

ARTERIAL TRAFFIC TRENDS AND MODELLING OF FUTURE TRAFFIC DEMANDS

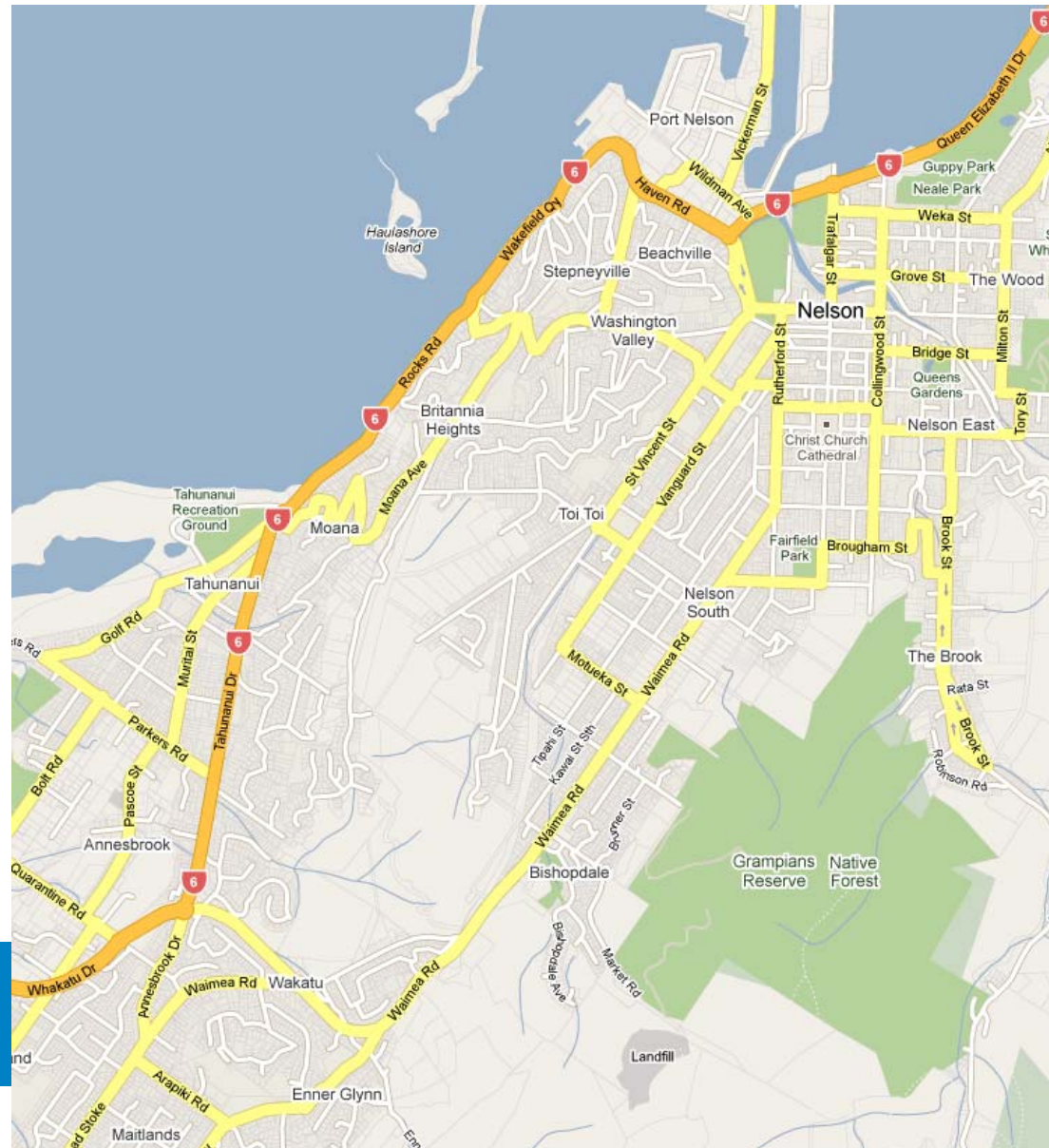


Nelson City Council
te kaunihera ō whakatū

Existing Arterial Routes

State
Highway 6

20,200 vpd
Delay of 1-
2 mins in
peak



Rutherford
Street /
Waimea
Road

25,100 vpd
Delay of 1-
3 mins in
peak

City Council
ihera ō whakatū

Existing Arterial Routes

State Highway 6

- 2 lane, 2 way road
- Range of land uses
- 5.6km long
- 20,200 vpd
- c.0% growth last 10 yrs
- 1200 vph AM peak NBD
- 1100 vph PM peak SBD
- Delays of 1-2 mins in peak

Rutherford / Waimea

- 2 lane, 2 way road
- Range of land uses
- 6.3km long
- 25,100 vpd (Waimea Rd)
- c.0% growth last 10 yrs
- 1500 vph AM peak NBD
- 1700 vph PM peak SBD
- Delays of 1-3 mins in peak

Heavy Vehicle Movements

Road	Location	% HCV's	Daily Volume
Rocks Rd	South of Port	6%	1200
SH6	Hira	15%	400
SH6	Wairoa Bridge	19%	1500

Heavy Vehicle Movements

Rocks Road - 2006

	AM Peak (8am-9am)	Interpeak (12pm-1pm)	PM Peak (4pm-5pm)
Northbound	98	67	52
Southbound	70	70	85

Rutherford Street - 2006

	AM Peak (8am-9am)	Interpeak (12pm-1pm)	PM Peak (4pm-5pm)
Northbound	15	24	7
Southbound	14	29	8

Model overview

- Using TRACKS model, updated 2009
- 3 / 4 stage model, 3 periods
- Calibrated to 2006
- “Typical day” flows
- Trip Generation by Household
- Trip Distribution by HH and Employment allocations

Modelling Results

AM peak	2006	2036
Number of Trips (whole model)	37,000	46,000
Kilometres travelled (study area)	110,000	144,000
Average trip length (study area)	6.96	6.85
Mean speed - kph (study area)	45.7	44.4

Arterial Route Results

Volumes 2006 / 2036

Hourly Traffic	AM	IP	PM
Rocks Road Northbound	1128/1007	862/980	685/902
Rocks Road Southbound	480/694	784/1001	1162/1263
Waimea Road Northbound	1585/1582	1114/1226	1068/1154
Waimea Road Southbound	682/827	1072/1122	1765/1651
Total Screenline	4146 / 4449	4025 / 4594	4972 / 5416

Arterial Route Results

- Percentage increase 2006 - 2036

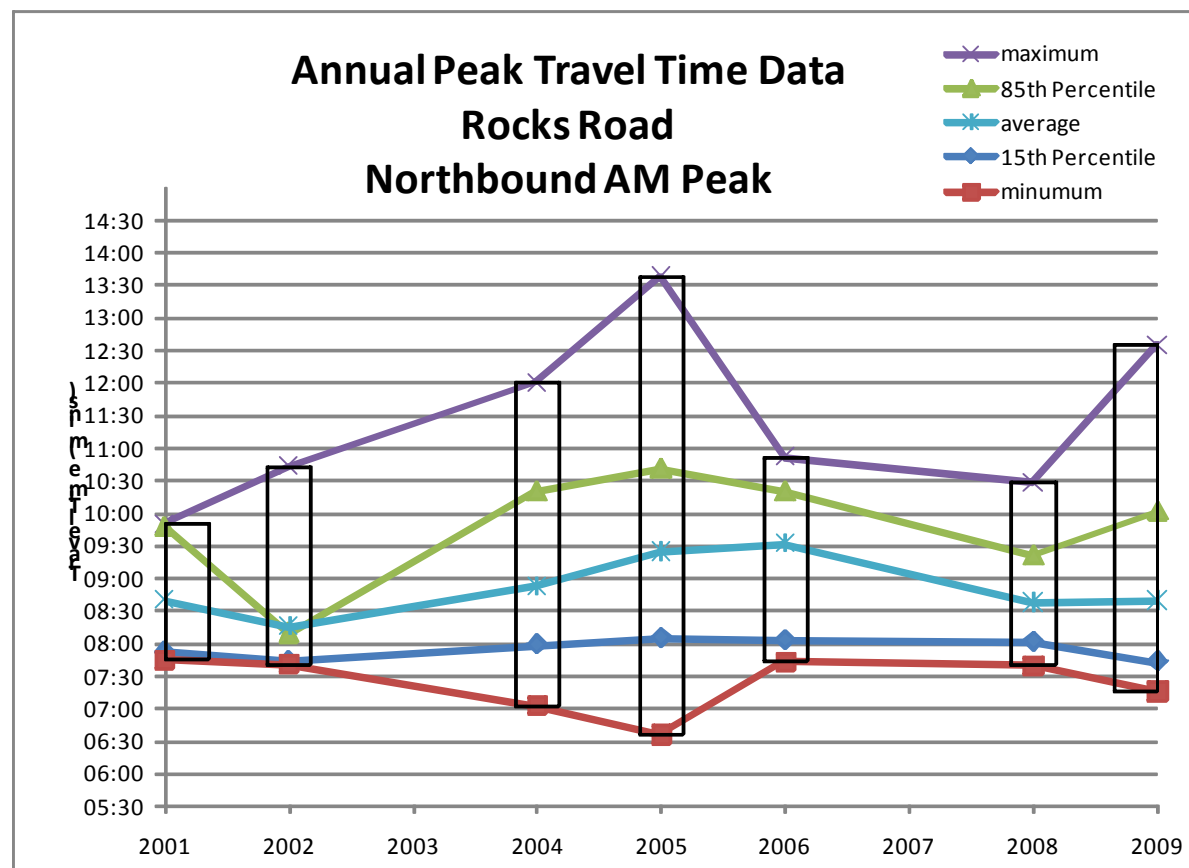
Hourly Traffic	AM	IP	PM
Rocks Road Northbound	-11%	14%	32%
Rocks Road Southbound	45%	28%	9%
Waimea Road Northbound	0%	10%	8%
Waimea Road Southbound	21%	5%	-6%
Total Screenline	7.3 %	14.1 %	8.9 %

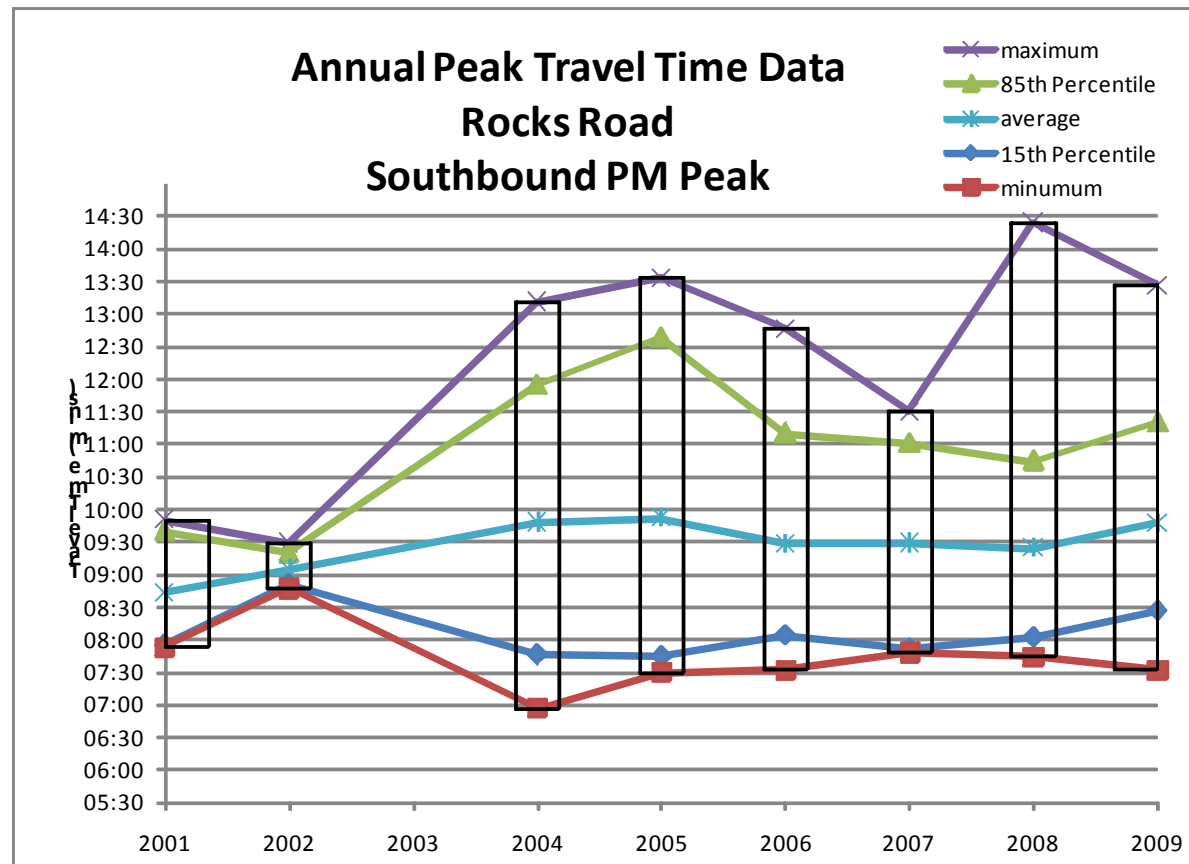
Public Transport Model Demands

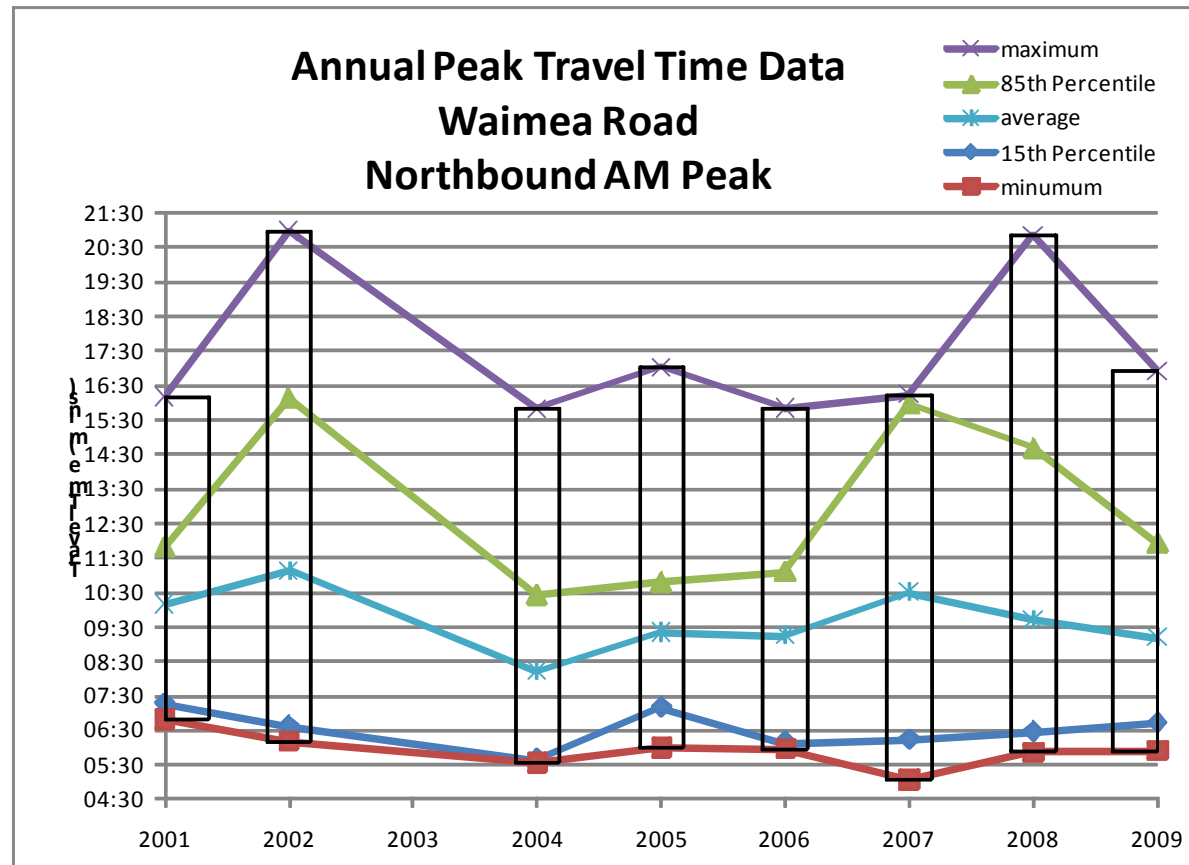
Year	AM Peak		Interpeak	
	Existing PT	Phase A	Existing PT	Phase A
2006	143	197	72	91
2016	136	230	78	151
2036	134	256	82	182

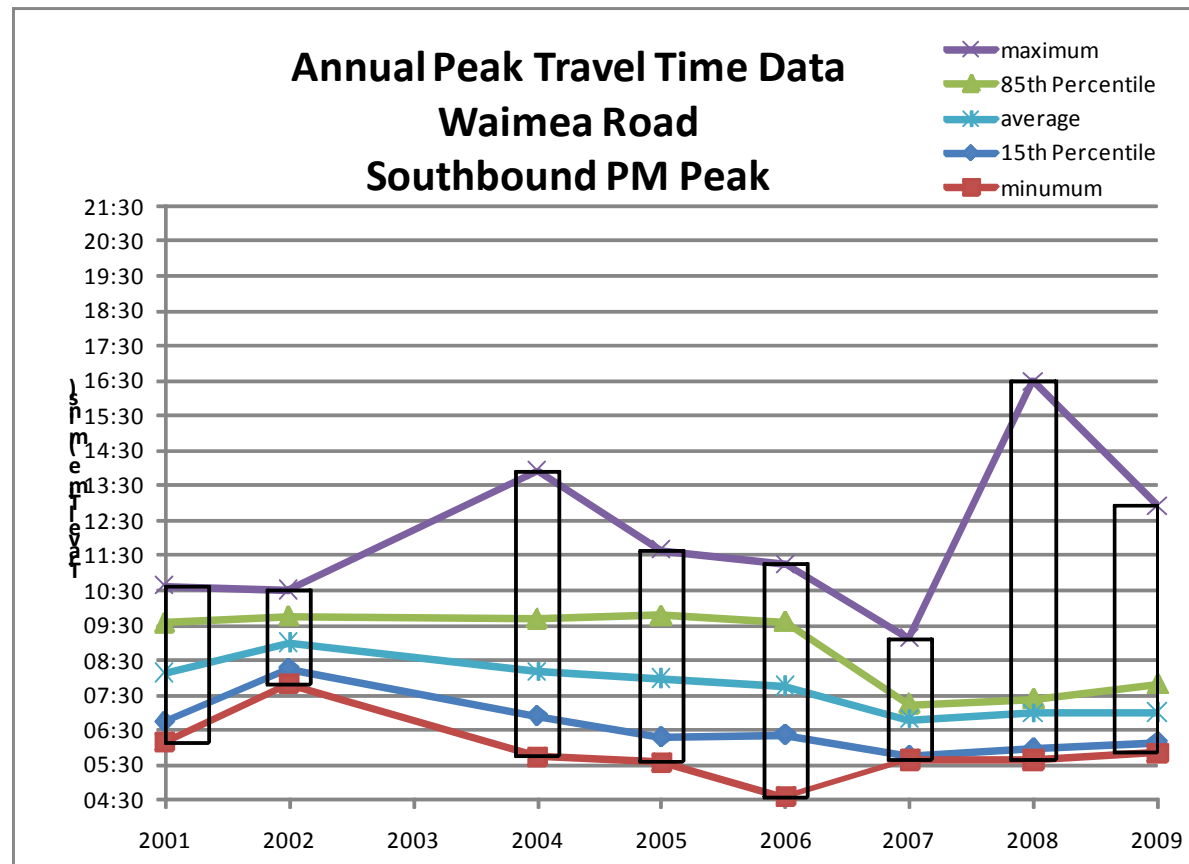
Modelling Summary

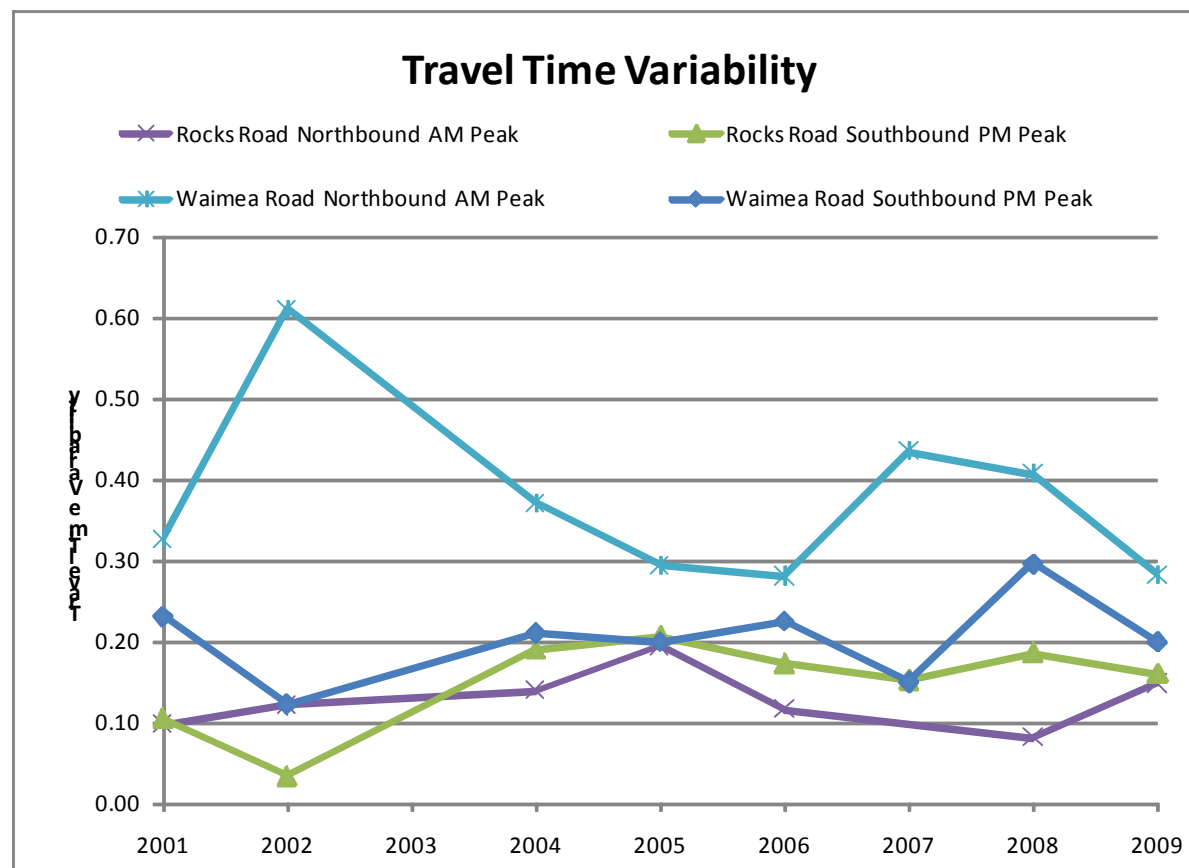
- Overall a 26%-28% increase in peak hour trips in 30 years
- Increase in vehicle kilometres travelled
- Reduction in average trip length
- Increase in traffic in interpeak and off-peak directions along current arterial routes
- Little or no increase in peak hour peak direction traffic
- Slight decrease in mean speed











Nelson Journey to Work Mode Split (2006 Census)

Mode	Nelson (incl Stoke)	Richmond
Drove car/truck	75%	78%
Vehicle passenger	6%	5%
Bus	1%	1%
Motorcycle	1%	1%
Bicycle	7%	6%
Walk	10%	9%

Study Area Person Trips

TRIPS (whole network)	2006 base calibration			2016 with PT Phase A			2036 with PT Phase A		
	AM	IP	PM	AM	IP	PM	AM	IP	PM
Total person trips (2 or 3 hours)									
Car driver	37037	39433		40881	43425		45888	50427	
Car passenger	6836	12775		7236	13873		7805	15999	
PT : Richmond ↔ Nelson	143	72		230	151		256	182	
PT: Other Nelson services	95	84		121	156		127	158	
Walk / cycle	14120	21609		15106	23897		16310	27613	
Private cars trips (1 hour)									
Total driver trips (incl. park)	24638	20823	26713	27253	22862	29581	31024	26645	33970
Increase relative to 2006	-	-	-	10.6%	9.8%	10.7%	25.9%	28.0%	27.2%

SCREENLINE VOLUME (vph)				2006 Calibrated			2016 with PT Phase A			2036 with PT Phase A		
No.	Road	Location	Dirn	AM	IP	PM	AM	IP	PM	AM	IP	PM
2.6a	Wakefield Quay	Sth of Haven Rd	n/b	522	403	334	529	537	448	492	552	516
			s/b	225	357	597	269	441	653	360	542	653
2.6b	Russel St & Maori Road	Sth of Haven Rd	n/b	127	111	120	138	151	174	161	213	259
2.6c			s/b	118	112	134	166	153	162	246	222	197
2.6d	St Vincent St	Sth of Haven Rd	n/b	636	416	348	625	286	271	645	414	430
			s/b	296	391	578	225	328	490	305	375	474
2.6e	Vanguard St	Sth of Haven Rd	n/b	166	160	166	116	141	170	96	108	233
			s/b	142	166	163	198	209	196	198	223	246
2.6f	Rutherford St	Sth of Bridge St	n/b	316	327	331	365	384	401	423	443	402
			s/b	300	320	408	263	275	345	408	331	373
Screenline total flow			n/b	1767	1417	1299	1773	1499	1464	1817	1730	1840
			s/b	1081	1346	1880	1121	1406	1846	1517	1693	1943
% increase with respect to 2006			n/b	-	-	-	0.3%	5.8%	12.7%	2.8%	22.1%	41.6%
			s/b	-	-	-	3.7%	4.5%	-1.8%	40.3%	25.8%	3.4%

Key

vph: Vehicles per hour

PT: Public Transport

AM: Morning peak hour

IP: Interpeak hour

PM: Evening peak hour

n/b: northbound

s/b: southbound

Red text denotes travel in the peak direction in the peak hour i.e. northbound in the AM peak and southbound in the PM peak.

SCREENLINE VOLUME (vph)				2006 Calibrated			2016 with PT Phase A			2036 with PT Phase A		
No.	Road	Location	Dirn	AM	IP	PM	AM	IP	PM	AM	IP	PM
2.2a	Rocks Road	North of Bisley	n/b	1128	862	685	1137	915	740	1007	980	902
			s/b	480	784	1162	531	899	1304	694	1001	1263
2.2c	Princes Drive	North of Moana	n/b	207	107	110	206	116	165	197	134	209
2.2d			s/b	64	86	182	107	108	223	142	131	237
2.2b	Waimea Road	North of Beatson	n/b	1585	1114	1068	1639	1164	990	1582	1226	1154
			s/b	682	1072	1765	706	1059	1654	827	1122	1651
Screenline total flow			n/b	2920	2083	1863	2982	2195	1895	2786	2340	2265
			s/b	1226	1942	3109	1344	2066	3181	1663	2254	3151
% increase with respect to 2006			n/b	-	-	-	2.1%	5.4%	1.7%	-4.6%	12.3%	21.6%
			s/b	-	-	-	9.6%	6.4%	2.3%	35.6%	16.1%	1.4%

Land Use Projections

- Nelson 2009-2019 Community Plan
- Tasman Growth, Supply-Demand Model
- Nelson Urban Growth Strategy
- Nelson Resource Management Plan
- Tasman Resource Management Plan

Land Use - Population

- Previous Model (includes Richmond etc)
 - 2006 76,000
 - 2036 117,600
- Current Model (includes Richmond etc)
 - 2006 79,900
 - 2036 98,900
- Changes between land use forecasts
 - Significantly less in Richmond and Tasman
 - More in Nelson CBD

Land Use - Employment

- Previous Model (includes Richmond etc)
 - 2006 29,900
 - 2036 47,471
- Current Model (includes Richmond etc)
 - 2006 34,600
 - 2036 46,397
- Changes between land use forecasts
 - Slightly less in Stoke, Richmond and Tasman
 - More in CBD and Nelson south