

TECHNICAL NOTE

Reference: P1049t03v01

30 January 2020

Hansen Yuncken
Bldg 1, L3, 75-85 O'Riordan Street
Alexandria NSW 2015

Response to Agency Submissions

New Public School, Estella Road, Wagga Wagga (SSD 9494)

Dear Paul,

I refer to recent correspondence and meetings in regard to the issues raised in the Response to Submissions (RTS) received in relation to the New Public School, Estella Road, Wagga Wagga SSD-9494 (the Proposal), and specifically the following submissions prepared by government agencies following exhibition of the Proposal:

- NSW Department of Planning, Industry and Environment (DPIE), *New Public School, Estella Road, Wagga Wagga SSD-9494 – Response to Submissions*, 17 December 2019 (DPIE RTS)
- Transport for NSW (TfNSW), SSD - 9494 – Proposed New Primary School, Lot 1 Dp1253855, Estella Road, Estella, 4 December 2019 (TfNSW RTS)
- City of Wagga Wagga (Council), Submission- New Estella Public School, Wagga Wagga Estella (SSD 9494), 12 December 2019 (Council RTS)

The sections below provide a summary of the relevant issues raised in each of the responses to the submission and the Ason Group response to each issue. In preparing these responses, Ason Group has referenced the following documents:

- Ason Group, *Transport Impact Assessment, New Estella Road Public School, Wagga Wagga, Estella Road, Estella (Wagga Wagga)*; and
- City of Wagga Wagga, *Northern Growth Structure Plan*.

Issues have also been labelled with the appropriate Ethos Urban reference number (EU) for ease of cross referencing.

NSW Department of Planning, Industry and Environment: Transport

Point 1 (EU7)

Provide information to demonstrate that the proposed drop-off and pick-up facility would adequately cater for demand, particularly in the afternoon peak which experiences longer dwell times as recognised in the TAR, to avoid queues onto, and informal drop-off and pick-up on, Estella Road. This information is required having regard to the design of Estella Road as a rural type road and potential impacts of informal drop-off and pick-up on road safety and the proximity of the pick-up and drop-off facility to the intersection of Estella Road and Gunn Drive and proposed pedestrian crossings on Estella Road and Gunn Drive.

Ason Group Response to Point 1 (EU7)

The revised, proposed layout of the school frontage on Estella Road shown in **Figure 1** has been modelled in SIDRA using inputs provide by Council and based on Wagga Wagga Spatial Plan 2013/2043. The revised layout consolidates the Drop-Off/Pick-Up Zone (DOPUZ) access with the car park access, effectively extending the DOPUZ to 90 metres. This means that even with the kerbside space being 100% utilised by vehicles, there is still 90 metres available in the passing lane for queueing vehicles.

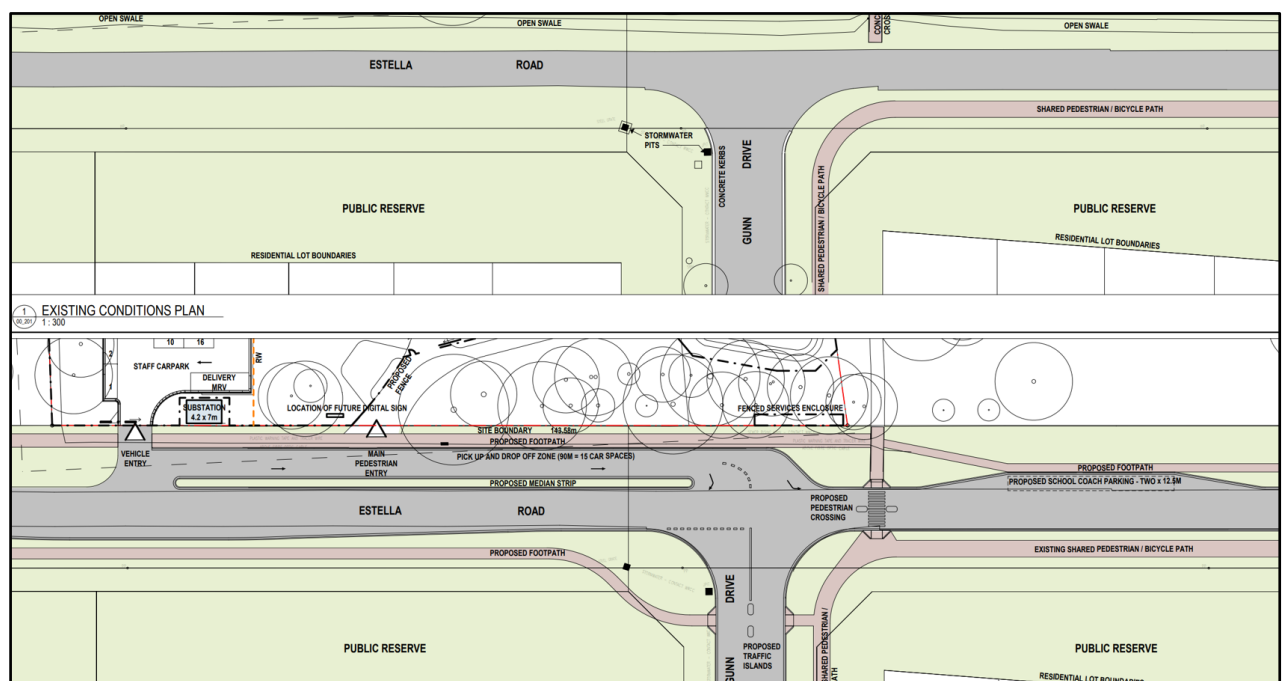


Figure 1: Revised Proposed Layout

The results of the additional modelling are shown in **Table 1** and demonstrate that the forecast queue in the DOPUZ for the worst case 2030 AM scenario is a maximum 22 metres. Therefore, there is 68 metres spare capacity that can accommodate any short, anomalous periods of concentrated drop-offs during the AM.

Table 1: Estella Road / Gunn Drive / DOPUZ SIDRA Results (AM)

Intersection	Parameter	2018 + School	2030 Base + School
Estella Road / Gunn Drive / DOPUZ	Delay (sec)	4	10
	LoS	A	A
	95% Back of Queue in DOPUZ	9 m (2 veh)	22 m (4 veh)

The PM pick-up period is spread more than the AM due to staggered finish times, generates less traffic due to after hours school care and extra-curricula activities, and does not align with the network peak. Therefore, queuing in the PM will be less than the AM.

Dwell times in the DOPUZ are subject to the Australian Road Rules no standing parking rule. Under the no parking rule, motorists cannot stop for longer than two minutes and cannot move more than three metres from their vehicle. These times have been used in calculating the requirements for the DOPUZ and the timing will be managed in the school's Traffic and Pedestrian Management Plan and enforced the same as all existing kerbside parking restrictions in Wagga Wagga.

Point 2 (EU8)

Provide information to demonstrate that the design of the proposed drop-off and pick-up facility (including the location and design of the entrance and exit), bus bays, pedestrian footpaths and crossings would provide safe and efficient access arrangements to the school, including a road safety audit of the proposed arrangements.

Ason Group Response to Point 2 (EU8)

Design of the car park has been in accordance with AS2890 and the DOPUZ has been designed to accommodate the swept path of the largest design vehicle (MRV). All of the facilities associated with the school have been designed in accordance with the appropriate standards and guidelines. However, due to the need to wait for the availability of data to conduct warrants for crossings, it is appropriate to conduct a Road Safety Audit once these have been finalised. It is expected that this would form a condition of consent in any forthcoming determination.

Point 3 (EU9)

Provide information to demonstrate that sufficient parking would be provided on site (notwithstanding the provisions of the Wagga Wagga Development Control Plan 2010) to cater for demand for staff at the school given:

- *the context of the site and consequent likelihood of high reliance on car-based travel; and*
- *the need to avoid staff parking on Estella Road, particularly given its design as a rural type road and undesirability of parking on the road and consequent impacts on road safety.*

Ason Group Response to Point 3 (EU9)

The Wagga Wagga DCP 2010 specifies parking rates for primary and secondary schools as 1 space/two employees plus 1 space/ten senior students (Years 11 and 12). Noting that the Proposal is for a primary school, there are no year 11 or 12 students.

The School will provide a total of 22 off-street parking spaces, and therefore be fully compliant with the DCP as well as provide a surplus for additional visitor parking and future growth without impacting on the on-street parking. Parking spaces required are for 16 teachers (1 per classroom) and 8 additional admin staff = $24/2$ = 12 parking spaces. The School proposes 23 parking spaces managed as:

- 21 spaces (school use)
- 1 accessible
- 1 MRV for service vehicles (2.5m x 8.8m)

Accordingly, the proposed 23 onsite parking spaces provided for the Estella Public School is above the Wagga Wagga DCP 2010 parking requirement. However, the surplus does provide for future potential growth in staff numbers to cater for 800 students.

The parking rate for people with disabilities is in accordance with the Building Code of Australia 2011 Table D3.5 car parking numbers for people with a disability which specifies 1 space per 100 car parking spaces for a class 9b (a) School. The School meets the accessible parking requirement with the provision of 1 accessible parking space.

Car parking has been provided in accordance with the requirements in AS/NZS 2890.1 2009 Parking Facilities – Part 1: Off- street car parking for the design of car parks and AS/NZS 2890.6 2009 Parking Facilities Part 6: Off-street parking for people with disabilities.

Transport for NSW

Point 1 (EU22)

Direct property access to Estella Road has been denied by Council to maintain that road as a collector road. The function of Estella Road as a collector road should be maintained to encourage the desire lines for through traffic from the surrounding residential precincts rather than circulating through the residential streets within Estella.

Ason Group Response to Point 1 (EU22)

Council has advised in a meeting on 28 January 2020 that property access to Estella Road has NOT been denied.

Point 2 (EU23)

The traffic generation due to the proposed school in addition to the existing and resultant traffic due to the subdivision of the surrounding residential precincts will likely warrant the upgrade of the treatment of the intersection of Estella Road with Boorooma Street to the east of the subject site. The findings of the TIA acknowledge the need for works to this intersection and references findings from previous studies which indicate that the intersection will exceed capacity by 2030 and need upgrade to a roundabout, even without the School. The TIA fails to acknowledge that the location of the school as proposed will likely hasten the need for the upgrade of the intersection to cater for the potential additional traffic, particularly during peak hour periods.

Ason Group Response to Point 2 (EU23)

The Northern Growth Structure Plan (NGASP) has identified the need for the intersection of Estella Road with Boorooma Road to be upgraded to a roundabout based on strategic model outputs consistent with Wagga Wagga Spatial Plan 2013/2043. The land use assumptions in the models have incorporated forecast zoning and appropriate growth rates have been used. Further, the Site has been identified as a State School in the NGASP, so it is reasonable to assume that any funding program has already considered the traffic generation of the school.

With consideration of the above, the SIDRA modelling in the TIA demonstrates failure of the intersection within the next 10 years. Therefore, Council would be aware of the intersection reaching capacity well within that 10 year period with traffic growth that incorporates the school—from their own modelling—and it is assumed that funding for the upgrade will be scheduled and allocated accordingly.

Point 3 (EU24)

The proposed school site is separated from the surrounding residential precincts by Estella Road. This will generate the need for pedestrian and cyclist movement across Estella Road. The school will also attract pedestrian movement from the residential precincts to the east and west of the subject site. A network of pedestrian/shared pathways needs to be established to allow for the safe movement of students to the school

site. This is consistent with promotion of active transport modes. For road safety reasons these pathways should be located separate to the roadways, particularly Estella Road. The location of the pathways should also provide for passive surveillance from nearby dwellings to create a safe environment for students using the pathways.

Ason Group Response to Point 3 (EU24)

In a meeting with Council on 28 January, it was confirmed that an active transport strategy is currently being developed in conjunction with the NGASP and that pedestrian and cyclist demand and movements around the Site and surrounding suburbs is being met by the planning for provision of appropriate infrastructure to accommodate.

Associated facilities on-site will connect with any existing or proposed infrastructure.

Point 4 (EU25)

Estella Road is currently constructed as a rural road formation with a swale drain located along both sides of the road formation. The pick-up/drop-off zone and a bus bay are proposed to be located within the roadside currently occupied by the swale drain and opposite the intersection of Gunn Drive with Estella Road. The location of the bus bays to the east of the proposed school away from the school grounds may need to be further designed and managed to ensure appropriate supervision is available by school staff of children accessing the buses.

Ason Group Response to Point 4 (EU25)

It has been agreed with Council and TfNSW officers that the location of the bus bay is in the safest and most appropriate location, immediately adjacent to the east of Site. Students would be required to walk only 50 metres directly along a footpath with very good sight lines and no obstructions from the furthest point of the proposed bus bay to the school grounds. It is expected that the school's TPMP would also incorporate operational management of the bus bay.

Point 5 (EU26)

The pick-up/drop-off zone is proposed to be one-way east bound with exit from this facility to Estella Road to be located in close proximity to the approach side to the pedestrian crossing facility proposed across Estella Road. The proposed operation of the pick-up/drop-off zone needs to be managed to ensure the theoretical capacity of the facility as posed by the supporting documentation is achieved.

Ason Group Response to Point 5 (EU26)

Kerbside parking restrictions (no standing) will apply to the DOPUZ and it is expected that the school's TPMP would incorporate operational management of the DOPUZ.

Point 6 (EU27)

The TIA in its assessment of the capacity of the pick-up/dropoff zone doesn't appear to consider the delay to vehicles exiting the facility caused by the use of the crossing facility or vehicles wishing to turn right from the facility or turn across Estella Road to Gunn Drive.

Ason Group Response to Point 6 (EU27)

The criteria for a pedestrian or school crossing—such as number of pedestrians and desire lines conflicting with specific traffic flows—are not known for the School when it will be operational. Therefore, the proposed location is indicative only, to demonstrate an appropriate and likely location should the warrants be met once the school is operational.

The results of the additional SIDRA modelling show that the forecast queue in the DOPUZ for the worst case 2030 AM scenario is a maximum of 22 metres. Therefore, there is 68 metres spare capacity that can accommodate any short anomalous periods of concentrated drop-offs during the AM and/or any additional delays that may be experienced by the effect of the crossing.

Point 7 (EU28)

It is noted that the TIA recommends that a Traffic and Pedestrian Management Plan (TPMP) be developed by the Department of Education and the School, to be reviewed on an annual basis to establish inefficiencies and areas for improvement, particularly in regard to the operation of the pickup/drop-off zone. As a minimum the exit driveway from the pick-up/drop-off zone shall be designed to allow for a separate left and right turn lane.

Ason Group Response to Point 7 (EU28)

The exit driveway from the pick-up/drop-off zone has been designed to allow for a separate left and right turn lane and the additional modelling has also incorporated this configuration.

Point 8 (EU29)

The effective capacity of the on-site parking and the pickup/ drop-off zone will impact on the convenience for access to the school. This may generate the potential for parents parking within the surrounding public road network. The ad-hoc parking of vehicles along the roadside will narrow the available travel lanes for vehicles within the public roads and restrict the sight lines to school children. The parking of vehicles along Estella Road which has no kerb and gutter may also cause damage to the carriageway and roadside formation and require students to traverse the current swale drains and cross Estella Road at random locations. The current roadside formation and maintenance of Estella Road particularly on its northern side may be a potential hazard to students accessing the school.

Ason Group Response to Point 8 (EU29)

If parking on Estella Road is identified as an issue either in a Road Safety Audit or post school opening by stakeholders, restriction can be implemented using appropriate signage in addition to signage that will be installed along the frontage of the school and enforcement can be managed between school operating procedures, Council rangers and NSW Police.

Point 9 (EU30)

From the submitted plans it appears that the proposed setback for the school is approximately 20 metres from the road reserve of Estella Road and the footprint of the school buildings appear to occupy only the southern part of the site. From the information available it appears that the footprint of the school buildings could be moved northward on the site to increase the setback from Estella Road. The potential for the location of the pick-up/drop-off zone and/or the bus bay within the school grounds and the relocation of the proposed driveways may aid to address a number of the issues outlined above.

Ason Group Response to Point 9 (EU30)

The setback and location of the school buildings has been established based on consideration of minimisation of earthworks, minimising tree removal and the Educational Facilities Standards and Guidelines (EFSG). Further, the suitability and appropriateness of the current proposed arrangement along the frontage of the Site has been agreed by Council and TfNSW in a meeting on 28 January 2020.

Point 10 (EU31)

The submitted documentation identifies the intention to provide facilities for pedestrians to cross both Gunn Drive and Estella Road. The standard of the crossing facilities will need to be considered against the relevant warrants for such facilities. A marked pedestrian crossing may not be warranted for Estella Road. However the development will require the installation of a new school zone within Estella Road and Gunn Drive. Consideration should also be given the provision of appropriate road crossing facilities for pedestrians within Boorooma Street to the east and Pine Gully Road to the west.

Ason Group Response to Point 10 (EU31)

The criteria for a pedestrian or school crossing and pedestrian refuges—such as number of pedestrians and desire lines conflicting with specific traffic flows—are not known for the School when it will be operational. Therefore, the proposed location is indicative only, to demonstrate an appropriate and likely location should the warrants be met once the school is operational. It has been agreed that warrants will be assessed as soon as the data is available.

Point 11 (EU32)

Written authorisation is required from Transport for NSW to install the School Zone and any associated signs and pavement markings. The final details for the establishment of the school zone on Estella Road will need to be further discussed with Transport for NSW. (Email the Road User Safety Unit for the southwest region

on RoadUserSafety- Southwest@transport.nsw.gov.au). Works required for the establishment of the new school zone are subject to concurrence from Transport for NSW prior to works commencing.

Ason Group Response to Point 11 (EU32)

Acknowledged. Discussions have been initiated with TfNSW, Road User Safety and the timeline for establishment of a School Zone has been identified.

Point 12 (EU33)

Transport for NSW has assessed the application based on the documentation provided and would raise no objection to the development however requests that the consent authority give consideration to the abovementioned issues in its assessment of the application to address road safety and the impact of the development on the surrounding road environment.

Ason Group Response to Point 12 (EU33)

Noted.

Wagga Wagga City Council: Transport Impact Assessment

Point 1 (EU35)

Council strongly supports the pedestrian crossing linking the school to the neighbourhood of Estella.

Ason Group Response to Point 1 (EU35)

Noted. As discussed with Council officers, the criteria for a pedestrian or school crossing and pedestrian refuges—such as number of pedestrians and desire lines conflicting with specific traffic flows—are not known for the School when it will be operational. Therefore, the proposed location is indicative only, to demonstrate an appropriate and likely location should the warrants be met once the school is operational. It has been agreed that warrants will be assessed as soon as the data is available.

Point 2 (EU36)

Estella Road, Boorooma Street and Pine Gully Road are key collector roads in the existing network and with the anticipated growth expected in this areas to accommodate an additional 10,000 homes and other supporting facilities and uses to support the growing community. Full consideration of any potential changes on the wider network in the context of this development site will be required.

Council will take the lead on this work and will develop longer term solutions and options depending on the sequencing of new development and subdivision. There are a variety of options available to improve the surrounding road network and adjoining intersections as part of the school development and these options should be considered in the traffic impact assessment.

It must consider the full development potential of the site and changed traffic conditions as a result of the current and anticipated development in the precinct. The assessment must address all traffic including vehicular, pedestrian and cycling needs for the precinct.

Ason Group Response to Point 2 (EU36)

An additional modelling assessment has been conducted using strategic model outputs for 2031—provided by Council—consistent with Wagga Wagga Spatial Plan 2013/2043. AM data only has been provided, representing the worst peak in terms of concentration of traffic and alignment with the network peak.

The data received considers the full development potential of the Site and changed traffic conditions as a result of the current and anticipated development in the precinct.

As shown in **Table 2** and **Table 3** the trip generation for the school has been increased to 0.8 per student being driven and the distribution in accordance with the agreed methodology and strategic models.

Table 2: Updated Traffic Generation

Type	Quantity	Car as Driver		Car as Passenger	
Students	480	0%	0	80%	384
Teaching staff	16	-	14	-	2
Other staff	8	-	8	-	0
Total	504	-	22	-	386

Table 3: Trip Distribution

Directional	%	Student Drop (in & out)	Staff Drop (in & out)	Staff Driver (in only)	Total
Gunn	44%	169	1	10	180
Boorooma (N)	7%	27	-	2	28
Boorooma (S)	21%	81	-	5	85
Pine Gully (N)	14%	54	-	3	57
Pine Gully (S)	14%	54	1	3	58
Total	100%	384	2	22	408

The results in **Table 4** show that with the increased trip rate the intersections along Estella Road continue to operate with a good Level of Service (LoS) in 2030 with the exception of Estella Road / Boorooma Street. When modelled using the forecast 2030 traffic (no additional school traffic), this intersection has a LoS F (fails) due to the right turn movement out of Estella Road not being able to find enough appropriate gaps to make the turn into the increased flows on Boorooma Street.

Table 4: SIDRA Modelling Results

Intersection	Parameter	2018	2030 Base	2030 Base + School
Estella Road / Pine Gully Road	Worst Movement	South-Right	South-Right	East-Right
	Delay (sec)	7	8	10
	LoS	A	A	A
	Approach with longest queue	South	South	South
	Length of longest queue (m)	2	7	12
Estella Road / School Access	Worst Movement	North-Right	-	North-Right
	Delay (sec)	3	-	8
	LoS	A	-	A
	Approach with longest queue	East	-	East
	Length of longest queue (m)	2	-	16
Estella Road / Gunn Road	Worst Movement	South-Right	South-Right	North-Right
	Delay (sec)	4	5	10
	LoS	A	A	A
	Approach with longest queue	South	South	North
	Length of longest queue (m)	1	2	15

Intersection	Parameter	2018	2030 Base	2030 Base + School
Estella Road / Boorooma Street	Worst Movement	North-Right	West-Right	West-Right
	Delay (sec)	10	691	1805
	LoS	A	F	F
	Approach with longest queue	North	West	West
	Length of longest queue (m)	3	381	847
Estella Road / Boorooma Street (Upgrade)	Worst Movement	-	West-Left	West-Right
	Delay (sec)	-	19	30
	LoS	-	B	C
	Approach with longest queue	-	South	South
	Length of longest queue (m)	-	78	88

Sensitivity analysis demonstrates that the proposed upgrade of the Estella Road / Boorooma Street intersection to a roundabout alleviates the issue and results in spare capacity.

Point 3 (EU37)

The interface with Estella Road requires some work and more detail is required in relation to the main access, parking facilities, pick-up & drop of area and linkage with pedestrian network as well as road and intersection treatment at Gunn Drive. One of the potential solutions is a shared parking and bus stop zone and on the sporting grounds to the east and Council would like to further discuss these options with the department in more detail.

Ason Group Response to Point 3 (EU37)

Following discussions with Council and TfNSW, the proposed interface with Estella Road has been changed to consolidate the car park access with the DOPUZ, reducing potential conflicts and increasing the storage in the DOPUZ. The modelling results shown in **Table 4** demonstrate that the intersection of Estella Road / Gunn Drive / DOPUZ continues to operate satisfactorily (LoS A).

Based on the estimated peak hourly traffic volumes, a turn treatment review at the intersection of Estella Road with the School access was undertaken in accordance with *Austroads Guide to Road Design Part 4 – Intersections and Crossings: General* (AGRD4). The results indicate that a channelised right turn treatment (CHR), (**Figure 2**) will be required on Estella Road based on forecast traffic volumes.

Future shared parking on the sporting grounds to the east of the Site has been agreed in principle (meeting held on 28 January 2020)

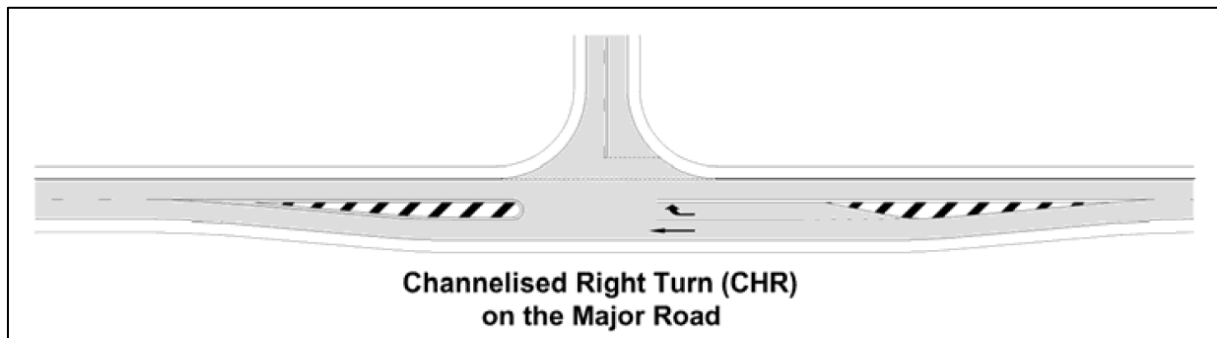


Figure 2: CHR Turn Treatment

Finally, we trust the above information provides clarification and a greater appreciation of the issues identified in the RRTS. As always, please do not hesitate to contact the undersigned should you require any further information.

Yours sincerely,

Dan Budai
Senior Traffic Engineer – Ason Group
 Email: dan.budai@asongroup.com.au

Attachment A

SIDRA Modelling Results

MOVEMENT SUMMARY

▽ Site: 1 [Estella x Pine Gully - 2018 - AM]

Estella Road x Pine Gully Road, Estella

Site Category: 3 leg priority-controlled
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pine Gully Road												
2	T1	151	10.0	0.105	0.1	LOS A	0.2	1.8	0.09	0.12	0.09	67.9
3	R2	35	10.0	0.105	6.8	LOS A	0.2	1.8	0.09	0.12	0.09	49.9
Approach		185	10.0	0.105	1.3	NA	0.2	1.8	0.09	0.12	0.09	63.6
East: Estella Road (500m)												
4	L2	24	10.0	0.016	3.6	LOS A	0.1	0.5	0.14	0.43	0.14	44.7
6	R2	63	10.0	0.067	4.8	LOS A	0.2	1.7	0.33	0.56	0.33	44.0
Approach		87	10.0	0.067	4.5	LOS A	0.2	1.7	0.28	0.52	0.28	44.2
North: Pine Gully Road												
7	L2	40	10.0	0.055	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	60.4
8	T1	58	10.0	0.055	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	66.7
Approach		98	10.0	0.055	2.7	NA	0.0	0.0	0.00	0.26	0.00	63.9
All Vehicles		371	10.0	0.105	2.4	NA	0.2	1.8	0.11	0.25	0.11	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 1 [Estella x Pine Gully - 2030 Base - AM]

Estella Road x Pine Gully Road, Estella

Site Category: 3 leg priority-controlled
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pine Gully Road												
2	T1	305	10.0	0.244	0.7	LOS A	0.9	6.7	0.27	0.15	0.27	66.6
3	R2	87	9.6	0.244	8.4	LOS A	0.9	6.7	0.27	0.15	0.27	49.2
Approach		393	9.9	0.244	2.4	NA	0.9	6.7	0.27	0.15	0.27	61.8
East: Estella Road (500m)												
4	L2	79	10.7	0.067	4.6	LOS A	0.3	2.0	0.37	0.53	0.37	44.1
6	R2	74	10.0	0.134	8.2	LOS A	0.4	3.3	0.59	0.79	0.59	42.2
Approach		153	10.3	0.134	6.3	LOS A	0.4	3.3	0.47	0.65	0.47	43.2
North: Pine Gully Road												
7	L2	89	10.6	0.205	6.5	LOS A	0.0	0.0	0.00	0.15	0.00	61.2
8	T1	280	10.2	0.205	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	67.9
Approach		369	10.3	0.205	1.6	NA	0.0	0.0	0.00	0.15	0.00	66.2
All Vehicles		915	10.1	0.244	2.8	NA	0.9	6.7	0.20	0.24	0.20	59.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 1 [Estella x Pine Gully - 2030 w School - AM]

Estella Road x Pine Gully Road, Estella

Site Category: 3 leg priority-controlled
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pine Gully Road												
2	T1	305	10.0	0.302	1.4	LOS A	1.5	11.6	0.41	0.24	0.42	65.0
3	R2	148	5.7	0.302	8.8	LOS A	1.5	11.6	0.41	0.24	0.42	48.3
Approach		454	8.6	0.302	3.8	NA	1.5	11.6	0.41	0.24	0.42	58.4
East: Estella Road (500m)												
4	L2	137	6.2	0.113	4.6	LOS A	0.5	3.4	0.38	0.54	0.38	44.8
6	R2	131	5.6	0.258	9.7	LOS A	0.9	6.8	0.66	0.86	0.75	42.2
Approach		267	5.9	0.258	7.1	LOS A	0.9	6.8	0.52	0.70	0.56	43.5
North: Pine Gully Road												
7	L2	149	6.3	0.237	6.5	LOS A	0.0	0.0	0.00	0.22	0.00	61.8
8	T1	280	10.2	0.237	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	67.0
Approach		429	8.8	0.237	2.3	NA	0.0	0.0	0.00	0.22	0.00	65.1
All Vehicles		1151	8.1	0.302	4.0	NA	1.5	11.6	0.28	0.34	0.30	56.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2 [Estella x Guun - 2018 - AM]

Estella Road x Guun Drive, Estella

Site Category: 3 leg priority-controlled
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Guun Drive (700m)												
1	L2	44	10.0	0.029	3.6	LOS A	0.1	0.9	0.10	0.43	0.10	38.2
3	R2	59	10.0	0.053	4.0	LOS A	0.2	1.3	0.20	0.49	0.20	38.3
Approach		103	10.0	0.053	3.8	LOS A	0.2	1.3	0.16	0.47	0.16	38.3
East: Estella Road (500m)												
4	L2	12	10.0	0.023	3.5	LOS A	0.0	0.0	0.00	0.13	0.00	39.8
5	T1	31	10.0	0.023	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	39.3
Approach		42	10.0	0.023	1.0	NA	0.0	0.0	0.00	0.13	0.00	39.5
West: Estella Road (100m)												
11	T1	55	10.0	0.044	0.1	LOS A	0.1	1.0	0.08	0.13	0.08	39.1
12	R2	22	10.0	0.044	3.7	LOS A	0.1	1.0	0.08	0.13	0.08	39.2
Approach		77	10.0	0.044	1.1	NA	0.1	1.0	0.08	0.13	0.08	39.1
All Vehicles		222	10.0	0.053	2.3	NA	0.2	1.3	0.10	0.29	0.10	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: 2 [Estella x Guun - 2030 Base - AM]

Estella Road x Guun Drive, Estella

Site Category: 3 leg priority-controlled
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Guun Drive (700m)												
1	L2	79	10.7	0.054	3.7	LOS A	0.2	1.7	0.17	0.44	0.17	38.0
3	R2	74	10.0	0.078	4.8	LOS A	0.3	1.9	0.33	0.56	0.33	38.2
Approach		153	10.3	0.078	4.2	LOS A	0.3	1.9	0.25	0.50	0.25	38.1
East: Estella Road (500m)												
4	L2	31	10.3	0.058	3.5	LOS A	0.0	0.0	0.00	0.14	0.00	39.7
5	T1	74	10.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	39.3
Approach		104	10.1	0.058	1.0	NA	0.0	0.0	0.00	0.14	0.00	39.5
West: Estella Road (100m)												
11	T1	141	9.7	0.100	0.1	LOS A	0.2	1.8	0.10	0.09	0.10	39.2
12	R2	35	9.1	0.100	3.9	LOS A	0.2	1.8	0.10	0.09	0.10	39.4
Approach		176	9.6	0.100	0.9	NA	0.2	1.8	0.10	0.09	0.10	39.3
All Vehicles		433	10.0	0.100	2.1	NA	0.3	1.9	0.13	0.25	0.13	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2 [Estella x Guun - 2030 w School - AM]

Estella Road x Guun Drive, Estella

Site Category: 4 leg priority-controlled
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Guun Drive (700m)												
1	L2	268	3.1	0.199	4.2	LOS A	0.9	6.4	0.32	0.50	0.32	37.7
3	R2	74	10.0	0.153	9.0	LOS A	0.5	3.9	0.59	0.79	0.59	36.8
Approach		342	4.6	0.199	5.2	LOS A	0.9	6.4	0.38	0.57	0.38	37.5
East: Estella Road (500m)												
4	L2	31	10.3	0.120	3.5	LOS A	0.0	0.0	0.00	0.06	0.00	39.9
5	T1	195	3.8	0.120	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	39.7
Approach		225	4.7	0.120	0.5	NA	0.0	0.0	0.00	0.06	0.00	39.7
North: Kiss & Drop												
7	L2	114	0.0	0.079	3.9	LOS A	0.3	2.3	0.25	0.46	0.25	37.2
8	T1	178	0.0	0.408	5.3	LOS A	2.1	14.9	0.57	0.82	0.75	36.4
9	R2	114	0.0	0.408	10.4	LOS A	2.1	14.9	0.57	0.82	0.75	27.7
Approach		405	0.0	0.408	6.3	LOS A	2.1	14.9	0.48	0.72	0.61	35.6
West: Estella Road (100m)												
11	T1	141	9.7	0.104	0.3	LOS A	0.3	2.0	0.16	0.10	0.16	39.0
12	R2	36	8.8	0.104	4.4	LOS A	0.3	2.0	0.16	0.10	0.16	39.2
Approach		177	9.5	0.104	1.1	NA	0.3	2.0	0.16	0.10	0.16	39.1
All Vehicles		1149	3.8	0.408	4.0	NA	2.1	14.9	0.31	0.45	0.35	37.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2a [Estella x Site Access - 2030 w School - AM]

Estella Road x School Access, Estella

Site Category: 3 leg priority-controlled
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Estella Road (100m)												
5	T1	266	5.9	0.371	1.3	LOS A	2.3	16.4	0.46	0.34	0.47	37.5
6	R2	308	0.0	0.371	5.1	LOS A	2.3	16.4	0.46	0.34	0.47	32.9
Approach		575	2.7	0.371	3.3	NA	2.3	16.4	0.46	0.34	0.47	36.0
North: School Access												
7	L2	1	0.0	0.003	3.9	LOS A	0.0	0.1	0.34	0.50	0.34	31.0
9	R2	1	0.0	0.003	7.9	LOS A	0.0	0.1	0.34	0.50	0.34	35.9
Approach		2	0.0	0.003	5.9	LOS A	0.0	0.1	0.34	0.50	0.34	34.5
West: Estella Road (500m)												
10	L2	121	0.0	0.162	3.4	LOS A	0.0	0.0	0.00	0.19	0.00	39.2
11	T1	177	10.1	0.162	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	38.9
Approach		298	6.0	0.162	1.4	NA	0.0	0.0	0.00	0.19	0.00	39.0
All Vehicles		875	3.9	0.371	2.7	NA	2.3	16.4	0.30	0.29	0.31	37.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [Estella x Boorooma - 2018 - AM]

Estella Road x Boorooma Street, Estella

Site Category: 3 leg priority-controlled
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Boorooma Street												
1	L2	5	10.0	0.339	6.6	LOS A	0.0	0.0	0.00	0.01	0.00	63.8
2	T1	616	10.0	0.339	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	69.8
Approach		621	10.0	0.339	0.1	NA	0.0	0.0	0.00	0.01	0.00	69.7
North: Boorooma Street												
8	T1	187	10.0	0.141	1.1	LOS A	0.4	3.3	0.24	0.10	0.24	67.0
9	R2	31	10.0	0.141	10.2	LOS A	0.4	3.3	0.24	0.10	0.24	47.0
Approach		218	10.0	0.141	2.3	NA	0.4	3.3	0.24	0.10	0.24	63.7
West: Estella Road												
10	L2	38	10.0	0.050	6.7	LOS A	0.2	1.4	0.55	0.69	0.55	41.1
12	R2	59	10.0	0.133	10.0	LOS A	0.4	3.2	0.67	0.83	0.67	44.7
Approach		97	10.0	0.133	8.7	LOS A	0.4	3.2	0.62	0.78	0.62	43.4
All Vehicles		936	10.0	0.339	1.5	NA	0.4	3.3	0.12	0.11	0.12	64.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Estella x Boorooma - 2030 Base - AM]

Estella Road x Boorooma Street, Estella

Site Category: 3 leg priority-controlled
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Boorooma Street												
1	L2	125	10.1	0.639	6.7	LOS A	0.0	0.0	0.00	0.07	0.00	62.9
2	T1	1038	10.0	0.639	0.2	LOS A	0.0	0.0	0.00	0.07	0.00	68.7
Approach		1163	10.0	0.639	0.9	NA	0.0	0.0	0.00	0.07	0.00	67.9
North: Boorooma Street												
8	T1	358	10.0	0.395	10.3	LOS A	4.0	30.4	0.56	0.10	0.78	56.5
9	R2	46	9.1	0.395	28.6	LOS C	4.0	30.4	0.56	0.10	0.78	40.8
Approach		404	9.9	0.395	12.4	NA	4.0	30.4	0.56	0.10	0.78	54.5
West: Estella Road												
10	L2	69	10.6	0.221	15.2	LOS B	0.7	5.7	0.84	0.93	0.90	36.9
12	R2	172	9.8	1.717	691.4	LOS F	50.1	380.5	1.00	4.63	12.38	5.3
Approach		241	10.0	1.717	496.5	LOS F	50.1	380.5	0.95	3.56	9.07	6.6
All Vehicles		1808	10.0	1.717	69.5	NA	50.1	380.5	0.25	0.54	1.38	28.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [Estella x Boorooma - 2030 w School - AM]

Estella Road x Boorooma Street, Estella

Site Category: 3 leg priority-controlled
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Boorooma Street												
1	L2	215	5.9	0.687	6.7	LOS A	0.0	0.0	0.00	0.11	0.00	63.7
2	T1	1038	10.0	0.687	0.3	LOS A	0.0	0.0	0.00	0.11	0.00	68.0
Approach		1253	9.3	0.687	1.4	NA	0.0	0.0	0.00	0.11	0.00	67.1
North: Boorooma Street												
8	T1	358	10.0	0.609	22.9	LOS B	9.7	73.6	1.00	0.21	1.61	46.9
9	R2	76	5.6	0.609	38.9	LOS C	9.7	73.6	1.00	0.21	1.61	34.7
Approach		434	9.2	0.609	25.7	NA	9.7	73.6	1.00	0.21	1.61	44.5
West: Estella Road												
10	L2	98	7.5	0.299	15.6	LOS B	1.1	8.0	0.84	0.97	0.99	37.0
12	R2	257	6.6	2.971	1805.0	LOS F	114.6	847.1	1.00	5.89	16.71	2.2
Approach		355	6.8	2.971	1311.2	LOS F	114.6	847.1	0.96	4.53	12.37	2.8
All Vehicles		2041	8.9	2.971	234.2	NA	114.6	847.1	0.38	0.90	2.49	12.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: 3v [Estella x Boorooma - 2030 Base - AM - Upgrade]**

Estella Road x Boorooma Street, Estella

Site Category: 3 leg priority-controlled
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Boorooma Street												
1	L2	125	10.1	0.141	7.1	LOS A	0.9	6.7	0.26	0.59	0.26	48.0
2	T1	1038	10.0	0.692	6.4	LOS A	10.3	78.0	0.45	0.51	0.45	56.5
Approach		1163	10.0	0.692	6.5	LOS A	10.3	78.0	0.43	0.52	0.43	55.3
North: Boorooma Street												
8	T1	358	10.0	0.411	7.6	LOS A	3.5	26.4	0.60	0.65	0.60	56.8
9	R2	46	9.1	0.411	10.0	LOS A	3.5	26.4	0.60	0.65	0.60	43.3
Approach		404	9.9	0.411	7.9	LOS A	3.5	26.4	0.60	0.65	0.60	55.1
West: Estella Road												
10	L2	69	10.6	0.234	19.4	LOS B	1.5	11.2	0.92	0.96	0.92	34.8
12	R2	172	9.8	0.390	18.5	LOS B	3.1	23.5	0.99	1.02	1.07	41.0
Approach		241	10.0	0.390	18.8	LOS B	3.1	23.5	0.97	1.01	1.03	39.4
All Vehicles		1808	10.0	0.692	8.4	LOS A	10.3	78.0	0.54	0.62	0.55	52.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY



Site: 3v [Estella x Boorooma - 2030 w School - AM - Upgrade]

Estella Road x Boorooma Street, Estella

Site Category: 3 leg priority-controlled
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Boorooma Street												
1	L2	215	5.9	0.248	7.5	LOS A	1.8	12.9	0.38	0.61	0.38	47.9
2	T1	1038	10.0	0.734	6.9	LOS A	11.5	87.7	0.63	0.53	0.63	55.9
Approach		1253	9.3	0.734	7.0	LOS A	11.5	87.7	0.58	0.54	0.58	54.1
North: Boorooma Street												
8	T1	358	10.0	0.500	8.7	LOS A	4.3	32.6	0.75	0.74	0.75	56.0
9	R2	76	5.6	0.500	11.0	LOS A	4.3	32.6	0.75	0.74	0.75	42.8
Approach		434	9.2	0.500	9.1	LOS A	4.3	32.6	0.75	0.74	0.75	53.5
West: Estella Road												
10	L2	98	7.5	0.361	21.4	LOS B	2.5	18.4	0.97	1.02	1.05	34.3
12	R2	257	6.6	0.629	29.7	LOS C	6.9	51.0	1.00	1.24	1.52	37.1
Approach		355	6.8	0.629	27.4	LOS B	6.9	51.0	0.99	1.18	1.39	36.5
All Vehicles		2041	8.9	0.734	11.0	LOS A	11.5	87.7	0.69	0.70	0.76	49.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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