BAPTISTCARE AND SYDNEY PROPERTY DEVELOPMENT CONSULTANTS

SUPPLEMENTARY TRANSPORT REPORT FOR BLOCK STUDY FOR LAND BOUNDED BY PENNANT HILLS ROAD, TINTERN AVENUE, HOMELANDS AVENUE AND MARTINS LANE, CARLINGFORD

APRIL 2017

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REF: 10331/2

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by BaptistCare and Sydney Property Development Consultants to prepare supplementary transport information for the block study for land bounded by Pennant Hills Road, Tintern Avenue, Homelands Avenue and Martins Lane at Carlingford. The study area is shown in Figure 1.

1.2 We have previously prepared a report[1] which was submitted with the block study. A copy of that report is provided as Appendix D to this report. In emails of 14 March and 4 April (council) and 31 March and 4 April 2017 (RMS), the authorities have raised a number of matters. These matters are as follows:

- Council email of 14 March

    1. *Please provided drawing showing 4 way Baker St/Pennant Hills Road intersection, with the new north-south road to align directly opposite Baker Street. The drawing should be reviewed by your traffic consultant to determine suitability from a road design perspective. Council's traffic team can review, however the ultimate design will be subject to approval by RMS. However, it is important to understand how the intersection alignment may affect the redevelopment of the site at 262 Pennant Hills Road.*

    2. *Please provide revised design and cross sections for the new north-south road showing a consistent minimum corridor width of 18.3m, noting that the width of*

[1] Transport Report for Block Study for Land Bounded by Pennant Hills Road, Tintern Avenue, Homelands Avenue and Martins Lane, Carlingford, February 2017.

the footpath area versus lanes/parking areas may vary along the length of the road. Again it is noted that the ultimate width of the intersection near Pennant Hills Rod will be subject to approval by RMS. The alignment of the road at the southern end as it connects to Grace Street should be reviewed to determine if the alignment can be moved off the property at No. 15 Homelands Avenue in order to limit property acquisition requirements.

3. *Council has advised that the new north-south road should be create a new connection between Pennant Hills Road and Grace Street. Technical advice would need to be provided to demonstrate that this is possible or alternatively made clear why this cannot occur.*

4. *Council's Traffic Engineer is currently reviewing the Traffic Study provided. An additional email will be sent in the coming days regarding additional information required in this regard.*

15. *The latest advice is that the existing pedestrian link between Azile Court and Pennant Hills Road will remain open. However should this change, this may change Council's advice regarding the road alignment to the south of 262 Pennant Hills Road.*

- RMS email of 31 March

We've reviewed the attached draft study prepared by Colston Budd Rogers and Kafes P/L dated Feb 2017 and provide the following comments for consideration:

Section 2.24 *– There needs to be more comments made here about the Parramatta Light Rail Project. The attachment (Parramatta Light Rail brings big changes to Carlingford line.docx) contains publically released details about the likely completion date 2023, light rail stops, service frequency, etc. These details should be included in*

the draft report. Also the second last sentence with Section 2.24 should be modified to state: "Subject to Planning Approval, construction of the light rail is expected to commence in 2018".

Section 3.8 *– The end of this segment makes reference to a concept layout for the proposed signalisation of Pennant Hills Road / Baker Street shown in Figure 4. Unfortunately Figure 4 was not included within this draft report. The draft report should be subsequently updated to include details of this concept layout.*

Section 3.12 *– The second sentence within this segment should be slightly modified to state: "At its intersection with Pennant Hills Road, Martins Lane could be widened to provide for left in/left out movements only".*

Section 3.21 *– This segment indicates that the precinct would generate 270vph in the peak yet doesn't quite describe how this number was arrived at. I note that within Section 3.1 it mentions that there will be 800 – 900 dwellings for the precinct and that within Section 3.20 the traffic generation rate to be used would be 0.3 vph / dwelling. The better approach would be to provide the range (i.e 0.3 x 800 = 240vph and 0.3 x 900 = 300vph).*

Section 3.35 *– Whilst there is some commentary on funding mechanisms for the proposed signalisation of Pennant Hills Road / Baker Street, there needs to be some additional commentary provided as to the trigger point of when the signal / civil works at Pennant Hills Road / Baker Street will be implemented.*

Section 3.36 *– I note that there is commentary about splitting the costs amongst the sites. It would be good if some additional commentary could be provided indicating how this would potentially be done (i.e. would it be based on each site's percentage % of the total cumulative development yield ?).*

New Appendix *– There should be some information indicating / demonstrating that the warrants for signals can be met. Refer to attachment (tsdect2v14 i.pdf).*

New Appendix *– This should include the detailed SIDRA 7 modelling output results (with some of the modelled intersections being linked as a Network model). These results should provide details such as (95% queues for each movement / lane, Movement / Lane Performance, Phasing Details, SIDRA Intersection Layouts. The results should be provided for the "Base AM / PM" and also for the "Future with Development AM / PM".*

- Council email of 4 April

I have discussed Andrew's [RMS] *comments with him and agree with his commentary.*

In addition in regard to 3.20 of the report we agree that the 0.3 vehicle trips per hour per unit is probably the lowest rate that would be acceptable. Slightly higher (say 0.35) may have been a more realistic generation rate, however the difference in actual trips is very small and when assigned to the road network become of little concern. The trip generation can therefore be accepted.

3.25 – 3.29 Presentation of the modelling results should be in a table form with the existing and proposed side by side to make comparison easier and clearly highlight any issues.

Andrew's comment regarding traffic signal warrants for the Baker Street/Pennant Hills intersection may not be necessary. Andrew was able to find the original request/agreement to the signals and will discuss it with the new staff in the area. He will clarify the documentation required in this regard as soon as possible.

- RMS email of 4 April

Further to my emailed comments further below (dated 31 March 2017) I have the following additional / updated comments for Council's consideration:
My comment made below (should now be deleted):
New Appendix *– There should be some information indicating / demonstrating that the warrants for signals can be met. Refer to attachment (tsdect2v14 i.pdf).*

I note that Section 3.8 of the CBRK report states:

3.8 *As noted in previous RMS correspondence (appended), vehicular access to the precinct would be provided via a new connection to Pennant Hills Road, opposite Baker Street. The intersection of Pennant Hills Road, Baker Street and the new access road would be signalised. In accordance with RMS correspondence, right turns from Pennant Hills Road into the site would not be permitted. A concept layout for the intersection is shown in Figure 4.*

These comments should pretty much address the fact that Roads and Maritime support the provision of signals in this location. The CBRK report just needs to (append) the attached (RMS letter.pdf) accordingly.

In addition, upon further review we've noted within Figure 2 and Figure 3 (see below) that there doesn't seem to be any additional traffic being generated into / out of Felton Road. However, I note that within the attached (Final Brief for Carlingford Block Study.pdf) that there would be a proposal at 241 Pennant Hills Road. As Felton Road is a cul-de-sac at its eastern end and the fact that Roads and Maritime doesn't favour vehicular accesses to developments from Arterial roads where alternative access is available we're assuming that this proposal would be adding traffic into / out of Felton Road.

CBRK needs to clarify this matter.

1.3 In response to a number of other matters raised by council officers, amendments have been made to the masterplan layout for the block study, including with respect to internal layout, road connections and density. A road connection is now included through the precinct, connecting Pennant Hills Road with Grace Street. The development yield is now estimated to be some 770 dwellings, compared to some 800 to 900 dwellings considered in our previous report.

1.4 This supplementary report therefore assesses the transport implications of the revised precinct development scale and layout, including the above matters raised by council and RMS. The supplementary information is set down in the following chapter.

2. SUPPLEMENTARY TRANSPORT INFORMATION

2.1 The supplementary transport information is set down through the following sections:

- amended development;
- traffic generation and effects;
- matters raised by authorities;
- summary.

Amended Development

2.2 Amendments have been made to the masterplan layout for the block study, including with respect to internal layout, road connections and density. A north-south road connection is now included through the precinct, connecting Pennant Hills Road with Grace Street. The development yield is now estimated to be some 770 dwellings, compared to some 800 to 900 dwellings considered in our previous report.

2.3 Vehicular access would be provided from a number of roads, including Tintern Avenue, Homelands Avenue, Azile Court (including to 258 Pennant Hills Road), Martins Lane and the new north-south road between Pennant Hills Road and Grace Street. The new road would connect to Pennant Hills Road opposite Baker Street, with traffic signals at this intersection.

Traffic Generation and Effects

2.4 Based on 0.3 vehicles per hour per apartment, and the amended potential development yield of some 770 apartments, the redeveloped precinct would generate some 240 vehicles per hour two-way during weekday morning and afternoon peak hours.

2.5 The additional traffic has been assigned to the road network. Existing peak hour flows plus the additional development traffic are shown in Figures 2 and 3, and summarised in Table 2.1.

2.6 Traffic increases on Pennant Hills Road would be some 65 to 95 vehicles per hour two-way at peak times. In the short section of Baker Street between Pennant Hills Road and Felton Road, traffic increases would be some 50 to 110 vehicles per hour two-way. Increases on other roads would generally be less than 50 vehicles per hour two-way.

2.7 The intersections have been analysed with SIDRA 7 Network for the additional development traffic flows shown in Figures 2 and 3. The analysis has included traffic from the potential development at 241 Pennant Hills Road. The analysis has also included the traffic signals at the intersection of Pennant Hills Road with Baker Street/new precinct access road.

2.8 The analysis found that the intersection of Pennant Hills Road with Adderton Road would operate with average delays of less than 35 seconds per vehicle during weekday morning and afternoon peak hours. This represents level of service C, a satisfactory level of service.

Table 2.1: Existing two-way peak hour traffic flows plus development traffic					
Road	**Location**	**Morning peak hour**		**Afternoon peak hour**	
		Existing	**Plus development**	**Existing**	**Plus development**
Pennant Hills Road	West of Tintern Avenue	2,870	+80	2,905	+85
	West of Baker Street	2,730	+65	2,820	+70
	West of Charles Street	2,840	+90	2,855	+90
	West of Adderton Road	2,820	+90	2,870	+95
	East of Adderton Road	3,560	+90	3,670	+95
Baker Street	North of Pennant Hills Road	470	+50	285	+110
	North of Felton Road	450	+20	210	+15
Felton Road	East of Baker Street	270	-	75	-
	West of Baker Street	235	-	150	-
Charles Street	South of Pennant Hills Road	110	-	45	+5
	North of Homelands Avenue	125	-	105	+5
Telopea Street	South of Homelands Avenue	145	+30	90	+30
	North of Adderton Road	160	+30	145	+30
Adderton Road	South of Pennant Hills Road	990	-	940	-
	South of Homelands Avenue	955	-	940	-
	South of Telopea Street	1,120	+30	970	+30
Tintern Avenue	South of Pennant Hills Road	250	+15	225	+15
Homelands Avenue	East of Grace Street	25	+20	10	+35
	West of Charles Street	40	+30	35	+35
	West of Adderton Road	65	-	110	-
Martins Lane	South of Pennant Hills Road	5	+10	1	+15
Azile Court	North of Homelands Avenue	15	+40	5	+55
Grace Street	South of Homelands Avenue	20	+20	10	+20

2.9 With traffic signals at the intersection of Pennant Hills Road/Baker Street/new precinct access road, the intersection would operate with average delays of less than 35 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

2.10 The analysis found that the additional traffic would not change the operation of the intersection of Pennant Hills Road with Tintern Avenue. The minor additional flows through this intersection would not have significant effects on its operation. As previously discussed, alternative routes are available. The new signals at Baker Street would also create gaps in which traffic will be able to turn.

2.11 The unsignalised intersections of Adderton Road with Homelands Avenue and Telopea Street would continue to operate with average delays for the highest delayed movements of less than 20 seconds per vehicle during peak periods. This represents level of service B, a reasonable level of service.

2.12 The roundabout at Baker Street/Felton Road, and the unsignalised intersections of Pennant Hills Road with Charles Street and Martins Lane, and of Homelands Avenue with Charles Street/Telopea Street and Grace Street/Azile Court, would continue to operate with average delays for the highest delayed movements of less than 15 seconds per vehicle during peak periods. This represents level of service A/B, a good level of service.

2.13 Therefore, with the measures proposed, the road network will be able to cater for the additional traffic from the proposed development.

2.14 A summary of intersection operations is shown in Table 2.2.

Table 2.2: Intersection operations				
Intersection	**Existing**		**Plus development**	
	Avg delay (s)	**LOS**	**Avg delay (s)**	**LOS**
Pennant Hills Road/Adderton Road	<35	C	<35	C
Pennant Hills Road/Baker Street	>70	F	<35	F
Adderton Road/Homelands Avenue	<20	B	<20	B
Adderton Road/Telopea Street	<20	B	<20	B
Baker Street/Felton Road	<15	A	<15	A
Pennant Hills Road/Charles Street	<15	A	<15	A
Pennant Hills Road/Martins Lane	<15	A	<15	A
Homelands Avenue/Charles Street	<15	A	<15	A
Homelands Avenue/Grace Street	<15	A	<15	A

Matters Raised by Authorities

2.15 The matters raised by the authorities are discussed below.

- Council email of 14 March

  1. *Please provided drawing showing 4 way Baker St/Pennant Hills Road intersection, with the new north-south road to align directly opposite Baker Street. The drawing should be reviewed by your traffic consultant to determine suitability from a road design perspective. Council's traffic team can review, however the ultimate design will be subject to approval by RMS. However, it is important to understand how the intersection alignment may affect the redevelopment of the site at 262 Pennant Hills Road.*

2.16 A concept layout for the intersection of Pennant Hills Road with Baker Street and the precinct access road is shown in drawings prepared by SCP. It is provided as Appendix A to this report.

2. *Please provide revised design and cross sections for the new north-south road showing a consistent minimum corridor width of 18.3m, noting that the width of the footpath area versus lanes/parking areas may vary along the length of the road. Again it is noted that the ultimate width of the intersection near Pennant Hills Rod will be subject to approval by RMS. The alignment of the road at the southern end as it connects to Grace Street should be reviewed to determine if the alignment can be moved off the property at No. 15 Homelands Avenue in order to limit property acquisition requirements.*

2.17 These details are shown in the urban designer's amended drawings.

3. *Council has advised that the new north-south road should be create a new connection between Pennant Hills Road and Grace Street. Technical advice would need to be provided to demonstrate that this is possible or alternatively made clear why this cannot occur.*

2.18 The amended concept design includes a new north-south road connection between Pennant Hills Road and Grace Street.

4. *Council's Traffic Engineer is currently reviewing the Traffic Study provided. An additional email will be sent in the coming days regarding additional information required in this regard.*

15. *The latest advice is that the existing pedestrian link between Azile Court and Pennant Hills Road will remain open. However should this change, this may change Council's advice regarding the road alignment to the south of 262 Pennant Hills Road.*

2.19 These matters are noted.

- RMS email of 31 March

We've reviewed the attached draft study prepared by Colston Budd Rogers and Kafes P/L dated Feb 2017 and provide the following comments for consideration:

Section 2.24 *– There needs to be more comments made here about the Parramatta Light Rail Project. The attachment (Parramatta Light Rail brings big changes to Carlingford line.docx) contains publically released details about the likely completion date 2023, light rail stops, service frequency, etc. These details should be included in the draft report. Also the second last sentence with Section 2.24 should be modified to state: "Subject to Planning Approval, construction of the light rail is expected to commence in 2018".*

2.20 These matters are noted. Services on the light rail line will run every seven to eight minutes in each direction. There will be 16 stations on the route.

Section 3.8 *– The end of this segment makes reference to a concept layout for the proposed signalisation of Pennant Hills Road / Baker Street shown in Figure 4. Unfortunately Figure 4 was not included within this draft report. The draft report should be subsequently updated to include details of this concept layout.*

2.21 The concept layout for the intersection is provided as Appendix A.

Section 3.12 *– The second sentence within this segment should be slightly modified to state: "At its intersection with Pennant Hills Road, Martins Lane could be widened to provide for left in/left out movements only".*

2.22 The existing median in Pennant Hills Road would continue to prevent right turns to and from Martins Lane.

Section 3.21 *– This segment indicates that the precinct would generate 270vph in the peak yet doesn't quite describe how this number was arrived at. I note that within Section 3.1 it mentions that there will be 800 – 900 dwellings for the precinct and that within Section 3.20 the traffic generation rate to be used would be 0.3 vph / dwelling. The better approach would be to provide the range (i.e 0.3 x 800 = 240vph and 0.3 x 900 = 300vph).*

2.23 The traffic generation estimate was based on mid-point of the above range. This has now been superseded by the revised development yield.

Section 3.35 *– Whilst there is some commentary on funding mechanisms for the proposed signalisation of Pennant Hills Road / Baker Street, there needs to be some additional commentary provided as to the trigger point of when the signal / civil works at Pennant Hills Road / Baker Street will be implemented.*

Section 3.36 *– I note that there is commentary about splitting the costs amongst the sites. It would be good if some additional commentary could be provided indicating how this would potentially be done (i.e. would it be based on each site's percentage % of the total cumulative development yield ?).*

2.24 We agree that these matters will require resolution. This work to determine cost apportionment and timing would be most appropriately addressed at a planning proposal stage for the precinct. However, a mechanism to implement the works could be a voluntary planning agreement.

New Appendix *– There should be some information indicating / demonstrating that the warrants for signals can be met. Refer to attachment (tsdect2v14 i.pdf).*

2.25 This matter is discussed below.

New Appendix *– This should include the detailed SIDRA 7 modelling output results (with some of the modelled intersections being linked as a Network model). These results should provide details such as (95% queues for each movement / lane, Movement / Lane Performance, Phasing Details, SIDRA Intersection Layouts. The results should be provided for the "Base AM / PM" and also for the "Future with Development AM / PM".*

2.26 The SIDRA output summaries are provided as Appendix B.

- Council email of 4 April

I have discussed Andrew's [RMS] *comments with him and agree with his commentary.*

In addition in regard to 3.20 of the report we agree that the 0.3 vehicle trips per hour per unit is probably the lowest rate that would be acceptable. Slightly higher (say 0.35) may have been a more realistic generation rate, however the difference in actual trips is very small and when assigned to the road network become of little concern. The trip generation can therefore be accepted.

3.25 – 3.29 Presentation of the modelling results should be in a table form with the existing and proposed side by side to make comparison easier and clearly highlight any issues.

2.27 These matters are noted. Table 2.2 summarises the SIDRA modelling results.

Andrew's comment regarding traffic signal warrants for the Baker Street/Pennant Hills intersection may not be necessary. Andrew was able to find the original request/agreement to the signals and will discuss it with the new staff in the area. He will clarify the documentation required in this regard as soon as possible.

2.28 This matter is discussed below.

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These comments should pretty much address the fact that Roads and Maritime support the provision of signals in this location. The CBRK report just needs to (append) the attached (RMS letter.pdf) accordingly.

2.29 This matter is noted. The previous RMS correspondence is provided as Appendix C.

In addition, upon further review we've noted within Figure 2 and Figure 3 (see below) that there doesn't seem to be any additional traffic being generated into / out of Felton Road. However, I note that within the attached (Final Brief for Carlingford Block Study.pdf) that there would be a proposal at 241 Pennant Hills Road. As Felton Road is

a cul-de-sac at its eastern end and the fact that Roads and Maritime doesn't favour vehicular accesses to developments from Arterial roads where alternative access is available we're assuming that this proposal would be adding traffic into / out of Felton Road.

CBRK needs to clarify this matter.

2.30 Figures 2 and 3 show additional traffic from potential development in the block study precinct. They do not include traffic from potential development at 241 Pennant Hills Road. However, the SIDRA network analysis has included the additional Pennant Hills Road traffic from potential development at 241 Pennant Hills Road.

2.31 The traffic report[2] submitted with the planning proposal for 241 Pennant Hills Road shows relatively small changes in traffic flow at the Baker Street/Felton Street intersection (some five to 10 vehicles per hour on any movement). As previously noted in our report, this intersection operates at a good level of service, with spare capacity to cater for additional traffic. The small additional traffic from potential development at 241 Pennant Hills Road would not have noticeable effects on the operation of this intersection.

Summary

2.32 In summary, the main points relating to the traffic implications of the proposed development are as follows:

[2] "Indicative Scheme for a Mixed Use Development, 241-245 Pennant Hills Road, Carlingford Traffic Impact Assessment." Prepared by Traffic Solutions Pty Ltd, 21 December 2015.

i) a revised block study has been prepared to take into account a number of matters raised by council and RMS;

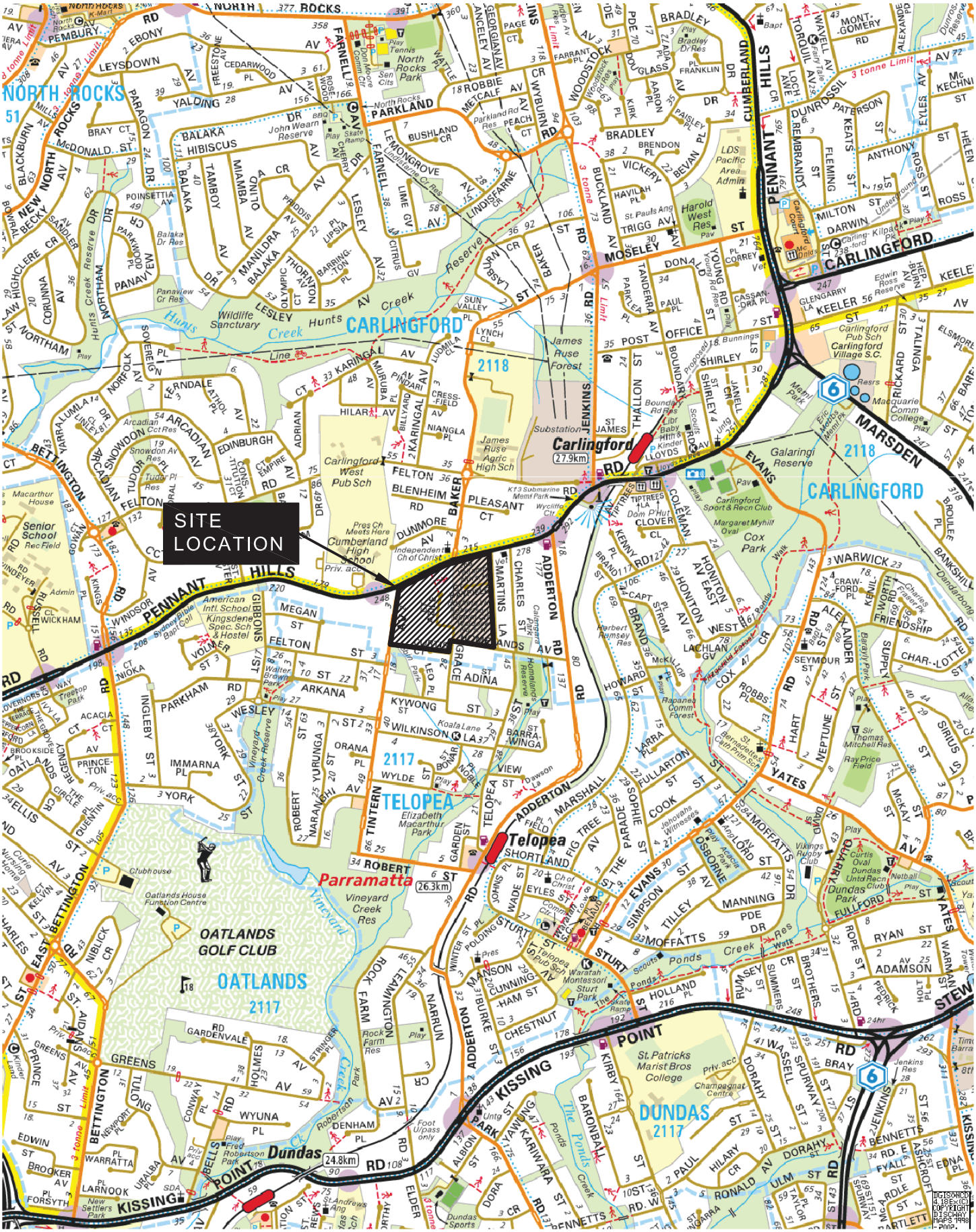
ii) the revised development yield is some 770 dwellings;

iii) the revised layout includes a north-south road connection between Pennant Hills Road and Grace Street;

iv) new traffic signals would be provided on Pennant Hills Road at the intersection of Baker Street with the new precinct access road;

v) with the measures proposed, the road network will be able to cater for the additional traffic from potential redevelopment of the precinct, as well as traffic from potential development at 241 Pennant Hills Road;

vi) matters raised by the authorities are discussed in paragraphs 2.15 to 2.31.

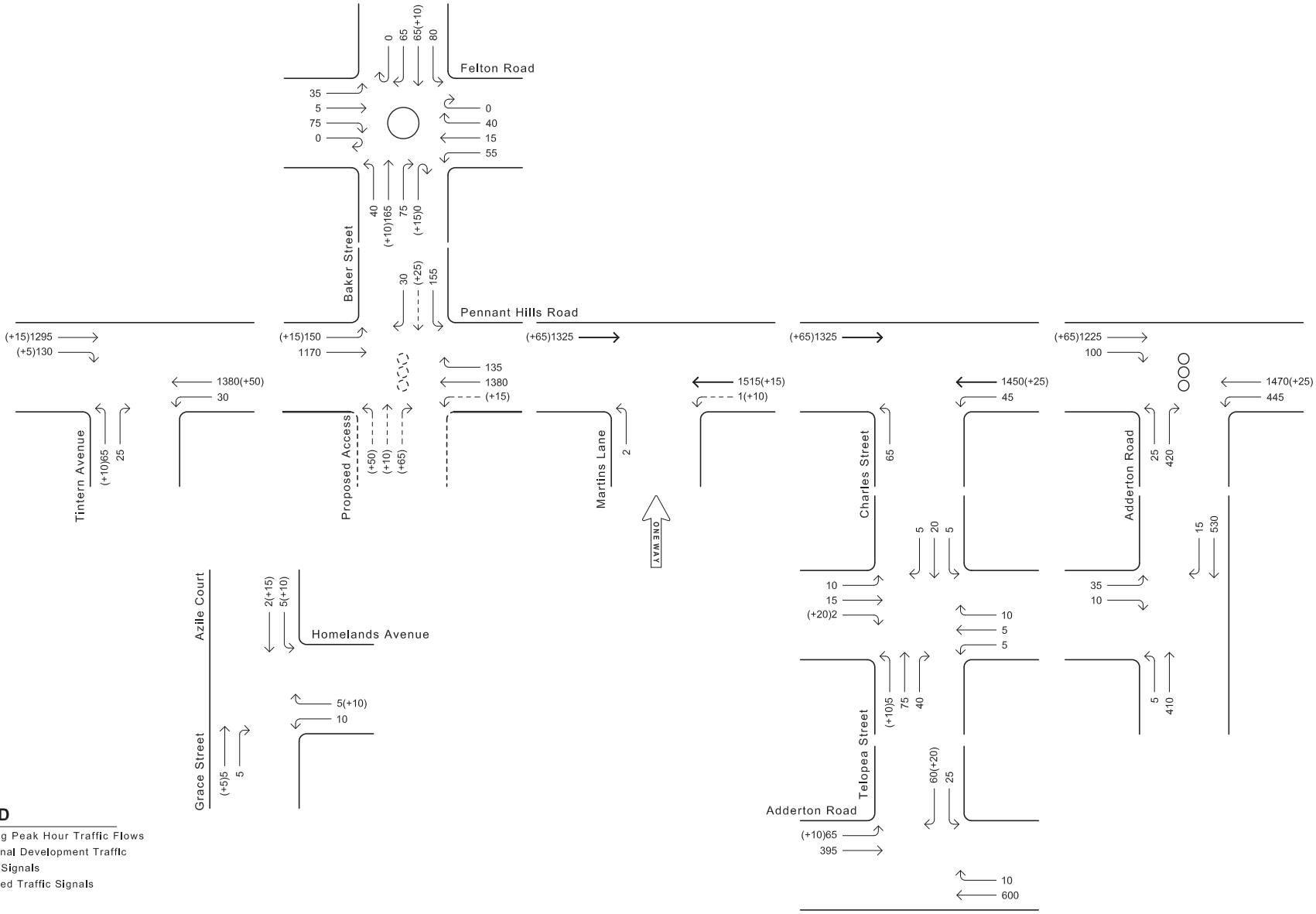


Location Plan

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mr.hs Ref: 10331/2 28.04.2017

Figure 1

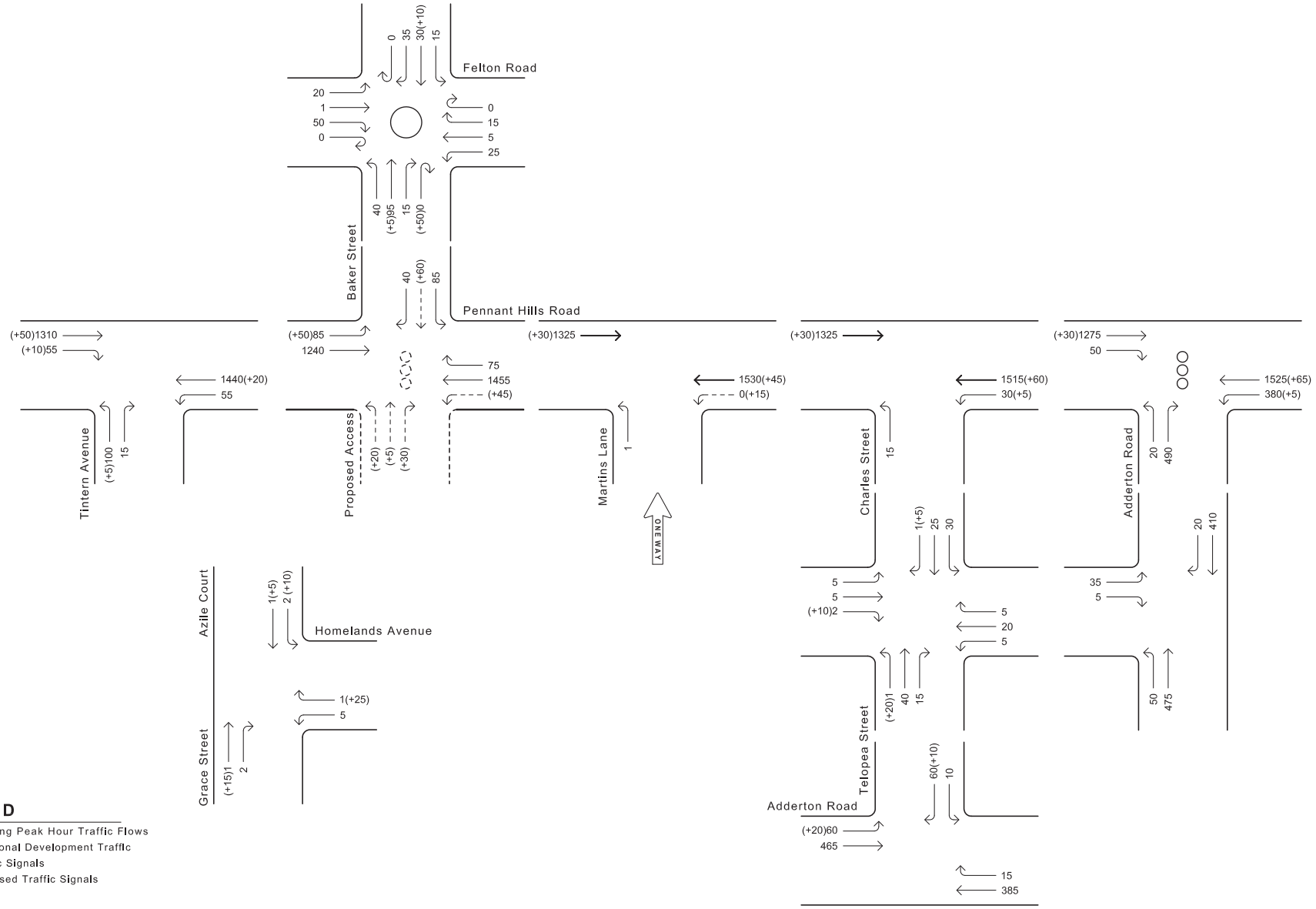


Existing weekday morning peak hour flows plus development traffic

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mr.hs Ref: 10331/2 28.04.2017

Figure 2



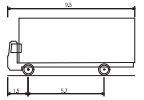
Existing weekday afternoon peak hour flows plus development traffic

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mr.hs Ref: 10331/2 28.04.2017

Figure 3

APPENDIX A
CONCEPT INTERSECTION LAYOUT



PARRAMATTTA COUNCIL GARBAGE TRUCK (9.5 M)

OVERALL LENGTH	9.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.417m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	4.00s
CURB TO CURB TURNING RADIUS	12.500m

Key Plan

NOTES

1. PROPOSED ROAD WIDENING ALIGNMENT SUBJECT TO CONFIRMATION FROM RMS AND DETAILS SURVEY
2. SURVEY DETAILS SHOWN ON BAPTIST CARE SITE AND ADJOINING SITE ARE AN AMALGAMATION OF SURVEYS
3. NO DETAILS SURVEY OF PENNANT HILLS ROAD AVAILABLE

FOR RE-ZONING ONLY NOT FOR CONSTRUCITON

Rev	Revision Description	Date
A	ISSUE FOR INFORMATION	26.04.2017

Client

Project
BAPTISTCARE CARLINGFORD PENNANT HILLS ROAD RE-ZONING STUDIES

Title
PROPOSED PENNANT HILLS ROAD AND BAKER STREET INTERSECTION AND ACCESS ROAD - PLAN

Scale
0 10000 25000
1:500 at A1

Drawn	Checked	Approved
K2L	JK	

Project Number	Drawing Number	Revision
170004	SKC10	A

APPENDIX B
SIDRA OUTPUT SUMMARIES

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex): Azile Court - Grace Street - Homelands Avenue]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Grace Street											
2	T1	5	1.0	0.005	0.0	LOS A	0.0	0.2	0.04	0.25	46.5
3	R2	5	1.0	0.005	2.4	LOS A	0.0	0.2	0.04	0.25	42.9
Approach		10	1.0	0.005	1.2	NA	0.0	0.2	0.04	0.25	44.6
East: Homelands Avenue											
4	L2	10	1.0	0.010	4.6	LOS A	0.0	0.3	0.01	0.53	37.1
6	R2	5	1.0	0.010	4.6	LOS A	0.0	0.3	0.01	0.53	41.5
Approach		15	1.0	0.010	4.6	LOS A	0.0	0.3	0.01	0.53	39.0
North: Azile Court											
7	L2	5	1.0	0.004	4.6	LOS A	0.0	0.0	0.00	0.38	44.1
8	T1	2	1.0	0.004	0.0	LOS A	0.0	0.0	0.00	0.38	41.9
Approach		7	1.0	0.004	3.3	NA	0.0	0.0	0.00	0.38	43.7
All Vehicles		32	1.0	0.010	3.2	NA	0.0	0.3	0.02	0.41	41.5

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.

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex+D): Azile Court - Grace Street - Homelands Avenue]

Existing Plus Development Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Grace Street											
2	T1	10	1.0	0.008	0.0	LOS A	0.0	0.2	0.06	0.17	47.4
3	R2	5	1.0	0.008	2.5	LOS A	0.0	0.2	0.06	0.17	43.7
Approach		15	1.0	0.008	0.8	NA	0.0	0.2	0.06	0.17	46.1
East: Homelands Avenue											
4	L2	10	1.0	0.018	4.6	LOS A	0.1	0.4	0.07	0.52	36.7
6	R2	15	1.0	0.018	4.7	LOS A	0.1	0.4	0.07	0.52	41.3
Approach		25	1.0	0.018	4.7	LOS A	0.1	0.4	0.07	0.52	39.9
North: Azile Court											
7	L2	15	1.0	0.016	4.6	LOS A	0.0	0.0	0.00	0.27	45.4
8	T1	15	1.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.27	44.0
Approach		30	1.0	0.016	2.3	NA	0.0	0.0	0.00	0.27	44.9
All Vehicles		70	1.0	0.018	2.8	NA	0.1	0.4	0.04	0.34	42.9

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.

MOVEMENT SUMMARY

▽ Site: 101 [PM (Ex): Azile Court - Grace Street - Homelands Avenue]

Existing Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Grace Street											
2	T1	1	1.0	0.002	0.0	LOS A	0.0	0.1	0.02	0.33	45.5
3	R2	2	1.0	0.002	2.4	LOS A	0.0	0.1	0.02	0.33	42.1
Approach		3	1.0	0.002	1.6	NA	0.0	0.1	0.02	0.33	43.2
East: Homelands Avenue											
4	L2	5	1.0	0.004	4.6	LOS A	0.0	0.1	0.01	0.53	37.1
6	R2	1	1.0	0.004	4.6	LOS A	0.0	0.1	0.01	0.53	41.5
Approach		6	1.0	0.004	4.6	LOS A	0.0	0.1	0.01	0.53	38.2
North: Azile Court											
7	L2	2	1.0	0.002	4.6	LOS A	0.0	0.0	0.00	0.36	44.4
8	T1	1	1.0	0.002	0.0	LOS A	0.0	0.0	0.00	0.36	42.3
Approach		3	1.0	0.002	3.0	NA	0.0	0.0	0.00	0.36	43.9
All Vehicles		12	1.0	0.004	3.5	NA	0.0	0.1	0.01	0.44	40.8

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.

MOVEMENT SUMMARY

▽ Site: 101 [PM (Ex+D): Azile Court - Grace Street - Homelands Avenue]

Existing Plus Development Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Grace Street											
2	T1	15	1.0	0.009	0.0	LOS A	0.0	0.1	0.02	0.06	49.1
3	R2	2	1.0	0.009	2.4	LOS A	0.0	0.1	0.02	0.06	45.1
Approach		17	1.0	0.009	0.3	NA	0.0	0.1	0.02	0.06	48.6
East: Homelands Avenue											
4	L2	5	1.0	0.023	4.6	LOS A	0.1	0.5	0.05	0.54	36.7
6	R2	25	1.0	0.023	4.7	LOS A	0.1	0.5	0.05	0.54	41.3
Approach		30	1.0	0.023	4.6	LOS A	0.1	0.5	0.05	0.54	40.8
North: Azile Court											
7	L2	10	1.0	0.008	4.6	LOS A	0.0	0.0	0.00	0.36	44.4
8	T1	5	1.0	0.008	0.0	LOS A	0.0	0.0	0.00	0.36	42.3
Approach		15	1.0	0.008	3.0	NA	0.0	0.0	0.00	0.36	43.9
All Vehicles		62	1.0	0.023	3.1	NA	0.1	0.5	0.03	0.36	42.9

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.

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex): Adderton Road - Telopea Street]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
East: Adderton Road											
5	T1	600	1.0	0.321	0.1	LOS A	0.2	1.3	0.03	0.01	49.8
6	R2	10	1.0	0.321	7.9	LOS A	0.2	1.3	0.03	0.01	49.4
Approach		610	1.0	0.321	0.2	NA	0.2	1.3	0.03	0.01	49.8
North: Telopea Street											
7	L2	25	1.0	0.234	5.0	LOS A	0.9	6.0	0.19	0.59	43.6
9	R2	60	1.0	0.234	18.2	LOS B	0.9	6.0	0.19	0.59	23.5
Approach		85	1.0	0.234	14.3	LOS A	0.9	6.0	0.19	0.59	29.6
West: Adderton Road											
10	L2	65	1.0	0.047	4.3	LOS A	0.0	0.0	0.00	0.40	46.5
11	T1	395	1.0	0.192	0.0	LOS A	0.0	0.0	0.00	0.02	49.8
Approach		460	1.0	0.192	0.6	NA	0.0	0.0	0.00	0.08	49.4
All Vehicles		1155	1.0	0.321	1.4	NA	0.9	6.0	0.03	0.08	47.0

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: 101 [AM (Ex+D): Adderton Road - Telopea Street]

Existing Plus Development Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	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 per veh	Average Speed km/h
East: Adderton Road											
5	T1	600	1.0	0.321	0.1	LOS A	0.2	1.3	0.03	0.01	49.8
6	R2	10	1.0	0.321	8.0	LOS A	0.2	1.3	0.03	0.01	49.4
Approach		610	1.0	0.321	0.2	NA	0.2	1.3	0.03	0.01	49.8
North: Telopea Street											
7	L2	25	1.0	0.309	6.0	LOS A	1.2	8.8	0.17	0.60	42.8
9	R2	80	1.0	0.309	19.7	LOS B	1.2	8.8	0.17	0.60	23.1
Approach		105	1.0	0.309	16.5	LOS B	1.2	8.8	0.17	0.60	28.0
West: Adderton Road											
10	L2	75	1.0	0.048	4.3	LOS A	0.0	0.0	0.00	0.45	46.2
11	T1	395	1.0	0.197	0.0	LOS A	0.0	0.0	0.00	0.02	49.9
Approach		470	1.0	0.197	0.7	NA	0.0	0.0	0.00	0.08	49.3
All Vehicles		1185	1.0	0.321	1.9	NA	1.2	8.8	0.03	0.09	46.2

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: 101 [PM (Ex): Adderton Road - Telopea Street]

Existing Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	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 per veh	Average Speed km/h
East: Adderton Road											
5	T1	385	1.0	0.218	0.3	LOS A	0.2	1.7	0.06	0.02	49.5
6	R2	15	1.0	0.218	8.0	LOS A	0.2	1.7	0.06	0.02	49.2
Approach		400	1.0	0.218	0.5	NA	0.2	1.7	0.06	0.02	49.5
North: Telopea Street											
7	L2	10	1.0	0.170	4.7	LOS A	0.6	4.3	0.39	0.68	44.3
9	R2	60	1.0	0.170	13.7	LOS A	0.6	4.3	0.39	0.68	23.9
Approach		70	1.0	0.170	12.4	LOS A	0.6	4.3	0.39	0.68	27.0
West: Adderton Road											
10	L2	60	1.0	0.053	4.3	LOS A	0.0	0.0	0.00	0.32	47.0
11	T1	465	1.0	0.219	0.0	LOS A	0.0	0.0	0.00	0.03	49.8
Approach		525	1.0	0.219	0.5	NA	0.0	0.0	0.00	0.06	49.5
All Vehicles		995	1.0	0.219	1.4	NA	0.6	4.3	0.05	0.09	46.7

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: 101 [PM (Ex+D): Adderton Road - Telopea Street]

Existing Plus Development Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
East: Adderton Road											
5	T1	385	1.0	0.218	0.3	LOS A	0.2	1.7	0.07	0.02	49.5
6	R2	15	1.0	0.218	8.2	LOS A	0.2	1.7	0.07	0.02	49.2
Approach		400	1.0	0.218	0.6	NA	0.2	1.7	0.07	0.02	49.5
North: Telopea Street											
7	L2	10	1.0	0.201	4.7	LOS A	0.7	5.2	0.33	0.66	44.1
9	R2	70	1.0	0.201	14.1	LOS A	0.7	5.2	0.33	0.66	23.8
Approach		80	1.0	0.201	12.9	LOS A	0.7	5.2	0.33	0.66	26.5
West: Adderton Road											
10	L2	80	1.0	0.055	4.3	LOS A	0.0	0.0	0.00	0.41	46.4
11	T1	465	1.0	0.228	0.0	LOS A	0.0	0.0	0.00	0.02	49.8
Approach		545	1.0	0.228	0.6	NA	0.0	0.0	0.00	0.08	49.3
All Vehicles		1025	1.0	0.228	1.6	NA	0.7	5.2	0.05	0.10	46.3

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.

MOVEMENT SUMMARY

Site: 101 [AM (Ex): Charles Street - Telopea Street - Homelands Avenue]

Existing Weekday Morning Peak Hour
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Telopea Street											
1	L2	5	1.0	0.065	4.6	LOS A	0.2	1.6	0.06	0.20	47.9
2	T1	75	1.0	0.065	0.0	LOS A	0.2	1.6	0.06	0.20	48.7
3	R2	40	1.0	0.065	4.6	LOS A	0.2	1.6	0.06	0.20	47.1
Approach		120	1.0	0.065	1.8	NA	0.2	1.6	0.06	0.20	48.2
East: Homelands Avenue											
4	L2	5	1.0	0.020	7.5	LOS A	0.1	0.5	0.11	0.96	43.6
5	T1	5	1.0	0.020	7.9	LOS A	0.1	0.5	0.11	0.96	36.3
6	R2	10	1.0	0.020	7.9	LOS A	0.1	0.5	0.11	0.96	39.0
Approach		20	1.0	0.020	7.8	LOS A	0.1	0.5	0.11	0.96	40.2
North: Charles Street											
7	L2	5	1.0	0.016	4.7	LOS A	0.0	0.3	0.08	0.17	46.2
8	T1	20	1.0	0.016	0.1	LOS A	0.0	0.3	0.08	0.17	48.7
9	R2	5	1.0	0.016	4.8	LOS A	0.0	0.3	0.08	0.17	46.0
Approach		30	1.0	0.016	1.6	NA	0.0	0.3	0.08	0.17	48.2
West: Homelands Avenue											
10	L2	10	1.0	0.024	7.7	LOS A	0.1	0.6	0.20	0.93	41.3
11	T1	15	1.0	0.024	7.9	LOS A	0.1	0.6	0.20	0.93	36.6
12	R2	2	1.0	0.024	7.8	LOS A	0.1	0.6	0.20	0.93	43.8
Approach		27	1.0	0.024	7.8	LOS A	0.1	0.6	0.20	0.93	39.5
All Vehicles		197	1.0	0.065	3.2	NA	0.2	1.6	0.09	0.38	46.8

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.

MOVEMENT SUMMARY

Site: 101 [AM (Ex+D): Charles Street - Telopea Street - Homelands Avenue]

Existing Plus Development Weekday Morning Peak Hour
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Telopea Street											
1	L2	15	1.0	0.070	4.6	LOS A	0.2	1.7	0.06	0.23	47.8
2	T1	75	1.0	0.070	0.0	LOS A	0.2	1.7	0.06	0.23	48.5
3	R2	40	1.0	0.070	4.6	LOS A	0.2	1.7	0.06	0.23	46.9
Approach		130	1.0	0.070	2.0	NA	0.2	1.7	0.06	0.23	48.0
East: Homelands Avenue											
4	L2	5	1.0	0.020	7.5	LOS A	0.1	0.5	0.11	0.96	43.5
5	T1	5	1.0	0.020	7.9	LOS A	0.1	0.5	0.11	0.96	36.3
6	R2	10	1.0	0.020	7.9	LOS A	0.1	0.5	0.11	0.96	39.0
Approach		20	1.0	0.020	7.8	LOS A	0.1	0.5	0.11	0.96	40.1
North: Charles Street											
7	L2	5	1.0	0.016	4.7	LOS A	0.0	0.3	0.08	0.17	46.2
8	T1	20	1.0	0.016	0.1	LOS A	0.0	0.3	0.08	0.17	48.7
9	R2	5	1.0	0.016	4.8	LOS A	0.0	0.3	0.08	0.17	46.0
Approach		30	1.0	0.016	1.6	NA	0.0	0.3	0.08	0.17	48.2
West: Homelands Avenue											
10	L2	10	1.0	0.045	7.7	LOS A	0.2	1.1	0.23	0.92	41.3
11	T1	15	1.0	0.045	7.9	LOS A	0.2	1.1	0.23	0.92	36.5
12	R2	20	1.0	0.045	7.9	LOS A	0.2	1.1	0.23	0.92	43.8
Approach		45	1.0	0.045	7.9	LOS A	0.2	1.1	0.23	0.92	41.8
All Vehicles		225	1.0	0.070	3.6	NA	0.2	1.7	0.10	0.42	46.5

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.

MOVEMENT SUMMARY

Site: 101 [PM (Ex): Charles Street - Telopea Street - Homelands Avenue]

Existing Weekday Afternoon Peak Hour
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Telopea Street											
1	L2	1	1.0	0.030	4.7	LOS A	0.1	0.6	0.08	0.16	48.2
2	T1	40	1.0	0.030	0.1	LOS A	0.1	0.6	0.08	0.16	48.9
3	R2	15	1.0	0.030	4.7	LOS A	0.1	0.6	0.08	0.16	47.3
Approach		56	1.0	0.030	1.4	NA	0.1	0.6	0.08	0.16	48.5
East: Homelands Avenue											
4	L2	5	1.0	0.028	7.6	LOS A	0.1	0.7	0.14	0.97	43.8
5	T1	20	1.0	0.028	7.6	LOS A	0.1	0.7	0.14	0.97	36.7
6	R2	5	1.0	0.028	7.5	LOS A	0.1	0.7	0.14	0.97	39.2
Approach		30	1.0	0.028	7.6	LOS A	0.1	0.7	0.14	0.97	39.1
North: Charles Street											
7	L2	30	1.0	0.030	4.6	LOS A	0.0	0.1	0.01	0.30	45.3
8	T1	25	1.0	0.030	0.0	LOS A	0.0	0.1	0.01	0.30	48.3
9	R2	1	1.0	0.030	4.7	LOS A	0.0	0.1	0.01	0.30	45.3
Approach		56	1.0	0.030	2.5	NA	0.0	0.1	0.01	0.30	47.1
West: Homelands Avenue											
10	L2	5	1.0	0.011	7.6	LOS A	0.0	0.3	0.14	0.95	41.3
11	T1	5	1.0	0.011	7.7	LOS A	0.0	0.3	0.14	0.95	36.6
12	R2	2	1.0	0.011	7.5	LOS A	0.0	0.3	0.14	0.95	43.9
Approach		12	1.0	0.011	7.6	LOS A	0.0	0.3	0.14	0.95	40.6
All Vehicles		154	1.0	0.030	3.5	NA	0.1	0.7	0.07	0.43	46.3

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.

MOVEMENT SUMMARY

Site: 101 [PM (Ex+D): Charles Street - Telopea Street - Homelands Avenue]

Existing Plus Development Weekday Afternoon Peak Hour
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Telopea Street											
1	L2	20	1.0	0.040	4.7	LOS A	0.1	0.7	0.08	0.24	47.6
2	T1	40	1.0	0.040	0.1	LOS A	0.1	0.7	0.08	0.24	48.3
3	R2	15	1.0	0.040	4.7	LOS A	0.1	0.7	0.08	0.24	46.7
Approach		75	1.0	0.040	2.2	NA	0.1	0.7	0.08	0.24	47.9
East: Homelands Avenue											
4	L2	5	1.0	0.028	7.6	LOS A	0.1	0.7	0.15	0.97	43.7
5	T1	20	1.0	0.028	7.7	LOS A	0.1	0.7	0.15	0.97	36.6
6	R2	5	1.0	0.028	7.6	LOS A	0.1	0.7	0.15	0.97	39.2
Approach		30	1.0	0.028	7.7	LOS A	0.1	0.7	0.15	0.97	39.0
North: Charles Street											
7	L2	30	1.0	0.032	4.6	LOS A	0.0	0.3	0.04	0.31	44.9
8	T1	25	1.0	0.032	0.0	LOS A	0.0	0.3	0.04	0.31	48.1
9	R2	5	1.0	0.032	4.7	LOS A	0.0	0.3	0.04	0.31	45.0
Approach		60	1.0	0.032	2.7	NA	0.0	0.3	0.04	0.31	46.8
West: Homelands Avenue											
10	L2	5	1.0	0.020	7.6	LOS A	0.1	0.5	0.16	0.93	41.3
11	T1	5	1.0	0.020	7.8	LOS A	0.1	0.5	0.16	0.93	36.6
12	R2	10	1.0	0.020	7.6	LOS A	0.1	0.5	0.16	0.93	43.8
Approach		20	1.0	0.020	7.6	LOS A	0.1	0.5	0.16	0.93	42.3
All Vehicles		185	1.0	0.040	3.8	NA	0.1	0.7	0.06	0.46	46.0

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: 101 [AM (Ex): Adderton Road - Homelands Avenue]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Adderton Road											
1	L2	5	1.0	0.214	4.6	LOS A	0.0	0.0	0.00	0.01	49.3
2	T1	410	1.0	0.214	0.0	LOS A	0.0	0.0	0.00	0.01	49.9
Approach		415	1.0	0.214	0.1	NA	0.0	0.0	0.00	0.01	49.9
North: Adderton Road											
8	T1	530	1.0	0.287	0.1	LOS A	0.2	1.2	0.04	0.02	49.8
9	R2	15	1.0	0.287	6.8	LOS A	0.2	1.2	0.04	0.02	47.8
Approach		545	1.0	0.287	0.3	NA	0.2	1.2	0.04	0.02	49.8
West: Homelands Avenue											
10	L2	35	1.0	0.054	6.1	LOS A	0.2	1.3	0.47	0.65	41.9
12	R2	10	1.0	0.054	10.8	LOS A	0.2	1.3	0.47	0.65	44.2
Approach		45	1.0	0.054	7.1	LOS A	0.2	1.3	0.47	0.65	42.6
All Vehicles		1005	1.0	0.287	0.5	NA	0.2	1.3	0.04	0.04	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.
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: 101 [AM (Ex+D): Adderton Road - Homelands Avenue]

Existing Plus Development Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Adderton Road											
1	L2	5	1.0	0.214	4.6	LOS A	0.0	0.0	0.00	0.01	49.3
2	T1	410	1.0	0.214	0.0	LOS A	0.0	0.0	0.00	0.01	49.9
Approach		415	1.0	0.214	0.1	NA	0.0	0.0	0.00	0.01	49.9
North: Adderton Road											
8	T1	530	1.0	0.287	0.1	LOS A	0.2	1.2	0.04	0.02	49.8
9	R2	15	1.0	0.287	6.8	LOS A	0.2	1.2	0.04	0.02	47.8
Approach		545	1.0	0.287	0.3	NA	0.2	1.2	0.04	0.02	49.8
West: Homelands Avenue											
10	L2	35	1.0	0.054	6.1	LOS A	0.2	1.3	0.47	0.65	41.9
12	R2	10	1.0	0.054	10.8	LOS A	0.2	1.3	0.47	0.65	44.2
Approach		45	1.0	0.054	7.1	LOS A	0.2	1.3	0.47	0.65	42.6
All Vehicles		1005	1.0	0.287	0.5	NA	0.2	1.3	0.04	0.04	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.
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: 101 [PM (Ex): Adderton Road - Homelands Avenue]

Existing Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Adderton Road											
1	L2	50	1.0	0.272	4.6	LOS A	0.0	0.0	0.00	0.05	49.0
2	T1	475	1.0	0.272	0.0	LOS A	0.0	0.0	0.00	0.05	49.7
Approach		525	1.0	0.272	0.5	NA	0.0	0.0	0.00	0.05	49.6
North: Adderton Road											
8	T1	410	1.0	0.231	0.2	LOS A	0.3	1.8	0.08	0.03	49.7
9	R2	20	1.0	0.231	7.4	LOS A	0.3	1.8	0.08	0.03	47.5
Approach		430	1.0	0.231	0.6	NA	0.3	1.8	0.08	0.03	49.6
West: Homelands Avenue											
10	L2	35	1.0	0.045	6.4	LOS A	0.2	1.1	0.48	0.65	42.1
12	R2	5	1.0	0.045	10.3	LOS A	0.2	1.1	0.48	0.65	44.4
Approach		40	1.0	0.045	6.9	LOS A	0.2	1.1	0.48	0.65	42.5
All Vehicles		995	1.0	0.272	0.8	NA	0.3	1.8	0.05	0.07	49.5

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.

MOVEMENT SUMMARY

▽ Site: 101 [PM (Ex+D): Adderton Road - Homelands Avenue]

Existing Plus Development Weekday Afternoon Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Adderton Road											
1	L2	50	1.0	0.272	4.6	LOS A	0.0	0.0	0.00	0.05	49.0
2	T1	475	1.0	0.272	0.0	LOS A	0.0	0.0	0.00	0.05	49.7
Approach		525	1.0	0.272	0.5	NA	0.0	0.0	0.00	0.05	49.6
North: Adderton Road											
8	T1	410	1.0	0.231	0.2	LOS A	0.3	1.8	0.08	0.03	49.7
9	R2	20	1.0	0.231	7.4	LOS A	0.3	1.8	0.08	0.03	47.5
Approach		430	1.0	0.231	0.6	NA	0.3	1.8	0.08	0.03	49.6
West: Homelands Avenue											
10	L2	35	1.0	0.045	6.4	LOS A	0.2	1.1	0.48	0.65	42.1
12	R2	5	1.0	0.045	10.3	LOS A	0.2	1.1	0.48	0.65	44.4
Approach		40	1.0	0.045	6.9	LOS A	0.2	1.1	0.48	0.65	42.5
All Vehicles		995	1.0	0.272	0.8	NA	0.3	1.8	0.05	0.07	49.5

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.

MOVEMENT SUMMARY

Site: 101 [AM (Ex): Baker Street - Felton Street]

Existing Weekday Morning Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Baker Street											
1	L2	40	1.0	0.239	3.7	LOS A	1.4	9.6	0.33	0.48	35.6
2	T1	165	1.0	0.239	3.3	LOS A	1.4	9.6	0.33	0.48	37.7
3	R2	75	1.0	0.239	6.1	LOS A	1.4	9.6	0.33	0.48	37.5
3u	U	1	1.0	0.239	7.4	LOS A	1.4	9.6	0.33	0.48	37.8
Approach		281	1.0	0.239	4.1	LOS A	1.4	9.6	0.33	0.48	37.5
East: Felton Street											
4	L2	55	1.0	0.107	4.1	LOS A	0.5	3.8	0.39	0.54	36.6
5	T1	15	1.0	0.107	3.7	LOS A	0.5	3.8	0.39	0.54	36.7
6	R2	40	1.0	0.107	6.6	LOS A	0.5	3.8	0.39	0.54	37.6
6u	U	1	1.0	0.107	7.8	LOS A	0.5	3.8	0.39	0.54	38.0
Approach		111	1.0	0.107	5.0	LOS A	0.5	3.8	0.39	0.54	37.0
North: Baker Street											
7	L2	80	1.0	0.192	3.9	LOS A	1.1	7.4	0.37	0.52	37.2
8	T1	65	1.0	0.192	3.5	LOS A	1.1	7.4	0.37	0.52	37.6
9	R2	65	1.0	0.192	6.4	LOS A	1.1	7.4	0.37	0.52	36.9
9u	U	1	1.0	0.192	7.6	LOS A	1.1	7.4	0.37	0.52	38.3
Approach		211	1.0	0.192	4.5	LOS A	1.1	7.4	0.37	0.52	37.2
West: Felton Street											
10	L2	35	1.0	0.119	4.6	LOS A	0.6	4.4	0.46	0.61	35.5
11	T1	5	1.0	0.119	4.1	LOS A	0.6	4.4	0.46	0.61	36.0
12	R2	75	1.0	0.119	7.0	LOS A	0.6	4.4	0.46	0.61	35.2
12u	U	1	1.0	0.119	8.2	LOS A	0.6	4.4	0.46	0.61	34.5
Approach		116	1.0	0.119	6.2	LOS A	0.6	4.4	0.46	0.61	35.3
All Vehicles		719	1.0	0.239	4.7	LOS A	1.4	9.6	0.37	0.52	37.0

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.

MOVEMENT SUMMARY

Site: 101 [AM (Ex+D): Baker Street - Felton Street]

Existing Plus Development Weekday Morning Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Baker Street											
1	L2	40	1.0	0.258	3.7	LOS A	1.5	10.6	0.34	0.49	35.5
2	T1	175	1.0	0.258	3.3	LOS A	1.5	10.6	0.34	0.49	37.7
3	R2	75	1.0	0.258	6.2	LOS A	1.5	10.6	0.34	0.49	37.4
3u	U	15	1.0	0.258	7.4	LOS A	1.5	10.6	0.34	0.49	37.7
Approach		305	1.0	0.258	4.2	LOS A	1.5	10.6	0.34	0.49	37.4
East: Felton Street											
4	L2	55	1.0	0.109	4.3	LOS A	0.6	3.9	0.41	0.55	36.5
5	T1	15	1.0	0.109	3.8	LOS A	0.6	3.9	0.41	0.55	36.6
6	R2	40	1.0	0.109	6.7	LOS A	0.6	3.9	0.41	0.55	37.5
6u	U	1	1.0	0.109	7.9	LOS A	0.6	3.9	0.41	0.55	37.9
Approach		111	1.0	0.109	5.1	LOS A	0.6	3.9	0.41	0.55	36.9
North: Baker Street											
7	L2	80	1.0	0.204	4.0	LOS A	1.1	8.0	0.38	0.52	37.2
8	T1	75	1.0	0.204	3.6	LOS A	1.1	8.0	0.38	0.52	37.6
9	R2	65	1.0	0.204	6.5	LOS A	1.1	8.0	0.38	0.52	36.9
9u	U	1	1.0	0.204	7.7	LOS A	1.1	8.0	0.38	0.52	38.3
Approach		221	1.0	0.204	4.6	LOS A	1.1	8.0	0.38	0.52	37.2
West: Felton Street											
10	L2	35	1.0	0.122	4.7	LOS A	0.6	4.5	0.48	0.62	35.4
11	T1	5	1.0	0.122	4.3	LOS A	0.6	4.5	0.48	0.62	35.9
12	R2	75	1.0	0.122	7.2	LOS A	0.6	4.5	0.48	0.62	35.1
12u	U	1	1.0	0.122	8.4	LOS A	0.6	4.5	0.48	0.62	34.4
Approach		116	1.0	0.122	6.3	LOS A	0.6	4.5	0.48	0.62	35.2
All Vehicles		753	1.0	0.258	4.8	LOS A	1.5	10.6	0.38	0.53	37.0

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.

MOVEMENT SUMMARY

Site: 101 [PM (Ex): Baker Street - Felton Street]

Existing Weekday Afternoon Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Baker Street											
1	L2	40	1.0	0.119	3.2	LOS A	0.6	4.3	0.19	0.40	36.3
2	T1	95	1.0	0.119	2.8	LOS A	0.6	4.3	0.19	0.40	38.3
3	R2	15	1.0	0.119	5.7	LOS A	0.6	4.3	0.19	0.40	38.1
3u	U	1	1.0	0.119	6.9	LOS A	0.6	4.3	0.19	0.40	38.5
Approach		151	1.0	0.119	3.2	LOS A	0.6	4.3	0.19	0.40	37.9
East: Felton Street											
4	L2	25	1.0	0.041	3.6	LOS A	0.2	1.3	0.27	0.49	36.8
5	T1	5	1.0	0.041	3.1	LOS A	0.2	1.3	0.27	0.49	37.0
6	R2	15	1.0	0.041	6.0	LOS A	0.2	1.3	0.27	0.49	37.8
6u	U	1	1.0	0.041	7.2	LOS A	0.2	1.3	0.27	0.49	38.2
Approach		46	1.0	0.041	4.4	LOS A	0.2	1.3	0.27	0.49	37.2
North: Baker Street											
7	L2	15	1.0	0.068	3.3	LOS A	0.3	2.4	0.21	0.47	37.3
8	T1	30	1.0	0.068	2.9	LOS A	0.3	2.4	0.21	0.47	37.8
9	R2	35	1.0	0.068	5.8	LOS A	0.3	2.4	0.21	0.47	37.1
9u	U	1	1.0	0.068	7.0	LOS A	0.3	2.4	0.21	0.47	38.4
Approach		81	1.0	0.068	4.2	LOS A	0.3	2.4	0.21	0.47	37.4
West: Felton Street											
10	L2	20	1.0	0.064	3.6	LOS A	0.3	2.2	0.29	0.54	35.8
11	T1	1	1.0	0.064	3.2	LOS A	0.3	2.2	0.29	0.54	36.3
12	R2	50	1.0	0.064	6.1	LOS A	0.3	2.2	0.29	0.54	35.6
12u	U	1	1.0	0.064	7.3	LOS A	0.3	2.2	0.29	0.54	35.9
Approach		72	1.0	0.064	5.4	LOS A	0.3	2.2	0.29	0.54	35.7
All Vehicles		350	1.0	0.119	4.1	LOS A	0.6	4.3	0.23	0.46	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.
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.

MOVEMENT SUMMARY

Site: 101 [PM (Ex+D): Baker Street - Felton Street]

Existing Plus Development Weekday Afternoon Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	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 per veh	Average Speed km/h
South: Baker Street											
1	L2	40	1.0	0.159	3.3	LOS A	0.8	6.0	0.20	0.46	35.7
2	T1	100	1.0	0.159	2.8	LOS A	0.8	6.0	0.20	0.46	37.8
3	R2	15	1.0	0.159	5.7	LOS A	0.8	6.0	0.20	0.46	37.6
3u	U	50	1.0	0.159	6.9	LOS A	0.8	6.0	0.20	0.46	37.9
Approach		205	1.0	0.159	4.1	LOS A	0.8	6.0	0.20	0.46	37.5
East: Felton Street											
4	L2	25	1.0	0.043	3.9	LOS A	0.2	1.4	0.34	0.51	36.7
5	T1	5	1.0	0.043	3.4	LOS A	0.2	1.4	0.34	0.51	36.8
6	R2	15	1.0	0.043	6.3	LOS A	0.2	1.4	0.34	0.51	37.7
6u	U	1	1.0	0.043	7.5	LOS A	0.2	1.4	0.34	0.51	38.1
Approach		46	1.0	0.043	4.7	LOS A	0.2	1.4	0.34	0.51	37.1
North: Baker Street											
7	L2	15	1.0	0.080	3.6	LOS A	0.4	2.8	0.28	0.48	37.3
8	T1	40	1.0	0.080	3.1	LOS A	0.4	2.8	0.28	0.48	37.7
9	R2	35	1.0	0.080	6.0	LOS A	0.4	2.8	0.28	0.48	37.1
9u	U	1	1.0	0.080	7.2	LOS A	0.4	2.8	0.28	0.48	38.4
Approach		91	1.0	0.080	4.4	LOS A	0.4	2.8	0.28	0.48	37.4
West: Felton Street											
10	L2	20	1.0	0.067	3.9	LOS A	0.3	2.3	0.35	0.56	35.6
11	T1	1	1.0	0.067	3.5	LOS A	0.3	2.3	0.35	0.56	36.2
12	R2	50	1.0	0.067	6.4	LOS A	0.3	2.3	0.35	0.56	35.5
12u	U	1	1.0	0.067	7.6	LOS A	0.3	2.3	0.35	0.56	34.8
Approach		72	1.0	0.067	5.7	LOS A	0.3	2.3	0.35	0.56	35.5
All Vehicles		414	1.0	0.159	4.5	LOS A	0.8	6.0	0.26	0.49	37.2

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.
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.

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex): Pennant Hills Road - Tintern Avenue - Import]

⊕⊕ Network: N101 [AM (Ex): Pennant Hills Road]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Tintern Avenue													
1	L2	65	1.0	65	1.0	4.274	3055.9	LOS F	53.0	374.2	1.00	3.11	0.8
3	R2	25	1.0	25	1.0	4.274	3172.2	LOS F	53.0	374.2	1.00	3.11	0.3
Approach		90	1.0	90	1.0	4.274	3088.2	LOS F	53.0	374.2	1.00	3.11	0.7
East: Pennant Hills Road													
4	L2	30	1.0	29	1.0	0.360	5.6	LOS A	0.0	0.0	0.00	0.03	55.5
5	T1	1380	2.0	1357	2.0	0.360	0.0	LOS A	0.0	0.0	0.00	0.01	59.7
Approach		1410	2.0	1386[N1]	2.0	0.360	0.1	NA	0.0	0.0	0.00	0.01	59.7
West: Pennant Hills Road													
11	T1	1295	2.0	1295	2.0	0.336	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
12	R2	130	1.0	130	1.0	0.588	32.0	LOS C	2.5	17.9	0.93	1.10	32.1
Approach		1425	1.9	1425	1.9	0.588	3.0	NA	2.5	17.9	0.08	0.10	53.9
All Vehicles		2925	1.9	2901[N1]	1.9	4.274	97.3	NA	53.0	374.2	0.07	0.15	15.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 7 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 101 [AM (Ex): Pennant Hills Road - Baker Street - Import]

Network: N101 [AM (Ex): Pennant Hills Road]

Existing Weekday Morning Peak Hour
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Pennant Hills Road													
5	T1	1380	2.0	1380	2.0	0.358	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
6	R2	135	1.0	135	1.0	0.520	26.2	LOS B	2.2	15.7	0.90	1.06	26.8
Approach		1515	1.9	1515	1.9	0.520	2.3	NA	2.2	15.7	0.08	0.09	46.3
North: Baker Street													
7	L2	155	1.0	155	1.0	0.239	11.4	LOS A	0.9	6.5	0.55	1.01	33.6
9	R2	30	1.0	30	1.0	5.000	3898.0	LOS F	25.7	181.1	1.00	1.39	0.2
Approach		185	1.0	185	1.0	5.000	641.6	LOS F	25.7	181.1	0.63	1.07	1.4
West: Pennant Hills Road													
10	L2	150	1.0	148	1.0	0.340	5.6	LOS A	0.0	0.0	0.00	0.14	53.9
11	T1	1170	2.0	1153	2.0	0.340	0.0	LOS A	0.0	0.0	0.00	0.06	57.2
Approach		1320	1.9	1301[N1]	1.9	0.340	0.6	NA	0.0	0.0	0.00	0.07	56.4
All Vehicles		3020	1.8	3001[N1]	1.9	5.000	41.0	NA	25.7	181.1	0.08	0.14	12.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 7 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex): Pennant Hills Road - Martins Lane - Import]

⊕⊕ Network: N101 [AM (Ex): Pennant Hills Road]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Martins Lane													
1	L2	2	1.0	2	1.0	0.004	9.5	LOS A	0.0	0.1	0.62	0.68	35.2
Approach		2	1.0	2	1.0	0.004	9.5	LOS A	0.0	0.1	0.62	0.68	35.2
East: Pennant Hills Road													
5	T1	1515	2.0	1515	2.0	0.394	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1515	2.0	1515	2.0	0.394	0.0	NA	0.0	0.0	0.00	0.00	59.9
West: Pennant Hills Road													
11	T1	1325	2.0	1308	2.0	0.340	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1325	2.0	1308[N1]	2.0	0.340	0.0	NA	0.0	0.0	0.00	0.00	59.9
All Vehicles		2842	2.0	2825[N1]	2.0	0.394	0.0	NA	0.0	0.1	0.00	0.00	59.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 7 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

▽ Site: 101 [AM (Ex): Pennant Hills Road - Charles Street - Import]

⊕⊕ Network: N101 [AM (Ex): Pennant Hills Road]

Existing Weekday Morning Peak Hour
Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Charles Street													
1	L2	65	1.0	65	1.0	0.098	8.8	LOS A	0.4	2.9	0.58	0.73	36.7
Approach		65	1.0	65	1.0	0.098	8.8	LOS A	0.4	2.9	0.58	0.73	36.7
East: Pennant Hills Road													
4	L2	45	1.0	45	1.0	0.389	5.6	LOS A	0.0	0.0	0.00	0.04	55.6
5	T1	1450	2.0	1450	2.0	0.389	0.0	LOS A	0.0	0.0	0.00	0.02	58.7
Approach		1495	2.0	1495	2.0	0.389	0.2	NA	0.0	0.0	0.00	0.02	58.4
West: Pennant Hills Road													
11	T1	1325	2.0	1308	2.0	0.340	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1325	2.0	1308[N1]	2.0	0.340	0.0	NA	0.0	0.0	0.00	0.00	59.9
All Vehicles		2885	2.0	2868[N1]	2.0	0.389	0.3	NA	0.4	2.9	0.01	0.03	56.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 7 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.