26. Test of Higher Passenger Transport Usage

26.1 General

The greatest potential to influence travel demand lies through landuse planning, the provision of public transport, cycle opportunities (identified within CRETS) and wider policy measures such as road pricing (suggested in the RLTS). As a sensitivity check, the CRETS study includes a test on passenger transport utilising the Urban Development Strategy (UDS) 2026 landuse, and an assumption that 10% of the future trips would be undertaken by passenger transport (on top of the 3% already incorporated into the CRETS study). The test is therefore based on the 2026 UDS landuse and includes approximately 13% of all trips being undertaken by public transport.

It has been found from modelling the major works, that if the UDS 2026 landuse was to be implemented with 10% less trips (assumption that these trips transfer to public transport – or other travel demand reduction methods), it would result in changes to the traffic volumes on various links. Figure 51 shows the predicted changes in traffic volumes compared to the UDS 2026 landuse for a 24 hour period. Figure 52 shows the absolute traffic volumes for a 24 hour period in 2026 for a 90% UDS landuse that is a total public transport patronage of approximately 13% as described above. Table 48 contains the 24 hour period for 2026 traffic volumes for a number of significant links for the 90% UDS landuse.

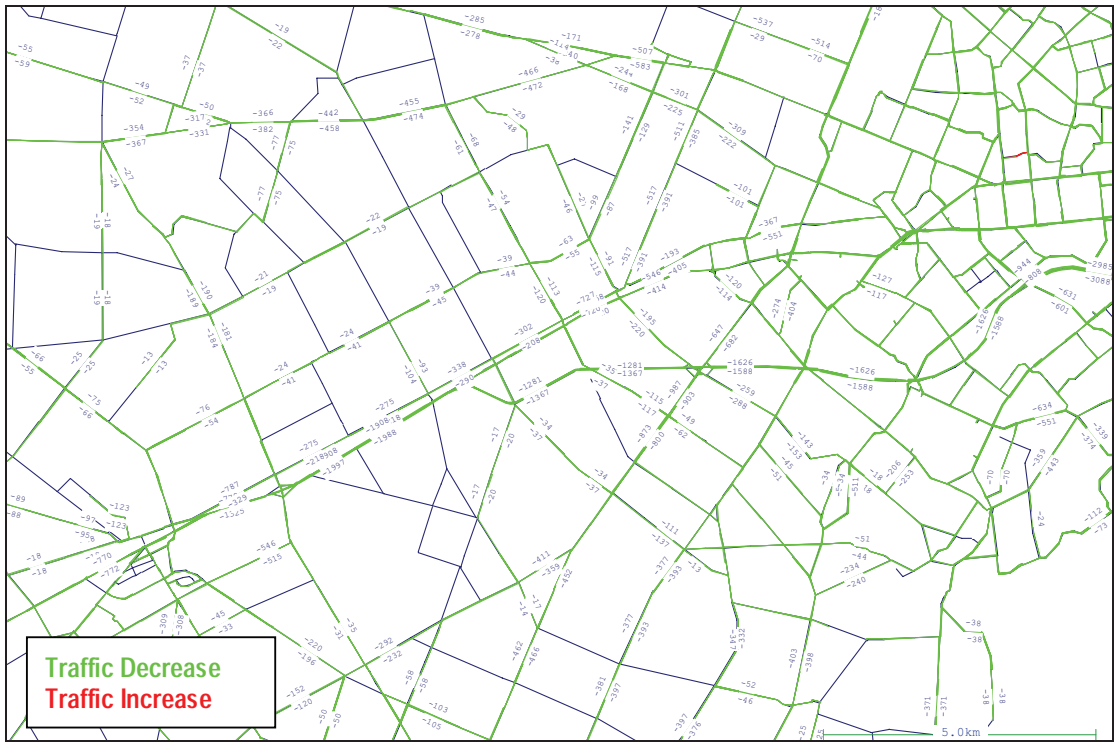

Figure 51

Transport Strategy with 90% of UDS 2026 Landuse – 24 Hour Traffic Volume Change Plot
(Compared to 100% 2026 Landuse)

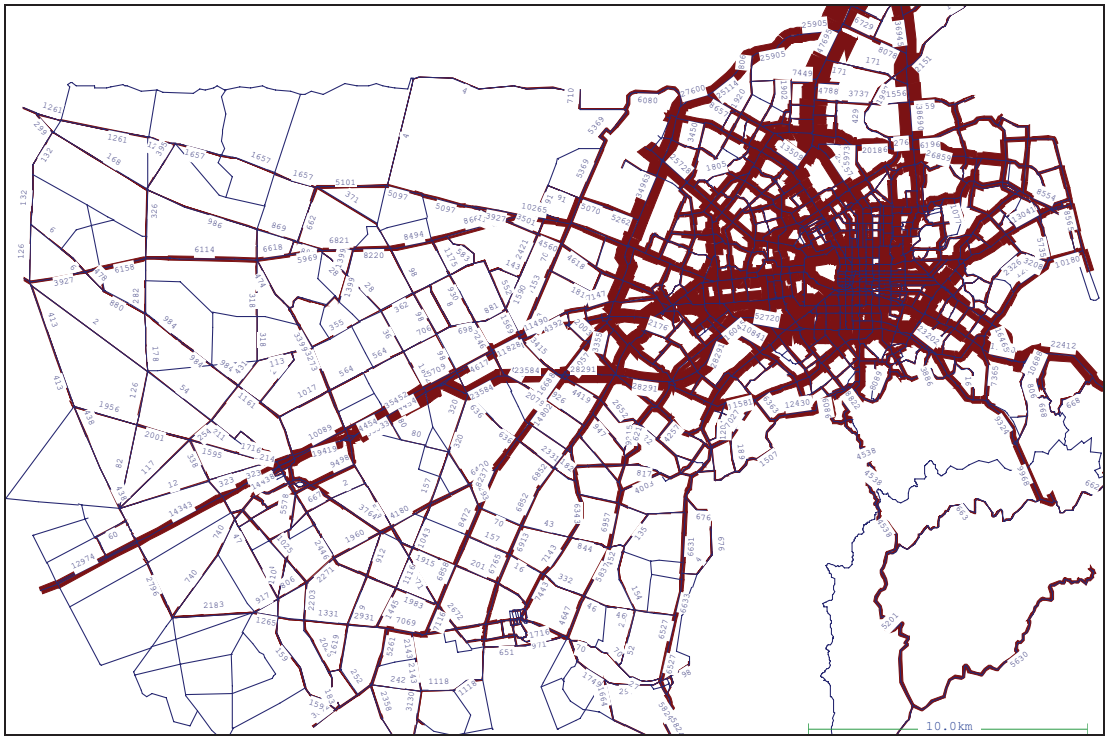

Figure 52

Transport Strategy with 90% of UDS 2026 Landuse – Traffic Volume Plot

ROUTE	DESCRIPTION	24 hour volumes					
		Validation Network 2001	Do Min Network 2021	Package of Options TS 2021	Package of Options UDS 2026	Package of Options 90% UDS 2026	Differnce UDS 2026 to 90% of UDS 2026
SH1 - Hornby to Rolleston	SH1 Sth Carmen	16400	19200	11000	13100	12100	-1000
	SH1 Sth HJR	15500	26600	9000	12500	11500	-1000
	SH1 Sth Barters	15800	27300	11400	14800	13500	-1300
	SH1 Sth Kirks	16300	29800	12100	14500	13100	-1400
	SH1 Sth Dawsons	15700	29200	11100	13100	11800	-1300
	SH1 Sth Curraghs	15300	28900	31800	39300	35500	-3800
	SH1 Sth Weedons	14700	25400	19400	21500	19400	-2100
Springs - Trents to Main South	Springs Sth Main South	18000	22400	21100	30900	28000	-2900
	Springs Sth Amyes	14600	16200	15100	20000	18200	-1800
	Springs Sth HJR	10300	27300	10500	14900	13400	-1500
	Springs Sth Marshs	10500	23200	11300	13800	12500	-1300
	Springs Sth Birchs	9200	21400	10300	12700	11500	-1200
	Springs Sth Toswilll	6500	15900	6500	9200	8300	-900
	Springs Sth Hamptons	4500	8900	6300	7600	6900	-700
Shands - Halswell Junction to Main South	Sth Main South	21100	26200	27000	35600	32000	-3600
	Sth Amyes	11400	11000	13700	15900	14500	-1400
	Sth Seymour	12500	12100	14200	17100	15500	-1600
Lincoln Connection	Birmingham Sth Vulcan	5700	6500	14500	18400	16600	-1800
	Wigram Sth Haytons	3500	8800	16700	21900	19800	-2100
	Dunbars to Halswell Junction			12300	15900	14300	-1600
	Halswell Junction to Marshs			11000	13500	12200	-1300
	Whincops Sth Quaifes	200	500	7200	10200	9200	-1000
	Ellesmere Sth Leadleys	2800	2200	5200	7800	7000	-800
	Lincoln Southern Collector			1400	1900	1700	-200
SH1 - Main South to Main North	Johns Wst Main North	12100	19800	20000	29000	25900	-3100
	Johns Wst Gardiners	11300	18700	19300	28000	25100	-2900
	Johns Wst of Sawyers Arms	17100	27300	23100	30700	27600	-3100
	Russley Sth Harewood	16500	21700	20600	28600	25700	-2900
	Russley Sth Wairakei	16900	22100	22300	30200	27000	-3200
	Russley Sth Memorial	22200	30800	30300	39500	35600	-3900
	Russley Sth Ryans	18000	23700	26600	34400	31000	-3400
	Masham Sth Yaldhurst	16100	23600	23800	30600	27600	-3000
	Carmen Sth Buchannans	16900	25400	24900	32800	29600	-3200
	Carmen Sth Waterloo	17100	23800	24000	31200	28200	-3000
CSM - Nash to Jerrold	Barrington Wst Selwyn	27300	43800	42500	51500	46000	-5500
	CSM Wst Barrington	24000	48500	46500	58800	52700	-6100
	CSM Wst Curletts		26100	24700	31500	28300	-3200
	CSM Wst Nash		26100	24700	31500	28300	-3200
	CSM Wst Awatea/Dunbars		26100	24700	31500	28300	-3200
	CSM Wst Springs			24700	31500	28300	-3200
	CSM Wst Shands			20700	26200	23600	-2600
Main South/Blenhiem - Springs to Curletts	Blenhiem Wst Curletts	40200	35500	31500	40500	36700	-3800
	Main South Wst Epsom	50200	54400	52200	67800	61300	-6500
	Main South Wst Lowther	43300	48000	39200	52400	47400	-5000
	Main South Est Springs	44500	48700	40400	55000	49800	-5200
Curletts - Blenhiem to Lincoln/Halswell	Curletts Sth Blenhiem	35500	37400	33300	37900	34300	-3600
	Curletts Sth Parkhouse	35400	35100	35000	41100	37000	-4100
	Curletts Sth CSME	12000	11900	12100	12100	10800	-1300
Amyes - Shands to Springs	Amyes Sth Shands	7700	16900	14600	20500	18300	-2200
	Amyes Nth Springs	10600	20500	17900	23700	21600	-2100
	Awatea Sth Springs	2600	18300	15500	22900	20700	-2200
	Awatea Nth Wigram	2400	10700	9000	12400	11100	-1300
	Dunbars Sth Wigram	5100	12000	13000	16100	14400	-1700
	Dunbars Nth Halswell	4700	9800	9700	13200	11900	-1300
Halswell Junction - Main Sth to Springs	HJR Nth Shands	1800	8200	900	2200	2000	-200
	HJR Nth Springs	7200	16900	8300	18600	16600	-2000
Halswell - Nicholls to Lincoln	Lincoln Sth Wrights	24400	30500	27800	29200	26200	-3000
	Halswell Sth Curletts	23500	27200	24600	25200	22700	-2500
	Halswell Sth Hendersons	18000	26100	22400	23000	20700	-2300
	Halswell Sth Aidenfield	18000	22100	18600	22700	20300	-2400
	Halswell Sth Dunbars	13600	17500	14800	16700	15100	-1600
Rolleston Drive	Rolleston Sth SH1	2400	5900	9700	12400	11200	-1200
	Rolleston Sth Tennyson	100	2300	2400	4200	3800	-400

Table 48

Transport Strategy with 90% of UDS 2026 Landuse Major Works – Traffic Volumes

26.2 Passenger Transport Patronage – 90% of UDS Levels of Service

Table 49 and Table 50 contain the predicted link and intersection levels of service in 2026 using 90% of the UDS 2026 landuse. The locations included in the table are those identified as being under pressure in the Do Minimum plus other sites that have been identified using a Performance Level Analysis of this option.

					24 hour volume	AM Peak (1 hour equivalent volumes)				PM Peak (1 hour equivalent volumes)			
ROUTE	DESCRIPTION	Link Type	FWD Dir	Link Lanes		FWD Vol	BAK Vol	FWD LOS	BAK LOS	FWD Vol	BAK Vol	FWD LOS	BAK LOS
SH1 - Hornby to Rolleston	SH1 Sth Carmen	Urbm	Sth	2	**12000**	262	646	Urban Link		811	468	Urban Link	
	SH1 Sth HJR	R2L	Sth	1	**11000**	223	587	C		765	419	D	
	SH1 Sth Barters	Urb	Sth	1	**14000**	454	929	Urban Link		1146	637	Urban Link	
	SH1 Sth Kirks	R2LP	Sth	2	**13000**	447	683	Passing Lanes		809	590	Passing Lanes	
	SH1 Sth Dawsons	R2L	Sth	1	**12000**	409	604	D		750	544	D	
	SH1 Sth Weedons	Mtw	Sth	2	**19000**	849	808	A	A	1443	729	B	A
	SH1 Sth Rolleston	Mtw	Sth	1	**14000**	489	808	A	B	736	729	B	B
Springs - Trents to Main South	Springs Sth Main South	Urb	Sth	1	**28000**	1143	1224	Urban Link		1440	1194	Urban Link	
	Springs Sth Amyes	Urb	Sth	1	**18000**	1003	886	Urban Link		964	1066	Urban Link	
	Springs Sth HJR	R2L	Sth	1	**13000**	449	923	D		981	788	E	
	Springs Sth Marshs	R2L	Sth	1	**12000**	459	759	D		903	707	E	
	Springs Sth Birchs	Urbm	Sth	1	**11000**	446	710	Urban Link		796	682	Urban Link	
	Springs Sth Toswilll	Urbm	Sth	1	**8000**	411	472	Urban Link		529	579	Urban Link	
Shands - Halswell Junction to Main South	Sth Main South	Urb	Sth	2	**32000**	1266	1375	Urban Link		1446	1476	Urban Link	
	Sth Amyes	Urb	Sth	1	**14000**	537	632	Urban Link		748	602	Urban Link	
	Sth Seymour	Urb	Sth	1	**16000**	656	685	Urban Link		826	759	Urban Link	
SH1 - Main South to Main North	Johns Wst Main North	Mtw	Wst	2	**26000**	1723	948	B	A	1069	1814	A	C
	Masham Sth Yaldhurst	Urb	Sth	2	**28000**	1301	1364	Urban Link		1474	1708	Urban Link	
	Carmen Sth Buchannans	Urb	Sth	2	**30000**	1441	1258	Urban Link		1665	1543	Urban Link	
	Carmen Sth Waterloo	Urb	Sth	2	**28000**	1351	1375	Urban Link		1480	1775	Urban Link	
CSM - Nash to Jerrold	CSM Wst Barrington	Mtw	Wst	2	**53000**	2418	3421	C	D	3580	2849	E	D
	CSM Wst Curletts	Mtw	Wst	2	**28000**	848	2433	A	C	2289	1393	C	B
	CSM Wst Nash	Mtw	Wst	2	**28000**	848	2433	A	C	2289	1393	C	B
	CSM Wst Awatea/Dunbars	Mtw	Wst	2	**28000**	848	2433	A	C	2289	1393	C	B
	CSM Wst Springs	Mtw	Wst	2	**28000**	848	2433	A	C	2289	1393	C	B
	CSM Wst Shands	Mtw	Wst	2	**24000**	703	1643	A	B	1691	954	B	A
Main South/Blenhiem - Springs to Curletts	Blenhiem Wst Curletts	Urbm	Wst	2	**37000**	1300	1488	Urban Link		1547	1359	Urban Link	
	Main South Wst Epsom	Urbm	Wst	2	**61000**	2161	2399	Urban Link		2779	2301	Urban Link	
	Main South Wst Lowther	Urbm	Wst	2	**47000**	1621	1669	Urban Link		2125	1661	Urban Link	
	Main South Est Springs	Urbm	Wst	2	**50000**	1638	1989	Urban Link		2359	1816	Urban Link	
Curletts - Blenhiem to Lincoln/Halswell	Curletts Sth Blenhiem	Urbm	Sth	2	**34000**	1635	1373	Urban Link		1610	1658	Urban Link	
	Curletts Sth Parkhouse	Urbm	Sth	2	**37000**	1781	1996	Urban Link		2221	2054	Urban Link	
	Curletts Sth CSME	Urb	Sth	1	**11000**	391	669	Urban Link		889	449	Urban Link	
Amyes - Shands to Springs	Amyes Sth Shands	Urb	Sth	1	**18000**	713	872	Urban Link		918	958	Urban Link	
	Amyes Nth Springs	Urb	Sth	1	**22000**	981	896	Urban Link		1130	1186	Urban Link	
	Awatea Sth Springs	Urb	Sth	1	**21000**	886	771	Urban Link		1055	929	Urban Link	
	Awatea Nth Wigram	Urb	Sth	1	**11000**	413	669	Urban Link		974	584	Urban Link	
	Awatea Sth Wigram	Urb	Sth	1	**11000**	413	669	Urban Link		974	584	Urban Link	
	Dunbars Sth Wigram	Urb	Sth	1	**14000**	408	1064	Urban Link		1196	683	Urban Link	
	Dunbars Nth Halswell	Urb	Sth	1	**12000**	513	636	Urban Link		928	653	Urban Link	
	Dunbrs/Hndsns Est Halwell	Urb	Est	1	**19000**	517	1341	Urban Link		1458	834	Urban Link	
Halswell Junction - Main Sth to Springs	HJR Nth Shands	Urb	Sth	1	**2000**	138	50	Urban Link		67	198	Urban Link	
	HJR Nth Springs	Urb	Sth	1	**17000**	506	1249	Urban Link		1158	809	Urban Link	
Halswell - Nicholls to Lincoln	Lincoln Sth Wrights	Urbm	Sth	2	**26000**	541	1724	Urban Link		1743	991	Urban Link	
	Halswell Sth Curletts	Urb	Sth	2	**23000**	393	1614	Urban Link		1691	790	Urban Link	
	Halswell Sth Aidenfield	Urb	Sth	2	**20000**	266	1468	Urban Link		1304	803	Urban Link	
	Halswell Sth Aidenfield	Urb	Sth	2	**20000**	266	1468	Urban Link		1304	803	Urban Link	
	Halswell Sth Dunbars	Urb	Sth	1	**15000**	319	822	Urban Link		827	674	Urban Link	
Wigram - Birmingham to Halwell Junction	Wigram Extn Sth Brmghm	Urb	Sth	1	**16000**	373	1128	Urban Link		1094	789	Urban Link	
	Wigram Sth Treffers	Urb	Sth	1	**16000**	346	1103	Urban Link		1008	753	Urban Link	
	Wigram Sth Haytons	Urb	Sth	1	**20000**	333	1316	Urban Link		1383	776	Urban Link	
	Wigram Sth Nash	Urb	Sth	1	**15000**	341	983	Urban Link		1086	674	Urban Link	
	Wigram Dev Sth Awatea	Urb	Sth	1	**13000**	259	798	Urban Link		808	684	Urban Link	
Hayton - Blenheim to Washbornes	Hayton De Sth Blenheim	Urb	Sth	1	**8000**	491	761	Urban Link		632	574	Urban Link	

Table 49

2021 Link level of service for Transport Strategy with 90% of UDS 2026 Landuse

Intersection	Control	AM Peak (seconds of delay) Worst App	Max App Del	Flw Wgt Del	LOS	PM Peak (seconds of delay) Worst App	Max App Del	Flw Wgt Del	LOS
SH1/Slip Lane/Tennyson St	P	Slip Lane onto SH1	15.2	15.20	C	Slip Lane onto SH1	15.7	15.70	C
SH1/Weedons Rd South Bound On Ramp	P	Sth Bnd On Ramp	16.5	0.21	C	Sth Bnd On Ramp	17.2	0.12	C
SH1/Weedons Rd North Bound On Ramp	P	Nth Bnd On Ramp	19	8.92	C	Nth Bnd On Ramp	17.3	4.59	C
Weedons Ross Rd/SH1 Ramps	P	Weedons Ross Nth	19.9	14.78	C	Weedons Ross Nth	13.7	8.70	B
Weedons Rd/SH1 Ramps	P	Off Ramp (sth bnd)	15.1	3.92	C	Off Ramp (sth bnd)	16.5	11.36	C
SH1/Dawsons Rd	P	Waterholes	16.8	2.78	C	Waterholes	19.4	2.82	C
SH1/Kirk Rd	P	Trents	16.1	6.54	C	Trents	26.1	7.50	D
SH1/Yaldhurst	S	Yaldhurst Est	61.4	36.54	D	Yaldhurst Est	107.1	39.27	D
SH1/Barters Rd	S	SH1 Sth	24.6	20.54	C	SH1 Nth	26	21.40	C
SH1/Gardiners Rd	P	Gardiners	11.8	1.02	B	Gardiners	11.4	0.36	B
Main South Rd/Symes	P	Symes	18	0.54	C	Symes	28	1.58	D
Sockburn Roundabout	R	Main South Wst	54.7	38.31	D	Blenhiem	114.1	62.87	E
Blenhiem Rd/Curletts Rd	S	Curletts Sth	55	52.62	D	SH73 Wst	73.2	69.22	E
Parkhouse Rd/Treffers Rd	P	Parkhouse Sth	0.4	0.15	A	Parkhouse Sth	0.2	0.16	A
Curletts Rd/CSME Sth Bnd Offramp	S	Curletts West	1	0.41	A	Curletts West	2	1.49	A
Springs Rd/ Amyes Rd	P	Springs Sth	5.6	4.37	A	Springs Sth	17.6	10.83	C
Springs Rd/HJR/CSME	R	HJR Est	14.3	13.18	B	HJR Est	13.6	12.09	B
Springs Rd/ Marshes Rd	P	Marshs Wst	21.8	6.96	C	Marshs Wst	30.8	8.27	D
Springs Rd/Hodgens Rd	P	Hodgens	20.1	1.26	C	Hodgens	23.3	1.14	C
Springs Rd/Toswill Rd	P	Toswill	13.6	1.53	B	Toswill	15.4	1.43	C
Shand Rd/Marshs Rd	P	Marshs Wst	41.4	8.87	E	Marshs Est	45.7	11.93	E
Lincoln Connection/Halswell Junction Road	P	Lincoln Conection Sth	21.1	18.76	C	Lincoln Conection Nth	19.9	17.98	C
Halswell Rd/Curletts Rd	S	Curletts Est	36.6	28.16	C	Curletts Wst	33.4	28.93	C
Halswell Rd/Hendersons Rd	S	Aidenfield Nth	62.5	5.10	A	Aidenfield Nth	73.5	6.32	A
Halswell Rd/Nash Rd	S	Nash Wst	10.4	3.70	A	Nash Wst	10	4.90	A
Halswell Rd/Dunbars Rd	S	Halswell Sth	57.8	31.43	C	Halswell Nth	40.7	34.32	C
Wigram Rd/Treffers Rd	P	Treffers Wst	9.1	0.43	A	Treffers Wst	8.9	0.81	A
Wigram Rd/Haytons Rd	R	Wigram Sth	34.2	29.22	C	Wigram Nth	69.5	43.15	D
Wigram Rd/Nash Rd	P	Nash Est	23.5	9.79	C	Nash Wst	56.2	16.87	F

Table 50

2021 Intersection level of service for Transport Strategy with 90% of UDS 2026 Landuse

26.3 Conclusion

The shift of 10% of all trips to public transport as set out in this section shows a reduction of traffic of up to 4,000 vpd on key arterial roads. The resultant traffic flows through Sockburn are still higher than the CRETS forecasts. To provide a sustainable transport network, a greater than 10% use of passenger transport and alternative modes such as cycling will be required.

27. Summary/Conclusion

The Christchurch, Rolleston and Environs Transportation Study (CRETS) is a study of the transportation requirements in the Christchurch to Rolleston broad area for the period to 2021. The study takes into account the NZ Transport Strategy 2002 and the Land Transport Management Act (LTMA) 2003. The study not only considers improvements to the road network but also includes other transport mode opportunities, including passenger services and cycling.

The study area includes the Selwyn towns of Rolleston, Lincoln, Springston, West Melton, Tai Tapu, Templeton and Prebbleton; the south western suburbs of Christchurch generally including Hornby, Sockburn, Wigram and Halswell; and the Christchurch International Airport. Although outside the study area, access to the Port of Lyttleton, in particular from the south has been taken into account.

The aim of the study is to produce a Transport Strategy that is robust and flexible to accommodate a number of future urban growth possibilities in the study area, while contributing to an integrated safe, responsible and sustainable land transport system in the future.

Key aspects of the Transport Strategy can be summarised as:

- Utilising the Main South and Midland Rail lines for the movement of freight, especially coal from the West Coast
- Protecting the rail corridor from Rolleston through Hornby to Christchurch Central as a long term possibility for commuter rail.
- Developing a road hierarchy to ensure that the road network is developed where appropriate for mobility and access, and to assist the Study Partners in the protection of the road corridors.
- Distribution of traffic across the network whereby better utilising the existing road network.
- Future proofing transport corridors in particular State Highway 1, Southern Motorway (including its extension from Halswell Junction Road to the South of Templeton) and the Christchurch/Lincoln connection via Wigram, Whincops and Ellesmere Roads.
- Planning of key bus corridors in the Selwyn area including Park and Ride Facilities and key corridors including Birchs Road and Lincoln/Halswell Road.
- Improving the Western Corridor by four laning of Johns/Russley/Carmen/Masham Roads (SH1) to provide improved access to the airport and industries and commerce on the Western fringe of Christchurch, as well as to strengthen the North/South function of this route and promoting Yaldhurst Road/Pound Road as a bypass of Hornby.
- Improving access to Christchurch International Airport via three key points, including provision for the separation of heavy/freight from passenger traffic as much as possible.
- Planning for increased traffic between Christchurch and Rolleston and traffic from the south to Christchurch City and the Port of Lyttelton via an extension of the Christchurch Southern Motorway and the four laning of State Highway 1 from the extended motorway connection with State Highway 1, to Weedons Ross Road on the Northern edge of Rolleston.
- Improving access to the township of Rolleston and the Rolleston Industrial Area via three key points including one to the north, one to the south and Tennyson Street, as well as a grade separated connection between Rolleston Township and Rolleston Industrial Area.

- Improved connection between Rolleston and Lincoln including a passenger transport route via Boundary Road.

- Planning for increased traffic between Christchurch and Lincoln and the Halswell area via a series of arterial roads including an improved route utilising Matipo Street, Birmingham Drive, Magdalan Place, Wigram Road, Whincops Road, Longstaffs Road and Ellesmere Road to Lincoln, and Ellesmere Road via Sabys/Candys State Highway 75 to Sparks Road/Frankleigh Street/Milton Street to the Halswell area.

- Provision of an improved orbital arterial from Hornby to Halswell and beyond via Amyes Road, Awatea and Dunbars Road with an extension to Sparks Road/Hendersons Road.

- Promotion and development of a South Western orbital corridor between State Highway 1 and State Highway 75 utilising Hamptons Road, Trices Road, Sabys Road and Candys Road with a new link between Trices Road and Sabys Road.

- Upgrading of Hoskyns Road to provide better access to Rolleston from the West, including State Highway 73.

- Planning for an alternative route to State Highway 1 between Christchurch and Rolleston via Shands and Selwyn Roads.

- Intersection improvements on various routes to improve mobility, safety and access.

- Reduction of future traffic through existing townships including Templeton and Prebbleton.

- Provision for cycling into individual works by providing wide shoulders and cycle lanes where appropriate, as well as dedicated alternative mode corridors including Birchs Road between Lincoln and Prebbleton, and Boundary Road between Lincoln and Rolleston.

The Transport Strategy has shown to be effective in providing for the transport needs within the Study Area up to 2021, utilising where possible the existing transport corridors, for both freight, private and public passenger transport, and cycling. A limited number of new transport corridors will be required, which have been chosen through extensive analysis to maximise the transport efficiency, while minimising both environment and social effects.

The Transport Strategy has deliberately built into it, the ability to cater for alternative transport modes in the future. In particular future bus passenger transport will have the necessary transport corridors in place and appropriate road cross sections have been included for cyclists and in some cases off road cycle lanes are included.