Appendix E

Integrated Transport Assessment

novo group

Planning. Traffic. Development.

Integrated Transport Assessment

prepared for

SELWYN DISTRICT COUNCIL

Kirwee Reserve

August 2019

Integrated Transport Assessment

prepared for

Selwyn District Council

Kirwee Reserve

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Introduction

1. Selwyn District Council has commissioned Novo Group to prepare an Integrated Transport Assessment (ITA) for the extension of the Kirwee Reserve.

2. This report provides an assessment of the transport aspects of the proposed development. It also describes the transport environment in the vicinity of the site, describes the transport related components of the proposal and key transport provisions in the District Plan. It has been prepared broadly in accordance with the Integrated Transportation Assessment Guidelines specified in New Zealand Transport Agency Research report 422, November 2010 and other relevant best practice guides.

3. It is proposed to develop and extend the Kirwee Reserve to the northwest creating a second cricket oval, and an additional junior field through re-alignment of the second senior field. Other Facilities include a pump track and other passive (as opposed to organised) recreational spaces including walking tracks where dogs are permitted. The extension will include provision for a total of 201 car parking spaces and a new vehicle entrance to Tramway Road. The proposed reserve layout is shown in Figure 1 below.

Figure 1: Proposed Reserve Layout

Transport Environment

Road Network

High Street

4. High Street is a local road with a 50km/h speed limit. High Street has an approximately 5.2m wide un-marked carriageway which provides for one traffic lane in each direction and has flush grass berms on both sides. A 1.4m wide sealed footpath is provided on the southern side of the carriageway.

5. The Mobile Road website estimates traffic volumes on High Street as approximately 282 vehicles per day, although this is likely to vary from day to day depending on activities at the A&P Grounds and Kirwee Domain.

Tramway Road

6. Tramway Road is a local road with a 50km/h speed limit[1] increasing to 100km/h 80m north of the intersection with High Street. Tramway Road has two marked traffic lanes and flush grass berms.

7. Opposite the proposed access, Tramway Road has a carriageway width that tapers from 6.2m through the rural area to 10.4m width at the 50km/h threshold treatment. The sealed width is approximately 8.9m opposite the proposed access.

8. The Mobile Road website estimates traffic volumes on High Street as approximately 249-278 vehicles per day.

Crash History

9. The NZ Transport Agency Crash Analyses System (CAS) has been reviewed to identify crashes that have been reported on High Street and Tramway Road between 2009-2019. One reported crash was identified as shown in **Figure 2** below.

[1] The speed limit was reduced from 70km/h to 50km/h through the amended speed limit bylaw as of 1st August 2019

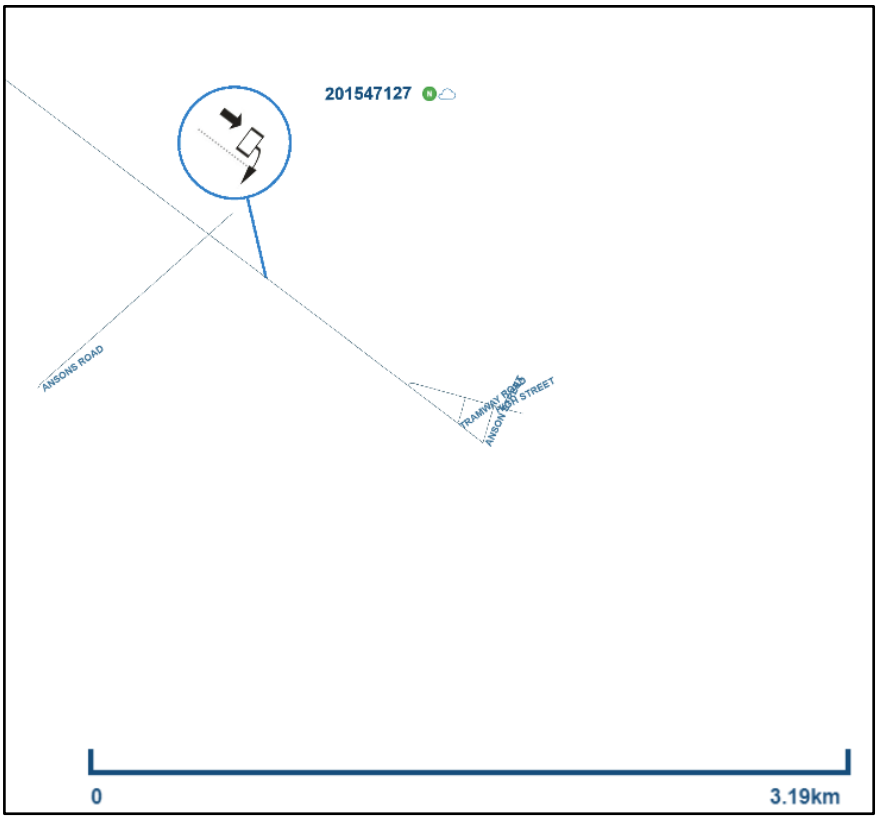

Figure 2: Collision Diagram NZTA CAS Database (reported crashes 2009-2019)

10. The reported crash did not result in injury. It involved a rear end collision with a right turning vehicle on Tramway Road 300m east of the intersection with Ansons Road. The crash summary report from the CAS database is included in **Appendix 1**.

Alternative Transport Modes

Passenger Transport

11. There are no public transport routes that service Kirwee.

Cycling

12. There are no dedicated cycle routes or lanes in close proximity to the site.

Existing Parking Demand

13. Spot counts of parking demand were undertaken on two Saturday mornings to determine the existing peak parking demand associated with the rugby games. These surveys were undertaken during junior games when two fields were occupied (two games) simultaneously. The spot count undertaken on 25 May 2019 also coincided with the Rugby club's annual Club-Day which represents one of the busiest days on the yearly rugby calendar. The parking demand is presented in **Table 1** below.

Table 1: Existing Parking Demand (Rugby)

Location	Supply	25th May 2019 10am	25th May 2019 11am	8th June 2019 10am	8th June 2019 10:30
West Carpark	60	25	41	19	28
Central Car park	30	27	26	30	26
East Car park	14	13	13	8	6
A&P Showgrounds	Grass	46	105	24	27
Total		**111**	**185**	**81**	**87**

14. There did not appear to be any on-street parking occurring in association with the above surveys i.e., no-one was observed walking to / from vehicles parked on-street. There were however two vehicles parked on High Street, however these appeared to be associated with adjoining residential properties.

The Proposal

15. The existing Kirwee Reserve contains two senior rugby fields, one junior field (although additional games can be played on half senior fields), a cricket oval, bowling green, seven tennis / netball courts and passive recreation (play-grounds etc) space. There are currently three car parking areas accessed from High Street.

16. The proposal is to extend the reserve to the north-west providing an additional cricket oval, repositioning the second rugby field, and creating an additional junior field. The area also includes passive recreation / dog walking areas, pump track, additional amenities, play-grounds and recreational spaces.

17. It is proposed to reconfigure existing car parking spaces and extend these spaces to cater for up to 201 parking spaces (including 5 mobility spaces).

18. The car parks will be formed / sealed and drained and lit (for security). The provision of the car park will be staged (as facilities are provided and the club membership increases over time).

19. There are also other areas around the reserve that could also be opened up to provide temporary and informal grass parking for larger one-off events.

20. 10 cycle parks are to be provided in several locations to cater for any cycle parking demand.

21. An additional vehicle access is also proposed to Tramway Road as well as a separate pedestrian access from Tramway Road.

Traffic Generation and Parking Demand

22. Traffic generation and parking demand of the various activities is estimated below from survey data (where available) as set out in **Table 2** below and otherwise from first principles.

Table 2: Survey information from NZ Trips and Parking Database

Facility surveyed	Site and survey info	Parking Demand	Trip Generation
Silverdale War Memorial Park, Rodney	3 Rugby Fields, 2 tennis courts, 1 hockey pitch, 3 bowling greens, Pony club. Sat in May	283 peak parking demand	318 trips
Ilam Fields, Christchurch	Wed 1200-1700 June. 4 Rugby fields and clubhouse	168 peak parking demand	102 vehicles per hour

Netball

23. Netball games are not played on these courts therefore the peak use is associated with trainings. With two courts it is anticipated that there would be two teams training at any one time, with typically 12 squad / team members (24 total plus coaches). The traffic generation would therefore be low. Trainings typically occur on weekday evenings and will not change as a result of the proposed extension to the reserve.

Rugby

24. The peak period associated with the Rugby fields typically occurs in the mornings when several junior rugby games are occurring at once, there would be up to three games occurring at any time (the third using half a senior field). The existing parking demand was surveyed and is set out in **Table 1** above.

25. As a proxy for estimating traffic generation, the Silverdale survey identified turn-over of around 1.12 trips per parked vehicle[2] (the Ilam Fields suggested only 0.6 trips per parked vehicle however it is not clear if this was associated with a training session or games). Applying the higher of these rates to the observed 87 parked vehicles suggests a traffic generation of 97 trips in the peak hour. This aligns well with the operational observations that vehicle parking duration is typically more than one hour. This accounts for warm-up times, game time, and after-game time lags. Furthermore, some cars will also be associated persons playing in or supporting more than one team etc.

26. The higher parking demand on club days (185 vehicles) therefore equates to around 207 vehicle movements in peak hour periods.

27. The opportunity to cater for three junior fields may not necessarily proportionately increase the traffic generation as it will depend on the number of games scheduled (which is not necessarily proportionate to the number of fields available as the games rotate between different club grounds). For example, consecutive games may alternate fields allowing teams to warm up on the field before the game instead of utilising space around the perimeter of otherwise occupied fields. At most, the existing traffic generation would be around 194 trips per hour on a typical Saturday. The higher 'club-day' peak is not anticipated to noticeably increase over the near future as this is likely proportionate to the

[2] Apply the traffic generation to parking demand as a ratio (i.e., 318 trips / 283 space demand = 1.12 trips per vehicle in the peak hour).

size of the club rather than the number of sports fields. A 50% increase has however been conservatively applied to allow for any additional games i.e., 311 trips per hour[3].

28. Senior games typically have around 25 people (players and coaches, refs etc) per team. With two fields there could be up to four teams at any one time (100 people). With a conservative car occupancy of 2 people per car, this would equate to around 50 vehicles. Spectator volumes are more difficult to estimate, however it is unlikely that parking demand would be higher than that which occurred during the surveyed junior games. The games are also longer than one hour and typically have greater gaps between games that are scheduled on the same fields hence there is also unlikely to be the same level of traffic generation as occurs in association with the junior games.

29. Some of the visiting senior teams also charter a bus, reducing the traffic generation and parking demand from that assessed above. Where buses are expected a small number of car parks are coned off to provide for the bus parking.

30. Trainings occur on weekday evenings and are expected to be lower with typically only one team per field and no additional spectators (i.e., none other than parents driving children to the practise).

Bowls

31. A bowling green can typically be divided into parallel playing strips (called rinks). The size of the existing green suggests it could provide up to four rinks. Up to four people can play per team (eight people per game) and therefore eight players on four rinks suggests up to 32 players. There maybe some overlap associated with consecutive games and organisers etc. Games typically last more than an hour and most organisers would arrive early so the peak hour traffic volumes would still remain low at an estimated 20 vehicle movements (say 40 people and two person per car occupancy).

Tennis

32. Tennis games are sometimes held on Saturdays and also weekdays, along with trainings. If games were occurring on all six courts, this would suggest up to 24 players (assuming doubles). Including spectators and coachers, organisers and the like this could equate to around 40 people at any one time. Assuming a car occupancy of 2 people per vehicle this could equate to around 20 vehicles. The length of games is varied and as such the traffic generation is not likely to exceed 30 trips in any given hour. Tennis is also a summer sport only, so would not coincide with Netball or Rugby which are winter sports.

Cricket

33. Senior cricket matches typically have around 11 players (with only 1 or 2 reserves) and last for more than an hour. Junior grades have shorter games and may be less than one hour. Senior cricket games also attract some spectators, coaches and organisers therefore an estimated 50 people per game would generate 25 vehicles however these would not likely arrive and depart in the same hour. Junior games may generate around 30 players and coaches (with a similar number of parents watching) and turn over within an hour

[3] It is noted that the club anticipates only a 22% increase in Junior membership over the next 5 years.

(estimated 60 trips). Cricket is also a summer sport only, so would not coincide with winter sporting codes.

Passive recreation

34. The dog park, pump track, playgrounds etc will likely generate some vehicle movements throughout the day with peak periods after school and work and on weekends. A small allowance for peak hour traffic is added for these uses as there is likely to also be a lot of overlap with visits to the site for organised sport (i.e., a parent walking the dog whilst a child has practise / warm up or a sibling using the pump track whilst another is playing etc). During the rugby parking spot counts approximately 4 people were observed walking dogs through the area, many of these appeared to be local (not having driven to the site). An allowance of 10 trips associated with passive recreation should be sufficient to include any additional traffic associated with the dog park and pump track. It is assumed that parking duration will exceed 1 hour.

Total

35. Rugby predominately operates over the winter months. Netball games are not played at the site. Cricket is played over the summer months. Bowls is predominantly over the summer months. Tennis is predominantly over summer months also. Accordingly, typical peak traffic generation and parking demand for each of the summer and winter sports as estimated above, is summarised in Tables 3 and 4 below:

Table 3: Estimated Traffic Generation

Sport	Existing Winter Weekend Peak	Future Winter Weekend Peak	Existing Summer Weekend Peak	Future Summer Weekend Peak
Rugby	97	207	-	-
Cricket	-	-	60	120
Tennis	-	-	40	40
Bowls	-	-	20	20
Passive (dog park, pump track etc)	5	10	5	10
Total	**102**	**217**	**125**	**190**

Table 4: Estimated Peak Parking Demand

Sport	Existing Winter Weekend Peak	Future Winter Weekend Peak	Existing Summer Weekend Peak	Future Summer Weekend Peak
Rugby	87	174	-	-
Cricket	-	-	30	60
Tennis	-	-	20	20
Bowls	-	-	20	20

Passive (dog park, pump track etc)	5	10	5	10
Total	**92**	**184**	**75**	**110**

District Plan Assessment

36. Designations are not required to comply with the rules in the District Plan however the Transport Standards in Appendix E10 (Rural) and E13 (Township) have been considered for guidance. These are also incorporated into **Appendix 1**. The proposal is consistent with all District Plan standards except in respect of the access formation where an alternative layout has been proposed. In addition, cycle parking is also proposed.

Assessment of Effects

37. The key transport related effects can be grouped into topics of parking, on-site layout and access, and the road network. The effects of each of these aspects are assessed below.

Parking

38. The District Plan would require 185 car parking spaces[4] which is met and exceeded by the 201 space provision.

39. The parking demand has been estimated in Table 4 above as 184 spaces during the winter peak and 110 during the summer peak.

40. It follows that the proposed supply of 201 spaces on the site could meet all anticipated parking demand on a typical weekend. During club days there may be a higher demand and overflow areas are available around the site to cater for overflow parking during these infrequent occurrences.

41. Larger annual or one-off events may also occur on occasion which generate parking demand that is over and above typical use. For example, this could include tournaments or community events. This scale of activity could result in additional overflow parking demand however the quantum of additional parking demand is difficult to estimate. Noting these events would be infrequent the informal (grass) parking areas around the site can be used to cater for the additional demand. Large events would also be managed through TMP measures and/or parking marshals.

42. Kerb-side parking is undesirable in high speed rural areas, where the associated vehicle manoeuvring and pedestrian movements can create a safety concern. In this situation, on site observations revealed that most vehicles were observed to be approaching the site via Courtney Road and West Coast Road. Noting this and that the clubrooms are closest to High Street, any overflow on-street parking demand is likely to occur on High Street first (which has a 50km/h speed limit). Should large events occur this could be managed by use

[4] Based on approx. 4.3ha of playing fields requiring 65 spaces and approx. 1200m^2 GFA of recreational buildings requiring 120 spaces.

of event signage or temporary speed limits to ensure drivers are fully aware of formal and informal parking available on the site.

43. Such options are best considered on a case by case basis by the tournament / event managers as part of the planning phase with the appropriate action included in the running of the event.

44. The site is located in the Kirwee Township and may generate some cycle parking demand from residents. The small size of the township and the wider rural catchment however suggests that such demand is likely to be limited. Accordingly, the 10 cycle stands proposed should be more than sufficient to cater for the likely demand. There is also ample space around the site to provide additional cycle parks in the future should regular demand exceed supply.

On-Site Layout

45. The parking areas proposed have a conventional layout which affords ease of manoeuvring to and from each of the parking areas. The accesses provide for two-way flow of vehicles in opposing directions (passing) and there are ample opportunities for turning should a car park area be fully occupied.

46. All of the accesses provide large queuing spaces which can accommodate vehicles well clear of the road.

47. The proposed main car park has a long straight aisle and speed platforms could be considered to ensure slow speeds are maintained to appropriate levels.

48. The parking areas are dispersed around the main entrances to the site to enable people to park nearest to the facilities they are visiting.

49. The Master Plan includes a variety of formed paths linking the proposed car park to the various existing and proposed, fields and buildings and the existing car parking areas. There is also a path provided to the Hoskyns Road connection and an existing grass walkway along the main entrance from High Street. The paths provided therefore accommodate good pedestrian circulation and connections through and within the site. The casual use of mown grass areas is also a key characteristic of parks and will complement the formal paths provided.

Access

50. The site will continue to use the existing accesses to High Street which are well formed and cater for two-way traffic. High Street has a 50km/h speed limit and there is good visibility in both directions from these accesses.

51. A new access is proposed from Tramway Road. Tramway Road has a 100km/h speed limit at the application site, reducing to 50km/h south of the site where road markings and landscaping signal the change as shown in Figure 3 below. It is noted that the speed limit was reduced from 70km/h to 50km/h through the amended speed limit bylaw as of 1st August 2019 (after the photo below was taken).

Figure 3: Photograph of Tramway Road looking south towards the existing threshold treatment.

52. The District Plan would typically refer to Diagram E10.D for access to non-residential activities in a rural environment. This diagram provides acceleration and deceleration lanes for vehicles entering and exiting a site. Tramway Road has low traffic volumes and the access is in close proximity to the 50km/h speed limit sign. Furthermore the Tramway Road access is considered to likely receive the least amount of use with most vehicles arriving via High Street. As such alternative designs have been considered to cater for the site's specific characteristics. Noting that it may be desirable to move the 50km/h speed limit further north of the site access in the future and to be consistent with the existing road environment it is recommended that existing threshold treatment be extended 50m north as shown in Figure 4 below.

Figure 4: Proposed road layout extension to the north of the site access.

53. The existing threshold treatment includes a 1.6m sealed shoulder, 3.0m traffic lanes and a 1.2m flush median. The combined median, lane and shoulder width of 5.8m is sufficient to allow through traffic to pass around any vehicles waiting to turn right into the site. Noting the low traffic volumes, there is unlikely to be any delay for right turn vehicles and as such this is considered to be sufficient.

54. The extension of the threshold treatment achieves the intention of the access diagrams in providing space for through vehicles to pass around vehicles slowing to enter the site. It would also avoid additional roadway reconstruction or remarking if the speed limit was moved in the future.

55. If any additional road-side planting is extended north, then it is recommended that this be low height species that do not block visibility from either the site access or that of the property on the opposite side of the road.

56. The access should include a 15m turning radius where it joins to the sealed edge of the road.

Road Network

57. The site is located on the northern side of the Kirwee Township with access to two local roads. These roads connect to West Coast Road which forms part of the State Highway network and to Courtenay Road which is a collector road. This is consistent with the intended roles and functions of roads within the District Plan road hierarchy with local roads primarily providing for property access. Collector roads provide connections to the wider road network and the State Highway provides stronger links to major centres. From a traffic movement and function perspective, the site is therefore considered to be appropriately located for the intended use.

58. Noting both the existing traffic volumes and estimated traffic generation associated with the site, the frontage roads can readily accommodate these volumes.

59. Observations during the Saturday morning surveys suggested that vehicles could exit the site with little or no delay. During a 20 minute observation period there was only one vehicle on Tramway Road. This highlights the low overall volumes which in turn confirms the low overall delay.

60. There are several options for trip arrival and departure routes depending on the direction of travel. This will split traffic volumes across the nearby intersections and avoid significant delays at any one intersection.

61. Overall, both of the frontage roads and the wider road network are considered to have adequate physical capacity to cater for the anticipated increase in traffic generation.

Summary

62. The proposed supply of 201 car parking spaces on the site could meet all anticipated parking demand on a typical weekend. During club days and or larger annual or one-off

events there are informal (grass) areas around the reserve that could also be opened up to provide temporary parking.

63. Such options are best considered on a case by case basis by the tournament / event managers as part of the planning phase with the appropriate action included in the running of the event.

64. The proposed access location and design is appropriate and it is recommended that the existing road threshold treatment markings be extended approximately 50m to the north to better facilitate access to the site (and be consistent with any future relocation of the 50km/h speed limit).

65. The site is well located within the road network and the anticipated traffic generation can be accommodated within the existing physical capacity of the road network.

Appendix 1

NZTA CAS Data

Appendix 2

Transport Compliance Assessment

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
It is noted that the Transport Rules of the District Plan do not apply to Designations however the Transport standards in Appendices 13 (Township Volume) and 10 (Rural Volume) have been considered below as a guide.	
E10.1.PARKING REQUIREMENTS	
E10.1.1.1 Any on-site car parking or loading space located between the road frontage and the main entrance of any educational facility or any activity involving the retailing of goods and services to the public shall not have a metalled surface. Notes: (a) The reason for Rule E10.1.1.1 is to avoid the potential for stones to "fly up" from the tyres of vehicles, which may create a danger to school children and the public in general. (b) Table E10.1 below provides a guide for the marking out of car parking spaces in the case of the developer or landowner wishing to provide a parking surface which is formed and sealed. (c) The discharge of storm water from a large sealed area may require a discharge consent from Environment Canterbury.	N/A
E10.1.2.1 Any area required for on-site parking or loading, other than for a residential activity, shall be available at all times for staff and visitors during the hours of operation of the activity and shall not be diminished by any subsequent erection of any structure, storage of goods, or any other use.	Complies
E10.1.2.2 Garageable parking spaces for any residential activity shall have the following minimum internal dimensions:	N/A
E10.1.3.2 The minimum width of the entrance to a single garage shall be 2.4 metres.	N/A
E10.1.3.3 Any other parking space for any residential activity shall have the following minimum dimensions:	N/A
E10.1.4.1 The gradient of any on-site parking or loading area for any non-residential activity, shall be no more than: (a) At 90° to the angle of parking - 1:16; or (b) Parallel to the angle of parking - 1:20	Will comply
E10.1.5.1 The manoeuvring area to and from any parking space shall be designed to accommodate at least the design motor car as set out in the Council's Engineering Code of Practice.	Complies
E10.1.5.2 The manoeuvring area to and from any loading space shall be designed to accommodate at least the design truck as set out in the Council's Engineering Code of Practice.	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E10.1.5.3 No loading space shall obstruct any on-site car parking space or any vehicle or pedestrian access.	N/A
E10.1.5.4 No vehicle shall be required to reverse out of any site onto a road.	No vehicles will reverse out of the site

E10.2 ACCESSWAYS AND CROSSINGS	
E10.2.1.1 The minimum requirements for any shared private vehicle accessway for a site(s) shall be in accordance with Table E10.2. 2-3 Sites 4.5m legal width, 3.0m carriageway, turning areas and optional passing bay	N/A the accesses are not shared with other sites.
E10.2.1.2 Where Table E10.2 requires turning areas, turning within the shared accessway may be facilitated through the use of a hammerhead arrangement. Note: refer to the Council's Code of Practice for the design standard required.	N/A
E10.2.2.1 No part of any vehicle crossing shall be located closer to the intersection of any road than the minimum distances specified in Table E10.3 except that where the boundaries of a site do not allow the provision of any vehicle crossing whatsoever in conformity with the above distances, a single vehicle crossing may be constructed in the position which most nearly complies with the provisions of Table E10.3. (the Road Hierarchy for the District is set out in Appendix 9).	The vehicle access on Tramway Road is more than 60m from the nearest intersection and the existing accesses to High Street are more than 10m from the nearest intersection.

		Intersecting Road Type Distances in Metres			
Vehicle Crossing Joins to	Posted speed Km/hr	State Highway	Arterial	Collector	Local
State Highway	> 50	100	100	100	100
	≤50	30	30	30	30
Arterial	> 50	100	100	100	100
	≤50	30	30	30	30
Collector	> 50	75	75	60	60
	≤50	30	30	30	25
Local	> 50	75	75	60	60
	≤50	25	25	25	10

E10.2.2.2 No part of any vehicle crossing shall be located closer than 30 metres to the intersection of any railway line as measured from the nearest edge of the vehicle crossing to the limit line at the level rail crossing.	There are no railway crossings within 30m of the site.

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E10.2.2.3 The distance between any vehicle crossing and road intersection shall be measured along the centre line of the frontage road: (a) From the point where the centre lines of the two roads intersect; (b) To the point where the centre lines of the vehicle crossing and the frontage road intersect.	Noted
E10.2.2.4 Notwithstanding Rule E10.2.2.1 above, for any: (a) service station; or (b) truck stop; or (c) any activity which generates more than 40 vehicle movements in any one day; No part of any vehicle crossing onto any State Highway road or arterial road shall be located closer than: (d) 60m to the departure side of any intersection; and/or (e) 30m to the approach side of any intersection. The distance shall be measured in accordance with Rule E10.2.2.3.	The site does not have a vehicle crossing to a State Highway orArterial Road
E10.2.3.1 Vehicle crossings onto roads must provide the required minimum sight distances in Table E10.4 and Diagram E10.A1.	Both High Street and Tramway Road are straight and flat with visibility achieved in all directions.

Posted (Legal) Speed Limit (km/h)	State Highway, Arterial and Collector roads Required Sight Distances (m)
50	113
60	140
70	170
80	203
90	240
100	282

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E10.2.4.1 Vehicle access to any site from any road or service lane shall be by way of a vehicle crossing constructed at the owner's or the developer's expense.	Noted
E10.2.4.2 The maximum number of residential vehicle crossings shall not exceed 1 per road frontage.	N/A
E10.2.4.3 Vehicle crossings to any site shall be constructed in accordance with: E10.2.4.3.1 Diagram E10.B1 if the vehicle crossing is to provide access to a property from a State Highway with less than 30 equivalent car movements per day; or E10.2.4.3.2 Diagram E10.B2 if the vehicle crossing is to provide access to a property from a State Highway with between 30 and 100 equivalent car movements per day; or E10.2.4.3.3 Diagram E10.C1 if the vehicle crossing is to provide access to a dwelling and is to a local road; or E10.2.4.4.4 Diagram E10.C2 if the vehicle crossing is to provide access to a dwelling and is to an arterial road or provides access to any activity and is to a collector road; or E10.2.4.4.5 Diagram E10.D if the vehicle crossing is to provide access to a commercial activity or is a heavy vehicle access, other than State Highways.	The proposed access to Tramway Road is not constructed in accordance with Diagram E10.D as an alternative solution has been proposed.
E10.3 ROAD STANDARDS	
E10.3.1.1 Any new road shall be laid out and vested in the Council in accordance with the standards contained in Table E10.5.	N/A
E10.3.1.2 For determining the carriageway width in Table E10.5, the minimum carriageway widths shall be measured from the edge of seal to edge of seal. Local Roads: 15-20m Road reserve width and 6.7-7m carriageway width	N/A
E10.3.1.3 The carriageway of any new road laid out and vested in accordance with the above shall be formed and sealed.	N/A
E10.3.1.4 Any cul-de-sac shall be constructed with a turning head of 26m diameter measured kerb face to kerb face.	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT	
E10.3.2 Road Intersection Spacing (all roads)	N/A no new intersections are proposed	N/A
E13.1.1 Parking Spaces to be Provided		
E13.1.1.1 - For any new activity, or any increase in an existing activity not complying with Section 10 of the Act (Certain Existing Land Uses in Relation to Land Protected), provision shall be made for on-site vehicle parking, for use by staff and visitors, in accordance with Table E13.1(a), E13.1(b) and E13.1(c), and in compliance with the car park dimensions in Table E13.2 and Diagram E13.1.	Sports grounds and playing fields: 15 spaces per hectare of playing fields; Places of Assembly and/or Recreational Activities: 10 spaces per 100m^2 public area or 1 space per 10 seats, whichever is greater Approx 4.3ha of playing fields = 65 spaces. Approx 1200m^2 GFA = 120 spaces 201 spaces provided.	
E13.1.1.2 - If an activity is not listed in Table E13.1, the activity closest in parking demand to the new activity shall be used.	Noted	
E13.1.1.3 - Where there are two or more similar activities in Table E13.1 and there is uncertainty over which rate is most applicable, the activity with the higher parking rate shall apply.	Noted	
E13.1.1.4 - Where there are two or more different activities listed in Table E13.1 occurring on the site, the total requirement for the site shall be the sum of the parking requirements for each activity.	Noted	
E13.1.1.5 - Where a parking requirement results in a fractional space, any fraction of one half or over shall be rounded up to the nearest whole number and any fraction under one half shall be disregarded except that there must be a minimum of one space for each activity.	Noted	
E13.1.1.6 - Parking spaces for persons with impaired mobility shall be provided at the required rate (refer to Rules 5.5.1.5 and 17.5.1.4) and shall be included within the total requirement specified in Table E13.1.	1 space is required for up to 10 spaces and then 1 space per 50 car parks. Therefore 201 spaces requires 5 mobility spaces.	
E13.1.1.7 - Where an application includes two or more activities, and the nature of activities is unknown, the activity with the highest parking rate shall apply.	Noted	

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E13.1.1.8 - The parking requirement for Food and Beverage activities is based on PFA. Where PFA is not specified or is unknown, the parking requirement shall be calculated based on GFA.	Noted
E13.1.2 Availability of Parking Spaces	
E13.1.2.1 - Any area required for on-site parking or loading, other than for a residential activity, shall be available at all times for staff and visitors during the hours of operation of the activity and shall not be diminished by any subsequent erection of any structure, storage of goods, or any other use, except as required in the Rolleston Key Activity Centre in Rule E13.1.3.4 below.	Will be available
E13.1.3 Parking Area Location	
E13.1.3.1 - All parking required in Table E13.1 above and all loading (including unloading) areas shall be located on the same site as the activity for which the parking is required. This rule shall not apply to any required parking which complies with Rules E13.1.3.3 and E13.1.3.4 below.	Some parking is occurring on the adjacent reserve.
E13.1.3.2 - Any parking or loading area for any activity in a Business zone shall not have its access across land in any Living zone, except for any parking provided in Rolleston Reserve pursuant to Rule E13.1.3.4.	N/A
E13.1.3.3 - Within a Business 1, 2 or 2A Zone, parking required in table E13.1 above may be provided on a physically adjoining site, or on a site within 100m of the site on which the activity is undertaken, provided that it meets the conditions of E13.1.3.5 in either of these situations.	N/A
E13.1.3.4 - For Precinct 8 of the Rolleston Key Activity Centre, all car parking (required and/or provided) shall be provided in Precincts 1 and/or 6 in a public car park or public car parks, shall be available for general public use and shall meet conditions (c), (d) and (e) of Rule E13.1.3.5.	N/A
E13.1.3.5 (a) the parking shall be clearly associated with the activity by way of signage on both sites, or alternatively be available for general public use, and (b) the parking is located on the same side of any road as the activity, and (c) the most direct route provided or available for pedestrians from the parking area to the activity is not more than 200m and, (d) if disabled parking cannot be physically accommodated on the same site as the activity, shall be provided at the closest point to the entrance to the activity with which they are associated and, the most direct route from the disabled parking spaces to the activity shall be accessible for mobility impaired persons and (e) Parking on a separate site by an activity must be protected for the use of that activity (and any future activity on the activity site), or for the use of the general public, by an appropriate legal instrument. A copy of the appropriate legal	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
instrument shall be provided to Selwyn District Council for their records. Note: Precinct 8 parking shall be protected for the use of the general public only.	
E13.1.4 Cycle Parking	
E13.1.4.1 - Any activity, other than residential activities, temporary activities, activities listed in E13.1.4.2 and activities permitted under Part C, Living Zone Rules - Activities 10.9.1. is to provide cycle parking at a minimum of 2 spaces and then at a rate of 1 cycle space for every 5 car parking spaces required, to a maximum of 10 cycle spaces.	N/A
E13.1.4.2 - Any Place of assembly, recreation or education activity shall provide cycle parking at a minimum of 2 spaces and then at a rate of 1 cycle space for every 5 car parking spaces required.	44 cycle parks suggested (in an urban area) – 10 proposed
E13.1.4.3 - All cycle parking required by rule E13.1.4.1 or E13.1.4.2 shall be provided on the same site as the activity and located as close as practicable to the building main entrance and shall be clearly visible to cyclists entering the site, be well lit and secure. The type of stand must comply with the Engineering Code of Practice requirements for cycle parking rack systems	Noted
E13.1.5 Loading and Manoeuvring	
E13.1.5.1 - All loading and manoeuvring shall be carried out on-site. The manoeuvring area to and from the loading zone shall be designed to accommodate at least the design truck as detailed in the Council's Engineering Code of Practice.	Will occur on-site
E13.1.5.2- No loading zone shall obstruct any on-site car parking space or any vehicle or pedestrian access. For clarification any loading spaces shall be in addition to parking spaces required in Table E13.1.	Noted
E13.1.6 Parking Spaces for Residential Activities	
E13.1.6.1 - Garageable parking spaces for any residential activity in any zone shall have the following minimum internal dimensions: Single 3.1m wide & 5.5m deep Double 5.6m wide & 5.5m deep	N/A
E13.1.6.2 - The minimum width of the entrance to a single garage shall be 2.4 metres.	N/A
E13.1.6.3 - Any other parking space for any residential activity shall have the following minimum dimensions: Width 2.5m Depth 5m	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E13.1.6.4 - The manoeuvring area to and from the site access to the parking space shall be designed to accommodate at least the design motor car as set out in the Council's Engineering Code of Practice.	N/A
E13.1.6.5 - Where two parking spaces are required by for any residential activity (other than visitor spaces), they may be provided in tandem where onsite manoeuvring is provided.	N/A
E13.1.7 Gradient of Parking Areas	
E13.1.7.1 - The gradient for any on-site parking surface for any non-residential activity, shall be no more than: (a) At 90° to the angle of parking - 1:16 (b) Parallel to the angle of parking - 1:20	Will comply
E13.1.8 Maximum Gradients for Access to any Parking Space(s)	
E13.1.8.1 - The maximum average gradient of any access shall be 1 in 6.	Will comply
E13.1.8.2 - The maximum gradient shall be 1 in 4 on any straight section and 1 in 6 around curves, the gradient being measured on the inside line of the curve.	Will comply
E13.1.8.3 - The maximum change in gradient without a transition shall be no greater than 8°.	Will comply
E13.1.9 On-site Manoeuvring	
E13.1.9.1 - On-site manoeuvring shall be provided to ensure that no vehicle is required to reverse either onto or off a site where: (a) Any site has access to a State Highway or arterial road (refer Appendix 7); or (b) Any site has access to a collector road and required 3 or more parking spaces; or (c) Any site containing a non-residential activity having access to a collector road; or (d) Any access to a site that serves 6 or more parking spaces; or (e) Any residential activity providing tandem parking.	All vehicles can drive forwards off the site.
E13.1.9.2 Parking spaces shall be located so as to ensure that no vehicle is required to carry out any reverse manoeuvring when entering any required parking space.	All car parks are located to enable a vehicle to drive forwards into the park.
E13.1.9.3 Vehicles shall not be required to undertake more than one reverse manoeuvre when manoeuvring out of any required parking or loading space.	All car parks enable this

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E13.1.10 Queuing Spaces	
E13.1.10.1 - A queuing space shall be provided on-site for all vehicles entering or exiting a parking or loading area. The length of such queuing spaces shall be in accordance with Table E13.3 below. Where the parking area has more than one access the number of parking spaces may be apportioned between the accesses in accordance with their potential usage.	Eastern car park (20 spaces) 5.5m – approx. 50m provided. Middle car parks (127 spaces) 20.5m – approx. 45m provided. New (63 carparks –i.e., assuming half use this access) 15.5m – approx. 20m provided.
E13.1.10.2 - The queuing space length shall be measured from the road boundary to the nearest vehicle control point or point where conflict with vehicles or pedestrians on established pathways already on the site may arise.	Noted
E13.1.11 Illumination	
E13.1.11.1 - Any parking and loading areas, (excluding those for any residential activity), which are required at night shall be illuminated to a minimum maintained level of 2 lux, with high uniformity, during the hours of operation.	Lighting of key areas complies.
E13.1.12 Surface of Parking and Loading Areas	
E13.1.12.1 The surface of any parking, loading, and associated access areas (except parking areas for any residential activity) shall be formed, sealed and drained with the parking spaces permanently marked.	All on-site car parks will comply.
E13.2.1 Private Vehicle Accessway	
E13.2.1.1 - The minimum requirements for any private vehicle accessway for a site(s) shall be in accordance with Table E13.4.	5m carriageway width, turning and passing areas – all accesses comply
E13.2.1.2 - The minimum height clearance for any private vehicle access shall be 4.5m.	Noted
E13.2.1.3 - Where a private vehicle access serves more than two allotments, in any zone, it shall be formed and sealed.	N/A
E13.2.1.4 - Where turning areas are required in Table E13.4, this may be facilitated through the use of a hammerhead arrangement. Note: refer to the Council's Code of Practice for the design standard required.	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E13.2.1.5 - The minimum width of an accessway serving a single site in the Living Zones shall be 3.5m.	N/A
E13.2.2 Distances of Vehicle Crossings from Road Intersections	
E13.2.2.1 - No part of any vehicle crossing shall be located closer to the intersection of any roads than the minimum distances specified in Table E13.5 except that where the boundaries of a site do not allow the provision of any vehicle crossing whatsoever in conformity with Table E13.5, a single vehicle crossing may be constructed in the position which most nearly complies. (Note that the Road Hierarchy for the District is set out in Appendix 7).	All accesses comply
E13.2.2.2 - In applying E13.2.2.1 the distances specified in Table E13.5 shall be measured along the road boundary parallel to the centre line of the roadway of the frontage road from the kerb line, or formed edge, of the intersecting road – refer to Diagram E13.5.	Noted
E13.2.2.3 - No part of any vehicle crossing shall be located closer than 30 metres to the intersection of any railway line measured from the nearest edge of the vehicle crossing to the limit line at the level rail crossing.	The access is not within 30m of a railway line
E13.2.3 Sight Distances from Vehicle Crossings	
E13.2.3.1 - Any access on any road shall have minimum unobstructed sight distances that comply with Tables E13.6 below and measured in accordance with Diagram E13.2.	Tramway Road and High Street are straight and flat affording complying visibility.
E13.2.4 Vehicle Crossing Design and Siting	
E13.2.4.1 - Vehicle access to any site from any road or service lane shall be by way of a vehicle crossing constructed at the owner's or developer's expense.	Noted
E13.2.4.2 - For all sites in a Living Zone there shall be a maximum of one vehicle crossing per site.	N/A
E13.2.4.3 - For sites in the Business 2A Zone with frontage to roads other than State Highway and Arterial roads, there shall be a maximum of two vehicle crossings per site except that: (a) There may be a maximum of three vehicle crossings per site where the road frontage is more than 100 metres in length.	N/A

APPENDIX E10 TRANSPORT (RURAL VOLUME) and APPENDIX E13 TRANSPORT (TOWNSHIP VOLUME)	COMMENT
E13.2.4.4- For sites in all other Business zones (excluding B2A zone) there shall be a maximum of one vehicle crossing per site, except where: (a) the site has frontage to roads other than State Highway and Arterial roads, where there may be a maximum of two vehicle crossings per site if each crossing is a single exit or entry (one way flow), or (b) The site has a road frontage of more than 100m in length where there may be a maximum of three vehicle crossings per site.	The site has 100m of road frontage and three vehicle crossings.
E13.2.4.5 - The maximum spacing and width any vehicle crossing shall comply with Table E13.7.	Crossings are less than 1m or more than 7m apart (compliant) Crossing widths are between 4m and 7m (compliant)
E13.2.4.6 - For the purposes of measuring the distance between crossings specified in table E13.7, the distance between two vehicle crossings shall be measured along the edge of the carriageway parallel to the road centre line, between the full height kerb or edge of crossing seal and the full height kerb or seal edge of the adjoining crossing.	Noted
E13.2.4.7 - For the purposes of measuring crossing widths as specified in Table E13.7, the width of a vehicle crossing shall be measured at the property boundary (parallel with the road reserve).	Noted
E13.2.4.8 - Notwithstanding E13.2.4.5 above, for vehicle crossings onto a State Highway or Arterial road with a posted speed limit of 70km/h or greater the distances between crossings shall be taken from Diagram E13.4.	Access is not to a State Highway or Arterial Road
E13.2.5 Standard of Vehicle Crossings	
E13.2.5.1 - Vehicle crossings shall be constructed to the following minimum standards: (a) Standard vehicle crossings shall be provided to sites capable of containing no more than 6 dwellings or which generate no more than 100 vehicle movements per day. (b) Heavy-duty vehicle crossings shall be provided for all other sites.	Noted
E13.3 Road Standards	
E13.3.1 New Road …	N/A no new roads are proposed.
E13.3.2 Road Intersection Spacing (all roads)	N/A no intersections are proposed