



## **Appendix D**

### **Integrated Transport Assessment**

# Weedons Road Residential Rezoning Plan Change

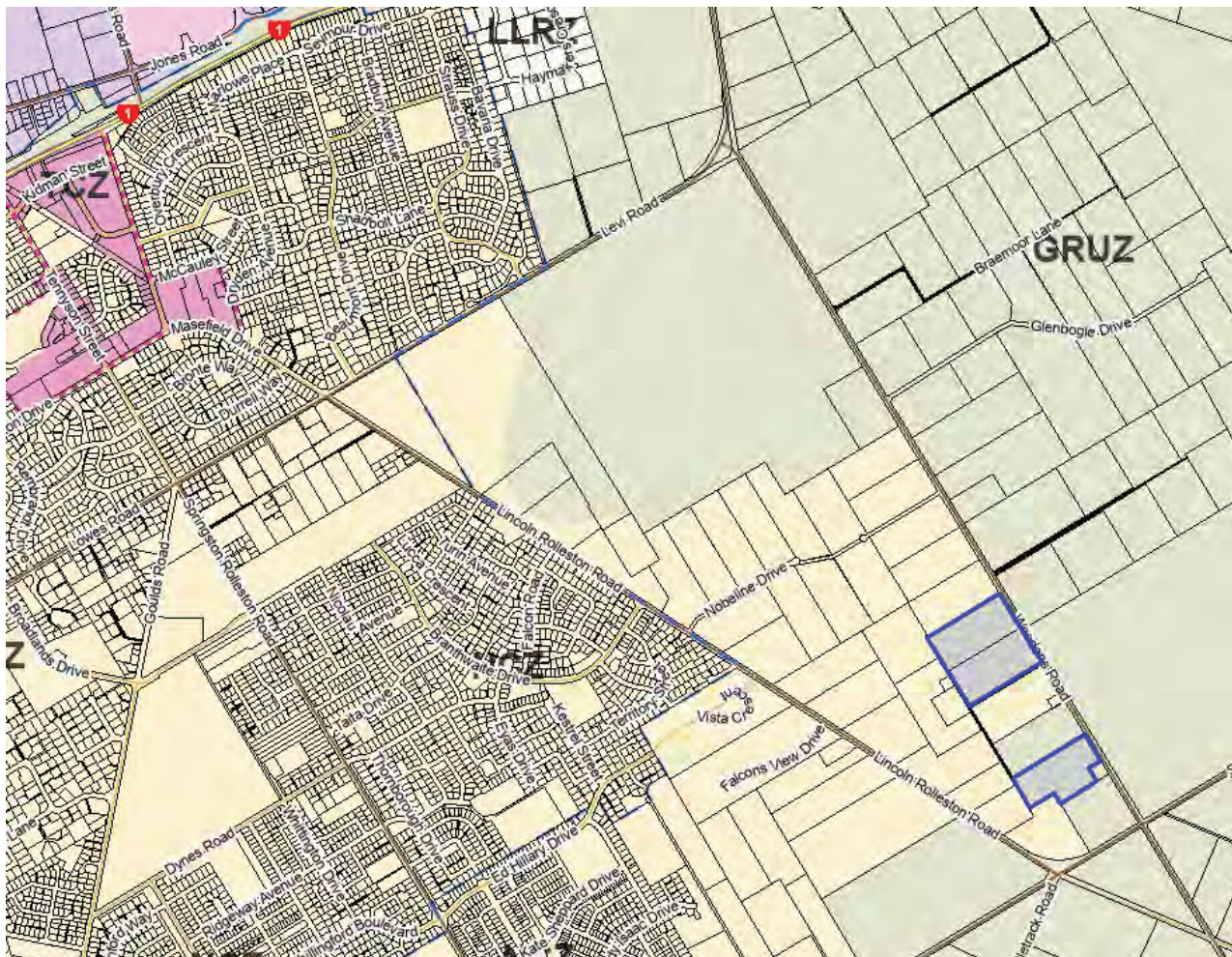
## Integrated Transport Assessment

Prepared for:  
Yoursection Ltd

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Prepared by:  
Stantec New Zealand

Project/File:  
310203579



## Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
1	26/11/2024	Draft for Project Team Review	S Jayasinghe	A Metherell	-	A Metherell
2	18/12/2024	Include Site 2	A Metherell	-	A Leckie	A Metherell
3	9/1/2025	Revised ODP	A Metherell			A Metherell

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Prepared by



Signature

Sayuni Jayasinghe

Printed Name



Signature

Andrew Metherell

Printed Name

Approved by



Signature

Andrew Metherell

Printed Name



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# **1 Introduction**

Yoursection Ltd proposes to re-zone approximately 13 hectares of rural land to the south-east of Rolleston for residential use by way of a private Plan Change to the Selwyn District Partially Operative District Plan (District Plan). The Site includes two separate areas of land:

- Site 1 – 1/487 and 2/487 Weedons Road 8.7ha
- Site 2 – 10/487 Weedons Road 4.3ha

The Sites are on the western side of Weedons Road, surrounded by a combination of land recently rezoned as Medium Density Residential (MDZ) in the Partially Operative District Plan and rural land. If developed at 15 lots per hectare, Site 1 has the capacity to accommodate approximately 130 lots, and Site 2 has capacity for approximately 63 lots.

This Integrated Transport Assessment has been prepared to assess the proposed Outline Development Plan for the Plan Change and the ability of the surrounding transport network to accommodate the proposed development. The report also includes background on the location of the site, the existing transport network around the site and planned future changes in landuse and transport infrastructure.



## 2 Site Location

The locations of the sites for the proposed re-zoning can be seen in Figure 2-1.



**Figure 2-1: Site Location in Context of Existing Rolleston Urban Area (Aerial Image Source: Canterbury Maps Viewer)**

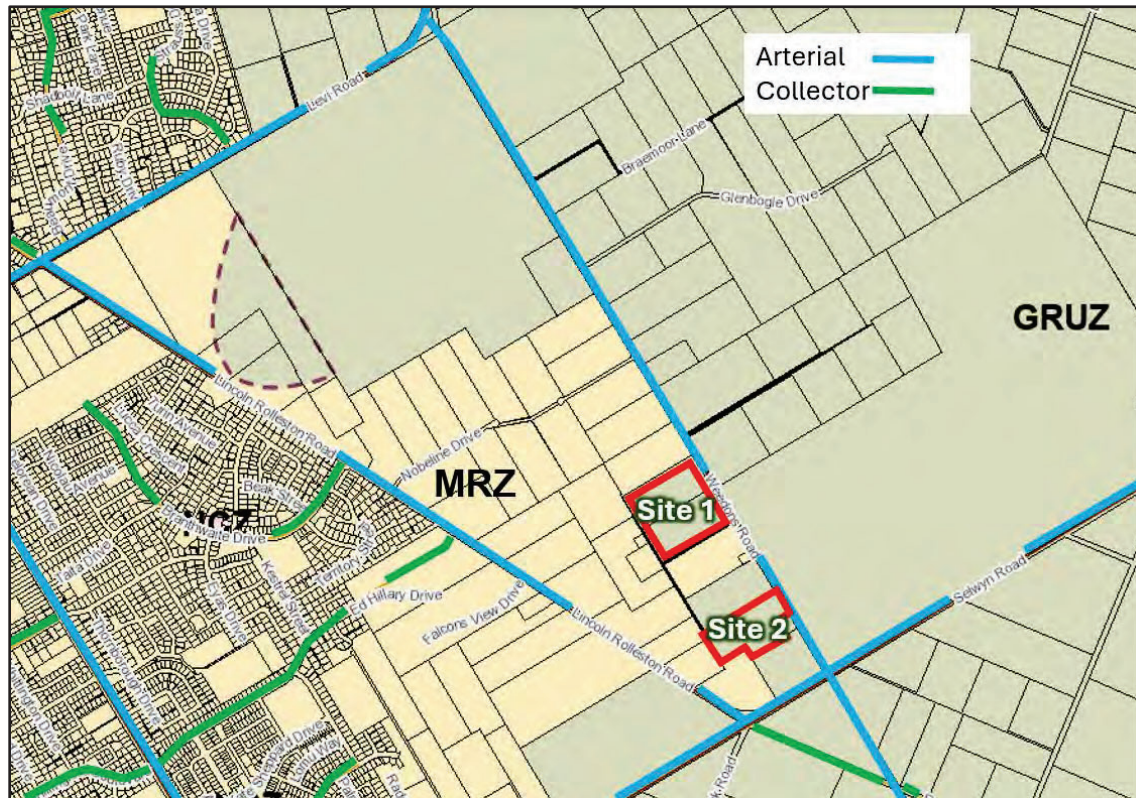
Figure 2-2 below shows the sites in the context of the Partially Operative District Plan road hierarchy classifications in the south-east of Rolleston, alongside the existing zoning.

Key roads within the vicinity of the sites include Weedons Road, Lincoln Rolleston Road, Levi Road and Selwyn Road. It is noted that there are collector road routes planned through the development areas between Weedons Road and Lincoln Rolleston Road, which are not yet reflected in the road hierarchy.

The sites are General Rural Zone under the Partially Operative District Plan. The land to the north, south and west of Site 1 is zoned Medium Density Residential (MDZ), while Site 2 is one of three larger lots in the south-eastern corner of the block remaining rurally zoned.



**Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment**  
**2 Site Location**



**Figure 2-2: Road Hierarchy Classification (SDC Partially Operative District Plan)**





## 3 Existing Transport Network

### 3.1 Weedons Road

Weedons Road is classified in the Partially Operative District Plan as an Arterial Road. It provides for an indirect movement route between Lincoln and the IZone industrial area west of the SH1/Weedons Road interchange.

Along the site frontage Figure 3-1, the road has a rural formation with a single traffic lane in each direction and a posted speed limited of 80 km/h. Power poles are positioned on the west side of the road. This general layout is consistent along the road.



*Figure 3-1: Weedons Road Site Frontage, Looking North-West*

### 3.2 Levi Road

The Weedons Road arterial route continues to the north-west and past the Levi Road intersection, providing linkage to the Christchurch Southern Motorway interchange. Weedons Road and Levi Road meet at a priority-controlled T-intersection (Figure 3-2 and Figure 3-3) with a right turn bay from Levi Road into Weedons Road (south). Levi Road continues south-west from this intersection as a key connection to Rolleston township.



*Figure 3-2: Levi Road/Weedons Road intersection (looking west on Levi Road)*



*Figure 3-3: Levi Road/Weedons Road intersection (Image Canterbury Maps)*

### **3.3 Selwyn Road**

The Weedons Road arterial route continues south-east to and across the Selwyn Road arterial route. Selwyn Road and Weedons road meet at a stop-controlled intersection within an 80km/h speed limit area, as shown in **Figure 3-4** and **Figure 3-5**. There are central traffic islands on the Weedons Road approaches.







*Figure 3-4: Selwyn Road looking east to Weedons Road Intersection*



*Figure 3-5: Selwyn Road/Weedons Road Intersection (Image Canterbury Maps)*

### 3.4 Lincoln Rolleston Road

Selwyn Road arterial route continues south-west towards Lincoln Rolleston Road. Selwyn Road and Lincoln Rolleston Road meet at a priority-controlled T-intersection (**Figure 3-6** and **Figure 3-7**), with the minor leg being Selwyn Road to the west. This section of Selwyn Road has an arterial status in the District Plan. The intersection operates within an 80km/h speed limit.



**Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment**  
**3 Existing Transport Network**



**Figure 3-6: Selwyn Road/Lincoln Rolleston Road Intersection**



**Figure 3-7: Selwyn Road/Lincoln Rolleston Road Intersection (Aerial Image Source: Canterbury Maps)**





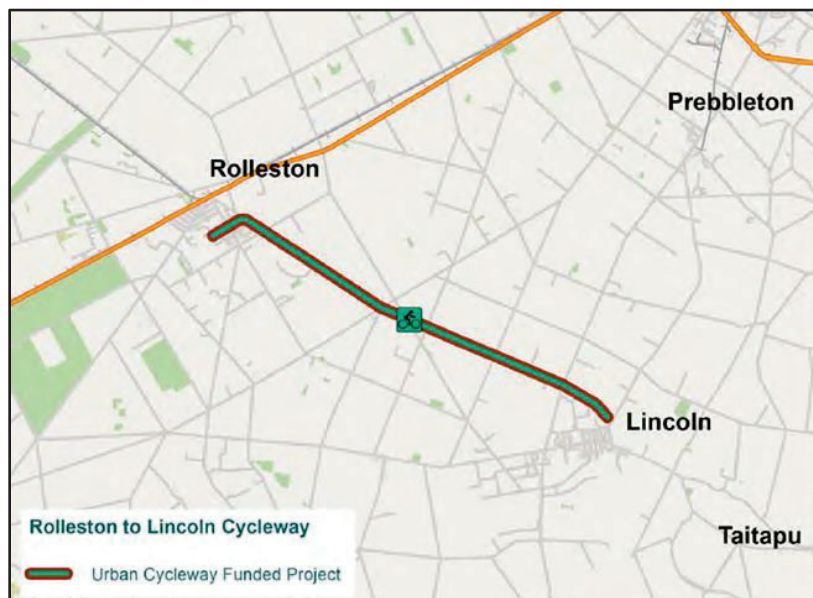
Along Lincoln Rolleston Road (**Figure 3-8**), the road has a rural formation with a single traffic lane in each direction and a posted speed limit of 80km/h.



*Figure 3-8: Lincoln Rolleston Road, Looking South-East*

### **3.5 Existing Cycle/Pedestrian Network**

There is no existing cycleway and pedestrian network along Weedons Road. The nearest cycleway to the site is the Rolleston to Lincoln Cycleway (**Figure 3-9**) that runs along the south-western side of Lincoln Rolleston Road. Along the rural section of Lincoln Rolleston Road, the path (**Figure 3-10**) has an approximately 1.5m width. The shared pedestrian/cycle path along the sections with residential development frontage is widened to 2.5m.



*Figure 3-9: Rolleston to Lincoln Cycleway Route*



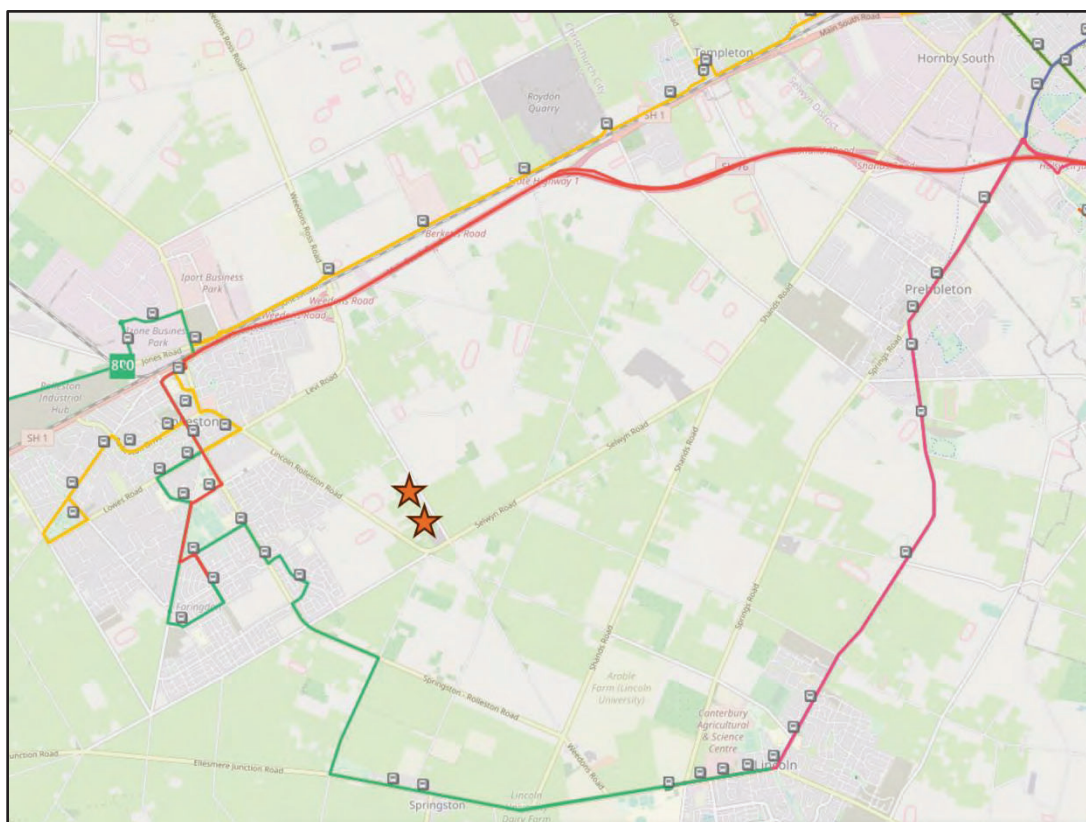


**Figure 3-10: Rolleston to Lincoln Cycleway on Lincoln Rolleston Road**

Subdivision roads in the surrounding area along Lincoln Rolleston Road are being developed with footpaths or shared paths to Council standards.

## **3.6 Public Transport**

Figure 3-11 below shows the existing bus routes servicing the Rolleston area.



**Figure 3-11: Existing Bus Routes (Metro Info), Site Location Orange Stars**



## **Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment**

### **3 Existing Transport Network**

The primary route servicing Rolleston is the #5 Rolleston/New Brighton service (the yellow line below) running at a headway of approximately 30mins in each direction, with more frequent services during commuter times.

The #820 Burnham/Lincoln via Rolleston service (the green line below) runs at a headway of approximately 1 hour in each direction. This service currently runs closest to the site through Acland Park off Springston Rolleston Road, where there is a pair of bus stops located on Broadway Parade approximately 1.3km west of the site.

The #85 Rolleston/City direct service is an express commuter service to Christchurch with three buses leaving Rolleston during the morning commuter period and three buses returning in the evening.



## 4 Existing Traffic Patterns

### 4.1 Daily Traffic Volumes

Average daily traffic (ADT) volumes on significant roads in the local Rolleston transport network were obtained from SDC and are summarised in Table 4-1 below.

**Table 4-1: Daily Traffic Volumes (SDC)**

Locations	ADT (vpd)	Count Date
Weedons Road, north-west of Selwyn Road	1,600	August 2021
Weedons Road, south-east of Levi Road	1,800	September 2022
Levi Road, west of Weedons Road	10,200	September 2022
Selwyn Road, south-west of Weedons Road	7,200	September 2022
Lincoln Rolleston Road, west of Selwyn Road	3,400	September 2022
Lincoln Rolleston Road, south-east of Levi Road	6,000	March 2019

It can be seen that Weedons Road currently carries relatively low traffic volumes compared with the other arterial roads. Levi Road west of Weedons Road is the busiest road in the area due to its usage by people travelling to and from Christchurch. All the roads outlined in the summary table above are classified as Arterial Roads under the SDC District Plan and the traffic volumes reflect their function of delivering traffic flow to high importance routes and areas.

### 4.2 Intersection Turn Movements

Intersection traffic counts were carried out on Thursday 27 April 2023 at the Selwyn Road intersections with Lincoln Rolleston Road and Weedons Road. The counts for peak hours are summarised in Table 4-2 and Table 4-3.

**Table 4-2: Selwyn Road/Lincoln Rolleston Road**

Approach	Movement	AM 2023	PM 2023
Lincoln Rolleston Road (North)	Through	161	167
	Right	4	15
	Approach	165	182
Selwyn Road (West)	Left	5	12
	Right	422	225
	Approach	427	237
Selwyn Road (East)	Left	167	382
	Through	104	266
	Approach	271	648
INTERSECTION		863	1,067

Observations indicate that the Selwyn Road/Lincoln Rolleston Road intersection can accommodate the existing high turning traffic volumes with low delays and queuing occurrence, although the heavy PM peak left turn from Selwyn Road east into Selwyn Road west creates some difficulties with gap selection for those turning right from Selwyn Road west into Selwyn Road east.





## Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

### 4 Existing Traffic Patterns

**Table 4-3: Selwyn Road/Weedons Road**

Approach	Movement	AM 2023	PM 2023
Selwyn Road (East)	Left	1	1
	Thru	216	560
	Right	8	13
	Approach	225	574
Weedons Road (South)	Left	46	67
	Thru	61	66
	Right	1	2
	Approach	108	135
Selwyn Road (West)	Left	18	11
	Thru	524	296
	Right	50	78
	Approach	592	385
Weedons Road (North)	Left	24	28
	Thru	57	93
	Right	6	12
	Approach	87	133
INTERSECTION		1012	1227

Observation of the Selwyn Road/Weedons Road intersection indicates it operates with modest delays. There is some complexity, particularly in the evening peak as vehicles crossing the intersection wait for gaps in traffic in both directions on Selwyn Road, often with vehicles side by side at the stop line.



## 5 Road Crash Analysis

### 5.1 Crash Locations

A search of the crash records was undertaken using Waka Kotahi's 'Crash Analysis System' (CAS) database for the purposes of reviewing the existing road safety in the vicinity of the site. The search was conducted for the most recent complete 5-year period of July 2019 to June 2024. The search area is illustrated in **Figure 5-1** (Key: "M" / Yellow = minor-injury, "N" / Green = non-injury) and includes the length of Weedons Road from Levi Road (north) to Selwyn Road (south) with 250m search radii at these intersections.

There have been 16 crashes recorded within the search area during the search period. Of the crashes recorded one was classified as a serious injury crash, seven were minor injury and eight were non-injury.

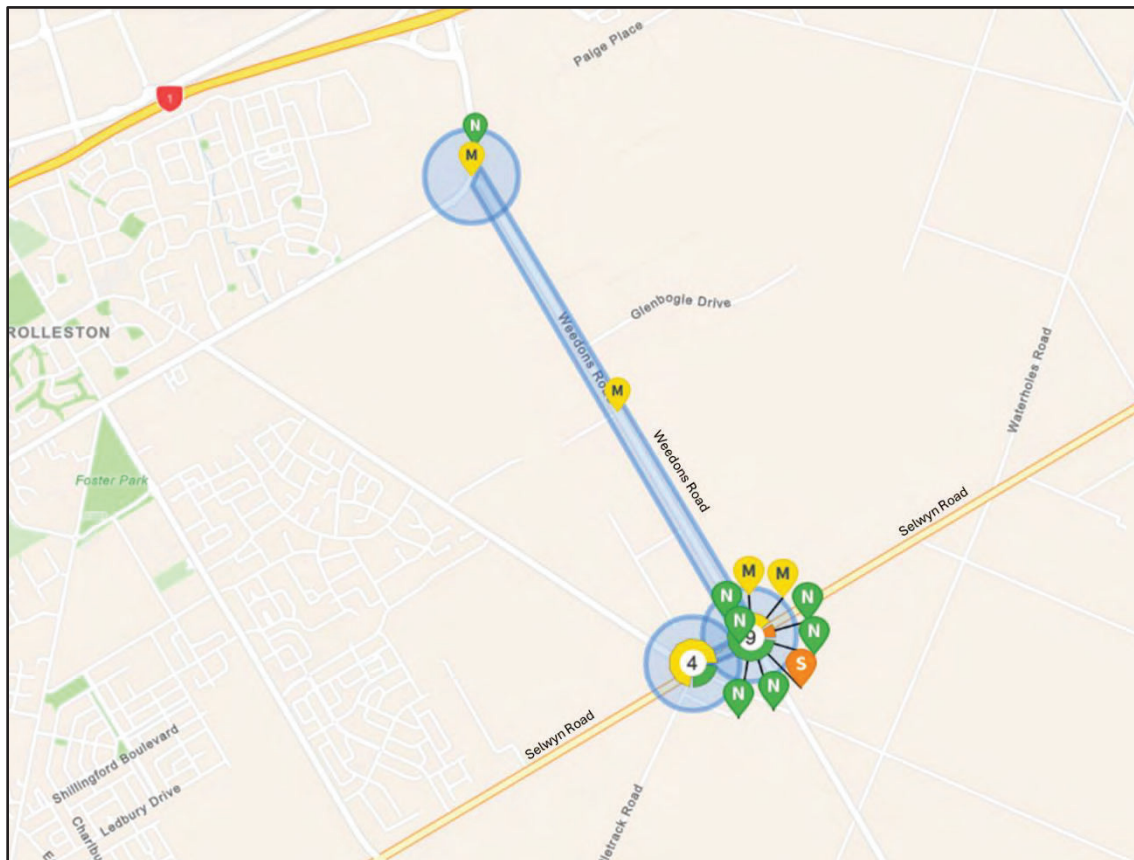


Figure 5-1: Crash Search Area (Waka Kotahi CAS)

### 5.2 Weedons Road

There has been one crash along Weedons road during the search period. A minor crash occurred along the road whilst a driver parking a truck and trailer on the middle of the road opened a gate to a property. A northbound and a southbound driver failed to notice the parked vehicle in the middle of the road causing them to crash into it.

### 5.3 Weedons Road/Levi Road

Two crashes were recorded at the Weedons Road/Levi Road intersection during the search period, one was a minor injury crash and one non-injury crash. The minor crash occurred due to driver error where a driver wanting to turn right from Weedons Road onto Levi Road misinterpreted the indicators of a vehicle travelling westbound on Levi Road causing a side-on collision. The non-injury crash was due to



a parked vehicle pulling out into the traffic lane on Weedons Road without checking for vehicles behind and ultimately crashing into a north bound vehicle.

## 5.4 Selwyn Road/Weedons Road

There were nine crashes recorded at the Selwyn Road/Weedons Road intersection during the search period. One was classified as a serious injury crash, two as minor injury crashes and the other six were classified as non-injury. The crash types at the intersection are shown in Figure 5-2, with symbols showing single vehicle loss of control, two vehicle collisions at the intersection, and an other turning (J other). The green “N” notation shows non-injury crashes, yellow “M” is minor injury, and orange “S” is a serious injury.



**Figure 5-2: Crashes at Selwyn Road/Weedons Road**

There have been nine turning or crossing movement type collisions involving two vehicles at the intersection. These included four crashes (including a serious and minor injury crash) where the vehicle was travelling along Selwyn Road was hit from the side by a vehicle travelling through the intersection into Weedons Road.

There were also two crashes involving vehicles turning right from Selwyn Road west into Weedons Road south. A further turning crash also occurred at the intersection due to an inexperienced driver driving into a ditch.

The other two crashes were loss of control type crashes whilst turning. One of the crashes was a slow-moving motorcyclist who was under the influence and hit the centre of the traffic island and lost control. The other crash involved a fatigued driver driving into a ditch.

## 5.5 Selwyn Road/Lincoln Rolleston Road

Three crashes were recorded at the Selwyn Road/Lincoln Rolleston Road intersection during the search period. Two were classified as minor injury with one being classified as a non-injury.







**Figure 5-3: Crashes at Lincoln Rolleston Road/Selwyn Road**

The two minor injury crashes involved vehicles travelling through on Selwyn Road to Lincoln Rolleston Road colliding with vehicles turning right from Selwyn Road west. A common cause reported is that the drivers approaching the intersection from the west on Selwyn Road and turning right had failed to see a car coming from the right. Historically, the frequency of this type of crash has decreased. There were multiple occurrences before our search period, but now there are fewer of these crashes during the search period. This could be as a result of the general increase in turning movements from Selwyn Road west changing driver behaviour through the intersection and reduced through movements to and from Lincoln Rolleston Road as highlighted earlier.

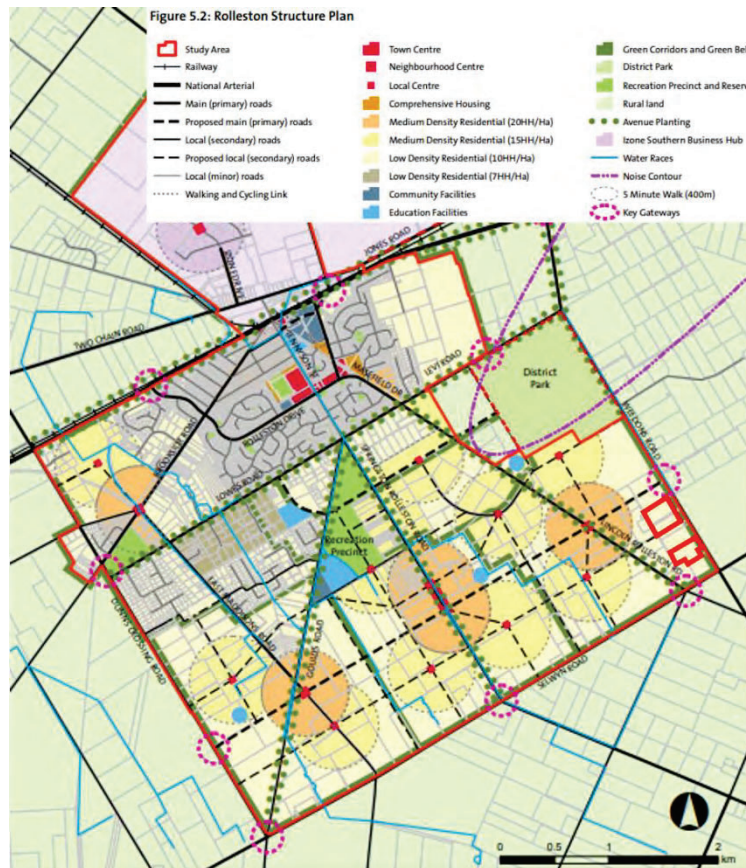
The other non-injury crash was listed as a cutting corner type crash. It involved a driver turning right from Selwyn Road west and then failing to keep to the left of the road after turning resulting, resulting in a collision with a westbound vehicle. There is no indication of this crash being related to the operation of the intersection.



## 6 Planning Context/Future Environment

### 6.1 Rolleston Structure Plan

The Rolleston Structure Plan (Figure 6-1) has set out a potential plan for the long-term Rolleston area that encapsulates the site, and generally all land in the Future Infrastructure Boundary defined in the Canterbury Regional Policy Statement (CRPS). It provides some high-level insight into the original intention and potential for long term connections for the road network, public transport, and cycling. North of the site on Weedons Road a large District Park is indicated.



**Figure 6-1: Rolleston Structure Plan (Site in Red)**

As a reference for considering the long-term development of Rolleston, in the vicinity of the proposed development, the relevant Structure Plan transport diagrams indicate:

- That the site will comprise of one east-west secondary road (the extension of Lady Issac Drive) on the south side which is already provisioned in Dev-RO16.
- Future bus services nearest to the site as indicated are indicated as an orbiter service on Lincoln Rolleston Road and the CRETS Collector Road (Ed Hillary Drive – Talon Drive), as well as south of the site on Selwyn Road .
- Cycleways are anticipated along Weedons Road, Selwyn Road and Lincoln Rolleston Road, as well as through future residential development north of the site.

It is important to note that the high-level transport planning provided for in the Rolleston Structure Plan requires on-going reconsideration as development of Rolleston progresses and has now largely been implemented through rezoning as part of the District Plan review process and subdivisions. For this reason, it is considered a guidance document.



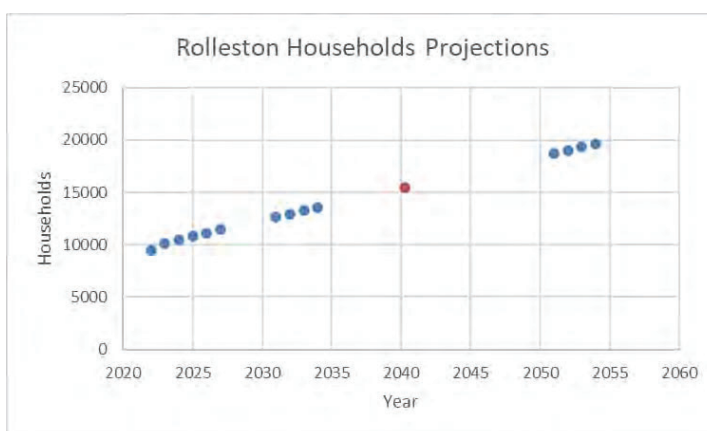
## 6.2 Regional Policy Statement

The Regional Policy Statement sets out the Projected Infrastructure Boundary and includes future development areas Greenfield Priority Areas for development. These areas were set following the Canterbury Earthquakes and then revised in 2021 to reflect the need for housing capacity. Greenfield development is well advanced or completed in most of the residential priority areas of Rolleston.

The Future Development Areas are identified in Map A of the Policy Statement which includes the proposed site as a Future Development Area within the Projected Infrastructure Boundary.

## 6.3 Nearby Greenfield Development Land

The Long Term Plan projections<sup>1</sup> of residential growth indicate close to linear growth over time in Rolleston, as shown in Figure 6-2. The red dot represents the household provision in the SDC traffic model, which is representative of households at 2040/41 and is 48% higher than the 2024 household estimate. This represents approximately 310 households per annum growth over the next 16 years.



**Figure 6-2: Long Term Plan Households Growth Projections**

To support this growth, there are several proposed development areas on the south-eastern part of Rolleston included in the Partially Operative District Plan, as shown in Figure 6-3. Additional residential development areas are also included in the western part of Rolleston. The Site is a section of rural zoned land bounded on three sides by residential zoned land.

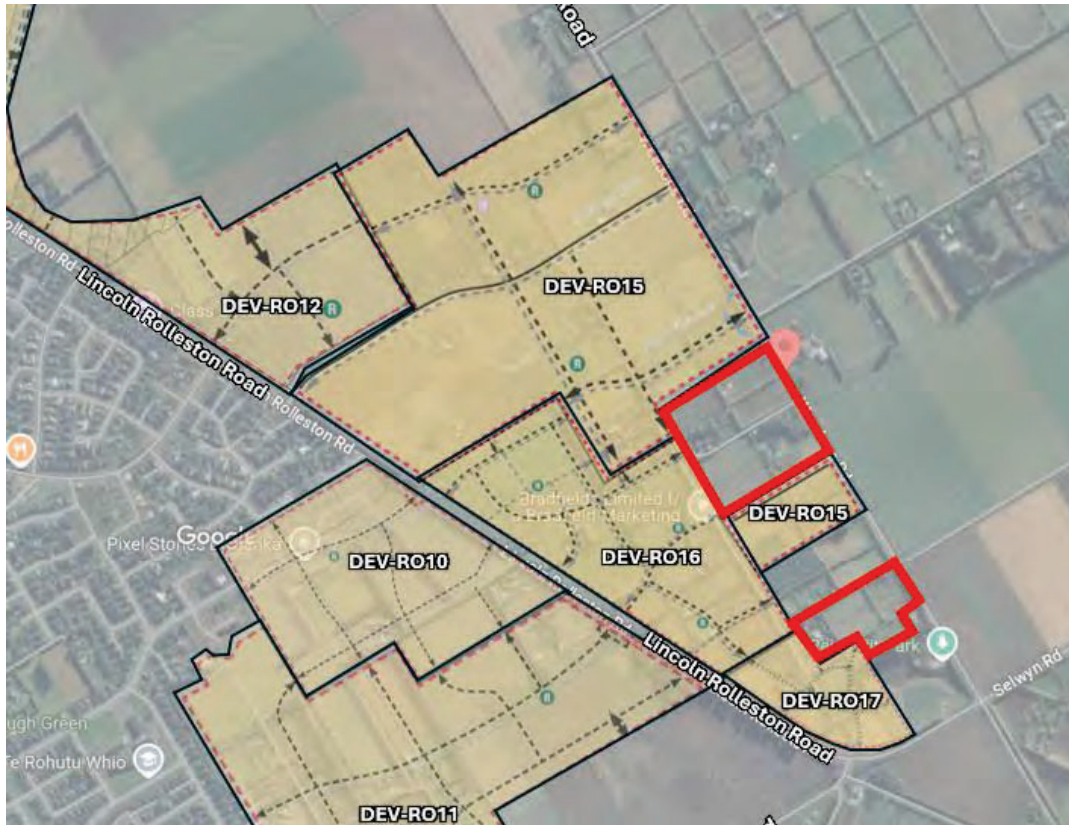
According to the Outline Development Plan (ODP) provisions, residential development within the DEV-RO15, DEV-RO16, and DEV-RO17 areas is restricted from happening until the following intersection upgrades are operational:

- the Selwyn Road and Lincoln Rolleston Road intersection to form a roundabout.
- the Selwyn Road and Weedons Road intersection to form a roundabout.
- the Lowes Road/Levi Drive/Masefield intersection to traffic signals.

Pedestrian and cycle connections are also shown on DEV-RO15 along the Weedons Road frontage, consistent with the provisions of the Rolleston Structure Plan. The ODP's do not otherwise discuss how the Weedons Road frontage is to be treated, being on the zoned urban/rural boundary. This will be a matter considered during subdivision. However, it is noted comparable road frontages such as Selwyn Road and Dunns Crossing Road have provided full urban upgrades on the development side of the road, with a rural formation remaining on the rural side.

<sup>1</sup> Selwyn District Long Term Plan 2024-2034 Growth & Demand Report





**Figure 6-3: Proposed Residential Plan Change in South-east of Rolleston (Site in Red)**

Various residential subdivisions are occurring in the south-east of Rolleston, having either approved plans or consent applications submitted to Council including (but not limited to):

- Falcons Landing - west of Lincoln Rolleston Road (part of DEV-RO10).
- Falcons East (part of DEV-RO16).
- Urban Estates - west of Lincoln Rolleston Road (part of DEV-RO11).

Those developments, and others being completed will add road connectivity in the area through implementation of new roads required by ODPs and additional traffic. Of particular note is that the developments will provide for eastern extensions of the Sir Ed Hillary Drive and Lady Isaac Drive Collector Roads.

## 6.4 Rolleston Access Improvements

NZTA is planning changes to the SH1 connections into Rolleston as part of the Roads of Regional Significance Programme (previously the NZ Upgrade Programme). In particular, a new bridge is proposed across SH1 at Rolleston Drive, with removal of the existing traffic lights and some additional turning movement restrictions at that location. It is expected the changes will be completed by approximately 2030. It is understood a possible outcome of the changes will be increased use of Levi Road as an increasingly important access route in and out of Rolleston.

A new two-lane roundabout is proposed at Dunns Crossing/Walkers Road intersection to create a new way to enter and exit Rolleston and the industrial area from the south.



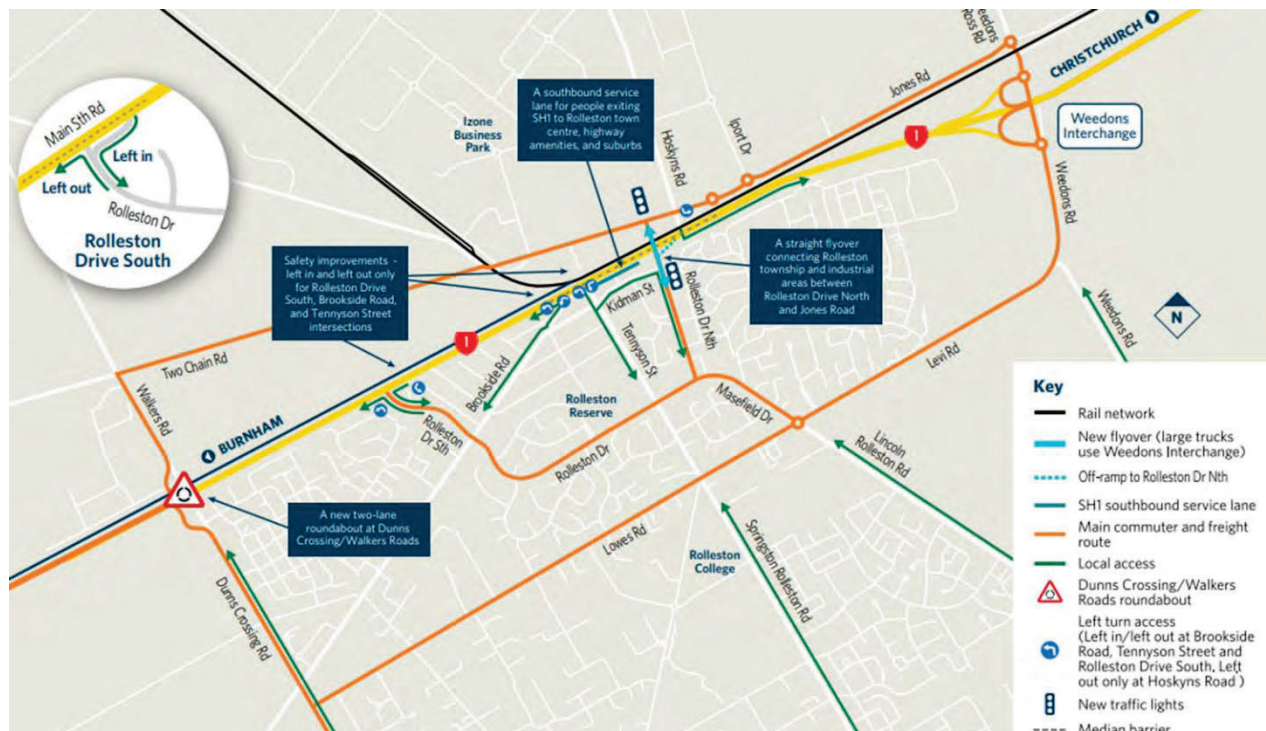


Figure 6-4: Proposed Rolleston Flyover and Transport Improvements (Waka Kotahi June 2022 Feedback Form)

## 6.5 Selwyn District Transport Projects

The 2024/25 annual plan includes the projects and budgets planned for the year. In this plan, the Levi Road / Lincoln Rolleston Road intersection is set to upgrade to traffic signals. This will address mounting congestion issues at this key arterial intersection.

The 2024-34 Long Term Plan capital programme and Transport Activity Management Plan provides for the following intersection upgrade timings:

- Selwyn Road/Lincoln Rolleston Road roundabout \$8M 2028/29
- Selwyn Road/Weedons Road roundabout \$6.5M 2028/29
- Levi Road/Weedons Road roundabout \$4M 2032/2033

The Long Term Plan also includes provision for a roundabout on Lincoln Rolleston Road at Ed Hillary Drive in 2034/35 (\$3M), and on Branthwaite Drive in 2035/36 (\$3M), to improve road safety and accommodate traffic growth.

The Levi Road/Weedons Road roundabout and the Selwyn Road/Weedons Road roundabout would support the increasing function of Weedons Road as development areas connect across from Lincoln Rolleston Road to Weedons Road, as well as supporting increasing movement between Lincoln and the industrial areas.

The Selwyn Road/Springston Rolleston Road roundabout planned for in the three-year programme of the Long Term Plan for 2025/26 costing \$6M is not National Land Transport Programme (NLTP) funded anymore hence this is being paused. This is due to the significant reduction in funding from NZTA for the 2024-27 infrastructure plan. Other projects around the area are still funded.

## 6.6 Future Public Transport Environment

As highlighted, the Rolleston Structure Plan indicates that the CRETS collector road and Lincoln Rolleston Road are potential future bus routes.

The draft Canterbury Regional Public Transport Plan plans to revise routes to maximise patronage by running more frequent services along certain corridors quickly. Selwyn services are intended to be



extensions to strong routes to and from Christchurch City, with further future improvements to Selwyn services in the future. The Plan references the Greater Christchurch Public Transport Futures business case work which includes an indicative map showing the southeast of Rolleston being serviced by a route from Rolleston to Lincoln along part of Lincoln Rolleston Road.

Previous discussions with Environment Canterbury (ECan) public transport representatives confirmed that there have been no changes to the bus network in Rolleston for some time and that the services in Rolleston (#5 and #820) are due for service reviews in 2024/25. The timing for these reviews came out of the Future Public Transport Business Case work carried out for ECan. It is understood at this time, the intention will be to take a 'blank canvas' approach to re-considering public transport provision in Rolleston. It is ECan's intention to use extensive consultation with the community in developing its future plans. As such, whilst no firm plans have been included for public transport close to the site, the recently zoned residential land and ongoing development in the area will factor into such a review.



## 7 Proposed Rezoning Overview

### 7.1 ODP and Development Scale

It is proposed to re-zone two blocks of land totalling approximately 13ha, as follows:

- Site 1 – 1/487 and 2/487 Weedons Road 8.7ha
- Site 2 – 10/487 Weedons Road 4.3ha

The rezoning will be from General Rural to Medium Density Residential, consistent with adjoining residential land. The two ODPs proposed are shown in Figure 7-1 and Figure 7-2:



**Figure 7-1: Site 1 ODP**







**Figure 7-2: Site 2 ODP**

Based on an average density of 15 lots per hectare, it is estimated that the sites could accommodate approximately 193 residential lots (130 lots within Area 1 and 63 lots within Area 2). The sites will form eastern extensions of DEV-RO16 and DEV-RO17 respectively.

## 7.2 Site 1 Layout

The ODP for Site 1 includes road connection to each of the adjoining residential areas (south, west and north where residential development will occur), as well as separate road connection to Weedons Road. These will support a well connected road network, as well as flexibility to stage development of the site independently of adjoining areas if necessary.

In the vicinity of Site 1, three intersections are proposed along Weedons Road to provide vehicle access to planned residential land. Two of these are already proposed by existing DEV-RO15 ODP for proposed neighbouring residential roads to the north and south of the site.

The DEV-RO15 intersections north and south of the site are intended to be Tee-intersections of collector roads with an arterial road. Weedons Road is currently an arterial with 80km/h speed limit, and intersection separation is important. Based on development at the urban/rural interface on Selwyn Road



and Dunns Crossing Road, and the progressive development along Lincoln Rolleston Road, a reduced urban speed limit of 50km/h or 60km/h is anticipated along the site frontage.

For a 60km/h road the minimum separation between roads according to the District Plan is 151m (for 80km/h road it is 214m). The separation between the current ODP roads is approximately 360m between collector roads, and that enables a compliant additional road connection in the middle of these roads with at least 151m (although it will be less than 214m separation required for an 80km/h road). However, as it is currently unclear to what extent the Council will want to protect the arterial function of Weedons Road any additional road connection requires evaluation. Other local road connectivity is indicated to all site boundaries to the west, south, and north.

Pedestrian/cycle connections are indicated along several of the internal roads as well as along the Weedons Road frontage.

## **7.3 Site 2 Layout**

Site 2 will support a connection from DEV-RO17 to Weedons Road, as well as connectivity to potential subdivision to the north (if 9/487 Weedons Road was rezoned or consented for residential subdivision in the future).

It is noted that DEV-RO17 includes a potential connection to the proposed Selwyn Road / Lincoln Rolleston Road intersection. The description of the road connecting from DEV-RO17 is as follows indicating that the road is potentially going to support higher levels of vehicle traffic, and a bus route:

*The primary road traversing the ODP will have a greater road reserve width than other roads with a greater sense of spaciousness and will to allow for larger tree planting and the inclusion of a separate shared cycle and walkway, and also recognise that any development in the wider area may find this an attractive route (meaning that traffic volumes may be greater). This road should also be designed to a standard to facilitate public transport routes (bus).*

It is likely this description reflects the potential connection to the Selwyn Road / Lincoln Rolleston Road intersection, and the traffic that may use the road for movement between Weedons Road north of the site and Selwyn Road west of the site.

The new road connection to Weedons Road will be approximately 325m north of the Selwyn Road arterial roundabout, and approximately 350m south of the Lady Isaac Drive collector road extension intersection on Weedons Road. This is sufficiently separated from those intersections such that it will not affect the form of those higher order intersections.

The proposed ODP does not include a specific connection to the adjacent Reid Pit, although pedestrian connection can be considered as a standard matter for subdivision consent.

# **8 Transport Network Performance Assessment**

## **8.1 Traffic Generation/Distribution**

Stantec traffic modellers have made use of the Selwyn District Council 2040 Rolleston Micro-Simulation Traffic Model which has been developed for assessment of the future transport network once urban zoned land has been developed. It is understood that this model provides for most of the zoned greenfield residential areas to be fully developed.

The model has been applied for assessment of the ability of the surrounding road network to accommodate a 130-lot subdivision in Site 1 and a 63-lot subdivision in Site 2.

The following related to trip generation, distribution and mode shift were adopted for consistency with the model.

- Peak hour trips: 0.9 per household.
- AM directional split: 75% departures, 25% arrivals.
- PM directional split: 40% departures, 60% arrivals.
- Distribution consistent with that of the model zone for the adjoining future residential developments north and west of the site (zone 402).



To determine the potential incremental traffic related effects, the following model scenarios have been developed and assessed:

- **Base** – the 2040 model refined network in the area without the proposed Plan Change developments
- **Site 1, Scenario 1** – 2040 – Base network plus Site 1, no additional connection to Weedons Road
- **Site 1, Scenario 2** – 2040 - Base network plus Site 1, with an additional connection to Weedons Road
- **Site 2, Scenario 3** – 2040 - Site 1, Scenario 2 plus Site 2, with DEV-RO17 connection to Selwyn Road/Lincoln Rolleston Road
- **Site 2, Scenario 4** – 2040 - Site 1, Scenario 2 plus Site 2, no DEV-RO17 connection to Selwyn Road/Lincoln Rolleston Road

## **8.2 Base Traffic Model**

As a basis for assessment, the suitability of the model for an assessment specifically along Weedons Road was reviewed. It is noted that the base traffic model includes the following intersection upgrades representative of a future transport network:

- Lincoln Rolleston Road / Levi Road traffic signals
- Selwyn Road / Weedons Road multi lane roundabout
- Selwyn Road / Lincoln Rolleston Road multi lane roundabout
- Weedons Road / Levi Road roundabout
- Lincoln Rolleston Road / Ed Hillary Drive roundabout
- Lincoln Rolleston Road / Lady Isaac Drive as a priority-controlled intersection, which has been revised for this assessment to a roundabout as required by the ODP.

As described earlier all of these projects are included in the Council Annual Plan or Long Term Plan, or a requirement of development.

It is recognised that these projects are planned for the future, and an assessment of a subdivision related traffic effects will be considered under the District Plan high trip generator and subdivision provisions.

As the surrounding DEV15/16/17 have a requirement that several intersections are upgraded, it is accepted the same restriction will apply as a base case for the rezoning proposal.

The additional modelled changes are summarised in the following Figure 8-1 and include a roundabout at Lincoln Rolleston Road / Lady Isaac Drive, and continuation of the Lady Isaac Drive connection to Weedons Road (as anticipated by DEV-RO15 and DEV-RO16).







Figure 8-1: Base Traffic Model Modifications

### 8.3 Site 1 Traffic Model

In order to represent development, the traffic network was also modified to reflect the ODP proposed for Site 1, with two network versions included for assessment:

- Scenario 1: no new Weedons Road connection.
- Scenario 2: with additional Weedons Road connection.

A new zone was added to the model that specifically represents the Plan Change request area, as shown in Figure 8-2 and Figure 8-3.



Figure 8-2: 'Site 1 – Development Scenario 1' - Traffic Model Changes from “Base”





**Figure 8-3: 'Site 1 – Development Scenario 2' - Traffic Model Changes from Scenario 1**

No changes to the surrounding 'base' road network were made in the 'with development' scenarios.

## 8.4 Site 1 Traffic Modelling Results

**Appendix A** contains peak hour modelling outputs for Site 1 with levels of service reported for key nearby intersections along the Weedons Road, Selwyn Road, Lincoln Rolleston Road, and Levi Road routes for both the base and with-development model.

To indicate the general level of traffic on the future road network in the area, the traffic volume forecasts in peak hours of the road network are shown in the **Figure 8-4** and **Figure 8-5** below for the morning peak hour. As can be seen, the general pattern of traffic volumes in the area is relatively unchanged.





Figure 8-4: Base 2040 AM Peak without Rezoning Development



Figure 8-5: Scenario 1: 2040 AM Peak with Rezoning Development





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### 8 Transport Network Performance Assessment

Generally, development of the site resulting in 130 houses would be a relatively small increase in the level of activity in the area, particularly when considering the widespread constructed and planned residential development throughout the south of Rolleston. The growth forecasts for Rolleston outlined earlier indicate forecast growth of almost 5,000 new residential households throughout Rolleston, indicating the development of the site will represent growth of less than 1/2 year of growth demand and 0.8% of the total Rolleston households at 2040.

A summary of the level of service modelled is included below. The Level of Service is a measure of efficiency of the intersection, with a range LOS A (low delay) through to LOS F (congested).

**Table 8-1: Intersection Level of Service Summary 2040 with Site 1**

Intersection	AM			PM		
	Base	Scn 1	Scn 2	Base	Scn 1	Scn 2
Lincoln Rolleston and Selwyn Road	A	A	A	A	A	A
Weedons and Selwyn Road	A	A	A	A	A	A
Lincoln Rolleston and Levi and Lowes Road and Masefield Drive	D	C	D	C	C	C
Levi and Weedons Road	E	E	E	A	A	A
Lincoln Rolleston Road and Brendean Drive	B	B	B	C	B	B
Lincoln Rolleston Road and Edmund Hillary Drive	B	B	A	A	A	A
Lincoln Rolleston Road and Lady Issac Drive	A	A	A	A	A	A
Weedons Road and Brendean Drive	D	C	D	B	B	A
Weedons Road and Edmund Hillary Drive	A	A	A	A	A	A
Weedons Road and Lady Issac Drive	A	A	A	A	A	A
Weedons Road and Site 1 New Road			A			A

The morning peak is the more critical of the two peak periods for local access from residential areas to the arterial road network, since that is when these areas generate their highest outgoing traffic volumes. Locally, the intersections providing access to and from the site to Weedons Road are forecast to operate efficiently in the morning peak with development, and there is no material change in performance. In the wider area, there are no notable changes in performance.

The worst operating part of the road network is the Levi Road / Weedons Road intersection in the morning peak. The intersection itself is able to operate effectively in its planned roundabout format, although there is some queuing back from the SH1 interchange that reaches the intersection and affects the performance. The Rolleston Access study has optimised access performance, and no additional projects have been anticipated within the timeframe of the development.

The planned timing of the key projects supporting development of the site and the surrounding area were determined through the District Plan review rule provisions that have been included in DEV-RO15, DEV RO 16 and DEV-RO17. The additional scale of development is sufficiently small in comparison to those areas and no additional incremental effects are identified so no further changes in the ODP rules are considered necessary.

The Discretionary activity status provides Council opportunity to consider the timing of development compared to the timing of the road infrastructure upgrades in a way that is consistent with previous outcomes determined through the District Plan review. The small change in volume and performance will have no material effect on the timing of projects, although incremental traffic effects would be expected to be considered as part of a Discretionary consent application.

The assessment of the two road connection options with or without the additional connection to Weedons Road show no material change in performance of the surrounding road network. In that respect, the inclusion of the road connection is related to connectivity and ability to deliver residential development that is not reliant on one or both of the adjoining collector roads being fully connected to Weedons Road.



As there is a potential outcome that the multiple right of ways on the south side of the site affect staging of development, or the development to the north has not occurred, then it is considered suitable to show a “potential local road connection” from the site to Weedons Road (at least 151m from the collector roads). That road will also provide a further east west connection via the land to the west that has recently received subdivision consent by the same developer promoting this rezoning. These matters can be considered further during the resource consent process.

## **8.5 Site 2 Traffic Model Description**

The Site 2 update consists of copying the model from Site 1, Scenario 2 and applying additional modifications to reflect the Site 2 development. Two networks were created for the assessment.

- Scenario 3: Site 2 including Weedons Rd connection and with Selwyn Road / Lincoln Rolleston Road roundabout connection.
- Scenario 4: Additional Weedons Rd connection and without Selwyn Road / Lincoln Rolleston Road roundabout connection.

A new zone was added to the model that specifically represents the Site 2 ODP development area proposed in the Plan Change. **Figure 8-6** and **Figure 8-7** shows the network modifications.



**Figure 8-6: Site 2 Scenario 3 Model Changes from Site 1 Scenario 2**



**Figure 8-7: Site 2 Scenario 4 Model Changes from Site 1 Scenario 2 (no roundabout connection)**



## 8.6 Traffic Model Results Site 2

**Appendix A** also contains peak hour modelling outputs with levels of service reported for key nearby intersections.

To indicate the general level of traffic on the future road network in the area, the traffic volume forecasts in peak hours of the road network are shown in the **Figure 8-8** and **Figure 8-9** below for the morning peak hour. There are minimal changes in flow difference between the two scenarios, or compared to the base.



**Figure 8-8: Scenario 3 2040 AM Peak with Rezoning Development**

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**Figure 8-9: Scenario 4 2040 AM Peak with Rezoning Development**

A summary of traffic volumes on key road links is provided in Table 8-2 below, under the various scenarios assessed, together with the Site 1 scenarios. This shows small changes in peak hour traffic volumes as a result the Site 1 and 2 developments.

**Table 8-2: Changes in Traffic Volumes 2040 AM Peak**

Intersection	AM				
	Base	Scn 1 Site 1 only	Scn 2 Site 1 only, extra Weedons connection	Scn 3 Site 1 & 2, with Selwyn Rd connection	Scn 4 Site 1 & 2, no Selwyn Rd connection
Lincoln Rolleston Road north of Selwyn Road	847	904	890	938	919
Weedons Road north of Selwyn Road	265	273	273	237	257
Weedons Road north of Brendean Drive	847	830	838	875	814
Lady Isaac Drive Extension west of Weedons Road	159	158	128	101	115
Edmund Hillary Drive Extension west of Weedons Road	281	153	140	149	150
Site 1 new road	-	-	230	100	234
Site 2 new road	-	-	-	119	42



The landuse within the Area 2 development site was increased by 63 houses. This is relatively small compared to both the Area 1 update and other planned residential development in Rolleston.

A summary of the level of service modelled for scenarios 3 and 4 is included below.

**Table 8-3 Intersection Level of Service Summary 2040**

Intersection	AM			PM		
	Base	Scn 3	Scn 4	Base	Scn 3	Scn 4
Lincoln Rolleston and Selwyn Road	A	A	A	A	A	A
Weedons and Selwyn Road	A	A	A	A	A	A
Lincoln Rolleston and Levi and Lowes Road and Masefield Drive	D	D	C	C	C	C
Levi and Weedons Road	E	E	E	A	A	A
Lincoln Rolleston Road and Brendean Drive	B	B	B	C	C	B
Lincoln Rolleston Road and Edmund Hillary Drive	B	A	A	A	A	A
Lincoln Rolleston Road and Lady Issac Drive	A	A	A	A	A	A
Weedons Road and Brendean Drive	D	C	C	B	A	A
Weedons Road and Edmund Hillary Drive	A	A	A	A	A	A
Weedons Road and Lady Issac Drive	A	A	A	A	A	A
Weedons Road and Site 1 New Road	-	A	A	-	A	A
Weedons & DEV-RO17 Collector	-	A	A	-	A	A

The LOS across the network for scenarios 3 and 4 remain unchanged compared to scenarios 1 and 2.

In the morning peak, there is an increase by 70 vehicles at the Lincoln Rolleston Road and Selwyn Road intersection for scenario 3 with the roundabout connection compared with the scenario without the roundabout. A similar pattern is seen in the PM peak, an increase of 50 vehicles for the same intersection for scenario 3 when compared to scenario 4.

The new site connection on to Weedons Road from the DEV-RO17 Collector Road, modelled as a sign controlled Tee-intersection, performs at LOS A for both scenarios and both peak periods without any significant delays.

There are no significant delays in the surrounding road network for either scenario 3 or scenario 4. The inclusion of a roundabout connection or without a roundabout connection into Lincoln Rolleston and Selwyn Road from the new site is modelled to have very minor impact on traffic volumes. The new road connection has a volume of 175vph with the roundabout connection, and 105vph without the connection. These traffic volumes in an urban context represent local road traffic volumes. In that respect the connection to a fourth arm of the future roundabout is not seen as important from a transport network functionality perspective, with sufficient capacity provided by the roundabouts on Selwyn Road to accommodate the through traffic movements between Selwyn Road west and Weedons Road north. Preferably, through traffic would be discouraged, to support a safer and slow speed residential environment.

The need for and likelihood of the roundabout connection will be a matter for consideration at the time of subdivision as part of DEV-RO17. If the proposed Site 2 is staged ahead of that land, then a decision





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will likely need to assume the roundabout connection would be made, with the road design suitably sized to accommodate the traffic volumes.



## 9 Assessment of Proposed ODPs

### 9.1 Staging of Network Connections

#### 9.1.1 Site 1

Staging of development is a matter that is addressed at subdivision, and no specific staging provisions are included for the surrounding ODP areas.

The currently proposed extension of Lady Isaac Drive, which is being treated as a 'Primary Road' in the DEV-RO15 has some challenges in delivery as a result of the complex right of way arrangements at the boundary of the proposed site subject to the rezoning. The rezoning will afford further options for development of this road link and provide greater certainty for all of the affected property owners on the right of way. As such, the rezoning is expected to increase the likelihood that the collector road link to Weedons Road can be delivered.

As described in the traffic modelling assessment, the proposed development can be supported by the already planned collector road network. To support flexibility for development staging noting adjacent parcels of land are in different ownership, the ODP provides connections to development land to the west, south, and north as well as the potential local road connection to Weedons Road. This will support a well-connected local transport network and provides flexibility for staging of development which can be considered through the subdivision process.

A connection from Lincoln Rolleston Road to Weedons Road through the overall development areas (including DEV-RO15) is expected to relieve some of the pressure on the Lincoln Rolleston Road / Selwyn Road and Lincoln Rolleston Road / Levi Road intersections. If the rezoning site occurs ahead of other development fronting Weedons Road and is able to complete an interim connection between Weedons Road and Lincoln Rolleston Road, it will support resilience of the transport network, including supporting options for traffic management / detour (if necessary) during construction of the Selwyn Road roundabouts. The need for the connection from one of the developments fronting Weedons Road will be a matter that is considered through subdivision.

If development is required to connect to Weedons Road ahead of connection to other development areas to the west which enable connection to Lincoln Rolleston Road, the effect of the generated traffic is expected to be manageable in the short term, noting the restriction on development until the Selwyn Road / Weedons Road roundabout is upgraded.

As the road connections are shown on the proposed ODP, and the comparable provision restricting development until the three intersections are upgraded is included, no additional description of staging is considered necessary from a transport perspective.

#### 9.1.2 Site 2

As with Stage 1, staging of development is a matter that is addressed at subdivision. There are two likely outcomes for development staging:

- Development follows DEV-RO17 and connectivity to the Rolleston urban area is achieved through that development area, with arterial access supported by the new road connection to Weedons Road. This will provide the most connectivity, and there is unlikely to be a need for any further external infrastructure.
- Development is ahead of DEV-RO17, which will result in a more isolated development area onto Weedons Road. This is comparable to other lots fronting Weedons Road that were rezoned through the District Plan review process. To ensure connectivity to the other urban area for active modes users, and assuming that development is likely to follow 1/487 and 2/487 Weedons Road or other development to the northwest, it is considered appropriate that a footpath connection from the site would be provided along the right of way connection currently providing access from Weedons Road to 10/487 Weedons Road at its northwest corner. It is noted this requires agreement of several landowners, and as such will be a matter to cover in the subdivision application at the time.



If development is required to connect to Weedons Road ahead of connection to other development areas to the west which enable connection to Lincoln Rolleston Road, the effect of the generated traffic is expected to be manageable in the short term, noting the restriction on development until the Selwyn Road / Weedons Road roundabout is upgraded, and the low traffic volumes that will be generated by the site.

## **9.2 Weedons Road Intersections**

The traffic modelling has confirmed that priority tee intersections will operate efficiently.

The collector road intersection at the south of Site 1 would be considered during subdivision consent as to whether a right turn bay would be beneficial, similar to the turn provisions previously provided on Lincoln Rolleston Road at some subdivision intersections. It is noted that on Selwyn Road no right turn bay provisions have been included. The straight road alignment and infrequent access on the eastern side enables either outcome to be achieved.

The greater Christchurch Spatial Plan does not anticipate further land development to the east of Weedons Road. However, if future rezoning is a potential consideration in the long term, then there may be a need to consider provision within land boundaries for a future roundabout at the Weedons Road / Lady Isaac Drive intersection. This would be a matter for consideration during subdivision.

As described earlier, the potential for an additional local road intersection as part of Site 1 on Weedons Road is included in the ODP. The key matter for that intersection will relate to separation from the higher order collector road intersections, with a minimum of 151m required by District Plan rules based on a 60km/h speed limit.

The Site 2 intersection is well separated from the nearby collector and arterial road intersections.

Based on traffic volumes modelled, it is considered that new Weedons Road intersections can be developed as standard urban tee intersections. No specific details regarding future intersection forms are considered necessary for inclusion in the ODP.

## **9.3 Frontage Road Upgrades**

The Weedons Road frontage will need to be upgraded to an urban standard. Based on comparable upgrades on Selwyn Road and Dunns Crossing Road, it is anticipated to be focused on the new development side of the road and include road widening, kerb and channel and drainage, a footpath (or shared path) and lighting. This is a standard requirement when rural land is developed for residential purposes. The details of the road widening and frontage upgrade would be confirmed at the subdivision detailed design stage as appropriate and would be considered in the context of any other upgrades that have occurred to the north or south as part of DEV-RO15. No specific changes to the ODP text are considered necessary.

## **9.4 Internal Roothing**

It is expected that all of the new additional roads within Site 1 will be local residential roads, the design of which can be considered through the subdivision process in accordance with District Plan provisions. No specific road cross-sections are considered necessary.

The Site 2 road connecting Weedons Road to the Selwyn Road / Lincoln Rolleston Road intersection already includes text within DEV-RO17 text. Comparable text can be included within the proposed ODP to ensure a consistent level of road design. As noted through the traffic modelling, it is considered that the connection to Selwyn Road / Lincoln Rolleston Road is not important for efficient functioning of the road network in the area, although it adds connectivity for buses and cycling and the need will be a matter considered through subdivision design. Ultimately the design of the internal roads will not be materially different if the connection is made or not.

Good connectivity to the surrounding areas will be achieved through development in accordance with the ODP, with local road connections indicated to the undeveloped land adjacent to the Sites.





## **9.5 Pedestrian and Cyclist Provision**

The ODP for Site 1 includes extension of the pedestrian cycle link along Weedons Road connecting what will otherwise be a gap in infrastructure between the two sections of DEV-RO15. This is considered a positive outcome for the proposed transport network.

The ODP for Site 2 also includes a notation for the pedestrian cycle connection along the site frontage, which can support movement to Reid Pit and beyond to the south, or to other zoned areas to the north in due course if 9/487 Weedons Road is rezoned in the future. The main road within Site 2 will also include a cycle provision, consistent with the adjacent DEV-RO17.

All roads in the future subdivisions will be low volume local residential streets, with the potential exception of the road through Site 2 which will still have volumes at a level typical of a residential area. Footpaths will be required as per District Plan standards. No additional notations for pedestrians and cyclist movement are considered necessary.

## **9.6 Public Transport Provision**

The site is currently not connected to the public transport network, and in the short term residents may need to rely on accessing park n ride services such as at Foster Park, or by connecting to existing routes by use of cycle or micro-mobility modes such as scooter.

Over time it is expected there will be modifications to the bus network and services. As with other urban areas in Rolleston, the bus service provision will be a matter reviewed by Environment Canterbury as growth occurs and demand for services is generated. The draft Canterbury Public Transport Plan 2025-2035 anticipates maximising patronage on routes, with Rolleston services focussed on extensions of strong routes to and from Christchurch City, and park and ride services. Longer term branch extensions are planned within the next ten years within Selwyn District.

No specific public transport provision is proposed through the ODP. However, it is anticipated that the Ed Hilary Drive and Lady Isaac Drive extensions would be considered “collector roads” and will be able to be used by buses and one (or both) of these routes may become an attractive bus route once connected to Weedons Road as the surrounding area is developed.

If or when a bus service was to run along one of these roads, it would be possible to have much of the Site 1 development within a 400m walking distance of it. The good level of connectivity for pedestrians and cyclists proposed through the ODP would ensure that convenient routes would be available to the bus route. As these roads are already included in the DEV-RO15 ODP, no additional notation for public transport is considered necessary.

Site 2 is an eastward extension of DEV-RO17, which in its ODP references the likely need to accommodate a bus route. The rezoning will support extension of the potential bus route to Weedons Road, which increases the flexibility of delivering a well-connected bus route network in the future.



## 10 Planning Assessment

### 10.1 Partially Operative District Plan Provisions

The Partially Operative District Plan (PODP) includes a range of matters relevant to consideration of the rezoning of the land.

The key matter at this planning stage is to ensure that there is consistency between the zoning proposal, including the ODP, and the PODP Objectives and Policies, and higher-level planning documents. The rules are matters to be considered through future subdivision and land development.

An analysis of the PODP Urban Form and Development objectives and policies has been carried out.

The District Wide – Strategic Directions included:

*SD-UFD-O1 Compact and Sustainable Township Network*

*Urban growth is located:*

*2. Inside Greater Christchurch only within existing urban areas, Greenfield Priority Areas, or Future Development Areas identified in the Canterbury Regional Policy Statement; ....*

*SD-UFD-O4 Urban growth and development:*

- 1. is well-integrated with the efficient provision, including the timing and funding, of infrastructure; and*
- 2. has the ability to manage or respond to the effects of climate change; and ...*

The sites are located within a Future Development Area identified in the Regional Policy Statement.

The sites are located adjacent to areas where development has been proposed through DEV-RO15, DEV-RO16 and DEV-RO17, and fills a gap resulting from the nature of the District Plan submission process (no rezoning submissions were put forward for the sites). In that respect, it contributes to a compact and sustainable form for the transport network. The site has good access to the arterial road network, with intersection upgrades being planned along the Weedons Road / Selwyn Road arterial route.

The development will allow connection to the proposed collector road network and existing arterial road network, affording efficient distribution of traffic across multiple routes. The change in traffic volumes and performance is of a sufficiently low scale that it is not expected to alter the timing of wider area transport network improvements that are either included in the Long Term Plan or anticipated through development as represented by long term transport modelling investigations.

The sites are unlikely to be directly serviced by public transport in the short term as there is no future bus route indicated to be implemented on Weedons Road by the Regional Public Transport Plan or Rolleston Structure Plan. However, ECan will be reviewing Rolleston bus routes in the short term. The extension of collector and local roads to Weedons Road affords the opportunity for bus routes to service this area via already planned roads within the planned urban infrastructure boundary. The proposed Site 1 development will fill a gap between development in DEV-RO15 and support connectivity for residents in those areas to have a more walkable connection to a future bus service. Similarly, for Site 2, it provides extension of a road identified in DEV-RO17 as being designed to be compatible with bus services.

The Transportation section includes objectives as follows:

*TRAN-O1*

*People and places are connected through safe, efficient, and effective land transport corridors and land transport infrastructure for all transport modes, which are well integrated with land use activities and subdivision development, and reduce dependency on private motor vehicles.*

*TRAN-O2*

*Land transport corridors and land transport infrastructure are protected from incompatible land use activities and subdivision development.*

*TRAN-O3*



*Land transport corridors and land transport infrastructure support the needs of people and freight, while ensuring adverse effects on the surrounding environment from their establishment and operation are managed.*

As discussed earlier, the site development is able to integrate with planned and future development through road connections to the north, east and south, as well as appropriately located and formed connections to Weedons Road. The connections to adjacent undeveloped land will support integration of the local transport network between Weedons Road and Lincoln Rolleston Road. The use of an ODP, combined with Transport rules will protect the arterial Weedons Road from inappropriate access. The higher order roads in the adjacent ODP areas can support cycle routes, with the rezoning proposed supporting connectivity via lower order roads.

## **10.2 Canterbury Regional Policy Statement**

The Canterbury Regional Policy Statement objectives and policies in Chapter 5 Land-Use and Infrastructure and Chapter 6 Recovery and Rebuilding of Greater Christchurch have been reviewed.

The relevant Chapter 5 policies relate to urban growth being attached to existing urban areas, the safety and efficiency of the strategic and arterial road network being maintained, and connectivity for pedestrians and cyclists being provided. Chapter 6 focusses on new residential development occurring in the planned locations, transport effectiveness and integration of land use and infrastructure. The site is located within the projected infrastructure boundary for Rolleston as shown on Chapter 6 Map A.

Generally, the policies relating to transport are similar to those in the PODP which have been discussed previously. The proposed zoning request area is adjacent to residential zoned areas where development is proposed, and the ODP is integrated with those future development areas.

Bus services in Rolleston are evolving and routes change as new subdivisions and road links provide connection. The physical requirements of a bus route for a future service can be considered through road design in accordance with the District Plan. For Site 1, only the adjacent collector road on the southern boundary, as already represented on DEV-RO15, could be developed as part of the site and accommodate a bus route. For Site 2, the ODP text for the adjacent DEV-RO17 anticipates a bus route through the site.

## **10.3 National Policy Statement – Urban Development**

The National Policy Statement Urban Development 2020 sets policy around urban development. It aims to ensure that towns and cities are well-functioning urban environments. New development capacity is considered against whether that development capacity is “infrastructure-ready”, with good access to existing services, public transport networks and infrastructure. Based on the assessment provided, it is considered that there is adequate existing and planned infrastructure to support the wider transport needs of the proposed development.

The ODP requires development to be assessed as a Discretionary Activity ahead of road infrastructure improvements being implemented in the surrounding area. The ODP also further requires connections to the existing transport network in locations that support safe and efficient integration of the site.

It is also considered that the development is generally well connected along the transport corridors, being adjacent to arterial and collector roads already planned to accommodate residential development.

Public transport services are evolving for Rolleston in response to the significant increase in demand and can be contemplated on routes within a walkable distance to reduce reliance on private vehicle travel.





## 11 Conclusion

Development of the two sites with approximately 8.9ha (Site 1) and 4.3ha (Site 2) could result in approximately 130 and 65 residential lots respectively. This will contribute further growth in an area that has been anticipated as a future development area in the south-east of Rolleston.

It has been assessed that the additional traffic that could be generated by development of the sites would be able to be accommodated with minimal change in performance of the wider road network including planned intersection upgrades.

The provisions of DEV-RO15, DEV-RO16 and DEV-RO17 adjacent to the Sites restrict development until future intersection upgrades are carried out. That enables the timing of development in relation to future intersection upgrades to be assessed as part of a subdivision application. This is in addition to standard high trip generator rule requirements for subdivision of residential land.

On a local level, both of the ODPs only need to provide for residential local road streets, with connections to adjacent Collector Roads proposed. The existing road notations on adjacent ODPs can be carried over to the new ODPs. The additional local roads will support connectivity of land in DEV-RO15 and DEV-RO17. The intersections on Weedons Road proposed by the ODPs are appropriately spaced to protect the function of the arterial road. The proposal to include an additional local road connection to Weedons Road in Site 1 to support staged development flexibility as a result of complex right of way arrangements adjacent to the site.

The Site 1 ODP will support the continuation of the Lady Isaac Drive primary road connecting to Weedons Road, with the additional connectivity of the collector road network supporting safety and efficiency of the road network. This is important for the overall connectivity of Rolleston, having been identified since 2009 as part of a future road network included in the Rolleston Structure Plan.

The Site 2 ODP also connects Lincoln Rolleston Road to Weedons Road, although traffic modelling has determined that the performance of the road network will not be affected if the DEV-RO17 connection to the Selwyn Road / Lincoln Rolleston Road intersection was not made.

A good level of connectivity is proposed to the surrounding undeveloped areas to ensure a well-connected local road network in the future between Weedons Road and Lincoln Rolleston Road.

The ODP includes good connectivity for pedestrians throughout the site, both next to roads, including Weedons Road, and off-road. Development of the site will support a more coherent cycle connection along Weedons Road that is shown on the northern development areas of DEV-RO15.

It is anticipated that extensions of Ed Hilary Drive and Lady Isaac Drive would both be able to accommodate a bus route in the future as demand increases for a route through to Weedons Road. Those roads are within walkable distance of Site 1. Site 2 will support extension of a potential bus route to Weedons Road, as indicated by the text on DEV-RO17.

Based on the above, it is concluded that the re-zoning of the site as proposed can be supported from a transport perspective.



# Appendices



## **Appendix A Traffic Modelling Results**

### **A.1 Site 1 AM Peak Model Results (Year 2040)**





# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)						Option 1 (With Development)						Option 2 (With Development + Weedons Connection)					
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS	
Lincoln Rolleston & Selwyn Rd	Selwyn Rd East	L	219	1	A		Selwyn Rd East	L	231	1	A		Selwyn Rd East	L	242	1	A	
		T	253	2	A			T	275	2	A			T	256	2	A	
	East Appr Total		472	1	A		East Appr Total		506	1	A		East Appr Total		498	1	A	
	Selwyn Rd South	L	16	4	A		Selwyn Rd South	L	13	4	A		Selwyn Rd South	L	13	4	A	
		R	575	7	A			R	595	8	A			R	593	8	A	
	South Appr Total		591	7	A		South Appr Total		609	8	A		South Appr Total		606	8	A	
	Lincoln Rolleston Rd West	T	597	6	A		Lincoln Rolleston Rd West	T	643	7	A		Lincoln Rolleston Rd West	T	621	7	A	
		R	15	4	A			R	18	6	A			R	14	5	A	
	West Appr Total		612	6	A		West Appr Total		661	7	A		West Appr Total		635	7	A	
	Intersection Total		1675	5	A		Intersection Total		1775	6	A		Intersection Total		1739	5	A	
Weedons & Selwyn Rd	Weedons Rd North	L	4	7	A		Weedons Rd North	L	3	15	B		Weedons Rd North	L	3	7	A	
		T	62	17	B			T	62	17	B			T	64	16	B	
		R	7	11	B			R	7	18	B			R	7	9	A	
	North Appr Total		72	16	B		North Appr Total		72	17	B		North Appr Total		74	15	B	
		L	0	-	-			L	0	-	-			L	0	-	-	
	Selwyn Rd East	T	303	4	A		Selwyn Rd East	T	321	4	A		Selwyn Rd East	T	316	4	A	
		R	20	3	A			R	21	3	A			R	21	3	A	
	East Appr Total		323	4	A		East Appr Total		342	4	A		East Appr Total		337	4	A	
	Weedons Rd South	L	159	3	A		Weedons Rd South	L	170	3	A		Weedons Rd South	L	162	4	A	
		T	120	4	A			T	117	4	A			T	118	4	A	
Lincoln Rolleston & Levi & Lowes Rd & Masefield Dr		R	0	0	A			R	0	-	-			R	0	1	A	
	South Appr Total		280	3	A		South Appr Total		287	3	A		South Appr Total		280	4	A	
	Selwyn Rd West	L	53	2	A		Selwyn Rd West	L	64	2	A		Selwyn Rd West	L	60	2	A	
		T	973	6	A			T	1011	5	A			T	1003	6	A	
		R	145	6	A			R	160	5	A			R	152	6	A	
	West Appr Total		1171	6	A		West Appr Total		1235	5	A		West Appr Total		1215	6	A	
	Intersection Total		1846	5	A		Intersection Total		1936	5	A		Intersection Total		1906	6	A	
	Masefield Dr North	L	71	29	C		Masefield Dr North	L	77	29	C		Masefield Dr North	L	79	28	C	
		T	191	32	C			T	188	31	C			T	188	34	C	
		R	17	30	C			R	16	27	C			R	13	33	C	
	North Appr Total		279	31	C		North Appr Total		280	31	C		North Appr Total		280	32	C	
	Levi Rd East	L	21	3	A		Levi Rd East	L	24	6	A		Levi Rd East	L	23	5	A	
		T	63	30	C			T	61	30	C			T	66	31	C	
		R	68	47	D			R	69	45	D			R	69	46	D	
	East Appr Total		152	34	C		East Appr Total		154	33	C		East Appr Total		159	34	C	
	Lincoln Rolleston Rd South	L	64	34	C		Lincoln Rolleston Rd South	L	69	40	D		Lincoln Rolleston Rd South	L	58	39	D	
		T	438	40	D			T	455	38	D			T	427	40	D	
		R	216	40	D			R	216	39	D			R	213	44	D	
	South Appr Total		718	39	D		South Appr Total		740	39	D		South Appr Total		699	41	D	
	Lowes Rd West	L	45	40	D		Lowes Rd West	L	50	30	C		Lowes Rd West	L	48	24	C	
		T	274	38	D			T	293	36	D			T	278	32	C	
		R	77	32	C			R	83	29	C			R	84	25	C	
	West Appr Total		395	37	D		West Appr Total		426	34	C		West Appr Total		410	29	C	
	Intersection Total		1545	37	D		Intersection Total		1600	35	C		Intersection Total		1547	36	D	

Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)						Option 1 (With Development)						Option 2 (With Development + Weedons Connection)							
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS
Levi & Weedons Rd	Weedons Rd North	L	129	2	A	Weedons Rd North	L	130	2	A	Weedons Rd North	L	138	2	A	Weedons Rd North	L	138	2	A
		T	169	2	A		T	171	2	A		T	175	3	A		T	175	3	A
	North Appr Total		298	2	A	North Appr Total		301	2	A	North Appr Total		313	2	A	North Appr Total		313	2	A
	Weedons Rd South	L	35	4	A	Weedons Rd South	L	43	4	A	Weedons Rd South	L	40	4	A	Weedons Rd South	L	40	4	A
		R	787	15	B		R	773	16	B		R	771	16	B	Weedons Rd South	R	771	16	B
	South Appr Total		823	14	B	South Appr Total		816	16	B	South Appr Total		811	15	B	South Appr Total		811	15	B
	Levi Rd West	T	747	127	F	Levi Rd West	T	774	130	F	Levi Rd West	T	763	124	F	Levi Rd West	T	763	124	F
		R	9	101	F		R	9	85	F		R	8	117	F		R	8	117	F
	West Appr Total		755	127	F	West Appr Total		782	129	F	West Appr Total		771	123	F	West Appr Total		771	123	F
	Intersection Total		1876	58	E	Intersection Total		1898	60	E	Intersection Total		1895	57	E	Intersection Total		1895	57	E
Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	42	0	A	Lincoln Rolleston Rd North	L	29	0	A	Lincoln Rolleston Rd North	L	25	0	A	Lincoln Rolleston Rd North	L	25	0	A
		T	438	3	A		T	460	2	A		T	450	2	A		T	450	2	A
	North Appr Total		481	3	A	North Appr Total		488	2	A	North Appr Total		475	2	A	North Appr Total		475	2	A
	Brendean Dr East	L	2	5	A	Brendean Dr East	L	2	5	A	Brendean Dr East	L	2	7	A	Brendean Dr East	L	2	7	A
		R	31	12	B		R	30	14	B		R	26	14	B		R	26	14	B
	East Appr Total		33	12	B	East Appr Total		32	14	B	East Appr Total		28	14	B	East Appr Total		28	14	B
	Lincoln Rolleston Rd South	T	415	2	A	Lincoln Rolleston Rd South	T	453	2	A	Lincoln Rolleston Rd South	T	422	2	A	Lincoln Rolleston Rd South	T	422	2	A
		R	44	8	A		R	41	6	A		R	43	7	A		R	43	7	A
	South Appr Total		459	8	A	South Appr Total		494	6	A	South Appr Total		464	7	A	South Appr Total		464	7	A
	Intersection Total		973	12	B	Intersection Total		1014	14	B	Intersection Total		968	14	B	Intersection Total		968	14	B
Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	52	17	B	Lincoln Rolleston Rd North	L	34	11	B	Lincoln Rolleston Rd North	L	37	13	B	Lincoln Rolleston Rd North	L	37	13	B
		T	353	16	B		T	387	12	B		T	376	12	B	Lincoln Rolleston Rd North	T	376	12	B
		R	35	16	B		R	42	12	B		R	38	13	B		R	38	13	B
	North Appr Total		440	16	B	North Appr Total		462	12	B	North Appr Total		450	13	B	North Appr Total		450	13	B
	Edmund Hillary Dr East	L	1	2	A	Edmund Hillary Dr East	L	0	14	B	Edmund Hillary Dr East	L	1	3	A	Edmund Hillary Dr East	L	1	3	A
		T	48	7	A		T	50	7	A		T	57	6	A	Edmund Hillary Dr East	T	57	6	A
		R	48	7	A		R	50	7	A		R	57	6	A		R	57	6	A
	East Appr Total		97	7	A	East Appr Total		99	7	A	East Appr Total		114	6	A	East Appr Total		114	6	A
	Lincoln Rolleston Rd South	L	79	3	A	Lincoln Rolleston Rd South	L	81	3	A	Lincoln Rolleston Rd South	L	90	3	A	Lincoln Rolleston Rd South	L	90	3	A
		T	279	3	A		T	373	3	A	Lincoln Rolleston Rd South	T	259	4	A	Lincoln Rolleston Rd South	T	259	4	A
Levi & Weedons Rd		R	21	2	A		R	18	3	A		R	17	2	A		R	17	2	A
	South Appr Total		380	3	A	South Appr Total		472	3	A	South Appr Total		366	3	A	South Appr Total		366	3	A
	Edmund Hillary Dr West	L	136	17	B	Edmund Hillary Dr West	L	137	19	B	Edmund Hillary Dr West	L	143	14	B	Edmund Hillary Dr West	L	143	14	B
		T	271	17	B		T	215	18	B	Edmund Hillary Dr West	T	224	13	B	Edmund Hillary Dr West	T	224	13	B
		R	173	16	B		R	183	16	B		R	180	13	B		R	180	13	B
	West Appr Total		580	17	B	West Appr Total		535	17	B	West Appr Total		547	13	B	West Appr Total		547	13	B
	Intersection Total		1497	12	B	Intersection Total		1568	11	B	Intersection Total		1477	10	A	Intersection Total		1477	10	A



Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)					Option 1 (With Development)					Option 2 (With Development + Weedons Connection)							
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS			
Lincoln Rolleston Rd & Lady Isaac Dr	Lincoln Rolleston Rd North	L	47	5	A	Lincoln Rolleston Rd North	L	52	5	A	Lincoln Rolleston Rd North	L	51	5	A			
		T	479	6	A		T	521	6	A		T	505	6	A			
		R	9	4	A		R	7	4	A		R	8	3	A			
	North Appr Total		535	6	A	North Appr Total		579	6	A	North Appr Total		565	6	A			
		Lady Isaac Dr East	L	37	7		A	Lady Isaac Dr East	L	43		9	A	Lady Isaac Dr East	L	35	10	A
			T	33	7		A		T	41		9	A		T	39	9	A
	R		64	8	A	R	67		10	A	R	64	10		A			
	East Appr Total		135	8	A	East Appr Total		151	9	A	East Appr Total		137	10	A			
		Lincoln Rolleston Rd South	L	12	1		A	Lincoln Rolleston Rd South	L	13		2	A	Lincoln Rolleston Rd South	L	10	1	A
			T	260	2		A		T	13		2	A		T	260	2	A
	R		26	2	A	R	13		2	A	R	25	3		A			
	South Appr Total		298	2	A	South Appr Total		38	2	A	South Appr Total		295	2	A			
Lady Isaac Dr West		L	56	5	A		Lady Isaac Dr West	L	54	8		A	Lady Isaac Dr West	L	233	1	A	
		T	56	5	A			T	118	8		A		T	233	1	A	
	R	56	5	A	R	77		8	A	R	233	1		A				
West Appr Total		168	5	A	West Appr Total		249	8	A	West Appr Total		698	1	A				
	Intersection Total		1136	8		A	Intersection Total		1017		7	A	Intersection Total		1694	4	A	
		Weedons Rd North	T	120		4		A	Weedons Rd North		T	121		4	A	Weedons Rd North	T	126
R			17	11	B	R		18		7	A	R		20	8		A	
North Appr Total			137	11	B	North Appr Total		139		7	A	North Appr Total		146	8		A	
	Weedons Rd South	L	8	2	A		Weedons Rd South	L	7	1	A		Weedons Rd South	L	9	1	A	
		T	531	3	A			T	509	3	A			T	505	3	A	
South Appr Total			538	3	A	South Appr Total			516	3	A	South Appr Total			513	3	A	
	Brendean Dr West	L	179	31	D		Brendean Dr West	L	182	24	C		Brendean Dr West	L	188	26	D	
		R	6	16	C			R	8	13	B			R	7	13	B	
West Appr Total			185	31	D	West Appr Total			190	24	C	West Appr Total			195	26	D	
	Intersection Total		860	31	D		Intersection Total		845	24	C		Intersection Total		853	26	D	
		Weedons Rd North	T	108	1			A	Weedons Rd North	T	115			1	A	Weedons Rd North	T	117
R			28	1	A	R		26		1	A	R		26	1		A	
North Appr Total			137	1	A	North Appr Total		141		1	A	North Appr Total		144	2		A	
	Weedons Rd South	L	13	1	A		Weedons Rd South	L	12	1	A		Weedons Rd South	L	8	1	A	
		T	319	3	A			T	322	3	A			T	274	3	A	
South Appr Total			332	3	A	South Appr Total			333	3	A	South Appr Total			282	3	A	
	Ed Hillary Dr West	L	184	3	A		Ed Hillary Dr West	L	101	9	A		Ed Hillary Dr West	L	95	9	A	
		R	55	3	A			R	14	5	A			R	12	6	A	
West Appr Total			239	3	A	West Appr Total			115	9	A	West Appr Total			106	9	A	
	Intersection Total		708	3	A		Intersection Total		590	9	A		Intersection Total		531	9	A	





# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)						Option 1 (With Development)						Option 2 (With Development + Weedons Connection)					
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS	
Weedons Rd & Lady Isaac Dr	Weedons Rd North	T	153	4	A		Weedons Rd North	T	120	4	A		Weedons Rd North	T	114	3	A	
		R	21	2	A			R	25	2	A			R	24	2	A	
	North Appr Total		173	4	A		North Appr Total		145	4	A		North Appr Total		138	3	A	
	Weedons Rd South	L	6	1	A		Weedons Rd South	L	9	0	A		Weedons Rd South	L	10	0	A	
		T	187	2	A			T	192	2	A			T	187	2	A	
	South Appr Total		192	2	A		South Appr Total		200	2	A		South Appr Total		197	2	A	
	Lady Isaac Drive West	L	117	4	A		Lady Isaac Drive West	L	112	4	A		Lady Isaac Drive West	L	81	4	A	
		R	16	5	A			R	12	6	A			R	13	3	A	
	West Appr Total		133	5	A		West Appr Total		124	6	A		West Appr Total		94	4	A	
	Intersection Total		498	5	A		Intersection Total		469	6	A		Intersection Total		429	4	A	
Weedons Rd & Site 1 New Road	Weedons Rd North	T					Weedons Rd North	L					Weedons Rd North	T	138	2	A	
		R						T						R	2	1	A	
	North Appr Total						North Appr Total						North Appr Total		140	2	A	
	Weedons Rd South	L					Weedons Rd South	L					Weedons Rd South	L	14	1	A	
		T						T						T	282	2	A	
	South Appr Total						South Appr Total						South Appr Total		296	2	A	
	Site 1 New Road West	L					Site 1 New Road West	L					Site 1 New Road West	L	60	2	A	
		R						R						R	17	3	A	
	West Appr Total						West Appr Total						West Appr Total		78	3	A	
	Intersection Total						Intersection Total						Intersection Total		513	3	A	



## **A.2 Site 1 PM Peak Model Results (Year 2040)**



Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)						Option 1 (With Development)						Option 2 (With Development + Weedons Connection)					
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS	
Lincoln Rolleston & Selwyn Rd	Selwyn Rd East	L	591	2	A		Selwyn Rd East	L	590	2	A		Selwyn Rd East	L	587	2	A	
		T	527	2	A			T	556	2	A			T	567	2	A	
	East Appr Total		1118	2	A		East Appr Total		1146	2	A		East Appr Total		1154	2	A	
	Selwyn Rd South	L	9	4	A		Selwyn Rd South	L	10	5	A		Selwyn Rd South	L	9	5	A	
		R	247	8	A			R	248	8	A			R	251	8	A	
	South Appr Total		255	8	A		South Appr Total		257	8	A		South Appr Total		261	8	A	
	Lincoln Rolleston Rd West	T	336	3	A		Lincoln Rolleston Rd West	T	335	3	A		Lincoln Rolleston Rd West	T	338	3	A	
		R	10	2	A			R	10	3	A			R	10	2	A	
	West Appr Total		346	3	A		West Appr Total		345	3	A		West Appr Total		348	3	A	
	Intersection Total		1718	3	A		Intersection Total		1749	3	A		Intersection Total		1762	3	A	
	Weedons Rd North	L	10	5	A		Weedons Rd North	L	10	5	A		Weedons Rd North	L	9	4	A	
		T	100	9	A			T	98	10	A			T	91	9	A	
Weedons & Selwyn Rd		R	35	8	A			R	36	8	A			R	36	9	A	
	North Appr Total		145	9	A		North Appr Total		143	9	A		North Appr Total		137	9	A	
	Selwyn Rd East	L	0	1	A		Selwyn Rd East	L	0	-	-		Selwyn Rd East	L	1	2	A	
		T	933	6	A			T	956	6	A			T	947	5	A	
		R	81	5	A			R	70	5	A			R	71	5	A	
	East Appr Total		1015	6	A		East Appr Total		1025	6	A		East Appr Total		1018	5	A	
	Weedons Rd South	L	150	6	A		Weedons Rd South	L	154	6	A		Weedons Rd South	L	164	6	A	
		T	97	13	B			T	100	13	B			T	100	12	B	
		R	0	-	-			R	0	-	-			R	0	-	-	
	South Appr Total		247	9	A		South Appr Total		254	9	A		South Appr Total		264	8	A	
	Selwyn Rd West	L	22	1	A		Selwyn Rd West	L	25	1	A		Selwyn Rd West	L	26	1	A	
		T	401	3	A			T	406	3	A			T	413	3	A	
Lincoln Rolleston & Levi & Lowes Rd & Masefield Dr		R	158	3	A			R	152	3	A			R	150	3	A	
	West Appr Total		581	3	A		West Appr Total		582	3	A		West Appr Total		589	3	A	
	Intersection Total		1988	5	A		Intersection Total		2005	5	A		Intersection Total		2007	5	A	
	Masefield Dr North	L	115	31	C		Masefield Dr North	L	114	32	C		Masefield Dr North	L	116	31	C	
		T	434	34	C			T	438	34	C			T	442	32	C	
		R	42	36	D			R	50	48	D			R	43	41	D	
	North Appr Total		591	33	C		North Appr Total		602	35	C		North Appr Total		600	33	C	
	Levi Rd East	L	136	7	A		Levi Rd East	L	135	8	A		Levi Rd East	L	141	8	A	
		T	224	22	C			T	232	23	C			T	224	23	C	
		R	74	16	B			R	72	16	B			R	73	16	B	
	East Appr Total		434	17	B		East Appr Total		440	17	B		East Appr Total		437	17	B	
	Lincoln Rolleston Rd South	L	50	22	C		Lincoln Rolleston Rd South	L	58	22	C		Lincoln Rolleston Rd South	L	52	21	C	
Weedons & Selwyn Rd		T	356	27	C			T	375	26	C			T	376	25	C	
		R	92	68	E			R	87	72	E			R	82	55	D	
	South Appr Total		497	34	C		South Appr Total		519	33	C		South Appr Total		510	29	C	
	Lowes Rd West	L	54	26	C		Lowes Rd West	L	52	28	C		Lowes Rd West	L	52	25	C	
		T	297	37	D			T	293	37	D			T	282	37	D	
		R	110	23	C			R	101	23	C			R	109	23	C	
	West Appr Total		461	32	C		West Appr Total		446	33	C		West Appr Total		443	32	C	
	Intersection Total		1983	30	C		Intersection Total		2006	30	C		Intersection Total		1991	28	C	





Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)					Option 1 (With Development)					Option 2 (With Development + Weedons Connection)				
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS
Levi & Weedons Rd	Weedons Rd North	L	665	4	A	Weedons Rd North	L	647	5	A	Weedons Rd North	L	641	4	A
		T	881	5	A		T	901	5	A		T	903	5	A
	North Appr Total		1546	4	A	North Appr Total		1548	5	A	North Appr Total		1544	5	A
	Weedons Rd South	L	61	7	A	Weedons Rd South	L	60	9	A	Weedons Rd South	L	60	8	A
		R	237	10	A		R	247	10	A		R	259	10	A
	South Appr Total		298	9	A	South Appr Total		307	10	A	South Appr Total		319	10	A
	Levi Rd West	T	455	6	A	Levi Rd West	T	471	6	A	Levi Rd West	T	454	6	A
		R	41	5	A		R	43	5	A		R	40	5	A
	West Appr Total		496	6	A	West Appr Total		514	6	A	West Appr Total		494	6	A
	Intersection Total		2339	5	A	Intersection Total		2369	6	A	Intersection Total		2356	6	A
Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	28	0	A	Lincoln Rolleston Rd North	L	20	0	A	Lincoln Rolleston Rd North	L	23	0	A
		T	430	2	A		T	427	2	A		T	421	2	A
	North Appr Total		458	2	A	North Appr Total		447	2	A	North Appr Total		444	2	A
	Brendean Dr East	L	3	4	A	Brendean Dr East	L	4	5	A	Brendean Dr East	L	3	5	A
		R	50	18	C		R	39	14	B		R	38	13	B
	East Appr Total		54	18	C	East Appr Total		43	14	B	East Appr Total		40	13	B
	Lincoln Rolleston Rd South	T	505	2	A	Lincoln Rolleston Rd South	T	516	2	A	Lincoln Rolleston Rd South	T	526	2	A
		R	19	5	A		R	19	4	A		R	20	5	A
	South Appr Total		524	5	A	South Appr Total		535	4	A	South Appr Total		546	5	A
	Intersection Total		1035	18	C	Intersection Total		1025	14	B	Intersection Total		1030	13	B
Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	38	4	A	Lincoln Rolleston Rd North	L	46	4	A	Lincoln Rolleston Rd North	L	45	4	A
		T	295	4	A		T	289	5	A		T	286	5	A
		R	97	5	A		R	90	5	A		R	89	5	A
	North Appr Total		429	4	A	North Appr Total		425	5	A	North Appr Total		421	5	A
	Edmund Hillary Dr East	L	1	8	A	Edmund Hillary Dr East	L	1	4	A	Edmund Hillary Dr East	L	0	0	A
		T	277	9	A		T	247	8	A		T	244	8	A
		R	277	9	A		R	247	8	A		R	244	8	A
	East Appr Total		555	9	A	East Appr Total		495	8	A	East Appr Total		488	8	A
	Lincoln Rolleston Rd South	L	150	14	B	Lincoln Rolleston Rd South	L	162	13	B	Lincoln Rolleston Rd South	L	163	13	B
		T	388	15	B		T	358	3	A		T	408	13	B
Lincoln Rolleston Rd & Edmund Hillary Dr		R	7	13	B		R	5	10	A		R	7	9	A
	South Appr Total		544	15	B	South Appr Total		526	6	A	South Appr Total		578	13	B
	Edmund Hillary Dr West	L	96	8	A	Edmund Hillary Dr West	L	92	8	A	Edmund Hillary Dr West	L	96	9	A
		T	118	7	A		T	119	8	A		T	113	9	A
		R	114	7	A		R	117	7	A		R	121	8	A
	West Appr Total		327	7	A	West Appr Total		328	8	A	West Appr Total		329	9	A
	Intersection Total		1855	9	A	Intersection Total		1773	7	A	Intersection Total		1816	9	A



Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)					Option 1 (With Development)					Option 2 (With Development + Weedons Connection)				
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS
Lincoln Rolleston Rd & Lady Isaac Dr	Lincoln Rolleston Rd North	L	76	3	A	Lincoln Rolleston Rd North	L	79	3	A	Lincoln Rolleston Rd North	L	78	3	A
		T	315	3	A		T	314	3	A		T	315	3	A
		R	20	2	A		R	19	2	A		R	17	2	A
	North Appr Total		410	3	A	North Appr Total		413	3	A	North Appr Total		411	3	A
	Lady Isaac Dr East	L	24	3	A	Lady Isaac Dr East	L	24	4	A	Lady Isaac Dr East	L	23	4	A
		T	114	4	A		T	127	4	A		T	119	5	A
		R	47	4	A		R	44	5	A		R	47	5	A
	East Appr Total		185	4	A	East Appr Total		195	4	A	East Appr Total		189	5	A
	Lincoln Rolleston Rd South	L	41	3	A	Lincoln Rolleston Rd South	L	43	3	A	Lincoln Rolleston Rd South	L	41	4	A
		T	476	5	A		T	43	3	A		T	510	4	A
		R	23	4	A		R	43	3	A		R	24	4	A
	South Appr Total		539	5	A	South Appr Total		129	3	A	South Appr Total		575	4	A
	Lady Isaac Dr West	L	22	7	A	Lady Isaac Dr West	L	22	8	A	Lady Isaac Dr West	L	119	1	A
		T	22	7	A		T	71	8	A		T	119	1	A
		R	22	7	A		R	25	6	A		R	119	1	A
	West Appr Total		67	7	A	West Appr Total		118	7	A	West Appr Total		356	1	A
	Intersection Total		1201	7	A	Intersection Total		854	4	A	Intersection Total		1531	3	A
Weedons Rd & Brendean Dr	Weedons Rd North	T	554	5	A	Weedons Rd North	T	515	5	A	Weedons Rd North	T	507	5	A
		R	150	6	A		R	174	6	A		R	171	6	A
			704	6	A	North Appr Total		689	6	A	North Appr Total		678	6	A
	Weedons Rd South	L	25	1	A	Weedons Rd South	L	25	1	A	Weedons Rd South	L	22	1	A
		T	205	2	A		T	211	2	A		T	221	2	A
			230	2	A	South Appr Total		236	2	A	South Appr Total		243	2	A
	Brendean Dr West	L	57	2	A	Brendean Dr West	L	55	3	A	Brendean Dr West	L	58	3	A
		R	2	11	B		R	2	13	B		R	2	9	A
			59	11	B	West Appr Total		57	13	B	West Appr Total		60	9	A
	Intersection Total		992	11	B	Intersection Total		982	13	B	Intersection Total		980	9	A
	Weedons Rd North	T	301	1	A	Weedons Rd North	T	315	1	A	Weedons Rd North	T	309	1	A
		R	259	2	A		R	207	2	A		R	207	1	A
			560	2	A	North Appr Total		522	2	A	North Appr Total		516	1	A
	Weedons Rd South	L	44	1	A	Weedons Rd South	L	21	1	A	Weedons Rd South	L	20	1	A
		T	191	2	A		T	192	2	A		T	184	2	A
			234	2	A	South Appr Total		214	2	A	South Appr Total		203	2	A
Weedons Rd & Edmund Hillary Dr	Ed Hillary Dr Ext	L	33	2	A	Ed Hillary Dr Ext	L	20	3	A	Ed Hillary Dr Ext	L	19	3	A
		R	11	8	A		R	3	8	A		R	2	7	A
			44	8	A	West Appr Total		23	8	A	West Appr Total		21	7	A
	West Appr Total		44	8	A	West Appr Total		23	8	A	West Appr Total		21	7	A
	Intersection Total		839	8	A	Intersection Total		759	8	A	Intersection Total		740	7	A



Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Base (No Development)					Option 1 (With Development)					Option 2 (With Development + Weedons Connection)				
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS
Weedons Rd & Lady Isaac Dr	Weedons Rd North	T	165	3	A	Weedons Rd North	T	157	3	A	Weedons Rd North	T	149	3	A
		R	149	3	A		R	165	3	A		R	153	3	A
	North Appr Total		314	3	A	North Appr Total		323	3	A	North Appr Total		302	3	A
	Weedons Rd South	L	16	1	A	Weedons Rd South	L	26	1	A	Weedons Rd South	L	18	1	A
		T	187	2	A		T	168	2	A		T	177	2	A
	South Appr Total		203	2	A	South Appr Total		195	2	A	South Appr Total		195	2	A
	Lady Isaac Dr	L	36	3	A	Lady Isaac Dr	L	35	2	A	Lady Isaac Dr	L	30	3	A
		R	2	7	A		R	3	5	A		R	3	7	A
	West Appr Total		39	7	A	West Appr Total		38	5	A	West Appr Total		32	7	A
	Intersection Total		555	7	A	Intersection Total		555	5	A	Intersection Total		530	7	A
Weedons Rd & Site 1 New Road	Weedons Rd North	T				Weedons Rd North	T				Weedons Rd North	T	302	2	A
		R					R					R	12	1	A
	North Appr Total					North Appr Total					North Appr Total		314	2	A
	Weedons Rd South	L				Weedons Rd South	L				Weedons Rd South	L	13	0	A
		T					T					T	203	1	A
	South Appr Total					South Appr Total					South Appr Total		216	1	A
	Site 1 New Road West	L				Site 1 New Road West	L				Site 1 New Road West	L	19	1	A
		R					R					R	6	3	A
	West Appr Total					West Appr Total					West Appr Total		25	3	A
	Intersection Total					Intersection Total					Intersection Total		555	3	A



### **A.3 Site 2 AM Peak Model Results (Year 2040)**





Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					Option (With Development + Weedons Connection + Area2 Without RDBI)				
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS
Lincoln Rolleston & Selwyn Rd	DEV-RO17 Collector North	L	10	6	A	Selwyn Rd East	L	251	1	A
		T	35	12	B		T	264	2	A
		R	10	13	B			515	1	A
	North Appr Total		55	11	B	East Appr Total				
	Selwyn Rd East	L	233	1	A	Selwyn Rd South	L	13	4	A
		T	255	2	A		R	576	10	A
		R	5	1	A			589	10	A
	East Appr Total		493	2	A	South Appr Total				
	Selwyn Rd South	L	12	4	A	Lincoln Rolleston Rd West	T	642	3	A
		T	96	5	A		R	13	4	A
Weedons & Selwyn Rd		R	519	9	A	West Appr Total				
	South Appr Total		626	8	A	Intersection Total				
	Lincoln Rolleston Rd West	L	29	2	A		L	3	13	B
		T	623	3	A	Weedons Rd North	T	62	18	B
		R	9	5	A		R	8	12	B
	West Appr Total		661	3	A	North Appr Total				
	Intersection Total		1835	5	A		L	0	-	-
	Weedons Rd North	L	3	10	A	Selwyn Rd East	T	310	4	A
		T	60	16	B		R	19	3	A
		R	2	3	A	East Appr Total				
Lincoln Rolleston & Levi & Lowes Rd & Masefield Dr	North Appr Total		65	15	B	Weedons Rd South	L	171	3	A
	Selwyn Rd East	L	0	-	-		T	102	4	A
		T	323	4	A		R	0	2	A
	East Appr Total		344	4	A	South Appr Total				
	Weedons Rd South	L	167	3	A		L	62	3	A
		T	117	4	A	Selwyn Rd West	T	1000	7	A
		R	0	-	-		R	154	6	A
	South Appr Total		284	4	A	West Appr Total				
	Selwyn Rd West	L	33	2	A	Intersection Total				
		T	980	6	A		L	75	27	C
	West Appr Total		1176	6	A	Masefield Dr North	T	189	32	C
	Intersection Total		1869	5	A		R	17	25	C
	Masefield Dr North	L	76	29	C	North Appr Total				
		T	182	34	C		L	25	5	A
		R	15	27	C	Levi Rd East	T	67	28	C
	North Appr Total		273	32	C		R	68	43	D
	Levi Rd East	L	25	13	B	East Appr Total				
		T	64	38	D		L	72	35	C
		R	67	53	D	Lincoln Rolleston Rd South	T	462	34	C
	East Appr Total		156	41	D		R	212	36	D



# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)						Intersection	Option (With Development + Weedons Connection + Area2 Without RDBT Arm)					
	Approach	Movement	Vol	Delay	LOS			Approach	Movement	Vol	Delay	LOS	
Levi & Weedons Rd	Weedons Rd North	L	137	2	A		Levi & Weedons Rd	Weedons Rd North	L	135	2	A	
		T	168	2	A				T	180	2	A	
	<b>North Appr Total</b>		305	2	A			<b>North Appr Total</b>		314	2	A	
	Weedons Rd South	L	49	4	A			Weedons Rd South	L	43	4	A	
		R	804	15	B				R	747	16	B	
	<b>South Appr Total</b>		853	15	B			<b>South Appr Total</b>		789	15	B	
	Levi Rd West	T	735	131	F			Levi Rd West	T	772	122	F	
		R	8	86	F				R	7	91	F	
	<b>West Appr Total</b>		743	130	F			<b>West Appr Total</b>		778	122	F	
	<b>Intersection Total</b>		1901	58	E			<b>Intersection Total</b>		1882	57	E	
Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	29	0	A		Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	25	0	A	
		T	458	2	A				T	462	2	A	
	<b>North Appr Total</b>		487	2	A			<b>North Appr Total</b>		488	2	A	
	Brendean Dr East	L	2	3	A			Brendean Dr East	L	3	5	A	
		R	28	15	B				R	27	14	B	
	<b>East Appr Total</b>		30	15	B			<b>East Appr Total</b>		29	14	B	
	Lincoln Rolleston Rd South	T	427	2	A			Lincoln Rolleston Rd South	T	451	2	A	
		R	42	6	A				R	43	6	A	
	<b>South Appr Total</b>		469	6	A			<b>South Appr Total</b>		494	6	A	
	<b>Intersection Total</b>		986	15	B			<b>Intersection Total</b>		1011	14	B	
Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	30	13	B		Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	37	10	A	
		T	393	13	B				T	391	11	B	
		R	37	12	B				R	37	11	B	
	<b>North Appr Total</b>		460	13	B			<b>North Appr Total</b>		465	11	B	
	Edmund Hillary Dr East	L	1	17	B			Edmund Hillary Dr East	L	1	2	A	
		T	50	7	A				T	53	7	A	
		R	29	7	A				R	30	7	A	
	<b>East Appr Total</b>		79	7	A			<b>East Appr Total</b>		84	7	A	
	Lincoln Rolleston Rd South	L	85	3	A			Lincoln Rolleston Rd South	L	82	3	A	
		T	279	4	A				T	287	4	A	
Lincoln Rolleston Rd & Edmund Hillary Dr		R	18	2	A		Lincoln Rolleston Rd & Edmund Hillary Dr		R	16	2	A	
	<b>South Appr Total</b>		382	3	A			<b>South Appr Total</b>		386	3	A	
	Edmund Hillary Dr West	L	133	15	B			Edmund Hillary Dr West	L	145	16	B	
		T	232	15	B				T	222	15	B	
		R	185	13	B				R	181	14	B	
	<b>West Appr Total</b>		550	14	B			<b>West Appr Total</b>		548	15	B	
	<b>Intersection Total</b>		1471	11	B			<b>Intersection Total</b>		1483	10	A	



# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					Option (With Development + Weedons Connection + Area2 Without RDBT)					
	Intersection					Arm					
	Approach	Movement	Vol	Delay	LOS	Approach	Movement	Vol	Delay	LOS	
Lincoln Rolleston Rd & Lady Issac Dr	Lincoln Rolleston Rd North	L	44	4	A	Lincoln Rolleston Rd & Lady Issac Dr	Lincoln Rolleston Rd North	L	51	5	A
		T	536	6	A			T	525	6	A
		R	8	4	A			R	8	5	A
	<b>North Appr Total</b>		588	6	A		<b>North Appr Total</b>		583	6	A
	Lady Issac Dr East	L	19	8	A		Lady Issac Dr East	L	25	10	A
		T	30	9	A			T	36	10	A
		R	55	10	A			R	66	11	B
	<b>East Appr Total</b>		104	9	A		<b>East Appr Total</b>		127	10	A
	Lincoln Rolleston Rd South	L	12	1	A		Lincoln Rolleston Rd South	L	10	2	A
		T	277	2	A			T	272	2	A
		R	21	3	A			R	23	3	A
<b>South Appr Total</b>		310	2	A	<b>South Appr Total</b>		305	2	A		
Lady Issac Dr West	L	53	5	A	Lady Issac Dr West	L	51	6	A		
	T	105	6	A		T	110	6	A		
	R	73	5	A		R	81	6	A		
<b>West Appr Total</b>		231	6	A	<b>West Appr Total</b>		242	6	A		
<b>Intersection Total</b>		1233	5	A	<b>Intersection Total</b>		1258	6	A		
Weedons Rd & Brendean Dr	Weedons Rd North	T	125	4	A	Weedons Rd & Brendean Dr	Weedons Rd North	T	123	4	A
		R	21	8	A			R	18	6	A
			146	8	A				141	6	A
	<b>North Appr Total</b>		7	1	A		<b>North Appr Total</b>		8	1	A
	Weedons Rd South	L	547	3	A		Weedons Rd South	L	499	3	A
		T	554	3	A			T	506	3	A
		R	183	27	D			R	174	25	C
	<b>South Appr Total</b>		4	10	A		<b>South Appr Total</b>		6	11	B
	<b>West Appr Total</b>		187	27	D		<b>West Appr Total</b>		180	25	C
	<b>Intersection Total</b>		886	27	D		<b>Intersection Total</b>		827	25	C
	Weedons Rd & Edmund Hillary Dr	Weedons Rd North	T	113	1		A	Weedons Rd & Edmund Hillary Dr	Weedons Rd North	T	119
R			28	1	A	R	24			1	A
			142	1	A		143			1	A
<b>North Appr Total</b>			11	1	A	<b>North Appr Total</b>			11	1	A
Weedons Rd South		L	309	3	A	Weedons Rd South	L		275	3	A
		T	320	3	A		T		286	3	A
		R	99	8	A		R		99	8	A
<b>South Appr Total</b>			11	7	A	<b>South Appr Total</b>			16	6	A
Ed Hillary Dr West		L	110	8	A	Ed Hillary Dr West	L		115	8	A
		R	572	8	A		R		544	8	A
<b>West Appr Total</b>					<b>West Appr Total</b>						
<b>Intersection Total</b>					<b>Intersection Total</b>						



# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					Intersection	Option (With Development + Weedons Connection + Area2 Without RDBT)				
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS
Weedons Rd & Lady Isaac Dr	Weedons Rd North	T	116	3	A	Weedons Rd & Lady Isaac Dr	Weedons Rd North	T	124	3	A
		R	18	3	A			R	21	2	A
	<b>North Appr Total</b>		134	3	A		<b>North Appr Total</b>		146	3	A
	Weedons Rd South	L	12	1	A		Weedons Rd South	L	13	1	A
		T	244	2	A			T	198	2	A
	<b>South Appr Total</b>		256	2	A		<b>South Appr Total</b>		211	2	A
	Lady Isaac Drive West	L	66	4	A		Lady Isaac Drive West	L	73	4	A
Weedons Rd & Site 1 New Road		R	6	3	A	Weedons Rd & Site 1 New Road		R	8	3	A
	<b>West Appr Total</b>		72	4	A		<b>West Appr Total</b>		81	4	A
	<b>Intersection Total</b>		462	4	A		<b>Intersection Total</b>		437	4	A
	Weedons Rd North	T	134	1	A		Weedons Rd North	T	146	2	A
		R	2	4	A			R	2	3	A
	<b>North Appr Total</b>		136	4	A		<b>North Appr Total</b>		147	3	A
	Weedons Rd South	L	18	1	A		Weedons Rd South	L	14	1	A
Weedons & Site 2 DEV-RO17 Collector		T	320	1	A	Weedons & Site 2 DEV-RO17 Collector		T	286	2	A
	<b>South Appr Total</b>		338	1	A		<b>South Appr Total</b>		300	2	A
	Site 1 New Road West	L	59	2	A		Site 1 New Road West	L	57	2	A
		R	20	3	A			R	18	3	A
	<b>West Appr Total</b>		80	3	A		<b>West Appr Total</b>		75	3	A
	<b>Intersection Total</b>		553	4	A		<b>Intersection Total</b>		522	3	A
	Weedons Rd North	T	132	1	A		Weedons Rd North	T	156	1	A
Weedons & Site 2 DEV-RO17 Collector		R	27	1	A	Weedons & Site 2 DEV-RO17 Collector		R	8	1	A
	<b>North Appr Total</b>		159	1	A		<b>North Appr Total</b>		164	1	A
	Weedons Rd South	L	5	0	A		Weedons Rd South	L	11	0	A
		T	167	1	A			T	173	1	A
	<b>South Appr Total</b>		173	1	A		<b>South Appr Total</b>		184	1	A
	DEV-RO17 Collector West	L	58	2	A		DEV-RO17 Collector West	L	10	1	A
		R	34	3	A			R	13	2	A
Weedons & Site 2 DEV-RO17 Collector	<b>West Appr Total</b>		92	3	A	Weedons & Site 2 DEV-RO17 Collector	<b>West Appr Total</b>		23	2	A
	<b>Intersection Total</b>		424	3	A		<b>Intersection Total</b>		371	2	A





## **A.4 Site 2 PM Peak Model Results (Year 2040)**



Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					Intersection	Option (With Development + Weedons Connection + Area2 Without RDBT)				
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS
Lincoln Rolleston & Selwyn Rd	DEV-RO17 Collector North	L	1	3	A	Lincoln Rolleston & Selwyn Rd	Selwyn Rd East	L	611	2	A
		T	59	5	A			T	555	2	A
		R	8	3	A		East Appr Total		1166	2	A
	North Appr Total		68	4	A		Selwyn Rd South	L	6	4	A
		L	561	2	A			R	253	10	A
		T	548	2	A		South Appr Total		259	10	A
		R	15	1	A		Lincoln Rolleston Rd West	T	339	2	A
	East Appr Total		1123	2	A			R	10	2	A
		L	6	4	A		West Appr Total		349	2	A
		T	53	6	A		Intersection Total		1774	3	A
Weedons & Selwyn Rd	South Appr Total		277	9	A	Weedons & Selwyn Rd	Weedons Rd North	L	12	6	A
		L	21	1	A			T	90	9	A
	Lincoln Rolleston Rd West	T	333	2	A			R	39	8	A
		R	5	2	A		North Appr Total		141	9	A
	West Appr Total		359	2	A			L	1	0	A
	Intersection Total		1827	3	A		Selwyn Rd East	T	951	6	A
		L	9	6	A			R	83	6	A
	Weedons Rd North	T	94	10	A		East Appr Total		1035	6	A
		R	10	4	A		Weedons Rd South	L	160	6	A
	North Appr Total		114	9	A			T	94	14	B
Lincoln Rolleston & Levi & Lowes Rd & Masfield Dr		L	1	1	A	Lincoln Rolleston & Levi & Lowes Rd & Masfield Dr	South Appr Total		0	-	-
		T	156	6	A			L	41	1	A
		R	0	-	-		Selwyn Rd West	T	403	3	A
	East Appr Total		1035	6	A			R	149	3	A
		L	156	6	A		West Appr Total		593	3	A
		T	105	13	B		Intersection Total		2022	5	A
		R	0	-	-		Masefield Dr North	L	116	32	C
	South Appr Total		261	9	A			T	444	34	C
		L	7	1	A		North Appr Total		43	43	D
	Selwyn Rd West	T	400	3	A			L	603	34	C
Weedons & Selwyn Rd	West Appr Total		557	3	A	Weedons & Selwyn Rd	Levi Rd East	L	135	7	A
	Intersection Total		1966	5	A			T	223	23	C
		L	124	34	C			R	79	17	B
		T	437	36	D		East Appr Total		437	17	B
		R	37	44	D		Lincoln Rolleston Rd South	L	62	20	B
	North Appr Total		597	36	D			T	375	25	C
		L	133	7	A			R	90	58	E
	Levi Rd East	T	216	22	C		South Appr Total		527	30	C
		R	78	16	B		Lowes Rd West	L	54	27	C
	East Appr Total		427	17	B			T	305	37	D
Lincoln Rolleston & Levi & Lowes Rd & Masfield Dr		L	56	21	C	Lincoln Rolleston & Levi & Lowes Rd & Masfield Dr	West Appr Total		474	32	C
		T	377	24	C		Intersection Total		2041	29	C
	Lincoln Rolleston Rd South	R	92	69	E						
	South Appr Total		524	32	C						
		L	51	27	C						
		T	302	37	D						
	Lowes Rd West	R	114	22	C						
	West Appr Total		466	32	C						
	Intersection Total		2015	30	C						



# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					
	Approach	Movement	Vol	Delay	LOS	
Levi & Weedons Rd	Weedons Rd North	L	652	5	A	
		T	878	5	A	
	<b>North Appr Total</b>		1530	5	A	
	Weedons Rd South	L	68	8	A	
		R	253	10	A	
	<b>South Appr Total</b>		321	9	A	
	Levi Rd West	T	468	6	A	
		R	43	4	A	
	<b>West Appr Total</b>		511	6	A	
	<b>Intersection Total</b>		2362	6	A	
Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	21	0	A	
		T	437	2	A	
	<b>North Appr Total</b>		458	2	A	
	Brendean Dr East	L	4	5	A	
		R	35	19	C	
	<b>East Appr Total</b>		39	19	C	
	Lincoln Rolleston Rd South	T	534	2	A	
		R	17	5	A	
	<b>South Appr Total</b>		550	5	A	
	<b>Intersection Total</b>		1047	19	C	
Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	45	4	A	
		T	297	5	A	
		R	94	5	A	
	<b>North Appr Total</b>		436	5	A	
	Edmund Hillary Dr East	L	0	12	B	
		T	240	9	A	
		R	23	7	A	
	<b>East Appr Total</b>		263	9	A	
	Lincoln Rolleston Rd South	L	155	13	B	
		T	413	13	B	
Levi & Weedons Rd		R	5	13	B	
	<b>South Appr Total</b>		573	13	B	
	Edmund Hillary Dr West	L	98	8	A	
		T	115	8	A	
		R	121	8	A	
	<b>West Appr Total</b>		334	8	A	
	<b>Intersection Total</b>		1606	9	A	
Intersection	Option (With Development + Weedons Connection + Area2 Without RbRT Arm)					
	Approach	Movement	Vol	Delay	LOS	
Levi & Weedons Rd	Weedons Rd North	L	649	4	A	
		T	898	5	A	
	<b>North Appr Total</b>		1547	5	A	
	Weedons Rd South	L	64	7	A	
		R	253	10	A	
	<b>South Appr Total</b>		317	10	A	
	Levi Rd West	T	469	6	A	
		R	45	6	A	
	<b>West Appr Total</b>		514	6	A	
	<b>Intersection Total</b>		2378	6	A	
Lincoln Rolleston Rd & Brendean Dr	Lincoln Rolleston Rd North	L	21	0	A	
		T	436	2	A	
	<b>North Appr Total</b>		457	2	A	
	Brendean Dr East	L	3	7	A	
		R	36	15	B	
	<b>East Appr Total</b>		39	15	B	
	Lincoln Rolleston Rd South	T	527	2	A	
		R	18	6	A	
	<b>South Appr Total</b>		545	6	A	
	<b>Intersection Total</b>		1041	15	B	
Lincoln Rolleston Rd & Edmund Hillary Dr	Lincoln Rolleston Rd North	L	47	4	A	
		T	297	5	A	
		R	90	5	A	
	<b>North Appr Total</b>		433	5	A	
	Edmund Hillary Dr East	L	1	1	A	
		T	236	8	A	
		R	27	7	A	
	<b>East Appr Total</b>		264	8	A	
	Lincoln Rolleston Rd South	L	163	12	B	
		T	408	12	B	
Levi & Weedons Rd		R	5	8	A	
	<b>South Appr Total</b>		577	12	B	
	Edmund Hillary Dr West	L	96	8	A	
		T	124	8	A	
		R	122	8	A	
	<b>West Appr Total</b>		342	8	A	
	<b>Intersection Total</b>		1616	9	A	



# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)						Intersection	Option (With Development + Weedons Connection + Area2 Without RDBT Arm			
	Approach	Movement	Vol	Delay	LOS	Approach		Movement	Vol	Delay	LOS
Lincoln Rolleston Rd & Lady Issac Dr	Lincoln Rolleston Rd North	L	70	2	A	Lincoln Rolleston Rd North	L	80	2	A	
		T	331	3	A		T	323	3	A	
		R	20	2	A		R	19	2	A	
	North Appr Total		420	3	A	North Appr Total		423	3	A	
	Lady Issac Dr East	L	15	4	A	Lady Issac Dr East	L	20	4	A	
		T	107	5	A		T	125	4	A	
		R	40	4	A		R	49	5	A	
	East Appr Total		163	5	A	East Appr Total		193	5	A	
	Lincoln Rolleston Rd South	L	40	4	A	Lincoln Rolleston Rd South	L	42	4	A	
		T	514	4	A		T	508	5	A	
		R	14	5	A		R	18	5	A	
	South Appr Total		567	4	A	South Appr Total		567	5	A	
	Lady Issac Dr West	L	21	5	A	Lady Issac Dr West	L	22	7	A	
		T	55	6	A		T	74	7	A	
R		26	7	A	R		21	7	A		
West Appr Total		102	6	A	West Appr Total		116	7	A		
Intersection Total		1252	4	A	Intersection Total		1299	4	A		
Weedons Rd & Brendean Dr	Weedons Rd North	T	529	5	A	Weedons Rd North	T	526	5	A	
		R	164	6	A		R	167	7	A	
	North Appr Total		693	6	A	North Appr Total		693	7	A	
	Weedons Rd South	L	23	1	A	Weedons Rd South	L	25	1	A	
		T	237	2	A		T	223	2	A	
	South Appr Total		259	2	A	South Appr Total		248	2	A	
	Brendean Dr West	L	47	3	A	Brendean Dr West	L	56	3	A	
		R	3	9	A		R	3	7	A	
	West Appr Total		50	9	A	West Appr Total		58	7	A	
	Intersection Total		1001	9	A	Intersection Total		1000	7	A	
	Weedons Rd & Edmund Hillary Dr	Weedons Rd North	T	330	1	A	Weedons Rd North	T	333	1	A
			R	205	2	A		R	202	2	A
		North Appr Total		535	2	A	North Appr Total		536	2	A
		Weedons Rd South	L	21	1	A	Weedons Rd South	L	21	1	A
T			205	2	A	T		191	2	A	
South Appr Total			226	2	A	South Appr Total		212	2	A	
Ed Hillary Dr Ext		L	20	3	A	Ed Hillary Dr Ext	L	22	3	A	
		R	3	8	A		R	4	6	A	
West Appr Total			22	8	A	West Appr Total		25	6	A	
Intersection Total			783	8	A	Intersection Total		773	6	A	





# Weedons Road Residential Rezoning Plan Change Integrated Transport Assessment

Intersection	Option (With Development + Weedons Connection + Area2)					Intersection	Option (With Development + Weedons Connection + Area2 Without RDBT Arm				
	Approach	Movement	Vol	Delay	LOS		Approach	Movement	Vol	Delay	LOS
Weedons Rd & Lady Issac Dr	Weedons Rd North	T	190	3	A	Weedons Rd & Lady Issac Dr	Weedons Rd North	T	181	3	A
		R	135	3	A			R	146	3	A
	North Appr Total		326	3	A		North Appr Total		328	3	A
	Weedons Rd South	L	12	1	A		Weedons Rd South	L	16	1	A
		T	210	2	A			T	189	1	A
	South Appr Total		222	2	A		South Appr Total		205	1	A
	Lady Isaac Dr	L	22	2	A		Lady Isaac Dr	L	27	3	A
		R	1	6	A			R	3	5	A
	West Appr Total		23	6	A		West Appr Total		30	5	A
	Intersection Total		571	6	A		Intersection Total		563	5	A
Weedons Rd & Site 1 New Road	Weedons Rd North	T	326	2	A	Weedons Rd & Site 1 New Road	Weedons Rd North	T	328	2	A
		R	11	2	A			R	13	2	A
	North Appr Total		337	2	A		North Appr Total		340	2	A
	Weedons Rd South	L	16	0	A		Weedons Rd South	L	13	0	A
		T	226	1	A			T	212	1	A
	South Appr Total		242	1	A		South Appr Total		226	1	A
	Site 1 New Road West	L	15	1	A		Site 1 New Road West	L	17	1	A
		R	5	3	A			R	6	3	A
	West Appr Total		20	3	A		West Appr Total		22	3	A
	Intersection Total		599	3	A		Intersection Total		588	3	A
Weedons & Site 2 DEV-RO17 Collector	Weedons Rd North	T	129	1	A	Weedons & Site 2 DEV-RO17 Collector	Weedons Rd North	T	165	1	A
		R	72	1	A			R	29	1	A
	North Appr Total		201	1	A		North Appr Total		194	1	A
	Weedons Rd South	L	10	0	A		Weedons Rd South	L	34	0	A
		T	178	1	A			T	184	1	A
	South Appr Total		188	1	A		South Appr Total		218	1	A
	DEV-RO17 Collector West	L	31	1	A		DEV-RO17 Collector West	L	5	1	A
		R	4	2	A			R	5	3	A
	West Appr Total		35	2	A		West Appr Total		10	3	A
	Intersection Total		423	2	A		Intersection Total		421	3	A





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Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

**Stantec New Zealand**

Level 3, 2 Hazeldean Road, Addington, Christchurch, 8024  
NEW ZEALAND  
Mail to: PO Box 13052, Christchurch 8140  
[Stantec.com](http://Stantec.com)

