Lyle Marshall & Associates Pty Ltd

Consulting Engineers, Transportation and Environmental Planners, Hydrology & Hydraulics & Architects

ABN 39 001 200 620

EMM/1160/2/15

11th August 2015

Hallmark Constructions Pty Ltd
c/- Matthew Daniel
Development Director
Canedo Management Pty Ltd

Email: madaniel99@gmail.com

Dear Matthew,

Re: Supplementary Assessment Summary. Modelling from Additional Sites A-E from Masterplan prepared by Stanisic Architects plus 30-46 Auburn Road Regents Park and Potts Hill Development Sites.

We have prepared the calculations of traffic generation from the sites **A, B, C, D** and **E**, as shown from the Masterplan report prepared by Stanisic Architects *page 13,* which is *attached* to this Supplementary Report as **Figure A**.

We refer to our previous Supplementary Report No 15/15 whereby five (5) development scenarios were modelled for the site at 30-46 Auburn Road. Scenario 5 or 'ultimate development' scenario is used for the basis of testing the *additional* traffic generation from Sites **A - E**.

The number of dwellings for Site **A - E** has been calculated by Stanisic Architects as shown in Table 1:-

Table 1 Development Scenarios and Range of Dwellings.

Table 1: SITES A-E: AUBURN ROAD REGENTS PARK					
Site ID	**Site Area**	**GFA m^2**	**site/m^2**	**Area/unit**	**No of Dwellings**
A	8289	31850	0.3	90	354
B	2941	9840	0.3	90	109
C	6731	25244	0.3	90	280
D	4500	13680	0.3	90	152
E	5231	15156	0.3	90	168

The traffic generation for the development scenarios is shown in **Table 2**.

Table 2: Traffic Generation from Sites A-D along Auburn Road

Table 2.0 Development Summary for Site A , B, C and D												
Development Scenarios					Peak Hour Rates		Peak Hour Traffic		AM SPLIT		PM SPLIT	
	GFA			Mix	AM	PM	AM	PM	IN	OUT	IN	OUT
Site A	31850	1 Bed	2 Bed	3Bed								
	No Of Dwellings		25480						IN	OUT	IN	OUT
	354	35	283	35	0.19	0.15	67	53	20%	80%	80%	20%
	GFA								13	54	42	11
Site B	9840	1 Bed	2 Bed	3Bed								
	No Of Dwellings		7872						IN	OUT	IN	OUT
	109	11	87	11	0.19	0.15	21	16	20%	80%	80%	20%
									4	17	13	3
Development Scenarios					Peak Hour Rates		Peak Hour Traffic		AM SPLIT		PM SPLIT	
	GFA			Mix	AM	PM	AM	PM	IN	OUT	IN	OUT
Site C	25244	1 Bed	2 Bed	3Bed								
	No Of Dwellings		20195						IN	OUT	IN	OUT
	280	28	224	28	0.19	0.15	53	42	20%	80%	80%	20%
	GFA								11	43	34	8
Site D	13680	1 Bed	2 Bed	3Bed								
	No Of Dwellings		10944						IN	OUT	IN	OUT
	152	15	122	15	0.19	0.15	29	23	20%	80%	80%	20%
									6	23	18	5
Sites A+B+C+D									34	136	107	27

The traffic generation has been calculated for **Sites A - D**. These sites will *enter* and *exit* the road network at Gunya Street *north* of Morris Street and Magney Avenue. Sites **A-D** represent a dwelling yield of **895** dwellings similar to the 'ultimate yield' shown for **scenario 5** for 30-46 Auburn Road at **900 dwellings**.

The traffic generation from **Site E** is shown in **Table 3**. There are **168 dwellings** on **Site E**.

Table 3.0 Development Summary for Site E

Development Scenarios					Peak Hour Rates		Peak Hour Traffic		AM SPLIT		PM SPLIT	
Site E	15156	1 Bed	2 Bed	3Bed	AM	PM	AM	PM				
	No Of Dwellings		12125						IN	OUT	IN	OUT
	168	17	134	17	0.19	0.15	32	25	20%	80%	80%	20%
									6	26	20	5

Vehicles will *enter* and *exit* **Site E** from Curliss Street.

The traffic has then been assigned to the *two critical intersections* of Amy Street/ Auburn Road and Auburn Road/Park Road Carlingford Road roundabouts. These intersections are linked and modelled in **SIDRA 6**. The scenario model is Scenario 6 and included in the future performance is the traffic generation from 30-46 Auburn Road and Potts Hill Development Site as well as Sites A-E.

The future performance of the intersection upgrade bridge works of the Carlingford/ Park Road/Auburn Road roundabout is (Level Of Service (LoS) **A** in both the AM and PM Peak Hours. The future performance of the Amy Street/ Auburn Road intersection is also Level Of Service A (LoS) A in both the AM and PM peak hours. The roundabouts have also been modelled in a linked scenario and show Level Of Service A in both the AM and PM peak hours.

The performance of these intersections with the widened railway bridge and intersection upgrade works demonstrate plenty of spare capacity to cope with the proposed development as suggested in the Concept Masterplan prepared by Stanisic Architects. The results are located in **Appendix A** to this summary letter.

The construction of the bridge intersection upgrade works will commence at the end of January 2016, as advised by Auburn Council's Project Superintendent John Oates on 10th August 2015. Email advice is attached in **Appendix B** of this letter.

Yours sincerely,

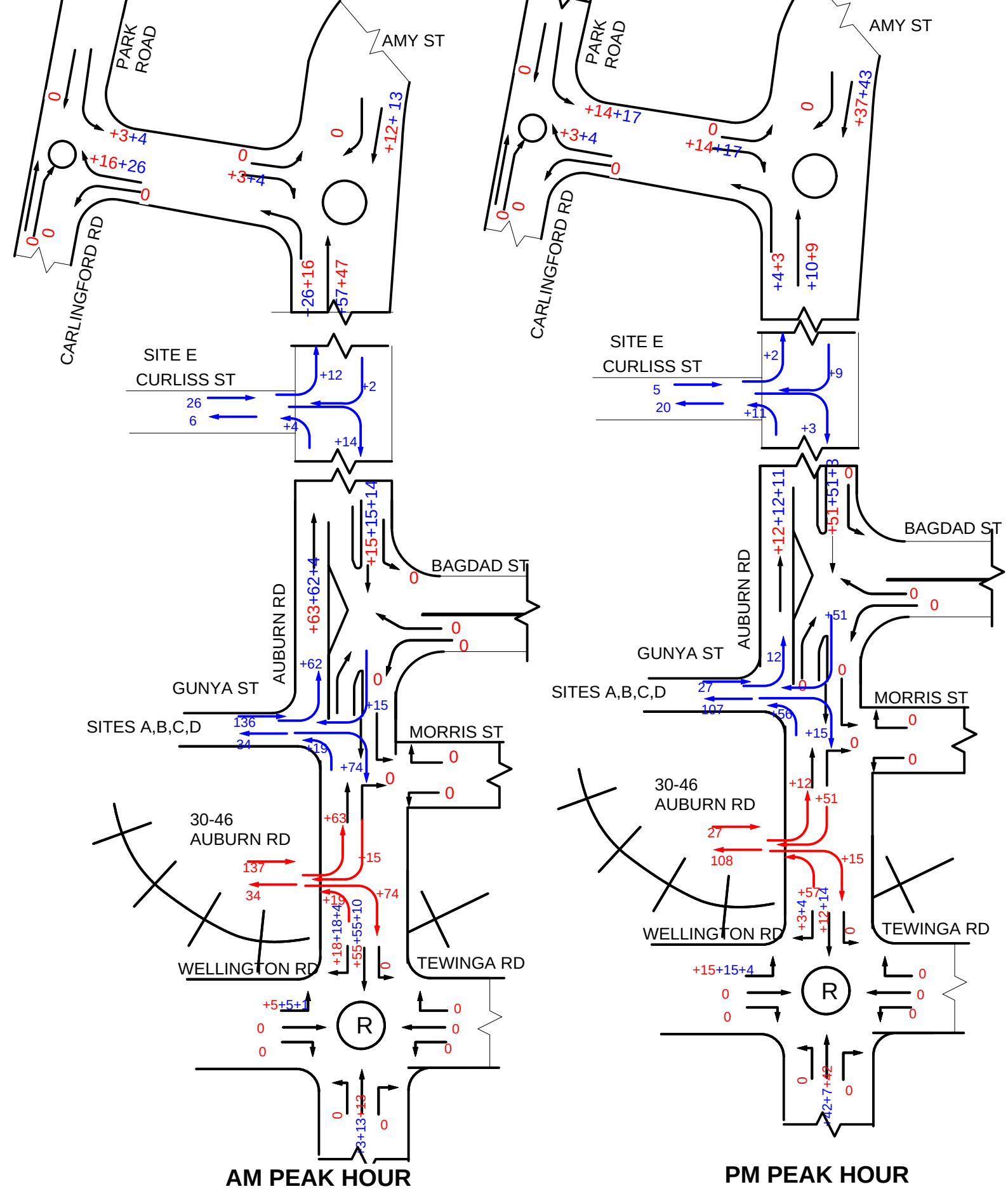
E Marshall-McClelland

Erica Marshall-McClelland
LYLE MARSHALL & ASSOCIATES PTY LTD

Attachments:
Figure A, Figures 14A + 14B, Figure 15, Figure 16, Appendix , Appendix B

FIGURE 7: URBAN STRATEGY PLAN - LONG TERM

FIGURE A: P13 of CONCEPT DESIGN REPORT 7/8/15
PREPARED BY STANISIC ARCHITECTS



LEGEND

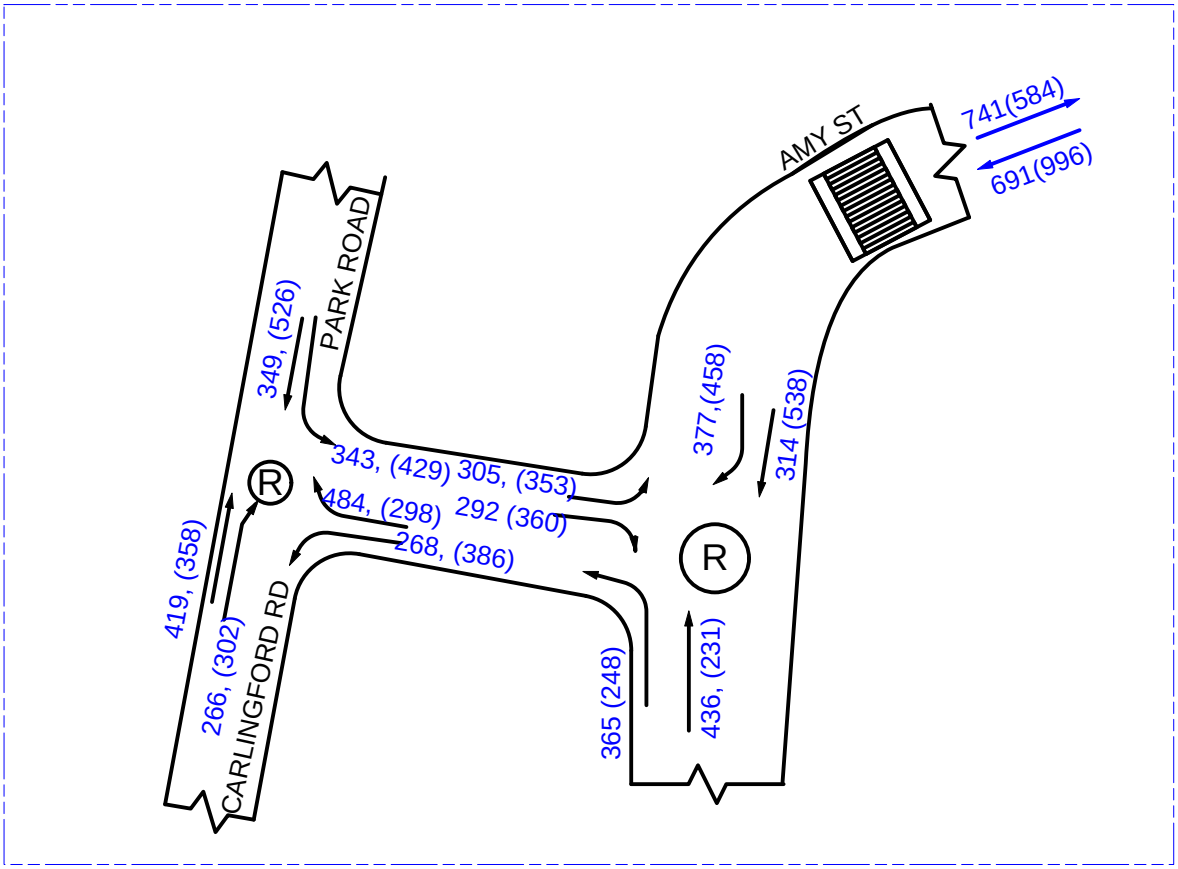
+74 ADDITIONAL PEAK HOUR VOLUMES GENERATED BY THE PROPOSED SITE AT 30-46 AUBURN ROAD ULTIMATE

+74 TRAFFIC GENERATED BY PROPOSED SITES A,B,C,D & E

N

DEVELOPMENT SCENARIO 5+ SITES A,B,C,D,E

FIGURES 14A + 14B



intersections included in analysis

N

LEGEND

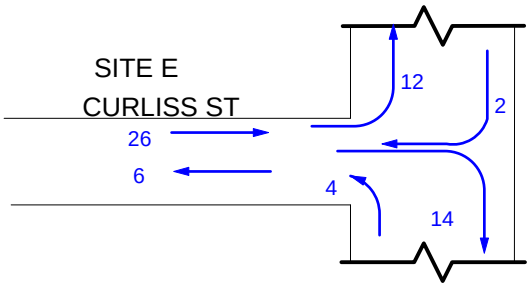
8-9AM PEAK HOUR **204**

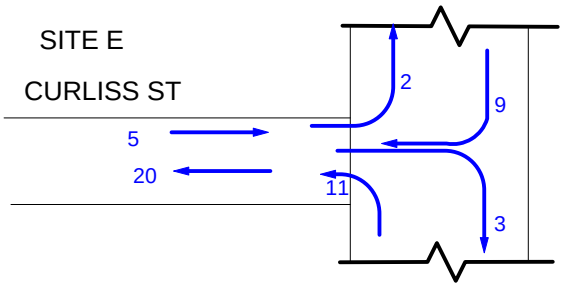
4:30-5:30PM PEAK HOUR **(94)**

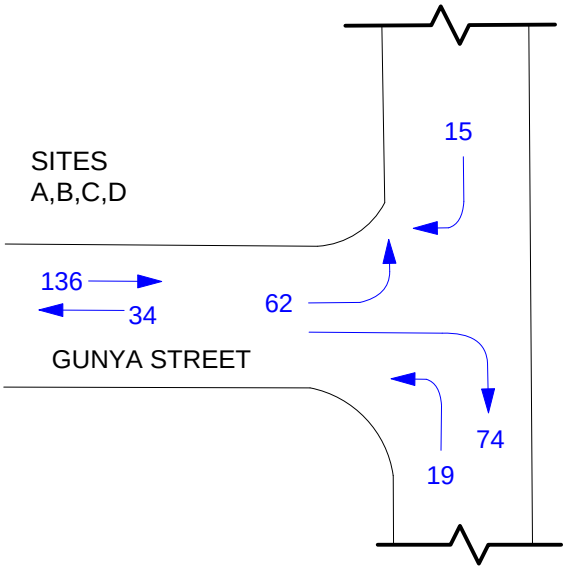
FUTURE PEAK HOUR VOLUMES,
EXISTING PLUS SCENARIO 5
DEVELOPMENT FSR 4:1
30-46 AUBURN ROAD
PLUS POTTS HILL RESIDENTIAL
DEVELOPMENT PLUS SITES
A,B,C,D and E AUBURN ROAD

FIGURE 15

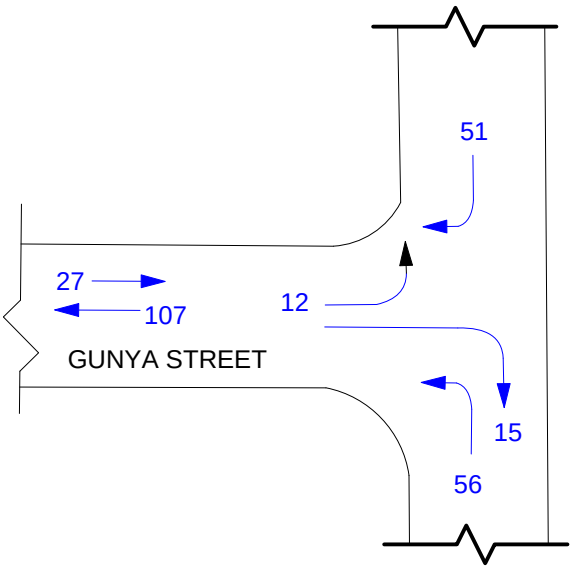
900 dwellings
+ 895 dwellings A,B,C,D +
168 dwellings Site E







AM PEAK HOUR



PM PEAK HOUR

LEGEND

74 ADDITIONAL PEAK HOUR VOLUMES GENERATED BY THE PROPOSED SITES A-E

N

ADDITIONAL PEAK HOUR VOLUMES FOR SITES A-E

FIGURE 16

APPENDIX A

Carlingford Road / Park Road / Auburn Road

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement
EXISTING PERFORMANCE						
Carlingford Rd / Park Rd / Auburn Rd	AM	0.913	16.8 (26.8)	**B** (Worst: B)	Round-about	RT from Carlingford Rd
Carlingford Rd / Park Rd / Auburn Rd	PM	1.034	43.1 (>70)	**D** (Worst: F)		RT from Auburn Rd
FUTURE PERFORMANCE – SCENARIO 6 (Inc Potts Hill & Bridge Upgrade)						
Carlingford Rd / Park Rd / Auburn Rd	AM	0.764	8.7 (14.2)	**A** (Worst: A)	Round-about	RT from Carlingford Rd
Carlingford Rd / Park Rd / Auburn Rd	PM	0.602	7.5 (9.8)	**A** (Worst: A)		RT from Auburn Road

Auburn Road / Amy Street

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement
EXISTING PERFORMANCE						
Auburn Rd / Amy St	AM	0.678	8.6 (10.8)	**A** (Worst: A)	Round-about	LT from Auburn Rd (S)
Auburn Rd / Amy St	PM	0.622	7.7 (9.8)	**A** (Worst: A)		LT from Auburn Rd (S)
FUTURE PERFORMANCE – SCENARIO 6 (Inc Potts Hill & Bridge Upgrade)						
Auburn Rd / Amy St	AM	0.462	7.1 (8.9)	**A** (Worst: A)	Round-about	RT from Auburn Rd (W)
Auburn Rd / Amy St	PM	0.552	7.2 (9.0)	**A** (Worst: A)		RT from Amy St

(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.

Railway Bridge Roundabouts Network (AM Peak Period)

Intersection	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)	Control Type	Worst Movement
EXISTING PERFORMANCE						
Carlingford Rd / Park Rd / Auburn Rd	AM	0.945	22.9 (39.6)	**B** (Worst: C)	Round-about	RT from Carlingford Rd
Auburn Rd / Amy St	AM	1.074	>70 (>70)	**F** (Worst: F)		LT from Auburn Rd (S)
FUTURE PERFORMANCE – SCENARIO 6 (Inc Potts Hill & Bridge Upgrade)						
Carlingford Rd / Park Rd / Auburn Rd	AM	0.764	8.7 (14.2)	**A** (Worst: A)	Round-about	RT from Carlingford Rd
Auburn Rd / Amy St	AM	0.462	7.1 (8.9)	**A** (Worst: A)		RT from Auburn Rd (W)

Railway Bridge Roundabouts Network (PM Peak Period)

Intersection	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)	Control Type	Worst Movement
EXISTING PERFORMANCE						
Carlingford Rd / Park Rd / Auburn Rd	PM	1.041	52.9 (>70)	**D** (Worst: F)	Round-about	LT from Park Rd
Auburn Rd / Amy St	PM	1.036	>70 (>70)	**F** (Worst: F)		RT from Amy St
FUTURE PERFORMANCE – SCENARIO 6 (Inc Potts Hill & Bridge Upgrade)						
Carlingford Rd / Park Rd / Auburn Rd	PM	0.602	7.5 (9.8)	**A** (Worst: A)	Round-about	RT from Auburn Road
Auburn Rd / Amy St	PM	0.552	7.2 (9.0)	**A** (Worst: A)		RT from Amy St

(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.

APPENDIX B

Erica Marshall

From: John Oates <John.Oates@auburn.nsw.gov.au>
Sent: Monday, 10 August 2015 12:51 PM
To: em.lylemarshall@ozemail.com.au
Cc: Soma Somaskanthan
Subject: FW: Amy Street Auburn Road Bridge Upgrade intersection works

Dear Erica,

I apologize for the belated reply. Construction Works are programmed to commence, end of January, next year.

Regards,

John Oates

Project Superintendent

AUBURN CITY COUNCIL
MANY CULTURES ONE COMMUNITY

Phone: 02 87459740
Mobile: 0411511162

From: Soma Somaskanthan
Sent: 6 August 2015 1:03 PM
To: John Oates
Subject: FW: Amy Street Auburn Road Bridge Upgrade intersection works

Hi John,

As discussed, could you please respond to this.

Hanks & Regards

Soma

S R Somaskanthan
Team Leader - Transportation & Traffic

AUBURN CITY COUNCIL
MANY CULTURES ONE COMMUNITY

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