Ardill Payne & PARTNERS

ENGINEERS PLANNERS SURVEYORS ENVIRONMENTAL PROJECT MANAGEMENT

TRAFFIC IMPACT ASSESSMENT

Proposed Rezoning for Future Residential Subdivision and Development

Lot 38 DP 1059938
31 Alidenes Road, Wilsons Creek

for:
St Saviour Investments Pty Ltd

August 2018

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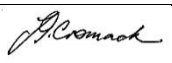
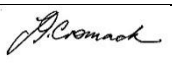
1	12.12.18	T. Cromack		T. Cromack	
2	06.02.19	T. Cromack		T. Cromack	

Revision No:	Description
0	Original Issue – DRAFT to client
1	Issue with DA
2	Additional Intersection Treatments Added

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1. Introduction

Ardill Payne and Partners (APP) has been commissioned by St Saviour Investments Pty Ltd to prepare a Traffic Impact Assessment in respect of Lot 38 DP 1059938, 31 Alidenes Road, Wilsons Creek. The study has been undertaken to support and inform a Planning Proposal for rezoning of the 12.2ha site to an R5 'Large Lot Residential' zone to permit future residential subdivision and development.

This Traffic Impact Assessment is based on a potential yield of 30 residential lots which is the expected scenario in respect of traffic generation.

This report provides details regarding the current traffic, the level of service provided by surrounding roads and the impact the proposed development will have on these roads.

1.1 The Site

The site is located approximately 5.2km south west of Mullumbimby. A site plan is shown in **Figure 1**; a locality plan is shown in **Figure 2**.

Figure 1: Site Plan

Figure 2: Locality Plan

Table 1 describes the site identification details.

Table 1 – Site Identification Details

Site Address	31 Alidenes Road, Wilsons Creek
Total Site Area	12.2ha.
Proposed Rezone Area	12.2 ha
Title	Lot 38 DP 1059938
Local Government Area	Byron Shire Council
Existing Land Use	The subject land currently contains two dwellings. The land is largely cleared grassland (grazing land) and has levels ranging between 40-20m AHD
Surrounding Environment	Existing scattered residential to the north, west, and south, undulating pasture to the east.

1.2 The Proposal

The objective of the Planning Proposal is to rezone the subject land to an R5 zone and to apply a minimum lot size that will enable the land to be subdivided into minimum 0.3ha lots. The expected yield from the rezoning of the site is approx. 30 lots.

It is expected that the majority of the proposed allotments will gain direct access to the existing road network via Alidenes Road. A small number of the proposed allotments may gain access directly onto Wilsons Creek Road.

2. Existing Conditions

2.1 Alidenes Road

Alidenes Road is a 2 lane, 2-way bitumen un-delineated sealed road. The road is approx. 5.5m wide for the majority of its length, local widening (to 9m width) occurs within the vicinity of the Robinsons Road / Alidenes Road intersection. Alidenes Road also widens to a width of 7m as it approaches the Wilsons Creek Road / Alidenes Road intersection. The road contains a grassed shoulder to each side.

Alidenes Road is in moderate to good condition and has no posted speed limit.

Figure 3: Alidenes Road looking west

2.2 Wilsons Creek Road

Wilsons Creeks Road is a 2 lane, 2-way bitumen sealed road. The average road width generally varies between approx. 6m and 7m with discontinuous 0.5m gravel shoulders to each side. Some shorts sections have centre and edge line marking.

The road is in relatively good condition and has no posted speed limit.

Figure 4A: Wilsons Creek Road looking west from Alidenes Road

Figure 4B: Wilsons Creek Road looking east from Alidenes Road

2.3 Wilsons Creek Road / Alidenes Road Intersection

The intersection of Wilsons Creek Road with Alidenes Road is an unsigned rural T-intersection. Alidenes Road approaches Wilsons Creek Road at an acute angle before squaring to Wilsons Creek Road though the final 40m of the approach. Wilsons Creek Road is relatively flat within the surrounds of the intersection. Alidenes Road approaches the intersection at an incline of approximately 6%. The included angle of the intersection approach is approx. 32°, however the included angle of the intersection at the termination of Alidenes Road is approx. 70°. There are no dedicated turn lanes or widenings at the intersection.

Figure 5: Wilsons Creek Road / Alidenes Road Intersection looking from Alidenes Road

2.4 Coolamon Scenic Drive / Wilsons Creek Road Intersection

The intersection of Wilsons Creek Road with Coolamon Scenic Drive is a typical rural T-intersection. The intersection is 'Stop' sign controlled. Wilsons Creek Road intersects with Coolamon Scenic Drive at angle of 84 degrees. Both Coolamon Scenic Drive and Wilsons Creek Road are relatively flat within the surrounds of the intersection. There is a turn lane from the northern approach of Coolamon Scenic Drive onto Wilsons Creek Road.

2.5 Public Transport

The nearest scheduled bus service is on Coolamon Scenic Drive (Northern Rivers Bus Lines Route 610 / 635). However, school bus services are present on Wilsons Creek Road. School buses stop to pick-up and set-down passengers on the gravel area north-east of the Wilsons Creek Road / Alidenes Road intersection (refer **Figure 4B**).

2.6 Pedestrians

Pedestrian volumes in the area of the subject land are generally low and typical of country areas. There are no pedestrian footpaths located in the vicinity.

2.7 Accident History

Based on the Transport for NSW Centre for Road Safety website, for the period 2013-2017, there has been no recorded crashes on Alidenes Road. Only four minor-moderate injury crashes have been recorded on Wilsons Creek Road. One minor injury crash has been recorded at the Coolamon Scenic Drive / Wilsons Creek Road intersection.

3. Traffic Assessment

This traffic assessment has been prepared on the basis that the expected yield from the rezoning of the site is approx. 30 lots (refer Section 1).

3.1 Existing Traffic Counts

Traffic counts for both Wilsons Creek Road and Alidenes Road were obtained from National Traffic Surveys Pty Ltd. The counts were taken in August /September 2018, and are summarised in **Tables 2 and 3**.

Table 2 – Existing Traffic Counts Wilsons Creek Road

Date	Street	Description	Count	Volume
2018	Wilsons Creek Road	Approx. 200m east of Alidenes Road	AADT	1502
			Av. Peak Hr	153
			HV%	3.9
2018	Wilsons Creek Road	Approx. 100m west of Alidenes Road	AADT	1162
			Av. Peak Hr	120
			HV%	4.8

Table 3 – Existing Traffic Counts Alidenes Road

Date	Street	Description	Count	Volume
2018	Alidenes Road	Approx. 100m west of Wilsons Creek Road	AADT	359
			Av. Peak Hr	40
			HV%	2.8

3.2 Proposed Traffic Generation

This assessment is based on the RMS *'Guide to Traffic Generating Developments'* (2002). Updated traffic generation rates were sourced from the RMS '*Technical Direction TDT 2013/04: Guide to Traffic Generating Developments, Updated Traffic Surveys'*. The generation rates are summarised in **Table 4.**

Table 4 – Traffic Generation Rates

Development level	Source	AADT	Peak Hour Vehicle Trips Volume
Low Density Residential Dwellings	RMS	7.4 trips/dwelling	0.78 trips/dwelling

(According to the RMS Guide, a trip is defined as a one-way vehicular movement from one point to another excluding the return journey. Therefore, a return trip to/from a land use is counted as two trips).

Annual average daily traffic (AADT) and peak vehicle trip volumes per hour generated by the proposed development have been estimated based on the expected yield (approx. 30 low density residential lots) and the generation rates shown in **Table 4**. The proposed traffic generation is summarised in **Table 5**.

Table 5 – Proposed Traffic Generation

Road	Development level	Lots	Predicted daily traffic	Predicted peak hourly traffic
Alidenes Road	Detached Dwellings	27	199.8	21.1
Wilsons Creek Road	Detached Dwellings	3	22.2	2.3
Total	Detached Dwellings	30	222	23.4

3.3 Trip Distribution and Modal Split

Subdivision traffic will predominantly travel via Alidenes Road. The remainder of the subdivision traffic will access directly on to Wilsons Creek Road. At the Wilsons Creek Road / Alidenes Road intersection, the majority of traffic will turn left and head to Coolamon Scenic Drive and Mullumbimby via the most direct route. The trip distributions are approx. as follows:

Leaving the subdivision

- 90% onto Alidenes Road
- 10% onto Wilsons Creek Road

Wilsons Creek Road / Alidenes Road Intersection

- 100% East Towards Coolamon Scenic Drive

Coolamon Scenic Drive / Wilsons Creek Road Intersection

- 60% North towards Mullumbimby
- 40% South towards Federal and Bangalow

With limited scheduled bus services currently operating within the area, the vast majority of vehicle trips will be by private car.

4. Impacts of Proposed Development

The impacts of the proposed development are assessed in accordance with the RMS *'Guide to Traffic Generating Developments'* (2002).

4.1 Impact on Traffic Efficiency

To aid interpretation of the impacts on traffic flows, the RMS Guide provides acceptable ranges of peak vehicle flows for various Levels of Service (LOS) experienced on the road. The intention is to at least maintain the existing Level of Service for the streets adjacent to the site.

Levels of Service are defined by the RMS for rural roads (shown in **Table 6**), with the highest Level of Service being Level A and service deteriorating to Level E.

Table 6 – Two-Way Peak Hour Flows on Two Lane Rural Roads

Terrain	Level of Service	5% Heavy Vehicles (veh/hr) – 80km/h [1]	5% Heavy Vehicles (veh/hr) – 100km/h
Level	B	531	590
	C	873	970
	D	1395	1550
	E	2250	2500

Note 1: Capacities for 80km/h are between 85-95% of the capacities for 100km/h.

The following performance standards are recommended:

Weekday Peak Hour Flows

Major Roads: Level of Service C

Minor Roads: Level of Service C (desirable)

Recreational Peak Hours (weekends)

Major Roads: Level of Service D

Minor Roads: Level of Service D (desirable)

Existing peak traffic movements (one way) on Alidenes Road are approx. 20vph. Therefore, the current Level of Service for this road is better than Level B:

- Additional traffic movements of approx. 10.5vph (one way) (from **Table 5**) will not alter the Level of Service on this road.

Existing peak traffic movements (one way) on Wilsons Creek Road are approx. 77vph. Therefore, the current Level of Service for this road is better than Level B:

- Additional traffic movements of approx. 11.7vph (one way) (from **Table 5**) will not alter the Level of Service on this road.

The proposed development will not reduce the Level of Service on adjoining streets to below acceptable performance standards.

4.2 Impact on Intersections

Sight distances will be assessed for a reaction time of 2.0 seconds and a design speed of 80km/h. Note that this design speed has been adopted due to the road alignment past the intersection.

The minimum safe intersection sight distance (SISD) which should be provided on the major road at any intersection is 181m (Table 3.2, Austroads *'Guide to Road Design – Part 4A'*). No grade correction is required for SISD as Wilsons Creek Road is flat through and approaching the intersection.

The recommended minimum approach sight distance (ASD) which should be provided on the minor road approach to an intersection is 114m (Table 3.1, Austroads *'Guide to Road Design – Part 4A'*). ASD has not been adjusted for grade due to the intersection geometry.

The existing Wilsons Creek Road /Alidenes Road intersection is a typical rural T-intersection. The available sight distance from Alidenes Road east along Wilsons Creek Road is approx. 160m, and south-west is in excess of 250m. The available approach sight distance from Alidenes Road is approx. 45m. Therefore, the intersection does not meet desirable minimum standards for ASD along Alidenes Road. ASD cannot be improved, however the installation of advanced warning signs will improve safety. SISD is slightly deficient in the east approach of Wilsons Creek Road. SISD could be improved with some vegetation trimming.

In order to assess the impact of the proposed development on the Wilsons Creek Road / Alidenes Road intersection a SIDRA analysis of the intersection was undertaken for the following scenarios:

- Base Case (Without Development) at Current Year (2018)
- Base Case (Without Development) plus 10 Years (2028)
- Developed Case at Current Year (2018)
- Developed Case plus 10 Years (2028).

Outputs from the SIDRA are summarized in **Tables 7, 8, and 9**. SIDRA reports for each scenario along with the model layout are located in **Attachment 1**.

Table 7 – SIDRA Outputs – Degree of Saturation

Test Scenario	Alidenes Road	Wilsons Creek Road East	Wilsons Creek Road South West
Base Case Current Year	0.01	0.04	0.06
Base Case Plus 10 Years	0.01	0.05	0.06
Developed Case at Current Year	0.01	0.05	0.06
Developed Case Plus 10 Years	0.02	0.05	0.07

Table 8 – SIDRA Outputs – Level of Service

Test Scenario	Alidenes Road	Wilsons Creek Road East	Wilsons Creek Road South West
Base Case Current Year	A	A	A
Base Case Plus 10 Years	A	A	A
Developed Case at Current Year	A	A	A
Developed Case Plus 10 Years	A	A	A

Table 9 – SIDRA Outputs – Delay (sec.)

Test Scenario	Alidenes Road		Wilsons Creek Road East		Wilsons Creek Road South West	
Movement	Left	Right	Right	Through	Left	Through
Base Case Current Year	5.8	6.0	7.1	0.1	5.5	0.0
Base Case Plus 10 Years	5.9	6.1	7.1	0.1	5.5	0.0
Developed Case at Current Year	5.8	6.1	7.0	0.2	5.5	0.0
Developed Case Plus 10 Years	5.9	6.2	7.1	0.2	0.0	5.5

From the above it is concluded that the existing Wilsons Creek Road / Alidenes Road intersection will continue to perform satisfactorily, and within acceptable performance standards, with the increase in traffic from the proposed development. The satisfactory performance is expected to continue well past the 10 year development horizon.

4.3 Impact on Amenity

The traffic volumes produced by the development are expected to increase two way peak hour traffic flows on Alidenes Road by approx. 53% and on Wilsons Creek Road by approx. 15% east of the development. However, as noted above, traffic flows on both roads are not expected to increase beyond the capacity of the existing road network. The traffic generated from the proposed development will be predominantly light vehicles. Level of Service is expected to remain within acceptable performance standards after the development with only minimal increase in delays.

4.4 Impact on Safety

No crashes have been reported on Alidenes Road or at the Wilsons Creek Road / Alidenes Road intersection in the period 2013-2017. A road safety audit for the Wilsons Creek Road / Alidenes Road intersection, undertaken by Tony Cromack (auditor number RSA-02-0414), has identified a series of safety concerns at the intersection. To address these concerns and improve safety at the intersection the following recommendations are made:

- Provide guide posts and line marking (centre and edge lines) to the intersection
- Install 'Give Way' sign and associated give way line on the Alidenes Road approach to the intersection.
- Install 'Intersection Ahead' signs (or similar) in all approaches to the intersection.

A layout plan demonstrating the recommended changes has been provided in Attachment 2 of this report.

Sight distance in the Eastern approach to Alidenes Road shall be improved by pruning of roadside vegetation.

Any new accesses onto Alidenes Road and Wilsons Creek Road shall be located to provide optimum sight distance.

The additional peak hour traffic movements are unlikely to raise any significant adverse safety issues for local transport and users of the local road network. The proposed recommendations are made to improve definition of the existing Wilsons Creek Road / Alidenes Road intersection which will improve safety in the road network surrounding the proposed development.

4.5 Impact on Public Transport

Most vehicle trips will be by private car. The proposed development will generate additional demand for public transport services, especially school bus services. These services will be catered for by the bus companies based on demand.

4.6 Impact on Pedestrians and Cyclists

There is adequate room on the road verges for the safe movement of pedestrians. Cyclists will continue to use the existing road carriageway. Pedestrian and cyclist volumes within the surrounding area are expected to remain low after the proposed development. Increased traffic on Wilsons Creek Road is not expected to significantly affect pedestrians using Wilsons Creek Road. Increased traffic on Alidenes Road will have a minor impact on pedestrians using Alidenes Road. However given that both pedestrian and vehicle volumes are expected to remain low this impact is expected to be minor.

4.7 Impact of Other Proposed Developments in the Vicinity

There are no other known development proposals in the area.

5. Design Standards

Northern Rivers Local Government (NRLG) '*Development Design Specification D1: Geometric Road Design (Urban and Rural)'* (August 2013) Table D1.27 provides the following design characteristics for rural roads:

- Minor road up to 150 AADT – 6m seal; 0.5m shoulders.
- Minor road 150-500 AADT – 6m seal; 1.0m shoulders.
- Minor road 500-1000 AADT – 7m seal; 1.0m shoulders.
- Major road over 1000 AADT – 7.5m seal; 1.5m shoulders

5.1 Alidenes Road

The existing AADT on Alidenes Road is 359vpd. Therefore, the existing classification of Alidenes Road is 'Minor road 150-500 AADT'. The existing seal width on Alidenes Road is approx. 5.5m. In its existing condition, the existing road width in parts of Alidenes Road appears to be slightly less than the required minimum standard.

The estimated additional AADT on Alidenes Road after development is approx. 200vpd. As such the total AADT on Alidenes Road after development is estimated to be approx. 560vpd, which would just exceed the current classification. It is considered that any requirement to widen sections of Alidenes Road be deferred until DA stage. At this stage, detail survey will be available along with a development proposal showing the actual number of allotments to be considered.

5.2 Wilsons Creek Road

The existing AADT on Wilsons Creek Road is 1502vpd east of the proposed development. As such Wilsons Creek Road can be considered a 'Major road over 1000 AADT'. The existing seal width on Wilsons Creek Road varies between 6.0m and 7.0m. In its existing condition, the existing road width in parts of Wilsons Creek Road appears to be slightly less than the required minimum standard, however it appears to perform satisfactorily.

The estimated additional AADT on Wilsons Creek Road after development is approx. 222vpd. As such the total AADT on Wilsons Creek Road after development is estimated to be approx. 1724vpd. It is considered that the small increase in traffic volume does not warrant any upgrade of Wilsons Creek Road.

It should be noted that, in Section 4.4, recommendation have been proposed to improve the delineation of Wilson Creek Road / Alidenes Road intersection to improve safety.

6. Conclusion and Recommendations

It is concluded that the proposed development will increase the number of daily and peak hourly trips on the local roads. The Level of Service on the surrounding roads and intersections will not be reduced by the proposed development and is within acceptable performance standards.

While the proposed development will increase the demand for public transport, it is submitted that the existing services are adequate. No additional public transport infrastructure is proposed.

With the below recommendations, the local roads will have the capacity to safely and efficiently service the traffic that will be generated by the future subdivision.

It is noted that the classification of Alidenes Road will most likely increase from 'Minor road 150-500 AADT' to 'Minor road 500-1000 AADT' for a section of its length, as a result of traffic generated by the proposed development.

Recommendation 1:

Provide guide posts and line marking (centre and edge lines) to the intersection.

Recommendation 2:

Install 'Give Way' sign and associated give way line on the Alidenes Road approach to the intersection.

Recommendation 3:

Install 'Intersection Ahead' signs (or similar) in all approaches to the intersection.

Recommendation 4:

Prune vegetation on eastern approach to Alidenes Road to improve sight distance.

Recommendation 5:

Ensure that any new accesses onto Alidenes Road and Wilsons Creek Road are located to provide optimum sight distance.

Recommendation 6:

Defer consideration of any upgrade of Alidenes Road until DA stage.

7. Scope of Engagement

This report has been prepared by Ardill Payne & Partners (APP) at the request of St Saviour Investments Pty Ltd for the purpose of a traffic impact assessment for a Rezoning Application for Lot 38 DP 1059938, Alidenes Road, Wilsons Creek, and is not to be used for any other purpose or by any other person or corporation.

This report has been prepared from the information provided to us and from other information obtained as a result of enquiries made by us. APP accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this document for a purpose other than that described above.

APP declares that it does not have, nor expects to have, a beneficial interest in the subject project.

To avoid this advice being used inappropriately it is recommended that you consult with APP before conveying the information to another who may not fully understand the objectives of the report. This report is meant only for the subject site/project and should not be applied to any other.

8. Attachments

Attachment 1 SIDRA Outputs

Attachment 2 Proposed Intersection Treatments

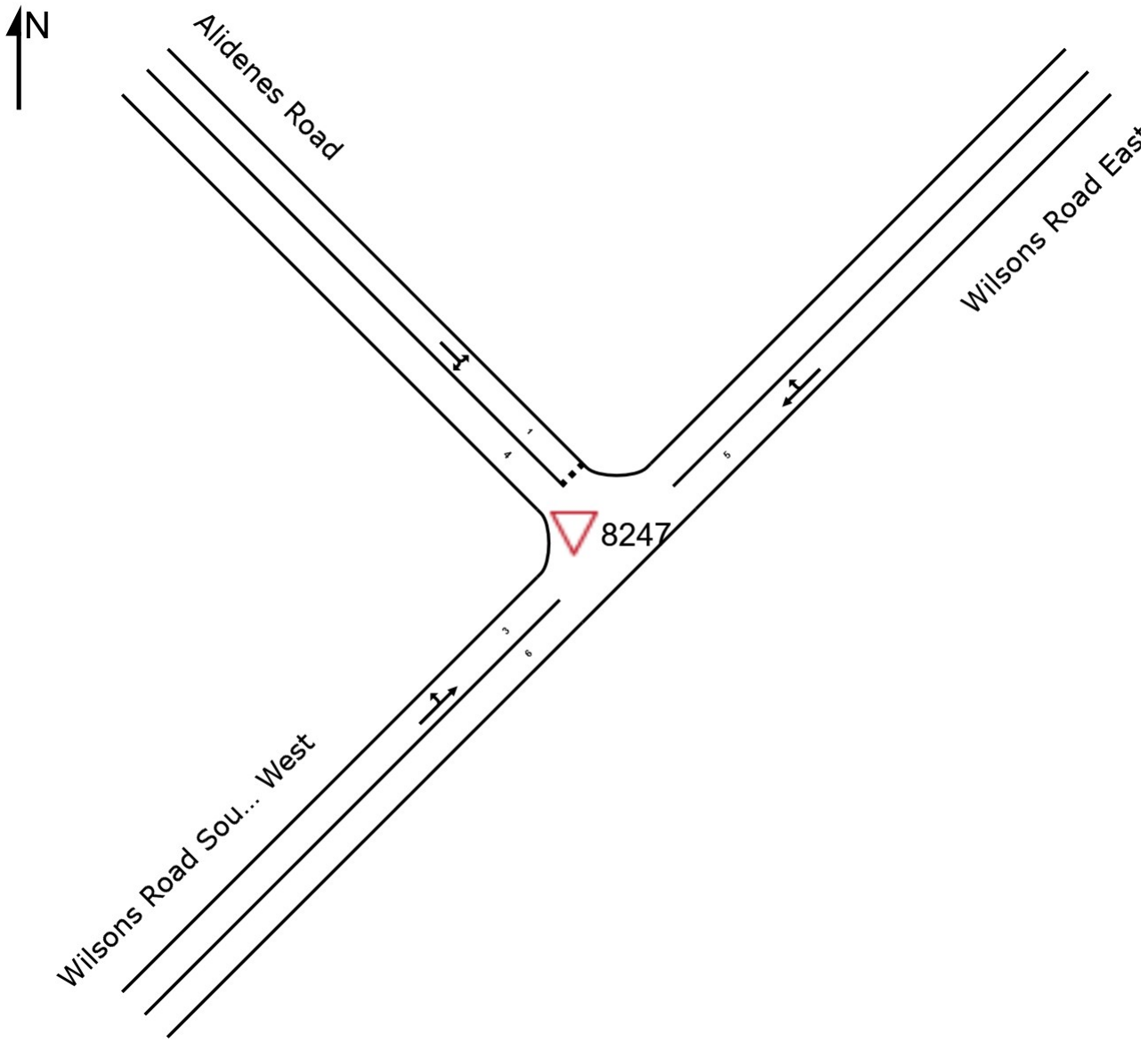
ATTACHMENT 1

Attachment 1: SIDRA Outputs

SITE LAYOUT

Site: 8247 [Wilsons Creek Road / Alidenes Road_Pre-dev-current]

Wilsons Creek Road / Alidenes Road
Site Category: (None)
Giveway / Yield (Two-Way)



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Project: S:\01 Jobs\8200-8299\8247 DA.SEE - 31 Alidenes Road, Wilsons Creek\02 Engineering\06 Traffic\8247_Alidenes.sip8

MOVEMENT SUMMARY

Site: 8247 [Wilsons Creek Road / Alidenes Road_Pre-dev-current]

Wilsons Creek Road / Alidenes Road
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	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
NorthEast: Wilsons Road East												
25	T1	56	3.6	0.042	0.1	LOS A	0.1	0.8	0.11	0.16	0.11	76.5
26	R2	18	5.6	0.042	7.1	LOS A	0.1	0.8	0.11	0.16	0.11	67.0
Approach		74	4.1	0.042	1.8	NA	0.1	0.8	0.11	0.16	0.11	74.4
NorthWest: Alidenes Road												
27	L2	10	0.0	0.008	5.8	LOS A	0.0	0.2	0.19	0.53	0.19	51.2
29	R2	1	0.0	0.008	6.0	LOS A	0.0	0.2	0.19	0.53	0.19	50.5
Approach		11	0.0	0.008	5.8	LOS A	0.0	0.2	0.19	0.53	0.19	51.1
SouthWest: Wilsons Road South West												
30	L2	2	0.0	0.057	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.7
31	T1	105	4.8	0.057	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach		107	4.7	0.057	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles		192	4.2	0.057	1.1	NA	0.1	0.8	0.05	0.10	0.05	64.1

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.

MOVEMENT SUMMARY

Site: 8247 [Wilsons Creek Road / Alidenes Road_Pre-dev+10y]

Wilsons Creek Road / Alidenes Road
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	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
NorthEast: Wilsons Road East												
25	T1	63	4.8	0.047	0.1	LOS A	0.1	0.9	0.12	0.15	0.12	76.4
26	R2	20	5.0	0.047	7.1	LOS A	0.1	0.9	0.12	0.15	0.12	67.1
Approach		83	4.8	0.047	1.8	NA	0.1	0.9	0.12	0.15	0.12	74.4
NorthWest: Alidenes Road												
27	L2	11	0.0	0.008	5.9	LOS A	0.0	0.2	0.21	0.54	0.21	51.1
29	R2	1	0.0	0.008	6.1	LOS A	0.0	0.2	0.21	0.54	0.21	50.5
Approach		12	0.0	0.008	5.9	LOS A	0.0	0.2	0.21	0.54	0.21	51.1
SouthWest: Wilsons Road South West												
30	L2	3	0.0	0.065	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.7
31	T1	117	5.1	0.065	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		120	5.0	0.065	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles		215	4.7	0.065	1.1	NA	0.1	0.9	0.06	0.10	0.06	64.1

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.

MOVEMENT SUMMARY

Site: 8247 [Wilsons Creek Road / Alidenes Road_Post-dev-current]

Wilsons Creek Road / Alidenes Road
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	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
NorthEast: Wilsons Road East												
25	T1	57	3.5	0.049	0.2	LOS A	0.2	1.2	0.15	0.21	0.15	75.2
26	R2	29	3.4	0.049	7.0	LOS A	0.2	1.2	0.15	0.21	0.15	66.3
Approach		86	3.5	0.049	2.5	NA	0.2	1.2	0.15	0.21	0.15	72.5
NorthWest: Alidenes Road												
27	L2	21	0.0	0.015	5.8	LOS A	0.1	0.4	0.19	0.54	0.19	51.2
29	R2	1	0.0	0.015	6.1	LOS A	0.1	0.4	0.19	0.54	0.19	50.5
Approach		22	0.0	0.015	5.8	LOS A	0.1	0.4	0.19	0.54	0.19	51.1
SouthWest: Wilsons Road South West												
30	L2	2	0.0	0.058	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.7
31	T1	106	4.7	0.058	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach		108	4.6	0.058	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles		216	3.7	0.058	1.6	NA	0.2	1.2	0.08	0.15	0.08	63.2

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: 8247 [Wilsons Creek Road / Alidenes Road_Post-dev+10]

Wilsons Creek Road / Alidenes Road
Site Category: (None)
Giveway / Yield (Two-Way)

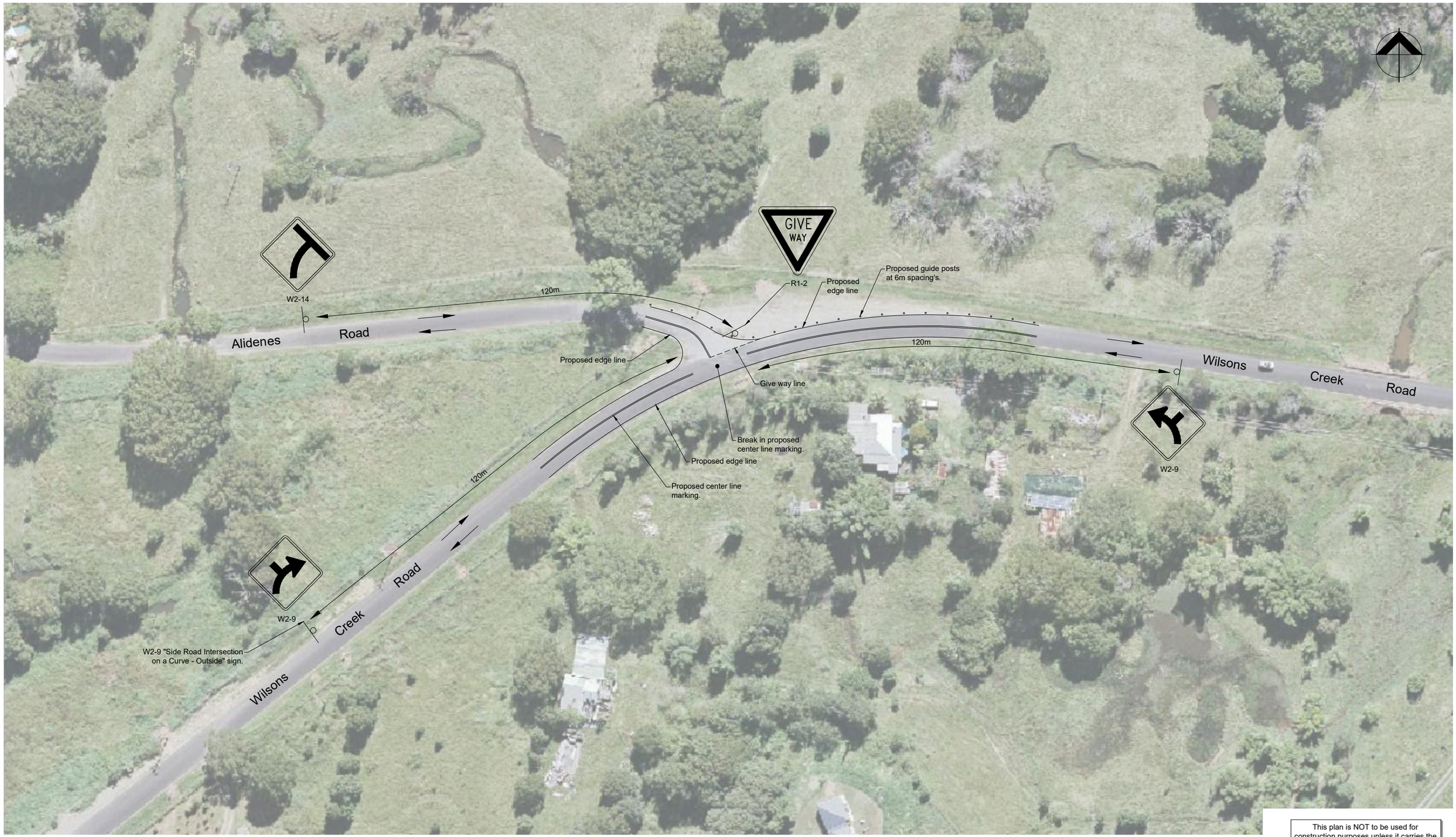
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Wilsons Road East												
25	T1	64	4.7	0.054	0.2	LOS A	0.2	1.3	0.15	0.21	0.15	75.3
26	R2	31	3.2	0.054	7.1	LOS A	0.2	1.3	0.15	0.21	0.15	66.4
Approach		95	4.2	0.054	2.4	NA	0.2	1.3	0.15	0.21	0.15	72.6
NorthWest: Alidenes Road												
27	L2	21	0.0	0.015	5.9	LOS A	0.1	0.4	0.21	0.54	0.21	51.1
29	R2	1	0.0	0.015	6.2	LOS A	0.1	0.4	0.21	0.54	0.21	50.4
Approach		22	0.0	0.015	5.9	LOS A	0.1	0.4	0.21	0.54	0.21	51.1
SouthWest: Wilsons Road South West												
30	L2	3	0.0	0.065	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.7
31	T1	118	5.1	0.065	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		121	5.0	0.065	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles		238	4.2	0.065	1.6	NA	0.2	1.3	0.08	0.14	0.08	63.4

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.

ATTACHMENT 2

Attachment 2: Proposed Intersection Treatments

All works proposed at should be constructed in accordance with AS1742



This plan is NOT to be used for construction purposes unless it carries the approval stamp of the local authority.

Issue	Date	Description	App'd
A	06/02/2019	Issue With Revision 2 of Traffic Impact Assessment	TC

Client: St Saviour Investments Pty Ltd

Project: Proposed Rezoning for Future Subdivision
31 Alidenes Road
Wilsons Creek

Title: Proposed Intersection Treatments Alidenes Road / Wilsons Creek Road

ARDILL PAYNE
& Partners
ENGINEERS PLANNERS SURVEYORS
ENVIRONMENTAL PROJECT MANAGEMENT
BALLINA 45 River Street Ph. 02 6686 3280
GUNNEDAH 285 Conadilly Street Ph. 02 6742 9955
A.B.N. 51 808 558 977 e-mail: info@ardillpayne.com.au

Design	AH
Drawn	AH
Checked	TC
Approved	TC
Date	06/02/2019
Job No.	8247
Scale	1:500 @ A1, 1:1000 @ A3
Datum	AHD
Drafting File	8247_Traffic-report-figure.dwg
Design File	
Dwg No.	SK02
Issue	A

S:\01 Jobs\8200-8299\8247 DA SEE - 31 Alidenes Road, Wilsons Creek\05 Drawings\01 Civil\01 Current\8247_Traffic-report-figure.dwg, SK02, 7/02/2019 3:57:51 PM