BEFORE THE SELWYN DISTRICT COUNCIL HEARINGS PANEL

In the Matter of:	The Resource Management Act 1991
and	
In the Matter of:	a submission by Kevler Development Ltd on the Proposed Selwyn District Plan (Submission no. 492)

Statement of Evidence of Andrew Alan Metherell

Stantec New Zealand
Telephone: +64 3 366 7449
E-Mail: andrew.metherell@stantec.com
Hazeldean Business Park, 6 Hazeldean Road, Addington
Christchurch 8024

Kevler Evidence Andrew Metherell - Traffic.docx

3 August 2022

Statement of Evidence of Andrew Metherell, BE(Hons) CMEngNZ CPEng

Introduction

1. My full name is Andrew Alan Metherell. I am a Chartered Professional Engineer, a Chartered Member of Engineering New Zealand, and am included on the International Professional Engineer Register. I hold a Bachelor of Engineering (Civil) with Honours degree from the University of Canterbury. I am also an Associate Member of the New Zealand Planning Institute.

2. I have twenty-five years' experience, practising as a traffic engineering and transportation planning specialist based in Christchurch. I am currently employed as the Christchurch Traffic Engineering Team Leader at Stantec New Zealand (Stantec), a global multi-disciplinary engineering consultancy. In this role I am responsible for providing transport engineering advice, assessment and design for a wide range of activities.

3. I have had extensive experience providing transportation engineering advice and assessment for land development projects in the greater Christchurch area. Relevant to this project I am regularly involved in the planning, assessment and design of the transport networks for residential, commercial and industrial growth areas.

4. Locally, I have carried out transportation assessment and transport design for:

   (i) the Special Housing Area subdivision (now Acland Park) on the eastern side of Springston Rolleston Road,

   (ii) the Foster Park Notice of Requirement, and Selwyn Aquatic Centre,

   (iii) The Rolleston Christian School resource consent,

   (iv) various residential subdivisions throughout Rolleston including Falcons Landing, Levi Park, and Devon Park; and

   (v) several Selwyn District Plan residential plan changes including PC2, PC3, PC8&9, PC59, PC67, PC75, and PC82.

5. I have extensive experience with development and application of traffic models at both large and small scales for the purpose of assessing large scale landuse change associated with Plan Changes, through to assessing localised transport effects of development proposals and integration of development. This has included regional transport models such as the Christchurch Transport Model, localised transport network models, and intersection models.

6. I am regularly involved in transport infrastructure design and safety assessment of transport infrastructure. Examples include the Little River (City End) Major Cycleway scheme design, road design particularly in new subdivisions throughout Christchurch and the Selwyn District,

and arterial road upgrades and roundabout designs around Wigram to integrate development with the transport network. I have also led various roundabout and signalised intersection designs.

7. I have read and am familiar with the Code of Conduct for Expert Witnesses in the current (2014) Environment Court Practice Note. I agree to comply with this Code of Conduct in giving evidence to this hearing and have done so in preparing this written brief. The evidence I am giving is within my area of expertise, except where I state I am relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed. I understand it is my duty to assist the hearing committee impartially on relevant matters within my area of expertise and that I am not an advocate for the party which has engaged me.

Scope of Evidence

8. Kevler Developments has lodged a submission[1] on the Proposed Selwyn District Plan requesting that their land on Springston Rolleston Road (the site) be zoned for residential use. The site is approximately 15.9ha in size and could yield approximately 260-280[2] households.

9. The scope of my evidence is to address the transportation engineering related matters of the proposed rezoning, including the level of connectivity with the existing and planned transport network, the ability to achieve safe and efficient access to the subdivision, and the ability of the road network to accommodate the changes in traffic patterns as a result of the rezoning.

10. By way of summary, I have concluded that:

(i) the ODP proposed offers a suitable level of connectivity for walking, cycling, public transport, and other vehicles;

(ii) is a logical expansion considering existing or planned development and zoning, and possible future rezoning; and

(iii) the change in traffic patterns can be safely and efficiently accommodated.

Site Location

11. As outlined in **Figure 1** (figures are contained in **Attachment A**), the site is located on the south-western side of Springston Rolleston Road. It is opposite Acland Park and generally east of Faringdon.

12. As shown in **Figure 2**, the land is proposed to be zoned General Rural. However, there is residentially developed and / or zoned land to the north, west and east. Furthermore, a

[1] DPR-0492
[2] Initially, 200 households had been anticipated as an approximate yield, and traffic modelling analysis carried out in September 2021 and included in this evidence reflected that yield. The submitter now anticipates a yield of approximately 260-280 households for the site.

substantial subdivision[3] expanding Farringdon was approved under the COVID-19 Recovery (Fast-track Consenting) Referred Projects Order 2020. It is a block of land to the south bordering Selwyn Road, but separated by one property lot which is also subject to a rezoning request as part of a Proposed District Plan submission[4]. The proposed site and site immediately to the south are effectively surrounded by residential land in all directions.

Existing Transport Environment

Existing Roads

13. **Figure 3** shows the site in the context of the surrounding road network.

14. Springston Rolleston Road is an arterial road between Lowes Road in Rolleston and Shands Road to the south-east. The section through the southern part of Rolleston has undergone a large amount of urbanisation in recent years as adjacent land has been developed. Past the site, it currently has an 80km/h speed limit. The road has a rural formation on the site side of the road, with no kerb. On the opposite side of the road, there is a kerb, then a water feature and a shared pedestrian / cycle path. **Photographs 1** and **2** (photographs are contained in **Attachment B**) show the existing Springston Rolleston Road in the vicinity of the site.

15. Kate Sheppard Drive (**Photograph 3**) is a local road which provides access to Acland Park subdivision on the opposite side of Springston Rolleston Road. Kate Sheppard Drive meets Springston Rolleston Road at a T-intersection opposite the site, visible in Photograph 1. There is seal widening opposite the intersection.

16. Hungerford Drive (**Photograph 4**) is a local north-south road in Faringdon subdivision. It has a 20m wide reserve with an approximately 9.2m wide carriageway and a 2.5m path on the eastern side of the road only.

17. Shillingford Boulevard and Ed Hillary Drive are east-west collector roads in the Faringdon and Acland Park subdivisions respectively. They are part of a collector road route which is planned to run from Dunns Crossing Road to Lincoln Rolleston Road. However, there is currently a short gap between the two roads on the western side of Springston Rolleston Road.

18. Faringdon Boulevard is a north-south collector road through Faringdon which currently stops at the edge of the development.

19. Selwyn Road is an arterial road which runs along the southern edge of Rolleston. It meets Lincoln Rolleston Road, also an arterial road, at a T-intersection. The road continues to the east as Selwyn Road towards Christchurch.

[3] Previously subject to Plan Change 64 to the Operative District Plan, which was subsequently withdrawn
[4] DPR-0404

20. Lady Isaac Drive is the southern of the three roads which provide access to Acland Park from Springston Rolleston Road. Broadway Parade is a boulevard style road running north-south centrally through Acland Park.

21. Ledbury Drive, Sherborne Drive, Lemonwood Drive and Northmoor Boulevard are nearby local roads within Faringdon.

Cycle / Pedestrian Network

22. There is a shared path running along the eastern side of Springston Rolleston Road behind the water-race, visible in Photographs 1 and 2. There are a number of connections from that path into Acland Park but the only places where there are crossings of the water-race are at the three intersections.

23. The shared path along Springston Rolleston Road continues towards Rolleston, with some sections of the road having a shared path on both sides of the road and others a single path.

24. There are a number of off-road path connections through reserves in both Acland Park and Faringdon, providing permeable neighbourhoods for pedestrians and cyclists.

25. There is a reserve on the south side of Ledbury Drive opposite the end of Sherborne Drive which connects to the site boundary. I expect that this will be intended for pedestrian / cyclist connectivity.

Bus Network

26. The 820 Burnham / Lincoln via Rolleston bus service runs through Acland Park and Faringdon as shown in **Figure 4**. This service runs approximately hourly through the day in each direction. It allows for connections to the 5 Rolleston / New Brighton service in the Rolleston town centre or the 80 Lincoln / Parkland service in Lincoln. The nearest bus-stops to the site are on Springston Rolleston Road north of Ed Hillary Drive, Broadway Parade in Acland Park, just south of Kate Sheppard Drive, and on Faringdon Boulevard, north of Ledbury Drive. These bus stops are within walking distance of the site. In addition the express 85 service has its start and termination point within Faringdon, providing options for direct service to/from Christchurch City via the Southern Motorway at peak times.

Existing Traffic Volumes

27. According to Selwyn District Council (SDC) traffic count data, Springston Rolleston Road past the site was recorded to carry approximately 5,000 vehicles per day (vpd) in October 2020. Near Lowes Road it was recorded to carry approximately 10,900vpd in 2019. No traffic count information is available for Selwyn Road but it is estimated to carry approximately 5,300vpd east of Springston Rolleston Road according to the MobileRoad.org website which collates Council asset management data.

28. As outlined later in my evidence, when assessing effects of potential traffic that could be generated if the site is re-zoned, I have made use of future traffic forecasts made available by SDC. That will better reflect the ever changing transport patterns in this area as existing and planned development occurs.

Crash History

29. Given the fast development that has occurred in the south of Rolleston, crash records will only be available over the short time that some roads have been operational and older crash records on other roads which have changed significantly may not be particularly relevant.

30. Regardless, I have carried out a crash search along Springston Rolleston Road from Selwyn Road to Dynes Road and also along Hungerford Drive using the Waka Kotahi NZ Transport Agency Crash Analysis System. Since the start of 2016, through to mid 2021 there have been nine crashes at the Springston Rolleston Road / Selwyn Road intersection, one crash on Springston Rolleston Road within the search area and one crash on Hungerford Drive.

31. At the Springston Rolleston Road / Selwyn Road intersection, the nine crashes included one fatal crash, one serious-injury crash and three minor injury crashes. Eight of the nine crashes involved drivers on Selwyn Road failing to give-way to vehicles on Springston Rolleston Road.

32. The one crash on Springston Rolleston Road was a single-vehicle crash in 2018 when the driver lost control and alcohol was a suspected contributing factor.

33. The one crash on Hungerford Drive involved a driver crashing into a parked vehicle, likely due to inattention.

34. I conclude from the crash search that safe vehicle movement between Springston Rolleston Road and adjacent residential developments is possible. The performance of the Springston Rolleston Road / Selwyn Road intersection is a concern and I understand that a roundabout is planned for this important intersection of two arterial roads. The SDC Rolleston traffic model includes a roundabout at the intersection based on the intersection being upgraded in conjunction with the Waka Kotahi Safe Network Programme. As well as improving the safety of crossing movements on Selwyn Road, the roundabout will act as a southern entry to the town and help with speed management on Springston Rolleston Road.

Future Transport Environment

35. As set out above, I understand the Springston Rolleston Road / Selwyn Road intersection will need to be upgraded to a roundabout to address existing safety concerns as outlined above, and that would need to occur in any case based on existing road safety records.

36. A connection between Shillingford Boulevard and Ed Hillary Drive has recently been constructed as part of the development of the residentially zoned land north of the site.

Figure 5 shows the subdivision plan for the roading link. The property boundaries at the Ed Hillary Drive intersection were designed to allow for a roundabout to be constructed at this intersection when the fourth leg is constructed but I am not aware that a roundabout is currently being planned.

37. As mentioned earlier, the Faringdon subdivision expansion to the south was approved through Covid-19 Recovery processes. The subdivision plan is shown in **Figure 6**. The plan allows for a continuation of Faringdon Boulevard to Selwyn Road as well as a continuation of Northmoor Boulevard, a key east-west road, through to Springston Rolleston Road.

38. With Faringdon Boulevard extended to Selwyn Road, Shillingford Boulevard and Ed Hillary Drive connected and Northmoor Boulevard extended to Springston Rolleston Road, I consider that the wider area will be served by a well-connected network of collector and arterial roads.

39. There are several other Operative District Plan Change requests in for Rolleston and these are all shown in **Figure 7,** together with adjacent Special Housing Areas that are already developed residential areas, being Acland Park and Faringdon. Other Plan Change requests are further afield and I do not consider them particularly relevant to the proposed rezoning.

Proposed Rezoning

Overview

40. The proposed rezoning could result in an additional approximately 260 to 280 residential lots, representing a density of approximately 16 to 18 dwellings per hectare. An ODP has been prepared for the site and this is shown in **Figure 8**.

41. The key aspects of the ODP are:

- A local road connection to Springston Rolleston Road north of Kate Sheppard Drive
- A local road connection to Hungerford Drive
- Indicative connections to adjacent land to the west, south and north
- An off-road pedestrian / cycle connection to the reserve through to Ledbury Drive

42. I discuss these aspects and provide assessment of their appropriateness below.

Springston Rolleston Road Intersection

43. It is proposed that the new local road intersection is off-set north of Kate Sheppard Drive. I recommended the inclusion of the off-set primarily for road safety related reasons.

44. Off-set T-intersections are less complex and therefore safer than crossroad intersections. The proposed stagger will mean that right turn movements from Springston Rolleston Road into the side roads will not overlap.

45. The off-set arrangement will allow for a pedestrian (and possibly cyclist) crossing point to be provided between the two intersections. It is important that a safe crossing point is provided given the likely demand to walk / cycle to Acland Park where there are reserves and playgrounds, a primary school which is under construction and a future commercial development planned. Having a dedicated crossing point between two T-intersection will be safer and more appropriate than requiring people to cross at a crossroad intersection.

46. Off-setting the new intersection from Kate Sheppard Drive will also reflect the road hierarchy, with there being no need to allow for a large number of through crossing movements between two local roads. If off-setting the intersections results in less through traffic use of the two local roads, then I consider that is a desirable outcome for residents on the adjacent local roads.

47. The exact position of the new intersection would be confirmed at the subdivision design stage, and would also be subject to standard transport rules in the District Plan. However, as I have described, I consider that the proposed location close to Kate Sheppard Drive is a suitable location.

Hungerford Drive Connection

48. It is proposed that a local road connection to Hungerford Drive be provided. The formation characteristics can be considered at the time of subdivision in accordance with standard District Plan requirements. I expect that this road would have a similar formation to Hungerford Drive and continue to the southern boundary of the site. This is consistent with the approved Faringdon subdivision to the south which includes a local road connection to the north generally on the same alignment. I note that the existing section of Hungerford Drive only has a footpath on one side of the road. However, I would recommend that an extension of this road has a footpath on both sides of the road for pedestrian connectivity and accessibility.

Other External Connections

49. Other local road connections are proposed to the northern, western and southern boundaries of the site.

50. To the west, I would envisage this road connecting through the adjacent land to an extension of Faringdon Boulevard. This road would not necessarily need to continue to the existing Faringdon development further west, e.g. to Lemonwood Drive, as this road is a minor local road and in any case the Faringdon website does not indicate Lemonwood Drive continuing to the site boundary.

51. To the north, a minor road will be able to connect to the local road off the Shillingford Boulevard extension (shown in Figure 5), and this should be indicatively shown to be connecting on the outside of the bend.

52. To the south, there will be flexibility with how the local roads connect through the adjacent land and into the approved Faringdon subdivision.

53. I consider that these external connections will ensure that the site is well connected for all modes of travel on a local level.

Pedestrian / Cycle Provision

54. The reserve off Ledbury Drive is proposed to be extended into the site and an off-road pedestrian / cyclist connection will be provided through it as a connection towards Faringdon. Pedestrian / cyclist attractors within Faringdon include a nearby preschool, the South Point shops and large reserves. Other pedestrian / cyclist connections will be able to be considered at the subdivision stage.

Internal Roading

55. The ODP only shows internal roading indicatively and this would be firmed up at the subdivision design stage, with reference to the District Plan transport requirements. Matters such as the number of intersections on the main local roads, whether the use of crossroad intersections can be reduced and the formation of intersections should all be considered at the subdivision stage. In terms of road formation, I anticipate that local road standards similar to those adopted in surrounding areas will be adopted.

Public Transport

56. As the internal roads serve a local residential function, and there will be other higher order roads in adjacent land development, I do not anticipate the local roads within the site being suitable for bus routes. However, good pedestrian / cyclist connectivity to nearby bus stops should be achieved. As outlined, there are nearby bus stops on Faringdon Boulevard and Broadway Parade. Bus routes evolve as land is developed to achieve the best catchment possible. Bus routes would be expected to stay on classified roads i.e. arterial or collector roads. Future services could utilise one or more of the extensions of Faringdon Boulevard, Shillingford Boulevard and Northmoor Boulevard, all of which would be relatively close to the site.

Traffic Effects

57. In August 2021 I had Stantec traffic modellers carry out a traffic modelling exercise to assess the ability of the surrounding road network to accommodate the traffic volumes that could be generated by a 200-lot residential subdivision on the site. They made use of the Selwyn District Council's Rolleston Simulation Model of the time (Version 30 July 2022), which has an indicative assessment year of 2033. The model includes full development of all existing and zoned residential development in Rolleston as well as any that would be enabled by residential plan change requests under the Operative District Plan as lodged with Council at

the time. I understand it allowed for full development of the following Plan Change requests - PC 64, 70, 71, 73, 75, 76, 78.

58. I note that full development of these sites is not certain, with PC73 having a recommendation to decline by the Commissioner although it is subject to an appeal. In additionaPC80, 81 and 82 have all been lodged with Council. The evolving status of the Operative Plan Change sites, the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act, Waka Kotahi plans that are evolving for the Rolleston Access project, and the need for the Council to consider rezoning submissions as a group, it is difficult to apply a single fully representative transport modelling assessment at this time.

59. Nevertheless, I consider the modelling undertaken in 2021 will provide a suitable basis to inform the transport assessment of the proposed development plan for the submission site, and particularly the transport network connections and ability of the nearby transport network to accommodate traffic with the following matters to be taken into account:

(i) The proposed yield of the site is proposed at 260-280 households, whereas 200 households have been modelled.

(ii) There may be other Plan Changes approved ahead of the District Plan considerations, not included in the model.

(iii) The Waka Kotahi Rolleston Access scheme could alter modelled traffic patterns, particularly in the northern part of Rolleston.

(iv) Other Proposed Plan Change rezoning submissions will likely have some influence on performance, including the land immediately to the south of the site.

(v) Wider density changes as a result of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act could impact traffic patterns assessed.

60. I consider that utilising this model is an appropriate method of assessment at this time for the proposed re-zoning given the level of development that it allows for and the assessment year. I acknowledge that there are a number of other areas in Rolleston, and southern Rolleston in particular, which are subject to submissions on the proposed District Plan. In any case, the site for the proposed rezoning subject to this assessment is small in comparison to other areas and I consider that this level of assessment is appropriate.

61. The model includes future roading connections and intersection upgrades to allow for future forecast traffic volumes to be accommodated. In the vicinity of the site, these include roundabouts at the Springston Rolleston Road / Selwyn Road and Springston Rolleston Road / Ed Hillary Drive intersections and a sea-gull arrangement to minimise right turning movement conflicts at the Selwyn Road / Lincoln Rolleston Road intersection.

62. **Attachment C** of my evidence contains a summary of the traffic modelling exercise that has been carried out and the results. As outlined, traffic generation rates and distributions used for other residential zones in the model have been adopted for consistency.

63. The modelling results show that an additional 200 houses on the site would result in a negligible change in the performance of the key nearby intersections assessed being:

- Springston Rolleston Road / Selwyn Road
- Springston Rolleston Road / Ed Hillary Drive / Shillingford Boulevard
- Springston Rolleston Road / Lowes Road
- Selwyn Road / Lincoln Rolleston Road

64. I also conclude that the new intersection on Springston Rolleston Road will operate efficiently with good levels of service. The formation of the intersection will be able to be considered further through the subdivision and detailed design stages. The design will need to consider the existing road layout in the vicinity, including the road widening provided opposite the Kate Sheppard Drive intersection, and road marking through the intersection. I expect that the 60km/h speed limit adopted closer to Rolleston will be extended through to the Selwyn Road intersection as the surrounding land is adopted and the intersection design will need to be appropriate for the speed environment.

65. For comparison purposes, a second scenario was tested with the connection to Hungerford Drive removed to require all traffic from the 200 houses to enter and exit via Springston Rolleston Road. There was only a small difference in the traffic volumes using the Springston Rolleston Road intersection between the two scenarios, indicating that any through traffic use of the new road or increased use of Hungerford Drive would be expected to be small. On that basis, the layout requirements for anticpated road network connections and improvements is not noticably influenced by the rezoning.

66. I note that when other roads in the area are connected i.e. Faringdon Boulevard and Northmoor Boulevard, there will be more options for drivers to connect to the arterial road network and traffic will be more spread. I conclude that the new roads within the site will primarily serve the local road purpose of property access and I would encourage them being designed to encourage a slow speed environment for resident safety and amenity.

67. Having noted the modelling of 260-280 households has not been carried out at this time, and would need to be for a definitive understanding of network perfromance, I can only offer an informed opinion of the likely incremenental change in effects of the higher density. In my opinion, the form of transport modelling and performance outcomes, including the sensitivity test of a less connected transport network all lead to a high liklihood that the additional 60-80 households can be readily accommodated with minimal change in performance, without further changes to the ODP, and withot additional external infrastructure already anticpated by Council.

District Plan Transport Policies

68. The Transport chapter of the Proposed District Plan includes three objectives and I provide comment on these below.

> *TRANO1 People and places are connected through safe, efficient, and convenient land transport corridors and land transport infrastructure which is well integrated with land use activities and subdivision development.*

69. I consider that a residential development of the site will be able to be well connected to the surrounding road network and the surrounding neighbourhoods. An appropriately designed new intersection on Springston Rolleston Road will provide a safe and convenient connection to the arterial road network. Other local connections will be available to the north, west and south, noting that the site is essentially surrounded by residential development.

70. With an appropriate dedicated crossing point on Springston Rolleston Road, the site will be well connected for pedestrians and cyclists to Acland Park where a neighbourhood commercial development is anticipated and a primary school is currently under construction. Pedestrian and cycle connections will also be available to Faringdon, where there are also neighbourhood services.

> *TRANO2 Land transport corridors and land transport infrastructure are protected from incompatible land use activities and subdivision development.*

71. I consider that residential development of the site is logical given it will be surrounded by residential land-use, and there are no concerns related to impacts on land transport corridors.

> *TRANO3 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.*

72. As I have outlined, a local road network will be able to be developed within the site to primarily serve the residents of the development. An appropriately designed intersection on Springston Rolleston Road will be able to operate safely and efficiently and traffic generated by a residential development on the site will have negligible effects on the wider road network.

73. I conclude that the proposed re-zoning is consistent with the transport-related policies of the District Plan.

Conclusion

74. Following my assessment, I conclude that the site is appropriate for residential zoning given it is surrounding by residentially zoned and/or developed land to the east, north, west and south (with a small portion of unzoned land subject to another PDP submission immediately adjoining). This will allow it to be well connected to the surrounding neighbourhoods for walking and cycling, particularly to Acland Park and Faringdon where there are a range of attractors including neighbourhood shops, schools, parks and bus routes. It also facilitates connections between other developments.

75. Detail of the internal roading layout will be able to be confirmed at the subdivision and detailed design stages and I consider that local road standards will be appropriate to be adopted through the site. I would encourage the detailed design to aim to achieve a slow speed environment for resident safety and amenity.

76. Providing a new intersection on Springston Rolleston Road north of Kate Sheppard Drive is appropriate and this intersection will be able to be designed at a later stage to tie into the planned road environment. Based on traffic modelling carried out, I conclude that an appropriately designed intersection will operate safely and efficiently.

77. Based on traffic modelling carried out, I conclude that the traffic that could be generated by the proposed development will be spread across the transport network and have a negligible effect on the operation of key intersections nearby.

78. As described, I consider the proposed re-zoning to be consistent with the transport-related objectives of the District Plan.

79. I conclude that from a transport perspective, the site is appropriate to be zoned for residential land use and the proposed ODP will ensure that good transport outcomes can be achieved at the subdivision design stage.

Andrew Metherell
Stantec New Zealand

3 August 2022

Attachment A: Evidence Figures

Figure 1: Site Location (Orange Outline) in Context of Rolleston (Map Source: Google Earth)

Figure 2: Proposed District Plan Zoning

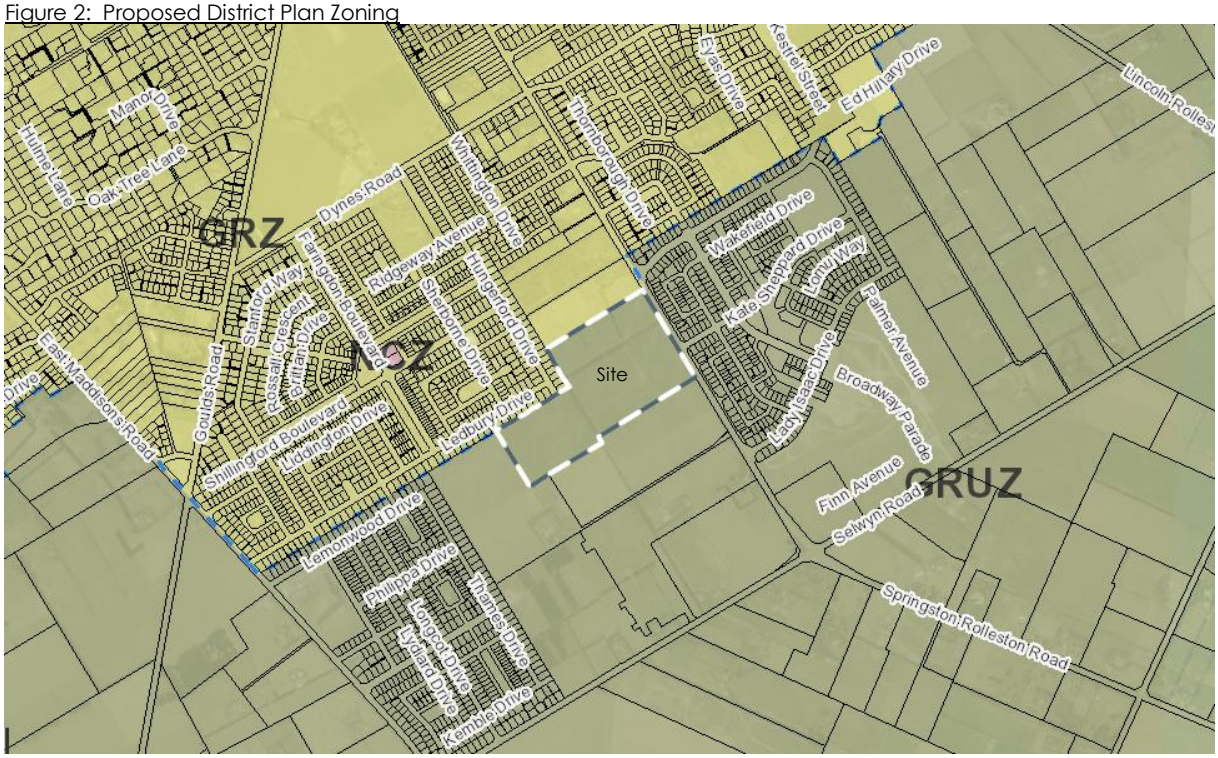


Figure 3: Site Location in Context of Surrounding Road Network (Red-Arterial, Yellow-Collector) (Google Earth)

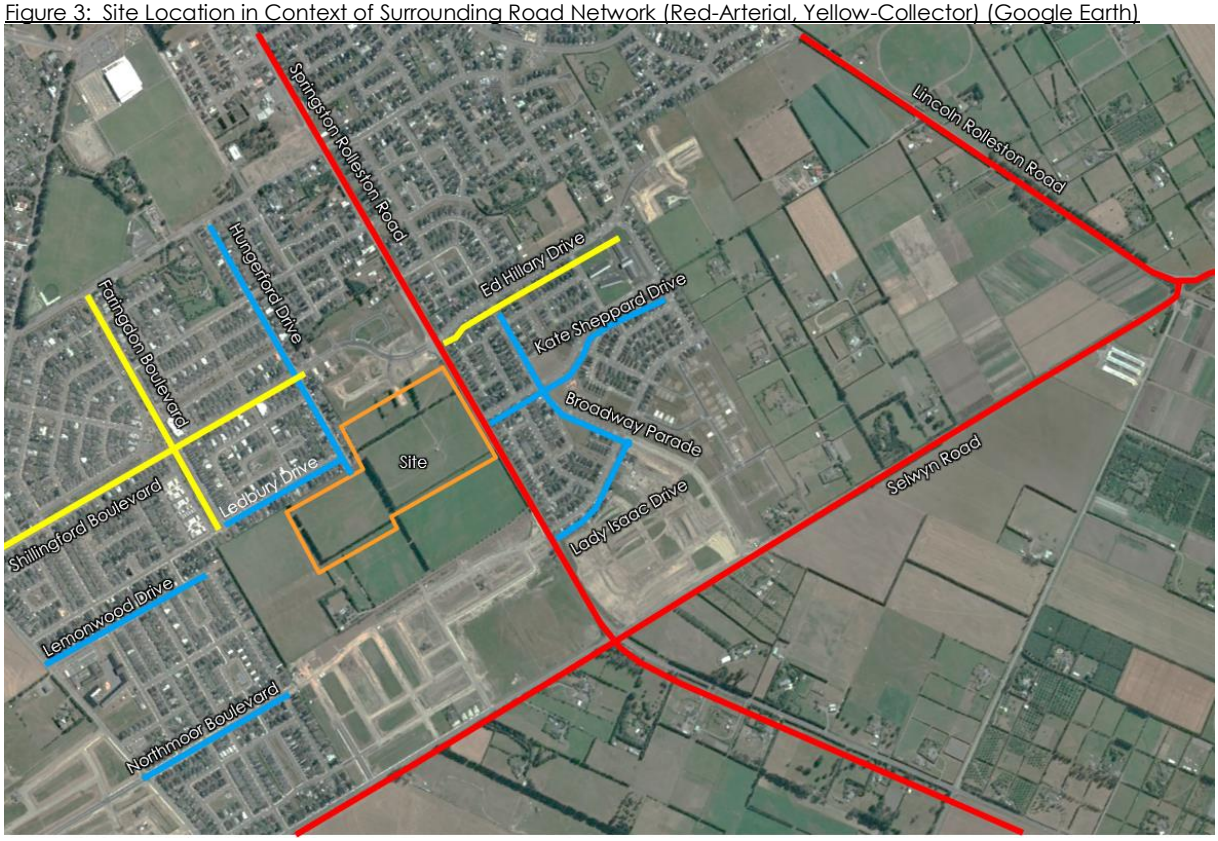


Figure 4: Bus Routes (Source: metroinfo)

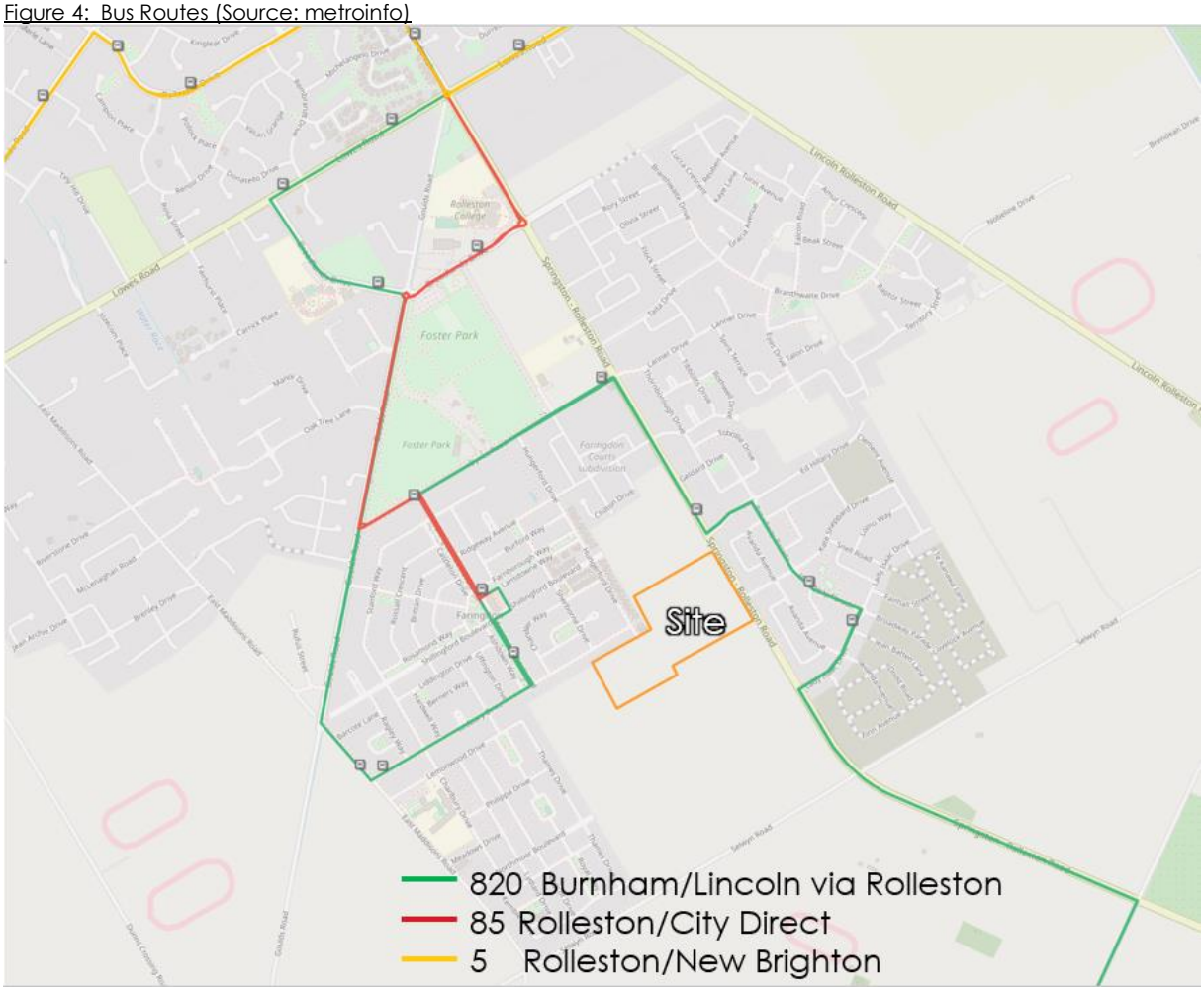


Figure 5: Shillingford Boulevard / Ed Hillary Drive Connection

Figure 6: Approved Subdivision Plan - Hughes Developments Limited South East Rolleston

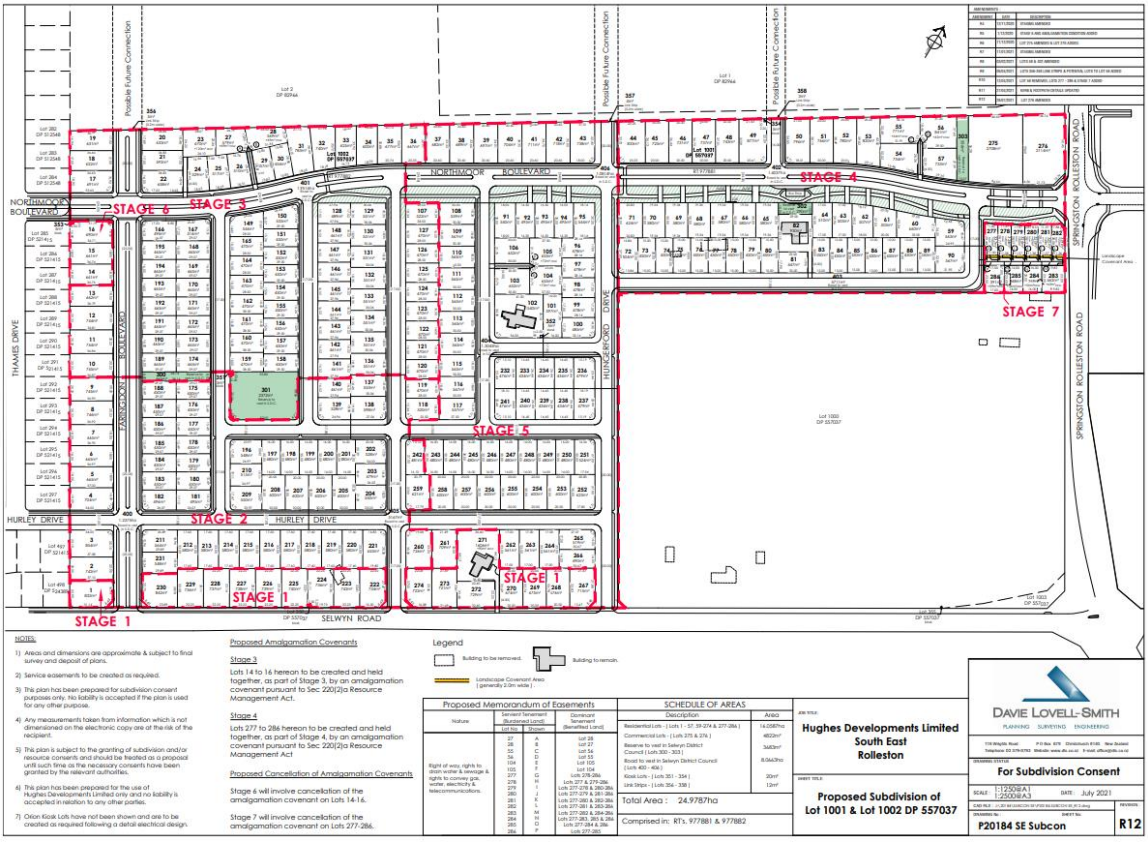
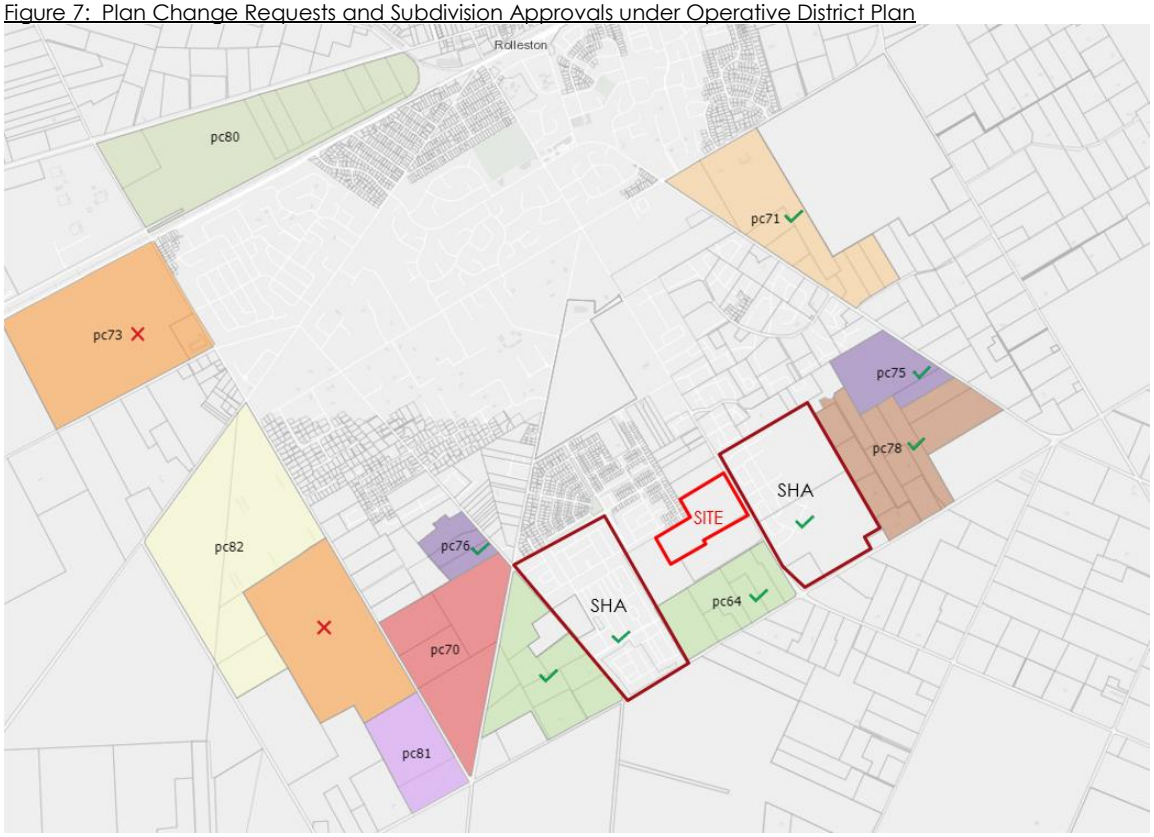
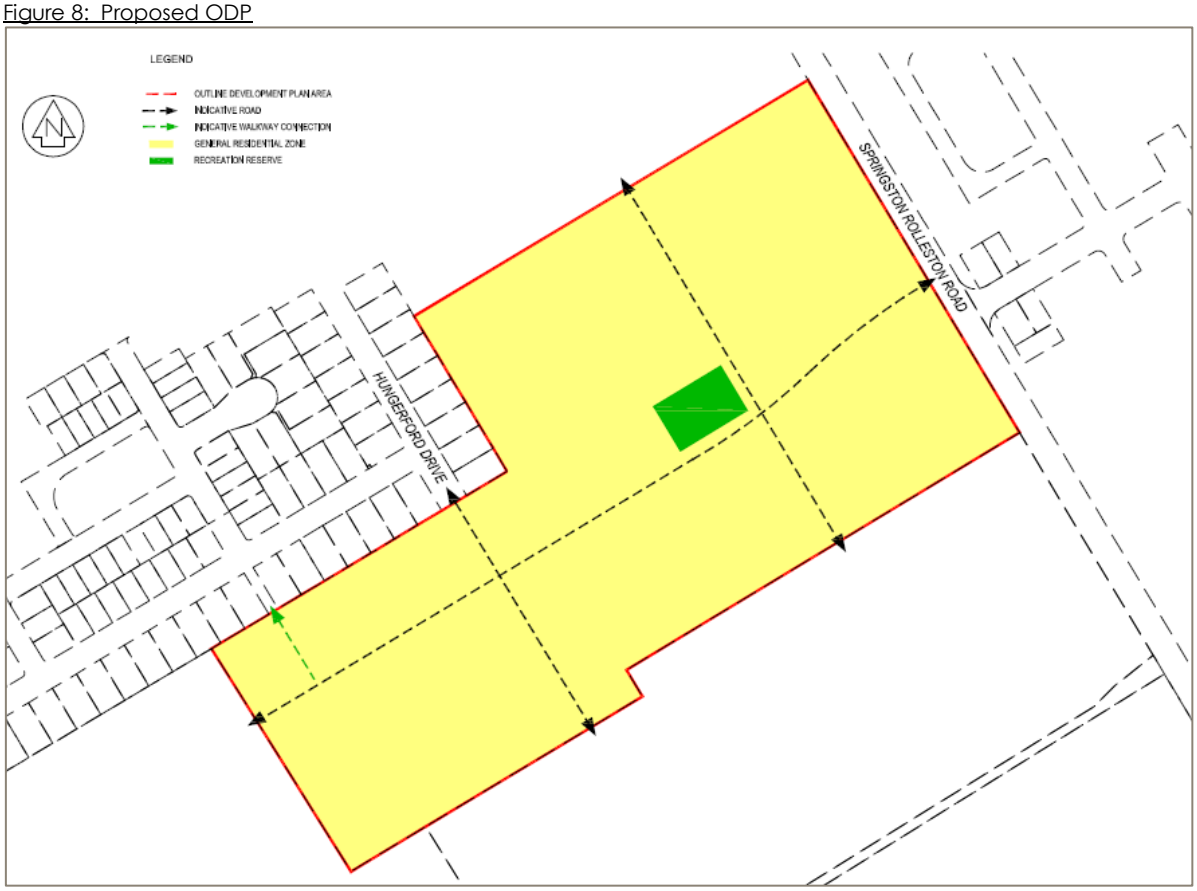


Figure 7: Plan Change Requests and Subdivision Approvals under Operative District Plan



Plan Change Requests in the Rolleston Area (as shown on SDC Website 3 August 2022), and nearby areas approved through Special Housing Area processes or Covid Recovery Processes. Green tick indicates a subdivision approval or Commissioner recommendation to approve, red cross is a Commissioner recommendation to decline. Submission site shown in red outline. PC 64 withdrawn as it received consent to subdivide through Covid Recovery processes.

Figure 8: Proposed ODP



Attachment B: Photographs

Photograph 1: Springston Rolleston Road, South of Kate Sheppard Drive, Looking North

Photograph 2: Springston Rolleston Road, South of Kate Sheppard Drive, Looking South

Photograph 3: Kate Sheppard Drive, East of Springston Rolleston Road, Looking East

Photograph 4: Hungerford Drive, North of Ledbury Drive, Looking North

Attachment C: Traffic Modelling Summary

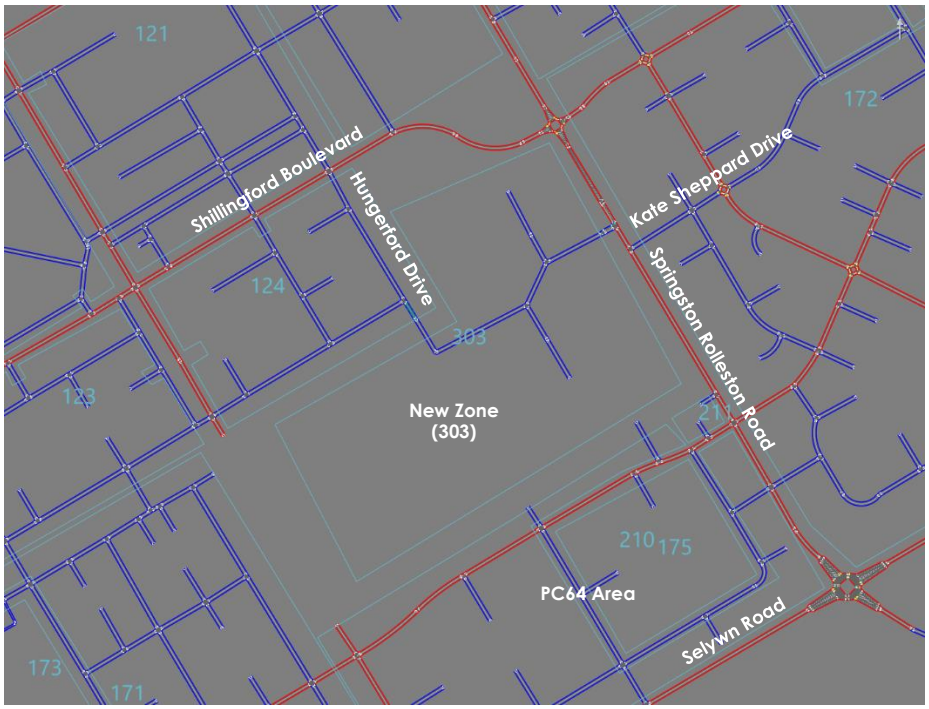
Stantec traffic modellers have made use of the 2033 Rolleston Micro-Simulation Traffic Model for this assessment. This model has been provided in 30 July 2021 to Stantec by Selwyn District Council's transport consultant.

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 splits: 40% departures, 60% arrivals
- Distribution consistent with that of surrounding residential zones
- Traffic generation reductions to allow for public transport and active mode uptake as outlined in the table below, and consistent with the traffic model provisions

	AM	PM
Rolleston to Christchurch	7.9%	6.8%
Christchurch to Rolleston	8.1%	6.5%
Rolleston to Lincoln	0.33%	0.16%
Lincoln to Rolleston	0.22%	0.28%
Internal Rolleston	0.25%	0.25%

A new zone was added to the simulation model as shown below. A new road was connected to Springston Rolleston Road and Hungerford Drive also as shown below. The connection to Springston Rolleston Road was north of Kate Sheppard Drive as proposed through the ODP.



The zone was not connected to any other roads as it is possible that the site could be developed before other connections are available. I consider this to be a worst case scenario. In the future if other roads are connected through the surrounding area e.g. Faringdon Boulevard and Northmoor Boulevard, they will result in a greater spread of traffic volumes. Limiting the number of connections means that more traffic will be required to use the Springston Rolleston Road intersection and I consider this to be a conservative assessment approach.

The modelling exercise was carried out primarily to assess the ability of the road network to accommodate the additional traffic that could be generated by 200 houses on the site (which is less than the 260-280 lots now proposed). The performance of the following four key nearby intersections was assessed, adopting the layouts that are allowed for in the transport model:

- Springston Rolleston Road / Selwyn Road (upgraded to a roundabout)
- Springston Rolleston Road / Ed Hillary Drive / Shillingford Boulevard (upgraded to a roundabout)
- Springston Rolleston Road / Lowes Road (Existing traffic signals)
- Selwyn Road / Lincoln Rolleston Road (Upgraded to seagull priority controlled)

The following table summarises the change in intersection performance forecast at the four intersections and the forecast performance of the new intersection on Springston Rolleston Road.

Intersection	Approach	Mvt	2033 AM						2033 PM					
			Base			with Dvlpmt (2 exits)			Base			with Dvlpmt (2 exits)		
			Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springston Rolleston Rd / Selwyn Rd	North	L	127	3.6	A	146	3.6	A	42	2.3	A	56	2.4	A
		T	284	5.3	A	296	5.0	A	243	3.2	A	251	3.1	A
		R	42	5.5	A	45	5.1	A	53	4.0	A	60	3.8	A
	East	L	21	2.0	A	20	2.7	A	9	1.9	A	6	1.4	A
		T	178	5.7	A	186	4.7	A	419	5.1	A	408	5.5	A
		R	36	6.4	A	45	6.6	A	62	5.5	A	92	7.1	A
	South	L	53	2.4	A	54	2.2	A	223	3.5	A	222	3.4	A
		T	135	3.2	A	137	3.2	A	330	5.1	A	344	5.3	A
		R	7	1.9	A	7	2.6	A	22	3.8	A	20	4.8	A
	West	L	45	2.7	A	52	2.2	A	45	2.9	A	51	2.6	A
		T	407	3.5	A	401	3.7	A	184	4.3	A	188	4.6	A
		R	196	3.9	A	197	4.6	A	106	5.1	A	109	5.7	A
Springston Rolleston Rd / Edmund Hillary Dr	North	L	31	3.1	A	32	3.3	A	30	4.1	A	29	2.9	A
		T	241	4.6	A	245	4.4	A	275	5.3	A	310	5.1	A
		R	19	7.3	A	21	6.4	A	26	7.9	A	28	7.1	A
	East	L	53	7.0	A	56	7.0	A	36	6.8	A	38	7.2	A
		T	93	8.5	A	90	8.4	A	111	9.0	A	117	9.3	A
		R	26	10.0	A	29	9.3	A	26	10.0	A	30	11.0	B
	South	L	72	2.6	A	80	2.8	A	119	3.0	A	115	3.1	A
		T	276	2.9	A	320	4.0	A	319	3.8	A	355	4.6	A
		R	33	3.9	A	40	5.7	A	49	4.5	A	47	5.7	A
	West	L	48	5.7	A	40	6.2	A	51	7.4	A	48	7.1	A
		T	101	6.7	A	117	7.7	A	146	8.3	A	128	8.7	A
		R	80	8.5	A	72	8.8	A	92	10.0	A	77	10.6	B
Springston Rolleston Rd / Lowes Rd	North	L	53	16.3	B	53	14.6	B	48	39.3	D	53	40.3	D
		T	407	15.3	B	402	16.0	B	628	45.7	D	626	46.7	D
		R	41	13.1	B	37	13.1	B	78	32.3	C	68	33.3	C
	East	L	120	10.0	A	125	9.8	A	299	13.5	B	305	13.7	B
		T	97	20.8	C	93	21.1	C	229	26.9	C	224	25.8	C
		R	29	37.4	D	38	30.8	C	50	30.0	C	51	34.5	C
	South	L	44	17.9	B	43	17.1	B	54	12.3	B	56	11.9	B
		T	651	21.9	C	659	24.2	C	539	17.0	B	567	16.9	B
		R	223	18.2	B	219	20.3	B	170	16.5	B	169	16.2	B
	West	L	123	21.2	C	123	21.7	C	47	19.1	B	41	19.1	B
		T	310	27.5	C	284	26.3	C	156	23.2	C	163	21.9	C
		R	56	34.7	C	73	32.1	C	47	35.4	C	45	37.8	D
Selwyn Rd / Lincoln Rolleston Rd	East	L	207	1.5	A	214	1.0	A	610	1.3	A	624	1.8	A
		T	341	1.5	A	332	1.6	A	832	2.0	A	823	2.3	A
	South	L	4	14.1	B	3	18.5	C	2	12.1	B	2	14.0	B
		R	627	19.3	C	639	22.3	C	214	28.2	D	223	28.8	D
	West	T	890	2.1	A	900	2.7	A	431	1.9	A	430	2.0	A
		R	1	5.0	A	2	5.5	A	1	30.5	D	2	68.0	F
Springston Rolleston Rd / Access Road	North	T	-	-	-	361	0.4	A	-	-	-	384	0.8	A
		R	-	-	-	14	5.2	A	-	-	-	41	6.2	A
	South	L	-	-	-	23	3.6	A	-	-	-	57	3.7	A
		T	-	-	-	382	1.0	A	-	-	-	482	1.0	A
	West	L	-	-	-	60	6.5	A	-	-	-	35	6.3	A
		R	-	-	-	61	11.8	B	-	-	-	50	12.8	B

It can be seen that any changes to the performance of the nearby intersections resulting from a residential development of the site would be negligible. Levels of service for movements do not change or where they do, this is the result of only very small changes to delays. On that basis, the layout requirements for anticpated road network connections and improvements is not noticably influenced by the rezoning.

The nearby Springston Rolleston Road / Selwyn Road and Springston Rolleston Road / Ed Hillary Drive intersections are forecast to operate with good levels of service A or B for all movements. The traffic signalised Springston Rolleston Road / Lowes Road intersection is forecast to operate with some delays during peak times however the additional traffic resulting from the site will not have a noticeable effect. Similarly development of the site will not have a noticeable effect on the critical right turn movement from Selwyn Road (west) at the Lincoln Rolleston Road intersection. There is a notable increase in the delay for the right turn from Lincoln Rolleston Road into Selwyn Road (west) however this movement is made by 1-2 vehicles and this is considered a traffic modelling anomoly.

The new intersection on Springston Rolleston Road is forecast to operate with good levels of service.

For a comparison, a second scenario was modelled which had the connection to Hungerford Drive removed. This required all traffic generated by the 200 houses on the site to enter and exit via Springston Rolleston Road. As shown in the table below, the differences in the traffic volumes turning to and from the side road at the new intersection on Springston Rolleston Road are small which indicates that any use of the new road as a through road connecting to Hungerford Drive or increased use of Hungerford Drive resulting from the proposed re-zoning would be small. There is a negligible difference in the performance of the nearby intersections when compared with the first scenario. For this reason, there is a not a traffic efficiency related requirement for specific road network staging.

Intersection	Approach	Mvt	2033 AM						2033 PM					
			Base			with Dvlpmt (1 exit)			Base			with Dvlpmt (1 exit)		
			Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springston Rolleston Rd / Selwyn Rd	North	L	127	3.6	A	145	3.4	A	42	2.3	A	49	2.3	A
		T	284	5.3	A	299	5.3	A	243	3.2	A	243	3.1	A
		R	42	5.5	A	50	6.0	A	53	4.0	A	61	4.2	A
	East	L	21	2.0	A	20	2.0	A	9	1.9	A	8	1.9	A
		T	178	5.7	A	185	5.5	A	419	5.1	A	416	5.5	A
		R	36	6.4	A	36	5.8	A	62	5.5	A	87	6.0	A
	South	L	53	2.4	A	53	2.7	A	223	3.5	A	222	4.0	A
		T	135	3.2	A	136	3.3	A	330	5.1	A	348	5.8	A
		R	7	1.9	A	7	2.7	A	22	3.8	A	20	5.3	A
	West	L	45	2.7	A	46	2.3	A	45	2.9	A	48	2.8	A
		T	407	3.5	A	405	3.7	A	184	4.3	A	188	4.6	A
		R	196	3.9	A	195	4.2	A	106	5.1	A	109	5.7	A
Springston Rolleston Rd / Edmund Hillary Dr	North	L	31	3.1	A	29	3.3	A	30	4.1	A	35	4.5	A
		T	241	4.6	A	258	4.9	A	275	5.3	A	314	5.6	A
		R	19	7.3	A	24	7.4	A	26	7.9	A	29	7.8	A
	East	L	53	7.0	A	57	6.7	A	36	6.8	A	38	8.8	A
		T	93	8.5	A	94	8.3	A	111	9.0	A	108	9.8	A
		R	26	10.0	A	28	10.7	B	26	10.0	A	31	11.5	B
	South	L	72	2.6	A	88	3.0	A	119	3.0	A	129	3.8	A
		T	276	2.9	A	321	4.0	A	319	3.8	A	354	4.8	A
		R	33	3.9	A	38	5.3	A	49	4.5	A	41	5.6	A
	West	L	48	5.7	A	54	6.5	A	51	7.4	A	47	8.5	A
		T	101	6.7	A	108	7.1	A	146	8.3	A	136	9.7	A
		R	80	8.5	A	88	9.0	A	92	10.0	A	97	11.5	B
Springston Rolleston Rd / Lowes Rd	North	L	53	16.3	B	56	14.4	B	48	39.3	D	47	40.0	D
		T	407	15.3	B	412	15.7	B	628	45.7	D	643	44.2	D
		R	41	13.1	B	44	12.0	B	78	32.3	C	86	35.7	D
	East	L	120	10.0	A	120	9.4	A	299	13.5	B	291	13.6	B
		T	97	20.8	C	95	22.4	C	229	26.9	C	241	26.1	C
		R	29	37.4	D	33	35.3	C	50	30.0	C	49	32.8	C
	South	L	44	17.9	B	45	19.9	B	54	12.3	B	55	11.0	B
		T	651	21.9	C	676	24.4	C	539	17.0	B	542	18.1	B
		R	223	18.2	B	217	20.4	B	170	16.5	B	182	16.4	B
	West	L	123	21.2	C	119	22.4	C	47	19.1	B	42	18.9	B
		T	310	27.5	C	297	26.9	C	156	23.2	C	167	21.0	C
		R	56	34.7	C	70	30.7	C	47	35.4	C	39	36.5	D
Selwyn Rd / Lincoln Rolleston Rd	East	L	207	1.5	A	207	1.1	A	610	1.3	A	625	1.5	A
		T	341	1.5	A	343	1.5	A	832	2.0	A	826	1.9	A
	South	L	4	14.1	B	3	15.8	C	2	12.1	B	2	24.4	C
		R	627	19.3	C	630	22.8	C	214	28.2	D	222	29.5	D
	West	T	890	2.1	A	910	2.2	A	431	1.9	A	430	2.0	A
		R	1	5.0	A	2	4.5	A	1	30.5	D	3	45.7	E
Springston Rolleston Rd / Access Road	North	T	-	-	-	380	0.6	A	-	-	-	388	0.8	A
		R	-	-	-	25	5.3	A	-	-	-	59	5.5	A
	South	L	-	-	-	18	3.6	A	-	-	-	47	3.6	A
		T	-	-	-	379	1.0	A	-	-	-	482	1.0	A
	West	L	-	-	-	68	6.6	A	-	-	-	42	6.9	A
		R	-	-	-	60	11.2	B	-	-	-	29	14.3	B