however, these modes are significantly underrepresented when compared to New Plymouth, Nelson and Palmerston North[2], with vulnerable road users making up 43.4% of total DSIs in these urban areas, as shown in Table 3-1.

Table 3-1: Vulnerable Road Users

Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist[3]	20.4%	17.5%
Total	**33.6%**	**43.4%**

Active users are a lower proportion of crash casualties in Hastings District than in other districts. However, in Hastings cycling is perceived to be unsafe and mode share is lower than other districts. Further information is needed to understand why cycling is perceived as unsafe. However, cycling infrastructure on high volume, high speed traffic routes with no or limited separation may contribute to this perception.

Active Transport Facilities

The quality and comfort of the active travel network can be defined as the ease of getting from an origin to a destination along existing streets and pathways, such that pedestrians and cyclists are not required to undertake complex manoeuvres, diversions or be exposed to poor surfaces.

Figure 3-1 summarises the different facilities used within the urban and rural environment in the Hastings District. Facilities recorded include shoulders, cycle routes, cycle paths and cycle lanes.

[2] Similar urban areas in terms of size of area, population and active transport networks.
[3] Including mopeds & pillion passengers

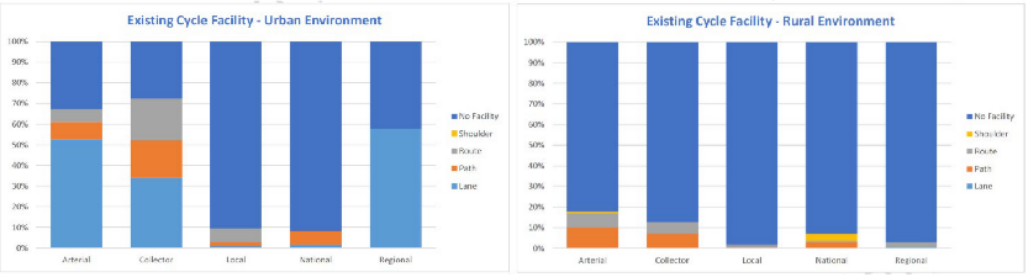


Figure 3-1: Cycling facilities on road corridors in the Hastings District (HDC 2017)

As shown above, within the District's urban areas, 60% of arterial and collector routes have some form of facility and, in rural areas, 20% of arterial and collector routes have some form of cycling facility. In urban areas, these facilities are usually on road cycle lanes. For example, St Aubyn Street and Southampton Street have Class 3[4] on-road cycle lanes (HDC, iWay 2018). However, many cycle facilities on arterial and collector routes are inconsistent, especially at intersections. Intersections are critical points for safety and iWay have identified that the majority of intersections in Hastings District require further improvements to accommodate active transport.

The national cycling programme identified Hastings as having an 80% fit for purpose network. This emphasises the importance of giving people safe and easy transport choices, regardless of the reason for their journey (WKNZTA 2017). In the past, Waka Kotahi largely focused on cycling as a mode of transport, however in working with the Ministry of Business and Innovation (MBIE) and the Ministry of Health (MoH), the focus has shifted toward collaboration and achieving co-benefits of active travel including regional economic development, tourism, safety, health, social wellbeing and environment.

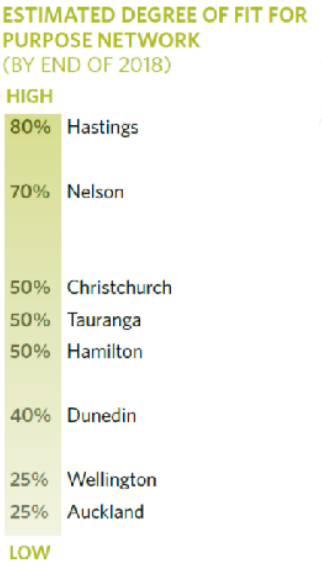


Figure 3-2: Hastings supports a range of government outcomes and was identified as being a fit for purpose network (WKNZTA 2017)

Typical traffic volumes on arterial and collector routes are over 5,000 and 3,000 vehicles per day, respectively and several arterial routes in the District carry over 10,000 vehicles per day (WKNZTA 2020a). As shown in Figure 3-3: Guide to facilities for traffic conditions (AT 2019)., at these traffic volumes, protected cycleways are the preferred provision for cycling, regardless of traffic speed.

[4] Cycle lanes on the carriageway legally designated by a painted cycle symbol (WKNZTA 2020b)

While the District has a network of cycle facilities covering many routes, the level of infrastructure is typically lower than desirable. Infrastructure also has gaps, especially at intersections, where the Level of Service is further reduced.

Comfort of active transport users

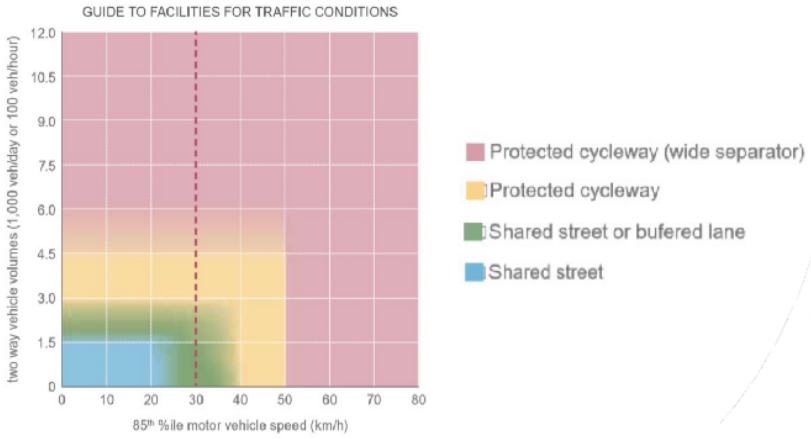


Figure 3-3: Guide to facilities for traffic conditions (AT 2019).

A lack of confidence and fear to use active modes are in many cases a result of participants being uncomfortable with driver behaviour, and the perceived lack of regard and awareness of cyclists and pedestrians. This perception has been reported in the perception survey, highlighting the issue of co-habitation on the road.

Where there is good cycling infrastructure, people who drive will feel more comfortable driving near people who are cycling and walking. A 2013 study in San Francisco found that whether or not drivers rode bikes themselves, over 80 percent of drivers felt moderately or very comfortable when driving near bikes with a protected bike lane (WKNZTA 2016). Only half of the drivers in the study said they felt comfortable on roads without cycling infrastructure (WKNZTA 2016).

3.2.2 Perception of walking and cycling as unsafe and inconvenient

Urban form

Cycling and walking are sensitive to distance and time, low density residential zones typically result in increased distances and times between destinations, however, low density does not necessarily mean poor connectivity (Cheyne et al 2015). Directness of path between two points are related to the characterises of street design. Good connectivity is highly correlated with walkability (Cheyne et al 2015). New active mode routes should offer advantages in terms of directness/permeability and journey time. (ESCC 2014).

Hastings and Havelock North have highly connective road networks based on a grid structure. However, the existing road network does not generally offer active users advantages in connectivity as no restrictions are made on motorised users. Flaxmere's road network is less connected, however, active user paths to and through parks and reserves offer improved connectivity for active users.

A large number of studies found that shorter distances between home and school are associated with increased active transport to school (Condon 2013). Two Australian studies reported that children are more likely to walk or cycle to school at least once a week, if they lived within 800 metres of their school (Condon 2013).

Hastings has been designed so that most houses are within 2 km of Hastings Central School, potentially an easy distance to walk or cycle between home and school. Active travel accessibility to jobs is very high. There are 7,000 jobs in the Hastings Central Census Area Unit and every resident is within 3 km. Many jobs in Hastings are within a distance accessible by active transport.

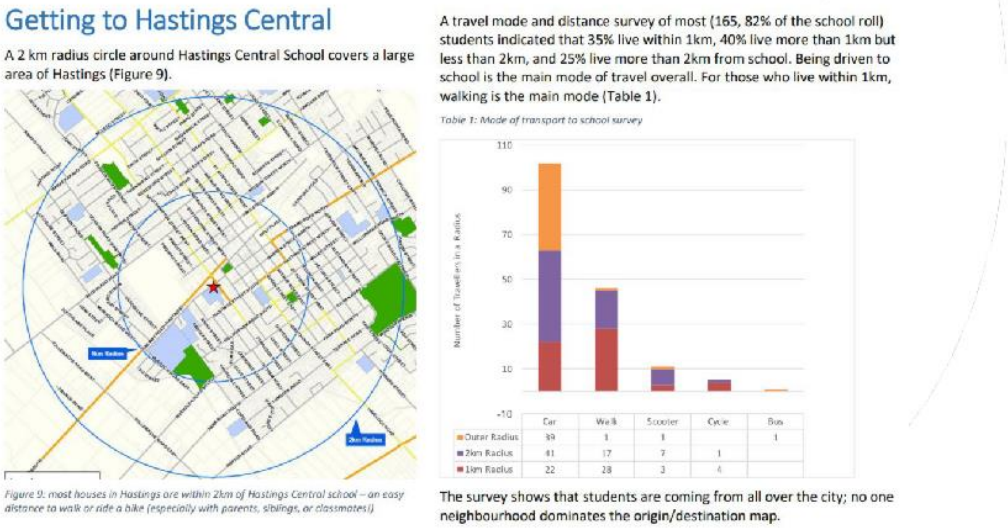


Figure 3-4: Location of Hastings Central School and the relative distance students travel (HCS 2018)

Road Safety Perceptions

The perception of safety in relation to walking and cycling is an important determinant of uptake in active travel[5] Walking and cycling are statistically safe ways to travel (MoT, 2015); however, negative perceptions and experiences may discourage people from using a particular route or encourage them to drive instead of walk or cycle, especially if the walking and cycling infrastructure is poor. Cheyne et al (2015) noted that parents participating in a perception survey expressed concerns about letting their children cycle on the road on their own, due to their lack of skills and experience on the road but also because parents did not trust other road user behaviour.

Findings from a comprehensive study by Muggeridge in 2012 suggest that although people in Hastings generally have positive attitudes towards walking and cycling, these are not necessarily translated into high levels of active transport, or high intentions to walk and cycle as a form of transport (Muggeridge 2012). As seen in Figure 3-5, driver behaviour, traffic volume and traffic speed were dominant factors in influencing walking and cycling safety perceptions. Other studies have found that traffic speed, volume, and proximity are key deterrents to active travel and particularly for commenting cyclists, cars passing too closely increases anxiety.

[5] The perception of safety in relation to cycling is often considered of greater importance than the actual safety of cycling, as the risk perceived is likely to be a more important determinant of cycling than the actual risks associated with cycling (Muggeridge, 2012)

Figure 3-5: Factors influencing safety perceptions (Muggeridge 2012)

Dedicated road space for active users can increase perceptions of safety and comfort for cyclists by increasing the separation to motorists, this improvement can increase with increasing levels of separation such as kerb or parking protection for cycle lanes. Cycle lanes between traffic lanes and pedestrian facilities also increase the separation between pedestrians and motorists and consequently increase comfort and perceived safety for pedestrians.

Fear of Crime

Another barrier to the uptake of walking and cycling is the fear of crime and one's personal safety, particularly for women, elderly and those with disabilities. Children and students use of active transport is often over-ridden by parents, who are concerned about 'stranger danger'. A poor design of the urban environment such as lack of surveillance, poor lighting, overgrown vegetation and disrepair adds to fearful attitudes towards walking and cycling. The issue of darkness can also be associated with the built environment, as many participants agreed that better lighting would make them perceive walking in the dark as safer. Darkness was particularly important in Hastings and Flaxmere, but to a lesser extent in Havelock North. Havelock North was thus perceived as safer than the other two neighbourhoods, with people saying they would not mind walking alone at night there but would not do it in Hastings or Flaxmere (Cheyne et al 2015).

End of trip facilities

All active mode routes should be clearly signed and have trip end facilities provided, such as cycle parking (ESCC 2014). End of trip facilities include showers and changing facilities, and secure sheltered bicycle parking. A lack of secure or sheltered bicycle storage contributes to fear of crime in the form of bike theft. Showers and changing facilities reduce the concern over body odour for those who cycle or walk further; those who have access to showers are 1.76 times more likely to cycle to work than those without the same facilities (Cheyne et al. 2015).

The Hawkes Bay DHB built additional secure cycle storage and started charging for car parking, these differences encouraged people to switch from motor vehicle use to active mode use. By adding additional amenities and making active modes more desirable such as providing end of trip facilities like showers, secure bike storage and lockers, map of facility locations and repair stations and bike pumps encouraged people to use active modes more. (Cheyne et al. 2015). Between 2015 and 2018, for staff at Hawkes Bay BDHB, cycling mode share increased by 6% and walking mode share increased by 3%.

School travel plans have indicated possible interventions to improve active travel to school. These interventions include improved end of trip facilities, such as all-weather bike and scooter stands. However, at present, only 63% of the urban schools in the district have at least partial access to the iWay network and nearly 40% schools in urban and over 80% schools in rural area have no coverage.

The DHB travel survey concluded that the reasons people use motor vehicle is primarily for convenience and flexibility.

Convenience of active modes

Motor vehicle use has been made so convenient, that active transport seems inconvenient in comparison. As seen in Figure 3-6, 'getting there quick' (i.e. directness/journey time) and 'convenience' (e.g. shops en route) are considered important factors that influence mode choice when travelling to school, work or shops. Parking is easy and cheap, which also means the car is often the most convenient option, when compared with public transport or active modes.

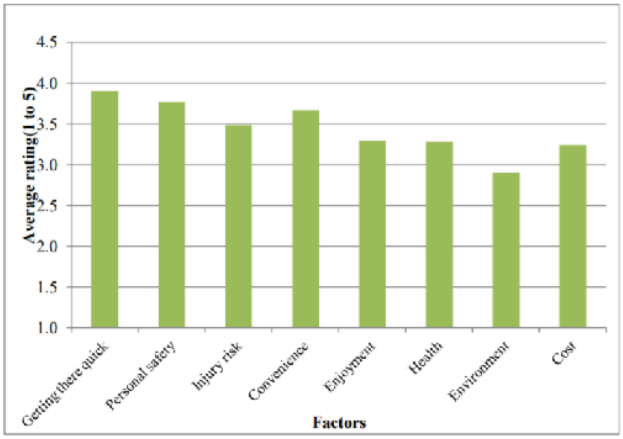


Figure 3-6: Factors influencing choice of mode of transport (Muggeridge 2012)

School travel plans have noted that student travel behaviours have changed. Between 1990 and 2014, the number of primary school students being driven to school in New Zealand increased from 31% to 55%, while travel by walking fell from 42% to 29% and cycling from 12% to 2% (MoT 2015). Parents drive their children because of ingrained travel habits, safety perceptions, and busy schedules including after school activities (HCS 2018).

Almost 80% of people travel to the shops via motor vehicle, in the same survey it was determined that just over 15% of people would walk or cycle to the shops.

Interventions that increased the convenience of active modes or decreased the convenience of travel by car could increase active mode share.

3.2.3 Limited active travel uptake, resulting in high car dependency

Active Travel Uptake

In 2010, New Plymouth and Hastings were selected by Waka Kotahi as model walking and cycling communities. New Plymouth District is comparable to Hastings District due to its flat topography, and population (74,184 district, 54,800 urban area).

Based on travel to work data from the 2013 Census, active mode share in the Hastings District is 9%. This compares to 10% for the Hawkes Bay Region and New Plymouth District.

Active mode share includes the walking mode share is higher than the cycling mode share in Hastings District and the comparison areas.

More people use private vehicles in Hastings District to complete their trips, in comparison with Hawke's Bay and New Plymouth District. Nearly 90% of total trips in Hastings in 2013 were completed using private vehicles.

Hastings District has the lowest proportion of people walking to work, in comparison with Hawke's Bay and New Plymouth District. Hawke's Bay and Hastings District have a similar proportion of people cycling to work; however, both have a lower proportion than New Plymouth District.

This dataset indicates both a dominance of the car in Hastings and an opportunity for change given the projected increase in population in the coming decades.

Geographic Factors

Poor weather and climate, such as reduced daylight hours, wind and rain reduces the likely number of cyclists to 64% of the normal levels. Topography was another highly correlated factor to cycle use (Cheyne et al 2015).

The Heretaunga plains area of Hawkes Bay experiences only 90 wet days per year and mean overnight low temperatures are higher than 7˚C in all months (Chappell 2013).

Figure 3-7: Contour overlay of the Hastings District's urban areas (LINZ n.d.)

The District's climate is dry and mild, and its topography is flat. The natural environment is ideal for active travel. Yet this is not reflected in the limited uptake of active travel.

Mode Share

The average annual daily cycle volume has increased, as counted at nine permanent count stations in the Hastings District. Over 1,500 average daily cycle trips were recorded, in 2016, and as shown in Figure 3-8, there are a few locations where a decrease in cycle numbers were observed, which indicates areas for improvements along the iWay cycle network.

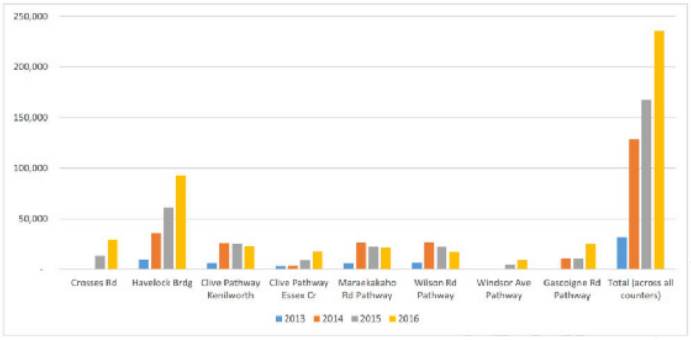


Figure 3-8: Annual Average Daily Cycle Volume at recording stations in Hastings District (HDC 2017)

Cycle and pedestrian volumes are seasonal, with the highest number of cyclists observed during the summer.

Recent investments in the active mode network have resulted in increased active travel and increasing active mode share in the District. However, active travel in Hastings District does not match that achieved in the rest of the Hawkes Bay Region or Waka Kotahi's other model community, New Plymouth.

Transport Behaviour

Road congestion, increased petrol and parking costs, availability of electric bicycles and scooters, bike sharing, and provision of more dedicated cycling infrastructure has increased active mode share in Hastings District since 2006.

Public transport patronage in Hastings District increased between 2009 and 2015 but has since declined to levels seen in 2012. This trend is consistent with regional New Zealand, and due partly to improved economic conditions, therefore more people are employed and using a vehicle.[6]

The use of the Total Mobility scheme[7] has increased since 2010, in line with the shift in population demographic in the Hastings District.

[6] Car ownership per capita has increased 7% in Hawke's Bay. The most significant declines in patronage have occurred on bus routes servicing areas with higher unemployment rates.
[7] The Total Mobility Scheme (TMS) provides subsidised passenger services travel for Hawke's Bay residents who are unable to use public transport due to a significant, permanent impairment.

Car Dependency

The Hawkes Bay Region has light vehicle[8] ownership rates higher than the New Zealand average of 0.8, as shown in Figure 3-9.

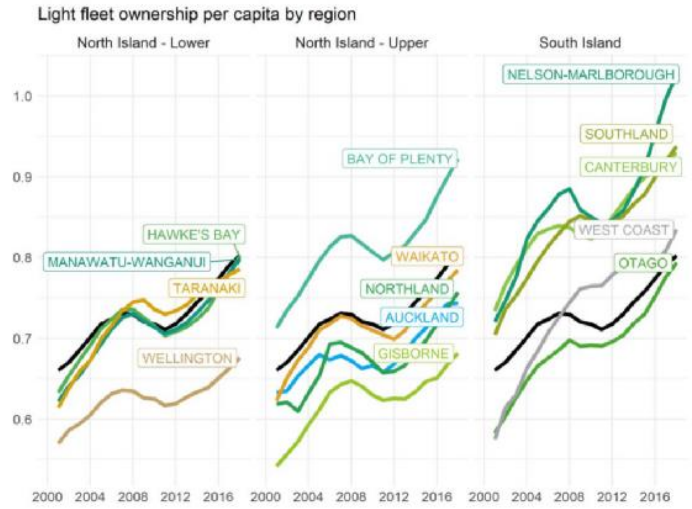


Figure 3-9: Light fleet ownership per capita by region (MoT 2018a)

However, as of the 2013 Census, over 2,000 (8%) households in the Hastings District did not have a light vehicle and over 9,000 (37%) have just one vehicle. Forty-two percent of households in the Hastings District have three or more people living in the household which indicates there are parts of the population that are transport disadvantaged by not having access to a vehicle. A network that encourages high car dependency reduces social and economic opportunities for the transport disadvantaged, those who choose not to drive and vulnerable populations such as the elderly and children, by minimising their access and choice on how to travel.

As noted in Section 2.3.3, Napier-Hastings is a low-income region and the high cost can be a barrier to vehicle ownership. A land transport system that makes travel without a car difficult makes households dependent on cars to access social and economic opportunities.

See Appendix C for household size and motor vehicles per household data.

[8] Light vehicles include light passenger vehicles such as cars and light commercial vehicles such as vans and utes.

Health Context

Hastings District is located within the Hawkes Bay Region. The Hawkes Bay Region has the lowest rates of adult physical activity[9] and second highest level of obesity of any region in New Zealand (MoH 2020).

Active transport enables residents to achieve their physical activity as part of their daily routine, which can result in improvements to health and wellbeing.

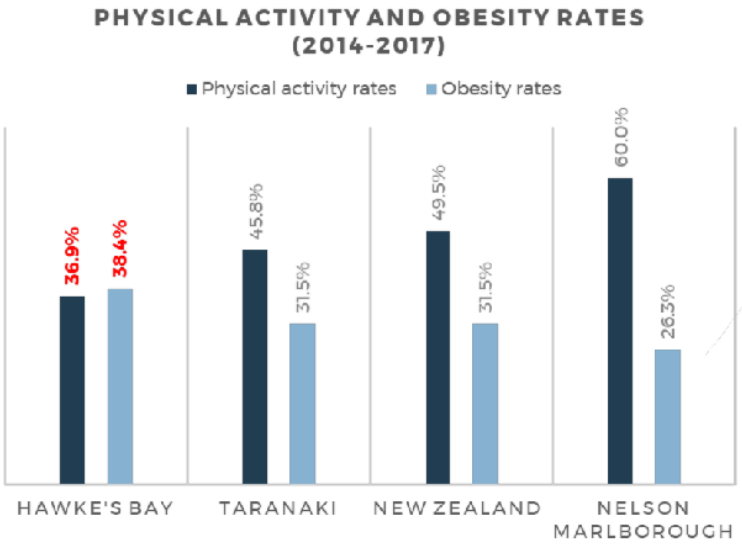


Figure 3-10: Physical activity and obesity rates for New Zealand and selected regions (MoH 2018)

3.3 Benefits of Investment

The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:

70% **Benefit one:** Increased use of active travel modes

Benefit one has been weighted 70% from resolving the identified problem. Increased use of active travel for trips to school, work and recreational purposes will result in improved health outcomes such as increased physical activity levels and reduced obesity rates. Using active travel as a mode of transport will also result in improved environmental outcomes such as air and noise quality and will reduce transport related emissions and overall environmental impact.

Increasing use of active travel modes will also result in increased utilisation of the existing iWay infrastructure.

[9] Physical activity (aged 15+ years) is defined as doing at least 30 minutes of brisk walking or moderate-intensity physical activity (or equivalent vigorous activity), for at least 10 minutes at a time, at least five days a week.

30% **Benefit two:** Improved perception of active travel

Benefit two has been weighted 30% as resolving the identified problem. Improved perception of active travel is the result of addressing views around safety, convenience, quality and comfort of walking and cycling. By addressing gaps in the level of service, improving amenities and reducing the pedestrian and cyclist crash rate, views on using active travel will shift over time, ultimately improving the perceptions around walking and cycling.

The Benefit Map is attached as Appendix D.

3.4 Investment Objectives

Investment objectives are under development with the client and will be agreed upon with stakeholders during the programme business case process.

3.4.1 Key Performance Indicators

It is important that the benefits of investment can be assessed and measured, to demonstrate that the proposal will deliver the expected outcomes.

These KPIs provide a measurable basis for monitoring how well the potential new programmes achieves the benefits over time. At this time, it is noted that there are currently too many KPI's and they will need to agreed upon with the client prior to the formulation of the investment objectives.

Benefit	Investment KPI	Measure	Description
Increased use of active travel modes (70%)	Increased walking and cycling facility LoS[10]	Use current footpath LoS and new cycling LoS assessment for cycle facilities. Austroads Cycle Level of service on iWay routes.	Increased walking and cycling safety LOS and consistent facility LOS* (for high demand, low LOS routes? key corridors?)
	Increased active travel for trips to school	Increased active travel trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data	Increased use of active travel (walking, cycling, scooting) for trips to school
	Increased active travel for trips to work	Census data, employer travel survey data and community travel survey	Increased active travel for trips to work

[10] LoS – Safety LoS, inconsistent LoS (unmet expectation of comfort and quality) and network gaps between destinations and communities.

	Increased active travel for recreation	HDC to continue conducting cycle counts, and measure future and historic counts, categorising off-peak commute times as recreational trips Community travel survey	Increased active travel for recreation
	Increased activity levels	Obesity and physical activity rates as reported by Ministry of Health in NZ Health Survey	Increased activity levels
Improved perception of active travel (30%)	Improved perceptions of active travel (safety and convenience)	New community survey data on perceptions of active travel (safety and convenience)	Improved perceptions of active travel (safety and convenience)
	Reduce active travel crash rate	Reported active mode crashes benchmarked against other regions and national data	Reduced pedestrian and cyclist crash rate (visible to community)

3.5 Key Findings

The following summarises the key findings from the review of the evidence. Based upon this evidence it is recommended to progress to a programme business case.

Within the Hastings District, most people live in the three largest urban areas, the climate is mild with infrequent rain, and the topography is very flat. The street network and existing active travel infrastructure provide a very connective transport network for active modes. However, active mode share is lower in Hastings than it is in comparable cities in New Zealand.

Cycle facilities in the urban areas are typically painted cycle lanes with no protection, contributing to a low level of service which is exacerbated by gaps in the cycle network, particularly at intersections. This poor level of service contributes to low uptake and negative public attitudes towards active transport.

Low rates of active transport use contribute to congestion, pollution, and poor health as people choose to travel by private vehicle. Concerns about the safety of cycling also contribute to deprivation and isolation as people who cannot access a motor vehicle are unable to access social and economic opportunities. This contributes to high levels of social deprivation in the district. Poor health and low levels of physical activity in the District are reinforced by a transport network that discourage active travel as part of a normal day.

3.6 Next Steps

The recommendation is that given the evidence, a programme business case should be developed that considers programmes and options that:

- Increase use of active travel modes
- Improve perception of active travel

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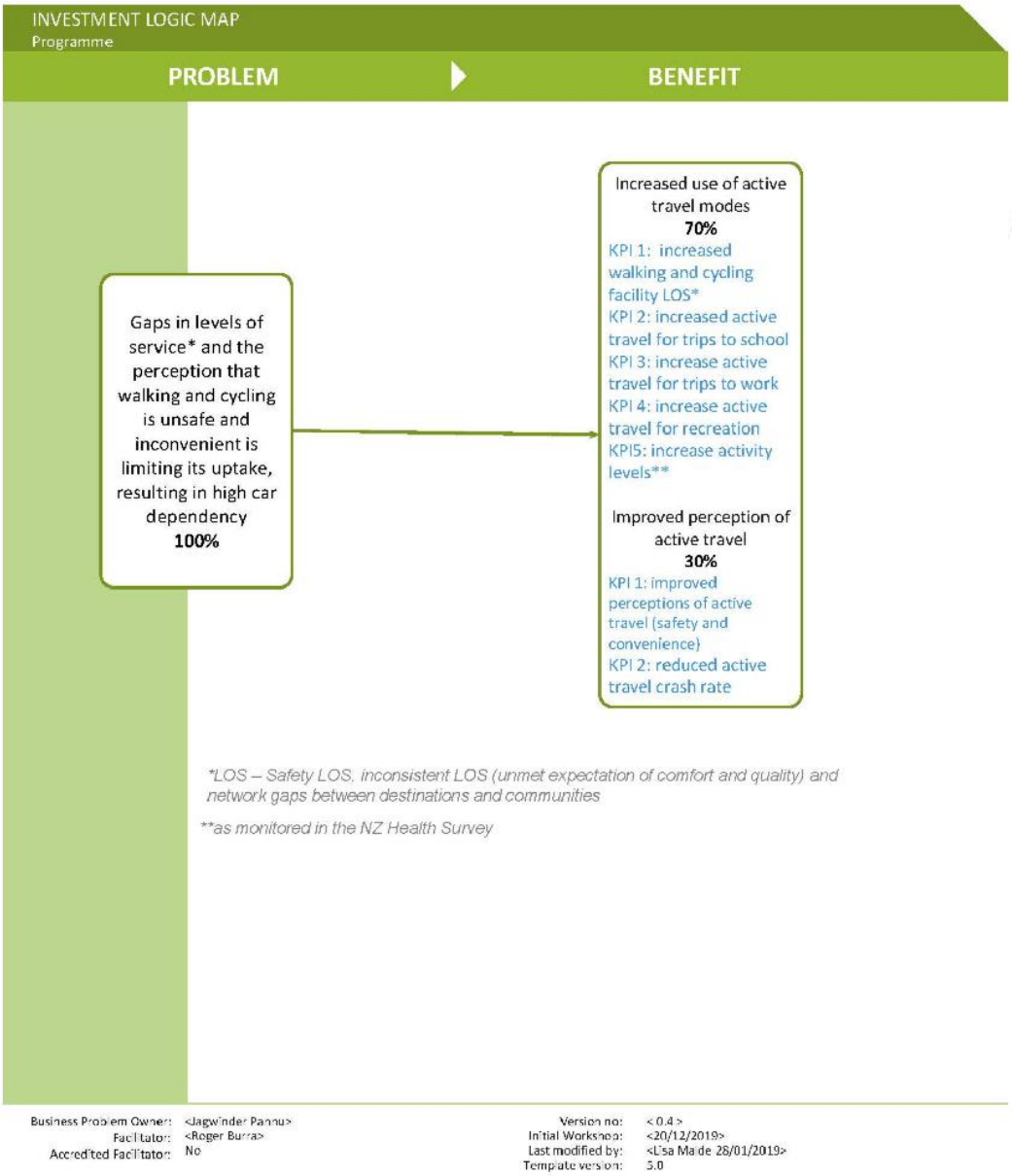
Appendix A – Investment Logic Mapping

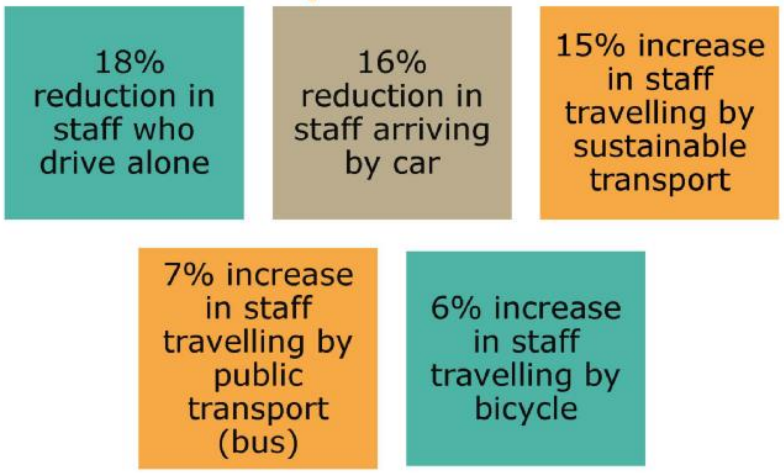
Normalising Active Travel for All

Delivering Community Wellbeing

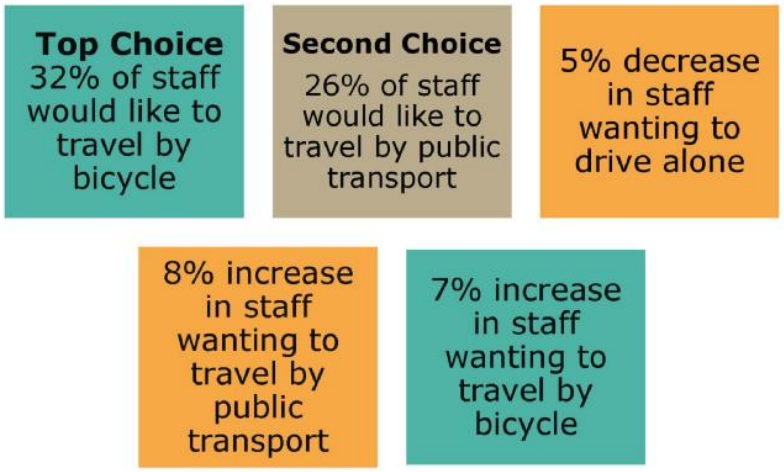


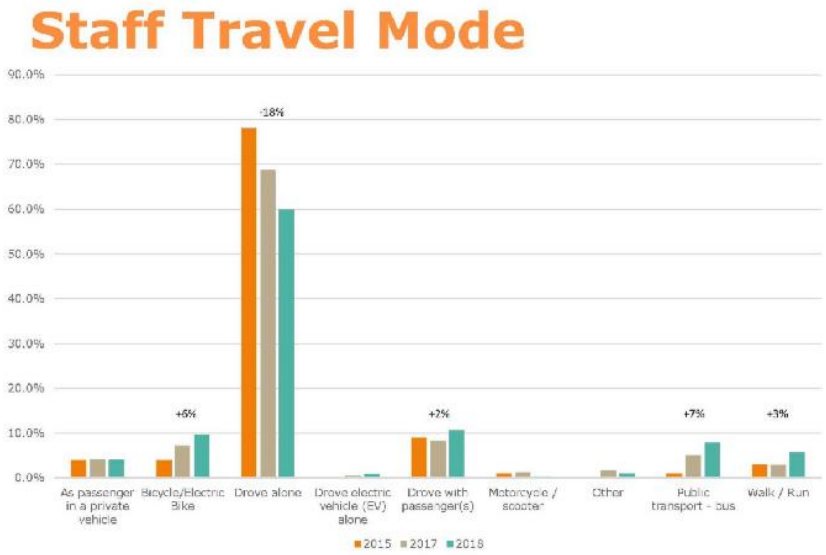
Appendix B – HBDHB Travel Survey Data Key Findings

2018 Travel Survey Staff - Compared to 2015



2018 Travel Survey Staff - Ideal Means of Travel





Desired mode shift was 10% - once a fortnight

Appendix C – Household size and motor vehicles per household data

Population and household data has been extracted from the New Zealand Census data and is summarised below, along with some key figures from the Heretaunga Plains Urban Development Strategy study.

Table 1 Study area household growth trends

	Population	Household	Cars	Household occupancy	Cars per household	Cars per person	Cars per person over 15
1996	118,410	42,528	60,712	2.78	1.43	0.51	0.67
2001	119,739	43,938	65,940	2.73	1.50	0.55	0.72
2006	124,965	46,149	74,119	2.71	1.61	0.59	0.77
2015*	130,320	50,911		2.58			
2026*	136,644	55,070		2.48			
2045*	138,575	58,925		2.35			

* Source: growth forecasts from Heretaunga Plains Urban Development Strategy

It can be seen from growth trends in household types that have been extracted from the previous 15 year census data that the number of people per household has decreased, the number of cars per household has increased, as has the number of cars per person. The Heretaunga Plains Urban Development Strategy projections shows that the trends in average number of persons per household is expected to continue.

6.3 Household projections

Household projection totals are based on those adopted for HPUDS for the period 2009 to 2045, with intervals of 2011, 2015, 2021 and 5 yearly to 2045. The periods have been adjusted to match the HPTS timelines and census years to derive projection target totals for 2009, 2011 and thereafter five yearly to 2046 as shown in Table 10.

Table 10 HPUDS household projections

	2009	2011	2016	2021	2026	2031	2036	2041	2046
Projected households	48603	49295	51281	53130	55070	56660	57800	58505	59030
Inter-period increase		692	1986	1849	1940	1590	1140	705	525

The increase in households has been allocated to greenfield/coastal sites, infill and rural (see Table 6).

Table 11 Household growth by type and location

Napier	2016	2021	2026	2031	2036	2041	2046	Total
Greenfields/coastal	578	333	349	267	169	109	63	1868
Infill	514	398	466	413	339	199	170	2499
Rural	193	102	63	44	18	16	12	448
Hastings	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**	**Total**
Greenfields/coastal	627	499	524	401	253	163	94	2561
Infill	557	398	466	413	339	199	170	2542
Rural	209	120	73	52	21	19	14	509

Appendix D – Benefit Mapping

BENEFIT MAP

BENEFIT	INVESTMENT BENEFIT (KPI's)	MEASURE	DESCRIPTION	BASELINE	TARGET
Increased use of active travel modes 70%	Increased walking and cycling facility LOS*	Use current footpath LOS and create new cycling LOS assessment for cycle facilities	Increased walking and cycling safety LOS and consistent facility LOS* (for high demand, low LOS routes? key corridors?)	Current walking and cycling facility LOS benchmarked against similar regions and national data (where available)	XX%
	Increased use of active travel for trips to school (same as network KPI)	Increased active travel trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data	Increased use of active travel (walking, cycling, scooting) for trips to school	2018 Census - New Zealand Walk - 22% Cycle – 4% Other – 1% 2018 Census – Hastings Walk - 18% Cycle – 5% Other – 2% 2018 Census – Napier Walk - 21% Cycle – 6% Other – 2% New Plymouth Nelson Palmerston North School Travel Plans (Generalised - Overall) Walk - 24% Cycle – 6% Scooter – 6%	XX% increase in use of active travel for trips to school
	Increase active travel for trips to work (same as network KPI)	Census data, employer travel survey data and community travel survey	Increased active travel for trips to work	2013 Census – Hastings Actual count, not % 2018 Census – Hastings Will be % not actual count 2018 Census – National Walk or jog – 5.2% Public Transport – 4.2% Cycle – 2%	XX% increase in use of active travel for trips to work

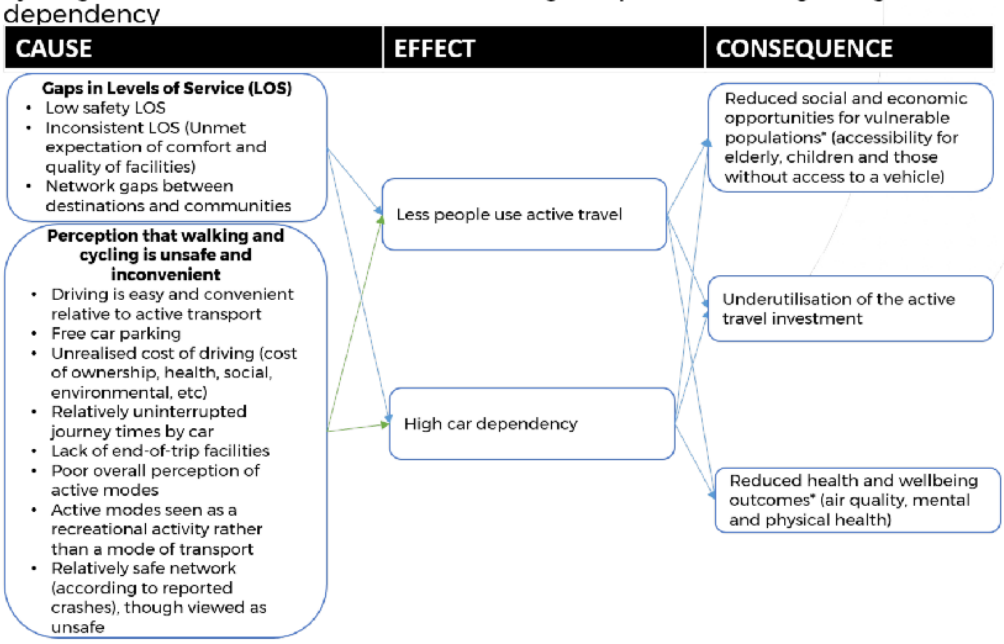
				2018 HBDHB Travel Survey Walk or jog – 6% Public Transport – 8% Cycle – 10% 2017 HDC Travel Survey Walk or jog – 6.5% Public Transport – 1% Cycle – 3.5% Baseline community travel survey – primary mode to/from work	
	Increase active travel for recreation	HDC to continue conducting cycle counts, and measure future and historic counts, categorising off-peak commute times as recreational trips Community travel survey	Increased active travel for recreation	XX recreational trips Baseline community travel survey – recreational trips	XX% increase in active travel recreational trips
	Increase activity levels (as monitored in the NZ Health Survey)	Obesity and physical activity rates as reported by Ministry of Health in NZ Health Survey	Increased activity levels	Physical Activity Rates 2011-14 Hawke's Bay - 45.3% 2014-17 National – 49.5% Hawke's Bay – 36.9% Taranaki – 45.8% Nelson Marlborough – 60% Obesity Rates 2011-14 Hawke's Bay - 34.3% Obesity Rates 2014-17 National – 31.5% Hawke's Bay – 38.4% Taranaki – 31.5% Nelson Marlborough – 26.3%	XX% increase in physical activity levels

Improved perception of active travel 30%	Improved perceptions of active travel (safety and convenience)	New community survey data on perceptions of active travel (safety and convenience)	Improved perceptions of active travel (safety and convenience)	XX – new community survey baseline data	XX% improved perception of active travel
	Reduced active mode crash rate	Reported active mode crashes benchmarked against other regions and national data	Reduced pedestrian and cyclist crash rate (visible to community)	CAS DSI Crash Analysis 2015-19 Hastings Pedestrians – 5.3% Wheeled Pedestrians – 1.6% Cyclists – 6.3% New Plymouth/Nelson/ Palmerston North Avg % Pedestrians – 13.6% Wheeled Pedestrians – 0.4% Cyclists – 11.9%	XX% Reduce crash rate by 50% in 5 years

Appendix E – Cause, Effect and Consequences Mapping

Active Travel Problem Statements

Problem 1 – Gaps in levels of service* and the perception that walking and cycling is unsafe and inconvenient is limiting its uptake, resulting in high car dependency



Appendix F – Waka Kotahi NZ Transport Agency Investment Questions

Meet Requirements?	Strategic Case Investment Questions and Response Sections
Yes	Is it clear what the problem is that needs to be addressed (both the cause and the effect)? See section 3.1, Appendix E – Cause, Effect and Consequences
Yes	Is there evidence to confirm the cause and effect of the problem? See section 3.2, Appendix E – Cause, Effect and Consequences
Yes	Does the problem need to be assessed *at this time*? See section 3.2
Yes	Is the problem specific to this investment (or should a broader perspective be taken)? See section 2.1
Yes	Have the benefits that will result from fixing the problem been adequately defined? See sections 3.3, Appendix D – Benefit Mapping
Yes	Are the benefits of high value to the organisation(s) (furthering its (their) objectives)? See section 2.1
Yes	Will the KPIs that have been specified provide reasonable evidence that the benefits have been delivered? See section 3.4.1, and Appendix D – Benefit Mapping
Yes	Are the KPIs both *measurable* and *totally attributable* to this investment? See section 3.4.1 and Appendix D – Benefit Mapping
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 3.4.1 and Appendix D – Benefit Mapping

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Project Number: 2-S5493.00

Network Programme Business Case

Hastings District Council

26 June 2020

CONFIDENTIAL

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Revision	Details
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01	90% Technical Review
02	Draft to Client
03	Draft to Client and Waka Kotahi
04	Revised Draft to Client and Waka Kotahi
05	Final document to client

Contents

List of Figures

Project Number: 2-S5493.00
Hastings District Council Network Business Case
Strategic Business Case

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This report ('**Report**') has been prepared by WSP exclusively for Hastings District Council ('**Client**') in relation to the Active Travel and Network Business Cases ('**Purpose**') and in accordance with the Short Form Agreement with the Client dated 15 November 2019. The findings in this Report are based on and are subject to the assumptions specified in the Report Offer of Services dated 15 November 2019. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

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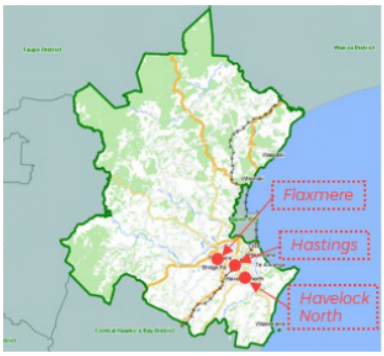
Executive Summary

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay which one of the largest apple, pear and stone fruit producing areas in New Zealand and is known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

Napier Port, which is about to expand, is the fourth largest port in New Zealand by overseas export volumes and is just 20 km from Hastings.



The Hawke's Bay lifestyle has drawn people and increased industry in the region which has led to increasing demands and challenges for the transportation network.

As workshop was undertaken with stakeholders and partners who identified and agreed with the following problems:

- **Problem one:** Poor user behaviour and transport system deficiencies increases the risk of deaths and serious injuries when crashes occur[1] (50%)
- **Problem two:** Increased industry productivity and changes in land-use is resulting the transport system not meeting the needs of users[2] (30%)
- **Problem three:** Poor uptake of active travel and public transport is negatively impacting on community wellbeing (20%)

The potential benefits of successfully addressing these problems were also developed and agreed upon. The stakeholder panel identified the following potential benefits and weightings:

Benefit one: Improved road safety (55%)
Benefit two: Improved customer experience (30%)
Benefit three: Increased community wellbeing (20%)
Benefit four: Greater uptake of active travel and public transport (10%)

The problem and benefits were validated by the evidence, notably:

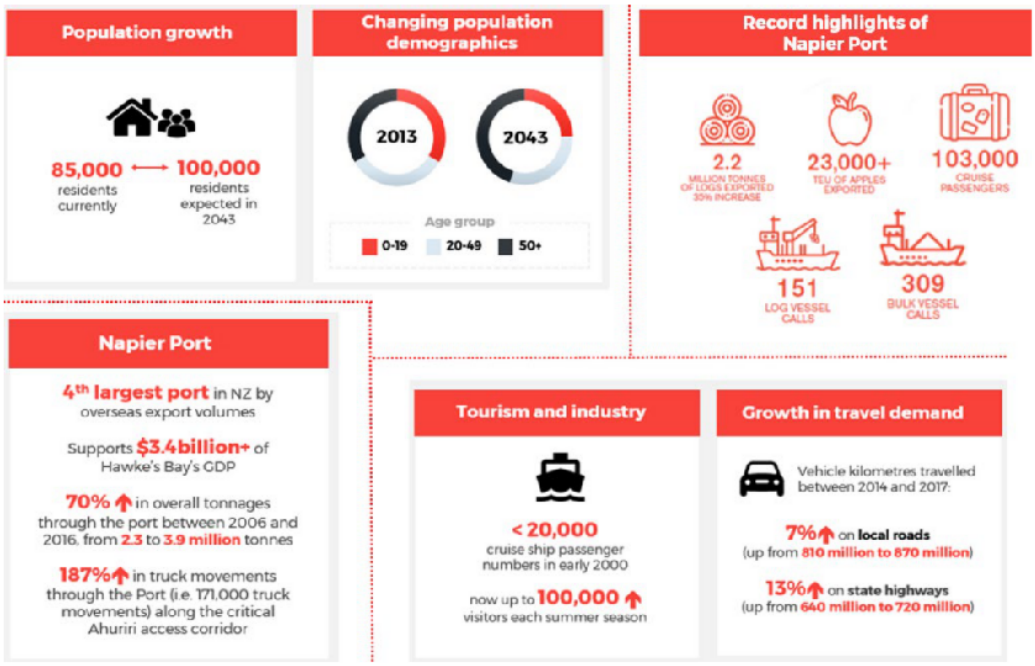
Increasing demand paired with risky and unsafe behaviour by people who drive increases the risk of death and serious injury when crashes occur. This paired with people not driving to the conditions or at a safe speed has increased collective risk and personal risk.

[1] Refers to safe systems approach
[2] Number of heavy trucks on minor roads, localised peak hour congestion on key routes, safety concerns

An increasing number of private vehicles and freight movements across a dispersed network has led to a changing mix of road users and overlapping peak movements. Vehicle Kilometres Travelled (VKT) in Hawke's Bay have increased between 2014 and 2017, by 7% on local roads (up from 810 million to 870 million kilometres) and 13% on state highways (up from 640 million to 720 million kilometres).

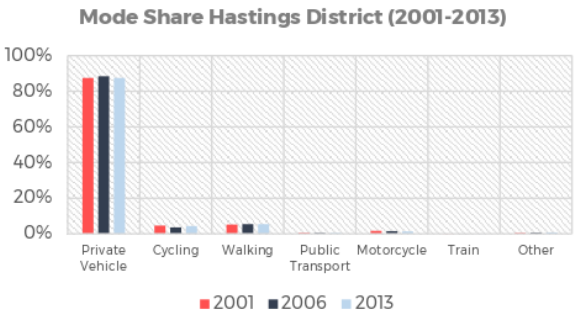
Road transport carries 95% of the freight in the Hawke's Bay region, while rail accounts for almost all the remaining 5%. Underutilisation of rail for freight means more freight trips using trucks through the Hastings District to the expanding port in Napier, putting pressure on the road network. Commuters are experiencing peak hour congestion on key routes and freight travel time has been impacted.

Increased domestic and international tourism through cruise ships and the regional airport, which is also expanding, play a factor in adding pressure to the network.



In the move towards a more compact urban form for the Heretaunga Plains subregion, an increasing proportion of the residential growth is expected to take place through intensification by redevelopment within existing residential and rural residential areas by 2045. Alongside residential growth areas, industrial growth areas have also been identified, many of which are in close proximity or adjacent to residential growth areas which will cause competing demands.

As a model community, Hastings District has heavily invested in walking and cycling infrastructure to positively impact on the community, however the ease and convenience of driving has resulted in private vehicles being the primary means of travel within the district. Active travel and public transport are not viewed as attractive or effective modes of transport which means they are underutilised. This translates to people not being as active as part of their daily life, increased inactivity and obesity rates and increased pressure on natural resources and carbon emissions from vehicles. Since driving is seen as the most viable option for transport, vulnerable populations also have reduced social and economic opportunities due to the need to own a vehicle.



There is strong strategic alignment with key national, regional and local strategic drivers around safety, network resilience, safe and efficient freight movements to the port, mode shift, transport choices and access to modes such as public transport, walking and cycling. There has also been an increasing shift toward reducing the adverse effects on the climate, local environment and public health which has strong strategic alignment with the Strategic Case.

The Strategic Case was followed by the development of a Programme Business Case (PBC) which is an evidence based living document that guides the direction for future investment in transportation network projects.

The PBC recommends a package of transport interventions including new network infrastructure, safety and level of service improvements, advocacy, education and enforcement, operational enhancements, policy measures and transportation / land-use integration. These interventions will build upon past successes and will allow Hastings District Council (HDC) to meet new and emerging challenges, particularly in a time when COVID-19 has changed the way we view active transport.

Three investment objectives were agreed upon and applied to the development of the PBC:

- Improve road safety - Improve road safety by reducing deaths and serious injuries by x%, reducing collective risk by x%, reducing personal risk by x%.
- Improve customer experience - Improve customer experience by reducing travel time variability for freight by x%, reducing the share of trucks on local roads by x%, reducing the share of crashes involving trucks by x%, increasing network resilience by x%.
- Improve community wellbeing - Improve community wellbeing by increasing active travel and public transport trips to work by x%, to school by x% and reducing the use of private vehicles for short trips by x%.

The percent of increase or decrease within these investment objectives will be determined once the baseline data has been collected.

A total of seven potential programme options were developed and assessed against their ability to address the problems and achieve the objectives. One programme focus emerged as the most effective. This programme focuses on interventions that specifically improve overall community wellbeing by improving infrastructure, safety and productivity, demand, and soft measures related to active transport and public transport (PT). This programmed was blended with a balanced programme to ensure it also delivered the infrastructure improvements needed to improve safety.

The recommended strategic programme focus has the following delivery philosophy:

- HDC will build on what has been done well;
- HDC will change the things that are not working;
- Let's do the hard work first;
- Equitable approach to active transport infrastructure improvements;
- The ease and convenience of driving and parking needs to be addressed;
- The right active transport infrastructure for the right target audience; and
- HDC will maximise opportunities for improvement.

The recommended programme performs well against all the investment objectives, and has strong alignment to relevant national, regional and local plans and strategies. The recommended programme has been assessed using the latest NZTA Assessment Framework criteria. It has not been possible to produce an indicative benefit cost ratio due to the scale and scope of this PBC. It is anticipated that efficiency will be assessed during subsequent phases as more detailed estimates of the costs and benefits can be determined.

The PBC has two key purposes:

- It has been used to identify quick wins and short-term measures that have the greatest potential to address travel behaviours, support mode shift through improved transport / land-use integration, operational enhancements, will improve safety and the level of service of the network and will meet the investment objectives; and
- It sets a framework for how the problems on the network will be addressed by focusing on new infrastructure improving connectivity and transportation choice, including walking, cycling and public transportation.

Through implementation of the recommended programme it will be safer and more convenient for people to make more trips using sustainable transport. Implementation of this programme alongside the Hastings District Council (HDC) Active Transport programme will result in a more mode neutral network, supporting all modes of transport, increasing access and choice and creating environments that support sustainable transport.

The "quick wins" focus on assessing and developing an approach for selected high-volume corridors, implementing a network operating plan, increasing data collection, increasing collaboration and transportation / land-use integration.

Short-term projects include implementation of the outcomes of the studies and plans developed in the "quick wins" phase as well increasing transportation / land-use integration, policy measures and further operational enhancements. The evidence suggests that increasing demands, change in land-use, poor uptake of active travel and human behaviour are a key cause of many of the problems identified on the transportation network. This phase of projects aims to address these issues through implementation of soft measures and some new infrastructure projects focused on improving the level of service and safety of the network.

Later stages build upon this approach with additional new infrastructure in later years.

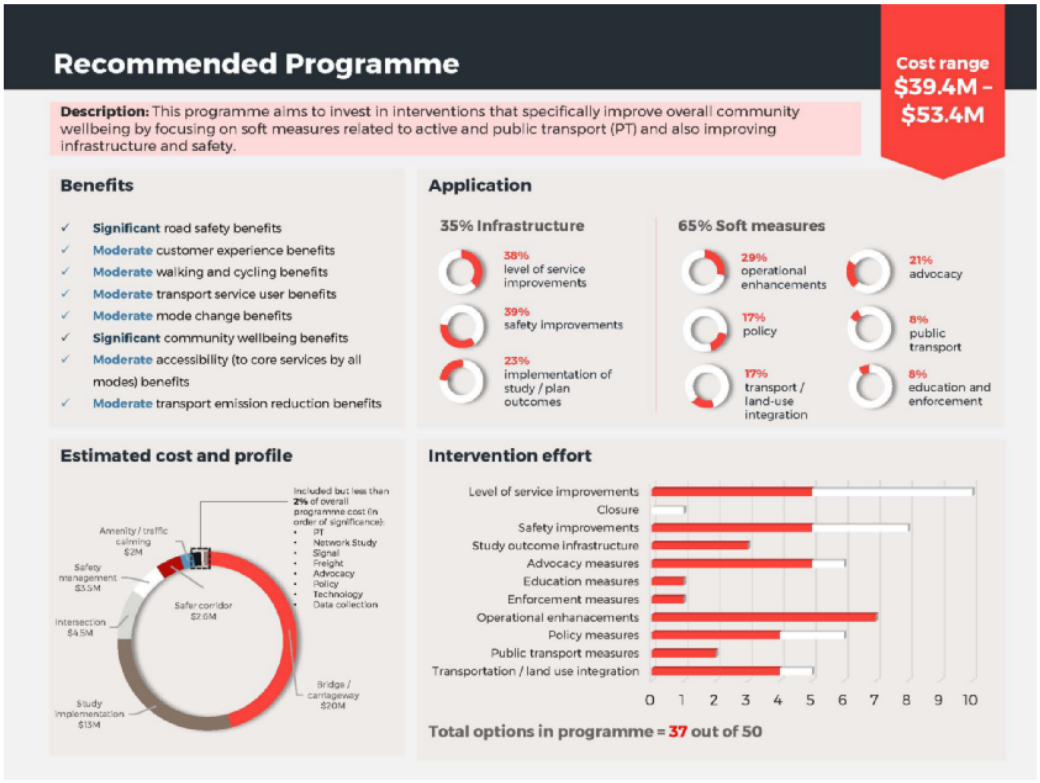
The midpoint of the **Capex component of the programme totals $45.8M, equating to an average expenditure of $4.6M per year**. In addition, there are **operational expenditure components totalling $620,000**.

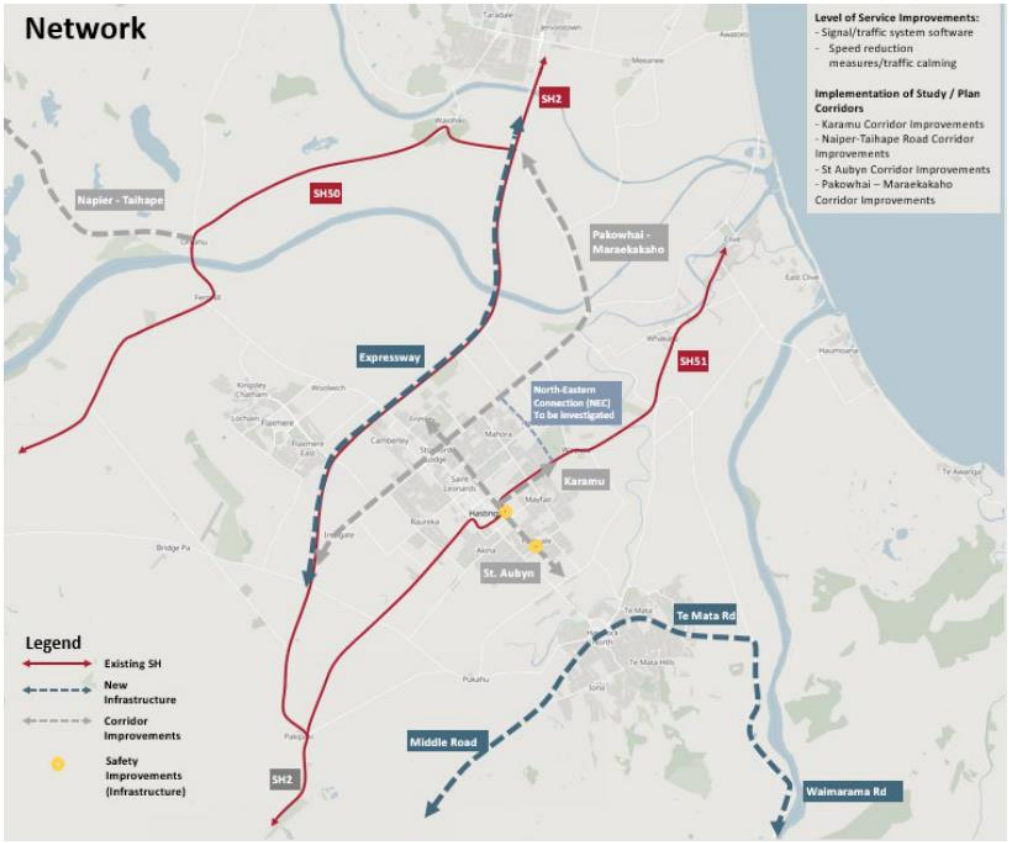
A level of flexibility is needed during this time of uncertainty with the COVID-19 pandemic, reduced council budgets, changing demands on various modes and changing road user needs. The programme has been prioritised and should be implemented to the extent that council transport budgets allow.

The PBC is a key stage in developing the Council's transport investment programme for the Long Term Plan. However, the next steps will see individual projects or activities developed and will go through statutory processes to proceed (e.g. NLTP, RLTP, and LTP).

Results alignment has been assessed as **High** as per the Investment Assessment Framework (2018).

A summary of the recommended programme and location of new infrastructure is provided below.





Refer to Appendix J – Waka Kotahi NZ Transport Agency SBC Investment Questions for the checklist of requirements against the strategic case assessment questions and Appendix Q – Waka Kotahi NZ Transport Agency PBC Investment Questions for the checklist of requirements against the PBC assessment questions.

PART A – STRATEGIC CASE

1 Introduction

1.1 Purpose

A Strategic Business Case (SBC) was commissioned by Hastings District Council (HDC) to improve the transport network within Hastings District. This network SBC and Programme Business Case (PBC) were undertaken in parallel with the HDC active transport SBC and PBC. This SBC outlines the strategic priorities and determines the need for investment and the case for change and sets the direction for the subsequent PBC in section 5. These reports were commissioned by Hastings District Council (HDC) to outline the need for investment and the case for change to improve the local transportation network, and move people and goods safely and efficiently within Hastings District. This includes both local roads and state highways (2, 5, 50 and 50A), though major regional network problems will be addressed in the Hawke's Bay Regional Business Case.

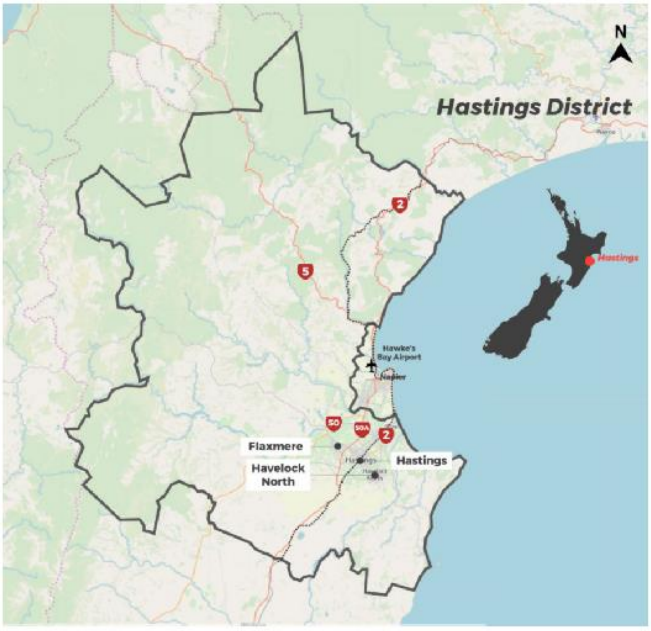
The purpose of this strategic business case is to:

- Provide a clear case for change and a compelling reason to invest;
- Define the problems identified by the project stakeholder, the evidence for these problems and associated benefits; and
- Recommend the next steps.

1.2 Scope

The physical extents of this SBC comprise the entire HDC service area, which is located in the Hawke's Bay Region and focused on the main urban areas such as Hastings, Havelock North and Flaxmere as well as smaller settlements and rural areas (see Figure 1).

Figure 1 Map of Hastings District



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1.3 Key Partners and Stakeholders

ILM workshop participants were selected due to their ongoing involvement in the Hastings network projects and involvement in the Regional Transport Committee. They represent a diverse cross-section of stakeholders that would be impacted by transportation network decisions and are involved in transport operational and strategic decision-making.

The key partners to the business case who will have a responsibility for delivering on the investment and key stakeholders who have helped determine the problems and benefits and guide the development of the programmes are shown in Table 1 and Table 2.

The following table lists the key partners for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications

Table 1 Key partners

The following table lists the key stakeholders for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current local context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications
Hawke's Bay Regional Council (HBRC)	Historic and current regional context, regional network stakeholder
Hastings Police	Road policing and safety
Hawke's Bay District Health Board (HBDHB)	Health impacts and outcomes of transport, major employer implementing a travel plan
Road Transport Association New Zealand	Road transport industry representative
New Zealand Automobile Association (AA)	Motorist, car and driver safety
Hastings City Business Association (HCBA)	Business owners, impact of network/parking decisions on business
Hawke's Bay Fruitgrowers Association (HBFA)	Fruit growing industry representative, impact of industry/network
Napier Port	Port operations representative, impact of port/network

Table 2 Key stakeholders

Technical support at the ILM workshop was also provided by Hastings District Council (HDC).

2 Context

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay, known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

In 2010 the Hastings District became new Zealand's first "Model Community" and by January 2011 the programme was branded "iWay", a network of urban pathways and on-street facilities. Building upon this, Hawke's Bay Trails is one of 22 Great Rides in New Zealand, with nearly 200km of off-cycle trails connecting the region and over 700,000 trip counts recorded on the trails in 2019.

2.1 Strategic Drivers

There is a strong drive for significant investment in the Hastings network at a national, regional and local level.

2.1.1 Government Policy Statement (GPS) 2018-2028 (MoT 2018)

The GPS identifies several national land transport objectives that are relevant to this investment, notably a land transport that:

- *Provides increased access for economic and social opportunities:* Supporting tourism is specifically noted in the investment priorities and the planning direction
- *Enables transport choice and access:* Specifically, increased mode shift, fit-for-purpose and safe (real and perceived) walking and cycling infrastructure
- *Reduces the adverse effects on the climate, local environment and public health:* Notably reduced significant negative effects on water quality and biodiversity from construction and ongoing use of transport infrastructure, and increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives.
- The business case approach aims to provide a value for money solution that address the needs from the key stakeholders.

2.1.2 Draft Government Policy Statement (GPS) 2021-2031 (MoT 2020)

The GPS identifies four strategic priorities that will guide land transport investments from 2021-2031. Several national land transport objectives that are relevant to this investment, notably a land transport that:

- *Developing a transport system where no-one is killed or seriously injured:* We need to create a transport system in both urban and regional areas that protect people. This priority gives effect to, but is not limited to, the *Road to Zero: the 2020-2030 Road Safety Strategy (Road to Zero).*
- *Providing people with better transport options to access social and economic opportunities:* Highly liveable cities and towns are people-friendly places with healthy environments that improve wellbeing and economic prosperity. The transport system contributes to liveable cities and towns by providing people with good travel options. This requires all parts of the transport system, be it roads, rail, public transport, and walking and cycling routes, to work together.
- *Improving freight connections for economic development:* Efficient, reliable, safe, mode-neutral and resilient freight transport – within cities, between regions and to ports – is vital for a thriving economy. The transport system needs to support the movement of freight by the most appropriate mode, improving interregional corridors, and increasing resilience.

- *Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access:* Vehicles that run on fuel are the fastest growing source of harmful climate pollution – emitting almost 70 per cent of our total transport emissions. Prioritising a reduction in greenhouse gases emitted by transport will help to achieve the Government's emission reduction targets and protect public health.

2.1.3 National Land Transport Programme (WKNZTA 2018)

The National Land Transport Programme (NLTP) is a three-year programme of planned activities and a 10-year forecast of revenue and expenditure prepared by Waka Kotahi to give effect to the GPS.

The NLTP includes a range of initiatives to support local government and has established five National Priority Programmes to accelerate activities aligned with the government's priorities including:

- Safety on local roads
- Public transport
- Walking and cycling
- Regional improvements
- Network resilience

The NLTP supports the following projects within the Hawke's Bay region which are specifically relevant to Hastings District:

- Improving safety; and planning for significant growth in forestry
- Ensuring safe and efficient access to Napier Port
- Maintaining the state highways and local roads
- SH2 Pakipaki to Waipukurau
- Hawke's Bay Expressway
- Weigh Right National at Napier Port
- New cycleways in the iWay cycling programme
- Increasing demand on the public transport system due to an ageing population
- Bridge strengthening programme to open up more of the network to 50MAX and HPMVs
- Safety promotion programmes in schools

2.1.4 Keeping Cities Moving (WKNZTA 2019)

Keeping Cities Moving is Waka Kotahi's plan to improve travel choice and reduce car dependency. The Plan outlines how the Transport Agency, in partnership with others, will help address the causes of car dependency and in doing so contribute to the GPS objectives by increasing the wellbeing of New Zealand's cities by growing the share of travel by public transport, walking and cycling.

Keeping Cities Moving includes an action plan of 34 interventions that will focus on leveraging mode-shift through:

- Spatial and place-based planning
- Policy and regulatory interventions
- Network design, management and optimisation
- Investment in infrastructure, platforms and services
- Economic tools; and
- Education, engagement and awareness interventions

2.1.5 Vision Zero (MoT 2020)

Vision Zero is a national approach where no-one is killed or seriously injured in road crashes, and where no death or serious injury while travelling on our roads is acceptable. Vision Zero builds on the Safe System (Safe Speeds, Safe Roads, Safe Vehicles, Safe Road Users) holistic approach to road safety, which requires people to think about the road system in its entirety, from infrastructure projects to policy and regulation.

2.1.6 Climate Change Response (Zero Carbon) Amendment Act (MfE 2019)

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement. This will limit the global average temperature increase to 1.5° Celsius above pre-industrial levels and allow New Zealand to prepare for, and adapt to, the effects of climate change.

The changes do four key things. They:

- set a new domestic greenhouse gas emissions reduction target for New Zealand to reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
- establish a system of emissions budgets to act as stepping stones towards the long-term target
- require the Government to develop and implement policies for climate change adaptation and mitigation
- establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

2.1.7 Hastings District Plan (HDC n.d.)

Section 2.5 'Transportation Strategy of the Hastings District Plan (the District Plan) identifies the importance of establishing a safe and efficient use of the transport network. This can be achieved by traffic management on the network, and the control of land use activities alongside the network.

2.1.8 Hastings Council Long Term Plan 2018-2028 (HDC 2017)

The Hastings District Council's Long Term Plan sets out the Council's plans and spending with the following aims being relevant to this investment:

- *Accessible range of safe transport options*
- *Safe walking and cycling facilities*
- *Efficient movement of goods*
- *Infrastructure supporting economic growth*

2.1.9 Hawke's Bay Regional Public Transport Plan 2019-2029 (Draft) (HBRC 2019a)

The Regional Land Transport Plan (RLTP) vision for transport in Hawke's Bay is: *"A safe, resilient and efficient transport system that supports the development of our economy and contributes to social wellbeing in our community"*. It aims to promote increased numbers of trips being undertaken on public transport, lessening the reliance on private motor vehicle travel and contributing to reduced congestion and carbon emissions on the road network. The Draft Regional Public Transport Plan 2019-2029 builds upon this strategic alignment by supporting the RLTP's vision.

2.1.1 Hawke's Bay Regional Council Climate Emergency Declaration (HBRC 2019b)

The Hawke's Bay Regional Council (HBRC) joined other councils around the country when it announced a climate emergency for the Hawke's Bay region on 26 June 2019, recognising there

is a small window of time to action and avoid the most damaging effects of the climate crisis in the longer term.

In declaring a climate emergency, the Regional Council is making climate change a focus in all its decision-making and relevant work programmes.

2.1.2 *Heretaunga Plains Transportation Study Report (GHD 2012)*

The Heretaunga Plains Transportation Study Report aims to *"ensure that people and goods are moved to/from and within the study area with the least cost and for the most benefit to the region's economy while enhancing its social and cultural fabric and environmental condition"*. This study also explored improving efficiency of freight logistics and distribution. Various key routes were identified as being a LOS D or E and the study projected continued deterioration by 2026 and by 2046 the same areas on the network continue to be under pressure being either at or over capacity.

2.1.3 *Heretaunga Plains Urban Development Strategy (HPUDS) (HDC et al 2017)*

The HPUDS takes a long-term view of land use and infrastructure, and how growth will be managed in the Heretaunga Plains sub-region for the period 2015-2045. It considers the following growth drivers and the relative demands they place on land in both Hastings and Napier: commercial and industrial; retirement sector; rural and urban residential development; intensification (infill); and affordability and sustainability.

2.1.4 *Local Government Leaders' Climate Change Declaration (LG 2017)*

Local government leaders declared an urgent need for responsive leadership and a holistic approach to climate change. The declaration asked NZ government to make climate change a priority to develop and implement an ambitious transition plan for a low carbon and resilient NZ. All local governments are committed to developing and implementing action plans to reduce greenhouse gas emissions and support resilience. Plans will promote walking, cycling, public transport and other low carbon transport options.

This business case clearly promotes the development and implementation of active transport to reduce greenhouse gas emissions and support resilience.

2.2 Geographic Context

Hastings, Flaxmere and Havelock North consist of relatively flat and rolling countryside, with Te Mata Peak providing some steeper areas. The relatively flat topography is favourable for active transport users, with the steeper areas such as Te Mata Peak providing recreational users the challenges they seek.

2.2.1 Population

Hastings District has a population of estimated at 85,000 people which is a 9.5% increase from 5 years prior (SNZ 2019). with 60% of that population residing in the key urban areas of Hastings, Havelock North and Flaxmere.

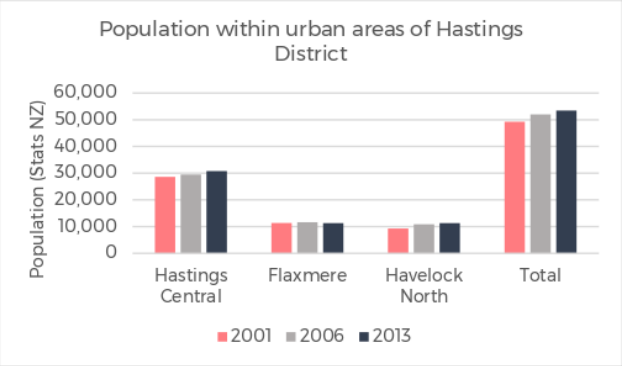
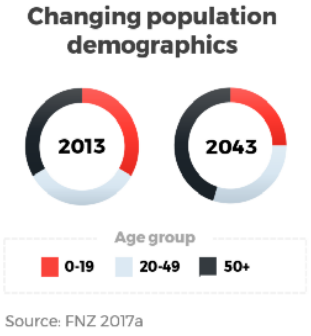


Figure 2 Population growth (2001, 2006 and 2013) (Source: SNZ 2013a)

Over the next 25 years, Hastings District's population is expected to increase to nearly 100,000. **To support the vision for delivering a safe and efficient network in Hastings, HDC needs to ensure the transport system is fit for purpose.** That means providing safe facilities and transport choices to all road users.



Source: FNZ 2017a

While population growth is expected to remain steady, there is expected to be significant growth of the 65+ age populations, who are expected to increase from 35% of the population in 2013 to 45% of the population in 2043. Growth in the population in the 65+ age group is expected to be great than the total population growth over this period. This will have significant impact on the transportation network and how residents use transport in the upcoming years.

2.2.2 Land use

Hastings District is dominated by rural and plains production land use, which surround the urban and commercial areas of Hastings, Havelock North and Flaxmere. Growth areas are made up of industrial and residential areas, with the majority of industrial growth areas surrounding Hastings and Flaxmere.

Figure 3 illustrates the key industrial and residential growth areas identified within Napier City and Hastings District, with the majority of industrial growth areas surrounding Hastings and Flaxmere.

In the move towards a more compact urban form for the Heretaunga Plains subregion, an **increasing proportion of the residential growth is expected to take place through intensification by redevelopment** within existing residential and rural residential areas. The key elements of the settlement pattern by 2045 are:

- 60% intensification (10 – 20% intensification or brownfields);
- 35% greenfield; and
- 5% of population in rural areas.

See Appendix A – Additional information on Hastings context for more detailed maps showing the land use summary of Hastings, as well as household projections.

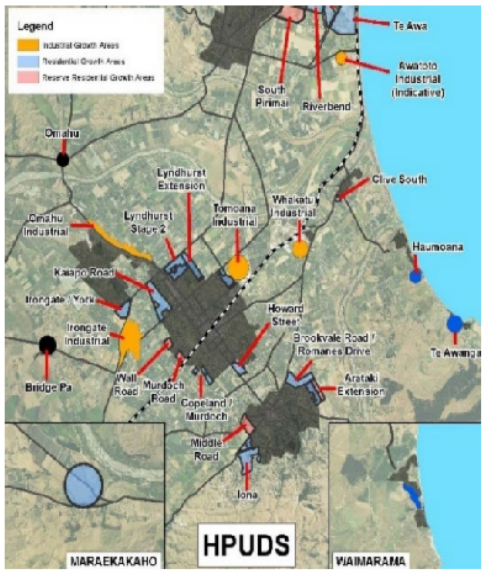


Figure 3 Land use within Hastings District (HDC et al 2017)

2.2.3 Social and Economic Context

Napier-Hastings is a relatively low-income region and has a significant degree of socio-economic deprivation. This needs to be taken into consideration, in future urban development planning for the area. (Bevin 2009)

Key industries in the region include primary production and processing, commercial business services and wholesale/retail trade. Hastings District is one of the largest apple, pear and stone fruit producing areas in New Zealand, and therefore has an important relationship with Napier Port. Napier Port is the fourth largest export port in New Zealand by overseas export volumes, additionally it hosts cruise ships (HBRC 2018). The district is also an important grape growing and wine producing area, attracting many tourists to the region.

Employment in the region is expected to increase by 18% between 2015-2045, with particular focus on the commercial and industrial sectors, which are forecast to grow by 21% and 15%, respectively between 2015-2045 (Bevin 2009).

Increasing employment in the region will result in increased demands for travel to employment. Accommodating this demand within existing travel patterns dominated by private vehicle use would result in increased pollution and congestion. A poor environment for active transport will restrict access to increasing employment opportunities for those unable to access private vehicles through disability or deprivation.

3 The Need for Investment

3.1 Defining the Problem

A facilitated investment logic mapping (ILM) workshop was held on 19 December 2019 with the following key stakeholders to identify the problems confronting the region and the benefits of addressing these issues (see Appendix B – Partners and stakeholders for the list of partners and stakeholders, as well as their contribution of interest in the project).

The stakeholder panel identified and agreed the following key problems: and benefits

- **Problem one**: Poor user behaviour and transport system deficiencies increases the risk of deaths and serious injuries when crashes occur[3] (50%)
- **Problem two**: Increased industry productivity and changes in land-use is resulting the transport system not meeting the needs of users[4] (30%)
- **Problem three**: Poor uptake of active travel and public transport is negatively impacting on community wellbeing (20%)

The Investment Logic Map is in Appendix B – Investment logic map.

3.2 Benefits of Investment

The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:

Benefit one: Improved road safety (55%)
Benefit two: Improved customer experience (30%)
Benefit three: Increased community wellbeing (20%)
Benefit four: Greater uptake of active travel and public transport (10%)

The Benefit Map is attached as Appendix G – Benefit Mapping.

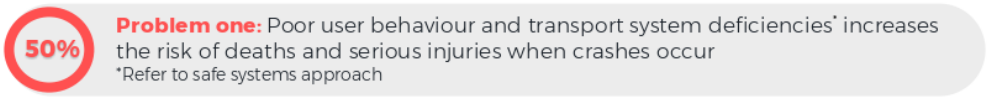
3.3 Evidence

In validating the problem statements, there are a number of factors to define and explore; including:

- Poor user behaviour in part attributed to infrastructure and risk;
- Competing and increasing demands related to tourism and industry, freight transport on the network, heavy vehicles, level of service and network deficiencies; and
- Poor uptake of active travel which includes the ease and convenience of driving, poor perception of active travel and public transport which results in decreasing health outcomes.

This information is provided in section 3.3.1, 3.3.2 and 3.3.3.

3.3.1 Evidence for problem one

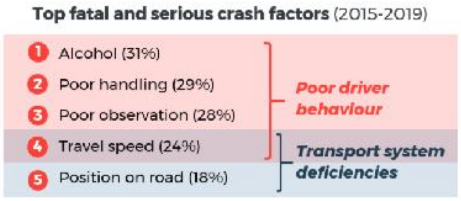


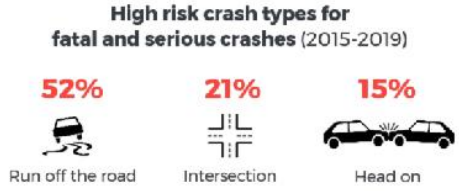
The stakeholders believe that poor driving behaviour is a major issue in Hastings, with a road environment that does not cater for all road users and is not fit for purpose, thus contributing to risk of a death or serious injury outcome occurring.

This is due largely to the presence of:

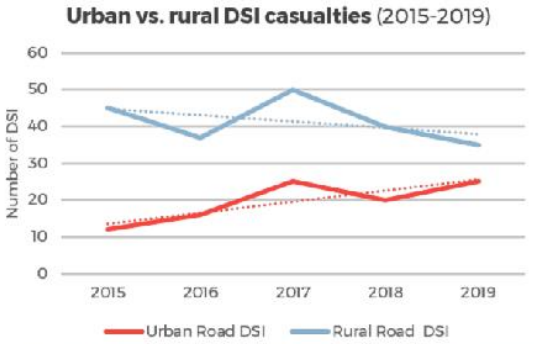
- roads and roadsides which are unpredictable and unforgiving of mistakes as the design fails to encourage appropriate road user behaviour and safe speeds; and
- speeds that do not suit the function and level of safety of the road.

[3] Refers to safe systems approach
[4] Number of heavy trucks on minor roads, localised peak hour congestion on key routes, safety concerns





During the five-year period 2015 to 2019, a total of **35 deaths** and **270 serious** injuries resulted from road crashes on HDC's highway and local road network, with the number of deaths and serious injuries (DSI) increasing at a rate of around 4 percent per annum. DSI on local roads contribute to 90% of the total DSIs (19 and 175 of DSI respectively were on local roads). Active modes, often classed as vulnerable road users make up 33.6% of DSI; however, these modes are significantly underrepresented when compared to New Plymouth, Nelson and Palmerston North[5], with vulnerable road users making up an average of 43.4% of total DSI in these urban areas. This indicates that safety concerns related to vulnerable users is related to perceived safety issues, rather than it actually being unsafe.



Three types of high risk crashes account for 88 percent of all DSI crashes in HDC. Run-off road crashes are a considerable proportion of fatal and serious crashes on the network.

The right figure outlines the top fatal and serious crash factors on all roads in HDC. Apart from poor observation of road conditions by drivers, the remainder of the crash factors are overrepresented when compared to the crash factor averages from New Plymouth, Nelson and Palmerston North.

The DSI trend has been decreasing along rural roads, and increasing along urban roads.

See Appendix C – Crash analysis for the full crash analysis of HDC's crash history between the period 2015 and 2019.

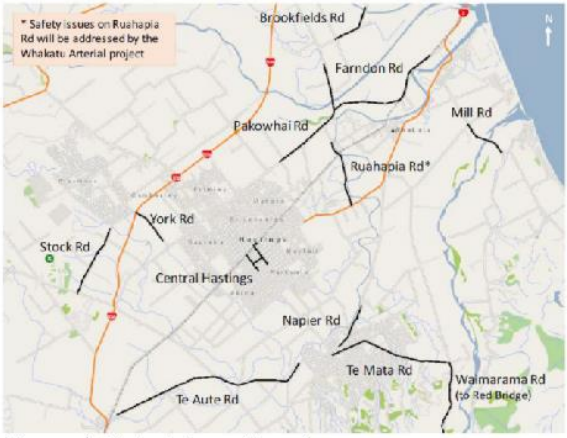


Figure 4 High risk corridors for 2011-2015 (HDC 2017)

Infrastructure and risk

Figure 4 shows the identified high-risk corridors[6] for the District (refer to Appendix E for more specific details of rural and urban high-risk corridors from the Hastings District Council 2017 Road Safety Strategy).

[5] Similar urban areas in terms of size of area, population and active transport networks.

[6] High risk corridors are lengths of road with a higher than average crash risk; where targeted safety improvements are most likely to reduce the social cost of crashes. High risk corridors are defined as corridors where the crash density (collective risk) or crash rate (personal risk) is high compared to similar corridors nationally (HDC 2017).

17

As seen in Figure 5, an infrastructure rating has been assessed for all roads in Hastings, with approximate locations of high risk intersections identified. Note: the highest risk roads posed by infrastructure are shown as black, with red being medium to high. This show where there is potential for risk.

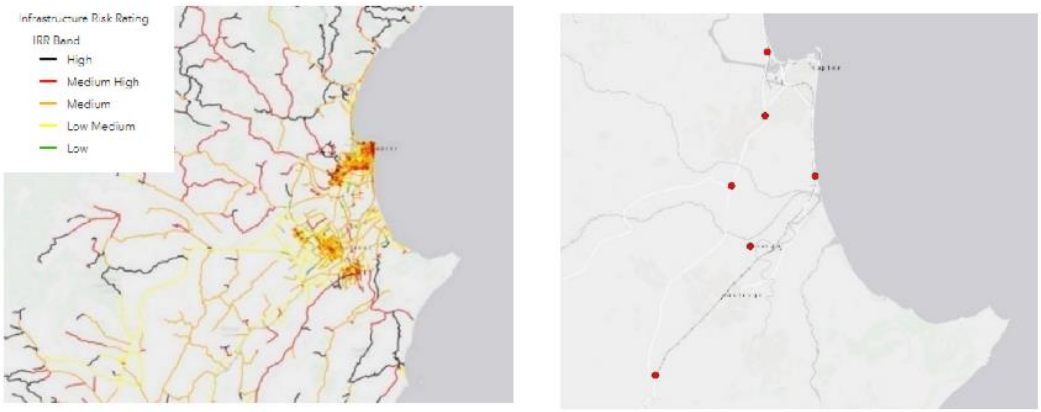


Figure 5 Infrastructure risk rating (left), high risk intersections (right) for 2013-2018 (Source: Mega Maps)

Poor behaviour trends

There has been significant improvement in some crash causes where driver behaviour or choice is implicated. Fatal and serious injuries from some major crash factors (alcohol and drugs, young drivers, fatigue and distraction, roads and roadsides, no restraint use) have in general declined since 2008, however crashes caused by high-risk drivers and speeding drivers have shown little improvement (HBRC 2018). See Appendix D for further details.

Recent spikes in crashes have been of concern and emphasises the need for the region to continue in focusing on national and local education programmes aimed at improving driver behaviour and encouraging a culture of driving to the conditions. From a Vision Zero and Safe System approach, this shows that the current transport system is unforgiving when people make mistakes. This presents an opportunity to improve the potential for DSI outcomes by creating a more forgiving system that takes human fallibility and vulnerability into account.

3.3.2 Evidence for problem two

30% **Problem two:** Increased industry productivity and changes in land use is resulting in the transport system not meeting the needs of users*
*Number of heavy trucks on minor roads, localised peak hour congestion on key routes, safety

Problem two refers to the inefficient freight movement through the transport system in Hastings, which has failed to effectively respond to the growth in demand and land use changes. An efficient freight network within Hawke's Bay is vital for the region's economy – not only does it serve a highly productive rural sector that exports large quantities of horticultural, forestry and agricultural products, it also provides access to the Port and domestic markets. The consequences of the problem are:

- Increased potential for conflict between road users;
- Localised peak hour congestion on key routes and increased freight travel time variability. This results in delays along the supply chain despite strict schedules in

place, as well as increased costs for importers and exports as they effectively pay the wait time;

- Increased number of crashes with trucks on all roads of HDC. **The number of crashes that involve trucks in DSI crashes between 2015 and 2019 is equivalent to the total combined crashes with trucks in New Plymouth, Palmerston North and Nelson. Similarly, 17% of crashes on State Highways in HDC involve a truck, in contrast to an average of 4% in similar aforementioned regions.**

The first part of the cause **(i.e. increased industry productivity)** is driven by:

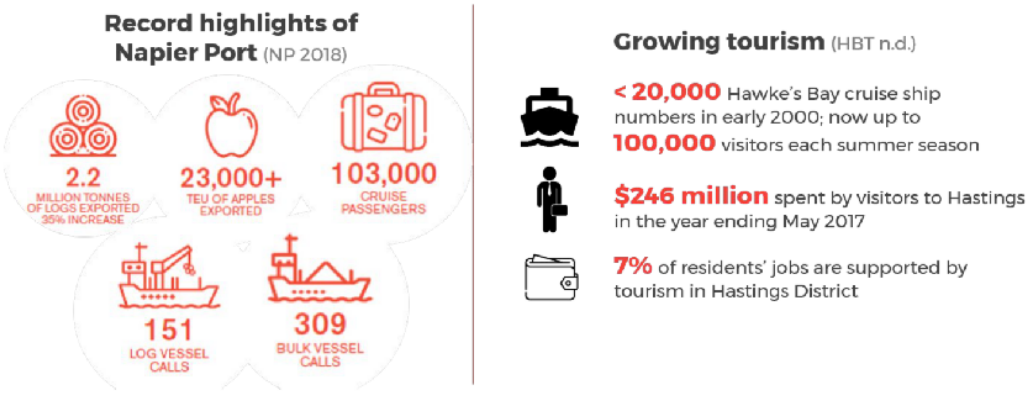
- A significant increase in freight movements from and through Hastings Districts to the port (see Section 0). This, combined with a continued increase in VKT on local roads and state highways and an ageing population will contribute to increased demand and challenges with the mix of traffic using the road network;
- Freight movement from and through Hastings to meet port departures occurring during peak commute times.

Tourism and industry

Growing regional industries such as agriculture, horticulture, viticulture and forestry and the Napier Port expansion both contribute to growing demands on the Hastings District transportation network, particularly in relation to trucks and heavy vehicles on key corridors.

Napier Port is the fourth largest port in New Zealand by overseas export volumes, holding national significance as it accounts for **10% of New Zealand's export tonnages** (HBRC 2018). In dollar terms, Napier Port supports more than $3.4 billion of Hawke's Bay's Gross Regional Product (HBRC 2018). Hastings District is one of the largest apple, pear and stone fruit producing areas in New Zealand, and therefore has an important relationship with the Port.

Increased tourism through cruise ships and the regional airport which is expanding also play a factor in adding pressure to the network.



The second part of the cause **(i.e. changes in land use)** can be seen in the industrial land use intensification occurring near residential growth areas (see Figure 3), as well as intensification and land use changes occurring prior to road network investment. This lack of integration between development and transport infrastructure translates to increased car dependency, higher energy use, greater traffic volumes and inefficient freight movement (HBRC 2014).

Freight transport

Road transport carries 95% of the freight in the Hawke's Bay region, while rail accounts for almost all the remaining 5%. The rail line south from Napier is commercially viable and handles all the region's rail freight. Use of this line for freight grew over 40% between 2007 and 2012, but tonnages remain low as a percentage of all freight carried. After 2014 freight loads has dropped on the line, due to Ravensdown Fertilisers' discontinued use of rail and because Fonterra product is no longer exported out of Napier Port (HBRC 2018).

Freight moving into and out of the region is growing and is expected to increase from 20.2 million tonnes in 2012 to about 30.7million tonnes by 2045[7]. **The growth in key freight types through the Port is predicted to increase truck movements (in and outbound) by 187% (being 171,000 truck movements),** along the critical Ahuriri access corridor between 2018 and 2027. These predictions are based on significant recent growth in apple plantings, wood harvests commencing in the Tararua/Central Hawke's Bay and Wairoa areas, and growth in other freight types (HBRC 2018).

The effects of the problem **(i.e. a transport system not meeting the needs of users)** are seen below:

- Growth in travel demand as evident by the significant increase in Vehicle Kilometres Travelled (VKT) as well as an increase in demand for High Productivity Motor Vehicles (HPMV) capability on key access routes;
- Increased number of trucks and heavy commercial vehicles (HCV) on minor roads, especially with trucks going into residential areas (Havelock North/Whakatu) rather than standard routes;
- Overlapping peak commuter and freight movements, with peak container traffic coinciding with morning peak commuter times between 7am and 8am in 2017-2019[8] .

Growth in travel demand

VKT in Hawke's Bay have increased between 2014 and 2017, by 7% on local roads (up from 810 million to 870 million kilometres) and 13% on state highways (up from 640 million to 720 million kilometres) (WKNZTA 2020). This is largely contributed by the increase in heavy vehicles because of the growth in freight moving through the region.

Since 2017, Hawke's Bay has also seen a rise in VKT on sealed urban and rural local roads, as well as sealed urban state highways. However, this is not the case for rural state highways which indicates increased demand has primarily occurred in urban areas and the more remote parts of the district (see Appendix A – Additional information on Hastings context for details).

Heavy vehicles on the network

Problems with the significant increase in freight movements is evidenced by a clear **increase in annual number of containers being handled by the Napier Port (an average of 8% per annum** between 2009 and 2015[9]). These numbers are expected to peak further over the coming years as a result of the continued growth in the rural sector and the national promotion of shipping as a transport mode.

[7] National Freight Demand Study, Ministry of Transport, 2014
[8] Data received from the Port
[9] This includes containers only, with forestry trucks excluded.

While road use has been increasing, containers into the Port by rail have decreased by over 15% between 2012 and 2016 (see Figure 6). Rail is greatly underutilised with only 9.9% of movements into the Port being by rail compared to 24.7% nationally in 2016, **adding pressure on the network as trucks rely heavily on the road to move containers**. This underutilisation of rail is further supported by the 2014 Future Freight Scenarios Study which showed that the rail route capacity (trains/day) running at Oringi-Hastings was 8 with a maximum of 27, as well as Hastings-Napier at 8 with a maximum capacity of 85, (MoT 2014).

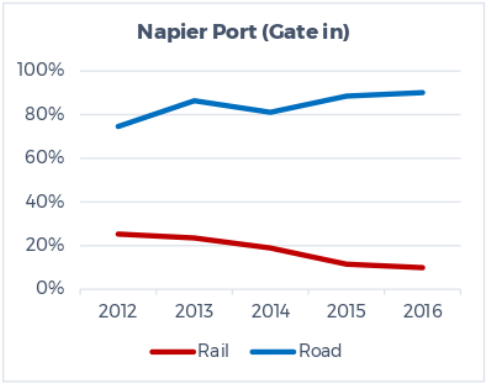


Figure 6 Decreasing rail movements with increasing road use (MoT 2019)

The impacts of heavy vehicles on the urban area, and the need to build a closer relationship between increases in the demand for freight and the provision for additional network capacity, is recognised by the District. A 12.4-hectare site in the industrial zone of Whakatu is earmarked for a future freight hub to provide a more effective access to the port for exports and imports via rail. With its proximity to the rail corridor and being in the centre of Hawke's Bay's future industrial heart, it is intended to connect a major export base directly to Napier Port and support the region's future growth (NP 2018).

The capability of the network to transport High Productivity Motor Vehicles (HPMVs) and to ensure safe and resilient access to areas of primary production is also an ongoing issue for the Hawke's Bay region (HBRC 2018). With 41 bridges in Hastings District currently understrength, there is a weak link in the ability to increase the weight and size of vehicles. Businesses are therefore limited to expand and shift their product to the Port for export in an efficient manner (GHD 2012).

Level of service and network deficiencies

Results from the deficiency analysis from the Heretaunga Plains Transportation Study (2012) highlight the key areas of concern at Level of Service (LOS) D or E within Hastings in 2009, 2026 and 2046[10]. See Figure 7 below.

[10] LOS D is defined as all drivers markedly restricted; LOS E is defined as near capacity, little or no freedom. The results of LOS also include peak commuter and freight.

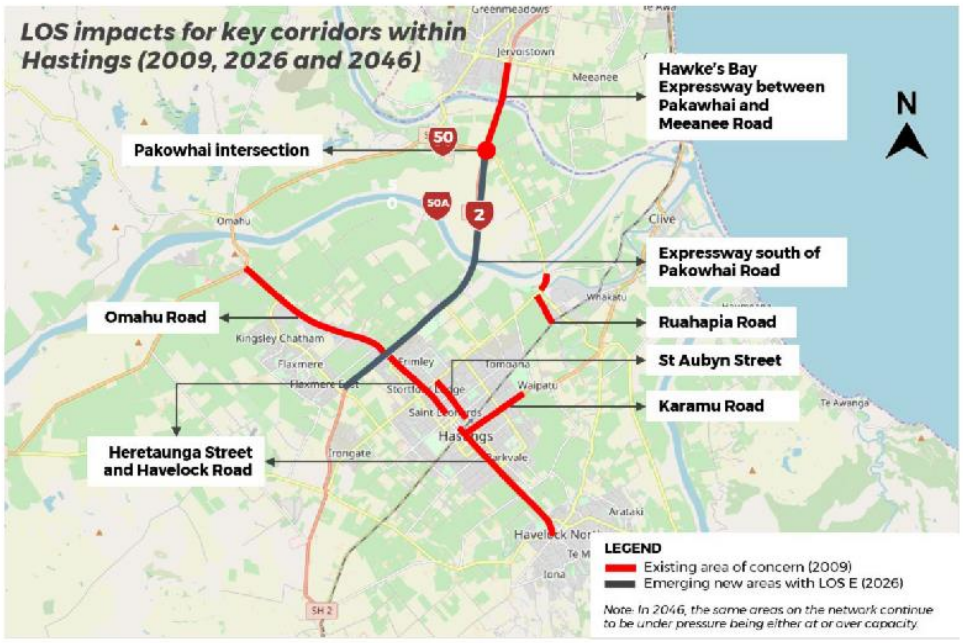
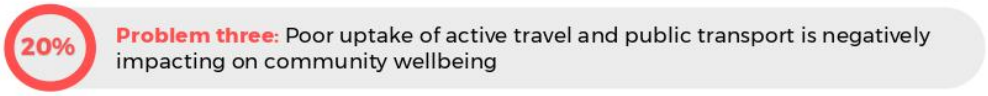


Figure 7 LOS impacts for key corridors within Hastings (2009, 2026, and 2046) (GHD 2012)

It is also noted that many of these issues would have been mitigated by recent construction projects, with the exception of several unaddressed corridors like Omahu Road, Karamu Road, Heretaunga Street and Havelock Road. Improvements since this study (e.g. roundabout improvements at Pakowhai, Hawke's Bay Expressway and Whakatu) may have decreased these forecasted impacts by delaying the onset of decreased LOS. However, it is likely that it will **continue to create localised peak congestion via pinch points in the network heading into 2046**. Some of the industrial areas identified in the HPUDS also align with the projected decrease in LOS (e.g. Omahu and Tomoana) which supports the need to address these areas.

In addition, Hastings District is facing a period of significantly higher road renewal requirements in the next ten to fifteen years, because of a concentrated programme of rural road sealing in the 1960s. This further creates challenges for the district to maintain appropriate levels of service into rural areas (HBRC 2018). As outlined above, **growth in all the following areas have led to increasing and competing demands on the Hastings networks from a variety of users:**

3.3.3 *Evidence for problem three*



Problem three refers to the ease of driving in HDC, and how the general perception of active travel and public transport, is reducing usage from those that have their own vehicles. This problem directly connects with the problem statement in the HDC Active Transport business

case, "Gaps in levels of service and the perception that walking and cycling is unsafe and inconvenient is limiting its uptake, resulting in high car dependency".

In 2010, Hastings and New Plymouth were selected by Waka Kotahi NZ Transport Agency (Waka Kotahi) for the Model Communities Programme: a focused investment in cycling infrastructure, education and encouragement. In 2011, iWay was developed with the programme focusing on developing key arterial routes to urban areas, complementary on-road cycle lanes on key collector routes, shared pathway projects, improved connectivity, and education programmes including training, campaigns and other safety programmes (HDC 2017). By mid-2012, the network was completed with more than 100km of new pathways including key routes to Flaxmere, Hastings, Havelock North and Clive (iWay 2020).

Despite significant investment in active modes in the region, the number of cars per household continues to rise, with the private vehicles being the primary means of travel to work within the Hastings District. Figure 8 indicates both a dominance of the car in Hastings and an opportunity for change given the projected increase in population in the coming decades.

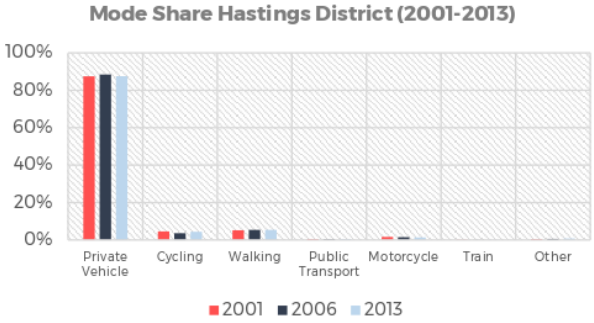


Figure 8 Mode share in Hastings District (2001-2013) (SNZ 2013a)

A higher reliance on the private car means a missed opportunity for people to be physically active during their commute. A lack of physical activity is one of the leading factors causing heart disease, stroke, cancers and premature deaths in New Zealand; risks increase for Māori, Pacific people and low-income communities (NZCofPHM 2014).

Furthermore, 'incidental exercise'[11] is strongly linked with improved health as "active transport can help improve physical as well as mental health, community life, social wellbeing and community interaction and safety" (NZCofPHM 2014). A perception survey revealed that walking and cycling for exercise and recreation is a source of physical, mental and spiritual well-being, and in some cases a way to relax and calm down from the stresses of everyday life (Muggeridge 2012). A University of North Carolina study also **found that people who cycle for 30 minutes five times per week, took less sick days than their peers, resulting in an increase in economic productivity** (WKNZTA 2016).

Ease and convenience of driving

As seen in Figure 9, barriers to further mode shift are still present as travelling alone by vehicle is the top choice because it saves time and is convenient (key findings from the Hawke's Bay District Health Board (HBDHB) Travel Survey Data is included in Appendix E – HBDHB Travel Survey Data Key Findings). Although cycling and using public transport are the top two ideal modes of travel, the actual top modes of travel are car-based: 1) driving alone; 2) carpooling; and 3) cycling.

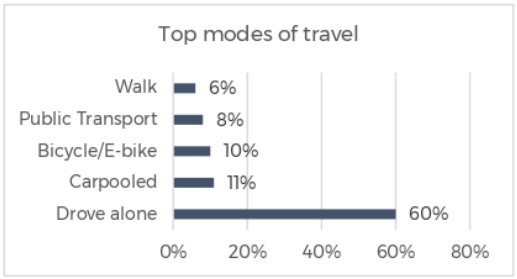


Figure 9 Top modes of travel (HBDHB 2018)

[11] Incidental activity is defined as physical activity undertaken to access public transport by the New Zealand College of Public Health Medicine (2014).

Automobile commutes exceeding 15 minutes are associated with reduced happiness and increased anxiety, while public transport commuting does not reduce personal well-being until journey times exceeds 30 minutes (Litman 2020). This applies to 56% of respondents from the HBDHB Travel Survey Data in 2018 who were found to spend 15 to 30 minutes commuting to work.

Poor perception of active travel and public transport

The poor perception of active travel and public transport as an attractive or effective mode of transport is contributing towards its limited uptake, resulting in high car dependency. **For pedestrians and cyclists, this is perception and low uptake of these types of modes is largely due to gaps in levels of service and perception that active travel is unsafe, as well as inconsistent facilities on arterial and collector routes particularly at intersections.** Connectivity barriers relating to the quality and comfort of the active travel network such as distance and time is also a factor (see Appendix F – Active Modes Strategic Case (Evidence) for evidence from the Active Modes Strategic Case).

In addition, while significant improvements have been made to Hawke's Bay's bus network over the last ten years, gaps in the service are still present. Suburban services in Hastings, which follow a traditional model of leaving from and returning to the CBD, have seen a consistent steady decline in patronage over the last four years (HBRC 2019). **While commuter services between cities have a reasonable frequency (20 minutes at peak times) and are showing some growth when fuel prices increase, the journey time is too long and more direct services are needed at peak times** (HBRC 2019).

Health impacts of decreased physical activity

The effects of the problem are clear when considering the following statistics:

Physical activity rates (36.9 percent) for Hawke's Bay adults during 2014-2017 are low compared to other regions such as Taranaki and Nelson Marlborough, as well as the national average (see Figure 10); **a decline of 8.4 percent from the 2011-2014 period**. This indicates that in Hawke's Bay a significant portion of the adults are not meeting the recommended physical activity guidelines of at least 30 minutes of exercise on at least five days in the past week[12]. This is well below the national average.

Similarly, **over a third (38.4 percent) of Hawke's Bay adults are classified as obese** compared with just under a third nationally (31.5 percent) across 2014-2017 (MoH 2018). **This is an increase of 4.1 percent from 2011-2014**.

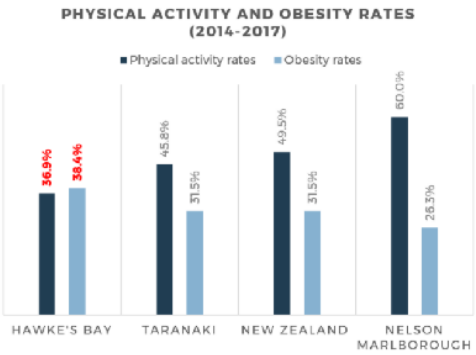


Figure 10 Physical activity and activity rates (2014-2017) (MoH 2018)

3.4 Investment Objectives

Investment objectives were developed by the project team and agreed upon with the stakeholders as part of the strategic case and were further developed during the PBC. They include the benefit, measure and target when fully developed.

[12] Hawke's Bay Regional Cycling Plan 2015: The recommended guidance is for at least 30 minutes of exercise on at least five days in the past week.

Benefit one: We will improve road safety by:

- reducing deaths and serious injuries by X%,
- reducing collective risk by X%, and
- reducing personal risk by X%.

Benefit two: We will improve customer experience by:

- reducing travel time variability for freight by X%,
- reducing the share of trucks on local roads by X%,
- reducing the share of crashes involving trucks by x%, and
- increasing network resilience by X%.

Benefit three: We will increase community wellbeing by:

- reducing the use of private vehicles for short trips by X%.

Benefit four: Increasing uptake of active travel and public transport by:

- increasing active travel and public transport trips to work by X%, and
- increasing active travel and public transport trips to school by X%.

3.4.1 Key Performance Indicators

It is important that the benefits of investment can be assessed and measured, to demonstrate that the proposal will deliver the expected outcomes.

These KPIs provide a measurable basis for monitoring how well the potential new programmes achieves the benefits over time.

It is also recommended that once a transportation emission baseline is conducted that a KPI be added to reduce transport emissions.

Benefit	Investment KPI / Benefit	Measure	Description
Improved road safety (50%)	Reduced collective risk Reduced personal risk Reduced number of DSI's **Safety: improve/ maintain (reduce deaths and serious injuries)**	**Crashes by severity** **Collective risk (crash density)** rating on key corridors **Personal risk (crash rate)** rating on key corridors **Road assessment rating – roads**	Reduction in number of deaths and serious injuries across the network Reduction in risk density of fatal and serious injury crashes per kilometre over the road network on key corridors Reduction in risk to the individual of fatal or serious injuries per million vehicle kilometres travelled on key corridors
Improved customer experience (30%)	**Travel time delay: decrease/maintain** **Access – freight: increase/maintain** **Resilience: improve/maintain**	**Travel time delay** (Reduced freight travel time variability) Reduced % of HCVs on minor roads Reduced % of crashes involving trucks **Spatial coverage – freight** (Increased	Reduction in freight travel time variability Reduction in % of HCV's on minor roads Reduction in percent of fatal and serious injury crashes across the network (particularly on SHs)

		network resilience / redundancy) Network redundancy	Increase in number of alternative routes to the Expressway (SH2) for freight in case of crashes and catastrophic events
Increased community wellbeing (20%) Greater uptake of active travel and public transport (10%)	Pollution and greenhouse gases: decrease/maintain Access – people: increase/ maintain	Mode shift from single occupancy private vehicle Access to key destinations School - Increased use of active travel (walking, cycling, scooting) and PT for trips to school Work - Increased active travel for trips to work	Increased active travel and PT trips to school using census data and generalised school travel plan data Increased active travel for trips to work
	Pollution and greenhouse gases: decrease/maintain Access – people: increase/ maintain	Mode shift from single occupancy private vehicle Access to key destinations Use of cars for journeys less than 5km	Reduced use of cars for journeys to work less than 5km

3.5 Key Findings

The following summarises the key findings from the review of the evidence. Based upon this evidence it is recommended to progress to a programme business case.

Hastings District faces several challenges around the network. Increasing demand paired with risky and unsafe behaviour by people who drive increases the risk of death and serious injury when crashes occur. This paired with people not driving to the conditions or at a safe speed has increased collective risk and personal risk.

An increasing number of private vehicles and freight movements across a dispersed network has led to a changing mix of road users and overlapping peak movements. Industrial land use intensification near residential growth areas has further increased potential conflict between road users. Underutilisation of rail for freight means more trucks making more trips through Hastings District to the expanding port in Napier, putting pressure on the road network. Commuters are experiencing peak hour congestion on key routes and freight travel time has been impacted.

As a Model Community, Hastings District has heavily invested in walking and cycling infrastructure to positively impact on the community, however the ease and convenience of driving has resulted in high car dependency. Active travel and public transport are not viewed as attractive or effective modes of transport which means they are underutilised. This translates to people not being as active as part of their daily life, increased inactivity and obesity rates and increased pressure on natural resources and carbon emissions from vehicles. Since driving is seen as the most viable option for transport, vulnerable populations also have reduced social and economic opportunities due to the need to own a vehicle.

PART B – DEVELOPING THE PROGRAMME

4 Summary of Approach

The development of the programme involved several stages and different processes. The summary of the programme development approach is provided in Figure 11.

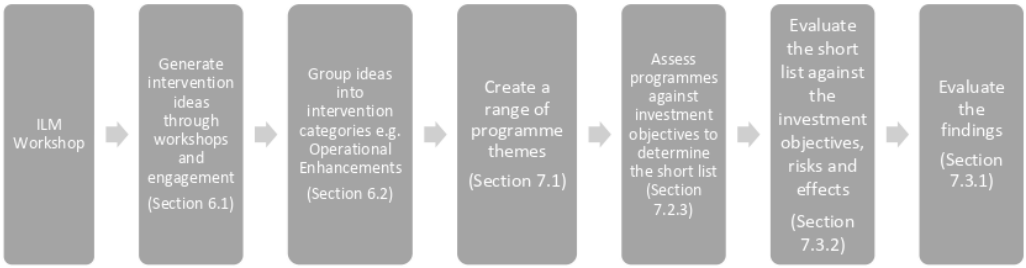


Figure 11 Network Programme Development Process

5 Ideas, Alternatives and Programme Options

5.1 Alternative and Option Generation

As part of the Investment Logic Mapping (ILM) workshop, stakeholders were asked to identify and agree on a series of problem statements and benefits relating to active modes within the Hastings District. A resulting ILM was developed (Appendix C – Investment logic map). During the workshop, stakeholders were invited to identify a range of options or ideas, with the intervention hierarchy in Figure 12 in mind, that could be considered to address the agreed problems to achieve the benefits sought for both the Network and Active Transport business cases which ran in parallel as part of the same process.

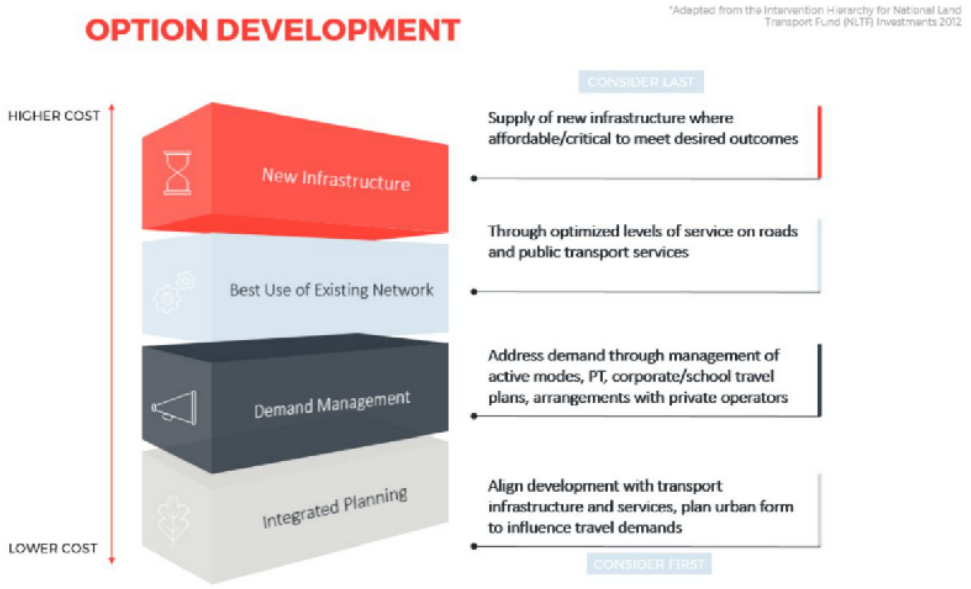


Figure 12 Option development (intervention hierarchy)

5.1.1 Idea Generation

As part of the ILM workshop, stakeholders were invited to identify a range of options or activities that could be considered as part of a "long-list" of potential options. The workshop sought to identify any interventions that may address the problems and achieve the benefits identified through the Investment Logic Map process.

Stakeholders were encouraged to provide "blue-sky" thinking to ensure all potential options were identified at an early stage. This approach ensured that the ideas were not limited to just those that achieved a high alignment to the benefits but may include types of intervention to target specific community outcomes, complementary measures, or services that may provide alternative options for active transport in the Hastings District.

The ideas from the two ILM workshops were combined to ensure alignment with the proper programme (network or active transport) and resulted in 52 new ideas. When merged with options and alternatives from the document review, there were a total of 320 ideas between both the network and active transport programmes. An additional 11 options were generated during an internal workshop held with HDC staff on 29th January 2020 based on previous work and audits.

Network options included bridges and carriageways improvements, safety improvements, network performance, connectivity, transport and land-use integration, public transport and travel demand management and mode shift options.

5.1.2 Alternatives

A Transport Planning alternative is a strategic way of responding to the problem and delivering the benefits. These could include ways that:

- Change demand – ways in which travel can be reduced;
- Modify productivity – optimising the way the transport system operates; and
- Infrastructure supply – developing new services or building things.

Following the idea generation process, the project team reviewed the options and developed additional alternatives that would deliver low cost and high value alternatives according to the intervention hierarchy in Figure 12. This ensured adequate optimisation, integrated planning and demand management alternatives were integrated into the programme development process.

5.1.3 Alternative and Option Feedback

In addition to this, feedback was also provided through:

- Engagement with local Iwi (see Section 5.1.3.1)
- A public open day held on the 12th March 2020
- Online feedback forum ("my voice my choice") which was open to the public between the 12th of March to the 19th of March 2020.

5.1.3.1 Iwi Engagement Feedback

HDC engaged with representatives from local iwi who serve as Pou Ahurea Matua to seek feedback on both the wider transport network and active transport in Hastings District. Feedback largely included reference to three locations to be of relevance to this project. These are:

- Waipatu Marae / Waipatu Community Plan
- Kahurānaki Marae Committee, Te Haukē
- Bridge Pā and Raukawa Valley

The following are the key issues that need to be addressed through this project:

- Speeds around marae, churches, schools and the communities
- Lack of walking and cycling connections into centres including Hastings, Havelock North and Flaxmere
- Safety concerns due to narrow shoulders in cycling areas (Cycling clubs and Iron Māori use the Raukawa Valley and surrounding area for training)
- Lack of public transport connectivity
- Roading issues at Kohupatiki
- Action from HDC and HBRC

Further details on Iwi Engagement Feedback can be found in Appendix J – Iwi Engagement.

5.1.3.2 Online Engagement Feedback

A public day was held on the 12th of March and an online survey was also posted on the same day to provide an opportunity for feedback for those who could not attend. The key findings from this engagement are outlined below.

Problem statement one: Poor user behaviour and transport system deficiencies increase the risk of serious injury in the advent of a crash.

The response from the public identified three key areas which the public felt would address these problems These are:

- Installing more roundabouts, particularly at the Longlands Road / Railway Road intersection, as there have been a lot of near-fatal accidents happen there.
- Highlighting the importance of driver education to highlight key areas of concern for cyclists (roundabouts, traffic lights, right turning bays/lanes).
- Improving pedestrian facilities particularly in Havelock North.

Problem statement two: Increased industry productivity and changes in land-use are resulting in the transport system not meeting the needs of users.

The majority of the responses identified freight management as being key to address a transport system not meeting the needs of users due to increased industry productivity and changes in land-use.

Problem statement three: Poor uptake of active travel and public transport is negatively impacting on community wellbeing.

Feedback showed, that, given the right facilities in the network and in the workplace, there is potential for increased uptake in active travel and public transport to positively contribute to community wellbeing. A number of measures were identified to address this poor uptake.

In addition to the above, making active travel easier by implementing good quality and affordable public showers with bike storage was raised.

It was noted that there is a need to address safety concerns for cyclists as cycling is currently associated with a lot of fear, especially with near-misses being extremely common.

Further details on the Public Day and Online Engagement Feedback can be found in Appendix K – Public Day and Online Engagement.

5.2 Alternative and Option Assessment

5.2.1 Option rationalisation process

Due to the significant number of ideas identified through the process, the long list of options was rationalised into the key alternative 'categories' shown within Table 3. Projects that were

identified as complete, planned, were underway or would be implemented through other workstreams or partners were removed. Additionally, a number of ideas were removed as it was identified that they would not address the problems or there is not currently enough demand to justify the implementation of some of the options (i.e., bus only lanes, prioritising public transport during peak times). In total 161 options were removed before splitting the network and active transport programmes out.

Table 3 HDC Network Programme Key Alternative Categories

Network Programme Options (49)	
Infrastructure (21)	Level of Service (LoS) Improvements (10)
	Closure (1)
	Safety (7)
	Implementation of Study / Plan Outcomes (3)
Productivity, Demand, and Soft Measures (28)	Advocacy (6)
	Education (1)
	Enforcement (1)
	Operational Enhancements (7)
	Policy (6)
	Public Transport (2)
	Transportation / Land-use Integration (5)

6 Programme Option Development and Assessment

6.1 Programme Development

Options, ideas and alternatives identified by stakeholders were developed a potential long list of seven (7) programmes. Table 2 provides an overview of the programme options that were developed and how their alignment to the level of measures and/or focus for that programme. For example, one ✓ = low use of focussed measures in programme, ✓✓ = secondary focus or moderate use of measures in programme and ✓✓✓ = highest priority/emphasis of measures in programme).

Table 4 HDC Network Intervention Themes

Programme Options		Intervention Themes					
		Soft Measures	Infrastructure Investment Measures	Safety Measures	Growth Area Measures	Freight Movement Measures	Active Travel Measures
1	Soft Measures Focus	✓✓✓	✓	✓✓	✓✓	✓✓	✓✓✓
2	Infrastructure Investment Focus	✓	✓✓✓	✓✓	✓✓	✓✓✓	✓✓
3	Growth Area Focus	✓✓	✓✓	✓	✓✓✓	✓✓✓	✓✓
4	Safety Focus	✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓
5	Land-Use and Industry Focus	✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓
6	Community Wellbeing Focus	✓✓	✓✓	✓✓	✓	✓	✓✓✓
7	Balanced Programme	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓

Descriptions of the programmes can be found in Appendix L – Programme Descriptions.

6.2 Programme Assessment

A two-step approach has been used in the programme option evaluation:

- An initial assessment of the long list of programmes consisted of assessing each programme against the investment objectives to ensure any programme that moved forward to the short list was aligned with the desired outcomes.; and
- A full assessment using a Multi Criteria Analysis (MCA) including alignment to investment objectives, risks and effects are undertaken on the remaining short list of programmes.

6.2.1 Multi-Criteria (MCA) Categories

The criteria used to determine the evaluation and scoring system were developed by the project team alongside our technical experts and HDC and should also be agreed upon by the stakeholders. These categories are outlined in Table 3. More detailed descriptions of the risk and effect criteria can be found in Appendix N – Risks and Effects Descriptions.

The criteria consist of 3 main parts:

- Investment Objectives - The investment objectives are based on problems, benefits, measures and KPIs previously identified in the strategic case.
- Risks - are related to the implementability, complexity and overall risk of the options within the programme; and

- Effects - are related to the impact of the options within the programme to the various criteria.

The specific criteria are shown in Table 5.

Table 5 MCA Criteria Categories

Investment Objectives	Risks	Effects
• **Improve road safety** - Improve road safety by reducing deaths and serious injuries by x%, reducing collective risk by x%, reducing personal risk by x%. • **Improve customer experience** - Improve customer experience by reducing travel time variability for freight by x%, reducing the share of trucks on local roads by x%, reducing the share of crashes involving trucks by x%, increasing network resilience by x%. • **Improve community wellbeing** - Improve community wellbeing by increasing active travel and public transport trips to work by x%, to school by x% and reducing the use of private vehicles for short trips by x%.	• Deliverability / Feasibility • Affordability • Stakeholder / Customers	• Social • Cultural • Economic • Environment • System Integration

6.2.2 MCA Scoring

Programmes were scored against a "Do minimum" programme which is further explained in Appendix M – Programme Descriptions.

Both the investment objectives and effects use a 7-point assessment (plus fatal flaws) criteria including positive and negative scores. Options that have better outcomes than the "Do minimum" programme were scored positively, and options that have an adverse outcome will have a negative score. A score of zero is considered to represent a negligible difference from the "Do minimum" programme.

The risks are assessed using a 5-point criteria with only negative options, as positive scores are not considered appropriate for these categories.

Scoring descriptions are in Table 6.

Investment Objectives	
Score	Description
3	Significant positive alignment
2	Moderate positive alignment
1	Minor positive alignment
0	Neutral alignment
-1	Minor adverse alignment
-2	Moderate adverse alignment
-3	Significant adverse alignment
-10	Fatal Flaw

Risks	
Score	Description
0	Insignificant risk or complexities
-1	Minor risk or complexities
-2	Moderate risk or complexities but achievable
-3	Significant risk or highly complex
-10	Fatal Flaw

Effects	
Score	Description
3	Significant positive effect
2	Moderate positive effect
1	Minor positive effect
0	Negligible effect
-1	Minor negative effect
-2	Moderate negative effect
-3	Significant or appalling negative effect
-10	Fatal Flaw

Table 6 MCA Scoring

6.2.3 *Programme Alignment with Investment Objectives*

The scoring of the programmes was assessed against the "Do minimum" programme. The criteria for assessment of alignment with the investment objectives is outlined in Table 5. Justification for the scoring can be found in Appendix O – Programme Alignment with Investment Objectives Justification.

Scoring for this first assessment uses the following weightings as part of the stakeholder agreed benefits:

- Improve road safety 50%
- Improve customer experience 30%
- Improve community wellbeing 20%

Using these weighting, four programmes demonstrate the best alignment with the investment objectives resulting in the highest positive weighted scores. A summary of those findings is provided in Table 7 and Table 8.

Table 7 HDC Network Programme Alignment with Investment Objectives

Programme Option		Soft Measures Focused Programme	Infrastructure Investment Focused Programme	Growth Area Focused Programme	Safety Focused Programme	Land-Use and Industry Focused Programme	Community Wellbeing Focused Programme	Balanced Programme
Investment Objective 1	Improve road safety	0	2	2	3	1	2	2
Investment Objective 2	Improve customer experience	0	1	2	1	2	2	2
Investment Objective 3	Improve community wellbeing	2	1	2	1	2	3	2
Weighted Scoring		0.40	1.50	2.00	2.00	1.50	2.20	2.00
Rank		7	5	2	2	5	1	2

Table 8 Key Long List Evaluation Findings

Programme Name	Key Evaluation findings	Proceed/Discard
Soft Measures Focus	Worst ranked programme for alignment to the investment objectives Lack of infrastructure projects misaligned the programme in achieving outcomes related to safety and customer experience Risks: May not achieve a change in perception, travel behaviour may change, however, safety concerns would not be addressed.	Discard
Infrastructure Investment Focus	Low scoring programme for alignment to the investment objectives Moderate alignment with improving road safety, however only slight alignment with improving customer experience and community wellbeing Risks: May improve safety, however, travel behaviours may not change. Cost prohibitive.	Discard
Growth Area Focus	Moderate alignment with all investment objectives resulted in moderate scores and overall ranking	Proceed to short list
Safety Focus	Significant alignment with road safety investment objective and minor positive scores in the remaining objectives resulted in a moderate overall ranking	Proceed to short list
Land-use and Industry Focus	Minor alignment with the safety investment objective resulted in a lower overall score due to the 50% weighting Risks: Geographically focused on areas where land-use and industry face challenges	Discard
Community Wellbeing Focus	Moderate alignment with road safety and improving customer experience and significant alignment with community wellbeing resulted in a high overall ranking Highest scoring programme	Proceed to short list
Balanced Programme	Moderate alignment with improving customer experience and community wellbeing and significant alignment with safety resulted in a high overall ranking	Process to short list

The four programmes which are identified as proceeding to the shortlist, will be further evaluated for their alignment with the full criteria which includes the investment objectives, risks and effects.

6.3 Short List Programme Evaluation

6.3.1 Short List Programme Profiles

A full profile of the four programmes on the short list showing benefits, application, estimate costs and level of interventions are provided in Figure 14, Figure 15, Figure 16 and Figure 17.

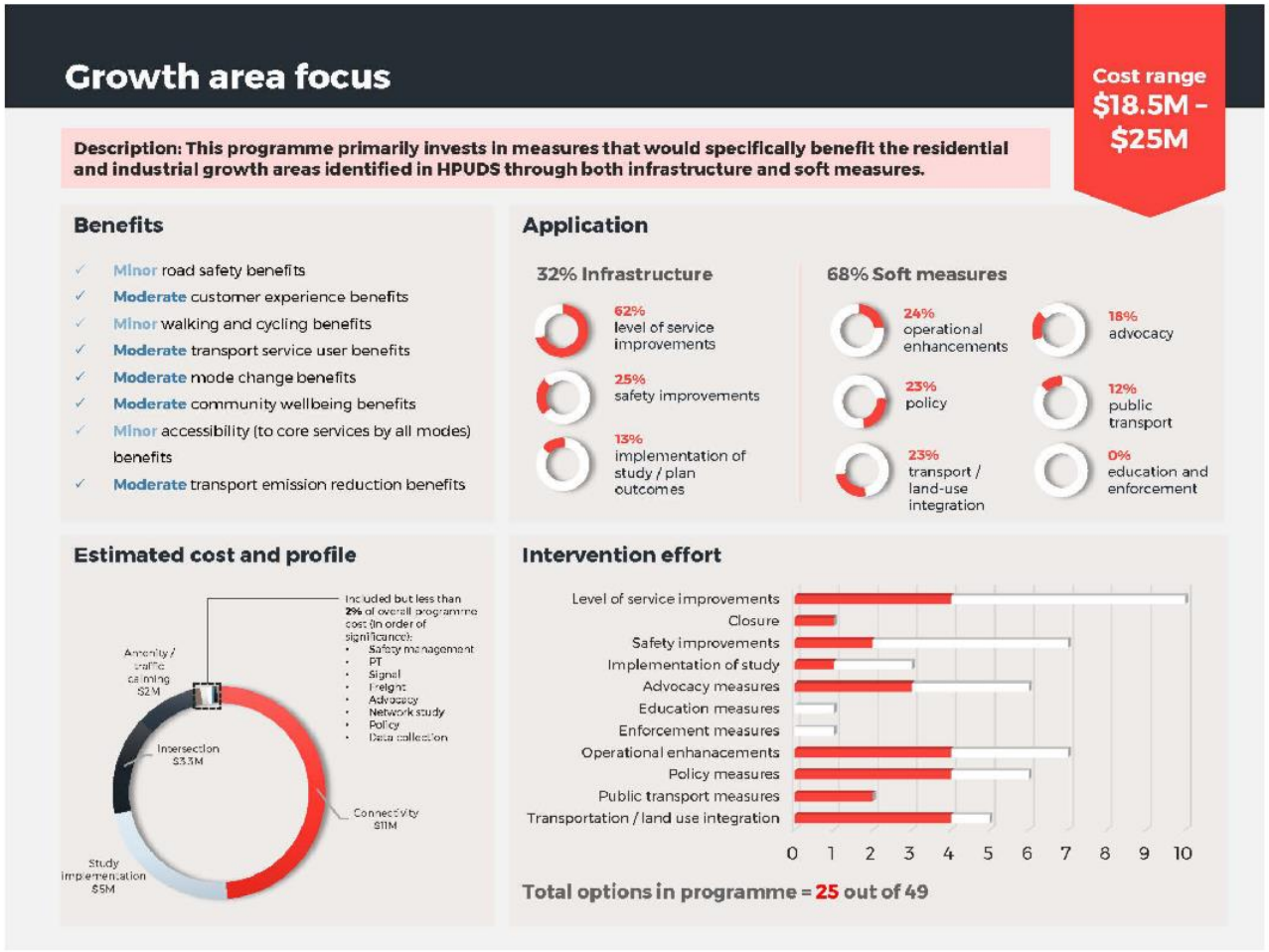


Figure 13 Growth area focus programme profile

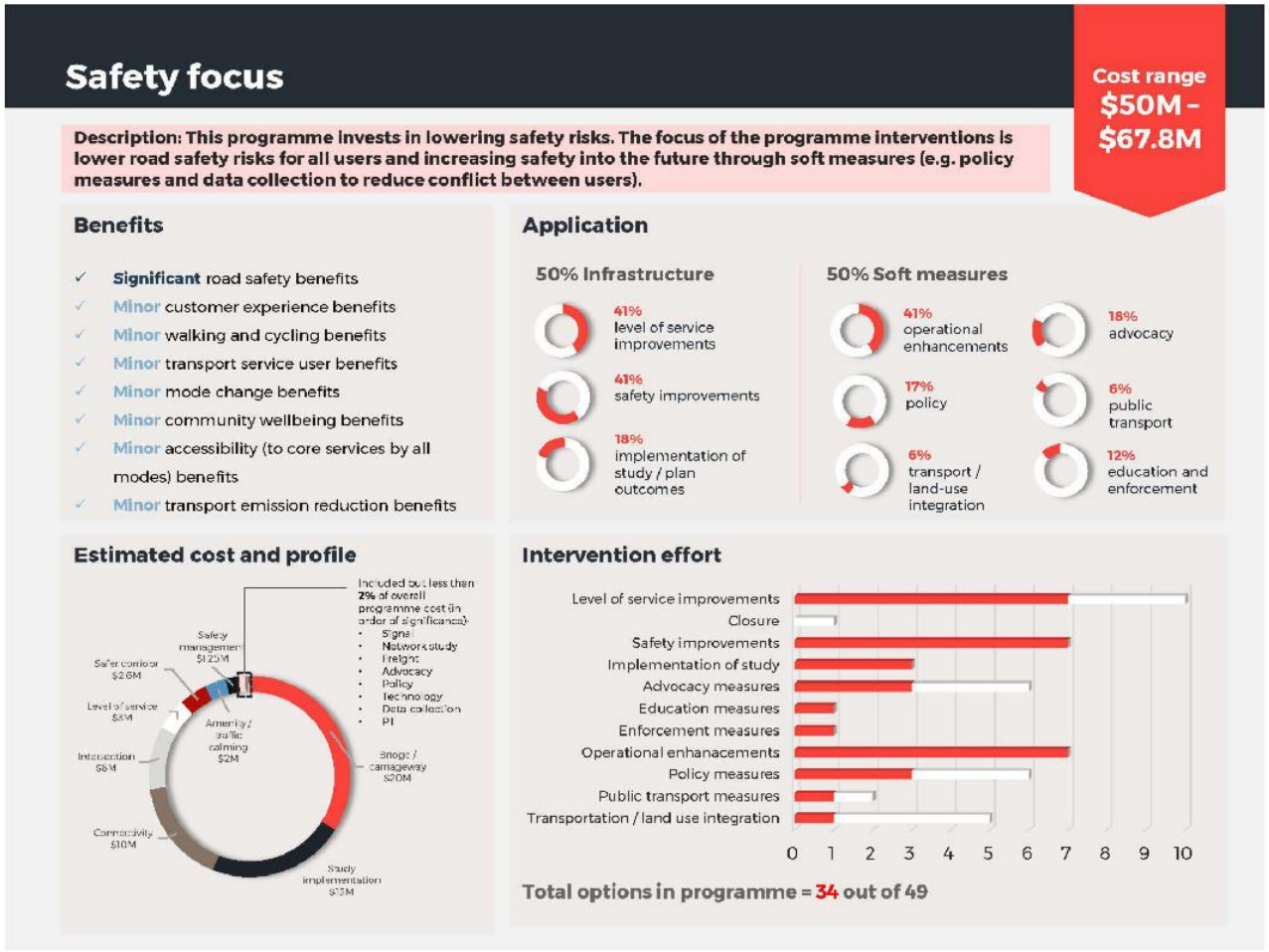


Figure 14 Safety focus programme profile

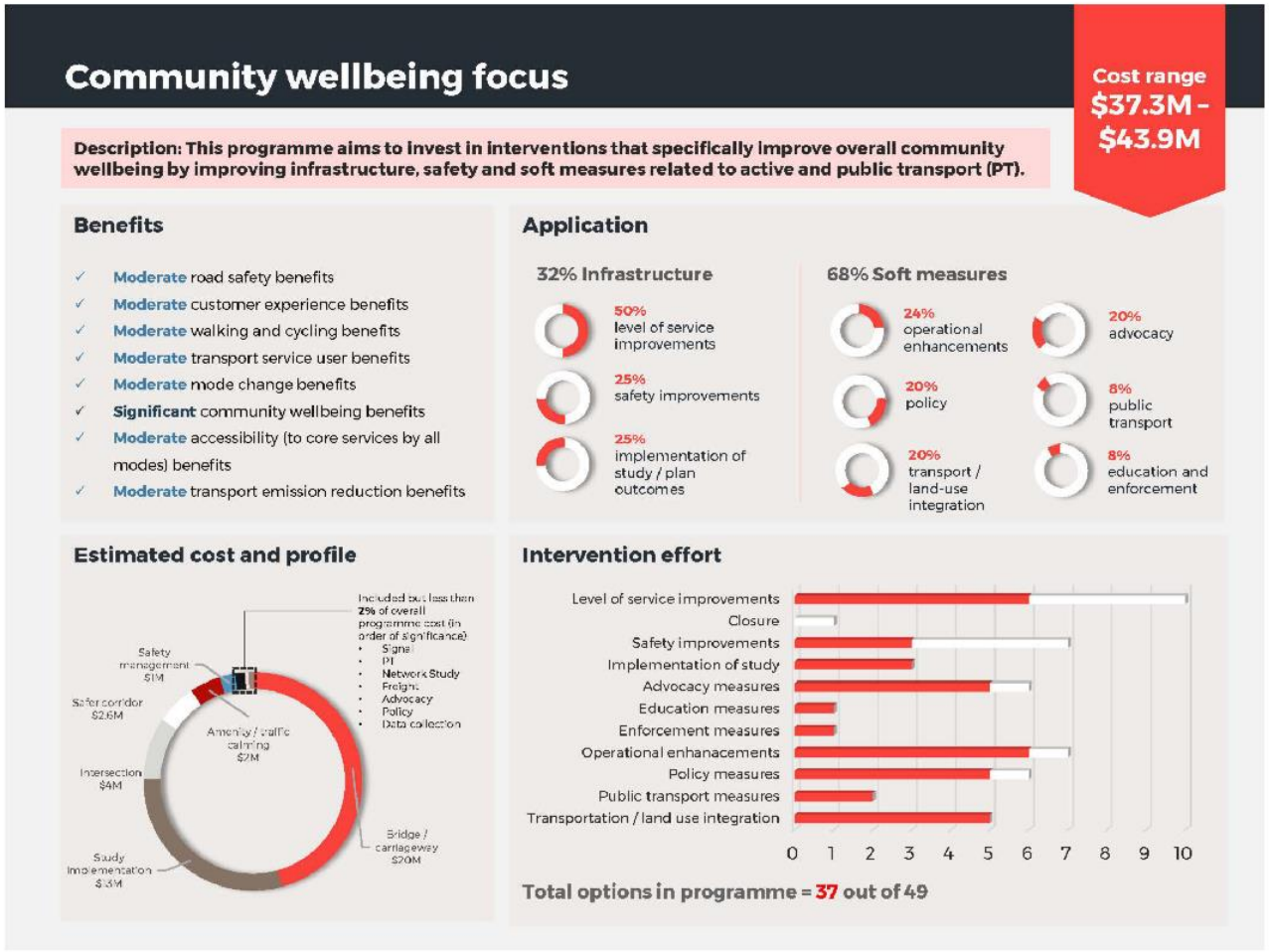


Figure 15 Community wellbeing focus programme profile

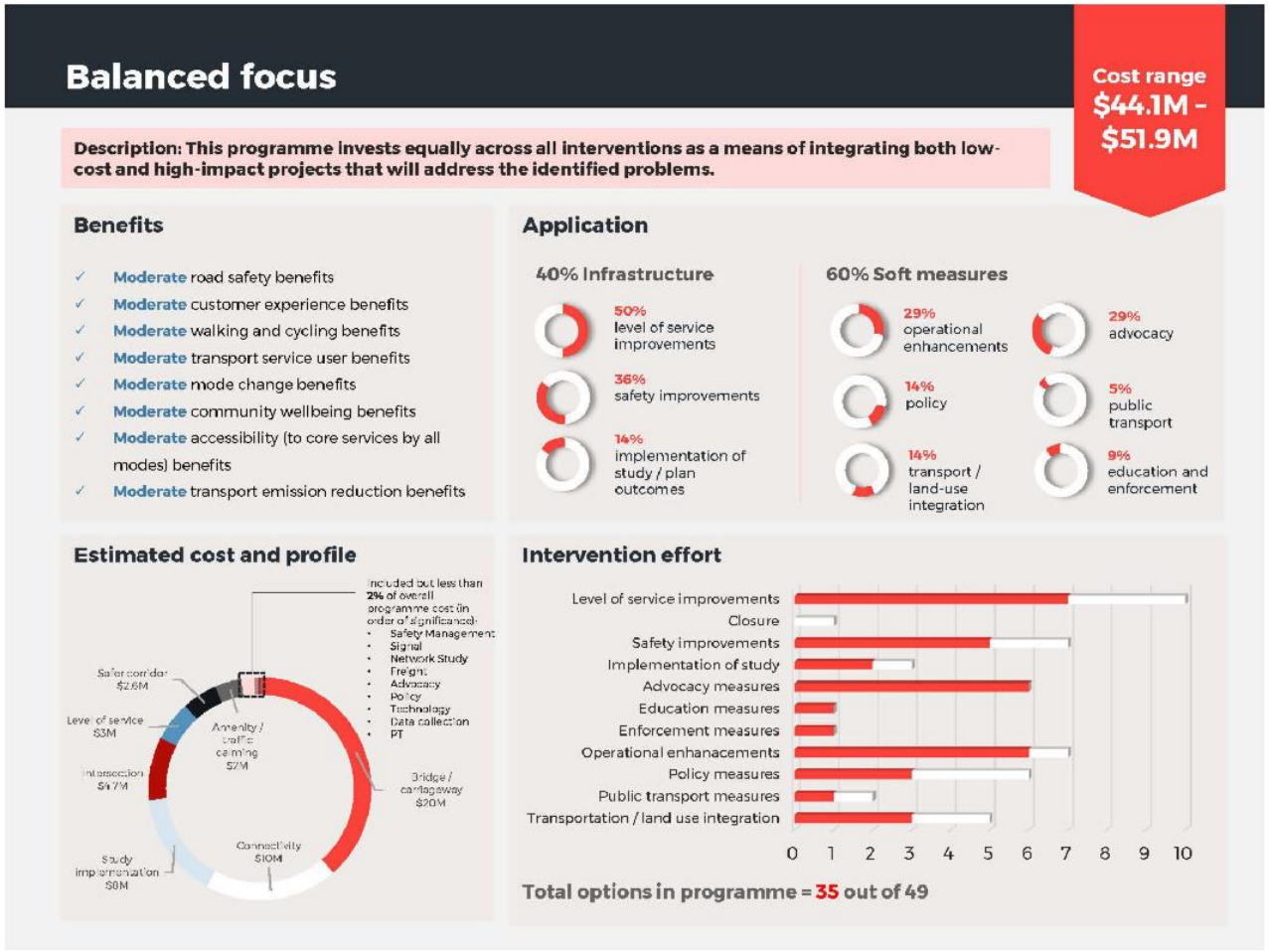


Figure 16 Balanced focus programme profile

6.3.2 Short List Evaluation

The short list evaluation framework used an MCA approach, using several sub-criteria under the following main criteria:

- The risk / implementability of the programme; and
- The effects caused by the programme

Descriptions of the risks and effects can be found in Appendix M – Risks and Effects Descriptions.

Using the MCA scoring from section 6.2.2, the outcome of the short list programme evaluation is provided in Table 9.

Table 9 Short List Programme Evaluation

Programme Option		Growth Area Focus	Safety Focus	Community Wellbeing Focus	Balanced Programme
Investment Objectives	Improve road safety	2	3	2	2
	Improve customer experience	2	1	2	2
	Improve community wellbeing	2	1	3	2
Risks / Implementability	Feasibility	0	-1	0	0
	Affordability	0	-2	-1	-2
	Stakeholders / Customers	0	-1	-1	0
Effects	Social	1	1	2	2
	Cultural	-2	1	2	1
	Economic	1	1	2	2
	Environment	1	0	2	1
	System Integration	2	0	3	3

6.3.3 Short List Evaluation Findings

Findings that were either significantly positive or negative are noted below:

Investment Objectives

- The Safety programme scored the highest regarding road safety due to significant investment in safety infrastructure projects and other related safety improvements.
- The Community Wellbeing programme was ranked as significantly positive for the community wellbeing investment objective as it will deliver significant mental, physical and environmental wellbeing benefits. It also includes options that are focused on improving access to services and increasing mode choice.

Risks / Implementability

- Both the Safety and Balanced programmes have moderate adverse affordability risk compared to the other programmes as they cost ranges are the highest of the programmes.

Effects

- The Growth Area Focused programme had the lowest score regarding cultural effects due to the impacts of growth. Iwi will need an understanding of the growth drivers and how transport can support or restrict activities.
- Both the Community Wellbeing and Balanced programmes scored high regarding system integration due to the inclusion of all the transportation / land-use integration options. These programmes would deliver significant mutual benefits related to integrated transport efficiencies.

6.3.4 Scoring and Ranking - Sensitivity tests

The base MCA scoring has been applied with equal weighting applied to each of the three criteria groups:

- Investment Benefits (I/O) 33%
- Risks / Complexity (R) 33%
- Effects (E) 33%

Descriptions of the sensitivity tests are in Appendix N – Sensitivity Test Descriptions.

The outcome of those tests is provided in Table 10.

Table 10 Sensitivity Test Ranking from MCA comparison

HDC Network PBC	Growth Area Focus	Safety Focus	Community Wellbeing Focus	Balanced Programme
Raw Scores	3	4	1	2
S1 - with 33/33/33	3	4	1	2
S2 - I/O-50%/R - 25%/E-25%	3	4	1	2
S3 - I/O-70%/R - 15%/E-15%	3	4	1	2
S4 - I/O-50%/R - 10%/E-40%	3	4	1	2
S5 - I/O-50%/R - 40%/E-10%	1	4	2	3

The sensitivity test outcomes indicate that the Community Wellbeing programme is the highest scoring programme across most of the tests. In summary:

- The Community Wellbeing programme scored quite high regarding alignment with the investment objectives and effects. This indicates this programme will deliver the most benefit with the least risk and effects.
- The Community Wellbeing Focused programme scored highest on the raw scores and when the effects are weighted higher. The Growth Area Focus programme scored higher when the risks are weighted the highest due to its scoring neutral across all risks, which ranked it the highest under the risk criteria.
- Since the Balanced programme and the Community Wellbeing Focused programme both scored quite high, this indicates there may need to be further assessment of these two programmes as the best aspects of each programme could be combined to deliver the most benefits, least effect and further assessment could be done to reduce risk which would result in a programme that scores high across the board.
- Although the Growth Area Focused and Safety Focused programmes ranked lower, there is still a need to ensure the philosophy behind these programmes carries through to the preferred programme. Transport infrastructure needs to anticipate and respond to growth and the network needs to continue to prioritise decreasing collective and personal safety risks and deaths and serious injuries (DSI's).

6.3.5 Further comparison of the Community Wellbeing and Balanced Programmes

Further comparison of the two programmes identified the following differences:

- The Community Wellbeing programme has more productivity, demand, and soft measures with a stronger focus on advocacy and public transport.
- Overall, the programmes are quite similar, however, the Community Wellbeing programme focuses more on increasing overall community wellbeing by improving infrastructure, safety and productivity, demand, and soft measures related to active transport and public transport (PT) scored slightly higher than the Balanced programme.
- The Community Wellbeing programme is lower cost which means it is also lacking many of the infrastructure improvements which may be necessary to better address road safety, customer experience and mode choice. This may be an opportunity to identify infrastructure options in the Balanced programme which could be added into the Community Wellbeing programme.

The project team and stakeholders agreed with this evaluation and recommended further discussion of creating a blended programme including primarily the Community Wellbeing programme and the Balanced programme.

6.4 Fine tuning the short list

6.4.1 North Eastern Connector (NEC)

A new north-eastern connector route on the north eastern side of Hastings City has been investigated and planned for many years, going back to the Heretaunga Plains Transport Study in 1980. This was in response to the recognition that an effective road network in the area required secondary links connecting major traffic generating areas to the Napier-Hastings Expressway. This connection could also provide efficient heavy commercial vehicle access to Tomoana Industrial area to allow efficient distribution of traffic to and from the north eastern suburbs of Hastings to the Expressway via Evenden Road.

A North Eastern Area Wide Study was conducted in 2014 which identified intersection enhancements, pedestrian and cycling improvements and links, traffic signal links, potential road closure and new road link with the connector. An urban enhancement area was also identified.

As the connector is a significant project with additional works related to it that would completely change the way the network functions, further investigation will be required. HDC has committed to ensuring a business case process is undertaken in the future.

The North East Connector was not included in the Community Wellbeing programme as it did not contribute to the intent of the programme or the benefits. The project team determined it will also not be included in the recommended programme for the same reasons as well as further investigation being required. A few options were removed from the programme as they were identified as being contingent upon the NEC proceeding and can be found in the following section.

7 Recommended Programme

7.1 Recommended Programme Elements

Following engagement with stakeholders and fine tuning of the short list, we are now considering some options that reflected a better breakdown of infrastructure and soft measures that would address the problems and deliver the most benefits. These specific projects are listed below, but are not final and still need to be considered by the stakeholder group in the next stages.

The high-level recommended options list is in Table 11. Further details related to implementation of the programme are in section 7.3.3

Table 11 Network high-level recommended option list

Type	Theme	Options	Description
Infrastructure (13)	Level of Service Improvements (5)	Intersection	St Aubyn / Windsor Ave
			Pakowhai Rd / St Aubyn St
			Implement appropriate software to link traffic signals throughout district
		Area-wide pavement treatments	Suburban areas
		Carriageway widening	Middle Road
	Safety (5)	Intersection	Hastings St N / St. Aubyn St E
			Future locations TBD
		Corridors	Te Mata Rd
			Pakowhai Rd
			Waimarama Rd
	Implementation of Study Outcomes (3)	Karamu Corridor Study Outcomes	
		Napier-Taihape Road Corridor Management Plan Outcomes	
		St Aubyn Corridor Management Plan Outcomes	

Productivity, Demand, and Soft Measures (24)	Advocacy (5)	Advocate for additional PT service information through an app or real time data
		Advocate for longer operating hours of PT; Increased connectivity of PT network; Advocate for PT options in rural communities
		Advocate for PT to/from the Hawke's Bay Airport
		Encourage reduced journey times between key destinations using PT
		Support an update of HPUDS and HPTS
	Education (1)	Support improving/increasing road safety education
	Enforcement (1)	Support and advocate for increased visible road policing
	Operational Enhancements (7)	Increase collaboration between Hastings and Napier councils
		Karamu Corridor Study
		Napier-Taihape Road Corridor Management Plan
		St Aubyn Corridor Management Plan
		Data collection provision to reduce conflicts between users
		Implement a Network Operating Plan
		Develop an Intelligent Transport Systems (ITS) action plan
	Policy (4)	Complete Streets plan/policy
		Key destination siting policy
		Multi-modal hub policy
		Policy to densify development around PT hubs/corridors
	Public Transport (2)	Establish a PT stop LOS to ensure consistency
		Improve PT amenities
	Transportation / Land-use Integration (4)	Workplace travel plans for new developments
		Transportation / Land-use coordination around growth areas
		Planning to further support multi-modal design
		Policy scan and updates to increase supportive land-use patterns

7.1.1 New options included in the Recommended Programme

As part of the option development process outlined in Section 5, new ideas, alternatives and options were generated, many of which were included in the Recommended Programme as outlined in Table 12. Options identified in the ILM workshops and developed by the project team as part of the SC and PBC process are identified as new. This is very much in line with the delivery philosophy outlined in section 7.3.1.

Table 12 New options included in Recommended Programme

Programme Options	Count	Percent of options	Cost	Percent of cost
Infrastructure	4	31%	$15.5M	34%
Productivity, Demand, and Soft Measures	22	92%	$300k	48%
Total	26	70%	$15.8M	34%

7.2 Programme Overview

The recommended programme for the Hastings District Council (HDC) Network includes two elements:

- Development of the Hastings District transportation network
- A package of soft measures to complement network development.

The recommended programme for network development has been established on the basis of findings from the shortlist assessment. The following sections summarise the recommended programme.

It should be noted that while active transport and public transport are included in this programme, a more robust active transport programme which includes infrastructure and soft measures that are targeted at increasing demand and use of the active transport network and also addressing travel behaviours leading to high car dependency in the district can be found in the HDC Active Transport Programme Business Case (PBC).

7.3 Programme Scope

The preferred programme contains a combination of investment in infrastructure and non-infrastructure measures. The total cost of the Programme is $39.4-53.4M, over approximately 10 years, an average expenditure per year of $4.6M. This is the recommended level of investment which is similar to the rate of investment as of 2019/20.

A full profile of the recommended programme showing benefits, application, estimate costs and level of interventions is illustrated in Figure 17.

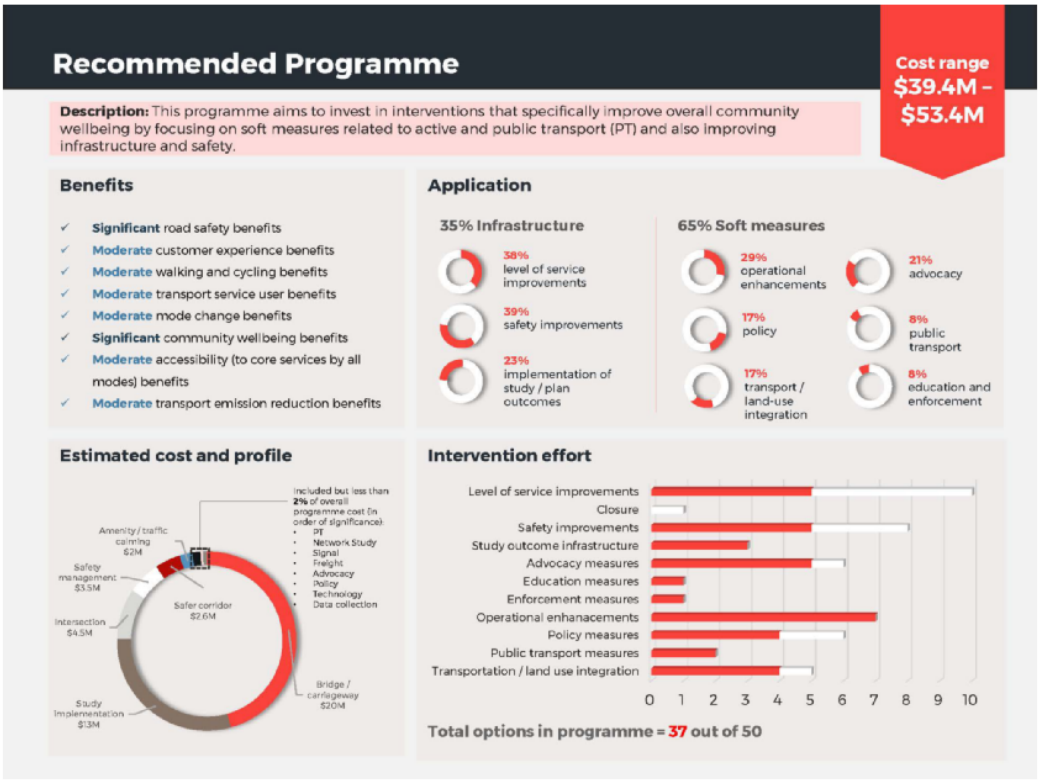


Figure 17 Recommended HDC Network Programme

7.3.1 Delivery Philosophy

Throughout the duration of the Strategic Case and PBC processes, significant feedback was received from stakeholders. A philosophy was discussed and agreed upon with Waka Kotahi as part of the HDC Active Transport PBC which is also relevant to the Network PBC due to some overlap between Programmes. HDC will ensure the principles outlined below will be followed as both Programmes progress:

- **HDC will build on what has been done well.** Some of the existing active transport infrastructure and most of the education programmes are very popular and successful. HDC will expand and continue to improve these.
- **HDC will change the things that are not working.** Travel behaviour change requires a comprehensive approach including significant soft measures including appropriate resources, media/comms, events, travel demand management and parking demand management. Very few stick approaches have been implemented to date and HDC requires a different approach in order to achieve mode shift.
- **Let's do the hard work first.** Projects that will improve safety or increase separation for on-street cycling facilities, including addressing difficult segments and intersections, need to be prioritised.
- Equitable approach to active transport infrastructure improvements. (Addressed in the HDC Active Transport PBC)
- **The ease and convenience of driving and parking needs to be addressed.** Significant soft measures have been included in the programme to ensure an integrated transportation planning approach to address high car dependency.
- The right active transport infrastructure for the right target audience. (Addressed in the HDC Active Transport PBC)

- **HDC will maximise opportunities for improvement.** HDC will embed active transport into Council processes so that opportunities for improving walking and cycling are made alongside other Council projects. HDC will also use Active Transport projects to improve streetscape appeal, amenity and safety for all users.

7.3.2 Recommended approach to the development of the Hastings District transport network

Using the philosophy outlined above, the following outline the recommended approach:

Focus on integrated planning and demand management measures to address travel behaviour

Focusing the design of the streetscapes on people by using a multi-disciplinary approach including policy, planning, urban design and transportation offer a range of benefits including increased safety, an improved balance between the built environment and natural environment, improved mental and physical health and economic growth. These measures will complement the recommended demand management initiatives further outlined in the HDC Active Transport PBC focused on encouraging use of active transport and public transport, travel behaviour change and mode shift.

Targeted infrastructure focused on safety and traffic calming measures at key intersections and corridors

As demonstrated in section 3.2, increasing demands on the network paired with residential and industrial growth have created a mix of vehicles resulting in significant crashes involving trucks and more trucks carrying freight that was previously moving through the district by rail. A review of truck routes, enforcement and resilience of the network paired with supporting a shift toward the use of rail for freight movement will increase safety for all users. Improving safety at key intersections and corridors as well as implementing comprehensive traffic calming measures will reduce collective and personal risk and DSI's.

7.3.3 Recommended implementation plan

The following section outlines the "quick wins" recommended implementation phasing for the HDC Network programme. The subsequent phases including interdependencies are in Appendix P – Network Implementation Plan and a detailed recommended implementation plan can be found in Appendix Q – Network Detailed Implementation Plan.

7.3.3.1 Quick wins, 2021-22

A number of projects were identified as key drivers for future decision making and success. These projects are implementable in the first year of the programme and have a few interdependencies with other projects.

Table 13 'Quick wins' focus for network programme, 2021-22

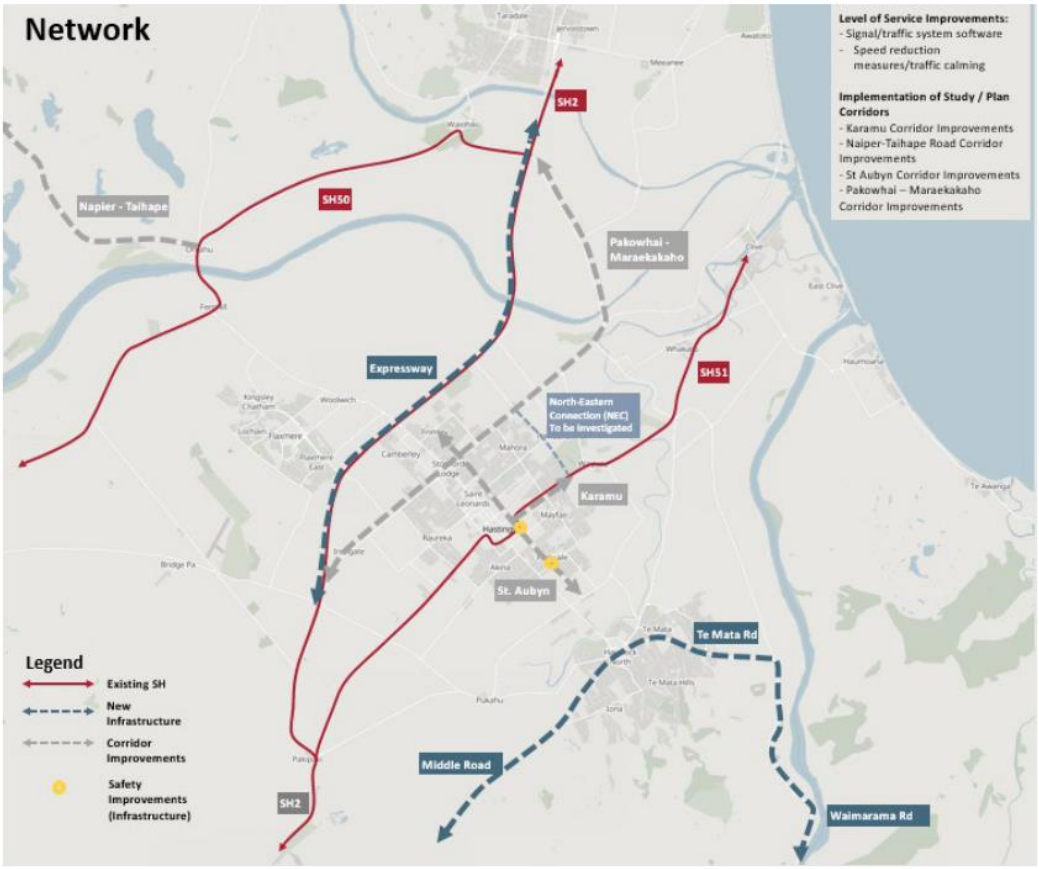
Type	Indicative Cost	Description	Interdependencies
Signal - Level of Service Improvements	**$150k**	Implement appropriate software to link traffic systems throughout the district	All existing and future intersections that will be signalised
Advocacy and Support	**$50k**	Support an update of HPUDS and HPTS and study model outputs	All network infrastructure projects Policy measures
Operational Enhancements	**No cost** (internal)	Increase collaboration and create a cohesive strategy between Hastings and Napier (NCC) councils	All network projects, particularly those near NCC boundary

Network Study	**$50k**	Karamu Corridor Study to consider capacity improvements such as clearways, lane management systems and travel demand	All projects near Karamu Rd between Grove Rd and St Aubyn, including $5M in implementation of study outcomes
Network Study	**$70k**	Napier-Taihape Road Corridor Management Plan	Currently underway and will inform $3M in implementation of study outcomes
Data Collection (ongoing)	**$5k** $20k total	Data collection provision to reduce conflicts with private vehicles, schools and workplaces - household O-D surveys, understanding tourism routes, industrial area movements and forestry/harvesting movements and load capacity mapping	All network, PT and active transport projects Policy measures
Network Study	**$80k**	Implement a Network Operating Plan	All network, PT and active transport projects Policy measures
Transportation / Land-use Integration	**No cost** (internal)	Increase coordination with HDC Planning team to ensure a proactive response to transport improvements which aligns with growth areas	All network, PT and active transport projects near growth areas and policy measures
Transportation / Land-use Integration	**No cost** (internal)	Perform a policy scan and update HDC policies and processes to reduce transport and land-use patterns that result in high car dependency.	All network, PT and active transport projects Policy measures

Total indicative cost of 'quick wins' - $405,000

Figure 18 illustrates the general location of network development for the recommended programme.

Figure 18 Recommended network infrastructure projects



7.4 Results Alignment

The results alignment is an assessment of investment proposals against the outcomes sought from the GPS. The question that needs to be asked when assessing the results alignment of the programme are: What is the significance of the case for change to the desired results in the GPS (is it in the public interest)?

This programme generally sits within several activity classes and seeks to contribute to planned land transport investment over a wide area. The activities within this programme would have to go through a process of prioritisation and funding approval, and requiring a BCR at an activity-level (i.e. projects). The programme also includes low cost and low risk activities not requiring BCR assessment, and some components which would be "Road Policing" which is assessed at a programme level.

Alignment for each high-level option type is shown below with alignment scored, one ✓ = low alignment of the option type, ✓✓ = moderate alignment of the option type, ✓✓✓ = high alignment of the option type and ✓✓✓✓ = very high alignment of the option type.

This PBC spans multiple activity classes under the framework and alignment for them is shown below:

Table 14 HDC Network Programme Alignment

2018-21 NLTP Activity Class and Strategic Priority	Investment benefit	Draft GPS Priority (2021/22-2030/31)	Alignment
Regional, local road and state highway improvements Low cost, low risk programmes	Safety: improve/ maintain (reduce deaths and serious injuries)	Developing a transport system where no-one is killed or seriously injured	✓✓✓ to ✓✓✓✓
Regional, local road and state highway improvements Low cost, low risk programmes	Resilience: improve/maintain Travel time delay: decrease/maintain Safety: improve/ maintain (reduce deaths and serious injuries)	Improving freight connections for economic development	✓✓ to ✓✓✓
Regional, local road and state highway improvements Walking Facilities Cycling Facilities Public Transport Low cost, low risk programmes	Physical health: support Access – people: increase/maintain Amenity value: increase/maintain Comfort and customer experience – access: improve/maintain Pollution and greenhouse gases: decrease/maintain	Providing people with better transport options to access social and economic opportunities Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access	✓✓✓ to ✓✓✓✓

The results alignment for Hastings District Council Network Programme is estimated to be High, as a result of the alignment with the priorities of the activity classes above.

7.5 Programme Risks and Opportunities

Due to the interconnectedness of these projects and the network and active transport programmes, we recommend a risk workshop be completed prior to commencement of work on these programmes to fully realise the risks and identify risk mitigation. It is also recommended that a risk assessment be performed as part of the implementation of major projects included in this programme.

At the time of this report, a number of projects are underway which will provide further insight as to how to best deliver the Programme including a regional network operating plan (NOP), an update to the Heretaunga Plains Transport Model, the Hawke's Bay Regional Transport Study PBC and the Karamu Master Plan project. These projects not being completed at the time of this report are a risk, however, completion of these projects will provide more clarity on what the risks and opportunities for this programme may be.

A high-level assessment of potential risks includes:

Table 15 Risks / Opportunities

Risks / Opportunities	Description
Infrastructure construction risk	Cost inflation will drive up the cost of delivering infrastructure elements, limiting the amount of the programme that can be delivered for a fixed budget
Financial risks	Shifts in priorities for funding or limitations on available funds may mean funding levels in this PBC will not be provided
Stakeholder/ public risks	Government or regional priorities may change and the programme may not deliver what is promised
Soft measures risks	Police are unable to provide sufficient additional road policing staff to deliver the increased enforcement component of the recommended programme
	The expected benefits arising from policy initiatives may not be delivered as a result of lack of urgency from decision makers, political interference or external issues
	Transportation / Land-use integration (soft measures) may not be delivered as a result of lack of urgency from decision makers, political interference or external issues
Benefits Realisation	Opportunity to develop continuous improvement loops to improve processes and deliver on outcomes

7.6 Recommended Programme Financial Case

The indicative cost estimate of the network programme is $39.4-53.4M, which does not account for inflation.

The midpoint of the Capex component of the programme totals $45.8M, equating to an average expenditure of $4.6M per year. In addition, there are operational expenditure components totalling $620,000. Further details are outlined in Figure 18.

A level of flexibility is needed during this time of uncertainty with the COVID-19 pandemic, reduced council budgets, changing demands on various modes and changing road user needs. The programme has been prioritised and should be implemented to the extent that council transport budgets allow.

It is expected that elements of the recommended programme will be funded under standard arrangements between the Waka Kotahi and HDC. The exception may be activities or projects which do not meet Waka Kotahi's funding criteria, which could be considered for council funding without subsidy from Waka Kotahi.

A range of procurement and financing options will be considered including public private partnerships and traditional procurement. Funding arrangements and costs will be refined following the completion of further work and discussions with Waka Kotahi. In addition, wider public consultation and elected member discussions will be undertaken as part of the HDC Long Term Plan (2021-2031) process.

7.7 Affordability

The affordability of the programme cannot be confirmed until the development of further work has been completed, alongside the agreement on levels of funding for transport activities in the HDC Long Term Plan. It also depends on the outcome of the Regional Land Transport Plan (RLTP) and the National Land Transport Programme/ National Land Transport Fund (NLTP/NLTF).

It is considered that the recommended programme will be efficient and fundable through the NLTF. Implementation would be staged over the ten year Long Term Plan period so that priority packages can be triggered first within affordable funding scenarios. Affordability will need to be confirmed through the inclusion of individual components of the programme in the NLTP.

PART C – DELIVERY AND MONITORING THE PROGRAMME

8 Recommended Programme Management Case

This section of the document outlines how the preferred programme will be delivered through the project partners and the key activities to take the next steps for the programme forward.

The following sections discuss key management case questions.

8.1 Programme Governance

The Programme of investment is a partnership between Hastings District Council and Waka Kotahi NZ Transport Agency. Each organisation has a role in planning, funding and delivering initiatives of the recommended programme. While funding, planning and delivery are expected to involve a partnership between the organisations, HDC plays the most central role in coordinating and delivering the network programme.

Successful delivery will require the continuation and evolution of the successful collaborative partnership and working arrangement between HDC and Waka Kotahi.

The senior responsible owner for the HDC Network PBC is the HDC Transportation Manager. Implementation of the PBC sits with the HDC Strategic Transport Engineer, in collaboration with other HDC transport team members. It is recommended that overall governance of the HDC Network PBC follow current internal HDC project management processes in establishing a stakeholder group for each major project to ensure proper representation of interested industries, businesses, residents and organisations.

8.2 Programme Delivery

8.2.1 General Approach

At the time of this report, a number of projects are underway which will provide further insight as to how to best deliver the Programme including a regional network operating plan (NOP), an update to the Heretaunga Plains Transport Model, the Hawke's Bay Regional Transport Study PBC and the Karamu Master Plan project.

Generally, major projects will follow the NZTA Business Case process. This will provide further detail and investigation to ensure the desired outcome.

8.2.2 Programme Staging

The Network programme has been grouped into quick wins, short, medium and long-term projects based on prioritisation with the project team and according to the delivery philosophy. A rough timeline has been indicated for the delivery of these projects to provide, however, projects have not been prioritised within each timeframe to provide flexibility. Soft measures have been developed with a 10-year delivery in mind which will require consideration if timelines for implementation are adjusted.

8.2.3 Monitoring of the Programme Timing and Triggers

The approach to delivering the programme will be flexible due to the geographic coverage of the Programme, the impacts of other delivery priorities and to also enable benefits realisation optimisation. Monitoring and evaluation tools and processes will be further developed as a critical element for the successful delivery of the programme. Triggers will also be determined based on the effectiveness of planned interventions which could then impact the preferred delivery of similar or related projects in the future. Within the governance arrangement there will be a feedback mechanism that allows changes to be made to optimise outcomes.

8.2.4 *Delivery Responsibility and Resourcing*

Delivery of the Programme will be undertaken by the HDC transport team in partnership with other appropriate internal delivery teams and will be funded between HDC and Waka Kotahi, on a proportional cost, depending upon the nature of the project.

The initial focus for the Programme will be to:

- Implement the quick wins
- Undertake the studies and plans outlined in the Programme to inform the associated infrastructure components of the Programme
- Identify the optimal delivery programme, e.g. packaging of works
- Undertake further assessment to identify preferred routes and treatments in collaboration with stakeholders, the community and local iwi

9 Stakeholder Engagement and Communications Plan

The stakeholder engagement and communications plan is critical to the success of the 2020 HDC Network Programme. Outlined below is not the plan itself, but rather an overview of the principles, key issues and general approach to engagement for this strategy. It sets out the framework from which a more detailed plan and ultimately communications plans will be developed for individual projects.

9.1 Engaging Early

It is important to note that improvements to the transport network will benefit people living locally and throughout the region. The project team will engage early with all interested and affected stakeholders so the improvements can best address their needs while achieving the strategic transport objectives of the project partners.

9.2 Key Stakeholders

Key stakeholders will be engaged prior to the general public as they can help to improve the projects. HDC will facilitate the identification and engagement with these stakeholders on a project by project basis to ensure proper representation on each major project.

Stakeholder representation will include parties who are affected by, or have an interest in, this strategy and its implementation. These may include, but are not limited to Hawke's Bay Regional Council, Napier City Council, Hawke's Bay DHB, primary industry groups, business associations, resident's associations, educational institutions and other community groups.

Mana whenua are key stakeholders in the implementation of the strategy and will be engaged early by HDC staff.

9.3 Community Engagement

The people living in the community will play a crucial role in shaping the implementation of these improvements. Where possible, HDC will undertake a number of public feedback phases where people can input into the project early and throughout the iterative process. HDC will implement a travel behaviour change programme to increase demand for active transport, create broader community interest in the projects and meaningful engagement as part of the project implementation process.

The information will be clear, accurate and disseminated widely so as many people as possible are aware of the public consultation. Not only will this help to improve the projects, but it will build excitement and anticipation for people who will see a vision of a safe and viable multi-modal network that provides equitable access and increase travel choice for all residents.

9.4 Promoting the Existing and Future Transport Improvements

A big component of the plan will be to celebrate the existing and future network infrastructure through positive PR, events and other communications channels. These activities will help illustrate the life cycle of a project from inception to completion and the reasons why HDC and project partners are in investing in the transport network.

10 Programme Performance and Review

Monitoring plans, using Waka Kotahi's template, will be completed for each package of projects. The plans will cover what monitoring tools will be required for each project, and when. The monitoring tools used for evaluating project benefits are:

- Collective risk of key corridors
- Personal risk on key corridors
- Reported DSI's benchmarked against other regions and national data
- HCV% on local roads benchmarked against other regions and national data
- Reported crashes with trucks benchmarked against other regions and national data
- Freight time variability as quantified by HDC using Google data
- Track number of alternative truck/freight routes to the Expressway (SH2)
- Use of active travel and PT for trips to school
- Use employer travel survey data to track changes in the use of active travel and PT to work
- New community travel survey to track the reduction of journeys by car less than 5km

Other potential monitoring could include:

- VKT
- Transport emissions
- Health outcome indicators (obesity, physical activity rates, other)
- Wellbeing indicators (TBD)

10.1 Benefit Realisation

As part of the strategic case, a benefits map was created to establish various investment benefits (KPI's), measures, baselines and high-level targets. This information can be found in Appendix G – Benefit Mapping.

It is recommended that before significant changes are made to the transport network, specific targets should be identified and where necessary, baseline data will need to be collected. This will ensure that KPI's which include measures beyond indicators already being collected such as active travel and PT trips to work, health outcomes and community travel behaviour can be accurately measured and monitored. These network KPI's should be reviewed alongside those outlined in HDC Active Transport PBC. A transport emission baseline has not been established so it is recommended that either a district-wide emission inventory or a regional emissions inventory be conducted to establish a baseline for transport emissions.

For major projects, a more detailed and site-specific benefit realisation plan should be developed and submitted at subsequent phases of the Business Case Approach.

Accurately understanding what is being achieved by the Programme will help to guide the appropriate scope of future projects, as well as provide assurance to Waka Kotahi that the National Land Transport Programme investment is providing value, in terms of contributing to targeted performance measures.

11 Next Steps

The recommended programme is not an investment programme, as individual projects or activities still need to be developed and will still need to go through statutory processes to proceed (e.g. NLTP, RLTP, and LTP). However, it provides an indication of the broad location, type and level of investment that is likely to be required to address the transport problems identified through the Strategic Case.

Whilst the full recommended programme represents a potentially large investment over a ten year period, the approach adopted to tackle multiple problems through a single business case, align implementation with wider programmes (such as maintenance and renewal programmes), and phasing of implementation represents better value for money solution than existing practices.

Although the HDC Long Term Plan covers a ten year planning horizon, it is refreshed and reviewed through the Annual Plan process and is reconsidered every three years. HDC views this PBC as a living document that can be updated and refreshed as assumptions or significant changes occur (such as the location and scale of housing and employment growth or the timing and impact of technological change or increases in available funding), which could significantly alter the strategic direction or timing of implementation/further development of subsequent phases.

Successful delivery of this programme will involve ongoing collaboration with project partners throughout the life of the programme, to ensure a one network approach is adopted that maximises value for money and best achieves the outcomes identified by all partner agencies. The governance structure in place (as outlined in section 9.1) will help to enable successful delivery.

12 Recommendations

The HDC Network PBC has undertaken a review of the key transport problems, challenges and opportunities related to the Hastings transport system.

The Community Wellbeing Programme was deemed the best programme in terms of addressing the investment objectives, risks and effects and was blended with the Balanced Programme resulting in the recommended programme.

This PBC will be refined through the development of further work, with an immediate focus on quick wins and short-term projects as outlined in section 8.3.3.

It is recommended that:

- HDC Network Working Group endorse the PBC
- HDC Executive Leadership Team endorse and approve funding of the Programme through the LTP process
- Waka Kotahi support for the PBC and its ongoing development
- HDC progress further work within existing funding arrangements as per the prioritised programme. Further applications and phases to follow.

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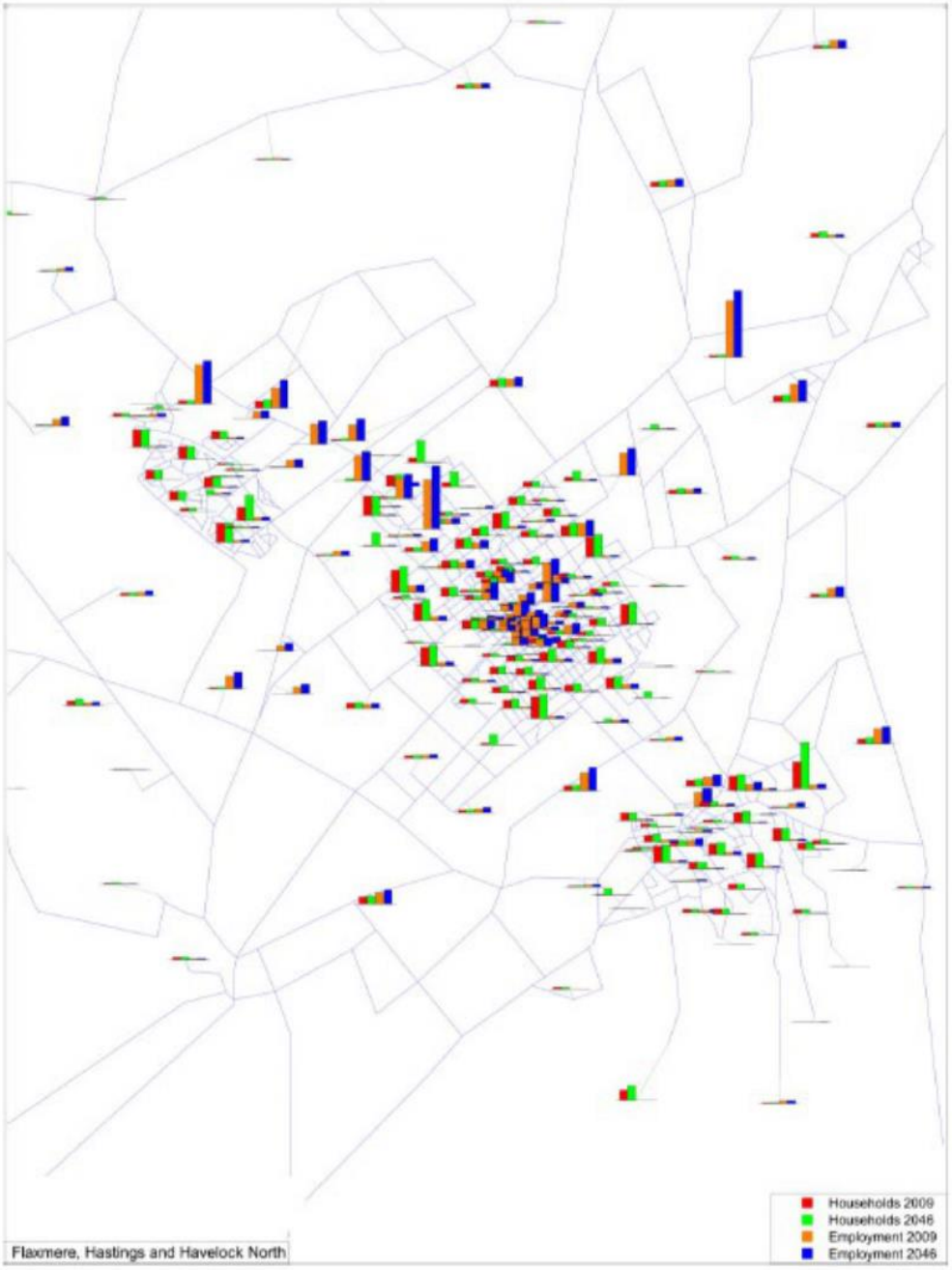
Appendix A – Additional information on Hastings context

Hastings land use summary (GHD 2012)



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Household projections (GHD 2012)

6.3 Household projections

Household projection totals are based on those adopted for HPUDS for the period 2009 to 2045, with intervals of 2011, 2015, 2021 and 5 yearly to 2045. The periods have been adjusted to match the HPTS timelines and census years to derive projection target totals for 2009, 2011 and thereafter five yearly to 2046 as shown in Table 10.

Table 10 HPUDS household projections

	2009	2011	2016	2021	2026	2031	2036	2041	2046
Projected households	48603	49295	51281	53130	55070	56660	57800	58505	59030
Inter-period increase		692	1986	1849	1940	1590	1140	705	525

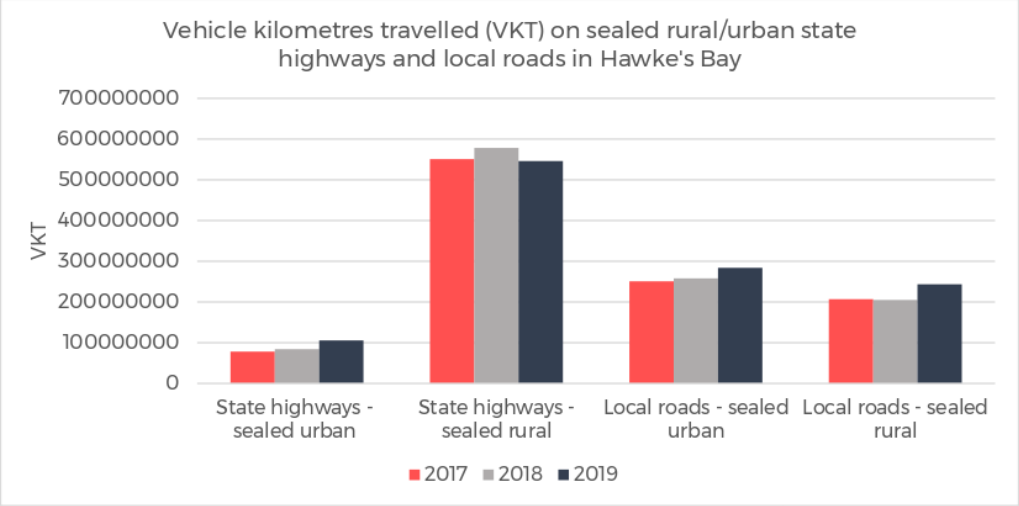
The increase in households has been allocated to greenfield/coastal sites, infill and rural (see Table 6).

Table 11 Household growth by type and location

Napier	2016	2021	2026	2031	2036	2041	2046	Total
Greenfields/coastal	578	333	349	267	169	109	63	1868
Infill	514	398	466	413	339	199	170	2499
Rural	193	102	63	44	18	16	12	448
Hastings	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**	**Total**
Greenfields/coastal	627	499	524	401	253	163	94	2561
Infill	557	398	466	413	339	199	170	2542
Rural	209	120	73	52	21	19	14	509

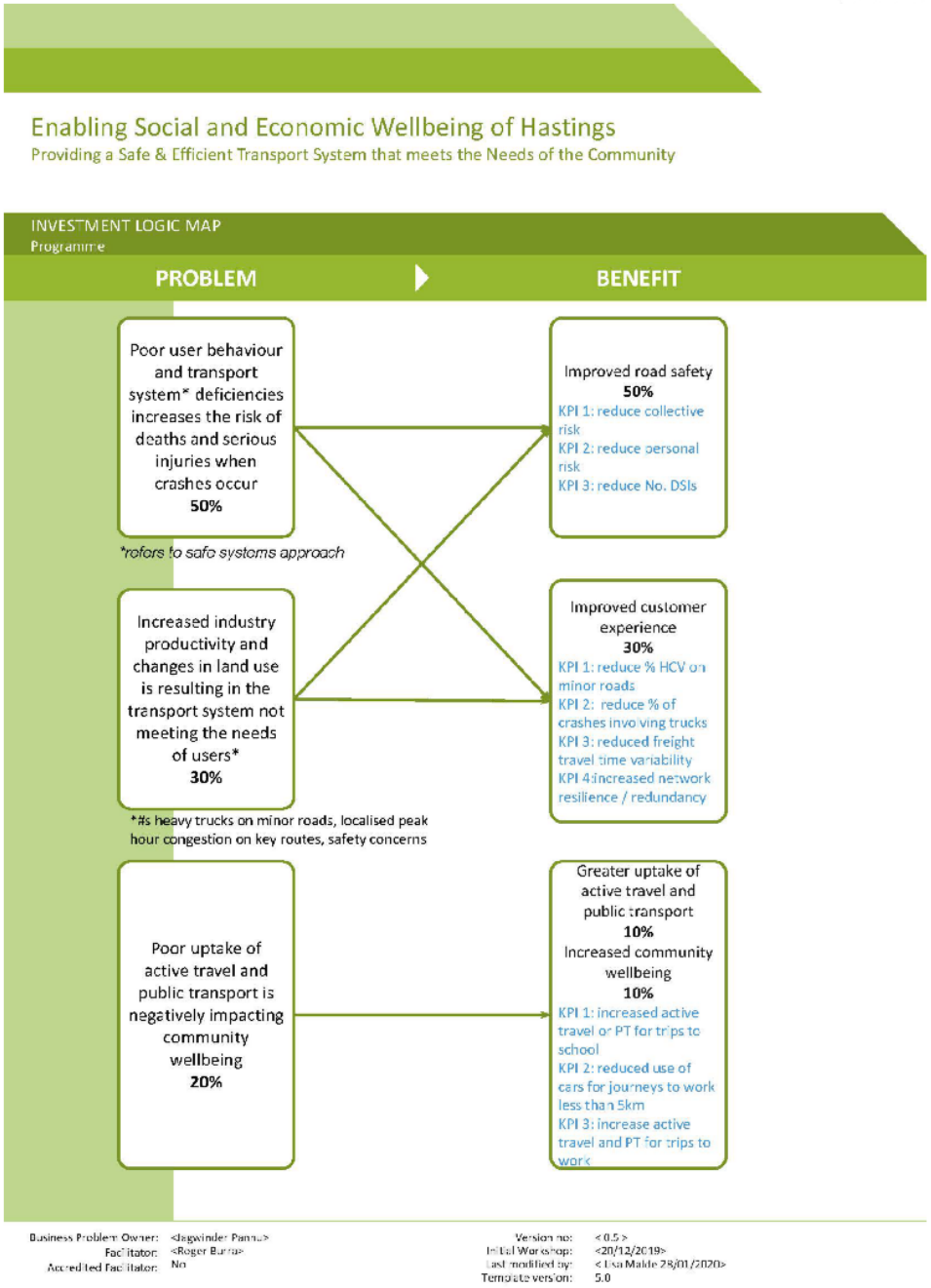
60

Vehicle kilometres travelled in Hawke's Bay (WKNZTA 2020)



Note: The VKT data for sealed rural and urban state highways are associated with light vehicles. The vehicle classification is not known for that of local roads.

Appendix B – Investment logic map

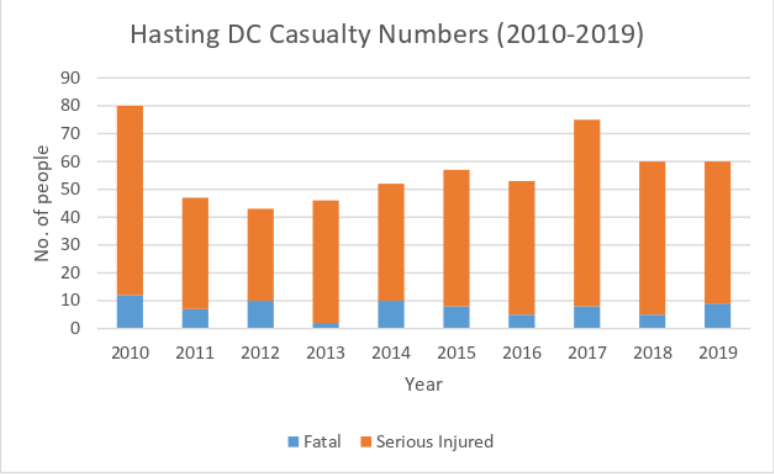


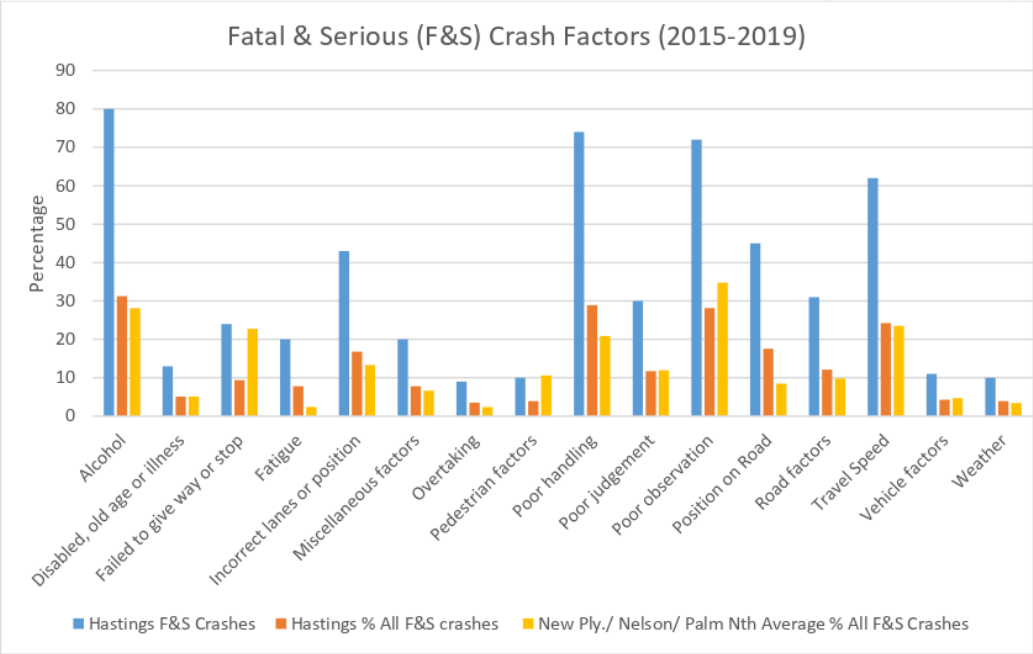
Appendix C – Crash analysis

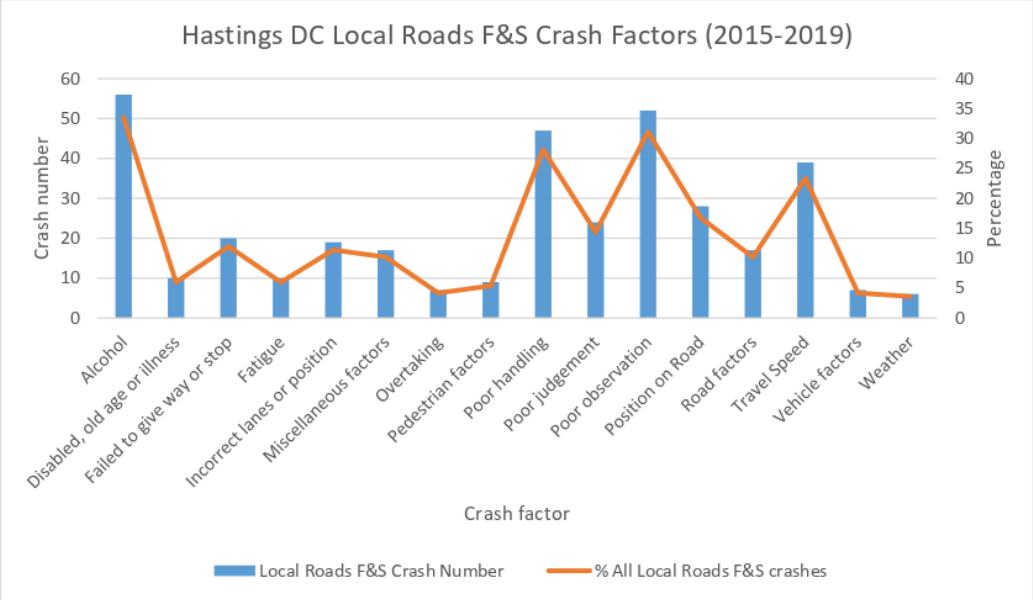
Waka Kotahi NZ Transport Agency Crash Analysis System (2015-2019)

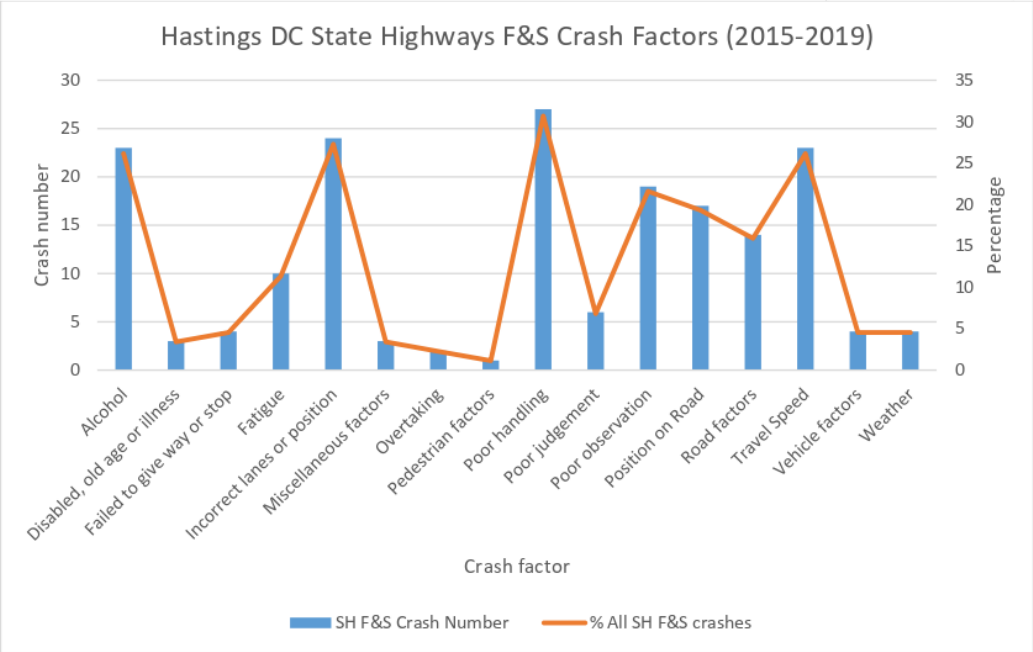
Key findings

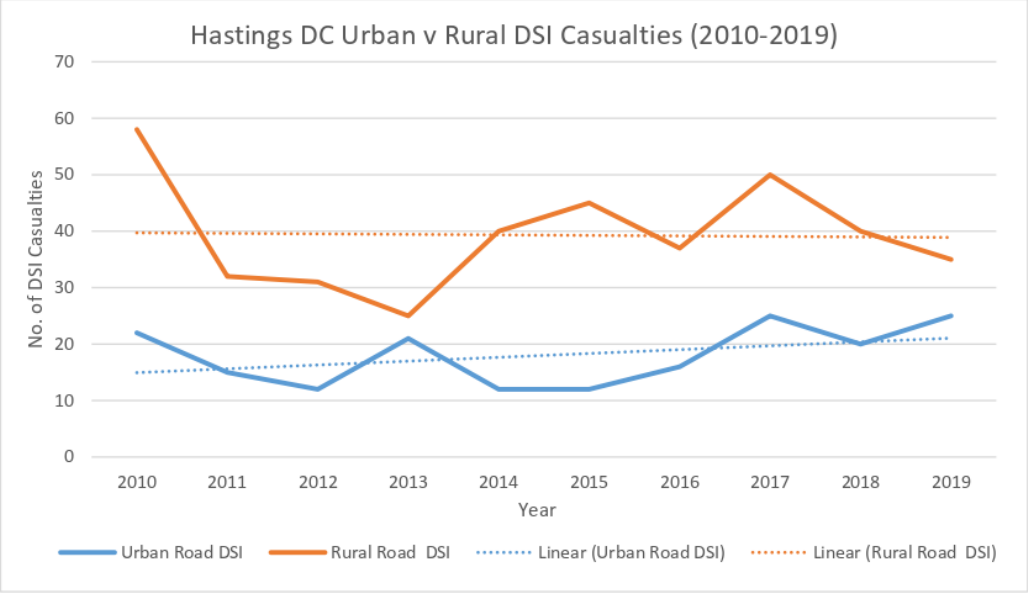
- Since 2014 there has been an upward trend in casualty (death, serious injury, minor injury) numbers in Hastings DC.
- Vulnerable road users make up 33.6% of Death and Serious injuries (DSI) in Hastings DC. However, this is underrepresented when compared to New Plymouth, Nelson and Palmerston North which on average have a vulnerable road user DSI to total DSI percentage of 43.4%
- Motorcycle DSI is overrepresented in Hastings DC when compared to the average of motorcycle DSI across New Plymouth, Nelson and Palmerston North. Motorcycle DSI make up 20% of total DSI on local roads and 20% of total DSI on state highways.
- Prominent factors in Fatal and Serious (F&S) crashes within Hastings DC are alcohol, poor handling, poor observation, travel speed, position on road and incorrect lanes or position. Apart from poor observation the remainder of the aforementioned crash factors are overrepresented when compared to the crash factor averages from New Plymouth, Nelson and Palmerston North.
- While the 10-year DSI trend has been decreasing along rural roads the 10-year DSI trend has been increasing along urban roads.
- When looking at the age of drivers at fault in F&S crashes, 45-74-year olds were overrepresented when compared to the average of New Plymouth, Nelson and Palmerston North.
- When looking at the type of vehicle involved in F&S crashes, vans, trucks and motorcycles were overrepresented in Hastings DC when compared to the average of New Plymouth, Nelson and Palmerston North.
- When looking at the type of vehicle involved in F&S crashes on state highways, only trucks and motorcycles were overrepresented in Hastings DC compared to the average of New Plymouth, Nelson and Palmerston North.

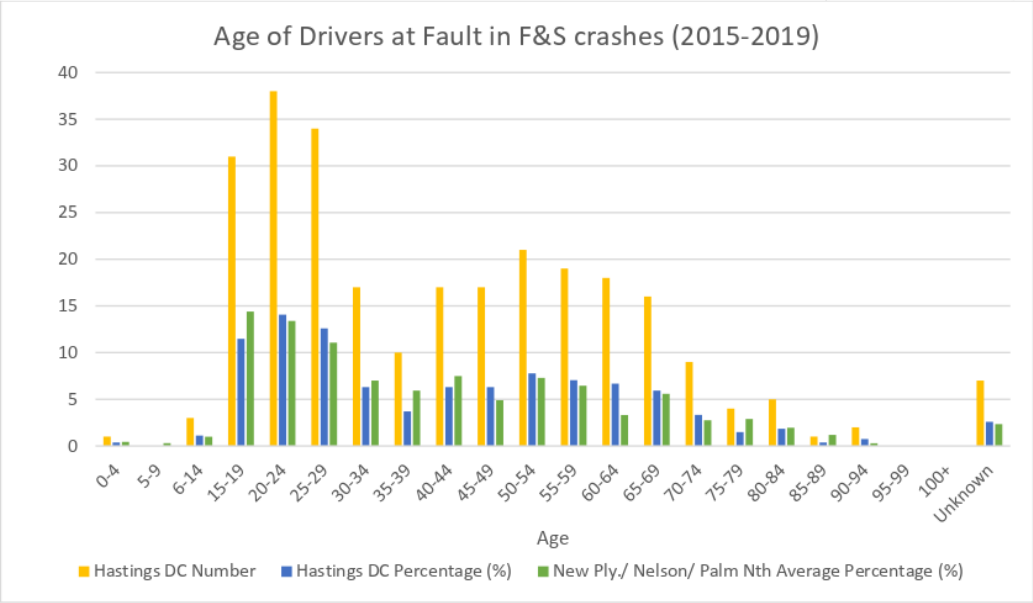


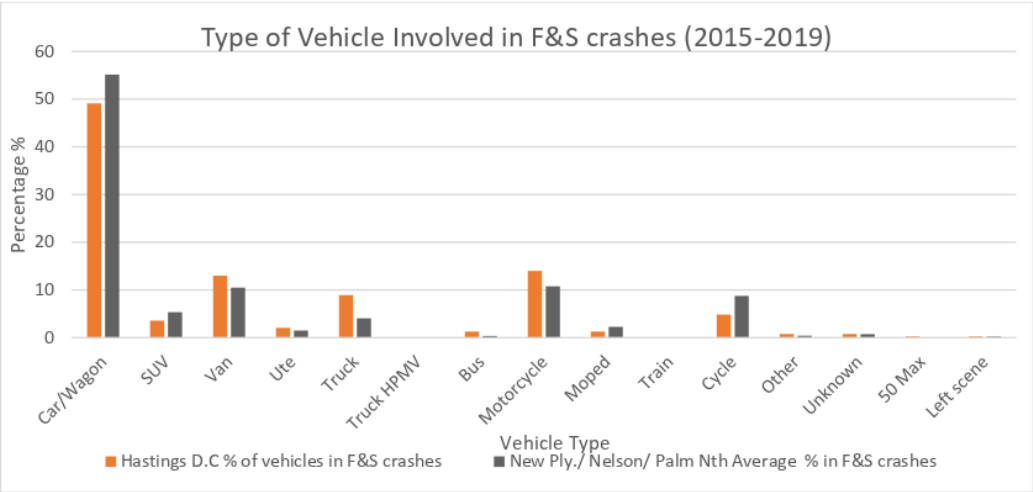

Fatal & Serious (F&S) Crash Factors (2015-2019)
Percentage
90
80
70
60
50
40
30
20
10
0
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Hastings F&S Crashes
Hastings % All F&S crashes
New Ply./ Nelson/ Palm Nth Average % All F&S Crashes


Hastings DC Local Roads F&S Crash Factors (2015-2019)
Crash number
60
50
40
30
20
10
0
Percentage
40
35
30
25
20
15
10
5
0
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Crash factor
Local Roads F&S Crash Number
% All Local Roads F&S crashes


Hastings DC State Highways F&S Crash Factors (2015-2019)
Crash number
Percentage
0
5
10
15
20
25
30
35
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Crash factor
SH F&S Crash Number
% All SH F&S crashes


Hastings DC Urban v Rural DSI Casualties (2010-2019)
No. of DSI Casualties
0
10
20
30
40
50
60
70
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Year
Urban Road DSI
Rural Road DSI
Linear (Urban Road DSI)
Linear (Rural Road DSI)


Age of Drivers at Fault in F&S crashes (2015-2019)
40
35
30
25
20
15
10
5
0
0-4
5-9
6-14
15-19
20-24
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79
80-84
85-89
90-94
95-99
100+
Unknown
Age
Hastings DC Number
Hastings DC Percentage (%)
New Ply./ Nelson/ Palm Nth Average Percentage (%)


Type of Vehicle Involved in F&S crashes (2015-2019)
60
50
40
30
20
10
0
Percentage %
Car/Wagon
SUV
Van
Ute
Truck
Truck HPMV
Bus
Motorcycle
Moped
Train
Cycle
Other
Unknown
50 Max
Left scene
Vehicle Type
Hastings D.C % of vehicles in F&S crashes
New Ply./ Nelson/ Palm Nth Average % in F&S crashes

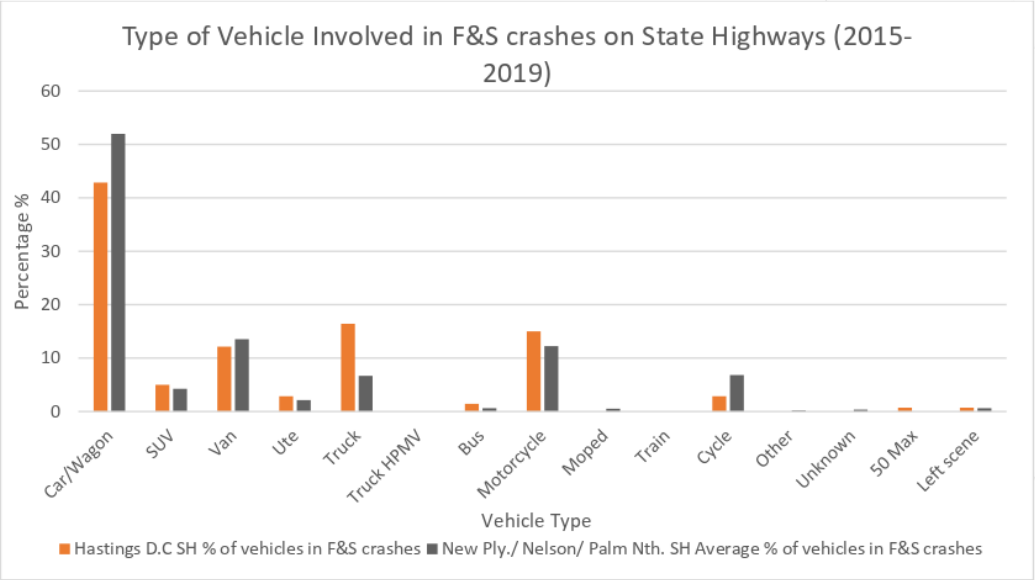
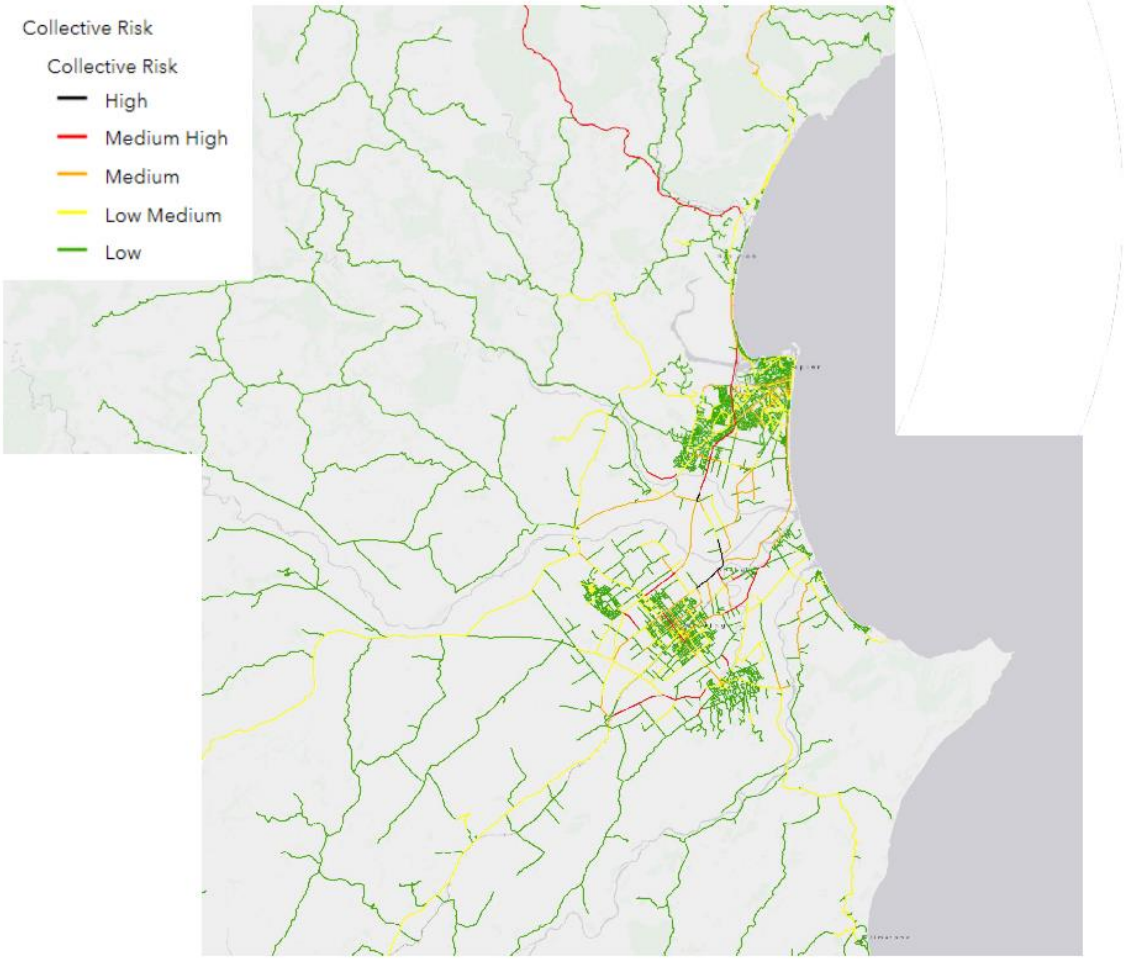


Table 16: Vulnerable Road Users

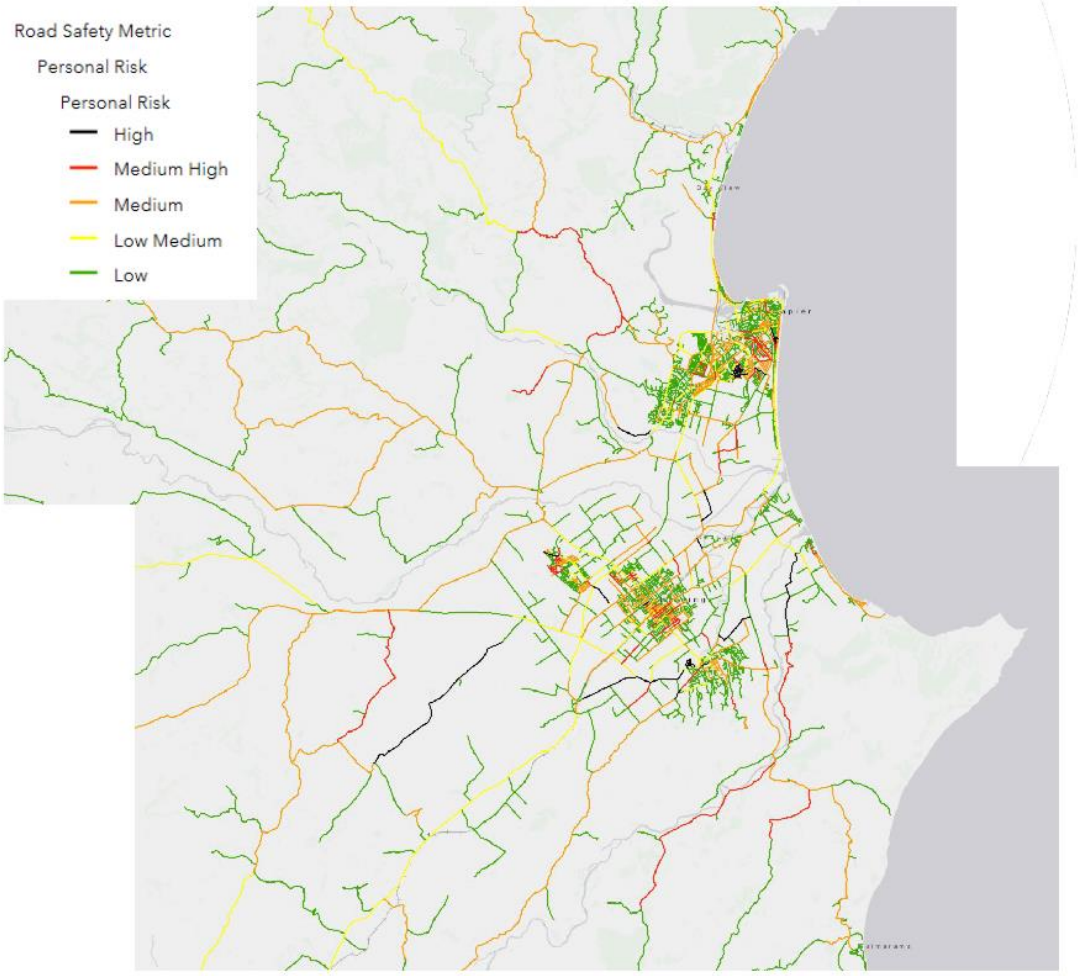
Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist[13]	20.4%	17.5%
Total	**33.6%**	**43.4%**

[13] Including mopeds & pillion passengers

Collective Risk (2013-2018) Source: Mega Maps



Personal Risk (2013-2018) Source: Mega Maps



High Risk Intersections (2013-2018) Source: Mega Maps

High Risk Motorcycling Routes (2013-2018) Source: Mega Maps

Poor behaviour trends from RLTP 2018 (HBRC 2018)

Figure 10: Fatal and Serious Injuries in Alcohol Related Crashes

Figure 12: Fatal and Serious Injuries Speed-Related Crashes.

Appendix D – HDC Road Safety Strategy 2017

High Risk Corridors

TABLE 1-1: HIGH RISK RURAL ROUTES

High Risk Rural Route	ONRC Classification	Rural Crash Risk[2]		Treatment Philosophy	Indicative Cost[3]
		Collective	Personal		
Farndon Rd	Primary Collector	High	High	Safer Corridors (incl Speed Mgt)	$$$
York Rd	Primary Collector	High	High	Safety Management (incl Speed Mgt)	$
Stock Rd	Primary Collector	High	High	Safety Management (incl Speed Mgt)	$
Pakowhai Rd	Arterial (Ruahapia int removed)	High	Medium High	Safer Corridors	$$ - $$$
Ruahapia Rd	Primary Collector	Medium High	High	Safe System Transformation	Underway
Waimarama Rd	Arterial	Medium High	High	Safety Management (incl Speed Mgt)	$$
Brookfields Rd	Secondary Collector	Medium High	High	Safety Management (incl Speed Mgt)	$
Te Aute Rd	Primary Collector	Medium High	Medium High	Safety Management (incl Speed Mgt)	$$

TABLE 1-2: HIGH RISK URBAN ROUTES

High Risk Urban Route	ONRC Classification	Urban Crash Risk[4]		Treatment Philosophy	Indicative Cost[5]
		Collective	Personal		
Te Mata Road	Arterial	High	Medium	Safety Management (incl Speed Mgt)	$
Napier Road	Arterial	Medium High	Medium High	Safety Management (incl Speed Mgt)	$

TABLE 1-3: HIGH RISK INTERSECTIONS

Intersection	Type	Collective Risk	Personal Risk	Level of Safety Service (LoSS)	Treatment Philosophy	Est Cost[6]
Pakowhai Rd / Ruahapia Rd	Rural Priority-T	High	High	LoSS IV	SSTW (underway – being closed)	-
Pakowhai Rd / Richmond Rd	Rural Priority-T	Medium high	High	LoSS IV	Safety Management / Potential Li-Lo	$-$$
Karamu Rd North / Grove Rd	Urban Signals-X	Medium high	Medium high	LoSS IV	Safer intersection work (some already undertaken)	$
Hastings St North / St Aubyn St E	Urban Priority-X	Medium	Medium high	LoSS IV	SSTW – Likely Traffic Signals	$$
Maraekakaho Rd / York Rd	Urban Priority-T	Medium	Medium high	LoSS IV	Safety Management or SSTW (Rbt)	$-$$$
Southland Rd / Eastbourne St W	Urban Priority-X	Medium	Medium high	LoSS IV	SSTW (mini Rbt)	$
Southampton St W / Charles St	Urban R/bt	Medium	Medium high	LoSS IV	Safety Management/Safer intersections	$

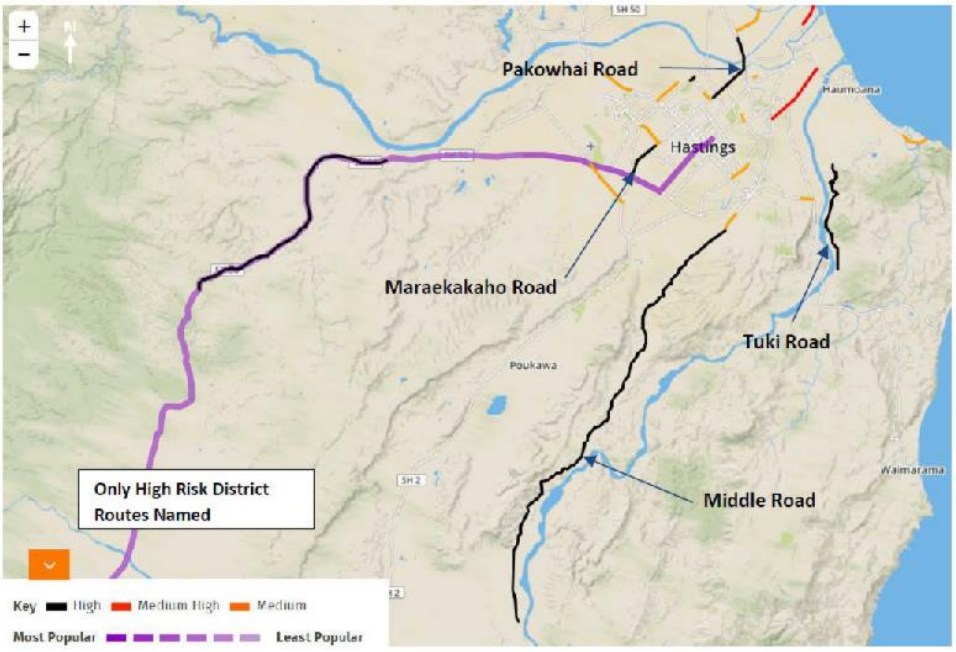


FIGURE 1:4: HIGH RISK MOTORCYCLE ROUTES WITHIN HASTINGS DISTRICT (SOURCE: ACC'S ROAD SAFETY RISK TOOL)

TABLE 1-4: HIGH RISK MOTORCYCLE ROUTES WITHIN HASTINGS DISTRICT

High Risk Rural Route	ONRC Classification	Casualties (07-16)			Treatment Philosophy	Indicative Cost[7]
		D	S	M		
Middle Rd	Secondary Collector	1	7	3	Safer Corridors/Site Specific	$$$
Tuki Tuki Rd	Access	0	3	1	Safety Management (incl Speed Mgt)	$
Maraekakaho Rd	Arterial	1	1	2	Safety Management (incl Speed Mgt)	$
Pakowhai Rd	Arterial	0	2	7	Safer Corridors	$$ - $$$

The HDC Road Safety Strategy (2017) also outlines key focus areas of the safety strategy:

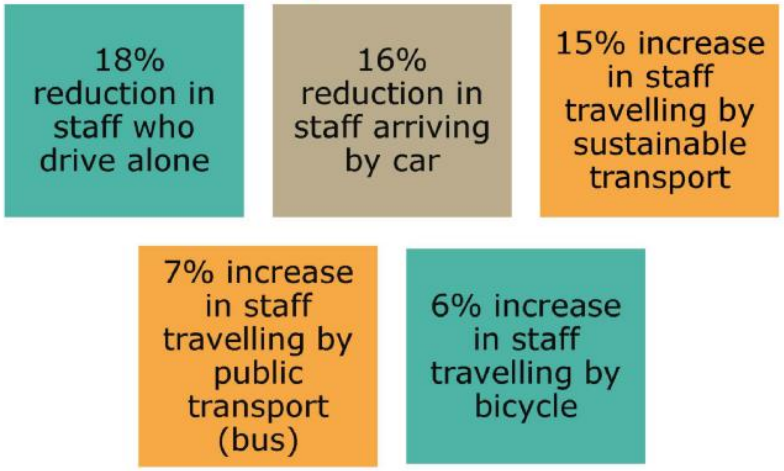
High risk corridors – Concentrating on seven identified high risk rural routes and two high risk urban routes.

High risk intersections (predominantly urban)1 – Concentrating on the six identified high risk intersections as well as other intersections along St Aubyn Street and Hastings Street. Notably all of the high-risk intersection identified have a LoSS of IV, which indicates that compared to other similar intersections (in terms of both volume and type), these intersections are all performing in the worst 30% nationally.

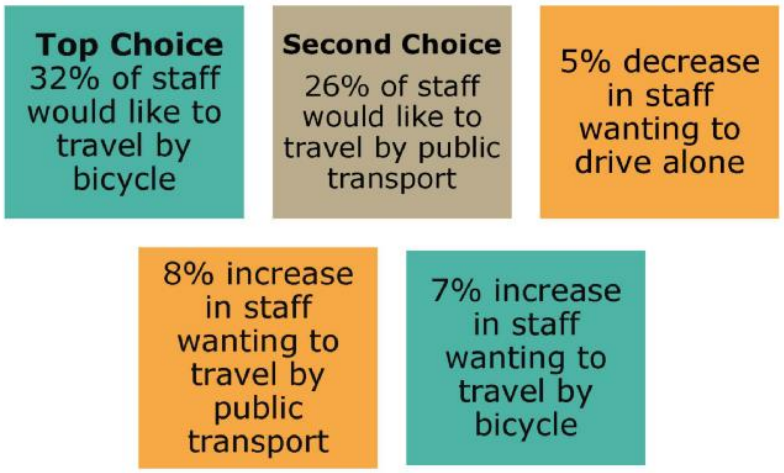
Motorcycling – Concentrating on improvements to four key high-risk motorcycle routes and network wide road safety promotion activities

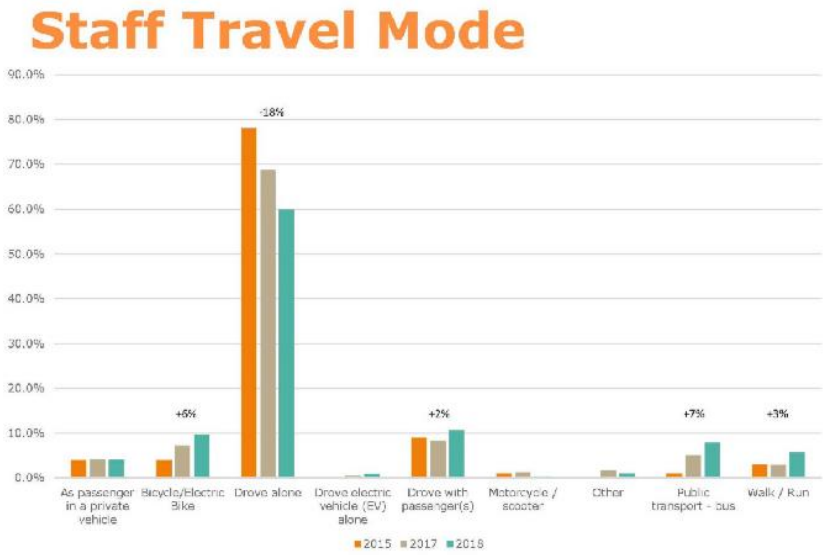
Appendix E – HBDHB Travel Survey Data Key Findings

2018 Travel Survey Staff - Compared to 2015



2018 Travel Survey Staff - Ideal Means of Travel





Desired mode shift was 10% - once a fortnight

Appendix F – Active Modes Strategic Case (Evidence)

Perception of walking and cycling as unsafe and inconvenient

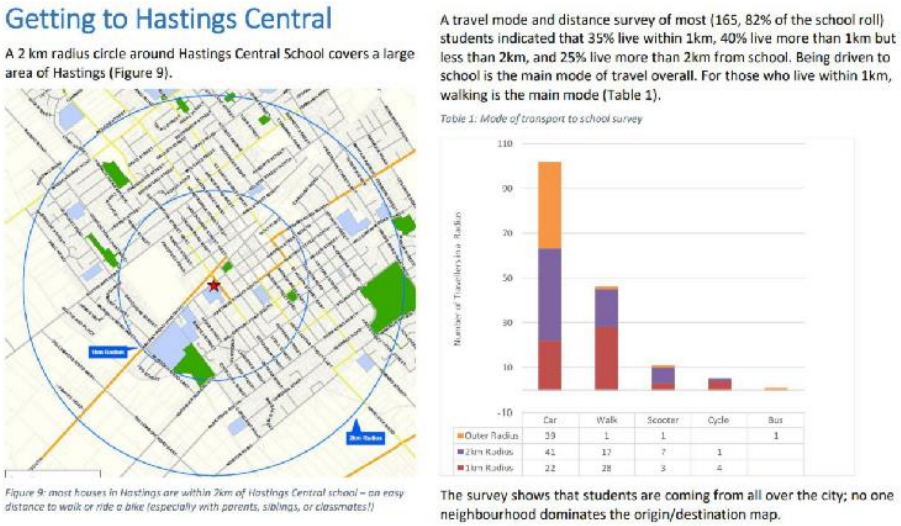
Urban form

Cycling and walking are sensitive to distance and time, low density residential zones typically result in increased distances and times between destinations, however, low density does not necessarily mean poor connectivity (Cheyne et al 2015). Directness of path between two points are related to the characterises of street design. Good connectivity is highly correlated with walkability (Cheyne et al 2015). New active mode routes should offer advantages in terms of directness/permeability and journey time. (ESCC 2014).

Hastings and Havelock North have highly connective road networks based on a grid structure. However, the existing road network does not generally offer active users advantages in connectivity as no restrictions are made on motorised users. Flaxmere's road network is less connected, however, active user paths to and through parks and reserves offer improved connectivity for active users.

A large number of studies found that shorter distances between home and school are associated with increased active transport to school (Condon 2013). Two Australian studies reported that children are more likely to walk or cycle to school at least once a week, if they lived within 800 metres of their school (Condon 2013).

Hastings has been designed so that most houses are within 2 km of Hastings Central School, potentially an easy distance to walk or cycle between home and school. Active travel accessibility to jobs is very high. There are 7,000 jobs in the Hastings Central Census Area Unit and every resident is within 3 km. Many jobs in Hastings are within a distance accessible by active transport.



Location of Hastings Central School and the relative distance students travel (HCS 2018)

Road Safety Perceptions

The perception of safety in relation to walking and cycling is an important determinant of uptake in active travel[14]. Walking and cycling are statistically safe ways to travel (MoT, 2015); however, negative perceptions and experiences may discourage people from using a particular route or encourage them to drive instead of walk or cycle, especially if the walking and cycling infrastructure is poor. Cheyne et al (2015) noted that parents participating in a perception survey expressed concerns about letting their children cycle on the road on their own, due to their lack of skills and experience on the road but also because parents did not trust other road user behaviour.

Findings from a comprehensive study by Muggeridge in 2012 suggest that although people in Hastings generally have positive attitudes towards walking and cycling, these are not necessarily translated into high levels of active transport, or high intentions to walk and cycle as a form of transport (Muggeridge 2012). As seen in Figure 5-2, driver behaviour, traffic volume and traffic speed were dominant factors in influencing walking and cycling safety perceptions. Other studies have found that traffic speed, volume, and proximity are key deterrents to active travel and particularly for commenting cyclists, cars passing too closely increases anxiety.

Factors influencing safety perceptions (Muggeridge 2012)

Dedicated road space for active users can increase perceptions of safety and comfort for cyclists by increasing the separation to motorists, this improvement can increase with increasing levels of separation such as kerb or parking protection for cycle lanes. Cycle lanes between traffic lanes and pedestrian facilities also increase the separation between pedestrians and motorists and consequently increase comfort and perceived safety for pedestrians.

Fear of Crime

Another barrier to the uptake of walking and cycling is the fear of crime and one's personal safety, particularly for women, elderly and those with disabilities. Children and students use of active transport is often over-ridden by parents, who are concerned about 'stranger danger'. A poor design of the urban environment such as lack of surveillance, poor lighting, overgrown vegetation and disrepair adds to fearful attitudes towards walking and cycling. The issue of darkness can also be associated with the built environment, as many participants agreed that better lighting would make them perceive walking in the dark as safer. Darkness was particularly important in Hastings and Flaxmere, but to a lesser extent in Havelock North. Havelock North was thus perceived as safer than the other two neighbourhoods, with people saying they would not mind walking alone at night there but would not do it in Hastings or Flaxmere (Cheyne et al 2015).

[14] The perception of safety in relation to cycling is often considered of greater importance than the actual safety of cycling, as the risk perceived is likely to be a more important determinant of cycling than the actual risks associated with cycling (Muggeridge, 2012)

End of trip facilities

All active mode routes should be clearly signed and have trip end facilities provided, such as cycle parking (ESCC 2014). End of trip facilities include showers and changing facilities, and secure sheltered bicycle parking. A lack of secure or sheltered bicycle storage contributes to fear of crime in the form of bike theft. Showers and changing facilities reduce the concern over body odour for those who cycle or walk further; those who have access to showers are 1.76 times more likely to cycle to work than those without the same facilities (Cheyne et al. 2015).

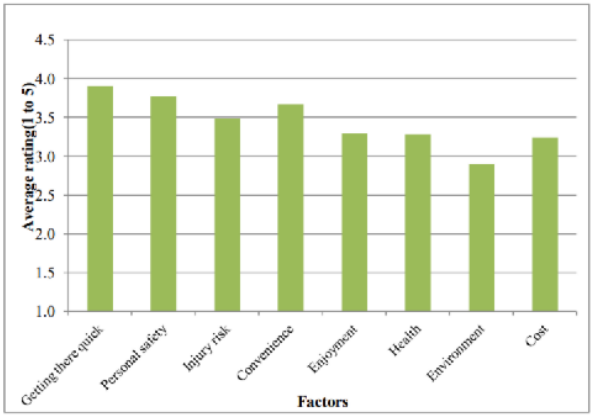
The Hawkes Bay DHB built additional secure cycle storage and started charging for car parking, these differences encouraged people to switch from motor vehicle use to active mode use. By adding additional amenities and making active modes more desirable such as providing end of trip facilities like showers, secure bike storage and lockers, map of facility locations and repair stations and bike pumps encouraged people to use active modes more. (Cheyne et al. 2015). Between 2015 and 2018, for staff at Hawkes Bay BDHB, cycling mode share increased by 6% and walking mode share increased by 3%.

School travel plans have indicated possible interventions to improve active travel to school. These interventions include improved end of trip facilities, such as all-weather bike and scooter stands. However, at present, only 63% of the urban schools in the district have at least partial access to the iWay network and nearly 40% schools in urban and over 80% schools in rural area have no coverage.

The DHB travel survey concluded that the reasons people use motor vehicle is primarily for convenience and flexibility.

Convenience of active modes

Motor vehicle use has been made so convenient, that active transport seems inconvenient in comparison. As seen in Figure 5-3, 'getting there quick' (i.e. directness/journey time) and 'convenience' (e.g. shops en route) are considered important factors that influence mode choice when travelling to school, work or shops. Parking is easy and cheap, which also means the car is often the most convenient option, when compared with public transport or active modes.



Factors influencing choice of mode of transport (Muggeridge 2012)

School travel plans have noted that student travel behaviours have changed. Between 1990 and 2014, the number of primary school students being driven to school in New Zealand increased from 31% to 55%, while travel by walking fell from 42% to 29% and cycling from 12% to 2% (MoT 2015). Parents drive their children because of ingrained travel habits, safety perceptions, and busy schedules including after school activities (HCS 2018).

Almost 80% of people travel to the shops via motor vehicle, in the same survey it was determined that just over 15% of people would walk or cycle to the shops.

Interventions that increased the convenience of active modes or decreased the convenience of travel by car could increase active mode share.

Limited active travel uptake, resulting in high car dependency

Active Travel Uptake

In 2010, New Plymouth and Hastings were selected by Waka Kotahi as model walking and cycling communities. New Plymouth District is comparable to Hastings District due to its flat topography, and population (74,184 district, 54,800 urban area).

Based on travel to work data from the 2013 Census, active mode share in the Hastings District is 9%. This compares to 10% for the Hawkes Bay Region and New Plymouth District. Active mode share includes the walking mode share is higher than the cycling mode share in Hastings District and the comparison areas.

More people use private vehicles in Hastings District to complete their trips, in comparison with Hawke's Bay and New Plymouth District. Nearly 90% of total trips in Hastings in 2013 were completed using private vehicles.

Hastings District has the lowest proportion of people walking to work, in comparison with Hawke's Bay and New Plymouth District. Hawke's Bay and Hastings District have a similar proportion of people cycling to work; however, both have a lower proportion than New Plymouth District.

This dataset indicates both a dominance of the car in Hastings and an opportunity for change given the projected increase in population in the coming decades.

Geographic Factors

Poor weather and climate, such as reduced daylight hours, wind and rain reduces the likely number of cyclists to 64% of the normal levels. Topography was another highly correlated factor to cycle use (Cheyne et al 2015).

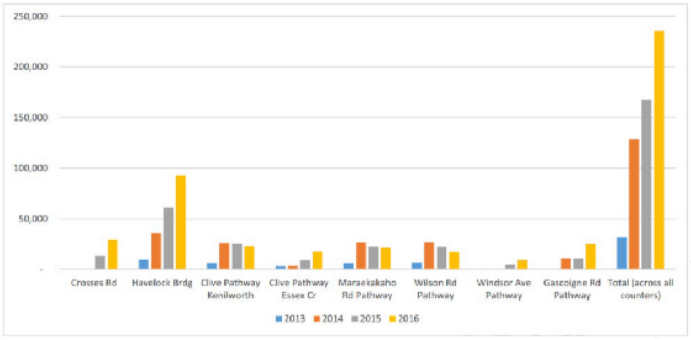
The Heretaunga plains area of Hawkes Bay experiences only 90 wet days per year and mean overnight low temperatures are higher than 7˚C in all months (Chappell 2013). The District's

Contour overlay of the Hastings District's urban areas (LINZ n.d.)

climate is dry and mild, and its topography is flat. The natural environment is ideal for active travel. Yet this is not reflected in the limited uptake of active travel.

Mode Share

The average annual daily cycle volume has increased, as counted at nine permanent count stations in the Hastings District. Over 1,500 average daily cycle trips were recorded, in 2016, and as shown in Figure 5-5, there are a few locations where a decrease in cycle numbers were observed, which indicates areas for improvements along the iWay cycle network.



Annual Average Daily Cycle Volume at recording stations in Hastings District (HDC 2017)

Cycle and pedestrian volumes are seasonal, with the highest number of cyclists observed during the summer.

Recent investments in the active mode network have resulted in increased active travel and increasing active mode share in the District. However, active travel in Hastings District does not match that achieved in the rest of the Hawkes Bay Region or Waka Kotahi's other model community, New Plymouth.

Transport Behaviour

Road congestion, increased petrol and parking costs, availability of electric bicycles and scooters, bike sharing, and provision of more dedicated cycling infrastructure has increased active mode share in Hastings District since 2006.

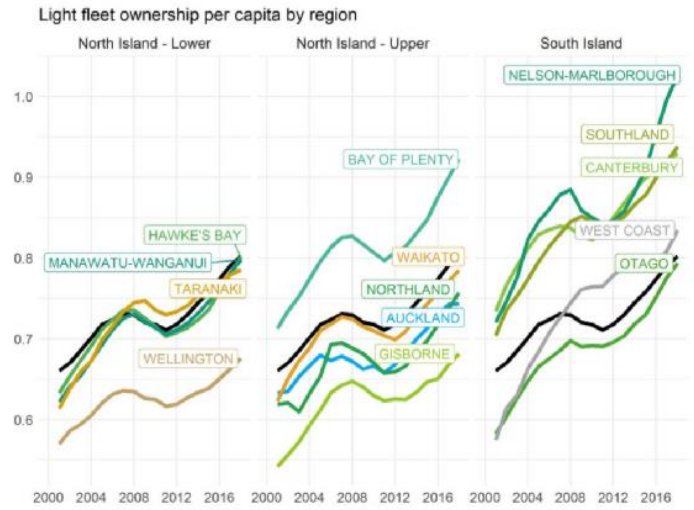
Public transport patronage in Hastings District increased between 2009 and 2015 but has since declined to levels seen in 2012. This trend is consistent with regional New Zealand, and due partly to improved economic conditions, therefore more people are employed and using a vehicle.[15]

The use of the Total Mobility scheme[16] has increased since 2010, in line with the shift in population demographic in the Hastings District.

[15] Car ownership per capita has increased 7% in Hawke's Bay. The most significant declines in patronage have occurred on bus routes servicing areas with higher unemployment rates.
[16] The Total Mobility Scheme (TMS) provides subsidised passenger services travel for Hawke's Bay residents who are unable to use public transport due to a significant, permanent impairment.

Car Dependency

The Hawkes Bay Region has light vehicle[17] ownership rates higher than the New Zealand average of 0.8, as shown in Figure 5-6.



Light fleet ownership per capita by region (MoT 2018)

However, as of the 2013 Census, over 2,000 (8%) households in the Hastings District did not have a light vehicle and over 9,000 (37%) have just one vehicle. Forty-two percent of households in the Hastings District have three or more people living in the household which indicates there are parts of the population that are transport disadvantaged by not having access to a vehicle. A network that encourages high car dependency reduces social and economic opportunities for the transport disadvantaged, those who choose not to drive and vulnerable populations such as the elderly and children, by minimising their access and choice on how to travel.

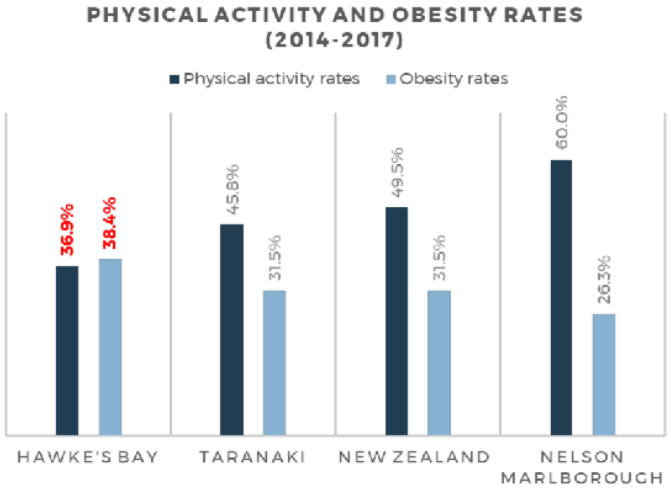
Napier-Hastings is a low-income region and the high cost can be a barrier to vehicle ownership. A land transport system that makes travel without a car difficult makes households dependent on cars to access social and economic opportunities.

[17] Light vehicles include light passenger vehicles such as cars and light commercial vehicles such as vans and utes.

Health Context

Hastings District is located within the Hawkes Bay Region. The Hawkes Bay Region has the lowest rates of adult physical activity[18] and second highest level of obesity of any region in New Zealand (MoH 2020).

Active transport enables residents to achieve their physical activity as part of their daily routine, which can result in improvements to health and wellbeing.



Physical activity and obesity rates for New Zealand and selected regions (MoH 2018)

[18] Physical activity (aged 15+ years) is defined as doing at least 30 minutes of brisk walking or moderate-intensity physical activity (or equivalent vigorous activity), for at least 10 minutes at a time, at least five days a week.

Appendix G – Benefit Mapping

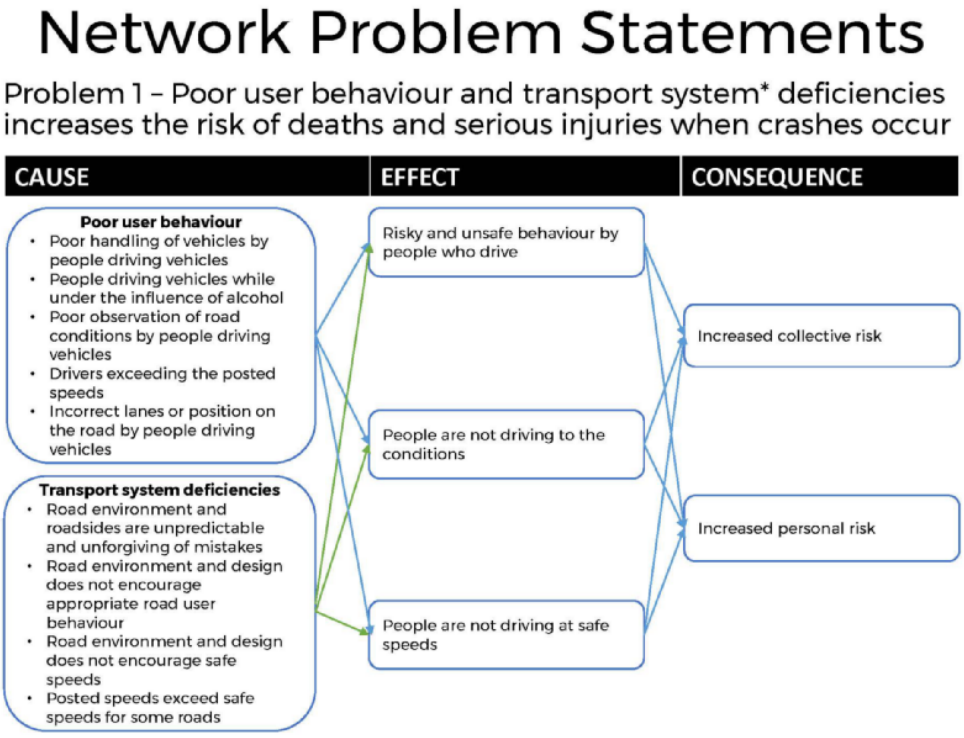
BENEFIT MAP					
BENEFIT →	INVESTMENT BENEFIT (KPI's) →	MEASURE →	DESCRIPTION →	BASELINE →	TARGET
Improved road safety 50%	Reduced collective risk	Collective risk rating on key corridors	Reduction in risk density of fatal and serious injury crashes per kilometre over the road network on key corridors	Current collective risk rating – Across the key corridors – to identify key corridors	Reduce collective risk rating on key corridors by X
	Reduced personal risk	Personal risk rating on key corridors	Reduction in risk to the individual of fatal or serious injuries per million vehicle kilometres travelled on key corridors	Current personal risk rating – Across the key corridors – to identify key corridors	Reduce personal risk rating on key corridors by X
	Reduced number of DSI's	Reported DSI's benchmarked against other regions and potentially national data	Reduction in number of deaths and serious injuries across the network	DSI 2019 Network-wide Hastings - 60 New Plymouth - 60 Nelson - 23 Palmerston North – 42 National -	XX% reduction in DSI's across the network
Improved customer experience 30%	Reduction in % of HCV's on minor roads	HCV % on local roads benchmarked against other regions and national data (Current NZTA VKT data does not split heavy vehicles – unsure what data source would be used)	Reduction in % of HCV's on minor roads	Current % of HCV's on minor roads benchmarked against other regions and national data	XX% reduction in % of HCV's on minor roads
	Reduction in % of crashes involving trucks	Reported crashes with trucks benchmarked against other regions and national data	Reduction in percent of fatal and serious injury crashes across the network	2015-19 Network-wide Hastings – 8.91% New Plymouth – 6.59%	XX% reduction in crashes involving trucks across the network

			(particularly on SHs)	Nelson – 3.33% Palmerston North – 2.26% Napier - National - 2015-19 State Highways Hastings – 16.43% New Plymouth – 8.79% Nelson – 9.38% Palmerston North – 1.89% Napier - National -	XX% reduction in crashes involving trucks on State Highways
	Reduction in freight travel time variability	Freight time variability as quantified by HDC using Google data (collection underway)	Reduction in freight travel time variability	Baseline freight time variability	XX% Reduction in freight travel time variability
	Increased network resilience / redundancy	Increase in number of alternative routes to the Expressway (SH2) for freight	Increase in number of alternative routes to the Expressway (SH2) for freight in case of crashes and catastrophic events	Current truck/freight routes	XX Increase in number of alternative routes to the Expressway (SH2) for freight
Greater uptake of active travel and public transport 10% Poor uptake of active travel and public transport is negatively impacting community wellbeing 20%	Increased use of active travel and PT for trips to school	Increased active travel and PT trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data	Increased use of active travel (walking, cycling, scooting) and PT for trips to school	2018 Census - New Zealand Walk - 22% Public Transport – 20% Cycle – 4% Other – 1% 2018 Census – Hastings Walk - 18% Public Transport – 14% Cycle – 5% Other – 2% 2018 Census – Napier Walk - 21% Public Transport – 13% Cycle – 6%	XX% increase in use of active travel and PT for trips to school

				Other – 2% New Plymouth Nelson Palmerston North School Travel Plans (Generalised - Overall) Walk - 24% Bus – 7% Cycle – 6% Scooter – 6%	
	Reduced use of cars for journeys less than 5km (15 minutes)	Employer travel survey data and community travel survey	Reduced use of cars for journeys less than 5km	2017 - 55% of HDC staff reported their commute was less than 15 minutes 2018 - 29% of HBDHB staff reported their commute was less than 15 minutes Need to cross-calculate with mode Baseline community travel survey – mode and distance to/from work	From trips to/from work less than 5km (15 min) Increase journeys by walking 8% Increase journeys by cycling 5.5% Increase journeys by bus 1.5% Increase carpooling X%
	Increase active travel and PT for trips to work	Census data, employer travel survey data and community travel survey	Increased active travel for trips to work	2013 Census – Hastings Actual count, not % 2018 Census – Hastings Will be % not actual count 2018 Census – National Walk or jog – 5.2% Public Transport – 4.2% Cycle – 2% 2018 HBDHB Travel Survey	XX% increase in use of active travel and PT for trips to work

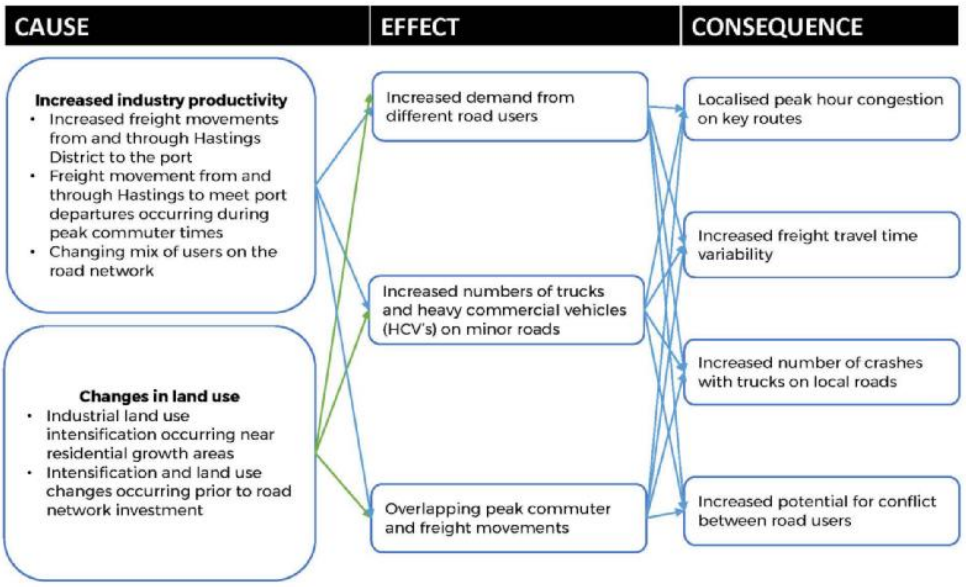
				Walk or jog – 6% Public Transport – 8% Cycle – 10% 2017 HDC Travel Survey Walk or jog – 6.5% Public Transport – 1% Cycle – 3.5% Baseline community travel survey – primary mode to/from work	

Appendix H – Cause, Effect and Consequences Mapping



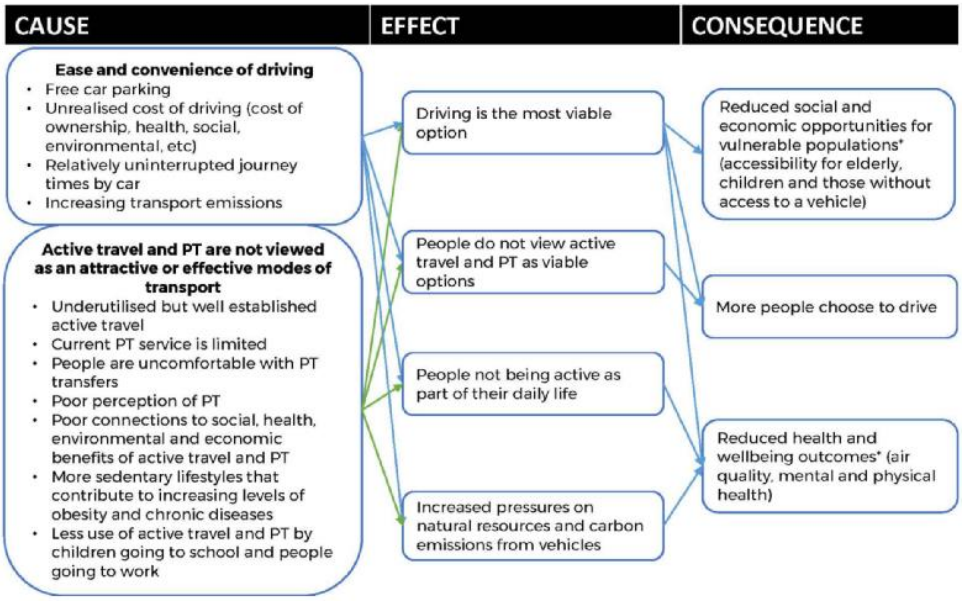
Network Problem Statements

Problem 2 – Increased industry productivity and changes in land use is resulting in the transport system not meeting the needs of users*



Network Problem Statements

Problem 3 – Poor uptake of active travel and public transport (PT) is negatively impacting community wellbeing



Appendix I – Waka Kotahi NZ Transport Agency SBC Investment Questions

Meet Requirements?	Strategic Case Investment Questions and Response Sections
Yes	Is it clear what the problem is that needs to be addressed (both the cause and the effect)? See section 4.1, Appendix I – Cause, Effect and Consequences
Yes	Is there evidence to confirm the cause and effect of the problem? See section 4.2, Appendix I – Cause, Effect and Consequences
Yes	Does the problem need to be assessed *at this time*? See section 4.2
Yes	Is the problem specific to this investment (or should a broader perspective be taken)? See section 2
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 4.3, Appendix H – Benefit Mapping
Yes	Are the benefits of high value to the organisation(s) (furthering its (their) objectives)? See section 3
Yes	Will the KPIs that have been specified provide reasonable evidence that the benefits have been delivered? See section 4.4.1 and Appendix H – Benefit Mapping
Yes	Are the KPIs both *measurable* and *totally attributable* to this investment? See section 4.4.1 and Appendix H – Benefit Mapping
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 4.4.1 and Appendix H – Benefit Mapping

Appendix J – Iwi Engagement

Representatives from local iwi who serve as Pou Ahurea Matua were engaged and asked for feedback on the transport network and active transport in Hastings District. The feedback below summarises the feedback received.

The following three locations have been identified to be of relevance to this project:

- Waipatu Marae / Waipatu Community Plan
- Kahurānaki Marae Committee, Te Haukē
- Bridge Pā and Raukawa Valley

The following are the key issues that need to be addressed through this project:

1 **Speeds around marae, churches, schools and the communities**

2 **Lack of walking and cycling connections into centres including Hastings, Havelock North and Flaxmere**

3 **Safety concerns due to narrow shoulders in cycling areas (Cycling clubs and Iron Māori use the Raukawa Valley and surrounding area for training)**

4 **Lack of public transport connectivity**

There was a consensus that the lack of public transport connectivity is disconnecting whānau, especially those on very low incomes and poor health, require better access socio-economic opportunities (e.g. community facilities and health centres) via public transport. Investigating these needs and the cost to whānau / hāpori of such not being available (perhaps extending to kainga like Pakipaki, Omahu) was highlighted.

As stated in the 2010 Heretaunga Plains Urban Development Strategy:

There is evidence that connection to culture improves Māori well-being. It is important to ensure that Māori have both an easy means of connecting and moving between peri-urban Māori communities, such as Tangoio, Omahu, Bridge Pa, Pakipaki etc and urban communities, such as west Hastings, Flaxmere and Maraenui. It is also important that "suburbs" maintain vital community infrastructure to provide opportunities for community connection and revitalisation.

To encourage mode shift, investigating public transport options regarding rail/ bus extending from Waipukurau to Napier and Wairoa to Napier was also supported.

5 **Roading issues at Kohupatiki**

It was noted that Kohupatiki has two major roading issues which have been unaddressed for many years. This is associated with the access and egress to/from Farndon Road into Kohupatiki from both entry points. This should be made safer for all road users especially with the continual development of Kohupatiki.

6 **Action from HDC and HBRC**

It was emphasised that action from both the HDC and HBRC is crucial as they engage in Papakainga development to provide solutions, and not put it solely into the hands of the whānau.

Appendix K – Public Day and Online Engagement

A public day was held on the 12th of March and an online survey was also posted on the same day to provide an opportunity for feedback for those who could not attend. The key findings from this engagement are outlined below.

Problem statement one: Poor user behaviour and transport system deficiencies increases the risk of serious injury in the advent of a crash.

It was acknowledged that safety is positioned at the top of the hierarchy of transport needs. Whilst acknowledging the fact that addressing poor user behaviour and transport system deficiencies must be a long-term goal, three key ways were identified in the feedback response to address this:

- Install more roundabouts, particularly at the Longlands Road / Railway Road intersection, as there have been a lot of near-fatal accidents happen there.
- Driver education is important to highlight key areas of concern for cyclists (roundabouts, traffic lights, right turning bays/lanes).
- Improve pedestrian facilities particularly in Havelock North.

Problem statement two: Increased industry productivity and changes in land-use is resulting in the transport system not meeting the needs of users.

The majority of the responses identified freight management as being key to address a transport system not meeting the needs of users due to increased industry productivity and changes in land-use.

This included early action of Elwood Road Expressway through to Havelock North, to help keep trucks and other traffic off Marine Parade. By easing congestion over the narrow bridges at Awatoto, it would also relieve congestion at the Pakowhai Road/ Napier Hastings Expressway roundabout.

Removing freight trucks from residential areas during the hours of 9pm-6am was suggested, with increased use of signage to calm traffic speeds (i.e. "Please slow down - Residential Area"). Reintroducing speed cameras along Tomoana and Pakowhai Roads was identified to curb speeding.

A comment was also received around the use of rail and trucks depending on the distance travelled.

Problem statement three: Poor uptake of active travel and public transport is negatively impacting on community wellbeing.

Feedback was received that, given the right facilities in the network and in the workplace, there is potential for increased uptake in active travel and public transport to positively contribute to community wellbeing.

The following measures were identified to address this poor uptake:

Improve public transport services (including reliability, frequency, connection to EIT Taradale, and provision of route to serve growing suburbs such as Clive).
Separated facilities and intersection improvements are needed to increase safety for walking, cycling and scooting.
Implement subsidies to encourage people to travel by bus, bikes and scooters.
Establish a HOP card system.
Install provision for bikes and scooters (e.g. between Hastings and Napier, adjacent to Fardon Road).
Safe connections to local facilities (supermarket, library, schools etc.) via existing cycle paths.

Enable safe access to existing cycleways.
Safety considerations to accommodate steep footpaths.
More controlled crossing points across major roads.

In addition to the above, making active travel easier by implementing good quality and affordable public showers with bike storage was raised.

It was noted that there is a need to address safety concerns for cyclists as cycling is currently associated with a lot of fear, especially with near-misses being extremely common.

Additional feedback as to how transportation across the district can be improved

Falling outside the above problem statements, a response was received around reducing congestion on roads by installing extra lanes and enabling freer left-hand turns.

Appendix L – Programme Descriptions

Do Minimum
This programme does not include any new transport infrastructure or soft measures. It includes implementation of the Asset Management Plan (AMP), maintenance programmes and education and awareness initiatives that are currently in place.

Soft Measures Focus
This programme aims to invest in low-cost driver and travel behaviour change, communication and engagement, policy and travel demand management measures.

Infrastructure Investment Focus
This programme aims to invest primarily on infrastructure with a few productivity, demand, and soft measures related to infrastructure as a secondary focus.

Growth Area Focus
This programme primarily invests in measures that would specifically benefit the residential and industrial growth areas identified in HPUDS through both infrastructure and productivity, demand, and productivity, demand, and soft measures.

Safety Focus
This programme aims to invest in lowering safety risks. The focus of the programme interventions is lower road safety risks for all users and increasing safety into the future through productivity, demand, and soft measures such as policy measures and data collection to reduce conflict between users.

Land-Use and Industry Focus
This programme primarily invests in meeting the demand of residential and industrial growth through a mix of infrastructure, policy change and transportation / land-use integration.

Community Wellbeing Focus
This programme aims to invest in interventions that specifically improve overall community wellbeing by improving infrastructure, safety and productivity, demand, and soft measures related to active transport and public transport (PT).

Balanced Programme
This programme invests equally across all interventions as a means of integrating both low-cost and high-impact projects that will address the identified problems.

Appendix M – Risks and Effects Descriptions

The short list evaluation framework used an MCA approach, using several sub-criteria under the following the main criteria:

The risk / implementability of the programme; and
The effects caused by the programme

	Criteria	Explanation
Risks/ Complexity	Deliverability / Feasibility	Delivery risk, resourcing, timeframes, complexity
	Affordability	Affordability against RLTP/NLTP budgets (10 years)
	Stakeholder/Customers	Acceptability of the option to key partners and general public
Effects	Social	Impact on liveability, connectivity and accessibility to core services
	Cultural	Impacts on iwi values, ways of living that enhance hauoratanga (wellbeing) and equitable access for marae-based communities
	Economic	Impact to local economy, degree of enablement of sustainable business and tourism, attracting visitors, business and growth
	Environment	Greenhouse gas emissions, potential to impact on environmentally sensitive areas
	System Integration	Transport and land-use integration, realising opportunities for mutual benefit and efficiencies

Appendix N – Sensitivity Test Descriptions

A range of sensitivity tests were undertaken to understand the sensitivity of the different criteria in scores and programme ranking. These sensitivity tests were agreed upon by the project team. The tests include:

1. Investment objectives, risks/implementability and effects equally weighted at 33% (S1)
2. Investment objectives weighted at 50%, risks/implementability at 25% and effects at 25% (S2)
3. Investment objectives weighted at 70%, risks/implementability at 15% and effects at 15% (S3)
4. Investment objectives weighted at 50%, risks/implementability at 10% and effects at 40% (S4)
5. Investment objectives weighted at 50%, risks/implementability at 40% and effects at 10% (S5)

Appendix O – Programme Alignment with Investment Objectives Justification

Programme Option		Do Minimum	Soft Measures Focused Programme	Infrastructure Investment Focused Programme	Growth Area Focused Programme	Safety Focused Programme	Land-Use and Industry Focused Programme	Community Wellbeing Focused Programme	Balanced Programme
Investment Objective 1	Improve road safety	Moderate Adverse Effect/Risk	Neutral	Moderate Positive	Moderate Positive	Significantly Positive	Minor Positive	Moderate Positive	Moderate Positive
Objective 1 Justification Current state: From 2015 to 2019, there were 35 deaths and 270 serious injuries resulted from road crashes on HDC's network. The number of deaths and serious injuries (DSI) increased at a rate of around 4 percent per annum. Vulnerable road users make up 33.6% of DSI.		No improvement in safety measures will result in moderate adverse effect regarding safety.	Low focus on safety initiatives, high focus on policy, behaviour change, and education may maintain current road safety.	Heavy focus on safety initiatives. Moderate focus on vulnerable users. Low focus on soft measures which are key to safety.	Moderate focus on safety initiatives and on vulnerable users. Low focus on soft measures which are key to safety.	Heavy focus on safety initiatives. Moderate focus on vulnerable users. Low focus on soft measures which are key to safety.	Minor focus on safety initiatives. Moderate focus on vulnerable users and on soft measures which are key to safety.	Moderate focus on safety initiatives and vulnerable users. High focus on policy, behaviour change and education which are key to safety.	Moderate focus on safety, vulnerable users and soft measures.
Investment Objective 2	Improve customer experience	Significant Adverse Effect/Risk	Neutral	Minor Positive	Moderate Positive	Minor Positive	Moderate Positive	Moderate Positive	Moderate Positive
Objective 2 Justification Current state: 95% of the freight in the Hawke's Bay region is by road. Freight movements are expected to increase from 20.2 million tonnes in 2012 to about 30.7million tonnes by 2045. VKT in Hawke's Bay have increased by 7% on local roads and 13% on state highways.		No action to address competing user demands will have significant adverse effect.	Low focus on infrastructure to address increasing demands and high focus on soft measures to reduce demands and improve the built environment.	High focus on infrastructure to address increasing demands and low focus on soft measures to reduce demands and improve the built environment.	Moderate focus on infrastructure to address increasing demands and on soft measures to reduce demands and conflicts.	High focus on infrastructure to address increasing demands and low focus on soft measures to reduce demands and conflicts.	Moderate focus on infrastructure to address increasing demands and on soft measures to reduce demands and conflicts.	Moderate focus on infrastructure to address increasing demands and on soft measures to reduce demands and conflicts.	Moderate focus on infrastructure to address increasing demands and on soft measures to reduce demands and conflicts.
Investment Objective 3	Improve community wellbeing	Moderate Adverse Effect/Risk	Moderate Positive	Minor Positive	Moderate Positive	Minor Positive	Moderate Positive	Significantly Positive	Moderate Positive

Objective 3 Justification Current state: Physical activity rates (36.9 percent) for Hawke's Bay adults during 2014-2017 are low. Over a third (38.4 percent) of Hawke's Bay adults are classified as obese. High reliance on travel by private vehicle.	Mental and physical health will not improve if current trends continue.	Low focus on infrastructure may reinforce network constraints, high level of soft measures will potentially shift some current trends.	High focus on infrastructure may make the network more appealing, lack of soft measures will reinforce current trends.	Minor PT and walking cycling measure would result in minor improvements to wellbeing.	Minimal multi-modal measures needed to improve wellbeing.	Moderate multi-modal measures to improve wellbeing.	Significant multi-modal measures to improve wellbeing.	Moderate multi-modal measures to improve wellbeing.

Appendix P – Network Implementation Plan

Short-term projects for 2022-2025

Type	Indicative Cost	Description	Interdependencies
Transportation / Land-use Integration	**No cost** (internal)	Work with Planning to encourage transport diversity and further support multi-modal design	Walking and cycling projects Policy measures
Transportation / Land-use Integration	**No cost** (internal)	Support/require adoption of staff travel plans for all new developments	All network projects Walking and cycling projects Policy measures
Public Transport (PT)	**$20k**	Establish a PT stop Level of Service (LoS) to ensure consistency	PT projects Walking and cycling projects
Policy	**No cost** (internal)	Policy change to densify development around PT hubs/corridors	PT projects Walking and cycling projects
Policy	**No cost** (internal)	Policy to support multi-modal hubs at PT stops where end of trip facilities, park and ride (car) and bike lockers are provided	PT projects Walking and cycling projects
Policy	**No cost** (internal)	Policy on siting of key destinations (schools, sports centres, etc.) to ensure they are within close proximity to the network	All projects near schools
Policy	**$40k**	Develop a Complete Streets plan/policy to support overall mobility, increase mode choice and access to transport	PT projects Walking and cycling projects
Technology	**$40k**	Develop an Intelligent Transport Systems (ITS) action plan to futureproof the network and identify areas of future investment	Medium and long-term network projects
Network Study	**$50k**	St Aubyn Corridor Management Plan	All projects near St Aubyn St between Pakowhai Rd and Hastings St, including $5M in implementation of study outcomes

Enforcement	**No cost** (internal)	Support and advocate for increased visible road policing	All network projects
Education	**No cost** (internal)	Support improving/increasing road safety education, re-education of older drivers and driver training to be more aware and courteous to people on motorbikes and cyclists	All network projects Walking and cycling projects
Advocacy	**No cost** (internal)	Advocate for PT to/from the Hawke's Bay Airport	Pakowhai Rd and Karamu Rd projects Walking and cycling projects PT projects
Study / plan Implementation	**$1.5M** $3M total	Implementation of Napier-Taihape Road Corridor Management Plan recommendations/outcomes	Napier-Taihape Road Corridor Management Plan
Study / plan Implementation	**$2M** $5M total	Implementation of Karamu Corridor Management Plan recommendations/outcomes	Karamu Corridor Management Plan
Level of Service Improvement	**$6M** $20M total	Carriageway widening of Middle Road, Gilpin Rd to District line	Walking and cycling projects in the area
Intersection – Level of Service	**$3M**	Pakowhai / St Aubyn - Re-assess preferred option to better facilitate the required walking and cycling linkages at this location	St Aubyn Corridor Management Plan
Amenity / Traffic Calming	**$2M**	Speed reduction measures in suburban areas through area wide pavement treatments	Walking and cycling projects

Total indicative cost of short-term projects - $15.2M

Medium-term projects for 2025-2028

Type	Indicative Cost	Description	Interdependencies
Public Transport (PT)	**$200k**	Improve PT amenities in line with LoS standards	Establishing PT LoS standards PT projects
Public Transport (PT)	**No cost** (internal)	Encourage reduced journey times between key destinations using PT	Walking and cycling projects Travel Demand Management projects (in Active Transport PBC)

Public Transport (PT)	**No cost** (internal)	Advocate for longer operating hours of PT, increased connectivity of PT network, advocate for PT options in rural communities	Walking and cycling projects Travel Demand Management projects (in Active Transport PBC)
Public Transport (PT)	**No cost** (internal)	Advocate for additional PT service information through an app or real-time data	Walking and cycling projects Travel Demand Management projects (in Active Transport PBC)
Study / plan Implementation	**$2M** $5M total	Implementation of St Aubyn Corridor Management Plan recommendations/outcomes	St Aubyn Corridor Management Plan
Safety Management	**$1.5M** $2.5M total	TBD improvements identified in the safety strategy	All network projects
Safety Management	**$750k**	Waimarama Rd – safety management including speed management	Walking and cycling projects in the area
Intersection - Level of Service Improvements	**$1M**	St Aubyn / Windsor Ave	St Aubyn Corridor Management Plan Walking and cycling projects

Total indicative cost of medium-term projects - $16M

Long-term projects for 2028-2031 or beyond

Type	Indicative Cost	Description	Interdependencies
Safety management	**$2.63M**	Pakowhai Rd – Safer Corridors	Establishing PT LoS standards PT projects Walking and cycling projects Travel Demand Management projects (in Active Transport PBC)
Safety management	**$250k**	Te Mata Rd - Safety management including speed management	Te Mata Peak Corridor Management Plan (currently underway) Walking and cycling projects

Total indicative cost of long-term projects - $14.8M

Appendix Q – Network Detailed Implementation Plan

Type	Option	Option Description	Indicative Cost	Quick wins 2021-2022	Short-term projects 2022-2025	Medium-term projects 2025-2028	Long-term projects 2028-2031+
Intersection	St Aubyn / Windsor Ave	Install 3-arm roundabout	$ 1,000,000			1,000,000	
Signal	All signalised intersections	Implement appropriate software to link traffic systems throughout district	$ 150,000	$ 150,000			
Amenity / Traffic Calming	Suburban areas	Speed reduction measures through area wide pavement treatments	$ 2,000,000		$2,000,000		
Intersection	Pakowhai Rd / St Aubyn St	Re-assess preferred option to better facilitate the required walking and cycling linkages at this location	$ 3,000,000		$3,000,000		
Bridge / Carriageway	Middle Road	Carriageway widening to 8m	$ 20,000,000		$6,000,000	$7,000,000	$7,000,000
Intersections	Hastings St N / St. Aubyn St E	SSTW - Likely Traffic signals	$ 500,000		$ 500,000		
Safety Management	Te Mata Rd	Safety Management (including speed management)	$ 250,000				$ 250,000
Safer Corridor	Pakowhai Rd	Safer Corridors	$ 2,625,000				$2,625,000
Safety Management	Waimarama Rd	Safety Management (including speed management)	$ 750,000			$ 750,000	
Safety Management	TBD	Safety Management	$ 2,500,000			$1,500,000	$1,000,000

Study / Plan Implementation	Karamu Corridor Study Implementation	Karamu Corridor Study Implementation	$ 5,000,000		$2,000,000	$2,000,000	$1,000,000
Study / Plan Implementation	Napier-Taihape Road Corridor Management Plan Implementation	Napier-Taihape Road Corridor Management Plan Implementation	$ 3,000,000		$1,500,000	$1,500,000	
Study / Plan Implementation	St Aubyn Corridor Management Plan Implementation	St Aubyn Corridor Management Plan Implementation	$ 5,000,000			$2,000,000	$3,000,000
PT	PT service information	Advocate for additional PT service information through an app or real time data	$ -			$ -	
PT	PT operational improvements	Advocate for longer operating hours of PT; Increased connectivity of PT network; Advocate for PT options in rural communities	$ -			$ -	
PT	PT service to airport	Advocate for PT to/from the Hawke's Bay Airport	$ -		$ -		
PT	PT journey times	Encourage reduced journey times between key destinations using PT	$ -			$ -	
Advocacy	HPUDS and HPTS update	Support an update of HPUDS and HPTS and study model outputs	$ 50,000	$ 50,000			
Education	Driver education	Support improving/increasing road safety education, re-education of older drivers	$ -		$ -		

		and driver training to be more aware and courteous to people on motorbikes and cyclists					
Policy / Enforcement	Visible road policing	Support and advocate for increased visible road policing	$ -		$ -		
Transportation / Land-use Integration	Increase cross-council collaboration	Increase collaboration and create a cohesive strategy between Hastings and Napier councils	$ -	$ -			
Network Study	Karamu Corridor Study	Karamu Corridor Study to consider capacity improvements such as clearways, lane management systems and travel demand	$ 50,000	$ 50,000			
Network Study	Napier-Taihape Road Corridor Management Plan	Napier-Taihape Road Corridor Management Plan	$ 70,000	$ 70,000			
Network Study	St Aubyn Corridor Management Plan	St Aubyn Corridor Management Plan	$ 50,000		$ 50,000		
Data Collection	Data collection to reduce conflict between users	Data collection provision to reduce conflicts with private vehicles, schools and workplaces - household O-D surveys, understanding tourism routes, industrial area movements and forestry/harvesting	$ 20,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000

		movements and load capacity mapping					
Network Study	Implement a Network Operating Plan	Reducing conflict for vulnerable users and prioritising PT and active transport	$ 80,000	$ 80,000			
Technology	Intelligent Transport Systems (ITS) action plan	Develop an Intelligent Transport Systems (ITS) action plan to identify areas of future investment	$ 40,000		$ 40,000		
Policy	Complete Streets plan/policy	Develop a Complete Streets plan/policy to support overall mobility, increase mode choice and access to transport	$ 40,000		$ 40,000		
Policy	Key destination siting policy	Policy on siting of key destinations (schools, sports centres, etc.) to ensure they are within close proximity to the network	$ -		$ -		
Policy	Multi-modal hub policy	Focus on multi-modal hubs at PT stops where end of trip facilities, park and ride (car) and bike lockers are provided	$ -		$ -		
Policy	Policy change to densify development around PT hubs/corridors	Change Planning policies to increase density and allow for a mix of uses particularly around PT hubs/corridors and the town centre to better support cycling, walking and use of PT	$ -		$ -		

PT	PT stop Level of Service	Establish a PT stop LOS to ensure consistency	$ 20,000		$ 20,000		
PT	PT amenity	Improve PT amenities	$ 200,000			$ 200,000	
Transportation / Land-use Integration	Workplace travel plans for new developments	Support/require adoption of staff travel plans for all new developments	$ -		$ -		
Transportation / Land-use Integration	Transportation / Land-use coordination around growth areas	Increase coordination with Planning to ensure proactive response to transport improvements which aligns with growth areas	$ -	$ -			
Transportation / Land-use Integration	Planning to further support multi-modal design	Work with Planning to encourage transport diversity and further support multi-modal design (e.g., pedestrian circulation in car parks)	$ -		$ -		
Transportation / Land-use Integration	Policy scan and updates to increase supportive land-use patterns	Address HDC policies and processes that create transport and land-use patterns resulting in high car dependency	$ -	$ -			

Appendix R - Waka Kotahi NZ Transport Agency PBC Investment Questions

Meet Requirements?	Programme Business Case Investment Questions and Response Sections
Yes	Briefly explain the range of strategic alternatives and options that have been explored, including whether these include consideration of demand, supply and productivity responses. See section 6.1, 6.1.1 and 6.1.2
Yes	Briefly explain the strategic options and alternatives that are proposed and whether there is a clear rationale for the selection of the preferred programme. See section 6, 6.1, 6.2, 7 and 7.3
Yes	Briefly explain why the proposed alternatives and options are likely to be the most effective response to the problem. See section 7.3, 7.3.1, 7.3.3 and 8.1
Yes	Briefly explain whether the proposed alternatives and options are feasible. See section 8

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Project Number: 2-S5493.00

Network Strategic Business Case

Hastings District Council

26 February 2020

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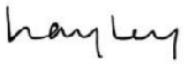

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Document History and Status

Revision	Date	Author	Reviewed by	Approved by	Status
00	23/01/2020	Hayley Byun	Cherie Mason, Lisa Malde		Draft
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00	50% Technical Review
01	90% Technical Review
02	Draft to Client
03	Final document to client

Contents

List of Figures

Disclaimers and Limitations

This report ('**Report**') has been prepared by WSP exclusively for Hastings District Council ('**Client**') in relation to the Active Travel and Network Business Cases ('**Purpose**') and in accordance with the Short Form Agreement with the Client dated 15 November 2019. The findings in this Report are based on and are subject to the assumptions specified in the Report Offer of Services dated 15 November 2019. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

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Executive Summary

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay which is known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

The district is one of the largest apple, pear and stone fruit producing areas in New Zealand and the area boasts an attractive lifestyle known for its food, wine and beaches. Napier Port, which is about to expand, is the fourth largest port in New Zealand by overseas export volumes and is just 20 km from Hastings.

The following key problems have been identified and agreed through a facilitated ILM workshop with relevant stakeholders and partners:

- **Problem one:** Poor user behaviour and transport system deficiencies increases the risk of deaths and serious injuries when crashes occur[1] (50%)
- **Problem two:** Increased industry productivity and changes in land-use is resulting the transport system not meeting the needs of users[2] (30%)
- **Problem three:** Poor uptake of active travel and public transport is negatively impacting on community wellbeing (20%)

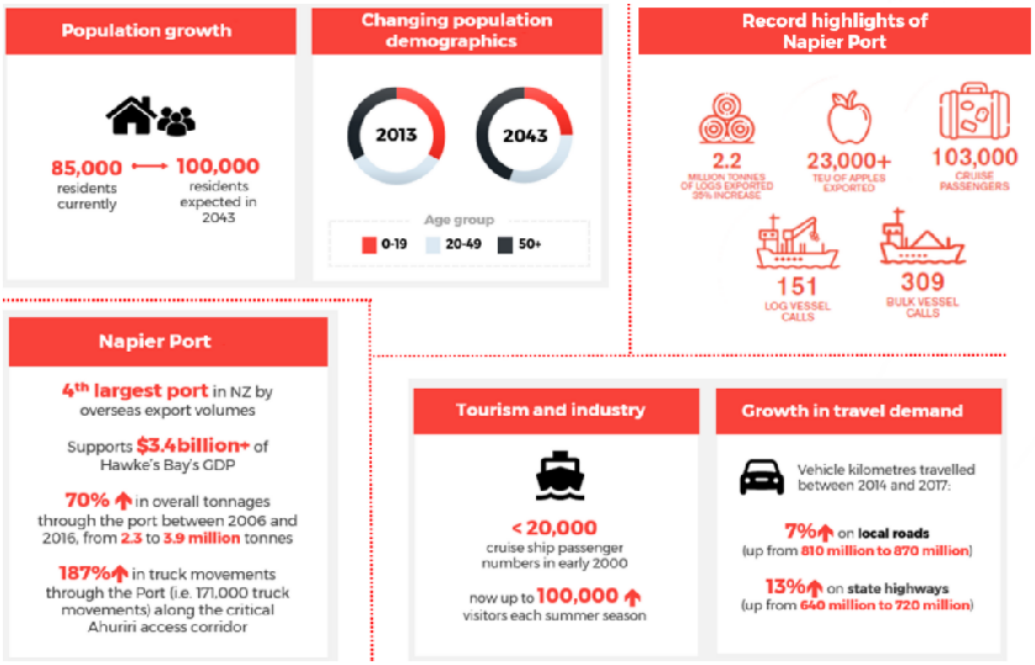
Evidence gathered through the compilation of this Strategic Case largely supports the problems as defined, notably:

- Increasing demand paired with risky and unsafe behaviour by people who drive increases the risk of death and serious injury when crashes occur. This paired with people not driving to the conditions or at a safe speed has increased collective risk and personal risk.
- An increasing number of private vehicles and freight movements across a dispersed network has led to a changing mix of road users and overlapping peak movements. Vehicle Kilometres Travelled (VKT) in Hawke's Bay have increased between 2014 and 2017, by 7% on local roads (up from 810 million to 870 million kilometres) and 13% on state highways (up from 640 million to 720 million kilometres).
- Road transport carries 95% of the freight in the Hawke's Bay region, while rail accounts for almost all the remaining 5%. Underutilisation of rail for freight means more freight trips using trucks through the Hastings District to the expanding port in Napier,

[1] Refers to safe systems approach
[2] Number of heavy trucks on minor roads, localised peak hour congestion on key routes, safety concerns

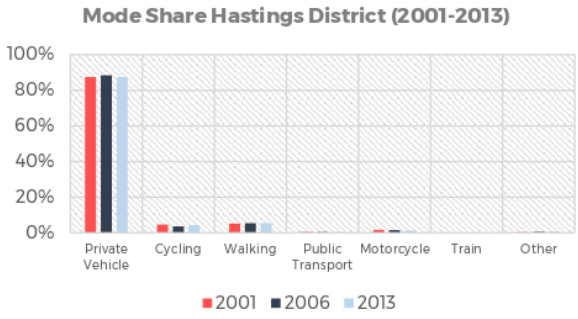
putting pressure on the road network. Commuters are experiencing peak hour congestion on key routes and freight travel time has been impacted.

- Increased domestic and international tourism through cruise ships and the regional airport, which is also expanding, play a factor in adding pressure to the network.



In the move towards a more compact urban form for the Heretaunga Plains subregion, an increasing proportion of the residential growth is expected to take place through intensification by redevelopment within existing residential and rural residential areas by 2045. Alongside residential growth areas, industrial growth areas have also been identified, many of which are in close proximity or adjacent to residential growth areas which will cause competing demands.

As a model community, Hastings District has heavily invested in walking and cycling infrastructure to positively impact on the community, however the ease and convenience of driving has resulted in private vehicles being the primary means of travel within the district. Active travel and public transport are not viewed as attractive or effective modes of transport which means they are underutilised. This translates to people not being as active as part of their daily life, increased inactivity and obesity rates and increased pressure on natural resources and carbon emissions from vehicles. Since driving is seen as the most viable option for transport, vulnerable populations also have reduced social and economic opportunities due to the need to own a vehicle.



The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:

- **Benefit one**: Improved road safety (55%)
- **Benefit two**: Improved customer experience (30%)
- **Benefit three**: Increased community wellbeing (20%)
- **Benefit four**: Greater uptake of active travel and public transport (10%)

There is strong strategic alignment with key national, regional and local strategic drivers around safety, network resilience, safe and efficient freight movements to the port, mode shift, transport choices and access to modes such as public transport, walking and cycling. There has also been an increasing shift toward reducing the adverse effects on the climate, local environment and public health which has strong strategic alignment with this Strategic Case.

Results alignment has been assessed as **High** as per the Investment Assessment Framework (2018).

It is recommended that this proposal should progress to develop a programme business case.

Refer to Appendix J for the checklist of requirements against strategic case assessment questions.

PART A – STRATEGIC CASE

1 Introduction

This document is a Strategic Business Case (SBC), commissioned by Hastings District Council (HDC) to outline the need for investment and the case for change to improve the local transportation network, and move people and goods safely and efficiently within Hastings District. This includes both local roads and state highways (2, 5, 50 and 50A), though major regional network problems will be addressed in the Hawke's Bay Regional Business Case.

The purpose of this strategic business case is to:

- Provide a clear case for change and a compelling reason to invest;
- Define the problems identified by the project stakeholder, the evidence for these problems and associated benefits; and
- Recommend the next steps.

The physical extents of this SBC comprise the entire HDC service area, which is located in the Hawke's Bay Region and focused on the main urban areas such as Hastings, Havelock North and Flaxmere as well as smaller settlements and rural areas (see Figure 1-1).

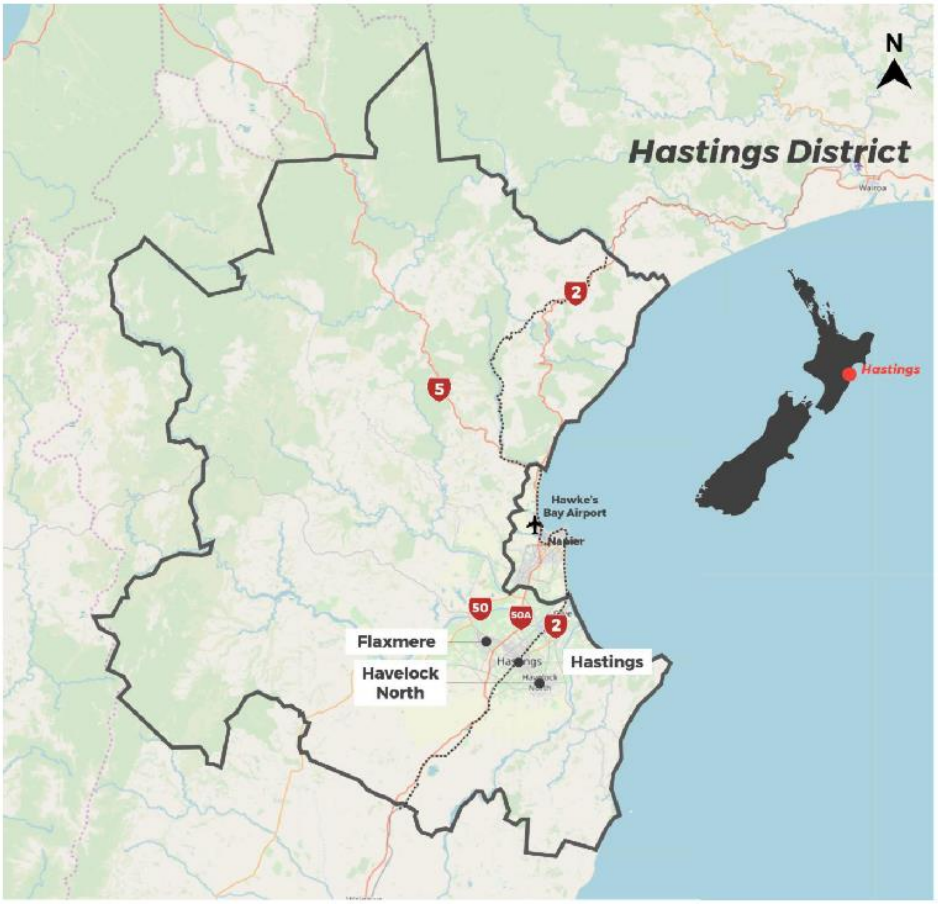


Figure 1-1 Map of Hastings District

2 Context

Hastings, winner of New Zealand's Most Beautiful City Award (2015), is the heart of Hawke's Bay which is known for its lifestyle, climate, beaches and activities, such as cycling trails, walking tracks and iconic landmarks such as Cape Kidnappers and Te Mata Peak.

2.1 Land use patterns

Hastings District is dominated by rural and plains production land use, which surround the urban and commercial areas of Hastings, Havelock North and Flaxmere. These urban areas comprise of residential, commercial and scheduled activities (schools).

Figure 2-1 illustrates the key industrial and residential growth areas identified within Napier City and Hastings District, with the majority of industrial growth areas surrounding Hastings and Flaxmere.

In the move towards a more compact urban form for the Heretaunga Plains subregion, an increasing proportion of the residential growth is expected to take place through intensification by redevelopment within existing residential and rural residential areas. The key elements of the settlement pattern by 2045 are:

- 60% intensification (10 – 20% intensification or brownfields);
- 35% greenfield; and
- 5% of population in rural areas.

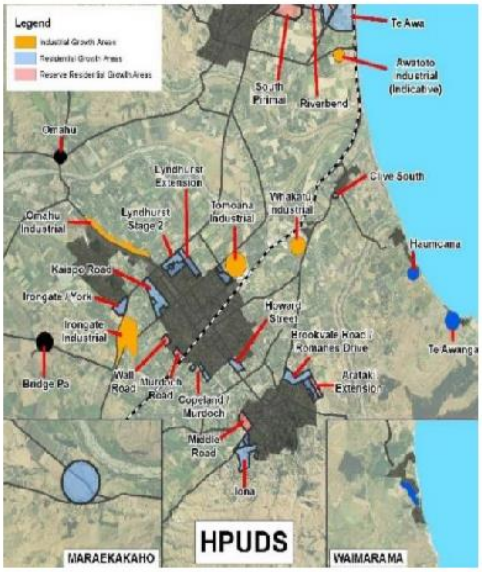


Figure 2-1 Settlement pattern (HDC et al 2017)

See Appendix A for more detailed maps showing the land use summary of Hastings, as well as household projections.

2.2 Population growth

According to the 2013 census, Hastings District had a population of over 73,000 people (SNZ 2013). The current population is estimated at 85,000 people which is a 9.5% increase from 2013 (SNZ 2019). Hastings Districts includes three urban areas; Hastings and Havelock North which have grown steadily and Flaxmere, with little growth between 2001 and 2013.

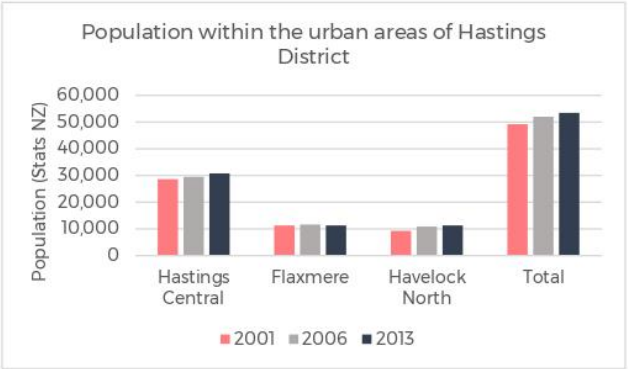
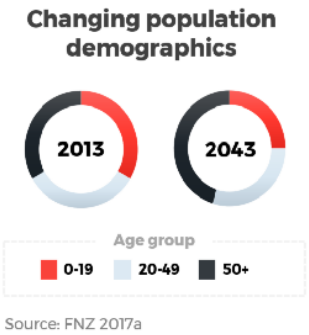


Figure 2-2 Population growth (2001, 2006 and 2013) (Source: SNZ 2013a)

Over the next 25 years, Hastings District's population is expected to increase to nearly 100,000. To support the vision for delivering a safe and efficient network in Hastings, HDC needs to ensure the transport system is fit for purpose. That means providing safe facilities and transport choices to all road users.

While population growth is expected to remain steady, there is expected to be significant growth of the 65+ age populations, who are expected to increase from 35% of the population in 2013 to 45% of the population in 2043. Growth in the population in the 65+ age group is expected to be great than the total population growth over this period. This will have significant impact on the transportation network and how residents use transport in the upcoming years.



Source: FNZ 2017a

3 Strategic Drivers

There is a strong drive for significant investment in the Hastings network at a national, regional and local level.

3.1 National alignment

3.1.1 Government Policy Statement (GPS) 2018-2028 (MoT 2018)

The GPS identifies several national land transport objectives that are relevant to this investment, notably a land transport that:

- *Provides increased access for economic and social opportunities:* Supporting tourism is specifically noted in the investment priorities and the planning direction
- *Enables transport choice and access:* Specifically, increased mode shift, fit-for-purpose and safe (real and perceived) walking and cycling infrastructure
- *Reduces the adverse effects on the climate, local environment and public health:* Notably reduced significant negative effects on water quality and biodiversity from construction and ongoing use of transport infrastructure, and increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives.
- The business case approach aims to provide a value for money solution that address the needs from the key stakeholders.

3.1.2 National Land Transport Programme (WKNZTA 2018)

The National Land Transport Programme (NLTP) is a three-year programme of planned activities and a 10-year forecast of revenue and expenditure prepared by Waka Kotahi to give effect to the GPS.

The NLTP includes a range of initiatives to support local government and has established five National Priority Programmes to accelerate activities aligned with the government's priorities including:

- Safety on local roads
- Public transport
- Walking and cycling
- Regional improvements
- Network resilience

The NLTP supports the following projects within the Hawke's Bay region which are specifically relevant to Hastings District:

- Improving safety; and planning for significant growth in forestry
- Ensuring safe and efficient access to Napier Port
- Maintaining the state highways and local roads
- SH2 Pakipaki to Waipukurau
- Hawke's Bay Expressway
- Weigh Right National at Napier Port
- New cycleways in the iWay cycling programme
- Increasing demand on the public transport system due to an ageing population
- Bridge strengthening programme to open up more of the network to 50MAX and HPMVs
- Safety promotion programmes in schools

3.1.3 Keeping Cities Moving (WKNZTA 2019)

Keeping Cities Moving is Waka Kotahi's plan to improve travel choice and reduce car dependency. The Plan outlines how the Transport Agency, in partnership with others, will help address the causes of car dependency and in doing so contribute to the GPS objectives by increasing the wellbeing of New Zealand's cities by growing the share of travel by public transport, walking and cycling.

Keeping Cities Moving includes an action plan of 34 interventions that will focus on leveraging mode-shift through:

- Spatial and place-based planning
- Policy and regulatory interventions
- Network design, management and optimisation
- Investment in infrastructure, platforms and services
- Economic tools; and
- Education, engagement and awareness interventions

3.1.4 Vision Zero (MoT 2020)

Vision Zero is a national approach where no-one is killed or seriously injured in road crashes, and where no death or serious injury while travelling on our roads is acceptable. Vision Zero builds on the Safe System (Safe Speeds, Safe Roads, Safe Vehicles, Safe Road Users) holistic approach to road safety, which requires people to think about the road system in its entirety, from infrastructure projects to policy and regulation.

3.2 Regional and local government alignment

3.2.1 Hastings District Plan (HDC n.d.)

Section 2.5 'Transportation Strategy of the Hastings District Plan (the District Plan) identifies the importance of establishing a safe and efficient use of the transport network. This can be achieved by traffic management on the network, and the control of land use activities alongside the network.

3.2.2 Hastings Council Long Term Plan 2018-2028 (HDC 2017a)

The Hastings District Council's Long Term Plan sets out the Council's plans and spending with the following aims being relevant to this investment:

- *Accessible range of safe transport options*
- *Safe walking and cycling facilities*
- *Efficient movement of goods*
- *Infrastructure supporting economic growth*

3.2.3 Hawke's Bay Regional Public Transport Plan 2019-2029 (Draft) (HBRC 2019)

The Regional Land Transport Plan's (RLTP) vision for transport in Hawke's Bay is: *"A safe, resilient and efficient transport system that supports the development of our economy and contributes to social wellbeing in our community"*. It aims to promote increased numbers of trips being undertaken on public transport, lessening the reliance on private motor vehicle travel and contributing to reduced congestion and carbon emissions on the road network. The Draft Regional Public Transport Plan 2019-2029 builds upon this strategic alignment by supporting the RLTP's vision.

3.2.4 Heretaunga Plains Transportation Study Report (GHD 2012)

The Heretaunga Plains Transportation Study Report aims to *"ensure that people and goods are moved to/from and within the study area with the least cost and for the most benefit to the region's economy while enhancing its social and cultural fabric and environmental condition"*. This study also explored improving efficiency of freight logistics and distribution. Various key routes were identified as being a LOS D or E and the study projected continued deterioration by 2026 and by 2046 the same areas on the network continue to be under pressure being either at or over capacity.

3.2.5 Heretaunga Plains Urban Development Strategy (HPUDS) (HDC et al 2017)

The HPUDS takes a long-term view of land use and infrastructure, and how growth will be managed in the Heretaunga Plains sub-region for the period 2015-2045. It considers the following growth drivers and the relative demands they place on land in both Hastings and Napier: commercial and industrial; retirement sector; rural and urban residential development; intensification (infill); and affordability and sustainability.

4 The Need for Investment

4.1 Defining the Problem

A facilitated investment logic mapping (ILM) workshop was held on 19 December 2019 with the following key stakeholders to identify the problems confronting the region and the benefits of addressing these issues (see Appendix B for the list of partners and stakeholders, as well as their contribution of interest in the project).

The stakeholder panel identified and agreed the following key problems:

- **Problem one**: Poor user behaviour and transport system deficiencies increases the risk of deaths and serious injuries when crashes occur[3] (50%)
- **Problem two**: Increased industry productivity and changes in land-use is resulting the transport system not meeting the needs of users[4] (30%)
- **Problem three**: Poor uptake of active travel and public transport is negatively impacting on community wellbeing (20%)

The Investment Logic Map is attached as Appendix C.

[3] Refers to safe systems approach
[4] Number of heavy trucks on minor roads, localised peak hour congestion on key routes, safety concerns

4.2 Evidence

4.2.1 *Evidence for problem one*

50%

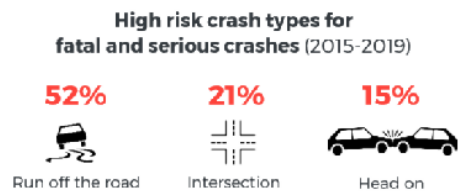
Problem one: Poor user behaviour and transport system deficiencies* increases the risk of deaths and serious injuries when crashes occur
*Refer to safe systems approach

This problem statement is derived to capture the issues around poor driving behaviour occurring within the existing road environments in Hastings that do little to reduce the risk of serious injury or death during a crash. The consequence is a network that is not for purpose and does not cater for all types of users.

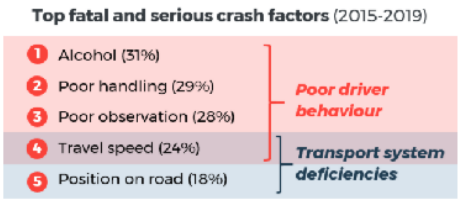
The cause of the problem is seen in the following, and is clear when compared against the Safe Systems Approach:

- Unsafe roads and roadsides which are unpredictable and unforgiving of mistakes as the design fails to encourage appropriate road user behaviour and safe speeds; and
- Unsafe speeds that do not suit the function and level of safety of the road.

During the five-year period 2015 to 2019, a total of **35 deaths** and **270 serious** injuries resulted from road crashes on HDC's network, with the number of deaths and serious injuries (DSI) increasing at a rate of around 4 percent per annum (19 and 175 of DSI respectively were on local roads). This is in contrast to the earlier five-year period of 2010 to 2015 which has marked a decreasing trend. Active modes, often classed as vulnerable road users make up 33.6% of DSI; however, these modes are significantly underrepresented when compared to New Plymouth, Nelson and Palmerston North[5], with vulnerable road users making up an average of 43.4% of total DSI in these urban areas.

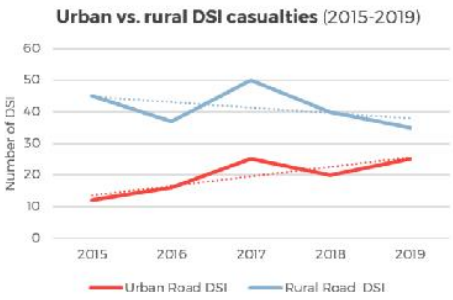


Three types of high risk crashes account for 88 percent of all fatal and serious crashes in HDC. Run-off road crashes are a considerable proportion of fatal and serious crashes on the network.



The left figure outlines the top fatal and serious crash factors on all roads in HDC. Apart from poor observation of road conditions by drivers, the remainder of the crash factors are overrepresented when compared to the crash factor averages from New Plymouth, Nelson and Palmerston North.

[5] Similar urban areas in terms of size of area, population and active transport networks.



While the DSI trend has been decreasing along rural roads, it has been increasing along urban roads. This indicates the need to implement safety measures in populated areas to further reduce crashes due to poor driver behaviour and transport system deficiencies in the Hastings District.

See Appendix D for the full crash analysis of HDC's crash history between the period 2015 and 2019.

Infrastructure and risk

Figure 4-1 outlines the identified high-risk corridors[6] for the District (refer to Appendix E for more specific details of rural and urban high-risk corridors from the Hastings District Council 2017 Road Safety Strategy).

As seen in Figure 4-2, an infrastructure rating has been assessed for all roads in Hastings, with approximate locations of high risk intersections identified. Note: the highest risk roads posed by infrastructure are shown as black, with red being medium to high.

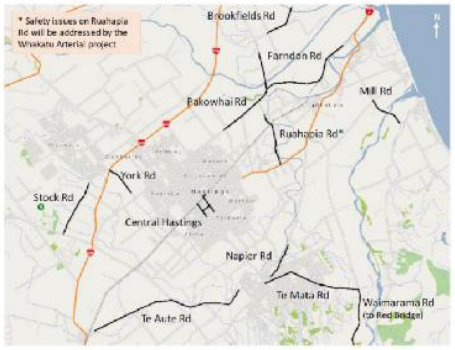


Figure 4-1 High risk corridors for 2011-2015 (HDC 2017)

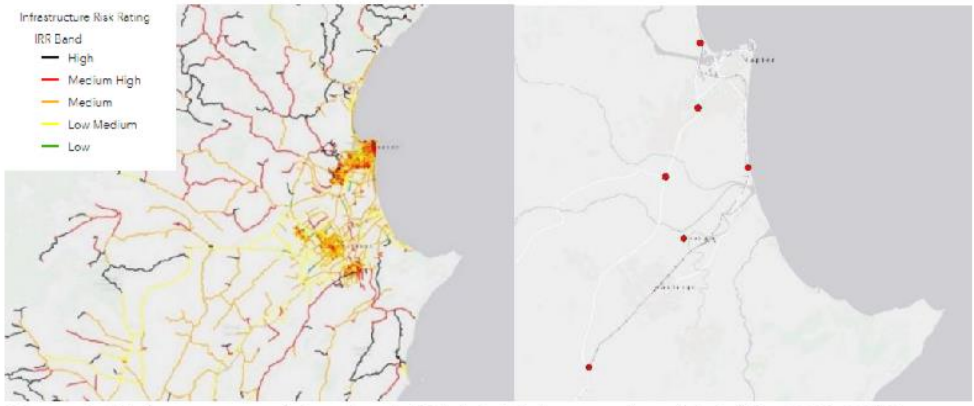


Figure 4-2 Infrastructure risk rating (left), high risk intersections (right) for 2013-2018 (Source: Mega Maps)

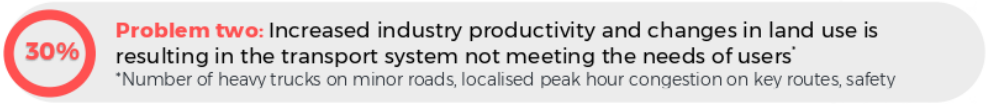
Poor behaviour trends

There has been significant improvement in some crash causes where driver behaviour or choice is implicated. Fatal and serious injuries from some major crash factors (alcohol and drugs, young drivers, fatigue and distraction, roads and roadsides, no restraint use) have in general declined since 2008, however crashes caused by high-risk drivers and speeding drivers have shown little improvement (HBRC 2018). See Appendix D for further details.

[6] High risk corridors are lengths of road with a higher than average crash risk; where targeted safety improvements are most likely to reduce the social cost of crashes. High risk corridors are defined as corridors where the crash density (collective risk) or crash rate (personal risk) is high compared to similar corridors nationally (HDC 2017).

Recent spikes in crashes have been of concern and emphasises the need for the region to continue in focusing on national and local education programmes aimed at improving driver behaviour and encouraging a culture of driving to the conditions. From a Vision Zero and Safe System approach, this shows that the current transport system is unforgiving when people make mistakes. This presents an opportunity to improve the potential for DSI outcomes by creating a more forgiving system that takes human fallibility and vulnerability into account.

4.2.2 *Evidence for problem two*



Problem two refers to the inefficient freight movement through the transport system in Hastings, which has failed to effectively respond to the growth in demand and land use changes. An efficient freight network within Hawke's Bay is vital for the region's economy – not only does it serve a highly productive rural sector that exports large quantities of horticultural, forestry and agricultural products, it also provides access to the Port and domestic markets. The consequences of the problem are:

- Increased potential for conflict between road users;
- Localised peak hour congestion on key routes and increased freight travel time variability. This results in delays along the supply chain despite strict schedules in place, as well as increased costs for importers and exports as they effectively pay the wait time;
- Increased number of crashes with trucks on all roads of HDC. The number of crashes that involve trucks in fatal and serious crashes between 2015 and 2019 is equivalent to the total combined crashes with trucks in New Plymouth, Palmerston North and Nelson. Similarly, 17% of crashes on State Highways in HDC involve a truck, in contrast to an average of 4% in similar aforementioned regions.

The first part of the cause **(i.e. increased industry productivity)** is driven by:

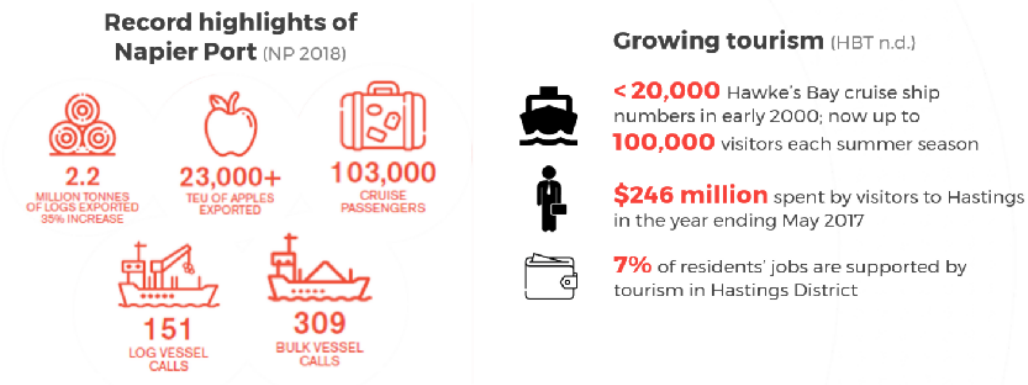
- A significant increase in freight movements from and through Hastings Districts to the port (see Section 0). This, combined with a continued increase in VKT on local roads and state highways and an ageing population will contribute to increased demand and challenges with the mix of traffic using the road network;
- Freight movement from and through Hastings to meet port departures occurring during peak commute times.

Tourism and industry

Growing regional industries such as agriculture, horticulture, viticulture and forestry and the Napier Port expansion both contribute to growing demands on the Hastings District transportation network, particularly in relation to trucks and heavy vehicles on key corridors.

Napier Port is the fourth largest port in New Zealand by overseas export volumes, holding national significance as it accounts for 10% of New Zealand's export tonnages (HBRC 2018). In dollar terms, Napier Port supports more than $3.4 billion of Hawke's Bay's Gross Regional Product (HBRC 2018). Hastings District is one of the largest apple, pear and stone fruit producing areas in New Zealand, and therefore has an important relationship with the Port.

Increased tourism through cruise ships and the regional airport which is expanding also play a factor in adding pressure to the network.



The second part of the cause **(i.e. changes in land use)** can be seen in the industrial land use intensification occurring near residential growth areas (see Figure 2-1), as well as intensification and land use changes occurring prior to road network investment. This lack of integration between development and transport infrastructure translates to increased car dependency, higher energy use, greater traffic volumes and inefficient freight movement (HBRC 2014).

Freight transport

Road transport carries 95% of the freight in the Hawke's Bay region, while rail accounts for almost all the remaining 5%. The rail line south from Napier is commercially viable and handles all the region's rail freight. Use of this line for freight grew over 40% between 2007 and 2012, but tonnages remain low as a percentage of all freight carried. After 2014 freight loads has dropped on the line, due to Ravensdown Fertilisers' discontinued use of rail and because Fonterra product is no longer exported out of Napier Port (HBRC 2018).

Freight moving into and out of the region is growing and is expected to increase from 20.2 million tonnes in 2012 to about 30.7million tonnes by 2045[7]. The growth in key freight types through the Port is predicted to increase truck movements (in and outbound) by 187% (being 171,000 truck movements), along the critical Ahuriri access corridor between 2018 and 2027. These predictions are based on significant recent growth in apple plantings, wood harvests commencing in the Tararua/Central Hawke's Bay and Wairoa areas, and growth in other freight types (HBRC 2018).

The effects of the problem **(i.e. a transport system not meeting the needs of users)** are seen below:

- Growth in travel demand as evident by the significant increase in Vehicle Kilometres Travelled (VKT) as well as an increase in demand for High Productivity Motor Vehicles (HPMV) capability on key access routes;
- Increased number of trucks and heavy commercial vehicles (HCV) on minor roads, especially with trucks going into residential areas (Havelock North/Whakatu) rather than standard routes.
- Overlapping peak commuter and freight movements.

[7] National Freight Demand Study, Ministry of Transport, 2014

Growth in travel demand

VKT in Hawke's Bay have increased between 2014 and 2017, by 7% on local roads (up from 810 million to 870 million kilometres) and 13% on state highways (up from 640 million to 720 million kilometres) (WKNZTA 2020). This is largely contributed by the increase in heavy vehicles because of the growth in freight moving through the region.

Since 2017, Hawke's Bay has also seen a rise in VKT on sealed urban and rural local roads, as well as sealed urban state highways. However, this is not the case for rural state highways which indicates increased demand has primarily occurred in urban areas and the more remote parts of the district (see Appendix A for details).

Heavy vehicles on the network

Problems with the significant increase in freight movements is evidenced by a clear increase in annual number of containers being handled by the Napier Port (an average of 8% per annum between 2009 and 2015[8]). These numbers are expected to peak further over the coming years as a result of the continued growth in the rural sector and the national promotion of shipping as a transport mode.

While road use has been increasing, containers into the Port by rail have decreased by over 15% between 2012 and 2016 (see Figure 4-3). Rail is greatly underutilised with only 9.9% of movements into the Port being by rail compared to 24.7% nationally in 2016, adding pressure on the network as trucks rely heavily on the road to move containers. This underutilisation of rail is further supported by the 2014 Future Freight Scenarios Study which showed that the rail route capacity (trains/day) running at Oringi-Hastings was 8 with a maximum of 27, as well as Hastings-Napier at 8 with a maximum capacity of 85, (MoT 2014).

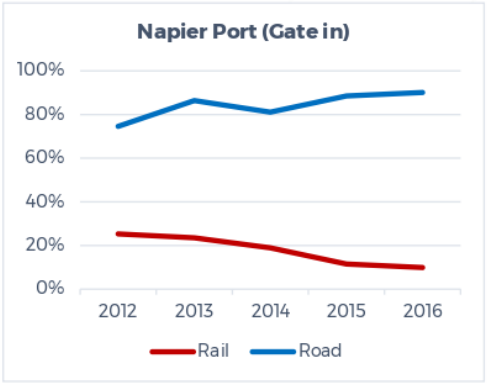


Figure 4-3 Decreasing rail movements with increasing road use (MoT 2019)

The impacts of heavy vehicles on the urban area, and the need to build a closer relationship between increases in the demand for freight and the provision for additional network capacity, is recognised by the District. A 12.4-hectare site in the industrial zone of Whakatu is earmarked for a future freight hub to provide a more effective access to the port for exports and imports via rail. With its proximity to the rail corridor and being in the centre of Hawke's Bay's future industrial heart, it is intended to connect a major export base directly to Napier Port and support the region's future growth (NP 2018).

The capability of the network to transport High Productivity Motor Vehicles (HPMVs) and to ensure safe and resilient access to areas of primary production is also an ongoing issue for the Hawke's Bay region (HBRC 2018). With 41 bridges in Hastings District currently understrength, there is a weak link in the ability to increase the weight and size of vehicles. Businesses are therefore limited to expand and shift their product to the Port for export in an efficient manner (GHD 2012).

[8] This includes containers only, with forestry trucks excluded.

Level of service and network deficiencies

Results from the deficiency analysis from the Heretaunga Plains Transportation Study (2012) highlight the key areas of concern at Level of Service (LOS) D or E within Hastings in 2009, 2026 and 2046[9]. See Figure 4-4 below.

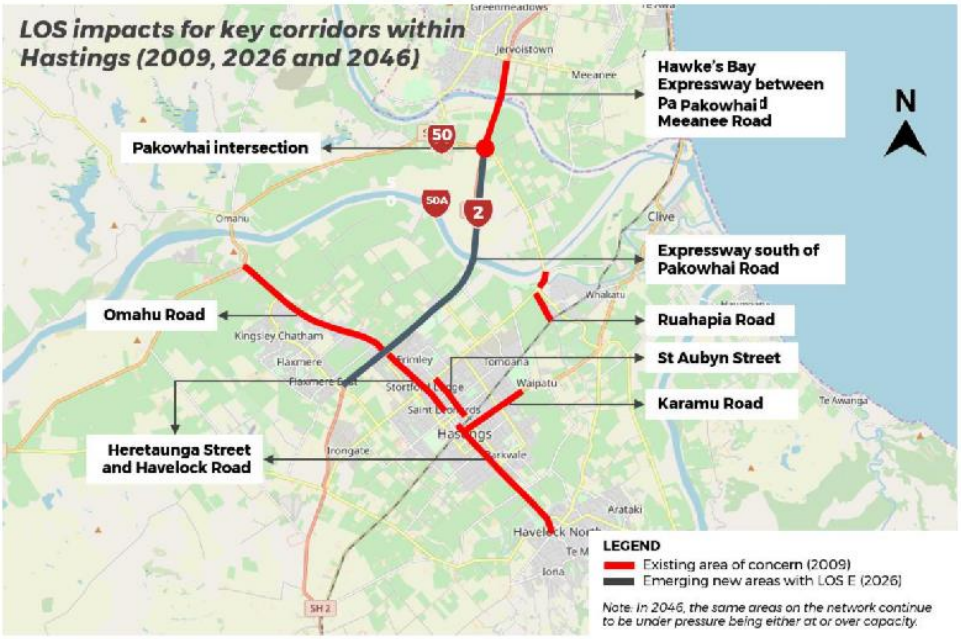


Figure 4-4 LOS impacts for key corridors within Hastings (2009, 2026, and 2046) (GHD 2012)

It is also noted that many of these issues would have been mitigated by recent construction projects, with the exception of several unaddressed corridors like Omahu Road, Karamu Road, Heretaunga Street and Havelock Road. Improvements since this study (e.g. roundabout improvements at Pakowhai, Hawke's Bay Expressway and Whakatu) may have decreased these forecasted impacts by delaying the onset of decreased LOS. However, it is likely that it will continue to create localised peak congestion via pinch points in the network heading into 2046. Some of the industrial areas identified in the HPUDS also align with the projected decrease in LOS (e.g. Omahu and Tomoana) which supports the need to address these areas.

In addition, Hastings District is facing a period of significantly higher road renewal requirements in the next ten to fifteen years, because of a concentrated programme of rural road sealing in the 1960s. This further creates challenges for the district to maintain appropriate levels of service into rural areas (HBRC 2018). As outlined above, growth in all the following areas have led to increasing and competing demands on the Hastings networks from a variety of users:

[9] LOS D is defined as all drivers markedly restricted; LOS E is defined as near capacity, little or no freedom. The results of LOS also include peak commuter and freight.

4.2.3 *Evidence for problem three*

20% **Problem four:** Poor uptake of active travel and public transport is negatively impacting on community wellbeing

Problem four refers to the ease of driving in HDC, and how the general perception of active travel and public transport, is reducing usage from those that have their own vehicles.

In 2010, Hastings and New Plymouth were selected by Waka Kotahi NZ Transport Agency (Waka Kotahi) for the Model Communities Programme: a focused investment in cycling infrastructure, education and encouragement. In 2011, iWay was developed with the programme focusing on developing key arterial routes to urban areas, complementary on-road cycle lanes on key collector routes, shared pathway projects, improved connectivity, and education programmes including training, campaigns and other safety programmes (HDC 2017). By mid-2012, the network was completed with more than 100km of new pathways including key routes to Flaxmere, Hastings, Havelock North and Clive (iWay 2020).

Despite significant investment in active modes in the region, the number of cars per household continues to rise, with the private vehicles being the primary means of travel to work within the Hastings District. Figure 4-5 indicates both a dominance of the car in Hastings and an opportunity for change given the projected increase in population in the coming decades.

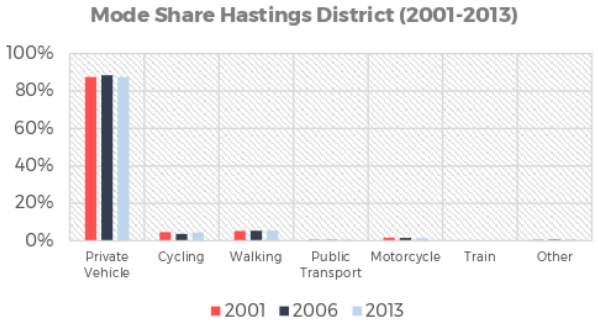


Figure 4-5 Mode share in Hastings District (2001-2013) (SNZ 2013a)

A higher reliance on the private car means a missed opportunity for people to be physically active during their commute. A lack of physical activity is one of the leading factors causing heart disease, stroke, cancers and premature deaths in New Zealand; risks increase for Māori, Pacific people and low-income communities (NZCofPHM 2014).

Furthermore, 'incidental exercise'[10] is strongly linked with improved health as "active transport can help improve physical as well as mental health, community life, social wellbeing and community interaction and safety" (NZCofPHM 2014). A perception survey revealed that walking and cycling for exercise and recreation is a source of physical, mental and spiritual well-being, and in some cases a way to relax and calm down from the stresses of everyday life (Muggeridge 2012). A University of North Carolina study also found that people who cycle for 30 minutes five times per week, took less sick days than their peers, resulting in an increase in economic productivity (WKNZTA 2016).

[10] Incidental activity is defined as physical activity undertaken to access public transport by the New Zealand College of Public Health Medicine (2014).

Ease and convenience of driving

As seen in Figure 4-6, barriers to further mode shift are still present as travelling alone by vehicle is the top choice because it saves time and is convenient (key findings from the Hawke's Bay District Health Board (HBDHB) Travel Survey Data is included in Appendix F). Although cycling and using public transport are the top two ideal modes of travel, the actual top modes of travel are car-based: 1) driving alone; 2) carpooling; and 3) cycling.

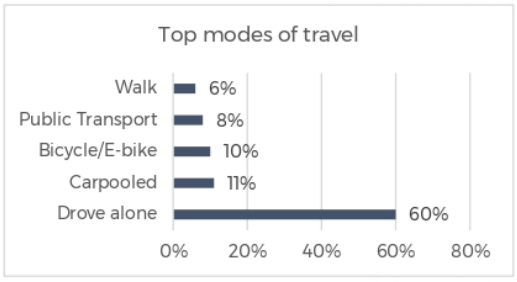


Figure 4-6 Top modes of travel (HBDHB 2018)

Automobile commutes exceeding 15 minutes are associated with reduced happiness and increased anxiety, while public transport commuting does not reduce personal well-being until journey times exceeds 30 minutes (Litman 2020). This applies to 56% of respondents from the HBDHB Travel Survey Data in 2018 who were found to spend 15 to 30 minutes commuting to work.

Poor perception of active travel and public transport

The poor perception of active travel and public transport as an attractive or effective mode of transport is contributing towards its limited uptake, resulting in high car dependency. For pedestrians and cyclists, this is due to gaps in levels of service and perception that active travel is unsafe, as well as inconsistent facilities on arterial and collector routes particularly at intersections. Connectivity barriers relating to the quality and comfort of the active travel network such as distance and time is also a factor (see Appendix G for evidence from the Active Modes Strategic Case).

In addition, while significant improvements have been made to Hawke's Bay's bus network over the last ten years, gaps are still present with some areas having limited public services. Suburban services in Hastings, which follow a traditional model of leaving from and returning to the CBD, have seen a consistent steady decline in patronage over the last four years (HBRC 2019). While commuter services between cities have a reasonable frequency (20 minutes at peak times) and are showing some growth when fuel prices increase, the journey time is too long and more direct services are needed at peak times (HBRC 2019).

The effects of the problem are clear when considering the following statistics:

- Physical activity rates (36.9 percent) for Hawke's Bay adults during 2014-2017 are low compared to other regions such as Taranaki and Nelson Marlborough, as well as the national average (see Figure 4-7); a decline of 8.4 percent from the 2011-2014 period. This indicates that in Hawke's Bay a significant portion of the adults are not meeting the recommended physical activity guidelines of at least 30 minutes of exercise on at least five days in the past week[11]. This is well below the national average.

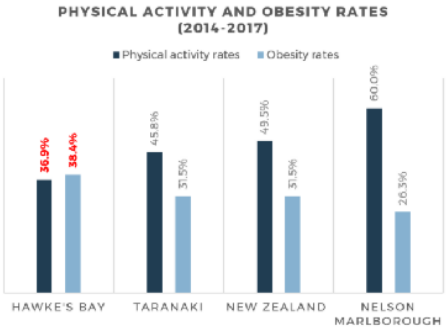


Figure 4-7 Physical activity and activity rates (2014-2017) (MoH 2018)

[11] Hawke's Bay Regional Cycling Plan 2015: The recommended guidance is for at least 30 minutes of exercise on at least five days in the past week.

- Similarly, over a third (38.4 percent) of Hawke's Bay adults are classified as obese compared with just under a third nationally (31.5 percent) across 2014-2017 (MoH 2018). This is an increase of 4.1 percent from 2011-2014.

4.3 Benefits of Investment

The potential benefits of successfully investing to address these problems were developed and agreed by stakeholders as part of the investment logic mapping held on December 2019. The stakeholder panel identified the following potential benefits and weightings:

- **Benefit one**: Improved road safety (55%)
- **Benefit two**: Improved customer experience (30%)
- **Benefit three**: Increased community wellbeing (20%)
- **Benefit four**: Greater uptake of active travel and public transport (10%)

The Benefit Map is attached as Appendix H.

4.4 Investment Objectives

Investment objectives are under development with the client and will be agreed upon with stakeholders during the programme business case process.

4.4.1 Key Performance Indicators

It is important that the benefits of investment can be assessment and measured, to demonstrate that the proposal will deliver the expected outcomes.

These KPIs provide a measurable basis for monitoring how well the potential new programmes achieves the benefits over time. At this time, it is noted that there are currently too many KPI's and they will need to agreed upon with the client prior to the formulation of the investment objectives.

Benefit	Investment KPI	Measure	Description
Improved road safety (50%)	Reduced collective risk	Collective risk rating on key corridors	Reduction in risk density of fatal and serious injury crashes per kilometre over the road network on key corridors
	Reduced personal risk	Personal risk rating on key corridors	Reduction in risk to the individual of fatal or serious injuries per million vehicle kilometres travelled on key corridors
	Reduced number of DSI	Reported DSI's benchmarked against other regions and national data	Reduction in number of deaths and serious injuries across the network
Improved customer experience (30%)	Reduced % of HCVs on minor roads	HCV % on minor roads benchmarked against other regions and national data	Reduction in % of HCV's on minor roads
	Reduced % of crashes involving trucks	Reported crashes with trucks benchmarked against other regions and national data	Reduction in percent of fatal and serious injury crashes across the network (particularly on SHs)
	Reduced freight travel time variability	Freight time variability as quantified by HDC using Google data (collection underway)	Reduction in freight travel time variability
	Increased network resilience / redundancy	Increase in number of alternative routes to the Expressway (SH2) for freight	Increase in number of alternative routes to the Expressway (SH2) for freight in case of crashes and catastrophic events
Greater uptake of active travel and public	Increased active travel and public transport for trips to school	Increased active travel and PT trips to school using census data (benchmarked against other regions and national data) and	Increased use of active travel (walking, cycling, scooting) and PT for trips to school

17

transport (10%) Increased community wellbeing (20%)		generalised school travel plan data	
	Reduced use of cars for journeys to work less than 5km	Use of cars for journeys less than 5km	Reduced use of cars for journeys to work less than 5km
	Increase active travel for trips to work	Active travel for trips to work	Increased active travel for trips to work

4.5 Key Findings

The following summarises the key findings from the review of the evidence. Based upon this evidence it is recommended to progress to a programme business case.

Hastings District faces several challenges around the network. Increasing demand paired with risky and unsafe behaviour by people who drive increases the risk of death and serious injury when crashes occur. This paired with people not driving to the conditions or at a safe speed has increased collective risk and personal risk.

An increasing number of private vehicles and freight movements across a dispersed network has led to a changing mix of road users and overlapping peak movements. Industrial land use intensification near residential growth areas has further increased potential conflict between road users. Underutilisation of rail for freight means more trucks making more trips through Hastings District to the expanding port in Napier, putting pressure on the road network. Commuters are experiencing peak hour congestion on key routes and freight travel time has been impacted.

As a model community, Hastings District has heavily invested in walking and cycling infrastructure to positively impact on the community, however the ease and convenience of driving has resulted in high car dependency. Active travel and public transport are not viewed as attractive or effective modes of transport which means they are underutilised. This translates to people not being as active as part of their daily life, increased inactivity and obesity rates and increased pressure on natural resources and carbon emissions from vehicles. Since driving is seen as the most viable option for transport, vulnerable populations also have reduced social and economic opportunities due to the need to own a vehicle.

4.6 Next Steps

The recommendation is that given the evidence, a programme business case should be developed that considers programmes and options that

- Improve road safety
- Improve customer experience
- Provide outcomes and output that lead to a greater uptake of non-vehicle based modes of travel; and
- Improve community wellbeing and health.

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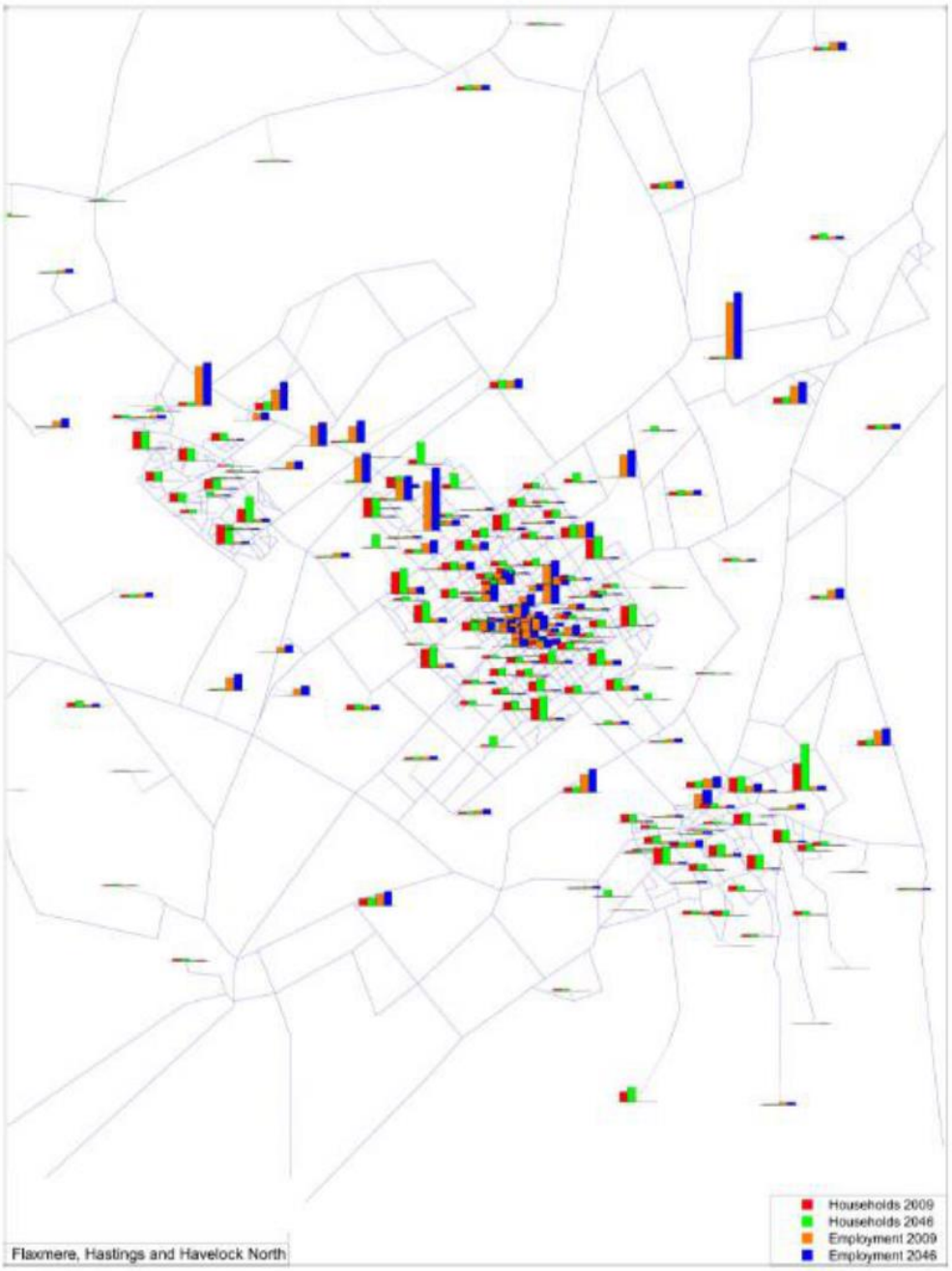
Appendix A – Additional information on Hastings context

Hastings land use summary (GHD 2012)



21

Household projections (GHD 2012)

6.3 Household projections

Household projection totals are based on those adopted for HPUDS for the period 2009 to 2045, with intervals of 2011, 2015, 2021 and 5 yearly to 2045. The periods have been adjusted to match the HPTS timelines and census years to derive projection target totals for 2009, 2011 and thereafter five yearly to 2046 as shown in Table 10.

Table 10 HPUDS household projections

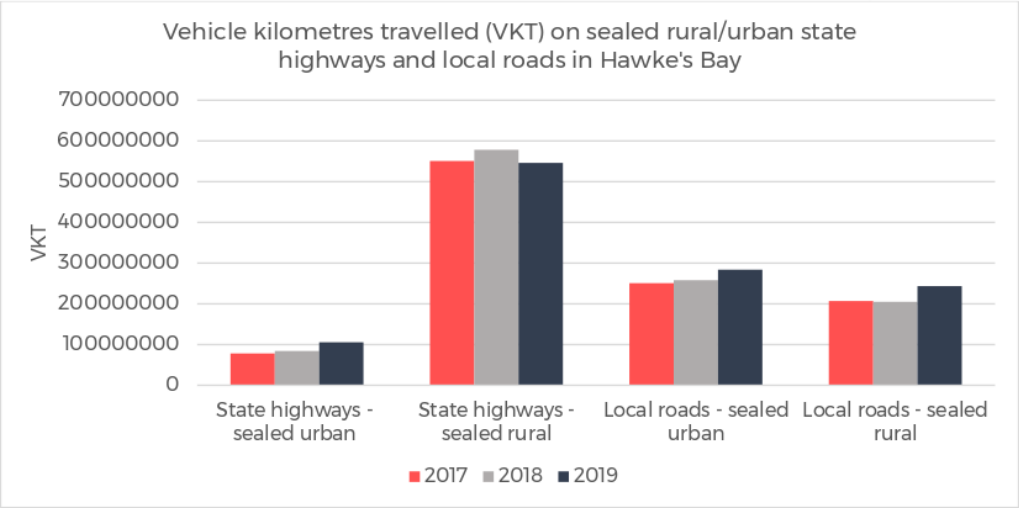
	2009	2011	2016	2021	2026	2031	2036	2041	2046
Projected households	48603	49295	51281	53130	55070	56660	57800	58505	59030
Inter-period increase		692	1986	1849	1940	1590	1140	705	525

The increase in households has been allocated to greenfield/coastal sites, infill and rural (see Table 6).

Table 11 Household growth by type and location

Napier	2016	2021	2026	2031	2036	2041	2046	Total
Greenfields/coastal	578	333	349	267	169	109	63	1868
Infill	514	398	466	413	339	199	170	2499
Rural	193	102	63	44	18	16	12	448
Hastings	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**	**Total**
Greenfields/coastal	627	499	524	401	253	163	94	2561
Infill	557	398	466	413	339	199	170	2542
Rural	209	120	73	52	21	19	14	509

Vehicle kilometres travelled in Hawke's Bay (WKNZTA 2020)



Note: The VKT data for sealed rural and urban state highways are associated with light vehicles. The vehicle classification is not known for that of local roads.

Appendix B – Partners and stakeholders

Key Partners

The following table lists the key partners for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications

Key Stakeholders

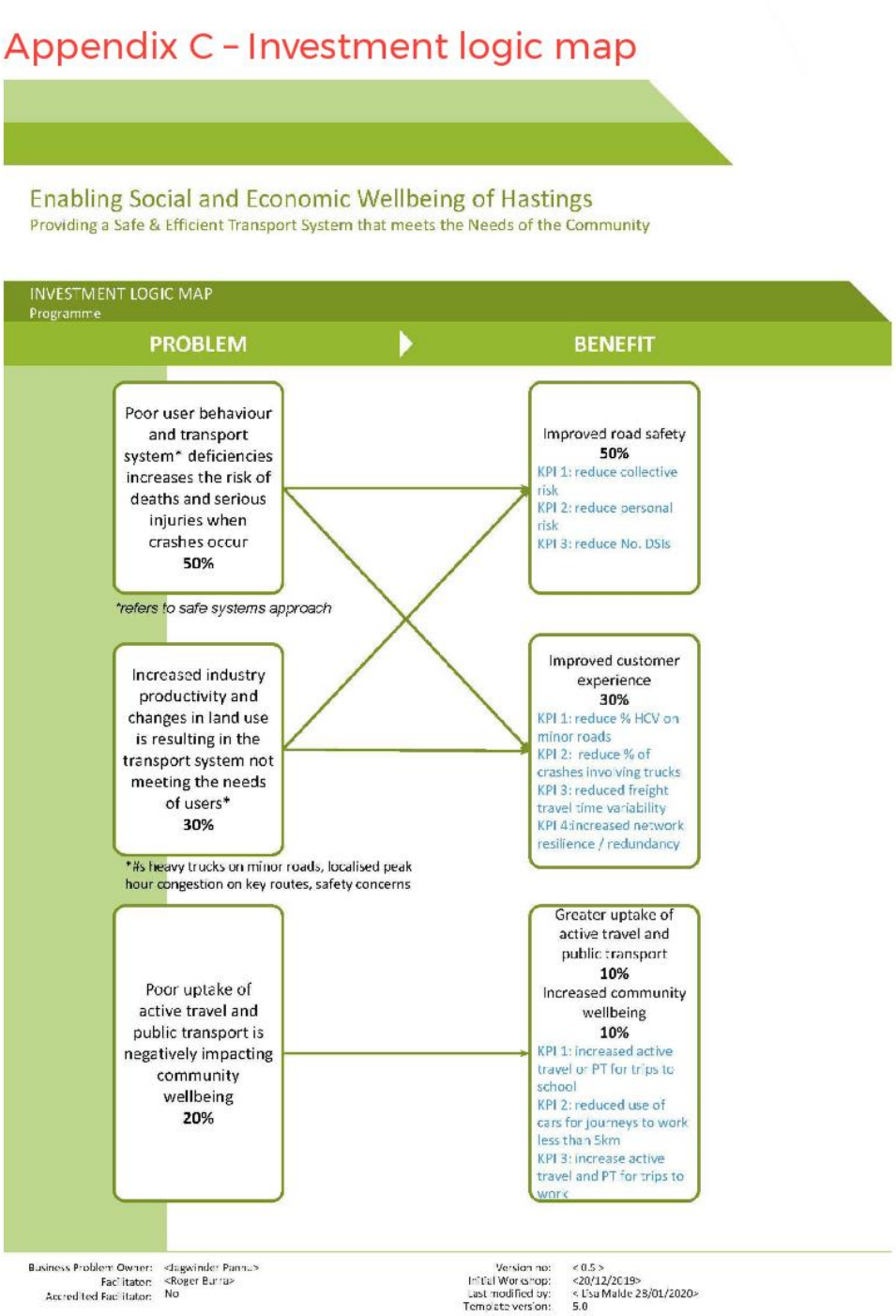
The following table lists the key stakeholders for the project:

Partner	Knowledge / Involvement
Hastings District Council (HDC)	Project owner, historic and current local context
Waka Kotahi (NZ Transport Agency)	Project impact and funding implications
Hawke's Bay Regional Council (HBRC)	Historic and current regional context, regional network stakeholder
Hastings Police	Road policing and safety
Hawke's Bay District Health Board (HBDHB)	Health impacts and outcomes of transport, major employer implementing a travel plan
Road Transport Association New Zealand	Road transport industry representative
New Zealand Automobile Association (AA)	Motorist, car and driver safety
Hastings City Business Association (HCBA)	Business owners, impact of network/parking decisions on business
Hawke's Bay Fruitgrowers Association (HBFA)	Fruit growing industry representative, impact of industry/network
Napier Port	Port operations representative, impact of port/network

Technical support at the ILM workshop was also provided by Hastings District Council (HDC).

ILM workshop participants were selected due to their ongoing involvement in the Regional Transport Committee and as representatives from key industries that would be impacted by transportation network decisions.

Appendix C – Investment logic map

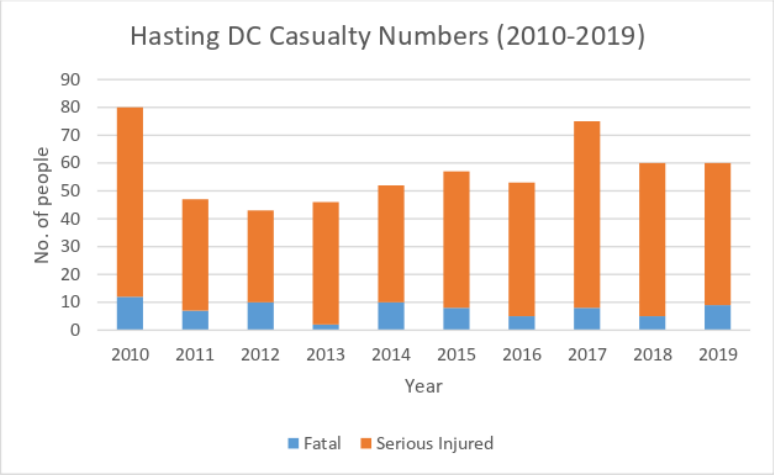


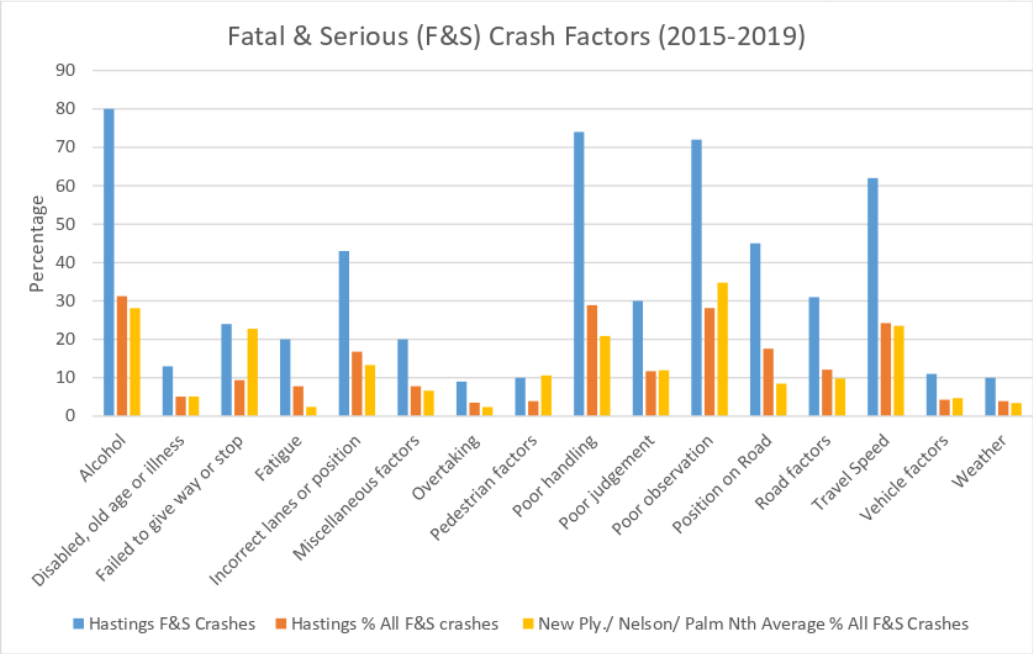
Appendix D – Crash analysis

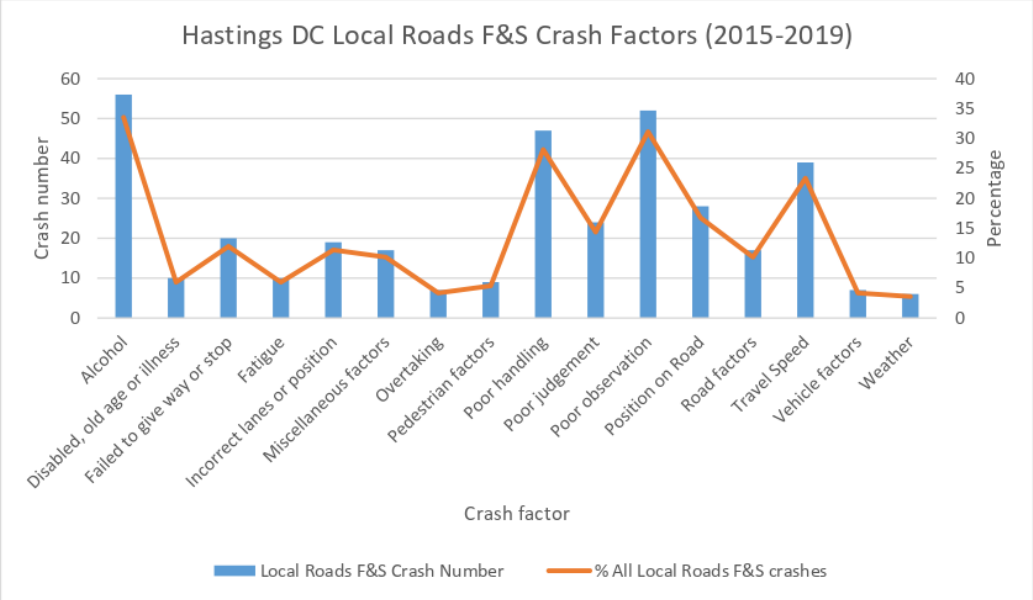
Waka Kotahi NZ Transport Agency Crash Analysis System (2015-2019)

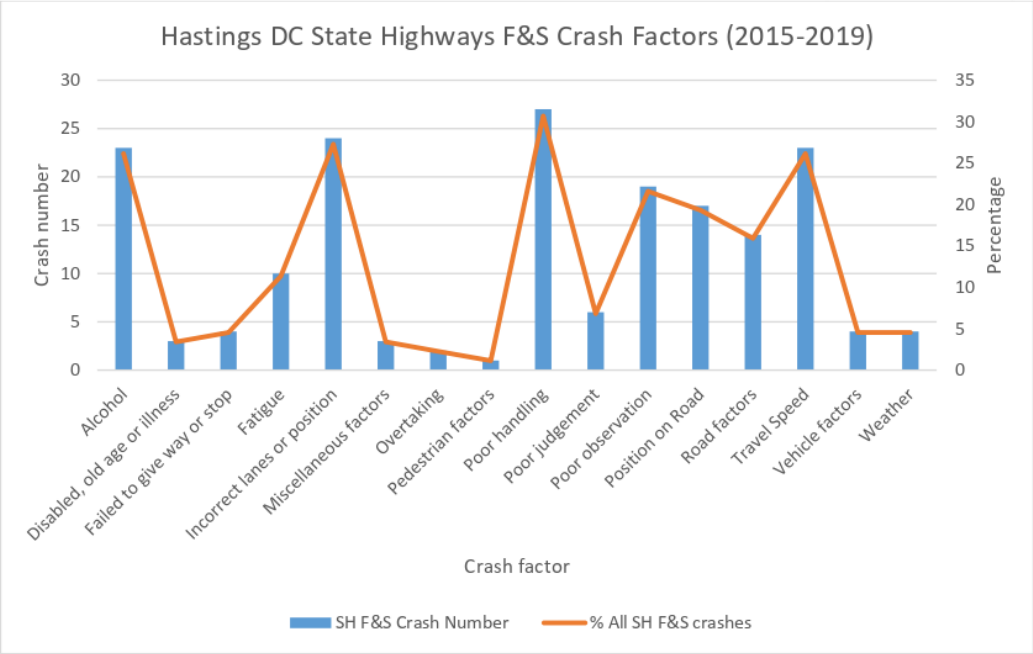
Key findings

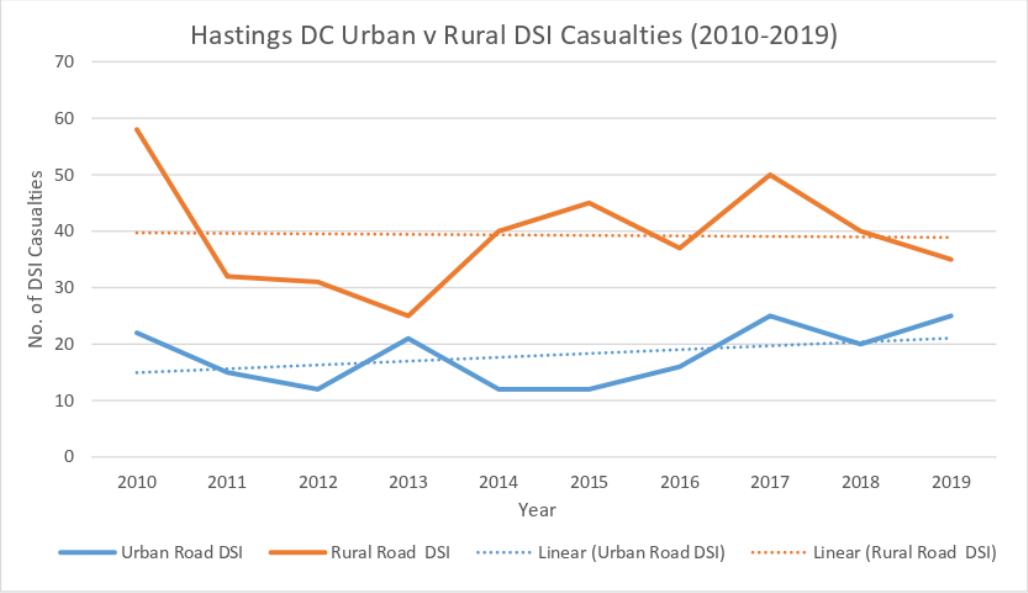
- Since 2014 there has been an upward trend in casualty (death, serious injury, minor injury) numbers in Hastings DC.
- Vulnerable road users make up 33.6% of Death and Serious injuries (DSI) in Hastings DC. However, this is underrepresented when compared to New Plymouth, Nelson and Palmerston North which on average have a vulnerable road user DSI to total DSI percentage of 43.4%
- Motorcycle DSI is overrepresented in Hastings DC when compared to the average of motorcycle DSI across New Plymouth, Nelson and Palmerston North. Motorcycle DSI make up 20% of total DSI on local roads and 20% of total DSI on state highways.
- Prominent factors in Fatal and Serious (F&S) crashes within Hastings DC are alcohol, poor handling, poor observation, travel speed, position on road and incorrect lanes or position. Apart from poor observation the remainder of the aforementioned crash factors are overrepresented when compared to the crash factor averages from New Plymouth, Nelson and Palmerston North.
- While the 10-year DSI trend has been decreasing along rural roads the 10-year DSI trend has been increasing along urban roads.
- When looking at the age of drivers at fault in F&S crashes, 45-74-year olds were overrepresented when compared to the average of New Plymouth, Nelson and Palmerston North.
- When looking at the type of vehicle involved in F&S crashes, vans, trucks and motorcycles were overrepresented in Hastings DC when compared to the average of New Plymouth, Nelson and Palmerston North.
- When looking at the type of vehicle involved in F&S crashes on state highways, only trucks and motorcycles were overrepresented in Hastings DC compared to the average of New Plymouth, Nelson and Palmerston North.

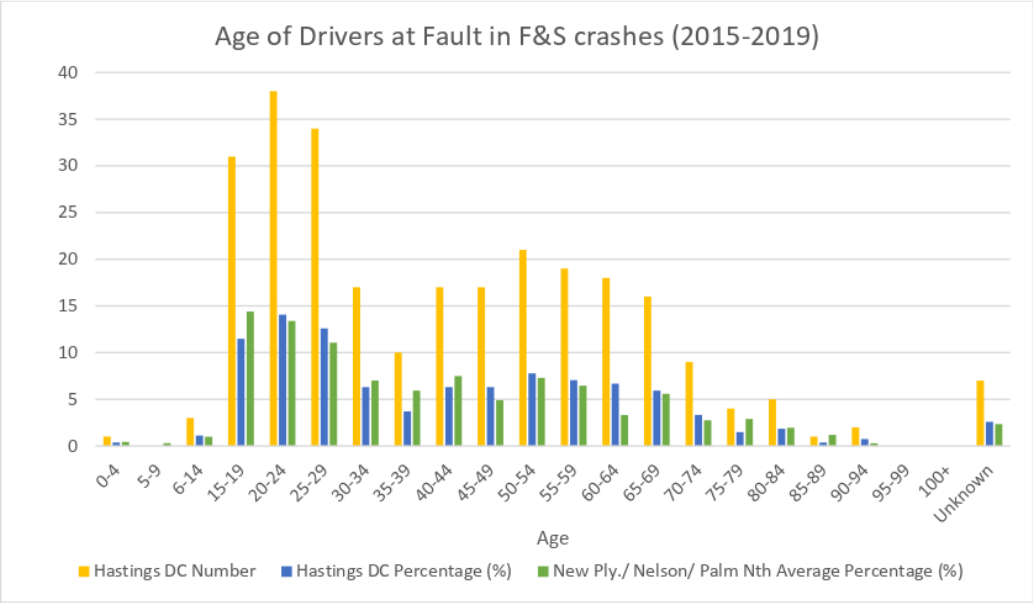


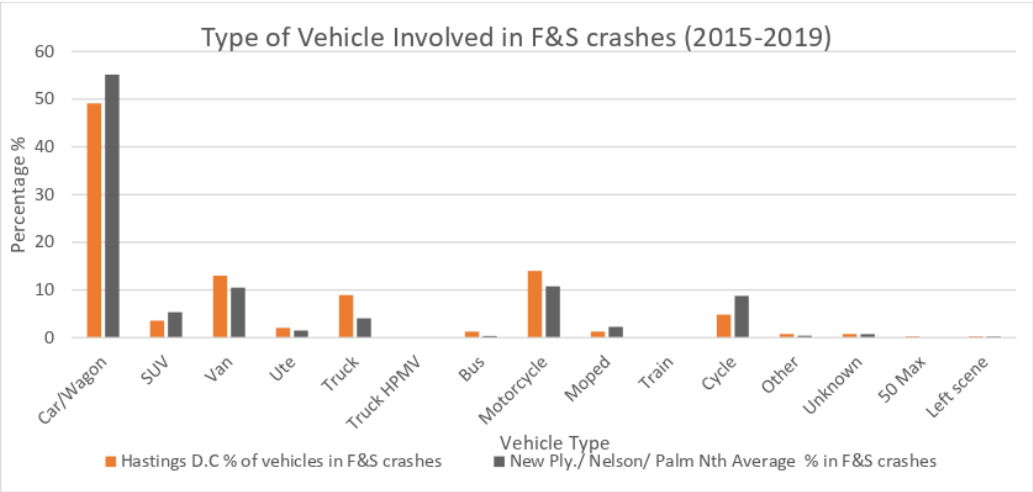

Fatal & Serious (F&S) Crash Factors (2015-2019)
Percentage
90
80
70
60
50
40
30
20
10
0
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Hastings F&S Crashes
Hastings % All F&S crashes
New Ply./ Nelson/ Palm Nth Average % All F&S Crashes


Hastings DC Local Roads F&S Crash Factors (2015-2019)
Crash number
60
50
40
30
20
10
0
Percentage
40
35
30
25
20
15
10
5
0
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Crash factor
Local Roads F&S Crash Number
% All Local Roads F&S crashes


Hastings DC State Highways F&S Crash Factors (2015-2019)
Crash number
Percentage
Alcohol
Disabled, old age or illness
Failed to give way or stop
Fatigue
Incorrect lanes or position
Miscellaneous factors
Overtaking
Pedestrian factors
Poor handling
Poor judgement
Poor observation
Position on Road
Road factors
Travel Speed
Vehicle factors
Weather
Crash factor
SH F&S Crash Number
% All SH F&S crashes


Hastings DC Urban v Rural DSI Casualties (2010-2019)
No. of DSI Casualties
Year
Urban Road DSI
Rural Road DSI
Linear (Urban Road DSI)
Linear (Rural Road DSI)


Age of Drivers at Fault in F&S crashes (2015-2019)
40
35
30
25
20
15
10
5
0
0-4
5-9
6-14
15-19
20-24
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79
80-84
85-89
90-94
95-99
100+
Unknown
Age
Hastings DC Number
Hastings DC Percentage (%)
New Ply./ Nelson/ Palm Nth Average Percentage (%)


Type of Vehicle Involved in F&S crashes (2015-2019)
60
50
40
30
20
10
0
Percentage %
Car/Wagon
SUV
Van
Ute
Truck
Truck HPMV
Bus
Motorcycle
Moped
Train
Cycle
Other
Unknown
50 Max
Left scene
Vehicle Type
Hastings D.C % of vehicles in F&S crashes
New Ply./ Nelson/ Palm Nth Average % in F&S crashes

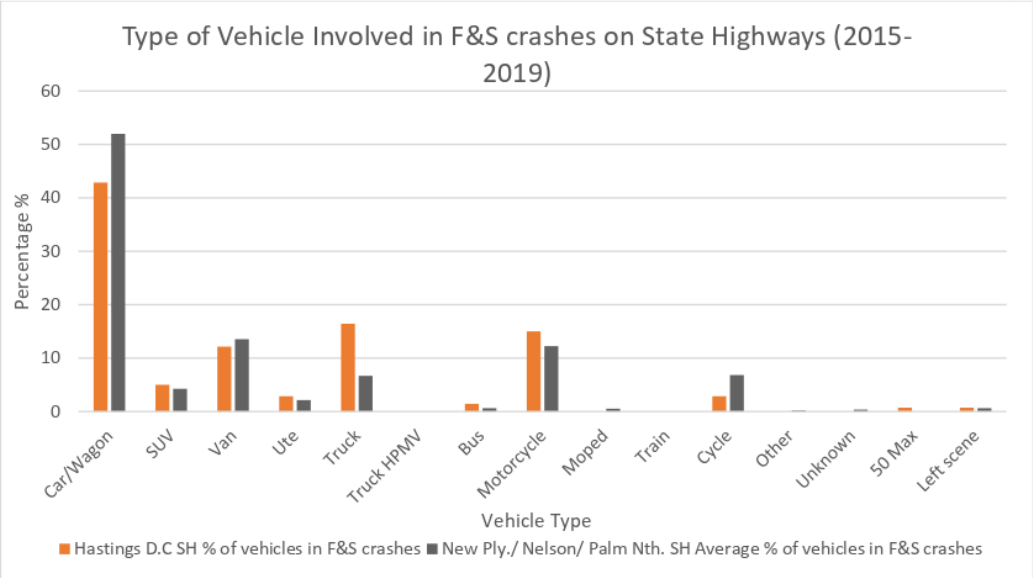
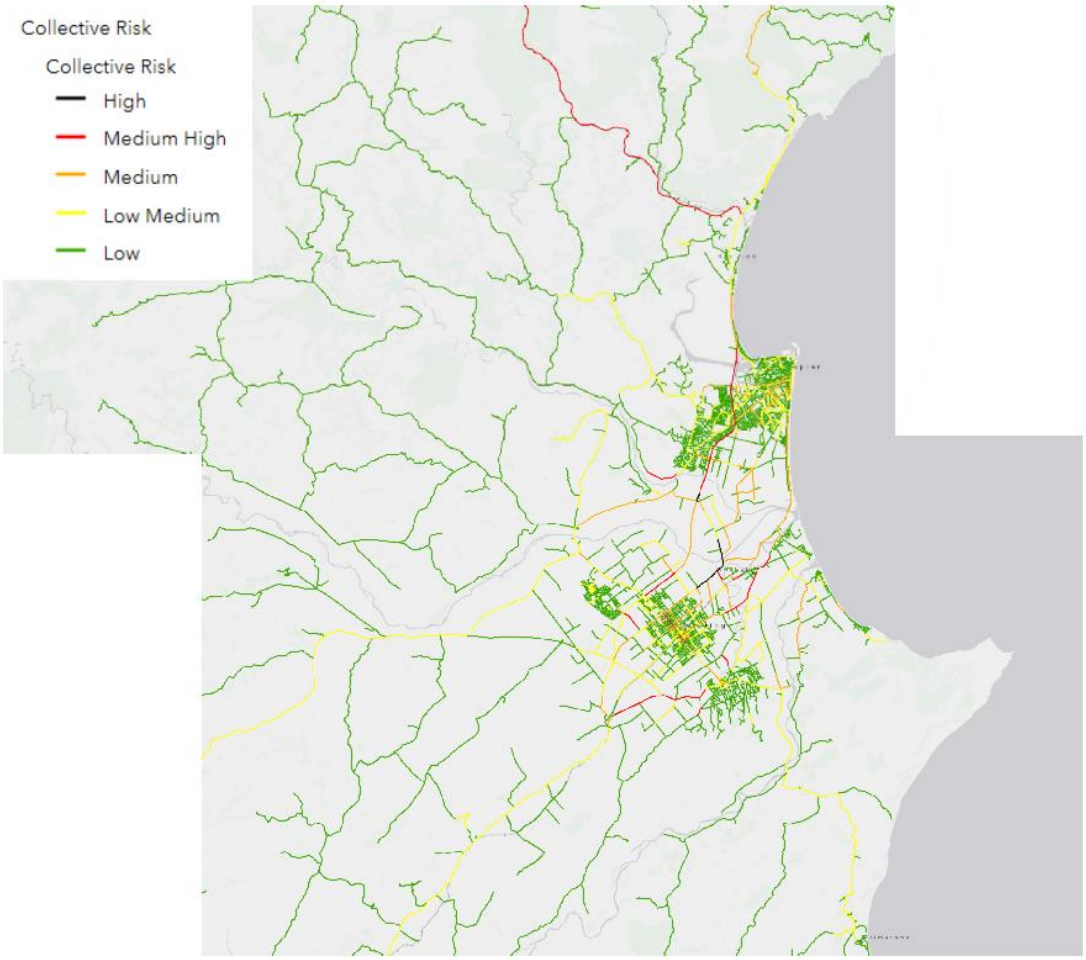


Table 5-1: Vulnerable Road Users

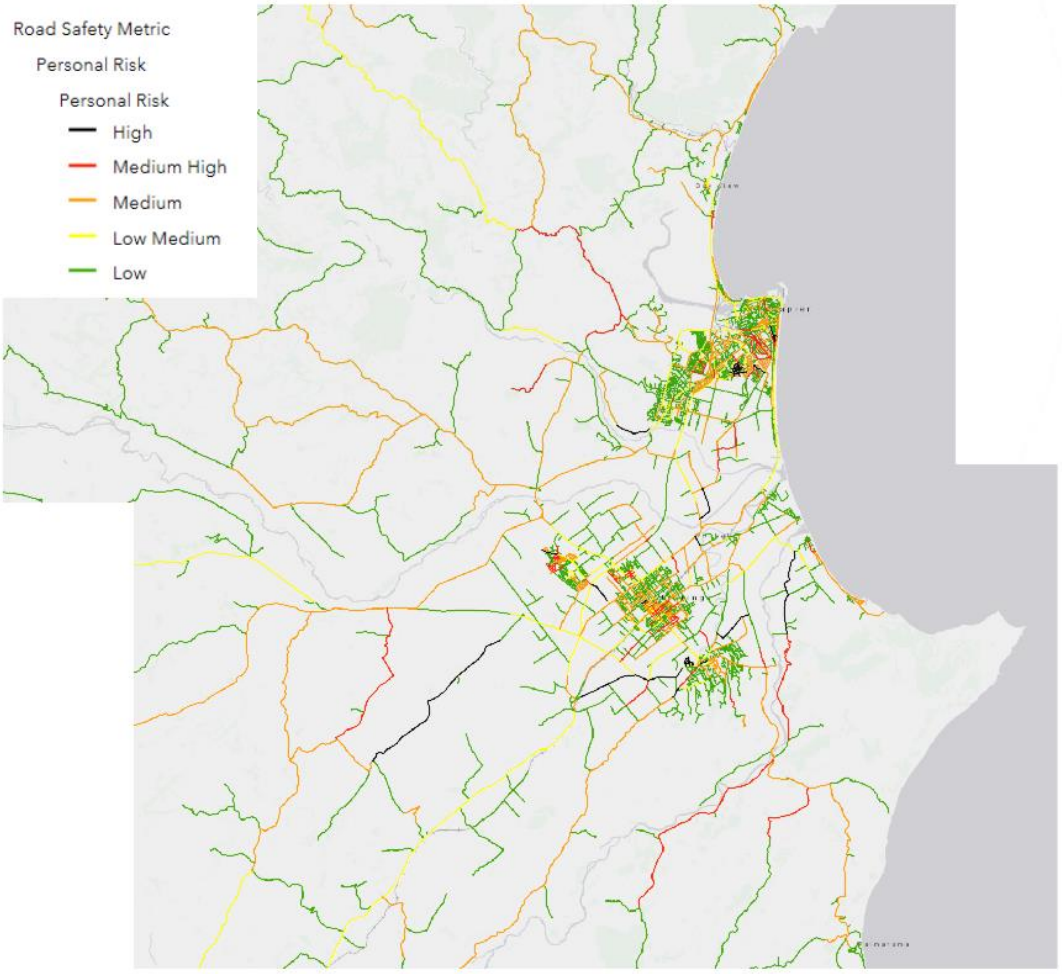
Vulnerable Road User DSI	% of all DSI in Hastings DC	New Ply./ Nelson/ Palm Nth. Average % of all DSI
Pedestrian	5.3%	13.6%
Wheeled Pedestrian	1.6%	0.4%
Cyclist	6.3%	11.9%
Motorcyclist[12]	20.4%	17.5%
Total	**33.6%**	**43.4%**

[12] Including mopeds & pillion passengers

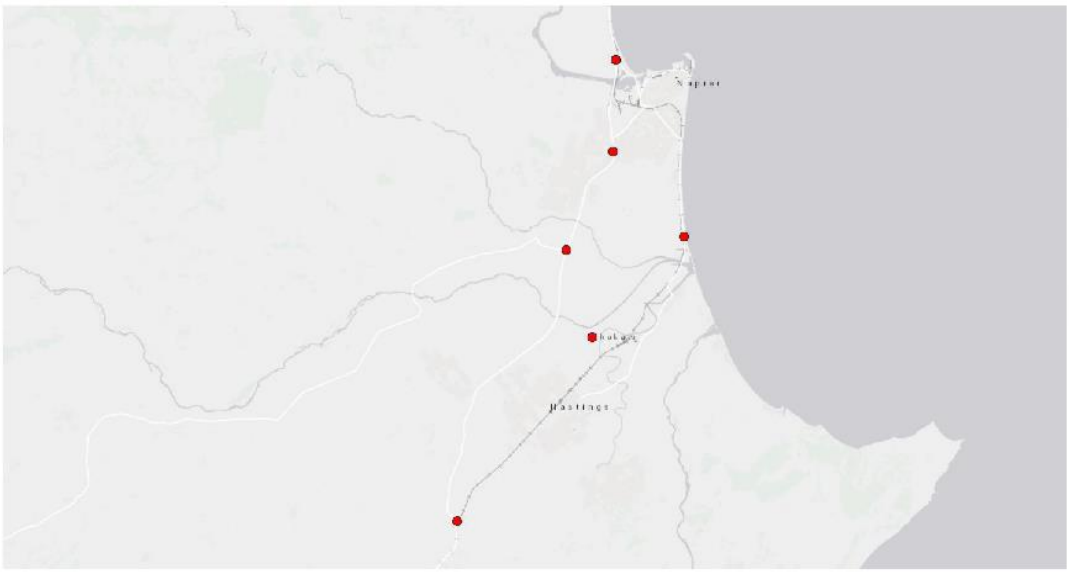
Collective Risk (2013-2018) Source: Mega Maps



Personal Risk (2013-2018) Source: Mega Maps



High Risk Intersections (2013-2018) Source: Mega Maps



High Risk Motorcycling Routes (2013-2018) Source: Mega Maps

Poor behaviour trends from RLTP 2018 (HBRC 2018)

Figure 10: *Fatal and Serious Injuries in Alcohol Related Crashes*

Figure 12: *Fatal and Serious Injuries Speed-Related Crashes.*

Appendix E – HDC Road Safety Strategy 2017

High Risk Corridors

TABLE 1-1: HIGH RISK RURAL ROUTES

High Risk Rural Route	ONRC Classification	Rural Crash Risk[2]		Treatment Philosophy	Indicative Cost[3]
		Collective	Personal		
Farndon Rd	Primary Collector	High	High	Safer Corridors (incl Speed Mgt)	$$$
York Rd	Primary Collector	High	High	Safety Management (incl Speed Mgt)	$
Stock Rd	Primary Collector	High	High	Safety Management (incl Speed Mgt)	$
Pakowhai Rd	Arterial (Ruahapia int removed)	High	Medium High	Safer Corridors	$$ - $$$
Ruahapia Rd	Primary Collector	Medium High	High	Safe System Transformation	Underway
Waimarama Rd	Arterial	Medium High	High	Safety Management (incl Speed Mgt)	$$
Brookfields Rd	Secondary Collector	Medium High	High	Safety Management (incl Speed Mgt)	$
Te Aute Rd	Primary Collector	Medium High	Medium High	Safety Management (incl Speed Mgt)	$$

TABLE 1-2: HIGH RISK URBAN ROUTES

High Risk Urban Route	ONRC Classification	Urban Crash Risk[4]		Treatment Philosophy	Indicative Cost[5]
		Collective	Personal		
Te Mata Road	Arterial	High	Medium	Safety Management (incl Speed Mgt)	$
Napier Road	Arterial	Medium High	Medium High	Safety Management (incl Speed Mgt)	$

TABLE 1-3: HIGH RISK INTERSECTIONS

Intersection	Type	Collective Risk	Personal Risk	Level of Safety Service (LoSS)	Treatment Philosophy	Est Cost[6]
Pakowhai Rd / Ruahapia Rd	Rural Priority-T	High	High	LoSS IV	SSTW (underway – being closed)	-
Pakowhai Rd / Richmond Rd	Rural Priority-T	Medium high	High	LoSS IV	Safety Management / Potential Li-Lo	$-$$
Karamu Rd North / Grove Rd	Urban Signals-X	Medium high	Medium high	LoSS IV	Safer intersection work (some already undertaken)	$
Hastings St North / St Aubyn St E	Urban Priority-X	Medium	Medium high	LoSS IV	SSTW – Likely Traffic Signals	$$
Maraekakaho Rd / York Rd	Urban Priority-T	Medium	Medium high	LoSS IV	Safety Management or SSTW (Rbt)	$-$$$
Southland Rd / Eastbourne St W	Urban Priority-X	Medium	Medium high	LoSS IV	SSTW (mini Rbt)	$
Southampton St W / Charles St	Urban R/bt	Medium	Medium high	LoSS IV	Safety Management/Safer intersections	$

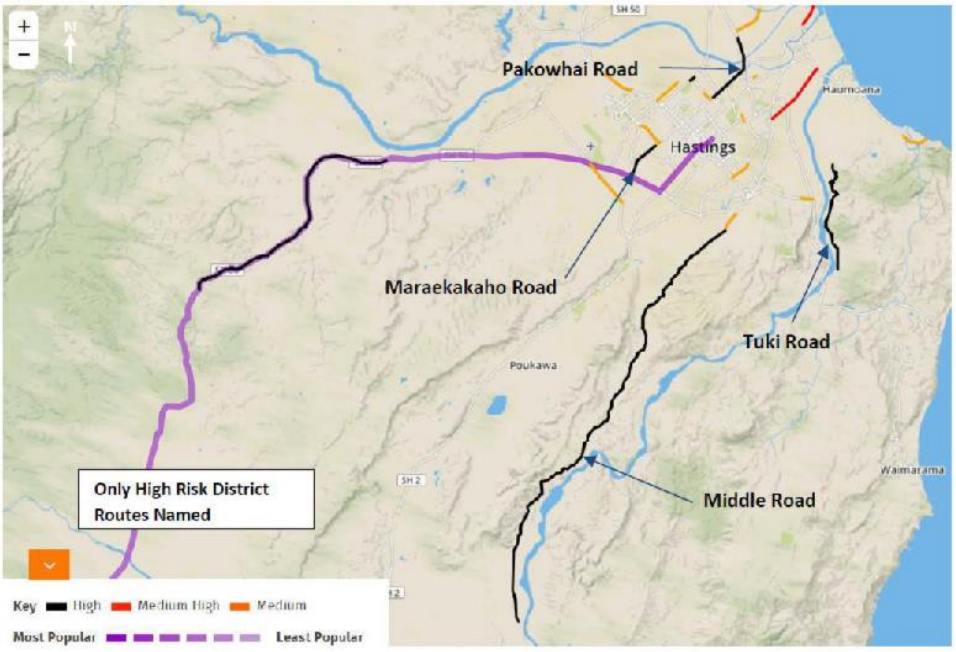


FIGURE 1:4: HIGH RISK MOTORCYCLE ROUTES WITHIN HASTINGS DISTRICT (SOURCE: ACC'S ROAD SAFETY RISK TOOL)

TABLE 1-4: HIGH RISK MOTORCYCLE ROUTES WITHIN HASTINGS DISTRICT

High Risk Rural Route	ONRC Classification	Casualties (07-16)			Treatment Philosophy	Indicative Cost[7]
		D	S	M		
Middle Rd	Secondary Collector	1	7	3	Safer Corridors/Site Specific	$$$
Tuki Tuki Rd	Access	0	3	1	Safety Management (incl Speed Mgt)	$
Maraekakaho Rd	Arterial	1	1	2	Safety Management (incl Speed Mgt)	$
Pakowhai Rd	Arterial	0	2	7	Safer Corridors	$$ - $$$

The HDC Road Safety Strategy (2017) also outlines key focus areas of the safety strategy:

- **High risk corridors** – Concentrating on seven identified high risk rural routes and two high risk urban routes.
- **High risk intersections (predominantly urban)**1 – Concentrating on the six identified high risk intersections as well as other intersections along St Aubyn Street and Hastings Street. Notably all of the high risk intersection identified have a LoSS of IV, which indicates that compared to other similar intersections (in terms of both volume and type), these intersections are all performing in the worst 30% nationally.
- **Motorcycling** – Concentrating on improvements to four key high-risk motorcycle routes and network wide road safety promotion activities

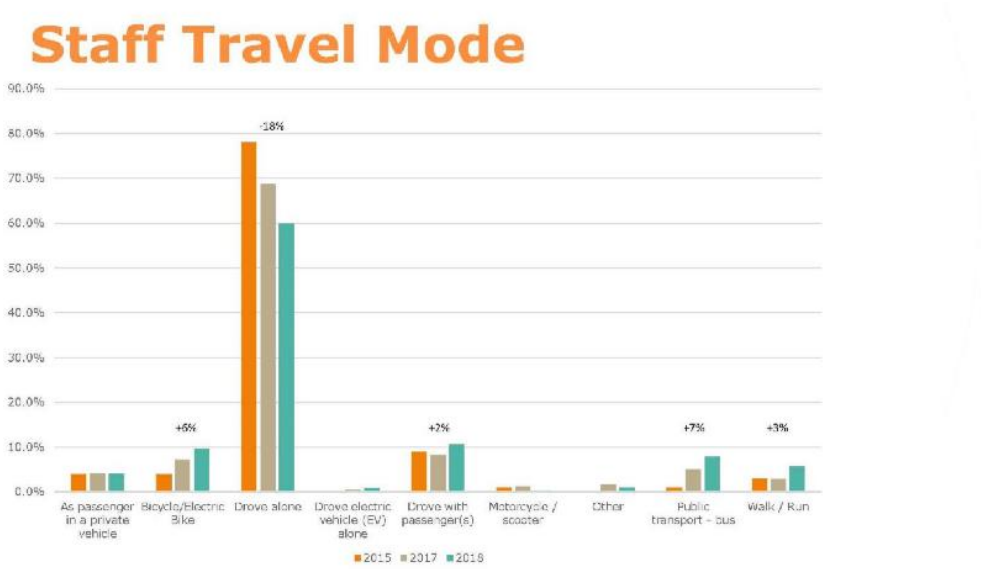
Appendix F – HBDHB Travel Survey Data Key Findings

2018 Travel Survey Staff - Compared to 2015

- 18% reduction in staff who drive alone
- 16% reduction in staff arriving by car
- 15% increase in staff travelling by sustainable transport
- 7% increase in staff travelling by public transport (bus)
- 6% increase in staff travelling by bicycle

2018 Travel Survey Staff - Ideal Means of Travel

- **Top Choice** 32% of staff would like to travel by bicycle
- **Second Choice** 26% of staff would like to travel by public transport
- 5% decrease in staff wanting to drive alone
- 8% increase in staff wanting to travel by public transport
- 7% increase in staff wanting to travel by bicycle



Desired mode shift was 10% - once a fortnight

Appendix G – Active Modes Strategic Case (Evidence)

Perception of walking and cycling as unsafe and inconvenient

Urban form

Cycling and walking are sensitive to distance and time, low density residential zones typically result in increased distances and times between destinations, however, low density does not necessarily mean poor connectivity (Cheyne et al 2015). Directness of path between two points are related to the characterises of street design. Good connectivity is highly correlated with walkability (Cheyne et al 2015). New active mode routes should offer advantages in terms of directness/permeability and journey time. (ESCC 2014).

Hastings and Havelock North have highly connective road networks based on a grid structure. However, the existing road network does not generally offer active users advantages in connectivity as no restrictions are made on motorised users. Flaxmere's road network is less connected, however, active user paths to and through parks and reserves offer improved connectivity for active users.

A large number of studies found that shorter distances between home and school are associated with increased active transport to school (Condon 2013). Two Australian studies reported that children are more likely to walk or cycle to school at least once a week, if they lived within 800 metres of their school (Condon 2013).

Hastings has been designed so that most houses are within 2 km of Hastings Central School, potentially an easy distance to walk or cycle between home and school. Active travel accessibility to jobs is very high. There are 7,000 jobs in the Hastings Central Census Area Unit and every resident is within 3 km. Many jobs in Hastings are within a distance accessible by active transport.

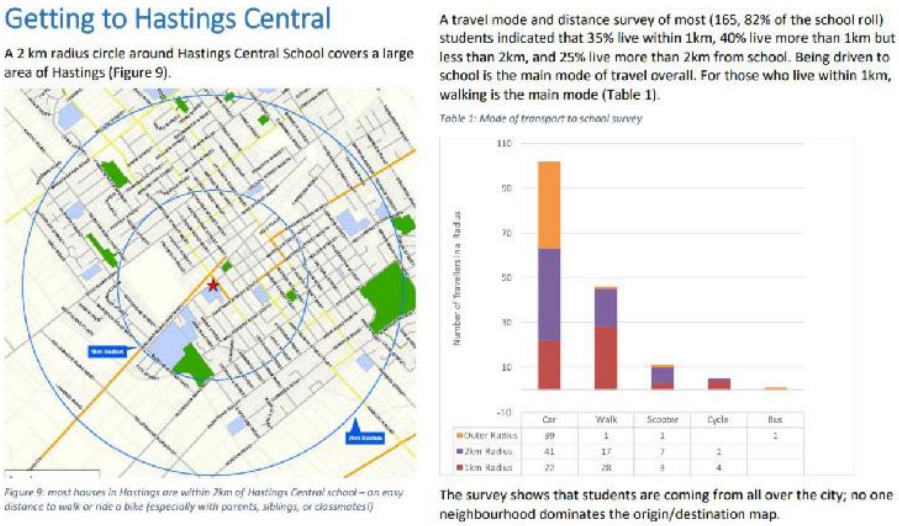


Figure 5-1: Location of Hastings Central School and the relative distance students travel (HCS 2018)

Road Safety Perceptions

The perception of safety in relation to walking and cycling is an important determinant of uptake in active travel[13]. Walking and cycling are statistically safe ways to travel (MoT, 2015); however, negative perceptions and experiences may discourage people from using a particular route or encourage them to drive instead of walk or cycle, especially if the walking and cycling infrastructure is poor. Cheyne et al (2015) noted that parents participating in a perception survey expressed concerns about letting their children cycle on the road on their own, due to their lack of skills and experience on the road but also because parents did not trust other road user behaviour.

Findings from a comprehensive study by Muggeridge in 2012 suggest that although people in Hastings generally have positive attitudes towards walking and cycling, these are not necessarily translated into high levels of active transport, or high intentions to walk and cycle as a form of transport (Muggeridge 2012). As seen in Figure 5-2, driver behaviour, traffic volume and traffic speed were dominant factors in influencing walking and cycling safety perceptions. Other studies have found that traffic speed, volume, and proximity are key deterrents to active travel and particularly for commenting cyclists, cars passing too closely increases anxiety.

Figure 5-2: Factors influencing safety perceptions (Muggeridge 2012)

Dedicated road space for active users can increase perceptions of safety and comfort for cyclists by increasing the separation to motorists, this improvement can increase with increasing levels of separation such as kerb or parking protection for cycle lanes. Cycle lanes between traffic lanes and pedestrian facilities also increase the separation between pedestrians and motorists and consequently increase comfort and perceived safety for pedestrians.

Fear of Crime

Another barrier to the uptake of walking and cycling is the fear of crime and one's personal safety, particularly for women, elderly and those with disabilities. Children and students use of active transport is often over-ridden by parents, who are concerned about 'stranger danger'. A poor design of the urban environment such as lack of surveillance, poor lighting, overgrown vegetation and disrepair adds to fearful attitudes towards walking and cycling. The issue of darkness can also be associated with the built environment, as many participants agreed that better lighting would make them perceive walking in the dark as safer. Darkness was particularly important in Hastings and Flaxmere, but to a lesser extent in Havelock North. Havelock North was thus perceived as safer than the other two neighbourhoods, with people saying they would not mind walking alone at night there but would not do it in Hastings or Flaxmere (Cheyne et al 2015).

[13] The perception of safety in relation to cycling is often considered of greater importance than the actual safety of cycling, as the risk perceived is likely to be a more important determinant of cycling than the actual risks associated with cycling (Muggeridge, 2012)

End of trip facilities

All active mode routes should be clearly signed and have trip end facilities provided, such as cycle parking (ESCC 2014). End of trip facilities include showers and changing facilities, and secure sheltered bicycle parking. A lack of secure or sheltered bicycle storage contributes to fear of crime in the form of bike theft. Showers and changing facilities reduce the concern over body odour for those who cycle or walk further; those who have access to showers are 1.76 times more likely to cycle to work than those without the same facilities (Cheyne et al. 2015).

The Hawkes Bay DHB built additional secure cycle storage and started charging for car parking, these differences encouraged people to switch from motor vehicle use to active mode use. By adding additional amenities and making active modes more desirable such as providing end of trip facilities like showers, secure bike storage and lockers, map of facility locations and repair stations and bike pumps encouraged people to use active modes more. (Cheyne et al. 2015). Between 2015 and 2018, for staff at Hawkes Bay BDHB, cycling mode share increased by 6% and walking mode share increased by 3%.

School travel plans have indicated possible interventions to improve active travel to school. These interventions include improved end of trip facilities, such as all-weather bike and scooter stands. However, at present, only 63% of the urban schools in the district have at least partial access to the iWay network and nearly 40% schools in urban and over 80% schools in rural area have no coverage.

The DHB travel survey concluded that the reasons people use motor vehicle is primarily for convenience and flexibility.

Convenience of active modes

Motor vehicle use has been made so convenient, that active transport seems inconvenient in comparison. As seen in Figure 5-3, 'getting there quick' (i.e. directness/journey time) and 'convenience' (e.g. shops en route) are considered important factors that influence mode choice when travelling to school, work or shops. Parking is easy and cheap, which also means the car is often the most convenient option, when compared with public transport or active modes.

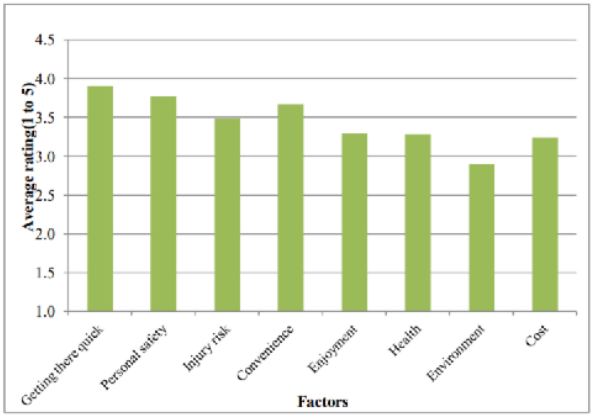


Figure 5-3: Factors influencing choice of mode of transport (Muggeridge 2012)

School travel plans have noted that student travel behaviours have changed. Between 1990 and 2014, the number of primary school students being driven to school in New Zealand increased from 31% to 55%, while travel by walking fell from 42% to 29% and cycling from 12% to 2% (MoT 2015). Parents drive their children because of ingrained travel habits, safety perceptions, and busy schedules including after school activities (HCS 2018).

Almost 80% of people travel to the shops via motor vehicle, in the same survey it was determined that just over 15% of people would walk or cycle to the shops.

Interventions that increased the convenience of active modes or decreased the convenience of travel by car could increase active mode share.

Limited active travel uptake, resulting in high car dependency

Active Travel Uptake

In 2010, New Plymouth and Hastings were selected by Waka Kotahi as model walking and cycling communities. New Plymouth District is comparable to Hastings District due to its flat topography, and population (74,184 district, 54,800 urban area).

Based on travel to work data from the 2013 Census, active mode share in the Hastings District is 9%. This compares to 10% for the Hawkes Bay Region and New Plymouth District. Active mode share includes the walking mode share is higher than the cycling mode share in Hastings District and the comparison areas.

More people use private vehicles in Hastings District to complete their trips, in comparison with Hawke's Bay and New Plymouth District. Nearly 90% of total trips in Hastings in 2013 were completed using private vehicles.

Hastings District has the lowest proportion of people walking to work, in comparison with Hawke's Bay and New Plymouth District. Hawke's Bay and Hastings District have a similar proportion of people cycling to work; however, both have a lower proportion than New Plymouth District.

This dataset indicates both a dominance of the car in Hastings and an opportunity for change given the projected increase in population in the coming decades.

Geographic Factors

Poor weather and climate, such as reduced daylight hours, wind and rain reduces the likely number of cyclists to 64% of the normal levels. Topography was another highly correlated factor to cycle use (Cheyne et al 2015).

The Heretaunga plains area of Hawkes Bay experiences only 90 wet days per year and mean overnight low temperatures are higher than 7°C in all months (Chappell 2013). The District's

Figure 5-4: Contour overlay of the Hastings District's urban areas (LINZ n.d.)

climate is dry and mild, and its topography is flat. The natural environment is ideal for active travel. Yet this is not reflected in the limited uptake of active travel.

Mode Share

The average annual daily cycle volume has increased, as counted at nine permanent count stations in the Hastings District. Over 1,500 average daily cycle trips were recorded, in 2016, and as shown in Figure 5-5, there are a few locations where a decrease in cycle numbers were observed, which indicates areas for improvements along the iWay cycle network.

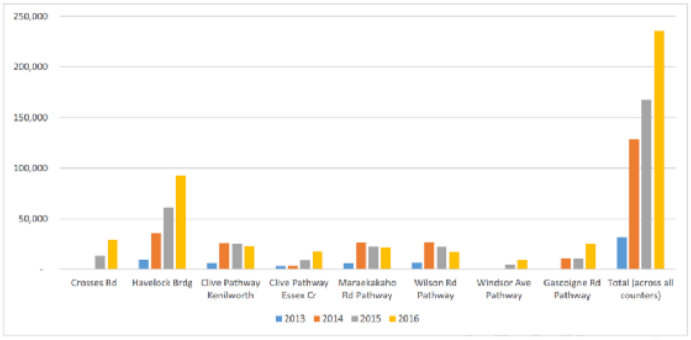


Figure 5-5: Annual Average Daily Cycle Volume at recording stations in Hastings District (HDC 2017)

Cycle and pedestrian volumes are seasonal, with the highest number of cyclists observed during the summer.

Recent investments in the active mode network have resulted in increased active travel and increasing active mode share in the District. However, active travel in Hastings District does not match that achieved in the rest of the Hawkes Bay Region or Waka Kotahi's other model community, New Plymouth.

Transport Behaviour

Road congestion, increased petrol and parking costs, availability of electric bicycles and scooters, bike sharing, and provision of more dedicated cycling infrastructure has increased active mode share in Hastings District since 2006.

Public transport patronage in Hastings District increased between 2009 and 2015 but has since declined to levels seen in 2012. This trend is consistent with regional New Zealand, and due partly to improved economic conditions, therefore more people are employed and using a vehicle.[14]

The use of the Total Mobility scheme[15] has increased since 2010, in line with the shift in population demographic in the Hastings District.

[14] Car ownership per capita has increased 7% in Hawke's Bay. The most significant declines in patronage have occurred on bus routes servicing areas with higher unemployment rates.
[15] The Total Mobility Scheme (TMS) provides subsidised passenger services travel for Hawke's Bay residents who are unable to use public transport due to a significant, permanent impairment.

Car Dependency

The Hawkes Bay Region has light vehicle[16] ownership rates higher than the New Zealand average of 0.8, as shown in Figure 5-6.

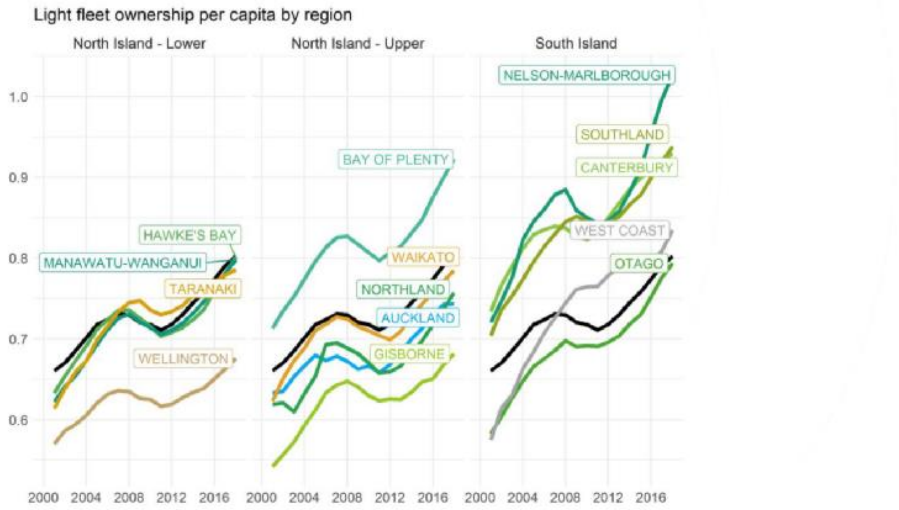


Figure 5-6: Light fleet ownership per capita by region (MoT 2018)

However, as of the 2013 Census, over 2,000 (8%) households in the Hastings District did not have a light vehicle and over 9,000 (37%) have just one vehicle. Forty-two percent of households in the Hastings District have three or more people living in the household which indicates there are parts of the population that are transport disadvantaged by not having access to a vehicle. A network that encourages high car dependency reduces social and economic opportunities for the transport disadvantaged, those who choose not to drive and vulnerable populations such as the elderly and children, by minimising their access and choice on how to travel.

Napier-Hastings is a low-income region and the high cost can be a barrier to vehicle ownership. A land transport system that makes travel without a car difficult makes households dependent on cars to access social and economic opportunities.

[16] Light vehicles include light passenger vehicles such as cars and light commercial vehicles such as vans and utes.

Health Context

Hastings District is located within the Hawkes Bay Region. The Hawkes Bay Region has the lowest rates of adult physical activity[17] and second highest level of obesity of any region in New Zealand (MoH 2020).

Active transport enables residents to achieve their physical activity as part of their daily routine, which can result in improvements to health and wellbeing.

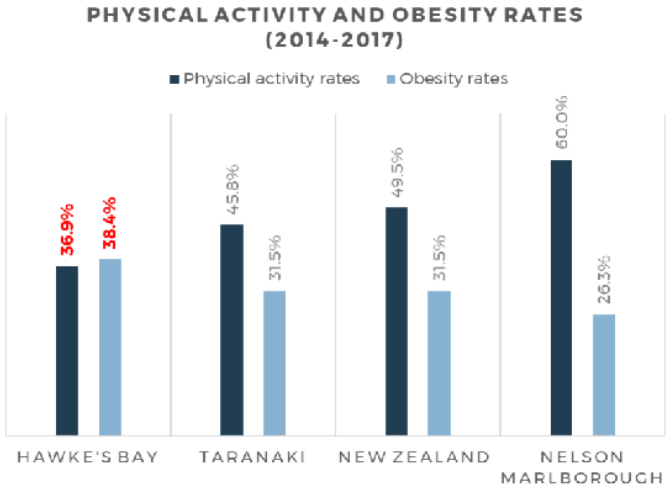


Figure 5-7: Physical activity and obesity rates for New Zealand and selected regions (MoH 2018)

[17] Physical activity (aged 15+ years) is defined as doing at least 30 minutes of brisk walking or moderate-intensity physical activity (or equivalent vigorous activity), for at least 10 minutes at a time, at least five days a week.

Appendix H – Benefit Mapping

BENEFIT MAP					
BENEFIT →	INVESTMENT BENEFIT (KPI's) →	MEASURE →	DESCRIPTION →	BASELINE →	TARGET
Improved road safety 50%	Reduced collective risk	Collective risk rating on key corridors	Reduction in risk density of fatal and serious injury crashes per kilometre over the road network on key corridors	Current collective risk rating – Across the key corridors – to identify key corridors	Reduce collective risk rating on key corridors by X
	Reduced personal risk	Personal risk rating on key corridors	Reduction in risk to the individual of fatal or serious injuries per million vehicle kilometres travelled on key corridors	Current personal risk rating – Across the key corridors – to identify key corridors	Reduce personal risk rating on key corridors by X
	Reduced number of DSI's	Reported DSI's benchmarked against other regions and potentially national data	Reduction in number of deaths and serious injuries across the network	DSI 2019 Network-wide Hastings - 60 New Plymouth - 60 Nelson - 23 Palmerston North – 42 National -	XX% reduction in DSI's across the network
Improved customer experience 30%	Reduction in % of HCV's on minor roads	HCV % on local roads benchmarked against other regions and national data (Current NZTA VKT data does not split heavy vehicles – unsure what data source would be used)	Reduction in % of HCV's on minor roads	Current % of HCV's on minor roads benchmarked against other regions and national data	XX% reduction in % of HCV's on minor roads
	Reduction in % of crashes involving trucks	Reported crashes with trucks benchmarked against other regions and national data	Reduction in percent of fatal and serious injury crashes across the network (particularly on SHs)	2015-19 Network-wide Hastings – 8.91% New Plymouth – 6.59% Nelson – 3.33%	XX% reduction in crashes involving trucks across the network

				Palmerston North – 2.26% Napier - National - 2015-19 State Highways Hastings – 16.43% New Plymouth – 8.79% Nelson – 9.38% Palmerston North – 1.89% Napier - National -	XX% reduction in crashes involving trucks on State Highways
	Reduction in freight travel time variability	Freight time variability as quantified by HDC using Google data (collection underway)	Reduction in freight travel time variability	Baseline freight time variability	XX% Reduction in freight travel time variability
	Increased network resilience / redundancy	Increase in number of alternative routes to the Expressway (SH2) for freight	Increase in number of alternative routes to the Expressway (SH2) for freight in case of crashes and catastrophic events	Current truck/freight routes	XX Increase in number of alternative routes to the Expressway (SH2) for freight
Greater uptake of active travel and public transport 10% Poor uptake of active travel and public transport is negatively impacting community wellbeing 20%	Increased use of active travel and PT for trips to school	Increased active travel and PT trips to school using census data (benchmarked against other regions and national data) and generalised school travel plan data	Increased use of active travel (walking, cycling, scooting) and PT for trips to school	2018 Census - New Zealand Walk - 22% Public Transport – 20% Cycle – 4% Other – 1% 2018 Census – Hastings Walk - 18% Public Transport – 14% Cycle – 5% Other – 2% 2018 Census – Napier Walk - 21% Public Transport – 13% Cycle – 6% Other – 2% New Plymouth	XX% increase in use of active travel and PT for trips to school

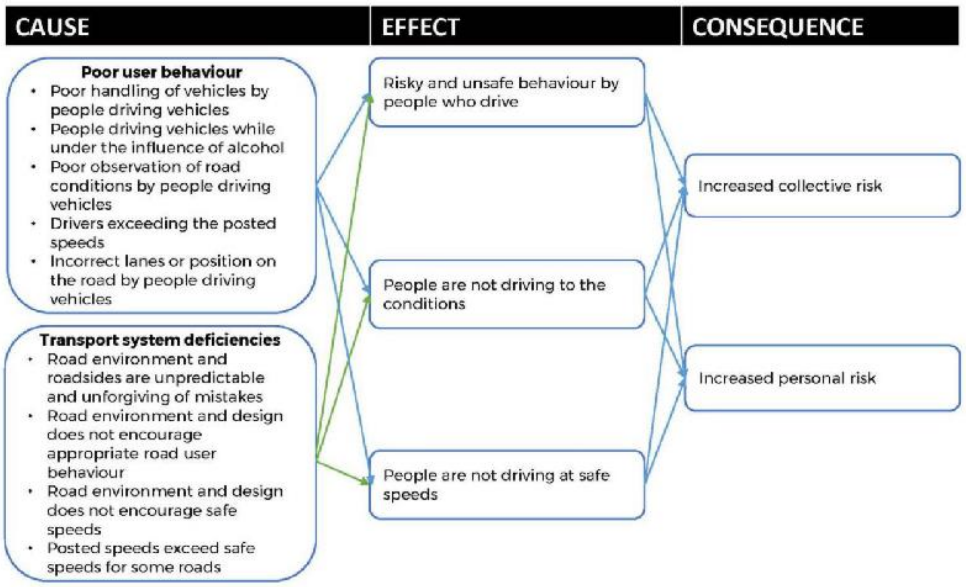
				Nelson Palmerston North School Travel Plans (Generalised - Overall) Walk - 24% Bus – 7% Cycle – 6% Scooter – 6%	
	Reduced use of cars for journeys less than 5km (15 minutes)	Employer travel survey data and community travel survey	Reduced use of cars for journeys less than 5km	2017 - 55% of HDC staff reported their commute was less than 15 minutes 2018 - 29% of HBDHB staff reported their commute was less than 15 minutes Need to cross-calculate with mode Baseline community travel survey – mode and distance to/from work	From trips to/from work less than 5km (15 min) Increase journeys by walking 8% Increase journeys by cycling 5.5% Increase journeys by bus 1.5% Increase carpooling X%
	Increase active travel and PT for trips to work	Census data, employer travel survey data and community travel survey	Increased active travel for trips to work	2013 Census – Hastings Actual count, not % 2018 Census – Hastings Will be % not actual count 2018 Census – National Walk or jog – 5.2% Public Transport – 4.2% Cycle – 2% 2018 HBDHB Travel Survey Walk or jog – 6%	XX% increase in use of active travel and PT for trips to work

				Public Transport – 8% Cycle – 10% 2017 HDC Travel Survey Walk or jog – 6.5% Public Transport – 1% Cycle – 3.5% Baseline community travel survey – primary mode to/from work	

Appendix I – Cause, Effect and Consequences Mapping

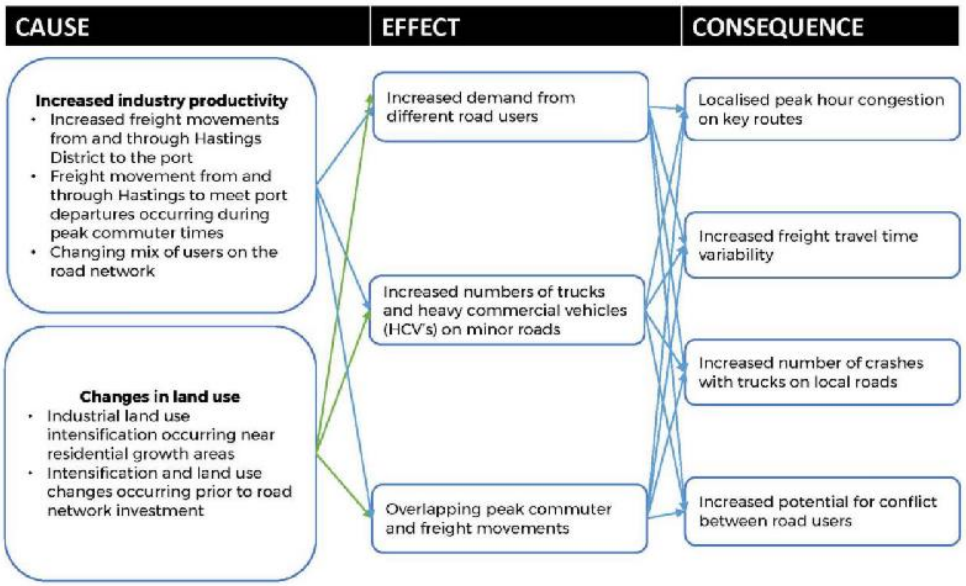
Network Problem Statements

Problem 1 – Poor user behaviour and transport system* deficiencies increases the risk of deaths and serious injuries when crashes occur



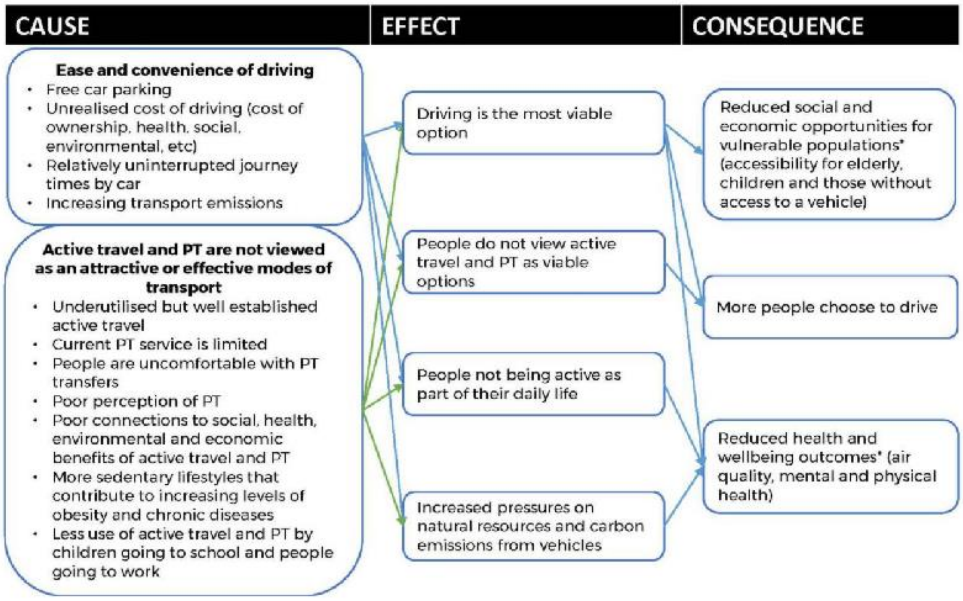
Network Problem Statements

Problem 2 – Increased industry productivity and changes in land use is resulting in the transport system not meeting the needs of users*



Network Problem Statements

Problem 3 – Poor uptake of active travel and public transport (PT) is negatively impacting community wellbeing



Appendix J – Waka Kotahi NZ Transport Agency Investment Questions

Meet Requirements?	Strategic Case Investment Questions and Response Sections
Yes	Is it clear what the problem is that needs to be addressed (both the cause and the effect)? See section 4.1, Appendix I – Cause, Effect and Consequences
Yes	Is there evidence to confirm the cause and effect of the problem? See section 4.2, Appendix I – Cause, Effect and Consequences
Yes	Does the problem need to be assessed *at this time*? See section 4.2
Yes	Is the problem specific to this investment (or should a broader perspective be taken)? See section 2
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 4.3, Appendix H – Benefit Mapping
Yes	Are the benefits of high value to the organisation(s) (furthering its (their) objectives)? See section 3
Yes	Will the KPIs that have been specified provide reasonable evidence that the benefits have been delivered? See section 4.4.1 and Appendix H – Benefit Mapping
Yes	Are the KPIs both *measurable* and *totally attributable* to this investment? See section 4.4.1 and Appendix H – Benefit Mapping
Yes	Have the benefits that will result from fixing the problem been adequately defined? See section 4.4.1 and Appendix H – Benefit Mapping

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