
Nelson Southern Link Investigation

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Programme Business Case



Photo 1 Nelson viewed from Grampians



Photo 2 Nelson viewed from the air

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SUPPORTING DOCUMENTS

Nelson Southern Link Investigation: Future Forecasting Report, New Zealand Transport Agency, March 2016;

Nelson Southern Link Investigation (SH6 Annesbrook Roundabout to SH6 Haven Rd Roundabout), Strategic Case, October 2015;

SH6 Rocks Road Walk / Cycle Facility Options Update Report, March 2016;

Bluetooth Data provided by Araflow Ltd – Oct 2014 to March 2016;

Rocks Road Walking and Cycling Investigation Report – July 2014

Arterial Traffic Study, June 2011;

North Nelson to Brightwater Strategic Study, April 2008.

EXECUTIVE SUMMARY

NELSON SOUTHERN LINK INVESTIGATION PROGRAMME BUSINESS CASE

EXECUTIVE SUMMARY RECOMMENDATIONS

The Nelson Southern Link Investigation (NSLI) programme business case (PBC) recommends:

- A range of interim measures that optimise traffic flow on SH6 and Waimea Rd, followed by
- Development of a new arterial route, and
- Further consideration of improvements to Rocks Road.

The recommended programme is shown graphically in Figure 1.

The recommended programme will achieve the following key stakeholder objectives for this project:

- eased congestion
- fewer walking and cycling deaths and serious injuries
- increased active transport and recreational activities on Rocks Road

Nelson's key arterial routes are experiencing longer than acceptable peak period journey times. As the region's population grows, traffic volumes are also likely to grow, making it a challenge to access and cross these arterials. The New Zealand Transport Agency (Transport Agency) is recommending a range of interim measures over the next few years to reduce peak period journey times until a new route is needed. These measures aim to make the most of the existing traffic network in the short and medium terms.

These interim measures includes:

- adding a northbound clearway between Annesbrook roundabout and Bisley Avenue
- having two southbound lanes through the Bisley Avenue lights to increase traffic capacity on the state highway
- clearways and intersection changes between The Ridgeway and Motueka Street to increase traffic capacity along Waimea Road.
- enhanced public transport, and
- further encouragement of peak hour walking and cycling, land use controls, and travel demand management measures such as parking restrictions to reduce demand on arterials.



Figure 1 – NSL Recommended Programme

The timing for a new route depends on many factors. The scale of the efforts to optimise the network, the speed of regional growth and new technologies can all affect the timeline. For example, if optimisation measures perform better than expected, a new route could be delayed. If they perform worse than expected, a new route will be needed sooner. Preliminary modelling of some of the optimisation options suggests a new route will be needed early 2030s, although modelling is only one tool to guide decision making. Refer to Figure 2 for a graphical representation showing the timing considerations for a new route.

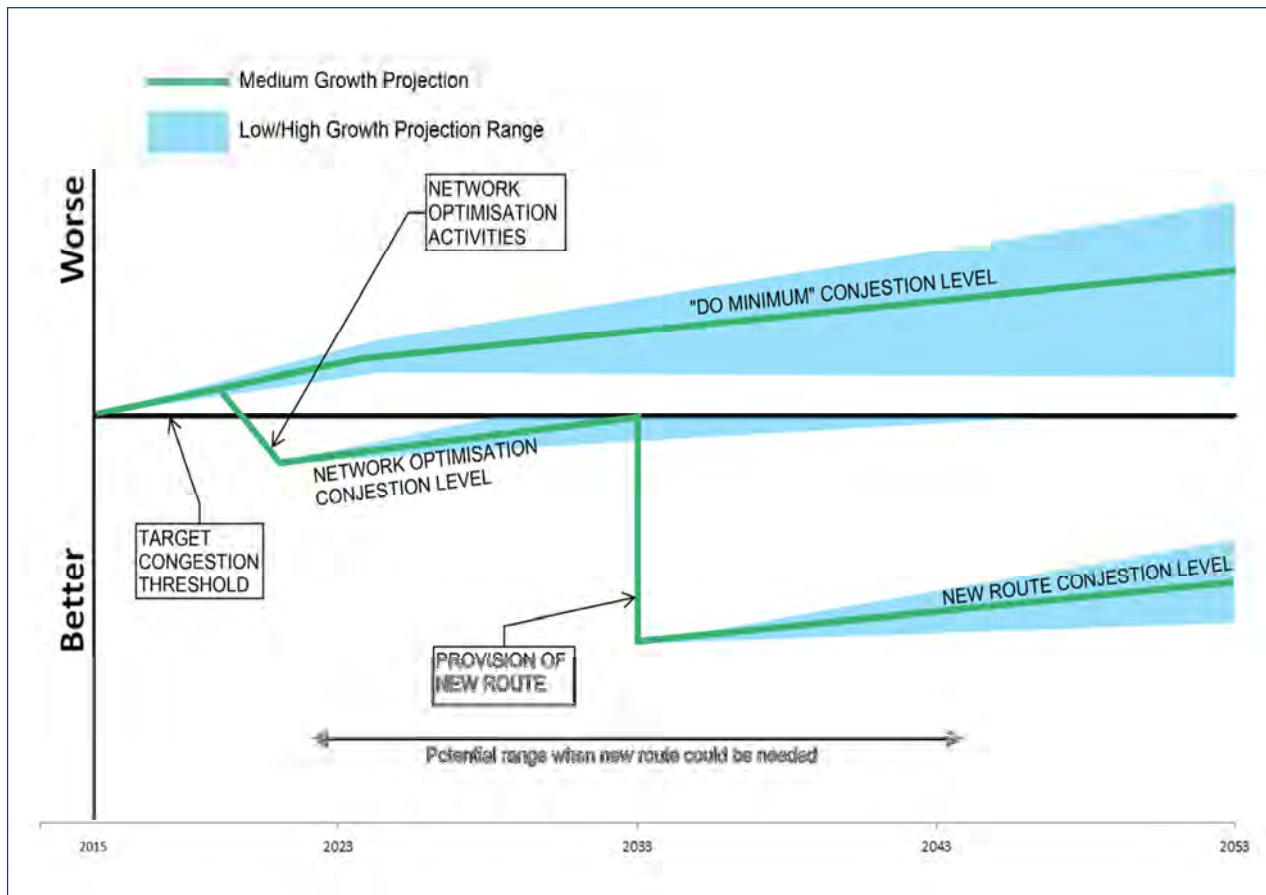


Figure 2 – Recommended Programme in relation to congestion objective target

Before a new route is planned, key stakeholders need to make some fundamental decisions regarding the route’s optimum location, alignment and its classification as either a state highway or local arterial. The Transport Agency and the Nelson City Council (NCC) will also have to consider the issues and opportunities for reverting the existing state highway to local authority ownership should the new route be classified as state highway.

Improvements on State Highway 6 (SH6) Rocks Road have also been proposed to increase the use of active transport modes and recreational activities. The recommended programme includes a range of options for improvements. Before any decisions can be made, the Transport Agency has to finalise the location of SH6, which now runs along Rocks Road but may change to the new route in the future. Firm recommendations for improvements to Rocks Road are expected during the next phase of the investigation, the Detailed Business Case (DBC).

Community feedback in March 2016 indicated 61% of respondents preferred a new route option, 21% preferred optimising the existing arterial routes, and 10% preferred widening the existing arterial routes.

At this stage in the investigation, the recommended programme has an estimated cost range of \$45m to \$300m. Network optimisation measures range from \$20m to \$40m and new arterial options from \$70m to \$300m. The range is wide because the options within it have not been investigated in detail. They will be narrowed down in the next phase of the investigation, (the DBC), and the cost range refined. The indicative

benefit cost ratio for the recommended programme is between 0 and 2.2 and it has an investment assessment profile of M/M/L.

This initial economic analysis has only considered traditional transport benefits. The next phase of the project will also consider the potential wider economic benefits.

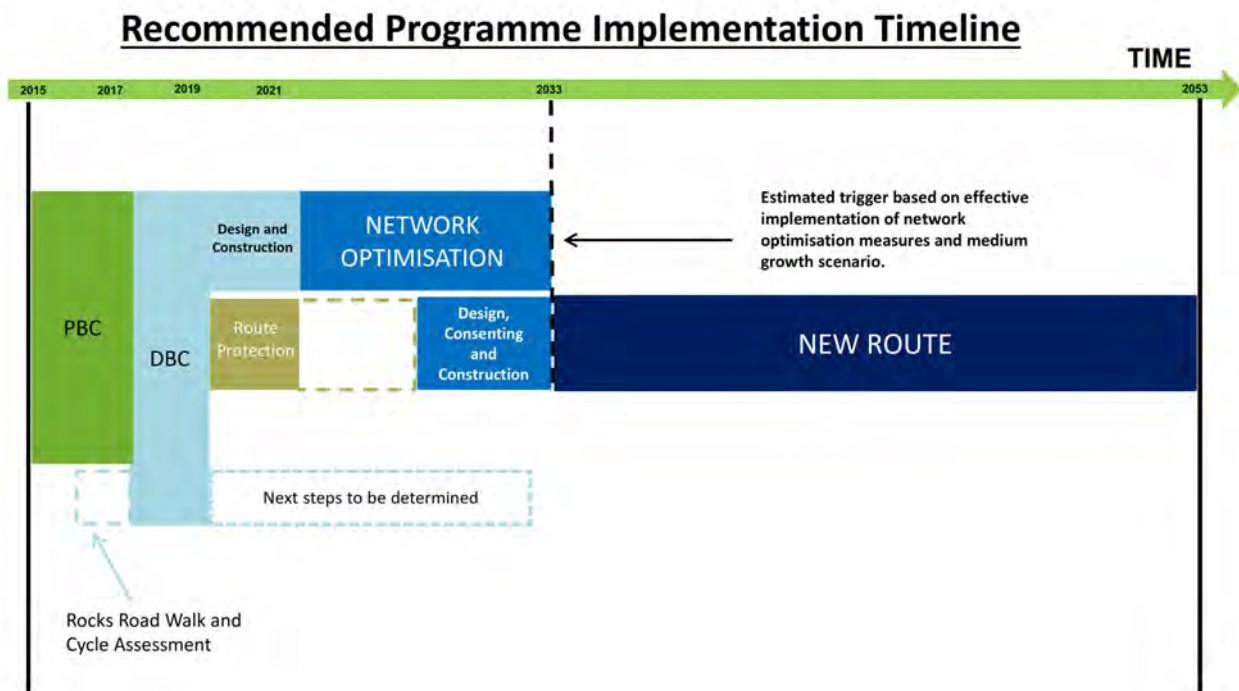


Figure 3 – Recommended Programme Implementation Timeline

The additional information from the DBC phase of the investigation will enable Government, the Transport Agency and NCC to make robust, evidence based and community supported decisions that will meet regulatory approval, if required.

During the DBC we will clarify:

- The effectiveness of the various network optimisation options, which will guide when a new route will be needed.
- Options for a new arterial route including any environmental effects that will inform decisions regarding alignment and classification.
- Route protection options such as land purchase, regulatory controls, planning activities by NCC and possibly designation of a new route.
- Options for improvements on Rocks Road, dependent on the final location of the state highway.
- An assessment of the wider economic benefits of the preferred new route option.

The timeline for the next phase of the investigation is shown graphically in Figure 3.

BACKGROUND

(SH6 is classified as a regional strategic state highway. It travels through Nelson City from Queen Elizabeth II (QEII) Drive onto Rocks Road and along the waterfront. It progresses into the Tahunanui suburb until it meets Whakatu Drive at the Annesbrook Roundabout and continues south towards Richmond.

Improvements to SH6 to the north and south of the project area have been completed, resulting in mostly free-flow conditions with travel speeds between 80 to 100km/h. However, for the central section (i.e. the investigation area), traffic travels within 50km/hr posted speed limits and 40km/hr variable school speed zones along roads characterised as two lane urban arterials.

Since the 1960s Nelson has been considering an additional Southern Link highway (shown as a blue dashed line in the Figure 4 below) to accommodate traffic growth. A number of significant infrastructure investments have been undertaken toward this end such as the upgrading of St. Vincent Street, and the relocation of the Fire Station. The 2004 Environment Court declined the Southern Link Notice of Requirement and since then two further investigations found that there wasn't an immediate need for a new route. Both investigations, however, recommended monitoring of arterial traffic volumes and consideration of interventions when the arterial network required congestion relief.

There are currently approximately 45,000 vehicles a day across the two main north/south routes within the study area (SH6 Rocks Road and Waimea Rd). Traffic volumes have remained relatively constant over the past 10 years, possibly due to increases in walking, cycling and public transport investment and a period of slow growth. On SH6 the proportion of HCV's is 6% which equates to approximately 1,300 HCV's per day.



Figure 4 – Extract from the Nelson Resource Management Plan (original “Southern Link” alignment dashed blue)

THE ROCKS ROAD WALK/CYCLE INVESTIGATION

Prior to commencement of the NSLI a NCC/Transport Agency SH6 Rocks Road walk/cycle investigation was underway. That investigation supported a range of options costing up to \$25m, some widening into the Coastal Marine Area. The NSLI problem statements confirm the NSLI and the Rocks Road investigation are linked, with the outcome of the NSLI being critical to any investment decisions we make on the Rocks Road. Rocks Road forms a crucial 2km section of four sections of the 7.2km coastal cycle route being progressed as part of the Governments \$3m urban cycleway funding contribution for Nelson.

Contained within the March 2016 public engagement documentation there were four options for improving walking and cycling infrastructure along SH6 Rocks Road:

- **Option 1 – Minor improvements**

This option includes committed improvements identified by the Transport Agency and NCC, such as resurfacing work to the road and footpath. It also involves incremental improvements to existing on-road facilities and the footpath. There is no widening on the seabed, the existing footpath, or cycle facilities. Cost is \$4.9 Million.

- **Option 2 – Safety enhancements with reduced lane widths**

This includes the improvements outlined in Option 1 above and creates additional cycle and footpath width through narrowing the traffic lanes to 3m. This option can only be pursued if the state highway is relocated and large trucks are banned. Cost is \$8.2 Million.

- **Option 3 – On-road cycle lanes in both directions, shared path and reduced parking**

This option involves widening the on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side. Parking between Victoria Road and Richardson Street would be removed. There would be significant seawall widening. Cost \$21.3 Million.

- **Option 4 – On-road cycle lanes and shared path**

This option involves widening on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side as in Option 3. Parking between Victoria Road and Richardson Street would be retained. This will require significant seawall widening. Cost is \$25.1 Million

PROBLEMS

The NSLI strategic case transport problems were reviewed and updated at the start of this PBC to (along with their weightings in brackets):

Problem 1 (70%): The form and function of Nelson’s two arterial corridors results in congestion and delays.

Problem 2 (30%): Substandard infrastructure Rocks Road, which is part of the Coastal Path, is constraining the growth in walking and cycling activities.

The evidence to support Problem 1 is principally based on the Bluetooth data collected from the third quarter in 2014 onwards. The data indicates:

- Average 15-minute travel time delays in the peak periods range between 2 and 8 minutes on SH6 and between 1 and 14 minutes on Waimea Road; and
- Peak hour volume to capacity ratios on Nelson’s two arterials range from 83% to 95%.

This information is shown graphically in Figures 3 and 4 for the SH6 route and Figures 5 and 6 for the Waimea Road route for a typical period. The solid lines indicate school term weeks and the dashed lines indicate holiday periods. Blue lines are for second quarter of 2015 and red lines are for second quarter 2016. Throughout most of 2016 there was significant traffic management on Waimea Road as Council made stormwater improvements, which increased traffic delays. The graphs indicate, with the exception of the southbound evening peak on SH6, that traffic delays are less significant in the holiday periods.

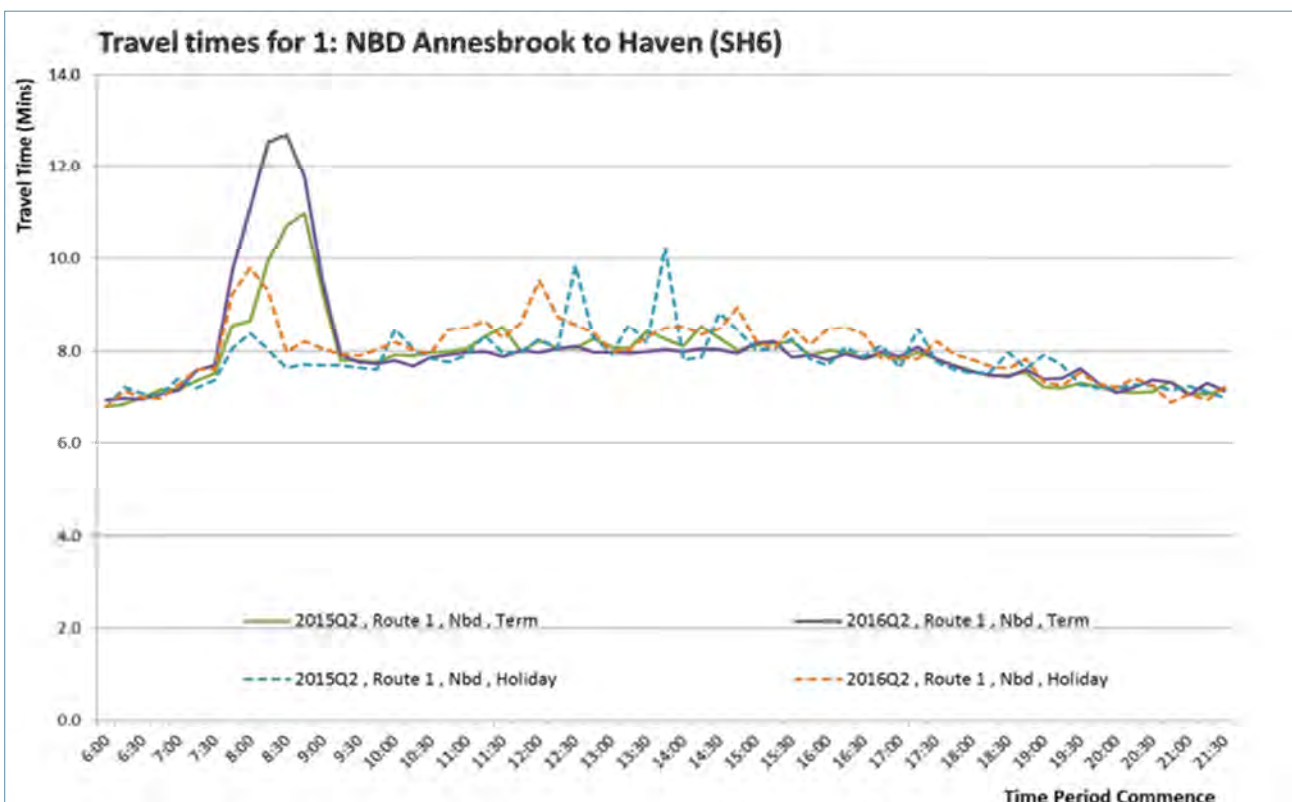


Figure 5 – 15min travel times on SH6 northbound

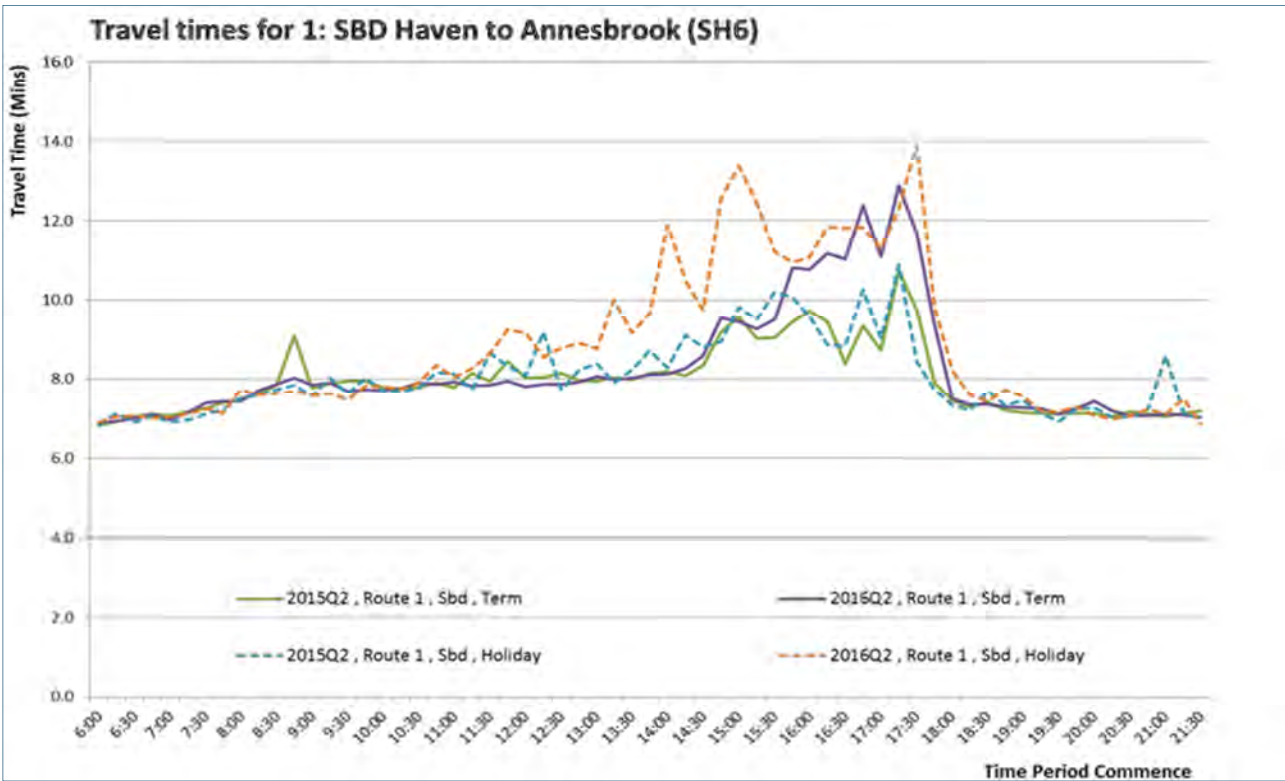


Figure 6 - 15min travel times on SH6 southbound

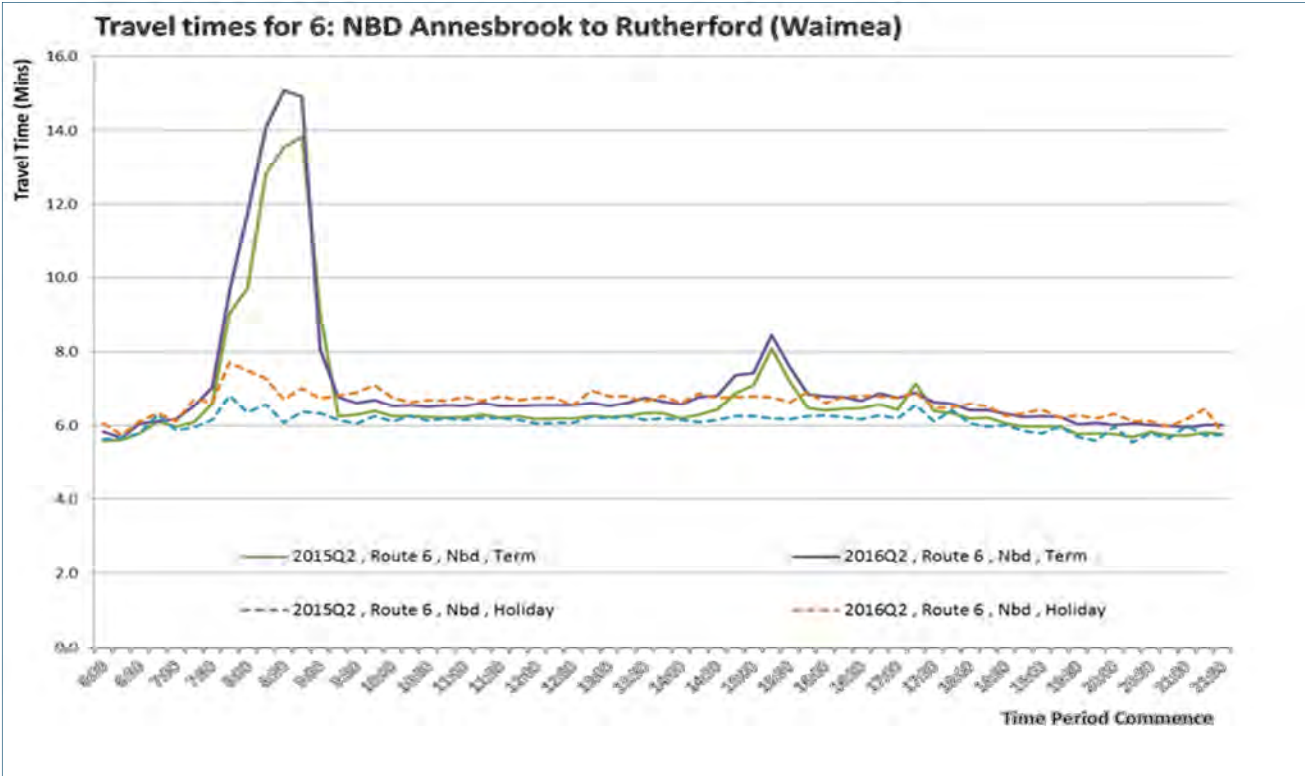


Figure 7 - 15min travel times on Waimea Road northbound

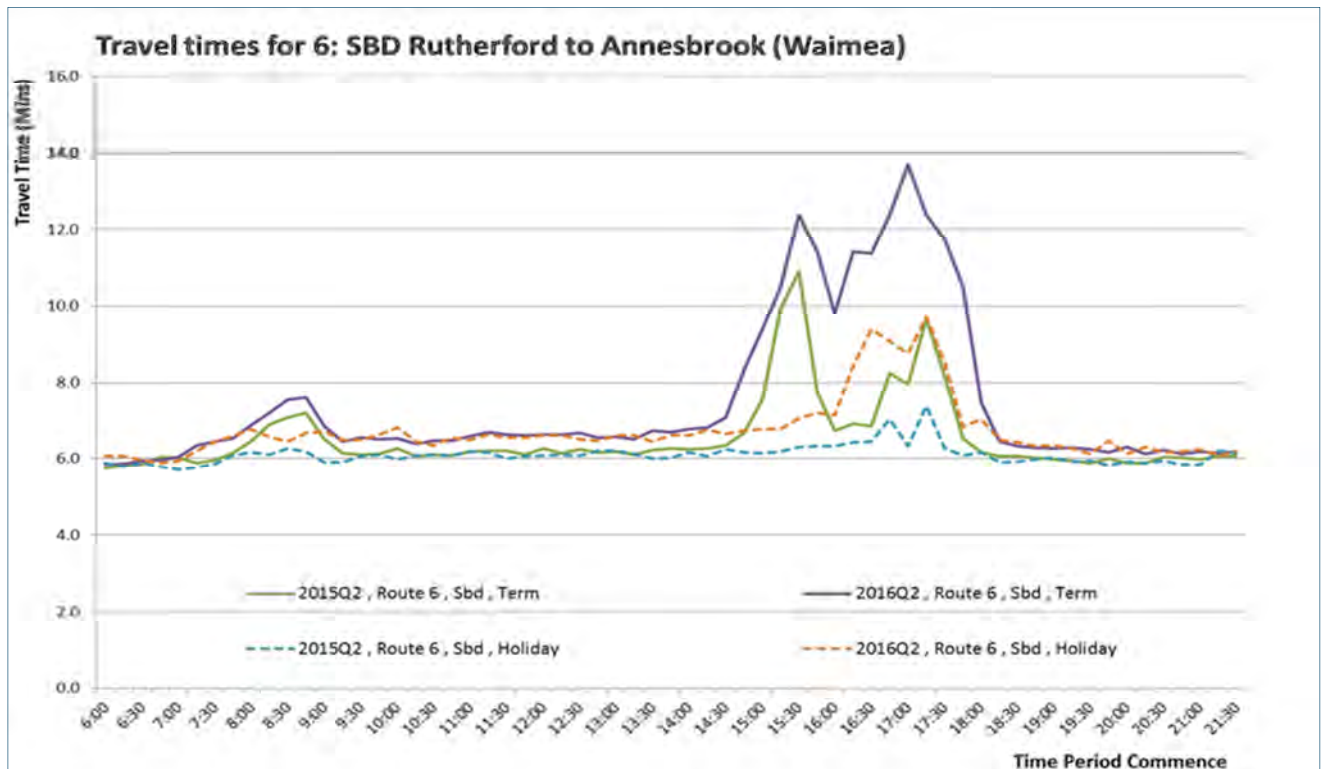


Figure 8 – 15min travel times on Waimea Road southbound

The evidence relating to the second problem is from NCC walking and cycling data and a comparison of the walking and cycling infrastructure on Rocks Road compared to current design standards. The growth in walking and cycling numbers along Rocks Road is less than half the overall growth for Nelson. When compared to the NCC Land Development Manual minimum standards, 60% of the seaward footpath is below the desired 2m width and 50% of existing cycle lanes meet the minimum 1.5m width. None of the existing cycle lanes met the desired width of 1.8m for cycling past parked cars.

The evidence indicates substandard infrastructure on SH6 Rocks Rd is a deterrent to walking and cycling growth.

BENEFITS

The benefits of investing in solving the identified problems are:

- Benefit A (70%): Reduced journey times.
- Benefit B (15%): Improved safety for walking and cycling modes of travel.
- Benefit C (15%): Improved tourism, active transport and recreational activities on Rocks Road.

INVESTMENT OBJECTIVES

The project's key stakeholders identified four Investment Objectives (IOs) and their targets are:

- **Investment Objective 1:** Travel times on the two arterials no worse than 2015 for the life of the programme (40 years).
- **Investment Objective 2:** Peak hour volume to available capacity ratio of no more than 0.8 on the two arterials.
- **Investment Objective 3:** Zero walking and cycling crashes on the two arterials; and continuous decline in walking and cycling deaths and serious injuries on the two arterials for the life of the programme.
- **Investment Objective 4:** Five years after implementing an option on Rocks Road, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson.

Options, activities, approaches and strategic responses to address the problems, achieve the benefits and meet the investment objectives were determined through a collaborative process involving the Transport Agency, key stakeholders and the public.

PUBLIC ENGAGEMENT

Community feedback in March 2016 indicated 61% preferred a new route option, 21% preferred optimisation the existing arterial routes and 10% preferred widening the existing arterial routes, although those who supported a new route option reduced to 46% in a statistically evaluated telephone survey.

PROGRAMME DEVELOPMENT AND ASSESSMENT

Nine programmes were developed and tested against the investment objectives to see which would address the identified problems. These included:

- Network optimisation activities such as intersection improvements, clearways on sections of Waimea Road and Tahunanui and Annesbrook Drive, enhanced public transport, active transport and travel demand management measures on the state highway and local arterial roads
- Widening the existing state highway and local arterials, rather than clearways
- A new arterial route, such as a Southern Link type route or tunnel options, and
- Combinations of the above, with enhanced public transport and four options to improve walking and cycling on SH6 Rocks Road

A range of enhancements for walking and cycling on Rocks Road were included in all programmes from programme 2 onwards, and these options can be revisited again when there is a greater understanding around the classification and timing of the new route.

Table 1 – Programme Assessment Summary

Approach	Programme	Brief description	Key reason for rejection
Making the most of the existing network	1	Do minimum.	Doesn't address the identified problems.
	2	Network optimisation only.	Doesn't address the walking and cycling investment objectives.
	3	Network optimisation (as above) plus Rocks Road options.	Uncertain performance over the longer term.
	4	The same as Programme 3 with clearways options for public transport (PT) only.	Insufficient PT demand to justify clearways for PT only.
Widening the existing arterials	5	The same as Programme 3 (excluding clearways) plus road widening options on both arterials for use by public transport only.	Implementation impacts and PT demand could not justify this programme.
	6	The same as Programme 3 (excluding clearways) plus road widening options on both arterials for use by all traffic.	Implementation impacts and poor stakeholder support.
	6a	The same as Programme 3 (excluding clearways) plus road widening options for use by all traffic on Waimea Road and Rutherford Street only.	Less effective than Option 7 and with similar impacts as Programme 6.
Creating a new arterial	7	The same as Programme 3 (excluding clearways) plus a new route.	Recommended programme.
	8	The same as Programme 7 but the new route is for public transport only.	Insufficient PT demand to justify.

Key stakeholders held mixed views on the recommended programme, with some willing to trade off local access (i.e. local access and egress to side roads and accesses) along the two arterials to reduce congestion. The majority view was less traffic on Rocks Road, Waimea Road, and Rutherford Street was desirable and should be pursued.

Initial assessments of the programmes identified long term optimisation, widening and options solely relying on public transport were less effective at addressing the identified problems.

The project team requested additional traffic modelling related to clearways and a new route. After assessing this new information, the project team decided the recommended programme (Programme 7) should consist of two activities:

- Network optimisation activities that change the current transport network to accommodate and manage the projected traffic growth, followed by;
- A new route to accommodate the projected traffic growth. The new route could include tunnels and alignments similar to the Southern Link, and could be classified either state highway or local road.

A summary of the programmes assessment along with the key reason for rejection is shown in Table 1 above.

THE RECOMMENDED PROGRAMME

Many options are still contained within the recommended programme, including improved public transport, more travel demand management and new route tunnel alignments. The next stage of the investigation will assess the options within the recommended programme in further detail, and select and refine those best to progress.

The recommended programme assessment is shown in Table 2 below.

The performance of the recommended programme against the project IO's is summarised in Table 3 below.

Table 2 – NSLI Recommended Programme Assessment

Programme / Activity		Programme
Programme Description		RECOMMENDED PROGRAMME
Investment Objectives		
Investment Objective 1	Travel times on the two arterials no worse than 2015 for the life of the programme.	High
Investment Objective 2	Volume to available capacity ratio on the two arterials no worse than 80% for the life of the programme.	High
Investment Objective 3	Zero walking and cycling crashes on the two arterials; Continuous decline in death and serious injuries (DSI's) for the life of the programme.	Medium
Investment Objective 4	Double walking and cycling numbers per day within 5 years of implementing a walking / cycling option on Rocks Road and thereafter the growth rate is greater than elsewhere in Nelson.	Medium
Investment Cost		\$45M – \$300M
Time to Implement		1–15 yrs
Difficulty to Implement (low, medium, high)		Medium – high
Public and Stakeholder Risk of Acceptance		Medium
Risks (Impacts using seven point scale) +3 = major benefit +2 = moderate benefit + 1 = minor benefit 0 = no impact or benefit -3 = major impact -2 = moderate impact -1 = minor impact		
Accessibility – to what extent does the programme affect accessibility for all modes of travel		+2 to +3
Safety – to what extent does the programme address safety of travellers for all modes of		-2 to +2
Economic – to what extent will the programme impact the Regional economy		-3 to +2
Environmental – to what extent will the programme affect water resources, resource efficiency and ecology		-2 to +1
Environmental – what will be the likely impact of the programme on noise and vibration levels if implemented		-1 to +3
Environmental – what will be the likely impact of the programme on air quality levels if implemented		-1 to +1
Social – what will be the likely impact of the programme on social outcomes if implemented		-3 to +2
Landscape / Urban design – what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented		-2 to +1
Culture – what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented		-2 to 0
Built Heritage – what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented		-2 to 0
Indicative BCR		0 – 2.2
Indicative Programme Profile:		MML

Table 3 – Performance ratings of the recommended programme against the IO's

Investment Objectives		Recommended Programme (over the life of the programme)
1	Travel times on the two arterials no worse than 2015 for the life of the programme	greater than 70%
2	Peak hour volume to available capacity ratio of no more than 0.8 on the two arterials	greater than 70%
3	Zero walking and cycling crashes on the two arterials; and continuous decline in walking and cycling deaths and serious injuries on the two arterials for the life of the programme	30% to 70%
4	Five years after implementing an option on Rocks Road, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson	30% to 70%

NB: The range of values in Table 3 illustrates the variability of the performance of the options within the recommended programme against the targets of each investment objective, whether singularly or in multiple different combinations. The work to find the optimal combination of options that achieves the highest performance across all investment objectives over time is to be undertaken in the DBC phase.

UNCERTAINTIES

The recommended programme contains a number of uncertainties and work to address these will take place in the DBC phase:

- traffic growth modelling;
- the classification and alignment of a new route;
- micro-modelling work to better determine locations and configurations of clearways and the new route;
- costs associated with clearways and a new route.

Traffic modelling shows that expected traffic delays and travel speeds on the two arterials will deteriorate under the medium growth scenario, shown in Figure 9. The scale of efforts to optimise the network, the speed of regional growth and new technologies, will determine when a new route is required.

- The recommended programme is based on a medium growth scenario, which projects that network optimisation activities will become less effective at reducing travel delays and make it a challenge to access and cross the arterials sometime in the early 2030s.
- Under a low growth scenario, traffic modelling indicates that a new route will not be required for another 40 years, but under a high growth scenario it will be required in the mid to late 2020s.

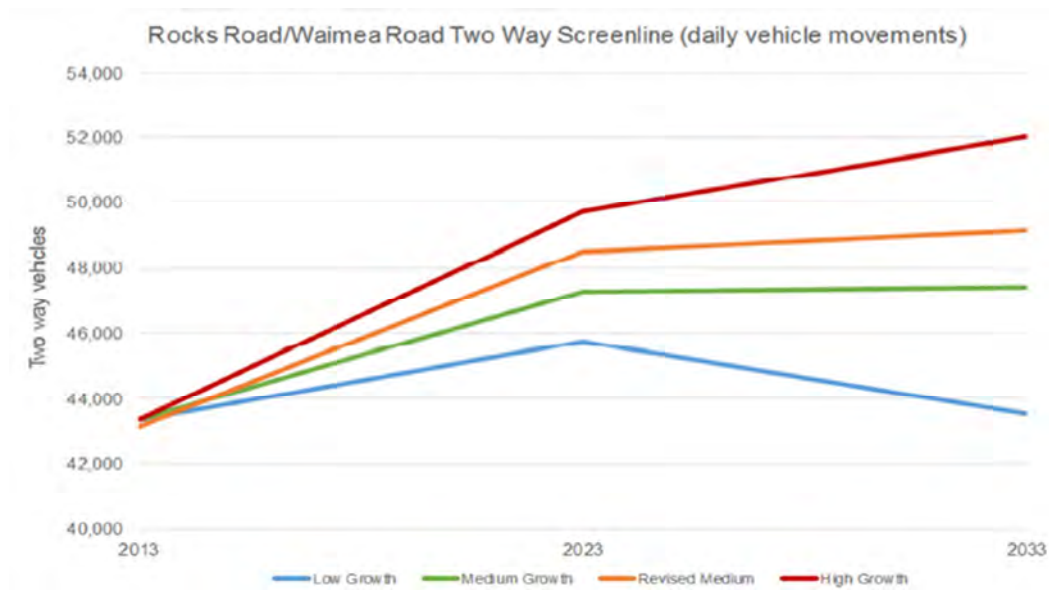


Figure 9 – Traffic Growth Scenarios

RISKS

The project team identified the following critical risks associated with the implementation of the activities and options within the recommended programme:

- Organisational risk – The Transport Agency needs NCC’s support for some of the activities and options within the recommended programme to enable implementation;
- Affordability – Detailed preferred option costs and assessments are required before they can be considered for inclusion in the National Land Transport Programme;
- Rocks Road consents – Obtaining permission for a Rocks Road option that requires reclamation into the coastal area presents significant, but manageable challenges;
- New route consents – Obtaining permission for a new route, which includes designating it as a state highway or a local road – presents significant manageable challenges;
- Operational risks include:
 - physical operation of the network
 - the integration with and operation of additional PT services
 - policy and systems operational aspects (eg traffic signal optimisation, parking charges).

Some of the operation risks will fall outside of the Transport Agency’s sphere of responsibility (e.g. changing land use or changing school hours) and will need to be integrated across the delivery of the programme with the wider land use and transport system.

NEXT STEPS

The next step in the investigation is the DBC. In the next phase the network optimisation activities and the new route will be investigated further. During the DBC more detail on options within the recommended programme will be available and the best options to progress further will be selected.

The timeline for the next phase of the investigation is shown graphically in Figure 3.

PART A – THE STRATEGIC CASE

This Programme Business Case (PBC) report was written over a period of time between early 2016 and June 2017 based on the New Zealand Transport Agency's (Transport Agency's) procedures for the development of projects using the better business case approach. This better business case procedure encompassed four stages – the Strategic Case, the Programme Business Case, the Indicative Business Case and the Detailed Business Case. In mid June 2017, the Transport Agency advised a change to its procedures to adopt a single phase combining the work traditionally undertaken in the Indicative Business Case and the Detailed Business Case into one phase and named this combination of work as the Detailed Business Case.

This PBC report was written prior to the change. Any references to the Indicative Business Case phase within this report are to be read as occurring within the Detailed Business Case.

1 INTRODUCTION

The Nelson Southern Link Investigation (NSLI) forms part of the Government's Accelerated Regional Roding Package for the State Highway¹, and covers the area between Whakatu Drive and Queen Elizabeth II (QEII) Drive.

1.1 BACKGROUND

The main Project study area is between State Highway 6 (SH6) Annesbrook Roundabout to SH6 Haven Rd Roundabout, as illustrated in Figure 1.

¹ <http://www.transport.govt.nz/land/accelerated-regional-roding-package/#nsl>

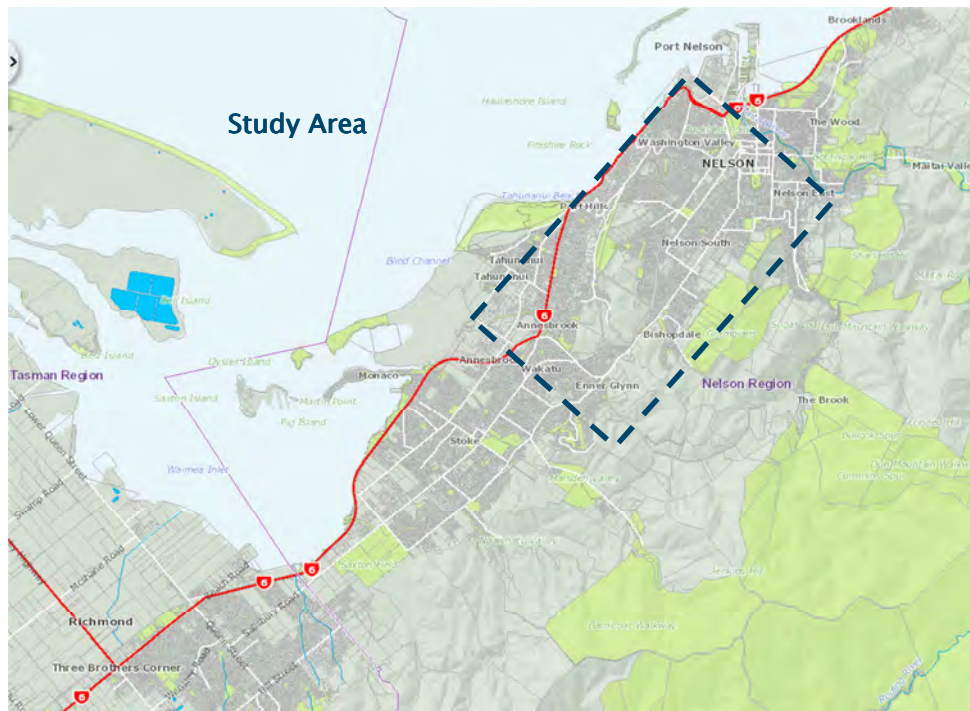


Figure 1 : Location of Study Area

SH 6 is classified as a Regional State Highway under the One Network Road Classification² because:

- The average daily traffic volume is greater than 15,000 vehicles per day in an urban area³;
- Freight volume is greater than 400 heavy commercial vehicles per day⁴;
- It services population centres greater than 30,000; and
- There are more than 20,000 international travellers on the route annually⁵.

State Highway 6 traverses around Nelson City from QEII Drive onto Rocks Road and along the waterfront. It progresses into the Tahunanui suburb until it meets Whakatu Drive at the Annesbrook Roundabout and continues south towards Richmond. Improvements to State Highway 6 from QEII Drive to the north and Whakatu Drive to the south have been completed, resulting in mostly free-flow conditions with travel speeds between 80 to 100km/h.

With reference to Figure 2, between the SH6 Haven Road roundabout and the SH6 Annesbrook roundabout, traffic travels within 50km/hr posted speed limits and 40km/hr variable school speed zones along roads characterised as two lane urban arterials.

² <https://www.nzta.govt.nz/roads-and-rail/road-efficiency-group/one-network-road-classification/key-documents/>

³ NZTA Site 00600118 has approximately 22,350 vehicles per day, 6% HCV in 2014, <https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf>

⁴ HCVs are around 6% of the AADT, approximately 1,340 heavy vehicles per day

⁵ International guest nights approximately 460,000 between March 2014 and March 2015. <http://www.stuff.co.nz/nelson-mail/news/68518973/tourism-hits-record-breaking-levels-in-nelson>

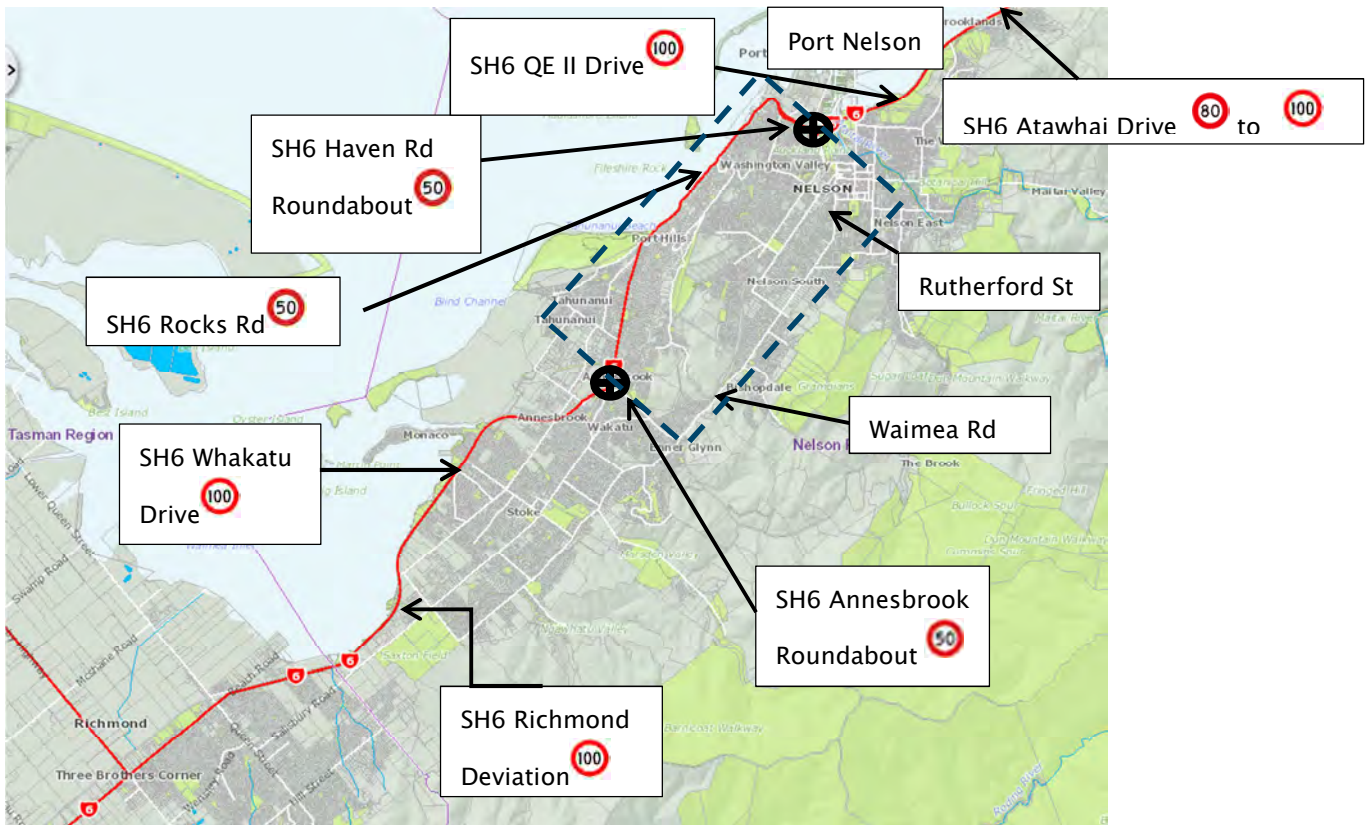


Figure 2 : Investigation Location, Road Names and State Highway Speed Limits

Traffic volumes on SH6 Rocks Road were approximately 22,300⁶ with 6% Heavy Commercial Vehicles (HCV) in 2015.

1.2 FOCUS OF THE NELSON ARTERIAL PBC

The NSLI (SH6 Annesbrook Roundabout to SH6 Haven Rd Roundabout), **Strategic Case** (October 2015) outlined the need for investment and the case for change. The focus of this Programme Business Case (PBC) is to address the identified problems from the Strategic Case of:

- **Congestion** (70%): Congestion in peak hours on Nelson’s two arterial routes result in travel delays.
- **Accessibility** (30%): SH6 Rocks Road is a key walking and cycling route constrained by substandard infrastructure.

1.2.1 Programme Business Case

The programme business case (PBC) identifies programmes of work and / or activities that deliver on the Strategic Case through to identifying a preferred programme with an optimal mix of options, which most

⁶ NZTA Site 00600118 <https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf> and <https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/2011-2015-AADT-Booklet2.pdf>

effectively addresses the problems identified for the arterial corridors and delivers on the transport benefits sought.

This PBC has sought:

- To provide an evidence based assessment of the problems identified in the Strategic Case, as refined during the PBC phase, affecting transport within the arterial corridors, together with the benefits of solving them;
- To define clear and achievable SMART⁷ investment objectives to enable an assessment of programmes to be undertaken;
- To recommend a preferred programme for further investigation; and
- To define the scope for the next stage of the business case process.

⁷ Specific, Measurable, Achievable, Relevant, Time-bound

2 PROGRAMME CONTEXT

2.1 BACKGROUND

Improving southern corridor access has a long history dating back over 40 years. In that time, projects to improve QEII Drive to the north and Whakatu Drive to the south have been completed, leaving the section between QEII Drive and Whakatu Drive as the remaining section yet to be addressed.

The Strategic Case summarises previous related studies in the following sections. As all of these studies concern the study area, they provide important background and context to the PBC.

2.1.1 The Southern Link

In July 2000 Transit New Zealand, the predecessor of the New Zealand Transport Agency (Transport Agency), lodged a Notice of Requirement stating “*the designation for the Southern Link is needed...to complete the final link between Queen Elizabeth II Drive and the northern end of the Whakatu Drive (Stoke Bypass).*”⁸ The location and Nelson Resource Management Plan status of the “Southern Link” is shown in Figure 3 as a dashed blue line, which highlights a “proposed principal route.”⁹

In 2004, the Environment Court declined the Notice of Requirement for reasons including social severance, the proximity of the route to schools, air quality degradation and a lack of evidence that the route would improve safety and efficiency.



2.1.2 The Nelson North to Brightwater Strategic Study, April 2008

The purpose of this combined Nelson City Council (NCC), Tasman District Council (TDC) and Transport Agency study was to identify present and future transport needs along the wider Nelson – Richmond urban area. The subsequent 2009 Nelson Regional Land Transport Strategy, however, stated that the future need for the Southern Link be monitored.

2.1.3 The Arterial Traffic Study, June 2011

The Arterial Traffic Study was commissioned by NCC and the Transport Agency to “*determine the best transport configuration between Annesbrook and the QEII / Haven Road roundabouts that would improve the city as a*

⁸ Southern Link Environment Court decision, clauses 6, 7 & 14, 2004

⁹ Extract from The Nelson Resource Management Plan Urban Road Hierarchy Map, ref A2.1

whole'. The study determined that no options would qualify for National Land Transport Fund (NLTF) funding at that time, and that the existing arterial transport configuration should be retained. NCC subsequently decided not to support further developing peak hour clearways on the existing arterials as a future option, and also agreed that the Southern Link should be protected as a future transport corridor. The study recommended further investigation be undertaken to improve walking and cycling along Rocks Road.

2.1.4 SH6 Rocks Road Walk / Cycle Facility Options Report, 2016

The SH6 Rocks Road walk / cycle investigation started in 2014, however a preferred option has yet to be determined. Given this project's interdependency with the NSLI PBC, the Transport Agency decided that its next steps, with regard to a walk / cycle option on Rocks Road, would be best determined once the PBC is completed.

2.2 GEOGRAPHIC AND ENVIRONMENTAL CONTEXT

Nelson's central city area is bounded by the sea and low foothills as shown in Figure 4 below. The Maitai River, Brook Stream and York Stream flow through this area. Substantial parts of the city are built on land reclaimed from the sea and historical foreshore. Because of the close proximity of the Nelson foothills and the encroachment of development on the flood plains and riparian margins, the stream and river catchments are relatively short, narrow and steep leading to rapid storm water runoff and a risk of flash flooding in higher intensity rain events. These events cause storm surges and rock fall along Rocks Road (SH6) leading to occasional road closures. Waimea Road has experienced road closures as a result of high winds toppling trees, and culverts on York Stream have occasionally blocked leading to flooding closing the road (although Council is currently upgrading the Waimea Road culverts).

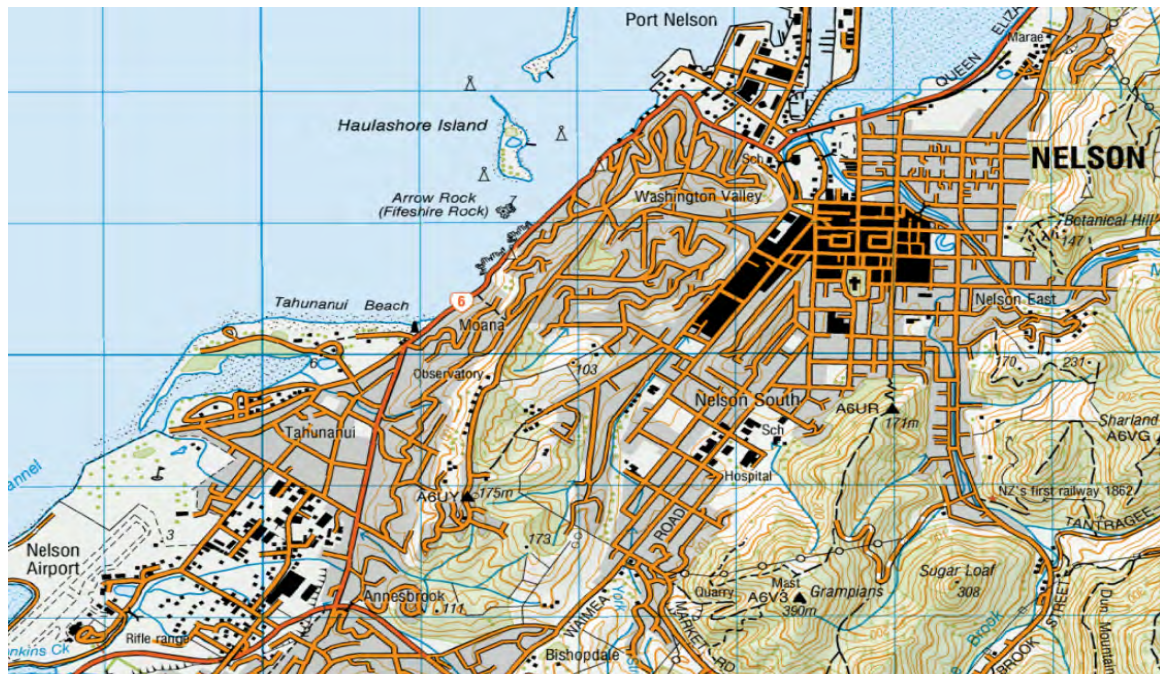


Figure 4 : Nelson Topography

Much of Nelson's coastal communities including the Central City area, Tahunanui and Airport will be affected by sea level rise in the future. Most of the community's critical infrastructure is located within the coastal

environment, including arterial road links, the Port and Airport. According to Ministry for Environment predictions for sea level rise, no NCC assets require urgent consideration before 2018.

2.3 SOCIAL CONTEXT

Nelson's usually resident population is 46,437 (2013), which is 1.1% of New Zealand's population¹⁰. Between 2006 and 2013 Nelson's population increased by 8.3 percent, an average annual growth rate of 1.1 percent. Over half of Nelson's population growth was in Stoke.

The median age increased to 42.5 years compared with 39.4 years in 2006, and New Zealand's median age of 38 years. Nelson has a high proportion of residents aged over 65 at 17.5%, compared with 14.3% nationally. There was a big increase in employment for people aged over 65 years and over, up 5.5 percent to 17.6 percent between 2006 and 2013.

Tasman's usually resident population is 47,154 (2013), which is also 1.1% of New Zealand's population. This is an increase of 2,526 people, or 5.7 percent, since the 2006 Census.

The median age increased to 44.2 years compared with 40.3 years in 2006 Richmond also has a high proportion of residents aged over 65 at 17.9%.

2.4 ECONOMIC CONTEXT

Based on regional Gross Domestic Product (GDP) growth¹⁰, the Nelson / Tasman region grew by 19.1% between 2010 and 2015.

Visitors continue to increase their contribution, with international visitor expenditure up by 18.6 percent to \$159 million and guest nights increasing to 565,700 in the year to March 2015, up 8.7 percent over the year to March 2014. The majority of Nelson's tourist accommodation is located in and around the central business district (CBD) and adjacent to the state highway and arterial roads, including Waimea Road.

The Ministry of Primary Industry's analysis of "Future Capability Needs for the Primary Industries in New Zealand" (April 2014) indicates that successful implementation of the primary industries strategies is likely to create an additional 7,000 jobs in Nelson, Marlborough and Tasman by 2025. This job generation is likely to result in increased traffic generation around Nelson's CBD, Port and Airport.

Looking into the future, the Regional Economic Development Strategy 2014, identifies economic opportunities for the region including the development of mussel farms, increased wood processing as volumes of harvested wood increase, and an increase in the use of digital technology across all sectors.

¹⁰ http://www.stats.govt.nz/browse_for_stats/economic_indicators/NationalAccounts/RegionalGDP_HOTPYeMar15.aspx

2.5 TRANSPORT CONTEXT

As summarised in Section 1.1, SH6 is classified as a Regional route. Daily traffic volumes on SH6 Rocks Road in 2015 were approximately 20,300¹¹ with 6% Heavy Commercial Vehicles (HCV).

2.5.1 Historical Traffic Growth

Using data from Transport Agency Site 00600118 and NCC count stations, the combined screenline volumes for SH6 and Waimea Road route¹² through the study area are shown in Figure 5.

Figure 5 indicates that traffic volumes on SH6 have remained relatively constant over the last six years.

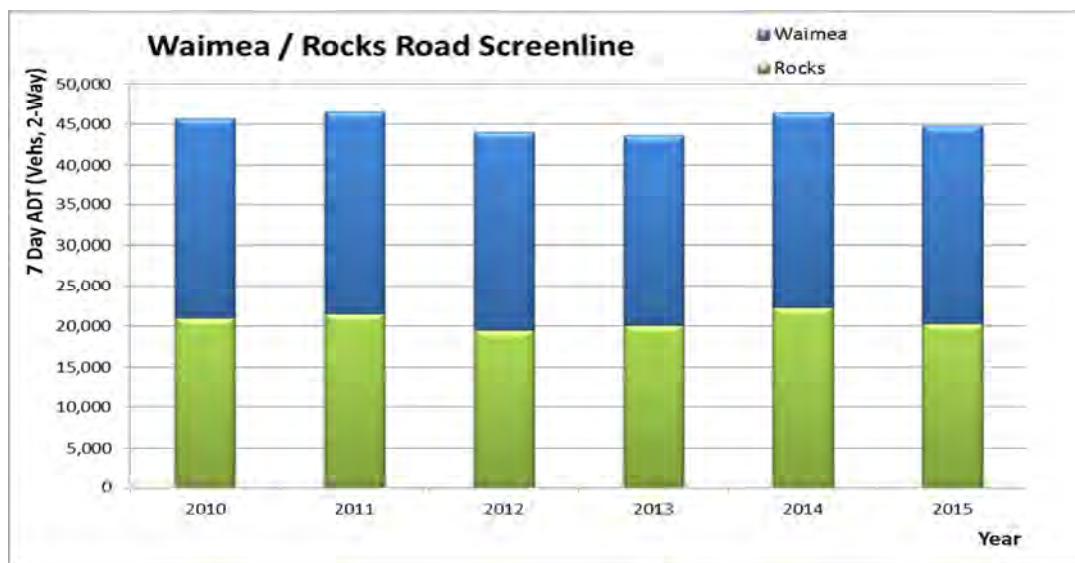


Figure 5 : SH6 Rocks Road / Waimea Road Screenline Traffic Volumes

2.5.2 Freight Volumes

Port Nelson freight tonnages are provided in Figure 6¹³ for import and export respectively. Freight growth has remained stable for the past 10 years.

The relationship between the port and the state highway is a key aspect in terms of the movement of freight. The state highway is currently the only road providing access to and from the port. The movement of export goods from the Nelson / Tasman Region to destinations beyond the South Island, and the movement of import goods in and around the Nelson / Tasman region, are wholly reliant in the first instance, on the connection to the state highway.

¹¹ NZTA Site 00600118 <https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf> and <https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/2011-2015-AADT-Booklet2.pdf>

¹² The Waimea Rd route travels from the SH6 Haven Rd roundabout, along Haven Rd, Halifax St, Rutherford St and Waimea Rd before joining the State Highway at the SH6 Annesbrook roundabout.

¹³ Data provided by Nelson Port, 11 March 2016. Tonnage includes bulk and containerised freight.

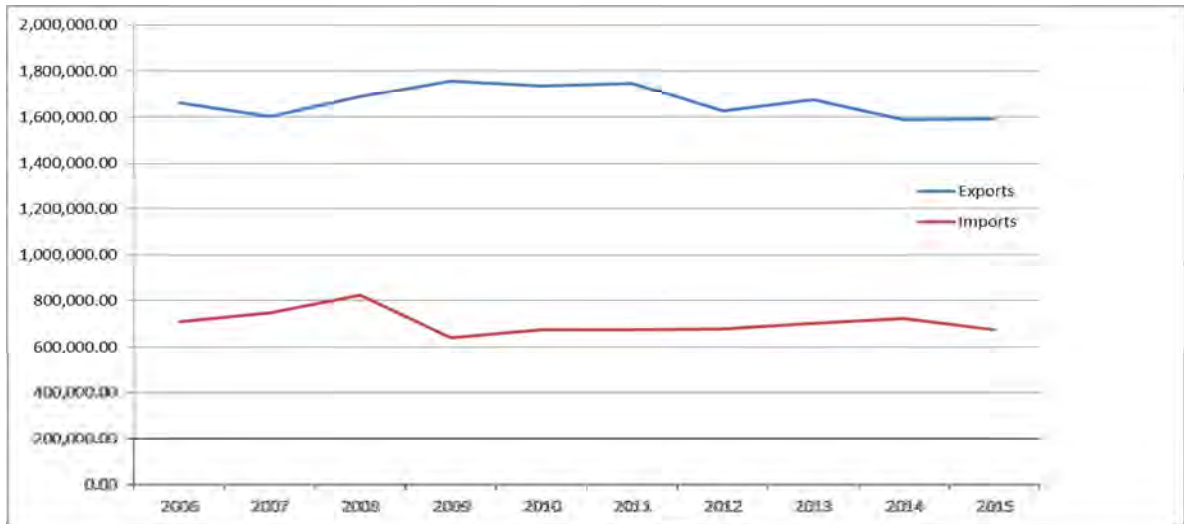


Figure 6 : Port Nelson Import / Export Freight Tonnages, 2006–2015

2.5.3 Walking and Cycling

NCC has been collecting cycle count data for the last 15 years at various locations on the strategic cycle network. The growth in Rocks Road users over that period can be seen in Figure 7. This growth is lower than the growth on the other key cycle routes, such as the Stoke railway reserve and the Bishopdale railway reserve, which have been upgraded to have higher standard facilities in recent years. Overall there is 3.4% growth per annum for the 15 years of data, yet growth on Rocks Road has been tracking at approximately 2.1%.

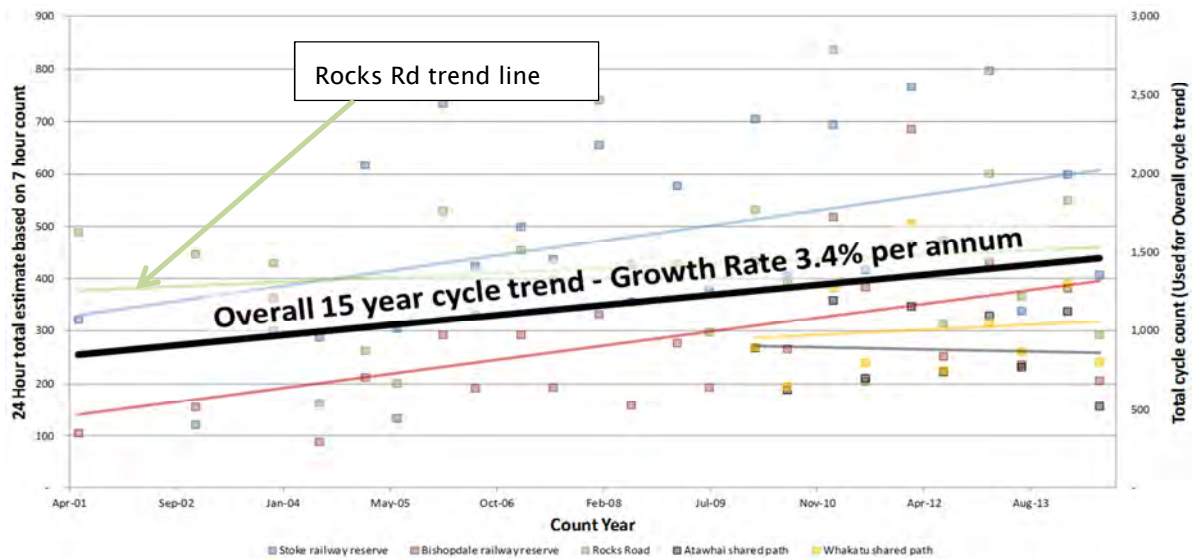


Figure 7 : Nelson's Historic Cycle Growth in Nelson¹⁴

In June 2015 the Transport Agency announced support for Nelson's Coastal Route as part of the Government's Urban Cycleway Programme, announced in 2014. The 7.2km route is shown in Figure 8 and includes the Haven Rd, Wakefield Quay and Rocks Rd sections of SH6. When completed, the coastal route could duplicate or replace the current inland route alignment of the Great Taste Trail, linking Nelson to Richmond.

¹⁴ Graph from NCC's submission for UCF funding, June 2015

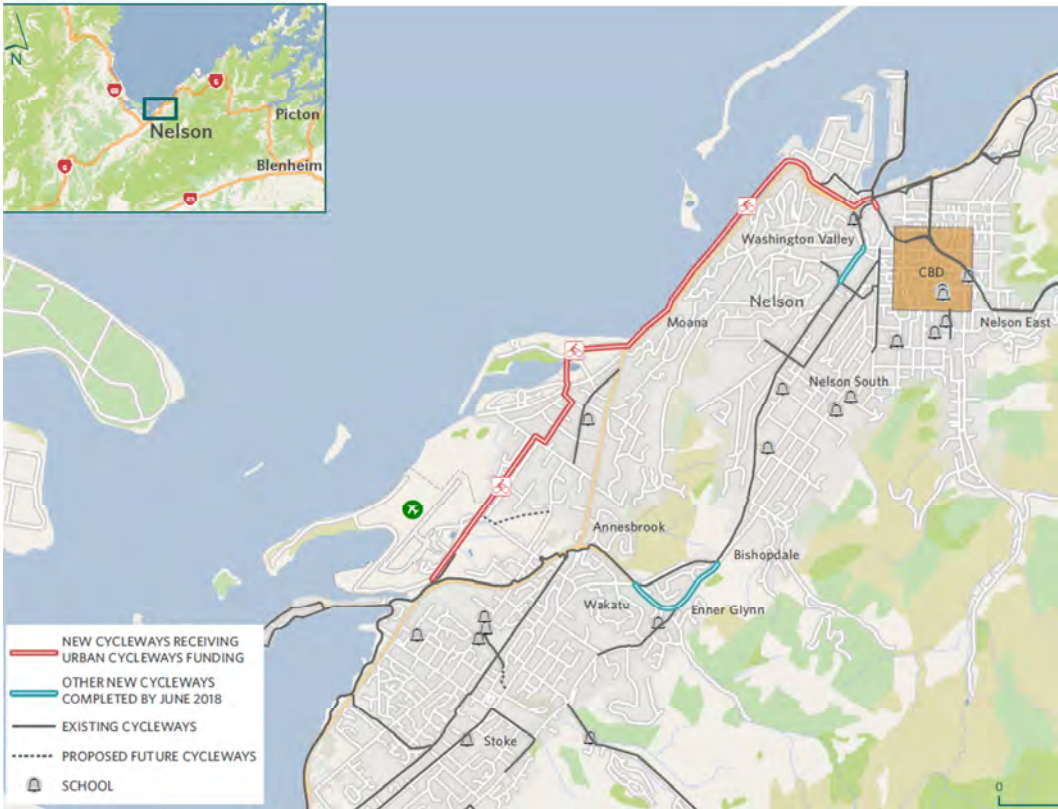


Figure 8 : Nelson's Coastal Route

3 KEY ORGANISATIONS, STAKEHOLDERS AND PUBLIC

This section outlines the key organisations and stakeholders participating in the development of the PBC. Each could either have a responsibility for developing the preferred programme or have been identified as groups representing the wider Nelson / Tasman region that have a physical and strategic influence on the transport network.

3.1 KEY ORGANISATIONS

3.1.1 New Zealand Transport Agency (Transport Agency)

The Transport Agency is responsible for managing, operating, planning and improving state highways and funding local roads to some extent. This is done by the Highways and Network Operations group on behalf of the Transport Agency who are leading the development of the Investigation. The Planning and Investment group is responsible for allocation of funding for transport investment throughout New Zealand.

As the key organisation in the development of this business case on behalf of the Government, the Transport Agency is fundamentally concerned with the ongoing safe and efficient operation of SH6.

3.1.2 Key Organisations

A number of key organisations external to the Transport Agency, identified as historically having a direct physical and strategic influence on the transport network and/or the majority of network users, have viewpoints that need to be taken into account when developing this PBC as shown in Table 1.

Table 1: Key Organisations

Key Organisations	Focus Area
NCC, represented by the Mayor (who is also a Regional Transport Committee member), Works and Infrastructure Committee Chair and Regional Transport Committee Chair	<ul style="list-style-type: none"> Investigation's study area is within NCC unitary territory Strategic transport planning for the region Provision and operation of local road network Unitary authority – plans for and manages the effects of the use and development of land
TDC represented by Engineering Services Chair and Regional Transport Committee Chair	<ul style="list-style-type: none"> Transport linkages between Tasman District, Nelson's central business district, and Port Nelson Strategic transport planning for the Tasman region Provision and operation of local road network Unitary authority – plans for and manages the effects of the use and development of land
Automobile Association (AA), represented by Nelson District AA Council Chair.	<ul style="list-style-type: none"> Promoting, facilitating and protecting the interests of motor vehicle owners
Road Transport Association NZ (RTA), represented by a nominee	<ul style="list-style-type: none"> Association representing road transport operators and the Heavy Haulage Association
NZ Police, represented by Team Leader	<ul style="list-style-type: none"> Road safety and enforcement of the traffic laws

Key Organisations	Focus Area
Road Policing, Tasman	<ul style="list-style-type: none"> Contributes towards the Government's Safer Journeys Strategy and safe system approach
Nelson Chamber of Commerce, represented by Chief Executive Officer	<ul style="list-style-type: none"> Advocate for businesses in the Nelson region

3.2 KEY STAKEHOLDERS

Key stakeholders, external to the Transport Agency (and their key organisations), whose viewpoints have been taken into account through PBC stakeholder workshops are shown in Table 2.

Table 2: Key Stakeholders

Key Stakeholders
NCC Representative from the Planning and Regulatory Committee
Port Nelson Ltd
Bicycle Nelson Bays
Walk Nelson Tasman
A Public Transport User Representative
NCC Representative from the Transport and Rooding Division

3.3 PUBLIC

The Public were involved in the development of the PBC through the feedback they provided during the Public Engagement period that ran between 23 March and 24 April 2016. Refer to Section 6.2 and Appendix F of this report for information related to public engagement.

4 STRATEGIC ASSESSMENTS – OUTLINING THE NEED FOR INVESTMENT

4.1 DEFINING THE PROBLEM

As summarised in the Strategic Case, a facilitated Investment Logic Mapping workshop was held on 7 October 2015 with key organisations to gain a better understanding of current issues and business needs. The following two key problems were agreed at the workshop:

Problem 1 (70%): Congestion in peak hours on Nelson’s two arterial routes result in travel delays.

Problem 2 (30%): SH6 Rocks Road is a key walking and cycling route constrained by substandard infrastructure.

The Investment Logic Map from the Strategic Case is attached as Appendix A.

4.1.1 Problem Refinement

The PBC Options Workshop on 18 December 2015 (minutes are provided in Appendix C) reviewed the problem statements from the Strategic Case. After discussion of the problems that took into account the root causes and the issues and constraints, the attendees unanimously agreed to change the problem statements to:

Problem 1 (70%): The form and function¹⁵ of Nelson’s two arterial corridors results in congestion and delays.

Problem 2 (30%): Substandard infrastructure on Rocks Road, which is part of the Coastal Path, is constraining the growth in walking and cycling activities.

The weightings of the problems were maintained at 70% and 30% respectively by the majority of attendees.

Further analyses of these problems and development of SMART (Specific, Measurable, Agreed, Realistic, Time-based) investment objectives are explored in Sections 4.5, 4.6 and 4.7.

4.2 THE BENEFITS OF INVESTMENT

The potential benefits of successfully investing to address the problems were identified at the investment logic mapping session in October 2015. The panel identified and agreed the following potential benefits:

Benefit 1 (35%): Reduced journey times.

Benefit 2 (35%): Contribute to Nelson and regional economic growth and productivity.

Benefit 3 (15%): Improved community safety and wellbeing.

Benefit 4 (15%): Improved tourism and recreational activities.

The benefit map from the Strategic Case is attached as Appendix B.

¹⁵ ‘Form and function’ were used to describe route configurations and accessibility for all modes of travel.

4.2.1 Benefit Refinement

The PBC Options Workshop on 18 December 2015 reviewed the benefit map from the Strategic Case, and agreed the following changes to the benefits. Appendix D contains the meeting minutes:

- Benefit 2 *“Contribute to Nelson and Regional economic growth and productivity”* would occur as a consequence of achieving Benefit 1 *“Reduced journey times”* and therefore Benefit 2 is not required;
- The workshop attendees agreed that Benefit 3 *“Improved community safety and well-being”* should be re-worded as *“Improved safety for walking and cycling modes of travel”*.
- The workshop attendees agreed that Benefit 4 was related to the section of SH6 known as Rocks Road, which runs from the intersection of Bisley Avenue through to the Wakefield Quay and should be re-worded as *“Improved tourism and recreational activities on Rocks Road”*. Following further feedback to the Transport Agency from the workshop attendees, *“active transport”* was added to the description to encompass walking and cycling as well as tourism and recreational activities and the Benefit 4 description was finalised as *“Improved tourism, active transport and recreational activities on Rocks Road”*.
- The Investment KPI for Benefit 4 (refer to the ILM Logic Map in Appendix B) titled *“Increase spatial coverage for cyclists and paths”* was deleted following feedback to the Transport Agency as it was deemed to be an option to the Investment KPIs *“Decrease walk/cycle crashes”* and *“Increased cycle and walker numbers”* and not an objective in its own right.

The Benefit weightings from the Strategic Case have been reassigned to give 70% for Benefit 1 and 15% each for Benefits 3 and 4. The rationale for this change is that Benefit 2 would occur as a result of Benefit 1 being achieved (as acknowledged by the workshop attendees), so Benefit 2’s weighting of 35% is reassigned to Benefit 1.

The removal of Benefit 2 has the potential to create confusion in future correspondence through re-numbering of the benefits from the Strategic Case. To mitigate that risk the Benefits will be described from here on as:

Benefit A (70%): Reduced journey times.

Benefit B (15%): Improved safety for walking and cycling modes of travel.

Benefit C (15%): Improved tourism, active transport and recreational activities on Rocks Road.

4.3 ALIGNMENT TO EXISTING STRATEGIES/ORGANISATIONAL GOALS

4.3.1 The Transport Agency

- The Transport Agency is responsible for operating, maintaining, renewing and improving the state highway network. The state highway within the study area has been highlighted by the Government as being of particular regional importance to contributing to the Government’s strategic direction¹⁶ which is:

¹⁶ Accelerated Regional Rooding Package, Ministry of Transport, July 2014

“To drive improved performance from the land transport system by focusing on:

- *Economic growth and productivity;*
- *Road safety; and*
- *Value for money.”*

The Government Policy Statement¹⁷ (GPS) expects the Transport Agency to take a lead role in securing integrated land transport planning that contributes to the government’s overarching goal of *“growing the New Zealand economy to deliver greater prosperity, security and opportunities for all New Zealanders.”*

The Transport Agency’s Statement of Intent¹⁸ sets out its purpose, which is to *“create transport solutions for a thriving New Zealand.”* The desired outcomes are consistent with the proposed investment, being:

- Effective – Move people and freight where they need to go in a timely manner;
- Efficient – Deliver the right infrastructure and services to the right level at the best cost;
- Safe and Responsible – Reduce the harms from transport; and
- Resilient – Meet future needs and endure shocks.

One of the Transport Agency’s Statement of Intent key goals for the transport network involves integrating land uses, transport networks, and the various modes, services and systems to deliver a seamless and safe ‘one network’. Consequently, it is important when considering any state highway transport network improvements that the region’s policy objectives are taken into account. The long term organisation goals and medium term objectives that relate to this Strategic Case are identified in Table 3.

Table 3: Transport Agency Long-term (2013–32) Goals and Medium-term (2013–2022) Objectives

Long Term (2013–32) Goals	Medium Term (2013–2022) Objectives
Integrate one effective and resilient network for customers	Integrate land uses and transport networks to shape demand at national, regional and local levels.
	Integrate national and local transport networks to support strategic connections and travel choices.
	Improve freight supply chain efficiency.
Deliver efficient, safe and responsible highway solutions for customers	Greater resilience of the state highway network.
	Deliver consistent levels of customer service that meet current expectations and anticipate future demand.
	Provide significant transport infrastructure.
Maximise effective, efficient and strategic returns for New Zealand	Align investment to agreed national, regional and local outcomes and improve value for money in all we invest in and deliver.

¹⁷ Government Policy Statement on Land Transport 2015/16–2024/25

¹⁸ <https://www.nzta.govt.nz/assets/resources/statement-of-intent/docs/soi-2015-2019.pdf>

The Transport Agency's role includes promoting integrated land use and multi-modal transport planning with local government, for an increasingly optimised transport network that runs well and reliably. The Transport Agency needs to negotiate the right balance between transport outcomes and other social, community and economic outcomes.

4.3.2 Relevant Strategies and Plans

Table 4 below identifies the high level organisational strategies of the Government, the NZ Transport Agency and Nelson City Council that relate to this investigation project and are inputs for consideration when moving through the Business Case phases.

Table 4: Relevant Organisational Strategies and Plans

Organisation	Organisational Strategies
Government	Government Accelerated Regional Rooding Package, Government Policy Statement on Land Transport 2015/16 – 2024/25
Transport Agency	Statement of Intent June 2015, draft South Island Freight Plan 2014, National Business Cases, National Infrastructure Plan 2015, National Land Transport Plan 2015 – 2018
NCC	Long Term Plan 2015 – 25, Heart of Nelson – Central City Strategy 2009, Nelson 2060 – Framing our Future
NCC (Regulatory Authority Objectives)	Nelson Resource Management Policy Statement and Plan (under review as the “Nelson Plan”)
NCC (Regional Transport Objectives)	Transportation Asset Management Plan 2015 – 2025, Regional Land Transport Plan 2015 – 2018

4.4 ISSUES AND CONSTRAINTS

When undertaking a study to address the identified problems, the issues and constraints must be considered to ensure that programme and option development takes these into account. ‘Issues’ are uncertainties that the study may not be in a position to resolve, but must work within the context of. ‘Constraints’ represent the bounds within which a study is being undertaken. These are both captured in an “Uncertainty Log”.

For clarification purposes:

- Issues generally relate to something that is occurring for which a decision is yet to be made. For example, a study in a neighbouring area may lead to a proposal that results in significant changes to through trips along the two arterials or for example, the impact of a major new land-use development scheme has yet to become clear; and
- Constraints are known and generally provide the context about which programmes and options are

generated and assessed against. For example, the built-up areas of Nelson will have implications on the ability to build a particular option.

- Table 5 provides the definitions related to the probability of an issue occurring.

Table 5: Probability Definitions

Probability
Near certain: The outcome will happen or there is a high probability that it will happen
More than likely: The outcome is likely to happen but there is some uncertainty
Reasonably foreseeable: The outcome may happen, but there is significant uncertainty
Hypothetical: There is considerable uncertainty whether the outcome will ever happen

The Uncertainty Log is shown in Table 6.

Table 6: Uncertainty Log

Factor	Probability	Impact on programme
Factors affecting demand		
Land use changes occur at a different rate than currently envisaged eg the inclusion of Special Housing Areas	More than likely	High
Higher volumes may mean that transport investment for a particular treatment is required earlier than envisaged or a different treatment than programmed is required. Lower traffic volumes may mean a treatment may have been unnecessary or required at a later date.		
Job numbers increase or decrease at a different rate than currently envisaged	Reasonably foreseeable	High
A faster rate may mean a different treatment is required. A slower rate may mean a treatment can be deferred to a future date or a treatment may not be required.		

Factor affecting supply		
Road space unavailable for some options	More than likely	High
Using the existing transport corridor and optimising the available width has the potential to limit the ability to implement certain options		

Richmond becomes a significant Regional hub and travel patterns alter.	Hypothetical	Low – medium
------------------------------------------------------------------------	--------------	--------------

Factor affecting cost		
Higher travel costs to individuals	Reasonably foreseeable	Medium
Discretionary journeys likely to decrease. Possibility of higher vehicle occupancy rates.		

Cheaper travel costs to individuals through a change in propulsion system and / or technology	More than likely	High
Traffic volumes during interpeak and weekend periods may increase due to more personal funds being available, a proportion of which could be spent on more recreational journeys.		

Constraints
<ul style="list-style-type: none"> • The statutory powers of an authority to implement change –Transport Agency for SH6, NCC for local roads; • The funding levels that can realistically be obtained; • Topographical constraints that may make implementation risky and / or expensive; • The impacts on the existing as-built and natural environments may constrain the ability to implement particular options;

4.5 EVIDENCE TO SUPPORT PROBLEM 1 (70%): THE FORM AND FUNCTION OF NELSON’S TWO ARTERIAL CORRIDORS RESULTS IN CONGESTION AND DELAYS.

The statement is broken down into cause, effect and consequence as follows:

- **Cause:** Outlines the key causation / contributing factors of the problem:
 - *“The form and function of Nelson’s two arterial corridors”*
- **Effect:** Outlines the effects of both the singular and combined contributing factors:
 - *“results in congestion”*

- **Consequence:** Focusses on the outcomes of the cause and effect relationships and the consequences of not investing:
 - “and delays”

The following sections summarise the evidence that supports the problem statement, and the implications of this information.

4.5.1 The Evidence

Form and Function

PBC Workshop attendees reviewed the traffic model outputs related to the location of congestion points along the two arterials and the cumulative effect of congestion in comparison to free flow speeds. The information presented to the attendees at the two workshops in December 2015, and attached in Appendix C, provides the evidence for the Problem 1 statement (as amended in December 2015).

Traffic Model

The existing Nelson – Tasman Tracks Strategic Transportation Model (Tracks Model) was updated in 2015 to reflect the 2013 census data, validated and independently peer reviewed. The model’s purpose is to enable the existing transport network, in and around the study area, to be replicated to enable modelling of future years to occur to understand the changes to the transport network over time using a particular growth scenario. The model has helped to obtain a better understanding of where transport problems on the transport network are likely to occur, when they will occur and to better understand the extent of the problem of congestion (Problem 1) into the future using different growth scenarios.

The traffic model study area incorporates the Nelson City and Tasman District urban areas, from Hira in the east, Tophouse in the south and Motueka to the north–west as shown in Figure 9.

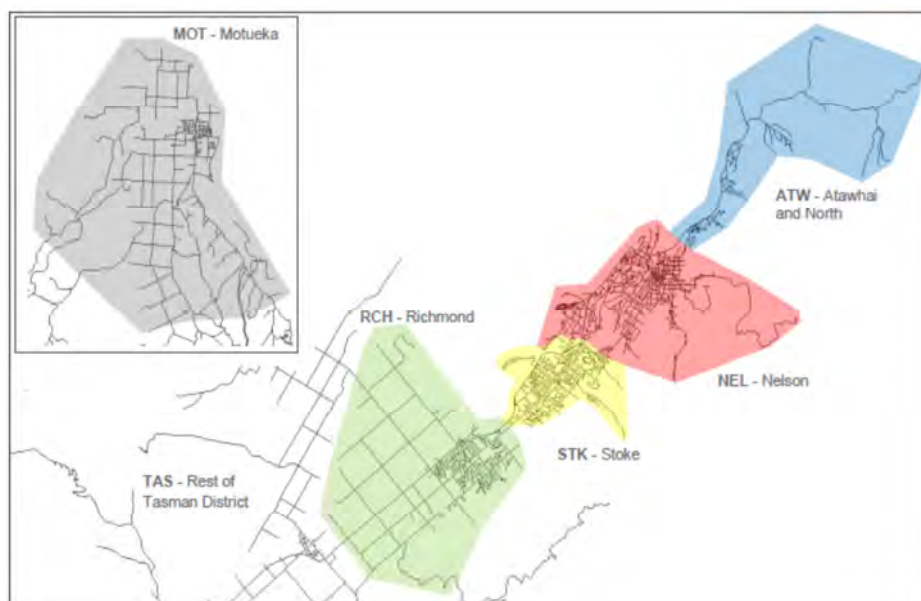


Figure 9: Traffic Model Extents

The Tracks Model projected the do minimum (2013 model) scenario into the future using models developed for 2023 and 2033 with land use input assumptions¹⁹ agreed with NCC and TDC officers. The quantum of population growth in the future baseline models aligned with Statistics New Zealand (SNZ) medium growth projections published in 2015 and household occupancy rates sourced from technical analysis by Rationale planning consultants. Key employment assumptions take into consideration likely changes in age profiles resulting in lower levels of future workforce participation. The assumptions are also informed through consultation with major employers within the study area to incorporate their growth expectations.

Sensitivity testing on the future models was undertaken to understand the likely level of uncertainty (range) as part of the Uncertainty Log (see Table 6 above) to different land use growth forecasts and how these may affect the model outputs. The sensitivity scenarios are centred on the current SNZ range of population projections as follows:

- Low Growth;
- Revised Medium Growth; and
- High Growth.

Low Growth – assumes SNZ published low growth population forecasts to understand the impacts of development occurring at a slower rate than the base forecast model. This test retains the same household occupancy assumptions as the base model. Employment growth is adjusted based on the change in household numbers from the slower development rate. The base school and tertiary roles are determined as a function of population growth so the school and tertiary roles have been factored back accordingly.

Revised Medium Growth – The revised medium scenario is a variant of the medium growth used in the main models, making adjustments to household numbers to align with SNZ household occupancy forecasts but retaining the same quantity of population growth. The future household occupancy rates adopted by NCC and TDC are higher than those predicted by SNZ and result in fewer households in the future relative to the population size. The revised medium growth scenario aligns with SNZ household occupancy rate predictions. When compared to the medium growth scenario, would add 1,794 households in the 2023 model and 2,579 households in the 2033 model with a corresponding increase in the number of jobs using the same 1.083 ratio. This in turn leads to a higher number of vehicles (using the same cars / household ratio of 1.68) and ultimately a higher number of home to work to home vehicle trips, which mostly occur in the peak period.

High Growth Scenario – The high growth scenario utilises the same methodology as that described for the low growth scenario and is developed to demonstrate the impacts of faster than expected growth on the model outputs by combining the SNZ high growth population forecasts with the base population per household ratio of the existing models.

Figure 10 below provides information with regard to the total number of vehicle kilometres travelled (VKT) within the study area under the different growth scenarios for the future. Figure 11 provides the range of traffic volumes per day to be expected on Waimea Road and SH6 combined.

¹⁹ Nelson Southern Link Investigation: Future Forecast Report March 2016

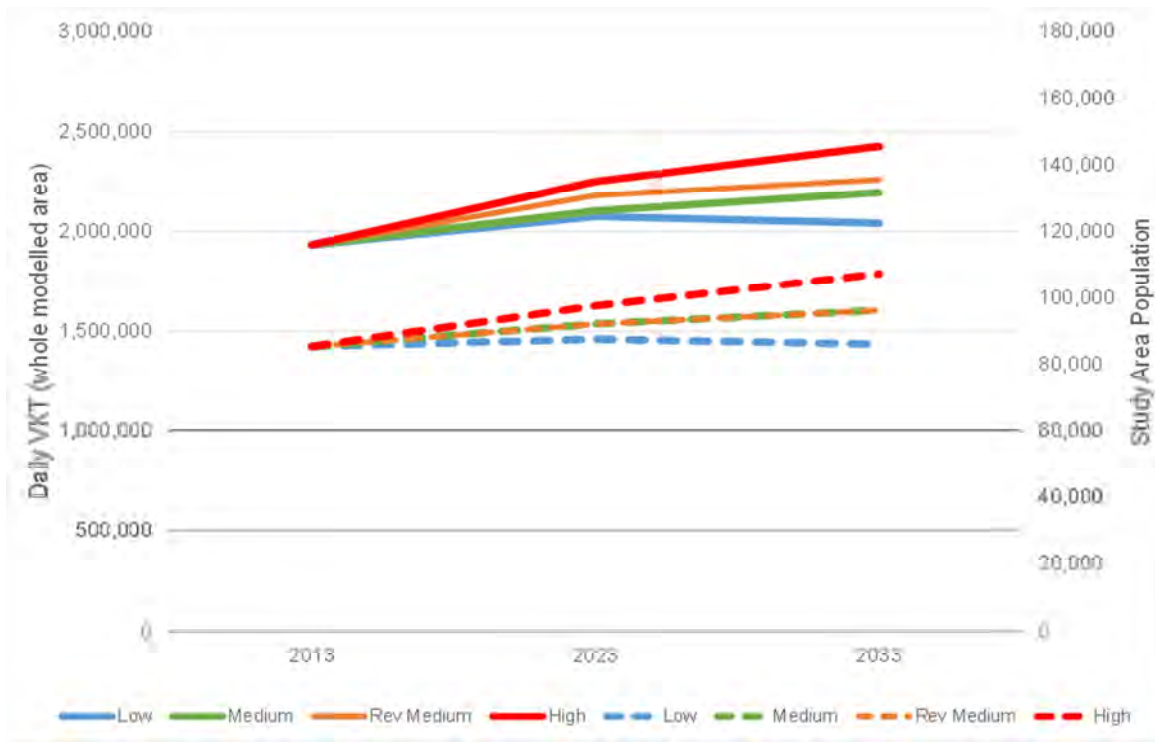


Figure 10: Comparison of Daily VKT and Model Area Population (dashed lines represent population numbers, solid lines represent VKT)

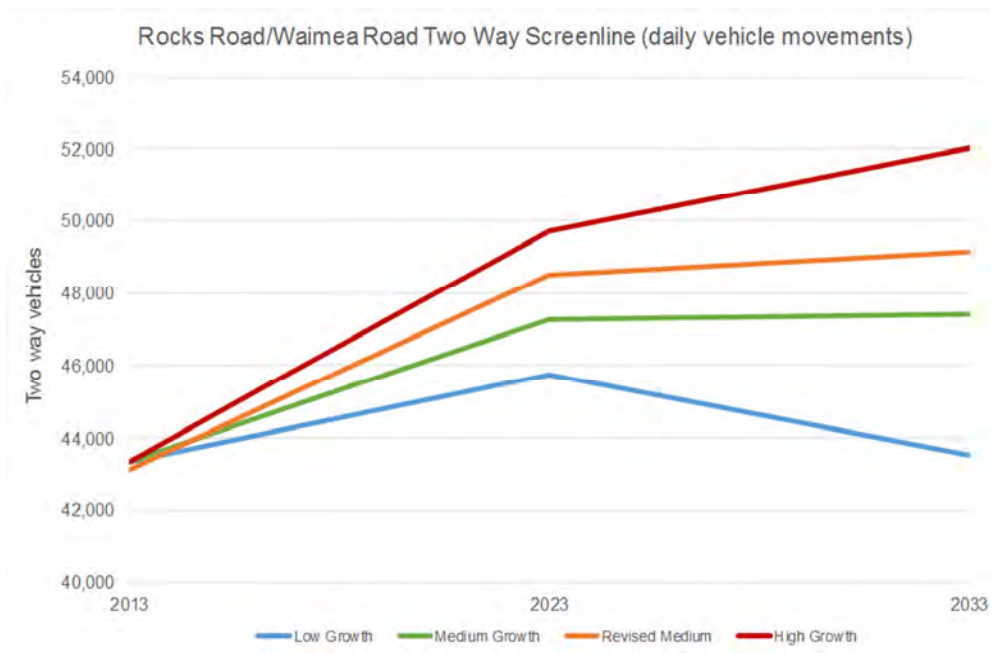


Figure 11: Comparison of Daily Traffic on Arterials Against Growth Scenarios

The primary outcome from the traffic modelling undertaken for the NSLI related to the two main arterial routes, demonstrates the level of uncertainty with regard to traffic volumes and travel times in the future under a range of different growth scenarios. Only the low growth scenario demonstrates that traffic volumes in 2033 will be

similar to 2015, with the other growth scenarios showing a range of higher traffic volumes in 2033 depending on the growth scenario.

Current Congestion

With reference to Problem 1, related to congestion, a Transport Agency definition²⁰ of congestion is *“where the volume to capacity ratio exceeds 80% for 5 days per week over at least a 1 hour time period that affects at least 1.5 km of a route”*.

For NSLI, the information collected to determine the current level of congestion was derived through the use of Bluetooth data. This data is captured through the positioning algorithm within mobile phone devices and together with the time data captured via sensors, enables the speed of a vehicle to be determined between known points along with the time taken to travel between those known points. For NSLI, Bluetooth data has been captured since the October 2014 and is presented in more detail in Appendix E. The Bluetooth data compares the travel times and travel speeds for each quarter for school term and holiday times. The Bluetooth data reports average travel times and average travel speeds within separate 15 minute intervals.

For Waimea Road, the Bluetooth data provided in the Strategic Case was between the Waimea Road/ Beatson Road roundabout and the intersection of Waimea Road / Rutherford Street – known as Route 2 in the Strategic Case. Appendix E provides Bluetooth data on Waimea Road between Annesbrook roundabout and the intersection of Waimea Road / Rutherford Street – known as Route 6 in Appendix E.

The Bluetooth data for both arterial routes, as shown in Appendix E, concurs with the evidence from the Strategic Case. In summary, the data provided in Appendix E shows the following:

- A comparison of Q4 2014 data and Q4 2015 data showed:
 - Delays on SH6 in both term and holiday times have increased by 1 minute in the northbound direction and by 2 minutes in the southbound direction for daytime time periods;
 - Delays to Waimea Road during term time have increased by approximately 2 minutes for the morning and evening peak periods correlated to direction;
- A comparison of Q1 2015 data and Q1 2016 data showed:
 - Delays to SH6 morning peak in the northbound direction during term time have increased by approximately 3 minutes and by approximately 1 minute during the other daytime time periods;
 - Delays to SH6 evening peak in the southbound direction during both term and holiday times have increased by approximately 2 minutes and by approximately 1.5 minutes during the other daytime time periods;
 - Delays to Waimea Road morning peak in the northbound direction during term time have increased by approximately 2 minutes with a small increase in delay during the other daytime time periods;
 - Delays to Waimea Road evening peak in the southbound direction during term and holiday times have increased by approximately 2 minutes.
- A comparison of Q2 2015 data and Q2 2016 data showed:

²⁰ Refer Glossary, NZTA Planning and Investment Knowledge Base

- Delays to SH6 morning peak in the northbound direction during term time have increased by approximately 2 minutes;
- Delays to SH6 evening peak in the southbound direction during both term and holiday times have increased by approximately 2 minutes;
- Delays to Waimea Road morning peak in the northbound direction during term time and holiday time have increased by approximately 1 minute;
- Delays to Waimea Road evening peak in the southbound direction during term and holiday times have increased by approximately 3 minutes.
- A comparison of Q3 2015 data and Q3 2016 data showed:
 - Delays to SH6 morning peak in the northbound direction during holiday time have increased by approximately 1 minute;
 - Delays to SH6 afternoon school peak in the southbound direction during term time have increased by approximately 1 minute. Delays in the evening peak during holiday time have increased by approximately 2 minutes;
 - Delays to Waimea Road morning peak in the northbound direction during term time and holiday time have increased by approximately 1 minute;

It is important to note that during 2016, there have been roadworks on Waimea Road, which could be a contributory factor in some of the increased delays when comparing 2016 travel times to 2015.

The evidence for congestion can be summarised as:

- Across the average 15 minute period, travel time delays in the peak periods on SH6 range between 2 and 8 minutes, and between 1 and 14 minutes on Waimea Road;
- Uncongested daytime travel speeds on SH6 are approximately 40km/hr, reducing to as low as 22km/hr in the southbound peak;
- Uncongested daytime travel speeds on Waimea Road are approximately 50km/hr, reducing to as low as 16km/hr in the northbound peak;
- During holiday periods, there are minimal delays northbound in the morning peak on Waimea Road;
- During holiday periods, there is approximately 2 – 4 minutes delay southbound in the evening peak on Waimea Road;
- During holiday periods, the delays in the peak on SH6 in the southbound direction are approximately 2 minutes greater than term time; and
- During holiday periods, there are minimal delays in the morning and evening peaks on SH6 in the northbound direction;

4.5.2 Implications of the Evidence

Taking into account the evidence for Problem 1, the implications are:

- Growth forecasts indicate that expected traffic delays and travel speeds on the two arterials will most likely get worse than 2015 levels under a range of 2023 and 2033 growth scenarios. Under the low growth scenario, traffic delays and travel speeds in 2033 are likely to be similar to 2015 levels.

4.6 EVIDENCE FOR PROBLEM 2 (30%): SUBSTANDARD INFRASTRUCTURE ON ROCKS ROAD, WHICH IS PART OF THE COASTAL PATH, IS CONSTRAINING THE GROWTH IN WALKING AND CYCLING ACTIVITIES.

The statement is broken down into cause, effect and consequence as follows:

- **Cause:** Outlines the key causation / contributing factors of the problem:
 - *“Substandard infrastructure on Rocks Road”*
- **Effect:** Outlines the effects of both the singular and combined contributing factors:
 - *“is constraining”*
- **Consequence:** Focusses on the outcomes of the cause and effect relationships and the consequences of not investing:
 - *“growth in walking and cycling ”*

The following sections summarise the evidence that supports the problem statement, and the implications of this information.

4.6.1 The Evidence

Constraining Growth in Walking and Cycling

Historical growth comparisons for walking and cycling on Rocks Road and the rest of Nelson was demonstrated in the evidence contained in the Strategic Case, reproduced in Figure 7 in Section 2.5.3 above. This comparison shows that the growth in walking and cycling numbers along Rocks Road is less than half the overall growth for Nelson.

Infrastructure Quality

An assessment of the pedestrian and cycling infrastructure along Rocks Rd was undertaken as part of the Rocks Rd walk / cycle path investigation²¹. When compared to the NCC Land Development Manual minimum standards, this investigation found that:

- 60% of the seaward footpath is below the desired 2m width²²; and
- Only 50% of existing cycle lanes met the minimum 1.5m width. None of the existing cycle lanes met the desired width of 1.8m for passing parked cars.

A review of the collective risk within Urban KiwiRap²³ indicates medium to high risk category for SH6 and the majority of Waimea Road (Annesbrook roundabout to Haven Road roundabout).

4.6.2 Implications of the evidence

- Compared to the historical 15 year average, growth in walking and cycling numbers on Rocks Road is lower than elsewhere in Nelson;

²¹ Rocks Road Cycle and Walking Project Investigation Report, July 2014

²² NCC Land Development Manual minimum standard

²³ <http://interpret.maps.arcgis.com/apps/PublicInformation/index.html?appid=d9713fc76168416cb9742f4d5d84fe31>

- Walking and cycling infrastructure on Rocks Road does not comply with current NCC standards;
- Public engagement undertaken in October 2014 as part of the Rocks Road Walking and Cycling Project Investigation identified substandard infrastructure as being a deterrent to walkers and cyclists accessing the hospitality and leisure industries, or the coastal amenity.

4.7 SMART INVESTMENT OBJECTIVES

At the PBC Workshop of 18 December 2015, the minutes of which are contained in Appendix D, attendees discussed the following SMART Investment Objectives (IOs) and their targets to be used to assess programmes and options developed during the PBC phase. The IOs serve as the basis for directing and guiding the entire study process, allow proper appraisal of options and alternatives, provide a clear line of site from the problems through to the benefits and key performance indicators (KPIs) and are focussed on the outcomes being sought

4.7.1 Investment Objective 1

Benefit:	Reduced travel times in the peak periods on the two arterial routes between Annesbrook and Haven Road roundabouts.
Investment KPI:	Decreased peak hour travel times.
Measure:	Travel speed.
Baseline:	Travel speeds on SH6 are averaging 29km/hr in the peaks. Travel speeds on Waimea Rd are averaging 22km/hr in the peaks.
Target:	Travel times on the two arterials no worse than 2015 for the life of the programme (40 years).

NB: It is noted that not all attendees were in agreement that travel times were a problem now and into the future.

4.7.2 Investment Objective 2

Benefit:	Reduced travel times in the peak periods on the two arterial routes between Annesbrook and Haven Road roundabouts.
Investment KPI:	Improve peak hour available capacity to move people and goods.
Measure:	Volume to available capacity ratio.
Baseline:	Peak hour volume to available capacity ratio on Nelson's two arterials (SH6 Rocks Road and Waimea Rd) range from 83% to 95%.
Target:	Peak hour volume to available capacity ratio of no more than 0.8.

4.7.3 Investment Objective 3

Benefit:	Improved safety for walking and cycling modes of travel.
Investment KPI:	Decrease in walking and cycling crash numbers on the two arterials.
Measure:	Crash numbers and death and serious injuries (DSIs).
Baseline:	In the last 5 years there have been 42 crashes involving cyclists and 13 involving pedestrians on the two arterials.

Targets: Zero walking and cycling crashes; and
Continuous decline in walk / cycle DSI's for the life of the programme.

4.7.4 Investment Objective 4

Benefit: Improved tourism, active transport and recreational activities on Rocks Road.
Investment KPI: Increase walking and cycling numbers on Rocks Road.
Measure: Walking and cycling numbers using Rocks Road.
Baseline: 500 cyclists per day, 250 pedestrians per day.
Target: Five years after implementing an option on Rocks Road, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson.

4.8 SUMMARY OF PROBLEMS, BENEFITS AND INVESTMENT OBJECTIVES

Figure 12 summarises the problems, benefits and investment objectives refined during the PBC phase and used to develop the programmes.

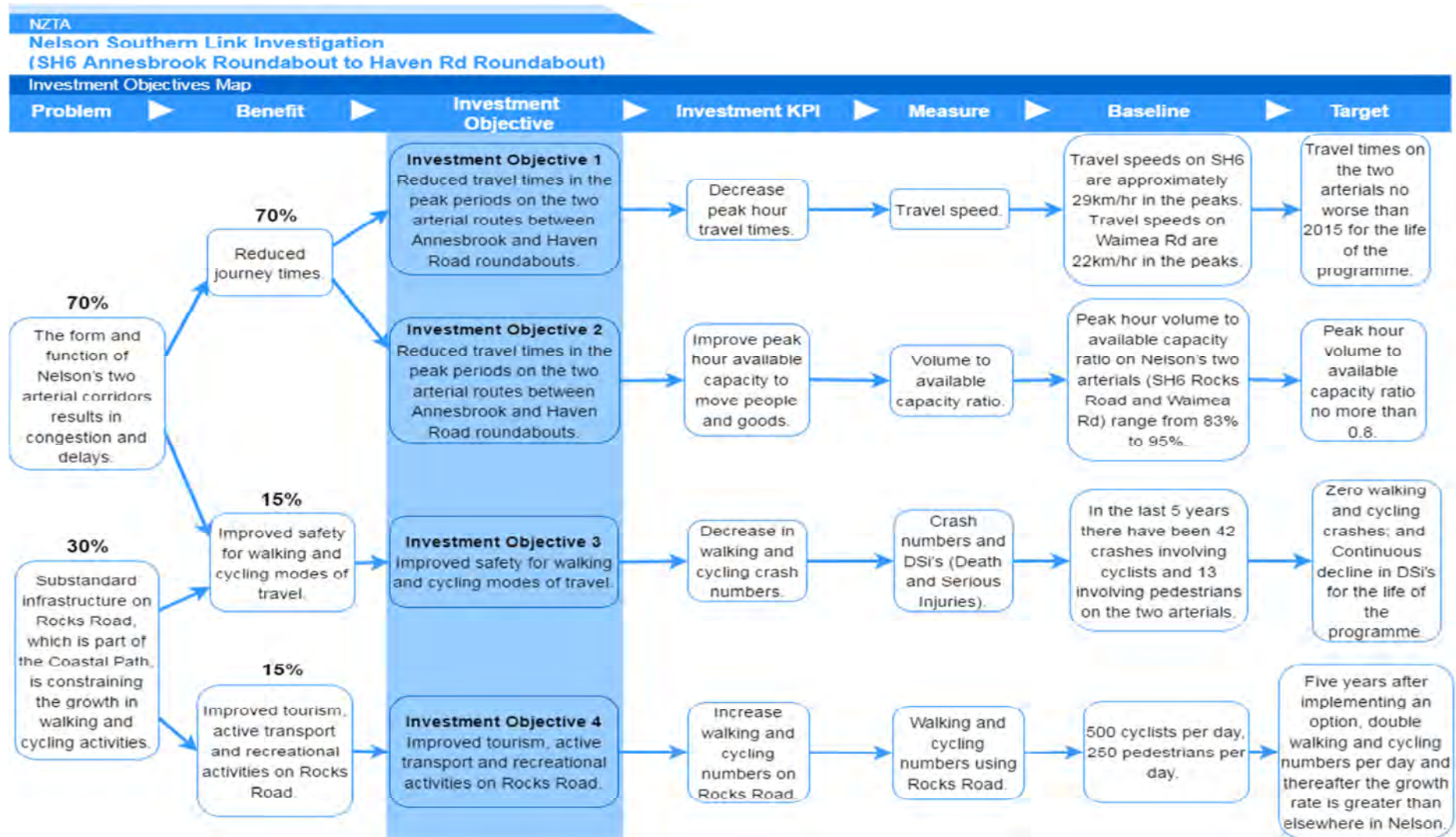


Figure 12: Summary of Problems, Benefits and Investment Objectives Refined for the PBC

PART B – DEVELOPING THE PROGRAMME

5 ALTERNATIVES AND OPTION DEVELOPMENT

5.1 OPTION GENERATION

During the second PBC Workshop held on 18 December 2015, workshop attendees identified options to address the problems and achieve the desired outcomes under the following three categories:

- A. Options to improve capacity / infrastructure quality;
- B. Options to improve efficiency; and
- C. Options to shape and influence demand.

A full list of the options tabled by the workshop attendees is attached in Appendix D.

Workshop attendees identified a total of 113 options. These ranged from light rail through to influencing travel behaviours. To capture the widest scope of possibilities, the philosophy of “no wrong answers” was adopted; therefore, no option was discarded at this early phase.

After the workshop, the options identified were filtered by the project team to remove duplicates. Options were then sifted by firstly grouping the options that were listed by the attendees as desired outcomes into actual options that could be implemented as shown in Table 7.

Table 7: Grouped Options

All Options	Grouped Options
<ul style="list-style-type: none"> • Remove traffic signage and road lanes • Pedestrianised inner city streets • Electric vehicle subsidy/charging ports. A subsidy to encourage a shift away from fossil fuel method of propulsion to electric vehicles and provide charging points at parking spaces. • Living arterials – trees, shade, seats • Survey to identify barriers for uptake/use of public transport (PT) / cycling. • Publicise / preach benefits of cycling / walking – • Reduce unnecessary travel (work on-line – shop on-line, etc.) • Combine journeys • Showers and secure cycle parking in workplace • Flexible start/finish times for school businesses employment • Ban and breath test cyclists • Park and Ride – Ambassador 	<p>These options were grouped into three options with a focus on incentivising use of other modes of transport and varied commute times:</p> <ul style="list-style-type: none"> • imposing restrictions on the existing roading network • imposing parking restrictions • using advertising campaigns

All Options	Grouped Options
<ul style="list-style-type: none"> • Remove parking • Re-distribute parking • Reduce parking capacity in CBD and increase parking fees • Remove parking from around schools • Parking management • Create disincentives • Invest in promoting options (increase attractiveness – make cycling sexy) • Preserve pedestrian-vehicle balance in CBD (don't flood CBD and periphery with additional vehicles) • Reduce cross traffic on both arterials • More walking and cycling uptake • A regional strategic highway SH6 • School educational and travel plans involving parental incentives • Driverless cars 	
<ul style="list-style-type: none"> • Apartment living in CBD/commercial retail centres • Focus on land use and implications: <ul style="list-style-type: none"> ○ walk, live, play ○ density of housing ○ economic development numbers • Tahuna intersection relocating shopping precinct • Reduce urban sprawl • Inner city living • Density of housing • Clarity around economic development areas 	<ul style="list-style-type: none"> • Changes to Land Use
<ul style="list-style-type: none"> • Incentivise higher occupancy vehicle use 	<ul style="list-style-type: none"> • Provision of High Occupancy Vehicles (HOV) lanes
<ul style="list-style-type: none"> • Bus lanes • PT options – rail and/or bus • Free PT • Prioritise PT • Better PT – bus lane • Trams • Expand P/T network into TDC • PT upgrades + promotion – bus and/or rail and park and ride clearways for PT lanes and car pool • Bus – express – dedicated route – possibility through railway reserve • Bus lane / dual occupancy lane • Rail link • Monorail • Rail shunt/shuttle • Improved PT – times/frequency 	<p>These options were grouped into the following options:</p> <ul style="list-style-type: none"> • Dedicated bus lanes • Additional bus services – fare paid by user • Additional bus services – free or partially subsidised • New commuter rail service – fare paid by user • New commuter rail service – free or partially subsidised • Dedicated busway on old rail reserve • Dedicated transit/freight route on old rail reserve

All Options	Grouped Options
<ul style="list-style-type: none"> • Priority PT and freight infrastructure and HOV • Free PT 3 year trial • Light rail to city • Better Public Transport (Fastlane for trucks/buses/multiple occupancy cars) • On-demand PT services (Uber etc.) 	

A large number of options provided at the workshop were brief in their description. Each of the remaining options were reviewed and a description added to understand how that option would be practically implemented. For example, the description for the option “Park and Ride” is *“This option involves the provision of parking facilities south of Annesbrook roundabout and the provision of public transport to enable commuters to access the CBD and vice versa”*. Another example was the option called “Wider sidewalks – mobility scooters/skate boards on the two arterials”, whose practical description became *“Widening sidewalks occurs by removing parking and other restrictions along the arterials which is assumed to create the required space.”*

Option descriptions were added to some of the options to ensure that assessment by individuals would be done on a like-for-like basis to minimise the risk of mis-interpretation of the option and therefore the assessment of that option.

In parallel to the NSLI, the Transport Agency has undertaken a separate study into improving walking and cycling facilities along Rocks Road. That study (SH6 Rocks Road Walking and Cycling Investigation) identified and investigated key options at a level of detail correlated to the Indicative Business Case (the business case phase immediately after the PBC) phase. Additionally, that study is directly correlated to Problem 2 of the PBC.

It is important that decisions on these two transport projects are informed by one another. At least one of the options identified for improved walking and cycling facilities along Rocks Road can only be implemented in conjunction with activities associated with the NSLI. For this reason, the Transport Agency requested that the Rocks Road walking and cycling improvement options from the Rocks Road Walk Cycle Facility Investigation be brought into the NSLI for consideration within programmes that are developed for NSLI.

Four options from the Rocks Road walking and cycling improvement study were incorporated into NSLI and publicly consulted on. These were:

- Option One:** **Minor safety enhancements:** This option includes committed improvements identified by the Transport Agency and NCC, such as resurfacing work to the road and footpath. It also involves incremental improvements to existing on-road facilities and the footpath. There is no widening on the seabed, the existing footpath, or cycle facilities. Rough order cost \$2.6 million.
- Option Two:** **Safety enhancements with reduced lane widths:** This includes the improvements outlined in Option 1 above, and creates additional cycle and footpath width through narrowing the traffic lanes to 3m. This option can only be pursued if the state highway is relocated (i.e. Rocks Rd becomes a local road and large trucks are banned). Rough order cost \$8.2 million.
- Option Three:** **On-road cycle lanes in both directions, shared path and reduced parking:** This option involves widening the on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side. Parking between Victoria Road and Richardson Street would be removed. There would be significant seawall widening. Rough order cost \$21.3 million.

Option Four: **On-road cycle lanes and shared path:** This option involves widening on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side as in Option 3 above. Parking between Victoria Road and Richardson Street would be kept. This will require significant seawall widening. Rough order cost \$25.1 million.

5.1.1 Summary of Option Generation

Overall, a total of 44 options were left after the filtering and sifting exercise and are listed in Appendix F and included in the in the public engagement material to help with the feedback provided on the proposed approaches (Section 6.2 below).

5.2 OPTIONS ASSESSMENT

During the period between Workshop 2 and the end of the public consultation, the options identified in Section 5.1 above were assessed and re-assessed individually by the project team's technical specialists at a qualitative level using the following criteria:

- Investment, operational and maintenance cost range;
- Estimated Benefit Cost Ratio (range);
- Timing of implementation after completion of the NSLI Investigation;
- Strategic Fit – high, medium or low;
- Effectiveness – high, medium or low;
- Efficiency – high, medium or low;
- An assessment against the Investment Objectives to describe to what extent (high, medium or low) the option is expected to meet the objective over the life of the programme;
- Implementability
 - Feasibility – technically how straightforward is the option to implement; any novel or leading edge technologies involved; property and consenting risks; and, any ongoing operation or maintenance implications;
 - Affordability – what are the funding risks, will non-traditional funding methods be needed, cash flow risks; ongoing operating risks and risk in obtaining operating subsidies;
 - Public / Stakeholder acceptance- what is the level of anticipated objections by the community or particular stakeholders
- Impacts
 - Safety – how will the option enhance safety for different types of transport users? Are there impacts on personal safety / security? What will be the impact on fatal and serious crashes;
 - Economy – how will option affect travel times, level of service (LoS), reliability of travel times and traffic volumes? Will there be gainers and losers; potential to enhance the development potential of adjacent land; attract new jobs; and, help existing businesses
 - Environmental – noise and vibration;
 - Environmental – air quality;
 - Environmental – water resources, resource efficiency, ecology;
 - Accessibility;

- Landscape – visual quality and urban design;
- Culture and Heritage; and
- Social – community cohesion, public health, severance.

5.2.1 Seven Point Scale

The scoring of each option utilised a ranking system of high, medium and low for the assessment against the investment objectives and assessment of implementability (as set out in the Transport Agency's PBC guidance).

Impacts were assessed using the Transport Agency's seven point scale based on the following criteria:

- **+3 Major benefit** – these are the benefits or positive impacts which, depending on the scale of benefit or severity of impact, are the principal consideration when assessing an option's eligibility for investment;
- **+2 Moderate benefit** – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;
- **+1 Minor benefit** – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;
- **0 No benefit or impact** – the option is anticipated to have no or negligible benefit or negative impact;
- **-1 Minor cost or negative impact** – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;
- **-2 Moderate cost or negative impact** – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;
- **-3 Major cost or negative impacts** – these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for investment.

The assessment for each option was recorded and can be found in Appendix G.

6 PROGRAMME DEVELOPMENT

Programmes were developed through consideration of the strategic responses to address the problems plus inputs from key stakeholders and from public engagement.

In January 2016, during a project team workshop, it was agreed that options that included passenger or light rail were discontinued from further analysis. However, it was noted that a dedicated busway, which would result in similar outcomes as a passenger or light rail system but at much lower investment costs (capital investment and operational costs, was to be retained.

As previously noted, the total number of individual options for grouping into programmes was 44.

6.1 STRATEGIC RESPONSE TO THE PROBLEMS

The first step undertaken by the project team was to determine that there were three strategic responses that could be utilised to address the problems, contribute towards the desired benefits and achieve the Investment Objectives. These were by:

- Changing land use to alter travel patterns to effectively reduce private motor vehicles travelling in the peak.
- Increasing capacity to facilitate increased traffic volumes;
- Reducing the volume of private motor vehicles travelling in the peak periods – making the most of the current network;

6.1.1 Strategic Response When Considering Problem 1

When considering the strategic response to Problem 1 there is direct correlation to existing land use patterns in the Nelson – Tasman area. However, the Transport Agency is not the responsible entity that decides the permitted land uses and is only able to make a submission on proposed land use changes during reviews of District Plans or through a Private Plan Change. The view was taken by the Project team that submissions to the District Plan process is an option that should be occurring on a regular basis and therefore higher residential intensification [higher than currently provided for in the current Nelson Resource Management Plan (NRMP)] within walking distance of the Nelson City CBD should be an option included in all programmes. This would potentially result in fewer home to/from work journeys by private vehicle provided there was an uptake in increased availability of residential housing.

The current NCC policy within the NRMP (IC4.3) states that the inner city’s “fundamental character is non-residential”. The project team took the view that the implementation of intensified inner city housing would take a significant amount of time to effect the required change to achieve IOs 1 and 2 and therefore concluded that although “changing land use” as a strategic response, along with options supporting that strategic response, could address Problem 1, the implementation timeframe would be long term and could not be pursued with confidence as a strategic response to Problem 1 at this stage in the Business Case process. This was also due to the overall uncertainty about whether NCC would adopt wide scale changes to the District Plan (via a Transport Agency submission) to effect the change necessary to achieve IOs 1 and 2. In summary “changing land use” is an option to be included in the programmes and not a standalone strategic response.

The project team then addressed the other strategic responses – increasing capacity and reducing the number of private motor vehicles travelling in the peak or a combination of both.

With regard to increasing capacity on the two arterials as a strategic response to solve problem 1, the project team determined that there were three measures to achieve this:

- Physically widening the existing road corridors (mid-block and / or intersections); or
- Creating a new route; or
- Combinations of the above.

With regard to reducing the volume of private vehicles travelling at peak times on the two arterials, the project team determined that this reduction could be achieved through the following travel demand measures (TDM):

- Implementation of restrictions to discourage private vehicle travel in the peak period eg parking restrictions / charges; or
- Provision of car sharing; or
- A switch to other modes of travel (public transport, walking, cycling); or
- Combinations of the above.

6.1.2 Strategic Response When Considering Problem 2

The “strategic response” to address the problem of sub-standard walking and cycling infrastructure on Rocks Road (Problem 2) is to “widen” the infrastructure so that it meets current standards. The existing footpath width is less than the current AustRoads and NCC standards, as are the existing on-road cycle lanes. Although there are sections along the route where parking could be removed to create width, the majority of the length would require physical widening. The project team concluded that physically widening the existing footpath and cycle facilities was the only strategic response that could provide infrastructure complying with current standards.

6.2 PUBLIC ENGAGEMENT

Taking into account the strategic responses to solve the two problems, three approaches were developed for public engagement. In summary, the Approaches used were developed from the strategic responses discussed above, a review of the outcomes of the North Nelson to Brightwater Corridor Study and the Arterial Traffic Study plus changes to legislation, technical standards and codes of practice (NCC and Transport Agency), strategic and long term plans that have occurred since. It was also acknowledged that the last time the public was consulted on significant improvements to the arterial network was in 2004 – 2006 as part of the North Nelson to Brightwater Strategic Study.

These approaches focus on the high level strategic alternatives that were considered appropriate for the area of study, taking into account:

- the refined Problem Statements and Investment Benefits (from Sections 4.1.1 and 4.2.1 above);
- the agreed Smart Investment Objectives (Section 4.7 above);
- the work done in the North Nelson to Brightwater Corridor Study 2008 and the Arterial Traffic Study 2011;
- changes to the Resource Management Act (RMA) and Land Transport Management Act (LTMA) since the last time full public engagement occurred in 2005;
- Strategic documents and Plans released by NCC, TDC and the Transport Agency since the Arterial Traffic Study in 2011;
- The timeframe for this study to find a solution to the problems;

- The discussions in Section 6.1 above.

The following three approaches were identified for public engagement as:

- **Approach A: Make the most of the existing network**

This approach focuses on improving the existing road network (and making the most of the current walking and cycling network), increasing bus services (public transport), and decreasing or limiting the volume of private travel during peak periods (travel demand management) by imposing restrictions without needing to widen or build new routes.

- **Approach B: Widen the existing arterial routes**

This approach focuses on options that would widen the existing arterial roads by at least one lane. It would also include walking and cycling, public transport, network optimisation and travel demand management activities that complement widening the arterial roads.

- **Approach C: Creating a new arterial route**

The focus of this approach is building of a new route that connects the Annesbrook Roundabout to the Haven Road Roundabout, such as but not limited to a Southern Link-type route. It would also include walking and cycling, public transport, network optimisation and travel demand management activities that complement the establishment of a new route.

A fourth Approach (Approach D) was added to the questionnaire, which provided the opportunity to provide feedback for any other approach.

Within each of the proposed approaches were one or more of the Rocks Road walking and cycling improvement options (refer to Section 5.1 above).

Public engagement occurred between 21 March to 24 April 2016. The public were asked to provide their views on the significance of the two problems and on their preferred approach to address those problems. Appendix F contains the Public Consultation Summary Report, which includes the feedback booklet and options descriptions that were consulted on.

6.2.1 Feedback From Public Engagement

The purpose of the public engagement programme was to obtain feedback from the public on the significance of two transport problems identified in the Strategic Case, on three approaches identified to address these problems, and any other approaches or options the public would like considered.

Appendix F contains the Consultation Summary Report and details the work undertaken for the public engagement exercise.

Submissions were received from individuals, stakeholders, organisations, societies and interest groups. A total of 2114 submissions were received during the consultation period. The main findings were:

- Of the 2056 responses received when answering the question about the significance of congestion (Problem 1), 16.1% said it was not significant, 15.3% said it was somewhat significant, 14.3% said it was moderately significant and 54.4% said it was very significant.
- Of the 1985 responses received when answering the question about the layout, look and feel of Rocks Road being a deterrent for walking and cycling (Problem 2), 64.0% said that it was a deterrent and 36.0% said it wasn't.

- Of the 2010 responses received when answering the question about a preferred approach to solve the problems, 24.0% preferred Approach A, 10.5% preferred Approach B, 61.4% preferred Approach C and 4.1% preferred Approach D.
- The majority of respondents who chose Approach D had a preference for Rocks Road options 3 and 4 to be part of Approaches B and C or to include widening (Approach B) of walking and cycling infrastructure within Approach A.
- Of the comments received by respondents, the most often mentioned was “just do something”. This comment was in relation to both problems.

A separate telephone survey was undertaken of 500 randomly selected people (400 in Nelson and 100 in Tasman) to provide an additional source of feedback. The questions asked were similar to the questions asked in the feedback form.

With regard to a preferred approach, 46% of telephone respondents favoured Approach C, with 34% favouring Approach B and 17% favouring Approach A.

7 PROGRAMME DEVELOPMENT

Programmes were developed during a workshop (Technical Workshop 1), involving the project team's technical specialists, through consideration of the work undertaken in Part A above, the strategic responses and approaches to address the identified problems and feedback from the public engagement.

Technical workshop 1 was divided into two parts, the first being identification of the programmes, with the second part being the draft assessment of the programmes.

A total of 8 programmes were developed by the project team to address the problems, and achieve the identified benefits and investment objectives. The key methodology for developing each of the programmes is summarised below

7.1 DO MINIMUM PROGRAMME

The do minimum scenario, against which the other programmes are assessed, is the existing transport network plus the following (which are identified projects from the annual and long term plans of NCC and the Transport Agency):

- SH6 southbound approach/merging lane reinstatement at Tahunanui Signals;
- The Princes Drive extension to Waimea Road will be included as a seagull intersection;
- Traffic signals at Queen St / Salisbury Road intersection;
- Capacity improvements to SH6 / Quarantine Road intersection;
- A weekday feeder loop bus service covering the Stoke area, operating half hourly during peak periods;
- A Richmond feeder bus service operating at half hourly frequencies during peak periods.

The traffic modelling²⁴ undertaken, included the do–minimum programme in the 2023 and 2033 models to identify the projected traffic volumes, delays and travel times in the future based on growth projections agreed with NCC and TDC.

7.2 NETWORK OPTIMISATION PROGRAMME

When further considering the strategic response of reducing the volume of peak hour traffic on the two arterials, the project team considered that this reduction could be achieved through the TDM measures, which were considered to be part of the “network optimisation” programme:

- Implementation of restrictions to discourage private vehicle travel in the peak period; or
- Provision of car sharing; or
- A switch to other modes of travel (public transport, walking, cycling); or
- Through combinations of the above.

²⁴ Nelson Southern Link Investigation: Future Forecasting Report, New Zealand Transport Agency, March 2016

The project team considered the timeframes to implement any particular option or measure and used the following to understand when an option could be implemented.

- At best, the Business Case process could take approximately 18 months, with a worst case taking a further 18 months;
- Permissions (eg Resource consent, changing school/retailing/port operation hours, NCC permissions / approvals etc) to implement a particular option could take between 18 months to 3 years.
- The detailed design and construction phases were assessed to take 1 to 3 years.

The point at which an option, that required permissions, could be operational is assessed as being between mid 2020 to the end of 2025. Therefore, to immediately address the problems beyond the end of the Business Case phase, a programme of measures called “Network Optimisation” was developed. The majority of options in this programme would most likely come from the options associated with Approach A in the public engagement documentation. The project team decided that this programme would form a sub-programme of other programmes whose options would take longer to gain the required permissions. This method is consistent with the “mix and match” concept promoted by the Transport Agency’s PBC guidance. The “Network optimisation” programme also includes options correlated to TDM measures and increased public transport services. This programme aligned with Approach A, one of the strategic responses – making the most of the current transport network.

7.3 PUBLIC TRANSPORT AS A STAND ALONE PROGRAMME

The project team then considered public transport (buses) as a sole activity utilising the existing transport network to address Problem 1 by reducing the amount of private motor vehicle travel in the peak period. The project team determined that it would be highly unlikely that there would be a shift from private motor vehicles onto buses during the peak period without a corresponding measure to restrict the amount of parking in and around the CBD and / or increase the cost of parking in the CBD and / or decrease the cost of fares. This is because without a reduction in the number of private motor vehicles travelling in the peak periods, buses would be operating in the same congested conditions. This was based on the 2013 census data which states that 708 people who travelled to work were a passenger in a vehicle compared to 12,834 people who drove to work²⁵ plus the following figures, as set out below, related to bus patronage for adults on Bus Routes 1 and 2 who are the most likely group to mode shift. Prior to October 2014, NCC had parking charges within the CBD for each hour. In October 2014, the Council trialled providing the first hour free after feedback from retailers citing concerns about a loss of customers in conjunction with Richmond providing free parking, which is still in place.

Bus Route 1 runs from Richmond to the Nelson CDB via Annesbrook roundabout, Waimea Road and Rutherford Street. Bus Route 2 runs from Richmond to the Nelson CDB via SH6. Average monthly bus patrons for adults were:

- 2012 average of 10855;
- 2013 average of 11561;

²⁵ http://www.stats.govt.nz/Census/2013-census/data-tables/tables-about-a-place.aspx?request_value=24481&reportid=14&tabname=Transport

- 2014 to end of October average of 12111;
- 2014 November (start of trial) and December average of 11063;
- 2015 average of 11258;
- 2016 to end of July average of 11156.

The project team determined that the success of a public transport programme for Nelson on its own would be directly correlated to the quantum of parking restrictions and charges in the CBD area and the cost of fares and are major dependencies for a public transport programme utilising the existing transport network.

The project team determined that additional public transport services should be part of all programmes and was therefore added to the “Network Optimisation” programme because additional services could be actioned immediately at the end of the Business Case process. The quantum and affordability / fundability of those additional services would need to be worked through with NCC during the next phase of the investigation (the IBC).

The project team acknowledged that dedicated public transport lanes could be a programme where additional capacity specifically for public transport was developed – refer to Sections 7.4 and 7.5 below.

7.4 CLEARWAYS AS A KEY ACTIVITY FOR NETWORK OPTIMISATION

A key option identified is the use of clearways²⁶. The project team determined that if there was sufficient width on the existing corridors to provide clearways for the morning and evening peaks with only minor works needed within the existing road designation. It was then determined that clearways would be part of the network optimisation programme as their implementation could commence at the end of the Business Case phase. Corridor widths will need to be assessed to determine the viability of this option further at the commencement of the IBC phase.

The project team acknowledged that clearway space could be used for public transport purposes during the peak periods and as such a programme utilising clearways for just public transport was determined.

7.5 INCREASE CAPACITY PROGRAMMES

With regard to increasing capacity as a strategic response to solve Problem 1, the project team determined that there were three measures to achieve this by:-

- Physically widening the existing road corridors (mid-block and / or intersections); or
- Creating a new route or
- Through combinations of the above.

Taking into account Section 7.3 above regarding dedicated lanes for public transport, the project team determined that increased capacity to address Problem 1 could accommodate increases in private motor vehicles

²⁶ A clearway is section of road used for traffic on which it is illegal to stop for any reason other than a breakdown or an obstruction to the road such as stationary traffic. Clearways may operate at all times or for limited times such as peak traffic flow times

in the peak (including using the extra capacity for clearways on the existing arterials) or for dedicated use by public transport but not both.

This resulted in the following programmes correlated to the “increase capacity” strategic response:

- Widening for public transport and Network Optimisation;
- Widening for more private motor vehicle traffic in the peak and Network Optimisation;
- New route and Network Optimisation;
- New route for public transport and Network Optimisation;

7.6 INVESTMENT OBJECTIVE 3

The project team also considered Investment Objective 3, which is to achieve an outcome that supports the safe travel of walkers and cyclists. As this outcome applies to all programmes, the project team determined that a separate walking and cycling programme was not required but that options associated with walking and cycling would be included in the “Network Optimisation” programme if they could be implemented at the end of the Business Case phase or within the other programmes where longer term permissions were needed depending on the particular walk/cycle option.

7.7 CONSIDERING PROBLEM 2 – INVESTMENT OBJECTIVE 4

The project team considered Problem 2 in the context of a “strategic response” to address the problem of sub-standard walking and cycling infrastructure on Rocks Road. The project team determined that physically widening the existing facilities was the only strategic response that could provide infrastructure complying with current standards. The project team reviewed the Rocks Road walking and cycling options publicly consulted on and considered that some of these options were incompatible to some of the programmes identified in the previous sections.

The project team determined that options that address the provision of parking, cycle lanes and pedestrian crossing points along Rocks Road, and the interaction of an option with the as-built and natural environments, would be dependent on the options within other programmes. Acknowledging that Option 2 from the Rocks Road Walk Cycle Facility Investigation could only be implemented if the State Highway was relocated, the project team included all the Rocks Road walking and cycling options, where not mutually exclusive, in all the programmes.

7.8 SELECTED PROGRAMMES

Taking all the above into account the final programmes for assessment were:

- Programme 1 Do minimum;
- Programme 2 Network optimisation (includes clearway options) and Rocks Road option 1 – a sub-programme to the other programmes (excluding Programme 1);
- Programme 3 Network optimisation and Rocks Road options 3 or 4;
- Programme 4 Clearways for public transport, network optimisation and Rocks Road options 3 or 4;

- Programme 5 Widening for public transport, network optimisation and Rocks Road options 3 or 4*;
- Programme 6 Widening for more traffic in the peak, network optimisation and Rocks Road options 3 or 4*;
- Programme 7 New route, network optimisation and Rocks Road options 2, 3 or 4;
- Programme 8 New route for public transport, network optimisation and Rocks Road Options 2, 3 or 4

* The quantum of widening required to address problems 1 and 2 together is greater than the quantum of widening required to address only Problem 1 or only Problem 2.

Appendix H contains a spreadsheet showing which options reside within each programme.

Figures 13 and 14 summarise the interaction of programmes that were developed with the anticipated timeframe for implementation. A key point to note is that some options are mutually exclusive to some programmes but not all, depending on the main theme of the programme

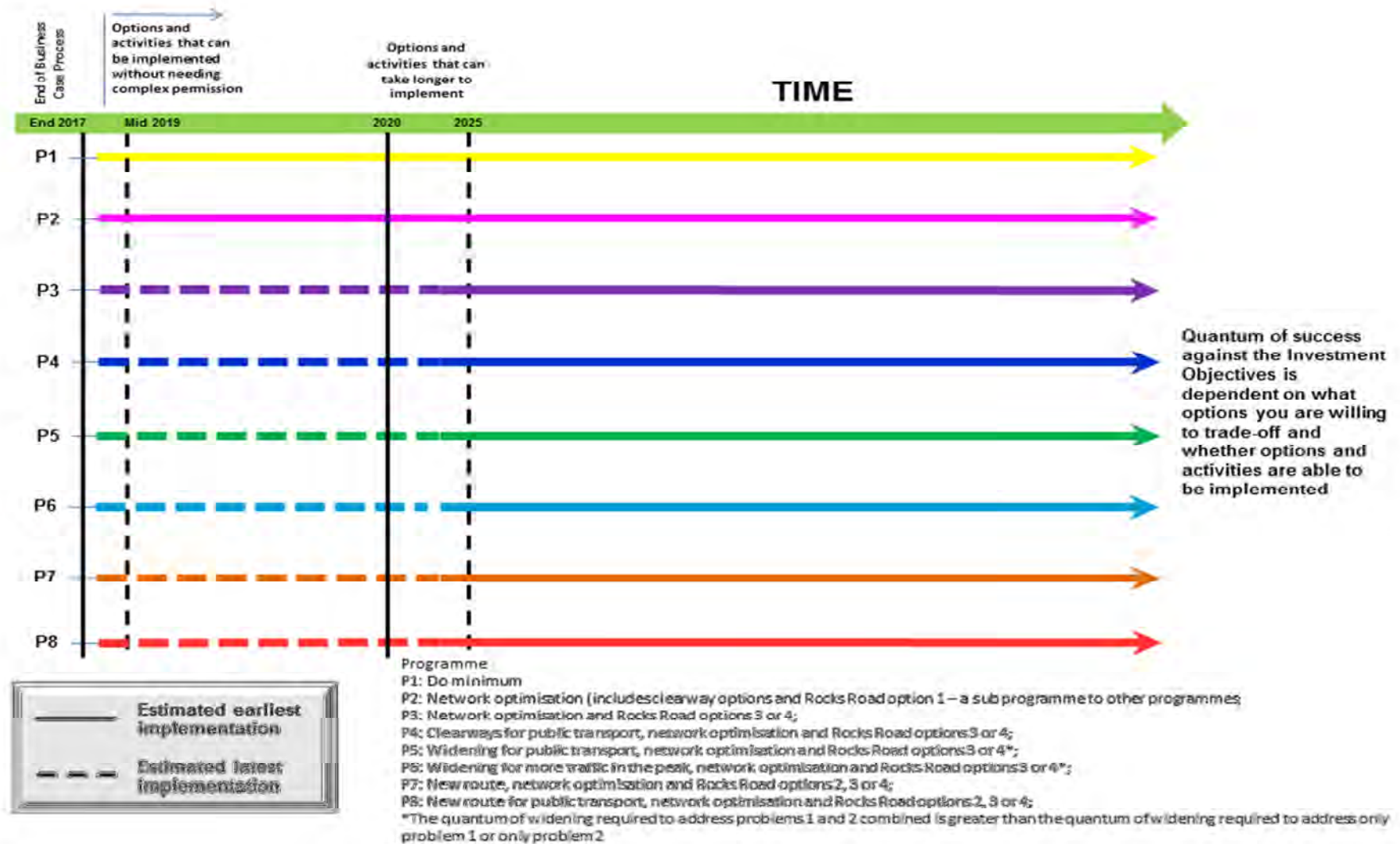


Figure 13: Interaction of Programmes vs Time

Mutually exclusive options (correlated to programme theme) that require complex permission

Option	Excluded From
1	P3, P4, P5, P7, P8
12	P3, P4, P5, P6, P7, P8
5	P3, P4, P5, P6, P8
5A	P3, P4, P5, P6, P8
13	P3, P4, P5, P6
17	P3, P4, P5, P6
47	P3, P4, P5, P6, P8
44	P3, P4, P5, P6, P8
3	P3, P4, P5, P6, P8
48	P3, P4, P5, P6, P7
20	P3, P6, P7
36	P3, P4, P5, P6
45	P3
46	P3, P4

NB: refer to Appendix H for option descriptions and programme details

Mutually exclusive options (correlated to programme theme) that do not require complex permission

Option	Excluded From
33	P3, P4, P5, P7, P8
35	P3, P4, P5, P6, P7, P8
4	P3, P4, P5, P6, P8

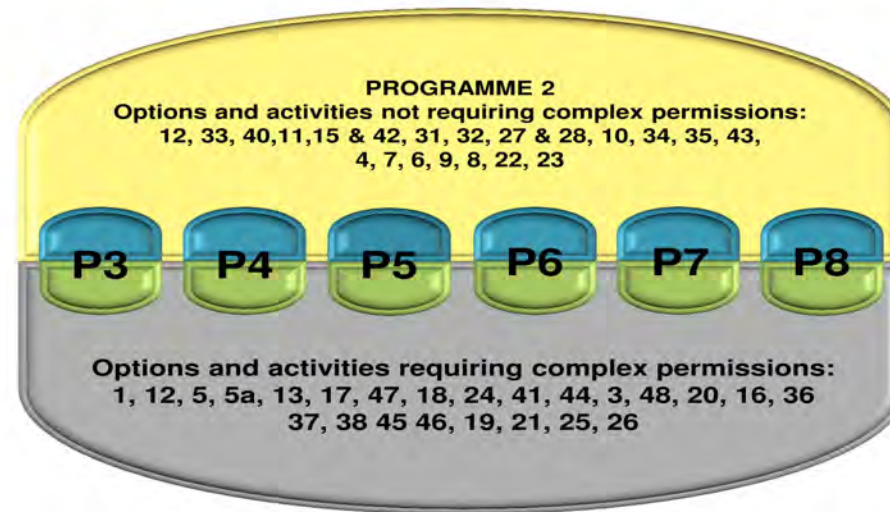


Figure 14: Summary of Options Within Programmes

8 PROGRAMME ASSESSMENT

8.1 WORKSHOPS

In addition to the workshops held in December 2015 to refine the problem statements and benefits and to determine the investment objectives for the study, a number of subsequent workshops involving either key stakeholders or technical specialists were held to help inform the assessment of the programmes. In summary, these were:

- Technical Workshop 1 – 4 May 2016;
- Workshop 3, 27 May 2016 – the third workshop with the key stakeholders;
- Workshop 4, 8 August 2016 – the fourth workshop with the key stakeholders; and
- Technical Workshop 2 – 30 August 2016 (see Section 9.1).

The outputs from 4th of May Technical Workshop were provided to Key Stakeholders in Workshop 3 for their feedback on the process and evaluation methodology. Workshop 4 was held to obtain feedback from the key stakeholders on the Public Engagement programme, to provide an update on the technical specialists initial scoring of the draft programmes (from Technical Workshop 1) and to seek their feedback the proposed scoring prior to undertaking Technical Workshop 2.

The second stage of assessment was undertaken within Technical Workshop 2 to assess the feedback from the public and Key Stakeholders, which was then used to help inform the decision making process for the recommended programme.

Appendix I contains the names of the technical specialists for each technical workshop.

8.1.1 Technical Workshop 1 (4th of May 2016)

Technical Workshop 1 was held on the 4th of May 2016 to undertake an initial assessment of the programmes defined in Section 7 above.

With regard to the do–minimum programme (Section 7.1 above), the project team determined that because the outcome of the traffic modelling done for the do–minimum scenario showed that congestion and delays would increase in the future, the do–minimum as a programme could not solve Problems 1 and 2. The do–minimum would be used in the PBC as the baseline for comparison of all other programmes to help assess the range of criteria as set out below. The do–minimum is still considered to be valid, particularly if no programmes proceed to the next phase.

The selected Programmes defined in Section 7 above were assessed by the technical specialists using a two–part methodology over a period of approximately 6 weeks. The first part assessed each programme as an outcome against:

- The broad contribution to the Investment Objectives (low, medium, high);
- The broad benefit range (low, medium, high);

- The main dis-benefits;

The second part utilised the previously assessed options (as in Section 5.2 above) within each programme to provide a range of scores for the following criteria within each programme:

- Broad investment and operational cost range;
- Difficult to implement (low, medium, high) for:
 - technical feasibility;
 - likely permissions;
 - financial affordability; and
 - stakeholder / public acceptance.
- Assessment of risks (Impacts using the same seven point scale as in Section 5.2.1 above) for:
 - Accessibility;
 - Safety;
 - Economic;
 - Water resources, resource efficiency and ecology;
 - Noise and vibration;
 - Air quality;
 - Social cohesion;
 - Landscape / Urban design;
 - Culture; and
 - Built Heritage
- Assessment of the indicative benefit cost ratio range;
- The likely phasing and implementation timeframe; and
- The primary dependencies of the programmes.

The draft evaluation of the initial Programmes is contained in Appendix J. This draft evaluation identified that all programmes (except the do-minimum) were given a “high” likelihood of achieving the targets for Investment Objectives 1 and 2, although programmes providing dedicated PT lanes were given a “medium-high” likelihood. The rationale being that not all private motorists would transfer to a different mode even if dedicated PT lanes were provided.

With regard to achieving the targets for Investment Objectives 3 and 4, the programmes associated with new routes or widening achieved a “high” likelihood, whilst the programmes associated with making the most of the existing corridor were given a “low” or “medium” likelihood. The rationale for the draft evaluation was centred around the existing road corridors having limited space to implement activities to meet the investment targets, whereas widening and the creation of a new route could provide that space.

8.2 WORKSHOP 3 (27 MAY 2016)

Key Stakeholder Workshop 3 was held on the 27th of May 2016 to update the attendees on progress and to advise them on the methodology that would be used for evaluating the programmes, which is detailed in Section 8.1.1 above.

The attendees discussed timeframes to implement options, noting that some could be implemented without requiring complex permission (eg optimising traffic signalled intersections), whilst some would take longer due to the requirement to get permission, some of which could be complex (eg consenting a reclamation into the foreshore).

Minutes of Workshop 3 are contained in Appendix K.

8.3 WORKSHOP 4 (30TH AUGUST 2016)

Key Stakeholder Workshop 4 was held on the 8th of August 2016 to obtain feedback from the Key Stakeholders on the public engagement undertaken and to update on them on the technical specialist scoring of the draft programmes. This feedback was then used to help inform the technical specialists' discussions at Technical Workshop 2 related to the trading-off of activities, dependencies and risks when considering the recommended programme.

The feedback from the Key Stakeholders, together with the public's feedback, was then used as one of the inputs into the final scoring of each of the programmes to help inform the determination of the recommended programme.

Minutes of Workshop 4 are contained in Appendix L

The attendees were asked for their views on whether the recommended programme should be a series of activities leading to a large intervention (option) or a series of activities to be implemented on an as and when needed basis (determined at the time of need). The majority view was that the former was preferable.

Attendees were asked a series of questions associated with what they want in terms of a transport network and what they would be willing to trade off to get that. There was unanimous agreement amongst the attendees that they wanted Rocks Road to have much higher amenity capabilities than present (as a consequence of relocating trucks elsewhere), the provision of wider footpaths, access to the foreshore and a cycle friendly environment. Although there was agreement around wanting these amenities, there was a minority of attendees who said that they would not have these amenities if it meant that other areas of the city would be affected by an option(s) that would result in an increase in traffic and truck volumes.

Attendees were asked if they would be willing to trade off local access (ie local access and egress to side roads and accesses) along the two arterials to improve congestion. There were mixed views from the attendees with some willing to trade off and some not. There was a majority view that less traffic on Rocks Road, Waimea Road and Rutherford Street would be a desirable outcome that should be pursued.

There was discussion around the programmes which provided for dedicated PT lanes and whether these should include High Occupancy Vehicles and/or freight. Attendees expressed their desire to have more people visiting the CBD of Nelson but less traffic coming to the CBD. Attendees were advised that the composition of what type

of vehicle(s) and/or mode of travel that would occupy additional lane capacity would be addressed in the IBC phase if additional capacity was an activity within the recommended programme.

9 RECOMMENDED PROGRAMME ASSESSMENT

9.1 TECHNICAL WORKSHOP 2 (30 AUGUST 2016)

The project team's technical specialists (refer Appendix I) and NZ Transport Agency representatives convened a technical workshop on the 30th of August 2016 (Technical Workshop 2) to consider the work done to date and the views from the attendees at Workshops 3 and 4 to enable the technical specialists to finalise the scoring of the initial programmes and develop a recommended programme of activities to be investigated in the next phase of investigations.

In evaluating the initial programmes (programmes 1 to 8 as defined in Section 7.1 above) and when defining the recommended programme, the technical specialists identified:

- The work that is needed with broad timelines including all that is able to be determined at this stage;
- The level of outcomes that will be achieved;
- The investment risk;
- The essential elements that must be successfully delivered;
- The desirable requirements that would add value and bring about additional benefits but are not essential to successful delivery;
- The optional requirements that might be delivered if sufficient budget was available;
- The elements that are specifically excluded from the programme and why they were excluded; and
- Identify key implementation activities by time.

Appendix M contains the minutes of the workshop and the discussions that took place. Utilising the information from previous Workshops, the key discussion points were centred about the public and Key Stakeholder risk around non-acceptance of programmes 1 to 8 based on the feedback from the Public Engagement. There was considerable discussion around clearways (location, acceptance and practical implementation), an option that resides in the Network Optimisation programme (programme 2), which is a sub-programme of all other programmes except the do-minimum.

There was considerable discussion around widening as an activity to achieve additional capacity on the network. The permission risk for widening programmes was raised from a "medium" score to a "high" score to recognise the high consenting hurdles faced by reclamation projects and significant property acquisition alongside SH6, Waimea Road and Rutherford Street. The technical specialists agreed that the "widening" programmes (for more private vehicle travel or for PT) have the highest impacts and risks overall across the assessment criteria and taken together with feedback from the public and stakeholders confirmed to the majority of technical specialists that "Widening" should not be the approach of the recommended programme but location specific widening options could be included within a recommended programme.

Discussion included additional network capacity for PT only, which has the potential to achieve the targets for Investment Objectives 1, 2 and 3 over 40 years. A significant mode shift would be needed and without any evidence that NCC would support (in the short, medium and long term) the implementation and ongoing commitment to activities that would achieve this mode shift, the technical specialists agreed that additional road space for PT could not form part of the recommended programme.

Taking the above into account, the programme descriptions were redefined by the technical specialists as:

- Programme 1 is the Do minimum;
- Programme 2 is Network Optimisation including peak hour clearway on Tahunanui Drive (one direction only) and Waimea Street (bi-directional between Motueka St and the proposed Princes Drive intersection) for private motor vehicles;
- Programme 3 is Network Optimisation (programme 2) plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options eg widening the arterials or creation of a new route;
- Programme 4 is Programme 3 but clearways are for PT (excludes clearways for other vehicles from assessment);
- Programme 5 is Programme 3 (excluding all clearways) plus widening on both arterials for PT;
- Programme 6 is Programme 3 (excluding all clearways) plus widening on both arterials for all traffic;
- Programme 6a is Programme 3 (excluding all clearways) plus widening on Waimea/Rutherford only;
- Programme 7 is P3 (excluding all clearways) plus a new route plus Rocks Road Option 2;
- Programme 8 is Programme 7 but for PT only.

The technical specialists scored and ranked the re-defined Programmes (refer to Appendix M) as follows:

- Programme 7 was ranked 1st by six technical specialists;
- Programme 3 was ranked 1st by two technical specialists;
- Programme 5 was ranked 1st by one Technical Specialist;
- Programme 6 was ranked 1st by one Technical Specialist;
- Programmes 1, 2, 4, 6a and 8 were not ranked 1st by any Technical Specialist;
- Programmes 1, 4, 6 and 8 were ranked equal lowest by two specialists each.

Programme 7 was ranked first by the majority of technical specialists primarily because it had the potential to achieve the targets of all the Investment objectives and aligned with the feedback provided by the public and stakeholders when compared to Programme 3, which was the next programme that was ranked first.

Programme 3 was the next first-ranked programme. The primary reason for the Technical Specialist not ranking this programme first was centred around not being able to achieve the targets of the investment objectives to the same degree as programme 7 (especially the target for investment objective 3) plus there was a level of uncertainty around how successful the programme would be if clearways were not supported by NCC, acknowledging that in previous studies NCC had not supported clearways.

The technical specialists acknowledged that there were challenges and difficulties to implement Programmes 7 and 3 and there are significant risks associated with individual options within these programmes. They determined that these challenges and difficulties could be addressed and the risks managed and mitigated to an acceptable level in subsequent phases of the business case process.

The technical specialists agreed that some initial traffic modelling should be done to ascertain whether clearways would meet the targets for Investment Objectives 1 and 2 over the next 40 years and if not, which year in the

future would the targets not be achieved. Understanding this timeframe, would inform the decision as to when or if a larger intervention (such as a new route, also to be traffic modelled) should be progressed.

Acknowledging that traffic modelling related to the clearways and a new route was to be undertaken, the technical specialists defined their draft recommended programme to include the following activities:

- i) Network optimisation options;
- ii) Clearways;
- iii) Widening options;
- iv) New route.

9.2 ADDITIONAL INFORMATION

The technical specialists agreed that traffic modelling for clearways on Waimea Road and Tahunanui Drive would help them understand their effectiveness over time. It was also agreed that traffic modelling for a new route should also be modelled to understand whether this activity would achieve the targets for Investment Objective 1 and 2 over 40 years. This knowledge is the first step in helping inform the decision and the timeframe to implement a new route (if needed) and the viability of clearways when assessed against the Transport Agency's procedures for receiving funding and subsequently guide the next steps for the Rocks Rd investigation. The new route that would be traffic modelled would be the alignment known as the Southern Link Road. The technical specialists agreed that the modelling should be undertaken for the medium and high growth scenarios, acknowledging that under a low growth scenario might not be necessary.

Details of the road configurations modelled are provided in Appendix N, along with the information requested by the technical specialists and the outcomes of the traffic modelling.

9.2.1 Summary of Traffic Modelling

Providing clearways would achieve the targets for IOs 1 and 2 on Waimea Road and SH6 for the medium growth scenario correlated to the direction of peak travel.

Providing clearways would not achieve the target for IO 1 on Waimea Road and SH6 correlated to the opposite direction of peak travel sometime between 2015 and 2023.

Provision of clearways is likely to result in traffic speeds on SH6 southbound between Haven and Annesbrook roundabouts and Waimea Road (Hardy to Motueka) falling below the target for IO 1 in the evening peak under the high growth scenario between 2023 and 2033.

Widening for southbound traffic between the proposed Princess Drive intersection and The Ridgeway in conjunction with clearways would most likely mean that the target for IO 2 would be met for the next 40 years for the stretch of Waimea Road between Motueka Street and The Ridgeway.

Widening for southbound traffic between Parker Street and Annesbrook roundabout in conjunction with clearways would most likely mean that the targets for IOs 1 and 2 would be met for the next 40 years for that stretch of SH6.

The modelling shows that providing clearways on Tahunanui Drive and Waimea Road will increase the AADT on SH6 for 2023 and 2033 traffic models when compared against the base model for both the medium and high growth scenarios. There is a reduction in AADT on Waimea Road when comparing the clearways to the base case for medium growth and an increase for the high growth scenario.

Installing clearways will mean that the targets for IOs 1 and 2 will not be met for side road access sometime between 2023 and 2033 for both growth scenarios. Side road delays for the high growth scenario are worse than for the medium growth scenario.

A new route would be likely to achieve the targets for IOs 1 and 2 (throughput and side road access) over the next 40 years.

No assessment against IOs 3 and 4 was undertaken as part of the traffic modelling undertaken.

9.3 FINAL RECOMMENDED PROGRAMME SCORING

The technical specialists were provided with the additional information (Section 9.2 above) and asked to score the recommended programme of activities. With the IBC phase of the business case in mind and for the purposes of defining costs, benefits, risks, timing and the implementation strategy, the project team divided the earlier recommended programme into the following sub-programmes and asked the technical specialists to separately score the sub-programmes and recommended programme:

- Sub-programme 7, which is similar to the original Programme 7 above (Section 7.8 above) but only contains those options directly associated with a new route (the other options were transferred to sub-programme 3);
- Sub-programme 3, which is the same as Programme 3 above (Section 7.8 above) plus the options transferred out of sub-programme 7.

Appendix O contains the assessment of the sub-programmes and a spreadsheet showing which options are within the recommended programme and sub-programmes. The technical specialists recommend that these sub-programmes should become two separate IBCs in the next phase.

Table 8 below shows the performance ratings of the recommended programme against the Investment Objectives.

Table 8: Performance ratings of the recommended programme against the IO's

Investment Objectives		Recommended Programme (over the life of the programme)
1	Travel times on the two arterials no worse than 2015 for the life of the programme	greater than 70%
2	Peak hour volume to available capacity ratio of no more than 0.8 on the two arterials	greater than 70%
3	Zero walking and cycling crashes on the two arterials; and continuous decline in walking and cycling deaths and serious injuries on the two arterials for the life of the programme	30% to 70%
4	Five years after implementing an option on Rocks Road, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson	30% to 70%

The technical specialists concluded that the identification of options that support clearways and a new route should be done at the start of the IBC phase as part of the overall review of the long list of options contained in Appendix G.

The technical specialists also concluded that the options that address IOs 3 and 4 would most likely be different within each sub-programme. Consideration must be made to ensure that options supporting clearways are in line with a new route, where possible.

9.3.1 Longevity of Programme Activities

The estimated timeframe for when the targets for IOs 1 and 2 are likely to be achieved using the medium growth scenario is set out below:

- Acknowledging that clearways are the options that have the most influence on achieving IOs 1 and 2 into the future, preliminary transport modelling suggests that under the medium growth scenario the implementation of network optimisation measures (specifically clearways) will achieve the targets for the congestion objectives (IOs 1 and 2) into the early 2030s; after which, a new arterial route will be necessary.
- Under the high growth scenario, network optimisation measures (specifically clearways) will achieve the targets for IOs 1 and 2 until the mid-2020s; after which, a new arterial route will be required.

- The installation of peak-hour clearways will mean increased delays for side road vehicles entering and exiting the arterials. Preliminary level-of-service calculations indicate that these delays should be acceptable until the mid-2020s.

The technical specialists noted that NCC will determine its community's level of service around side road delays on Waimea Road (a local authority road).

The technical specialists estimated longevity of the main activities within the recommended programme was wholly dependent on the growth in traffic that actually occurs.

9.3.2 Difficulty to Implement

The "time to implement" category of the assessment criteria were reviewed and the technical specialists determined that some options within the recommended programme could take up to 10 years to implement (eg "Port at Motueka", "Inland Port/Barge", "Rocks Road Options 3 and 4"). On the topic of the Rocks Road options, reclaiming land from the coastal environment was identified as a significant consenting challenge with the bar usually set around the "need" to reclaim. It was decided that further work would be necessary in the IBC and DBC phases to demonstrate this need in order to address Investment Objectives 3 and 4. The same issue is relevant for permissions; the recommended programme is rated "high" in terms of how difficult it would be to gain permission.

The score related to "technical feasibility" was given a "medium" difficulty rating. The technical specialists acknowledged that the recommended programme options could be implemented using standard New Zealand engineering resources and practices. Technical feasibility is broken down further into individual specialisations in Section 9.3.4.

With regard to "affordability", the Technical Specialists noted that there was no money within the National Land Transport Fund for any phases and money for the Investigation is currently coming directly from Government. Additionally, funding arrangements with NCC had not been discussed. Consequently, the "affordability" risk was scored "high".

The technical specialists considered the ideas that the public and stakeholders might not want or accept the activities and options within the recommended programme. All data from the public engagement exercise and the minutes of the workshops with the key stakeholders was reviewed. The comment most often submitted or heard during public engagement was "just do something." Therefore, the do-minimum scored "high" as a risk. Overall, the technical specialists scored the recommended programme as medium.

9.3.3 Programme Risks

Critical risks around the implementation of the activities and options within the recommended programme were identified:

- Organisational risk – The Transport Agency will need NCC's support for some of the activities and options within the recommended programme to enable implementation;
- Affordability – Detailed preferred option costs and assessments are required before they can be considered for inclusion in the National Land Transport Programme;
- Rocks Road consents – Obtaining permission for a Rocks Road option that requires reclamation into the coastal area presents significant challenges;
- New route consents – Obtaining permission for a new route, which includes designating it as a state highway or a local road – presents significant challenges;
- Operational risks:

- physical operation of the network
- the integration with and operation of additional PT services
- policy and systems operational aspects (eg traffic signal optimisation, parking charges).

Some of the operational risks will fall outside of the Transport Agency's sphere of responsibility (eg changing land use or changing school hours) and will need to be integrated across the delivery of the programme with the wider land use and transport system.

The other key risks identified to date for the options within the recommended programme are broken down into the following risk areas and summarised in Table 9:

Table 9: Seven Point Risk Scores of Recommended Programme and Sub-programmes

Programme Description	RECOMMENDED PROGRAMME
Accessibility – to what extent does the programme affect accessibility for all modes of travel	+2 to +3
Safety – to what extent does the programme address safety of travellers for all modes of travel	-2 to +2
Economic – to what extent will the programme impact the Regional economy	-3 to +2
Environmental – to what extent will the programme affect water resources, resource efficiency and ecology	-2 to +1
Environmental – what will be the likely impact of the programme on noise and vibration levels if implemented	-1 to +3
Environmental – what will be the likely impact of the programme on air quality levels if implemented	-1 to +1
Social – what will be the likely impact of the programme on social outcomes if implemented	-3 to +2
Landscape / Urban design – what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	-2 to +1
Culture – what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	-2 to 0
Built Heritage – what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	-2 to 0

There was consensus that the range of scores for each risk category would narrow as further study and investigation was undertaken in subsequent phases of the business case process.

The key risks of the recommended programme are centred around:

- Safety
- Economy
- Social
- Landscape / urban design
- Culture
- Built Heritage

These risks will require management and mitigation in subsequent phases.

Individual commentary on the scoring of the recommended programme or specific activities within the programme, are provided in sub-sections 9.3.3.1 through 9.3.3.9.

9.3.3.1 Accessibility

Overall positive benefit as the new route component will most likely be operating beyond 40 years.

9.3.3.2 Safety

Overall positive benefit as the new route component will most likely be operating beyond 40 years.

9.3.3.3 Economy

Large range of score is due to options within the programme. Plus 2 for tunnel and link road, -3 is for the option that has restrictions on HCVs getting to the port, assuming restrictions on all routes would be large negative economic impact.

9.3.3.4 Environmental – water resources, resource efficiency and ecology

Overall minor – moderate impact from better use of existing resources despite increased impact on water resources from additional traffic.

New route – Increased traffic flow on St Vincent Street resulting in increased traffic emissions and impact on water resources. Potential stream culverting required. Moderate effect on ecology, which is mostly grassland.

9.3.3.5 Environmental – noise and vibration

Clearways – Minor impact to building occupants due to decreased set-back distances.

New route – Change in noise environment due to increased traffic and decreased set-back distances associated with new route. Less noise on the two other arterials.

9.3.3.6 Environmental – air quality

Clearways – Improves traffic flow and reduces emissions but brings roadside closer to receptors. Overall neutral effect on air quality.

New route – Increased traffic volumes will raise emissions in the confines of the valley. Lower traffic volumes on the state highway and Waimea Road will reduce emissions, although not Waimea Road to the same extent as the state highway due to proximity of valley floor. Range of score reflects need to undertake detailed analysis.

9.3.3.7 Social outcomes

Clearways – Moderate negative social effects for certain groups. Social outcomes continue to decline over time for clearways on the two existing routes.

New Route – Assuming no mitigation measures, there are substantial negative social effects for certain groups within the St Vincent Street area. Social outcomes associated with the two existing arterials improve at implementation of the new route and decline slowly over time.

9.3.3.8 Landscape / Urban design

Clearways – Minor negative effects on urban form.

New route – Provides long term stability with regard to transport network facilitating urban form and landscape design for the next 40 years. New route provides moderate negative impact to urban form and landscape. Overall, a minor impact.

9.3.3.9 Culture and built heritage

Over the course of the investigation, attempts were made to meet with all local iwi face to face and to communicate via telephone and email. Some iwi responded and engaged with the project team, but not all. Those that have provided feedback have said the investigation needs to progress further in order for them to be able see more detail around options that are likely to progress. With regard to the Rocks Road options that require reclamation, iwi have signalled concern over the reclamation of foreshore areas.

The predominant area containing built heritage is Rocks Road between Bisley Avenue and Haven Road roundabout. There are four recorded archaeological sites and a number of listed historic places and areas. Rocks Road walking and cycling options are likely to have a moderate impact.

The score is primarily reflective of the risks to the built heritage, acknowledging that more work will be needed during the IBC phase to better understand cultural risks.

9.3.4 Value for money

This section details the results of the economic analysis undertaken for the main activities within the recommended programme

9.3.4.1 Costs

Cost estimates for individual options within the recommended programme have been qualitatively estimated and are contained in Appendix G. The capital, maintenance, and operational costs for the recommended programme have been determined using the minimum cost of the main programme activities and the maximum cost option within the programme.

Costs for the Rocks Road walking and cycling options have been obtained from the Rocks Road Options Update Report, March 2016.

The investment cost of the recommended programme has a most likely practical maximum cost of \$300M. A practical minimum investment cost would be similar to sub-programme 3 (\$45M). The most likely practical operational and maintenance costs are assessed as \$60M maximum with a \$40M minimum.

9.3.4.2 Benefits

With reference to the desired benefits from implementing the programme (Benefits A, B and C) and the Transport Agency's Economic Evaluation Manual (EEM), the main monetary benefits that are likely to occur from clearways or a new route are travel time and vehicle operating benefits. For the Rocks Road walking and cycling project, the main benefits are health and environmental benefits.

Clearways, Rocks Road walking and cycling improvements and a new route would be the most influential options within the recommended programme and were used to calculate the benefits.

The Net Present Value (NPV) for the benefits was determined over 40 years using the following assumptions:

- the results from the traffic modelling undertaken in Section 9.2;
- a new route would be implemented in 2033;
- a new route would take three years to construct;
- the new route covers the subsequent 40 years;
- the Rocks Road option (Option 3) would be implemented in 2021;
- a base date of 2019;
- clearways would operate until 2033.

The travel time, vehicle operating cost, health, environment, travel time and storm resilience NPV benefits for the recommend programme have been determined as: \$204M.

9.3.4.3 Benefit-cost ratio (BCR)

The calculation of the BCR followed the process defined in the EEM.

For the recommended programme, the BCR is calculated based on a base date of 2019 when clearways are implemented followed by Rocks Road Options 3 in 2021 followed by a new route in 2033, with clearways being removed at that time.

The recommended programme has a BCR range due to the range of costs and benefits across the different options that may or may not be implemented. The estimated BCR range is:

- zero to 2.2 for the recommended programme

Safety benefits have not been quantified as part of the PBC and are not calculated in the BCR ranges. These benefits will be determined during the IBC phase for specific options.

9.3.4.4 Sensitivity Testing

Sensitivity testing on two key criteria (costs and benefits for the recommended programme) was undertaken against different growth scenarios and items from the uncertainty log.

Sensitivities of +/- 20% on costs and +/- 20% on benefits were assessed and calculated and are summarised in Table 10.

Table 10: Sensitivity Testing on the Recommended and Sub-programmes BCRs

Sensitivity	Recommended Programme versus Do Minimum
Base Case	0 to 2.2
+20% Costs	0 to 1.9
-20% Costs	0 to 2.8
+20% Benefits	0 to 2.7
-20% Benefits	0 to 1.8

Table 10 shows that the recommended programme is sensitive to changes in benefits and costs. The BCR will be dependent on the options chosen, their benefits and costs. There is potential to improve the BCR through further analysis and investigation.

9.4 SUMMARY OF RECOMMENDED PROGRAMME ASSESSMENT

The work described in Sections 9.1, 9.2 and 9.3 reinforces the initial PBC finding that the primary activities of network optimisation followed by a new route should be undertaken consecutively. The recommended timeline is to implement network optimisation options including clearways at the end of the business case process and, under a medium growth scenario, implement a new route in the early 2030s.

The key uncertainty around which Rocks Road walking and cycling option is implemented, is directly related to whether the new route is a state highway or a local arterial road.

The key uncertainty around the timing for a new route is directly correlated to the growth in traffic that actually occurs over the coming years and the success of network optimisation measures.

9.5 IAF PROFILE

The recommended programme was assessed by the project team using the Investment Assessment Framework (IAF) profiles for the following elements:

- Strategic fit of the problems that are being addressed;
- Effectiveness of the proposed solution; and
- Economic efficiency of the recommended programme(s)

An assessment profile of M/M/L was determined for the programme using the Transport Agency's IAF as detailed below.

9.5.1 Strategic Fit

Overall – MEDIUM

The PBC demonstrates a change in the perception of the actual transport performance on the two Nelson arterial routes to that observed in previous plans and strategies.

The PBC demonstrates the gaps in journey time reliability and the congestion and capacity levels of service which adversely affect the transport system. The recommended programme identifies a number of opportunities to improve economic and social outcomes, including making better use of the existing transport capacity. These can also provide benefits to tourism and freight.

9.5.2 Effectiveness

Overall – MEDIUM

Outcomes Focussed – High

The problems identified relate to congestion, which leads to delays, and the need to ensure that the existing network continues to perform effectively in order to deliver liveability, connectivity, and economic benefits to the region.

Integrated – High

The programme appropriately responds to growth (current and forecast) to continue providing an appropriate level of service in the short and medium term. In addition, multiple projects are integrated over a 40-year horizon across various modes and through multiple delivery organisations.

Correctly scoped – Medium

The recommended programme integrates spatial land-use, connectivity and accessibility and operational issues in a balanced way. However, the recommended programme contains too many options and alternatives which needs to be challenged, optimised and narrowed down..

Affordable – High

The recommended programme involves a significant cost over the 40-year horizon. The programme reflects the level of infrastructure required to address the problems over this timeframe and the appropriately timed interventions. While further work is required to assess uncertainties within the recommended programme, overall it has understood and traded off alternative programmes to recommend the best while of life cost approach.

Timely – High

The recommended programme includes future actions that will create transport solutions and route protection at the right time to be effective. External factors may influence this timing and accelerate or defer the options or change the size of the interventions, and these are highlighted for testing at the next phase of the investigation.

Confidence – High

There is high confidence that the recommended programme is sound and can be implemented subject to further investigations on risks and uncertainties particular to specific activities within the recommended programme.

9.5.3 Benefit and cost appraisal

The estimated BCR range for the recommended programme is 0 to 2.2. It falls into the low rating for efficiency because it is less than three.

RECOMMENDED PROGRAMME

9.6 RECOMMENDED PROGRAMME IMPLEMENTATION STRATEGY AND TRIGGER POINTS

This section recommends what investigative work should be completed and when before the physical implementation of the recommended programme. It is summarised in Figure 15.

9.6.1 Indicative Business Case

The first element of the indicative business case phase is for the Transport Agency, the key stakeholders, and key organisations to convene a workshop to reconsider the Problems, Benefits, Investment Objectives and primary activities identified for implementation.

It is recommended that the IBC phase investigates in greater detail the options that support network optimisation and a new route.

The network optimisation investigation would refine the options that meet the Investment Objectives and provide value for money. Consideration must be given to ensuring that the options support the new route activity.

The new route investigation will determine the location and recommended alignment of the new route, its classification as either a state highway or local road, a more accurate estimate of when a new route will be required and the best way to protect it until it is required. The IBC will also inform the decision around which of the Rocks Road walking and cycling options to implement.

To understand when the measures for the clearway options fall below the targets of the Investment Objectives and trigger the need for a new route, the investigation needs to build a micro traffic model. It will provide a higher level of accuracy for determining the longevity of clearways options. It will also, provide a higher degree of accuracy related to side road delays, which can be compared with NCC's desired levels of service.

As part of building the model, the investigation team needs to work with NCC and TDC planners to review and update growth statistics and forecasts. Assuming that the IBC will start in early 2017, approximately two years would have passed since the current traffic model was initially developed.

In the IBC, the investigation should involve discussions with NCC, the public and key stakeholders to obtain their views about clearways and whether the new route should be a local arterial road or a state highway.

Route protection work could involve proposing activities such as land purchase, regulatory controls, planning activities by NCC and possibly include designation of a new route.

To provide a robust cost estimate for the new route, an engineering option should be developed to a reasonable level of confidence so a scheme estimate can be produced. This would involve geotechnical investigations, topographical surveys, property costs and baseline surveys correlated to anticipated impacts. Alignment options will require development to provide an upper and lower bound cost estimate and this work will form part of the IBC.

9.6.2 Detailed Business Case and pre-implementation works

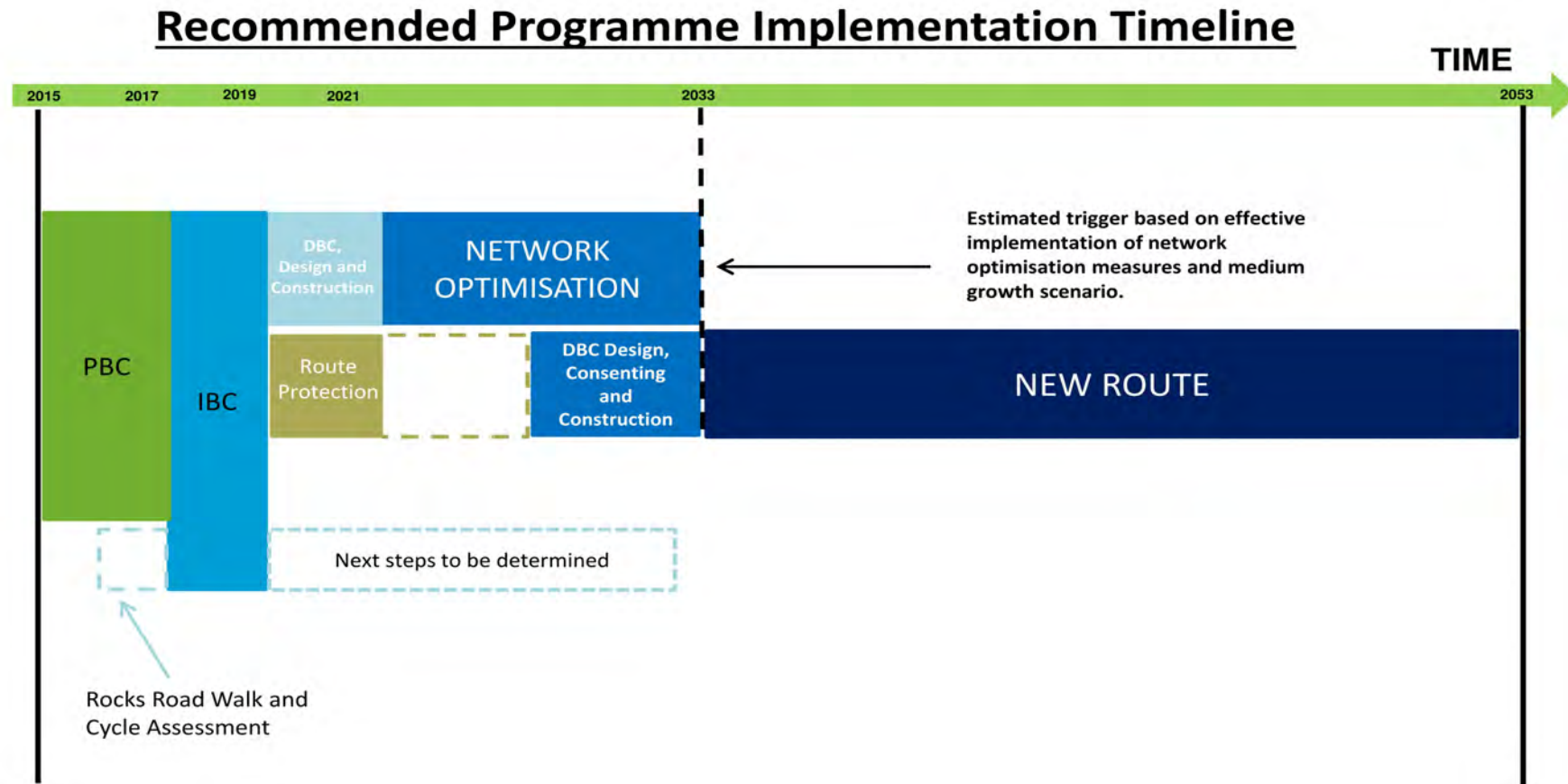
At this stage, it is recommended that the DBC for the network optimisation activities begin immediately after completion of the IBC.

The DBC for the new route should wait until actual traffic growth triggers the need to start the DBC.

Acknowledging that the DBC could take approximately 1–2 years, the RMA consenting work could take 3 years and the design and construction could take 3 years, the trigger point for starting the DBC is approximately 2025 to complete it in advance of the currently predicted date for the new route, 2033.

After implementation of the network optimisation programme, yearly monitoring of traffic growth and the success of the programme is recommended to inform the decision as to the likely date for starting the new route DBC.

Figure 15: Summary of Implementation Timeline



10 PROGRAMME FINANCIAL CASE

This financial case looks at the preferred programme and assesses the costs, affordability and funding options within the regional context.

10.1 INDICATIVE COSTS

Cost estimations were made for all programme options in the PBC. Standard cost models for network options were built up from inputs in the Transport Agency's Costing Estimation Manual (such as earthworks, land prices, carriageway construction costs, site clearance, footpaths, cycleways and others). Costs for non-transport related options have been estimated using the project team's costing knowledge base held by their Quantity Surveying division.

Option costs have been based on estimated construction costs, property costs plus maintenance and operational costs associated with concept alignments and a qualitative assessment of the option descriptions provided by Key Stakeholders.

PART C – DELIVERING AND MONITORING THE PROGRAMME

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

11 MANAGEMENT CASE

The following sections discuss the key management case questions.

11.1 PROGRAMME GOVERNANCE AND REPORTING

Table 11 below identifies the high level organisational strategies of the Government, the Transport Agency and NCC that relate to this investigation project.

Table 11: Relevant organisational strategies and plans

Organisation	Organisational Strategies
Government	Government Accelerated Regional Rooding Package, Government Policy Statement on Land Transport 2015/16–2024/25
Transport Agency	Statement of Intent, South Island Freight Plan, National Business Cases, National Infrastructure Plan, National Land Transport Plan
NCC	Long Term Plan 2015–25, Heart of Nelson – Central City Strategy, Nelson 2060 – Framing our Future
NCC (Regulatory Authority Objectives)	Nelson Resource Management Policy Statement and Plan (under review as the “Nelson Plan”)
NCC (Regional Transport Objectives)	Transportation Asset Management Plan, Regional Land Transport Plan

Successful delivery will require a collaborative partnership and working arrangement between NCC and the Transport Agency.

The project team will comprise of:

Table 12: Project Team

ROLE	NAME
Project Sponsor (HNO)	Mark Owen, Regional Performance Manager Transport Agency
Planning and Investment Sponsor	Julie Alexander, Regional Manager Planning & Investment Transport Agency
Project Manager	Andrew James, NZ Transport Agency
Senior Supplier	AECOM NZ Ltd
Supplier Team Leader	Graeme Doherty, AECOM

The programme governance structure will be reviewed at the start of the IBC phase.

11.2 STAKEHOLDER ENGAGEMENT AND COMMUNICATIONS PLAN

Key stakeholder workshops and public engagement will be important to ensure the views of the public are taken into consideration during the next phase. Formal public consultation on the recommended options to progress, possibly in conjunction with NCC, will then be sought, along with NCC's formal support.

11.3 PROGRAMME PERFORMANCE AND REVIEW

Monitoring of the Programme Timing and Triggers

Revisiting timings will be an on-going part of the NSLI process. The outcomes from the micro traffic modelling will allow more effective identification of trigger points.

Monitoring of the programme performance

The performance of the programme in delivering the outcomes will be monitored against the KPI measures as summarised in the Benefits Map from Figure 12, at periods of one year, five years and ten years after completion of construction.

11.4 RISKS ASSOCIATED WITH THE RECOMMENDED PROGRAMME

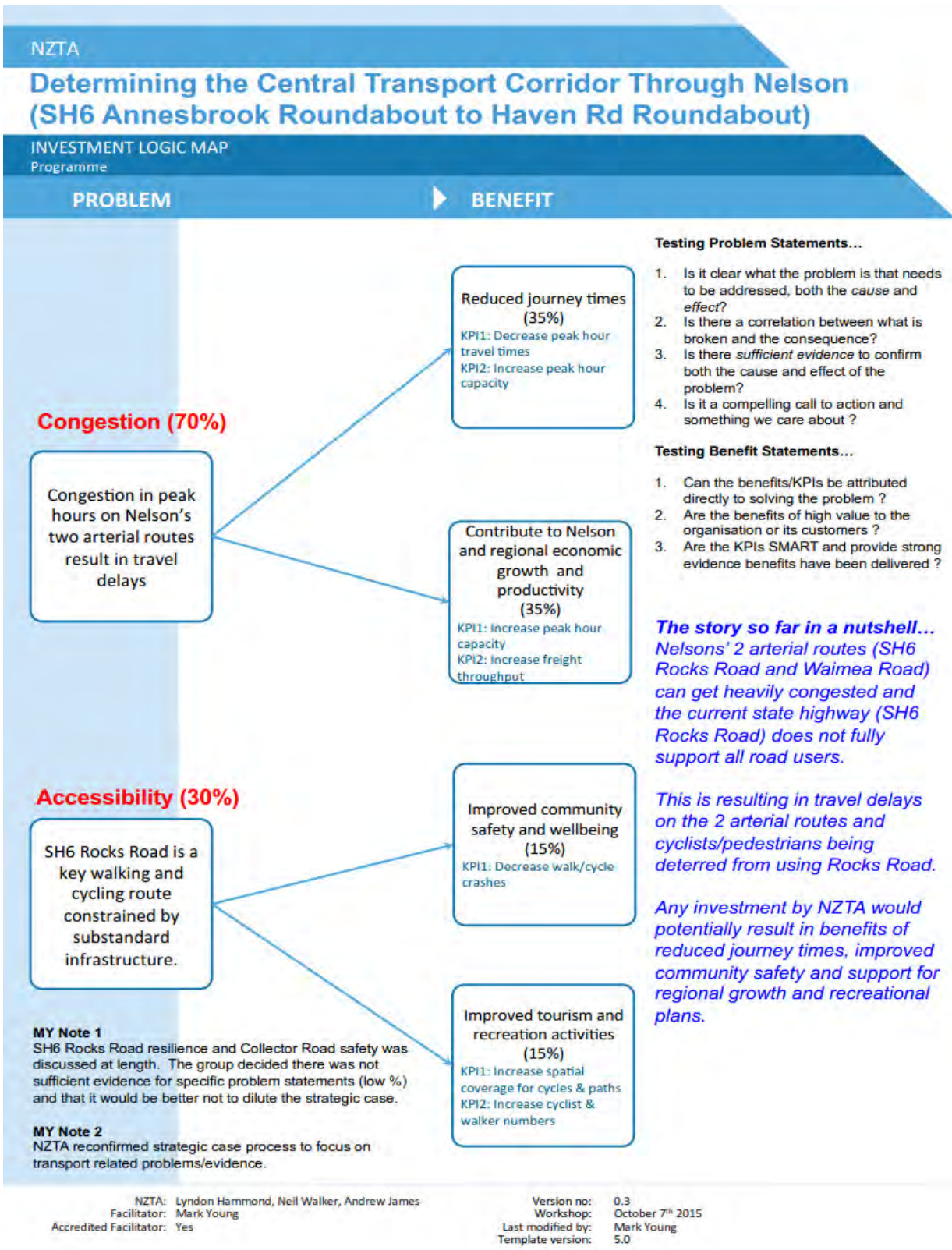
These critical risks around the implementation of the activities and options within only the recommended programme were identified:

- Organisational risk – The Transport Agency will need NCC's support for some of the activities and options within the recommended programme to enable implementation;
- Affordability – Detailed preferred option costs and assessments are required before they can be considered for inclusion in the National Land Transport Programme;
- Rocks Road consents – Obtaining permission for a Rocks Road option that requires reclamation into the coastal area presents significant challenges;

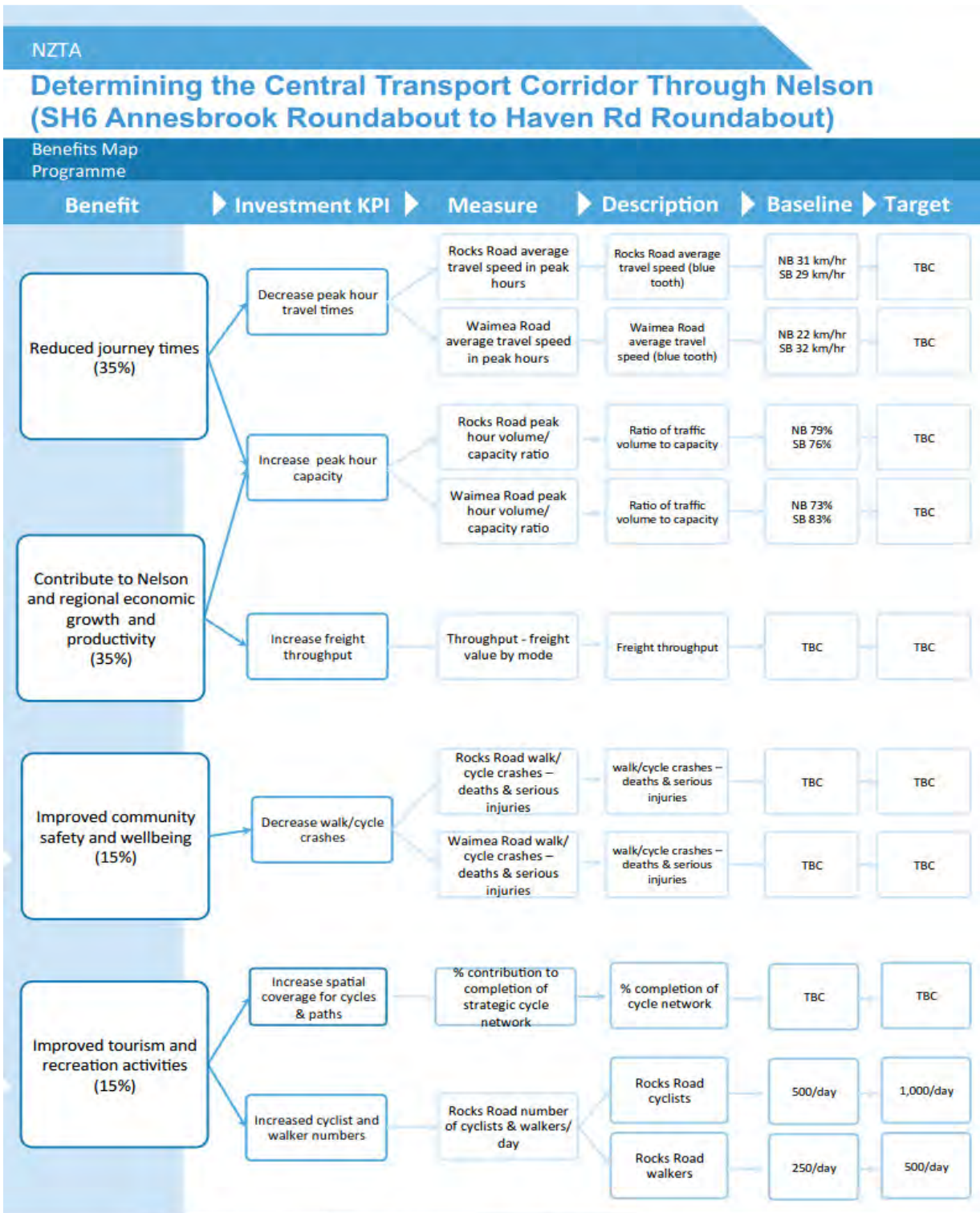
- New route consents – Obtaining permission for a new route, which includes designating it as a state highway or a local road – presents significant challenges;
- Operational risks
 - physical operation of the network
 - the integration with and operation of additional PT services
 - policy and systems operational aspects (eg traffic signal optimisation, parking charges).

Some of the operation risks will fall outside of the Transport Agency's sphere of responsibility (eg changing land use or changing school hours) and will need to be integrated across the delivery of the programme with the wider land use and transport system.

APPENDIX A – INVESTMENT LOGIC MAP FROM THE STRATEGIC CASE



APPENDIX B – BENEFITS MAP FROM STRATEGIC CASE



NZTA: Lyndon Hammond, Neil Walker, Andrew James
 Facilitator: Mark Young
 Accredited Facilitator: Yes

Version no: 0.3
 Workshop: October 7th 2015
 Last modified by: Mark Young
 Template version: 5.0

APPENDIX C – WORKSHOP 1A MINUTES

2.1 WORKSHOP 1A MINUTES

Minutes of Meeting

Subject: Programme Business Case Benefit Definition Workshop

Venue: Trailways Hotel, Nelson

Time 1.30pm – 4.30pm Friday
11 December 2015

Participants

1. Rachel Reese - Mayor, Nelson City Council
2. Eric Davy - Nelson City Council Regional Transport Committee Chair and Works and Infrastructure Committee Chair
3. Trevor Norris - Tasman District Council Regional Transport Committee Chair and Engineering Services Chair
4. Allan Kneale – Chair, Nelson District AA Council
5. Paul Haywood – Representative, Nelson District AA Council
6. Derek Nees – Representative, Road Transport Association NZ
7. Dot Kettle – Chief Executive, Nelson Chamber of Commerce
8. Will Andrews – Representative, Bicycle Nelson Bays
9. Chris Allison – Representative, Walk Nelson Tasman
10. Gail Collingwood – Representative, PT User Group
11. Matt McDonald - Port Nelson Ltd
12. Rhys Palmer – Nelson City Council Senior Asset Engineer – Transport and Roading
13. Selwyn Blackmore, Transport Planning Manager, Central, NZTA
14. Andrew James, Principal Transport Planner, NZTA
15. Lyndon Hammond, Planning and Investment Regional Manager, Central, NZTA
16. Graeme Doherty – Project Consultant, AECOM
17. Tim Brown – Workshop Facilitator, Resolve Group
18. Mark Walter, MBIE Representative

Apologies

Brian McGurk – Nelson City Council, Planning and Regulatory Committee and Councillor.

Agenda

- Introductions
- Ground Rules
- Project overview – where are we at?
- Purpose of today's workshop – why you are here?
- Program Business Case overview – what is the process?
- What does the future hold? (The “baseline”)
- What are the benefits, and KPI's to measure the benefits?
- Break

- Define the investment objectives – “what does good look like”?
- Summarise and Close.

Due to time constraints, the last four bullet points were not discussed and bullet point 6 was briefly touched on. These were deferred to the second workshop on 18 December 2015.

Minutes

Introductions

Each attendee introduced themselves and socialised the key points they want to see in the NSLI.

Key points that attendees want to see in undertaking that investigation:

- Cycle trails;
- Infrastructure for tourism;
- Economic development – regional economic opportunities;
- Take account of changing demographics;
- Strong links into organisations dealing with elderly;
- Take account of all users – children, walkers, cyclists through to large trucks;
- Rigorous process – covers everything thoroughly, no mis-understanding on data;
- Urban design / aesthetics;
- Impact on CBD and urban environs.

Attendees viewed a powerpoint slide and were given a handout booklet containing technical information related to the problems identified in the Strategic Case, the evidence for those problems, information from the traffic model to highlight the level of uncertainty when considering growth scenarios. This information was provided by The Transport Agency.

Ground Rules

The Facilitator set the following ground rules for the workshops.

- All feedback is valid;
- There is no weighting to an individual's feedback.

Project Overview

The NZ Transport Agency presented an overview of the project, which is to investigate whether there is a need for investment to solve the problems identified in the Strategic Case using the Business Case approach to investment decisions. It is one of the Government's Accelerated Regional Road projects.

In 2014 the Ministry of Transport was asked by the then Minister of Transport (Hon Gerry Brownlee) to come up with a list of projects that were regional priorities with regional economic growth potential, but had not been progressed previously due to a lack of available funding through the usual land transport funding process. These are the Accelerated Regional Roading Projects (ARRP).

The Minister and Cabinet then approved this list and provided funding, with the Southern Link being one of three projects put into Tranche 3 of the ARRP. Twelve million dollars of funding was identified for tranche 3 projects to complete the investigation and design stages of these projects.

The Southern Link was identified as a project that had support in the upper South Island and was a potentially important project for Nelson given growth forecasts and the potential future need for an option route south of Nelson. Because of the risks involved and previous investigations/consenting processes, it was included as a

tranche 3 project to fund its investigation, rather than as a Tranche 1 or 2 project (for which funding for construction has been provided or committed).

Purpose of Today's Workshop:

The Facilitator set out the purpose of the workshop being:

- Not looking at solutions – today is about framing the potential investment;
- To understand the Business Case Approach;
- To confirm the need for investment (The Problems);
- To understand the transport system baseline (The Do-Minimum);
- To understand the uncertainties and determine the issues and constraints;

Programme Business Case Approach

The Transport Agency presented the Business Case approach, which uses the Treasury's Better Business Case model and has adapted that model into 4 main project development phases being:

- The Strategic Case
- The programme Business Case
- The Indicative Business Case
- The Detailed Business Case.

The Programme Business Case is the second phase in the Nelson Southern Link Investigation. During this phase, the Transport Agency seeks programmes (a grouping of options) that would likely solve the transport problems identified in the first phase, the Strategic Case. Because of the significance and history of this project it includes significant stakeholder and community engagement. At the end of this phase, a report is provided to the Transport Minister on the outcomes of this phase and the previous one. The business case approach to transport investment is:

- Evidence based approach
- Investor and stakeholder driven
- Explores and evaluates a comprehensive range of solutions considering:
 - Demand management (demand);
 - Better managing and improving efficiency of existing networks (productivity); and
 - Capacity improvements (supply)
- Designed to ensure that the investment is compared against the outcomes being sought.

Transport System Baseline

AECOM presented the summary information from the traffic modelling recently undertaken, which uses the growth (population and jobs) predictions provided by Nelson City Council and Tasman District Council and agreed by their respective Senior Management teams. This is the growth that has been used in the traffic model to understand future traffic volumes on the current network if it remains similar to the current network.

The Facilitator advised that when developing programmes, there is a need to focus on the overall low and the overall high growth scenarios, because there is uncertainty about the quantum of growth in the future. The programmes that will be developed are based on evaluation scenarios that cover incremental improvements that are triggered at certain points in the future correlated to the actual growth that is occurring.

Uncertainties

Problem 1

The attendees reviewed the information in the handout booklet related to Problem 1, which compared freeflow speed of the do minimum between Annesbrook roundabout and Haven Road roundabout on the two arterial roads against the various growth scenarios and also reviewed the delay times for right turning vehicles onto the arterials at peak times based on the different growth scenarios.

The attendees had a brief discussion about congestion on the two arterials and felt that sub-standard infrastructure on both arterials was contributing to Problem 1.

Close

The workshop stopped at 5.15pm and the attendees resolved to discuss the items on the agenda that weren't discussed at the next workshop on the 18th of December 2015.

2.2 WORKSHOP 1A BENEFIT DEFINITION WORKSHOP HANDOUTS

Explanatory notes to accompany the handout booklet

1. Problem 1 Uncertainty – the graphs showing the effect on travel time under different growth scenarios when compared to freeflow.

The freeflow used is the time taken to travel along the corridor assuming no congestion or intersection delay along the route. As such vehicles would arrive at signalised intersections during a green phase and would not be impeded at roundabouts or other intersections. No allowance has been made for any delay due to geometric changes but these are considered to be minor. This free flow speed has been calibrated from Bluetooth travel time data at uncongested times of the day.

2. The bar charts showing right turn delays at intersections along the arterials is the average delay for vehicles turning right onto the arterial across the entire peak hour. Some of the intersections show a higher average delay in earlier years than later years. This is due to the traffic model reassigning traffic to other local roads when the speed on the arterial decreases below 20 km/hr.
3. The results from the different growth scenarios are to illustrate the level of uncertainty when looking to the future. There is no right or wrong answer. The main purpose of showing the different results based on a particular growth scenario is to enable the identification of an option or suite of options that can be implemented over time depending on the actual growth that occurs.

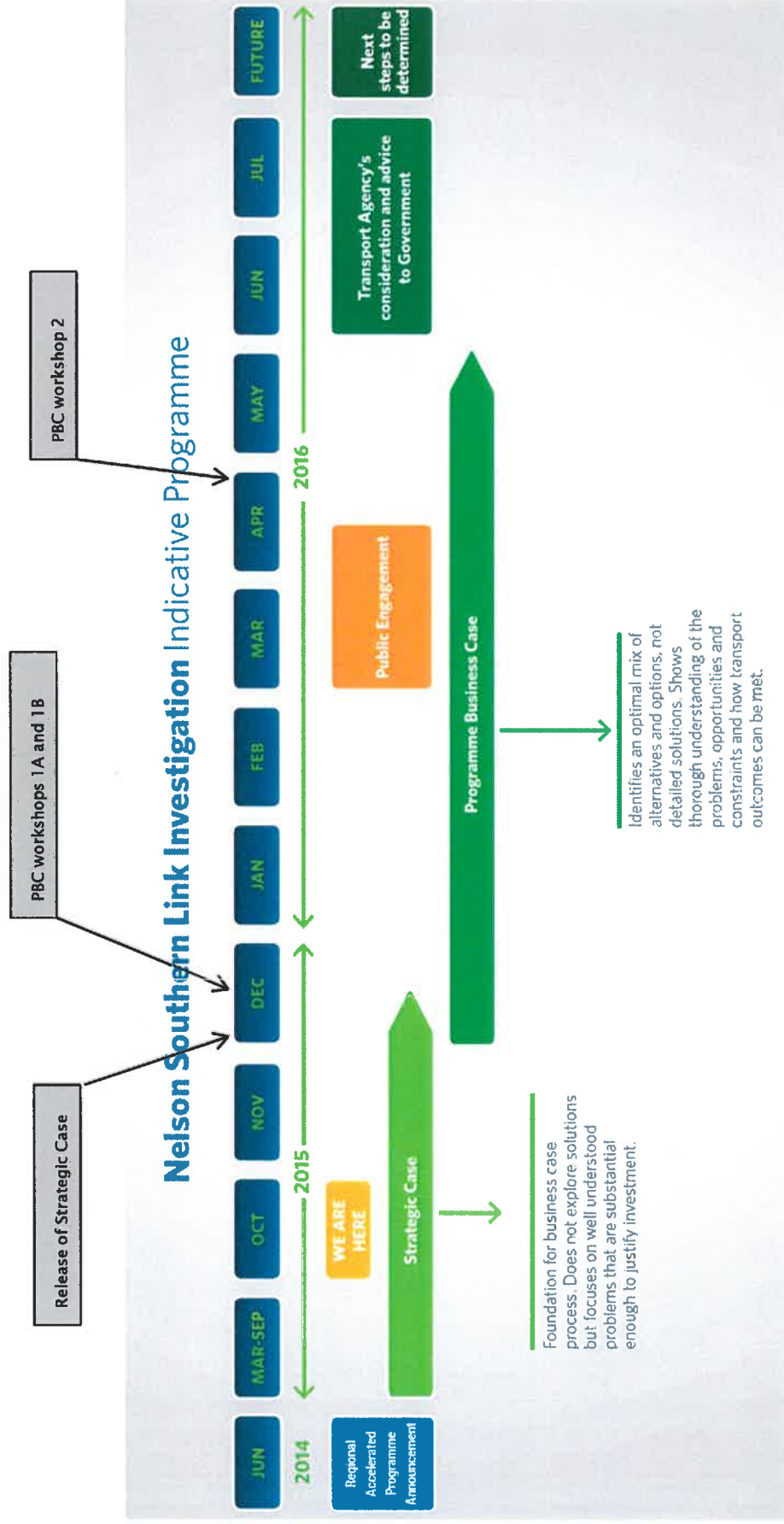
HANDOUT BOOKLET

New Zealand Transport Agency
Nelson Southern Link Investigation
Programme Business Case
Benefit Definition Workshop
Handout Booklet



Timeline

Current timeline

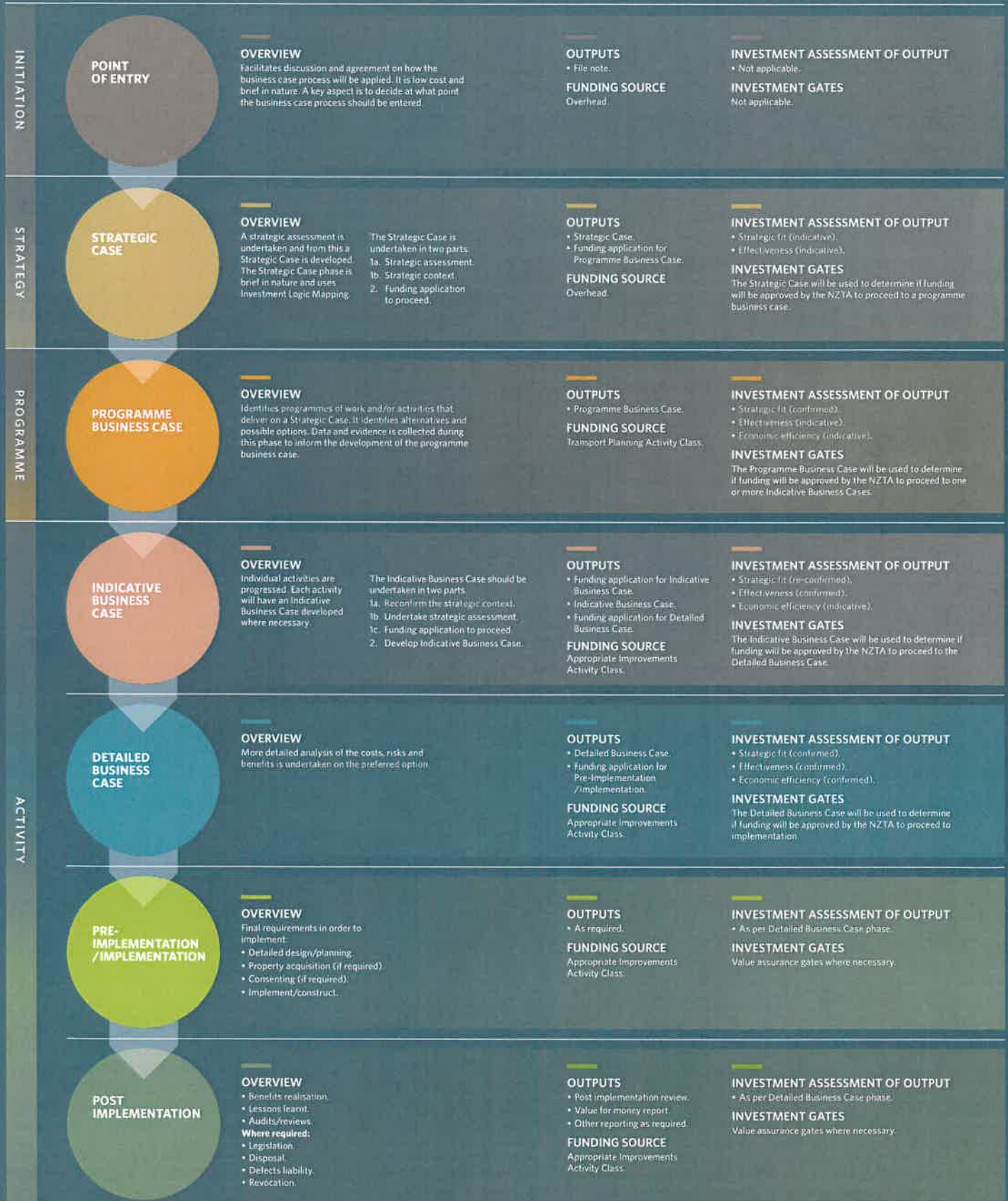


Business Case Approach

AN OVERVIEW OF THE BUSINESS CASE APPROACH

PLEASE NOTE that the business case approach is flexible. For example there will be instances where a single activity may go from the Strategic Case phase through to the Indicative or Detailed Business Case phase.

PLEASE ALSO NOTE that there may be a time delay between the development and approval of a Programme Business Case and when individual activities are undertaken.

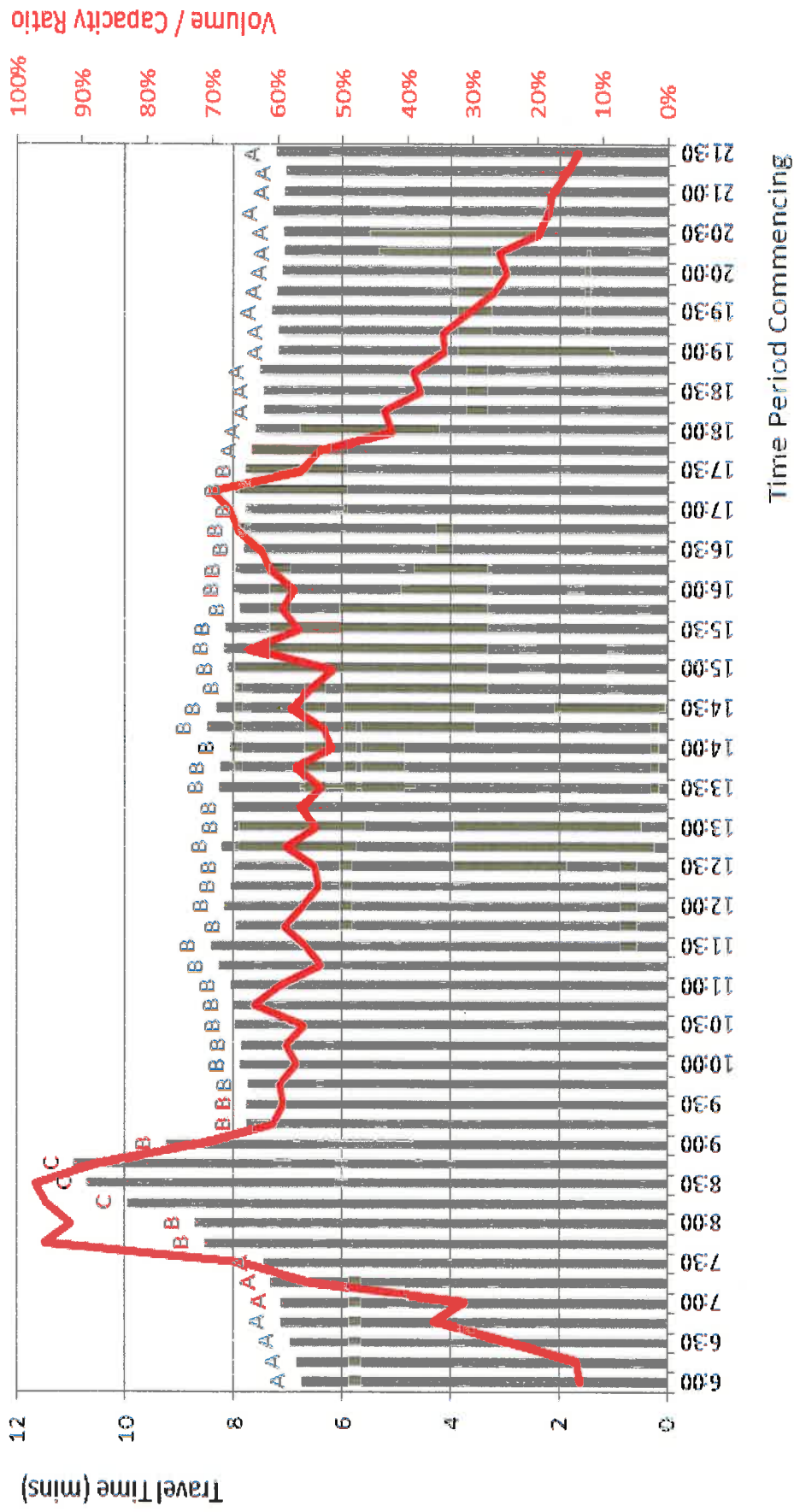


Problem 1 Evidence

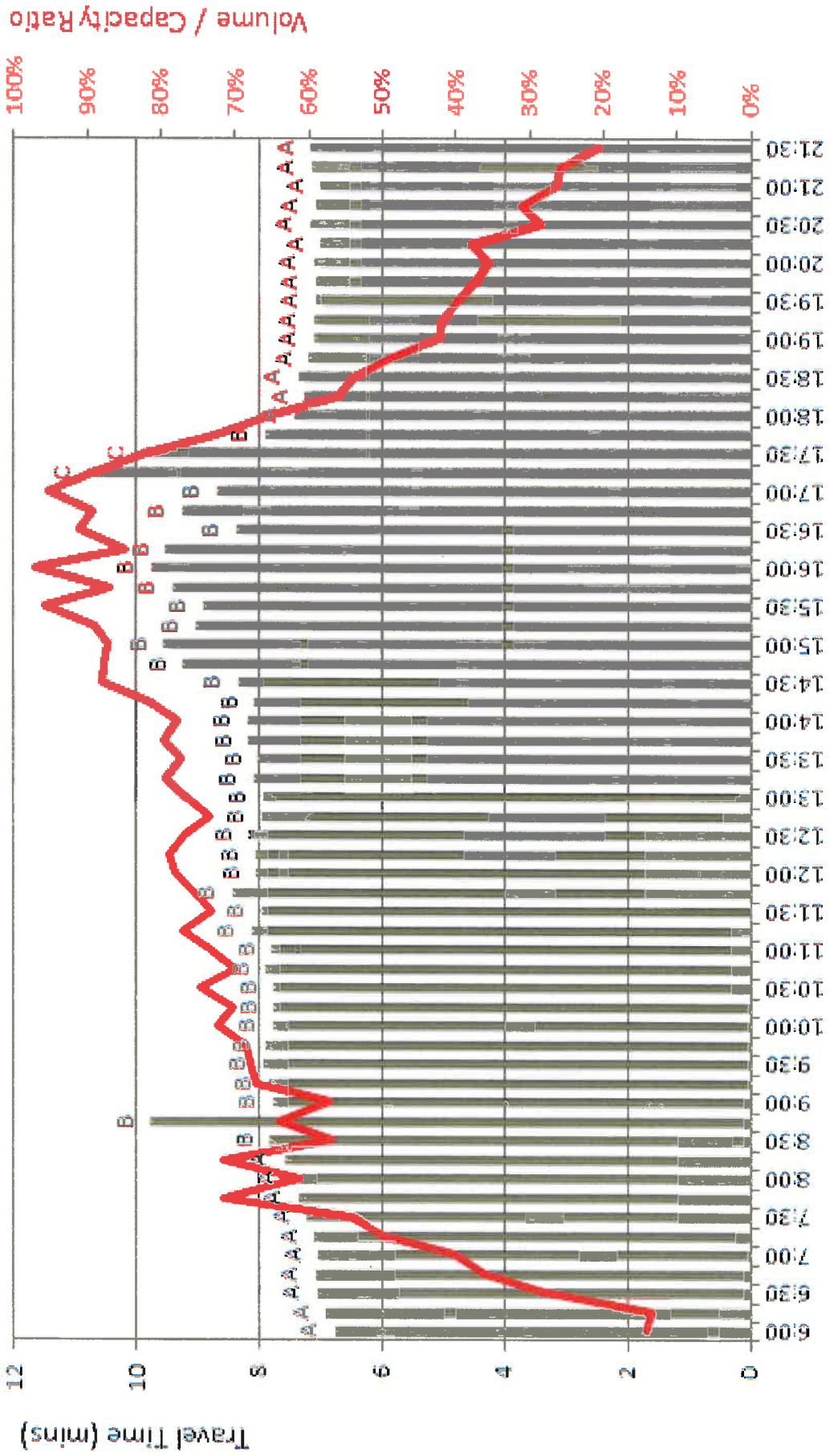
Nelson Southern Link Investigation - Programme Business Case

Problem Evidence Base – Current Situation

“Congestion in peak hours on Nelson’s two arterial routes result in travel delays”

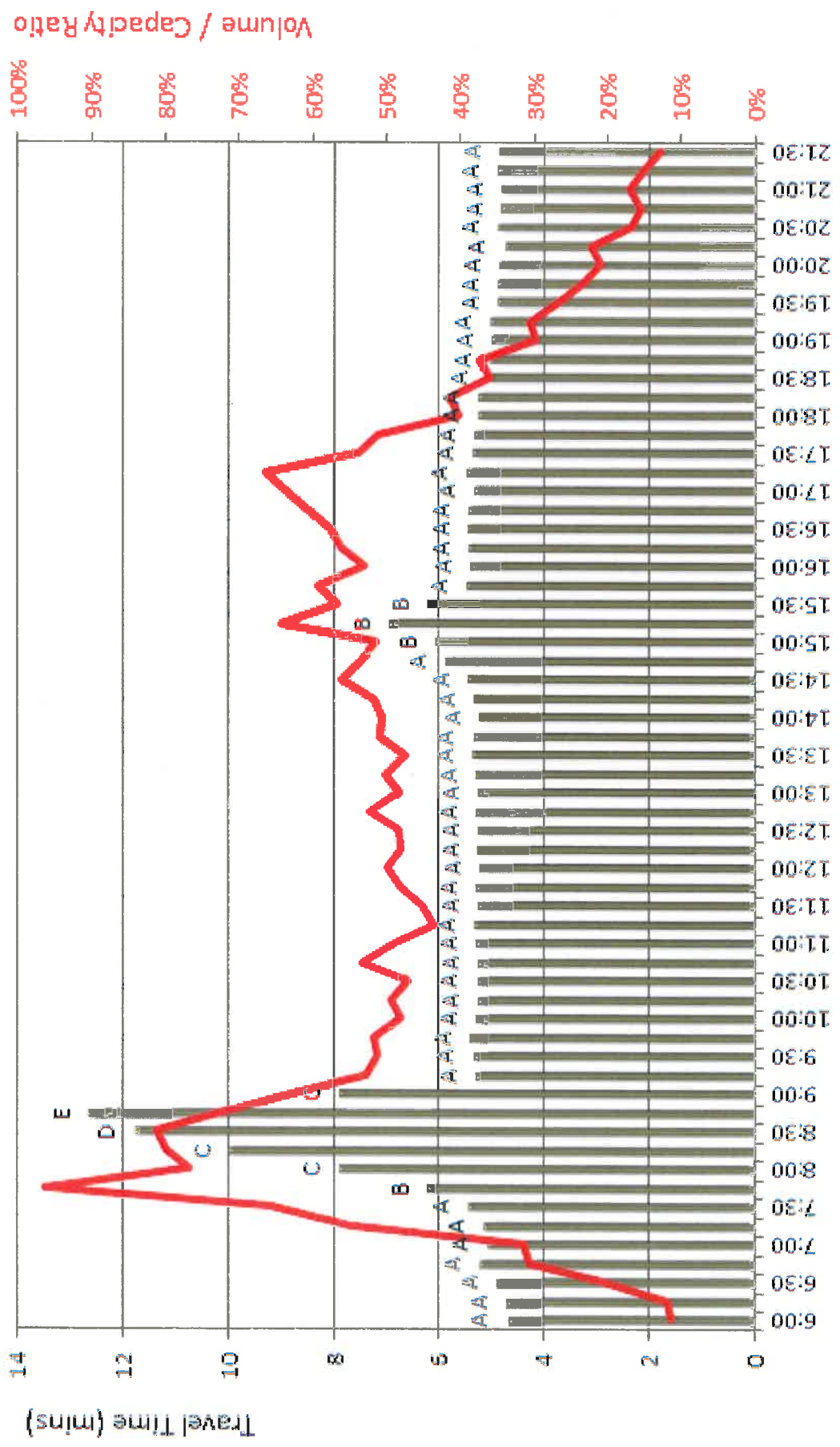


SH6 into Nelson



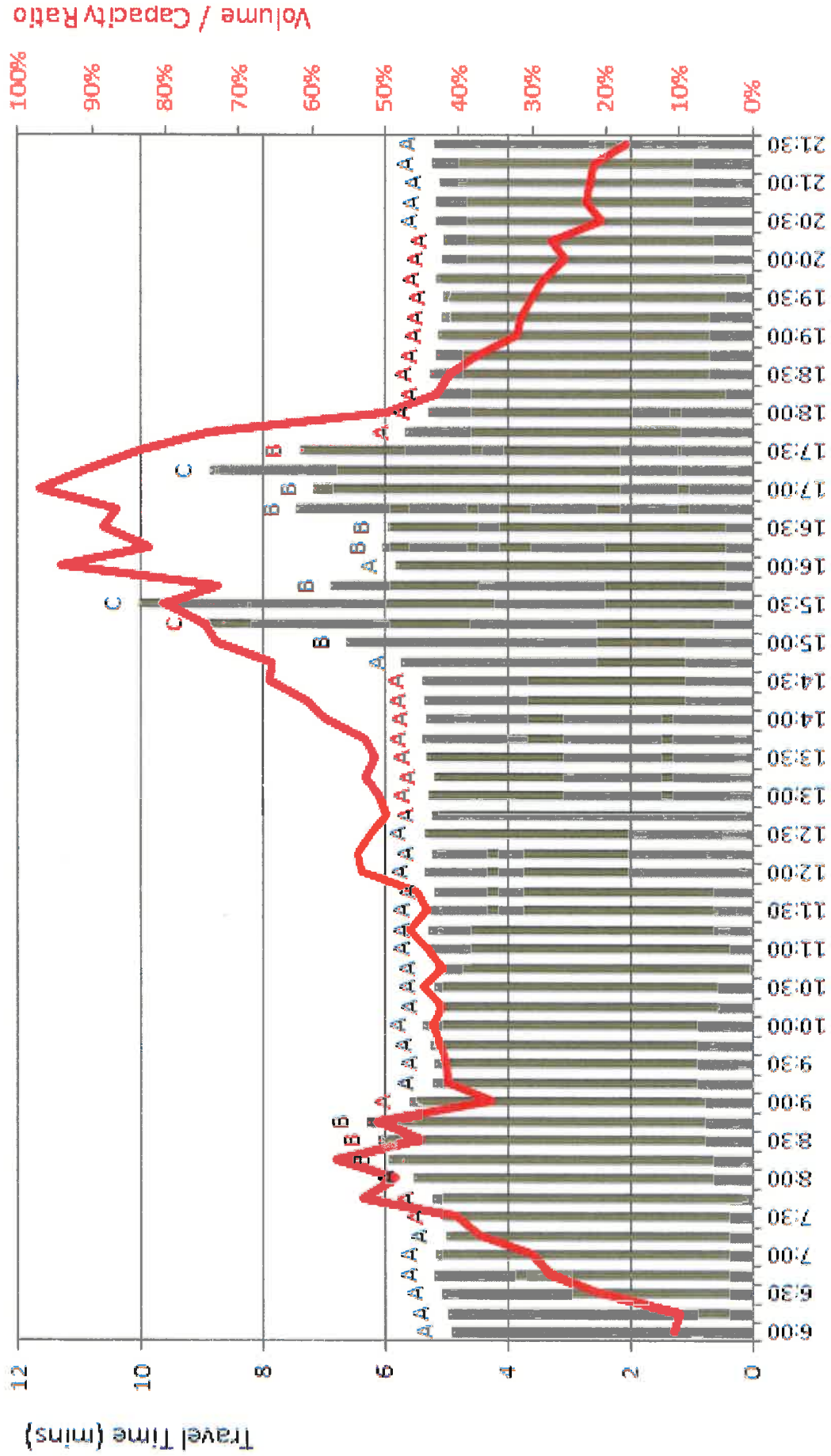
Time Period Commencing

SH6 into Richmond



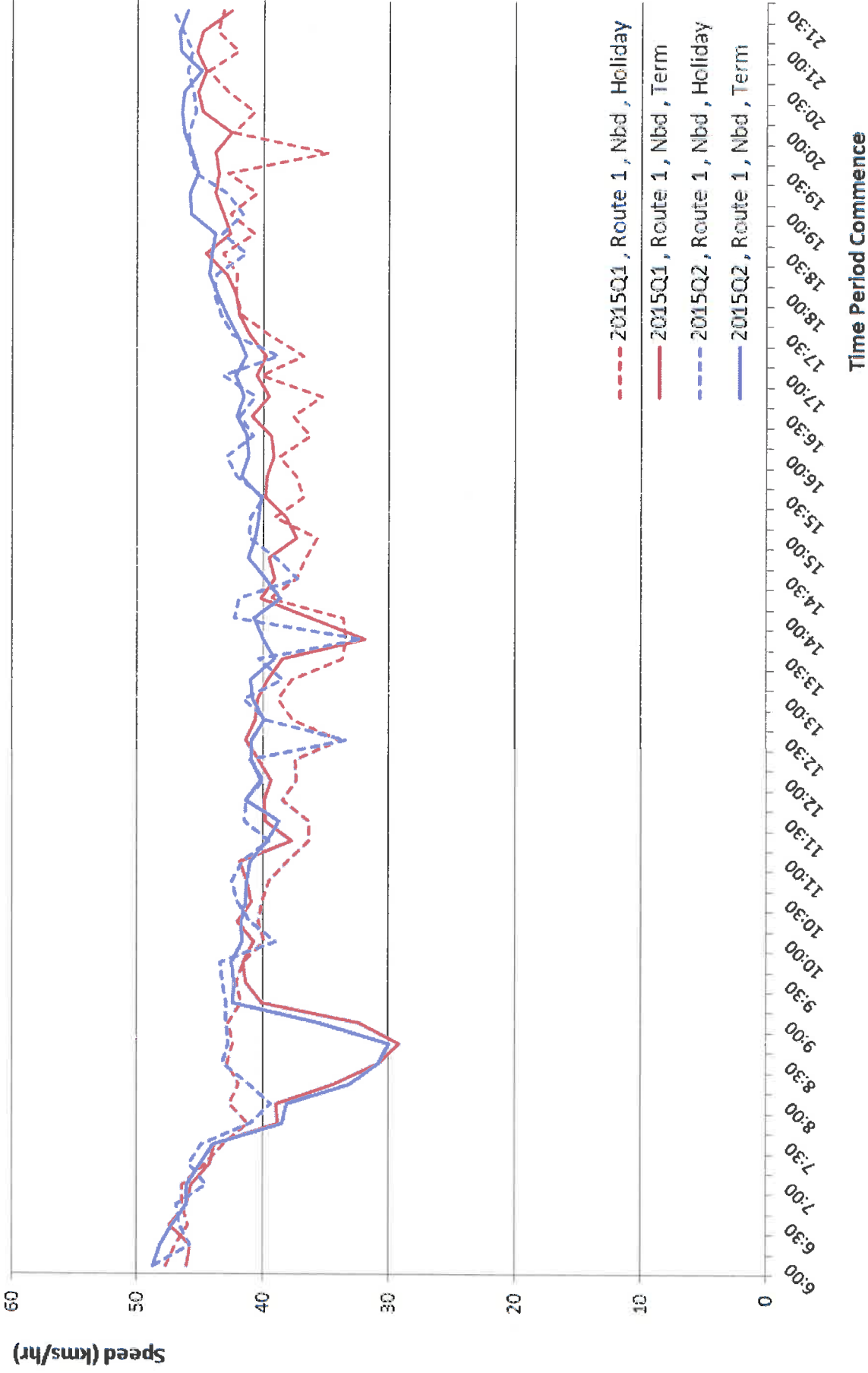
Time Period Commencing

Waimea Rd into Nelson

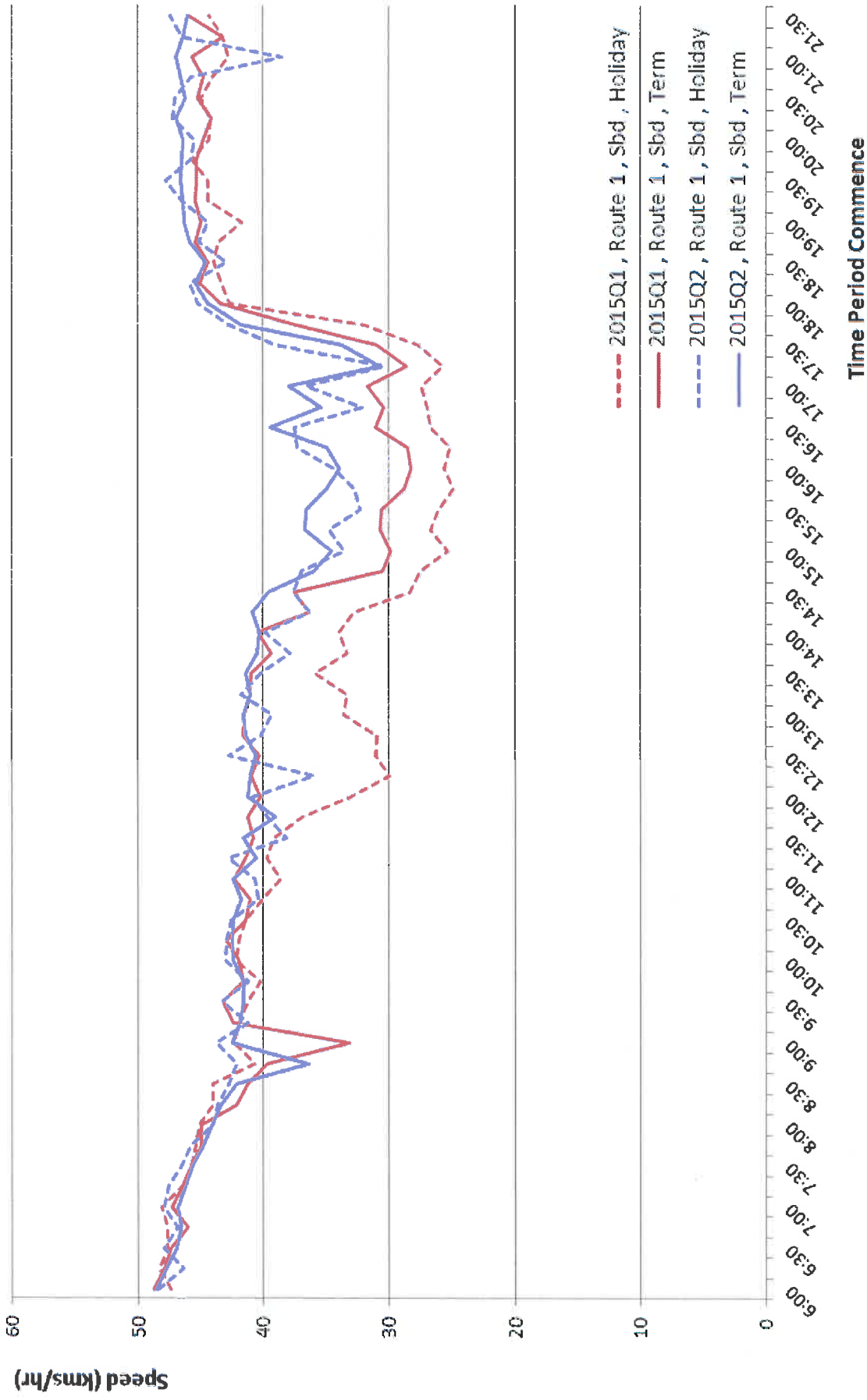


Time Period Commencing

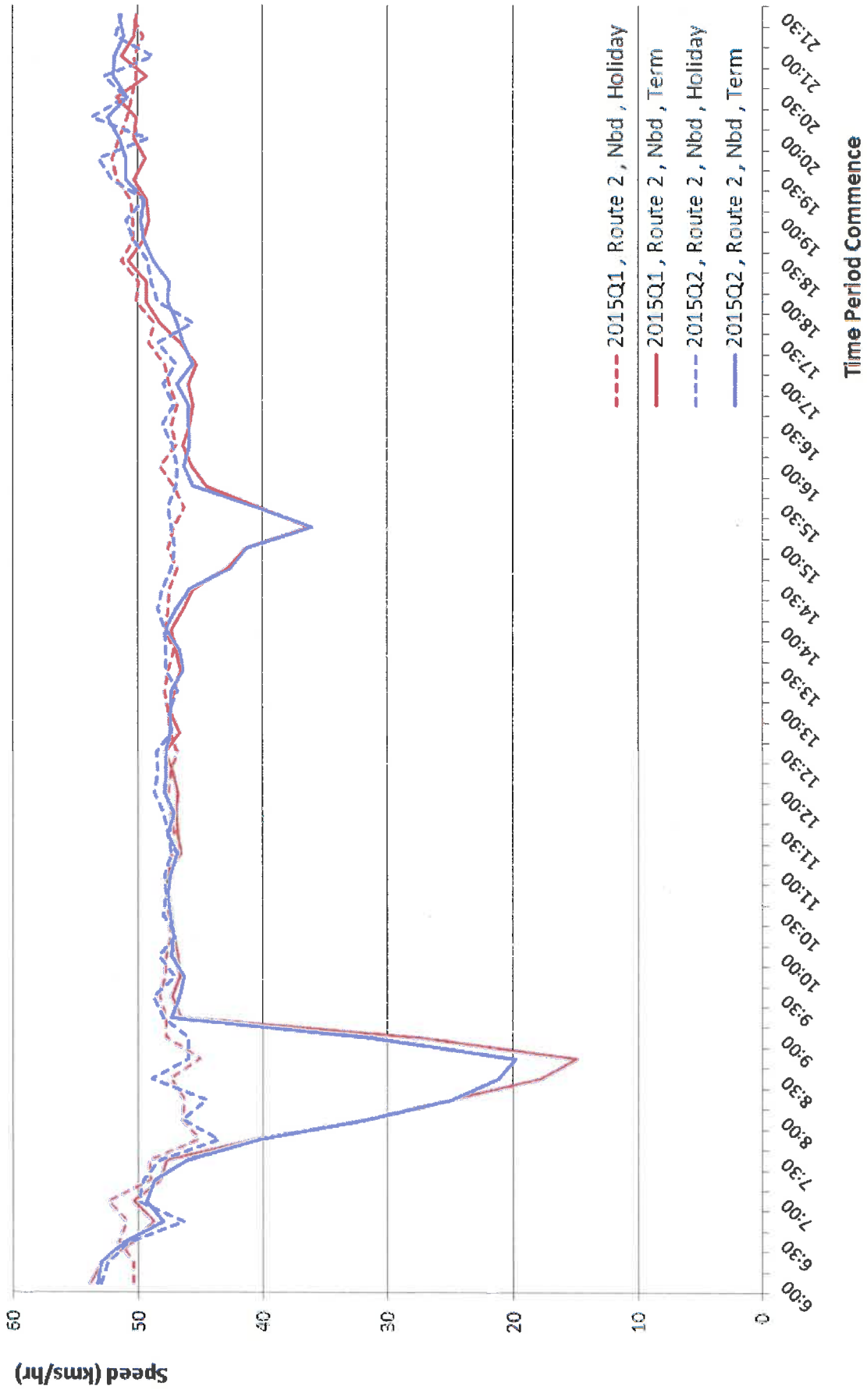
Waimea Rd towards Richmond



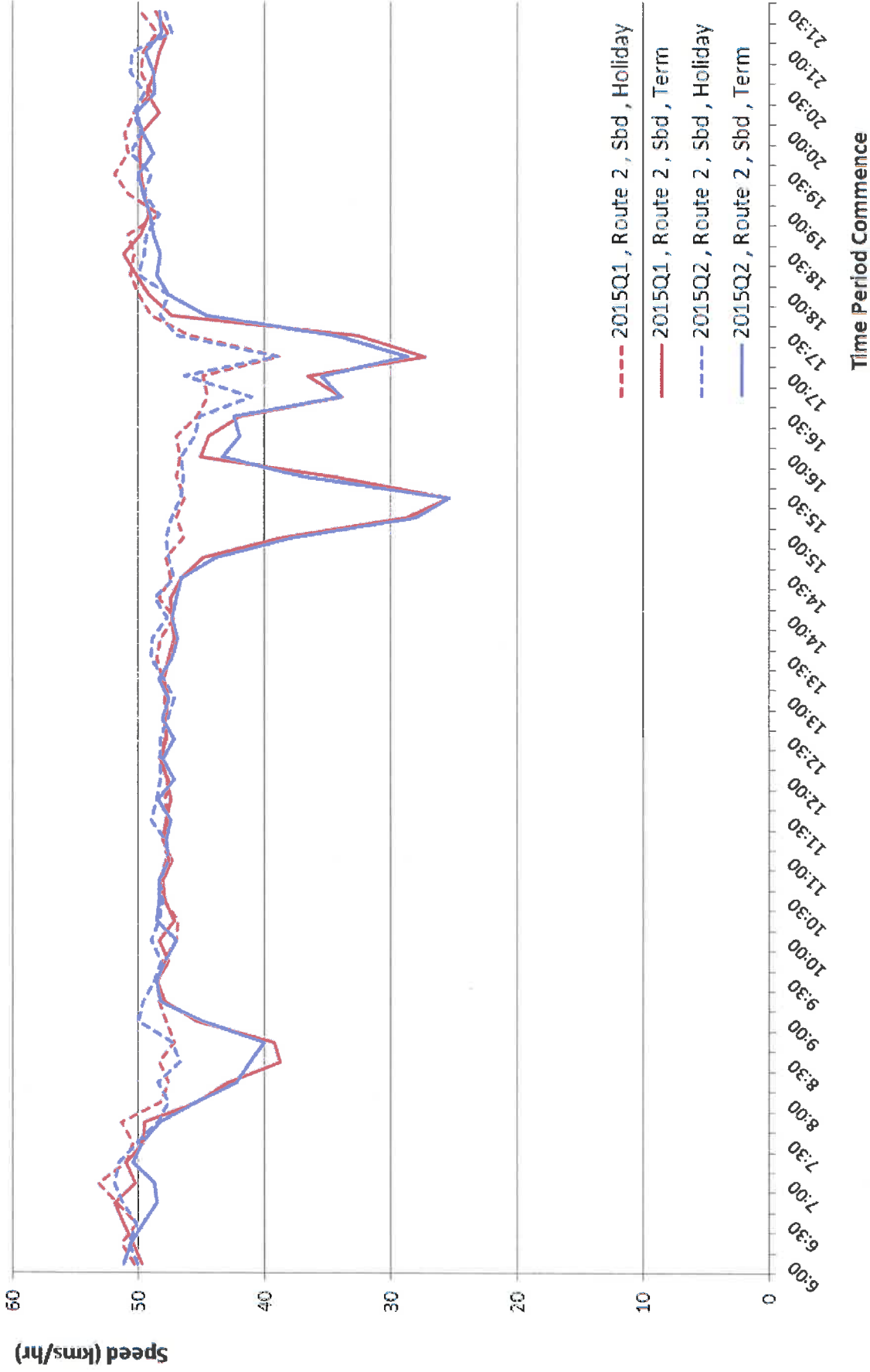
SH6 into Nelson



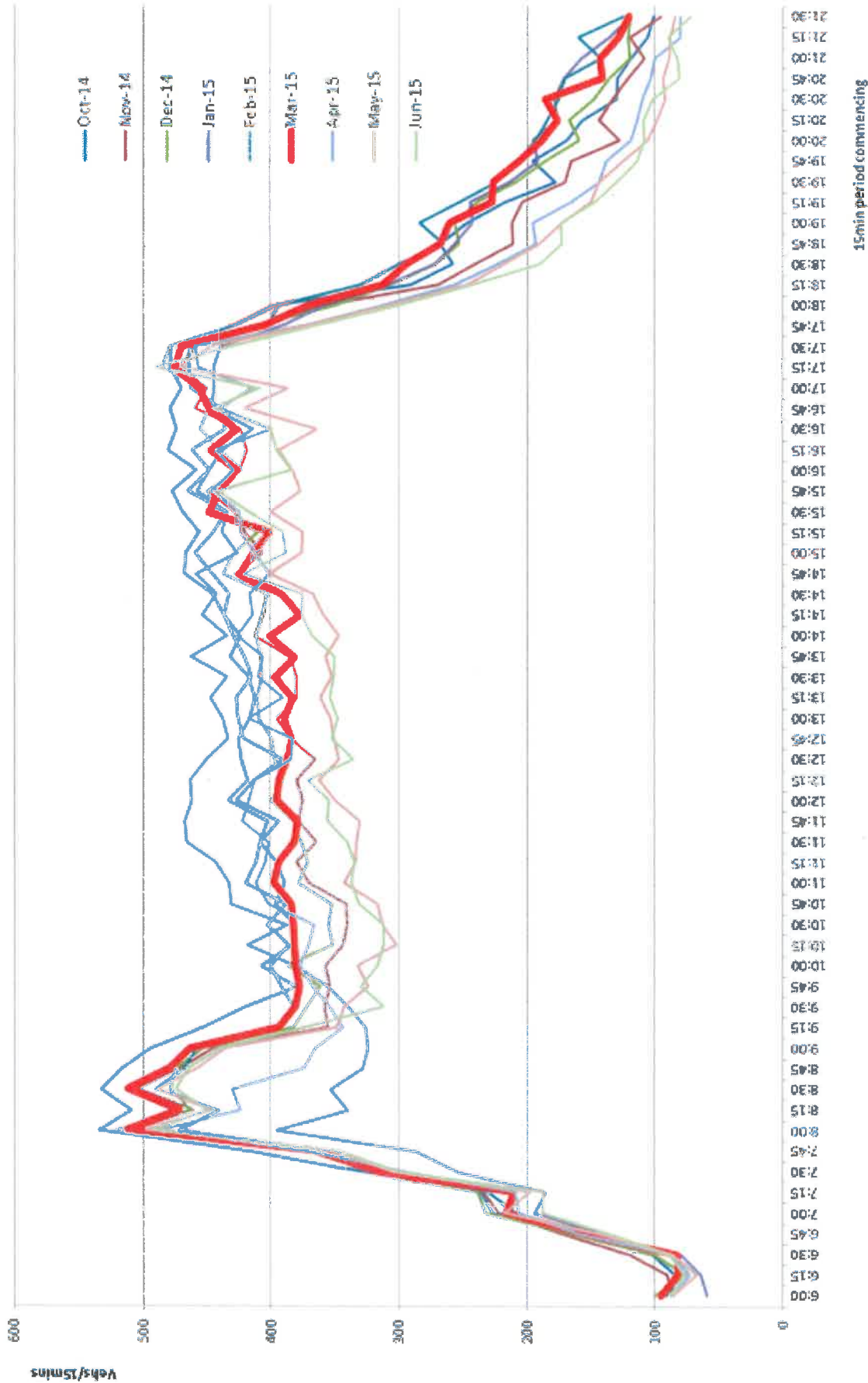
SH6 into Richmond



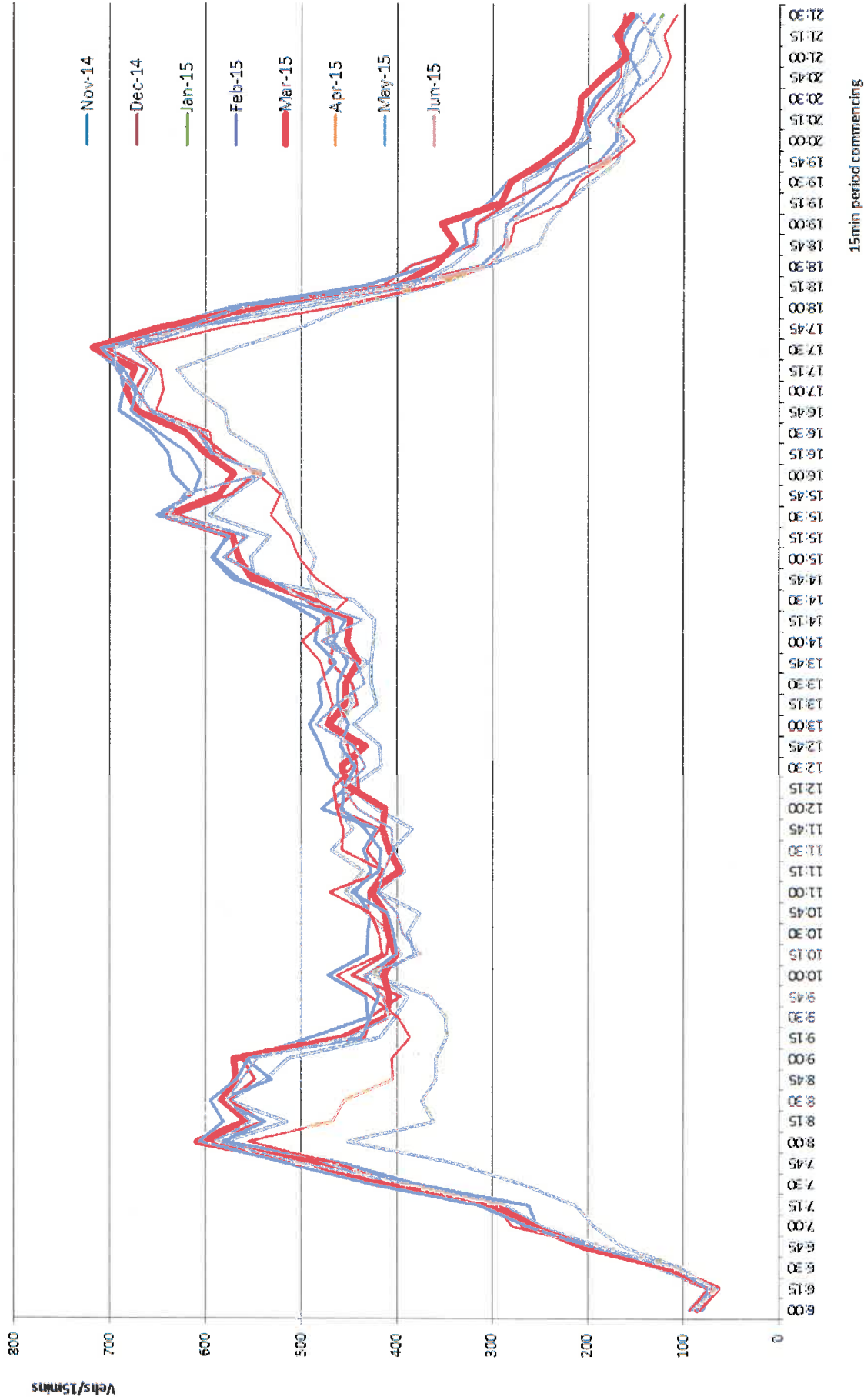
Waimea Rd into Nelson



Waimea Rd towards Richmond



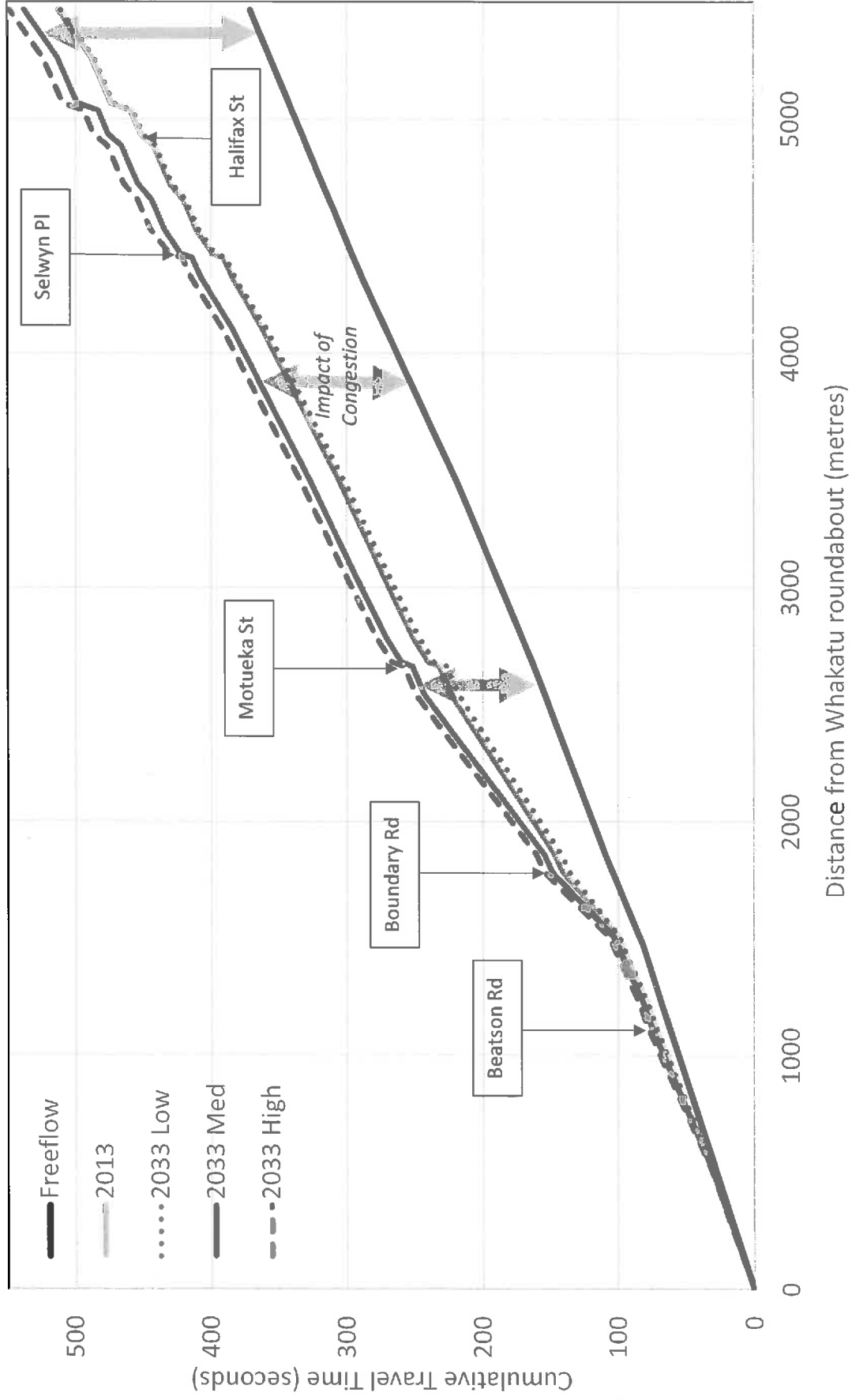
Waimea Rd 2-way recorded volumes



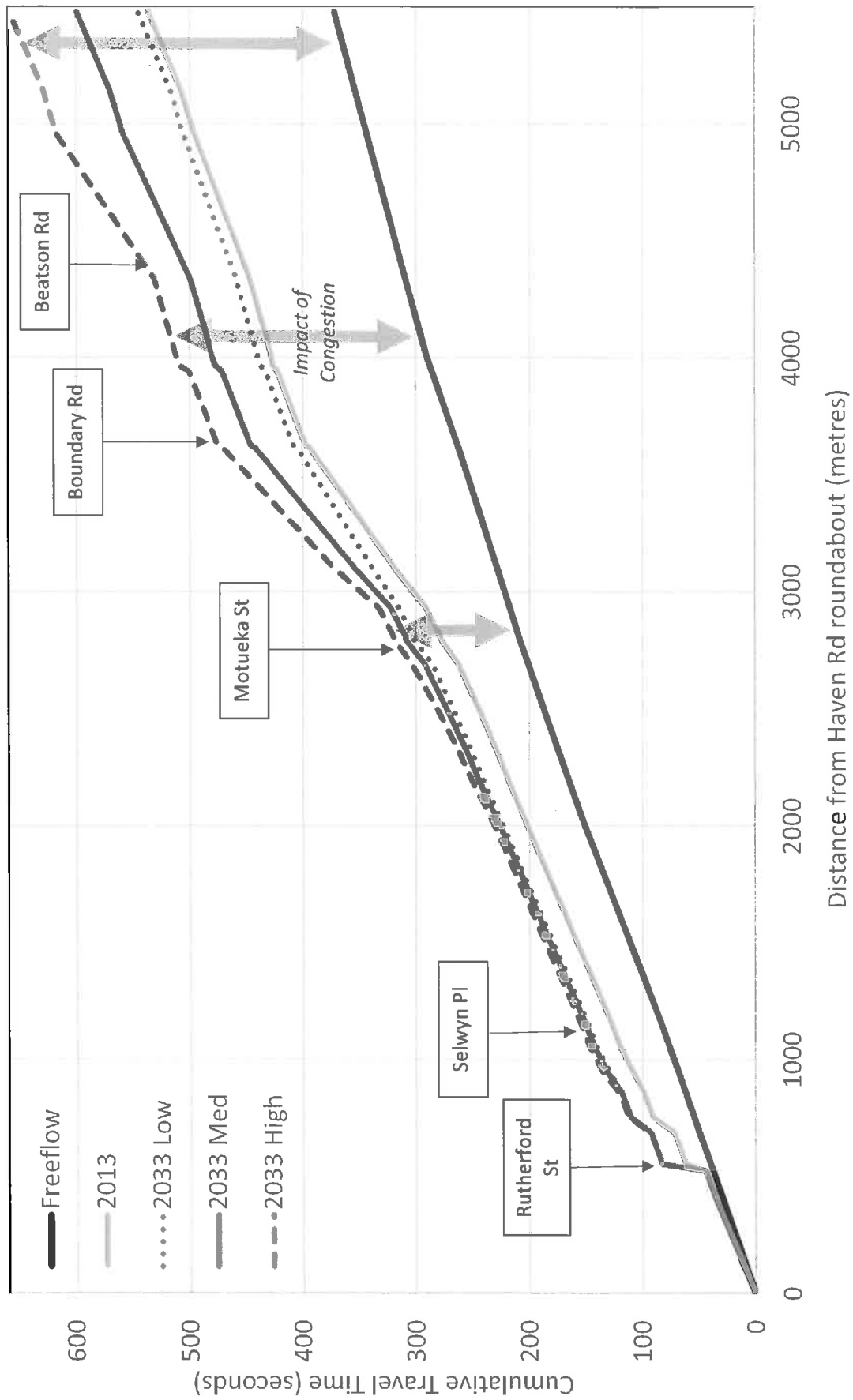
SH6 2-way recorded volumes

Problem 1 Uncertainty

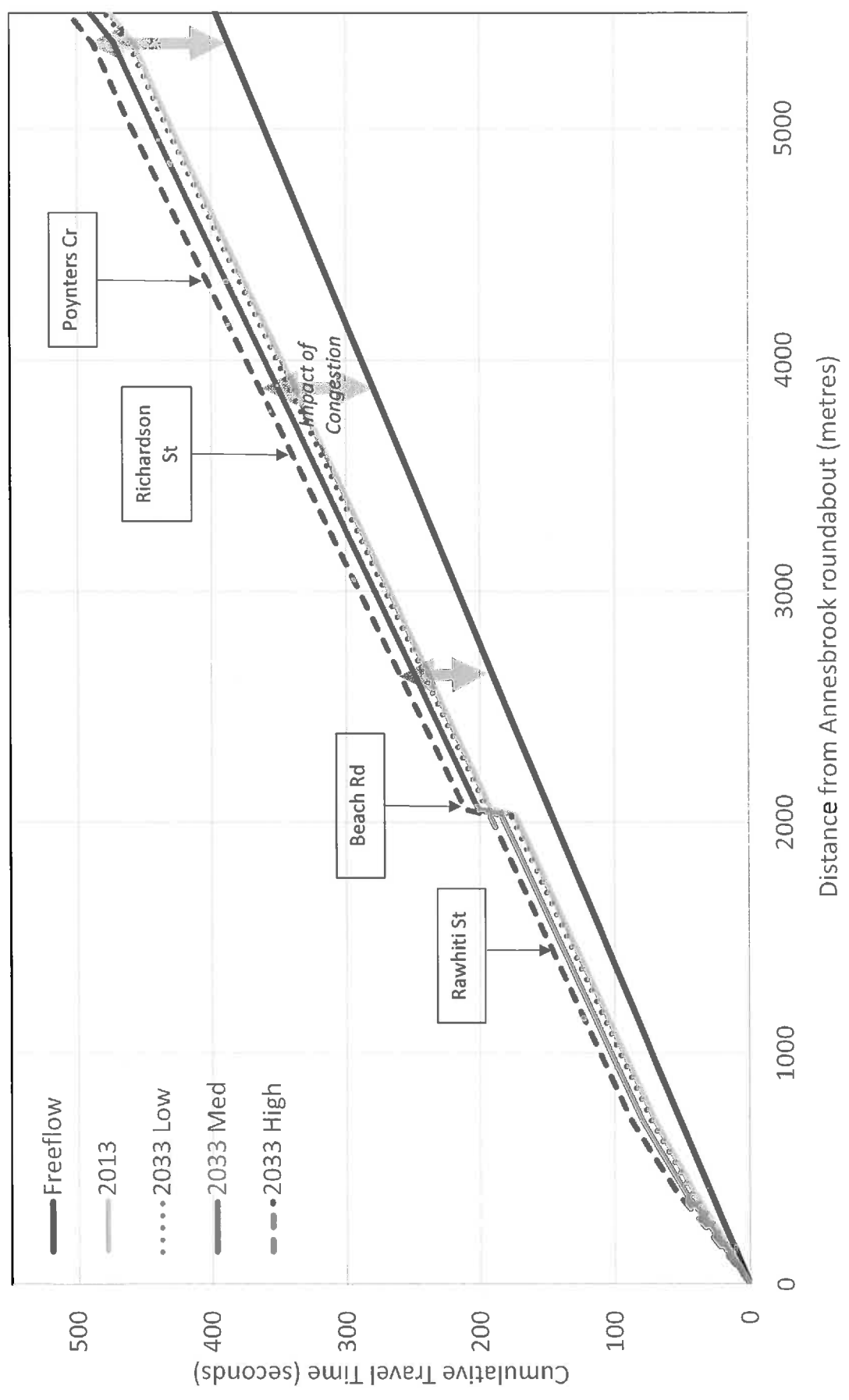
AM Peak - Whakatu to Haven Rd via Waimea Road



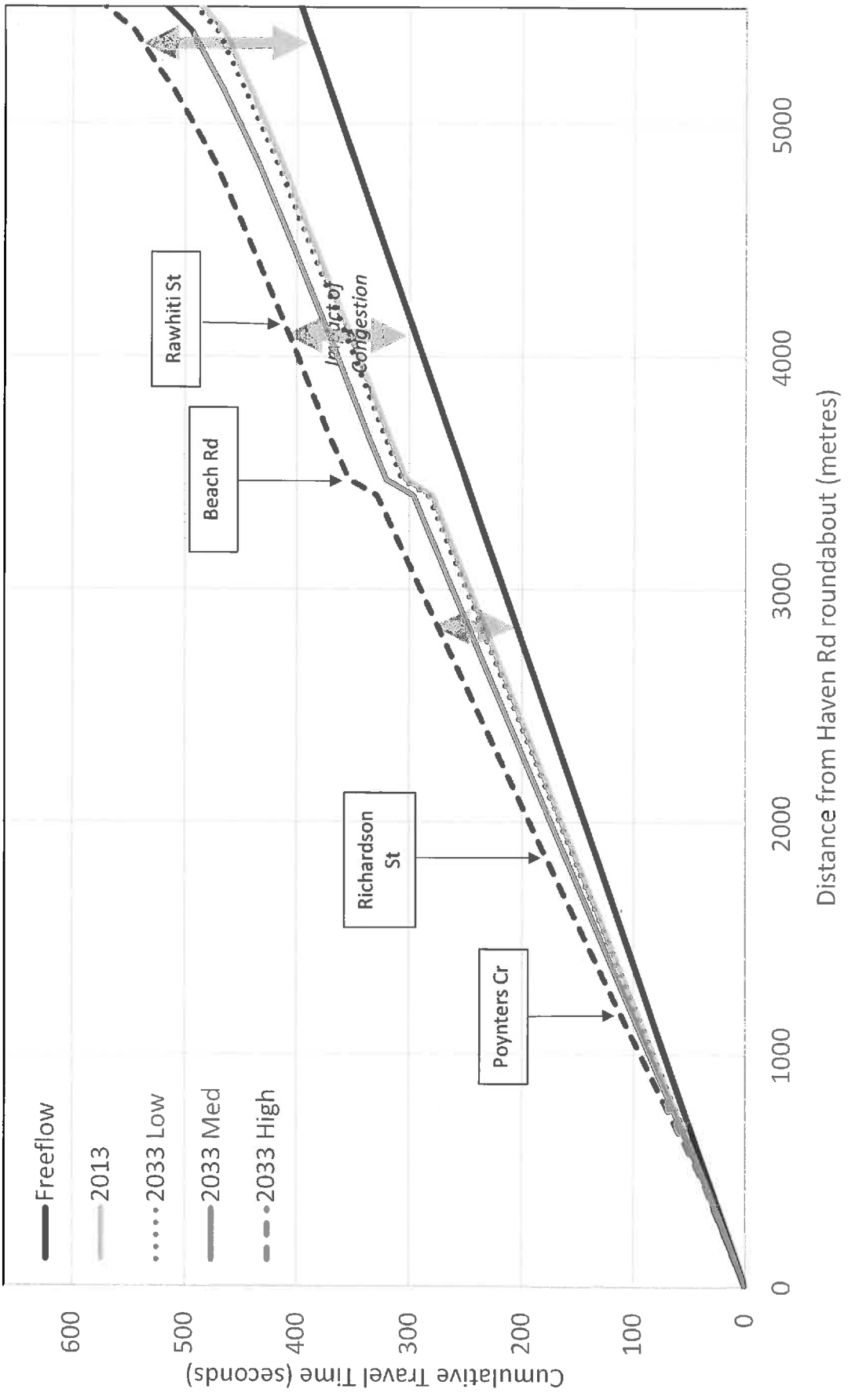
PM Peak - Haven Rd to Whakatu Dv via Waimea Road



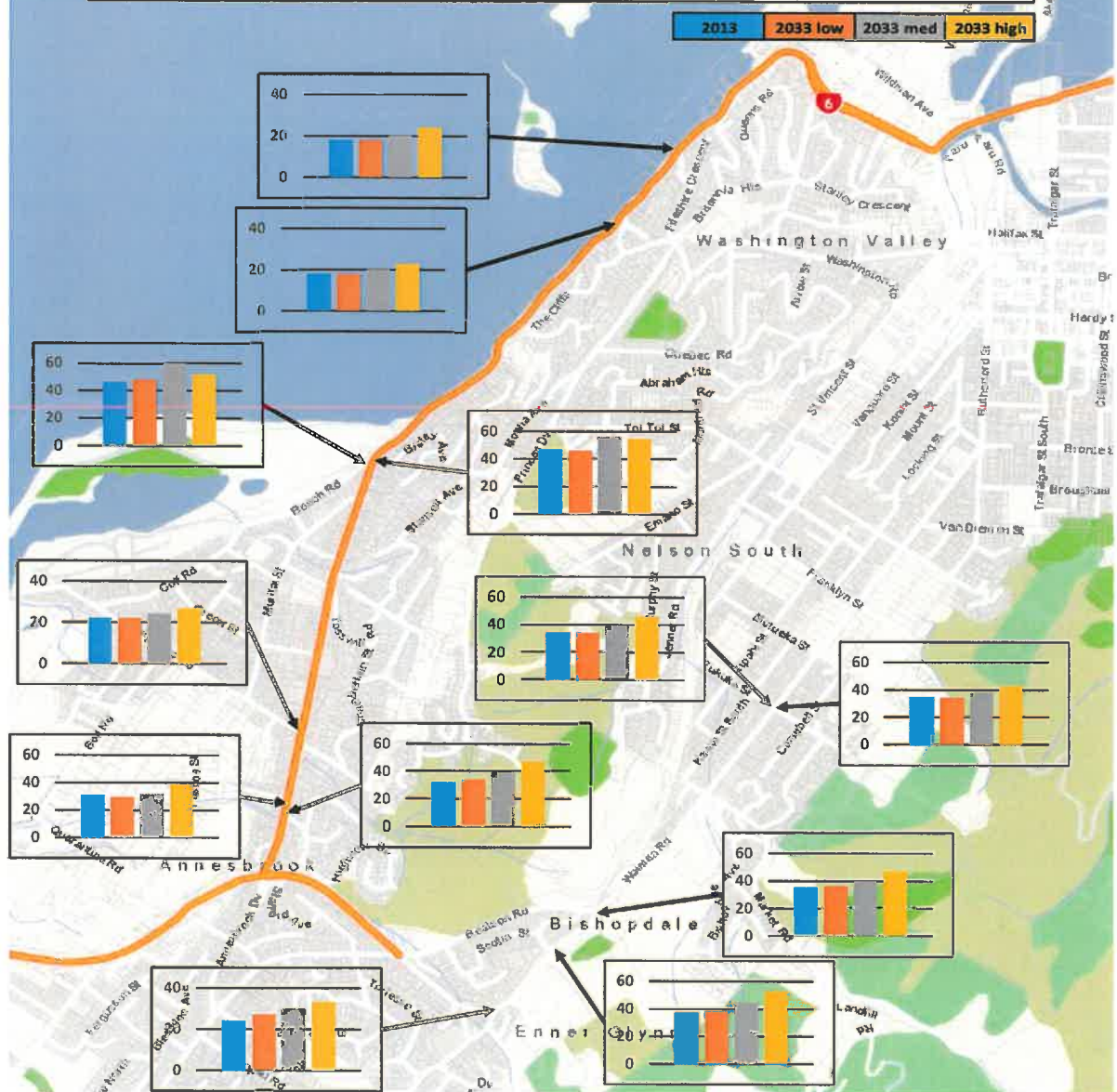
AM Peak - Annesbrook to Haven Rd via Rocks Road



PM Peak - Haven Rd to Annesbrook via Rocks Road



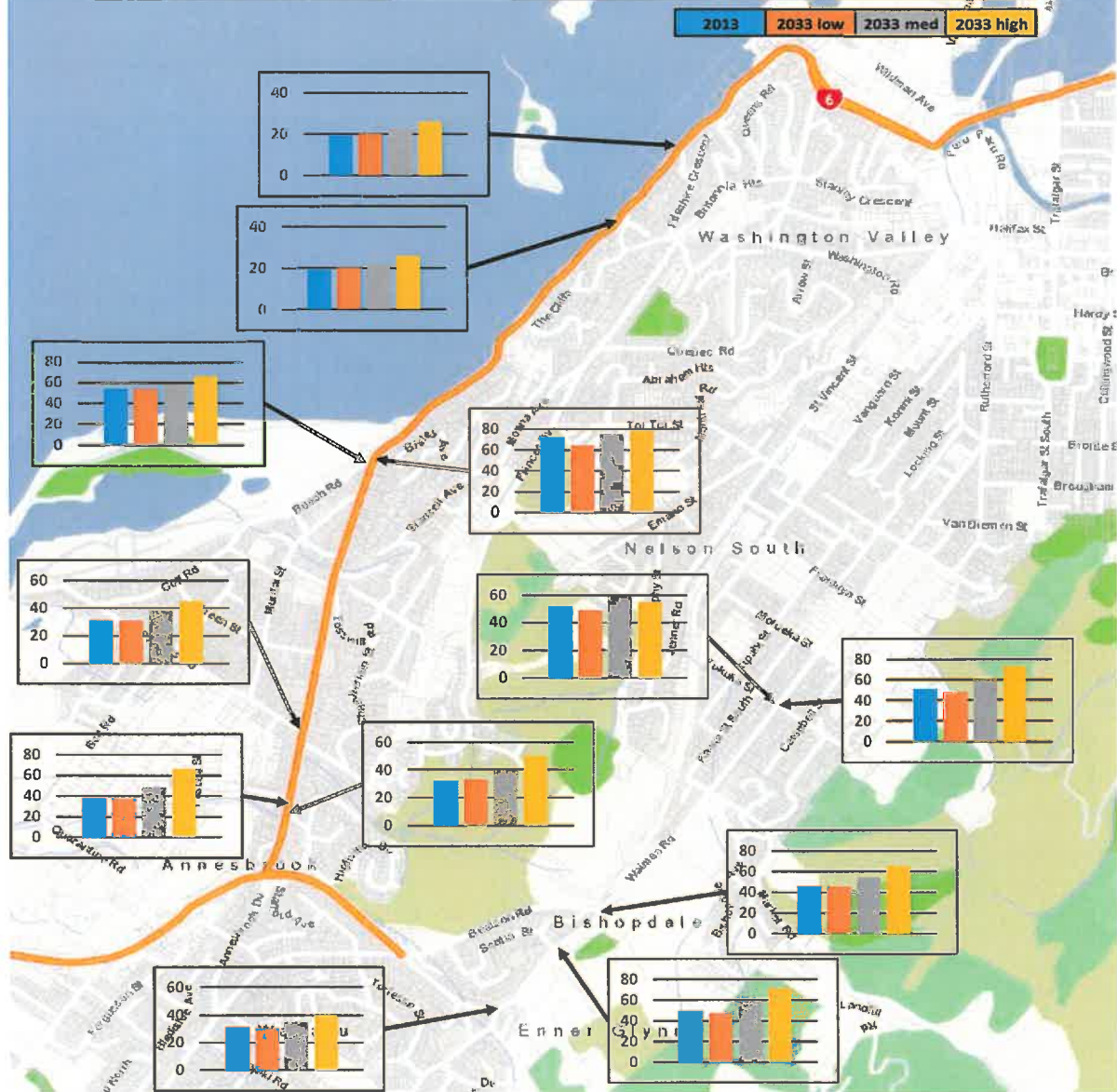
Morning Peak Average Side Road Right Turn Delays (sec)



	2013	2033 low	2033 med	2033 high
Victoria Rd	18	18	20	24
Richardson St	18	18	20	23
Beach Rd	46	48	60	52
Bisley Ave	47	46	56	55
Parkers Rd	22	22	24	27
Blackwood St	30	29	32	39
Gracefield St	32	34	39	47

	2013	2033 low	2033 med	2033 high
Tukuka St W	34	34	39	46
Tukuka St E	34	34	38	43
Beatson Rd	35	36	40	47
Ulster St	37	38	44	52
The Ridgeway	24	27	30	33

Evening Peak Average Side Road Right Turn Delays (sec)



	2013	2033 low	2033 med	2033 high
Victoria Rd	19	20	23	26
Richardson St	19	20	22	26
Beach Rd	54	54	58	66
Bisley Ave	72	64	75	79
Parkers Rd	31	31	38	45
Blackwood St	37	37	48	66
Gracefield St	32	33	40	50

	2013	2033 low	2033 med	2033 high
Tukuka St W	52	49	59	55
Tukuka St E	51	48	59	73
Beatson Rd	45	45	54	65
Ulster St	49	47	58	71
The Ridgeway	31	30	35	40

Nelson Southern Link Investigation - Programme Business Case

Traffic Modelling Uncertainties – Base Model for NCC and TDC Growth Projections

Population and Household Growth

Table 2.1 Nelson Population and Household Growth

Year	2015	2025	2045
StatsNZ Med Population Projection	49,740	53,320	56,020
Rationale Household Size	2.43	2.39	2.32
Estimated Nelson Households	20,470	22,310	24,150

Employment Growth

Table 2.5 Forecast Employment in Nelson and Tasman

	2013 Baseline Jobs	2023 Forecast Jobs	2033 Forecast Jobs
Nelson	22,008	23,108	24,209
Tasman	14,258	14,970	15,684
TOTAL	36,266	38,078	39,893

Table 2.6 Job Allocation to Major Employers in Nelson

Major Employer	Model Job Type	2013 Baseline	2023	2033
Cawthron Institute	Office Jobs	201	220	226
Nelson Airport	All Jobs	312	386	472
Nelson Hospital	Community Jobs	1,004	1,089	1,115
NMIT	Education Jobs	170	190	203
Nelson Port	All Jobs	1,050	1,260	1,470
Jobs Allocated to Major Employers		2737	3,145 +408 since 2013	3,486 +749 since 2013
Forecasted Nelson Job Growth post-2013			1,100	2,201
UNALLOCATED JOBS			692	1,452

Growth in Number of Commercial Buildings

**Table 2.7 Forecast
New Commercial
Buildings and Total
Jobs within
Tasman District**

Settlement Area	2013 Jobs	New Commercial Buildings			Number of Jobs
		2013-2023	2023-2033	2033	
Brightwater	662	10	6	688	717
Coastal Tasman Area	0	0	0	0	0
Mapua/Ruby Bay	484	16	8	526	566
Motueka	3,075	45	23	3,193	3,307
Richmond	4,589	156	84	4,998	5,408
Riwaka	461	0	0	461	461

Settlement Area	2013 Jobs	New Commercial Buildings			Number of Jobs
		2013-2023	2023-2033	2033	
Tasman	0	0	0	0	0
Upper Moutere	0	0	0	0	0
Wakefield	195	27	15	266	338
Ward Remainder Motueka	1,043	3	2	1,051	1,060
Ward Remainder Moutere Waimea	1,668	11	6	1,697	1,726
Ward Remainder Richmond	1,640	4	2	1,650	1,660

Summary – Nelson and Tasman Regions Combined

Table 2.10
Summary of Land
use Totals

Land use Variable	2013	2023	2033	2013-23 Growth	2023-33 Growth
Populations	85542	92292	96270	6750	3978
Vehicles	56088	61927	65314	5839	3388
Households	33477	36962	38984	3485	2022
Persons/HH	2.56	2.50	2.47	-0.06	-0.03
Cars/HH	1.68	1.68	1.68	0.00	0.00
Agri. Jobs	3137	3207	3278	70	71
Manufacturing jobs	5581	5904	6227	323	323
Wholesale jobs	1272	1344	1416	72	72
Retail jobs	5927	6220	6511	293	290
Office jobs	5622	5925	5989	303	64
Education jobs	2424	2536	2643	112	107
Community jobs	8126	8529	7766	403	-763
Total jobs	36266	38079	39893	1813	1813
Airport jobs	767	950	1160	183	211
School roll	15970	15387	14441	-583	-946
Tertiary roll	1658	1845	1718	187	-127
Port jobs	1050	1260	1470	210	210

Low Growth Scenario

The low growth scenario assumes SNZ published low growth population forecasts to understand the impacts of development occurring at a slower rate than the base forecast model. This test retains the same household occupancy assumptions as the base model. The result is a total of 35,118 households in the study area decreasing from the base model by 1,836 households. Likewise the household target for 2033 is 34,930 households decreasing from the base model by 4,060 households. The household target is distributed across the study area in a pro-rata basis in line with the future base model distribution.

Employment growth in the base models is set at 5% in 2023 and 10% in 2033. For the low growth scenario this is adjusted based on the change in households between 2013 and the base model. In 2023 the household growth to the base model is 16% while in 2033 it is equal to 24%. The resultant employment growth is somewhat marginal and decreases from 5% to 1.6% while in 2033 decreases from 10% to 1.8%.

The base school and tertiary roles are determined as a function of population growth so these have been adjusted for the low growth scenario by the rate of change in population between the base model and the low growth population projection. Respectively the population change for the low growth scenario is 95% and 90% for 2023 and 2033 so the school and tertiary roles have been factored back accordingly.

Table 4.6 Travel Times (min) and Speeds (kph) Low Growth

Period	AM		IP		PM	
	2023	2033	2023	2033	2023	2033
Travel time (min)						
Nelson-Annesbrook via Rocks (n/b)	8.1 (-0.1)	8 (-0.2)	7.6 (0)	7.6 (-0.1)	7.5 (0)	7.5 (-0.1)
Nelson-Annesbrook via Rocks (s/b)	7.7 (0)	7.7 (-0.1)	7.8 (0)	7.8 (0)	8.4 (-0.3)	8.3 (-0.5)
Nelson-Annesbrook via Waimea (n/b)	9.1 (-0.2)	8.5 (-0.5)	7.8 (0)	7.7 (-0.1)	7.7 (-0.1)	7.7 (-0.1)
Nelson-Annesbrook via Waimea (s/b)	7.9 (0)	7.7 (-0.1)	8 (0)	8 (0)	9.7 (-0.3)	9.1 (-0.9)
Speed (kph)	2023	2033	2023	2033	2023	2033
Nelson-Annesbrook via Rocks (n/b)	40.8 (0.4)	41.4 (1.1)	43.4 (0)	43.4 (0.3)	44 (0.2)	43.9 (0.3)
Nelson-Annesbrook via Rocks (s/b)	43.2 (0.4)	43.1 (0.5)	42.7 (0.5)	42.7 (0.6)	39.6 (1.5)	40.1 (2.5)
Nelson-Annesbrook via Waimea (n/b)	36.2 (1.1)	38.5 (1.9)	42.1 (0.3)	42.5 (0.6)	42.4 (0.4)	42.7 (0.8)
Nelson-Annesbrook via Waimea (s/b)	41.9 (0)	42.4 (0.3)	40.9 (0)	41.2 (0.2)	33.8 (1.1)	36.2 (3.4)

Figures in brackets represent the difference to the base model

Revised Medium Growth Scenario

The revised medium scenario is a variant of the current future models making adjustments to household numbers to align with Statistics New Zealand (SNZ) household occupancy forecasts but retaining the same quantity of population growth. The quantity of employment growth is derived by maintaining the existing ratio of jobs per household in the 2013 model.

In the base model household occupancy rates were taken from a report published by Rationale consultants prepared for Nelson City Council. These rates were significantly higher than derived from SNZ population and household projections out to 2033. The revised medium scenario reverts back to the SNZ projections and results in a greater number of households despite retaining the same medium projection for the population forecast. The net result is a further 1,794 households were added to the 2023 model while 2,579 households were added to the 2033 model. As previously noted these households were added on a pro-rata basis and to retain the same population the persons per household coefficient was reduced in each zone.

Subsequently, the total number of jobs in the revised medium forecasts have been adjusted by retaining the ratio of jobs per household from the base year (2013) model which is 1.083 jobs per household. The total job target for 2023 is therefore 41976 increasing from the base model by 3,896 jobs. Likewise the total job target for 2033 is 45,032 increasing from the base model by 5,172 jobs. The jobs in 2023 and 2033 were factored up pro-rata across the study area (excluding Port and Airport zones) by approximately 10.5% and 13.4% respectively to achieve the revised job target.

The base school and tertiary roles are determined as a direct function of the quantum of population growth so these variables are unchanged in this sensitivity test.

Table 4.3 Travel Times (min) and Speeds (kph) Revised Medium Growth

Period	AM		IP		PM	
	2023	2033	2023	2033	2023	2033
Travel time (min)						
Nelson-Annesbrook via Rocks (n/b)	8.2 (0)	8.2 (0)	7.6 (0)	7.7 (0)	7.5 (0)	7.6 (0)
Nelson-Annesbrook via Rocks (s/b)	7.7 (0)	7.7 (-0.1)	7.8 (0)	7.8 (0)	8.7 (0)	8.9 (0.1)
Nelson-Annesbrook via Waimea (n/b)	9.2 (-0.1)	9 (0)	7.9 (0.1)	7.9 (0.1)	7.8 (0)	7.9 (0.1)
Nelson-Annesbrook via Waimea (s/b)	7.9 (0.1)	7.9 (0.1)	8.2 (0.2)	8.1 (0.1)	10.2 (0.2)	10.2 (0.2)
Speed (kph)	2023	2033	2023	2033	2023	2033
Nelson-Annesbrook via Rocks (n/b)	40.3 (-0.1)	40 (-0.3)	43.2 (-0.2)	43 (-0.1)	43.7 (-0.1)	43.5 (-0.1)
Period	AM		IP		PM	
Nelson-Annesbrook via Rocks (s/b)	43 (0.2)	42.8 (0.2)	42.5 (0.3)	42.3 (0.2)	38.1 (0)	37.3 (-0.3)
Nelson-Annesbrook via Waimea (n/b)	35.6 (0.5)	36.4 (-0.2)	41.3 (-0.5)	41.5 (-0.4)	41.9 (-0.1)	41.6 (-0.3)
Nelson-Annesbrook via Waimea (s/b)	41.8 (-0.1)	41.4 (-0.7)	40 (-0.9)	40.4 (-0.6)	32.1 (-0.6)	32.3 (-0.5)

Figures in brackets represent the difference to the base model

High Growth Scenario

The high growth scenario utilises the same methodology as that described for the low growth scenario and is developed to demonstrate the impacts of faster than expected growth on the model outputs. By combining the SNZ high growth population forecasts with the base population per household ratio of the existing models a household target has been derived for each of the high growth future years.

A total of 39,126 households by 2023 is an increase from the base model of 2,172 households. Likewise the household target for 2033 is 43,480 households which is 4,490 households more than the corresponding future base model. The household target is distributed across the study area in a pro-rata basis in line with the future base model allocation of growth.

Employment growth in the base models is set at 5% in 2023 and 10% in 2033. For the high growth scenario this is adjusted based on the change in households between 2013 and the medium scenario. The resultant employment growth by 2023 increases slightly from 5% to 5.4% while in 2033 growth increases from 10% to 12.4%.

The base school and tertiary roles are determined as a function of population growth so these have been adjusted for the high growth scenario by the rate of change in population between the base model and the low growth population projection. Respectively the population change for the low growth scenario is 106% and 112% for 2023 and 2033 so the school and tertiary roles have been factored up accordingly.

Table 4.9 Travel Times (min) and Speeds (kph) High Growth Scenario

Period	AM		IP		PM	
	2023	2033	2023	2033	2023	2033
Travel time (min)						
Nelson-Annesbrook via Rocks (n/b)	8.2 (0)	8.4 (0.2)	7.6 (0)	7.8 (0)	7.6 (0.1)	7.6 (0)
Nelson-Annesbrook via Rocks (s/b)	7.7 (0)	7.8 (0)	7.8 (0)	7.9 (0.1)	9 (0.3)	9.6 (0.8)
Nelson-Annesbrook via Waimea (n/b)	8.9 (-0.4)	9.1 (0.1)	8 (0.2)	8 (0.2)	7.9 (0.1)	8 (0.2)
Nelson-Annesbrook via Waimea (s/b)	7.9 (0.1)	8 (0.2)	8.2 (0.2)	8.2 (0.2)	10.5 (0.5)	11 (1)
Speed (kph)	2023	2033	2023	2033	2023	2033
Nelson-Annesbrook via Rocks (n/b)	40.4 (0)	39.1 (-1.2)	43.2 (-0.2)	42.6 (-0.5)	43.6 (-0.2)	43.3 (-0.3)
Nelson-Annesbrook via Rocks (s/b)	43 (0.2)	42.7 (0.1)	42.5 (0.3)	42.1 (0)	36.9 (-1.2)	34.5 (-3.1)
Nelson-Annesbrook via Waimea (n/b)	37 (1.9)	35.9 (-0.7)	41.1 (-0.7)	40.8 (-1.1)	41.6 (-0.4)	40.9 (-1)
Nelson-Annesbrook via Waimea (s/b)	41.6 (-0.3)	41.1 (-1)	40.2 (-0.7)	40.1 (-0.9)	31.4 (-1.3)	30 (-2.8)

Figures in brackets represent the difference to the base model

Figure 4.1
 Comparison of
 Daily VKT and
 Study Area
 Population

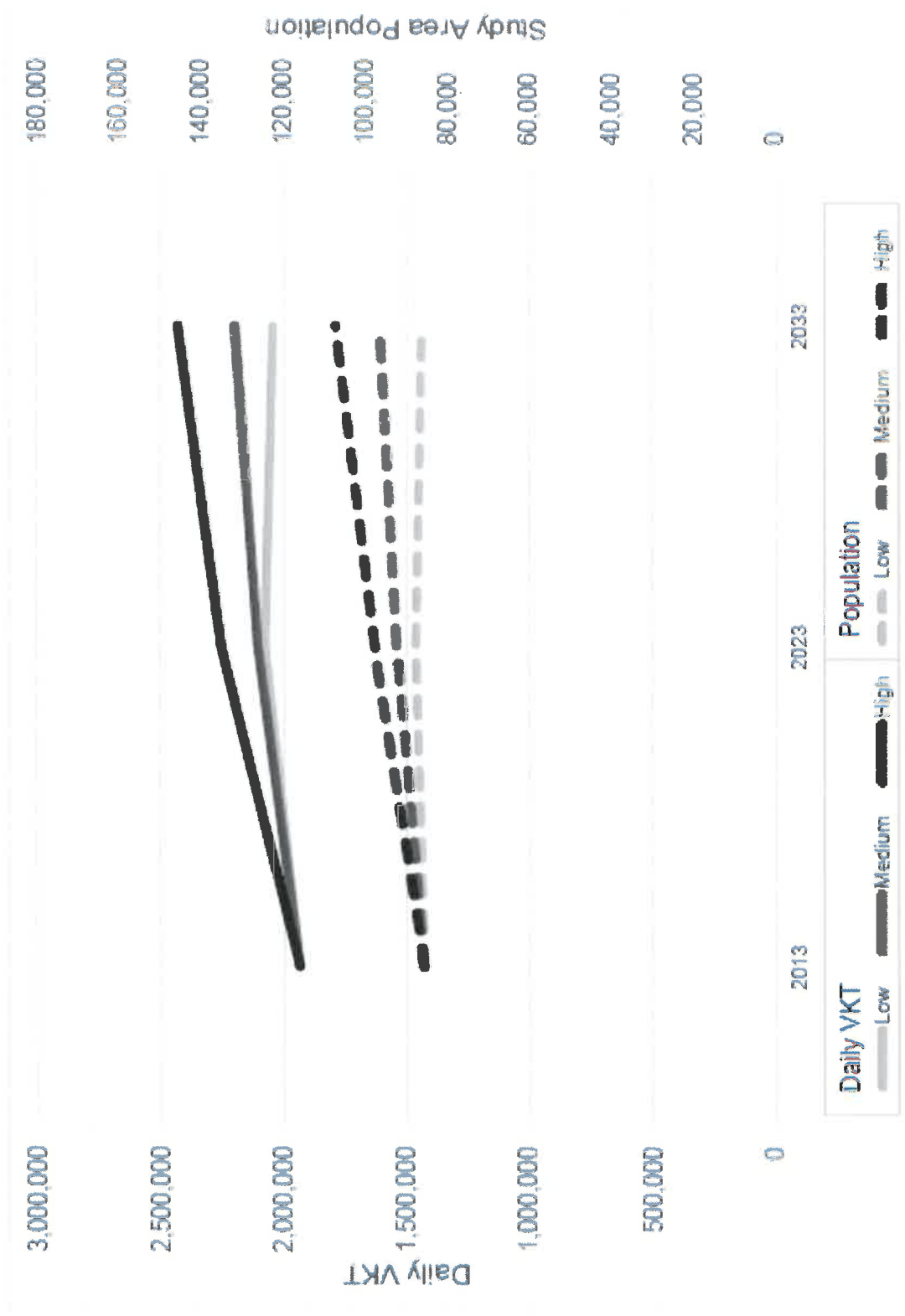


Figure 4.2
Comparison of
Daily Traffic on
Screen lines

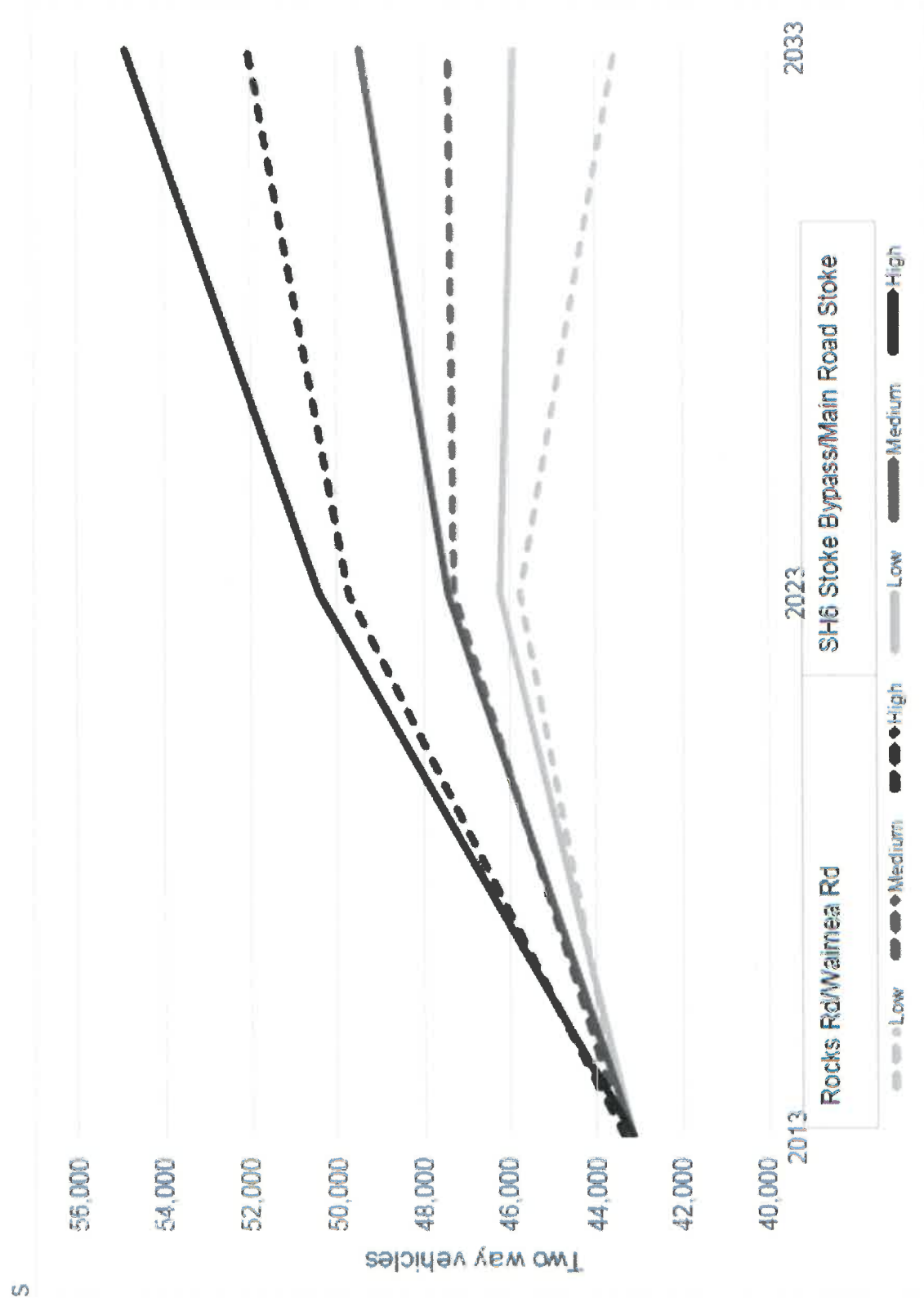
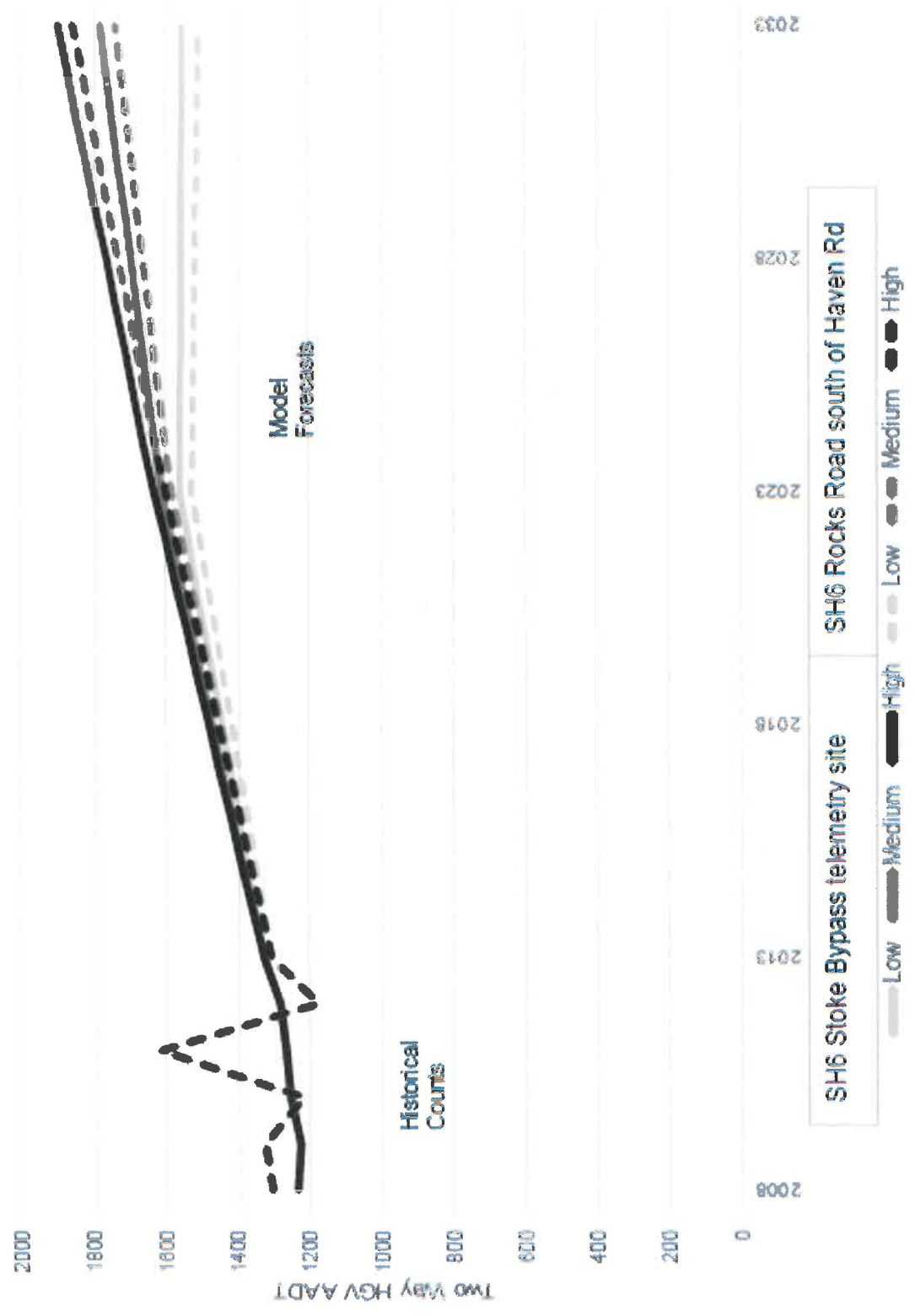


Figure 4.3 SH6 Historical and Forecast Heavy Vehicle AADT Flows

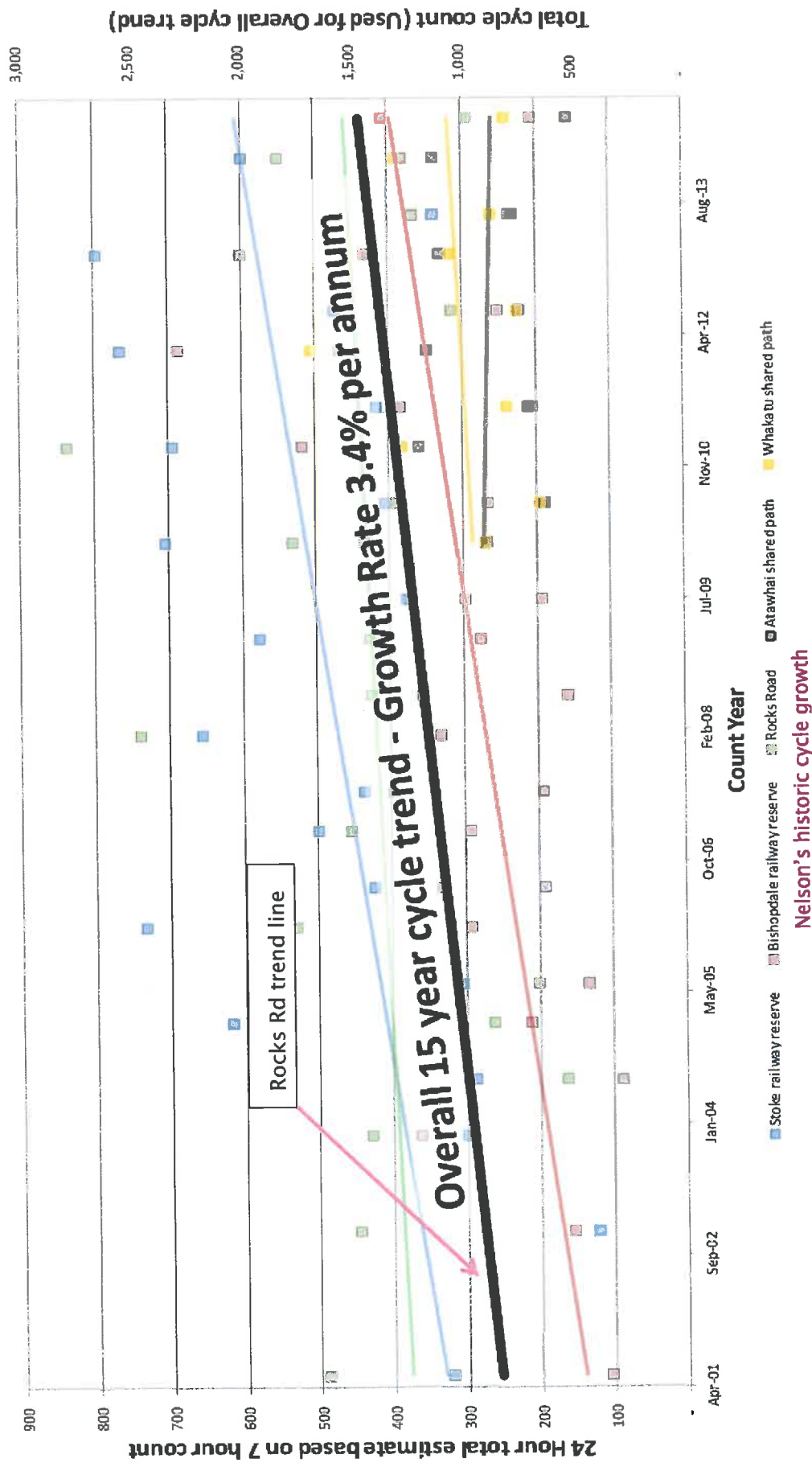


Problem 2 Evidence

Nelson Southern Link Investigation - Programme Business Case

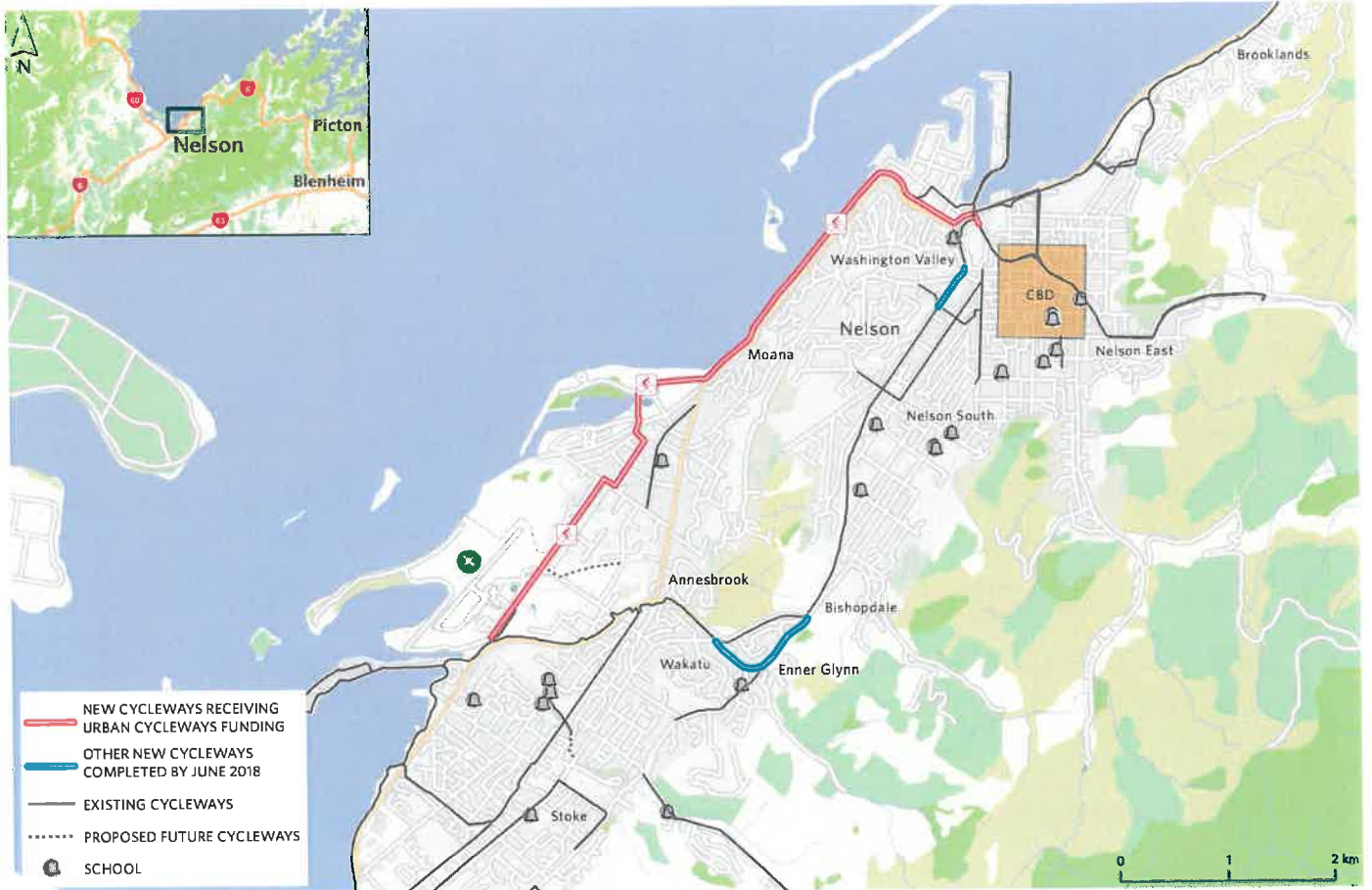
Problem 2 Evidence Base – Current Situation

SH6 Rocks Road is a key walking and cycling route constrained by substandard infrastructure





Nelson



Cycleways refers to both on and off-road facilities

Nelson has the highest percentage of people walking and cycling to work in New Zealand (18%, 2013 census), a reflection of both ongoing commitment to investing in their walking and cycling network and a bike-friendly climate. The provision of good quality, well-located cycling facilities has also resulted in over 60% of students at Broadgreen Intermediate School in Stoke regularly cycling to school.

Nelson has a vision of 'making cycling a safe, convenient and commonplace way of getting around Nelson' and aims to increase the number of cycling journeys, improve

safety, realise health benefits for Nelson residents of all ages, and increase mobility and independence for the ageing population.

The Urban Cycleways Fund will help accelerate the Nelson Coastal Route which will provide a popular and useful link between Nelson City, along the state highway corridor, to Tahunanui and the airport. This will be supported with cycle education and promotion.

The route and detail of this will be informed by the wider network planning in Nelson.

NELSON COASTAL ROUTE

This 7.2 km stretch of shared paths and the Saltwater Creek bridge will complete the primary routes on Nelson’s cycling network. These facilities will connect residential areas around Tahunanui into Nelson CBD along a scenic coastal route, as well as provide connections to recreational facilities and schools. The route and type of cycleway along with staging, costs and funding will be informed by wider network planning in Nelson over the next 12-18 months.

Benefits: The Nelson Coastal Route will provide a safer, off-road route for people in Western Nelson to travel to the CBD by bike. It will separate cyclists from high-volume traffic and will pass within 500m of two schools and within 1 km of two others, with a combined total of over 2,000 students. The route is expected to attract over 1,000 people a day when complete and will connect into the Great Taste Trail, part of Nga Haerenga - The New Zealand Cycle Trail.

Construction is anticipated to begin in late 2016 and be completed by mid-2018.

TOTAL ESTIMATED PROJECT COST	URBAN CYCLEWAYS FUND SHARE	NATIONAL LAND TRANSPORT FUND SHARE ESTIMATED	LOCAL SHARE ESTIMATED
\$20.34 million	\$3 million	\$12.82 million	\$4.52 million



URBAN CYCLEWAYS PROGRAMME

The Urban Cycleways Programme, comprising shared investment from the Urban Cycleways Fund, the National Land Transport Fund and local councils, enables key, high-value urban cycling projects to get underway around the country over the next three years, while improving cycle safety and supporting more connected cycle networks.



For more information, visit our website
www.nzta.govt.nz/UCP

Working together to make urban cycling a safer and more attractive transport choice

Success Factors

Nelson Southern Link Investigation - Programme Business Case

Success Factors

The table below identifies the high level organisational strategies of the Government, the NZ Transport Agency and Nelson City Council that relate to this investigation project.

Organisation	Organisational Strategies
Government	Government Accelerated Regional Roding Package, Government Policy Statement on Land Transport 2015/16-2024/25
NZ Transport Agency	Statement of Intent, South Island Freight Plan, National Business Cases, National Infrastructure Plan, National Land Transport Plan
Nelson City Council	Long Term Plan 2015-25, Heart of Nelson – Central City Strategy, Nelson 2060 – Framing our Future
Nelson City Council (Regulatory Authority Objectives)	Nelson Resource Management Policy Statement and Plan (under review as the “Nelson Plan”)
Nelson City Council (Regional Transport Objectives)	Transportation Asset Management Plan, Regional Land Transport Plan

The Government Policy Statement expects the Transport Agency to take a lead role in securing integrated land transport planning that contributes to the government's overarching goal of "growing the New Zealand economy to deliver greater prosperity, security and opportunities for all New Zealanders."

The Transport Agency's purpose is to "create transport solutions for a thriving New Zealand."

The desired outcomes are:-

- Effective – Move people and freight where they need to go in a timely manner;
- Efficient – Deliver the right infrastructure and services to the right level at the best cost;
- Safe and Responsible – Reduce the harms from transport; and
- Resilient – Meet future needs and endure shocks.

The Transport Agency's Statement of Intent articulates the goal for the transport network which involves integrating land uses, transport networks, and the various modes, services and systems to deliver a seamless and safe 'one network'.

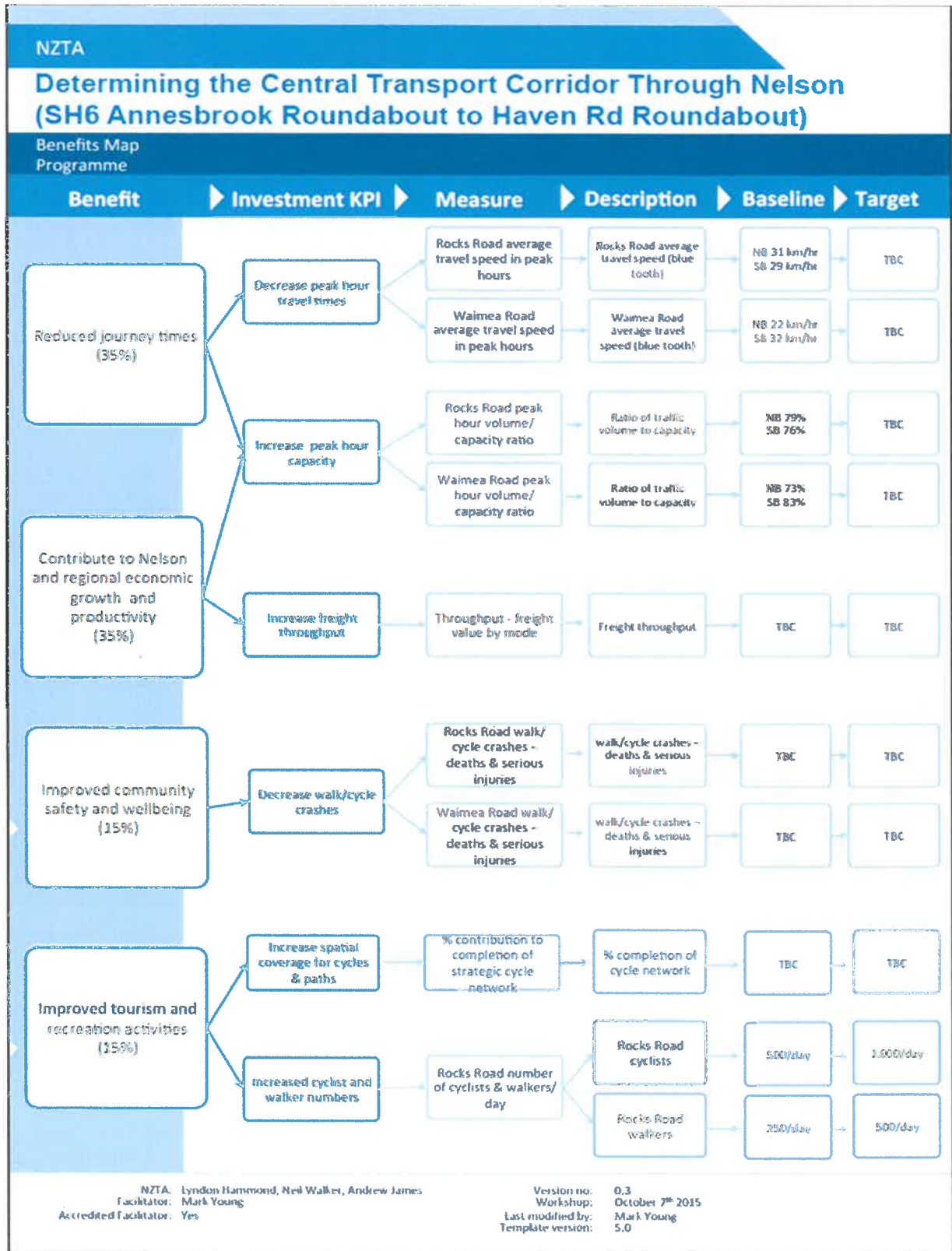
The long term organisation goals and medium term objectives that relate to this Strategic Case are identified in Table below:

Long-term (2013–32) Goals	Medium-term (2013–2022) Objectives
Integrate one effective and resilient network for customers	Integrate land uses and transport networks to shape demand at national, regional and local levels.
	Integrate national and local transport networks to support strategic connections and travel choices.
	Improve freight supply chain efficiency
Shape smart, efficient, safe and responsible transport choices	Implement the Safe System approach to create a forgiving land transport system that accommodates human error and vulnerability.
	Incentivise and shape safe and efficient travel choices using a customer-focused approach.
Deliver efficient, safe, responsible and resilient highway solutions for customers	Greater resilience of the state highway network
	Deliver consistent levels of customer service that meet current expectations and anticipate future demand
	Provide significant transport infrastructure.
Maximise effective, efficient and strategic returns for New Zealand	Align investment to agreed national, regional and local outcomes and improve value for money in all we invest in and deliver

Benefit Map

Nelson Southern Link Investigation - Programme Business Case

Strategic Case Benefits Map



APPENDIX D – WORKSHOP 1B MINUTES

Minutes of Meeting

Subject: Programme Business Case Options Workshop

Venue: Trailways Hotel, Nelson

Time 9.30am – 1.15pm Friday
18 December 2015

Participants

1. Rachel Reese - Mayor, Nelson City Council
2. Eric Davy - Nelson City Council Works and Infrastructure Committee Chair
3. Ruth Copeland - Nelson City Council Regional Transport Committee Chair
4. Brian McGurk – Nelson City Council, Planning and Regulatory Committee and Councillor
5. Trevor Norris - Tasman District Council Regional Transport Committee Chair and Engineering Services Chair
6. Paul Haywood – Representative, Nelson District AA Council
7. Derek Nees – Representative, Road Transport Association NZ
8. Dot Kettle – Chief Executive, Nelson Chamber of Commerce
9. John-Paul Pouchin – Representative, Bicycle Nelson Bays
10. Chris Allison – Representative, Walk Nelson Tasman
11. Gail Collingwood – Representative, PT User Group
12. Matt McDonald - Port Nelson Ltd
13. Rhys Palmer – Nelson City Council Senior Asset Engineer – Transport and Roading
14. Selwyn Blackmore, Transport Planning Manager, Central, NZTA
15. Andrew James, Principal Transport Planner, NZTA
16. Lyndon Hammond, Planning and Investment Regional Manager, Central, NZTA
17. Graeme Doherty – Project Consultant, AECOM
18. Tim Brown – Workshop Facilitator, Resolve Group
19. Suzanne Tromp - Scribe, AECOM

Apologies

Mark Walter (MBIE)

Agenda

- Part A: Scene Setting (30 mins)
- Confirm range of growth scenarios
- Confirm do-min projects
- Look at “causes” of problem statements
- Confirm problem statements
- Part B: Define the investment objectives (45 mins)
- Break
- Part C: Long list option development (2hrs)
- Summarise and Close

Minutes

Scene Setting

The Facilitator set the scene for the workshop, which was to understand what the future looks like if nothing is done, and if something is done what does good look like.

Range of Growth Scenarios

Information from the handout booklet related to the traffic modelling was reviewed by the attendees. The model forecasts what the transport system will look like if there's no intervention for 10 or 20 years using land use and demographics information within the model that were worked through with the Nelson and Tasman Councils.

The attendees were advised that the traffic model is a strategic model and is not a micro-model, therefore Bluetooth data (which is micro information) will be slightly different to the modelled data.

The attendees were advised that the model has been calibrated using turn movement inputs from cameras at around 30 or 40 intersections right throughout the city down to Richmond.

Views were expressed by the attendees as to whether the growth scenarios (sensitivity testing within the traffic model) in the handout booklet were too high or too low.

The attendees were advised that the growth scenarios in the traffic modelling report were based on inputs correlated to Stats NZ and the big employers in the region. The modelling stops at 2033, whereas the study life is 40 years.

The level of uncertainty about the future traffic volumes and speeds in 2033 and especially 2055 was acknowledged by the attendees and placed into the uncertainty log.

Do minimum

The attendees were advised that the do minimum modelled in the 2013 model is the current transport network in and around Nelson city. The do minimum modelled in 2023 and 2033 includes the following committed projects from Annual Plans:

- SH6 southbound approach/merging lane reinstatement at Tahunanui Signals;
- The Princes Drive extension to Waimea Road as a seagull intersection;
- Traffic signals at Queen St / Salisbury Road intersection;
- Capacity improvements to SH6 / Quarantine Road intersection.

There was discussion by the attendees about whether the SH6 southbound approach / merging lane reinstatement at Tahunanui signals was an option.

The Transport Agency responded that regardless of the treatment type, it will be undertaking works to improve the capacity of the intersection and the modelling of an additional southbound through lane at the existing intersection was considered appropriate for the traffic modelling exercise for the 2023 and 2033 models.

Causes of Problems

Attendees were shown the evidence of congestion on the two arterials plus the lower growth in cycle numbers on Rocks Road, when compared to other parts of the city, from the Strategic Case.

Confirming the Problem Statements

The attendees reviewed the problem statements from the Strategic Case plus the handout information related to congestion and side road delays and engaged in a discussion about the causes of congestion.

The attendees agreed that Problem 1 should be re-written to emphasise that it was the form and function of the two arterials, as well as traffic volumes, that were contributing to Problem 1. The revised Problem statement being agreed as:

"The form and function of Nelson's two arterial corridors results in congestion and delays".

The words "form and function" were used as a catchall by the attendees to describe route configurations and accessibility for all modes of travel.

Within that same discussion, the attendees agreed that the Rocks Rd section of the State Highway was the primary contributor to Problem 2 and should be re-written to:

“Substandard infrastructure on Rocks Road, which is part of the Coastal Path, is constraining the growth in walking and cycling activities”

A discussion occurred amongst the attendees related to the weightings of the two problem statements. A large majority of attendees agreed that the weightings for the problems were 70% for Problem 1 and 30% for Problem 2.

Strategic Case Benefits

The workshop attendees reviewed the benefits from the Strategic Case.

After discussion, the attendees agreed the following changes to be taken through into the Programme Business Case:

- Benefit 2 *“Contribute to Nelson and Regional economic growth and productivity”* would occur as a consequence of achieving Benefit 1 *“Reduced journey times”* and therefore Benefit 2 is not required.
- The workshop attendees agreed that Benefit 3 *“Improved community safety and well-being”* should be re-worded as *“Improved safety for walking and cycling modes of travel”*.
- The workshop attendees agreed that Benefit 4 was related to the section of SH6 known as Rocks Road, which runs from the intersection of Bisley Avenue through to Wakefield Quay and should be re-worded as *“Improved tourism and recreational activities on Rocks Road”*.

Post Meeting Note: Following further feedback to the Transport Agency “active transport” was added to the description to encompass walking and cycling as well as tourism and recreational activities and Benefit 4 finalised as “Improved tourism, active transport and recreational activities on Rocks Road”.

- The Investment KPI for Benefit 4 titled *“Increase spatial coverage for cyclists and paths”* was deleted following discussion as it was deemed to be an option to the Investment KPIs *“Decrease walk/cycle crashes”* and *“Increased cycle and walker numbers”* and not an objective in its own right.

Post Meeting Note: The Benefit weightings from the Strategic Case have been reassigned by The Transport Agency to give 70% for Benefit 1 and 15% each for Benefits 3 and 4. The rationale for this change is that Benefit 2 would occur as a result of Benefit 1 being achieved (as acknowledged by the workshop attendees), so Benefit 2’s weighting of 35% is reassigned to Benefit 1.

The removal of Benefit 2 has the potential to create confusion in future correspondence through re-numbering of the Benefits from the Strategic Case. To mitigate that risk, the Benefits will be described from here on as:

- *Benefit A – reduced journey times (70%)*
- *Benefit B – improved safety for walking and cycling modes of travel (15%)*
- *Benefit C – improved tourism, active transport and recreational activities on Rocks Road (15%)*

Investment Objectives

Six suggested Investment Objectives were presented to the workshop attendees. After discussion, the workshop attendees agreed the following Investment Objectives:

Investment Objective 1

Benefit: Reduced travel times in the peak periods on the two arterial routes between Annesbrook and Haven Road roundabouts.

Investment KPI: Decrease peak hour travel times.

Measure: Travel speed.

Baseline: Travel speeds on SH6 are approximately 29km/hr in the peaks. Travel speeds on Waimea Rd are 22km/hr in the peaks.

Target: Travel times on the two arterials no worse than 2015 for the life of the programme.

NB: One representative attendee did not agree that travel times were a problem now and into the future.

Investment Objective 2

Benefit: Reduced travel times in the peak periods on the two arterial routes between Annesbrook and Haven Road roundabouts.

Investment KPI: Improve peak hour available capacity to move people and goods.

Measure: Volume to available capacity ratio.

Baseline: Peak hour volume to available capacity ratio on Nelson's two arterials (SH6 Rocks Road and Waimea Rd) range from 83% to 95%.

Target: A target was not agreed. The target suggested by the attendees ranged from 0.5 through to the existing ratio on both arterials.

NB: The attendees discussed the meaning of the term "volume to capacity ratio" and agreed it should be written as "volume to available capacity ratio"

Post Meeting Note: The Transport Agency Investor has agreed to the target of volume/available capacity ratio being better than 80% for the life of the programme. The rationale is that 80% is approximately the median value of those values put forward by the attendees

Investment Objective 3

Benefit: Improved safety for walking and cycling modes of travel.

Investment KPI: Decrease in walking and cycling crash numbers.

Measure: Crash numbers and DSI's (Death and Serious Injuries).

Baseline: In the last 5 years there have been 42 crashes involving cyclists and 13 involving pedestrians on the two arterials.

Targets: Zero walking and cycling crashes;
Continuous decline in DSI's for the life of the programme.

Investment Objective 4

Benefit: Improved tourism, active transport and recreational activities on Rocks Road.

Investment KPI: Increase walking and cycling numbers on Rocks Road.

Measure: Walking and cycling numbers using Rocks Road.

Baseline: 500 cyclists per day, 250 pedestrians per day.

Target: Double walking and cycling numbers per day after implementing an option and thereafter the growth rate is greater than elsewhere in Nelson. The attendees could not agree the timeframe for when the walking and cycling numbers should double after option implementation.

Post meeting Note: The year by which the walking and cycling numbers should double was undecided. The Investor has decided on a 5 year period to double walking and cycling numbers because that is considered a reasonable timeframe.

Options

The workshop attendees were invited to list out options that they thought would solve the two problems and achieve the Investment Objectives.

The options identified by the workshop attendees are listed below under the headings as presented at the workshop:

OPTIONS TO IMPROVE CAPACITY/QUALITY

- 3 Laning
- Big one-way system
- Upgrading existing arterials
- Bus lanes
- Upgrading key intersections
- More shared pathways, better connections
- Travel demand measures
- PT (Public Transport) options – rail and/or bus
- Free PT
- More walking and cycling uptake – facilities
- Pedestrian overpass at Nelson College Hampden Street
- Prioritise PT
- Work
- Work at better integration of travel models – walking/cycling/PT/+ Private Vehicle's
- Remove parking
- Re-distribute parking
- Clearways at peak
- Increase parking costs
- Congestion charge
- Ring road system
- Peak hour clearways
- HOV (High Occupancy Vehicle) lanes
- Footpath width – mobility scooters x 2 to pass
- Survey to identify barriers for uptake/use of P/T / cycling
- Better PT – bus lane
- New arterial route
- New arterial route
- A regional strategic highway SH6
- Widen / clip on Rocks Road for walking and cycling
- One way morning and afternoon flow. Waimea, SH6, St Vincent, Vanguard as options
- Clearway arterials at peak hours
- Fill in the missing bit of road to connect Annesbrook to St Vincent
- Light rail
- Not possible on current corridors
- Tunnel from Annesbrook – Port
- Trams
- Other Transport corridor (southern link)
- One way Rocks Road and Waimea Road
- New arterial route
- Tunnel

OPTIONS TO IMPROVE EFFICIENCY

- Parking management
- Expand P/T network into TDC region (Tasman District Council)
- Travel demand measures – all
- PT upgrades + promotion – bus and/or rail and park and ride clearways for PT lanes and car pool
- More walking and cycling uptakes – facilities
- Park and Ride – eg Ambassador
- Pedestrian overbridges – Waimea Road
- Tahunanui intersection relocating shopping precinct
- Time travel machine
- Bus – express – dedicated route – possibility through railway reserve
- Network operating plan
- Driverless cars
- Electric vehicle subsidy/charging ports

- One way roads (Vanguard/St Vincent)
- Reduce urban sprawl
- Inner city living
- Remove parking from around schools
- Reduce unnecessary travel (work on-line – shop on-line, etc)
- Combine journeys
- New arterial route
- One way Waimea/Rocks Road
- Reduce cross traffic on both
- Port at Motueka
- Bus lane / dual occupancy lane
- Increase carrying capacity of trucks
- Change school start and finish times
- School educational and travel plans involving parental incentives
- Overpasses – Tahunanui Drive and Waimea Road
- Rail link
- Consider port operational hours
- Monorail
- Close side road accesses (or reduce)
- Pedestrian overpasses Tahunanui/Waimea Road
- Inland Port/Barge

OPTIONS TO SHAPE AND INFLUENCE DEMAND

- Reduce parking capacity in CBD (Central Business District) and increase parking fees
- Inland freight port
- Port operations – hours of operation
- Rail shunt/shuttle!
- Apartment living in CBD/commercial retail centres
- More walking and cycling uptake – facilities
- Focus on land use and implications
 - o walk, live, play
 - o density of housing
 - o economic development Nos
- Flexible start/finish times for school businesses employment
- Remove traffic signage and road lanes
- Adjust retailing hours 1000-1800
- Pedestrianised inner city streets
- Preserve ped-vehicle balance in CBD (don't flood CDB and periphery with additional vehicles)
- On-demand PT services (eg. uber etc)
- Invest in promoting options (increase attractiveness – make cycling sexy)
- Publicise / preach benefits of cycling/walking
- Incentivise higher occupancy vehicle use
- Prioritise cycle traffic (separate traffic lights)
- Address barriers to east-west ped + cycle travel
- Showers and secure cycle parking in workplace
- Improved PT – times/frequency
- Priority PT and freight infrastructure and HOV
- Park & ride
- New arterial route
- Free PT 3 year trial
- 3-4 m boardwalk for cyclists and walkers on Rocks Road
- Port hours
- Complete separation of cyclist and Pedestrians
- New arterial to SH (state highway) specification
- Reduce cost of public transport
- Living arterials – trees, shade, seats
- Better cycle storage areas in city / and showers

- Wider sidewalks – mobility scooters/skate boards/hoverboards
- Land use planning and more focus on work, live and play
- Create disincentives
- Density of housing
- Clarity around economic development areas
- Light rail to city
- Better Public Transport (Fastlane for trucks/buses/multiple occupancy cars)
- Ban and breath test cyclists

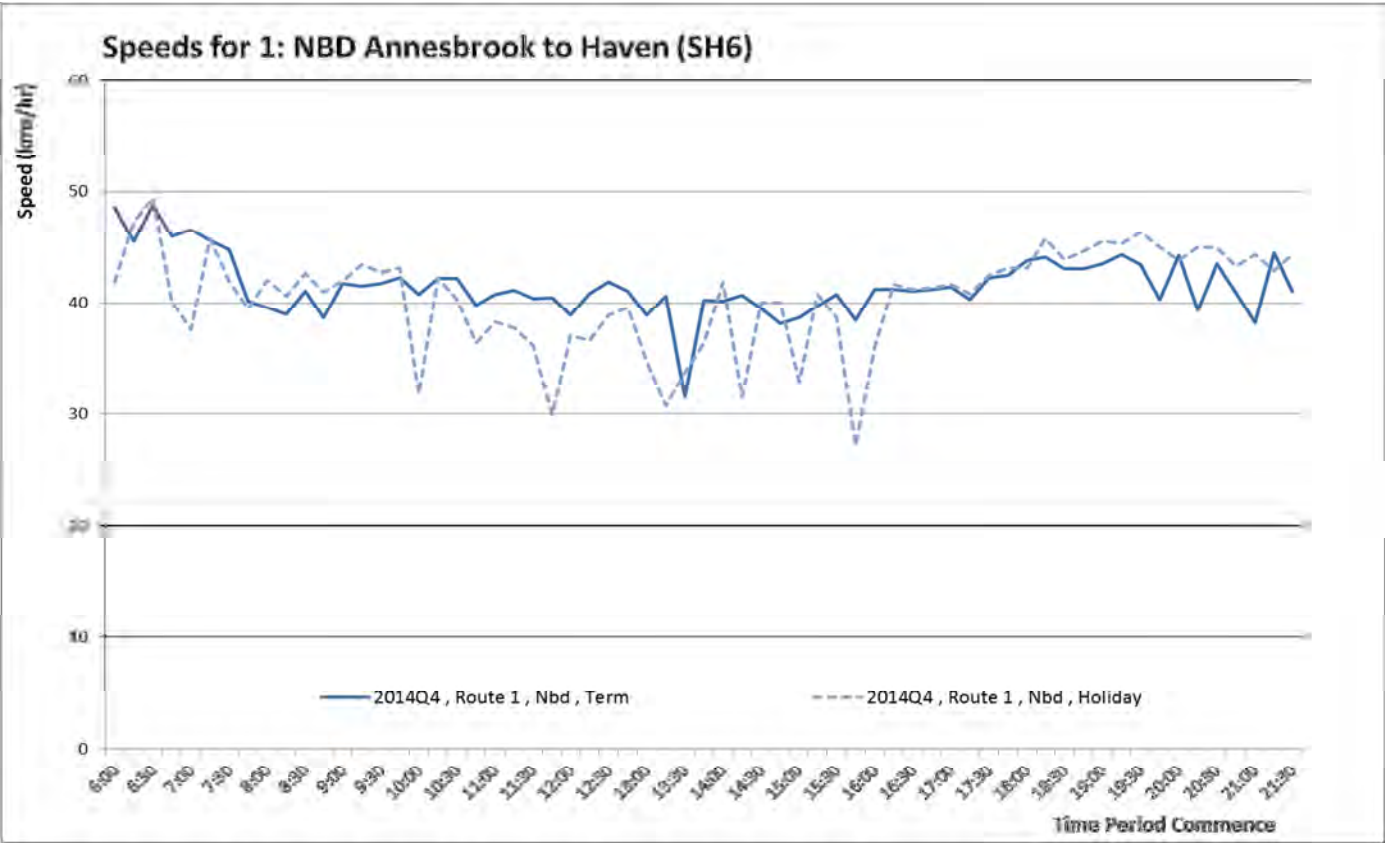
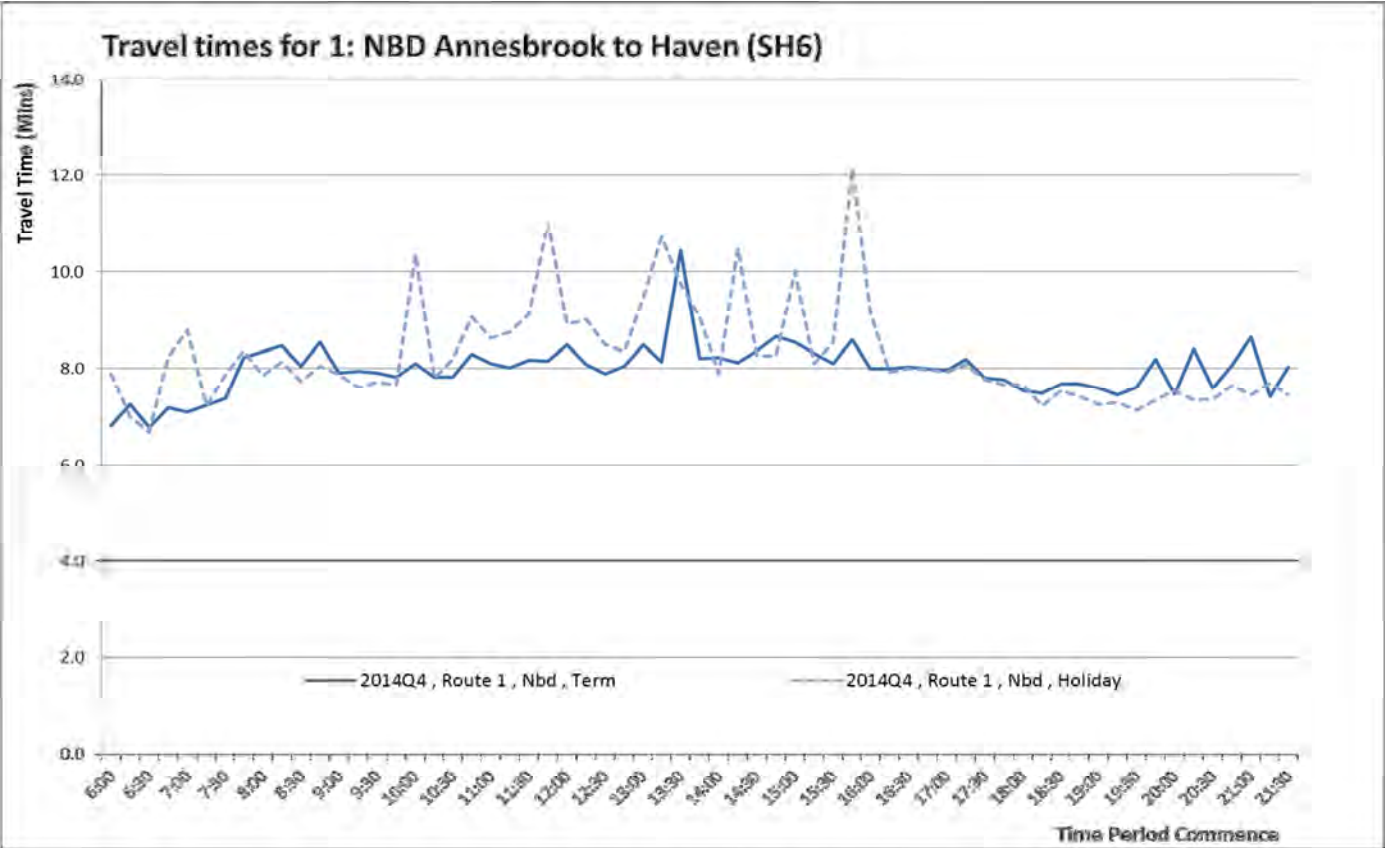
APPENDIX E – RECENT BLUETOOTH DATA

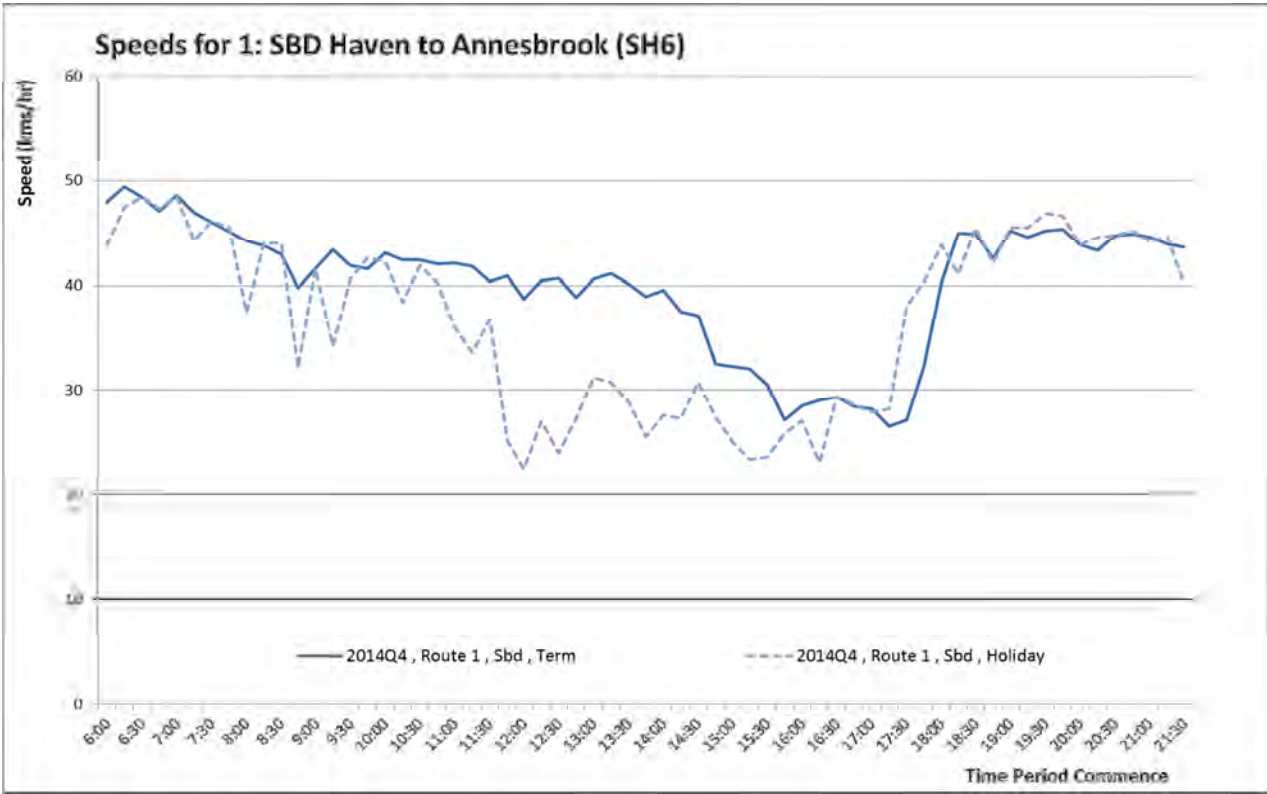
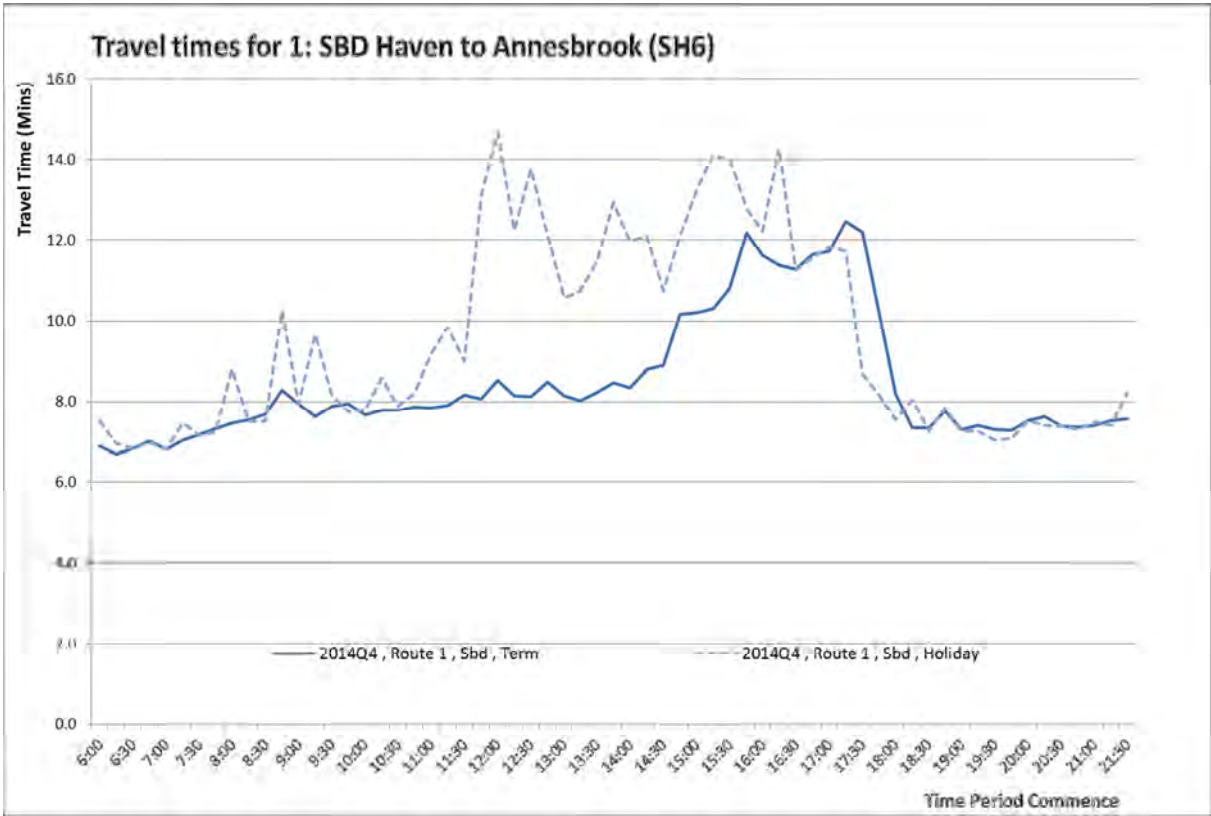
Data provided by the Transport Agency – travel time is the average peak hour travel time.

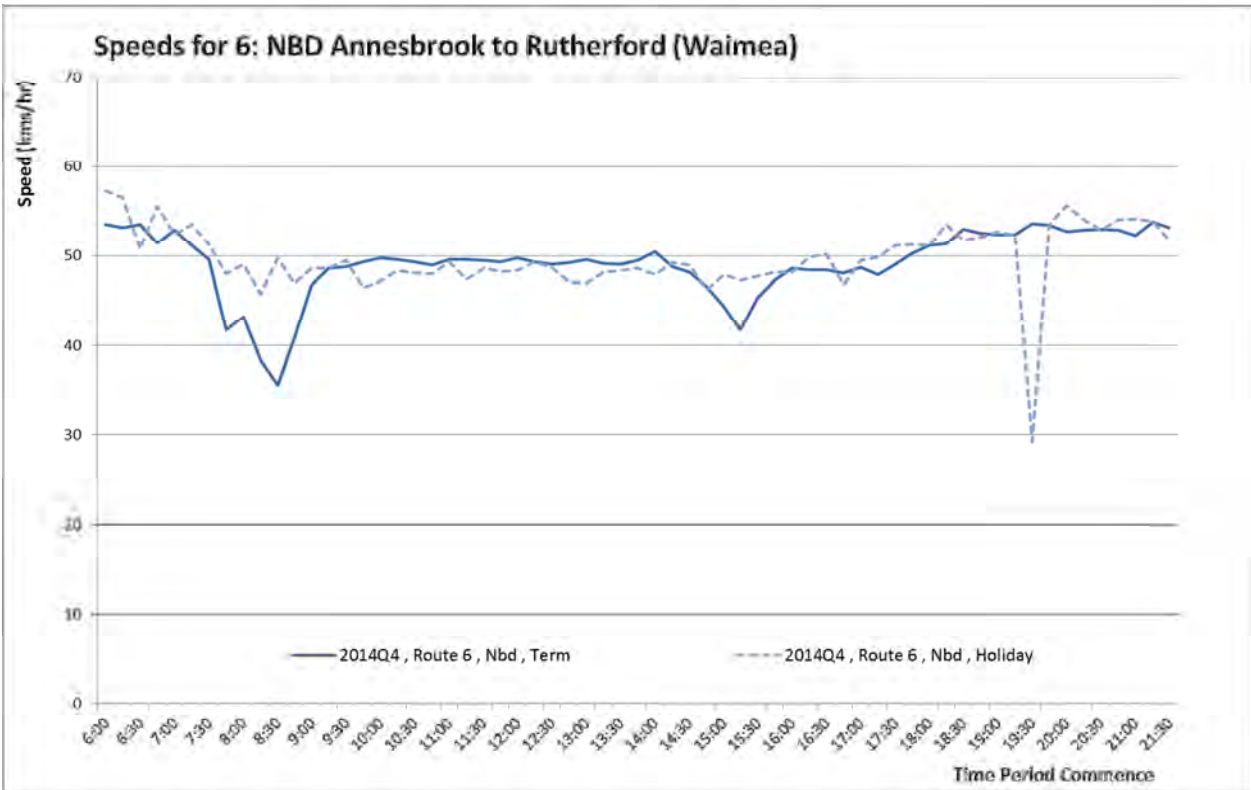
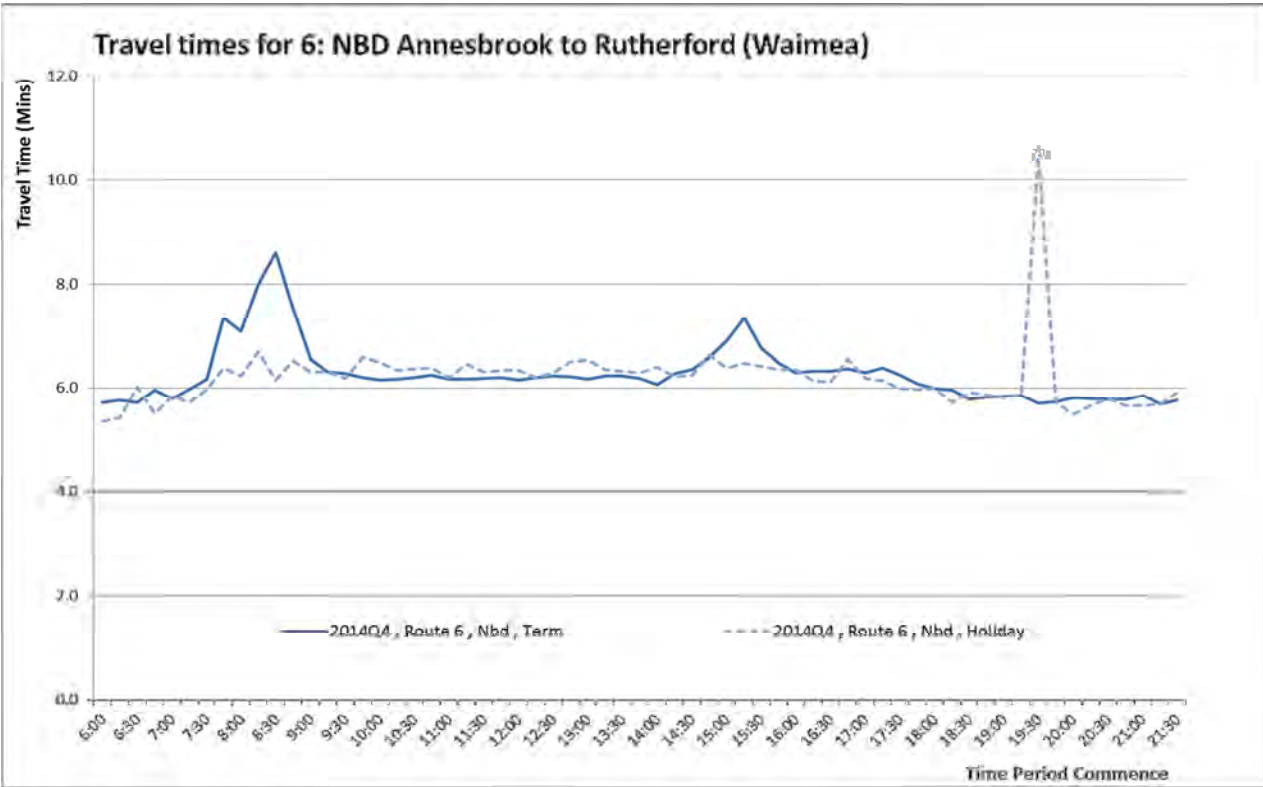


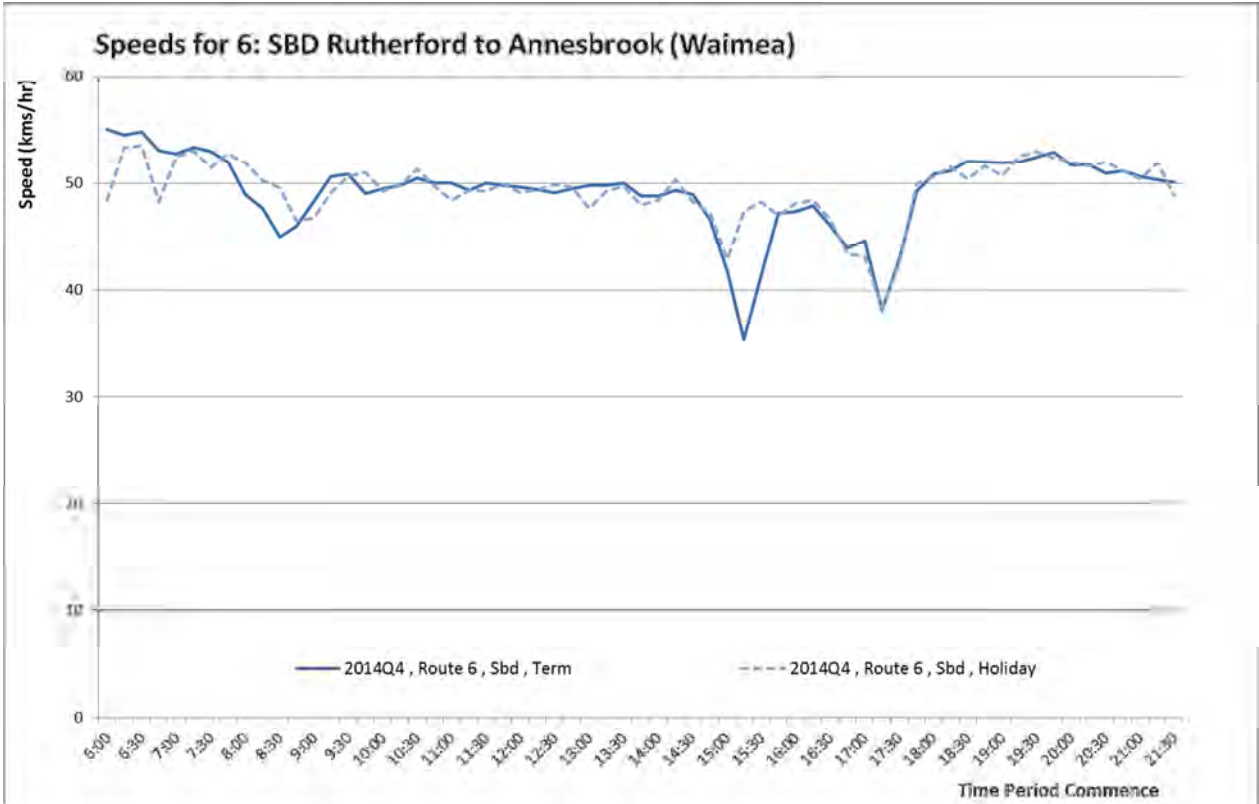
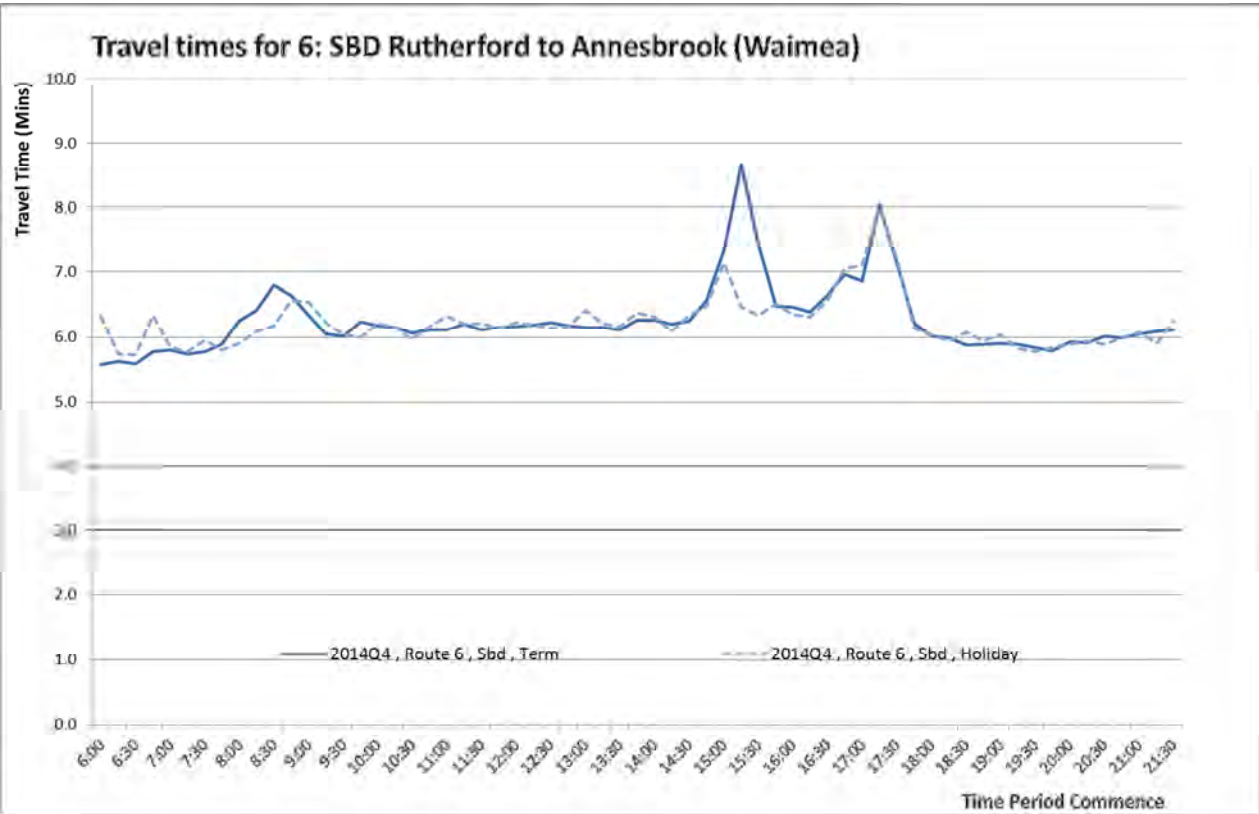
Figure E1 – Bluetooth Sensor Locations

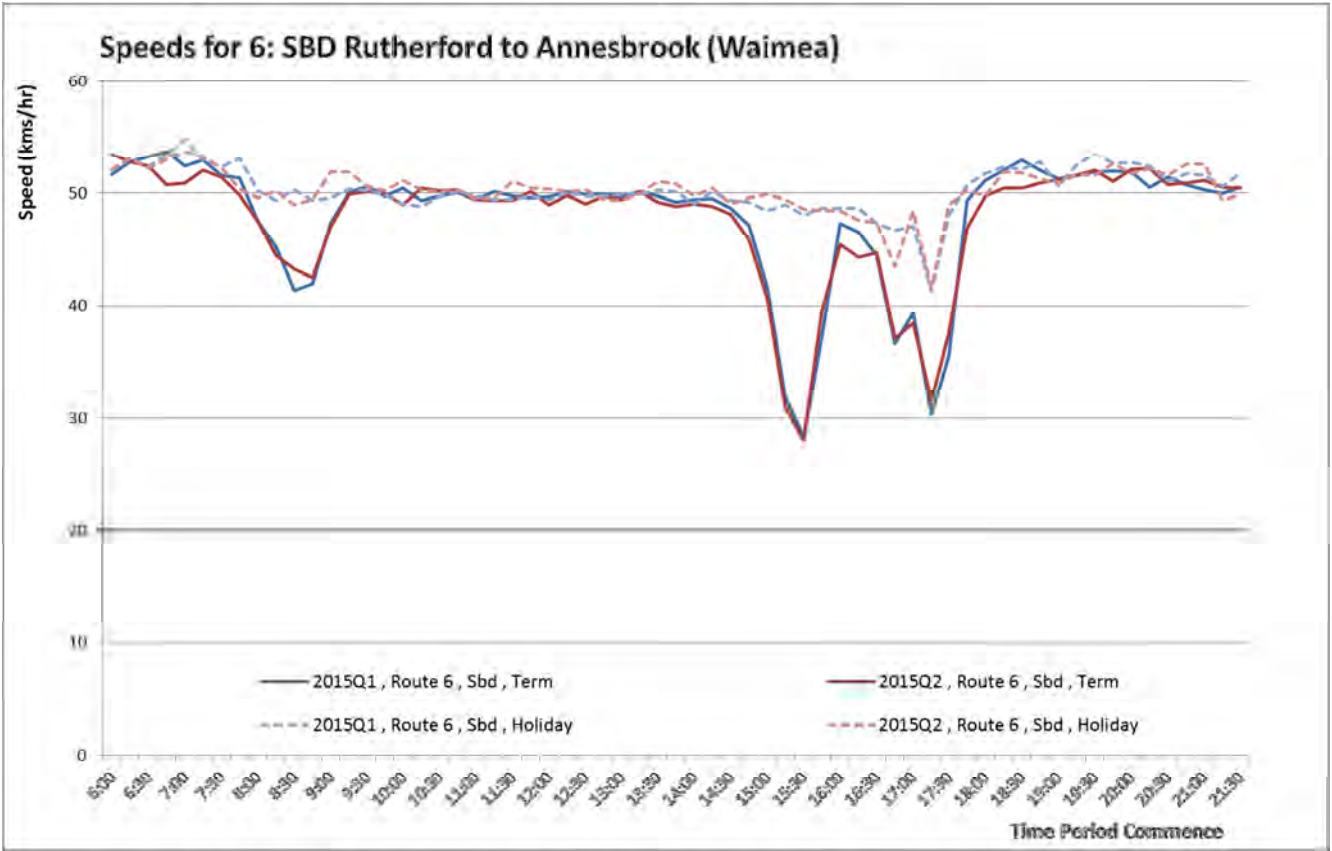
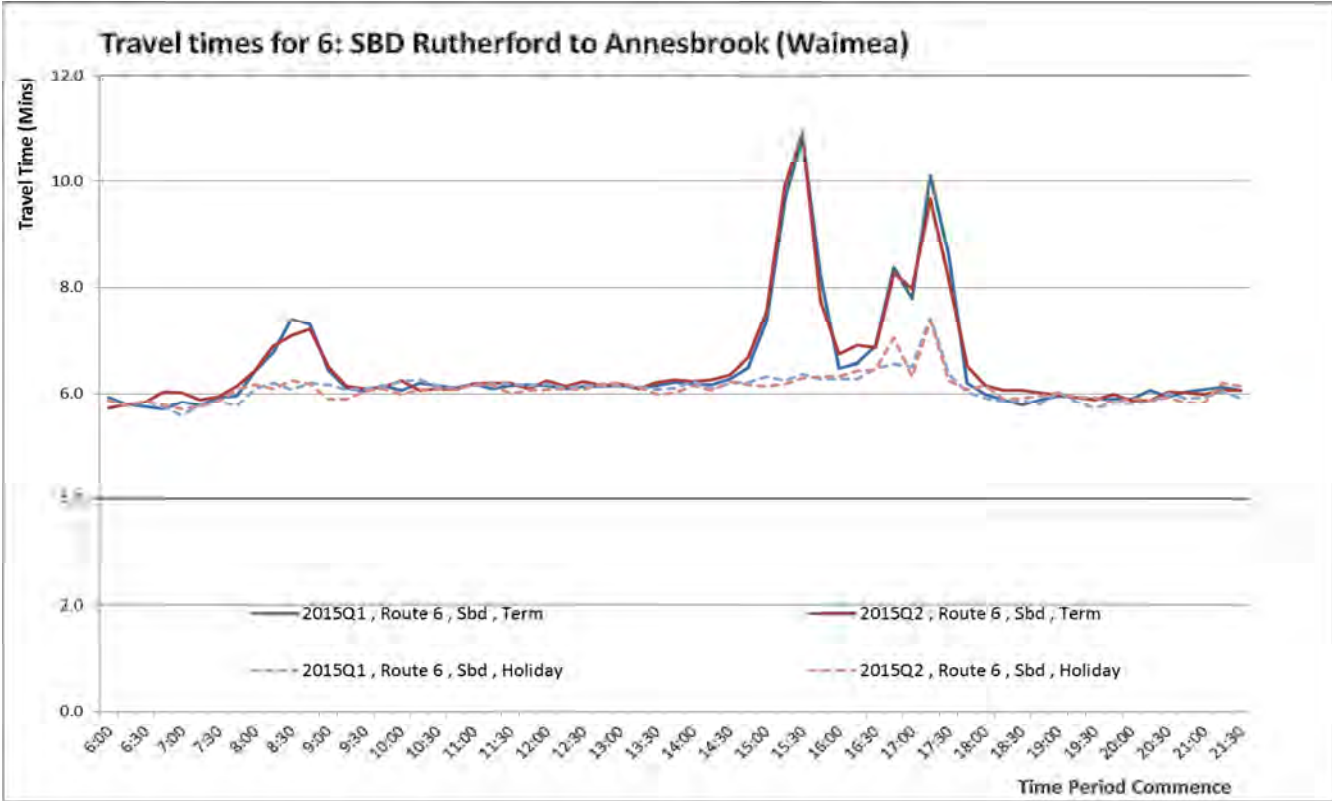
The following Bluetooth data graphs make reference to Route 1, which uses sensors 203 and 201. Route 6 uses sensors 203, 204 and 202.

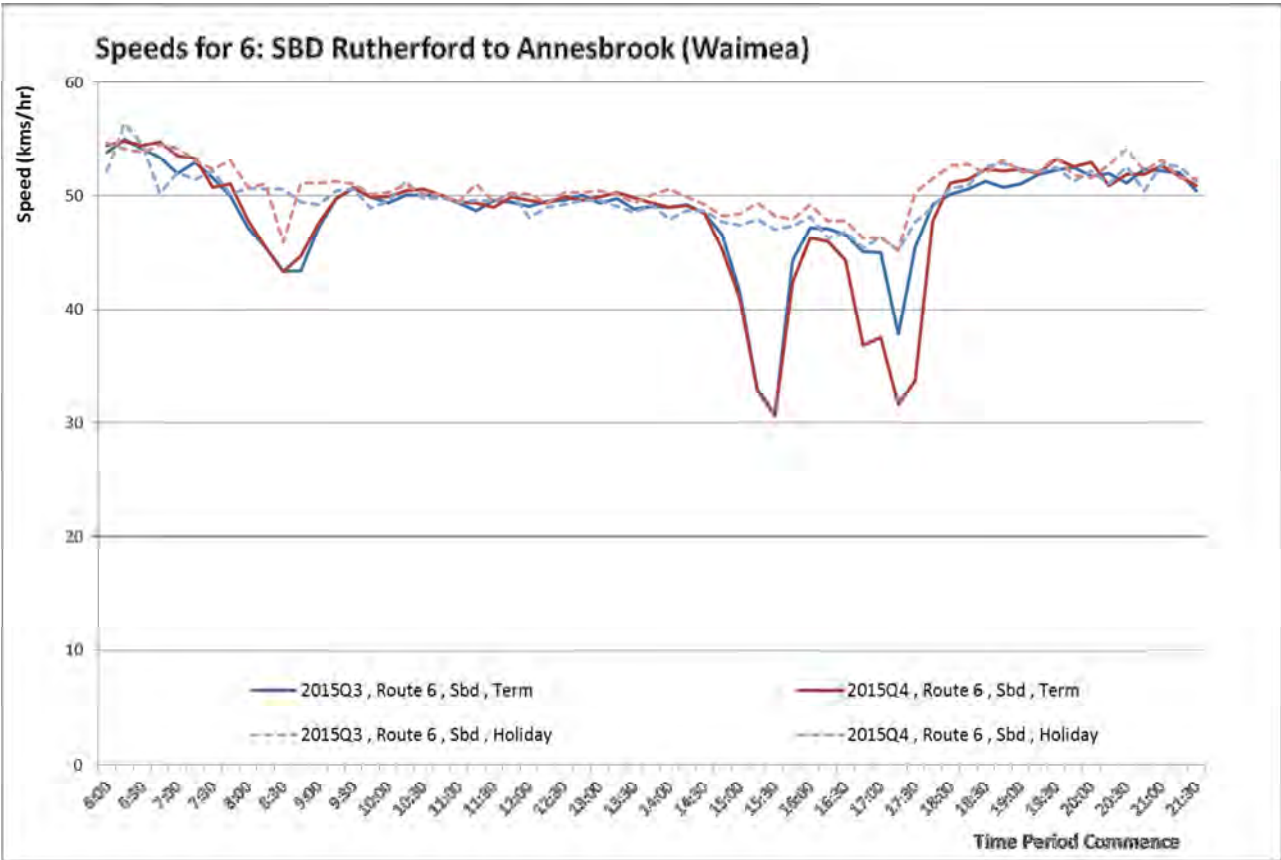
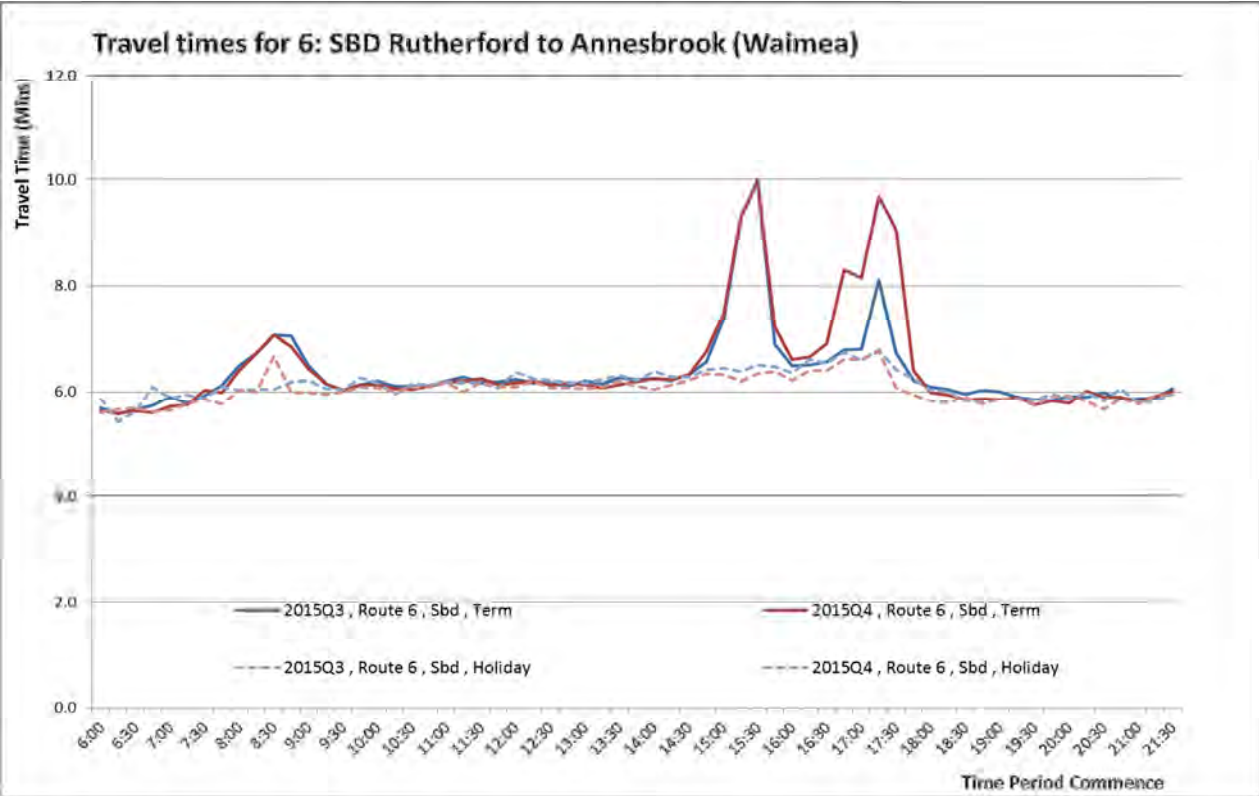


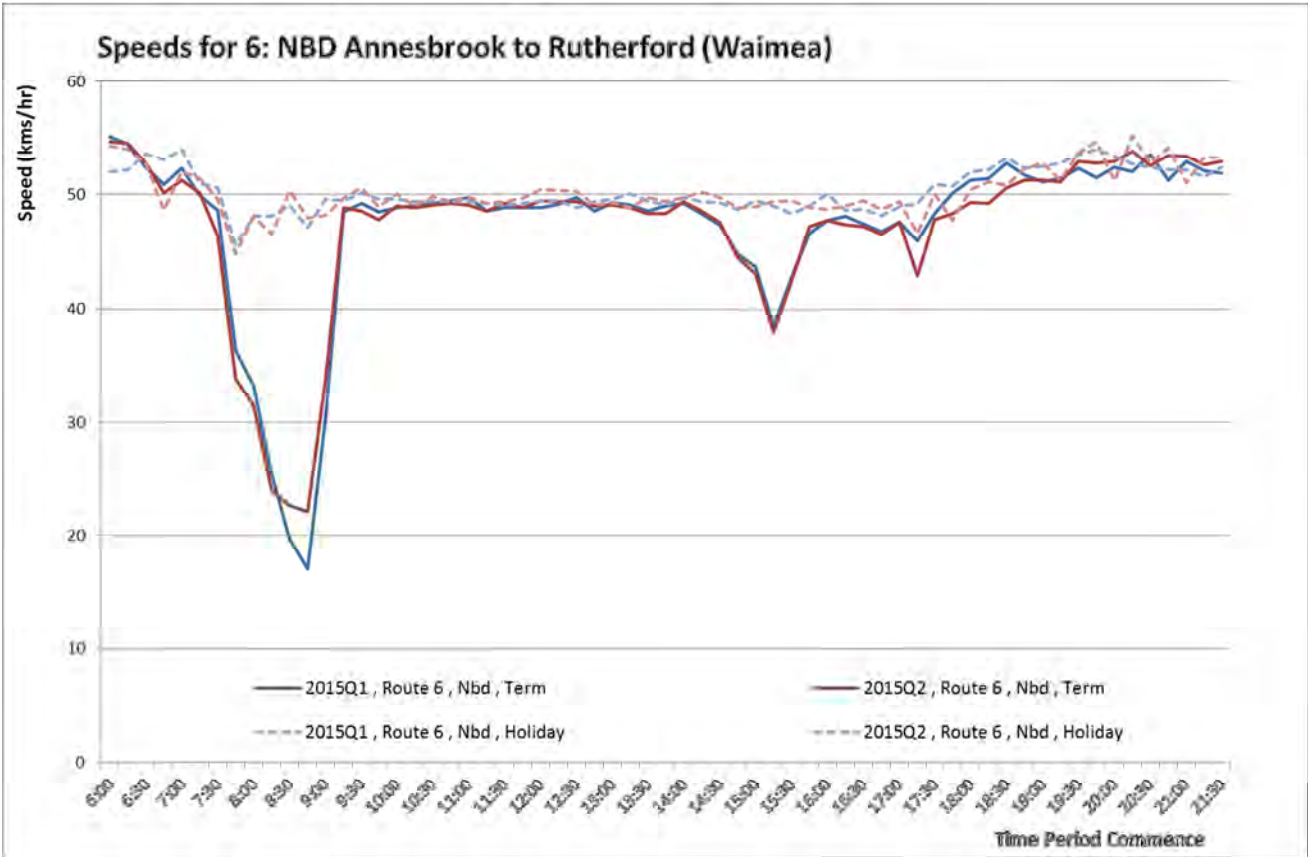
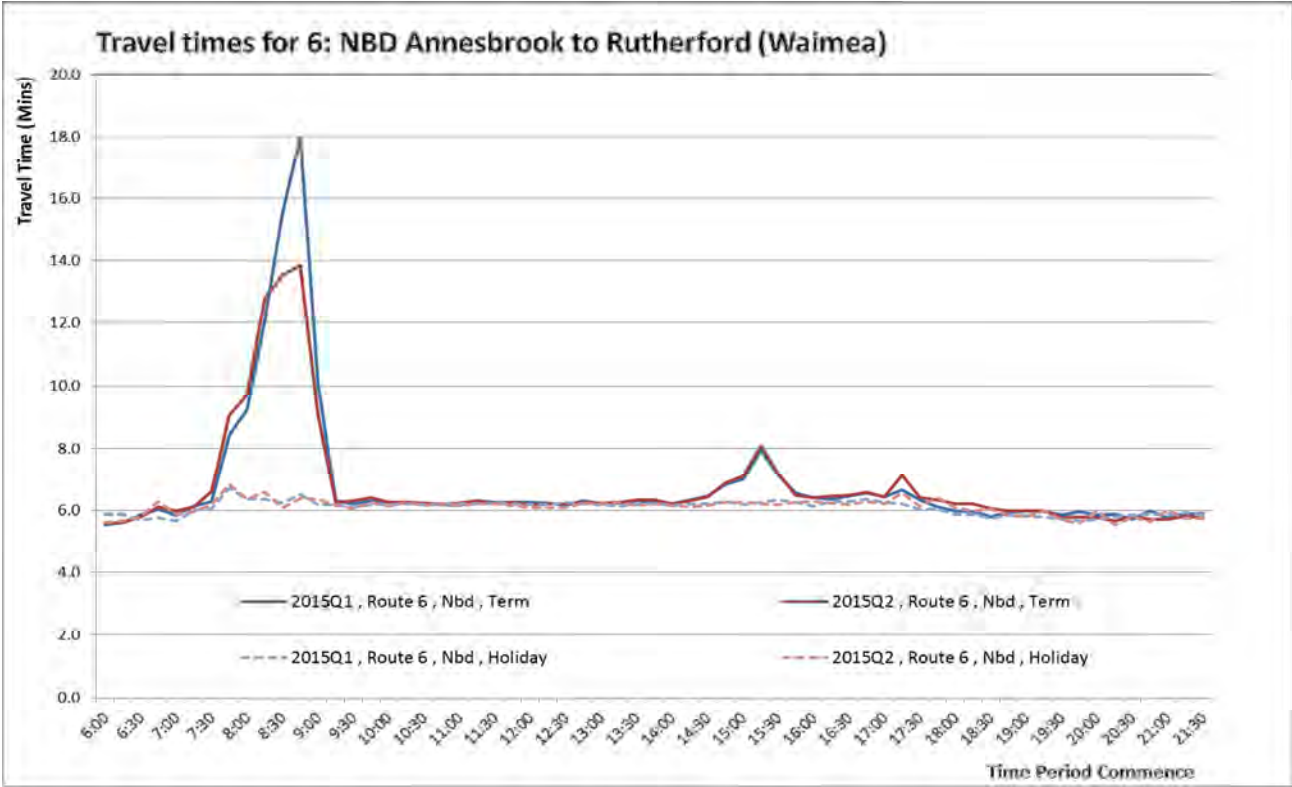


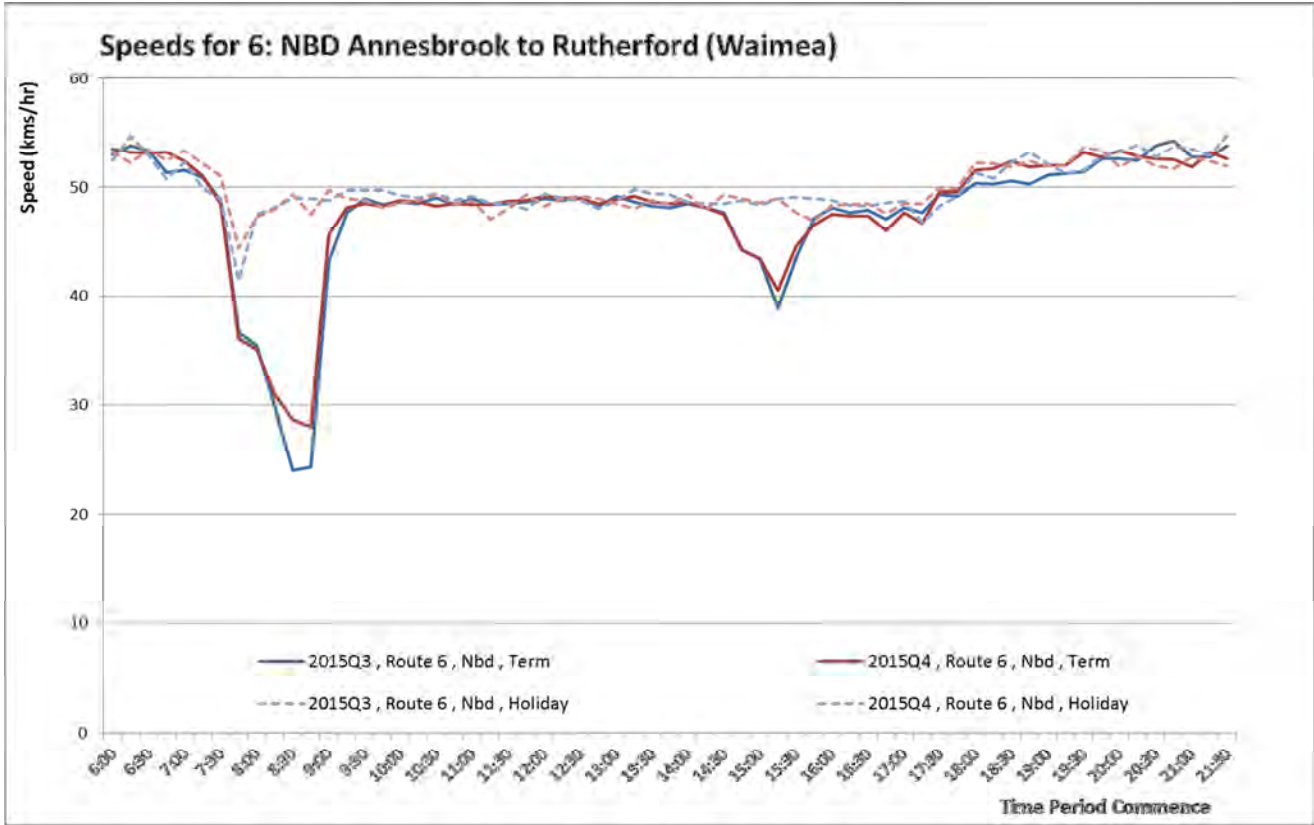
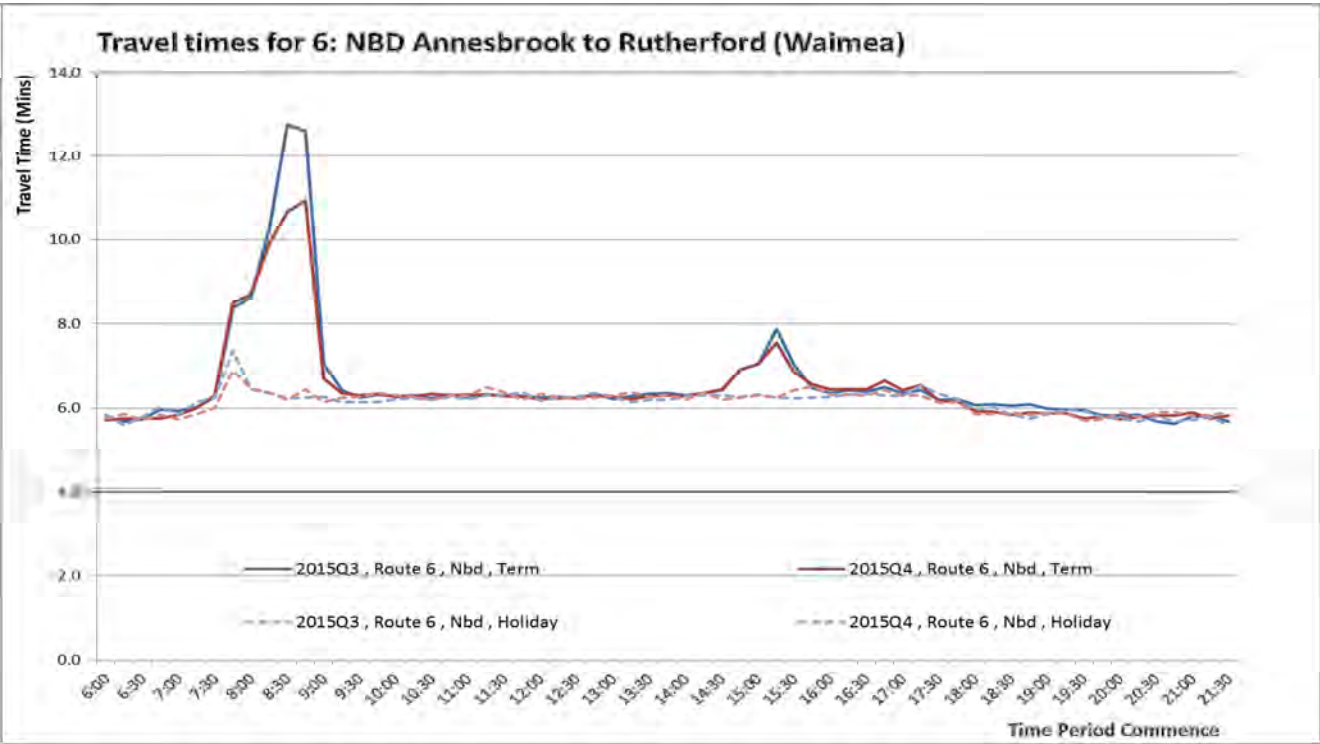


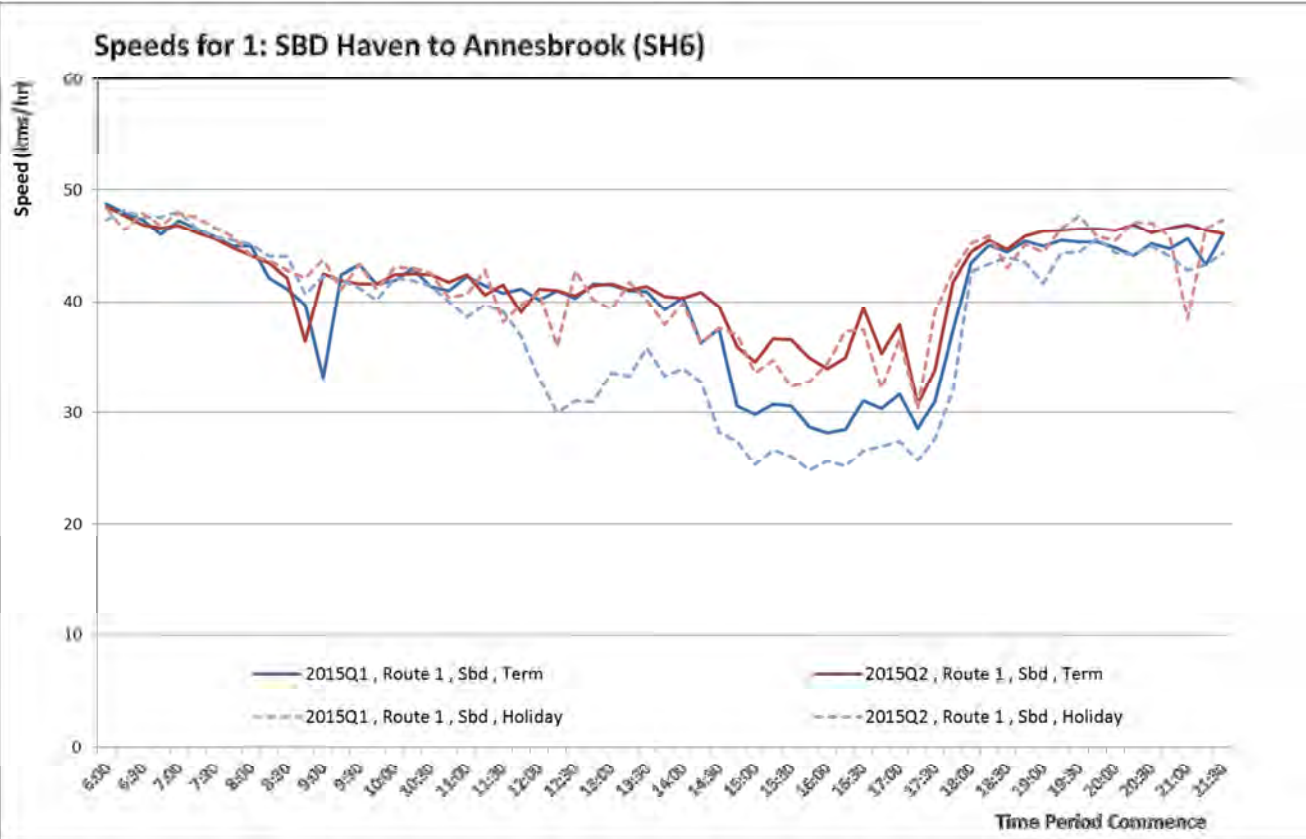
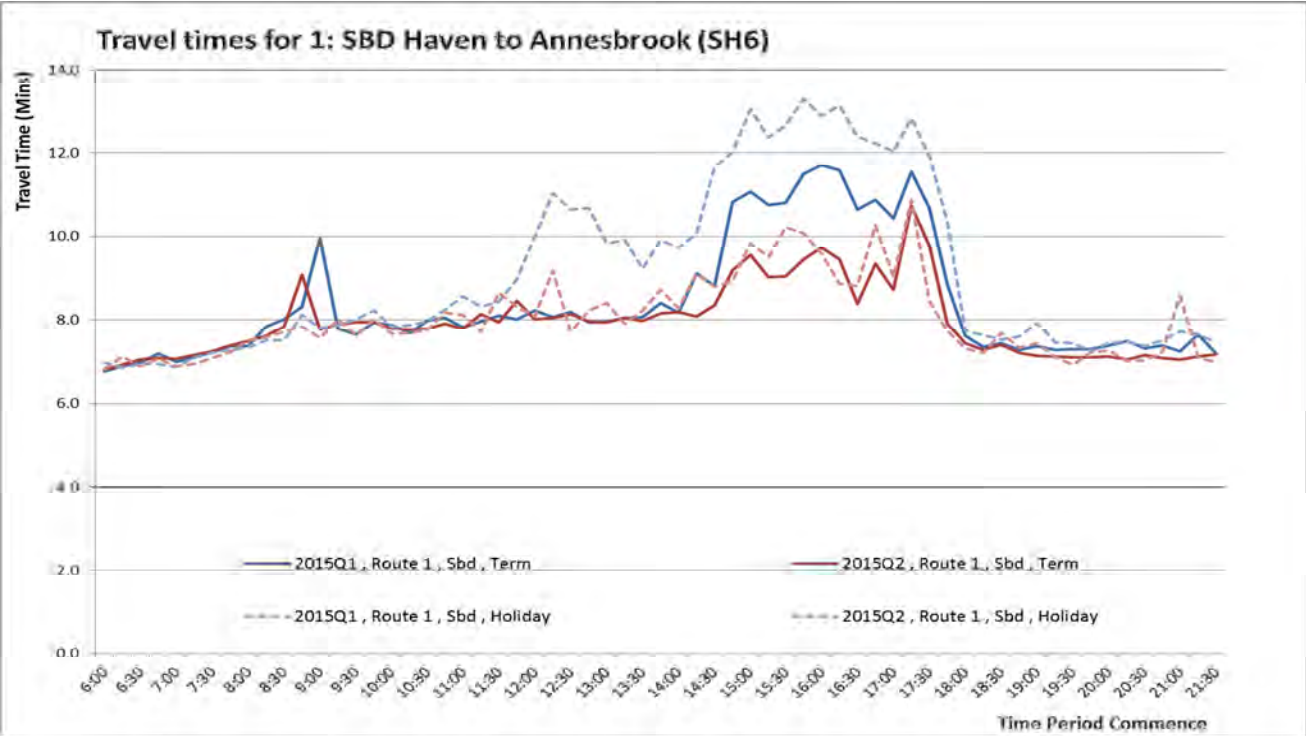


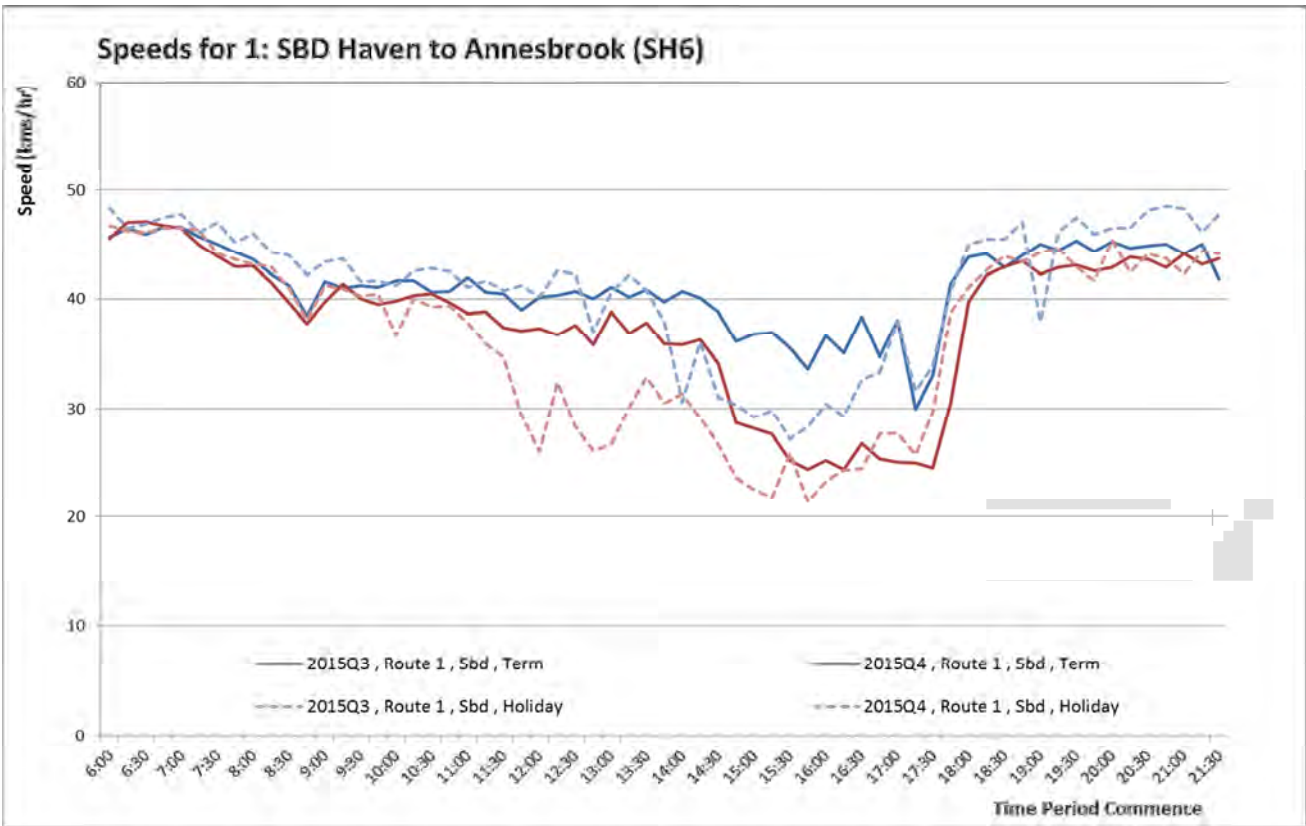
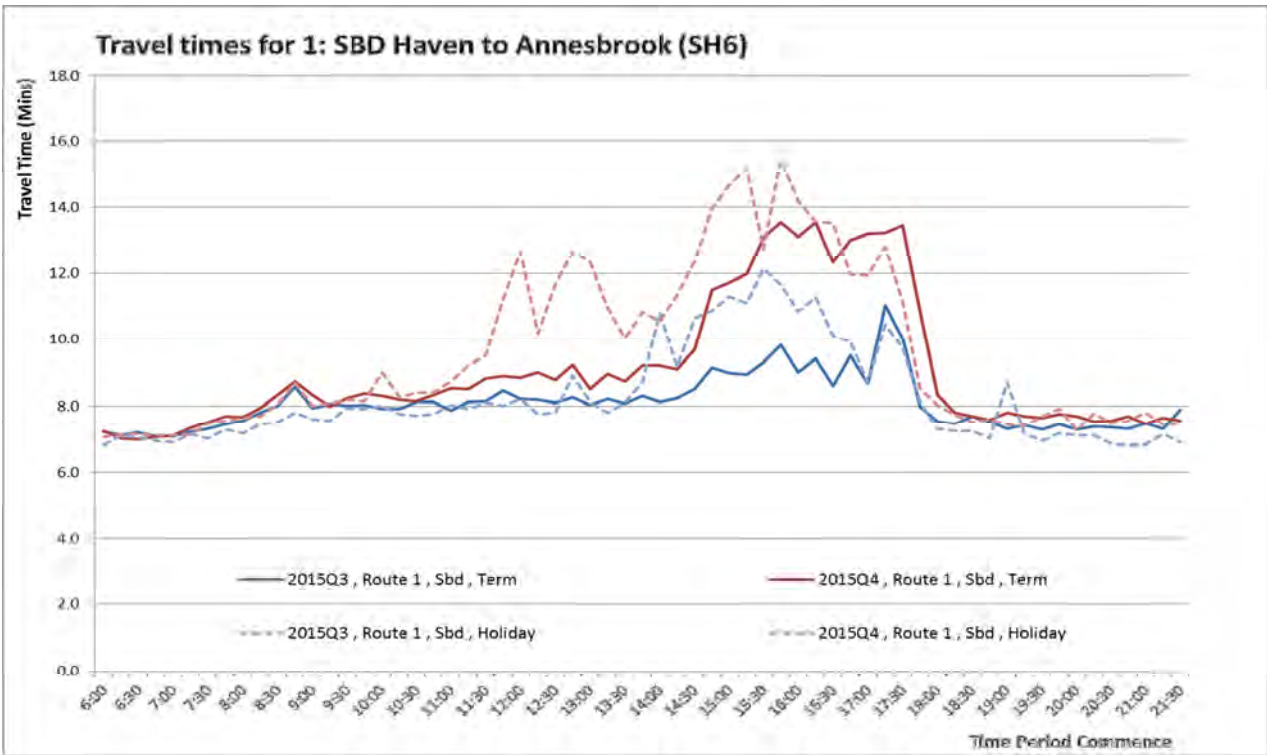


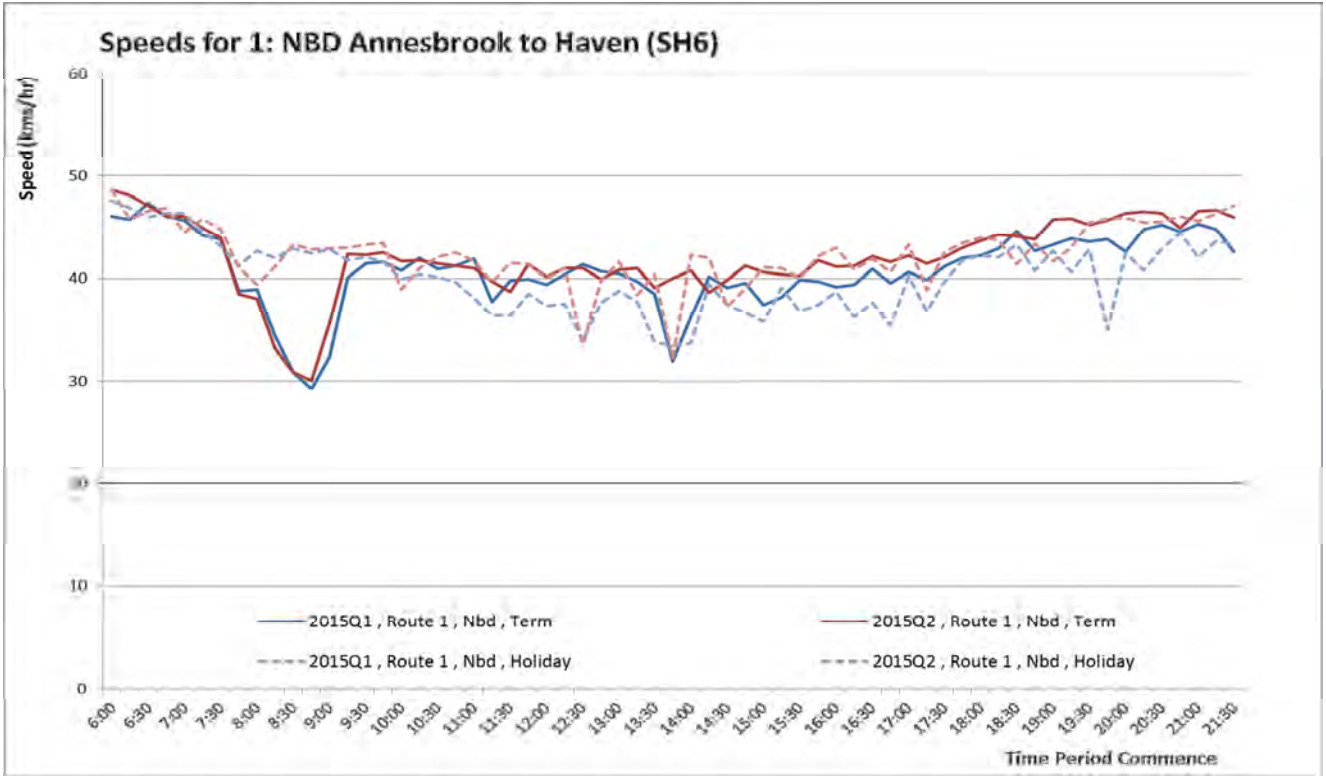
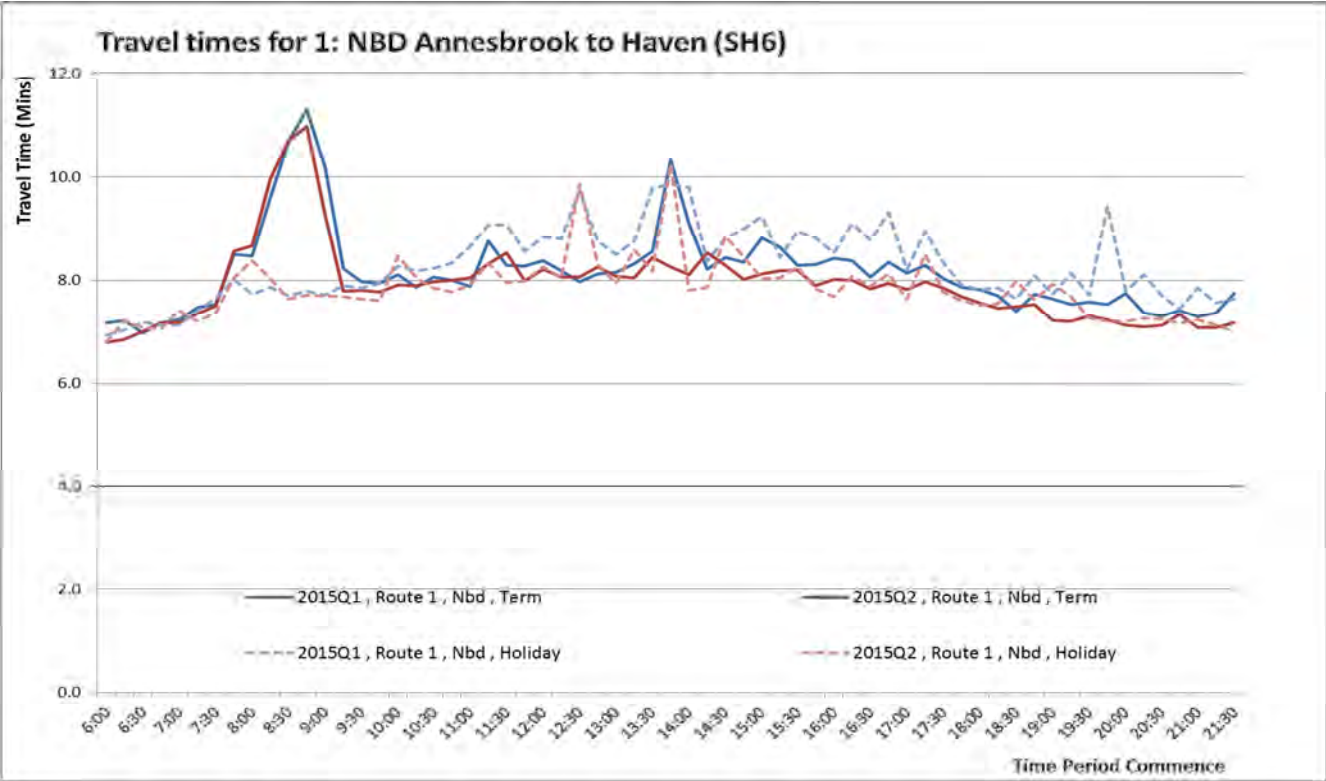


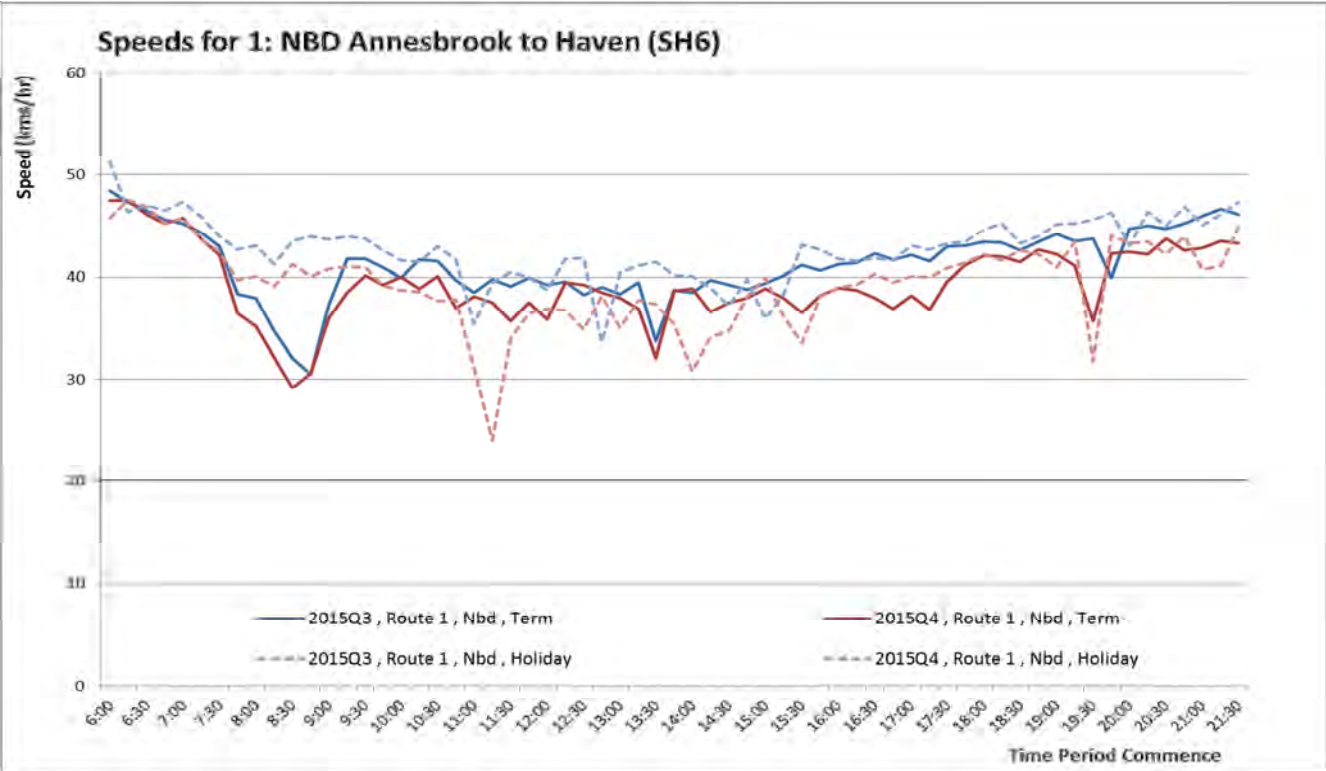
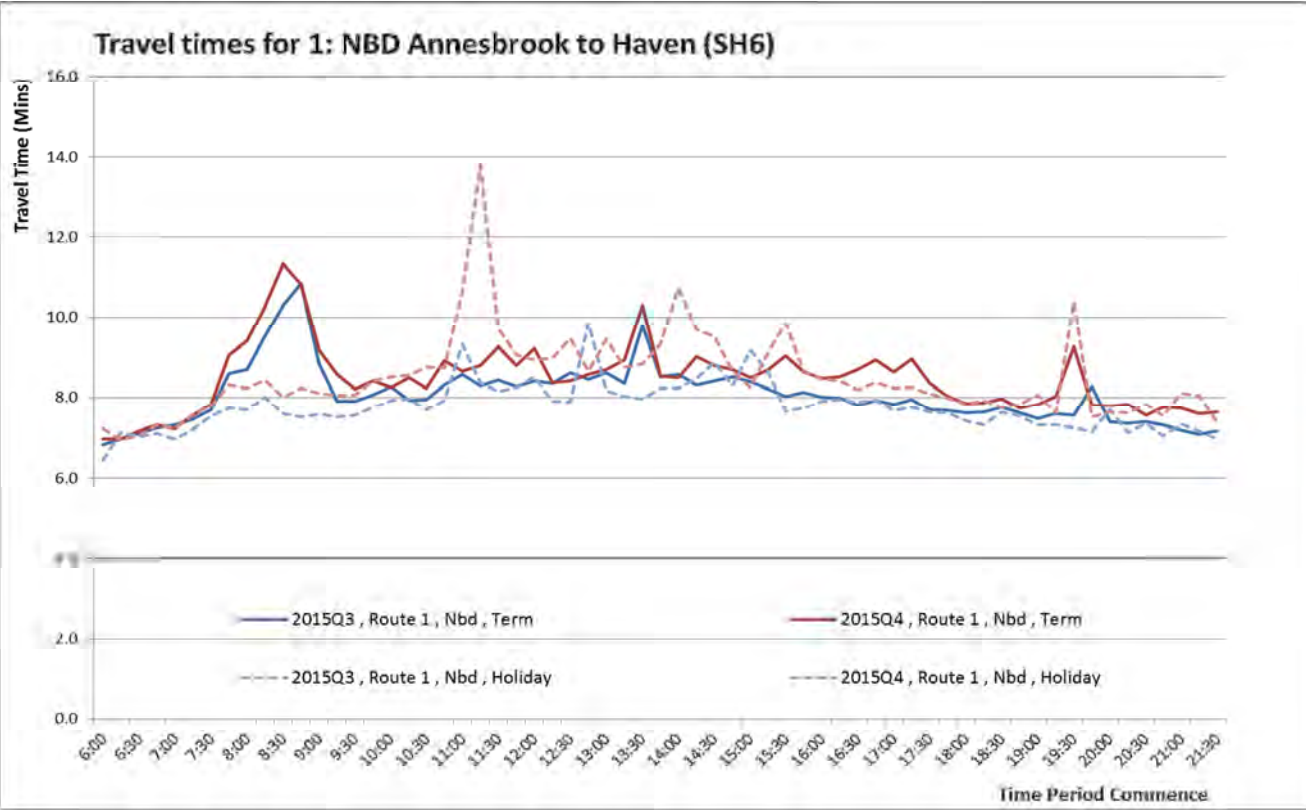


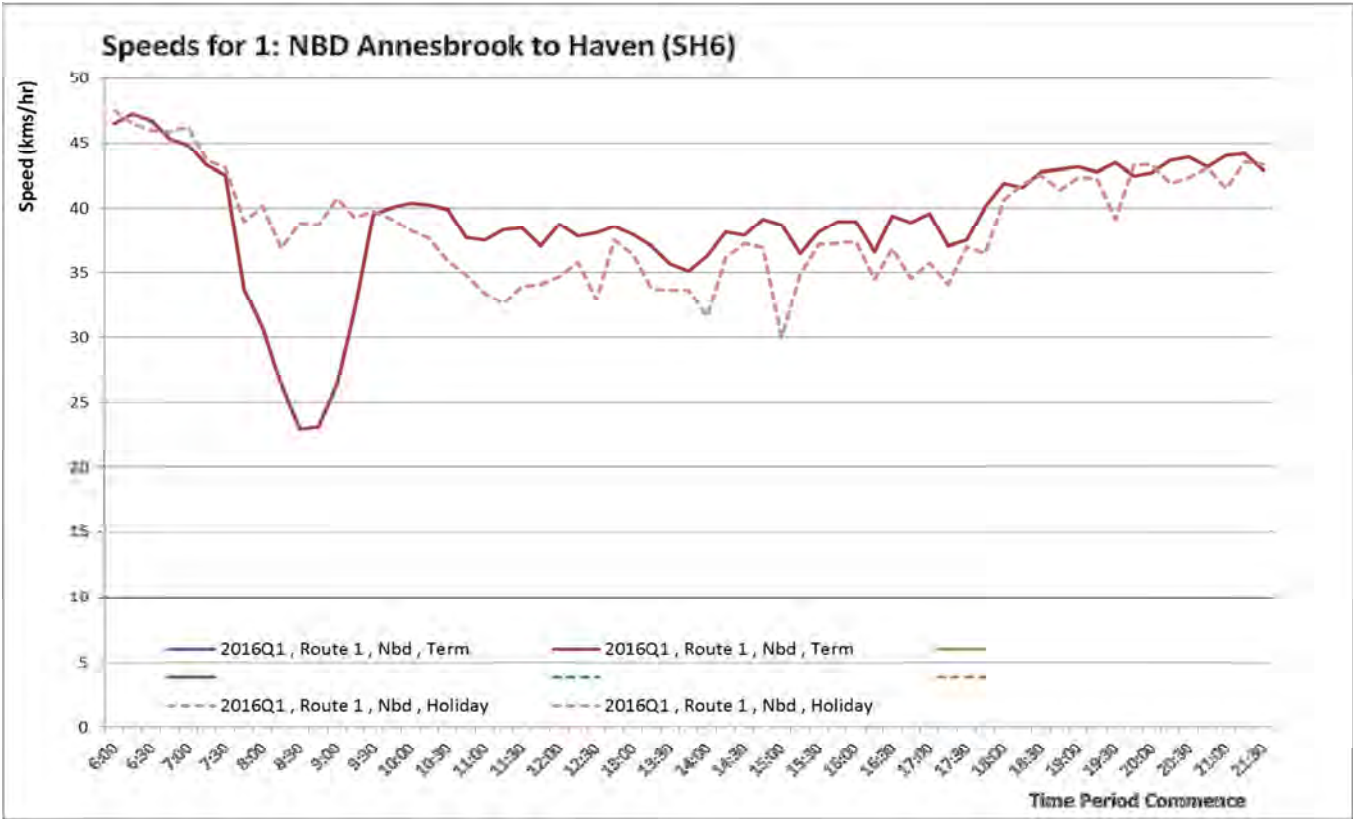
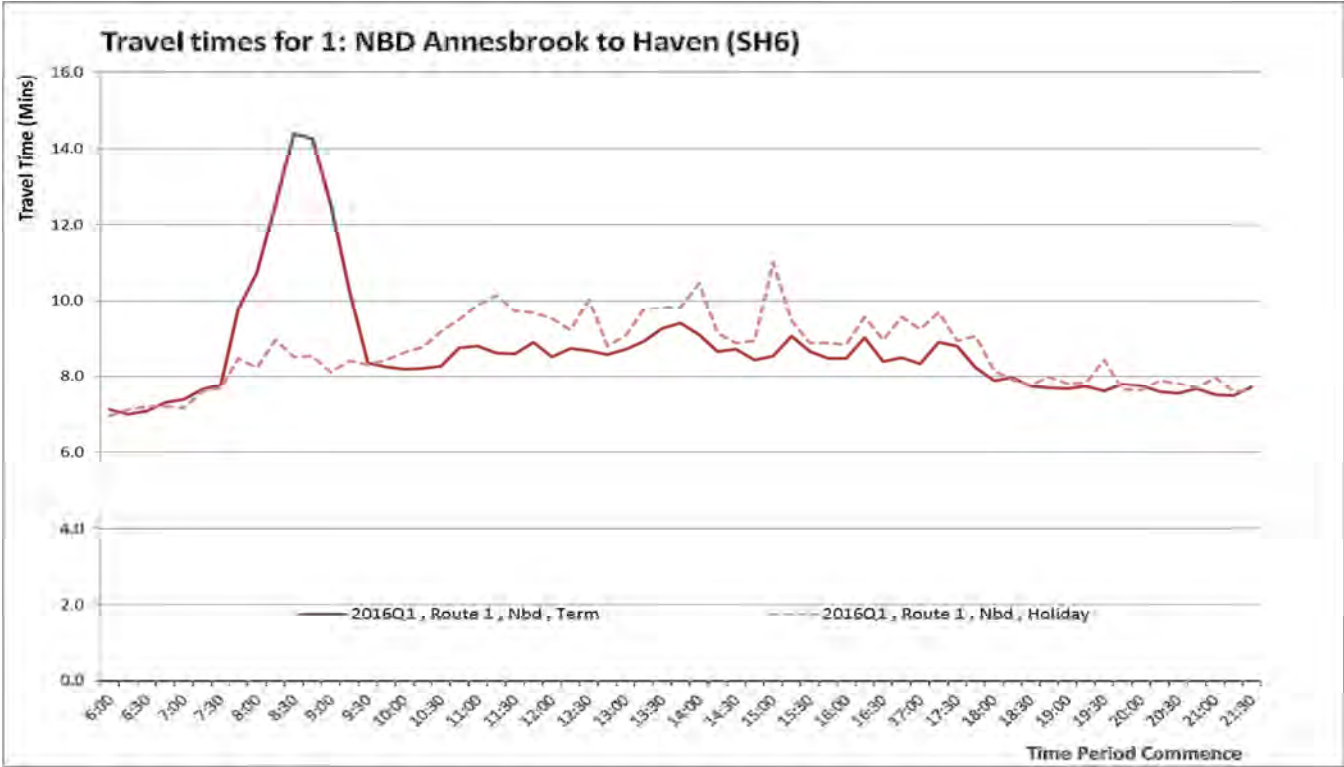


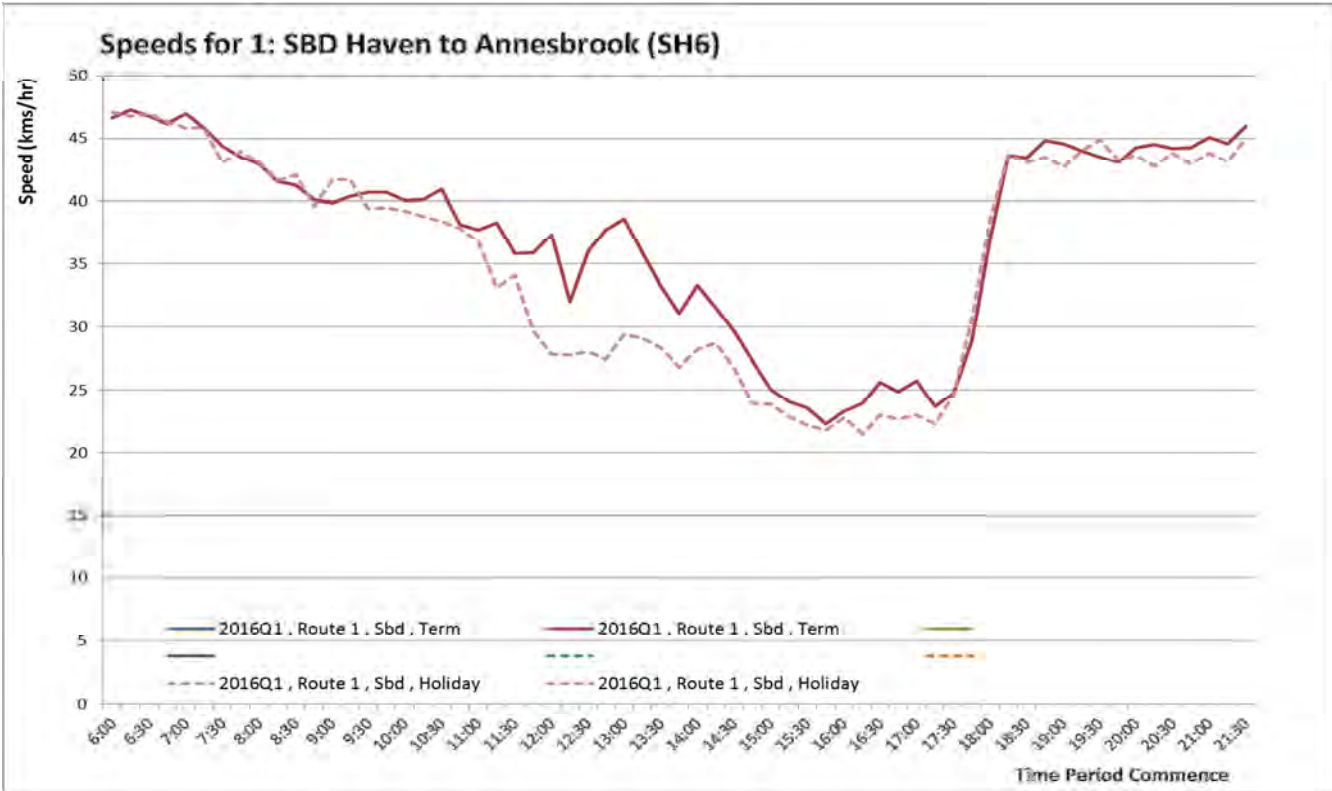
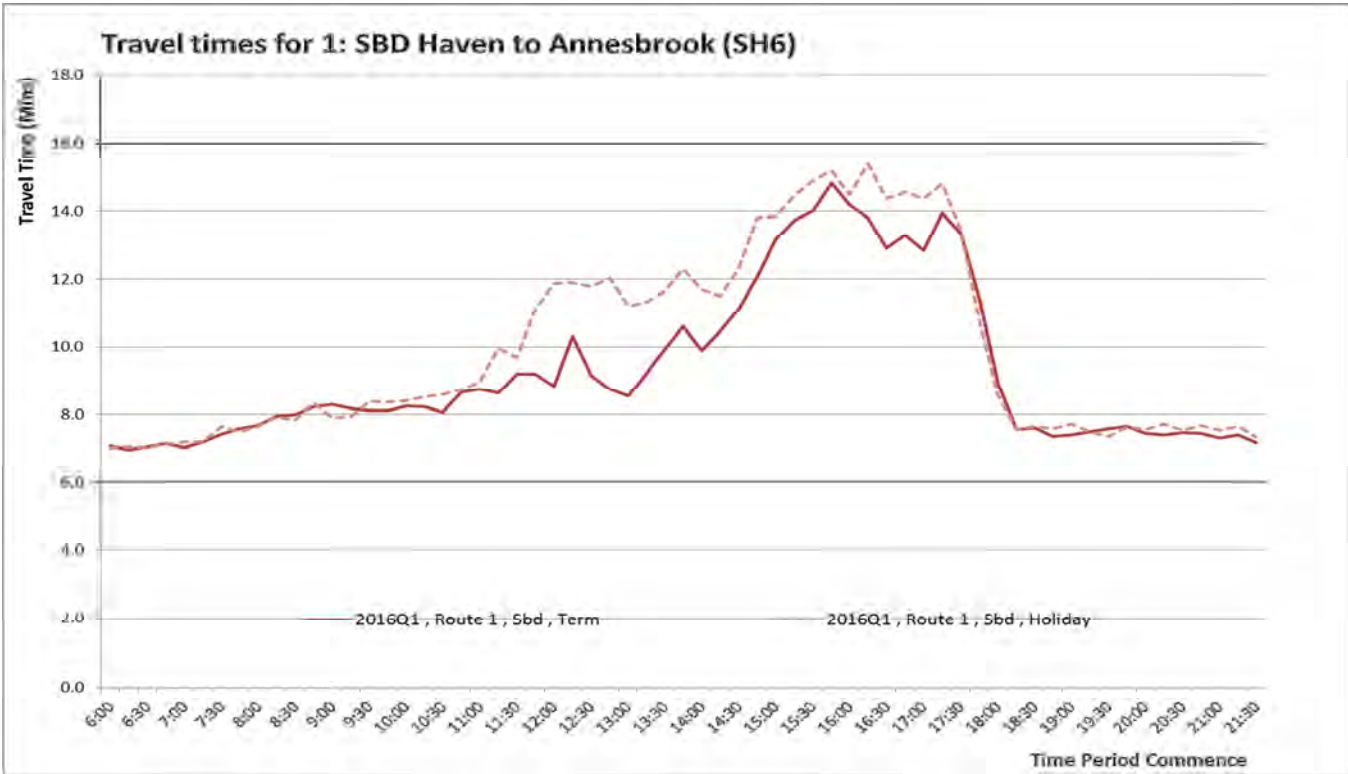


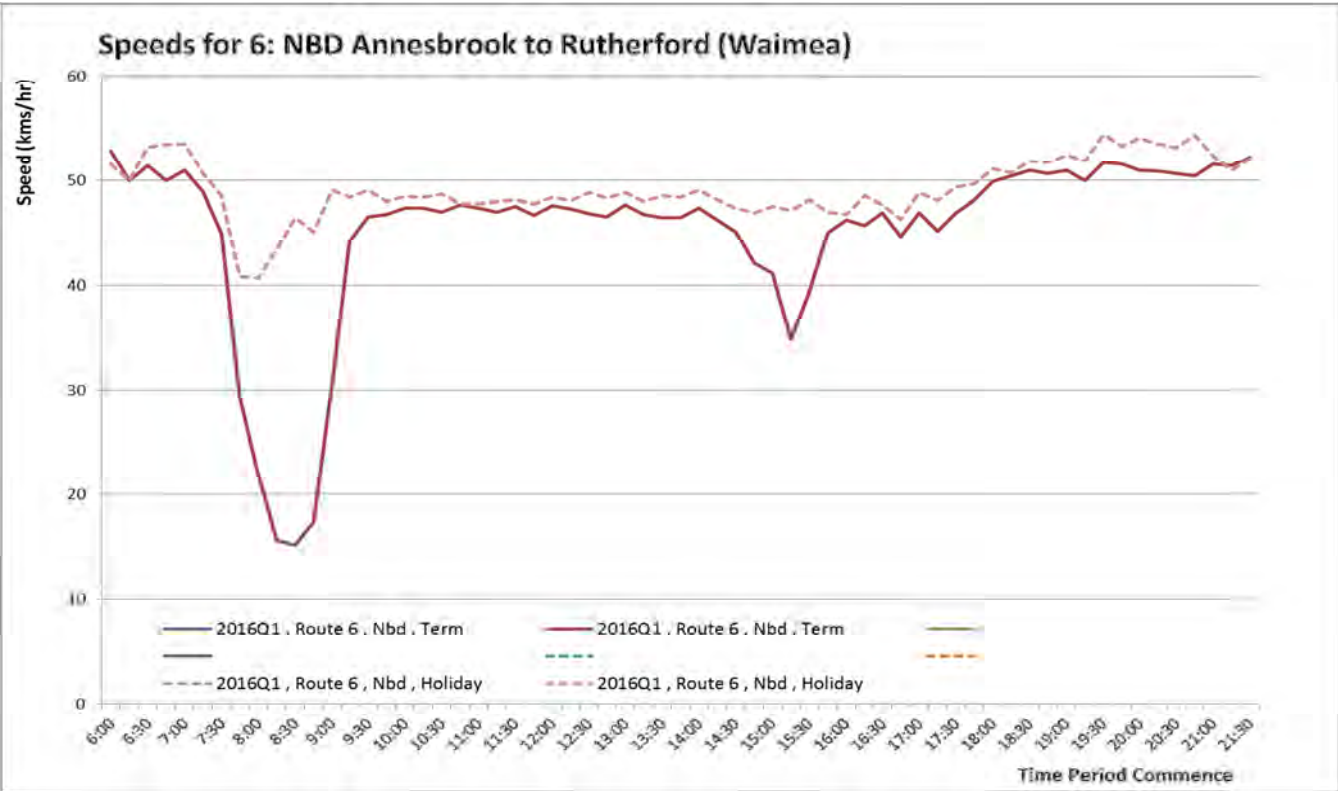
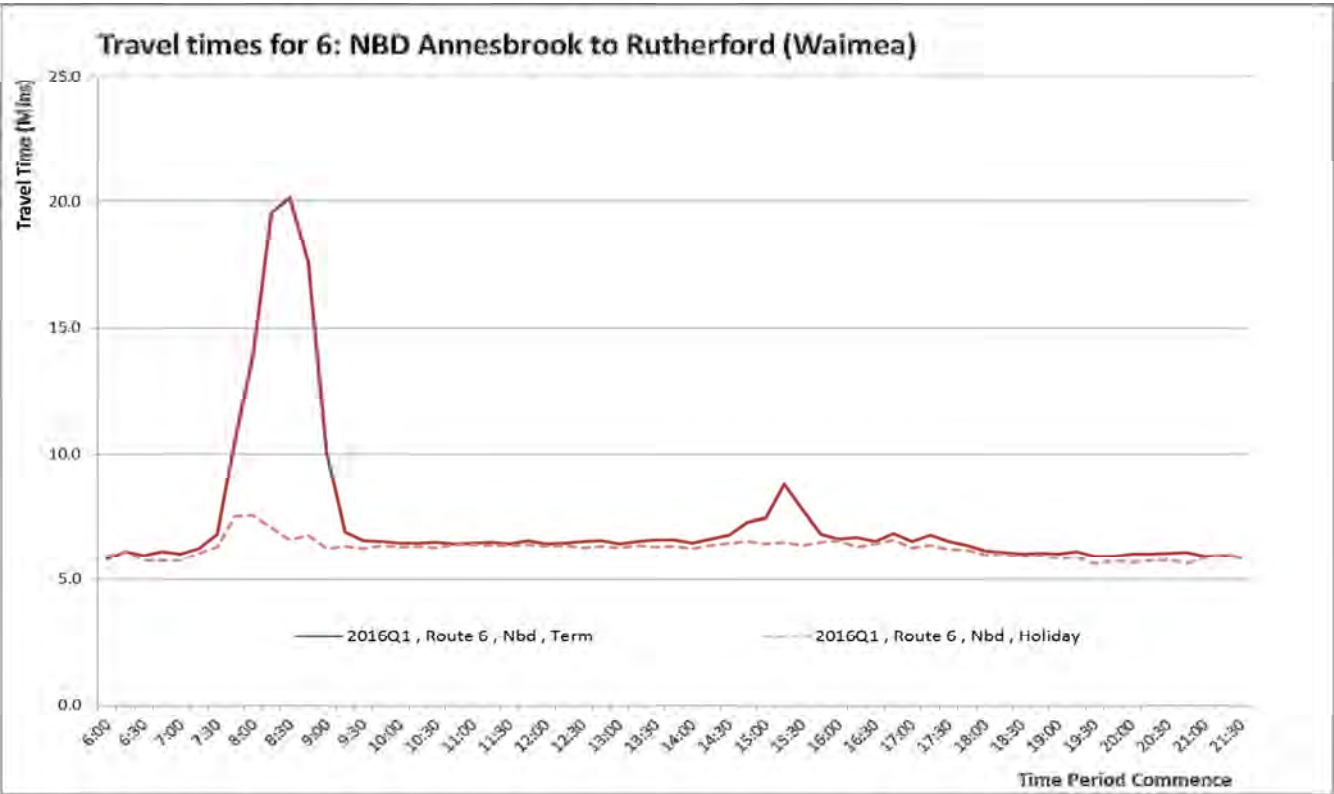


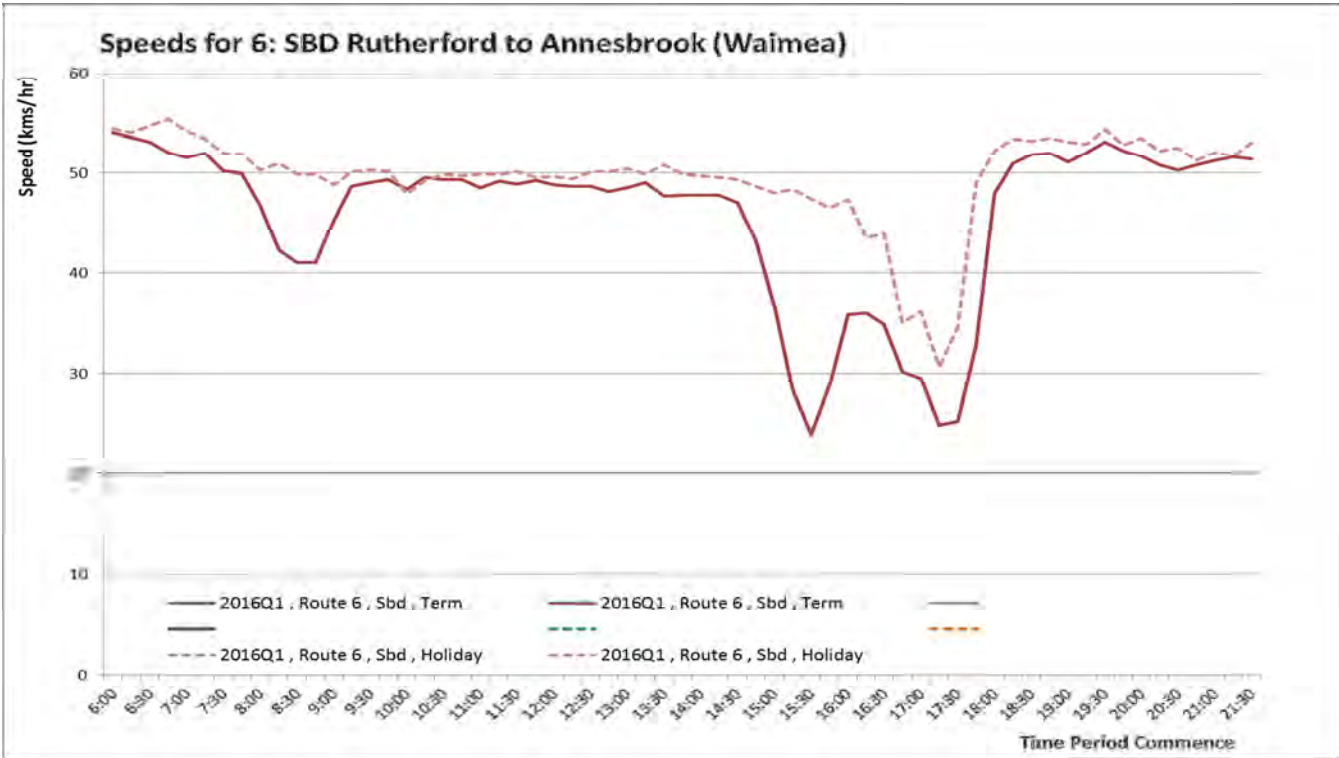
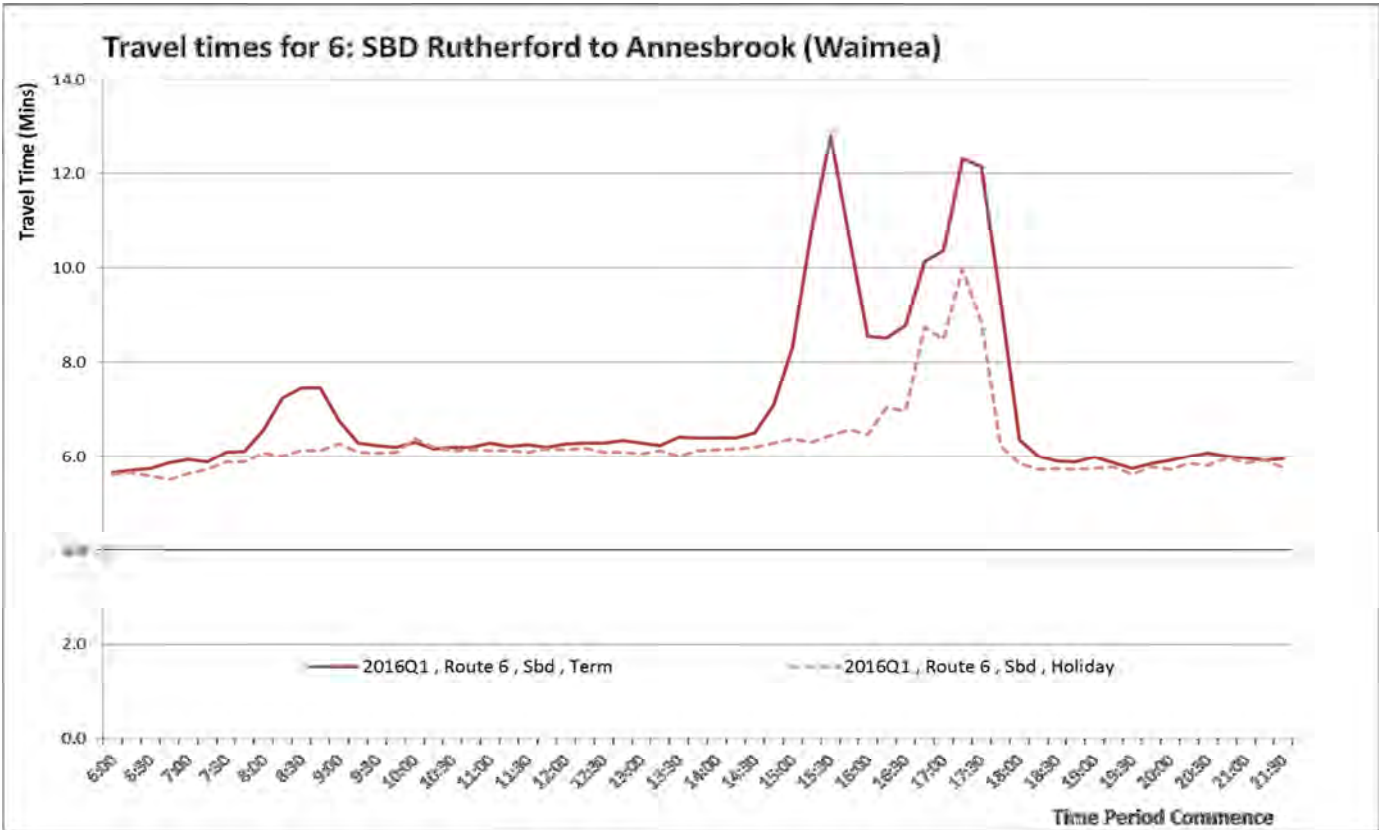


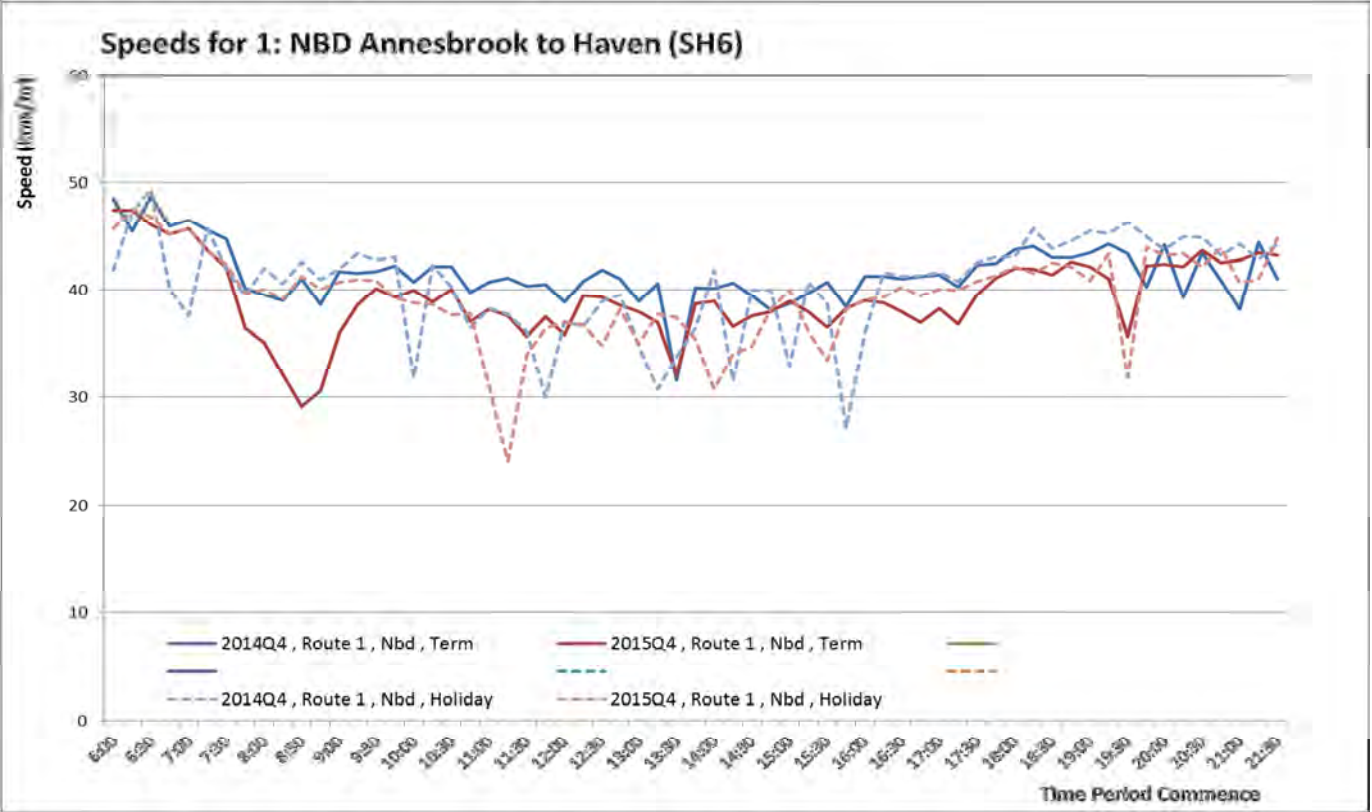
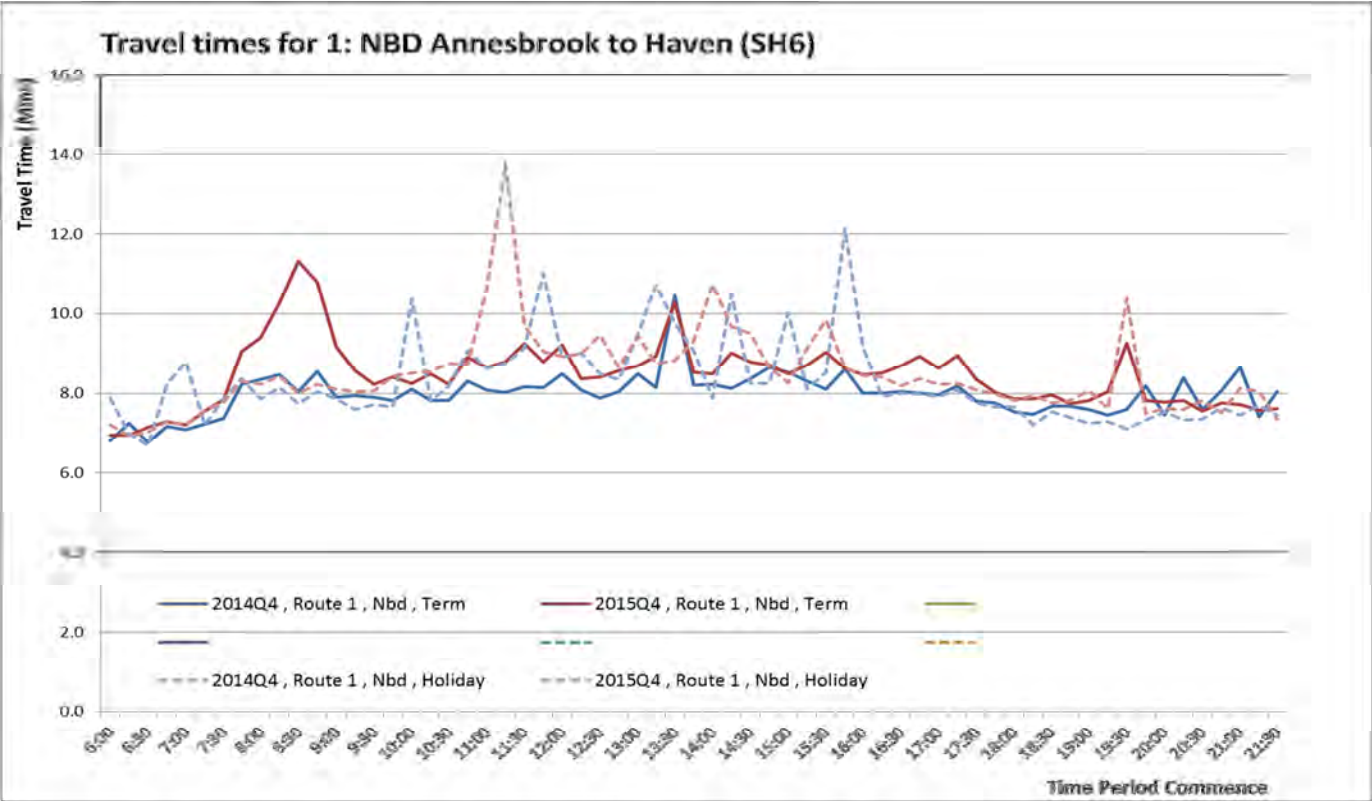


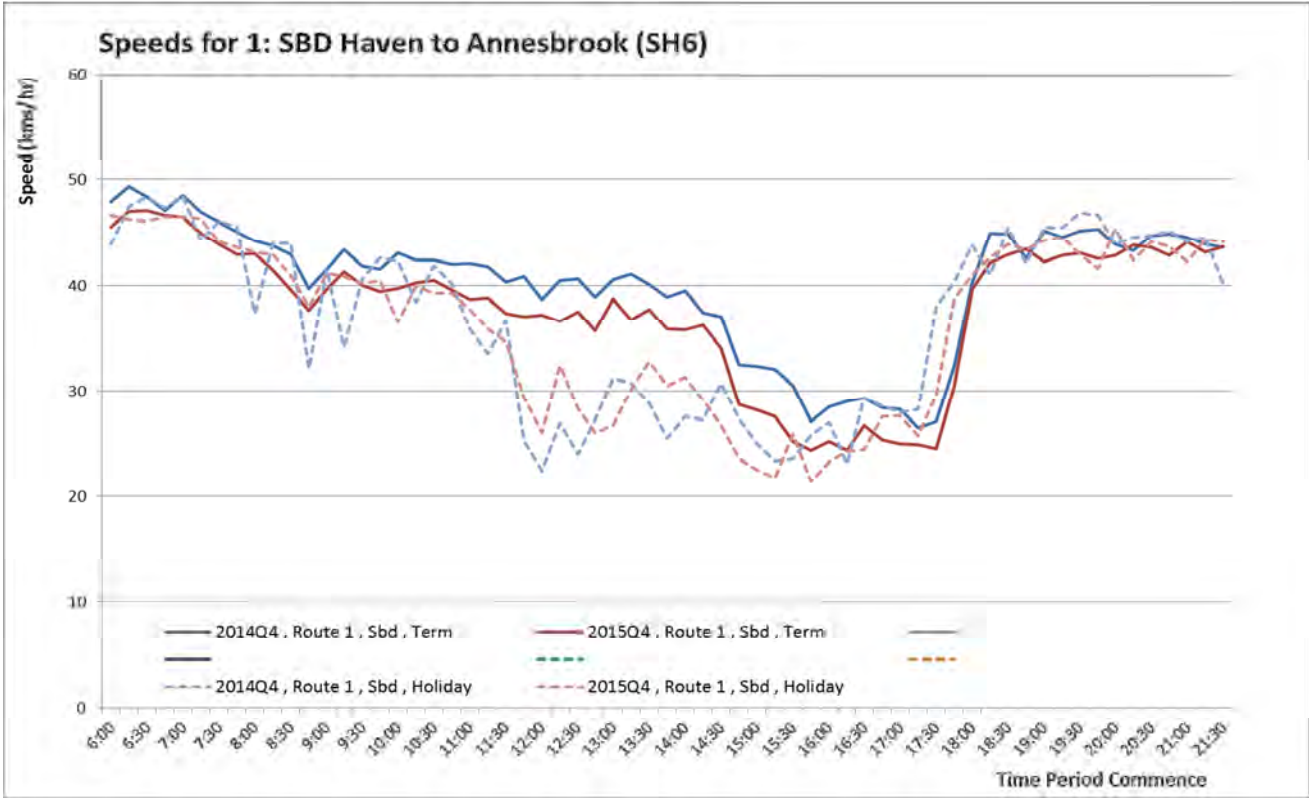
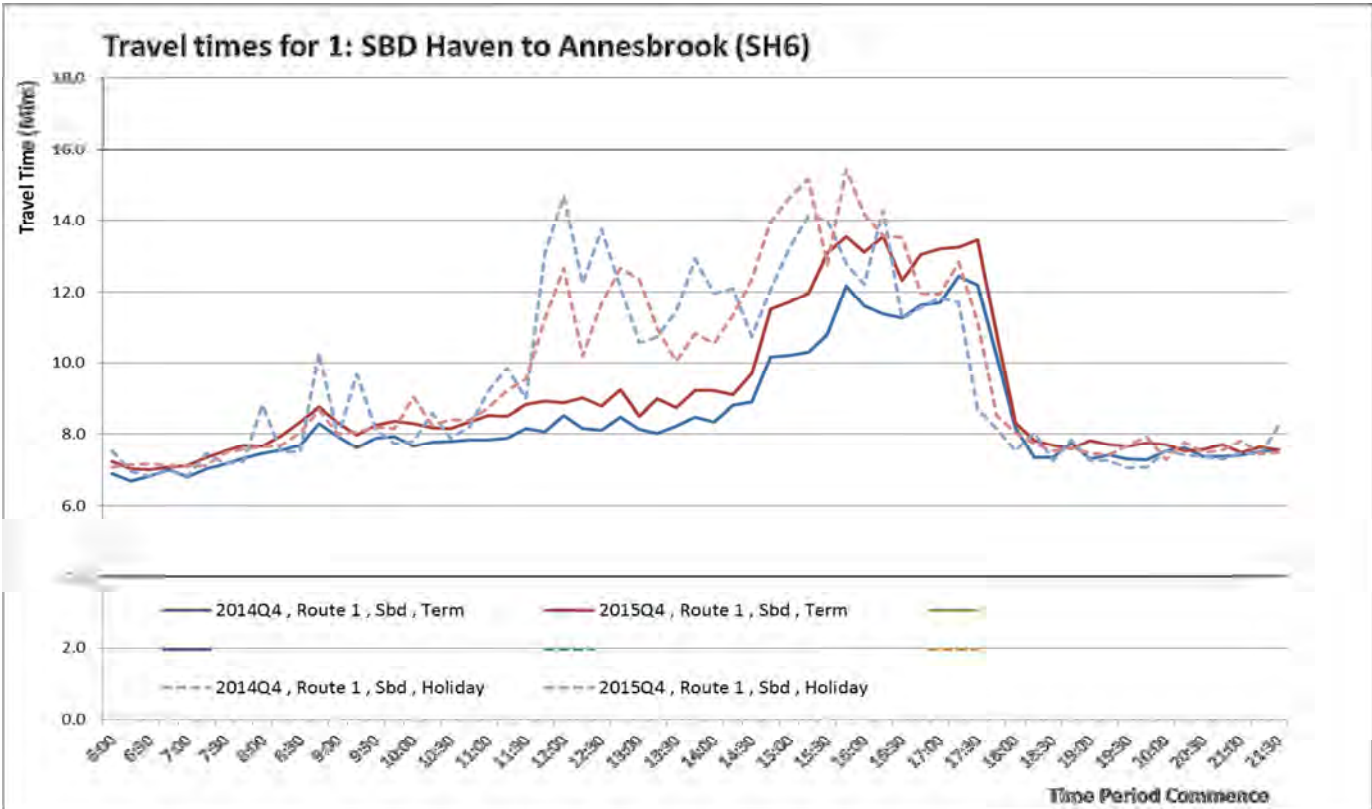


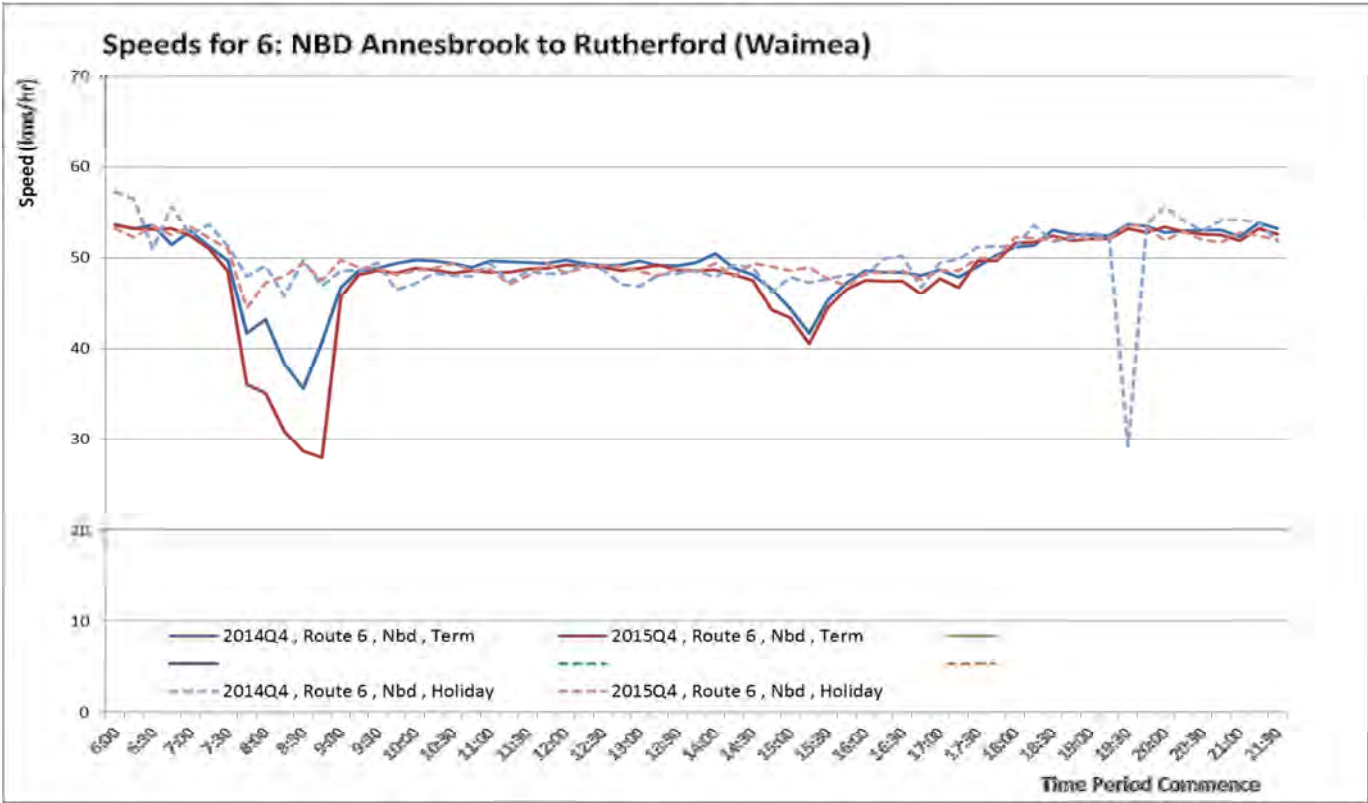
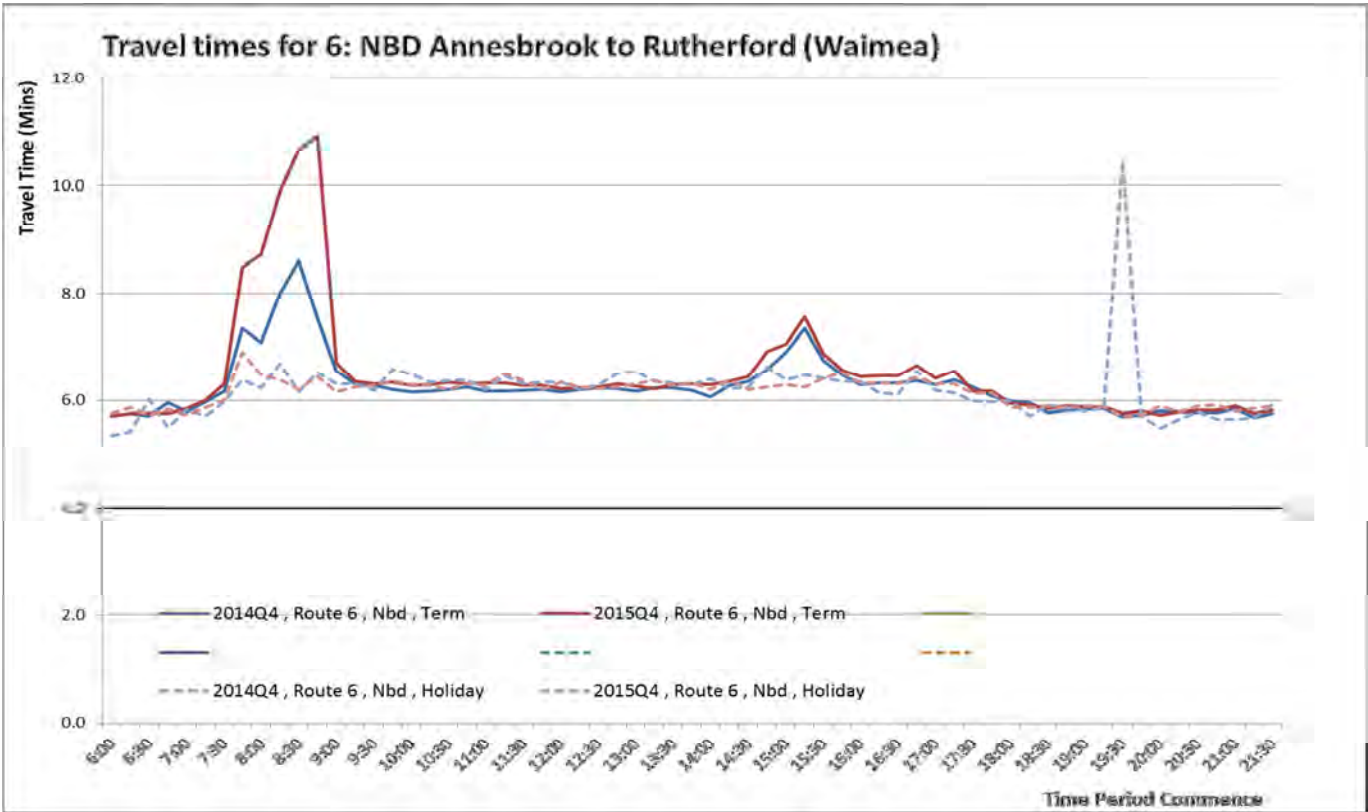


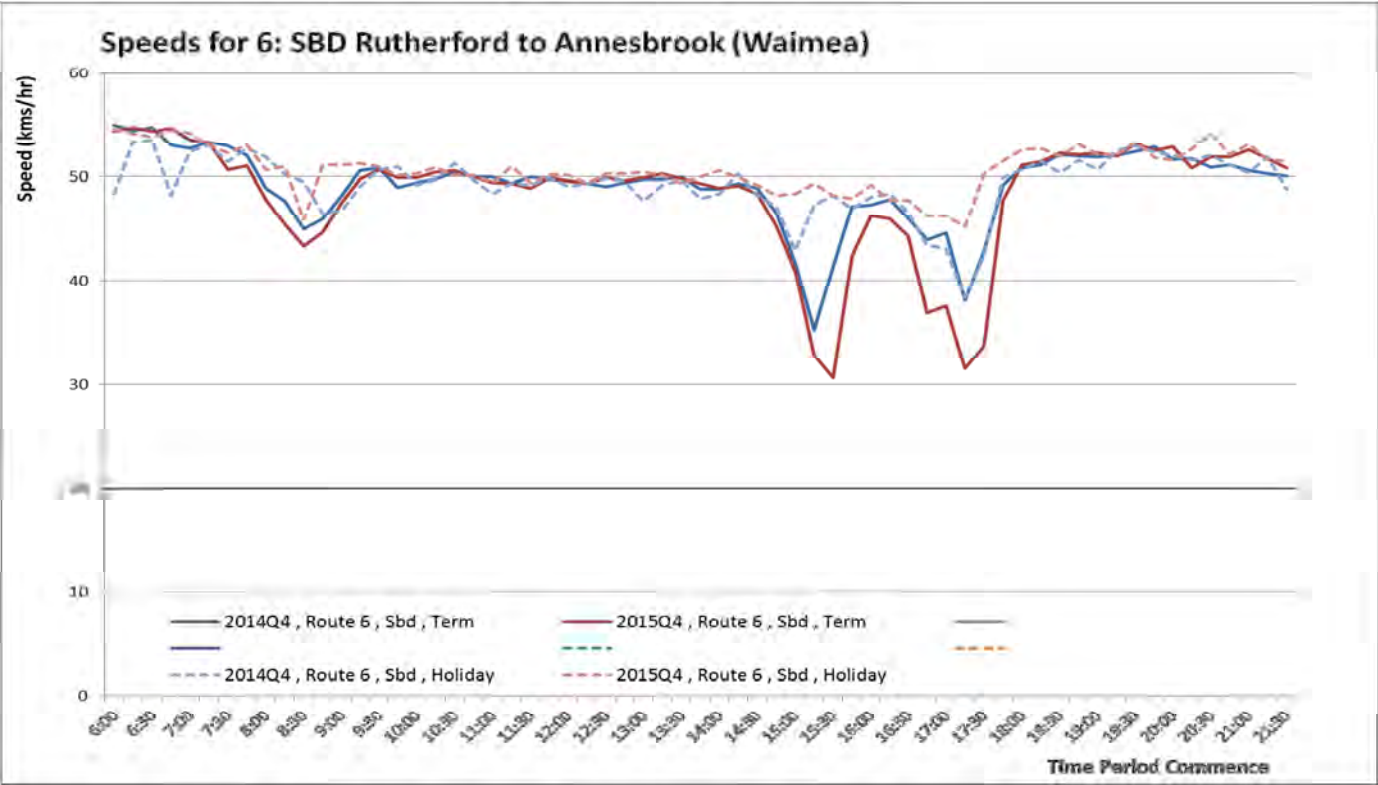
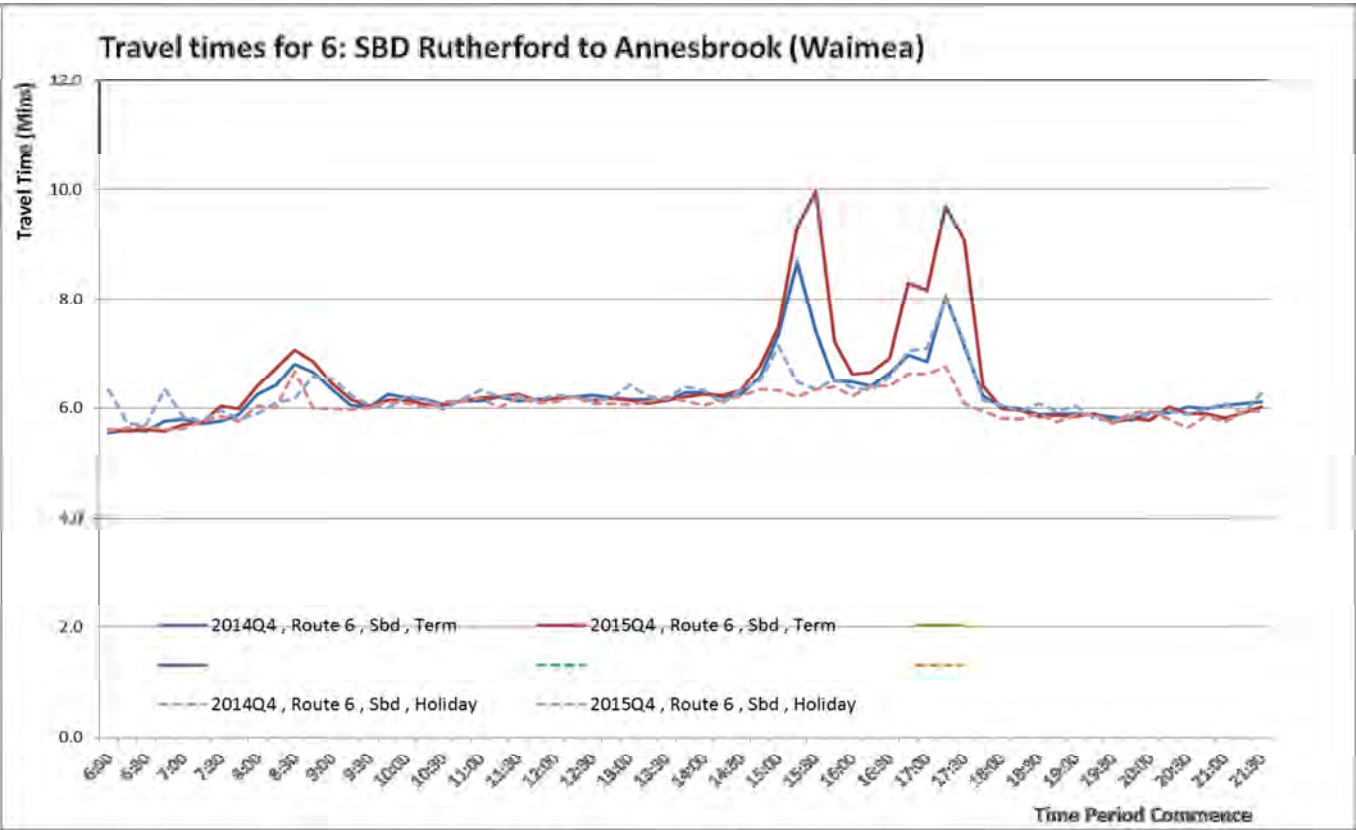


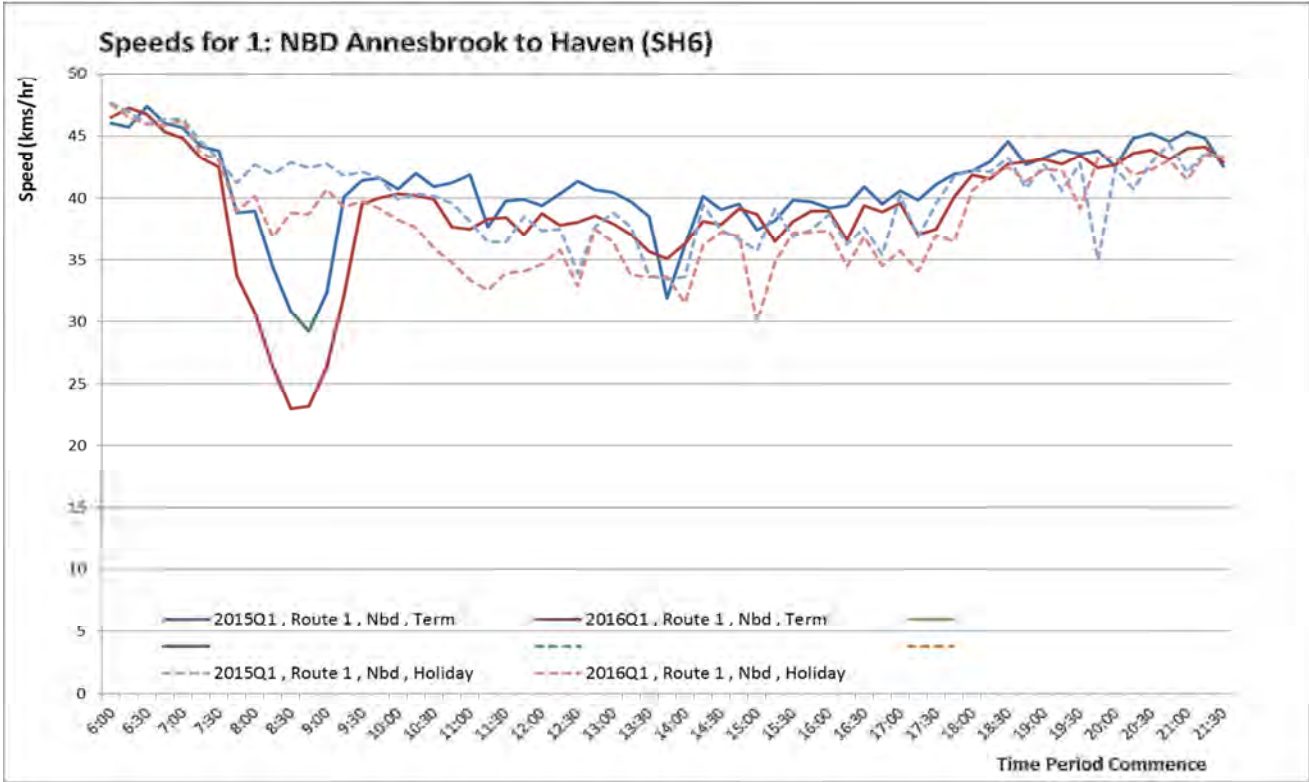
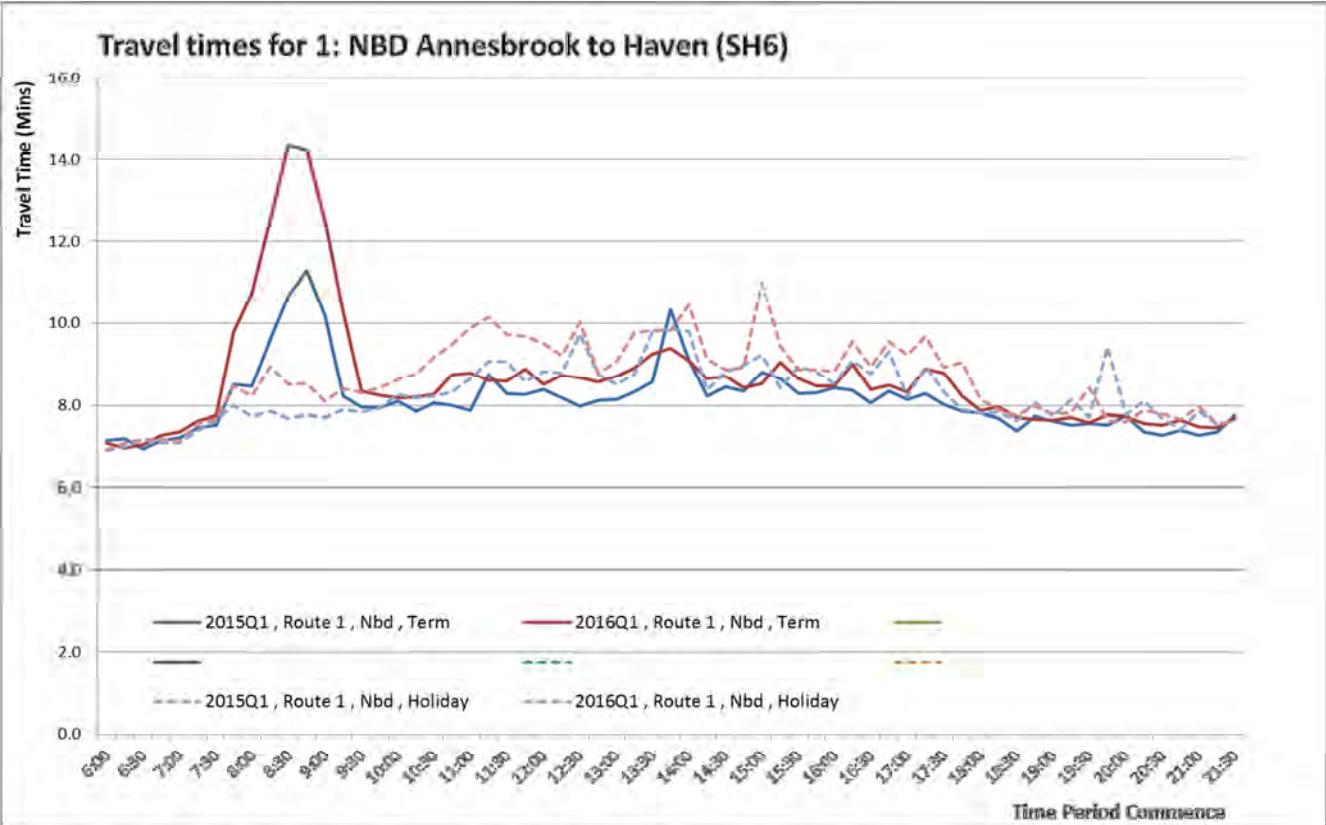


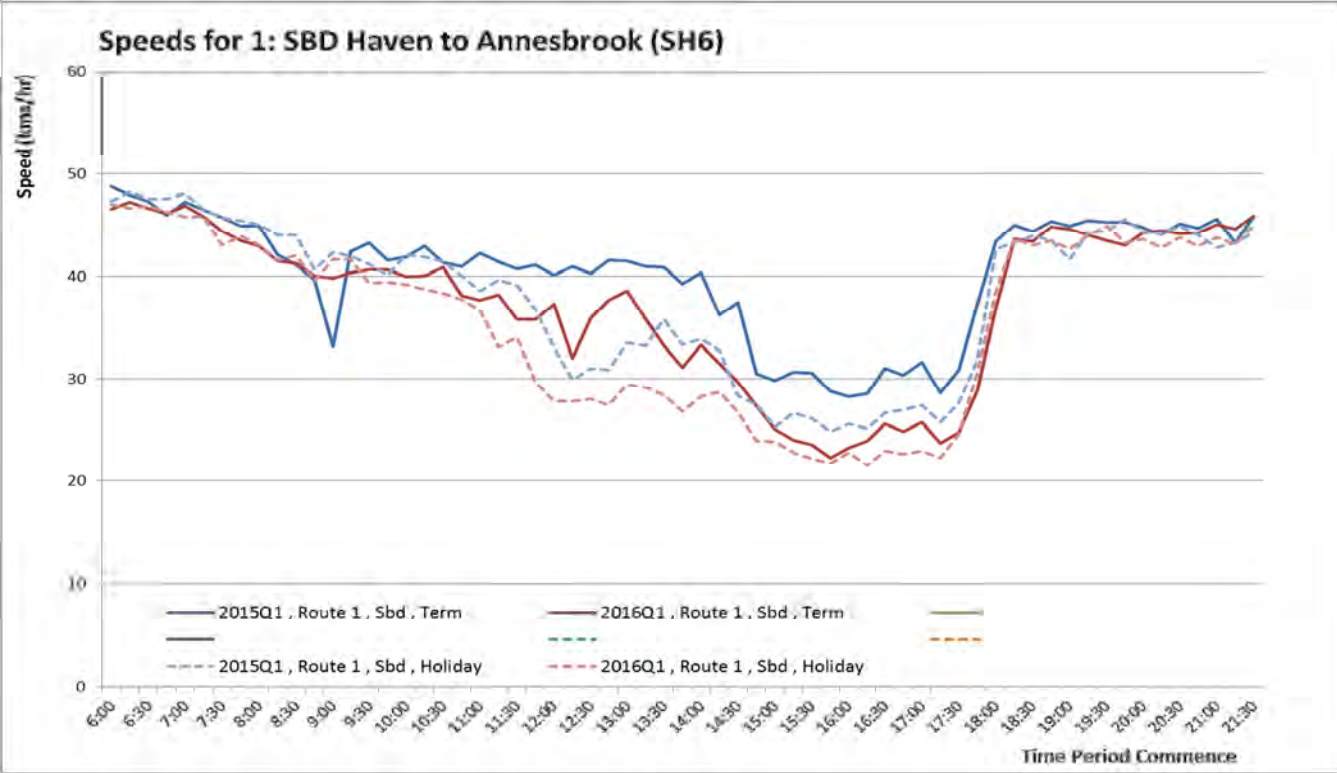
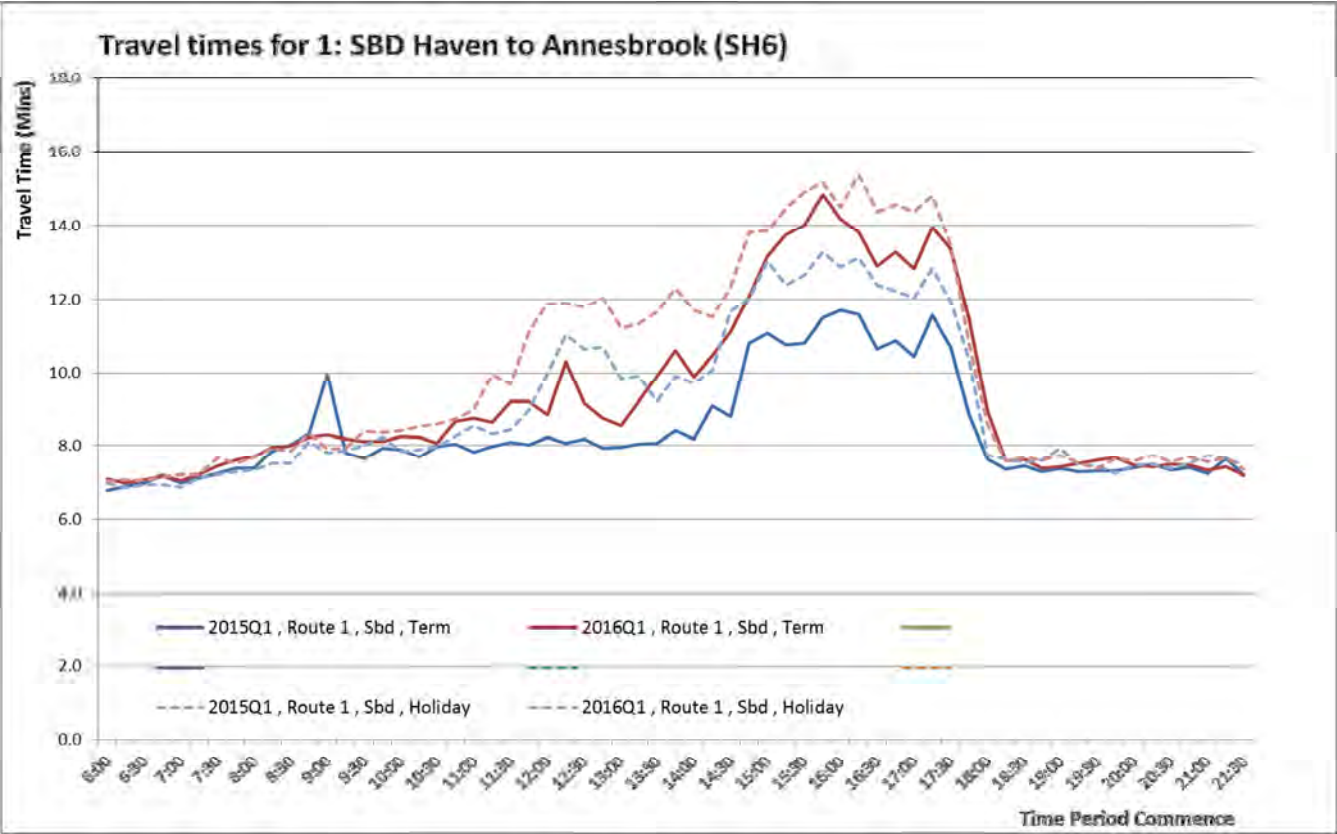


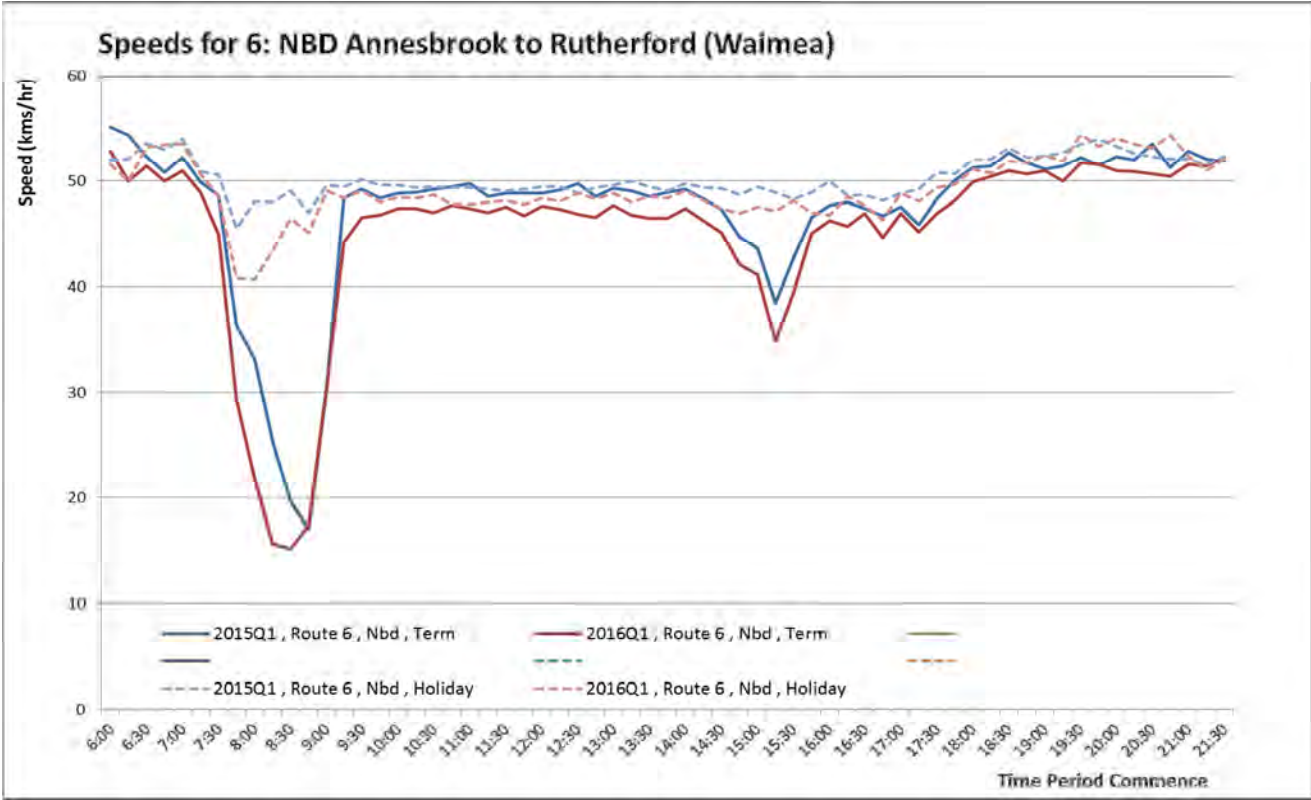
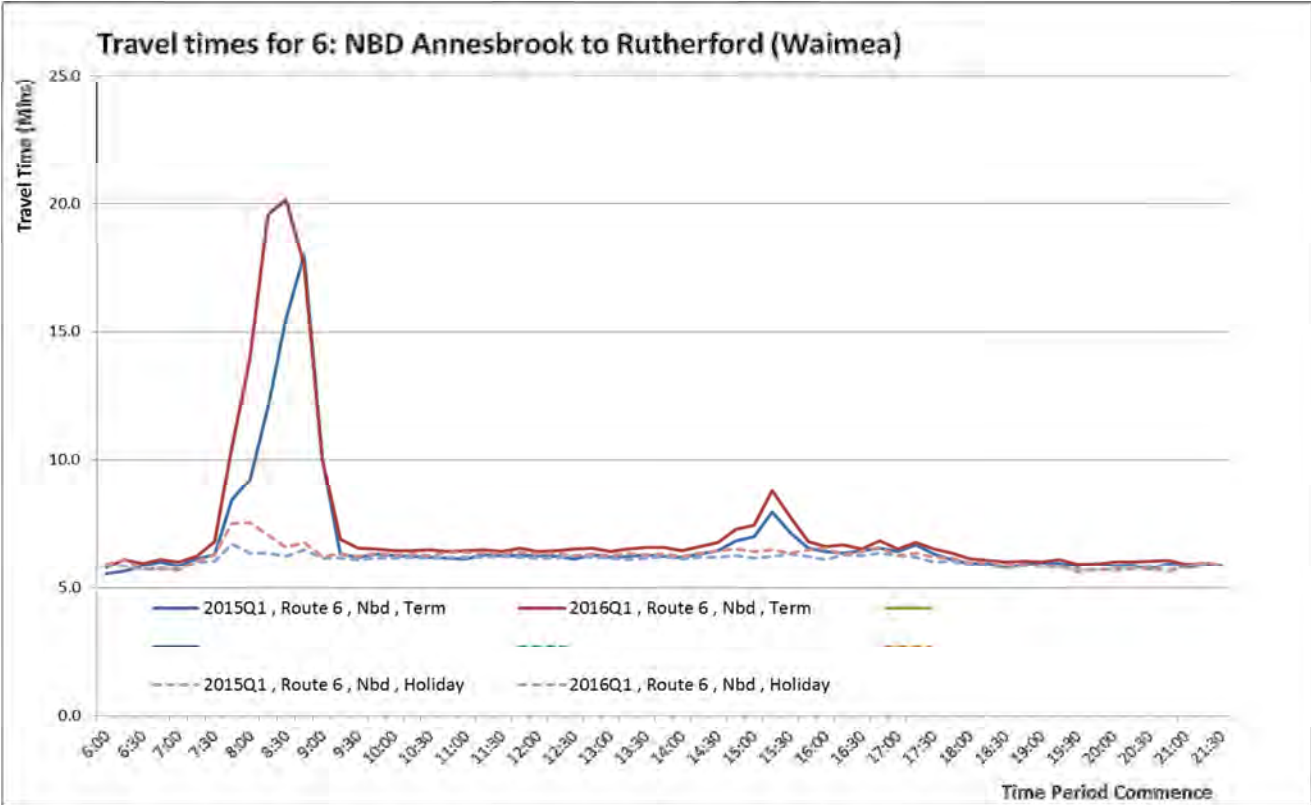


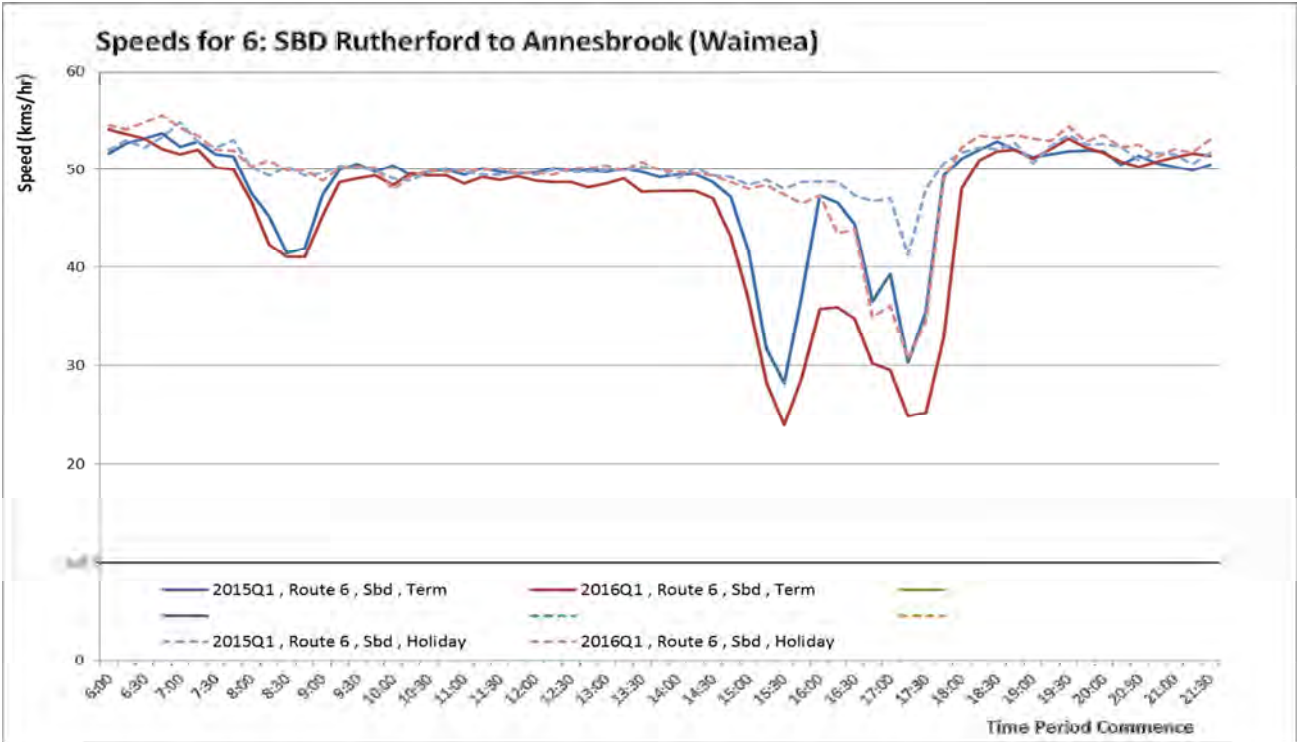
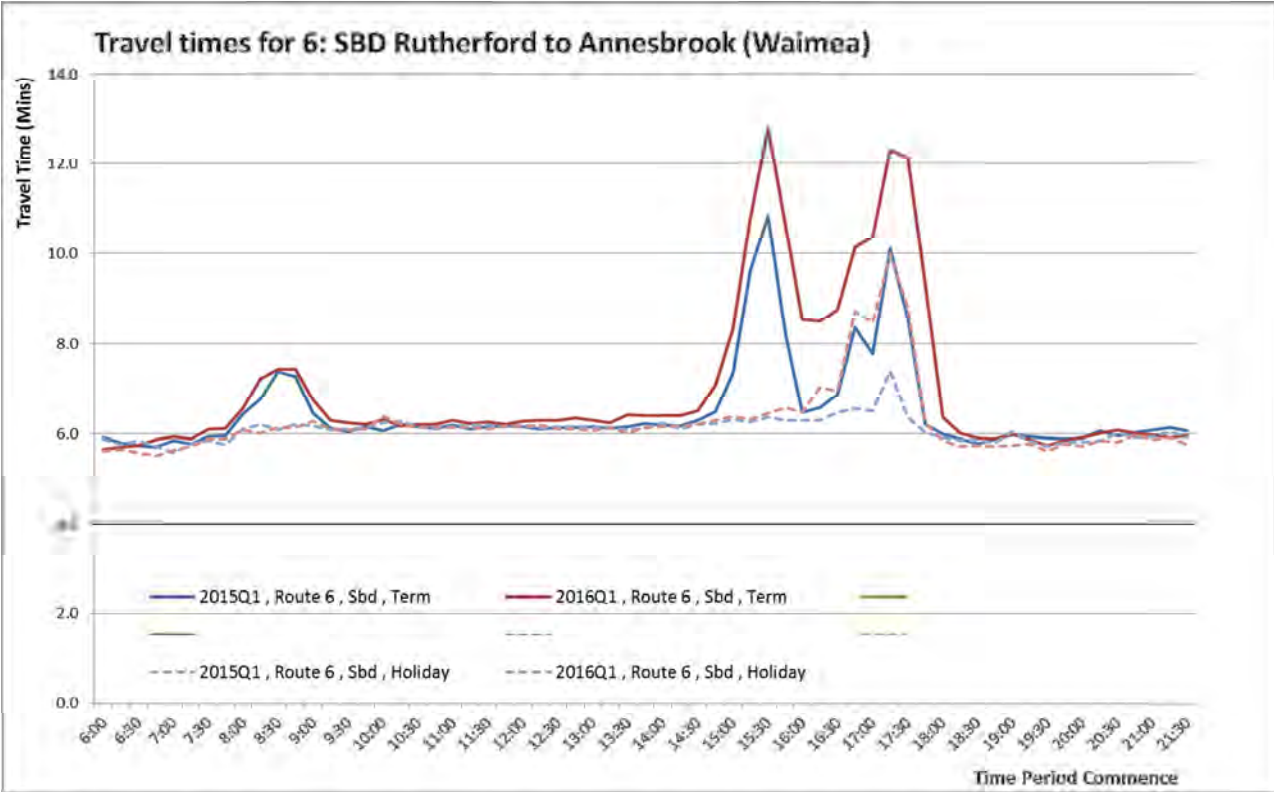


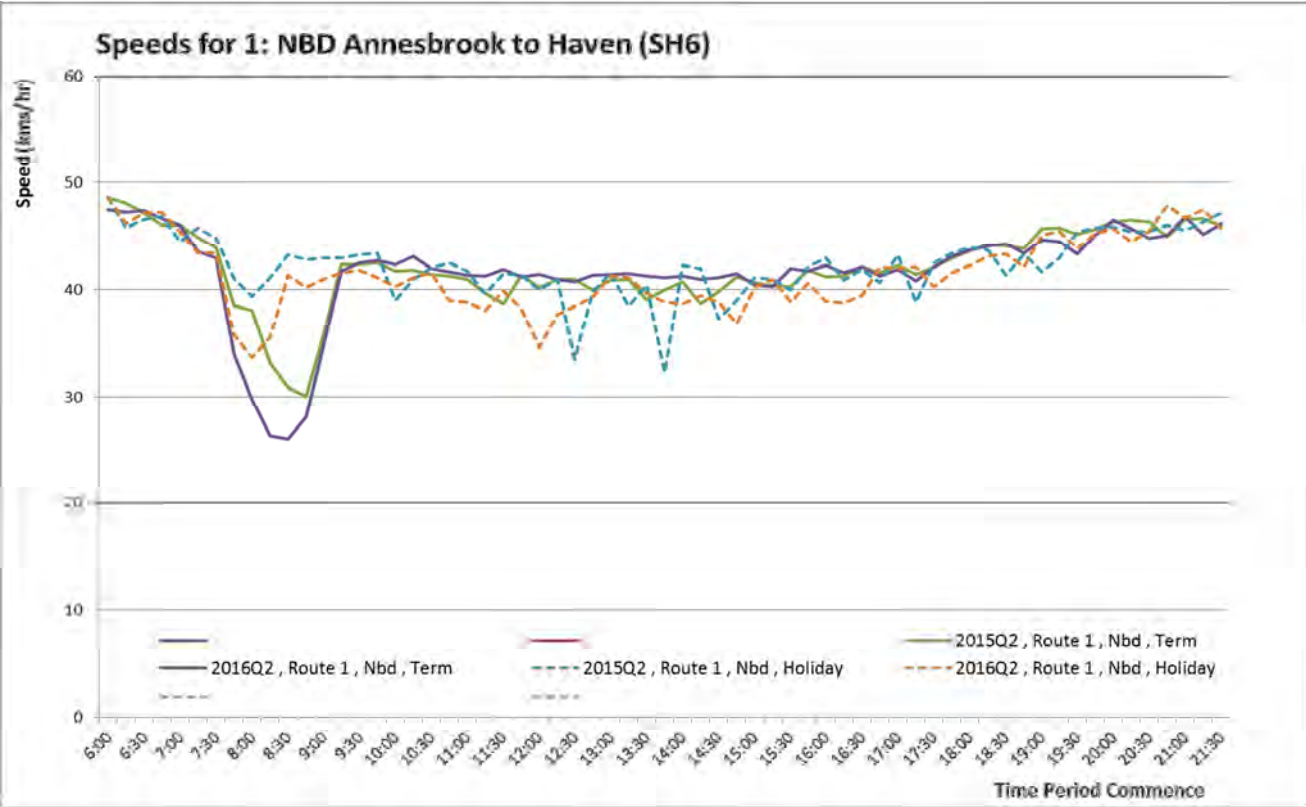
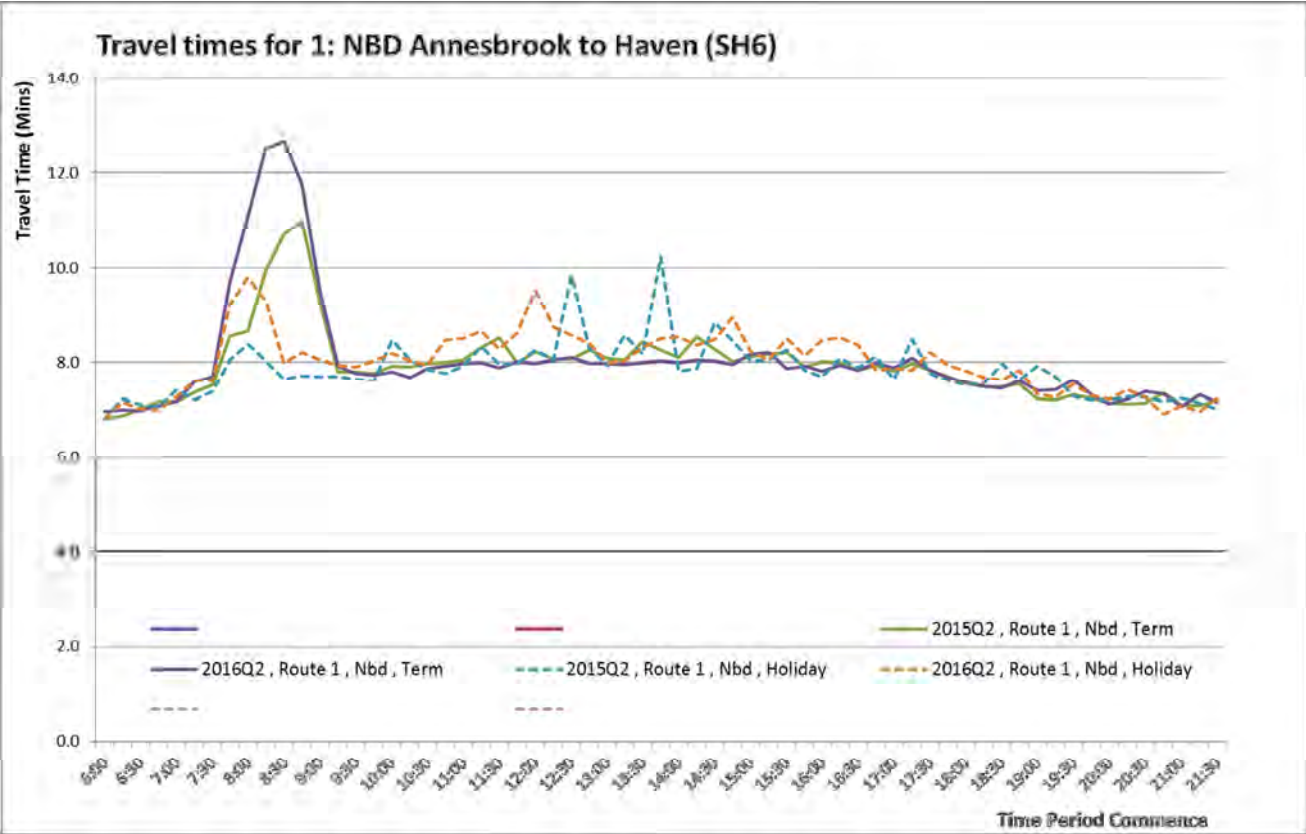


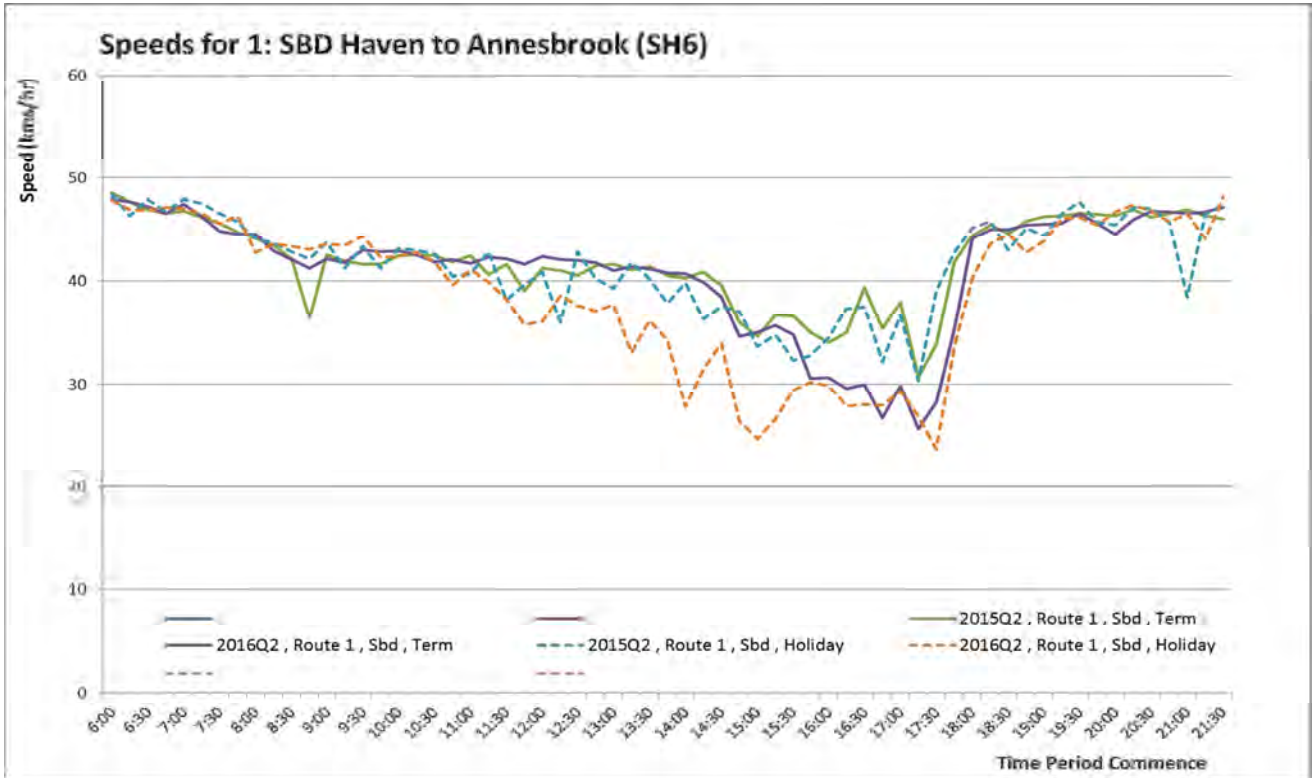
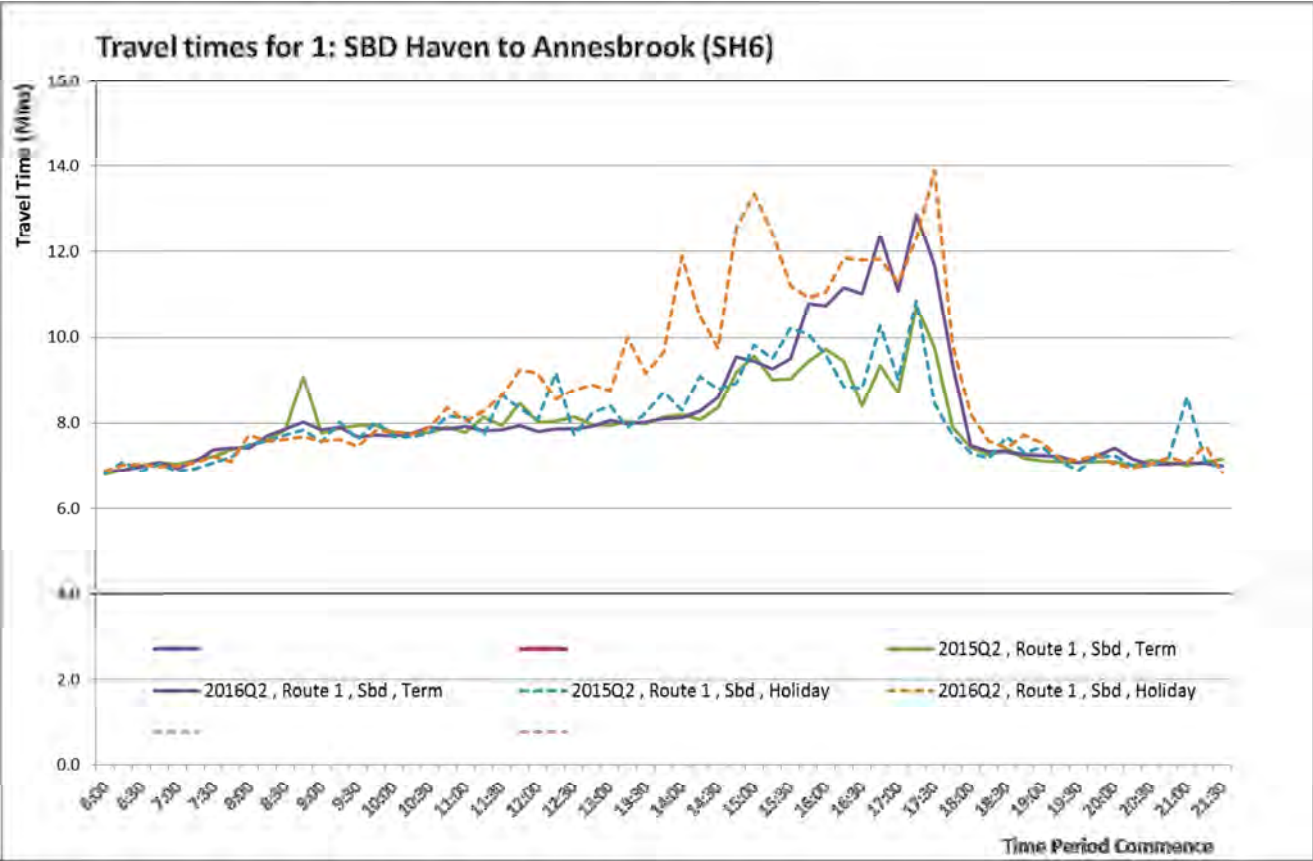


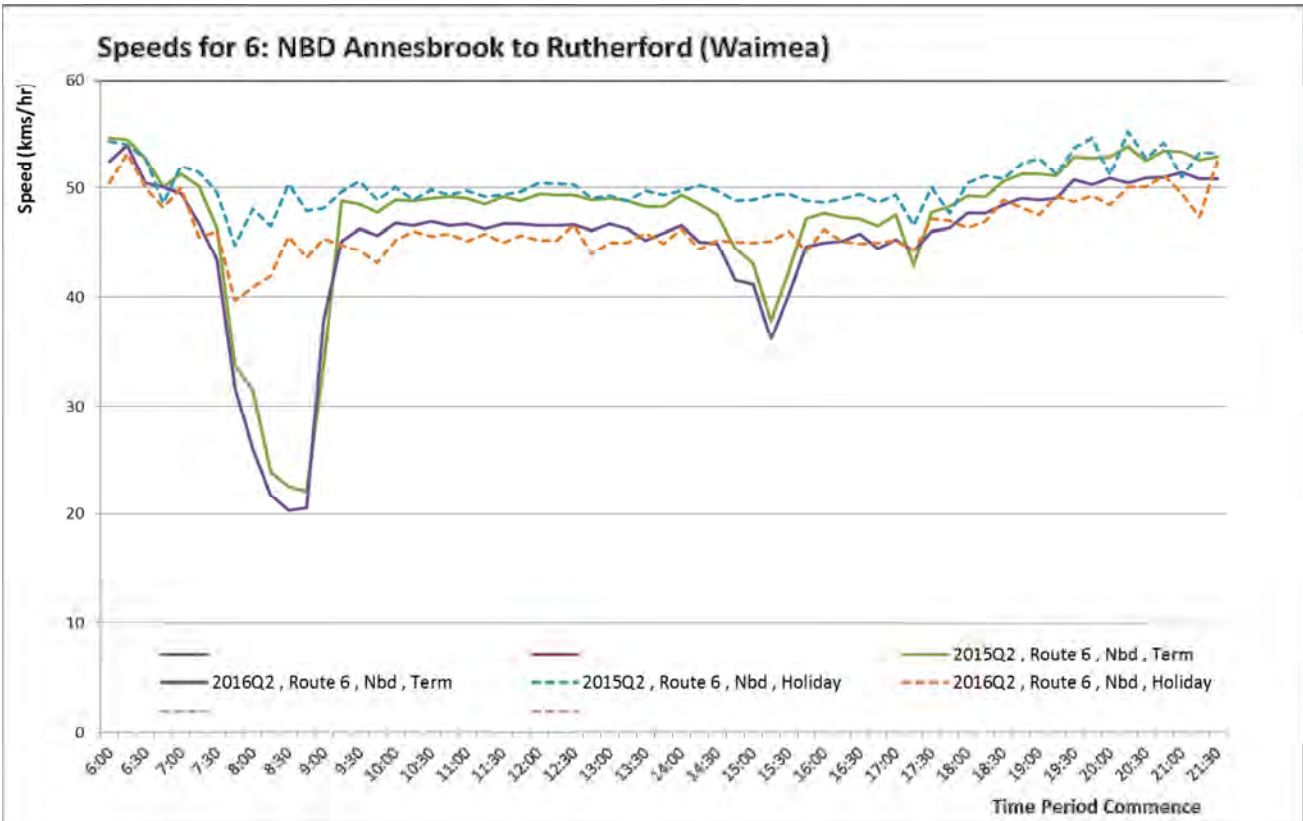
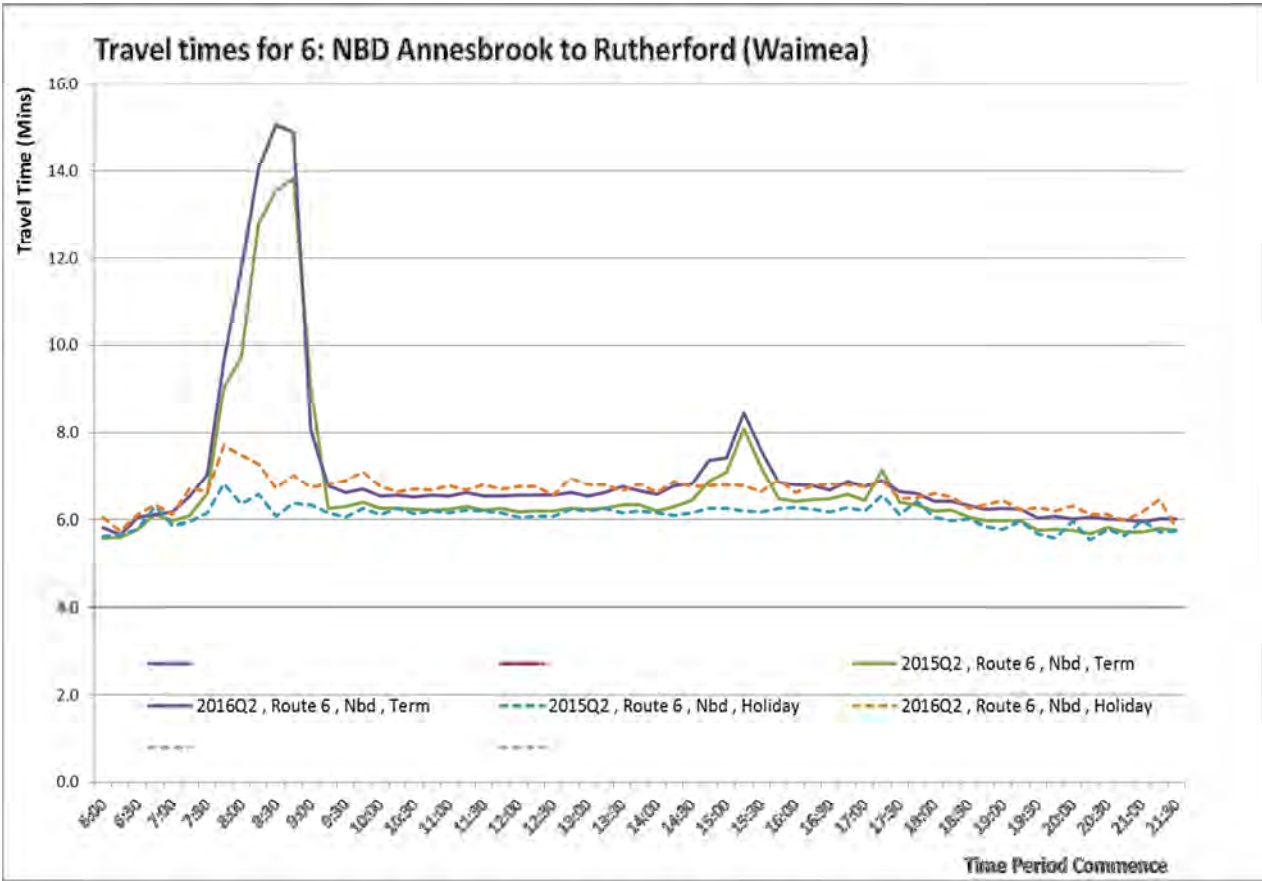


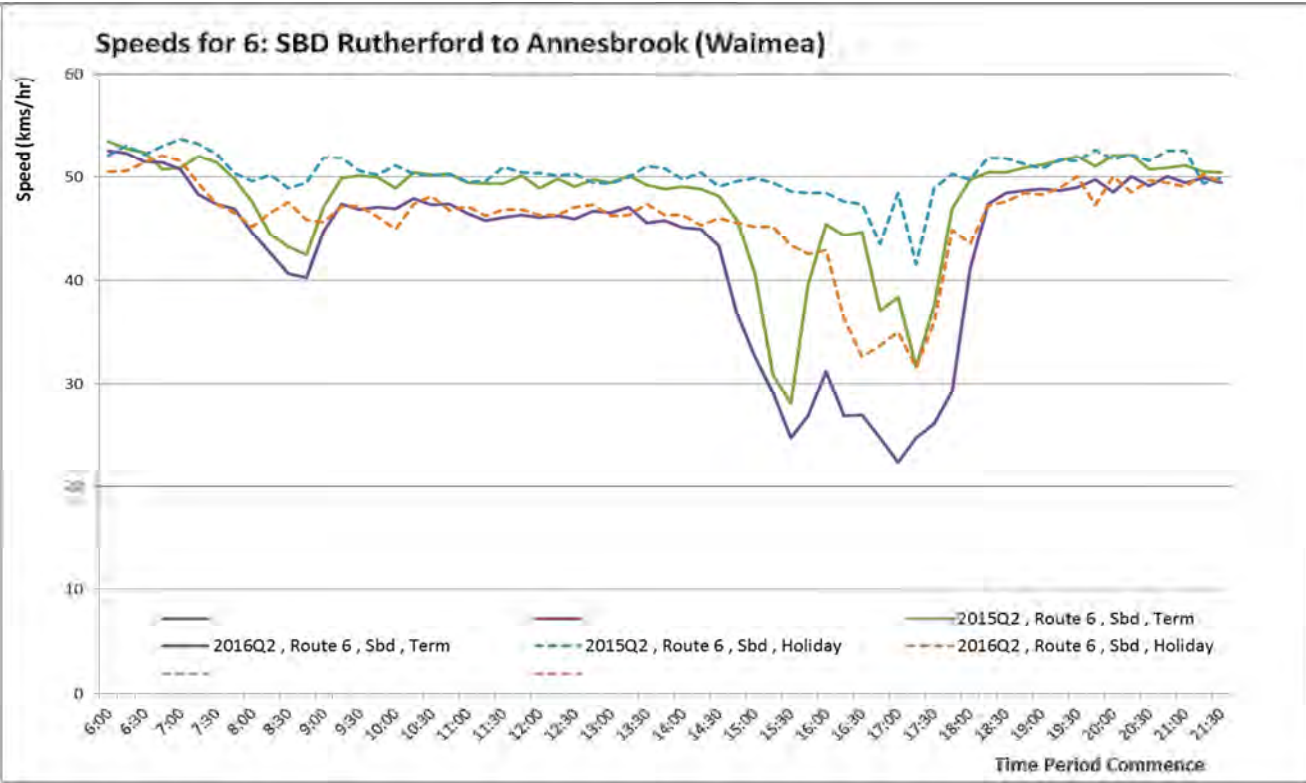
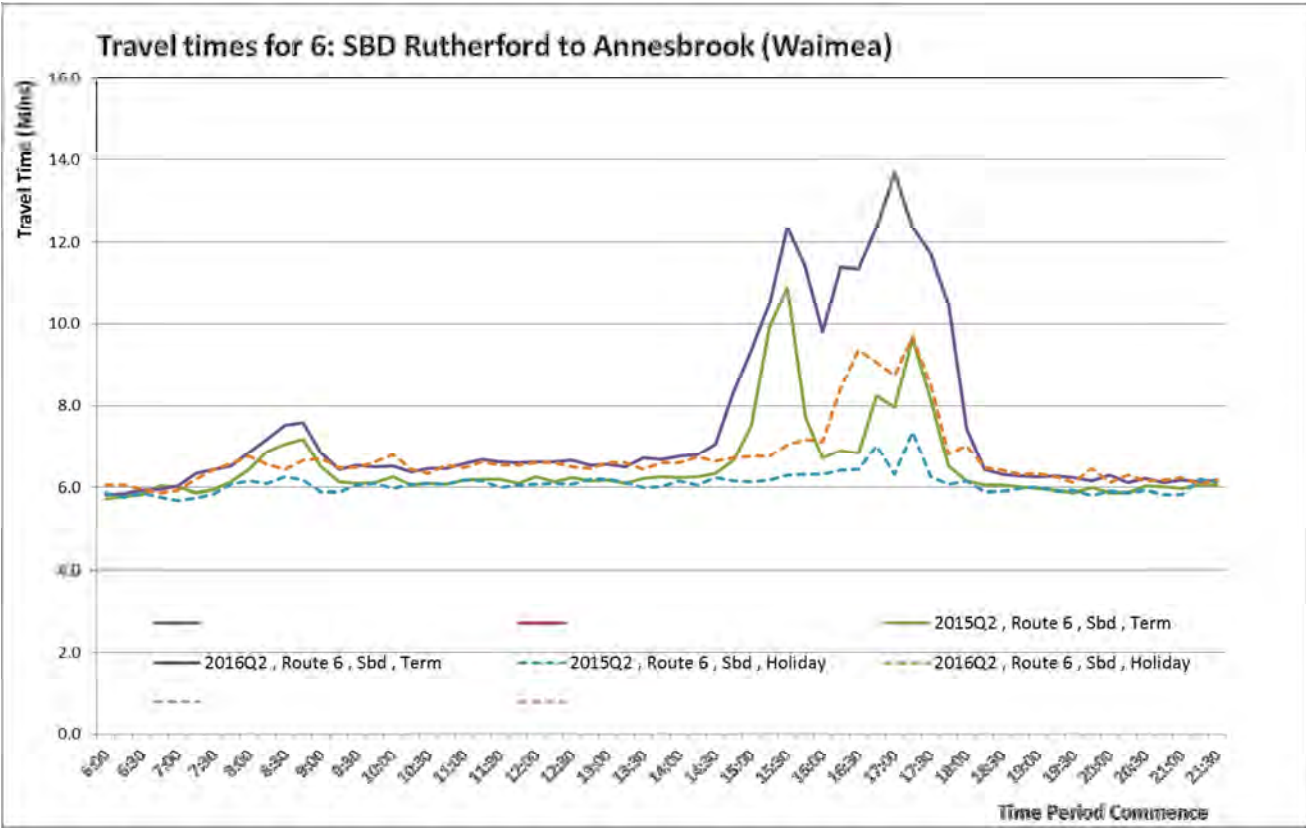


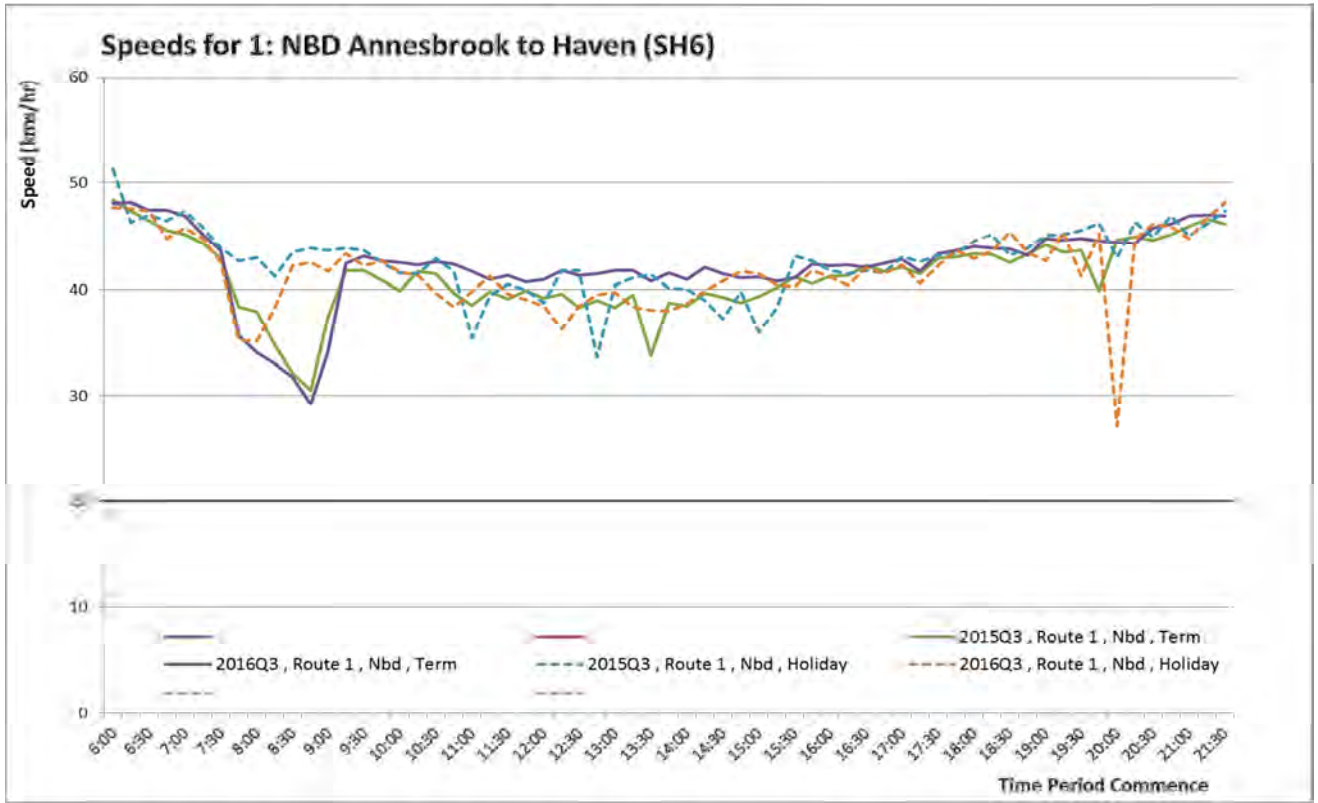
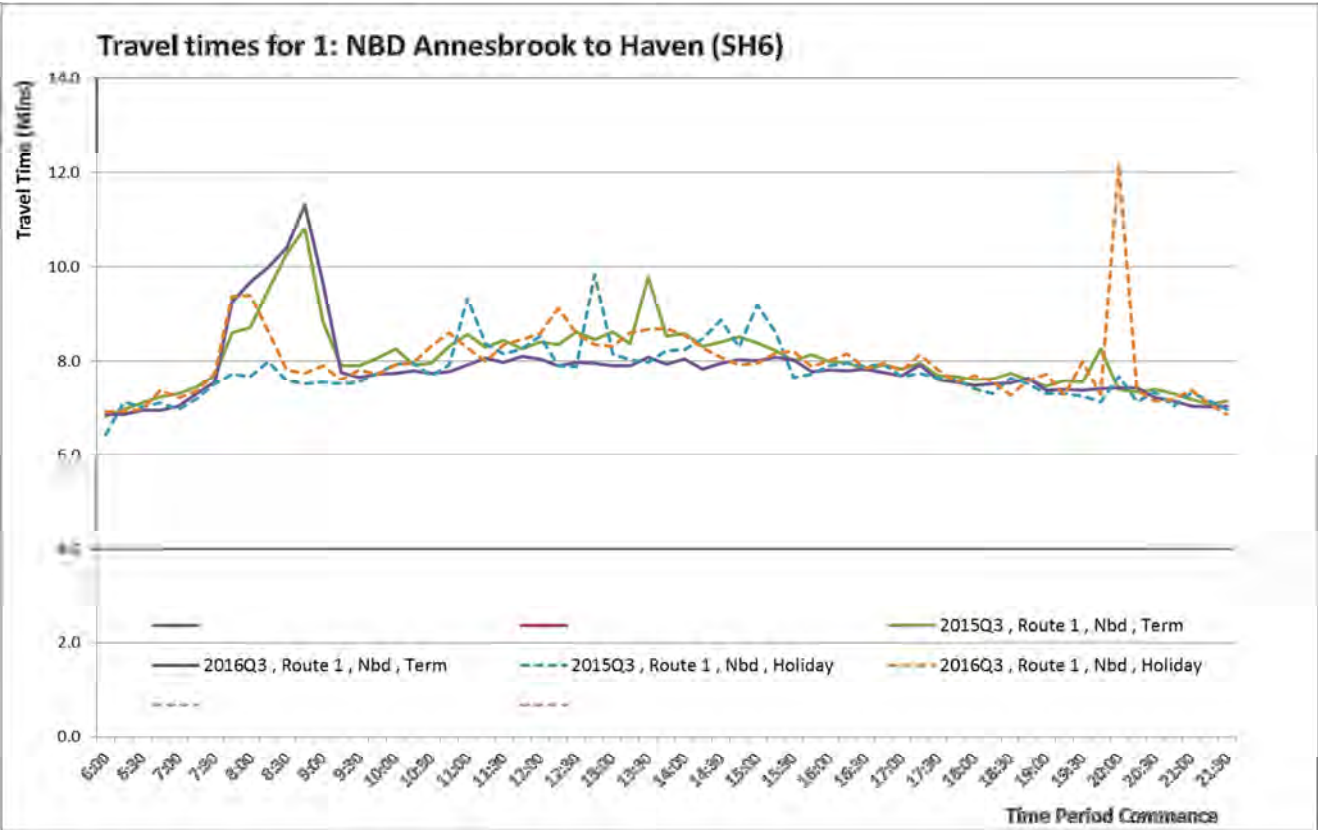


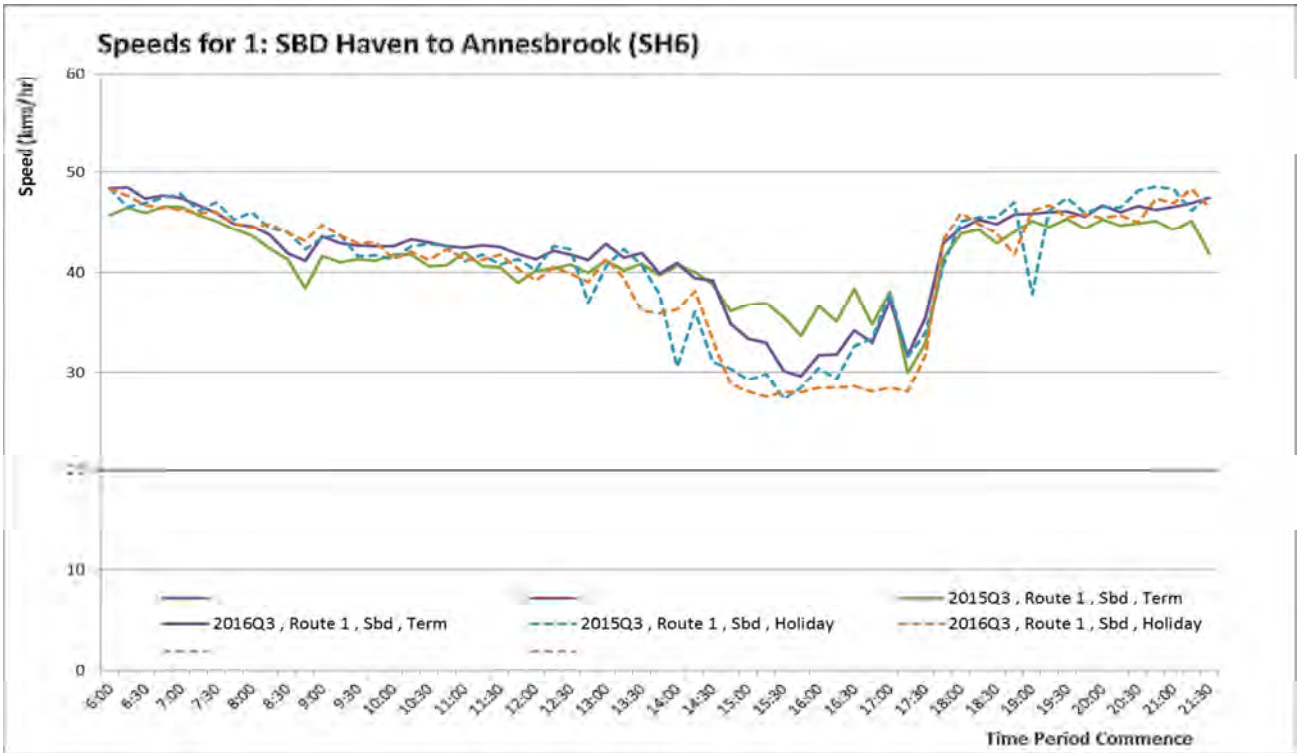
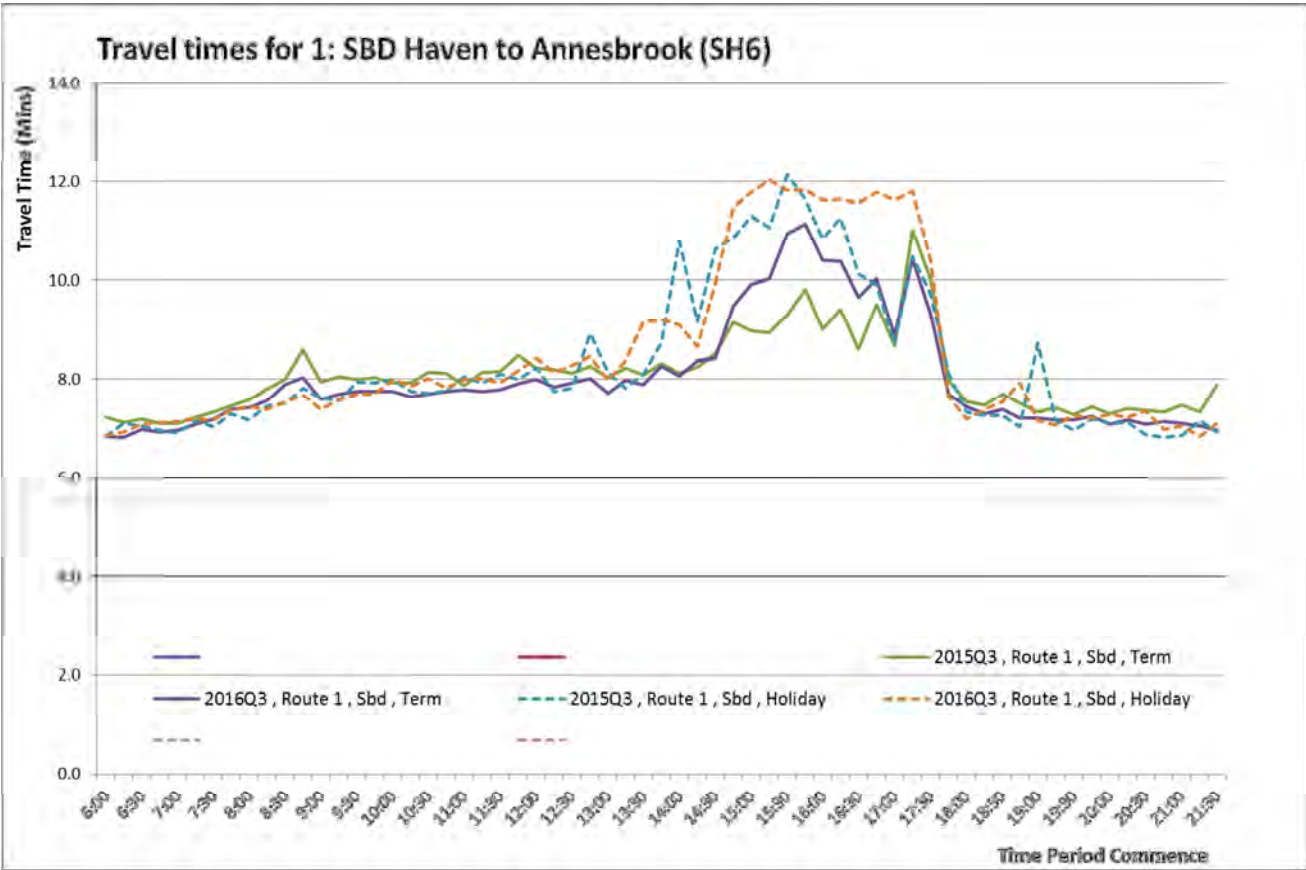


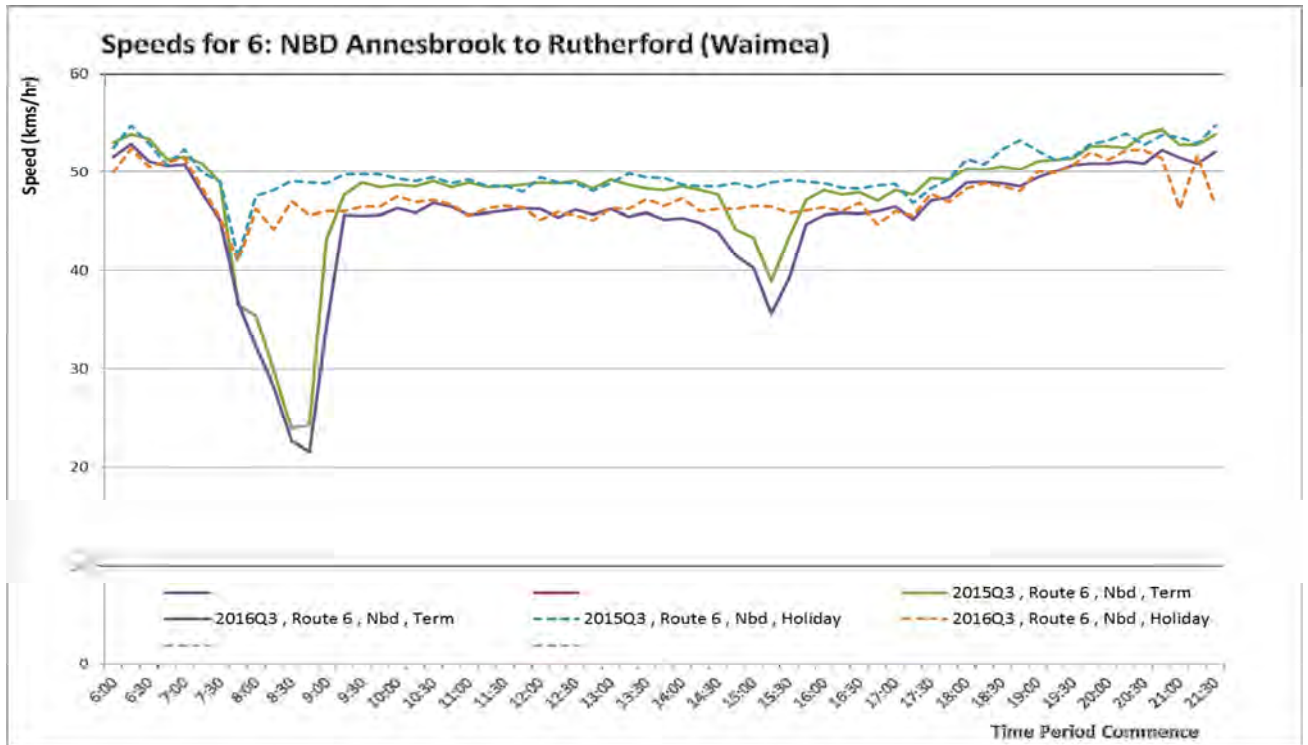
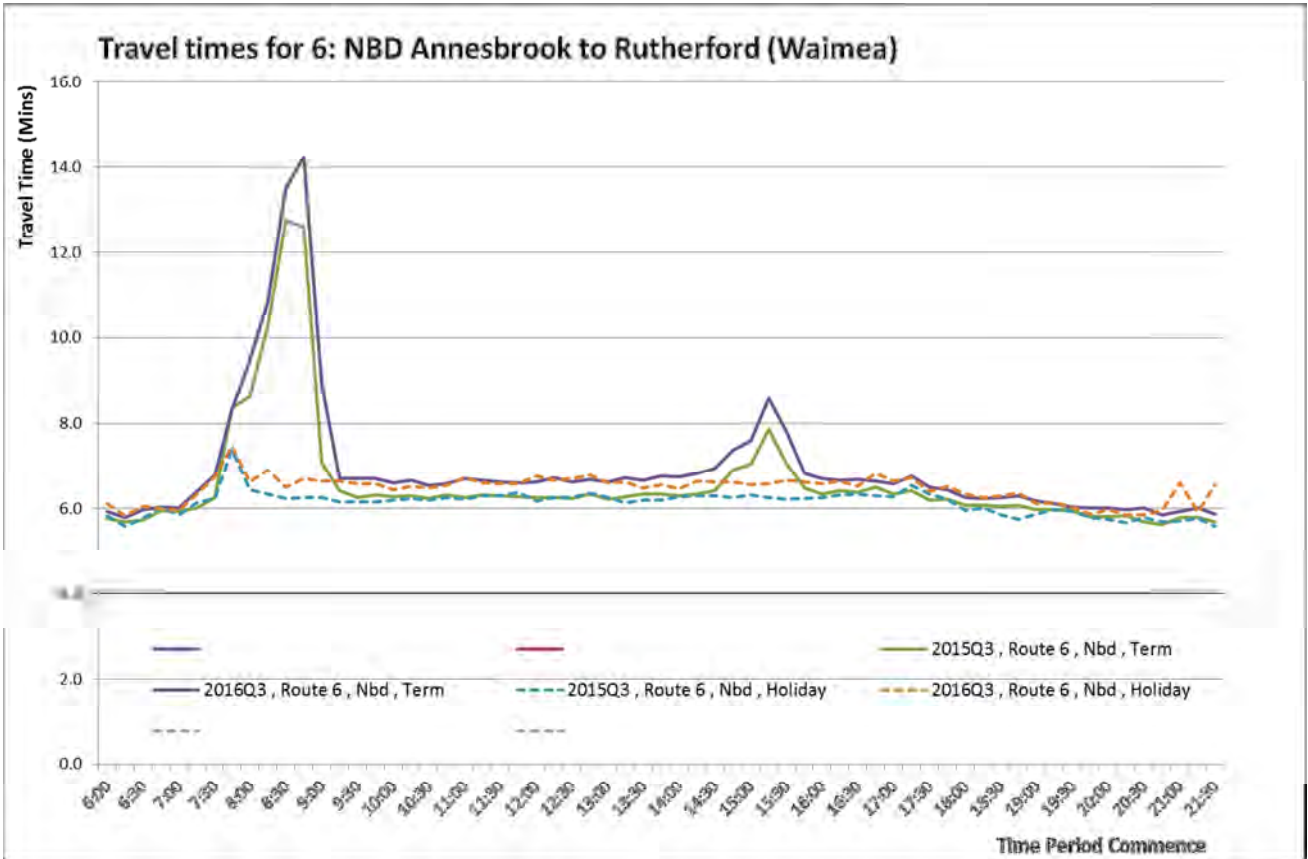


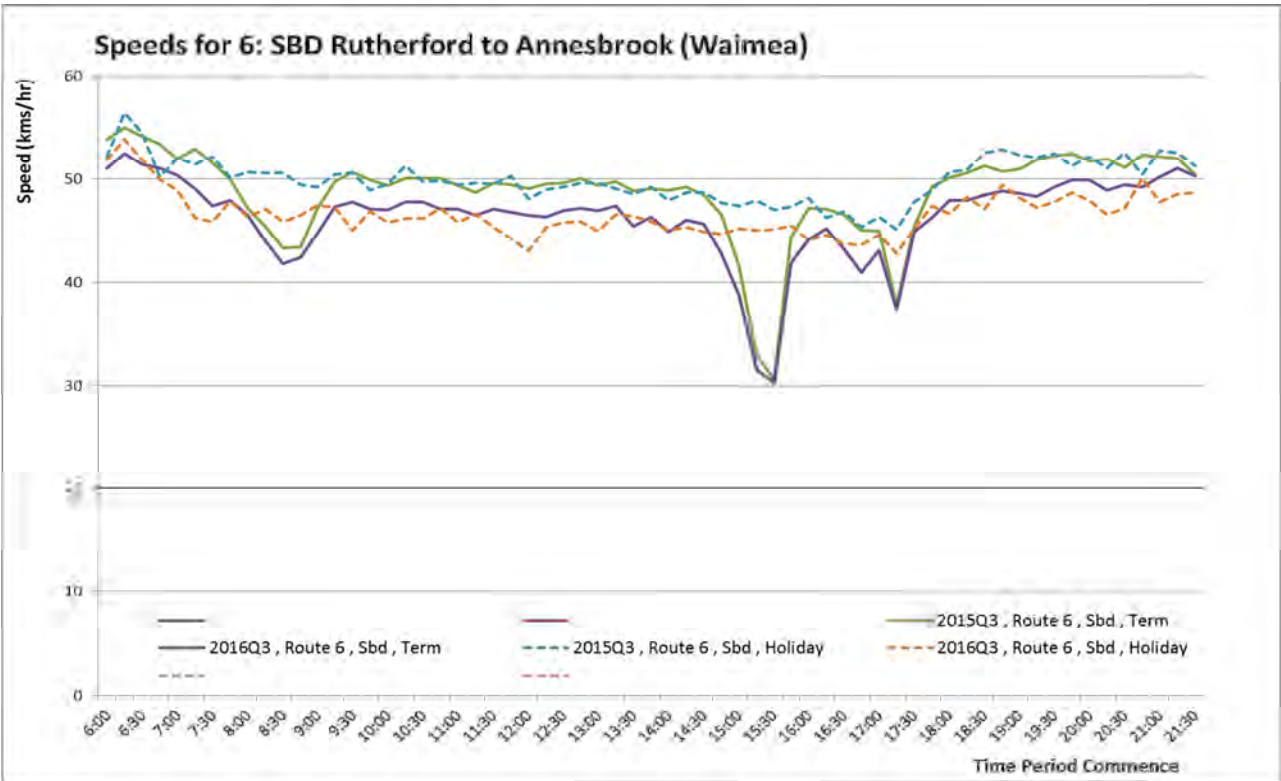
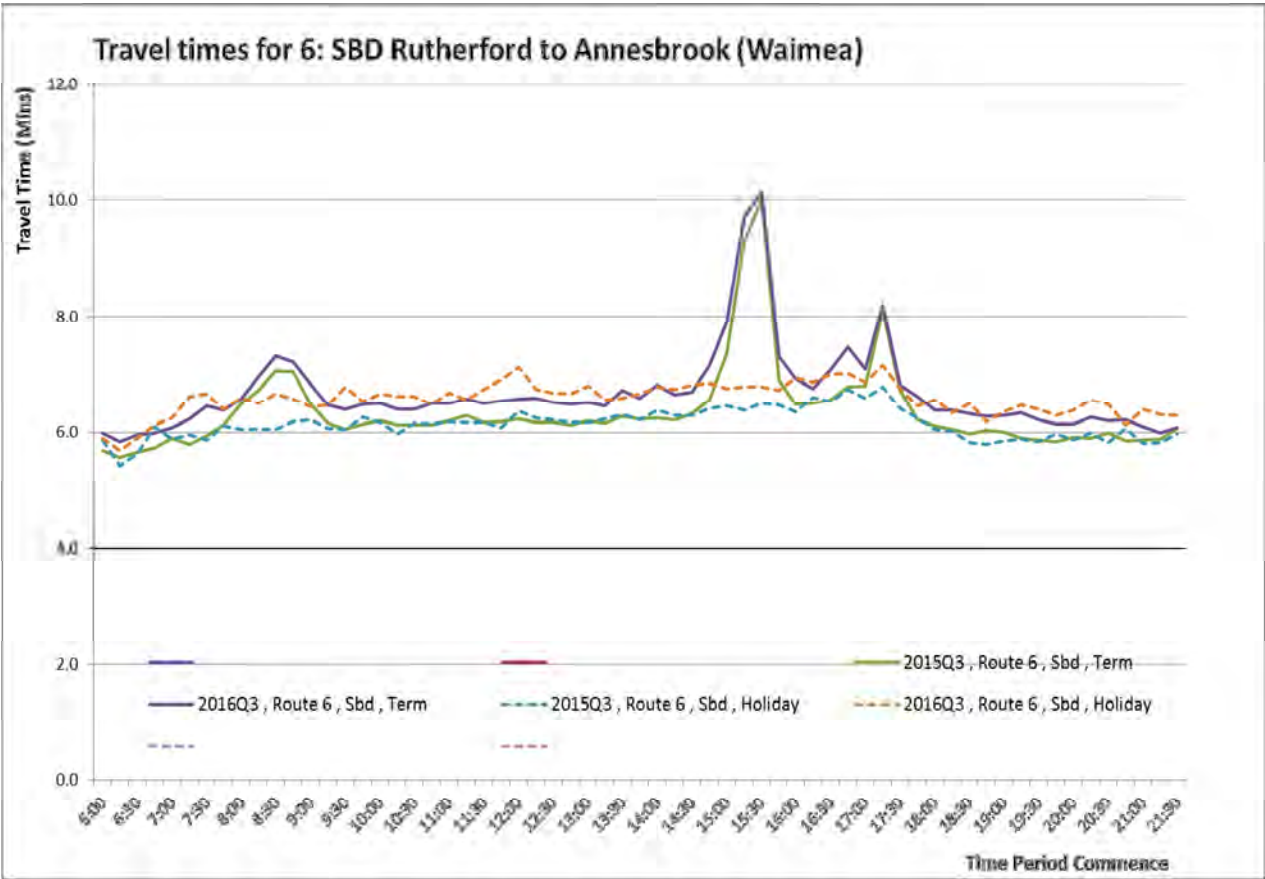












APPENDIX F – PUBLIC ENGAGEMENT SUMMARY REPORT

Nelson Southern Link Investigation

Programme Business Case Public Engagement Summary Report



Nelson Southern Link Investigation

Programme Business Case Public Engagement Summary Report

Client: New Zealand Transport Agency

Co No.: N/A

Prepared by Graeme Doherty

Reviewed by Helen Anderson

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Executive Summary

The New Zealand Transport Agency undertook a public engagement exercise between March 23rd and April 24th in 2016. The purpose of engaging with the public was to seek feedback about the significance of two transport problems identified in the Strategic Case, on three approaches identified by the Transport Agency to solve these problems, and any other approaches or additional ideas the public may like us to consider.

Options from the Rocks Road Walk / Cycle Facility Options Update Report that looked to address problem 2 were incorporated into the feedback material presented to the public because the two transport projects are informed by one another.

Seven public information sessions of approximately three hours each were held where the public could come and ask members of the project team questions.

The public were notified of the engagement exercise prior to the start date of the 23 March 2016 and throughout the engagement period via newspaper advertisements, radio adverts, the project website (which is accessed from the Transport Agency's website) and posters around Nelson city.

A feedback booklet was produced which provided information about why the Transport Agency was consulting, a timeline associated with the Programme Business Case (PBC) phase, information on how future growth affects the transport network, a description of the approaches to solve Problem 1, options associated with solving Problem 2, a table identifying options within each approach that could help work towards solving the two problems, a weblink address to access supporting information, the feedback booklet and form plus supporting documents, and a separate form providing a description of example options that could be included in an approach if a different one was chosen by the submitter. There was also the opportunity in the feedback form to add or remove options to / from the three approaches or present an alternative approach.

All documents (including supporting documents) were available in hard copy and could be viewed at the public libraries in Nelson, Tahunanui and Richmond and at the locations of the public information sessions

Feedback could be given via the feedback form, which could be submitted into a drop box provided at each library, via an internet based survey, by handing in the feedback form at one of the public information sessions, by posting using a freepost address, or via the project e-mail account.

Prior to the start of the public engagement, the Transport Agency presented the feedback booklet to Nelson City Councillors on the 22nd of March 2016 and updated Council on the process about to commence.

Feedback was received from individuals, stakeholders, organisations, societies and interest groups. A total of 2114 responses were received during the engagement period. People were asked to provide feedback to a number of questions but some choose only to answer a few. The main findings were:

- Of the 2056 responses received in answer to the question about the significance of the problem of congestion, 16.1% said it was not significant, 15.3% said it was somewhat significant, 14.3% said it was moderately significant and 54.4% said it was very significant.
- Of the 1985 responses received in answer to the question about the layout, look and feel of Rocks Road being a deterrent for walking and cycling, 64.0% said that it was a deterrent and 36.0% it wasn't.

- Of the 2010 responses received in answer to the question about a preferred approach to solve the problems, 24.0% preferred Approach A, 10.5% preferred Approach B, 61.4% preferred Approach C and 4.1% preferred Approach D.
- The majority of respondents who chose Approach D had a preference for Rocks Road options 3 and 4 to be part of Approaches B and C or to include widening of walking and cycling infrastructure within Approach A.
- Of the comments received by respondents, the most often mentioned was “just do something”. This comment was in relation to both problems.

A separate telephone survey was undertaken of five-hundred randomly selected people (four-hundred in Nelson and one-hundred in Tasman). The questions asked were consistent to the questions asked in the feedback form.

With regard to a preferred approach, 17% favoured Approach A, 34% favoured Approach B and 46% favoured Approach C.

1.0 Background to Public Engagement

The Nelson Southern Link Investigation (NSLI) is part of the Government's Accelerated Regional Roothing Package for state highway projects. The investigation is looking at how best to address existing and future transport issues on the arterial networks between the Annesbrook Drive and Haven Road roundabouts.

The Nelson Southern Link Investigation commenced in January 2015. The activities undertaken in the first six months involved:

- Completion of the Strategic Case;
- The building and running of a transportation model to enable traffic projections of the do-minimum transport network up to 2033;
- A review of the previous work undertaken during the North Nelson to Brightwater Corridor Study and the Nelson Arterial Traffic Study;
- A risk assessment and gap analysis of the previous work correlated to the present day;
- Workshops in December 2015, involved key organisations whose views were sought on the problems and benefits identified in the Strategic Case (Workshop 1) and the identification of Investment Objectives and their targets plus identification of Options to help solve the problems, achieve the benefits and meet the objectives (Workshop 2).

From January through to March 2016, work was undertaken to prepare for the public engagement exercise. This involved the determination of approaches to engage on, the filtering of options (from Workshop 2) to remove duplicates plus grouping similar options into one option.

Options from a separate study¹ that looked to address problem 2 were incorporated into the feedback material presented to the public because the two transport projects are informed by one another.

The purpose of consulting with the public was to help the Transport Agency finalise the PBC and, in particular, assist the Transport Agency in identifying a preferred approach to help address Nelson's arterial transport problems.

Feedback on the three proposed approaches to address the two identified problems on Nelson's arterial routes (congestion and accessibility) was sought. Additionally, feedback was sought on the significance of the problems identified and the four options associated with the improved provision of walking and cycling facilities on Rocks Road.

Once a preferred approach has been confirmed, there will be further opportunities to give feedback if the NSLI proceeds to the next stage.

¹ SH6 Rocks Road Walk / Cycle Facility options Update Report, March 2016.

2.0 Material Provided to the Public

The following material was made available to the public in hard copy throughout the length of the public engagement from the 23rd of March to the 24th of April:

- The feedback booklet, which contained the feedback form and the options descriptions list (Copy provided in Appendix A and B);
- Traffic Modelling report “*Nelson Southern Link Investigation Future Forecasting Report*” dated March 2016;
- Draft of the Programme Business Case Report “*Nelson Southern Link Investigation Programme Business Case – Draft for Public Engagement*” dated March 2016;
- “*SH6 Rocks Road Walk / Cycle Facility Options Update Report*” dated March 2016’
- The Strategic Case “*Nelson Southern Link Investigation (SH6 Annesbrook Roundabout to SH6 Haven Rd Roundabout) Strategic Case*” dated October 2015.

The above material was made available to the public at the following locations:

- Richmond Library (Richmond CBD);
- Elma Turner Library (Nelson CBD);
- Nightingale Library (Tahunanui);
- The public information sessions (see Section 5.1 below).

Additionally, the above material was available to view via the Transport Agency’s project website www.nzta.govt.nz/nelson-southern-link throughout the engagement period. This website also provided links to documents related to previous investigations, current information or other websites as follows:

- The North Nelson to Brightwater Corridor Management Study 2008;
- The Nelson Arterial Traffic Study 2011;
- Rocks Road Walking and Cycling Project – ongoing;
- Community Engagement Summary Report for Rocks Road Walking and Cycling Investigation 2014; and
- Bluetooth Traffic Data covering Q4 2014 through to the end of Q4 2015.

A project specific email address was also set up, which people could subscribe to for updates during the engagement period. This email address was also available for people to provide feedback.

3.0 Notifications to Advise Public of Engagement

The public were notified about the Investigation and the dates for engagement and feedback period by the following methods (including dates):

3.1 Media releases by the Transport Agency

- Have your say on how to keep Nelson moving – 17 March (pre-engagement warm up);
- Views sought on three potential approaches for Nelson’s arterial network – 23 March (engagement opens);
- Further opportunities to shape the transport future – 7 April;
- Ideas on how to improve Nelson’s road network welcomed – 15 April (one week left);
- Engagement closed, more than 2,000 responses received – 28 April.

3.2 Website updates

- Published 23 March – engagement opens;
- Published around 7 April – three new public information sessions added;
- Published 26 April – engagement closed, content updated.

3.3 Advertising

<p>Newspaper advertisements: March 23rd until April 21st.</p>	<p>Advertisements were spread across the four free community papers (Nelson and Waimea Weeklies, and the Nelson and Tasman Leaders) and the main daily paper (Nelson Mail), including three front page ads in the Nelson Mail.</p> <p>Ad 1: Weds 23rd March, Nelson Mail,; Thursday 24th March, Nelson and Richmond Leaders; Tuesday 29th March, Nelson Weekly; Wednesday 30th March, Waimea Weekly.</p> <p>Ad 2: Thursday 31st March. Nelson Mail, front page banner</p> <p>Ad 3: Thursday 31st March, Nelson and Richmond Leaders, 20 x 3</p>
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	<p>Ad 4: Thursday 7 April, Nelson Mail, front page banner</p> <p>Ad 5: Tuesday 12th April, Nelson Weekly, 10 x 3 Wednesday 13th April, Waimea Weekly, 10 x 3 Thursday 14th April, Nelson and Richmond Leaders, 10 x 3</p> <p>Ad 6: Thursday 14 April, Nelson Mail, front page banner</p> <p>Ad 7: Tuesday 19th April, Nelson Weekly, 10 x 3 Wednesday 20th April, Waimea Weekly, 10 x 3 Thursday 21st April, Nelson and Richmond Leaders, 10 x 3</p>
Radio advertisements: March 31 st until April 23 rd .	Advertisements are spread across More FM/The Breeze and Radio Live in Nelson. Through this time scripts were changed 8 times to correspond with the public information sessions and the closing of the public engagement.
Public poster placement: March 28 th until April 22 nd .	Posters sized A4, A3 and A1 are placed throughout the Nelson CBD in cafes, libraries, public notice boards and the advertising poles, changing the posters every Monday of the four weeks with updated messages/public information sessions.

4.0 Public Information

In addition to the material available for the public to view (as noted in Section 2 above), a telephone help line and the project specific email address were manned throughout the engagement period to enable the public to seek help and ask questions of the project team.

4.1 Public Information Sessions

A total of seven public information sessions were undertaken. These sessions provided the public with the opportunity to ask members of the project team questions about the NSLI and Rocks Road walk / cycle facility. Some attendees filled in the feedback form and/or provided written responses at these locations.

The sessions were held at the following locations along with the approximate numbers of attendees:

- Stoke Community Hall, Stoke. Friday 1 April 9.30am – 12.30pm, 41 attendees;
- Elma Turner Library, Nelson CBD. Friday 1 April 3.00pm – 6.00pm, 42 attendees;
- Elma Turner Library, Nelson CBD. Saturday 2 April 10.30am – 1.30pm, 54 attendees;
- Richmond Library, Richmond. Saturday 9 April 10.00am – 1.00pm, 35 attendees;
- Tahunanui Conference Centre, Tahunanui. Wednesday 13 April 4.00pm – 7.00pm, 24 attendees;
- Hampden Street School, Nelson South. Thursday 14 April 4.00pm – 7.00pm, 16 attendees;
- Victory Community Centre. Monday 18 April 5.30pm to 8.30pm, 41 attendees.

5.0 Feedback Received

5.1 Methods to Provide Feedback

In addition to providing feedback at the public information sessions, the public could provide feedback through the following methods:

- In hard copy format into a drop box located at the public libraries in Nelson, Tahunanui and Richmond;
- In hard copy format to a PO Box address;
- Via the project email address;
- Via an internet Survey Monkey accessible through the project website address.

The most common form of feedback was provided via the internet survey with 66% of responses being received through that medium.

5.2 Total Number of Responses Received

The total number of responses received was 2114. A breakdown of the submission methods is provided in Table 1

Number of Responses	Method
658	Hard copy feedback form
59	Email response (feedback form not used)
1397	Internet survey
2114	TOTAL

Table 1 – Total Number of Responses

5.3 Feedback Received on the Questions Asked

The answers to the questions asked are provided in the following sub-sections. The total number of answers may not match the total number of responses, which is due to a respondent not answering a specific question.

5.3.1 Significance Question About Congestion

Question 1 on the feedback form asked people to respond to “How significant do you think the problem of congestion is on the two arterials?” The responses are provided in Table 2.

QUESTION 1				
Not Significant	Somewhat Significant	Moderately Significant	Very Significant	Total
330	314	294	1118	2056
16.1%	15.3%	14.3%	54.4%	

Table 2 – Responses to Question 1

5.3.2 Layout of Rocks Road for Walking and Cycling

Question 2 on the feedback form asked people to respond to “Does the layout and the look and feel of Rocks Road stop you from walking and cycling along it?” The responses are provided in Table 3.

QUESTION 2		
Yes	No	Total
1270	715	1985
64.0%	36.0%	

Table 3 – Responses to Question 2

5.3.3 Preference Question About Approaches

Question 3 on the feedback form asked people to respond to “Which of the proposed approaches do you prefer and why?” The responses are provided in Table 4.

QUESTION 3				
A	B	C	D	Total
483	211	1234	82	2010
24.0%	10.5%	61.4%	4.1%	

Table 4 – Responses to Question 3

5.3.4 Question About Approach D

Question 4 on the feedback form asked people to provide options if they chose Approach D in question 3. The majority of respondents who chose Approach D (82 in total) had a preference for Rocks Road options 3 and 4 to be part of Approaches B and C or to include widening of walking and cycling infrastructure on Rocks Road within Approach A.

5.4 Comments in Response to Question 5

Question 5 asked “Is there anything else you want us to know to develop a preferred approach”. The comments that were repeated most often have been summarised in Table 5 below. The comment that occurred most is in bold font.

Better public transport would help.
Rocks Road environment is unpleasant and unsafe for cyclists, walkers, residents and businesses. Divert trucks.
Rocks Road - reduce speed so confident cyclists use car lane and give space to wider shared path.
Park and Ride bus system
Build the Southern Link
Just do something
Pedestrian overbridge at college and remove pedestrian crossing
Implement clearways
Heritage concerns along Rocks Road
No logging trucks on Rocks Road
No new road in Victory
Reduce number of single occupancy vehicles on the road.
Rising sea levels must be considered
The size of trucks must be considered
More school buses

Table 5 – Summarised Main Comments From Respondents to Question 5

5.5 Other Statistics About Respondents

Standard survey questions were asked related to the particulars of respondents, for statistical purposes and general interest.

5.5.1 Name provided

1533 respondents provided their name on the written feedback form and via the internet survey.

5.5.2 Age Group

A total of 1795 respondents provided their age group. Table 6 below shows the age profile of respondents.

Age Group						
20-30	31-40	41-50	51-60	61-70	71+	Total
97	215	341	424	429	289	1795
5.4%	12.0%	19.0%	23.6%	23.9%	16.1%	

Table 6 – Age Profile of Respondents who Answered Question

5.5.3 Suburb

When respondents provided the suburb they lived in, this was recorded and is summarised in Table 7. The suburbs inside the study area are named in Appendix C:

Approach A		Approach B		Approach C		Approach D	
inside	outside	inside	outside	inside	outside	inside	outside
198	140	85	65	415	619	34	35
12.4%	8.8%	5.3%	4.1%	26.1%	38.9%	2.1%	2.2%

Table 7 – Chosen Approach Correlated to Study Area and Suburbs

5.5.4 Travel to Work at Peak Times

A total of 1980 respondents provided information about how they travel to and from Nelson in the morning and evening peak periods or whether they travel at that time. This has been shown in Table 8 below. Individual respondents who travel during the morning and evening peak periods often travel by different modes.

TRAVEL TO WORK DURING PEAK PERIODS				
Vehicle	Cycle	Foot	Bus	Do not travel
1231	432	224	93	418
51.3%	18.0%	9.3%	3.9%	17.4%

Table 8 – Mode of Travel During Peak Periods

5.5.5 Other Responses

A small number of responses received were outside the scope of the engagement at this point. These have been noted for inclusion in subsequent phases.

6.0 Responses from Organisations

Responses were received on behalf of stakeholders, organisations, societies and interest groups. Some provided a total number of members and/or a number of people within that organisation / group that provided feedback, whilst others did not.

These responses were counted as one submission as there was no supporting documentation to show that individuals within the organisation / interest group had agreed to the submission.

The stakeholders, organisations, societies and / or interest groups that provided responses were:

- Nelson Walkers Unite;
- Heritage NZ – Advising the Transport Agency of heritage items on Rocks Road;
- Rutherford Street / Waimea Road Business & Residents Association;
- Tasman District Council Regional Transport Committee;
- Tahunanui Business Association;
- Nelson Tasman Chamber of Commerce;
- Port Nelson;
- Automobile Association;
- Bicycle Nelson Bays;
- Progress Nelson Tasman;
- Nelsust Incorporated;
- Tahunanui school
- Nelson Intermediate School
- Nelson Tasman Kindergartens Association
- Victory Primary School Board of Trustees
- Victory Community Centre
- The Boathouse Community Trust
- Nelson Heritage Advisory Group
- The Waterfront Association
- Nelson City Business Groups
- Greypower

7.0 Summary

Responses were received from individuals, stakeholders, organisations, societies and interest groups. A total of 2114 responses were received during the engagement period. The main findings were:

Of the 2056 responses received in answer to the questions about the significance of the problem of congestion, 16.1% said it was not significant, 15.3% said it was somewhat significant, 14.3% said it was moderately significant and 54.4% said it was very significant.

Of the 1985 responses received in answer to the question about the layout, look and feel of Rocks Road being a deterrent for walking and cycling, 64.0% said that it was a deterrent and 36.0% said it wasn't.

Of the 2010 responses received in answer to the question about a preferred approach to solve the problems, 24.0% preferred Approach A, 10.5% preferred Approach B, 61.4% preferred Approach C and 4.1% preferred Approach D.

The majority of respondents who chose Approach D had a preference for Rocks Road options 3 and 4 to be part of Approaches B and C or to include widening of walking and cycling infrastructure on Rocks Road within Approach A.

Of the comments received by respondents, the most often mentioned was “just do something”. This comment was in relation to both problems.

8.0 Telephone Survey

A separate telephone survey was undertaken of five-hundred randomly selected people (four-hundred in Nelson and one-hundred in Tasman). The questions asked were consistent to the questions asked in the feedback form.

Overall, there was high awareness of the government's proposals to improve Nelson's transport networks. Around three quarters (75%) of Nelson residents are aware of these proposals; while 62% of Tasman residents are aware of such proposals.

However, there was a lack of awareness of the government's plans to address the existing and future transport issues on the road network between Annesbrook Drive and Haven Road roundabouts; only half (48%) of Tasman residents are aware of these plans while 62% of Nelson residents state they are aware of these plans. Following this, nine in ten (90%) of Tasman residents and two thirds (67%) of Nelson residents claim not to have seen the community engagement brochure around these plans.

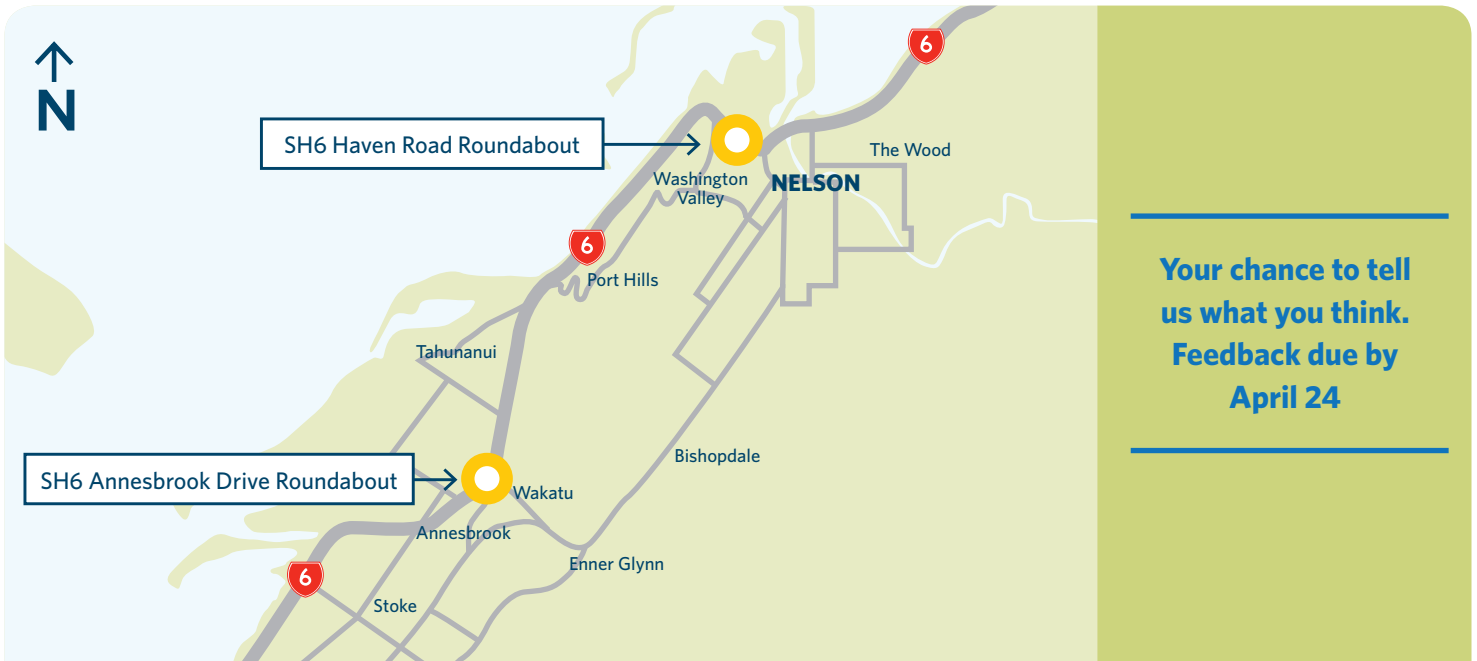
Residents agreed that the problem around congestion between Annesbrook Drive and Haven Road roundabouts was significant. Around six in ten residents of both Nelson (63%) and the Tasman region (64%) rated travel delays on this section of the network a significant problem (4 or 5). Generally, there is support for changes to this road network across the region; 64% of the region's residents support changes to the network while 16% oppose any changes.

Having examined some of the benefits and concerns of the proposed approaches, the majority of the region's residents (46%) preferred approach C (building a new route). This was driven primarily by Nelson residents (48%) followed by Tasman residents (44%). This was in-line with Nelson residents' initial thoughts on first hearing the approaches. Tasman residents were more likely to be swayed from approach B to approach C once they had heard the benefits and concerns around each of the approaches.

Approach A was the least favoured; opposition seems to be explained by the statement “It is not practical as there is not enough road width to cope with introducing pedestrian access, cycling tracks or increased public transport links” – 52% of the region's residents agreed with this statement, increasing to 55% of Nelson residents agreeing with this. Around a quarter (26%) of the region's residents disagreed with this statement.

There was much less of a concern around the walking and cycling infrastructure on Rocks Road; relatively few residents claim walking or cycling is their main mode of transport, and in keeping with the finding that the road layout along Rocks Road does not stop them from utilising this road using these modes of transport; it is unsurprising that fewer residents rate poor infrastructure for cyclists or walkers along Rocks Road as a significant problem. Around three in ten (31%) of residents are neutral on this statement while around half believe that it is a significant problem (49% of Nelson residents and 53% of Tasman residents).

Appendix A – Feedback Booklet



Improving the arterial network between Annesbrook Drive and Haven Road roundabouts

Why are we asking for your feedback?

Community engagement is an important part of our work to improve Nelson’s transport network. We now want to hear from you as we further develop the Programme Business Case (PBC).

The Nelson Southern Link Investigation (NSLI) is part of the Government’s Accelerated Regional Roding Package for state highway projects. The investigation is looking at how best to address existing and future transport issues on the arterial networks between the Annesbrook Drive and Haven Road roundabouts.

Your contribution will help us finalise the PBC and, in particular, allow us to identify a preferred approach to help address Nelson’s arterial transport problems.

As part of our work to further develop and finalise the PBC, we want your feedback on the three proposed approaches to address the two identified problems on Nelson’s arterial routes – congestion and accessibility.

Congestion causes travel delays for motorists on the city’s two arterial routes, and the poor infrastructure on Rocks Road limits accessibility for pedestrians and cyclists, making these travel options less attractive.

At this stage, the three potential approaches identified to address the problems are:

- Making the most of the existing network
- Widening the existing arterial routes
- Creating a new arterial route (such as, a Nelson Southern Link-type route).

These proposed approaches are outlined in further detail from page four.

As part of our engagement we are also giving you an update on the Rocks Road Walking and Cycling Investigation and asking for your feedback on which option(s) you feel may work best with the approaches proposed for the NSLI. It is important that decisions on these two projects are informed by one another. More information about the Walking and Cycling Investigation is available on page five.

Please note that once a preferred approach has been confirmed, there will be further opportunities to give your feedback if the NSLI proceeds to the next stage. This could happen later this year, depending on the outcomes of the PBC.

How to give feedback

There are a number of ways you can give us your feedback once you have read the information in this booklet and any supporting information (see the list on page six). You can:

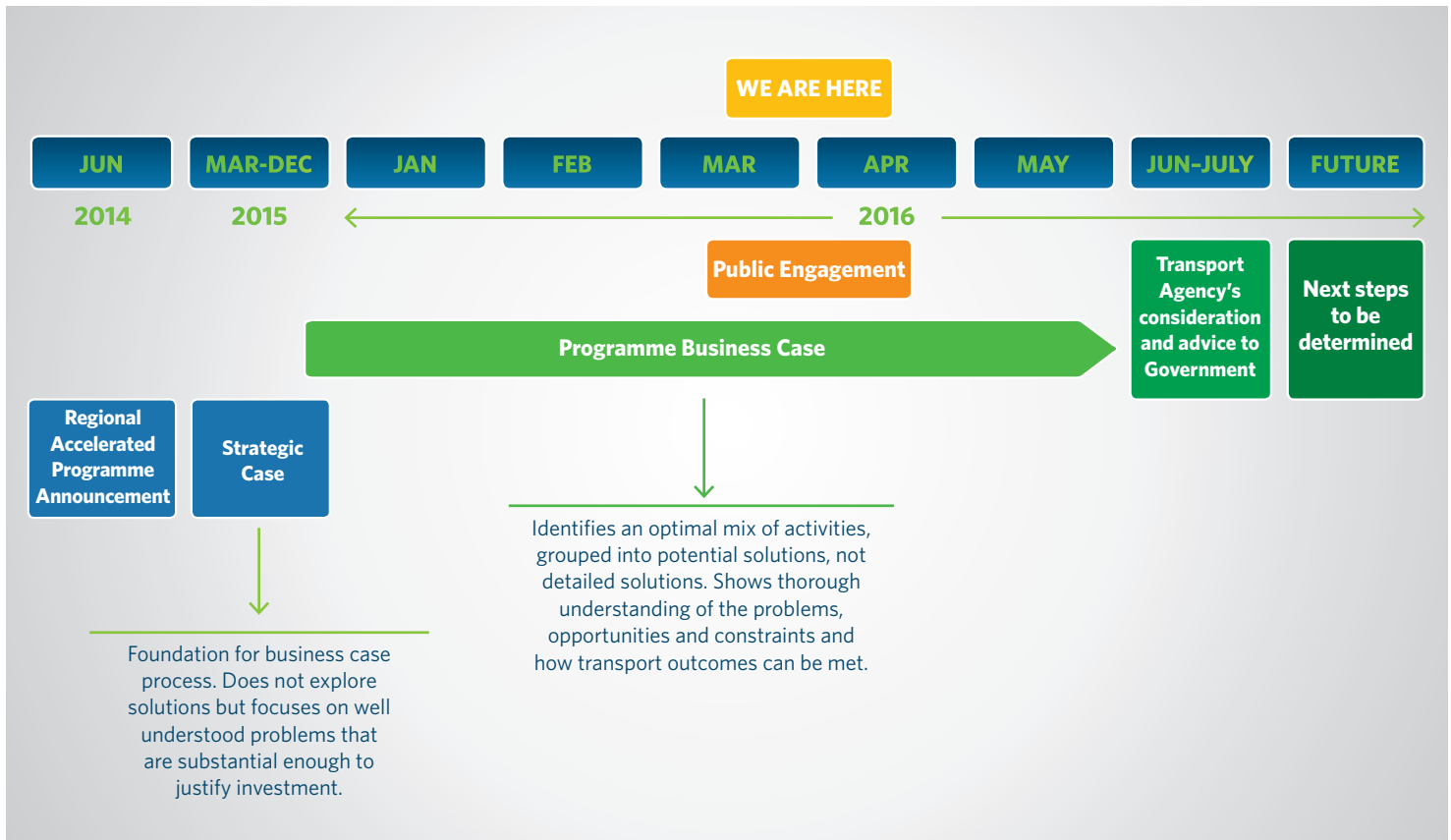
- Attend one of our public information sessions in Stoke, Richmond or Nelson at the beginning of April (details on feedback form at the back of this booklet).
- Fill in the feedback form at the back of this booklet and mail it back to us freepost.
- Fill out our online feedback form on the project website.
- Email us your comments.
- Call us on our freephone number.

Our full contact details are on the back page.

We will summarise your feedback into a report that we will make publicly available later in the year.

FEEDBACK DEADLINE: SUNDAY APRIL 24

Programme Business Case development



Since we completed the Strategic Case for the NSLI in November last year, we have done further work. Feedback has allowed us to update the transport problems, consider the benefits we want to achieve by addressing these problems and identify specific investment objectives. These are outlined separately below.

Problems

1. The form and function of Nelson's two arterial corridors results in congestion and delays, and
2. Substandard infrastructure on Rocks Road, which is part of the Coastal Path, is constraining growth in walking and cycling activities.

Benefits

- Reduced journey times.
- Improved safety for walking and cycling modes of travel.
- Improved tourism, active transport and recreational activities on Rocks Road.

Future investment objectives

1. **Decrease peak hour travel times.**
Target: "Travel times on the two arterials are no worse than 2015 for the next 40 years."
2. **Improve peak hour available capacity to move people and goods.**
Target: "The volume to available capacity ratio on the two arterials will be better than 80% for the years into the future."
3. **Decrease walking and cycling crashes.**
Target: "Achieve a continuous decline in death and serious injury walking and cycling crashes."
4. **Increase walking and cycling numbers on Rocks Road.**
Target: "Double current daily walking and cycling numbers within five years after implementing an option; thereafter the growth rate in walking and cycling numbers is greater than elsewhere in Nelson."

The above investment objectives will be used to help assess and determine the PBC's recommended approach.

How growth affects transport

Nelson’s population is expected to grow. This means the transport network in and around the city will be affected.

With data collected to date, we know that congestion is causing travel time delays during the peak period on the two arterials. We also know that walking and cycling growth on Rocks Road is lower than expected.

In the future, depending on the level of transport growth that Nelson experiences, travel delays are likely to get worse. Walking and cycling along Rocks Road could also become less attractive if we don’t resolve the transport problems on the city’s two main arterial routes.

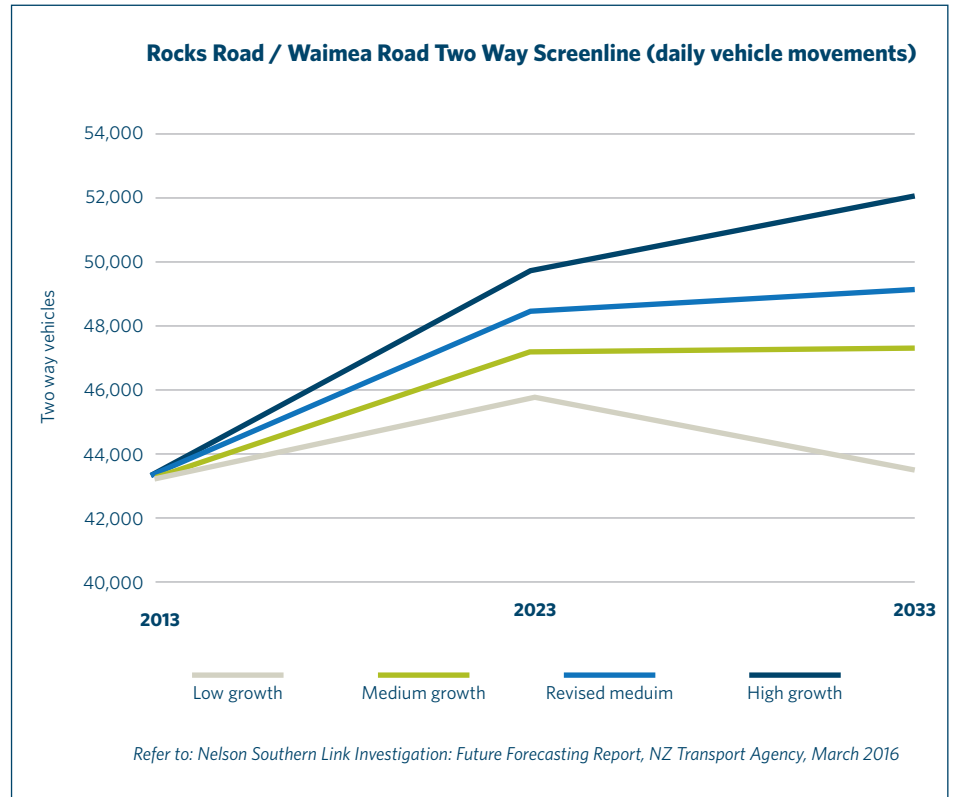
The NSLI will help us plan for future transport growth now, including when something should be done based on the speed of expected growth.

The table opposite sets out the likely transport growth scenarios. Historically, we have planned for the medium growth scenario(s).

There are a number of factors that could affect these scenarios, which will be considered during the development of the PBC. These are:

- Factors affecting demand, eg. changes in land use, job numbers increase at a faster rate than currently envisaged.
- Factors that affect supply, eg. road space availability, Richmond becomes a significant regional hub.
- Factors that affect the cost of travel, eg. higher travel costs to individuals, cheaper travel costs to individuals through vehicle technology changes.

Traffic volumes are uncertain depending on growth scenario



Programme Business Case 'Approaches'

We have identified three possible approaches for addressing the key problems outlined on page two. Now is your opportunity to share your views with us. You are integral to finalising the PBC and informing the selection of a preferred approach.

Below is a summary of the three different approaches we could take to address the problems. Consider these alongside some of the key benefits and challenges we've also outlined below.

Also, is there a fourth approach you would like to propose? If so, let us know in your feedback.

You may wish to reference the Draft Programme Business Case for Public Engagement Report and the PBC Options Descriptions Handout.

Approach A

Making the most of the existing network

This approach focuses on improving the existing road network (and making the most of the current walking and cycling network), increasing bus services (public transport), and decreasing or limiting the volume of private travel during peak periods (travel demand management) by imposing restrictions without needing to widen or build new routes.

Rocks Road would be widened to provide a shared path on the seaward side of the existing highway and possibly remove parking. The seawall would also be significantly widened.

Approach B

Widening the existing arterial routes

This approach focuses on options that would widen the existing arterial roads by at least one lane. It would also include walking and cycling, public transport, network optimisation and travel demand management activities that complement widening the arterial roads.

This approach would include safety improvements to Rocks Road to improve walking and cycling along it.

Approach C

Creating a new arterial route

The focus of this approach is building of a new route that connects the Annesbrook Drive Roundabout to the Haven Road Roundabout, such as but not limited to a Southern Link-type route. It would also include walking and cycling, public transport, network optimisation and travel demand management activities that complement the establishment of a new route.

This approach would include safety improvements and reduced traffic lane widths to provide extra cycling and footpath space on Rocks Road. No seawall widening would be required.

Benefits of the Approach

Could reduce private vehicle travel during the peak periods.

Provides for current and future capacity improvements, potentially via increased public transport services.

Likely to address future transport growth.

Provides opportunity to keep on-street parking.

Likely to address future transport growth.

Provides opportunity to keep on-street parking.

Could improve the environment in and around the existing arterials making it more attractive for residents and visitors.

Challenges of the Approach

To be completely effective, this approach would require parking restrictions and / or parking charges in and around the Central Business District to discourage peak period private vehicle travel.

We would also need to consider if there was enough road width to implement the options in this approach.

This approach is likely to affect the local environment (natural and buildings) along, in and around the two arterials.

We would also need to consider where the road would be widened and what implications this may have for access onto the existing arterials.

This approach is likely to affect the local environment (natural and buildings) along, in and around the new route.

We would also need to consider how the new route interacts and connects to existing roads and the local environment.

Rocks Road Walking and Cycling Investigation options

We have been further developing the walking and cycling options for the Rocks Road Walking and Cycling Investigation Project. You can read more information on this work in the SH6 Rocks Road Walk / Cycle Facility Options Update Report. In particular, we are now interested in your feedback on the following four options and how they might fit with the proposed approaches for the NSLI.

1

Minor Improvements. This option includes committed improvements identified by the NZ Transport Agency and Nelson City Council, such as resurfacing work to the road and footpath. It also involves incremental improvements to existing on-road facilities and the footpath. There is no widening of the seabed, the existing footpath, or cycle facilities. **\$4.9 Million**

2

Safety enhancements with reduced lane widths. This includes the improvements outlined in Option 1 above, and creates additional cycle and footpath width through narrowing the traffic lanes to 3m. **Please note, this option can only be pursued if the state highway is relocated (i.e. Rocks Road becomes a local road).** **\$8.2 Million**

3

On-road cycle lanes in both directions, shared path and reduced parking. This option involves widening the on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side. Parking between Victoria Road and Richardson Street would be removed. There would be significant seawall widening. **\$21.3 Million**

4

On-road cycle lanes and shared path. This option involves widening on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side as in Option 3 above. Parking between Victoria Road and Richardson Street would be kept. This will require significant seawall widening. **\$25.1 Million**



Proposed Programme Business Case 'Options'

This table outlines how the NSLI approaches and Rocks Road Walking and Cycling Options relate to each other. Combined, they aim to address the two identified transport problems on the arterial network and achieve our investment objectives.

The option numbers (as identified in the brackets below) are there for reference against the full PBC Options Description Handout. This handout explains all the relevant options identified to date for the NSLI in further detail.

Approach and its primary focus	Approach A Making the most of the existing network	Approach B Widening the existing arterial routes	Approach C Creating a new arterial route	Approach D What is your approach?
Problem 1: Improve arterial travel time and increase available capacity	Intersection capacity improvements (Option 31) Place restrictions on parking in and around the CBD (Options 6 / 7) Provide additional Public Transport services (Option 27) Retain Southern Link-type route as a future limited access transport corridor (Option 48)	Widen existing arterials for clearways (Option 33), with the option to expand them to provide a permanent extra traffic lane (Option 1)	A new two lane arterial route such as the Southern Link-type route (Options 5 / 47)	Refer to the "PBC Option Descriptions" handout for a list of options compiled
Problem 2: Improve walking and cycling	Rocks Road - Option 3 or 4	Rocks Road - Option 1	Rocks Road - Option 2	

Useful supporting documents to help your submission

Available to read on our website, at the Nelson Public Libraries, the Richmond Library and the four public information sessions.

- Nelson Southern Link Investigation (SH6 Annesbrook Roundabout to SH6 Haven Rd Roundabout), Strategic Case, October 2015
- Nelson Southern Link Investigation: Future Forecasting Report, NZ Transport Agency, March 2016
- SH6 Rocks Road Walk / Cycle Facility Options Update Report, March 2016
- The Draft Programme Business Case for Public Engagement Report, March 2016
- PBC Options Descriptions Handout

Available on our website only

www.nzta.govt.nz/projects/nelson-southern-link

- Bluetooth Data provided by Araflow Ltd
- North Nelson to Brightwater Strategic Study, April 2008

Available on the Nelson City Council website:

- Arterial Traffic Study, June 2011
- Rocks Rd walking and cycling background, 2014



Feedback form

Please fill out this form, fold it, and return it to us via the post or the feedback submission box at the Nelson Public Libraries or Richmond Library by Sunday April 24, 2016.

If you would like to submit responses with additional sheets, please be sure to attach them and send in an envelope.

You can also provide your feedback online at www.nzta.govt.nz/nelson-southern-link. Thank you for your valuable input.

Q1: How significant do you think the problem of congestion is on the two arterials?

- Not significant
 Somewhat significant
 Moderately significant
 Very significant

COMMENT:

Q2: Does the layout and the look and feel of Rocks Road stop you from walking or cycling along it? YES NO

COMMENT:

Q3: Which of the proposed approaches on page 6 do you prefer most and why? A B C D

If none, what combination approach do you think would work and why?

Q4: If you propose a different approach (to address the problems and to achieve the investment objectives), what options would you include?

Refer to the PBC Options Descriptions Handout for guidance.

Q5: Is there anything else you want us to know to develop a preferred approach?

Please tell us a bit about yourself *(this section is helpful to us, but is not compulsory)*

1. Name:

2. Age group: 20-30 31-40 41-50 51-60 61-70 71+

3. Suburb:

4. How do you travel to and from Nelson City in the peak morning and evening hours? Vehicle Cycle On foot Bus.

5. I do not travel to and from Nelson City in the morning or evening hours.

Your feedback is public information

Please note that the NZ Transport Agency may publish any information that you feedback, or provide it to a third party, and you may be individually identified as the submitter.

Therefore, please indicate clearly:

- If your comments are commercially sensitive, or for any other reason should not be disclosed.
- Any reason(s) why you should not be identified as the submitter of the feedback.



Public information sessions

Friday April 1. Stoke Community Hall, Stoke. 9.30am – 12.30pm.

Friday April 1. Elma Turner Library, Stoke, Nelson CBD. 3.00pm – 6.00pm.

Saturday April 2. Elma Turner Library, Nelson CBD. 10.30am – 1.30pm.

Saturday April 9. Richmond Library, Richmond. 10.00am – 1.00pm.



For more information on the project and to read answers to frequently asked questions, visit the project website at www.nzta.govt.nz/nelson-southern-link or phone **0508 NSL INFO / 0508 675 4636** or email nelson-southern-link@nzta.govt.nz

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NSLI
PO Box 1041
NELSON 7040

FOLD HERE

FOLD AND TAPE OPEN SIDES LEAVING SPACE FOR A LETTER OPENER / NO GLUE OR STAPLES PLEASE

Appendix B – Options Descriptions

Option Descriptions for the Programme Business Case

Providing feedback on the Nelson Southern Link Programme Business Case phase?

Please refer to the option reference numbers below when reviewing Approaches A, B and C; and when answering question FOUR on the feedback form.

Option Ref No.	Title	Further Description
Network Optimisation, Travel Demand Management, Walking and Cycling		
4	Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials	Assumes that the required space for an additional lane for road traffic can be created.
6	Impose restrictions on the arterials to reduce the volume of traffic	Requires legislation and local authority bylaws to ban/constrain particular types of vehicles, eg HCVs.
7	Impose parking restrictions at peak periods to encourage higher vehicle occupancy rates	Looks to limit the number of long term parking spaces available and impose a maximum duration for parking across a wider area around the CBD
8	Use advertising campaigns to persuade people to reduce the number of journeys or change their travel mode to public transport or walking or cycling	
9	Change land use to encourage less travel by private vehicle	Nelson City Council to change District Plan to enable densification of CBD and surrounding areas over and above current situation
10	More shared pathways and better connections on the two arterials	The provision of new shared paths in and around the CBD by removing parking and other restrictions to create the required width and ensuring seamless connectivity
11	Work at better integration of travel modes - walking/cycling/PT/+ private vehicles on the arterials	At particular points along the arterials, where interaction between different modes occurs (eg at bus stops or where cycle lanes end, parking areas or at traffic lights), implement physical works to provide dedicated space for all users.
12	Ring road system (3 Laning)	This roading system is to facilitate circular travel utilising an additional lane on both arterials to create a total of 3 lanes in-bound and 3 lanes outbound as a one-way system. This option is the same as for Options 1 or 4 in terms of providing an additional lane through widening or utilising the existing road corridors - also refer to those options.
14	Network operating plan	Encompasses the organisation of the existing roads into a system of managed roads (eg one-way system) to facilitate movement of traffic around the entire network focusing on the CBD area.
15	Close side road accesses (or reduce) to left in left out only on the arterials	Restricts right turn movements to a select number of side roads where it is possible to access those side roads via the surrounding local roads.
16	Pedestrian overpasses Tahunanui/Waimea Road to address barriers to east / west travel for walking and cycling and reduce road travel delays from peds lights and crossings	At traffic signal-controlled intersections, construct overpasses to enable pedestrians /cyclists to not have to wait at the lights to cross.
18	Inland Port/Barge	Involves the provision of a log loading facility on Rabbit Island, the provision of barges to take logs to and from the port, the provision of new roading infrastructure to State Highway standards from SH60 to the loading facility, the banning of logging trucks on SH6 from Annesbrook roundabout to the existing port entrance.
19	Congestion charge	Involves charging road users (excluding Public Transport) that use the two arterials assuming enabling legislation is passed.
20	Park and Ride	Involves the provision of parking facilities south of Annesbrook roundabout and the provision of public transport (buses) to enable commuters to access the CBD and vice versa.
21	Port at Motueka	The status quo plus a port facility at Motueka similar to Nelson port
22	Better cycle storage areas in city / and showers	Provide cycle storage facilities and showers at locations throughout the CBD
23	Electric vehicle subsidy/charging ports	Provide a subsidy to encourage a shift away from fossil fuel method of propulsion to electric vehicles and provide charging points at parking spaces.
24	Port operations - hours of operation	Change the hours that Port Nelson operates to facilitate the movement of freight at non-peak times.
25	Adjust retailing hours 1000-1800	Change the hours that retailers within the CBD are open to shift shopping traffic to non-peak times.
26	Change school start and finish times	Change the hours that schools are open to shift traffic to non-peak times.
31	Upgrading key intersections on the arterials to facilitate through movement	Install traffic lights at key intersections and give priority to through traffic.
32	Upgrading key intersections on the arterials to facilitate accessibility onto the arterials	Install traffic lights at key intersections and give priority to side road traffic.
33	Peak hour clearways to create a total of 3 lanes in-bound to Nelson in the morning and 3 lanes out-bound in the evening on the two arterials.	Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials which is assumed to create the required space for an additional lane for road traffic.
40	One way morning and afternoon flow. Waimea, SH6, St Vincent, Vanguard as options	This option uses the existing arterials and two local roads as one way roads (2 lanes in-bound, 2 lanes out-bound).

Option Descriptions for the Programme Business Case

Providing feedback on the Nelson Southern Link Programme Business Case phase?

Please refer to the option reference numbers below when reviewing Approaches A, B and C; and when answering question FOUR on the feedback form.

Option Ref No.	Title	Further Description
Network Optimisation, Travel Demand Management, Walking and Cycling		
41	Increase carrying capacity of trucks	Introduce legislation to allow heavier loads (heavier than HPMV) to be carried through the provision of larger HCVs on the State Highway
42	Close side road accesses (or reduce) to left in left out	This option is a repeat of Option 15
43	Prioritise cycle traffic (separate traffic lights)	At existing traffic signalled controlled intersections, install separate lanterns to enable cyclists to move before other traffic - similar to bus priority signals
46	Wider sidewalks - mobility scooters/skate boards on the two arterials	Widening sidewalks occurs by removing parking and other restrictions along the arterials which is assumed to create the required space.
Widening Arterials		
1	Widening of the existing road infrastructure on the two main arterials by a minimum of one lane for road traffic	Widen SH6 and Waimea Road to create an extra lane to provide a total of 3 lanes in each direction. The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.
3	Widening of the existing road infrastructure on the two main arterials by a minimum of one lane for buses only to utilise additional space	The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.
44	Priority lanes (Public Transport and freight and HOV) through the provision of an additional lane	Widen SH6 to create an extra lane for priority traffic. Assume SH6 is widened towards the west. The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.
45	Complete separation of cyclist and pedestrians	Separation occurs by creating additional space along the arterials. Similar to option 1 but less widening width is required.
New Routes		
5	New arterial road (limited access)	This route is commonly known as Southern Link that runs from the SH6 Haven Road roundabout to the SH6 Annesbrook roundabout utilising Haven Road, St Vincent Street, the old railway reserve and Whakatu Drive. It is assumed to be a single lane in each direction, with parking on both sides of St Vincent Street, with the cycleway transferring to Vanguard Street. Access onto the route from side roads is limited.
5a	New arterial road	This route is commonly known as Southern Link that runs from the SH6 Haven Road roundabout to the SH6 Annesbrook roundabout utilising Haven Road, St Vincent Street, the old railway reserve and Whakatu Drive. It is assumed to be a single lane in each direction, with parking on both sides of St Vincent Street, with the cycleway transferring to Vanguard Street. Access onto the route is unrestricted.
13	Tunnel option - Annesbrook to Port	Provide a tunnel from Annesbrook Roundabout to the port.
17	Tunnel option - Annesbrook to Emano	Utilises tunnel portals near Annesbrook roundabout and the end of Emano Street with the road either sidling the western hillside to St Vincent Street or utilising properties on one side of Emano Street. St Vincent Street is changed as per "New arterial route" (Option 5)
47	Dedicated transit/freight route on old rail reserve	As per Option 5 but for freight and/or High Occupancy Vehicles only.
Public Transport (Buses)		
27	Additional bus services - user paid	More services to other locations - fare paid by user
28	Additional bus services - subsidised	More services to other locations - fare free or partially subsidised
48	Dedicated busway on old rail reserve	The provision of extra bus services from outside the study area utilising the old railway reserve and St Vincent Street to access CBD using the route as per Option 5.
Rocks Road Options		
35	Rocks Rd Option1 -Minor Improvements	This option includes committed improvements identified by the Transport Agency and NCC, such as resurfacing work to the road and footpath. It also involves incremental improvements to existing on-road facilities and the footpath. There is no widening of the seabed, the existing footpath, or cycle facilities. \$4.9 Million
36	Rocks Rd Option 2 -Safety enhancements with reduced lane widths. (If the state highway is relocated)	This includes the improvements outlined in Option 1 above, and creates additional cycle and footpath width through narrowing the traffic lanes to 3m. Please note, this option can only be pursued if the state highway is relocated (i.e. Rocks Rd becomes a local road). \$8.2 Million
37	Rocks Rd Option 3 On-road cycle lanes in both directions, shared path and reduced parking	This option involves widened the on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side. Parking between Victoria Road and Richardson Street would be removed. There would be significant seawall widening. \$21.3 Million
38	Rocks Rd Option 4 On-road cycle lanes and shared path	This option involves widening on-road cycle lanes in both directions and creating a 2.9m shared walking and cycling path on the seaward side as in Option 3 above. Parking between Victoria Road and Richardson Street would be kept. This will require significant seawall widening. \$25.1 Million

Appendix C – Suburbs Inside the Study Area

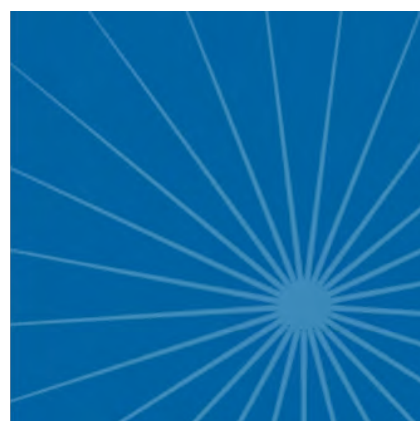
- Annesbrook;
- Beachville;
- Bishopdale;
- Britannia Heights;
- The Brook;
- Enner Glynn;
- Hanby Park;
- Moana;
- Nelson East;
- Nelson Central;
- Nelson South;
- Port Nelson;
- Stepneyville;
- Washington Valley.
- Tahunanui;
- Tahunanui Heights;
- Tasman Heights;
- Toi Toi;
- Wakatu;
- Washington Valley;
- The Wood.

Appendix D – Telephone Survey

NZTA

Nelson & Tasman Quantitative Research – Improving The Road Network

April 2016



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1. Executive Summary

Overall, there was high awareness of the government's proposals to improve Nelson's transport networks. Around three quarters (75%) of Nelson residents are aware of these proposals; while 62% of Tasman residents are aware of such proposals.

However, there was a lack of awareness of the government's plans to address the existing and future transport issues on the road network between Annesbrook Drive and Haven Road roundabouts; only half (48%) of Tasman residents are aware of these plans while 62% of Nelson residents state they are aware of these plans. Following this, nine in ten (90%) of Tasman residents and two thirds (67%) of Nelson residents claim not to have seen the community engagement brochure around these plans.

Residents agreed that the problem around congestion between Annesbrook Drive and Haven Road roundabouts was significant. Around six in ten residents of both Nelson (63%) and the Tasman region (64%) rated travel delays on this section of the network a significant problem (4 or 5). Generally, there is support for changes to this road network across the region; 64% of the region's residents support changes to the network while 16% oppose any changes.

Having examined some of the benefits and concerns of the proposed approaches, the majority of the region's residents (46%) preferred approach C (building a new route). This was driven primarily by Nelson residents (48%) followed by Tasman residents (44%). This was in-line with Nelson residents' initial thoughts on first hearing the approaches. Tasman residents were more likely to be swayed from approach B to approach C once they had heard the benefits and concerns around each of the approaches.

Approach A was the least favoured; opposition seems to be explained by the statement "It is not practical as there is not enough road width to cope with introducing pedestrian access, cycling tracks or increased public transport links" – 52% of the region's residents agreed with this statement, increasing to 55% of Nelson residents agreeing with this. Around a quarter (26%) of the region's residents disagreed with this statement.

There was much less of a concern around the walking and cycling infrastructure on Rocks Road; relatively few residents claim walking or cycling is their main mode of transport, and in keeping with the finding that the road layout along Rocks Road does not stop them from utilising this road using these modes of transport; it is unsurprising that fewer residents rate poor infrastructure for cyclists or walkers along Rocks Road as a significant problem. Around three in ten (31%) of residents are neutral on this statement while around half believe that it is a significant problem (49% of Nelson residents and 53% of Tasman residents).

2. Background

The New Zealand Transport Agency (NZTA) are looking at potential improvements to the arterial network between Annesbrook Drive and Haven Road roundabouts in Nelson.

NZTA are currently conducting community engagement. This research was designed to give an accurate measure of sentiment towards the proposed improvements.

This report details the findings of a telephone survey conducted from the 19th to the 23rd of April 2016. The New Zealand Transport Agency is interested in the views of those living in the Nelson and Tasman regions. Due to the level of potential impact on Nelson residents the sampling regime was designed in such a way so that 400 Nelson residents and 100 Tasman residents were surveyed.

The margin of error for a 50% figure at the 95% confidence level for a sample size of 500 is plus or minus 4.4%. The Nelson sub-sample of n=400 has a margin of error of 4.9% while the Tasman sub-sample of n=100 has a margin of error of 9.8%.

All fieldwork was conducted using the Quancept survey system which is a leading Computer Assisted Telephone Interviewing system. It is known for its power and flexibility, as well as the ease of use for supervisors and interviewers. It works in conjunction with a fully customizable sample management system, as well as a predictive dialer.

3. Methodology

3.1 Sampling regime

The table below shows how the sampling regime was designed to ensure representativeness within each region:

SAMPLING REGIME		
<i>Showing the number of respondents by interlocking quotas of age, sex and region</i>		
	Nelson	Tasman
	%	%
Base: n=	400	100
Male 18-44	77	17
Female 18-44	83	19
Male 45+	111	31
Female 45+	129	33

Sampling regime computed from 2013 Census data

The true population split between Nelson and Tasman is 50:50, therefore the 'All' figure has been weighted accordingly (from 80:20 to 50:50). The following table shows the total number of people aged 18 or over living in Nelson/ Tasman:

2013 CENSUS		
<i>18+ Population numbers:</i>		
	Nelson	Tasman
	%	%
TOTAL	35,907	35,718
Male 18-44	6,936	6,129
Female 18-44	7,473	6,624
Male 45+	9,996	11,181
Female 45+	11,502	11,784

Source: 2013 Census

3.2 Sample make-up

The sample make-up table shows the unweighted vs. weighted data.

SAMPLE MAKE UP		
	Unweighted %	Weighted %
Region*		
[Intentional over-sample of Nelson residents and under-sample Tasman]		
Nelson	80	50
Tasman	20	50
Sex		
Male	47	48
Female	53	52
Age group		
18-29	7	14
30-44	16	24
45-59	32	30
60+	45	32
Household income		
\$20,000 or less	5	4
\$20,001-30,000	11	8
\$30,001-40,000	9	10
\$40,001-50,000	8	7
\$50,001-70,000	13	14
\$70,001-100,000	19	23
\$100,000-150,000	15	14
More than \$150,000	6	6
Income was nil/or made a loss	-	-
Refused	14	14
Home ownership		
I am renting and looking to buy	4	9
I am renting and not looking to buy	7	10
I own my home freehold	51	42
I own my home with a mortgage	32	30
I live at home with parents	2	3
Other	3	5
Unsure	-	-
Refused	1	1
Number of years living in Nelson/ Tasman		
Less than 1 year	1	1
1 up to 2 years	3	4
2 up to 5 years	6	7
5 up to 10 years	9	11
10 up to 15 years	11	9
15 years or more	69	67
Unsure	1	1
Base: n=500		

4. Findings

Nelson is seen as a 'positive' city by local residents (83% rate it a 1 or 2 where 1 is very positive) and by Tasman residents (67% rate it a 1 or a 2).

<i>How would you rate Nelson as a city on a 1-5 scale where 1 means very positive and 5 means very negative?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
1 – Very positive	38	49	26
2	37	34	41
TOTAL 1 + 2	75	83	67
3	16	12	21
4	7	4	11
5 – Very negative	1	1	-
TOTAL 4 + 5	8	5	11
Unsure	1	-	1

Base: All respondents

Unsurprisingly, the main mode of transport within the region is by private or company car (87%). Residents of Nelson itself are proportionately more likely to cycle (5%) or walk (6%), however, the majority of Nelson residents are car users (81%).

<i>What mode of transport do you generally use?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Private vehicle / company car	87	81	94
Bicycle	4	5	2
Walk	3	6	-
Work vehicle / vehicle required for work	2	2	2
Motorbike / scooter	2	2	1
Bus	2	4	1
Other	-	-	-

Base: All respondents

Walking or Cycling around Rocks Road is quite common with 53% of Nelson residents (and 23% of Tasman residents) saying that they use this road for these purposes. The majority (73%) indicate that the layout of Rocks Road does not stop them walking or cycling along it.

4.1 Awareness of proposed network changes

Around three quarters (75%) of Nelson residents are aware of the government's proposals to improve Nelson's transport networks; while 62% of Tasman residents are aware of such proposals.

<i>Are you aware the government is currently looking at how best to improve Nelson's transport network?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Yes	70	75	62
No/ Unsure	30	25	38

Base: All respondents

There is less awareness around the government's plans to address the existing and future transport issues on the road network between Annesbrook Drive and Haven Road roundabouts; only half (48%) of Tasman residents are aware of these plans while 62% of Nelson residents state they are aware of these plans.

<i>Are you aware the government is currently looking at how best to address existing and future transport issues on the road network between the Annesbrook Drive and Haven Road roundabouts?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Yes	55	62	48
No/ Unsure	45	38	52

Base: All respondents

The community engagement brochure outlining the three approaches to the network changes appears to have not reached the majority of residents. Nine in ten (90%) of Tasman residents and two thirds (67%) of Nelson residents claim not to have seen this.

<i>Have you seen the community engagement brochure outlining the three approaches?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Yes	22	33	10
No/ Unsure	78	67	90

Base: All respondents

4.2 Nelson city congestion

Respondents were asked to describe how significant a problem they believed the congestion was between Annesbrook Drive and Haven Road roundabouts. The majority agreed that the problem was significant with around six in ten residents of both Nelson (63%) and the Tasman region (64%) rating travel delays on this section of the network a significant problem (4 or 5).

There are times when congestion causes travel delays on the roads between Annesbrook Drive and Haven Road Roundabouts – mostly on Rocks Road and Waimea Road. How significant do you think this problem is on a 1-5 scale where 1 means not at all significant and 5 means very significant?

	All %	Nelson %	Tasman %
Base: n=	500	400	100
1 – Not at all significant	6	5	5
2	10	11	11
TOTAL 1 + 2	16	16	16
3	19	21	18
4	28	28	28
5 – Very significant	36	35	36
TOTAL 4 + 5	64	63	64
Unsure	1	-	2

Base: All respondents

In line with the relatively few residents who claim walking or cycling is their main mode of transport, and in keeping with the finding that the road layout along Rocks Road does not stop them from utilising this road using these modes of transport; it is unsurprising that fewer residents rate poor infrastructure for cyclists or walkers along Rocks Road as a significant problem. Around three in ten (31%) residents are neutral on this statement while around half believe that it is a significant problem (49% of Nelson residents and 53% of Tasman residents).

Poor infrastructure on Rocks Road is sometimes said to limit accessibility for pedestrians, and cyclists. How significant do you think this problem is on a 1-5 scale where 1 means not at all significant and 5 means very significant?

	All %	Nelson %	Tasman %
Base: n=	500	400	100
1 – Not at all significant	6	8	4
2	11	12	9
TOTAL 1 + 2	17	20	13
3	31	29	32
4	26	25	29
5 – Very significant	24	24	24
TOTAL 4 + 5	50	49	53
Unsure	2	2	2

Base: All respondents

4.3 Support for network changes

There are currently three potential approaches for improving the road network between the Annesbrook Drive and Haven Road roundabouts. These are:

- Approach A – Improving the existing network: does not involve major works – this approach will improve the existing road networks, making the most of the current walking and cycling network, increasing bus services, and decreasing or limiting the volume of private travel during peak periods by imposing restrictions without needing to widen or build new routes.
- Approach B – widening the existing routes: this approach would widen the existing roads between the Annesbrook Drive and Haven Road roundabouts by at least one lane. It would also include walking and cycling, public transport, network optimisation and travel demand management activities that complement widening the arterial roads.
- Approach C – building a new route: a new route that connects the Annesbrook Drive Roundabout to the Haven Road Roundabout. This approach would also include walking and cycling, public transport, network optimisation and travel demand management activities to support the new route.

Residents were asked to rate their support of a series of proposed changes for the road network between Annesbrook Drive and Haven Road using a scale of 1 – 5 where 1 means “strongly support” and 5 means “strongly oppose”.

Do you generally support or oppose changes to the road network between the Annesbrook Drive and Haven Road roundabouts including Rocks Road and Waimea Road – on a 1-5 scale where 1 means strongly support and 5 means strongly oppose?

	All %	Nelson %	Tasman %
Base: n=	277	246	48
1 – Strongly support	43	43	43
2	20	18	19
TOTAL 1 + 2	63	61	62
3	16	20	14
4	8	8	8
5 – Strongly oppose	8	6	10
TOTAL 4 + 5	16	14	18
Unsure	5	5	6

Base: Those aware that the government is currently looking at how best to address existing and future transport issues on the road network between the Annesbrook Drive and Haven Road roundabouts

Note: Due to weighting the sub-samples for Nelson/ Tasman will not match the All figure

Generally, there is support for changes to this road network across the region; 63% of the region’s residents support changes to the network while 16% oppose any changes. Opposition is higher amongst Tasman residents (18% vs 14% of Nelson residents) although this is not a statistically significant finding.

One in five (20%) Nelson residents rate themselves as neutral to changes.

The main reason for supporting the changes is to reduce congestion (50%) while opposition arguments are that the changes may affect the community (25%) and that improvements should be made to public transport options rather than new roads (23%).

<i>Why do you support the changes?</i>			
	All %	Nelson %	Tasman %
Base: n=	174	150	30
Need to reduce congestion	50	49	51
It is necessary/ Current infrastructure does not fit needs of the city	18	19	17
Need to keep up with population growth	12	11	12
Need to have more cycle paths and pedestrian paths	8	6	7
Changes will make Nelson a more liveable city	7	9	6
Trucks and heavy vehicles should not be on Rocks Road	6	10	-
There has been enough discussion, now need to do something about it	5	2	11
Changes need to be made as soon as possible	4	2	6
Current road network is dangerous for cyclists and pedestrians	4	7	-
Need better access to the city and the port	3	2	3
Rocks Road should be protected for its scenic views/ Tourist attraction	3	6	-
Changes will help businesses in Nelson	2	1	3
Unsure	2	3	-
Other	1	1	3

Base: Those who support changes to the road network

Note: Due to weighting the sub-samples for Nelson/ Tasman will not match the All figure

Note: Multiple response question

<i>Why do you oppose the changes?</i>			
	All %	Nelson %	Tasman %
Base: n=	45	34	9
Affect it may have on the community	25	19	32
Improve public transport options instead of building new roads	23	8	40
Not necessary/ Do not want it to change	19	39	-
More cycle ways and pedestrian friendly paths	16	2	28
Should build a new road/ Alternative road	13	16	9
Traffic mainly due to school traffic	11	4	16
Changes may destroy the view of the bay	11	11	12
Huge cost to Nelson	8	6	11
Consider tunnel option	6	2	14
Land is unstable	6	2	12
Should widen roads instead of building new roads	4	8	-
Generally oppose the change	4	9	-
Not happy with changes made previously (Traffic lights)	2	4	-
Unsure	1	2	-

Base: Those who oppose changes to the road network

Note: Due to weighting the sub-samples for Nelson/ Tasman will not match the All figure

Note: Multiple response question

Having been read the three approaches, residents were asked which approach they preferred.

<i>Which approach do you currently prefer?</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Approach A - which doesn't involve major works	20	20	21
Approach B - which would widen existing roads	36	32	41
Approach C - which would involve building a new route	41	46	36
Other/ None	2	1	1
Depends/ Unsure	1	1	1

Base: All respondents

Tasman residents (41%) marginally preferred approach B (widening the existing roads) while just under half (46%) of Nelson residents preferred approach C (building a new route).

Initially, the strongest opposition across the region was for approach A (which doesn't involve major works) where 44% of residents were opposed to this approach. Support for this approach seems to have been derived from the fact that it is a cost effective option (30%) and less disruptive (29%). Around a quarter (23%) approve of the improvements to public transport.

<i>Why do you like Approach A?</i>			
	All %	Nelson %	Tasman %
Base: n=	101	82	21
Cost effective option	30	13	48
Least disruptive option	29	34	24
Improvements to public transport	23	26	21
Minimises the environmental impact/ Environmentally sustainable	15	19	14
Efficient use of current network	9	12	8
Better cycle ways and pedestrian paths	8	7	8
General positive comment - best option, I like this option etc.	6	4	11
Not a big enough problem to justify option B or C	5	9	-
Restrictions during certain times will reduce congestion	4	8	-
Dislike other options	3	5	-
Will encourage carpooling/ Attitude change to driving	2	3	-
Do not want to change Rocks Road	2	5	-
Unsure	4	5	5

Base: Those who prefer Approach 'A'

Note: Due to weighting the sub-samples for Nelson/ Tasman will not match the All figure

Note: Multiple response question

Looking at the verbatim comments around why an approach was preferred; approach B was considered a cost effective option by 14% of regional residents while the reduction in congestion was commented on by 15% of Nelson residents and 9% of Tasman residents. Tasman residents were more likely to comment that this was a good compromise (18% vs 5% of Nelson residents).

<i>Why do you like Approach B?</i>			
	All %	Nelson %	Tasman %
Base: n=	180	126	41
General positive comment - best option, I like this option etc.	28	29	30
Cost effective option	14	15	13
Will reduce congestion	12	15	9
This option is a good compromise	11	5	18
Using infrastructure/network that is already there	10	9	7
Will give cyclists and pedestrians more space and better paths	10	11	8
Not as disruptive as building a new road	9	6	9
Low impact on community	8	17	1
Do not need a new road	6	11	1
Dislike other options	6	11	5
Will not take too long to complete	4	6	3
Improvements to public transport	1	2	-
Will be safer for everyone on the roads	1	3	-
Lowest impact on the environment	1	-	2
Unsure	1	3	-

Base: Those who prefer Approach 'B'

Note: Due to weighting the sub-samples for Nelson/ Tasman will not match the All figure

Note: Multiple response question

Verbatim comments in support of approach C indicate that this approach was favoured because of the reduction in congestion (25%) this option will lead to.

Nelson residents were more likely to mention that this approach would protect the Rocks road views and allow recreational development in this area (20% vs 9% of Tasman residents) and that it provides an alternative route or another road in and out of Nelson (20% vs 12% of Tasman residents). Tasman residents were more likely to mention that it would take heavy vehicles off of Rocks road.

<i>Why do you like Approach C?</i>			
	All %	Nelson %	Tasman %
Base: n=	205	183	36
Reduces congestion	25	27	22
General positive comment - best option, I like this option etc.	19	13	26
Protects Rocks Road views/Opportunity to develop Rocks Road for recreation	17	20	9
Provides an alternative route/Another road in and out of Nelson city	17	20	12
Move heavy vehicles off Rocks Road	13	11	16
Other options are patch fixes that will not last/ Temporary fixes	11	10	13
Opportunity to create new cycle ways and pedestrian paths	7	8	6
Dislike other options	7	6	7
It is necessary	6	9	3
Long term solution	5	6	3
Provides an alternative option during storms or slips	3	6	-
Will keep up with population growth	3	3	2
Using Railway Reserve	2	2	3
Keep cyclists and pedestrians safe	2	3	-
Improve public transport	1	1	-
Provides a direct route	1	2	-
There is land available for the new route	1	1	-
Unsure	2	2	3

Base: Those who prefer Approach 'C'

4.4 Statement testing

To provide a more balanced view of the approaches available to improving the network, residents were given a set of statements to respond to in respect to each of the three approaches. The residents were asked to use a scale of 1-5 where 1 means “strongly agree” and 5 means “strongly disagree”.

4.4.1 Approach A

Thinking about Approach A which doesn't involve major works. On a 1 to 5 scale where 1 means strongly agree and 5 means strongly disagree please Tell me if you agree or disagree with the following statements. That..

	All %	Nelson %	Tasman %
Base: n=	500	400	100
It is not practical as there is not enough road width to cope with introducing pedestrian access, cycling tracks or increased public transport links	52	55	47
It will be negative as it requires parking restrictions and charges to discourage private vehicle travel during peak periods	43	46	35
It will provide for future needs by increasing public transport services	40	44	38
It will work as it reduces private vehicle travel during peak periods	30	29	29

Base: All respondents

The initial opposition reflected for approach A seems to be explained by the statement “It is not practical as there is not enough road width to cope with introducing pedestrian access, cycling tracks or increased public transport links” – 52% of the region’s residents agreed with this statement, increasing to 55% of Nelson residents agreeing with this. Around a quarter (26%) of the region’s residents disagreed with this statement.

Nelson residents were also more likely to agree with the statement “[approach A] will be negative as it requires parking restrictions and charges to discourage private vehicle travel during peak periods” (46% vs 35% of Tasman residents).

There was less support for the “positive” statements for approach A: Nelson residents were more likely to agree with “It will provide for future needs by increasing public transport services” (44% vs 38% of Tasman residents) and just three in ten (30%) across the region agreed with the statement “It will work as it reduces private vehicle travel during peak periods”. Overall, half (51%) of the region’s residents disagreed with this statement.

4.4.2 Approach B

Thinking about Approach B which involves widening the existing roads. On a 1 to 5 scale where 1 means strongly agree and 5 means strongly disagree please tell me if you agree or disagree with the following statements: That..

	All %	Nelson %	Tasman %
Base: n=	500	400	100
It will work as it will address future transport growth	48	47	49
Widening the existing roads, could have negative implications for access onto those roads	47	47	45
It may affect the local environment negatively along, in and around the two main routes between Annesbrook Drive and Haven Road roundabouts	45	50	38
It will provide an opportunity to keep on-street parking	42	40	42

Base: All respondents

Initially around two fifths of Tasman residents (41%) claimed to prefer approach B while only 32% of Nelson residents preferred this option.

Just under half of the region's residents agree that "[approach b] will work as it will address future transport growth" (48%), however, a third (33%) of the region's residents disagree with this same statement.

Just under half (47%) of the region's residents agree with the statement "widening the existing roads, could have negative implications for access onto those roads" and "it may affect the local environment negatively along, in and around the two main routes between Annesbrook Drive and Haven Road roundabouts" (45%) increasing to half (50%) of Nelson residents agreeing with this statement.

Around two fifths of the region's residents (42%) agree that "[approach B] will provide an opportunity to keep on-street parking".

4.4.3 Approach C

Thinking about Approach C which involves building a new route. On a 1 to 5 scale where 1 means strongly agree and 5 means strongly disagree please tell me if you agree or disagree with the following statements. That..

	All %	Nelson %	Tasman %
Base: n=	500	400	100
It will work as it will address future transport growth	71	67	73
It will provide an opportunity to keep on-street parking	66	62	67
It may provide an opportunity to improve the environment in and around the existing routes between Annesbrook Drive and Haven Road roundabouts making it more attractive	57	56	54
It may affect the local environment negatively along, in and around the new route	45	50	40
A new route could have negative implications for access onto existing roads and to the local environment	35	44	28

Base: All respondents

The initial support for approach C, was driven particularly from Nelson Residents (46%), however, Tasman residents are more likely to agree with the positive statements around this approach.

Overall, the region's residents agree with the statements:

- "It will work as it will address future transport growth" (71%), with more Tasman residents agreeing with this statement (73% vs 67% of Nelson residents).
- "It will provide an opportunity to keep on-street parking" (66%), again with more Tasman residents agreeing with this statement (67% vs 62% of Nelson residents).
- "It may provide an opportunity to improve the environment in and around the existing routes between Annesbrook Drive and Haven Road roundabouts making it more attractive" (57%).

There was less agreement with the more negative statements for approach C;

- Forty-five percent of the region's residents agreed that "it may affect the local environment negatively along, in and around the new route" (increasing to 50% of Nelson Residents agreeing with this statement)
- Just over a third (35%), increasing to 44% of Nelson residents agreeing "a new route could have negative implications for access onto existing roads and to the local environment". Fewer Tasman residents agreed with this statement (28%).

4.5 Preferred approach

Having balanced the approaches with the benefits and concerns, residents were asked which of the approaches they preferred overall. The majority of the region's residents (46%) preferred approach C (building a new route). This was driven primarily by Nelson residents (48%) followed by Tasman residents (44%).

<i>Now after hearing these benefits and concerns - which Approach do you currently prefer:</i>			
	All %	Nelson %	Tasman %
Base: n=	500	400	100
Approach A – which doesn't involve major works	17	19	14
Approach B – which would widen existing roads	34	31	38
Approach C – which would involve building a new route	46	48	44
Other/ None	1	1	1
Depends/ Unsure	2	1	3

Base: All respondents

The least favoured approach remained approach A (not involving major works) which was favoured by fewer than one fifth (17%) of the region's residents, while a third (34%) stated that they preferred approach B (widening existing roads).

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APPENDIX G – OPTIONS ASSESSMENT

**Programme business case
Assessment of alternatives summary table**

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 1 – Widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for road traffic						
Alternative description:	Widen SH6 and Waimea Road to create an extra lane to create a total of 3 lanes in each direction. The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		100		150	
	Net property cost (\$m):		30 (land only bought)		50 (land and dwellings bought)	
	Opex (\$m/30yr):		0		5	
	Maintenance (\$m/30yr):		10		25	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		2	
Timing of need:	Optimal programme:	5 years		Likely: 8 years		10 years
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: High Technical implementation, operation/maintenance and risks: medium Property Risks: High
Affordability:	High risk due to likelihood of funding required from other sources.
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Maintains current layout but adds an existing traffic lane. Possible safety concerns for cyclists but increased width provides overtaking opportunities so safety and risk balanced out
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact from improved access to CBD offset by negative effects due to property impacts on the widened route.
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.	-1	Minor impact to building occupants due to decreased set-back distances
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive: Improves traffic flow and reduces emissions. Negative: brings roadside closer to receptors. Overall neutral effect on air quality
Water Resources, resource efficiency, ecology	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.	-1	Assume increased traffic flow - increase of traffic emissions and impacts on water resources
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity only efficiency of corridor.

<p>Visual Quality, urban design, access and mobility</p>	<p>Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.</p>	<p>-3</p>	
<p>Cultural and Heritage</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.</p>	<p>-1</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.</p>	<p>-2</p>	<p>Minor/moderate increase in severance and noise, and reduction in amenity.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 2 – Widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for bus to utilise additional space					
Alternative description:	Widening of the existing road infrastructure on the two main arterials by a minimum of one lane for bus to utilise additional space. The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		100		150
	Net property cost (\$m):		30 (land only bought)		50 (land and dwellings bought)
	Opex (\$m/30yr):		20		45
	Maintenance (\$m/30yr):		10		25
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: High Technical implementation, operation/maintenance and risks: medium Property Risks: High
Affordability:	High risk due to likelihood of funding required from other sources.
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	mode change by drivers leads to fewer vehicles and therefore less conflict with other vehicles and modes and activities
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so.	-1	Minor impact to building occupants due to noise from new commuter rail service
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive: Reduce congestion for bus routes - reduce emissions. Negative: decrease distance between roadside and sensitive receptors. Overall: Neutral effect.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is	1	Assume reduction in traffic - decreased impacts in traffic emissions and water resources.

	invested in or otherwise;		
Land use and transport integration	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Increases option of new PT services connecting key destinations.
Visual Quality, urban design, access and mobility	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.	-3	
Cultural and Heritage	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.	-2	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so.	-1	

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 4 – Removal of restrictions on the existing two arterials which is assumed to create space for an additional lane for road traffic						
Alternative description:	Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials which is assumed to create the required space for an additional lane for road traffic					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		10		15	
	Net property cost (\$m):		0		5	
	Opex (\$m/30yr):		0		5	
	Maintenance (\$m/30yr):		10		15	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			1		3	
Timing of need:	Optimal programme:	5 year		Likely:	7 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so.	-2	Moves traffic closer to footpaths, increasing perceived risk to pedestrians and actual risk of conflict with side movements from driveways and intersections
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact from improved access to CBD offset by negative effects from removal of restrictions on the existing arterials.
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Minor impact to building occupants due to decreased set-back distances
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive: Improves traffic flow and reduces emissions. Negative: brings roadside closer to receptors. Overall neutral effect on air quality
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Better use of existing resources despite increased impacts water resources
Land use and transport	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity only efficiency of corridor.

integration			
Visual Quality, urban design, access and mobility	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Cultural and Heritage	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Minor/moderate increase in noise and reduction in safety

**Programme business case
Assessment of alternatives summary table**

Proposal details							
Business case name:	Nelson Southern Link Investigation			Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.						
Alternative number 5 – New arterial road (limited access)							
Alternative description:	This route is commonly known as Southern Link that runs from the SH6 Haven Road roundabout to the SH6 Annesbrook roundabout utilising Haven Road, St Vincent Street, the old railway reserve and Whakatu Drive. It is a single lane in each direction, with parking on St Vincent Street both sides, with the cycleway transferring to Vanguard Street. Access onto route from side roads is limited.						
Estimated total public sector funding requirement:			Lower		Upper		
	Capital plus property cost (\$m):		60		135		
	Net property cost (\$m):		10		20		
	Opex (\$m/30yr):		0		5		
	Maintenance (\$m/30yr):		10		15		
	Present value of cost to govt. (\$m):		N/A		N/A		
Estimated BCR range:			1		2		
Timing of need:	Optimal programme:	5 years		Likely: 8 years		10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L	

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: High Technical implementation, operation/maintenance and risks: Medium Property Risks: High
Affordability:	Medium
Public/Stakeholders:	High

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduces side road and driveway conflict on existing arterials for vehicle and active modes, increases it on St Vincent Street. Reduces risk to cyclists overall
Economy:	Major benefit – these benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option’s eligibility for investment;	3	Improved access to CBD leading to enhanced economic opportunities through improved journey time and reliability
Environmental and social:			
Noise and Vibration	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.	-3	Significant change in noise environment due to increased traffic and decreased set-back distances
Air Quality	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	Increased traffic volumes will raise emissions in the confines of the valley where air quality is already poor

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Significant increased traffic flow - increase of traffic emissions and impacts on water resources. Potential stream culverting required</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity due to creation of new transport corridor.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Moderate/significant increase in noise, air pollution, severance (e.g. for Valley residents, impact on reserve).</p>

**Programme business case
Assessment of alternatives summary table**

Proposal details			
Business case name:	Nelson Southern Link Investigation	Name of Project Manager & Region:	Andrew James Nelson
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.		
Alternative number 5a – New road (local road)			
Alternative description:	This route is commonly known as Southern Link that runs from the SH6 Haven Road roundabout to the SH6 Annesbrook roundabout utilising Haven Road, St Vincent Street, the old railway reserve and Whakatu Drive. It is a single lane in each direction, with parking on St Vincent Street both sides, with the cycleway transferring to Vanguard Street. It is a local road.		
Estimated total public sector funding requirement:		Lower	Upper
	Capital plus property cost (\$m):	60	125
	Net property cost (\$m):	10	20
	Opex (\$m/30yr):	0	5
	Maintenance (\$m/30yr):	10	15
	Present value of cost to govt. (\$m):	N/A	N/A
Estimated BCR range:		1	2
Timing of need:	Optimal programme:	5 years	Likely: 8 years 10 years
IAF profile:	Strategic fit:	M	Effectiveness: M Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: High Technical implementation, operation/maintenance and risks: Medium Property Risks: High
Affordability:	Medium
Public/Stakeholders:	High

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduces side road and driveway conflict on existing arterials for vehicle and active modes, increases it on St Vincent Street. Reduces risk to cyclists overall
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;	2	Improved access to CBD leading to enhanced economic opportunities through improved journey time and reliability
Environmental and social:			
Noise and Vibration	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for investment.	-3	Significant change in noise environment due to increased traffic and decreased set-back distances
Air Quality	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-2	Encourage people to ride share or take public transport. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Increased traffic volumes will raise emissions in the confines of the valley where air quality is already poor</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity due to creation of new transport corridor.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Reduction in air quality and amenity (e.g. for valley residents, impact on reserve). Assume loss of properties from widening St Vincent.</p>

Programme business case

Assessment of alternatives summary table

Proposal details								
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson				
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.							
Alternative number 6 – Impose restrictions on the arterials to reduce the volume of traffic - eg HCVs								
Alternative description:	This option would utilise legislation and local authority bylaws to ban/constrain particular types of vehicles - eg HCVs							
Estimated total public sector funding requirement:			Lower		Upper			
	Capital plus property cost (\$m):		0		20			
	Net property cost (\$m):		0		0			
	Opex (\$m/30yr):		5		10			
	Maintenance (\$m/30yr):		3		6			
	Present value of cost to govt. (\$m):		N/A		N/A			
Estimated BCR range:			0.1		1			
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years		
IAF profile:	Strategic fit:	M		Effectiveness:	M		Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: Medium Technical implementation, operation/maintenance and risks: Low Property Risks: Low
Affordability:	Low
Public/Stakeholders:	High

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Less traffic reduces conflict situations
Economy:	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.	-3	Major negative impact on economy due to negative impact on freight traffic carrying exports. This could be mitigated by new port construction or inland port
Environmental and social:			
Noise and Vibration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Minor improvement due to decreased traffic volumes
Air Quality	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so	-1	Positive: Reduce traffic and emissions from arterial routes. Negative: Likely to force traffic on to alternative low volume routes, which are more suburban and have greater sensitivity. Therefore create negative adverse effects in other areas.

			Overall effect - slight negative.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potential to increase connectivity through increased and easier connections to and from the arterial network.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Likely improvement on arterials but negative impacts on safety and amenity on local roads if traffic reroutes to them

Programme business case

Assessment of alternatives summary table

Proposal details								
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson				
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.							
Alternative number 7 – Impose parking restrictions at peak periods to encourage higher vehicle occupancy rates								
Alternative description:	This option would utilise legislation and local authority bylaws to constrain the number of long term parking spaces available and impose a maximum duration across a wider area around the CBD.							
Estimated total public sector funding requirement:			Lower		Upper			
	Capital plus property cost (\$m):		5		10			
	Net property cost (\$m):		2		5			
	Opex (\$m/30yr):		3		6			
	Maintenance (\$m/30yr):		1		3			
	Present value of cost to govt. (\$m):		N/A		N/A			
Estimated BCR range:			0.1		3			
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years		
IAF profile:	Strategic fit:	M		Effectiveness:	M		Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	High
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Less traffic reduces conflict situations.
Economy:	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-2	Moderate negative impact on local business due to less parking. This negative impact could be mitigated by provision of HOV lanes and may even become positive if implemented optimally. Parking restrictions on their own without alternatives such as HOV lanes
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to ride share or take public transport. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency,	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

ecology	impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;		
Land use and transport integration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so	-1	May reduce opportunities for viable car trips to local centres and key destinations.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	May reduce accessibility for mobility-impaired

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 8 – Advertising campaigns to persuade people to reduce number of journeys or change travel mode						
Alternative description:	Use advertising campaigns to persuade people to reduce the number of journeys or change their travel mode to public transport or walking or cycling.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		1		5	
	Net property cost (\$m):		0		1	
	Opex (\$m/30yr):		1		2	
	Maintenance (\$m/30yr):		1		2	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:		<1		<1		
Timing of need:	Optimal programme:	5 years		Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	Medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	no impact
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Effect of advertising could be short time and therefore negligible impact overall.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise; ;	1	Encourage people to ride share or take public transport. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.- slight negative.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Slight positive impact to connectivity through creating capacity on network.

Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	

Programme business case

Assessment of alternatives summary table

Proposal details			
Business case name:	Nelson Southern Link Investigation	Name of Project Manager & Region:	Andrew James Nelson
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.		
Alternative number 9 – Change land use to encourage less travel by private vehicle			
Alternative description:	Change land use to encourage less travel by private vehicle - Nelson City Council to change District Plan to enable densification of CBD and surrounding areas over and above current situation		
Estimated total public sector funding requirement:		Lower	Upper
	Capital plus property cost (\$m):	1	5
	Net property cost (\$m):	0	1
	Opex (\$m/30yr):	1	2
	Maintenance (\$m/30yr):	1	2
	Present value of cost to govt. (\$m):	N/A	N/A
Estimated BCR range:		0.1	3
Timing of need:	Optimal programme:	10 years	Likely: 20 years 30 years
IAF profile:	Strategic fit:	M	Effectiveness: M Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	high risk
Public/Stakeholders:	Medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Less traffic reduces conflict situations
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive impact due to less travel by private vehicle but off set by less agglomeration benefits from concentrating economic activity in CBD.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

<p>Land use and transport integration</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Develop better landuse and transport outcomes through developing strong desired linkages between complementary land uses (housing / employment etc).</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>1</p>	<p>Potential for positive social effects but densification can also cause negative social effects too.</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 10 – More shared pathways and better connections on/to the two arterials						
Alternative description:	More shared paths - The provision of new shared paths in and around the CBD by removing parking and other restrictions to create the required width and ensuring seamless connectivity					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		5		10	
	Net property cost (\$m):		1		2	
	Opex (\$m/30yr):		1		2	
	Maintenance (\$m/30yr):		1		5	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	1 year		Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: high
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Less risk for cyclists transferring to shared path. More risk for pedestrians from higher volumes of cyclists and other active modes. There are less pedestrians than vehicles, therefore minor positive benefit to cyclists overall from transferring to shared path
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact on access to CBD due to mode shift and improved transport choices
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to walk and cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.

Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Increased ped and cycle connections to strategic network.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Minor/moderate improvements for cyclist safety, encouraging active modes and air quality.

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 11 – Work at better integration of travel modes – walking/cycling/PT/+ PV's on the arterials					
Alternative description:	Work at better integration of travel modes - At particular points along the arterials, where interaction between different modes occurs (eg at bus stops or where cycle lanes end, parking areas or at traffic lights), implement physical works to provide dedicated space for all users.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		1		10
	Net property cost (\$m):		0		5
	Opex (\$m/30yr):		0		2
	Maintenance (\$m/30yr):		1		2
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	improvements can reduce conflict points
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact on access to CBD due to mode shift and improved transport choices
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity through creating travel options which complement each other</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Minor improvement to safety and moderate for access to PT.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation	Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.				
Alternative number 12 – Ring road system (3 Laning)					
Alternative description:	Ring road system (3 laning) - This roading system is to facilitate circular travel utilising an additional lane on both arterials to create a total of 3 lanes in-bound and 3 lanes outbound as a one-way system. This option is the same as for Options 1 or 4 in terms of implementability ie by providing an additional lane through widening or utilising the existing road corridors – refer to those options.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):				
	Net property cost (\$m):				
	Opex (\$m/30yr):				
	Maintenance (\$m/30yr):				
	Present value of cost to govt. (\$m):				
Estimated BCR range:					
Timing of need:	<i>Optimal programme:</i>		<i>Likely:</i>		
IAF profile:	<i>Strategic fit:</i>		<i>Effectiveness:</i>		<i>Efficiency:</i>

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: Technical implementation, operation/maintenance and risks: Property Risks:
Affordability:	
Public/Stakeholders:	

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:			
Economy:			
Environmental and social:			
Noise and Vibration			
Air Quality			
Water Resources, resource efficiency, ecology			
Land use and transport integration			
Visual Quality, urban design, access and mobility			
Cultural and Heritage			
Social – community cohesion, public health, severance			

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 13 – Tunnel from Annesbrook – Port						
Alternative description:	Tunnel option Annesbrook to Port - Provide a tunnel from Annesbrook Roundabout to the port.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		190		280	
	Net property cost (\$m):		10		20	
	Opex (\$m/30yr):		30		40	
	Maintenance (\$m/30yr):		30		40	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years	Likely: 10 years	10 years		
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: high Property Risks: high
Affordability:	medium
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Major benefit – these benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option’s eligibility for investment;	3	i Reduces side road and driveway conflict on existing arterials for vehicle and active modes. Reduces risk to cyclists overall
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Improved access to CBD leading to enhanced economic opportunities through improved journey time and reliability
Environmental and social:			
Noise and Vibration	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Moderate improvement due to decreased heavy vehicle traffic on other routes
Air Quality	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	Tunnel portals and potentially tunnel ventilation stacks will concentrate emissions from vehicles using tunnels. Creates at least two point discharges which will be perceived by public to cause adverse effects, especially within the valley which already experiences poor air quality.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Increase of traffic emissions and impacts on water resources. Creation of waste to landfill from tunnelling that is additional to surface road.</p>
<p>Land use and transport integration</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Increased connectivity due to creation of new transport corridor</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;</p>	<p>2</p>	
<p>Cultural and Heritage</p>	<p>Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for investment.</p>	<p>-3</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate/significant increase in safety and amenity, and decrease in severance and noise.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 14 – Network operating plan					
Alternative description:	Network operating plan - This option encompasses the organisation of the existing roads into a system of managed roads (eg one- way system) to facilitate movement of traffic around the entire network focusing on the CBD area.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		1		5
	Net property cost (\$m):		0		1
	Opex (\$m/30yr):		1		5
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: medium Property Risks: low
Affordability:	low risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Puts controls onto uncontrolled intersections, thereby reducing risk overall
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Negligible impact relative to Do Minimum which is assumed to include improved operation over time.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	If the road network is managed well, then congestion and emissions should be reduced.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Slight connectivity increase due to easier access to arterial network.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;;</p>	<p>1</p>	<p>Minor improvements in safety and air quality offset restrictions local routes (one ways)</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 15 – Close side road accesses (or reduce) to left in left out on the arterials						
Alternative description:	Close side road accesses (or reduce) to only left in left out on the arterials - Restrict right turn movements to a select number of side roads where it is possible to access adjacent side roads via the surrounding local roads.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		5		15	
	Net property cost (\$m):		2		5	
	Opex (\$m/30yr):		0		2	
	Maintenance (\$m/30yr):		5		10	
Present value of cost to govt. (\$m):		N/A		N/A		
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	1 year		Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M		Effectiveness:	M	
				Efficiency:	L	

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	removes certain types of crashes eg right turn against, therefore moderately positive
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact on through traffic on arterials
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive: Improved flow on main route. Negative: Longer travel distances for some. Net effect neutral
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

<p>Land use and transport integration</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	<p>Potential for negative impact on connectivity as choice of movements reduced.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	<p>Moderate impact on severance</p>

Programme business case

Pedestrian overpasses Tahunanui/Waimea Road to address barriers to east / west travel for walking and cycling

Proposal details								
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson				
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.							
Alternative number 16 – Pedestrian overpasses Tahunanui/Waimea Road to address barriers to east / west travel for walking and cycling								
Alternative description:	Pedestrian overpasses Tahunanui/Waimea Road to address barriers to east / west travel for walking and cycling - At traffic signalled controlled intersections, construct overpasses to enable pedestrians /cyclists to not have to wait at the lights to cross							
Estimated total public sector funding requirement:			Lower		Upper			
	Capital plus property cost (\$m):		10		15			
	Net property cost (\$m):		0		5			
	Opex (\$m/30yr):		0		2			
	Maintenance (\$m/30yr):		5		10			
Present value of cost to govt. (\$m):		N/A		N/A				
Estimated BCR range:		0.1		1				
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years		
IAF profile:	Strategic fit:	M		Effectiveness:	M		Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Reduces conflict situations between vehicular traffic and walking/cycling
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to walk and cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased active mode connections across existigin corridor.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate improvement in active (healthy) modes, walker safety and severance.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 17 – Tunnel from Annesbrook to Emano					
Alternative description:	Tunnel option - Annesbrook to Emano - This option utilises tunnel portals near Annesbrook roundabout and the end of Emano Street with the road either sidling the western hillside to St Vincent Street or utilising properties on one side of Emano Street. St Vincent Street is changed as per "New arterial route" (option 5).				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		140		180
	Net property cost (\$m):		10		20
	Opex (\$m/30yr):		15		25
	Maintenance (\$m/30yr):		15		25
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 9 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: high Property Risks: high
Affordability:	medium
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduces side road and driveway conflict on existing arterials for vehicle and active modes, increases it on St Vincent Street. Reduces risk to cyclists overall
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;	2	Improved access to CBD leading to enhanced economic opportunities through improved journey time and reliability
Environmental and social:			
Noise and Vibration	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for investment.	-3	Significant change in noise environment due to increased traffic and decreased set-back distances
Air Quality	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Tunnel portals and potentially tunnel ventilation stacks will concentrate emissions from vehicles using tunnels. Creates at least two point discharges which will be perceived by public to cause adverse effects , especially within the valley which already experiences poor air quality.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Significant increased traffic flow - increase of traffic emissions and impacts on water resources. Potential loss of terrestrial habitat at tunnel entrance near Emano St. Creation of waste to landfill from tunnelling that is additional to surface road.</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>May reduce opportunities for viable car trips to local centres and key destinations.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	

<p>Social – community cohesion, public health, severance</p>	<p>Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.</p>	<p>-3</p>	<p>Difficult to rate because option has significant variability on the social environment. E.g significant impact if option includes loss of properties on Emano and St Vincent (possibly even -3).</p>
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Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.				
Alternative number 18 – Inland Port/Barge					
Alternative description:	Inland Port/Barge - This option involves the provision of a log loading facility on Rabbit Island, the provision of barges to take logs to and from the port, the provision of new roading infrastructure to State Highway standards from SH60 to the loading facility, the banning of logging trucks on SH6 from Annesbrook roundabout to the existing port entrance.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		20		25
	Net property cost (\$m):		5		10
	Opex (\$m/30yr):		10		20
	Maintenance (\$m/30yr):		10		20
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	High risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so	-1	Relocation oif risk from SH6 to SH60 and Rabbit Island. Increased risk to navigation from barging
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Positive impact due to more efficient land use. However possible double handling requirements..
Environmental and social:			
Noise and Vibration	Major cost or negative impacts these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option’s eligibility for investment.	-3	Minor improvement in study area due to decreased heavy vehicle traffic in study area. Significant change in noise environment on route to Rabbit Island due to increased heavy vehicle traffic
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or	1	Positive: Reduce the number of trips by Logging vehicles to and from the port on currently congested routes. Therefore reduce emissions. Positive: Reduced truck movements due to use of barges to move logs. Negative. Increase truck movements and emissions on the road from SH60 to inland

	otherwise;		port. Overall positive
Water Resources, resource efficiency, ecology	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Assume greater impacts on coastal waters/ecology around Rabbit Island (higher value environment) due to operation of barge vessels.
Land use and transport integration	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Creation of alternative freight connection lining O/D of freight.
Visual Quality, urban design, access and mobility	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	
Cultural and Heritage	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	
Social – community	Moderate cost or negative impact – the option is	-2	Social effects on potentially affected community unknown (e.g. community along SH60 and

<p>cohesion, public health, severance</p>	<p>anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>		<p>from SH60 to Rabbit Island)</p>
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Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.				
Alternative number 19 – Congestion charge					
Alternative description:	Congestion charge - This option involves charging road users (excluding PT) that use the two arterials assuming enabling legislation is passed.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		5		10
	Net property cost (\$m):		0		2
	Opex (\$m/30yr):		10		20
	Maintenance (\$m/30yr):		10		20
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			1		2
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: high Property Risks: low
Affordability:	Medium risk
Public/Stakeholders:	Medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Less traffic reduces conflict situations
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduced congestion at peak times, But negative impact on CBD businesses due to increased cost of access.
Environmental and social:			
Noise and Vibration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Minor improvement due to decreased traffic volumes
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to ride share or take public transport. Potentially reduce the number of trips by private and freight vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.</p>
<p>Land use and transport integration</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-1</p>	<p>Will reduce access to the network and ease of connectivity across network.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	<p>Tradeoff between positives and negatives.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 20 – Park and Ride					
Alternative description:	Park and Ride - This option involves the provision of parking facilities south of Annesbrook roundabout and the provision of public transport (buses) to enable commuters to access the CBD and vice versa.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		15		25
	Net property cost (\$m):		5		10
	Opex (\$m/30yr):		15		25
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: medium
Affordability:	medium risk
Public/Stakeholders:	Medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	mode change by drivers leads to fewer vehicles and therefore less conflict with other vehicles and modes and activities
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Improved access to CBD but minor impact due to limited uptake.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potentially reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.</p>
<p>Land use and transport integration</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Increased connectivity due to new connection (modal) to CBD.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Minor/moderate improvements in access to PT, safety and air quality.</p>

Programme business case

Assessment of alternatives summary table

Proposal details							
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson			
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.						
Alternative number 21 – Port at Motueka							
Alternative description:	The status quo plus a port facility at Motueka similar to Nelson port						
Estimated total public sector funding requirement:			Lower		Upper		
	Capital plus property cost (\$m):		20		50		
	Net property cost (\$m):		1		5		
	Opex (\$m/30yr):		10		20		
	Maintenance (\$m/30yr):		10		20		
Present value of cost to govt. (\$m):		N/A		N/A			
Estimated BCR range:		0.1		1			
Timing of need:	Optimal programme:	5 years		Likely: 8 years		10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L	

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	high risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Benefit to SH6 if traffic relocates - higher risk to SH60, neutral overall
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so	2	Potentially positive impact due to shorter haul distances for exports.
Environmental and social:			
Noise and Vibration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise; ;	1	Minor improvement in study area due to decreased heavy vehicle traffic in study area. Potential change in noise environment on route to the proposed Port at Motueka due to increased heavy vehicle traffic
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potentially reduce the number of trips by freight vehicles to Nelson port on currently congested routes around the port and CBD and therefore reduce emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Some impact to coastal water resources from barge operations offset by improvements in resource efficiency via reduced traffic.

<p>Land use and transport integration</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Reduce the impact of freight on existing transport network and need for freight related transport upgrades.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Social effects on potentially affected community at Motueka are unknown</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 22 – Better cycle storage areas in city / and showers					
Alternative description:	Provide cycle storage facilities and showers at locations throughout the CBD				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		2		5
	Net property cost (\$m):		1		2
	Opex (\$m/30yr):		1		5
	Maintenance (\$m/30yr):		2		5
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	high risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	no impact
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible effect
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Removal of barriers to commuter cycling.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Minor improvement in active (healthy) modes</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 23 – Electric vehicle subsidy/charging ports						
Alternative description:	Electric vehicle subsidy/charging ports - Provide a subsidy to encourage a shift away from fossil fuel method of propulsion to electric vehicles and provide charging points at parking spaces.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		2		5	
	Net property cost (\$m):		1		2	
	Opex (\$m/30yr):		15		30	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	1 years	Likely: 3 years		5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: medium Property Risks: low
Affordability:	high risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage the use of zero emission vehicles. Potentially reduce the number of petrol and diesel vehicles and therefore reduce air contaminant emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume (relies upon electric car ownership) - decreased impacts in traffic emissions and water resources.

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Slight positive, will increase the likelihood of electric vehicle uptake and use.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	

Programme business case

Assessment of alternatives summary table

Proposal details			
Business case name:	Nelson Southern Link Investigation	Name of Project Manager & Region:	Andrew James Nelson
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.		
Alternative number 24 – Port operations - hours of operation			
Alternative description:	Port operations - hours of operation - Change the hours that the Port of Nelson operates to facilitate the movement of freight at non-peak times		
Estimated total public sector funding requirement:		Lower	Upper
	Capital plus property cost (\$m):	2	5
	Net property cost (\$m):	1	2
	Opex (\$m/30yr):	5	10
	Maintenance (\$m/30yr):	1	2
	Present value of cost to govt. (\$m):	N/A	N/A
Estimated BCR range:		0.1	1
Timing of need:	Optimal programme:	5 years	Likely: 8 years 10 years
IAF profile:	Strategic fit:	M	Effectiveness: M Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	high risk
Public/Stakeholders:	medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Slightly positive assuming that Port traffic travels in off peak only
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Negative impact on economy due to negative impact on freight traffic carrying exports.
Environmental and social:			
Noise and Vibration	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	Moderate impact due to increased heavy vehicle traffic at night
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Night operation of port will encourage trucking movements at night and therefore away from times of the day when there is currently congestion. Effect should be to reduce emissions from truck movements to port.

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on connectivity, only timing of trips to port.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Impact on night time noise / amenity for residents along trucking route

Programme business case

Assessment of alternatives summary table

Proposal details			
Business case name:	Nelson Southern Link Investigation	Name of Project Manager & Region:	Andrew James Nelson
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.		
Alternative number 25 – Adjust retailing hours 1000-1800			
Alternative description:	Adjust retailing hours 1000-1800 - Change the hours that retailers within the CBD are open to shift shopping traffic to non-peak times		
Estimated total public sector funding requirement:		Lower	Upper
	Capital plus property cost (\$m):	2	3
	Net property cost (\$m):	1	2
	Opex (\$m/30yr):	2	5
	Maintenance (\$m/30yr):	1	2
	Present value of cost to govt. (\$m):	N/A	N/A
Estimated BCR range:		0.1	1
Timing of need:	Optimal programme:	5 years	Likely: 8 years 10 years
IAF profile:	Strategic fit:	M	Effectiveness: M Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	high risk
Public/Stakeholders:	medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Risk remains the same
Economy:	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-2	Reduced congestion at peak times positive impact offset by negative effect on retailers from reduced hours.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Shift some private vehicles trips out of 08:00 to 9:00 peak traffic and therefore reduce congestion and emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact, will only alter the timing of travel.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Social – community cohesion, public health, severance	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 26 – Change school start and finish times					
Alternative description:	Change the hours that schools are open to shift traffic to non-peak times				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		2		5
	Net property cost (\$m):		1		2
	Opex (\$m/30yr):		1		5
	Maintenance (\$m/30yr):		1		2
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: high Property Risks: low
Affordability:	high risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Risk remains the same
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Positive impact at peak times offset by disruption to established trip patterns made by working parents dropping off children and having to make altered childcare arrangements..
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Shift some private vehicles trips out of 08:00 to 9:00 peak traffic and therefore reduce congestion and emissions.
Water Resources, resource efficiency, ecology	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not	1	Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.

	likely to contribute materially to determining whether an option is invested in or otherwise;		
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact, will only alter the timing of travel.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	

Programme business case

Assessment of alternatives summary table

Proposal details								
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson				
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.							
Alternative number 27 – Additional bus services – fare and operational costs paid by user								
Alternative description:	Additional bus services - More services to other locations - fare paid by user							
Estimated total public sector funding requirement:			Lower		Upper			
	Capital plus property cost (\$m):		2		5			
	Net property cost (\$m):		1		2			
	Opex (\$m/30yr):		20		30			
	Maintenance (\$m/30yr):		5		10			
Present value of cost to govt. (\$m):		N/A		N/A				
Estimated BCR range:		0.1		1				
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years		
IAF profile:	Strategic fit:	M		Effectiveness:	M		Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	medium
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	mode change by drivers leads to fewer vehicles and therefore less conflict with other vehicles and modes and activities
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Improved access to CBD from reduced congestion resulting from mode shift from car to PT but limited mode shift
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potentially encourage bus use, reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity through addition of new services.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate improvements on access to other modes (PT) and minor improvements in safety and air quality.</p>

**Programme business case
Assessment of alternatives summary table**

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 28 – Additional bus services – free or partially subsidised					
Alternative description:	Additional bus services - More services to other locations - fare free or partially subsidised				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		2		5
	Net property cost (\$m):		1		2
	Opex (\$m/30yr):		30		50
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	Medium risk
Public/Stakeholders:	medium risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	mode change by drivers leads to fewer vehicles and therefore less conflict with other vehicles and modes and activities
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Improved access to CBD from reduced congestion resulting from mode shift from car to PT but limited mode shift.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Potentially significantly encourage bus use , reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Assume minor reduction in traffic volume - decreased impacts in traffic emissions and water resources.</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity through addition of new services, subsidy fo service increases attractiveness for more users</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate improvements on access to other modes (PT) and minor improvements in safety and air quality.</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 31 – Upgrading key intersections on the arterials to facilitate through movement						
Alternative description:	Upgrading key intersections on the arterials to facilitate through movement - Install traffic lights at key intersections and give priority to through traffic					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		5		15	
	Net property cost (\$m):		2		5	
	Opex (\$m/30yr):		1		3	
	Maintenance (\$m/30yr):		2		5	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Focusing on throughput increases the risk of conflict with side road traffic via frustration
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Minor positive impact from improving access to CBD and improving route efficiency at key intersections
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Improved traffic flow reduces air emissions.

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Efficiency upgrade, assumed no increased connectivity for ped / cycle crossing etc.
Visual Quality, urban design, access and mobility	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Improved health (from better air quality) offset by slower side road movement for local traffic

Programme business case

Assessment of alternatives summary table

Proposal details							
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson			
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.						
Alternative number 32 – Upgrading key intersections on the arterials to facilitate accessibility onto the arterials							
Alternative description:	Upgrading key intersections on the arterials to facilitate accessibility onto the arterials - Install traffic lights at key intersections and give priority to side road traffic						
Estimated total public sector funding requirement:			Lower		Upper		
	Capital plus property cost (\$m):		5		15		
	Net property cost (\$m):		2		5		
	Opex (\$m/30yr):		1		3		
	Maintenance (\$m/30yr):		2		5		
Present value of cost to govt. (\$m):		N/A		N/A			
Estimated BCR range:		0.1		1			
Timing of need:	Optimal programme:	1 year		Likely: 3 years		5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M	

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Medium
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Puts controls onto uncontrolled intersections, thereby reducing risk overall
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Negative impact on through traffic on arterials.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive: reduce the number of vehicles on and emissions from non-arterial routes. Negative: Improved accessibility will increase vehicle numbers on the arterial routes and increase emissions. Overall neutral effect.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Slight connectivity increase due to easier access to arterial network.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Improved safety. Little other impact</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 33 – Peak hour clearways to create a total of 3 lanes in-bound to Nelson in the morning and 3 lanes out-bound in the evening on the two arterials.					
Alternative description:	Peak hour clearways to create a total of 3 lanes in-bound to Nelson in the morning and 3 lanes out-bound in the evening on the two arterials. - Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials which is assumed to create the required space for an additional lane for road traffic				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		10		15
	Net property cost (\$m):		0		5
	Opex (\$m/30yr):		15		20
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			1		2
Timing of need:	<i>Optimal programme:</i>	1 year	<i>Likely: 3 years</i>	5 years	
IAF profile:	<u>Strategic fit:</u>	M	<u>Effectiveness:</u>	M	<u>Efficiency:</u> L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Moves traffic closer to footpaths, increasing perceived risk to pedestrians and actual risk of conflict with side movements from driveways and intersections
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Improved access to and from CBD but congestion at interchanges would persist.
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Minor impact to building occupants due to decreased set-back distances
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduce congestion- reduce emissions

<p>Water Resources, resource efficiency, ecology</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so</p>	<p>-1</p>	<p>Assume increased traffic flow - increase of traffic emissions and impacts on water resources</p>
<p>Land use and transport integration</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;;</p>	<p>0</p>	<p>No impact on overall connectivity only efficiency of corridor.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Minor/moderate impact on noise, safety, severance, general amenity</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 34 – Rocks Road Do Minimum- Refurbishment Work					
Alternative description:	Rocks Road Do Minimum- Refurbishment Work - This option completes deferred renewal work of resurfacing of the carriageway and footpath, refurbishment of the chain link fence and installation of a public toilet. No seawall widening				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		2		3
	Net property cost (\$m):		0		1
	Opex (\$m/30yr):		0		1
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	L	Effectiveness:	L	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	no impact
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible impact
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Minimum effect on traffic flow or vehicle fleet using rocks road. Therefore no or minimal effect on vehicle emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity of network.
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	

<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Minor improvement to walkers' amenity</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 35 – Rocks Rd Option2 -Low Cost safety Improvements					
Alternative description:	Rocks Rd Option2 -Low Cost safety Improvements - This option completes deferred renewal works, but also includes the safety improvements of drainage upgrades, debris fence along the cliffs, green surfacing of cycle lanes, lighting upgrade, landscaping and improved crossing points. No seawall widening				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		4		6
	Net property cost (\$m):		0		1
	Opex (\$m/30yr):		0		1
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	H	Effectiveness:	L	Efficiency: H

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Should provide less risk to users
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible impact
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Safety improvements will have no or minimal effect on vehicle emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity of network.

<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Minor improvement to walkers' and cyclists' safety and amenity</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 36 – Rocks Rd Option 2 -Low cost safety enhancements with reduced lane widths following possible revocation of Rocks Rd state highway status					
Alternative description:	Rocks Rd Option 2 -Low cost safety enhancements with reduced lane widths following possible revocation of Rocks Rd state highway status - This option includes the renewal and safety improvements of the two previous options but creates additional cycle and footpath width through narrowing the traffic lanes to 3.2m. This is possible if the Southern Link road is constructed and the traffic volume and highway function is removed. This option raises the footpath but has no seawall widening. It is conditional upon revocation of the State Highway.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		8		10
	Net property cost (\$m):		0		1
	Opex (\$m/30yr):		0		1
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	H	Effectiveness:	L	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	low risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Reduced lane widths increases risk for drivers
Economy:	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	Negative impacts on CBD access due to increased congestion and lower journey time reliability
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No change to noise environment
Air Quality	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Reduced lane widths may lead to increased congestion and vehicle emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity of network.
Visual Quality, urban design, access and mobility	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;;	0	
Social – community cohesion, public health, severance	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive for cyclist/walker safety and general amenity if considered a standalone option. However, with Southern Links option there will be significant social effects (see Option 5).

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 37 – Rocks Rd Option 3 On–road cycle lanes, shared path and reduced parking						
Alternative description:	Rocks Rd Option 3 On–road cycle lanes, shared path and reduced parking - This option involves widening the on-road cycle lanes in both directions and forming a 2.9m shared path on the seaward side. The on-road parking between Victoria Road to Richardson St is removed and there is significant seawall widening					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		20		30	
	Net property cost (\$m):		0		5	
	Opex (\$m/30yr):		0		1	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years	Likely: 8 years		10 years	
IAF profile:	Strategic fit:	H	Effectiveness:	L	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: medium Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	removal of parking removes potential conflict between cyclists and vehicles with parked vehicle
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact on access to CBD due to mode shift and improved transport choices. Negative impact on local business from reduced parking.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Assume some coastal reclamation required.</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity through development of new ped and cycle connection.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate improvements for cyclist/walker safety and amenity, and access to active (healthy) modes.</p>

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 38 – Rocks Rd Option 4 On–road cycle lanes and Shared path					
Alternative description:	Rocks Rd Option 4 On–road cycle lanes and Shared path - This option involves widening the on-road cycle lanes in both directions and forming a 2.9m shared path on the seaward side. The on-road parking between Victoria Road to Richardson St is retained and there is significant seawall widening				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		20		30
	Net property cost (\$m):		0		5
	Opex (\$m/30yr):		0		1
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	H	Effectiveness:	L	Efficiency: L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: medium Property Risks: medium
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	parking retained so risk the same as current. Wider shared path lessens risk of conflict between other active modes (eg skateboards/peds)
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact on access to CBD due to mode shift and improved transport choices
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	<p>Assume some coastal reclamation required.</p>
<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increased connectivity through development of new ped and cycle connection.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Moderate improvements for cyclist/walker safety and amenity, and access to active (healthy) modes.</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 40 – One way morning and afternoon flow. Waimea, SH6, St Vincent Vanguard as options						
Alternative description:	One way morning and afternoon flow. Waimea, SH6, St Vincent Vanguard as options - This options uses the existing arterials as one way roads (2 lanes in-bound, 2 lanes out-bound)					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		5		10	
	Net property cost (\$m):		0		5	
	Opex (\$m/30yr):		5		10	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years		
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L
Investment objectives						

Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Medium
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	removes head on crashes
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Minor improved access to CBD but negative impacts on trips which take a longer route.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Reduce congestion- reduce emissions

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No impact on overall connectivity only efficiency of corridor.
Visual Quality, urban design, access and mobility	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Minor/moderate impact on amenity and severance

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.				
Alternative number 41 – Increase carrying capacity of trucks					
Alternative description:	Increase carrying capacity of trucks - Legislation to allow heavier loads (heavier than HPMV) to be carried through the provision of larger HCVs on the State Highway				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		0		1
	Net property cost (\$m):		0		0
	Opex (\$m/30yr):		0		1
	Maintenance (\$m/30yr):		5		15
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	5 years	Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: medium Technical implementation, operation/maintenance and risks: medium Property Risks: low
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Less trucks reduces the number and therefore less traffic reduces conflict situations
Economy:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Positive impact for freight traffic but largely implemented already by 50 Max policy.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Potentially reduce the number of trips by freight vehicles and therefore reduce emissions.

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Increased strength of connection between the origin and destination of freight (esp. Port).
Visual Quality, urban design, access and mobility	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible

Programme business case

Assessment of alternatives summary table

Proposal details					
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson	
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.				
Alternative number 43 – Prioritise cycle traffic (separate traffic lights)					
Alternative description:	At existing traffic signalled controlled intersections, install separate lanterns to enable cyclists to move before other traffic – similar to bus priority signals.				
Estimated total public sector funding requirement:			Lower		Upper
	Capital plus property cost (\$m):		2		5
	Net property cost (\$m):		0		1
	Opex (\$m/30yr):		5		10
	Maintenance (\$m/30yr):		5		10
	Present value of cost to govt. (\$m):		N/A		N/A
Estimated BCR range:			0.1		1
Timing of need:	Optimal programme:	1 year	Likely: 3 years	5 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency: M

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: Low Technical implementation, operation/maintenance and risks: Low Property Risks: Low
Affordability:	Low
Public/Stakeholders:	Medium

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Creates separation between vehicles and cyclists at intersections, therefore reducing conflict situations
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Negative impact on through traffic with relatively small positive impact for cyclists
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Negligible change to noise environment
Air Quality	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive: Encourage people cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions. Negative: Potentially cause more start/stop driving by motor vehicles as cycles are given priority. Overall effect: Neutral

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing traffic situation
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Increased connections for cycle movements.
Visual Quality, urban design, access and mobility	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	
Cultural and Heritage	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	
Social – community cohesion, public health, severance	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Minor improvements to cyclist safety and encouraging active modes

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.					
Alternative number 44 – Priority lanes (PT and freight and HOV) through the provision of an additional lane						
Alternative description:	Priority lanes (PT and freight and HOV) through the provision of an additional lane - Widen SH6 to create an extra lane for priority traffic. Assume SH6 is widened towards the west. The existing form that provides for parking, footpaths, cycle lanes etc on both roads is re-established for the widened roads.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		80		100	
	Net property cost (\$m):		20		50	
	Opex (\$m/30yr):		15		30	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years		Likely: 8 years		10 years
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L
Investment objectives						

Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Maintains current layout but adds an existing traffic lane. Possible safety concerns for cyclists but increased width provides overtaking opportunities so safety and risk balanced out
Economy:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;	2	Improved access to CBD by increased throughput of people and freight
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Minor impact to building occupants due to potential decreased set-back distances
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Heavy duty vehicles disproportionately contribute to emissions. With priority lanes the HDV sector of the vehicle fleet will experience less congestion, and emissions will be reduced.

Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation
Land use and transport integration	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Slight connectivity increase due to easier access to arterial network.
Visual Quality, urban design, access and mobility	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Cultural and Heritage	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	
Social – community cohesion, public health, severance	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so;	-1	Improvements in PT and air quality offset by adverse impacts on severance and amenity (extra lane) and noise

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.					
Alternative number 45 – Complete separation of cyclist and Peds						
Alternative description:	Complete separation of cyclist and Peds - Separation occurs by creating additional space along the arterials. Similar to option 1 but less widening width is required.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		20		30	
	Net property cost (\$m):		10		20	
	Opex (\$m/30yr):		2		5	
	Maintenance (\$m/30yr):		5		15	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years		Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M
Investment objectives						

Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	High
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	High
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	high risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Creates separation between pedestrians and cyclists, therefore reducing conflict situations
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive impact for walking and cycling potentially requiring additional space. Negligible overall economic impact.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Minor impact to building occupants due to potential decreased set-back distances
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to walk and cycle. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Creation of new pedestrian and cycle connections and infrastructure.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Minor/moderate improvements to cyclist and walker safety, and encouraging active modes</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.					
Alternative number 46 – Wider sidewalks – mobility scooters/skate boards on the two arterials						
Alternative description:	Wider sidewalks – mobility scooters/skate boards on the two arterials - Widening sidewalks occurs by removing parking and other restrictions along the arterials which is assumed to create the required space.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		20		30	
	Net property cost (\$m):		10		20	
	Opex (\$m/30yr):		2		5	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years		Likely: 8 years	10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	M
Investment objectives						

Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	High
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: low Technical implementation, operation/maintenance and risks: low Property Risks: low
Affordability:	low risk
Public/Stakeholders:	high risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Additional width provides for area to avoid conflict but can lead to increased speeds of active transport, thereby increasing risk. Overall slightly positive
Economy:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Positive impact for these users potentially requiring additional space. Negligible overall economic impact.
Environmental and social:			
Noise and Vibration	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Negligible change to noise environment
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Encourage people to walk. Potentially reduce the number of trips by private vehicles and therefore reduce emissions.
Water Resources, resource efficiency, ecology	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	No significant change to existing situation

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	<p>Increases space for competing kerbside modes on arterial network.</p>
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Cultural and Heritage</p>	<p>No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;</p>	<p>0</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	<p>Minor/moderate improvements to cyclist and walker safety, and encouraging active modes</p>

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown’s Future Investment Fund.					
Alternative number 47 – Dedicated transit/freight route on old rail reserve						
Alternative description:	Dedicated transit/freight route on old rail reserve - As per Option 5 but for freight only.					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		60		100	
	Net property cost (\$m):		10		20	
	Opex (\$m/30yr):		5		10	
	Maintenance (\$m/30yr):		3		6	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years		Likely: 8 years		10 years
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L

Investment objectives	
Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	Low
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Medium
Rationale for selection or rejection of alternative:	??
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	medium risk
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;	0	Neutral impact overall. Same volume of HCVs transferred to new route. Less conflicts on existing SH and more on St Vincent Street
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Negative impact due to double handling and capital costs
Environmental and social:			
Noise and Vibration	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	
Air Quality	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Removing commercial vehicles from public roads will reduce congestion on public roads and lower private vehicle emissions. Congestion on the dedicated transit/freight route would likely be lower than on public roads and therefore truck emission would likely reduce.
Water Resources, resource efficiency, ecology	Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-2	Based on being a road route. Similar to option 5.

<p>Land use and transport integration</p>	<p>Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;</p>	<p>1</p>	
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	

Programme business case

Assessment of alternatives summary table

Proposal details						
Business case name:	Nelson Southern Link Investigation		Name of Project Manager & Region:	Andrew James Nelson		
Business case purpose:	Investigate and develop preferred option for State Highway 6 from Annesbrook Rd roundabout to Haven Rd roundabout. This is one of three Accelerated Regional State Highway projects approved in June 2014 to be investigated using the Crown's Future Investment Fund.					
Alternative number 48 – Dedicated busway route on old rail reserve						
Alternative description:	Dedicated busway on old rail reserve - The provision of extra bus services from outside the study area utilising the old railway reserve and St Vincent Street to access CBD as per Option 5					
Estimated total public sector funding requirement:			Lower		Upper	
	Capital plus property cost (\$m):		60		100	
	Net property cost (\$m):		10		20	
	Opex (\$m/30yr):		20		50	
	Maintenance (\$m/30yr):		5		10	
	Present value of cost to govt. (\$m):		N/A		N/A	
Estimated BCR range:			0.1		1	
Timing of need:	Optimal programme:	5 years	Likely: 8 years		10 years	
IAF profile:	Strategic fit:	M	Effectiveness:	M	Efficiency:	L
Investment objectives						

Objective:	Performance against investment objective:
Objective 1: Travel times on the two arterials no worse than 2015 for the life of the Programme	High
Objective 2: Volume to available capacity ratio better than 80% for the life of the Programme	High
Objective 3: Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Medium
Objective 4: Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson	Low
Rationale for selection or rejection of alternative:	??.
Implementability appraisal of option	
Feasibility:	Consenting Risks: high Technical implementation, operation/maintenance and risks: medium Property Risks: high
Affordability:	Medium
Public/Stakeholders:	High risk of acceptability to public and stakeholders

Multi-criteria assessment of Alternative/option			
Criterion	Scale of impact	Significance of impact	Supporting information
Safety:	Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;	2	Reduces traffic on existing arterials thereby therefore less conflict with other vehicles and modes but a increase in conflicts on St Vincent Street but not as many as Option 5 or 5a
Economy:	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	Improved access to CBD from reduced congestion resulting from mode shift from car to PT but at a high capital cost
Environmental and social:			
Noise and Vibration	Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;	-1	
Air Quality	Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;	1	Removing buses from public roads will reduce congestion on public roads and lower private vehicle emissions. Congestion on the dedicated bus route would likely be lower than on public roads and therefore bus emissions would likely reduce.

<p>Water Resources, resource efficiency, ecology</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Land use and transport integration</p>	<p>Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits or impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together do so;</p>	<p>2</p>	
<p>Visual Quality, urban design, access and mobility</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	
<p>Cultural and Heritage</p>	<p>Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-2</p>	
<p>Social – community cohesion, public health, severance</p>	<p>Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/ negative impacts are those which taken in isolation may not determine an option’s eligibility for investment, but taken together could do so;</p>	<p>-1</p>	

APPENDIX H – PROGRAMMES AND THEIR OPTIONS

Nelson Southern Link Investigation - Draft Programme Development by AECOM												
<small>Investor: NZTA Facilitator: Graham Oshroff Initial Workshop: 4/24/2016 Version No.: 1 Last Modified by:</small>												
Category	Strategic Option	Intervention option No.	Intervention option	P1: Do Minimum	P2: Network optimisation (includes peak hour clearways for private motor vehicles)	P3: Network Optimisation plus Rocks Road Options 3 or 4 plus non-mutually exclusive longer timeframe options	P4: Clearways for PT (excl clearways for other vehicles from assessment) plus P3	P5: Widening for PT plus P3 (excl clearways for other vehicles from assessment)	P6: Widening for more traffic in the peak plus P3 (excl clearways for all vehicles from assessment)	P7: New Route plus P3 (excl clearways for all vehicles from assessment) plus Rocks Road Option 2	P8: New Route for PT - P7 but for PT only	
Do minimum	Do minimum	14	Options from Annual Plan	✓	✓	✓	✓	✓	✓	✓	✓	
			Network operating plan	✓	✓	✓	✓	✓	✓	✓	✓	
Roading	Widen existing infrastructure route	1	widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for road traffic						✓			
		12	Ring road system (3 Laning) 3 lanes wide – same as clearways see options 33 and 4 or same as widening see option 1									
		33	Peak hour clearways to create a total of 3 lanes in-bound to Nelson in the morning and 3 lanes out-bound in the evening on the two arterials.		✓	✓						
	New routes	5	New arterial road (limited access)								✓	
		5a	New arterial road (local road)								✓	
		13	Tunnel option - Annesbrook to Port								✓	✓
		17	Tunnel option - Annesbrook to Emans								✓	✓
		47	Dedicated transit/freight route on old rail reserve								✓	✓
	Freight Management	18	Inland Port/Barge				✓	✓	✓	✓	✓	✓
		24	Port operations - hours of operation				✓	✓	✓	✓	✓	✓
41		Increase carrying capacity of trucks				✓	✓	✓	✓	✓	✓	
Priority Lanes	40	One way morning and afternoon flow, Waimea, SH6, St Vincent Vanguard as options		✓	✓	✓	✓	✓	✓	✓	✓	
	44	Priority lanes (freight and HCV) through the provision of an additional lane						✓	✓			
Network optimisation	Access management	11	Work at better integration of travel modes – walking/cycling/PT/+ PV's on the arterials		✓	✓	✓	✓	✓	✓	✓	
		15 & 42	Close side road accesses (or reduce) to left in left out only on the arterials		✓	✓	✓	✓	✓	✓	✓	
	Intersection Improvements	31	Upgrading key intersections on the arterials to facilitate through movement		✓	✓	✓	✓	✓	✓	✓	
		32	Upgrading key intersections on the arterials to facilitate accessibility onto the arterials		✓	✓	✓	✓	✓	✓	✓	
Public Transport	Dedicated bus lanes	3	widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for buses only to utilise additional space					✓				
		48	Dedicated busway on old rail reserve								✓	
	Share road	20 & 28	Park and Ride Additional bus services		✓	✓	✓	✓	✓	✓	✓	
Active Transport	Walking/Cycling	10	More shared pathways and better connections on the two arterials		✓	✓	✓	✓	✓	✓	✓	
		16	Pedestrian overpasses Tahurangi/Waimea Road to address barriers to east / west travel for walking and cycling and reduce road travel delays from peds lights and signs			✓	✓	✓	✓	✓	✓	
		34	Rocks Road Do Minimum- Refurbishment Work	included	✓	✓	✓	✓	✓	✓	✓	
		35	Rocks Rd Option 1 - Low Cost safety improvements		✓					not included		
		36	Rocks Rd Option 2 -Low cost safety enhancements with reduced lane widths following possible revocation of Rocks Rd state highway status								✓	
		37	Rocks Rd Option 3 On-road cycle lanes, shared path and reduced parking			✓	✓	✓	✓	✓	✓	
		38	Rocks Rd Option 4 On-road cycle lanes and Shared path			✓	✓	✓	✓	✓	✓	
		43	Prioritise cycle traffic (separate traffic lights)		✓	✓	✓	✓	✓	✓	✓	
Traffic Demand Management	Parking supply	4	Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials which is assumed to create the required space for an additional lane for road traffic		✓	✓						
		7	Impose parking restrictions at peak periods to encourage higher vehicle occupancy rates		✓	✓	✓	✓	✓	✓	✓	
	Road pricing	19	Congestion charge			✓	✓	✓	✓	✓	✓	
	Restrict HCVs	6	Impose restrictions on the arterials to reduce the volume of traffic		✓	✓	✓	✓	✓	✓	✓	
Land Use / Other	Land Use	9	Change land use to encourage less travel by private vehicle		✓	✓	✓	✓	✓	✓	✓	
		21	Port at Motueka				✓	✓	✓	✓	✓	
	Behavioural Change	8	Use advertising campaigns to persuade people to reduce the number of journeys or change their travel mode to public transport or walking or cycling		✓	✓	✓	✓	✓	✓	✓	
		22	Better cycle storage areas in city / and showers		✓	✓	✓	✓	✓	✓	✓	
		23	Electric vehicle subsidy/charging ports		✓	✓	✓	✓	✓	✓	✓	
		25	Adjust retailing hours 1000-1900		✓	✓	✓	✓	✓	✓	✓	
26	Change school start and finish times		✓	✓	✓	✓	✓	✓	✓			

APPENDIX I – TECHNICAL SPECIALISTS

RMA and property risks – Helen Anderson until May 2016 and Tim Ensor after June 2016;

Technical feasibility – Dave Petrie until May 2016 and Graeme Doherty after June 2016;

Safety and costs – Graeme Doherty;

Economy – Adam Ashford;

Environmental (noise and vibration) – Michael Smith;

Environmental (air quality) – Jeff Bluett;

Environmental (water resources, efficiency and ecology) – Fiona Davies;

Land use and integration (accessibility) – Chris Ballantyne;

Landscape, visual quality and urban design – Gavin Lister;

Culture and built heritage – Grant Eccles;

Social outcomes – Kirsty Austin until April 2016 and Rob Quigley after May 2016;

Public transport – Simon Wood.

APPENDIX J – INITIAL PROGRAMME EVALUATION

Approach to Address Problem 1 only - congestion and delay	Make the most of the existing network (Approach A)				Increase capacity by widening (Approach B)		Increase capacity by adding a new route (Approach C)		
Approach to address Problem 2 only - substandard walking and cycling infrastructure on Rocks Road	Approach A		Approach B				Approaches A and B		
Programme Name	Programme 1	Programme 2	Programme 3	Programme 4	Programme 5	Programme 6	Programme 7	Programme 8	
Programme Description	P1: Do Minimum	P2: Network optimisation (includes peak hour clearways for private motor vehicles)	P3: Network Optimisation plus Rocks Road Options 3 or 4 plus non-mutually exclusive longer timeframe options	P4: Clearways for PT (excl clearways for other vehicles from assessment) plus P3	P5: Widening for PT plus P3 (excl clearways for other vehicles from assessment)	P6: Widening for more traffic in the peak plus P3 (excl clearways for all vehicles from assessment)	P7: New Route plus P3 (excl clearways for all vehicles from assessment) plus Rocks Road Option 2	P8: New Route for PT - P7 but for PT only	
	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	
Benefits									
Benefit A (70%) - contribution of programme towards reduced journey times	low	high	high	medium-high	medium-high	high	high	medium-high	
Benefit B (15%) - contribution of programme towards improved safety for walking and cycling modes of travel.	low	low	low-medium	low-medium	high	high	high	high	
Benefit C (15%) - contribution of programme towards improved tourism, active transport and recreational activities on Rocks Road.	low	low	medium	medium	medium	medium	high	high	
Dis-Benefits	On-road cycle ways removed. Reduced parking in peak periods.				Land taken for transport purposes				
	Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.				Significant increase in the cost of travel from delays on existing transport network during construction. Significant nuisance impact during construction.		Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.		
	Foreshore taken for transport purposes						Foreshore taken for transport purposes (except Rocks Road option 2)		
Investment Objectives									
Investment Objective 1	Travel times on the two arterials no worse than 2015 for the life of the Programme	Low	High	High	medium-high	medium-high	High	High	medium-high
Investment Objective 2	Volume to available capacity ratio better than 80% for the life of the Programme	Low	High	High	medium-high	medium-high	High	High	medium-high
Investment Objective 3	Zero walking and cycling crashes; Continuous decline in DSIs for the life of the programme	Low	Low	Low	Medium	Medium	Medium	High	Medium
Investment Objective 4	Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson on Rocks Road	Low	Low	Medium	Medium	High	High	Medium-high	Medium
Cost									
Investment cost (Range \$M)	\$0 - \$20M	\$20 - \$50M	\$45 - \$80M	\$45 - \$80M	\$100 - \$130M	\$100 - \$130M	\$70 - \$200M	\$70 - \$200M	
Maintenance and Operational costs if significant (Range \$M/30 yr)	\$20 - \$40M	\$35 - \$55M	\$40 - \$60M	\$70 - \$90M	\$80 - \$100M	\$50 - \$70M	\$35 - \$100M	\$65 - \$130M	
Time to Implement									
Minimum time to implement from completion of business case to completion of projects (Range)	1-5 yrs	1-5 yrs	5-10 yrs	5-10 yrs	5-10 yrs	5-10 yrs	5-10 yrs	5-10 yrs	
Difficulty to Implement (low, medium, high)									
Technical Feasibility - difficulty to implement the programme	low	low	medium	medium	medium	medium	medium	medium	
Permissions (eg consenting, property acquisition, school / retailing / port hours) - difficulty to get the required permissions to implement the programme	low	low-medium	medium-high	medium-high	medium-high	medium-high	medium-high	medium-high	
Financial affordability - difficulty to fund the programme under traditional methods	low					high			
Public non-acceptance of programme									
Stakeholder non-acceptance of programme									
Risks (Impacts using seven point scale)									
	-3 = major impact -2 = moderate impact -1 = minor impact		0 = no impact or benefit			+3 = major benefit +2 = moderate benefit +1 = minor benefit			
Accessibility - to what extent does the programme affect accessibility for all modes of travel	0	-1 to +1	-1 to +1	-1 to +2	-1 to +2	-2 to +1	0 to +2	0 to +2	
Safety - to what extent does the programme address safety of travellers for all modes of travel	0	-2 to +1	-2 to +2	-2 to +2	-1 to +2	-1 to +2	0 to +3	0 to +3	
Economic - to what extent will the programme impact the Regional economy	0	-2 to +1	-2 to +2	-3 to +2	-3 to +2	-2 to +2	-2 to +2	-3 to +2	
Environmental - to what extent will the programme affect water resources, resource efficiency and ecology	0	-1 to +1	-2 to +1	-2 to +1	-2 to +1	-2 to +1	-2 to +1	-2 to +1	
Environmental - what will be the likely impact of the programme on noise and vibration levels if implemented	0	-1 to +1	-1 to +1	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-2 to 0	
Environmental - what will be the likely impact of the programme on air quality levels if implemented	0	-1 to +1	-1 to +1	0 to +1	0 to +1	-1 to +1	-2 to +1	-1 to +1	
Social cohesion - what will be the likely impact of the programme on access to community facilities and community cohesion if implemented	0	-2 to +2	-2 to +2	-1 to +2	-1 to +2	-2 to +2	-2 to +2	-1 to +2	
Landscape / Urban design - what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	0	-1 to 0	-2 to +1	-2 to +1	-3 to +1	-3 to +1	-2 to +1	-2 to +1	
Culture - what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	0	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-3 to 0	-2 to 0	-2 to 0	
Built Heritage - what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	0	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-3 to 0	-2 to 0	-2 to 0	
Dependencies	Requires Local Authority to support to enable implementation								
	Traffic resolutions required								
	Behavioural changes need to occur								
	Funding (Affordability)								
	Need to understand imminent changes to air quality standards								
	Rocks Road options 3 and 4 dependent on satisfying the Coastal Policy Statement and the 'need' to widen into the coastal area								
	Highly dependent on the imposition of parking restrictions or higher charges to effect mode shift				Rocks Road options dependent on location of State Highway				
	Dependent on there being width available for clearways without the need for more than minor widening				Highly dependent on the imposition of parking restrictions or higher charges to effect mode shift				
	Year on year investment for additional buses and services correlated to increase in traffic volumes required				Year on year investment for additional buses and services correlated to increase in traffic volumes required				
Indicative BCR	Less than 1	Less than 3	Less than 1	Less than 3	Less than 1	Less than 3	Less than 1	Less than 1	

APPENDIX K – WORKSHOP 3 MINUTES

Nelson Southern Link Investigation

Subject: programme Business Case Workshop 3

Venue: Riwaka Room, Rutherford Hotel, Nelson

Time 9.30am – 11.30am
Friday 27 May 2016

Attendees

1. Rachel Reese - Mayor, Nelson City Council
2. Eric Davy - Works and Infrastructure Committee Chair, Nelson City Council
3. Ruth Copeland - Regional Transport Committee Chair, Nelson City Council
4. Brian McGurk –Planning and Regulatory Committee Chair, Nelson City Council
5. Trevor Norris - Regional Transport Committee Chair and Engineering Services Chair, Tasman District Council
6. Allan Kneale, Chairman, Nelson District AA Council
7. Paul Haywood – Representative, Nelson District AA Council
8. Derek Nees – Representative, Road Transport Association NZ
9. Dot Kettle – Chief Executive, Nelson Chamber of Commerce
10. John-Paul Pouchin – Representative, Bicycle Nelson Bays
11. Chris Allison – Representative, Walk Nelson Tasman
12. Gail Collingwood – Representative, PT User Group
13. Rhys Palmer – Nelson City Council Senior Asset Engineer – Transport and Roading
14. Selwyn Blackmore, Transport Planning Manager, Central, NZTA
15. Graeme Doherty – Project Consultant, AECOM, Workshop Facilitator

Apologies

Matt McDonald - Port Nelson Ltd

Andrew James - Principal Transport Planner, NZTA

Julie Alexander, Planning and Investment Regional Manager, Central, NZTA

Agenda

- Welcome at 9.30am
- Purpose of Workshop – 9.35am to 9.45am
- Update on work undertaken to date during the PBC phase – 9.45am to 10.30am
- Break 10.30am – 10.45am
- Programme criteria – Step through the various programme criteria and how this is used in the assessment of programmes – 10.45am to 11.15am
- Next steps, summary and close – 11.15am to 11.30am.

Minutes

Update on Work Completed

The work undertaken to date by the Workshop attendees was summarised:

- Workshop 1, December 2015 – Problems from the Strategic Case re-defined and 4 benefits from the Strategic Case modified into 3 benefits;
- Workshop 2, December 2015 – Four Investment Objectives determined and 113 options to address the problems were listed. It was noted that the target for IO 1 was determined by the NZTA Investor and that some of the Workshop attendees wanted a target that was better than 2015 levels.

The work undertaken to date by AECOM and the Transport Agency was summarised:

- Sifting and filtering of the 113 options into 44 options;
- Identification of the Strategic Responses the options cover;
- From the Strategic Responses, identification of the Approaches to address the problems;
- The rationale for linking the Rocks Road Investigation to the Nelson Southern Link Investigation (NSLI)'
- Public Engagement undertaken to gather feedback from the public on the scale of the identified Problems and the preferred Approach to address the Problems.

A query was raised about a response from the Transport Agency to an information request from Nelson City Council about the timing of implementation for an option related to improved walk/cycle facilities on Rocks Road.

During public engagement a total of 2114 responses were received from individuals and groups. Responses were received through hard copy, email and internet survey. A separate telephone survey of 500 randomly picked people was undertaken (400 in Nelson and 100 in Tasman). A total of 253 people attended the seven drop-in sessions.

A discussion about the growth in the traffic model identified that some of the attendees thought that growth projections used in the traffic model to predict future traffic volumes was too low. AECOM and the Transport Agency are using the information provided by Nelson City Council and Tasman District Council and would only change the future projections if those organisations provided revised growth projections. The Transport Agency will review the need for a more location specific micro-simulation traffic model for use during the next stage of the investigation.

A discussion was had to differentiate between the terms “options” and “activities”. This was explained by substituting the word “activity” for “project”. Therefore programmes contain a number of projects, each of which contains a number of options.

Attendees felt that an update to the public on the work done and the next steps, along with the associated timeframes, should be done. There was some feedback that the public had begun to think that the Investigation had stopped.

Programme Criteria

A discussion was held about timeframe to implement activities and options beyond the end of the Business Case process. This discussion focused on socialising that some activities and options would require complex permission and therefore it could be many years before those activities and/or options could be implemented and completed. Therefore there would need to be a programme that contained options that didn't require complex permission and could be implemented at the end of the Business Case process that would, as a minimum, cover the period between the end of the Business Case process and the implementation of activities

and options that contained complex permission. The programme implemented at the end of the Business Case process might address the problems, might achieve the benefits and objectives in part or in whole over the next 40 years but it might not. Therefore there should be subsequent programmes, based around the main themes of the Approaches that could be implemented if the first programme did not achieve the required targets at some future date. The timing of when these other programmes could be implemented would also be dependent on the quantum of growth that is occurring.

Some attendees were concerned at the overall timeframe to complete the Business Case process and felt that it was too risk adverse.

Workshop attendees were then advised of the assessment criteria for the programmes being:

- To what extent does a programme achieve the required Benefits - low, medium, high.
- What are the dis-benefits of a programme – descriptive terms.
- To what extent does a programme achieve the required Investment Objectives - - low, medium, high.
- Cost Range of the main components of a programme– Investment plus maintenance and operation.
- Range of 'Time to Implement' in years.
- Difficulty to implement – low, medium, high covering the following:
 - Technical feasibility;
 - Difficulty to obtain the required Permission;
 - Financial affordability - difficulty to fund the programme under traditional methods;
 - Stakeholder/Public non-acceptance of the programme.
- Risks using a seven point scale. The risks identified, specifically for NSLI are:
 - Accessibility - to what extent does the programme affect accessibility for all modes of travel
 - Safety - to what extent does the programme address safety of travellers for all modes of travel;
 - Economic - to what extent will the programme impact the Regional economy;
 - Environmental - to what extent will the programme affect water resources, resource efficiency and ecology;
 - Environmental - what will be the likely impact of the programme on noise and vibration levels if implemented;
 - Environmental - what will be the likely impact of the programme on air quality levels if implemented;
 - Social cohesion - what will be the likely impact of the programme on access to community facilities and community cohesion if implemented;
 - Landscape / Urban design - what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented;
 - Culture - what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented;

- Built Heritage - what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented.
- The seven point scale was summarised as:
 - -3 = major impact/cost
 - +3 = major benefit or positive impact
 - 0 = no impact or benefit
 - 2's = moderate
 - 1's = minor.

A question was asked whether any of the above included the risk to recreational and tourism activities. Attendees were advised that impacts on the infrastructure associated with those activities would most likely be contained within the "Social Cohesion" or "Urban Design" category. This will be confirmed at the next workshop.

The workshop attendees were advised that a date for Workshop 4 is unknown at this stage but the attendees would be given plenty of notice to enable adequate time to adjust diaries.

Questions and Actions

Questions were asked about the traffic model and how the ageing population and job growth was incorporated into the model. The attendees were advised that the Draft PBC report used for the public engagement and available on the Transport Agency's website contained the answers to those questions.

Questions were asked about the information used in the Strategic Case to define the problems and whether that information was still relevant. The attendees were advised that the Draft PBC report updated the information within the Strategic Case and that the Final PBC report would contain further updates (updates to the Strategic Case and the PBC report used during public engagement) as that information came to light over the next months or so.

Attendees advised that the workshop was useful to understand the process for determining and assessing the draft programmes and recommended that those attendees who were unable to attend should be contacted before Workshop 4, so as to bring them up to speed with the rest of the Workshop attendees.

Next Steps

The next steps for the Programme Business Case process were summarised as:

- Complete options assessment;
- Identify programmes;
- Complete the Public Engagement Summary Report and release to the Public;
- AECOM assess programmes against the previously mentioned criteria;
- Workshop 4 – Present programmes and AECOM assessment for comment by Stakeholders and undertake trade-off discussions;
- Final technical assessment by AECOM and the Transport Agency, taking into account all the work to date, to determine a recommended programme or programmes;
- Undertake a recommended programme assessment;
- Plan the next phase of the Business Case, complete the PBC report and recommend one or more Indicative Business Cases for further investigation;
- Consideration by the Transport Agency Board.

APPENDIX L – WORKSHOP 4 MINUTES

Nelson Arterial Investigations

Subject	Nelson Southern Link Investigation Project - Workshop 4	Page	1
Venue	Rutherford Hotel	Time	9.30 am – 3.00pm
		Date	08-Aug-2016

Attendees

1. Rachel Reese - Mayor, Nelson City Council (absent till 1pm)
2. Eric Davy - Works and Infrastructure Committee Chair, Nelson City Council (absent 10.30 to 12.30)
3. Brian McGurk –Planning and Regulatory Committee Chair, Nelson City Council
4. Barry Dowler - Regional Transport Committee, Tasman District Council
5. Allan Kneale, Chairman, Nelson District AA Council
6. Paul Haywood – Representative, Nelson District AA Council
7. Derek Nees – Representative, Road Transport Association NZ
8. John-Paul Pouchin – Representative, Bicycle Nelson Bays
9. Chris Allison – Representative, Walk Nelson Tasman
10. Gail Collingwood – Representative, PT User Group
11. Rhys Palmer – Nelson City Council Senior Asset Engineer – Transport and Roading
12. Matt McDonald – Port Nelson Ltd
13. Selwyn Blackmore, Transport Planning Manager, Central, NZ Transport Agency
14. Andrew James, Principal Transport Planner, NZ Transport Agency
15. Julie Alexander, Regional Manager Planning and Investment, Central NZ Transport Agency
16. Graeme Doherty – Project Consultant, AECOM, Workshop Facilitator
17. Tim Brown – Workshop Facilitator, Resolve Group
18. Suzanne Tromp – Minutes, AECOM

Apologies

Dot Kettle – Chief Executive, Nelson Chamber of Commerce

Ruth Copeland - Regional Transport Committee Chair, Nelson City Council

Trevor Norris – Regional Transport Committee Chair and Engineering Services Chair, Tasman District Council

Agenda

- Welcome at 9.30am;
- Purpose of Workshop, recap of Workshop 3 and work done since – 9.35am to 10.00am;
- Public Engagement Feedback – 10.00am to 10.30am;
- Break – 10.30am to 10.45am;
- How programmes were determined – 10.45am to 11.15am;

- Technical assessment of programmes and their dependencies – 11.15am to 12.30pm;
- Lunch – 12.30pm to 1.15pm;
- Trade off conversations – 1.15pm to 2.30pm;
- Next steps - 2.30pm to 2.45pm;
- Summary and close at - 2.45pm to 3.00pm.

Documentation circulated with Agenda

- Programme Business Case Engagement Summary Report, 27 July 2016
- Interim draft Programme Business Case

Minutes

These minutes are a summary of the workshop and generally provide the majority views unless specifically stated otherwise. Specific individual viewpoints have been excluded for clarity.

Purpose of Workshop

Workshop attendees were welcomed and advised that the purpose of the workshop was to seek feedback on the public engagement report and be updated on the technical work undertaken since the last workshop (Workshop 3), which would then be an input for the technical specialists to consider when determining a recommended programme of activities that would alleviate the two transport problems.

Minutes of Workshop 3

The attendees were asked if they had any amendments or queries related to the minutes of Workshop 3 (held in May). Concerns were raised that the timeline for completion of the business case process could put pressure on the development and approval of the 2018-2021 Regional Land Transport Programme (RLTP). This was noted and is to be monitored over the early part of 2017 to ensure the Nelson Southern Link Investigation (NSLI) and the RLTP inform each other.

A question was raised in relation to the minutes from Workshop 3 about whether the risks to recreational and tourism activities should be a separate assessment criteria. It was confirmed to the attendees that these risks were covered at a high level under the “social cohesion”, “urban design” and “economic” activities and a footnote to that effect would be added to the PBC report. It was noted that if the investigation continues into the next phase, then the Transport Agency would consider whether to include representation from the Nelson/Tasman Regional Economic Development Agency as part of any future key stakeholder group(s).

Work Undertaken Since Workshop 3

Since Workshop 3, a draft Options Assessment had been completed by the technical specialists on the 44 options that were presented to the public as part of the three proposed approaches. Each option was individually assessed by a Technical Specialist and then summarised into one spreadsheet with each option in a separate column and each assessment criteria in rows. The programmes were determined based on the strategic responses to the two identified transport problems, the approaches engaged on and the feedback received. In all, eight programmes were determined including a do-minimum programme.

Options were then assigned into the programmes as detailed in the interim draft PBC report, which was part of the documents pre-circulated to the attendees. The scoring of the individual options within each programme was reviewed to provide a range of scores for each programme.

Public Engagement Feedback

The executive summary of the Public Engagement Summary Report was presented and feedback sought from the attendees. Some of the attendees noted their appreciation of the effort that had gone into the public engagement programme.

Some attendees were concerned that some members of the public had been reporting the information contained in the Report as being representative of all Nelsonians rather than just representative of the respondents.

Some were also concerned that the telephone survey had used language that could be misunderstood, specifically reporting that the results were the preference of a majority of Nelsonians (rather than saying that it was the majority of respondents). Additionally, there was some concern that a percentage less than 50% had been reported as a majority.

The workshop attendees were advised that the information obtained from public engagement programme would be used to guide the development of the recommended programme, and it was not necessarily representative of all Nelsonians and more public engagement would be undertaken in the future. In particular, the Transport Agency provided clarification that the feedback would be provided to the technical specialists (when undertaking final assessments) and that the feedback received related to respondents only.

There was general consensus that the feedback from respondents was not a representative sample of Nelsonians. Rather, it was a sample of people who had taken the time to respond to the public engagement material. There was some discussion about what conclusions could be drawn from those who responded and those who had not. The attendees had varying views of what, if any, conclusions could be made from the engagement programme. The attendees were again reminded that public feedback was one input of many into the multiple assessment criteria that will help determine the recommended programme of activities. The technical specialists would be independently drawing their own conclusions as to the weight of the public feedback provided, along with the feedback from the workshops plus their own technical assessments.

Some attendees thought that the telephone survey highlighted a lack of awareness of the engagement programme, and most noted it was quite often challenging to get engagement from the wider public (across all age groups).

With regard to group submissions, the attendees were reminded that regardless of the number of people the group claimed to represent, such submissions would be counted as one submission.

Determining the Programmes

Programmes were developed firstly by defining the do minimum programme, from which all other programmes are assessed against. The do-minimum programme contains options that are committed and part of the Annual Plans of TDC, NCC and NZTA. The second programme consists of options that the technical specialists believed could be implemented without needing complex permissions e.g. requiring a Resource Consent. This became known as Programme 2 and was given the name "Network Optimisation". It is a programme on its own and also a sub-programme to all other programmes because it contains options that can be implemented to support the other programmes. It is primarily focused on improving the efficiency of the existing transport network, sometimes at the expense of local access. This programme correlated with Approach A from the public engagement programme.

Programme 3 was developed to include most of the remaining options requiring complex permissions that weren't mutually exclusive to the main themes of the other programmes. Programme 3 also included Rocks Road options 3 and 4 with priority for car travel in the clearways.

Programme 4 is similar to programme 3 but used the clearways for public transport only.

The remaining programmes, were based around the two other approaches publicly consulted on which correlated to increasing capacity to facilitate increases in traffic volumes over time. Programme 5 was centred around widening the existing arterials for all traffic with Programme 6 centred around using the widening for public transport only.

Programmes 7 and 8 were centred around providing a new road corridor for all vehicles or priority vehicles (Programme 7) or for public transport only (Programme 8).

Programmes were preliminarily assessed against the following criteria:

- Benefits and dis-benefits using a low, medium, high scale;
- Investment Objectives using a low, medium, high scale;
- Cost – capital, maintenance and operational costs;
- Time to Implement;
- Difficulty to implement using a low, medium, high scale;
- Risks – Seven point scale (+3 to -3) using the individual score of the options within the programmes to define the range for each risk category;

- Dependencies – qualitative assessment of the main dependencies of each programme.
- Indicative benefit cost range.

Technical Assessment of Programmes

The preliminary evaluation undertaken by the technical specialists for each programme was made available to workshop attendees, for discussion purposes. Programmes 2 and 7 were then worked through for each of the above criteria as examples. The workshop attendees were asked for their feedback on the technical specialists scoring for all the programmes.

There was a general discussion around whether some of the programmes would be needed if growth didn't occur as predicted. This was acknowledged and it was noted that the recommended programme could contain activities that would only be implemented if certain trigger points were reached that correlated to growth. The attendees were asked for their views on whether the recommended programme should be a series of activities leading to a large intervention (option) or a series of activities to be implemented on an as and when needed basis (determined at the time of need). The majority view was that the former was preferable.

There was discussion around the range of values assigned to each evaluation criteria for each programme and questions around why this wasn't a single value. The attendees were advised that the range exists because it reflects the full range of options within the programmes.

Access and accessibility were discussed at length, particularly focused on the programmes that contained clearways. Local access is about access to and from properties and side roads, whereas accessibility is being able to access other modes of travel and community services and activities. It was acknowledged that often a level of enforcement is necessary for clearway / access conflicts to be managed effectively.

The discussion on local access and accessibility included the use of clearways, which can be a useful intervention in meeting Investment Objectives 1 (peak hour travel times) and 2 (peak hour available capacity) but would be unlikely to provide any benefits associated with Investment Objectives 3 (walking and cycling crashes) and 4 (walking and cycling numbers on Rocks Rd) because any cycle lanes or flush medians currently on the two arterials would most likely be removed to provide an extra lane where parking is not allowed during certain times of the day. Clearways would require the support of NCC as they would apply to Waimea Rd/Rutherford St as well as SH6. All programmes and nearly all options require the support of the NCC and possibly TDC to enable them to be implemented and is one of the key dependencies for all programmes.

Additional public transport and how public transport could be utilised to shift people from private cars onto buses was also discussed. Experience elsewhere shows that just adding more buses and more services alone is not enough to get people onto buses and that it had to be accompanied by other measures such as faster journey times and/or higher costs to private motor vehicle users through activities like higher parking charges or more parking restrictions or a combination of both. This again would require the support of NCC and possibly TDC to implement these activities to effect a behavioural change that results in a mode shift away from private vehicle travel. Attendees were advised that the current public transport funding model was generally 50% user pays, 25% local authority contribution and 25% Transport Agency contribution.

There was a discussion around the cost of the programme called "new route" (Programmes 7 and 8). This centred around the cost of a tunnel. The attendees were advised that the programme contained two tunnel options, but only one would be built if that option was implemented. Therefore, the tunnel cost is correlated to the mean length of the two tunnels. There was also some discussion around the indicative cost range of the tunnel(s) provided. The project team agreed to review this indicative cost range.

There was a discussion around the time to implement a programme as assessed by the technical specialists with some attendees saying that some of the programmes, or options within those programmes, could be implemented much sooner than reported/predicted. The attendees were advised that the technical specialists had taken account of the work undertaken to prepare and lodge the previous RMA applications related to the Southern Link Road and subsequent Environment Court proceedings (as well as current consenting experience in urban situations) and had used that as the basis for the length of time for options that require complex permission(s) to be granted.

Trade Off Conversations

Attendees were asked a series of questions associated with what they want in terms of a transport network and what they would be willing to trade off to get that. There was unanimous agreement amongst the attendees that they wanted Rocks Road to have much higher amenity capabilities than present, such as the removal of trucks,

the provision of wider footpaths, access to the foreshore and a cycle friendly environment. Although there was agreement around wanting these amenities, there was a minority of attendees who said that they would not have these amenities if it meant that other areas of the city would be affected by an option(s) that would result in an increase in traffic and truck volumes.

Attendees were asked if they would be willing to trade off local access along the two arterials to improve congestion. There were mixed views from the attendees with some willing to trade off and some not. There was a majority view that less traffic on Rocks Road, Waimea Road and Rutherford Street would be a desirable outcome that should be pursued.

There was discussion around the programmes which provided for PT lanes (P4, P5 and P8) and whether these should include options for inclusion of HOV's and/or freight and/or PT lanes. Attendees expressed their desire to have more people visiting the CBD of Nelson but less traffic coming to the CBD. Attendees were advised that the composition of what type of vehicle(s) and/or mode of travel that would occupy additional lane capacity would be addressed in the IBC phase if additional capacity was an activity within the recommended programme.

Next Steps

Next steps would involve the circulation of the minutes from this workshop for review, which would then be used as the "stakeholder" input into the assessment by the technical specialists to help inform the determination of the recommended programme of activities to be investigated in the Indicative Business Case phase (if such a phase proceeds).

APPENDIX M – INITIAL PROGRAMMES FINAL EVALUATION

NZTA Southern Link Investigation Project

Subject: Programme Business Case Workshop 3 – Recommended Programme

Venue: Offices of Buddle Findlay, Level 17 State Insurance Tower, 1 Willis Street, Wellington	Time 9.30am – 3.30pm Tuesday 30 August 2016
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Attendees

1. Tim Ensor - AECOM
2. Adam Ashford - AECOM
3. Simon Wood - AECOM
4. Michael Smith - AECOM
5. Jeff Bluett - Golders
6. Fiona Davies - AECOM
7. Chris Ballantyne - AECOM
8. Robert Quigley – Quigley & Watts
9. Jared White - Ableys
10. Andrew James – Observer NZ Transport Agency
11. Matt Barnes – Observer NZ Transport Agency
12. Prudence Williams – NZ Transport Agency
13. Selwyn Blackmore – Observer on behalf of NZ Transport Agency
14. Graeme Doherty –AECOM, Workshop Facilitator

Apologies

- Gavin Lister - Isthmus
Grant Eccles - AECOM

Tabled Documents

- NSLI PBC Report Parts A and B – Draft report made available to Stakeholders at Workshop 4 on 8 August 2016
- NSLI – PBC Public Engagement Summary Report 27 July 2016
- Minutes of Stakeholder Workshop 3 – 27 May 2016
- Draft Minutes of Stakeholder Workshop 4 – 8 August 2016
- Spreadsheet for Evaluation workings

Agenda

- Welcome at 9.30am
- Purpose of Workshop – 9.35am to 9.45am
- Update on work undertaken since workshop on 4th May 2016 – 9.45am to 10.15am – tabled documents
 - Changes to PBC report

- Public engagement summary report
- Minutes of Workshop 4
- Reassess the existing programmes – 10.15am to 10.45am
- Break 10.45am – 11.00am
- Rank existing Programmes using inputs from public engagement, stakeholders and previous technical assessments – 11.00am to 11.15am
- Review all inputs and outputs and define the programme of activities that creates the recommended programme (refer to Section 5.3 of PBC Guidance Doc) – 11.15am to 12.30pm.
- Lunch – 12.30pm to 1.15pm
- Assess the Recommended Programme – 1.15pm to 2.15pm
- Sensitivity Analysis – 2.15pm to 2.40pm.
- Implementing the programme – Recommended order of activities – 2.40pm to 3.20pm
- Next steps, summary and close – 3.20pm to 3.30pm.

Minutes

Work Done Since Technical Workshop 1 (held on 4 May 2016)

Staff changes to the Technical Specialist Team involved bringing on new specialists (for example, Tim Ensor replaced Helen Anderson and Rob Quigley replaced Kirsty Austin). These new specialists reviewed the work undertaken by the previous technical specialists and updated the option and programme evaluation accordingly.

It was noted that additional work was undertaken to Part A of the draft PBC report, which included updated Bluetooth data, breaking this data into “term” and “Holiday” periods and providing a comparison between the same two quarters from different years.

It was noted that Sections 6 and 7 and the first part of Section 8 had been added to the draft PBC report.

The Public engagement summary report had been completed and made available to the public (in August 2016).

Workshops 3 and 4 with the Key Stakeholders had been held. It was noted the above documentation along with the minutes of Workshop 3 had been made available to attendees for their feedback.

The draft minutes of Workshop 4 were presented to the Technical Specialist Team.

Public engagement summary report

The technical specialists had no specific feedback on the Public Engagement programme. There was a discussion on the key themes of the engagement results in order to ensure all specialists understood the key themes. The technical specialists also noted the feedback from the Key Stakeholders on the engagement programme (as identified in the draft minutes of Workshop 4).

Key Stakeholder Workshop 4

In terms of the Key Stakeholder Workshop, the technical specialists noted that it was the majority view of the Key Stakeholders that trucks should be removed from Rocks Road. The technical specialists were advised that there is no evidence that trucks were causing cyclist crashes on Rocks Road and, at 6% of overall traffic volume, they do not contribute significantly to the congestion, therefore removing them from Rocks Road (as the only measure) would be unlikely to meet the PBC’s investment objectives. Although the Key Stakeholders see merit from removing trucks from Rocks Rd, the technical specialists noted that the problems, benefits and investment objectives meant that such a measure on its own would be unlikely to secure funding from the National Land Transport Fund.

The technical specialists discussed current Public Transport (PT) patronage. Information from NCC shows that adult PT patronage has reduced since the Nelson City Council's relaxed parking charges in the CBD from October 2014. Nelson City Council may feel that they need to keep charges down to ensure businesses remain competitive with other parts of the region. Buses appear to be under capacity, but are no faster than private vehicles. The technical specialists concluded that the lack of travel time benefit with buses made them unattractive and difficult to compete with car travel within the current transport network configuration. The technical specialists considered PT patronage will be difficult to increase without a consistent Richmond / Nelson approach to parking policy and/or faster travel times for buses that use the existing arterials.

Reassess the existing programmes

On a white board, the technical specialists individually scored the public and Key Stakeholder risk around non-acceptance of programmes 1 to 8. The ranges of scores (low, low-medium, medium, medium-high, high) were recorded onto the programme evaluation spreadsheet for "public" and "key stakeholders". These are summarised below:

Risk of Non Acceptance by the Stakeholders					
	Low	Low-med	Medium	Med-high	High
Approach A		4	4	1	
Approach B		2		6	1
Approach C	1	4	2	3	
Programme 1			4	1	5
Programme 2		2	4	3	1
Programme 3		3	6	1	
Programme 4			7	3	
Programme 5			4	4	2
Programme 6			5	5	
Programme 7	1	5	4	1	
Programme 8	1	2	2	3	3
NB: One specialist abstained from assessing the public risk for the approaches					
Risk of Non Acceptance by the Public					
	Low	Low-med	Medium	Med-high	High
Approach A			6	3	
Approach B			2	4	3
Approach C		3	5	1	
Programme 1			1	6	3
Programme 2		1	4	3	2
Programme 3		3	6	1	
Programme 4		1	2	5	2
Programme 5				5	5
Programme 6			5	3	2
Programme 7		4	5	1	
Programme 8		4	1	2	3
NB: One specialist abstained from assessing the public risk for the approaches					

It was noted that the three approaches identified in the public engagement programme (and on the programme evaluation sheet) were as follows: "making the most of the existing network (demand management); increasing capacity (supply) through widening; and increasing capacity through a new route.

The programme evaluation sheet was then populated with the final assessments and a general discussion was held on the programmes and what they would achieve and when. The only change identified related to the permissions risk for programmes 5 and 6, which was raised from a "medium" score to a "high" score to recognise the high consenting hurdles faced by reclamation projects. Significant widening into the foreshore on

Rocks Road and the impact along Waimea Road and Rutherford Street elevated this risk. The technical specialists agreed that significant widening into the foreshore along Rocks Road was unlikely to get the required RMA permissions, although lesser impacting options remained viable. In conjunction with the public and stakeholder feedback the technical specialists agreed that widening for an extra traffic lane or lanes on Rocks Road should not be an activity pursued in the recommended programme.

Concern was raised over the cost of tunnels, with the \$200M estimate seeming to be too low. It was explained that the mean value of the combined two tunnel options lead to the estimate, acknowledging that only one would be built. The construction cost of the longest tunnel is approximately \$300m. The technical specialists agreed that the upper bound range for the “new route” programmes should be changed to \$300M to cover the cost of the most expensive tunnel option. The technical specialists agreed that the tunnel option should be taken forward for further assessment in the IBC phase.

The technical specialists discussed clearways and their influence within Programmes 2, 3 and 4. Removing “clearways” from these programmes would have a significant impact on whether they would achieve the targets for Investment Objectives 1 and 2 for 40 years. Additionally, it was acknowledged that the use of clearways would mean the removal of on-road cycle lanes and parking, which meant that achieving Investment Objective 3 would be compromised and alternate options to achieve that Investment Objective would need investigating in the IBC phase. The technical specialists agreed that some initial traffic modelling should be done to ascertain whether clearways would provide the benefits that would meet the targets for Investment Objectives 1 and 2 over the next 40 years and if not, which year in the future would the targets not be achieved. Understanding this timeframe, would inform the decision as to when or if a larger intervention (such as a new route) would be required.

In light of the above consideration, the technical specialists considered Investment Objective 3. Some of the previously identified options would not be feasible if clearways were implemented but could be if a new route was implemented, such as Rocks Road Options 2 or complete separation of cyclists and pedestrians. Additionally, the technical specialists agreed that when considering Rocks Road, significant widening would be required to create the width needed for parking, pedestrians and cyclists to enable the targets for Investment Objectives 3 and 4 to be met if clearways were implemented. Retention of parking on Rocks Road was a strong community desire, as evidenced by the feedback provided to the Transport Agency from Nelson City Council. Taking the above into account plus the feedback from the public and key stakeholders, the technical specialists agreed that clearways along Rocks Road should not be an activity pursued in the recommended programme.

There was further discussion around clearways on Tahunanui Drive. There are sections along this part of the State Highway 6 (Rui Street intersection to Green Street intersection and Parkers Road intersection to Annesbrook Roundabout) where a clearway could only be implemented for one direction of travel. The technical specialists agreed that a clearway on Tahunanui Drive would only be practical for one direction of travel between Annesbrook Roundabout and Bisley Ave intersections.

There was further discussion around clearways on Waimea Road and Rutherford Street. When reviewing the current width available, in conjunction with the location of on-road cycle lanes, the technical specialists agreed that it would be unlikely that clearways (in any direction) could be implemented along Rutherford Street without widening. The technical specialists agreed that clearways on Waimea Road in both directions could be implemented between Motueka Street and the proposed Princes Drive intersection.

The technical specialists considered “widening” as a programme to meet the Investment Objectives. As well as providing additional capacity for vehicles that would address Investment Objectives 1 and 2, widening would include the inclusion of ‘space’ to enable options that addressed Investment Objectives 3 and 4. The technical specialists considered the quantum of widening needed and correlated that to risks and impacts. A widening programme was considered to have the greatest impacts when compared to the “new route” and “network optimisation” programmes because a minimum one lane of widening would be required for both arterials or two lanes of widening for one arterial. Acknowledging that significant widening along Rocks Road (as discussed above) would be unlikely to get permission, the technical specialists agreed that to achieve the targets of all the Investment Objectives between Annesbrook Road and Haven Road roundabouts then, as a minimum, two lanes of widening would be required on Waimea Road and Rutherford Street.

The technical specialists reassessed Programme 6 as “Widening for 4 lanes in total along Waimea Road/Rutherford Street for more traffic in the peak plus P3 (excluding clearways for all vehicles from assessment)” (called programme 6a). When assessed against the Benefits and Investment Objectives, the technical specialists agreed that in comparison with the other widening programmes, Programme 6a would not be as effective for Benefit A and Investment Objectives 1 and 2 due to having to accommodate access from side roads onto one arterial as opposed to two arterials.

With reference to the attached programme evaluation sheet, the technical specialists agreed that the “widening” programme (for more private vehicle travel or for PT) has the highest impacts and risks overall across the assessment criteria. This reassessment, taken together with feedback from the public and stakeholders confirmed to the majority of technical specialists that “Widening” should not be the approach for the recommended programme but location specific widening options could be included within the recommended programme.

Conversation was held regarding the programmes that were designed to create additional capacity for PT. The technical specialists agreed that there needed to be additional activities that discouraged the use of private vehicle travel in the peak and these centred around implementing traffic/parking restrictions and charging mechanisms to effect a mode shift. Other than the inputs provided by Nelson City Council in relation to parking on Rocks Road, it was noted that Nelson City Council did not make a submission during the public engagement programme. The technical specialists were unable to reach a conclusion as to whether activities associated with dedicated space for PT on clearways would achieve Investment Objectives 1 and 2 because they considered that increasing PT patronage would be difficult without a consistent Richmond / Nelson parking policy.

With regard to PT on a new route, the technical specialists agreed that the year-on-year funding cost via subsidies to both Nelson City Council and the Transport Agency meant that there would be ongoing operational costs. The new route for PT programme had the potential to achieve the targets for Investment Objectives 1, 2 and 3 over 40 years but to reduce the ongoing operational costs to a similar level for the “new route for all vehicles” programme would require a significant mode shift. As in the above paragraph and earlier discussion about PT patronage, the technical specialists were unable to reach a conclusion as to whether NCC would agree to additional activities that discouraged the use of private vehicle travel in the peak.

Taking into account that NCC support was required to implement additional activities to discourage the use of private motor vehicles in the peak, coupled with its view being unknown at this stage (together with the potential for its view to change over time), the technical specialists agreed that there was too much uncertainty at this stage as to whether activities associated with the provision of dedicated road space for public transport could be implemented. The majority of technical specialists agreed that dedicated road space for PT should not form part of the recommended programme but if there was long term certainty from NCC and the NZ Transport Agency to work together to achieve the required level of mode shift to PT that would last for the next 40 years, then this decision could be re-visited in the future.

Ranking of existing Programmes

As a result of the above, the programme descriptions were redefined as:

- Programme 1 is the Do minimum;
- Programme 2 is Network Optimisation including peak hour clearway on Tahunanui Drive (one direction only) and Waimea Street (bi-directional between Motueka St and Princes Drive intersections) for private motor vehicles;
- Programme 3 is Network Optimisation (programme 2) plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options;
- Programme 4 is Programme 3 but clearways are for PT (excludes clearways for other vehicles from assessment);
- Programme 5 is Programme 3 (excluding all clearways) plus widening on both arterials for PT;
- Programme 6 is Programme 3 (excluding all clearways) plus widening on both arterials for all traffic;

- Programme 6a is Programme 3 (excluding all clearways) plus widening on Waimea/Rutherford only;
- Programme 7 is P3 (excluding all clearways) plus a new route plus Rocks Road Option 2;
- Programme 8 is Programme 7 but for PT only.

The technical specialists reviewed and agreed the scoring of programmes (see the attached revised programme evaluation sheet) taking into account all the above conversation and re-assessments and ranked the Programmes as follows:

- Programme 7 was ranked 1st by six technical specialists;
- Programme 3 was ranked 1st by two technical specialists;
- Programme 5 was ranked 1st by one Technical Specialist;
- Programme 6 was ranked 1st by one Technical Specialist;
- Programmes 1, 2 4, 6a and 8 were not ranked 1st by any Technical Specialist;
- Programmes 1, 4, 6 and 8 were ranked equal lowest by two specialists each.

All technical specialists agreed that traffic modelling for clearways on Waimea Road and Tahunanui Drive (as discussed above) should be undertaken prior to completion of the PBC phase to understand the effectiveness of Programme 3 against Investment Objectives 1 and 2 over time. It was also agreed that traffic modelling for a new route should also be modelled to understand whether this activity would achieve the targets for Investment Objective 1 and 2 over 40 years. This knowledge would help inform the decision and the timeframe to implement a new route (if needed) when assessed against the Transport Agency's procedures for receiving funding and subsequently guide the next steps for the Rocks Rd investigation.

Preferred Programme

Acknowledging that traffic modelling related to the clearways and a new route is to be undertaken, the technical specialists defined their recommended programme to include the following activities in the following order:

- (i) Network optimisation options
- (ii) Clearways
- (iii) Widening options
- (iv) New route

The technical specialists reviewed the sequencing above in relation to what activity they would recommend if Network Optimisation and Clearways did not meet the targets of the Investment Objectives over 40 years. Taking into account the scoring of the Benefits and Investment Objectives together with the risks and impacts associated with the "widening" programmes and the "new route" programmes, the "new route" programme was chosen as the practical next activity.

The final recommended programme of activities was agreed as:

- (i) Network Optimisation Options
- (ii) Clearways
- (iii) New route together with other options that require longer timeframes to implement that support the new route and address Investment Objectives 3 and 4.

Next Steps

1. Traffic modelling as described above.

2. Measurement of Waimea Road to ascertain whether clearways will fit or whether widening out of the road reserve would be required.
3. Define the long list of options from Programmes 3 and 7 for the recommended programme and send the programme to the technical specialists for assessment together with the information from (1) and (2) above.
4. Review the work done and update the Uncertainty Log
5. Undertake a sensitivity analysis on the recommended programme assessment.
6. Quantify the “value” of low, medium and high as they relate to the Benefits, Investment Objectives and Difficulty to implement criteria within the programme assessment.
7. Undertake a risk assessments related to the acceptance of the recommended programme by the public and key stakeholders.
8. Define the IAF profile.
9. Provide the Financial Case.
10. Define the activities for the IBC phase including sub-activities that may arise from various decisions and hold points.
11. Complete the PBC Report for Transport Agency approval.
12. Identify next steps for the next development phase.

Follow up correspondence from the Social Impact Technical Specialist, Rob Quigley

Rob requested that under the programme evaluation tab, there is one change needed to the 'social' line. The description needs to change to something more generic, such as, 'Social - what will be the likely impact of the programme on social outcomes if implemented'. Because the existing terms 'social cohesion' and 'community cohesion' are very specific terms, and don't cover the breadth of what he was trying to consider.

The programme evaluation form has been adjusted accordingly to read “Social - what will be the likely impact of the programme on social outcomes if implemented”

Approach to Address Problem 1 only - congestion and delay	Make the most of the existing network (Approach A)				Increase capacity by widening (Approach B)			Increase capacity by adding a new route (Approach C)		
Approach to address Problem 2 only - substandard walking and cycling infrastructure on Rocks Road	Approach A		Approach B				Approaches A and B			
Programme Name	Programme 1	Programme 2	Programme 3	Programme 4	Programme 5	Programme 6	Programme 6a	Programme 7	Programme 8	
Programme Description	P1: Do Minimum	P2: Network Optimisation including peak hour clearway on Tahunanui Drive (one direction only) and Waimea Street (bi-directional) for private motor vehicles	P3: P2 Network Optimisation plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options	P4: P3 but clearways for PT (excludes clearways for other vehicles from assessment)	P5: Widening on both arterials for PT plus P3 options (excluding all clearways)	P6: P3 (excluding all clearways) plus Widening on both arterials for all traffic	Widening on Waimea/Rutherford only plus P3 (excluding all clearways)	P7: New route plus P3 (excluding all clearways) plus Rocks Road Option 2	P8: New route for PT (P7 but for PT only)	
	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	What is achievable if implemented	
Benefits										
Benefit A (70%) - contribution of programme towards reduced journey times	low	high	high	medium-high	medium-high	high	medium	high	medium-high	
Benefit B (15%) - contribution of programme towards improved safety for walking and cycling modes of travel.	low	low	low-medium	low-medium	high	high	high	high	high	
Benefit C (15%) - contribution of programme towards improved tourism, active transport and recreational activities on Rocks Road.	low	low	medium	medium	medium	medium	medium	high	high	
Dis-Benefits	On-road cycle ways removed. Reduced parking in peak periods.				Land taken for transport purposes					
		Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.			Significant increase in the cost of travel from delays on existing transport network during construction. Significant nuisance impact during construction.			Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.		
		Foreshore taken for transport purposes					Foreshore taken for transport purposes (except Rocks Road option 2)			
Investment Objectives										
Investment Objective 1	Travel times on the two arterials no worse than 2015 for the life of the Programme	Low	High	High	medium-high	medium-high	High	medium	High	medium-high
Investment Objective 2	Volume to available capacity ratio better than 80% for the life of the Programme	Low	High	High	medium-high	medium-high	High	High	High	medium-high
Investment Objective 3	Zero walking and cycling crashes; Continuous decline in DSIs for the life of the programme	Low	Low	Low	Medium	Medium	Medium	low	High	Medium
Investment Objective 4	Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson on Rocks Road	Low	Low	Medium	Medium	High	High	High	Medium-high	Medium
Cost										
Investment cost (Range \$M)	\$0 - \$20M	\$20 - \$50M	\$45 - \$80M	\$45 - \$80M	\$100 - \$130M	\$100 - \$130M	\$130 - \$160M	\$70 - \$300M	\$70 - \$300M	
Maintenance and Operational costs if significant (Range \$M/30 yr)	\$20 - \$40M	\$35 - \$55M	\$40 - \$60M	\$70 - \$90M	\$80 - \$100M	\$50 - \$70M	\$50 - \$70M	\$35 - \$100M	\$65 - \$130M	
Time to Implement										
Minimum time to implement from completion of business case to completion of projects (Range)	1-5 yrs	1-5 yrs	5-10 yrs	5-10 yrs	10-15 yrs	10-15 yrs	10-15 yrs	5-10 yrs	5-10 yrs	
Difficulty to Implement (low, medium, high)										
Technical Feasibility - difficulty to implement the programme	low	low	medium	medium	medium	medium	high	medium	medium	
Permissions (eg consenting, property acquisition, school / retailing / port hours) - difficulty to get the required permissions to implement the programme	low	low-medium	medium-high	medium-high	high	high	high	medium-high	medium-high	
Financial affordability - difficulty to fund the programme under traditional methods	low	high								
Public non-acceptance of programme (low, low-med, medium, med-high, high)	med-high to high	medium to med-high	medium	med-high	med-high to high	medium to med-high	high	low-med to medium	low-med to high	
Stakeholder non-acceptance of programme (low, low-med, medium, med-high, high)	medium-high	medium	medium	medium	medium to med-high	medium to med-high	high	low-med to medium	low-med to high	
Risks (Impacts using seven point scale)	-3 = major impact -2 = moderate impact -1 = minor impact				0 = no impact or benefit +2 = moderate benefit +3 = major benefit +1 = minor benefit					
Accessibility - to what extent does the programme affect accessibility for all modes of travel	0	-1 to +1	-1 to +1	-1 to +2	-1 to +2	-2 to +1	-3 to -1	0 to +2	0 to +2	
Safety - to what extent does the programme address safety of travellers for all modes of travel	0	-2 to +1	-2 to +2	-2 to +2	-1 to +2	-1 to +2	-2 to +1	0 to +3	0 to +3	
Economic - to what extent will the programme impact the Regional economy	0	-2 to +1	-2 to +2	-3 to +2	-3 to +2	-2 to +2	-2 to 0	-2 to +2	-3 to +2	
Environmental - to what extent will the programme affect water resources, resource efficiency and ecology	0	-1 to +1	-2 to +1	-2 to +1	-2 to +1	-2 to +1	-1 to +1	-2 to +1	-2 to +1	
Environmental - what will be the likely impact of the programme on noise and vibration levels if implemented	0	-1 to +1	-1 to +1	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-3 to 0	-2 to 0	
Environmental - what will be the likely impact of the programme on air quality levels if implemented	0	-1 to +1	-1 to +1	0 to +1	0 to +1	-1 to +1	-2 to -1	-2 to +1	-1 to +1	
Social - what will be the likely impact of the programme on social outcomes if implemented	0	-2 to +2	-2 to +2	-1 to +2	-1 to +2	-2 to +2	-3 to +2	-2 to +2	-1 to +2	
Landscape / Urban design - what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	0	-1 to 0	-2 to +1	-2 to +1	-3 to +1	-3 to +1	-3 to +1	-2 to +1	-2 to +1	
Culture - what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	0	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-3 to 0	-3 to 0	-2 to 0	-2 to 0	
Built Heritage - what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	0	-1 to 0	-2 to 0	-2 to 0	-3 to 0	-3 to 0	-3 to 0	-2 to 0	-2 to 0	
Dependencies	Requires Local Authority to support to enable implementation									
	Traffic resolutions required									
	Behavioural changes need to occur									
	Funding (Affordability)									
	Need to understand imminent changes to air quality standards									
	Rocks Road options 3 and 4 dependent on satisfying the Coastal Policy Statement and the 'need' to widen into the coastal area									
	Highly dependent on the imposition of parking restrictions or higher charges to effect mode shift				Rocks Road options dependent on location of State Highway					
	Dependent on there being width available for clearways without the need for more than minor widening				Highly dependent on the imposition of parking restrictions or higher charges to effect mode shift					
					Year on year investment for additional buses and services correlated to increase in traffic volumes required				Year on year investment for additional buses and services correlated to increase in traffic volumes required	
Indicative BCR	Less than 1	Less than 3		Less than 1		Less than 3	Less than 3	Less than 3	Less than 1	
Preferred Programme by number of Specialists	0	0	2	0	1	1	0	6	0	

APPENDIX N – TRAFFIC MODELLING OUTPUTS

Clearways

A review of the available road widths indicated that clearways (with minor widening) could be implemented in the following locations:

- Tahunanui Drive – one direction only between Annesbrook roundabout and Bisley Avenue;
- Waimea Road in both directions between the top of the Beatson Hill (where the proposed Princess Drive intersection is to be located) and Motueka Street.

The following road configurations were added to the do–minimum and modelled in the 2023 and 2033 traffic models for the medium and high growth scenarios. For the purposes of obtaining information to help the technical specialists understand the longevity of the identified clearways, the road configuration below for Waimea Road and SH6 was determined as being the most likely. The configuration will be subject to further detailed analysis in the IBC phase:

- Peak hour clearways on Waimea Road between the new Princess Drive intersection and Motueka Street for the inbound direction and Motueka Street intersection to the top of Beatson Hill in the outbound direction – two lanes inbound one outbound in the AM peak and one lane inbound and two lanes outbound in the PM peak.
- Princess Drive intersection would be a traffic signalled controlled intersection. In the off peak, the northbound clearway lane merges to create one northbound lane. Southbound Waimea Road traffic during the evening peak would be two through lanes merging into one at the location of the current merge of the existing passing lane. Both northbound and southbound lanes would stop to allow right turn vehicles from Princess Drive to access Waimea Road. Waimea Road northbound traffic would stop to allow right turning vehicles into Princess Drive.
- Boundary Road and Tukuka Streets to be left in and left out only to provide the appropriate level of safety for road users, with right turns being facilitated at Motueka Street.
- A right turn bay on the Waimea Road northern approach at the Motueka intersection would be installed and the traffic signals phased to facilitate right turns from Waimea Road together with the southern approach.
- Traffic signals would be installed at the Market / Waimea Road intersection. Waimea Road vehicles, in both directions, would stop to allow Market Road vehicles to access Waimea Road in both directions. Waimea Road southbound vehicles would stop to allow right turn vehicles from Waimea Road to access Market Road. This intersection is signalised primarily to provide the appropriate level of safety for side road users.
- A morning peak hour clearway would operate on Tahunanui Drive for northbound traffic between Annesbrook roundabout and Bisley Avenue.
- All traffic signals within the traffic models would be optimised with a focus on preserving throughput whilst attempting to provide an appropriate Level of Service for traffic accessing the corridors.

The following information from modelling clearways was requested by the technical specialists:

- With reference to the 2015 delay and volume to capacity (V/C) ratio targets for Investment Objectives 1 and 2, what year in the future does through traffic on the corridors fall below the targets set?

- With reference to LOS on the side roads, what year does LOS for the following intersections get worse than the 2015 level for the following side roads?
 - Tukaka Streets
 - Boundary Road
 - Market Road
 - Beatson Road (north end)
 - The Ridgeway
 - Beatson Roundabout

A number of graphs and tables were produced summarising the outputs from the additional traffic modelling. These are located further below in Appendix N and summarised below.

Travel Speed – AM Peak for Medium and High Growth Scenarios

Apart from Waimea Southbound (Motueka to Beatson North), the travel speeds don't appreciably drop below the 2015 level when looking at the 2023 and 2033 models.

For Waimea Southbound (Motueka to Beatson), the travel speeds drop below 2015 levels sometime between 2015 and 2023 in the morning peak, which is the opposite direction of peak travel.

Travel Speed – PM Peak for Medium Growth Scenario

Apart from Waimea Northbound (Beatson North to Motueka), the travel speeds don't appreciably drop below the 2015 level when looking at the 2023 and 2033 models.

For Waimea Northbound (Beatson North to Motueka), the travel speeds drop below 2015 levels sometime between 2015 and 2023 in the evening peak, which is the opposite direction of peak travel.

Travel Speed – PM Peak for High Growth Scenario

Apart from Waimea Road Northbound and SH6 Southbound (Haven to Annesbrook), the travel speeds don't appreciably drop below the 2015 level when looking at the 2023 and 2033 models.

For Waimea Road (Beatson North to Motueka) traffic travelling northbound in the morning peak (ie opposite to the peak direction of travel), travel speeds drop below 2015 levels sometime between 2015 and 2023.

For Waimea Road (Hardy to Motueka), travel speeds drop below 2015 levels sometime between 2023 and 2033 for the southbound evening peak direction.

For SH6 (Haven to Annesbrook), the travel speeds drop below 2015 levels sometime between 2023 and 2033 for the southbound evening peak direction.

V/C Ratio

The location of the places where the V/C ratio exceeds 0.8 for all growth scenarios is, on the whole, consistent and in the locations highlighted in the attached "VC Plots".

Side Road Right Turn Delays Morning

Sometime between 2015 and 2023, the side road delay (for the named intersections on the plots) gets worse than 2015 levels except for The Ridgeway and Beatson roundabout for both medium and high growth scenarios.

The side road delay at Beatson roundabout is less than 2015 for both growth scenarios and through extrapolation (using 2023 to 2033 figures) gets worse than 2015 level around 2050 for only the high growth scenario.

For the Ridgeway under both growth scenarios, the side road delay gets larger than 2015 level sometime between 2023 and 2033.

Side Road Right Turn Delays Evening

Sometime between 2015 and 2023, the side road delay (for the named intersections on the plots) gets worse than 2015 delay except for Beatson roundabout for both growth scenarios.

Side road delay at Beatson roundabout doesn't get any worse (practically) within the next 40 years for both growth scenarios.

Peak and Interpeak Annual Average Daily (7 day) Traffic (AADTs) on Rocks Road and Waimea Road With Clearways

The modelling shows that providing the aforementioned clearways on Tahunanui Drive and Waimea Road will change the AADT for 2023 and 2033 when compared against the base 2013 model. For the medium growth scenario, the AADT on SH6 increases by approximately 12% without clearways between 2013 and 2033 and increases by approximately 20% with clearways. For the high growth scenario the increase is approximately 24% without clearways and approximately 31% with clearways for the high growth scenario.

The AADT on Waimea Road is relatively the same in 2033 as it is in 2013 with clearways operating for the medium growth scenario and approximately 10% higher than 2013 for the high growth scenario. Without clearways, the AADT on Waimea Road is expected to increase by approximately 6% for the medium growth scenario and approximately 16% for the high growth scenario.

The AADTs are calculated by factoring peak and off-peak modelled flows and are dominated by the seven hour interpeak period (9am-4pm) during the factoring process where there is an increase in flow on SH6. The clearways on Waimea Road do result in higher flows on Waimea Road and a corresponding reduction on Rocks Road in the peak directions but this is more than offset by the reduction in flows during the interpeak and peak period contraflow direction when calculating the AADT values.

General

With reference to the VC plots, the traffic modelling of clearways shows that Investment Objective 2 will meet its target for the next 40 years except for:

- The section of Waimea Road from the top of Beatson Hill to The Ridgeway in the AM and PM peak periods for both the medium and high growth scenarios;
- The section of SH6 between Annesbrook roundabout and Parker Street that shows a VC ratio greater than 0.8 for the evening peak.

It may be possible to implement some widening on Waimea Road between the proposed Princes Drive intersection to The Ridgeway and some widening or intersection efficiencies for southbound traffic on SH6 between Parker Street and Annesbrook roundabout to meet Investment Objective 2, with the addition of an extra lane. For Waimea Road the extra southbound lane would terminate at The Ridgeway and the extra northbound lane commencing at The Ridgeway dedicated for right turn vehicles from The Ridgeway.

Traffic Modelling of New Route

A new route between Annesbrook Roundabout and Haven Road roundabout (referred to the Southern Link Road - SLR) was modelled (without clearways) for the 2023 and 2033 models for the medium growth scenario. The new route provided one extra lane for each direction, taking the total number of arterial lanes (Waimea, SH6 and new route) to three in each direction between the aforementioned roundabouts. For the purposes of obtaining

information to help the technical specialists understand the potential efficiency of a new route, the layout below was determined to be the most likely configuration. The layout will be subject to further detailed optioneering in the IBC phase:

The new route would be modelled based on the following:

- The SLR is a single lane in each direction;
- From Annesbrook roundabout to the near the intersection with Totara Street, the route would be limited access, with one grade separated interchange near the top of Beatson Hill that would incorporate the proposed Princess Drive extension to Waimea Road;
- The SLR becomes the main route east of Annesbrook roundabout and there is no access to Whakatu Drive in the eastbound direction;
- Access to the side roads off Waimea Road for eastbound vehicles between Beatson roundabout and Beatson Road north will be via the SLR and a grade separated interchange near the top of Beatson Hill;
- From Annesbrook roundabout to near the intersection with Totara Street, the speed restriction would be 70 km/hr. North of Totara Street, the speed restriction would be 50 km/hr;
- The intersections of Toi Toi Road and Gloucester Street would be traffic signalled;
- A flush median would be installed on the section of St Vincent Street north of the Totara Street intersection to facilitate some turning movements;
- The existing cycleway would be transferred to Vanguard Street;
- Parking on both sides of the road (except for two-laning at traffic signalled intersections and the section between Totara and Toi Toi Streets) would be provided for;
- The intersections with Totara Street and Hastings Street would be left in and left out only ie there would no provision for right turning movements;
- Toi Toi Street East would become a one-way road for westbound traffic;
- A dedicated northbound slip-lane is provided for SLR traffic accessing Hardy Street at the existing roundabout with Halifax Street;
- Haven Road South would be closed to St Vincent Street and a turn-around area provided ie becomes a cul-de-sac;
- A direct link between SLR and Hardy Street with existing side roads requiring to give way to link road traffic.

The outcome of this modelling (refer to further information below in Appendix N) showed that traffic volumes across the screenline were roughly split around one-third each, which means a reduction in traffic volume of approximately 30% on each of the two existing arterials.

The modelling showed that the targets for Investment Objectives 1 and 2 would be met for the modelled period (out to 2033) for the medium growth scenario. Beyond the modelled period (up to 2055), extrapolation indicates that the targets for Investment Objectives 1 and 2 would continue to be met. Further analysis correlating options and the medium and high growth scenarios is to be undertaken in the IBC phase.

Clearways

Peak Clearways Option Travel Time Analysis (Medium Growth Scenario)

2013 Base Values	2013AM				2013PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	35.2	182.1	13.7	195.8	46.1	137	12.7	149.7
Waimea Sthbnd (Motueka to Beatson Nth)	49.7	130	8.8	138.8	33.5	194.8	11.1	205.9
Waimea Ruth Nthbnd (Motueka to Hardy)	39.4	145.7	13.8	159.5	39.7	144.2	13.9	158.1
Waimea Ruth Sthbnd (Hardy to Motueka)	43.2	142.6	3	145.6	40.7	151.2	3	154.2
Tahunanui Nthbnd (Annesbrook to Beach)	38.1	175.4	18.9	194.3	41.4	161.7	17.1	178.8
Tahunanui Sthbnd (Beach to Annesbrook)	42.7	159.7	13.7	173.4	39.5	174.9	12.5	187.4
Rocks Nthbnd (Beach to Haven)	42.9	305.2	17	322.2	43.9	297.6	16.9	314.5
Rocks Sthbnd (Haven to Beach)	42.7	299.1	27.5	326.6	40.8	314.6	26.7	341.3

Clearways Option Medium Growth	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	39	138.4	38.8	177.2	37.9	135.5	43.5	179	40	135.1	37.4	172.5	38.4	135.4	41.3	176.7
Waimea Sthbnd (Motueka to Beatson Nth)	44.2	129.4	26.8	156.2	36.4	147.5	42.1	189.6	43.7	130	27.9	157.9	38.4	142.6	37.1	179.7
Waimea Ruth Nthbnd (Motueka to Hardy)	38.4	148	15.8	163.8	39.5	144.1	14.8	158.9	38.2	148.7	15.9	164.6	38.7	144.3	18	162.3
Waimea Ruth Sthbnd (Hardy to Motueka)	43.1	142.7	3	145.7	39.8	154.8	3	157.8	43.2	142.3	3	145.3	38.7	159.5	3	162.5
Tahunanui Nthbnd (Annesbrook to Beach)	42	157.5	18.8	176.3	40.8	164.9	16.6	181.5	41.9	157.8	18.7	176.5	40.5	165.6	17.1	182.7
Tahunanui Sthbnd (Beach to Annesbrook)	42.6	160	13.9	173.9	38	183.1	12	195.1	42.4	161	13.9	174.9	37.4	185.9	12.2	198.1
Rocks Nthbnd (Beach to Haven)	42.4	307.9	17.8	325.7	43.3	301.1	17.6	318.7	42.2	309.2	17.9	327.1	43.2	301.6	17.7	319.3
Rocks Sthbnd (Haven to Beach)	42.5	300.4	27.4	327.8	39.3	325.8	28.3	354.1	42.1	302.6	28	330.6	38.7	330.7	29.3	360

Option (Medium) vs 2013 Base	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	3.8	-43.7	25.1	-18.6	-8.2	-1.5	30.8	29.3	4.8	-47	23.7	-23.3	-7.7	-1.6	28.6	27
Waimea Sthbnd (Motueka to Beatson Nth)	-5.5	-0.6	18	17.4	2.9	-47.3	31	-16.3	-6	0	19.1	19.1	4.9	-52.2	26	-26.2
Waimea Ruth Nthbnd (Motueka to Hardy)	-1	2.3	2	4.3	-0.2	-0.1	0.9	0.8	-1.2	3	2.1	5.1	-1	0.1	4.1	4.2
Waimea Ruth Sthbnd (Hardy to Motueka)	-0.1	0.1	0	0.1	-0.9	3.6	0	3.6	0	-0.3	0	-0.3	-2	8.3	0	8.3
Tahunanui Nthbnd (Annesbrook to Beach)	3.9	-17.9	-0.1	-18	-0.6	3.2	-0.5	2.7	3.8	-17.6	-0.2	-17.8	-0.9	3.9	0	3.9
Tahunanui Sthbnd (Beach to Annesbrook)	-0.1	0.3	0.2	0.5	-1.5	8.2	-0.5	7.7	-0.3	1.3	0.2	1.5	-2.1	11	-0.3	10.7
Rocks Nthbnd (Beach to Haven)	-0.5	2.7	0.8	3.5	-0.6	3.5	0.7	4.2	-0.7	4	0.9	4.9	-0.7	4	0.8	4.8
Rocks Sthbnd (Haven to Beach)	-0.2	1.3	-0.1	1.2	-1.5	11.2	1.6	12.8	-0.6	3.5	0.5	4	-2.1	16.1	2.6	18.7

Option (Medium) vs 2013 Base % Change	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	11%	-24%	183%	-9%	-18%	-1%	243%	20%	14%	-26%	173%	-12%	-17%	-1%	225%	18%
Waimea Sthbnd (Motueka to Beatson Nth)	-11%	0%	205%	13%	9%	-24%	279%	-8%	-12%	0%	217%	14%	15%	-27%	234%	-13%
Waimea Ruth Nthbnd (Motueka to Hardy)	-3%	2%	14%	3%	-1%	0%	6%	1%	-3%	2%	15%	3%	-3%	0%	29%	3%
Waimea Ruth Sthbnd (Hardy to Motueka)	0%	0%	0%	0%	-2%	2%	0%	2%	0%	0%	0%	0%	-5%	5%	0%	5%
Tahunanui Nthbnd (Annesbrook to Beach)	10%	-10%	-1%	-9%	-1%	2%	-3%	2%	10%	-10%	-1%	-9%	-2%	2%	0%	2%
Tahunanui Sthbnd (Beach to Annesbrook)	0%	0%	1%	0%	-4%	5%	-4%	4%	-1%	1%	1%	1%	-5%	6%	-2%	6%
Rocks Nthbnd (Beach to Haven)	-1%	1%	5%	1%	-1%	1%	4%	1%	-2%	1%	5%	2%	-2%	1%	5%	2%
Rocks Sthbnd (Haven to Beach)	0%	0%	0%	0%	-4%	4%	6%	4%	-1%	1%	2%	1%	-5%	5%	10%	5%

Peak Clearways Option Travel Time Analysis (High Growth Scenario)

2013 Base Values	2013AM				2013PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	35.2	182.1	13.7	195.8	46.1	137	12.7	149.7
Waimea Sthbnd (Motueka to Beatson Nth)	49.7	130	8.8	138.8	33.5	194.8	11.1	205.9
Waimea Ruth Nthbnd (Motueka to Hardy)	39.4	145.7	13.8	159.5	39.7	144.2	13.9	158.1
Waimea Ruth Sthbnd (Hardy to Motueka)	43.2	142.6	3	145.6	40.7	151.2	3	154.2
Tahunanui Nthbnd (Annesbrook to Beach)	38.1	175.4	18.9	194.3	41.4	161.7	17.1	178.8
Tahunanui Sthbnd (Beach to Annesbrook)	42.7	159.7	13.7	173.4	39.5	174.9	12.5	187.4
Rocks Nthbnd (Beach to Haven)	42.9	305.2	17	322.2	43.9	297.6	16.9	314.5
Rocks Sthbnd (Haven to Beach)	42.7	299.1	27.5	326.6	40.8	314.6	26.7	341.3

Clearways Option High Growth	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	38.3	141.2	39	180.2	37.3	137.1	44.7	181.8	39.3	139.8	35.9	175.7	37.2	138.4	43.9	182.3
Waimea Sthbnd (Motueka to Beatson Nth)	43.9	130	27	157	34.2	155.7	46.1	201.8	43.3	131.3	28	159.3	33.5	159.8	46.1	205.9
Waimea Ruth Nthbnd (Motueka to Hardy)	38.3	148.7	15.1	163.8	39.2	144.7	15.4	160.1	37.6	150.7	16.4	167.1	38.6	145	18	163
Waimea Ruth Sthbnd (Hardy to Motueka)	42.9	143.4	3	146.4	39.1	157.9	3	160.9	43	143.3	3	146.3	36.6	168.8	3	171.8
Tahunanui Nthbnd (Annesbrook to Beach)	42	158	18.4	176.4	40.5	166.2	16.5	182.7	41.8	158.6	18.5	177.1	39.4	169.8	18.2	188
Tahunanui Sthbnd (Beach to Annesbrook)	42.3	160.8	14.1	174.9	36.7	189.4	12.3	201.7	41.9	162.8	14	176.8	34.7	199.7	13.5	213.2
Rocks Nthbnd (Beach to Haven)	42	311.1	17.8	328.9	43.2	302.1	17.7	319.8	41.3	316.6	17.9	334.5	42.9	304	17.8	321.8
Rocks Sthbnd (Haven to Beach)	42.3	302.1	27.6	329.7	38.3	334.7	29.2	363.9	41.7	305.1	28.8	333.9	36.7	351.1	28	379.1

Option (High) vs 2013 Base	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	3.1	-40.9	25.3	-15.6	-8.8	0.1	32	32.1	4.1	-42.3	22.2	-20.1	-8.9	1.4	31.2	32.6
Waimea Sthbnd (Motueka to Beatson Nth)	-5.8	0	18.2	18.2	0.7	-39.1	35	-4.1	-6.4	1.3	19.2	20.5	0	-35	35	0
Waimea Ruth Nthbnd (Motueka to Hardy)	-1.1	3	1.3	4.3	-0.5	0.5	1.5	2	-1.8	5	2.6	7.6	-1.1	0.8	4.1	4.9
Waimea Ruth Sthbnd (Hardy to Motueka)	-0.3	0.8	0	0.8	-1.6	6.7	0	6.7	-0.2	0.7	0	0.7	-4.1	17.6	0	17.6
Tahunanui Nthbnd (Annesbrook to Beach)	3.9	-17.4	-0.5	-17.9	-0.9	4.5	-0.6	3.9	3.7	-16.8	-0.4	-17.2	-2	8.1	1.1	9.2
Tahunanui Sthbnd (Beach to Annesbrook)	-0.4	1.1	0.4	1.5	-2.8	14.5	-0.2	14.3	-0.8	3.1	0.3	3.4	-4.8	24.8	1	25.8
Rocks Nthbnd (Beach to Haven)	-0.9	5.9	0.8	6.7	-0.7	4.5	0.8	5.3	-1.6	11.4	0.9	12.3	-1	6.4	0.9	7.3
Rocks Sthbnd (Haven to Beach)	-0.4	3	0.1	3.1	-2.5	20.1	2.5	22.6	-1	6	1.3	7.3	-4.1	36.5	1.3	37.8






Option (High) vs 2013 Base % Change	2023AM				2023PM				2033AM				2033PM			
	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time	Speed	TT	Dly	Time
Waimea Nthbnd (Beatson Nth to Motueka)	9%	-22%	185%	-8%	-19%	0%	252%	21%	12%	-23%	162%	-10%	-19%	1%	246%	22%
Waimea Sthbnd (Motueka to Beatson Nth)	-12%	0%	207%	13%	2%	-20%	315%	-2%	-13%	1%	218%	15%	0%	-18%	315%	0%
Waimea Ruth Nthbnd (Motueka to Hardy)	-3%	2%	9%	3%	-1%	0%	11%	1%	-5%	3%	19%	5%	-3%	1%	29%	3%
Waimea Ruth Sthbnd (Hardy to Motueka)	-1%	1%	0%	1%	-4%	4%	0%	4%	0%	0%	0%	0%	-10%	12%	0%	11%
Tahunanui Nthbnd (Annesbrook to Beach)	10%	-10%	-3%	-9%	-2%	3%	-4%	2%	10%	-10%	-2%	-9%	-5%	5%	6%	5%
Tahunanui Sthbnd (Beach to Annesbrook)	-1%	1%	3%	1%	-7%	8%	-2%	8%	-2%	2%	2%	2%	-12%	14%	8%	14%
Rocks Nthbnd (Beach to Haven)	-2%	2%	5%	2%	-2%	2%	5%	2%	-4%	4%	5%	4%	-2%	2%	5%	2%
Rocks Sthbnd (Haven to Beach)	-1%	1%	0%	1%	-6%	6%	9%	7%	-2%	2%	5%	2%	-10%	12%	5%	11%

NELSON-TASMAN TRANSPORTATION MODEL

Peak Directional Clearways Option - Volume to Capacity Ratio Plots








Volume to Capacity Ratio Plot – 2013 AM Peak

KEY	
	V/C 60% to 70%
	V/C 70% to 80%
	V/C 80% to 90%
	V/C 90% to 100%
	V/C >100%

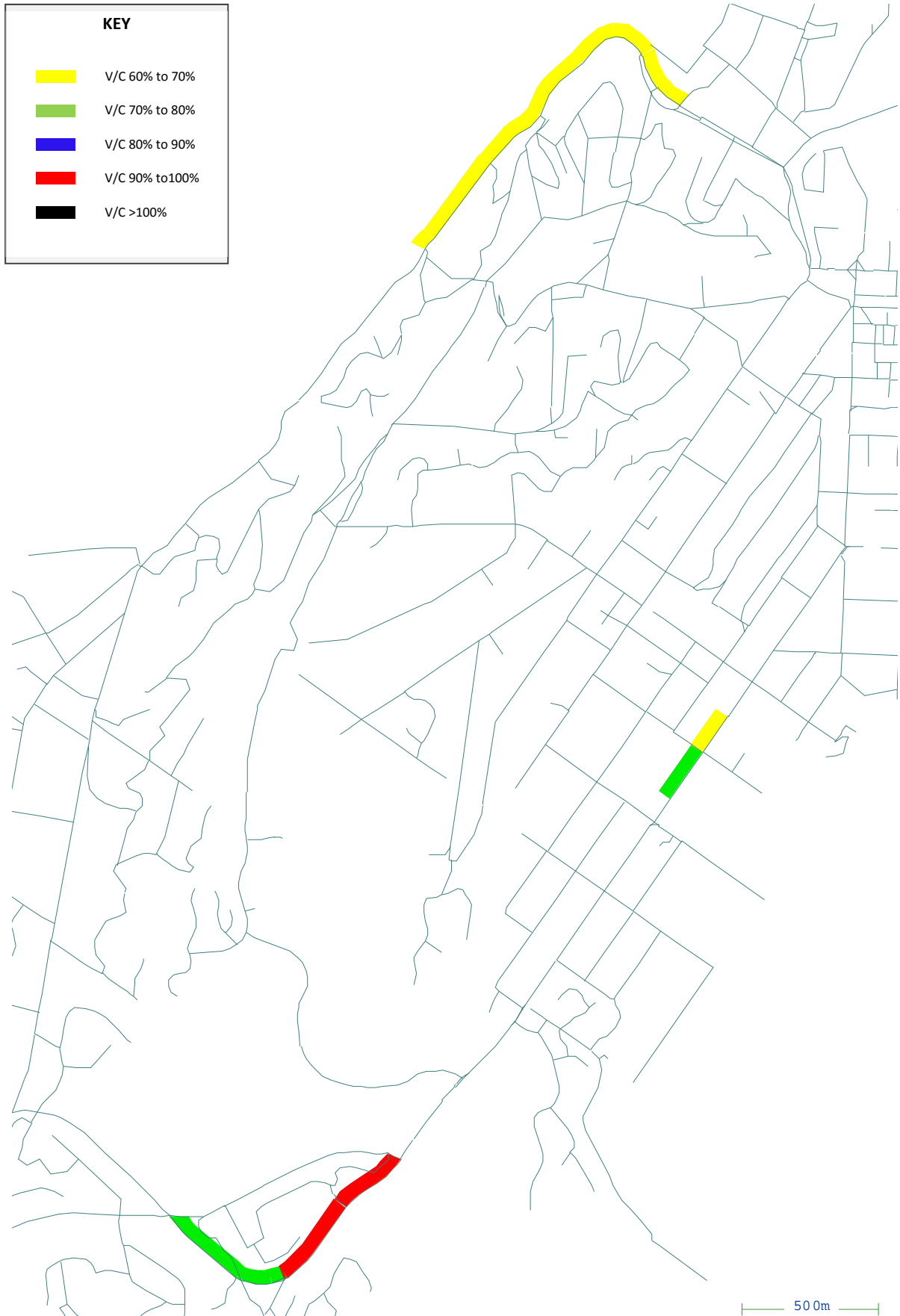


Volume to Capacity Ratio Plot – 2013 PM Peak

KEY	
	V/C 60% to 70%
	V/C 70% to 80%
	V/C 80% to 90%
	V/C 90% to 100%
	V/C >100%



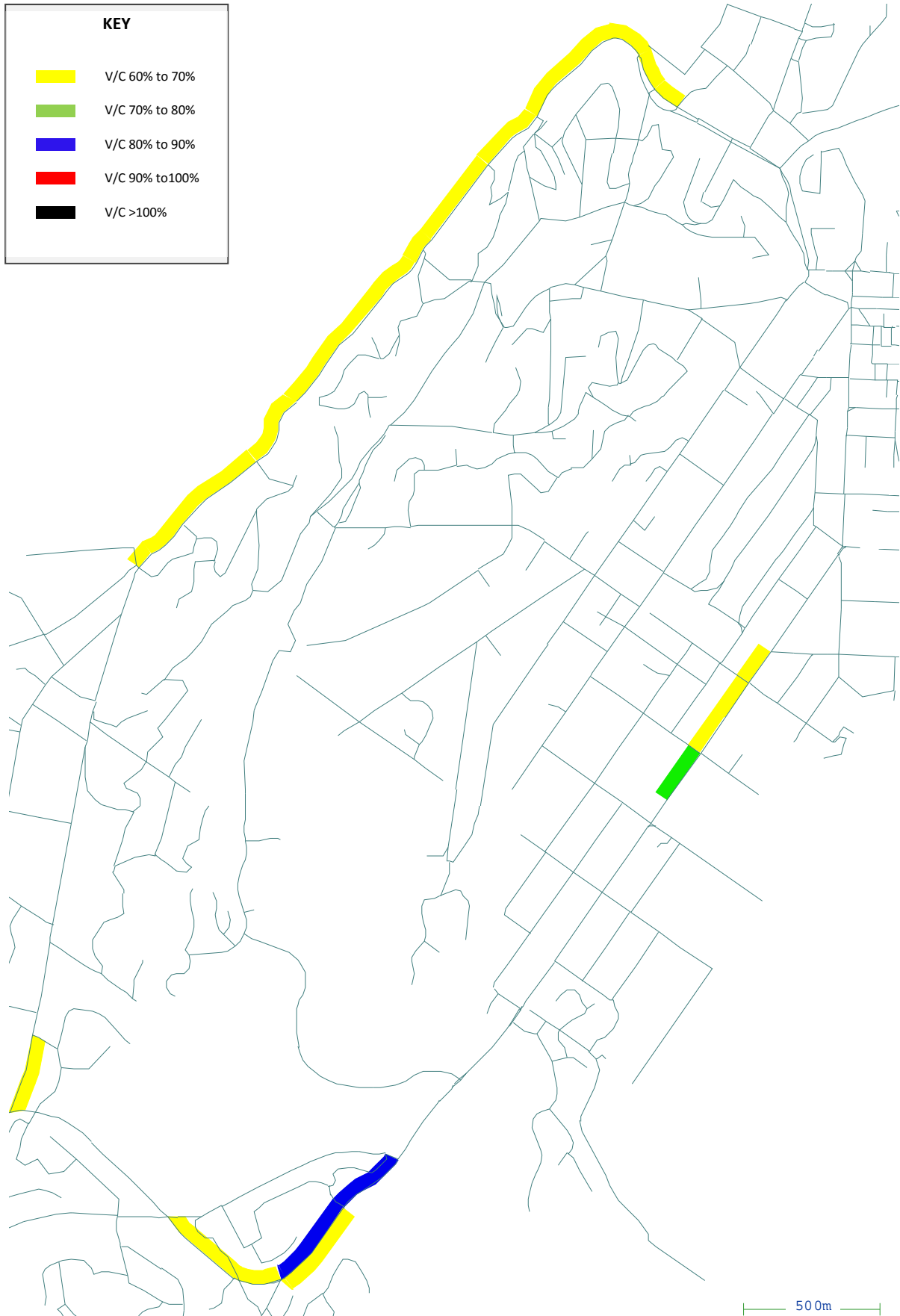
Volume to Capacity Ratio Plot – 2023 AM Peak Clearways Option – Medium Growth



Volume to Capacity Ratio Plot – 2023 PM Peak Clearways Option – Medium Growth








Volume to Capacity Ratio Plot – 2033 AM Peak Clearways Option – Medium Growth

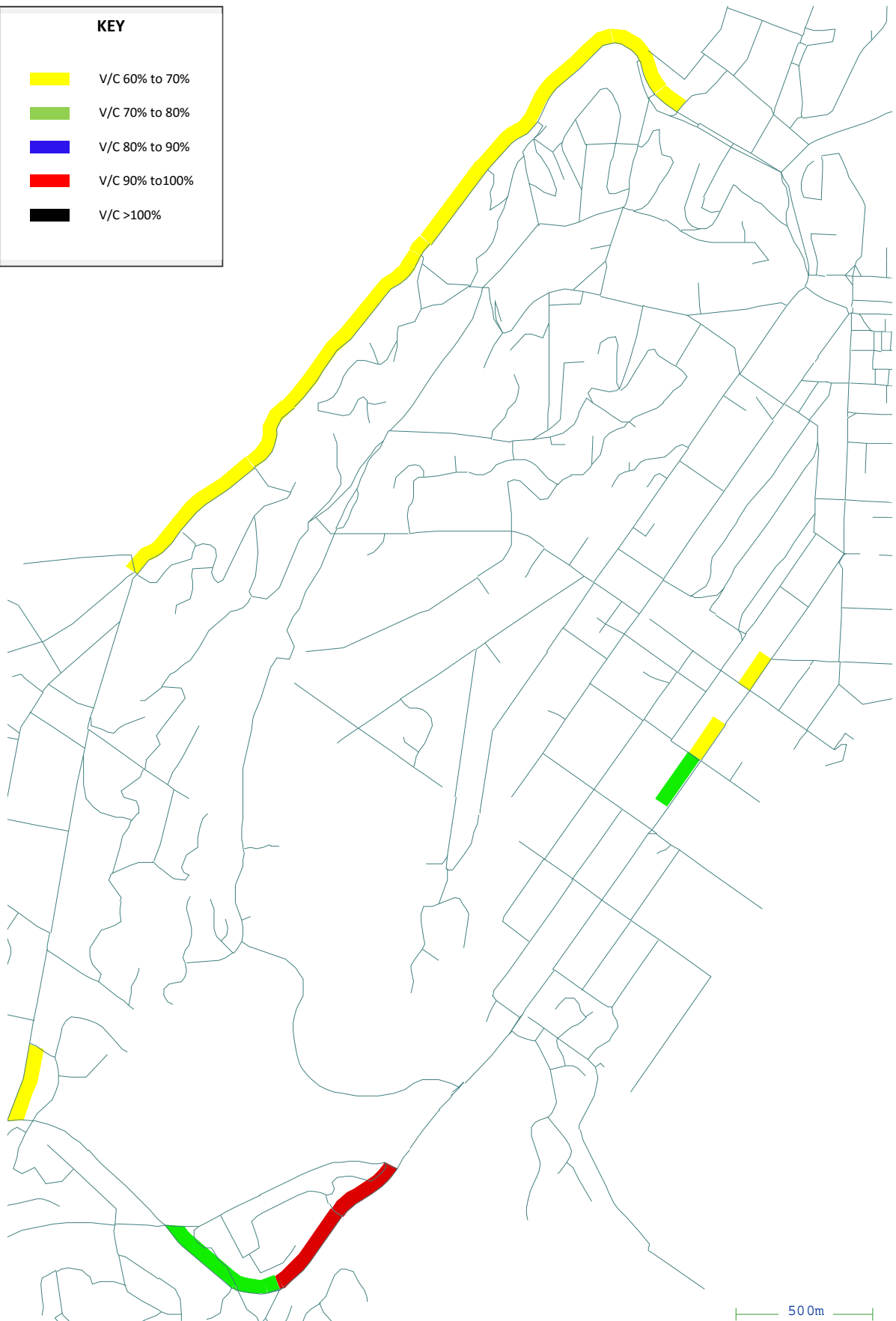


Volume to Capacity Ratio Plot – 2033 PM Peak Clearways Option – Medium Growth








Volume to Capacity Ratio Plot – 2023 AM Peak Clearways Option – High Growth

KEY	
	V/C 60% to 70%
	V/C 70% to 80%
	V/C 80% to 90%
	V/C 90% to 100%
	V/C >100%








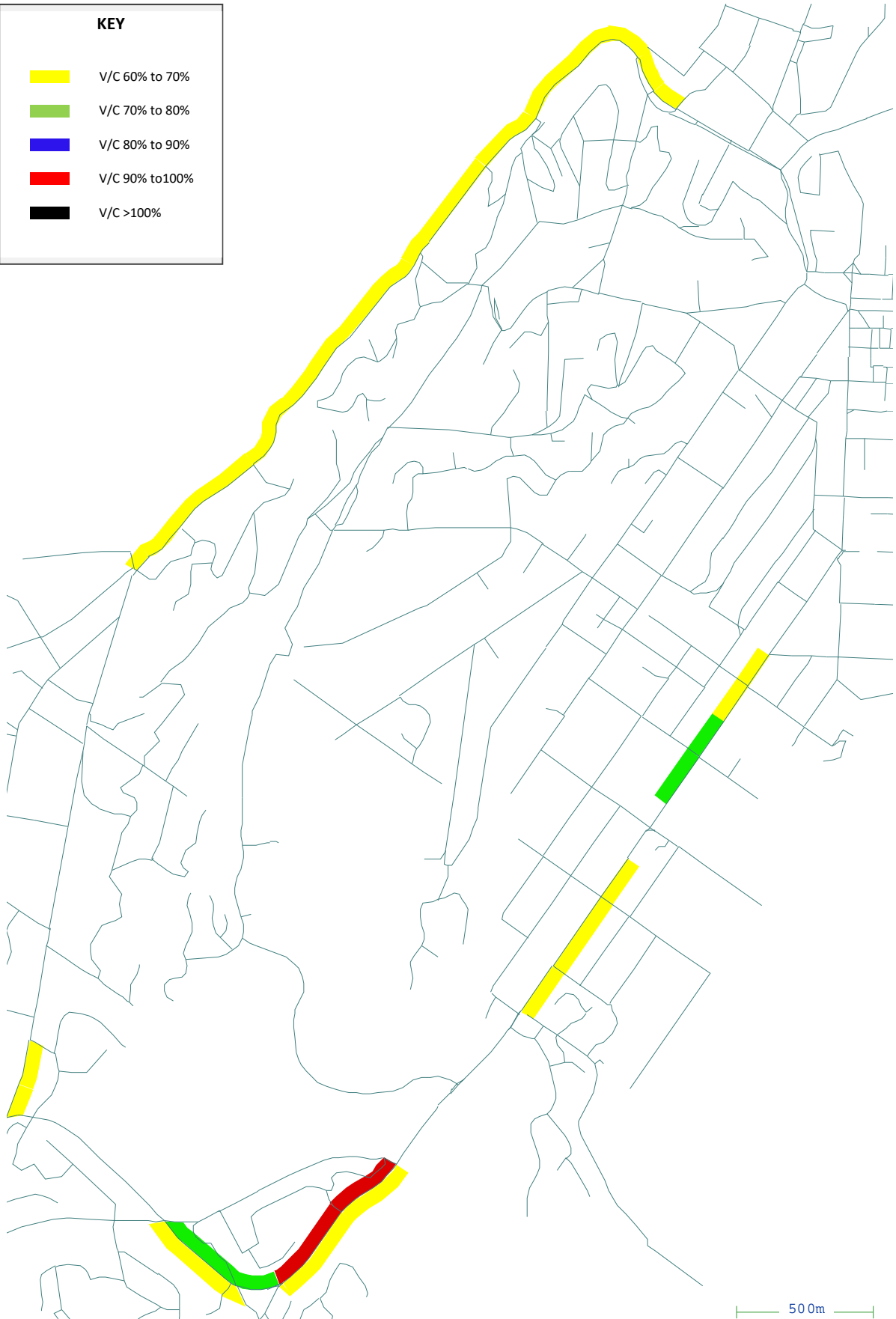
Volume to Capacity Ratio Plot – 2023 PM Peak Clearways Option – High Growth

KEY	
	V/C 60% to 70%
	V/C 70% to 80%
	V/C 80% to 90%
	V/C 90% to 100%
	V/C >100%

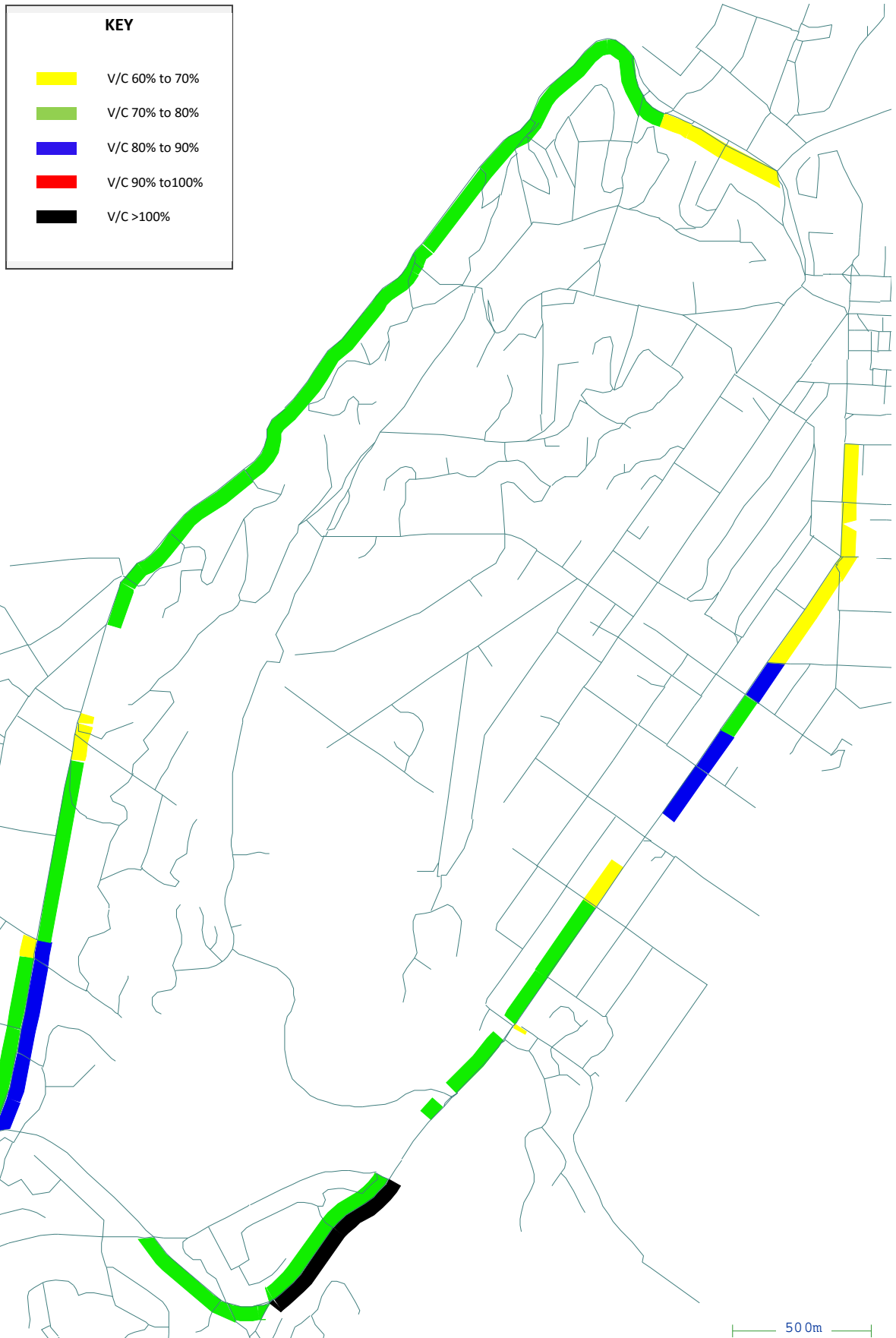


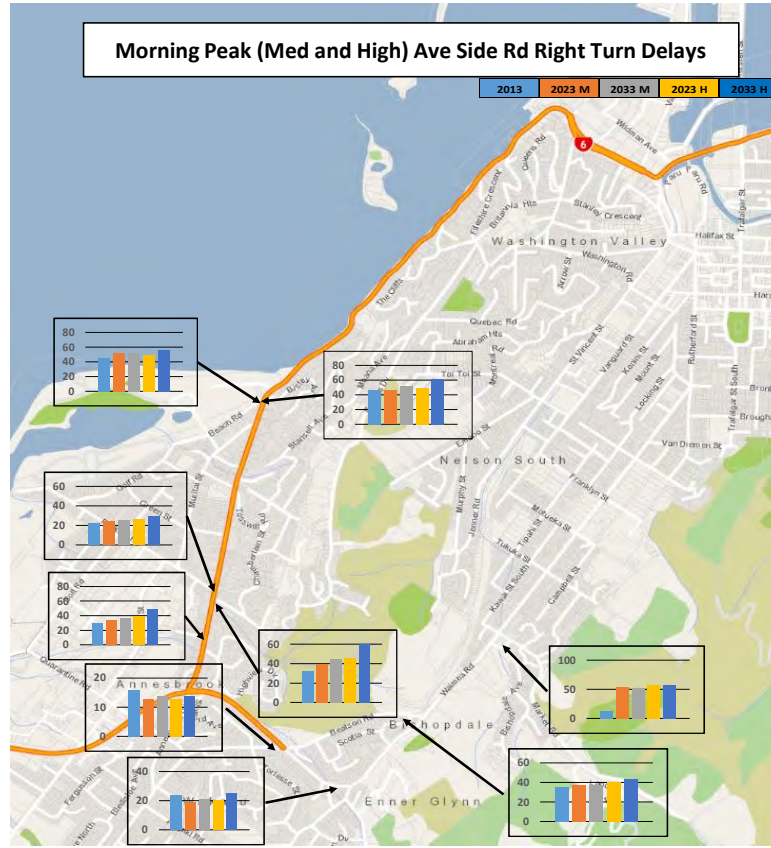
Volume to Capacity Ratio Plot – 2033 AM Peak Clearways Option – High Growth

KEY	
	V/C 60% to 70%
	V/C 70% to 80%
	V/C 80% to 90%
	V/C 90% to 100%
	V/C >100%



Volume to Capacity Ratio Plot – 2033 PM Peak Clearways Option – High Growth

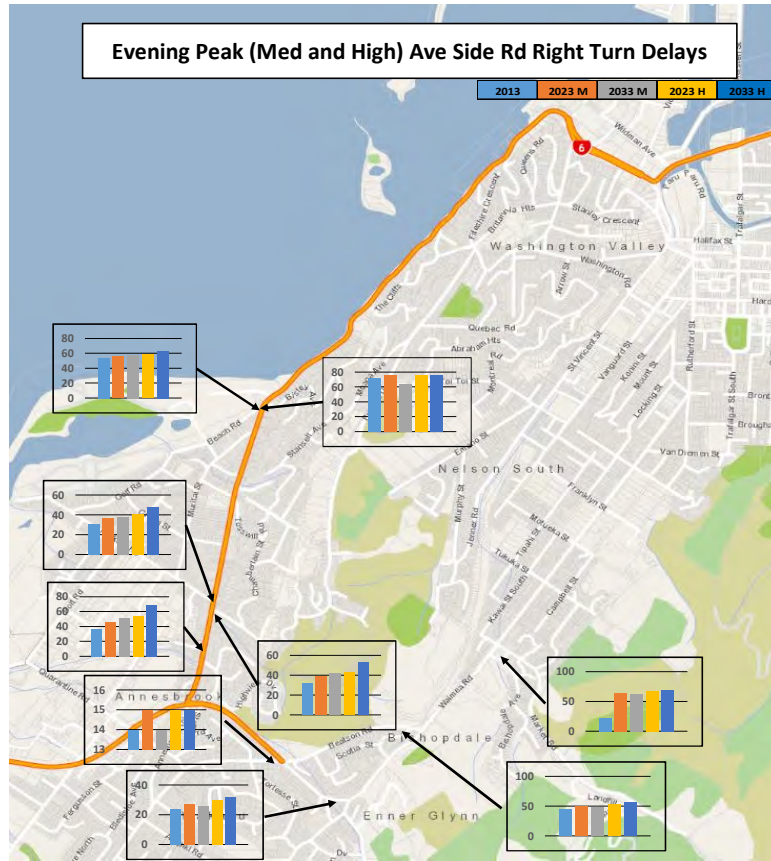




	2013	2023 M	2033 M	2023 H	2033 H		2013	2023 M	2033 M	2023 H	2033 H
Beach Rd	46	52	52	49	56	Market Rd	13	54	50	57	58
Bisley Ave	47	46	52	49	61	Beatson Rd N	35	37	37	40	44
Parkers Rd	22	24	25	26	29	Ridgeway	24	19	21	20	25
Blackwood St	30	34	37	39	49	Beatson Rbt	16	13	14	13	14
Douglas St	32	40	45	46	69	Motueka	28	42	44	47	51

Traffic delay in seconds

Road	2013 Base	SIDE ROAD DELAYS									
		Without Peak Hour Clearways		With Peak Hour Clearways		Without Peak Hour Clearways		With Peak Hour Clearways		Impact of adding clearways	
		2033 M	2033 H	2033 M	2033 H	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 (High Growth)	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 (High Growth)	% increase With / Without Clearways (Medium Growth)	% increase With / Without Clearways (High Growth)
Beach Rd	46	60	52	52	56	30%	13%	13%	22%	-13%	8%
Bisley Ave	47	56	55	52	61	19%	17%	11%	30%	-7%	11%
Parkers Rd	22	24	27	25	29	9%	23%	14%	32%	4%	7%
Blackwood St	30	32	39	37	49	7%	30%	23%	63%	16%	26%
Beatson Rd N	35	40	47	37	44	14%	34%	6%	26%	-8%	-6%
The Ridgeway	24	30	33	21	25	25%	38%	-13%	4%	-30%	-24%
Market Rd	13	14	15	50	58	8%	15%	285%	346%	257%	287%
Motueka St	28	31	29	44	51	11%	4%	57%	82%	42%	76%



	2013	2023 M	2033 M	2023 H	2033 H
Beach Rd	54	56	58	59	63
Bisley Ave	72	76	63	76	75
Parkers Rd	31	37	38	41	48
Blackwood St	37	47	51	54	69
Douglas St	32	39	42	43	53
Market Rd	23	65	62	67	69
Beatson Rd N	45	49	48	53	57
Ridgeway	24	27	26	30	32
Beatson Rbt	14	15	14	15	15
Motueka	28	33	36	33	34

Traffic delay in seconds

SIDE ROAD DELAYS											
Road	2013 Base	Without Peak Hour Clearways		With Peak Hour Clearways		Without Peak Hour Clearways		With Peak Hour Clearways		Impact of adding clearways	
		2033 M	2033 H	2033 M	2033 H	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 (High Growth)	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 (High Growth)	% increase With / Without Clearways (Medium Growth)	% increase With / Without Clearways (High Growth)
Beach Rd	54	58	66	58	63	7%	22%	7%	17%	0%	-5%
Bisley Ave	72	75	79	63	75	4%	10%	-13%	4%	-16%	-5%
Parkers Rd	31	38	45	38	48	23%	45%	23%	55%	0%	7%
Blackwood St	37	48	66	51	69	30%	78%	38%	86%	6%	5%
Beatson Rd N	45	54	65	48	57	20%	44%	7%	27%	-11%	-12%
The Ridgeway	24	35	40	26	32	46%	67%	8%	33%	-26%	-20%
Market Rd	23	27	32	62	69	17%	39%	170%	200%	130%	116%
Motueka St	28	26	29	36	34	-7%	4%	29%	21%	38%	17%

AADT

Road	2013 Base	Without Peak Hour Clearways				With Peak Hour Clearways				Without Peak Hour Clearways		With Peak Hour Clearways	
		2023M	2033M	2023H	2033H	2023M	2033M	2023H	2033H	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 High Growth)	% increase 2013 to 2033 (Medium Growth)	% increase 2013 to 2033 High Growth)
Rocks Rd - Nth Beach	17373	18744	19842	19953	22054	20428	21423	21501	23475	14.2%	26.9%	23.3%	35.1%
Tahunanui - Nth Annesbrook	21768	23336	24176	24561	26602	24782	25576	25949	27946	11.1%	22.2%	17.5%	28.4%
Waimea Rd - Sth Princes Extn	25982	28533	27552	29808	30104	26816	25910	28215	28645	6.0%	15.9%	-0.3%	10.2%
Waimea Rd - Nth Motueka	20156	22011	21500	22942	23401	20755	20404	21798	22461	6.7%	16.1%	1.2%	11.4%
Rutherford St - Nth Selwyn	12808	12782	13443	13671	15036	12228	12686	12903	14466	5.0%	17.4%	-1.0%	12.9%
Vanguard - Nth Motueka	5592	5978	6500	6311	7118	5697	6099	6034	6800	16.2%	27.3%	9.1%	21.6%
Vanguard - Sth Hardy	10052	10354	10309	10953	11997	10491	10420	11177	12096	2.6%	19.3%	3.7%	20.3%

Southern Link Road

Average Total Travel Time (Minutes) - Annesbrook to Haven Roundabouts				
Year	Period	Route	Do Min	SLR
2013	AM Peak	SH6 Nbd	7.93	7.65
		SH6 Sbd	7.68	7.63
		Waimea Nbd	8.54	7.68
		Waimea Sbd	7.43	7.79
		SLR Nbd		6.01
		SLR Sbd		6.08
	Interpeak	SH6 Nbd	7.56	7.47
		SH6 Sbd	7.73	7.58
		Waimea Nbd	7.71	7.55
		Waimea Sbd	7.56	8.03
		SLR Nbd		5.93
		SLR Sbd		6.18
	PM Peak	SH6 Nbd	7.52	7.44
		SH6 Sbd	8.17	7.81
		Waimea Nbd	7.70	7.57
Waimea Sbd		8.94	8.04	
SLR Nbd			5.92	
SLR Sbd			6.24	
2023	AM Peak	SH6 Nbd	8.15	7.78
		SH6 Sbd	7.67	7.61
		Waimea Nbd	8.36	7.81
		Waimea Sbd	7.50	7.87
		SLR Nbd		6.03
		SLR Sbd		6.08
	Interpeak	SH6 Nbd	7.62	7.54
		SH6 Sbd	7.77	7.64
		Waimea Nbd	7.45	7.58
		Waimea Sbd	7.73	7.97
		SLR Nbd		5.93
		SLR Sbd		6.15
	PM Peak	SH6 Nbd	7.54	7.51
		SH6 Sbd	8.61	7.90
		Waimea Nbd	7.37	7.59
Waimea Sbd		9.54	8.11	
SLR Nbd			5.92	
SLR Sbd			6.25	
2033	AM Peak	SH6 Nbd	8.17	7.86
		SH6 Sbd	7.72	7.67
		Waimea Nbd	8.17	7.75
		Waimea Sbd	7.53	7.81
		SLR Nbd		6.06
		SLR Sbd		6.13
	Interpeak	SH6 Nbd	7.66	7.57
		SH6 Sbd	7.82	7.67
		Waimea Nbd	7.39	7.57
		Waimea Sbd	7.68	7.68
		SLR Nbd		5.92
		SLR Sbd		6.15
	PM Peak	SH6 Nbd	7.57	7.53
		SH6 Sbd	8.70	7.96
		Waimea Nbd	7.39	7.58
Waimea Sbd		9.51	8.09	
SLR Nbd			5.91	
SLR Sbd			6.26	

Average Travel Speed (kph) - Annesbrook to Haven Roundabouts				
Year	Period	Route	Do Min	SLR
2013	AM Peak	SH6 Nbd	41.7	43.2
		SH6 Sbd	43.2	43.5
		Waimea Nbd	38.4	42.7
		Waimea Sbd	44.2	42.2
		SLR Nbd		49.8
		SLR Sbd		49.1
	Interpeak	SH6 Nbd	43.7	44.2
		SH6 Sbd	42.9	43.8
		Waimea Nbd	42.5	43.4
		Waimea Sbd	43.5	41
		SLR Nbd		50.4
		SLR Sbd		48.3
	PM Peak	SH6 Nbd	43.9	44.4
		SH6 Sbd	40.6	42.5
		Waimea Nbd	42.6	43.3
Waimea Sbd		36.8	40.9	
SLR Nbd			50.5	
SLR Sbd			47.9	
2023	AM Peak	SH6 Nbd	40.5	42.4
		SH6 Sbd	43.3	43.6
		Waimea Nbd	37	42
		Waimea Sbd	41.4	41.8
		SLR Nbd		49.6
		SLR Sbd		49.1
	Interpeak	SH6 Nbd	43.3	43.8
		SH6 Sbd	42.7	43.4
		Waimea Nbd	41.5	43.2
		Waimea Sbd	40.1	41.2
		SLR Nbd		50.4
		SLR Sbd		48.5
	PM Peak	SH6 Nbd	43.8	44
		SH6 Sbd	38.5	42
		Waimea Nbd	42	43.2
Waimea Sbd		32.5	40.5	
SLR Nbd			50.5	
SLR Sbd			47.8	
2033	AM Peak	SH6 Nbd	40.4	42
		SH6 Sbd	43	43.2
		Waimea Nbd	37.9	42.3
		Waimea Sbd	41.2	42.1
		SLR Nbd		49.4
		SLR Sbd		48.7
	Interpeak	SH6 Nbd	43.1	43.6
		SH6 Sbd	42.4	43.2
		Waimea Nbd	41.9	43.3
		Waimea Sbd	40.4	42.8
		SLR Nbd		50.5
		SLR Sbd		48.6
	PM Peak	SH6 Nbd	43.6	43.8
		SH6 Sbd	38.1	41.7
		Waimea Nbd	41.9	43.2
Waimea Sbd		32.6	40.7	
SLR Nbd			50.6	
SLR Sbd			47.7	

Average AADT - Annesbrook to Haven Roundabouts			
Route	AADT 2013	AADT 2023	AADT 2033
SH6	18000	15000	16000
Waimea	20000	18000	18000
SLR		12000	13000
Vanguard	6000	2000	2000

APPENDIX O – RECOMMENDED PROGRAMME AND SUB-PROGRAMMES ASSESSMENT – OPTIONS WITHIN RECOMMENDED PROGRAMME

Table o8 below shows the performance ratings of the sub-programmes and the recommended programme against the Investment Objectives.

Table o8 Performance ratings of the sub and recommended programmes against the IO's

Investment Objectives		Network Optimisation activities (Sub-programme 3)	A new route (Sub-programme 7)	Recommended Programme (over the life of the programme)
1	Travel times on the two arterials no worse than 2015 for the life of the programme	30% to 70% (up to early 2030's)	greater than 70% (after early 2030's)	greater than 70%
2	Peak hour volume to available capacity ratio of no more than 0.8 on the two arterials	30% to 70% (up to early 2030's)	greater than 70% (after early 2030's)	greater than 70%
3	Zero walking and cycling crashes on the two arterials; and continuous decline in walking and cycling deaths and serious injuries on the two arterials for the life of the programme	30% to 70%	30% to 70% (after early 2030's)	30% to 70%
4	Five years after implementing an option on Rocks Road, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson	30% to 70%	30% to 70%	30% to 70%

The technical specialists concluded that the identification of options that support clearways and a new route should be done at the start of the IBC phase as part of the overall review of the long list of options contained in Appendix G.

The technical specialists also concluded that the options that address Investment Objectives 3 and 4 would most likely be different within each sub-programme. Consideration must be made to ensure that options supporting clearways are in line with a new route, where possible.

Longevity of Programme Activities

The estimated timeframe for when the targets for Investment Objectives 1 and 2 are likely to be achieved using the medium growth scenario was assessed by the technical specialists and is set out below:

- Acknowledging that clearways are the options that have the most influence on achieving Investment Objectives 1 and 2 into the future, preliminary transport modelling suggests that under the medium growth scenario the implementation of network optimisation measures (specifically clearways) will achieve the targets for the congestion objectives (Investment Objectives 1 and 2) into the early 2030s; after which, a new arterial route will be necessary.

- Under the high growth scenario, network optimisation measures (specifically clearways) will achieve the targets for Investment Objectives 1 and 2 until the mid-2020s; after which, a new arterial route will be required.
- The installation of peak-hour clearways will mean increased delays for side road vehicles entering and exiting the arterials. Preliminary level of service calculations indicate that these delays should be acceptable until the mid-2020s.

The technical specialists noted that Nelson City Council will determine its community's level of service around side road delays on Waimea Road (a local authority road).

The technical specialists estimated longevity of the main activities within the recommended programme was wholly dependent on the growth in traffic that actually occurs.

Difficulty to Implement

The 'time to implement' category of the sub-programmes within the recommended programme were reviewed and the technical specialists determined that some options within sub-programme 3 could take up to 10 years to implement (eg "Port at Motueka", "Inland Port/Barge", "Rocks Road Options 3 and 4"). On the topic of the Rocks Road options, reclaiming land from the coastal environment was identified as a significant consenting challenge with the bar usually set around the "need" to reclaim. It was decided that further work would be necessary in the IBC and DBC phases to demonstrate this need in order to address Investment Objectives 3 and 4. The same issue is relevant for permissions with the recommended programme and sub-programmes rated "high" in terms of how difficult it would be to gain permission.

The score related to "technical feasibility" was given a "medium" difficulty rating. The technical specialists acknowledged that the recommended programme and sub-programme options could be implemented using standard New Zealand engineering resources and practices. Technical feasibility is broken down further into individual specialisations below.

With regard to "affordability", the Technical Specialists noted that there was no money within the NLTF for any phases and money for the Investigation is currently coming directly from Government. Additionally, funding arrangements with NCC had not been discussed. Consequently, "affordability" was scored "high".

The technical specialists considered the ideas that the public and stakeholders might not want or accept the activities and options within the recommended programme and sub-programmes. All data from the public engagement exercise and the minutes of the workshops with the key stakeholders was reviewed. The comment most often submitted or heard during public engagement was "just do something." Therefore, the do-minimum scored "high." Overall, the technical specialists scored the recommended programme and sub-programmes medium.

Programme Risks

Critical risks around the implementation of activities and options within the recommended programme were identified:

- Organisational risk – The Transport Agency will need NCC's support for some of the activities and options within the recommended programme to enable implementation;
- Affordability – Detailed preferred option costs and assessments are required before they can be considered for inclusion in the National Land Transport Programme;
- Rocks Road consents – Obtaining permission for a Rocks Road option that requires reclamation into the coastal area presents significant challenges;

- New route consents – Obtaining permission for a new route, which includes designating it as a state highway or a local road presents significant challenges;
- Operational risks
 - physical operation of the network
 - the integration with and operation of additional PT services
 - policy and systems operational aspects (eg traffic signal optimisation, parking charges).

Some of the operational risks will fall outside of the Transport Agency's sphere of responsibility (eg changing land use or changing school hours) and will need to be integrated across the delivery of the programme with the wider land use and transport system.

The other key risks identified to date for the options within the recommended programme and the sub-programmes were broken down into the following risk areas:

- Accessibility
- Safety
- Economic
- Environmental – water resources, resource efficiency and ecology
- Environmental – noise and vibration
- Environmental – air quality
- Social outcomes
- Landscape / Urban Design
- Culture
- Built Heritage

The range of options within the recommended programme and the sub-programmes were scored using the seven-point range (as defined in Section 5.2.1 above) and are summarised in Table o9:

Table o9 – Seven Point Risk Scores of Recommended Programme and Sub-programmes

	Recommended Programme	Sub-Programme 3	Sub-Programme 7
Programme Description	RECOMMENDED PROGRAMME	Sub-programme P3: Network Optimisation plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options	Sub-programme P7: New route after P3 plus Rocks Road Option 2
Accessibility – to what extent does the programme affect accessibility for all modes of travel	+2 to +3	-1 to +1	+2 to +3
Safety – to what extent does the programme address safety of travellers for all modes of travel	-2 to +2	-2 to +2	+1 to +2
Economic – to what extent will the programme impact the Regional economy	-3 to +2	-2 to +2	-3 to +2
Environmental – to what extent will the programme affect water resources, resource efficiency and ecology	-2 to +1	-2 to +1	-2
Environmental – what will be the likely impact of the programme on noise and vibration levels if implemented	-1 to +3	-1 to +1	-1 to +3
Environmental – what will be the likely impact of the programme on air quality levels if implemented	-1 to +1	-1 to +1	-1 to +1
Social – what will be the likely impact of the programme on social outcomes if implemented	-3 to +2	-3 to +2	-3 to +2
Landscape / Urban design – what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	-2 to +1	-1 to 0	-2 to +1
Culture – what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	-2 to 0	-2 to 0	-2 to 0
Built Heritage – what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	-2 to 0	-2 to 0	-2 to 0

There was consensus that the range of scores for each risk category would narrow as further study and investigation was undertaken in subsequent phases of the business case process.

The key risks of the recommended programme are centred around:

- Safety
- Economy
- Social
- Landscape / urban design
- Culture
- Built Heritage

These risks will require management and mitigation in subsequent phases.

Individual commentary on the scoring of the sub-programmes and recommended programme is provided in below.

Accessibility

Clearways – Potential for negative impact on connectivity as the choice of movements is reduced. Side road delays increase over time.

New route – Increased connectivity to and from the existing arterials from a transfer of traffic to the new route. Decreased connectivity for St Vincent Street.

Overall positive benefit as the new route component will most likely be operating beyond 40 years.

Safety

Clearways – Potential for an increase in crashes. Moves traffic closer to footpaths, increasing perceived risk to pedestrians and actual risk of conflict with side movements from driveways and intersections.

New route – Reduction in traffic on the two arterials reduces side road and driveway conflict events for vehicle and active modes. There is likely to be an increased crash risk on St Vincent Street.

Overall positive benefit as the new route component will most likely be operating beyond 40 years.

Economy

Clearways – Travel time analysis shows that average journey times increase in PM peak with small average decrease in AM peak over time. Overall average times appear to be increasing in medium growth scenario.

New route – Modelling confirmed Objective 1 and 2 are met to 2055 for medium and high growth scenarios, hence high score for Benefit A and Investment Objectives 1 and 2. Tourism benefits are scored as high due to reduction in traffic on Rocks Road.

Large range of score due to options within programme. Plus 2 for tunnel and link road, -3 is for the option that has restrictions on HCVs getting to the port, assuming restrictions on all routes would be large negative economic impact.

Environmental – water resources, resource efficiency and ecology

Clearways – Better use of existing resources despite increased impact on water resources from additional traffic. Minor change to ecology.

New route – Increased traffic flow on St Vincent Street resulting in increased traffic emissions and impact on water resources. Potential stream culverting required. Moderate effect on ecology, which is mostly grassland.

Environmental – noise and vibration

Clearways – Minor impact to building occupants due to decreased set-back distances.

New route – Change in noise environment due to increased traffic and decreased set-back distances associated with new route. Less noise on the two other arterials.

Environmental – air quality

Clearways – Improves traffic flow and reduces emissions but brings roadside closer to receptors. Overall neutral effect on air quality.

New route – Increased traffic volumes will raise emissions in the confines of the valley. Lower traffic volumes on the state highway and Waimea Road will reduce emissions, although not Waimea Road to the same extent as the state highway due to proximity of valley floor. Range of score reflects need to undertake detailed analysis.

Social outcomes

Clearways – Moderate negative social effects for certain groups. Social outcomes continue to decline over time for clearways on the two existing routes.

New Route – Assuming no mitigation measures, there are substantial negative social effects for certain groups within the St Vincent Street area. Social outcomes associated with the two existing arterials improve at implementation of the new route and decline slowly over time.

Landscape / Urban design

Clearways – Minor negative effects on urban form.

New route – Provides long term stability with regard to transport network facilitating urban form and landscape design for the next 40 years. New route provides moderate negative impact to urban form and landscape. Overall a minor impact.

Culture and built heritage

Over the course of the investigation, attempts were made to meet with all local iwi face to face and to communicate via telephone and email. Some iwi responded and engaged with the project team, but not all. Those that have provided feedback have said the investigation needs to progress further in order for them to be able see more detail around options that are likely to progress. With regard to the Rocks Road options that require reclamation, iwi have signalled concern over the reclamation of foreshore areas.

The predominant area containing built heritage is Rocks Road between Bisley Avenue and Haven Road roundabout. There are four recorded archaeological sites and a number of listed historic places and areas. Rocks Road walking and cycling options are likely to have a moderate impact.

The score is primarily reflective of the risks to the built heritage, acknowledging that more work will be needed during the IBC phase to better understand cultural risks.

Value for money

This section details the results of the economic analysis undertaken for the main activities within the sub-programmes: the implementation of clearways from sub-programme 3 and the implementation of a new at-grade route from sub-programme 7.

Costs

Cost estimates for individual options within the recommended programme have been qualitatively estimated and are contained in Appendix G. The capital, maintenance, and operational costs for the recommended programme and sub-programmes have been determined using the minimum cost of the main programme activities and the maximum cost option within the programmes.

Costs for the Rocks Road walking and cycling options have been obtained from the Rocks Road Options Update Report, March 2016.

For sub-programme 3, the minimum investment cost is \$45M. It covers the implementation of clearways, the Rocks Road option 3 and options associated with intersection efficiencies on the network. The maximum cost is \$80M. It is determined by adding the most expensive option (Option 18 – inland port/barge) to the minimum cost. The operational and maintenance costs over 30 years were determined using the same methodology, resulting in a minimum cost of \$40M and a maximum cost of \$60M. The investment, operational and maintenance costs of the other options fall within this range.

For sub-programme 7, the minimum investment cost is \$100M. It is the minimum cost of an at-grade new route similar to the previous Southern Link Road (SLR), plus intersection improvements. The maximum cost is \$300M. It is option 13, a tunnel from Annesbrook to the Port. In this instance, the maximum option is not added to the minimum option because either the SLR or the tunnel would be built. The operational and maintenance costs over 30 years were determined using the same methodology, resulting in a minimum cost of \$35M and a maximum cost of \$300M. The investment, operational and maintenance costs of the other options fall within this range.

The investment cost of the recommended programme has a likely practical maximum investment cost of \$300M with a practical minimum investment cost similar to sub-programme 3 (\$45M). Similarly, operational and maintenance costs would have a likely practical maximum cost of \$60M with a \$40M minimum.

Benefits

With reference to the desired benefits from implementing the programme (Benefits A, B and C) and the Transport Agency's Economic Evaluation Manual, the main monetary benefits that are likely to occur from clearways or a new route are travel time and vehicle operating benefits. For the Rocks Road walking and cycling project, the main benefits are health and environmental benefits.

Clearways, Rocks Road walking and cycling improvements and a new route would be the most influential options on the desired benefits of the programme and should be used to calculate them.

The Net Present Value (NPV) for the benefits were determined as \$153M for travel time benefits and \$4M for benefits associated with vehicle operating costs using these assumptions:

- the results from the traffic modelling undertaken in Section 9.2
- a new route would be implemented in 2033
- a new route would take three years to construct
- the new route covers the subsequent 40 years
- the Rocks Road option would be implemented in 2021

Using the results from the traffic modelling undertaken in Section 9.2, the NPV of the travel time and vehicle operating cost benefits for clearways have been determined as: \$128M for travel time benefits and \$1.8M for benefits associated with vehicle operating costs. This is based on a base date of 2019 for the clearways and covers the subsequent 40 years. With regard to the Rocks Road walking and cycling project, Option 3 from the Rocks Road report was chosen for the analysis. Based on an implementation date of 2021, the NPV of the benefits over the 40 years (base date 2019) have been determined as \$51M for health, environment, travel time and storm resilience benefits.

Given this information, the base date for the recommended programme should be 2019 with the benefits from clearways contributing until 2033 (when the clearways would be removed), the benefits from a Rocks Road walking and cycling option contributing from 2021 and the benefits from the new route contributing from 2033 to 2059. The travel time, vehicle operating cost, health, environment, travel time and storm resilience NPV benefits for the recommend programme have been determined as: \$204M.

Benefit-cost ratio (BCR)

The calculation of the BCR followed the process defined in the Transport Agency's Economic Evaluation Manual (EEM).

In calculating sub-programme 3's BCR, clearways are assumed to remain for the 40-year period from 2019 and that Rocks Road walking and cycling option 3 would be implemented in 2021.

In calculating sub-programme 7's BCR, the base date is 2030 with no network improvements, apart from those identified in the do-minimum, prior to the implementation of the new route. The BCR is based on a 40-year calculation period from the base date of 2030.

For the recommended programme, the BCR is calculated based on a base date of 2019 when clearways are implemented followed by Rocks Road Options 3 in 2021 followed by a new route in 2033, with clearways being removed at that time. This provides 26 years of benefits from sub-programme 7 to the end of the calculation period (2059).

Each programme has a BCR range due to the range of options and their costs and benefits that may or may not be implemented. The estimated BCR range for the sub and recommended programmes are:

- zero to 2.9 for sub-programme 3;
- zero to 1.9 for sub-programme 7;
- zero to 2.2 for the recommended programme

Safety benefits have not been quantified as part of the PBC and are not calculated in the BCR ranges. These benefits will be determined during the IBC phase for specific options.

Sensitivity Testing

Sensitivity testing on two key criteria (costs and benefits for the recommended programme was undertaken against different growth scenarios and items from the uncertainty log.

Sensitivities of +/- 20% on costs and +/- 20% on benefits were assessed and calculated and are summarised in Table 10.

Table o10– Sensitivity Testing on the Recommended and Sub-programmes BCRs

Sensitivity	Recommended Programme versus Do Minimum	Sub-programme 3 versus Do Minimum	Sub-programme 7 versus Do Minimum
Base Case	0 to 2.2	0 to 2.9	0 to 1.9
+20% Costs	0 to 1.9	0 to 2.7	0 to 1.5
-20% Costs	0 to 2.8	0 to 3.2	0 to 2.3
+20% Benefits	0 to 2.7	0 to 3.1	0 to 2.2
-20% Benefits	0 to 1.8	0 to 2.6	0 to 1.5

Table o10 shows that the recommended programme and sub-programmes are sensitive to changes in benefits and costs. The BCR will be dependent on the options chosen and their benefits and costs. There is potential to improve the BCR through further analysis and investigation.

Nelson Southern Link Investigation - Draft Recommended Programme Evaluation		
Programme Name	Programme 1	Programme
Programme Description	P1: Do Minimum	RECOMMENDED PROGRAMME
	What is achievable if implemented	What is achievable if implemented
Benefits		
Benefit A (70%) - contribution of programme towards reduced journey times	low	High = 7 medium to high = 3 medium = 1 low to medium = 1 low = -
Benefit B (15%) - contribution of programme towards improved safety for walking and cycling modes of travel.	low	High = 5 medium to high = 3 medium = 1 low to medium = 1 low = -
Benefit C (15%) - contribution of programme towards improved tourism, active transport and recreational activities on Rocks Road.	low	High = 5 medium to high = 3 medium = 1 low to medium = 1 low = -
Dis-Benefits		Land taken for transport purposes
		On-road cycle ways removed. Reduced parking in peak periods.
		Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.
		Foreshore taken for transport purposes
		Amenity effects on adjacent properties, some reduction in local connectivity, reduction in amenity for existing Railway Reserve cycleway
Investment Objectives		
Investment Objective 1	Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Investment Objective 2	Volume to available capacity ratio better than 80% for the life of the Programme	Low
Investment Objective 3	Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Investment Objective 4	Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson on Rocks Road	Low
Cost	Investment cost (Range \$M)	\$0 - \$20M
	Maintenance and Operational costs if significant (Range \$M/30 yr)	\$361 - \$707M
Time to Implement	Minimum time to implement from completion of business case to completion of projects (Range)	1-5 yrs
Difficulty to Implement (low, medium, high)	Technical Feasibility - difficulty to implement the programme	low
	Permissions (eg consenting, property acquisition, school / retailing / port hours) - difficulty to get the required permissions to implement the programme	low
	Financial affordability - difficulty to fund the programme under traditional methods	low
	Public non-acceptance of programme (low, low-med, medium, med-high, high)	med-high to high
	Stakeholder non-acceptance of programme (low, low-med, medium, med-high, high)	medium-high
	Risks (Impacts using seven point scale)	-3 = major impact -2 = moderate impact -1 = minor impact 0 = no impact or benefit
	Accessibility - to what extent does the programme affect accessibility for all modes of travel	0
	Safety - to what extent does the programme address safety of travellers for all modes of travel	0
	Economic - to what extent will the programme impact the Regional economy	0
	Environmental - to what extent will the programme affect water resources, resource efficiency and ecology	0
	Environmental - what will be the likely impact of the programme on noise and vibration levels if implemented	0
	Environmental - what will be the likely impact of the programme on air quality levels if implemented	0
	Social - what will be the likely impact of the programme on social outcomes if implemented	0
	Landscape / Urban design - what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	0
	Culture - what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	0
	Built Heritage - what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	0
Dependencies		Requires Local Authority to support to enable implementation
		Traffic resolutions required
		Behavioural changes need to occur
		Funding (Affordability)
		Need to understand imminent changes to air quality standards
		Rocks Road options 3 and 4 dependent on satisfying the Coastal Policy Statement and the 'need' to widen into the coastal area
		Rocks Road options dependent on location of State Highway
		Dependent on there being width available for clearways without the need for more than minor widening
Indicative BCR	low	low
Indicative Programme Profile:	<insert profile>	MHL
Overall Assessment:		- the recommended programme achieves approximately three-quarters of Benefits A & C and half of Benefit B; - Sub-programme 3 achieves approximately half of Benefits A and C and one-third of Benefit B; - Sub-programme 7 achieves approximately four-fifths of Benefits A and C and two-thirds of Benefit B. • In terms of the Investment Objectives: - the recommended programme achieves approximately four-fifths of Investment Objectives 1 and 2 and half of Investment Objectives 3 and 4; - Sub-programme 3 achieves approximately half of Investment Objectives 1, 2 and 4 and one-third of Investment Objective 3; - Sub-programme 7 achieves approximately nine-tenths of Investment Objectives 1 and 2 and half of Investment Objectives 3 and 4.
Recommendation:		At the start of the IBC, identify options related to IOs 3 and 4 that achieve a "high" rating and many those options to the Network Optimisation (including clearways) activities and a new route in the longer term

Nelson Southern Link Investigation - Draft Recommended Programme Evaluation - sub programmes		
Programme Name	Sub-Programme 3	Sub-Programme 7
Programme Description	Sub-programme P3: Network Optimisation plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options	Sub-programme P7: New route after P3 plus Rocks Road Option 2
	What is achievable if implemented	What is achievable if implemented
Benefits		
Benefit A (70%) - contribution of programme towards reduced journey times	High = 8 medium to high = 1 medium = 5 low to medium = 2 low = 2	High = 8 medium to high = 1 medium = 3 low to medium = 1 low = -
Benefit B (15%) - contribution of programme towards improved safety for walking and cycling modes of travel.	low-medium	High = 1 medium to high = 2 medium = 3 low to medium = 2 low = 2
Benefit C (15%) - contribution of programme towards improved tourism, active transport and recreational activities on Rocks Road.	medium	High = 5 medium to high = 1 medium = 1 low to medium = 3 low = 1
Dis-Benefits		On-road cycleways removed. Reduced parking in peak periods.
		Land taken for transport purposes
		Moderate increase in the cost of travel from delays on existing transport network during construction. Moderate nuisance impact during construction.
		Foreshore taken for transport purposes
		Amenity effects on adjacent properties, some reduction in local connectivity, reduction in amenity for existing Railway Reserve cycleway
Investment Objectives		
Investment Objective 1	Travel times on the two arterials no worse than 2015 for the life of the Programme	Low
Investment Objective 2	Volume to available capacity ratio better than 80% for the life of the Programme	Low
Investment Objective 3	Zero walking and cycling crashes; Continuous decline in DSI's for the life of the programme	Low
Investment Objective 4	Double walking and cycling numbers per day within 5 years of implementing an option and thereafter the growth rate is greater than elsewhere in Nelson on Rocks Road	Medium
Cost	Investment cost (Range \$M)	\$45 - \$80M
	Maintenance and Operational costs if significant (Range \$M/30 yr)	\$35M - \$100M
Time to Implement	Minimum time to implement from completion of business case to completion of projects (Range)	1-10 yrs
Difficulty to Implement	Technical Feasibility - difficulty to implement the programme	medium
	Permissions (eg consenting, property acquisition, school / retailing / port hours) - difficulty to get the required permissions to implement the programme	medium-high
	Financial affordability - difficulty to fund the programme under traditional methods	high
	Public non-acceptance of programme (low, low-med, medium, med-high, high)	medium
	Stakeholder non-acceptance of programme (low, low-med, medium, med-high, high)	medium
	Risks (Impacts using seven point scale)	-3 = major impact -2 = moderate impact -1 = minor impact 0 = no impact or benefit
	Accessibility - to what extent does the programme affect accessibility for all modes of travel	-1 to +1
	Safety - to what extent does the programme address safety of travellers for all modes of travel	-2 to +2
	Economic - to what extent will the programme impact the Regional economy	-2 to +2
	Environmental - to what extent will the programme affect water resources, resource efficiency and ecology	-2 to +1
	Environmental - what will be the likely impact of the programme on noise and vibration levels if implemented	-1 to +1
	Environmental - what will be the likely impact of the programme on air quality levels if implemented	-1 to +1
	Social - what will be the likely impact of the programme on social outcomes if implemented	-3 to +2
	Landscape / Urban design - what will be the likely impact of the programme on urban character, landscape character and visual amenity if implemented	-1 to 0
	Culture - what will be the likely impact of the programme on areas of significance to Maori and known archaeological sites if implemented	-2 to 0
	Built Heritage - what will be the likely impact of the programme on listed or other important heritage buildings/structures if implemented	-2 to 0
Dependencies		Requires Local Authority to support to enable implementation
		Traffic resolutions required
		Behavioural changes need to occur
		Funding (Affordability)
		Need to understand imminent changes to air quality standards
		Rocks Road options 3 and 4 dependent on satisfying the Coastal Policy Statement and the 'need' to widen into the coastal area
		Rocks Road options dependent on location of State Highway
		Dependent on there being width available for clearways without the need for more than minor widening
Indicative BCR	low	low
Indicative Programme Profile:	MHL	MML
Overall Assessment:		
Recommendation:		

Nelson Southern Link Investigation - Recommended Programme Long List of Options				Investor: NZTA			
Options highlighted in yellow do not progress as part of the recommended programme				Facilitator: Graeme Delaney			
				Initial Workshop: 30/04/2016			
				Version No.: 1			
				Last Modified by: Graeme Delaney 20/09/2016			
				RECOMMENDED PROGRAMME			
Category	Strategic Option	Intervention option No.	Intervention option	P1: Do Minimum	RECOMMENDED PROGRAMME	Sub-programme P3: Network Optimisation plus Rocks Road Options 3 and 4 plus non-mutually exclusive longer timeframe options	Sub-programme P7: New route after P3 plus Rocks Road Option 2
Do minimum	Do minimum		Options from Annual Plan	√	√	√	√
		14	Network operating plan	√	√	√	√
Rooding	Widen existing infrastructure route	1	widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for road traffic				
		12	Ring road system (3 Lining) 3 lanes wide - same as clearways see options 33 and 4 or same as widening see option 1				
		33	Peak hour clearways to create a total of 3 lanes in-bound to Nelson in the morning and 3 lanes out-bound in the evening on the two arterials.		√	√	
	New routes	5	New arterial road (limited access)		√		√
		5a	New arterial road (local road)		√		√
		13	Tunnel option - Annesbrook to Port		√		√
		17	Tunnel option - Annesbrook to Emanu		√		√
		47	Dedicated transit/freight route on old rail reserve		√		√
	Freight Management	18	Inland Port/Barge		√	√	
		24	Port operations - hours of operation		√	√	
		41	Increase carrying capacity of trucks		√	√	
	Priority Lanes	40	One way morning and afternoon flow. Waimea, SH6, St Vincent Vanguard as options		√	√	
		44	Priority lanes (freight and HOV) through the provision of an additional lane				
	Network optimisation	Access management	11	Work at better integration of travel modes - walking/cycling/PT/+ PV's on the arterials		√	√
15 & 42			Close side road accesses (or reduce) to left in left out only on the arterials		√	√	√ - arterials and new route
Intersection Improvements		31	Upgrading key intersections on the arterials to facilitate through movement		√	√	√ - arterials and new route
		32	Upgrading key intersections on the arterials to facilitate accessibility onto the arterials		√	√	√ - arterials and new route
Public Transport	Dedicated bus lanes	3	widening of the existing road infrastructure on the two main arterials by a minimum of one lane- for buses only to utilise additional space				
		48	Dedicated busway on old rail reserve				
	Share road	20	Park and Ride				
		27 & 28	Additional bus services		√	√	√
Active Transport	Walking/Cycling	10	More shared pathways and better connections on the two arterials		√	√	
		16	Pedestrian overpasses Tahunanui/Waimea Road to address barriers to east / west travel for walking and cycling and reduce road travel delays from peds lights and xings		√	√	
		34	Rocks Road Do Minimum- Refurbishment Work	included	√	√	
		35	Rocks Rd Option 1 -Low Cost safety Improvements		√	√	
		36	Rocks Rd Option 2 -Low cost safety enhancements with reduced lane widths following possible revocation of Rocks Rd state highway status		√		√ - only if RR Options 3 and 4 not implemented
		37	Rocks Rd Option 3 On-road cycle lanes, shared path and reduced parking		√	√	
		38	Rocks Rd Option 4 On-road cycle lanes and Shared path		√	√	
		43	Prioritise cycle traffic (separate traffic lights)		√	√	
Traffic Demand Management	Parking supply	4	Removal of restrictions (eg parking, loading zones, kerb build-outs etc) on the existing two arterials which is assumed to create the required space for an additional lane for road traffic		√	√	
		7	Impose parking restrictions at peak periods to encourage higher vehicle occupancy rates		√	√	
	Road pricing	19	Congestion charge		√	√	
	Restrict HCVs	6	Impose restrictions on the arterials to reduce the volume of traffic		√	√	
Land Use / Other	Land Use	9	Change land use to encourage less travel by private vehicle		√	√	
		21	Port at Motueka		√		√
	Behavioural Change	8	Use advertising campaigns to persuade people to reduce the number of journeys or change their travel mode to public transport or walking or cycling.		√	√	
		22	Better cycle storage areas in city / and showers		√	√	
		23	Electric vehicle subsidy/charging ports		√	√	
		25	Adjust retailing hours 1000-1800		√	√	
26	Change school start and finish times		√	√			