Nelson Southern Link Investigation

Rachel Pinn, Nathan Harper, Graeme Doherty

21 March 2016

Programme Business Case – Draft for Public Engagement

Purpose

This is Part A of the draft PBC and is being published to help inform public feedback. It is noted that Parts B and C are still underdevelopment.
TABLE OF CONTENTS

Nelson Southern Link Investigation ......................................................................................................................... 1

Table of Contents .......................................................................................................................................................... 2
Supporting documents .................................................................................................................................................. 4

PART A – THE STRATEGIC CASE .................................................................................................................................. 5

1.1 Background .......................................................................................................................................................... 5
1.2 Focus of the Nelson arterial PBC .......................................................................................................................... 7
   1.2.1 Programme Business Case .................................................................................................................................. 7
2.1 Background .......................................................................................................................................................... 8
   2.1.1 The Southern Link ........................................................................................................................................... 8
   2.1.2 The Nelson North to Brightwater Strategic Study, April 2008 ................................................................. 8
   2.1.3 The Arterial Traffic Study, June 2011 ........................................................................................................... 8
   2.1.4 SH6 Rocks Road Walk / Cycle Facility Options Report, February 2016 ................................................. 9
2.2 Geographic and environmental context ............................................................................................................... 9
2.3 Social context ...................................................................................................................................................... 10
2.4 Economic context ............................................................................................................................................... 10
2.5 Transport context ............................................................................................................................................... 11
   2.5.1 Historical Traffic Growth .................................................................................................................................. 11
   2.5.2 Freight Volumes ............................................................................................................................................ 11
   2.5.3 Walking and Cycling .................................................................................................................................... 12
3.1 Key Organisations .............................................................................................................................................. 14
   3.1.1 NZ Transport Agency ..................................................................................................................................... 14
   3.1.2 Key Organisations ........................................................................................................................................ 14
3.2 Key stakeholders .................................................................................................................................................. 15
3.3 Public ................................................................................................................................................................. 15
4.1 Defining the problem .......................................................................................................................................... 16
   4.1.1 Problem Refinement .................................................................................................................................... 16
4.2 The benefits of Investment ................................................................................................................................ 16
   4.2.1 Benefit Refinement .................................................................................................................................... 17
4.3 Alignment to existing strategies/organisational goals .......................................................................................... 17
   4.3.1 NZ Transport Agency ..................................................................................................................................... 17
   4.3.2 Relevant Strategies and Plans ........................................................................................................................ 17
4.4 Issues and constraints .......................................................................................................................................... 19
4.5 Problem 1 (70%): The form and Function OF Nelson’s two arterial corridors results in congestion and delays. .... 22
   4.5.1 The Evidence ................................................................................................................................................. 22
   4.5.2 Implications of the Evidence .......................................................................................................................... 26
4.6 Problem 2 (30%): Substandard infrastructure on Rocks Road, which is part of the Coastal Path, is constraining the growth in walking and cycling activities. ................................................................. 27
APPENDICES

Appendix A  Investment Logic Map from the Strategic Case
Appendix B  Benefit Map from the Strategic Case
Appendix C  Workshop 1A Minutes and Handouts
Appendix D  Workshop 1B Minutes
Appendix E  Recent Bluetooth Data
SUPPORTING DOCUMENTS


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, February 2016

Bluetooth Data provided by Araflow Ltd

Arterial Traffic Study, June 2011

North Nelson to Brightwater Strategic Study, April 2008
PART A – THE STRATEGIC CASE

1 INTRODUCTION

The Nelson Southern Link Investigation forms part of the Government’s Accelerated Regional Roading Package for the State Highway\(^1\), and covers the area between Whakatu Drive and Queen Elizabeth II (QEII) Drive.

1.1 BACKGROUND

The Project study area is between SH6 Annesbrook Roundabout to SH6 Haven Rd Roundabout, as illustrated in Figure 1.

![Study Area](image)

Figure 1: Location of Study Area

State Highway 6 is classified as a Regional State Highway under the One Network Road Classification\(^2\) because:

- The average daily traffic volume is greater than 15,000 vehicles per day in an urban area\(^3\);
- Freight volume is greater than 400 heavy commercial vehicles per day\(^4\);
- It services population centres greater than 30,000; and
- There are more than 20,000 international travellers on the route annually\(^5\).

---

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
State Highway 6 travels 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.

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

Traffic volumes on State Highway 6 (Rocks Road) were approximately 22,350\(^6\) with 6% Heavy Commercial Vehicles (HCV) in 2014.


\(^6\) NZTA Site 00600118 [https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf](https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf)
1.2 FOCUS OF THE NELSON ARTERIAL PBC

The Nelson Southern Link Investigation (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 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 effectively addresses the problems on the corridor and delivers on the transport benefits sought.

During the PBC phase, The NZ Transport Agency seeks:

- To provide an evidence based assessment of the problems identified in the Strategic Case affecting transport within the corridors, together with the benefits of solving them;
- To define clear and achievable SMART? 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 as the remaining section is 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 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).” 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.”

In 2004, the Environment Court declined the Notice of Requirement due to 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.

Figure 3: Extract from the Nelson RM Plan (original "Southern Link" alignment dashed blue)

2.1.2 The Nelson North to Brightwater Strategic Study, April 2008

The purpose of this combined Nelson City Council, Tasman District Council and NZ 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 Nelson City Council and the NZ Transport Agency to “determine the best transport configuration between Annesbrook and the QEII / Haven Road roundabouts that would improve the city as a whole”. The study determined that no options would qualify for National Land Transport

---

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
Fund (NLTF) funding, and that the existing arterial transport configuration be retained. The Nelson City Council (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, February 2016

The SH6 Rocks Road walk / cycle investigation commenced in 2014. However, a preferred option has yet to be recommended. The wider Nelson Southern Link Investigation (NSLI) programme business case will inform how these options are progressed.

2.2 GEOGRAPHIC AND ENVIRONMENTAL CONTEXT

Nelson’s central city area is bounded by the sea and low foothills as shown in Figure 3 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 are currently upgrading the Waimea Road culverts).

![Figure 3: Nelson Topography](image)

Much of Nelson’s coastal communities including the Central City area, Tahunanui and Airport will be subject to the effects of sea level change. 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 Nelson City Council 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 population\(^\text{10}\). 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 GDP growth\(^\text{10}\), the Nelson / Tasman region was the second fastest growing region in 2014 in New Zealand, growing by 4.3%. This is only slightly behind Canterbury on 4.5% and well above the national rate of 2.5%.

For 2014, growth was notable in construction (13.3%) and retail (10.3%), plus manufacturing (5.0%). 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 CBD and adjacent to the state highway and arterial roads.

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 increased traffic generation around Nelson’s CBD, Port and Airport.

Looking into the future, the Regional Economic Development Strategy 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.

2.5 TRANSPORT CONTEXT

As summarised in Section 1.1, SH6 is classed as a Regional route. Daily traffic volumes on State Highway 6 (Rocks Road) in 2014 were approximately 22,300\(^{11}\) with 6% Heavy Commercial Vehicles (HCV).

2.5.1 Historical Traffic Growth

Using data from NZTA Site 00600118 and NCC count stations, the combined screenline volumes for SH6 and Waimea Road route\(^{12}\) through the study area are shown in Figure 5. Counts for SH6 for 2015 have yet to be published.

Figure 5 indicates that traffic volumes on SH6 have remained relatively constant over the last 5 years, and on Waimea Road have declined slightly since 2011 (although increasing in 2014).

![Waimea / Rocks Road Screenline Traffic Volumes](image)

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

2.5.2 Freight Volumes

Port Nelson freight tonnages are provided in Figure 6\(^{13}\) for import and export respectively. Freight growth has remained stable of the past 10 years.

---

\(^{11}\) NZTA Site 00600118 [https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.pdf](https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2010-2014.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, 2006–2014

2.5.3 Walking and Cycling

Nelson City Council 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, although it has not increased to the same extent as other key routes having higher standard facilities, such as the Stoke railway reserve or the Bishopdale railway reserve routes. Overall there is 3.4% growth per annum for the 15 years of data.

Figure 7: Nelson’s Historic Cycle Growth in Nelson

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

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

Figure 8: Nelson’s Coastal Route (left) and the Great Taste Trail (right)
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 NZ Transport Agency

The NZ Transport Agency is responsible for managing, operating, planning and improving state highways. This is fundamentally 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 a key organisation in the development of this business case, the Transport Agency is fundamentally concerned with the ongoing safe and efficient operation of SH6. Investigation is needed to help solve the problems identified in the Strategic Case, and fully realise desired transport benefits.

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 and Focus Areas

<table>
<thead>
<tr>
<th>Key Organisations</th>
<th>Focus Area</th>
</tr>
</thead>
</table>
| Nelson City Council (NCC), represented by the Mayor (who is also a Regional Transport Committee member), Works and Infrastructure Committee Chair and Regional Transport Committee Chair | • 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 |
| Tasman District Council represented by Engineering Services Chair and Regional Transport Committee Chair | • Transport linkages between Tasman District, Nelson’s central business district, and Port Nelson are vital for the economic growth and productivity of the Top of the South region  
• 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. | • Promoting, facilitating and protecting the interests of motor vehicle owners |
3.2 KEY STAKEHOLDERS

Of the key stakeholders external to the Transport Agency (and their key organisations), whose viewpoints have been taken into account during the development of the PBC (to date) are shown in Table 2.

Table 2: Key Stakeholders

<table>
<thead>
<tr>
<th>Key Stakeholders</th>
<th>Focus Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Nelson Bays</td>
<td>A Public Transport User Representative</td>
</tr>
<tr>
<td>Nelson City Council Representative from the Transport and Roading Division</td>
<td></td>
</tr>
<tr>
<td>Walk Nelson Tasman</td>
<td></td>
</tr>
<tr>
<td>Port Nelson Ltd</td>
<td></td>
</tr>
<tr>
<td>Nelson City Council Representative from the Planning and Regulatory Committee</td>
<td></td>
</tr>
</tbody>
</table>

Representatives of the Key Stakeholders attended the Programme Business Case Workshops in December 2015.

3.3 PUBLIC

The Public provided feedback through the Public Engagement Programme run between 23 March and 24 April. [To be updated following completion of the Public Engagement Programme.]
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.

4.1.1 Problem Refinement

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

**Problem 1 (70%)**: The form and function\(^{15}\) 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 investment objectives is explored in Sections 4.5, 4.6 and 4.7. The Investment Logic Map from the Strategic Case is attached as Appendix A.

4.2 THE BENEFITS OF INVESTMENT

The potential benefits of successfully investing to address the problems were identified as part of a second facilitated investment logic mapping session held on 7 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 recreation 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 NZ 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 direction\(^\text{16}\) which is:

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

- *Economic growth and productivity;*

\(^{16}\) Accelerated Regional Roading Package, Ministry of Transport, July 2014
• Road safety; and
• Value for money."

The Government Policy Statement\textsuperscript{17} 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 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>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrate one effective and resilient network for customers</td>
<td>Integrate land uses and transport networks to shape demand at national, regional and local levels.</td>
</tr>
<tr>
<td></td>
<td>Integrate national and local transport networks to support strategic connections and travel choices.</td>
</tr>
<tr>
<td></td>
<td>Improve freight supply chain efficiency.</td>
</tr>
<tr>
<td>Deliver efficient, safe and responsible highway solutions for customers</td>
<td>Greater resilience of the state highway network.</td>
</tr>
<tr>
<td></td>
<td>Deliver consistent levels of customer service that meet current expectations and anticipate future demand.</td>
</tr>
<tr>
<td>Maximise effective, efficient and strategic returns for New Zealand</td>
<td>Provide significant transport infrastructure.</td>
</tr>
<tr>
<td></td>
<td>Align investment to agreed national, regional and local outcomes and improve value for money in all we invest in and deliver.</td>
</tr>
</tbody>
</table>

The Transport Agency’s role includes promoting integrated land use and multi-modal transport planning with resource planners and local government, for an increasingly optimised transport network that runs well and

\textsuperscript{17} Government Policy Statement on Land Transport 2015/16–2024/25
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 5 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**

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Organisational Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Transport Agency</td>
<td>Statement of Intent (draft), draft South Island Freight Plan, National Business Cases, National Infrastructure Plan, National Land Transport Plan</td>
</tr>
<tr>
<td>Nelson City Council (Regulatory Authority Objectives)</td>
<td>Nelson Resource Management Policy Statement and Plan (under review as the “Nelson Plan”)</td>
</tr>
<tr>
<td>Nelson City Council (Regional Transport Objectives)</td>
<td>Transportation Asset Management Plan, Regional Land Transport Plan</td>
</tr>
</tbody>
</table>

### 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 Transport Agency cannot make decisions about Health funding or for example, the built–up areas of Nelson will have implications on the ability to build a particular option.

The Uncertainty Log is shown in Table 5 below. Table 6 is a supporting table for Table 5.
### Table 5: Uncertainty Log

<table>
<thead>
<tr>
<th>Factor</th>
<th>Probability</th>
<th>Impact on programme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factors affecting demand</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land use changes occur at a different rate than currently envisaged</td>
<td>More than likely</td>
<td>High</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job numbers increase at a faster rate than currently envisaged</td>
<td>Reasonably foreseeable</td>
<td>High</td>
</tr>
<tr>
<td>A faster rate may mean a different treatment is required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor affecting supply</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road space unavailable for some options</td>
<td>More than likely</td>
<td>High</td>
</tr>
<tr>
<td>Using the existing transport corridor and optimising the available width has the potential to limit the ability to implement certain options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richmond becomes a significant Regional hub and travel patterns alter.</td>
<td>Hypothetical</td>
<td>Low - medium</td>
</tr>
<tr>
<td><strong>Factor affecting cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher travel costs to individuals</td>
<td>Reasonably foreseeable</td>
<td>Medium</td>
</tr>
<tr>
<td>Discretionary journeys likely to decrease. Potential for higher vehicle occupancy rates. Goods and services traffic volumes unlikely to change but costs transferred to recipient and likely to affect demand.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheaper travel costs to individuals through a change in propulsion system and / or technology</td>
<td>More than likely</td>
<td>High</td>
</tr>
<tr>
<td>Travel patterns for non-working population likely to increase as more funds are available to spend on travel. Travel at weekends likely to increase as overall cost of recreation results in an increased number of trips associated with recreational activities that require travel to reach those activities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Constraints**

- The statutory powers of an authority to implement change;
- The funding levels that can realistically be obtained;
- Topographical constraints that may make implementation risky and / or expensive;
- The existing as-built and natural environments and the impacts upon them, may constrain the ability to implement particular options;

**Table 6: Probability Definitions**

<table>
<thead>
<tr>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near certain: The outcome will happen or there is a high probability that it will happen</td>
</tr>
<tr>
<td>More than likely: The outcome is likely to happen but there is some uncertainty</td>
</tr>
<tr>
<td>Reasonably foreseeable: The outcome may happen, but there is significant uncertainty</td>
</tr>
<tr>
<td>Hypothetical: There is considerable uncertainty whether the outcome will ever happen</td>
</tr>
</tbody>
</table>
4.5 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 as 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 and independently validated. 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. Additionally, the model can indicate what those changes will be if using different growth scenarios. The model has helped to obtain a better understanding of where transport problems on the transport network are likely to occur and when they will occur.

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.
The Tracks Model projected the do minimum (2013 model) scenario into the future using models developed for 2023 and 2033 with land use input assumptions\textsuperscript{18} agreed with NCC and Tasman District Council (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 5 above) to different land use growth forecasts and how these may affect the model outputs. The 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 Statistics New Zealand (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 as a proportion of the population. The revised medium growth scenario aligns with SNZ predictions and

\textsuperscript{18} Nelson Southern Link Investigation: Future Forecast Report March 2016
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, with Table 7 summarising the range of peak travel times on SH6 and Waimea Road between Annesbrook and Haven Road roundabouts.

![Figure 10 – Comparison of Daily VKT and Model Area Population](image-url)
### Table 7: Summary of Sensitivity Tests Travel Time Forecasts\(^\text{19}\)

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Units</th>
<th>2013</th>
<th>Change from 2013</th>
<th>2023</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>Revised</td>
<td>High</td>
</tr>
<tr>
<td>Annesbrook to Nelson via Rocks (AM Peak)</td>
<td>mins</td>
<td>7.9</td>
<td>+ 0.2</td>
<td>+ 0.3</td>
<td>+ 0.3</td>
</tr>
<tr>
<td>Annesbrook to Nelson via Waimea (AM Peak)</td>
<td>mins</td>
<td>8.5</td>
<td>+ 0.6</td>
<td>+ 0.7</td>
<td>+ 1.0</td>
</tr>
<tr>
<td>Nelson to Annesbrook via Rocks (PM Peak)</td>
<td>mins</td>
<td>8.2</td>
<td>+ 0.2</td>
<td>+ 0.5</td>
<td>+ 0.8</td>
</tr>
<tr>
<td>Nelson to Annesbrook via Waimea (PM Peak)</td>
<td>mins</td>
<td>8.9</td>
<td>+ 0.8</td>
<td>+ 1.3</td>
<td>+ 1.6</td>
</tr>
</tbody>
</table>

\(^{19}\) The travel times in Table 7 are average values and will require further verification and refinement through micro-simulation modelling during the Indicative Business Case phase.
The primary outcome from the traffic modelling undertaken to date, 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.

Current Congestion

A Transport Agency definition\(^{20}\) 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".

Bluetooth data presented in the Strategic Case gave information on traffic speeds and travel times up to June 2015. Bluetooth data that includes the second half of 2015 is provided in Appendix E.

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 updated Bluetooth data for both arterial routes, as shown in Appendix E, concurs with the evidence from the Strategic Case.

The evidence for congestion can be summarised as:

- Peak hour volume to capacity ratios on Nelson’s two arterials range from 83% to 95%, confirming current traffic congestion in the peak hours on Nelson’s two arterial routes;
- Average 15 minute travel time delays in the peak periods on SH6 range between 2 and 4.5 minutes, and between 2 and 12 minutes on Waimea Road;
- Uncongested daytime travel speeds on SH6 are approximately 40km/hr, reducing to as low as 25km/hr in the southbound peak; and
- Uncongested daytime travel speeds on Waimea Road are approximately 50km/hr, reducing to as low as 18km/hr in the northbound peak.

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 get worse than at present under a range of 2023 and 2033 growth scenarios.

\(^{20}\) Refer Glossary, NZTA Planning and Investment Knowledge Base
4.6  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

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 approximately half the overall growth for Nelson.

**Substandard Infrastructure**

PBC Workshop attendees used their local knowledge of the section of SH6 known as Rocks Road and unanimously agreed that the wording of Problem 2 in the Strategic Case should be re-written to put "substandard infrastructure" at the forefront of the problem statement.

**Infrastructure Quality**

An assessment of the pedestrian and cycling infrastructure along Rocks Rd was undertaken as part of the Rocks Rd walk / cycle path investigation\(^{21}\). When compared to the NCC Land Development Manual minimum standards, this investigation found that:

- 60% of the seaward footpath is below the desired 2m width\(^{22}\); 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 past parked cars.

A Transport Agency / NCC study is currently underway to consider opportunities to improve the pedestrian and cycle facilities on State Highway 6 Rocks Road. This study will be completed following completion of the NSLI.

---

\(^{21}\) Rocks Road Cycle and Walking Project Investigation Report, July 2014

\(^{22}\) NCC Land Development Manual minimum standard
4.6.2 Implications of the evidence

- Compared to the historical 15 year average, growth in walking and cycling numbers on Rocks Road appears lower than elsewhere in Nelson;
- Walking and cycling infrastructure on Rocks Road does not comply with current NCC standards;
- Substandard infrastructure is considered 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 Investment Objectives and their targets to be used to assess programmes and options developed during the PBC phase.

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: 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: 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 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.

**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; and Continuous decline in 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, double walking and cycling numbers per day and thereafter the growth rate is greater than elsewhere in Nelson.
Part B is under development, and won’t be completed until the PBC development processes are completed. However, the initial sections of Part B related to identification of approaches and option identification are provided here to aid public engagement.

5 OPTION DEVELOPMENT

5.1 OPTION GENERATION

During the second PBC Workshop held on 18 December 2015, workshop attendees identified options under the following three categories:

A. Options to improve capacity / quality.
B. Options to improve efficiency.
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 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.

The following options were grouped into three ‘overarching’ options with a focus on reducing the volume of private travel:

Option – Remove traffic signage and road lanes
Option – Pedestrianised inner city streets
Option – 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.
Option – Living arterials – trees, shade, seats
Option – Survey to identify barriers for uptake/use of P/T / cycling.
Option – Publicise / preach benefits of cycling / walking –
Option – Reduce unnecessary travel (work on-line – shop on-line, etc)
Option – Combine journeys
Option – Showers and secure cycle parking in workplace
Option – Flexible start/finish times for school businesses employment
Option – Ban and breath test cyclists
Option – Park and Ride – Ambassador
Option – Remove parking
Option – Re-distribute parking
Option – Reduce parking capacity in CBD and increase parking fees
Option – Remove parking from around schools
Option – Parking management
Option – Create disincentives
Option – Invest in promoting options (increase attractiveness – make cycling sexy)
Option – Preserve ped–vehicle balance in CBD (don’t flood CBD and periphery with additional vehicles)
Option – Reduce cross traffic on both arterials
Option – More walking and cycling uptake
Option – A regional strategic highway SH6

The three grouped options are identified as:
• imposing restrictions on the existing roading network;
• imposing parking restrictions;
• using advertising campaigns.

The following options were grouped into one option with a focus “Change to Land Use”:

Option – Apartment living in CBD/commercial retail centres
Option – Focus on land use and implications
• walk, live, play
• density of housing
• economic development nos
Option – Tahuna intersection relocating shopping precinct
Option – Reduce urban sprawl
Option – Inner city living
Option – Density of housing
Option – Clarity around economic development areas

The following option was grouped into “Provision of High Occupancy Vehicles (HOV) lanes”:
Option – Incentivise higher occupancy vehicle use

The following options were grouped under separate option headings described further below:

Option – Bus lanes
Option – PT options – rail and/or bus
Option – Free PT
Option – Prioritise PT
Option – Better PT – bus lane
Option – Trams
Option – Expand P/T network into TDC
Option – PT upgrades + promotion – bus and/or rail and park and ride clearways for PT lanes and car pool
Option – Bus – express – dedicated route – possibility through railway reserve
Option – Bus lane / dual occupancy lane
Option – Rail link
Option – Monorail
Option – Rail shunt/shuttle
Option – Improved PT – times/frequency
Option – Priority PT and freight infrastructure and HOV
Option – Free PT 3 year trial
Option – Light rail to city
Option – Better Public Transport (Fastlane for trucks/buses/multiple occupancy cars)
Option – Driverless cars
Option – On-demand PT services (uber etc)
Option – School educational and travel plans involving parental incentives

The above options were grouped into the following options.

- 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.

A large number of options provided at the workshop were brief in their description. Each of the remaining options were then reviewed and provided with a description to understand how that option would be 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 description became “Widening sidewalks occurs by removing parking and other restrictions along the arterials which is assumed to create the required space.”

The option descriptions were added so that when further assessment by technical specialists is undertaken, this 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.

A total of 48 options were left after the filtering and sifting exercise.

6 PROGRAMME DEVELOPMENT

In January 2016, during a project team workshop the options were grouped into programmes. At that workshop it was agreed that options that included rail or light rail were discontinued from further analysis, as it was assumed that the Nelson area does not have the size of population to support a passenger, freight or light rail service. It was also disregarded due to its high funding and potential operational difficulties.

The total number of individual options for grouping into programmes was 45.
6.1 PUBLIC ENGAGEMENT

After a review of the alternative programmes and individual option descriptions, three programmes were developed (referred to as ‘approaches’ in the public engagement material’) for public engagement purposes.

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

- the revised Problem Statements and Investment Benefits (from Section 4.2.1 above);
- the agreed 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 RMA and LTMA since the last time full public engagement occurred in 2005;
- Strategic documents and Plans released by Nelson City Council, Tasman District Council and the Transport Agency since the Arterial Traffic Study in 2011;
- The timeframe for this study to find a solution to the problems.

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.

[Note for Public Engagement purposes only. The process by which the final options will be arranged into a programme will be undertaken after consideration of the feedback from the public engagement exercise, together with analyses and assessment of the options and approaches.]
Part C is under development, and won’t be completed until the PBC development processes are completed.
APPENDIX A - INVESTMENT LOGIC MAP FROM THE STRATEGIC CASE

NZTA

Determining the Central Transport Corridor Through Nelson (SH6 Annesbrook Roundabout to Haven Rd Roundabout)

INVESTMENT LOGIC MAP
Programme

PROBLEM

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.

BENEFIT

Reduction in journey times (35%)
KP1: Decrease peak hour travel times
KP2: Increase peak hour capacity

Contribute to Nelson and regional economic growth and productivity (35%)
KP1: Increase peak hour capacity
KP2: Increase freight throughput

Improved community safety and wellbeing (15%)
KP1: Decrease walk/cycle crashes

Improved tourism and recreation activities (15%)
KP1: Increase spatial coverage for cyclists & paths
KP2: Increase cyclist & walker numbers

Testing Problem Statements...
1. Is the problem and its cause clear? Is it realistic to address the cause?
2. Are there sufficient and differentiated measures to quantify the benefits?
3. Are the benefits sufficient to warrant investment?

Testing Benefit Statements...
1. Can the benefits/KPIs be attributed to the strategic case?
2. Are the benefits financially justified?
3. Are the KPIs SMART and provide strong evidence?

The story so far in a nutshell...
Nelson’s 2 arterial routes (SH6 Rocks Road and Waimea Road) can get heavily congested and the current state highway (SH6 Rocks Road) does not fully support all road users.

This is resulting in travel delays on the 2 arterial routes and cyclists/pedestrians being deterred from using Rocks Road.

Any investment by NZTA would potentially result in benefits of reduced journey times, improved community safety and support for regional growth and recreational plans.
## Appendix B - Benefit Map From the Strategic Case

### Determining the Central Transport Corridor Through Nelson (SH6 Annesbrook Roundabout to Haven Rd Roundabout)

<table>
<thead>
<tr>
<th>Benefits Map Programme</th>
<th>Benefit</th>
<th>Investment KPI</th>
<th>Measure</th>
<th>Description</th>
<th>Baseline</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reduced journey times (35%)</td>
<td></td>
<td>Decrease peak hour travel times</td>
<td>Rocks Road average travel speed in peak hours</td>
<td>NB 31 km/hr</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Waimea Road average travel speed in peak hours</td>
<td>NB 22 km/hr</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Increase peak hour capacity</td>
<td>Rocks Road peak hour volume/capacity ratio</td>
<td>NB 79%</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Waimea Road peak hour volume/capacity ratio</td>
<td>NB 73%</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td>Contribute to Nelson and regional economic growth and productivity (35%)</td>
<td></td>
<td>Increase freight throughput</td>
<td>Throughput - freight volume by mode</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td>Improved community safety and wellbeing (15%)</td>
<td></td>
<td>Decrease walk/cycle crashes</td>
<td>Rocks Road walk/cycle crashes - deaths &amp; serious injuries</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Waimea Road walk/cycle crashes - deaths &amp; serious injuries</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td>Improved tourism and recreation activities (15%)</td>
<td></td>
<td>Increase spatial coverage for cycles &amp; paths</td>
<td>% contribution to completion of strategic cycle network</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>% completion of cycle network</td>
<td>500/day</td>
<td>1,000/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Increased cyclist and walker numbers</td>
<td>Rocks Road number of cyclists &amp; walkers/day</td>
<td>250/day</td>
<td>500/day</td>
</tr>
</tbody>
</table>

**NZTA**

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

Version no: 0.3
Workshop: October 7th, 2015
Last modified by: Mark Young
Template version: 3.0

21 March 2016
APPENDIX C - WORKSHOP 1A MINUTES AND HANOUTS

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

Nelson Southern Link Investigation Indicative Programme

- **Release of Strategic Case**
- **PBC workshops 1A and 1B**
- **PBC workshop 2**

**2014**
- JUN
- MAR-SEP
- OCT
- NOV
- DEC

**2015**
- **WE ARE HERE**
- **Strategic Case**

**2016**
- JAN
- FEB
- MAR
- APR
- MAY
- JUN
- JUL
- FUTURE

**Programme Business Case**
- Identifies an optimal mix of alternatives and options, not detailed solutions. Shows thorough understanding of the problems, opportunities and constraints and how transport outcomes can be met.

**Foundation for business case process.** Does not explore solutions but focuses on well understood problems that are substantial enough to justify investment.
Business Case Approach
AN OVERVIEW OF THE BUSINESS CASE APPROACH

INITIATION

OVERVIEW
Identify Business Case
Risk assessment, and agreement on how the business case process will be applied. A clear cost and
benefit ratio. A project is feasible, as what point the business case process should be approved.

OUTPUTS
- Financial

FUNDING SOURCE
Overhead

INVESTMENT ASSESSMENT OF OUTPUT
- Not applicable

INVESTMENT GATES
- Not applicable

STRATEGIC CASE

OVERVIEW
A strategic assessment is undertaken and from this a
Strategic Case is developed. The Strategic Case phase is
breakdown into two parts.

1. Strategic Assessment
2. Funding application for

The Strategic Case is undertaken in two parts:
1a. Strategic Assessment:
1b. Funding application

OUTPUTS
- Strategic Case
- Funding application for

FUNDING SOURCE
Overhead

INVESTMENT ASSESSMENT OF OUTPUT
- Strategic Case
- Funding application

INVESTMENT GATES
- Not applicable

PROGRAMME BUSINESS CASE

OVERVIEW
Programme Business Case
Identify and assess the key aspects of work that will deliver the project. A clear cost and
benefit ratio. A project is feasible, as what point the business case process should be approved.

OUTPUTS
- Programme Business Case

FUNDING SOURCE
Transport Planning Activity Class

INVESTMENT ASSESSMENT OF OUTPUT
- Programme Business Case

INVESTMENT GATES
- Not applicable

INDICATIVE BUSINESS CASE

OVERVIEW
Indicative Business Case
Identify the key aspects of work that will deliver the project. A clear cost and
benefit ratio. A project is feasible, as what point the business case process should be approved.

OUTPUTS
- Indicative Business Case

FUNDING SOURCE
Appropriate Improvements Activity Class

INVESTMENT ASSESSMENT OF OUTPUT
- Indicative Business Case

INVESTMENT GATES
- Not applicable

DETAILED BUSINESS CASE

OVERVIEW
Detailed Business Case
Detailed analysis of the risks and
benefits is undertaken on the detailed plan.

OUTPUTS
- Detailed Business Case

FUNDING SOURCE
Appropriate Improvements Activity Class

INVESTMENT ASSESSMENT OF OUTPUT
- Detailed Business Case

INVESTMENT GATES
- Not applicable

PRE-IMPLEMENTATION/IMPLEMENTATION

OVERVIEW
Implementation in order to implement
- A detailed implementation
- Project consideration (if required)
- Contracting (if required)
- Implementation (if required)

OUTPUTS
- Detailed Business Case

FUNDING SOURCE
Appropriate Improvements Activity Class

INVESTMENT ASSESSMENT OF OUTPUT
- Detailed Business Case

INVESTMENT GATES
- Not applicable

POST IMPLEMENTATION

OVERVIEW
Post implementation review
- Value for money report
- Observation and analysis
- Monitoring
- Project completion

OUTPUTS
- Post implementation review

FUNDING SOURCE
Appropriate Improvements Activity Class

INVESTMENT ASSESSMENT OF OUTPUT
- Post implementation review

INVESTMENT GATES
- Not applicable
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"
Speed (kms/hr)

2015Q1, Route 1, Nbd, Holiday
2015Q1, Route 1, Nbd, Term
2015Q2, Route 1, Nbd, Holiday
2015Q2, Route 1, Nbd, Term

SH6 into Nelson

Time Period Commence

Nelson Southern Link Investigation – Programme Business Case
30 November 2015
p:|\603x|\60342058|\4. tech work area|4.5 planning|pbc\workshop 1a 11 dec 2015\handouts\sc problem evidence base\nsli pbc benefit definition workshop problem 1 evidence.doc
SH6 2-way recorded volumes

15min period commencing
Problem 1 Uncertainty
### Morning Peak Average Side Road Right Turn Delays (sec)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2033 low</th>
<th>2033 med</th>
<th>2033 high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Rd</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Richardson St</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Beach Rd</td>
<td>46</td>
<td>48</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>Bisley Ave</td>
<td>47</td>
<td>46</td>
<td>56</td>
<td>55</td>
</tr>
<tr>
<td>Parkers Rd</td>
<td>22</td>
<td>22</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Blackwood St</td>
<td>30</td>
<td>29</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>Gracefield St</td>
<td>32</td>
<td>34</td>
<td>39</td>
<td>47</td>
</tr>
<tr>
<td>Tukuka St W</td>
<td>34</td>
<td>34</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>Tukuka St E</td>
<td>34</td>
<td>34</td>
<td>38</td>
<td>43</td>
</tr>
<tr>
<td>Beaton Rd</td>
<td>35</td>
<td>36</td>
<td>40</td>
<td>47</td>
</tr>
<tr>
<td>Ulster St</td>
<td>37</td>
<td>38</td>
<td>44</td>
<td>52</td>
</tr>
<tr>
<td>The Ridgeway</td>
<td>24</td>
<td>27</td>
<td>30</td>
<td>33</td>
</tr>
</tbody>
</table>
Population and Household Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2025</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>StatsNZ Med Population Projection</td>
<td>49,740</td>
<td>53,320</td>
<td>56,020</td>
</tr>
<tr>
<td>Rationale Household Size</td>
<td>2.43</td>
<td>2.39</td>
<td>2.32</td>
</tr>
<tr>
<td>Estimated Nelson Households</td>
<td>20,470</td>
<td>22,310</td>
<td>24,150</td>
</tr>
</tbody>
</table>
## Employment Growth

### Table 2.5 Forecast Employment in Nelson and Tasman

<table>
<thead>
<tr>
<th></th>
<th>2013 Baseline Jobs</th>
<th>2023 Forecast Jobs</th>
<th>2033 Forecast Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson</td>
<td>22,008</td>
<td>23,108</td>
<td>24,209</td>
</tr>
<tr>
<td>Tasman</td>
<td>14,258</td>
<td>14,970</td>
<td>15,684</td>
</tr>
<tr>
<td>TOTAL</td>
<td>36,266</td>
<td>38,078</td>
<td>39,893</td>
</tr>
</tbody>
</table>

### Table 2.6 Job Allocation to Major Employers in Nelson

<table>
<thead>
<tr>
<th>Major Employer</th>
<th>Model Job Type</th>
<th>2013 Baseline</th>
<th>2023</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cawthron Institute</td>
<td>Office Jobs</td>
<td>201</td>
<td>220</td>
<td>226</td>
</tr>
<tr>
<td>Nelson Airport</td>
<td>All Jobs</td>
<td>312</td>
<td>386</td>
<td>472</td>
</tr>
<tr>
<td>Nelson Hospital</td>
<td>Community Jobs</td>
<td>1,004</td>
<td>1,089</td>
<td>1,115</td>
</tr>
<tr>
<td>NMIT</td>
<td>Education Jobs</td>
<td>170</td>
<td>190</td>
<td>203</td>
</tr>
<tr>
<td>Nelson Port</td>
<td>All Jobs</td>
<td>1,050</td>
<td>1,250</td>
<td>1,470</td>
</tr>
<tr>
<td><strong>Jobs Allocated to Major Employers</strong></td>
<td></td>
<td>2737</td>
<td>3,145</td>
<td>3,486</td>
</tr>
<tr>
<td></td>
<td>+408 since 2013</td>
<td>+749 since 2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Forecasted Nelson Job Growth post-2013</strong></td>
<td></td>
<td>1,100</td>
<td>2,201</td>
<td></td>
</tr>
<tr>
<td><strong>UNALLOCATED JOBS</strong></td>
<td></td>
<td>692</td>
<td>1,432</td>
<td></td>
</tr>
</tbody>
</table>
**Growth in Number of Commercial Buildings**

<table>
<thead>
<tr>
<th>Settlement Area</th>
<th>2013 Jobs</th>
<th>New Commercial Buildings</th>
<th>Number of Jobs</th>
<th>2023</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightwater</td>
<td>662</td>
<td>10</td>
<td>6</td>
<td>668</td>
<td>717</td>
</tr>
<tr>
<td>Coastal Tasman Area</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mapua/Ruby Bay</td>
<td>484</td>
<td>16</td>
<td>8</td>
<td>526</td>
<td>566</td>
</tr>
<tr>
<td>Motueka</td>
<td>3,075</td>
<td>45</td>
<td>23</td>
<td>3,193</td>
<td>3,307</td>
</tr>
<tr>
<td>Richmond</td>
<td>4,589</td>
<td>156</td>
<td>84</td>
<td>4,998</td>
<td>5,408</td>
</tr>
<tr>
<td>Riwaka</td>
<td>461</td>
<td>0</td>
<td>0</td>
<td>461</td>
<td>461</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Settlement Area</th>
<th>2013 Jobs</th>
<th>New Commercial Buildings</th>
<th>Number of Jobs</th>
<th>2023</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasman</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Upper Moutere</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wakefield</td>
<td>195</td>
<td>27</td>
<td>15</td>
<td>266</td>
<td>338</td>
</tr>
<tr>
<td>Ward Remainder Motueka</td>
<td>1,043</td>
<td>3</td>
<td>2</td>
<td>1,081</td>
<td>1,060</td>
</tr>
<tr>
<td>Ward Remainder Moutere Waimea</td>
<td>1,688</td>
<td>11</td>
<td>6</td>
<td>1,697</td>
<td>1,726</td>
</tr>
<tr>
<td>Ward Remainder Richmond</td>
<td>1,640</td>
<td>4</td>
<td>2</td>
<td>1,650</td>
<td>1,660</td>
</tr>
</tbody>
</table>
### Summary – Nelson and Tasman Regions Combined

<table>
<thead>
<tr>
<th>Land use Variable</th>
<th>2013</th>
<th>2023</th>
<th>2033</th>
<th>2013-23 Growth</th>
<th>2023-33 Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Populations</td>
<td>85542</td>
<td>92292</td>
<td>96270</td>
<td>6750</td>
<td>3978</td>
</tr>
<tr>
<td>Vehicles</td>
<td>56088</td>
<td>61927</td>
<td>65314</td>
<td>5839</td>
<td>3388</td>
</tr>
<tr>
<td>Households</td>
<td>33477</td>
<td>36962</td>
<td>38984</td>
<td>3485</td>
<td>2022</td>
</tr>
<tr>
<td>Persons/HH</td>
<td>2.56</td>
<td>2.50</td>
<td>2.47</td>
<td>-0.06</td>
<td>-0.03</td>
</tr>
<tr>
<td>Cars/HH</td>
<td>1.68</td>
<td>1.68</td>
<td>1.68</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Agr. Jobs</td>
<td>3137</td>
<td>3207</td>
<td>3278</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Manufacturing jobs</td>
<td>5581</td>
<td>5904</td>
<td>6227</td>
<td>323</td>
<td>323</td>
</tr>
<tr>
<td>Wholesale jobs</td>
<td>1272</td>
<td>1344</td>
<td>1416</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Retail jobs</td>
<td>5927</td>
<td>6220</td>
<td>6511</td>
<td>293</td>
<td>290</td>
</tr>
<tr>
<td>Office jobs</td>
<td>5622</td>
<td>5925</td>
<td>5989</td>
<td>303</td>
<td>64</td>
</tr>
<tr>
<td>Education jobs</td>
<td>2424</td>
<td>2536</td>
<td>2643</td>
<td>112</td>
<td>107</td>
</tr>
<tr>
<td>Community jobs</td>
<td>8126</td>
<td>8529</td>
<td>7766</td>
<td>403</td>
<td>-763</td>
</tr>
<tr>
<td>Total jobs</td>
<td>36266</td>
<td>38079</td>
<td>39893</td>
<td>1813</td>
<td>1813</td>
</tr>
<tr>
<td>Airport jobs</td>
<td>767</td>
<td>950</td>
<td>1160</td>
<td>183</td>
<td>211</td>
</tr>
<tr>
<td>School roll</td>
<td>15970</td>
<td>16387</td>
<td>14441</td>
<td>-583</td>
<td>-946</td>
</tr>
<tr>
<td>Tertiary roll</td>
<td>1658</td>
<td>1845</td>
<td>1718</td>
<td>187</td>
<td>-127</td>
</tr>
<tr>
<td>Port jobs</td>
<td>1050</td>
<td>1260</td>
<td>1470</td>
<td>210</td>
<td>210</td>
</tr>
</tbody>
</table>
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>
<thead>
<tr>
<th>Period</th>
<th>AM</th>
<th>IP</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel time (min)</strong></td>
<td><strong>2023</strong></td>
<td><strong>2033</strong></td>
<td><strong>2023</strong></td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (n/b)</td>
<td>8.1 (-0.1)</td>
<td>8.0 (-0.2)</td>
<td>7.6 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (s/b)</td>
<td>7.7 (0)</td>
<td>7.7 (-0.1)</td>
<td>7.8 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (n/b)</td>
<td>9.1 (-0.2)</td>
<td>8.5 (-0.5)</td>
<td>7.8 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (s/b)</td>
<td>7.9 (0)</td>
<td>7.7 (-0.1)</td>
<td>8 (0)</td>
</tr>
<tr>
<td><strong>Speed (kph)</strong></td>
<td><strong>2023</strong></td>
<td><strong>2033</strong></td>
<td><strong>2023</strong></td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (n/b)</td>
<td>40.8 (0.4)</td>
<td>41.4 (1.1)</td>
<td>43.4 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (s/b)</td>
<td>43.2 (0.4)</td>
<td>43.1 (0.5)</td>
<td>42.7 (0.5)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (n/b)</td>
<td>36.2 (1.1)</td>
<td>38.5 (1.9)</td>
<td>42.1 (0.3)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (s/b)</td>
<td>41.9 (0)</td>
<td>42.4 (0.3)</td>
<td>40.9 (0)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Period</th>
<th>AM</th>
<th>IP</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2023</td>
<td>2033</td>
<td>2023</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (n/b)</td>
<td>8.2 (0)</td>
<td>8.2 (0)</td>
<td>7.6 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (s/b)</td>
<td>7.7 (0)</td>
<td>7.7 (-0.1)</td>
<td>7.8 (0)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (n/b)</td>
<td>9.2 (-0.1)</td>
<td>9 (0)</td>
<td>7.9 (0.1)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (s/b)</td>
<td>7.9 (0.1)</td>
<td>7.9 (0.1)</td>
<td>8.2 (0.2)</td>
</tr>
<tr>
<td>Speed (kph)</td>
<td>2023</td>
<td>2033</td>
<td>2023</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (n/b)</td>
<td>40.3 (-0.1)</td>
<td>40 (-0.3)</td>
<td>43.2 (-0.2)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Rocks (s/b)</td>
<td>43 (0.2)</td>
<td>42.8 (0.2)</td>
<td>42.5 (0.3)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (n/b)</td>
<td>35.6 (0.5)</td>
<td>36.4 (-0.2)</td>
<td>41.3 (-0.5)</td>
</tr>
<tr>
<td>Nelson-Annesbrook via Waimea (s/b)</td>
<td>41.8 (-0.1)</td>
<td>41.4 (-0.7)</td>
<td>40 (-0.9)</td>
</tr>
</tbody>
</table>

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

Figures in brackets represent the difference to the base model.
Figure 4.1
Comparison of Daily VKT and Study Area Population

![Graph showing comparison of Daily VKT and Study Area Population over years 2013, 2023, and 2033 with three scenarios: Low, Medium, and High.](image_url)
Figure 4.2
Comparison of Daily Traffic on Screen lines

![Traffic Comparison Graph](image-url)

- Rocks Rd/Waimea Rd
- SH6 Stoke Bypass/Main Road Stoke
- Low, Medium, High (lines for each category)

**Legend:**
- Light line with dots: Low
- Medium line with dots: Medium
- Dark line with dots: High

**Years:**
- 2013
- 2023
- 2033

**Two Way Vehicles:**
- 40,000
- 42,000
- 44,000
- 46,000
- 48,000
- 50,000
- 52,000
- 54,000
- 56,000
Figure 4.3  SH6
Historical and Forecast Heavy Vehicle AADT Flows

Historical Counts

Model Forecasts

SH6 Stoke Bypass telemetry site  SH6 Rocks Road south of Haven Rd

Low  Medium  High  Low  Medium  High
Problem 2 Evidence
SH6 Rocks Road is a key walking and cycling route constrained by substandard infrastructure.

Overall 15 year cycle trend - Growth Rate 3.4% per annum
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 Tahunui 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.

<table>
<thead>
<tr>
<th>TOTAL ESTIMATED PROJECT COST</th>
<th>URBAN CYCLEWAYS FUND SHARE</th>
<th>NATIONAL LAND TRANSPORT FUND SHARE ESTIMATED</th>
<th>LOCAL SHARE ESTIMATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20.34 million</td>
<td>$3 million</td>
<td>$12.82 million</td>
<td>$4.52 million</td>
</tr>
</tbody>
</table>

**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](http://www.nzta.govt.nz/UCP)

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

[logos of NZ Transport Agency, Nelson City Council, and New Zealand Government]
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.

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Organisational Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Transport Agency</td>
<td>Statement of Intent, South Island Freight Plan, National Business Cases, National Infrastructure Plan, National Land Transport Plan</td>
</tr>
<tr>
<td>(Regulatory Authority Objectives)</td>
<td>Nelson Resource Management Policy Statement and Plan (under review as the “Nelson Plan”)</td>
</tr>
<tr>
<td>Nelson City Council</td>
<td>Transportation Asset Management Plan, Regional Land Transport Plan</td>
</tr>
</tbody>
</table>
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:
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrate one <strong>effective and resilient</strong> network for customers</td>
<td>Integrate land uses and transport networks to shape demand at national, regional and local levels.</td>
</tr>
<tr>
<td></td>
<td>Integrate national and local transport networks to support strategic connections and travel choices.</td>
</tr>
<tr>
<td></td>
<td>Improve freight supply chain efficiency</td>
</tr>
<tr>
<td>Shape smart, <strong>efficient, safe and responsible</strong> transport choices</td>
<td>Implement the Safe System approach to create a forgiving land transport system that accommodates human error and vulnerability.</td>
</tr>
<tr>
<td></td>
<td>Incentivise and shape safe and efficient travel choices using a customer-focused approach.</td>
</tr>
<tr>
<td>Deliver <strong>efficient, safe, responsible and resilient</strong> highway solutions for customers</td>
<td>Greater resilience of the state highway network</td>
</tr>
<tr>
<td></td>
<td>Deliver consistent levels of customer service that meet current expectations and anticipate future demand</td>
</tr>
<tr>
<td></td>
<td>Provide significant transport infrastructure.</td>
</tr>
<tr>
<td>Maximise <strong>effective, efficient and strategic</strong> returns for New Zealand</td>
<td>Align investment to agreed national, regional and local outcomes and improve value for money in all we invest in and deliver</td>
</tr>
</tbody>
</table>
Benefit Map
NZTA

Determining the Central Transport Corridor Through Nelson (SH6 Annesbrook Roundabout to Haven Rd Roundabout)

Benefits Map Programme

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Investment KPI</th>
<th>Measure</th>
<th>Description</th>
<th>Baseline</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced journey times (35%)</td>
<td>Decrease peak hour travel times</td>
<td>Rocks Road average travel speed in peak hours</td>
<td>Rocks Road average travel speed (blue dotted)</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warneka Road average travel speed in peak hours</td>
<td>Warneka Road average travel speed (blue dotted)</td>
<td>N2 32 km/hr</td>
<td>N2 29 km/hr</td>
</tr>
<tr>
<td>Contribute to Nelson and regional economic growth and productivity (35%)</td>
<td>Increase peak hour capacity</td>
<td>Rocks Road peak hour volume/capacity ratio</td>
<td>Ratio of traffic volume to capacity</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warneka Road peak hour volume/capacity ratio</td>
<td>Ratio of traffic volume to capacity</td>
<td>NB 29%</td>
<td>NB 70%</td>
</tr>
<tr>
<td></td>
<td>Increase freight throughput</td>
<td>Throughput - freight value by mode</td>
<td>Freight throughput</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td>Improved community safety and wellbeing (15%)</td>
<td>Decrease walk/cycle crashes</td>
<td>Rocks Road walk/cycle crashes - deaths &amp; serious injuries</td>
<td>TBC</td>
<td>TBC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warneka Road walk/cycle crashes - deaths &amp; serious injuries</td>
<td>walk/cycle crashes - deaths &amp; serious injuries</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td>Improved tourism and recreation activities (15%)</td>
<td>Increase spatial coverage for cycles &amp; paths</td>
<td>% contribution to completion of strategic cycle network</td>
<td>% completion of cycle network</td>
<td>TBC</td>
<td>TBC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nelson Southern Link Investigation - Programme Business Case

30 November 2015

p:\603x\6034\205814. tech work area\4.5 planning\pbcworkshop 1a 11 dec 2015\handouts\ins11 pbc strategic case benefits map.docx
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

19. Rachel Reese - Mayor, Nelson City Council
20. Eric Davy - Nelson City Council Works and Infrastructure Committee Chair
21. Ruth Copeland - Nelson City Council Regional Transport Committee Chair
22. Brian McGurk – Nelson City Council, Planning and Regulatory Committee and Councillor
23. Trevor Norris - Tasman District Council Regional Transport Committee Chair and Engineering Services Chair
25. Derek Nees – Representative, Road Transport Association NZ
26. Dot Kettle – Chief Executive, Nelson Chamber of Commerce
27. John-Paul Pouchin – Representative, Bicycle Nelson Bays
29. Gail Collingwood – Representative, PT User Group
30. Matt McDonald - Port Nelson Ltd
31. Rhys Palmer – Nelson City Council Senior Asset Engineer – Transport and Roading
32. Selwyn Blackmore, Transport Planning Manager, Central, NZTA
33. Andrew James, Principal Transport Planner, NZTA
34. Lyndon Hammond, Planning and Investment Regional Manager, Central, NZTA
35. Graeme Doherty – Project Consultant, AECOM
36. Tim Brown – Workshop Facilitator, Resolve Group
37. 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 though 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
- 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
  - walk, live, play
  - density of housing
  - 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.
Travel times for 6: SBD Rutherford to Annesbrook (Waimea)

Speeds for 6: SBD Rutherford to Annesbrook (Waimea)