# 6. Sensitivity Testing Using UDS Land Use

## Introduction

During the course of this study, the Greater Christchurch Urban Development Strategy (UDS) has been prepared by Environment Canterbury, Christchurch City Council, Waimakariri District Council, Selwyn District Council and Transit New Zealand. The UDS proposes an agreed growth strategy for the Greater Christchurch area to address the pressures being placed on the Greater Christchurch area's expansion to around 500,000 population at the year 2041. It aims to integrate land use development with transport and other social, environmental and infrastructural planning and is a step towards a more collaborative means of planning for the future. The UDS is not just about transport but takes a holistic approach to urban planning including land use, community identity, natural environment and economic factors. Statutory support is being given to the UDS through Proposed Plan Change No.1 to the Regional Policy Statement, which in turn from a transportation perspective will be underpinned in the 2008 Regional Land Transport Strategy.

The Christchurch, Rolleston and Environs Transportation Study (CRETS) is a Transportation study based on projected landuse and growth within the CRETS study area of south west Christchurch. CRETS commenced in 2002 before the UDS process started and at that time the CRETS landuse projection to 2021 was based on a medium growth forecast established from the 2001 Census. The recommended Transport Strategy was therefore oginally devised to address the resultant level of travel demands based on this growth scenario and land use patterns generally provided for in the Christchurch and Selwyn District Plans.

The Study Partners have agreed to investigate the alignment of the recommended Transport Strategy with the agreed UDS landuse growth forecasts by performing a sensitivity test on the recommended Transport Strategy using the 2026 UDS landuse forecasts

The agreed UDS landuse has adopted a Medium High forecast, based around the latest 2006 Census. This results in higher household and employment numbers than those assumed in CRETS for 2021. The same transportation modelling assumptions have been used to derive the resultant travel demands and traffic flow forecasts.

## CRETS vs UDS Landuse and Travel Demand

A comparison of the CRETS landuse against the UDS landuse is shown in Table 4 below. It should be noted that for CRETS there are landuses for 2001 and 2021, and UDS 2001 (CRETS equivalent) and 2026.

| AREA | 2001 CRETS | | 2021 CRETS | | 2026 UDS | | 2021 CRETS to 2026 UDS | |
|---|---|---|---|---|---|---|---|---|
| | HH | Jobs | HH | Jobs | HH | Jobs | HH | Jobs |
| Rolleston | 959 | 260 | 5296 | 2107 | 7112 | 6117 | 1816 | 2939 |
| Lincoln | 665 | 1492 | 1750 | 1571 | 3411 | 4062 | 1661 | 1954 |
| Prebbleton | 503 | 397 | 2000 | 468 | 1614 | 92 | -386 | -556 |
| Templeton | 710 | 843 | 833 | 903 | 2037 | 1727 | 1204 | 600 |
| West Melton | 554 | 215 | 758 | 263 | 1260 | 209 | 502 | -189 |
| Hornby | 4782 | 5820 | 4654 | 6521 | 5617 | 15986 | 963 | 7971 |
| Avonhead | 4448 | 722 | 4283 | 756 | 5027 | 2107 | 744 | 635 |
| Wigram | 264 | 506 | 3388 | 1635 | 2970 | 8766 | -418 | 6914 |
| Halswell | 4568 | 984 | 8743 | 1439 | 9640 | 2391 | 897 | 84 |
| **Model Total** [1] | **139321** | **120033** | **172200** | **129842** | **216210** | **231600** | **44010** | **101758** |

Table 4

CRETS vs UDS Landuse

Note [1] – This is not the sum of the areas outlined above rather the total for the whole model including the areas.

- CRETS 2001 to CRETS 2021 has a 24% growth in Households and a 8% growth in Jobs. This is a 1.2% growth per year for Households and a 0.4% growth per year for Jobs over the 20 years.
- CRETS 2001 to UDS 2026 has a 55% growth in Households and a 93% growth in Jobs. This is a 2.2% growth per year for Households and a 3.7% growth per year for Jobs over the 25 years.

*Forecast Travel Demand*

The resultant travel demand forecast for the UDS landuse is shown in the table below.

### Trip Purposes in the 24-Hour period (Modelled)

| Trip Purpose | Total Trips 2001 | Total Trips 2021 | *Increase 2001 to 2021* | *Increase 2001 to 2021* | Total Trips UDS 2026 | *Increase 2021 to 2026* | *Increase 2021 to 2026* | *Increase 2001 to 2026* | *Increase 2001 to 2026* |
|---|---|---|---|---|---|---|---|---|---|
| Home Based Work | 157179 | 187979 | *30800* | *19.60%* | 209785 | *21806* | *11.60%* | *52606* | *33.47%* |
| Home Based Shopping | 156214 | 197049 | *40835* | *26.14%* | 230755 | *33706* | *17.11%* | *74541* | *47.72%* |
| Home-Based Social/Rec | 125774 | 157883 | *32109* | *25.53%* | 184111 | *26228* | *16.61%* | *58337* | *46.38%* |
| Home Based Other | 283769 | 335691 | *51922* | *18.30%* | 393318 | *57627* | *17.17%* | *109549* | *38.60%* |
| Non Home Based | 290572 | 350196 | *59624* | *20.52%* | 403367 | *53171* | *15.18%* | *112795* | *38.82%* |
| Light Goods | 98914 | 154600 | *55686* | *56.30%* | 232076 | *77476* | *50.11%* | *133162* | *134.62%* |
| Heavy Goods | 51482 | 59071 | *7589* | *14.74%* | 86574 | *27503* | *46.56%* | *35092* | *68.16%* |
| External | 32268 | 51596 | *19328* | *59.90%* | 58229 | *6633* | *12.86%* | *25961* | *80.45%* |
| **Total** | 1196172 | 1494065 | *297893* | *24.90%* | 1798215 | *304150* | *20.36%* | *602043* | *50.33%* |

### Overall 24-Hour Trip Rates

| Horizon | 2021 | 2026 |
|---|---|---|
| Trip Matrix Total at end of CRETS model procedure[1] | 1501533 | 1803352 |
| Total Households in model | 172200 | 216210 |
| Overall 24-hour trips per household | 8.72 | 8.34 |

**Table 5**

**Travel demand forecast for UDS landuse.**

[1] Adjustment for Lincoln University trips.

### Traffic Volumes on Transport Strategy with UDS 2026 Landuse (UDS 2026)

It has been found from modelling the Transport Strategy, that if the UDS 2026 landuse was to be implemented, it would result in changes to the traffic volumes on various links. Table 7 contains the 24 hour period for 2026 traffic volumes for a number of significant links for the UDS landuse.

| | | 24 hour volumes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ROUTE | DESCRIPTION | Validation Network 2001 | Do Min Network 2021 | Growth Val to Do Min | Package of Options TS 2021 | Growth Val to Pckge TS 2021 | Package of Options UDS 2026 | Growth Val to Pckge UDS 2026 | Growth TS 2021 to UDS 2026 |
| SH1 - Hornby to Rolleston | SH1 Sth Carmen | 16400 | 19200 | 17% | 11000 | -33% | 13100 | -20% | 19% |
| | SH1 Sth HJR | 15500 | 26600 | 72% | 9000 | -42% | 12500 | -19% | 39% |
| | SH1 Sth Barters | 15800 | 27300 | 73% | 11400 | -28% | 14800 | -6% | 30% |
| | SH1 Sth Kirks | 16300 | 29800 | 83% | 12100 | -26% | 14500 | -11% | 20% |
| | SH1 Sth Dawsons | 15700 | 29200 | 86% | 11100 | -29% | 13100 | -17% | 18% |
| | SH1 Sth Curraghs | 15300 | 28900 | 89% | 31800 | 108% | 39300 | 157% | 24% |
| | SH1 Sth Weedons | 14700 | 25400 | 73% | 19400 | 32% | 21500 | 46% | 11% |
| Springs - Trents to Main South | Springs Sth Main South | 18000 | 22400 | 24% | 21100 | 17% | 30900 | 72% | 46% |
| | Springs Sth Amyes | 14600 | 16200 | 11% | 15100 | 3% | 20000 | 37% | 32% |
| | Springs Sth HJR | 10300 | 27300 | 165% | 10500 | 2% | 14900 | 45% | 42% |
| | Springs Sth Marshs | 10500 | 23200 | 121% | 11300 | 8% | 13800 | 31% | 22% |
| | Springs Sth Birchs | 9200 | 21400 | 133% | 10300 | 12% | 12700 | 38% | 23% |
| | Springs Sth Toswilll | 6500 | 15900 | 145% | 6500 | 0% | 9200 | 42% | 42% |
| | Springs Sth Hamptons | 4500 | 8900 | 98% | 6300 | 40% | 7600 | 69% | 21% |
| Shands - Halswell Junction to Main South | Sth Main South | 21100 | 26200 | 24% | 27000 | 28% | 35600 | 69% | 32% |
| | Sth Aymes | 11400 | 11000 | -4% | 13700 | 20% | 15900 | 39% | 16% |
| | Sth Seymour | 12500 | 12100 | -3% | 14200 | 14% | 17100 | 37% | 20% |
| Lincoln Connection | Birmingham Sth Vulcan | 5700 | 6500 | 14% | 14500 | 154% | 18400 | 223% | 27% |
| | Wigram Sth Haytons | 3500 | 8800 | 151% | 16700 | 377% | 21900 | 526% | 31% |
| | Dunbars to Halswell Junction | | | NA | 12300 | NA | 15900 | NA | 29% |
| | Halswell Junction to Marshs | | | NA | 11000 | NA | 13500 | NA | 23% |
| | Whincops Sth Quaifes | 200 | 500 | 150% | 7200 | 3500% | 10200 | 5000% | 42% |
| | Ellesmere Sth Leadleys | 2800 | 2200 | -21% | 5200 | 86% | 7800 | 179% | 50% |
| | Lincoln Southern Collector | | | NA | 1400 | NA | 1900 | NA | 36% |
| SH1 - Main South to Main North | Johns Wst Main North | 12100 | 19800 | 64% | 20000 | 65% | 29000 | 140% | 45% |
| | Johns Wst Gardiners | 11300 | 18700 | 65% | 19300 | 71% | 28000 | 148% | 45% |
| | Johns Wst of Sawyers Arms | 17100 | 27300 | 60% | 23100 | 35% | 30700 | 80% | 33% |
| | Russley Sth Harewood | 16500 | 21700 | 32% | 20600 | 25% | 28600 | 73% | 39% |
| | Russley Sth Wairakei | 16900 | 22100 | 31% | 22300 | 32% | 30200 | 79% | 35% |
| | Russley Sth Memorial | 22200 | 30800 | 39% | 30300 | 36% | 39500 | 78% | 30% |
| | Russley Sth Ryans | 18000 | 23700 | 32% | 26600 | 48% | 34400 | 91% | 29% |
| | Masham Sth Yaldhurst | 16100 | 23600 | 47% | 23800 | 48% | 30600 | 90% | 29% |
| | Carmen Sth Buchannans | 16900 | 25400 | 50% | 24900 | 47% | 32800 | 94% | 32% |
| | Carmen Sth Waterloo | 17100 | 23800 | 39% | 24000 | 40% | 31200 | 82% | 30% |
| CSM - Nash to Jerrold | Barrington Wst Selwyn | 27300 | 43800 | 60% | 42500 | 56% | 51500 | 89% | 21% |
| | CSM Wst Barrington | 24000 | 48500 | 102% | 46500 | 94% | 58800 | 145% | 26% |
| | CSM Wst Curletts | | 26100 | NA | 24700 | NA | 31500 | NA | 28% |
| | CSM Wst Nash | | 26100 | NA | 24700 | NA | 31500 | NA | 28% |
| | CSM Wst Awatea/Dunbars | | 26100 | NA | 24700 | NA | 31500 | NA | 28% |
| | CSM Wst Springs | | | NA | 24700 | NA | 31500 | NA | 28% |
| | CSM Wst Shands | | | NA | 20700 | NA | 26200 | NA | 27% |
| Main South/Blenhiem - Springs to Curletts | Blenhiem Wst Curletts | 40200 | 35500 | -12% | 31500 | -22% | 40500 | 1% | 29% |
| | Main South Wst Epsom | 50200 | 54400 | 8% | 52200 | 4% | 67800 | 35% | 30% |
| | Main South Wst Lowther | 43300 | 48000 | 11% | 39200 | -9% | 52400 | 21% | 34% |
| | Main South Est Springs | 44500 | 48700 | 9% | 40400 | -9% | 55000 | 24% | 36% |
| Curletts - Blenhiem to Lincoln/Halswell | Curletts Sth Blenhiem | 35500 | 37400 | 5% | 33300 | -6% | 37900 | 7% | 14% |
| | Curletts Sth Parkhouse | 35400 | 35100 | -1% | 35000 | -1% | 41100 | 16% | 17% |
| | Curletts Sth CSME | 12000 | 11900 | -1% | 12100 | 1% | 12100 | 1% | 0% |
| Aymes - Shands to Springs | Aymes Sth Shands | 7700 | 16900 | 119% | 14600 | 90% | 20500 | 166% | 40% |
| | Aymes Nth Springs | 10600 | 20500 | 93% | 17900 | 69% | 23700 | 124% | 32% |
| | Awatea Sth Springs | 2600 | 18300 | 604% | 15500 | 496% | 22900 | 781% | 48% |
| | Awatea Nth Wigram | 2400 | 10700 | 346% | 9000 | 275% | 12400 | 417% | 38% |
| | Dunbars Sth Wigram | 5100 | 12000 | 135% | 13000 | 155% | 16100 | 216% | 24% |
| | Dunbars Nth Halswell | 4700 | 9800 | 109% | 9700 | 106% | 13200 | 181% | 36% |
| Halswell Junction - Main Sth to Springs | HJR Nth Shands | 1800 | 8200 | 356% | 900 | -50% | 2200 | 22% | 144% |
| | HJR Nth Springs | 7200 | 16900 | 135% | 8300 | 15% | 18600 | 158% | 124% |
| Halswell - Nicholls to Lincoln | Lincoln Sth Wrights | 24400 | 30500 | 25% | 27800 | 14% | 29200 | 20% | 5% |
| | Halswell Sth Curletts | 23500 | 27200 | 16% | 24600 | 5% | 25200 | 7% | 2% |
| | Halswell Sth Hendersons | 18000 | 26100 | 45% | 22400 | 24% | 23000 | 28% | 3% |
| | Halswell Sth Aidenfield | 18000 | 22100 | 23% | 18600 | 3% | 22700 | 26% | 22% |
| | Halswell Sth Dunbars | 13600 | 17500 | 29% | 14800 | 9% | 16700 | 23% | 13% |
| Rolleston Drive | Rolleston Sth SH1 | 2400 | 5900 | 146% | 9700 | 304% | 12400 | 417% | 28% |
| | Rolleston Sth Tennyson | 100 | 2300 | 2200% | 2400 | 2300% | 4200 | 4100% | 75% |

**Table 6**

Transport Strategy (CRETS 2021) and UDS 2026 – Traffic Volumes

A comparison has been made between traffic volumes for the Transport Strategy in 2021 and UDS in 2026. The comparison shows a significant increase in traffic across the network on most corridors. The 24 hour period effects in 2026, of the UDS 2026 landuse sensitivity test on the major works corridors and growth areas include:

- Christchurch Southern Access Corridor – Significant increase in traffic volume over the entire length, including through Sockburn and along the Southern Motorway,
- Belfast to Hornby Corridor – Significant increase in traffic volume over the entire length,
- Russley to Aylesbury Corridor – Small increase in traffic volume over the entire length,
- Hornby to Burnham Corridor – Significant increase in traffic volume between Hornby and Weedons Ross Road and a small increase between Weedons Ross Road and Burnham,
- Christchurch to Lincoln Corridor including Prebbleton – Moderate increases on Ellesmere and Birchs Road with small increases on Springs Road south of Halswell Junction Road, with larger increases north of Halswell Junction Road,
- Christchurch to Tai Tapu Corridor – Very small increase in traffic volume between Hendersons and Wrights Road,
- Dunbars and Hendersons Road – Moderate increase in traffic volume south of Dunbars Road,
- Christchurch Outer Suburbs and Western Orbital Corridor – both very small increases and decreases in traffic volumes along route, basically no significant change,
- Rolleston to Lincoln Corridor – No significant change in traffic volume along this corridor.

A sample of the main changes in traffic flows are shown in the following table.

| Location | CRETS 2021 | UDS 2026 | Difference |
|---|---|---|---|
| Brougham Wst Selwyn | 42,500 | 51,500 | 9,000 |
| CSM West of Barrington | 46,500 | 58,800 | 12,300 |
| CSM West Awatea/Dunbars | 24,700 | 31,500 | 6,800 |
| CSM Wst Shands | 20,700 | 26,200 | 5,500 |
| Main South Road Sockburn | 52,200 | 67,800 | 15,600 |
| Johns Wst of Main North | 20,000 | 29,000 | 9,000 |
| Russley Sth Harewood | 20,600 | 28,600 | 8,000 |
| Russley Sth Memorial | 30,300 | 39,500 | 9,200 |
| Carmen Sth Buchanans | 24,900 | 32,800 | 7,900 |
| SH1 Sth Halswell Junction Rd | 9,000 | 12,500 | 3,500 |
| SH1 Sth Dawsons | 11,100 | 13,100 | 2,000 |
| SH1 Sth Curraghs | 31,800 | 39,300 | 7,500 |
| SH1 Sth Weedons | 19,400 | 21,500 | 2,100 |
| Springs Sth Main South | 21,100 | 30,900 | 9,800 |
| Springs Sth Halswell Junction Rd | 10,500 | 14,900 | 4,400 |
| Springs Sth Birchs | 10,300 | 12,700 | 2,400 |
| Birmingham Sth Vulcan | 14,500 | 18,400 | 3,900 |
| Wigram Sth Haytons | 16,700 | 21,900 | 5,200 |
| Whincops Sth Quaifes | 7,200 | 10,200 | 3,000 |
| Ellesmere Sth Leadleys | 5,200 | 7,800 | 2,600 |
| Lincoln Sth Wrights | 27,800 | 29,200 | 1,400 |
| Halswell Sth Aidenfield | 18,600 | 22,700 | 4,100 |

**Table 7**

Comparison of 24 hour traffic volumes generated by CRETS 2021 and UDS 2026

A comparison has been made between traffic volumes for the Transport Strategy in 2021 and the UDS in 2026 for the area around the Christchurch International Airport. The major effects include:

- A significant increase in traffic volume on Johns Road/Russley Road and Sawyers Arm Road East of State Highway 1,
- A moderate increase in traffic on Pound Road/McLeans Island Road,
- A moderate increase in traffic on Memorial Avenue east of State Highway 1.

A sample of the main changes in traffic flows around the Christchurch International Airport area include:

| Location | CRETS 2021 | UDS 2026 | Difference |
|---|---|---|---|
| Johns Road west of Gardiners Road | 17,900 | 26,900 | 9,000 |
| Russley Road south of Harewood Road | 25,700 | 36,900 | 11,200 |
| Russley Road south of Memorial Avenue | 28,900 | 38,100 | 9,200 |
| Memorial Avenue west of Russley Road | 29,300 | 31,000 | 1,700 |
| Memorial Avenue east of Russley Road | 26,200 | 30,100 | 3,900 |
| Pound Road south of McLeans Island Road | 4,000 | 6,200 | 2,200 |

**Table 8**

Comparison of traffic volumes generated by CRETS 2021 and UDS 2026

### Conclusion

As a result of the increase in vehicle trips for UDS 2026, the effectiveness of the CRETS Transport Strategy, when the UDS 2026 landuse is applied to it, is reduced. While the Transport Strategy addresses the issues that resulted from the assumed 2021 (CRETS) landuse, the more recent and higher UDS landuse projections indicate that the proposed Transport Strategy may be more relevant for the year 2016, than 2021. However, the underlying concepts of the CRETS Transport Strategy are equally applicable to the UDS 2026 including Road Hierarchy and the package of works including major, minor and CIA. If the higher vehicle trips eventuate for UDS 2026, the timing of some work for the CRETS Transport Strategy will require bringing forward, while some new works may need to be added.

It is important to note that the traffic forecast assumptions are based upon people travelling in the future as they do today. That is, people drive reasonably long distances to work, and there is only modest use of public transport and other modes. Both the UDS transport response to landuse growth and the Regional Land Transport Strategy encourage greater use of alternative modes of transport, better landuse/transport integration and travel demand management. Similarly the CRETS transport strategy identifies the need for strategic road improvements, but equally identifies the importance of public transport and other modes of travel. If there is a greater use of alternative modes than the private motor car, then the forecast travel demands may occur later than estimated. If not, then there may need to be further infrastructure improvements required.

Monitoring of actual population and traffic growth and further investigations will be necessary through ongoing UDS processes to confirm the transport requirements beyond the Transport Strategy recommended through this Christchurch Rolleston and Environs Transportation Study.

# 7. Test of Higher Passenger Transport Usage

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 travel demand management, and longer term potentially road pricing (suggested in the RLTS).

As a sensitivity check, 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, 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 10 shows the predicted changes in traffic volumes compared to the UDS 2026 landuse for a 24 hour period. Table  contains the 24 hour period for 2026 traffic volumes for a number of significant links for the 90% UDS landuse.

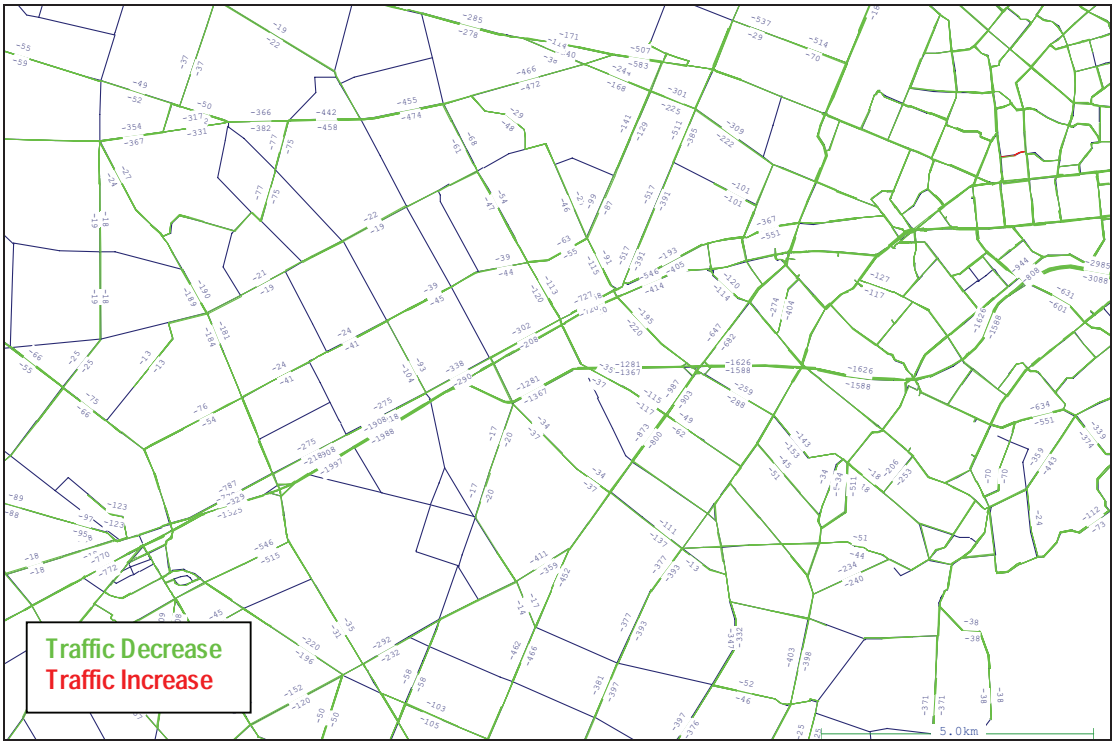


**Figure 10**

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

| 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 9**

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

### 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.

# 8. 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.

# APPENDICES