FRASERS PROPERTY AUSTRALIA

TRAFFIC AND TRANSPORT REPORT FOR A PROPOSED CONCEPT PLAN FOR A NEW OUTLET CENTRE AT EASTERN CREEK QUARTER STAGE 3

DECEMBER 2020

COLSTON BUDD ROGERS & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Telephone: (02) 9411 2411
Email: cbrk@cbrk.com.au

REF: 11436/2

TABLE OF CONTENTS

1 INTRODUCTION

1.1 This Transport and Traffic Report has been prepared for Frasers Property Australia, by Colston Budd Rogers and Kafes Pty Ltd, to support a State Significant Development Application (SSDA) submitted to the Department of Planning, Industry and Environment (DPIE) relating to Lot 3 of the Eastern Creek Quarter Site at Rooty Hill Road South, Eastern Creek. The application seeks Concept Plan approval for the staged construction of a new retail outlet centre at Lot 3 with supporting food and beverage tenancies, and ancillary entertainment and recreation usages.

1.2 Eastern Creek Business Hub has an approved concept plan which includes 56,438m^2 GFA within three lots comprising:

- 39,400m^2 specialised retail;
- 10,754m^2 convenience retail (including a supermarket and specialty shops);
- 3,000m^2 recreational;
- 400m^2 vehicle repair station;
- 1,200m^2 child care centre; and
- 1,684m^2 circulation.

1.3 A masterplan of the Eastern Creek Quarter has been prepared by i2C and is provided in Figure 1.

1.4 Stage 3 is located on the northern part of the site with frontage to Church Street and Rooty Hill Road South. Vehicular access to the site is provided from Rooty Hill Road South, via a new signalised intersection at Cable Place with a roundabout

providing direct access to Lots 1 and 2. Access to Lot 3 will be via the existing access to Rooty Hill Road South and Church Street.

1.5 Development on Lot 2 is now operational (convenience retail and car wash) with the child care centre to be constructed. Development on Lot 1 was recently approved (11,398m^2) and comprises:

- 8,390m^2 specialised retail;
- 100m^2 café;
- 400m^2 tyre service centre;
- 2,010m^2 indoor recreation centre; and
- A future PAD site (498m^2).

1.6 MOD 9 is currently being assessed which would provide for a second PAD site on Lot 1.

1.7 The Secretary's Environmental Assessment Requirements for the modification for the proposed outlet centre, dated 21 October 2020, include a number of traffic and parking matters. Table 1.1 includes the SEARs and the relevant sections of the report in which they are addressed.

Table 1.1: SEARs

SEARs requirement	Section of report
Traffic, transport, parking and access *Provide a Traffic and Transport Impact Assessment that includes the following:*	
- *daily and peak traffic movements likely to be generated by the proposed development.*	Chapter 6
- *details of all light and heavy vehicle movements (including vehicle type and likely arrival and departure times*	Chapter 6

- *details of proposed site access, vehicle circulation and parking provision associated with the proposed development including compliance with the requirements of the relevant Australian Standards (ie. Turn paths, sight distance requirements, aisle widths etc)*	Chapters 4 and 5. An assessment of car park layouts, access, sight lines and swept paths against relevant Australian Standards will be undertaken at the DA stage.
- *detail the cumulative study traffic impacts associated with the development (and any other known proposed developments in the area)*	Chapter 6
- *updated SIDRA modelling for the cumulative queuing impacts on Rooty Hill Road South/New Access Road from the roundabout for Stages 1 and 2, of SSD 5175 and the proposal on Lot 3*	Chapter 6
- *detail the suitability of Church Street for heavy vehicle access, proposed carriageway configuration and any upgrades required*	Chapter 5
- *assess the impact on intersections on Rooty Hill Road South and the need /associated funding for upgrading or road improvement works (if required) to the intersections of Rooty Hill Road South/Church Street and Rooty Hill Road South/Beggs Road*	Chapter 6
- *identify any traffic and transport infrastructure measures required to support future development, including regional and local intersection improvements, vehicular access options for adjoining sites, public transport needs, the timing and cost of infrastructure works and the identification of funding responsibilities associated with development*	Chapter 6
- *proposals to encourage sustainable travel choices, such as walking, cycling, public transport and car sharing and how these will be implemented*	Chapter 3
- *Provide a draft Construction Pedestrian and Traffic Management Plan*	Chapter 7
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers,	Chapter 8

community groups and affected landowners. *In particular you must consult with:* *- Blacktown City Council* *- Transport for NSW* *- Environment, Energy and Science Group in DPIE* *- Eastern Creek Public School* *- Local community.* *The EIS must describe the consultation process, the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.*	

1.8 This report assesses the traffic and transport implications of the proposed development, including addressing the SEARs, through the following chapters:

- Chapter 2 - Proposed Development;
- Chapter 3 Public and Active Transport;
- Chapter 4 Parking;
- Chapter 5 Access, Parking Layout and Servicing;
- Chapter 6 Traffic Effects;
- Chapter 7 - Draft Construction Management Plan; and
  .
- Chapter 8 Consultation with Authorities.

2 PROPOSED DEVELOPMENT

2.1 The 34ha Eastern Creek Quarter site is situated to the north of the Great Western Highway between Rooty Hill Road South and the M7 Motorway. Church Street marks the site's northern boundary. The site forms part of the Western Sydney Parklands and is located within the Blacktown Local Government Area. It is located approximately 1.5km south east of Rooty Hill Station.

2.2 This SSDA relates to Lot 3 of the ECQ site, which is the final lot proposed to be developed. It is located in the northern part of the site and has an area of approximately 7.29ha (refer to Figure 2.1 below).

Figure 2.1 – Site Location
Source - Nearmap

2.3 The concept approval for Stage 3 at Eastern Creek Business Hub Lot 3 envisages some 31,000m^2 GFA of specialised retail (bulky goods/large format retail) development. It is proposed to replace this with an outlet centre including supporting food and beverage (F&B) precinct, as shown in Figure 1. The outlet centre would be constructed in two stages:

- Stage A – some 29,500m^2 GFA (20,000m^2 GLA); and
- Stage B – some 10,000m^2 GFA (9.327m^2 GLA).

2.4 When completed the Stage 3 outlet centre will comprise some 39,500m^2 GFA (29,327m^2 GLA).

2.5 Access to car parking for Stage 3 would be provided directly from Church Street and via Goldsbro Glade to the intersection of Rooty Hill Road South/Cable Place. Access to loading for Stage 3 would be via Church Street and Beggs Road.

2.6 Some 1,200 parking spaces would be provided in Stage A in at-grade and undercroft parking areas. An additional 150 parking spaces will be provided in Stage B.

2.7 As part of the proposed development the following road works are proposed:

- reconstruction of Church Street to Blacktown Council's Industrial Road standard (13 metre carriageway within a 20 metre road reserve);
- provide traffic signals at the intersection of Church Street and Rooty Hill Road South;

- modifications to the traffic signal controlled intersections of Rooty Hill Road South with Cable Place and Eastern Road/Francis Street.

3 PUBLIC AND ACTIVE TRANSPORT

Public Transport

3.1 Busways operates the 723 and 738 services along Rooty Hill Road South past the site. The 723 and 728 services connect Mount Druitt railway station with Blacktown railway station and operate at 30 minute intervals in the weekday AM and PM peak periods, and 60 minute intervals at other times. The 723 service operates on weekdays only while the 728 service operates seven days a week

3.2 Bus stops are located on Rooty Hill Road South adjacent to the site at two locations:

- north and south of Cable Place, adjacent to Lot 1; and
- south of Church Street, adjacent to Lot 3.

3.3 Pedestrian access from Stage 3 to the Rooty Hill Road South bus stops will be provided via a pedestrian path along the site frontage and along Church Street. Access to the bus stop on the western side of Rooty Hill Road South, south of Church Street, will be provided at the proposed traffic signals at the intersection of Church Street/Rooty Hill Road South.

Active Transport

3.4 The site will be accessible by active forms of transport such as walking and cycling, with a pedestrian/cyclist connection linking Lot 3 to the existing infrastructure on Rooty Hill Road South and to the existing cycleway that runs along the M7 Motorway (via the existing connection to Church Street). Bicycle parking will be

provided for both customers and staff internal to the site. Customers will be able to make use of bicycle racks conveniently located within the public domain.

Work Place Travel Plan

3.5 A work place travel plan will be prepared, which will include the following:

- identify existing bus routes which stop adjacent and close to the site, including the location of bus stops and pedestrian crossings at signalised intersections;
- work with bus operators to improve services;
- encourage public transport by employees and visitors through the provision of information, maps and timetables in a site travel plan;
- raise awareness of health benefits of walking and cycling (including maps showing walking and cycling routes, including adjacent to and near the site); and
- encourage cycling by providing safe and secure bicycle parking, including the provision of bicycle parking for employees, plus showers and lockers.

Summary

3.6 The site provides opportunities for people to travel to the site by means other than car, with the proposal therefore being consistent with the following government objectives and planning principles of:

(a) improving accessibility to employment and services by walking, cycling, and public transport;

(b) improving the choice of transport and reducing dependence solely on cars for travel purposes;

(c) moderating growth in the demand for travel and the distances travelled, especially by car; and

(d) supporting the efficient and viable operation of public transport services.

4 PARKING

Car Parking

4.1 The Eastern Creek Business Hub Design Guidelines suggest car parking rates for specific land uses. However, the guidelines do not include rates for an outlet centre. The proposed outlet centre will have similar parking requirements to a large shopping centre where a range of uses are provided (such as retail, food and beverage, and entertainment). For shopping centres between 20,000m^2 and 30,000m^2 GLA, TfNSW Guidelines suggest provision of 4.3 spaces per 100m^2 GLA. Applying this rate the proposed outlet centre would require the following parking provisions:

- Stage A (20,000m GLA) – 860 spaces; and
- Stage B (29,327m^2 GLA) – 1,261 spaces.

4.2 The proposed provisions of 1,200 spaces in Stage A and 1,350 spaces in Stage B satisfy these requirements and are considered appropriate. A minimum of one percent of parking spaces will be accessible spaces

Bicycle Parking

4.3 The Eastern Creek Business Hub Design Guidelines do not include bicycle parking rates for specific land uses. By way of comparison AUSTROAD Guidelines suggest the following rates for retail development (based on 10% mode of travel by bicycle):

- Short Stay (visitor) - 0.3 to 0.4 spaces per 100m^2 GLA; and
- Long Stay (employee) - 0.07 to 0.1 space per 100m^2 GLA.

4.4 Applying these rates the proposed outlet centre would require the following bicycle parking provisions:

- Stage 1 (20,000m^2 GLA) – 60 to 80 short stay spaces plus 14 to 20 long stay spaces; and
- Stage 2 (29,327m^2 GLA) - 88 to 117 short stay spaces plus 20 to 29 long stay spaces.

4.5 Bicycle parking for will be provided in accordance with these requirements. Employee bicycle parking will be provided in secure locations. Short stay bicycle parking will be provided in racks within the car parking areas.

4.6 End of trips facilities (change room, showers and personal storage space) will be provided for employees. The provision of end of trip facilities reduces the barriers to cycling and contributes towards making cycling a viable alternative to car trips. These facilities would not be exclusive to cyclists, as they also offer benefits and incentives to walk to work. AUSTROAD Guidelines suggest the following rates for end of trip facilities:

- one shower for the first 5 (long stay) bicycle spaces plus one additional shower per 10 bicycle spaces thereafter; and
- one change room or direct access to a communal change room per shower (the change room may be a combined shower change room).

4.7 Applying these rates would require three showers and three change rooms. A minimum of three combined shower/change rooms will be provided.

5 ACCESS, INTERNAL LAYOUT AND SERVICING

Access

5.1 Access to the Stage 3 (Lot 3) will be provided via Church Street (at grade/under croft car parking and loading dock), Beggs Road (loading docks) and Goldsbro Glade that connects Lots 1 and 2 to the traffic signal controlled intersection of Rooty Hill Road South Cable Place (under croft car parking). Access from Church Street will be provided at three locations:

- at grade car park (approximately midway between Rooty Hill Road South and the access to the playing fields);
- loading docks (east of the access to the playing fields); and
- under croft car park (at the eastern end of Church Street)

5.2 As part of Stage 3, Church Street will be reconstructed to Council's industrial road standard to provide a 13 metre carriageway within a 20 metre wide road reserve. A 2.5 metre wide shared pedestrian/cycleway will be provided on one side of Church Street. This will connect Stage 3, the M7 cycleway and the playing fields with Rooty Hill Road South.

5.3 The intersection of Church Street and Rooty Hill Road South will be upgraded to provide traffic signals to accommodate turning movements in and out of Church Street as well as pedestrian crossings on all legs of the intersection. The provision of traffic signals will provide the following benefits:

- improved access to the existing playing fields (during sporting events traffic can experience delays turning right out of Church Street);
- appropriate access across Rooty Hill Road South for pedestrians and cyclists. As noted above the upgrade of Church Street will include a shared pedestrian/cycle path that connects to the existing cycleway on the M7, playing fields and Stage 3; and
- appropriate access to the bus stops located adjacent to the intersection.

5.4 The RMS traffic demand warrant for the installation of traffic signals is as follows:

For each of four one hour periods of an average day:

- the major road flow exceeds 600 vehicles/hour in each direction; and
- the minor road flow exceeds 200 vehicles/hour in one direction.

5.5 As noted in following Chapter 6, existing traffic flows along Rooty Hill Road South (the major road) exceed 600 vehicles per hour in each direction in the weekday afternoon and Saturday peak periods. Future traffic flows along Church Street will exceed 200 vehicles per hour in one direction in the weekday afternoon and Saturday peak periods. Thus the TfNSW warrant for traffic signals is satisfied.

Internal Layout

5.6 On site car parking will be located within at-grade car park and under croft car parks. The two car parks will be linked by internal ramps. Parking spaces will be a minimum 5.4 metres long and 2.6 metres wide with 6.6 metre wide circulation aisles. Spaces with adjacent obstructions will be 0.3 metres wider. Small car spaces will be 2.3 metres wide, staff spaces will be 2.4 metres wide and marked accordingly and disabled spaces 2.4 metres wide with a 2.4 metre wide adjacent

shared area. Motorbike spaces will be 1.2 metres wide by 2.5 metres long. Where pedestrians cross internal roads, adequate sight lines will be provided. These dimensions are considered appropriate, being in accordance with AS2890.1:2004 and AS2890.6:2009.

Servicing

5.7 Servicing of the site will be carried out via two separate loading docks with access from Beggs Road and Church Street. Both docks will be designed to cater for a range of trucks, up to 20 metre long articulated trucks. These docks will also be used for waste management of the centre. The Church Street dock is located on the eastern part of the site with access located to the east of playing fields access. The Beggs Road dock is located on the western part of the site and will share access with the loading dock for Lot 2. Two docks are provided on opposite sides of the site in order to appropriately service the large site. The loading areas will be designed to comply with AS2890.2:2018 with regards to turning areas, aisle widths and grades, and allow service vehicles to enter and exit the site in a forward direction.

5.8 Deliveries will be carried out between 7:00am and 6:00pm with a peak of some 5 trucks per hour. Over a day the number of deliveries to the outlet centre would be some 20 to 30 trucks.

6 TRAFFIC EFFECTS

Road Network

6.1 The site is bounded by Great Western Highway to the south, M7 Motorway to the east, Rooty Hill Road South to the west and Church Street to the north. Beggs Road is a dead-end road that is located between Lots 2 and 3. It provides access to the loading docks for Lot 2.

6.2 The M7 Motorway is a major road in Sydney's arterial road network. It has north-facing ramps with the Great Western Highway, adjacent to the site. The intersections of the M7 ramps with Great Western Highway are controlled by traffic signals.

6.3 Great Western Highway is also a major road in Sydney's road network, connecting Sydney with areas to the west. It intersects with Rooty Hill Road South at a signalised intersection, adjacent to the site.

6.4 Rooty Hill Road South connects Rooty Hill in the north with the Great Western Highway. It provides a four lane undivided carriageway with two traffic lanes in each direction. It has a signalised intersection with the Great Western Highway. Wallgrove Road forms a fourth (southern) approach to the intersection.

6.5 North of the site, Rooty Hill Road South connects with Francis Road and Eastern Road at a signalised intersection. Opposite the site, on the western side of Rooty Hill Road South, there are local residential streets, including Penfold Street,

Cawarra Street and Minchinbury Street which intersect with Rooty Hill Road South at priority controlled intersections.

6.6 Church Street is a no through road that connects to Rooty Hill Road South at a priority controlled t-intersection, with Church Street the minor road. It provides access to the playing fields and provides a six to seven metre carriageway with unsealed shoulders and no footpaths.

6.7 Access to Lots 1 and 2 is provided via Goldsbro Glade which connects to the traffic signal controlled intersection with Rooty Hill Road South/Cable Place. A roundabout, located on Goldsbro Glade, some 100 metres east of Rooty Hill Road South, provides access to Lot 1 (to the south) and Lot 2 (to the north).

Traffic Flows

6.8 Traffic counts were undertaken during the day on Saturday 23 July 2020 and during the weekday afternoon peak period on Wednesday 29 July 2020 at the following intersections:

- Rooty Hill Road South (RHRS) / Eastern Road / Francis Road (traffic signals);
- RHRS / Evans Avenue (traffic signals);
- RHRS / Cable Place / Goldsbro Glade (traffic signals); and
- Great Western Highway (GWH) / RHRS / Wallgrove Road (traffic signals).

6.9 These time periods were selected as they correspond to times when development traffic will have its greatest impact on the surrounding road network. The intersections surveyed are the same as previously assessed for the approved concept plan.

6.10 Table 6.1 shows base traffic flows which are displayed in Figures 2 and 3. Base traffic flows are existing flows (which include Lot 2 which was operating) plus approved Stage 2 (Lot 1) traffic, which are some 270 and 400 vehicles per hour during the weekday afternoon and Saturday midday peak periods respectively.

Table 6.1 Base Weekday Afternoon and Saturday Midday (sum of both directions) Traffic Flows

Location	Thursday Afternoon	Saturday Midday
Rooty Hill Road South (RHRS)		
- north of Eastern Road	370	300
- north of Evans Avenue	1900	1590
- north of Cable Place	1750	1505
- north of GWH	2030	1725
Eastern Road		
- east of RHRS	1935	1670
Francis Road		
- west of RHRS	1640	1470
Evans Avenue		
- west of RHRS	305	210
Goldsbro Glade		
- east of RHRS	755	985
Great Western Highway (GWH)		
- west of RHRS	3110	2815
- east of RHRS	2875	2250
Wallgrove Road		
- west of GWH	2875	2370

6.11 Examination of Table 6.1 reveals that the base case flows are as follows;

- Rooty Hill Road South carries some 1,505 to 2,030 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours between

Eastern Road and Great Western Highway. North of Eastern Road traffic flows were lower at between 300 and 400 vehicles per hour (two way) during the peak periods;

- Eastern Road carries some 1,670 to 1,935 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours;
- Francis Road carries some 1,470 to 1,640 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours;
- Evans Avenue carries some 210 to 305 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours;
- Goldsbro Glade carries some 755 to 985 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours;
- Great Western Highway carries some 2,250 to 3,110 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours; and
- Wallgrove Road carries some 2,370 to 2,875 vehicles per hour (two way) during the weekday afternoon and Saturday midday peak hours;

6.12 The results show that traffic flows on the surrounding streets are higher during the weekday afternoon peak periods compared to the Saturday midday peak.

Intersection Operation for Base Flows

6.13 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed using SIDRA 8 Network Model for the base traffic flows.

6.14 SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode.
>70	=	"F"	Unsatisfactory and requires additional capacity

- For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

6.15 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

6.16 The results of the SIDRA analysis for base flows are summarised below and set out in Table A1 in Attachment A:

- the traffic signal controlled intersection of the Rooty Hill Road South with Eastern Road and Francis Road operates with average delays per vehicle of less than 60 seconds during the weekday afternoon. This represents level of service D/E, near capacity. In the Saturday midday, the intersection operates with average delays per vehicle of less than 40 seconds during the weekday afternoon peak period. This represents level of service C, a satisfactory level of intersection operation.

- the traffic signal controlled intersection of the Rooty Hill Road South and Evans Avenue operates with average delays per vehicle of less than 15 seconds during weekday afternoon and Saturday midday peak periods. This represents level of service A/B, a good level of service;

- the traffic signal controlled intersection of the Rooty Hill Road South with Cable Place and Goldsbro Glade operates with average delays per vehicle of less than 25 seconds during the weekday afternoon and Saturday midday. This represents level of service B, an acceptable level of service; and

- the traffic signal controlled intersection of Great Western Highway with Rooty Hill Road South and Wallgrove Road operates with average delays per vehicle of less than 55 seconds during the weekday afternoon. This represents level of service D, a satisfactory level of intersection operation. In the Saturday midday, the intersection operates with average delays per vehicle of less than 40 seconds during the weekday afternoon peak period. This represents level of service C, a satisfactory level of intersection operation.

6.17 SIDRA movement summaries are provided in Attachment A.

Traffic Generation of Outlet Centre

6.18 TfNSW guidelines do not provide traffic generation rates for outlet centres. To determine an appropriate rate of traffic generation for the proposed development, similar outlet centres were surveyed (based on size and catchment). The surveys found generation rates of 1.45 vehicles per hour (two way) per 100m^2 GFA and 3.24 vehicles per hour (two way) per 100m^2 GFA in the weekday afternoon and Saturday midday respectively. It is noted that the weekday

afternoon peak hour generation rate of 1.45 vehicles per hour (two way) per 100m^2 GFA is similar to that used for the bulky goods use assessed in the approved concept plan for Stage 3 (1.46 vehicles per hour (two way) per 100m^2 GFA).

6.19 It is proposed to construct Stage 3 in two phases. Phase A will be some 20,000m^2 GLA and Phase B an additional 9,327m^2 GLA. The traffic assessment is based on full development of Stage 3 (total of some 29,327m^2 GLA). Based on the above rates the outlet centre would generate some 430 and 950 vehicles per hour two-way during the weekday afternoon and Saturday midday.

6.20 Some 20 per cent of trips would likely be passing trade. Thus the additional external trips generated by the development would be some 440 and 760 trips during the weekday afternoon and Saturday midday.

Traffic Distribution

6.21 The proposed outlet centre will draw customers from further away than the existing neighbourhood shopping centre in Stage 1. The following distribution of traffic to the outlet centre has been adopted:

- 35%/65% north/south split along Rooty Hill Road South; and
- 50% split in/out.

6.22 Stage 3 will have access from two traffic signal controlled intersection on Rooty Hill Road South via Church Street and the Goldsbro Glade. Traffic to/from the north (Eastern Road, Francis Street and Evans Avenue) will access Stage 3 via the

Church Street. Vehicles travelling to/from the south (Great Western Highway, M7 and Wallgrove Road) will be split between Church Street and the Goldsbro Glade.

Traffic Effects

6.23 The additional traffic has been assigned to the road network. Base flows plus the additional outlet centre traffic are shown in Figures 2 and 3, and summarised in Table 6.2.

Table 6.2: Base Weekday Afternoon and Saturday Midday + Stage 3 Two Way (sum of both directions) Traffic Flows

Location	**Weekday PM**		**Saturday Midday**	
	Base	+ outlet centre	Base	+ outlet centre
Rooty Hill Road South (RHRS)				
- north of Eastern Road	370	+5	300	+15
- north of Evans Avenue	1900	+95	1590	+215
- north of Church Street	1955	+105	1590	+245
- north of Cable Place	1750	+80	1505	+185
- north of GWH	2030	+245	1725	+525
Eastern Road				
- east of RHRS	1935	+45	1670	+100
Francis Road				
- west of RHRS	1640	+45	1470	+100
Evans Avenue				
- west of RHRS	305	+10	210	+25
Church Street				
- east of RHRS	0	+280	0	+620
Goldsbro Glade				
- east of RHRS	755	+160	985	+340
Great Western Highway (GWH)				
- west of RHRS	3110	+75	2815	+155
- east of RHRS	2875	+95	2250	+215
Wallgrove Road				
- west of GWH	2875	+75	2370	+115

6.24 Examination of table 6.2 revels the following increases in traffic from the outlet centre;

- traffic flows along Rooty Hill Road South will increase as follows:
  - north of Eastern Road: some 5 to 15 vehicles per hour in the peak periods;
  - between Eastern Road and Cable Place: some 80 to 105 vehicles per hour in the weekday afternoon and some 185 to 245 vehicles per hour during the Saturday midday; and
  - between Cable Place and Great Western Highway: some 245 vehicles per hour in the weekday afternoon and some 525 vehicles per hour during the Saturday midday;

- traffic flows along Eastern Road and Francis Road will increase by some 45 vehicles per hour in the weekday afternoon and some 100 vehicles per hour during Saturday midday;

- traffic flows along Evans Avenue will increase by some 10 vehicles per hour in the weekday afternoon and some 25 vehicles per hour during Saturday midday;

- traffic flows along Goldsbro Glade will increase by some 160 vehicles per hour in the weekday afternoon and some 340 vehicles per hour during Saturday midday;

- traffic flows along Great Western Highway and Wallgrove Road will increase by some 75 to 95 vehicles per hour in the weekday afternoon and some 155 to 215 vehicles per hour during Saturday midday; and

- traffic flows along Church Street will increase by some 280 vehicles per hour in the weekday afternoon and some 620 vehicles per hour during Saturday midday.

6.25 In order to cater for traffic generated by the outlet centre, the following upgrades to the surrounding road network have been identified;

- changing the lane configuration on the Rooty Hill Road South northbound approach to the intersection with Eastern Road/Francis Road, from left/through and through/right to left/through and designated right turn;

- upgrading the intersection of Rooty Hill Road South and Church Street to traffic signals with following configuration:
  - all movements permitted;
  - through and shared through/left turn lanes on the northern (RHRS) approach;
  - two through and a separate right turn lane on the southern (RHRS) approach;
  - separate right and left turn lanes on the eastern (Church Street) approach; and
  - pedestrian crossing on all legs of the intersection.

- reconfiguring the Goldsbro Glade approach to the intersection with RHRS/Cable Place to provide a right turn lane, shared right turn/though lane and extended separate left turn lane. Adjustments the signal phasing are required to accommodate these modifications;

6.26 The intersections analysed in section 6.13 have been reanalysed with the additional outlet centre traffic with the above upgrades to the road network. The results are summarised below and set out in Table A1 in Attachment A:

- the traffic signal controlled intersection of the Rooty Hill Road South with Eastern Road and Francis Road will continue to operate with average delays per vehicle of less than 55 seconds during the weekday afternoon. This represents level of service D, a satisfactory level of intersection operation. In the Saturday midday, the intersection operates with average delays per vehicle of less than 40 seconds during the weekday afternoon. This represents level of service C, a satisfactory level of intersection operation;

- the traffic signal controlled intersection of the Rooty Hill Road South and Evans Avenue will operate with average delays per vehicle of less than 20 seconds during the weekday afternoon and Saturday midday. This represents level of service B, an acceptable level of service;

- the traffic signal controlled intersection of the Rooty Hill Road South and Church Street will operate with average delays per vehicle of less than 25 seconds during the weekday afternoon and Saturday midday. This represents level of service B, an acceptable level of service;

- the traffic signal controlled intersection of the Rooty Hill Road South with Cable Place and Goldsbro Glade will continue to operate with average delays per vehicle of less than 25 seconds during the weekday afternoon and Saturday midday. This represents level of service B, an acceptable level of service;

- the traffic signal controlled intersection of Great Western Highway with Rooty Hill Road South and Wallgrove Road will operate with average delays per vehicle of less than 50 seconds during the weekday. This represents level of service D, a satisfactory level of intersection operation. In the Saturday midday, the intersection operates with average delays per vehicle of some 40 seconds during the peak period. This represents level of service C, a satisfactory level of intersection operation.

6.27 The SIDRA analysis also found the following with respect to queuing on Church Street and the Goldsbro Glade:

- 95% back of queue on Goldsbro Glade did not extend back to the roundabout connecting Lots 1 and 2; and
- 95% back of queue on Church Street did not extend back to the midday point between RHRS and the playing field access.

6.28 An assessment of the operation of the five intersections along Rooty Hill Road South (with and without the outlet centre traffic) has been undertaken for base plus 10 years. The results are summarised below and set out in Table A1 in Attachment A

- without the outlet centre traffic, the intersections of Rooty Hill Road South with Francis Street/Eastern Road and Great Western Highway would operate at capacity (LOS E/F) in the peak periods. Other intersections would operate a satisfactory (LOS B/C) levels of service;
- with Stage 3 traffic and the identified upgrades, the intersections of Rooty Hill Road South with Francis Street/Eastern Road and Great Western Highway

would operate at near capacity (LOS D/E) in the peak periods. Other intersections would operate a satisfactory (LOS B/C) levels of service

6.29 Thus in summary the traffic analysis has found that with the outlet centre traffic and the identified road network improvements, intersections along Rooty Hill Road South (from Eastern Road/Francis Road to Great Western Highway) would operate at the same or better level of service (LOS) for base and base plus 10 years traffic conditions.

7 DRAFT CONSTRUCTION TRAFFIC MANAGEMENT PLAN

7.1 The construction methodology, process and staging will be finalised when a builder has been appointed. The CTMP will be finalised prior to the commencement of work, taking into account relevant consent conditions.

Overall Principles for Traffic Management

7.2 The overall principles for traffic management during construction of the outlet centre are:

- provide a convenient and appropriate environment for pedestrians;
- minimise effects on pedestrian movements and amenity;
- manage and control vehicular movements to and from the site;
- maintain traffic capacity at intersections and mid-block around the site;
- maintain access to other properties adjacent to the site;
- restrict vehicle activity to designated truck routes through the area;
- maintain safety for workers;
- provide appropriate construction fencing and hoarding along Rooty Hill Road South and Church Street;
- provide appropriate access to the site for construction traffic;
- manage and control construction vehicles on and off the site and pedestrian movements adjacent to the construction access driveways; and
- manage and control construction vehicle activity in the vicinity of the site.

Hours of Work

7.3 Subject to conditions of consent, work associated with construction activities will be carried out between the following hours:

- Monday to Friday: - 7:00 am to 7:00 pm;
- Saturday: - 7:00 am to 5:00 pm; and
- Sunday/public holidays: - No work.

7.4 These hours will be subject to DPIE approval. All work including demolition, excavation and construction work during these hours will be carried out in accordance with the conditions of consent and the Australian Standard AS2436.10 Guide to Noise Control and Construction, Maintenance and Demolition Sites. The site contractor will be responsible to instruct and control all workers and sub-contractors regarding the hours of work. Any work outside these times would be subject to prior approval from DPIE and other relevant authorities.

Truck Routes

7.5 During demolition, excavation and construction, trucks removing spoil and transporting material to the site will be accommodated on-site. Access to and from the site will be provided from Church Street, Beggs Road and Goldsbro Glade, via temporary construction access driveways. Access arrangement and vehicle movements to and from the site will be managed by qualified traffic controllers. Construction vehicles will generally include single unit dump truck, concrete trucks and large rigid trucks.

7.6 Traffic movements on surrounding roads and continued access to adjacent properties will be maintained during construction. Truck movements will be restricted to designated truck routes and will be confined to the main road network in the vicinity of the site.

7.7 The proposed truck routes for the removal of spoil from the site and for the delivery of construction materials, are shown on Figure 4, and include Rooty Hill Road South, Eastern Road, Great Western Highway, Wallgrove Road and M7 Motorway. Truck drivers will be inducted and advised of the designated truck routes to and from the site.

Construction Site Entries

7.8 During demolition, excavation and construction, all construction vehicles and materials handling, including the removal of spoil and delivery of construction material, will be accommodated on-site. Construction hoarding and containment fencing will be erected around the perimeter of the site, with scaffolding and overhead protection provided where required.

7.9 Trucks will enter and exit the site in a forward direction. The temporary construction access driveways onto Church Street, Beggs Road and Goldsbro Glade will be managed and controlled by qualified traffic controllers. The traffic controllers will be located within the site and will manage pedestrians and truck movements across the adjacent footpaths. They will ensure that the access driveways are kept clear at all times, to allow trucks unobstructed access to the site. Trucks exiting the site will give way to traffic and pedestrians and will wait for appropriate gaps in the traffic in order to enter the surrounding road network.

7.10 The construction access driveways will provide appropriate sight lines for construction vehicle access, with regards to the number, type and size of construction vehicles. Pedestrian warning signs will be erected adjacent to the driveways and on pedestrian paths adjacent to the construction activity, in accordance with SafeWork NSW requirements.

7.11 Truck drivers will be advised of the presence of the traffic controllers, and that they must observe that persons directions at all times. All traffic controllers will be fully qualified with the relevant RMS Traffic Controllers qualifications.

7.12 All traffic controllers and work personnel will be required to wear high visibility fluorescent safety vests and Personnel Protective Equipment (PPE). Wet weather clothing will be made of fluorescent high visibility material.

Construction Traffic Effects

7.13 The number of vehicles generated during the various stages of construction will be determined when the construction methodology, process and staging is finalised by the builder. The peak construction traffic activity will generally occur during bulk excavation, with the removal of excavated material from the site, and during concrete pours, with the delivery of concrete to the site. .

7.14 Construction traffic will be managed to minimise the overall traffic effects on the surrounding road network, through the following measures:

- ensure that construction vehicles travel to and from the site along the designated truck routes;

- traffic controllers to manage the movement of construction vehicles on and off the site;

- control the size of construction vehicles;

- ensure that trucks do not park within surrounding street. All construction vehicles are to be accommodated on-site or within the on-street work zones;

- co-ordinate and manage the arrival of trucks and the delivery of construction material to and from the site; and

- ensure that all truck drivers are advised of the construction traffic management procedures.

Construction Workers

7.15 The number of construction workers will be determined when the construction methodology, process and staging is finalised by the builder. Construction worker parking will be available on-site. However, construction workers will be encouraged to use public transport services when travelling to and from the site. Public transport timetables will be made available to all construction workers.

7.16 Construction workers will be required to undergo site induction before access to the site is permitted. During the induction process and at more regular tool time talks, construction workers will be encouraged to use public transport. .

Pedestrians

7.17 Pedestrian routes in the vicinity of the site along Rooty Hill Road South and Goldsbro Glade will be maintained during construction. No construction vehicles will be parked nor will material/equipment be stored on the public footpaths adjacent to the site. Class B construction hoarding will be erected along Church Street adjacent to the site and appropriate fencing/hoarding will be provided along Rooty Hill Road South.

7.18 The openings in the construction hoarding at the construction access driveways will be managed and controlled by qualified traffic controllers. Pedestrian warning signs will be erected adjacent to the driveways and on pedestrian paths adjacent to the construction activity, in accordance with SafeWork NSW requirements.

7.19 The movement of trucks entering and exiting the site, and the movement of pedestrians across the construction access driveways when in use, will be managed and controlled by traffic controllers.

Community Public Consultation

7.20 In regards to community public consultation process relating to the demolition, excavation and construction activity, the appointed builder/contractor will undertake meetings and discussions with Blacktown Council and other authorities. A line of communication will be established between builder and the various stakeholders to discuss the proposed construction staging.

7.21 In addition, the builder/contractor will establish a 24 hour feedback telephone hotline and complaints register, and establish procedures to respond to issues

raised by stakeholders, public and community groups. A dedicated website will be established containing information about the project, status of work and other relevant notices.

Draft Construction Traffic Management Plan

7.22 The draft traffic management plan for construction of outlet centre is presented below. It includes the principles of traffic management and is subject to SafeWork NSW requirements, as well as survey and final design.

7.23 The appointed builder/contractor will be responsible for preparation of a detailed construction traffic management plan, to incorporate these principles and refine the construction methodology, staging and timing.

7.24 Site operations, signage, construction fencing/hoarding, overhead protection, safety barriers and line marking detail will be provided in accordance with Australian Standards and the Roads and Maritime Services' Manual for Traffic Control at Work Sites. A copy of the traffic management plan will be kept on-site at all times. Signage details, traffic management, the control of pedestrians in the vicinity of the site, and the control of trucks to and from the site will be the responsibility of the site contractor.

7.25 The draft construction traffic management plan includes the following:

- all construction activity to be provided for on-site or within the on-street work zones;

- the construction activity to be coordinated with the construction of other developments in the vicinity of the site;

- construction vehicle access to be provided from Goldsbro Glade and Church Street, via temporary construction access driveways;

- construction hoarding/fencing and scaffolding to be erected around the construction site, with overhead protection provided where required;

- construction work to be restricted to the approved hours of construction. Any work outside the approved hours would be subject to prior approval from Blacktown Council and the traffic committee;

- the movement of trucks on and off the site to be managed and controlled by traffic controllers in accordance with a safe work method statement and appropriate traffic control plans;

- construction vehicles will include single unit dump truck, concrete trucks and large rigid delivery trucks;

- truck movements to and from the site to be restricted to the designated truck routes;

- trucks to enter and exit the site in a forward direction;

- maintain access to other adjacent properties in the vicinity of the site at all times during construction;

- maintain appropriate capacity for pedestrians and cyclists at all times along the adjacent footpaths;

- openings in the construction hoarding to be provided for access to the site for construction vehicles;

- construction access driveways to be managed and controlled by qualified traffic controllers;

- traffic controllers to ensure that the construction access driveways are kept clear at all times, to allow trucks unobstructed access to the site;

- the management of the site works will be the responsibility of the site contractor/builder;

- pedestrian activity across the site access driveways will be managed and controlled by traffic controllers where required;

- pedestrian and cyclist warning signs to be utilised in the vicinity of the site;

- pedestrian arrangements, construction activity and erection of safety fencing will be provided in accordance with SafeWork NSW requirements;

- the construction site manager/builder to be responsible for the management of the site, the movement of trucks on and off the site, signage detail, traffic management and the control of pedestrians/cyclists; and

- construction signage to be provided in accordance with Australian Standards and the Roads and Maritime Services' Manual for Traffic Control at Work Sites.

8 CONSULTATION WITH AUTHORITIES

8.1 Frasers Property Australia attended a meeting with TfNSW and traffic consultant Colston Budd Rogers & Kafes (CBRK) on 5 August 2020. The following was discussed at this meeting:

- Frasers & CBRK acknowledged receipt of the SEARs, including TfNSW's requirements, which will be addressed within the Traffic Report;
- Frasers & CBRK informed TfNSW of the proposed Stage 3 Concept Plan and sought their feedback on the proposed traffic works, including proposed works to:
    - Church Street/Rooty Hill Road South intersection;
    - Cable Place/Rooty Hill Road South/Site Access intersection;
    - Francis Street/Eastern Road/Rooty Hill Road South intersection;

8.2 Frasers & CBRK attended a subsequent meeting with Blacktown City Council (BCC), on 9 September, in relation to the proposed traffic works, and incorporated both BCC and TfNSW feedback in the Traffic Report.

8.3 The key points raised in these meetings and the relevant sections of the report in which they are addressed are summarised in Table 8.1 below. Minutes of these meetings are provided in Attachment B.

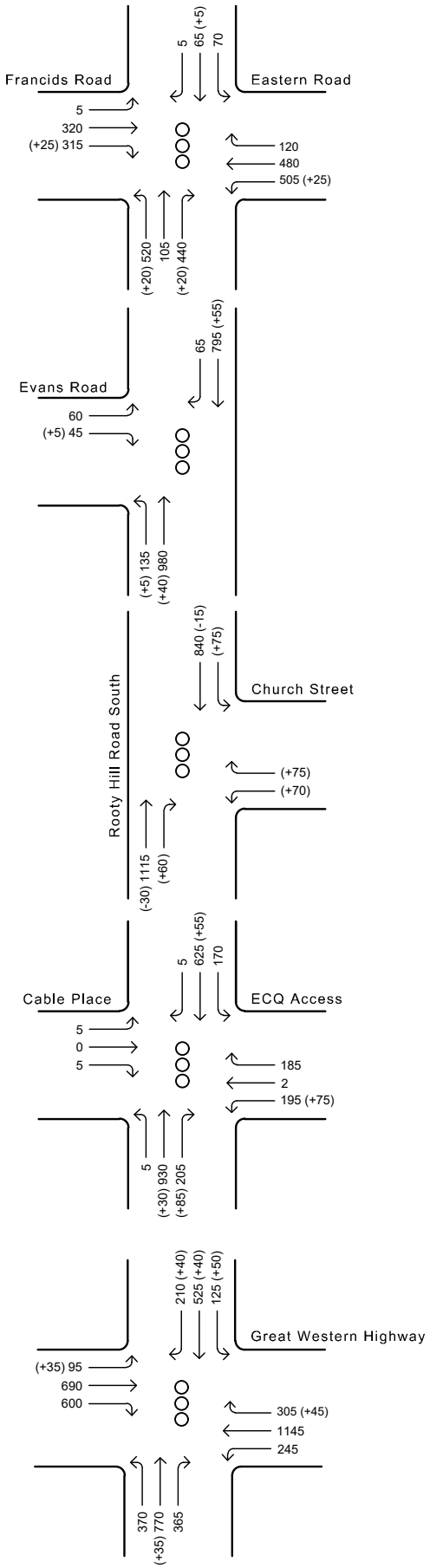
Table 8.1 Summary of Key Points from Meetings with TfNSW and BCC	
TfNSW (5/8/2020)	
Key Points	**Relevant Section of Report**
Works required at the intersection of Church Street and Rooty Hill Road South to reduce queuing along Church Street past centre access.	Chapter 6
Confirmation on phasing for Cable Place/ Rooty Hill road South intersection	Chapter 6
Possible upgrades to intersection of Rooty Hill Road South/Eastern Road/Francis Road	Chapter 6
Provision of active transport for Stage 3 including pedestrian and cycling accessibility	Chapter 3
Blacktown City Council (9/9/2020)	
Key Points	**Relevant Section of Report**
Upgrade of Church Street to accommodate 19 metre semi-trailers	Chapter 6
Upgrading of Rooty Hill Road South/ Church Street intersection to traffic signals and permitting all movements	Chapter 6
Presentation of works required at RHRS / Cable Place	Chapter 6
Presentation of works required at RHRS / Eastern Road / Francis Street	Chapter 6

ECQ Masterplan

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11436 30.11.2020

Figure 1



LEGEND

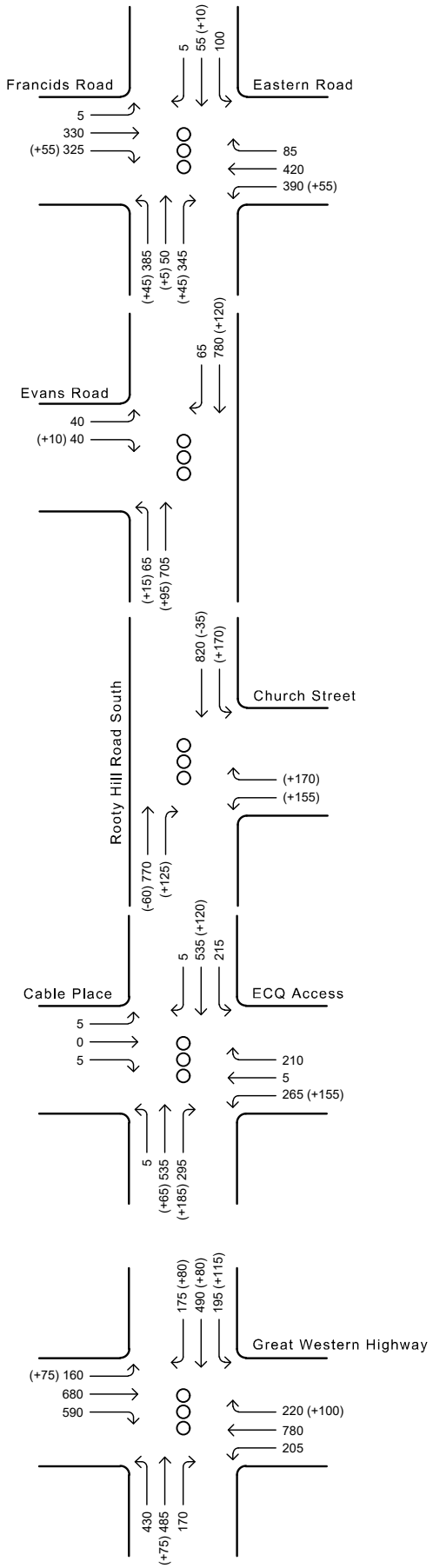
100 - Base Case Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Base case weekday afternoon peak hour traffic flows plus development traffic

Figure 2

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11436 30.11.2020



LEGEND

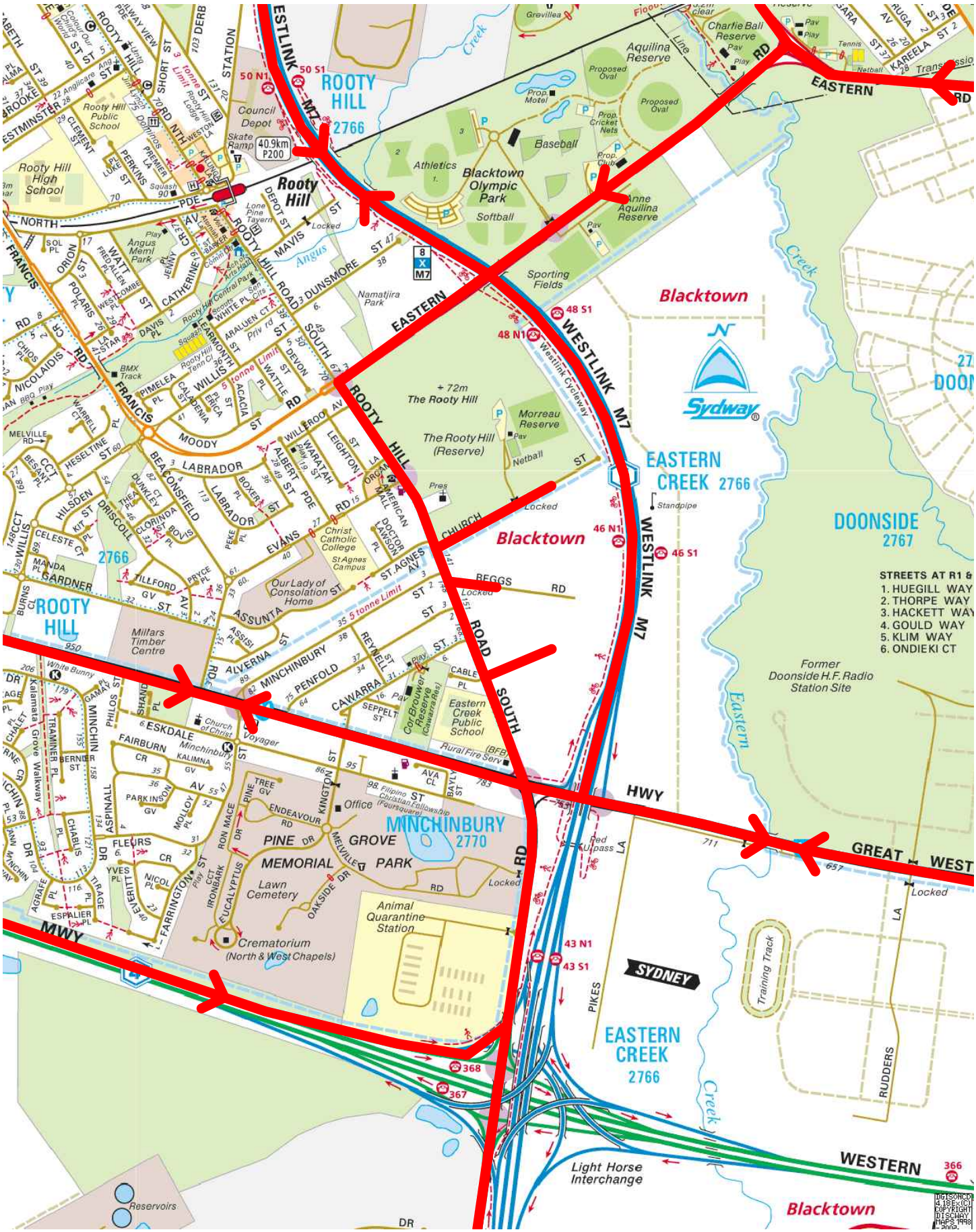
100 - Base Case Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Base Case Saturday midday peak hour traffic flows plus development traffic

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11436 30.11.2020

Figure 3



Truck Routes

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 11436 10.12.2020

Figure 4

ATTACHMENT A

SIDRA MOVEMENT SUMMARIES

Table A1 - Summary of Sidra Analysis for ECQ Outlet Centre									
Intersection		**Scenario**							
		Weekday Afternoon				**Saturday Midday**			
		Base Case	**Plus OC**	**2030**	**Plus OC**	**Base Case**	**Plus OC**	**2030**	**Plus OC**
Rooty Hill Road South / Eastern Road / Francis Road	**Average Delay (s)**	59	51	112	62	40	35	71	35
	LOS	E	D	F	E	C	C	F	C
Rooty Hill Road South/ Evans Avenue	**Average Delay (s)**	14	14	22	18	12	18	13	18
	LOS	A	B	B	B	A	B	A	B
Rooty Hill Road South/ Church Street	**Average Delay (s)**	-	12	-	12	-	24	-	19
	LOS	-	A	-	A	-	B	-	B
Rooty Hill Road South / Cable Place	**Average Delay (s)**	20	20	22	20	27	23	27	21
	LOS	B	B	B	B	B	B	B	B
Spine Road / Lots 1, 2 & 3	**Average Delay (s)**	-	11	-	10	-	12	-	12
	LOS	-	A	-	A	-	A	-	A
GWH/ Wallgrove Road / Rooty Hill Road South	**Average Delay (s)**	52	46	90	66	38	41	43	43
	LOS	D	D	F	E	C	C	D	D

OC = Outlet Centre

USER REPORT FOR NETWORK SITE

Project: Thu PM Networks

Template: Default Site User Report

Site: 101 [Thu PM Base - Rooty Hill Rd - Eastern Rd - Francis Rd]

Network: 1 [Thu PM Base]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, C, D, D1*
Output Phase Sequence: A, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	520	2.0	520	2.0	0.594	28.9	LOS C	21.1	150.0	0.78	0.82	0.78	37.6
2	T1	105	2.0	105	2.0	0.997	92.5	LOS F	45.4	323.4	1.00	1.17	1.57	20.2
3	R2	440	2.0	440	2.0	0.997	96.9	LOS F	45.4	323.4	1.00	1.17	1.57	20.8
Approach		1065	2.0	1065	2.0	0.997	63.3	LOS E	45.4	323.4	0.89	1.00	1.19	26.5
East: Eastern Road														
4	L2	505	2.0	505	2.0	0.529	16.7	LOS B	12.8	91.3	0.71	0.79	0.71	39.0
5	T1	480	2.0	480	2.0	0.992	88.7	LOS F	38.5	274.4	1.00	1.29	1.57	24.5
6	R2	120	2.0	120	2.0	0.377	51.6	LOS D	6.1	43.1	0.93	0.78	0.93	30.7
Approach		1105	2.0	1105	2.0	0.992	51.7	LOS D	38.5	274.4	0.86	1.01	1.11	28.4
North: Rooty Hill Road South														
7	L2	70	2.0	70	2.0	0.209	40.0	LOS C	2.5	17.6	0.89	0.78	1.08	33.6
8	T1	65	2.0	65	2.0	0.700	63.3	LOS E	4.2	30.1	1.00	0.83	1.17	18.5
9	R2	5	2.0	5	2.0	0.700	67.9	LOS E	4.2	30.1	1.00	0.83	1.17	27.7
Approach		140	2.0	140	2.0	0.700	51.8	LOS D	4.2	30.1	0.94	0.80	1.13	26.7
West: Francis Road														
10	L2	5	2.0	5	2.0	0.314	40.9	LOS C	7.2	51.2	0.84	0.69	0.84	35.4
11	T1	320	2.0	320	2.0	0.314	35.7	LOS C	7.3	52.1	0.84	0.69	0.84	37.8
12	R2	315	2.0	315	2.0	0.989	97.3	LOS F	25.0	178.0	1.00	1.11	1.64	14.5
Approach		640	2.0	640	2.0	0.989	66.1	LOS E	25.0	178.0	0.92	0.90	1.24	24.7
All Vehicles		2950	2.0	2950	2.0	0.997	59.0	LOS E	45.4	323.4	0.89	0.97	1.17	26.8

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

Site: 101 [Thu PM Base - Rooty Hill Rd - Evans Ave]

Network: 1 [Thu PM Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	135	2.0	135	2.0	0.729	23.3	LOS B	14.5	103.0	0.90	0.84	0.95	43.8
2	T1	980	2.0	980	2.0	0.729	17.8	LOS B	14.8	105.3	0.90	0.84	0.96	41.1
Approach		1115	2.0	1115	2.0	0.729	18.5	LOS B	14.8	105.3	0.90	0.84	0.96	41.6
North: Rooty Hill Road South														
8	T1	795	2.0	795	2.0	0.387	5.8	LOS A	6.4	45.6	0.52	0.46	0.52	46.7
9	R2	65	2.0	65	2.0	0.387	13.8	LOS A	6.0	42.7	0.64	0.56	0.64	45.7
Approach		860	2.0	860	2.0	0.387	6.4	LOS A	6.4	45.6	0.53	0.47	0.53	46.5
West: Evans Avenue														
10	L2	60	2.0	60	2.0	0.082	16.7	LOS B	1.1	7.8	0.65	0.69	0.65	34.5
12	R2	45	2.0	45	2.0	0.211	32.1	LOS C	1.3	9.0	0.94	0.73	0.94	26.8
Approach		105	2.0	105	2.0	0.211	23.3	LOS B	1.3	9.0	0.77	0.70	0.77	30.7
All Vehicles		2080	2.0	2080	2.0	0.729	13.7	LOS A	14.8	105.3	0.74	0.68	0.77	42.2

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

Site: 102 [Thu PM Base - Rooty Hill Rd - Cable Pl]

Network: 1 [Thu PM Base]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.443	8.0	LOS A	3.0	21.3	0.12	0.12	0.12	55.2
2	T1	930	2.0	930	2.0	0.443	1.6	LOS A	3.0	21.3	0.08	0.07	0.08	55.5
3	R2	216	2.0	216	2.0	0.589	51.3	LOS D	11.5	81.9	0.99	0.83	0.99	20.6
Approach		1151	2.0	1151	2.0	0.589	10.9	LOS A	11.5	81.9	0.25	0.22	0.25	39.5
East: Spine Road														
4	L2	205	2.0	205	2.0	0.279	13.0	LOS A	3.6	25.6	0.55	0.71	0.55	23.9
5	T1	2	2.0	2	2.0	0.005	35.5	LOS C	0.1	0.6	0.78	0.49	0.78	31.2
6	R2	195	2.0	195	2.0	0.878	70.2	LOS E	12.4	88.0	1.00	0.97	1.35	6.4
Approach		402	2.0	402	2.0	0.878	40.8	LOS C	12.4	88.0	0.77	0.84	0.94	10.5
North: Rooty Hill Road (north)														
7	L2	179	2.0	179	2.0	0.130	7.4	LOS A	1.7	12.4	0.24	0.62	0.24	51.0
8	T1	625	2.0	625	2.0	0.397	25.6	LOS B	12.3	87.3	0.75	0.65	0.75	36.6
9	R2	5	2.0	5	2.0	0.045	62.4	LOS E	0.3	2.0	0.96	0.65	0.96	31.3
Approach		809	2.0	809	2.0	0.397	21.8	LOS B	12.3	87.3	0.64	0.64	0.64	39.3
West: Cable Place														
10	L2	5	2.0	5	2.0	0.028	53.9	LOS D	0.3	2.1	0.91	0.65	0.91	22.2
11	T1	1	2.0	1	2.0	0.028	48.3	LOS D	0.3	2.1	0.91	0.65	0.91	25.2
12	R2	5	2.0	5	2.0	0.151	73.2	LOS F	0.3	2.2	1.00	0.63	1.00	17.9
Approach		11	2.0	11	2.0	0.151	62.1	LOS E	0.3	2.2	0.95	0.64	0.95	20.3
All Vehicles		2373	2.0	2373	2.0	0.878	19.9	LOS B	12.4	88.0	0.48	0.47	0.50	34.0

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

Site: 101 [Thu PM Base - Great Western Hwy - Rooty Hill Rd - Wallgrove rd]

Network: 1 [Thu PM Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, B1, C, D, D1*
Output Phase Sequence: A, B, B1, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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	Aver. No. Cycles	Average Speed km/h
South: Wallgrove Road														
1	L2	370	3.0	370	3.0	0.450	20.1	LOS B	8.8	63.4	0.73	0.79	0.78	47.5
2	T1	770	3.0	770	3.0	0.890	58.6	LOS E	24.4	175.5	1.00	1.05	1.26	21.2
3	R2	365	3.0	365	3.0	0.824	65.8	LOS E	11.1	79.5	1.00	0.93	1.24	22.0
Approach		1505	3.0	1505	3.0	0.890	50.9	LOS D	24.4	175.5	0.93	0.96	1.14	26.9
East: Great Western Highway														
4	L2	245	3.0	245	3.0	0.397	26.0	LOS B	7.9	56.4	0.81	0.79	0.81	36.7
5	T1	1145	3.0	1145	3.0	0.918	64.4	LOS E	25.5	183.1	1.00	1.05	1.34	25.0
6	R2	305	3.0	305	3.0	0.804	67.1	LOS E	9.2	66.0	1.00	0.89	1.23	7.2
Approach		1695	3.0	1695	3.0	0.918	59.3	LOS E	25.5	183.1	0.97	0.98	1.24	23.5
North: Rooty Hill Road South														
7	L2	125	2.0	125	2.0	0.178	35.6	LOS C	5.7	40.8	0.87	0.78	0.87	25.3
8	T1	525	2.0	525	2.0	0.603	48.8	LOS D	14.5	103.4	1.00	0.84	1.00	30.7
9	R2	210	2.0	210	2.0	0.942	77.5	LOS F	13.7	97.3	1.00	0.99	1.34	24.7
Approach		860	2.0	860	2.0	0.942	53.9	LOS D	14.5	103.4	0.98	0.87	1.06	28.4
West: Great Western Highway														
10	L2	95	3.0	95	3.0	0.102	22.5	LOS B	2.7	19.3	0.54	0.72	0.54	40.9
11	T1	690	3.0	690	3.0	0.355	30.6	LOS C	9.6	69.3	0.80	0.67	0.80	39.2
12	R2	600	3.0	600	3.0	0.949	59.3	LOS E	15.1	108.4	1.00	1.02	1.49	32.5
Approach		1385	3.0	1385	3.0	0.949	42.5	LOS C	15.1	108.4	0.87	0.82	1.08	35.2
All Vehicles		5445	2.8	5445	2.8	0.949	51.9	LOS D	25.5	183.1	0.94	0.92	1.15	28.1

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

USER REPORT FOR NETWORK SITE

Project: Thu PM Networks

Template: Default Site User Report

Site: 101 [Thu PM Base + Dev + Upgrades - Rooty Hill Rd - Eastern Rd - Francis Rd (Op 2 - RHRS Lane Des)]

Network: 2 [Thu PM Base + Dev]

Saurday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, B1*, D, D1*
Output Phase Sequence: A, B, B1*, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	540	2.0	540	2.0	0.844	41.6	LOS C	34.1	242.6	0.97	0.93	1.06	32.9
2	T1	105	2.0	105	2.0	0.844	37.2	LOS C	34.1	242.6	0.97	0.93	1.06	31.5
3	R2	460	2.0	460	2.0	0.895	64.0	LOS E	25.7	183.0	1.00	1.13	1.84	26.5
Approach		1105	2.0	1105	2.0	0.895	50.5	LOS D	34.1	242.6	0.98	1.02	1.39	29.8
East: Eastern Road														
4	L2	530	2.0	530	2.0	0.601	18.2	LOS B	14.1	100.6	0.78	0.81	0.78	37.8
5	T1	480	2.0	480	2.0	0.975	78.2	LOS F	35.5	252.9	1.00	1.25	1.52	26.3
6	R2	120	2.0	120	2.0	0.343	47.7	LOS D	5.7	40.3	0.91	0.78	0.91	31.7
Approach		1130	2.0	1130	2.0	0.975	46.8	LOS D	35.5	252.9	0.89	1.00	1.11	29.8
North: Rooty Hill Road South														
7	L2	70	2.0	70	2.0	0.183	26.2	LOS B	2.0	14.2	0.86	0.72	0.86	38.4
8	T1	70	2.0	70	2.0	0.675	59.3	LOS E	4.3	30.6	1.00	0.83	1.14	19.3
9	R2	5	2.0	5	2.0	0.675	63.9	LOS E	4.3	30.6	1.00	0.83	1.14	28.6
Approach		145	2.0	145	2.0	0.675	43.5	LOS D	4.3	30.6	0.93	0.78	1.00	28.7
West: Francis Road														
10	L2	5	2.0	5	2.0	0.311	39.8	LOS C	6.9	49.2	0.84	0.69	0.84	35.8
11	T1	320	2.0	320	2.0	0.311	34.3	LOS C	7.0	49.7	0.84	0.69	0.84	38.4
12	R2	340	2.0	340	2.0	0.973	86.7	LOS F	25.0	178.0	1.00	1.09	1.58	15.8
Approach		665	2.0	665	2.0	0.973	61.1	LOS E	25.0	178.0	0.92	0.89	1.22	25.6
All Vehicles		3045	2.0	3045	2.0	0.975	51.1	LOS D	35.5	252.9	0.93	0.97	1.23	28.8

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

Site: 101 [Thu PM Base + Dev - Rooty Hill Rd - Evans Ave]

Network: 2 [Thu PM Base + Dev]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	140	2.0	140	2.0	0.758	24.4	LOS B	15.7	111.7	0.91	0.87	1.00	38.0
2	T1	1020	2.0	1020	2.0	0.758	18.9	LOS B	16.0	114.1	0.92	0.87	1.00	27.6
Approach		1160	2.0	1160	2.0	0.758	19.6	LOS B	16.0	114.1	0.92	0.87	1.00	29.8
North: Rooty Hill Road South														
8	T1	860	2.0	860	2.0	0.415	5.9	LOS A	7.1	50.3	0.54	0.48	0.54	46.4
9	R2	65	2.0	65	2.0	0.415	14.0	LOS A	6.6	47.1	0.65	0.57	0.65	45.6
Approach		925	2.0	925	2.0	0.415	6.5	LOS A	7.1	50.3	0.55	0.48	0.55	46.3
West: Evans Avenue														
10	L2	60	2.0	60	2.0	0.082	16.7	LOS B	1.1	7.8	0.65	0.69	0.65	34.5
12	R2	50	2.0	50	2.0	0.234	32.2	LOS C	1.4	10.1	0.94	0.73	0.94	26.8
Approach		110	2.0	110	2.0	0.234	23.7	LOS B	1.4	10.1	0.78	0.71	0.78	30.5
All Vehicles		2195	2.0	2195	2.0	0.758	14.3	LOS A	16.0	114.1	0.75	0.70	0.80	35.6

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

Site: 103 [Thu PM Base + Dev - Church Street Access]

Network: 2 [Thu PM Base + Dev]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Opposed Turns
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
2	T1	1085	2.0	1085	2.0	0.388	6.4	LOS A	12.8	91.4	0.45	0.40	0.45	47.7
3	R2	63	2.0	63	2.0	0.154	16.2	LOS B	1.5	10.9	0.52	0.70	0.52	45.2
Approach		1148	2.0	1148	2.0	0.388	7.0	LOS A	12.8	91.4	0.45	0.42	0.45	47.4
East: Church Street														
4	L2	74	2.0	74	2.0	0.143	37.3	LOS C	3.0	21.0	0.78	0.74	0.78	27.2
6	R2	79	2.0	79	2.0	0.365	55.3	LOS D	4.0	28.8	0.96	0.77	0.96	21.5
Approach		153	2.0	153	2.0	0.365	46.6	LOS D	4.0	28.8	0.88	0.75	0.88	23.9
North: Rooty Hill Road (north)														
7	L2	79	2.0	79	2.0	0.387	17.1	LOS B	12.1	85.8	0.55	0.53	0.55	45.8
8	T1	825	2.0	825	2.0	0.387	11.6	LOS A	12.3	87.2	0.55	0.51	0.55	34.6
Approach		904	2.0	904	2.0	0.387	12.1	LOS A	12.3	87.2	0.55	0.51	0.55	36.5
All Vehicles		2205	2.0	2205	2.0	0.388	11.8	LOS A	12.8	91.4	0.52	0.48	0.52	39.9

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

Site: 102 [Thu PM Base + Dev + Upgrades - Rooty Hill Rd - Cable Pl]

Network: 2 [Thu PM Base + Dev]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.358	9.3	LOS A	5.2	36.7	0.22	0.20	0.22	54.0
2	T1	960	2.0	960	2.0	0.358	3.6	LOS A	5.2	36.7	0.21	0.19	0.21	50.9
3	R2	305	2.0	305	2.0	0.483	19.5	LOS B	7.4	52.7	0.48	0.71	0.48	30.6
Approach		1270	2.0	1270	2.0	0.483	7.4	LOS A	7.4	52.7	0.27	0.31	0.27	44.0
East: Spine Road														
4	L2	284	2.0	284	2.0	0.318	11.1	LOS A	4.6	32.8	0.51	0.71	0.51	24.1
5	T1	2	2.0	2	2.0	0.842	63.8	LOS E	6.0	42.6	1.00	0.94	1.40	21.0
6	R2	195	2.0	195	2.0	0.842	69.3	LOS E	6.0	42.6	1.00	0.93	1.40	5.6
Approach		481	2.0	481	2.0	0.842	34.9	LOS C	6.0	42.6	0.71	0.80	0.87	10.6
North: Rooty Hill Road (north)														
7	L2	179	2.0	179	2.0	0.136	6.1	LOS A	0.4	3.0	0.06	0.57	0.06	48.4
8	T1	680	2.0	680	2.0	0.488	34.1	LOS C	16.2	115.6	0.93	0.80	0.93	25.4
9	R2	5	2.0	5	2.0	0.300	75.2	LOS F	0.3	2.3	1.00	0.62	1.00	25.0
Approach		864	2.0	864	2.0	0.488	28.5	LOS C	16.2	115.6	0.75	0.75	0.75	28.2
West: Cable Place														
10	L2	5	2.0	5	2.0	0.065	61.5	LOS E	0.3	2.3	0.97	0.65	0.97	20.3
11	T1	1	2.0	1	2.0	0.065	56.0	LOS D	0.3	2.3	0.97	0.65	0.97	20.3
12	R2	5	2.0	5	2.0	0.070	65.3	LOS E	0.3	2.0	1.00	0.63	1.00	19.3
Approach		11	2.0	11	2.0	0.070	62.7	LOS E	0.3	2.3	0.98	0.64	0.98	19.9
All Vehicles		2626	2.0	2626	2.0	0.842	19.6	LOS B	16.2	115.6	0.51	0.55	0.54	30.0

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

Site: 101 [Thu PM Base + Dev + Upgrades - GWH - Rooty Hill Rd - Wallgrove Rd]

Network: 2 [Thu PM Base + Dev]

Weekday Mornign Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B1*, B, C, D1*, D
Output Phase Sequence: A, B, C, D1*, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Wallgrove Road														
1	L2	370	3.0	370	3.0	0.400	23.3	LOS B	12.1	86.9	0.66	0.76	0.66	45.6
2	T1	805	3.0	805	3.0	0.827	47.2	LOS D	22.3	160.0	1.00	0.96	1.14	24.2
3	R2	365	3.0	365	3.0	0.736	58.4	LOS E	10.0	72.0	1.00	0.87	1.11	23.7
Approach		1540	3.0	1540	3.0	0.827	44.1	LOS D	22.3	160.0	0.92	0.89	1.02	29.0
East: Great Western Highway														
4	L2	245	3.0	245	3.0	0.309	28.1	LOS B	8.5	60.9	0.69	0.78	0.69	35.5
5	T1	1145	3.0	1145	3.0	0.813	46.9	LOS D	20.9	150.0	1.00	0.93	1.12	30.8
6	R2	350	3.0	350	3.0	0.481	49.3	LOS D	8.5	60.7	0.93	0.81	0.93	9.7
Approach		1740	3.0	1740	3.0	0.813	44.7	LOS D	20.9	150.0	0.94	0.88	1.02	28.0
North: Rooty Hill Road South														
7	L2	175	2.0	175	2.0	0.210	33.2	LOS C	7.6	54.2	0.87	0.80	0.87	26.2
8	T1	565	2.0	565	2.0	0.734	55.4	LOS D	15.5	110.6	1.00	0.86	1.03	28.8
9	R2	250	2.0	250	2.0	0.834	50.1	LOS D	6.8	48.1	0.98	0.83	1.07	31.7
Approach		990	2.0	990	2.0	0.834	50.2	LOS D	15.5	110.6	0.97	0.84	1.01	29.2
West: Great Western Highway														
10	L2	130	3.0	130	3.0	0.187	31.5	LOS C	4.6	33.1	0.70	0.76	0.70	34.3
11	T1	690	3.0	690	3.0	0.490	38.6	LOS C	10.7	76.7	0.91	0.76	0.91	34.5
12	R2	600	3.0	600	3.0	0.825	59.2	LOS E	17.0	122.2	1.00	0.92	1.18	32.5
Approach		1420	3.0	1420	3.0	0.825	46.7	LOS D	17.0	122.2	0.93	0.83	1.00	33.4
All Vehicles		5690	2.8	5690	2.8	0.834	46.0	LOS D	22.3	160.0	0.94	0.86	1.01	29.9

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

Site: 101 [Thu PM Base + Dev - Lots 1, 2 & 3 Connection Sat full development]

Network: 2 [Thu PM Base + Dev]

Roundabout connection to Lots 1, 2 & 3
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Lot 1 Access														
1	L2	142	2.0	142	2.0	0.188	5.3	LOS A	0.9	6.1	0.43	0.60	0.43	49.8
2	T1	21	2.0	21	2.0	0.188	5.6	LOS A	0.9	6.1	0.43	0.60	0.43	55.1
3	R2	21	2.0	21	2.0	0.188	10.2	LOS A	0.9	6.1	0.43	0.60	0.43	55.0
Approach		184	2.0	184	2.0	0.188	5.9	LOS A	0.9	6.1	0.43	0.60	0.43	51.6
East: Spine Road (east)														
4	L2	21	2.0	21	2.0	0.034	5.6	LOS A	0.2	1.4	0.50	0.52	0.50	53.3
5	T1	37	2.0	37	2.0	0.034	5.8	LOS A	0.2	1.4	0.50	0.55	0.50	48.3
6	R2	21	2.0	21	2.0	0.034	10.7	LOS A	0.2	1.3	0.51	0.61	0.51	52.9
Approach		79	2.0	79	2.0	0.034	7.1	LOS A	0.2	1.4	0.50	0.56	0.50	51.5
North: Lot 2 Access														
7	L2	21	2.0	21	2.0	0.250	5.2	LOS A	1.5	10.9	0.45	0.64	0.45	51.2
8	T1	21	2.0	21	2.0	0.250	5.5	LOS A	1.5	10.9	0.45	0.64	0.45	52.4
9	R2	253	2.0	253	2.0	0.250	10.1	LOS A	1.5	10.9	0.45	0.64	0.45	46.0
Approach		295	2.0	295	2.0	0.250	9.5	LOS A	1.5	10.9	0.45	0.64	0.45	47.3
West: Spine Road (west)														
10	L2	253	2.0	253	2.0	0.155	4.4	LOS A	0.8	5.7	0.18	0.47	0.18	51.7
11	T1	74	2.0	74	2.0	0.153	4.5	LOS A	0.8	5.6	0.19	0.56	0.19	50.7
12	R2	142	2.0	142	2.0	0.153	9.1	LOS A	0.8	5.6	0.19	0.56	0.19	50.6
Approach		468	2.0	468	2.0	0.155	5.8	LOS A	0.8	5.7	0.18	0.51	0.18	51.2
All Vehicles		1026	2.0	1026	2.0	0.250	7.0	LOS A	1.5	10.9	0.33	0.57	0.33	50.2

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.
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.

USER REPORT FOR NETWORK SITE

Project: Thu PM Networks

Template: Default Site User Report

Site: 101 [Thu PM 2029 Base - Rooty Hill Rd - Eastern Rd - Francis Rd]

Network: 3 [Thu PM 2029 Base]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, C, D, D1*
Output Phase Sequence: A, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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	Aver. No. Cycles	Average Speed km/h
South: Rooty Hill Road South														
1	L2	635	2.0	621	2.0	0.661	34.0	LOS C	32.9	234.1	0.80	0.84	0.80	35.4
2	T1	130	2.0	127	2.0	1.123	191.5	LOS F	79.1	563.0	1.00	1.36	1.92	12.0
3	R2	535	2.0	523	2.0	1.123	195.9	LOS F	79.1	563.0	1.00	1.36	1.92	12.2
Approach		1300	2.0	1271 N1	2.0	1.123	116.4	LOS F	79.1	563.0	0.90	1.11	1.37	17.9
East: Eastern Road														
4	L2	595	2.0	595	2.0	0.567	18.6	LOS B	19.9	141.4	0.68	0.79	0.68	37.5
5	T1	565	2.0	565	2.0	1.122	191.5	LOS F	76.5	544.6	1.00	1.63	1.93	14.1
6	R2	140	2.0	140	2.0	0.395	62.7	LOS E	9.0	64.0	0.92	0.80	0.92	28.0
Approach		1300	2.0	1300	2.0	1.122	98.5	LOS F	76.5	544.6	0.85	1.16	1.25	19.0
North: Rooty Hill Road South														
7	L2	85	2.0	85	2.0	0.232	53.9	LOS D	4.3	30.8	0.88	0.80	1.15	29.8
8	T1	80	2.0	80	2.0	1.107	185.6	LOS F	10.6	75.6	1.00	1.25	2.12	8.1
9	R2	5	2.0	5	2.0	1.107	190.1	LOS F	10.6	75.6	1.00	1.25	2.12	14.0
Approach		170	2.0	170	2.0	1.107	119.9	LOS F	10.6	75.6	0.94	1.03	1.63	15.8
West: Francis Road														
10	L2	5	2.0	5	2.0	0.342	49.2	LOS D	10.9	77.3	0.83	0.69	0.83	32.8
11	T1	380	2.0	380	2.0	0.342	44.0	LOS D	11.0	78.2	0.83	0.70	0.83	34.8
12	R2	370	2.0	370	2.0	1.135	211.4	LOS F	50.7	361.1	1.00	1.28	2.04	7.4
Approach		755	2.0	755	2.0	1.135	126.1	LOS F	50.7	361.1	0.91	0.98	1.42	15.8
All Vehicles		3525	2.0	3496 N1	2.0	1.135	112.0	LOS F	79.1	563.0	0.88	1.09	1.35	17.7

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

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

Site: 101 [Thu PM 2029 Base - Rooty Hill Rd - Evans Ave]

Network: 3 [Thu PM 2029 Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	135	2.0	132	2.0	0.874	32.1	LOS C	35.7	254.5	0.93	0.98	1.09	40.3
2	T1	1215	2.0	1186	2.0	0.874	29.9	LOS C	35.7	254.5	0.94	1.01	1.16	34.1
Approach		1350	2.0	1318[N1]	2.0	0.874	30.2	LOS C	35.7	254.5	0.94	1.01	1.15	34.9
North: Rooty Hill Road South														
8	T1	955	2.0	908	2.0	0.459	8.2	LOS A	10.0	71.0	0.53	0.47	0.53	43.0
9	R2	65	2.0	62	2.0	0.459	23.5	LOS B	9.2	65.2	0.78	0.68	0.78	40.0
Approach		1020	2.0	970[N1]	2.0	0.459	9.2	LOS A	10.0	71.0	0.55	0.48	0.55	42.6
West: Evans Avenue														
10	L2	60	2.0	60	2.0	0.101	24.9	LOS B	1.6	11.7	0.73	0.71	0.73	29.9
12	R2	45	2.0	45	2.0	0.218	41.0	LOS C	1.7	11.9	0.95	0.73	0.95	23.7
Approach		105	2.0	105	2.0	0.218	31.8	LOS C	1.7	11.9	0.82	0.72	0.82	26.9
All Vehicles		2475	2.0	2393[N1]	2.1	0.874	21.7	LOS B	35.7	254.5	0.77	0.78	0.89	36.3

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

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

Site: 102 [Thu PM 2029 Base - Rooty Hill Rd - Cable Pl]

Network: 3 [Thu PM 2029 Base]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.482	10.8	LOS A	7.5	53.7	0.20	0.19	0.20	52.6
2	T1	1165	2.0	1133	2.0	0.482	4.2	LOS A	7.5	53.7	0.17	0.16	0.17	49.6
3	R2	216	2.0	210	2.0	0.661	68.6	LOS E	14.1	100.1	0.96	0.82	0.96	16.9
Approach		1386	2.0	1348 N1	2.0	0.661	14.3	LOS A	14.1	100.1	0.29	0.26	0.29	35.8
East: Spine Road														
4	L2	205	2.0	205	2.0	0.302	13.5	LOS A	4.0	28.8	0.51	0.70	0.51	23.4
5	T1	2	2.0	2	2.0	0.005	49.6	LOS D	0.1	0.8	0.81	0.51	0.81	26.3
6	R2	195	2.0	195	2.0	0.892	88.9	LOS F	15.9	113.4	1.00	0.96	1.31	5.2
Approach		402	2.0	402	2.0	0.892	50.2	LOS D	15.9	113.4	0.75	0.83	0.90	8.8
North: Rooty Hill Road (north)														
7	L2	179	2.0	170	2.0	0.117	7.3	LOS A	1.8	13.1	0.20	0.61	0.20	51.1
8	T1	785	2.0	748	2.0	0.391	24.5	LOS B	16.7	119.2	0.67	0.58	0.67	37.2
9	R2	5	2.0	5	2.0	0.043	78.9	LOS F	0.3	2.4	0.97	0.65	0.97	27.9
Approach		969	2.0	923 N1	2.0	0.391	21.6	LOS B	16.7	119.2	0.58	0.59	0.58	39.3
West: Cable Place														
10	L2	5	2.0	5	2.0	0.035	71.7	LOS F	0.4	2.9	0.93	0.65	0.93	18.3
11	T1	1	2.0	1	2.0	0.035	66.1	LOS E	0.4	2.9	0.93	0.65	0.93	21.1
12	R2	5	2.0	5	2.0	0.197	94.5	LOS F	0.4	2.9	1.00	0.63	1.00	14.8
Approach		11	2.0	11	2.0	0.197	81.5	LOS F	0.4	2.9	0.96	0.64	0.96	16.8
All Vehicles		2768	2.0	2684 N1	2.1	0.892	22.4	LOS B	16.7	119.2	0.46	0.46	0.49	32.4

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

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

Site: 101 [Thu PM 2029 Base - Great Western Hwy - Rooty Hill Rd - Wallgrove rd]

Network: 3 [Thu PM 2029 Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, B1, C, D, D1*
Output Phase Sequence: A, B, B1, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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	Aver. No. Cycles	Average Speed km/h
South: Wallgrove Road														
1	L2	450	3.0	450	3.0	0.530	24.1	LOS B	14.5	104.3	0.76	0.81	0.80	45.2
2	T1	930	3.0	930	3.0	1.042	134.8	LOS F	51.9	372.5	1.00	1.38	1.64	11.3
3	R2	445	3.0	445	3.0	0.966	106.8	LOS F	20.4	146.8	1.00	1.07	1.49	15.9
Approach		1825	3.0	1825	3.0	1.042	100.7	LOS F	51.9	372.5	0.94	1.17	1.40	17.3
East: Great Western Highway														
4	L2	300	3.0	300	3.0	0.442	29.4	LOS C	11.9	85.7	0.80	0.80	0.80	34.8
5	T1	1395	3.0	1395	3.0	1.012	116.5	LOS F	49.6	356.2	1.00	1.21	1.52	16.0
6	R2	365	3.0	365	3.0	1.004	125.8	LOS F	18.1	129.7	1.00	1.06	1.65	4.0
Approach		2060	3.0	2060	3.0	1.012	105.4	LOS F	49.6	356.2	0.97	1.12	1.44	15.3
North: Rooty Hill Road South														
7	L2	145	2.0	140	2.0	0.204	50.5	LOS D	8.7	61.9	0.92	0.80	0.92	20.6
8	T1	625	2.0	602	2.0	0.670	67.5	LOS E	21.7	154.5	1.00	0.85	1.00	25.9
9	R2	250	2.0	241	2.0	1.039	137.5	LOS F	25.4	180.7	1.00	1.15	1.65	16.4
Approach		1020	2.0	983 N1	2.0	1.039	82.3	LOS F	25.4	180.7	0.99	0.92	1.15	22.1
West: Great Western Highway														
10	L2	110	3.0	110	3.0	0.111	24.5	LOS B	3.8	27.1	0.51	0.72	0.51	39.2
11	T1	830	3.0	830	3.0	0.381	35.7	LOS C	14.5	103.8	0.77	0.66	0.77	36.1
12	R2	720	3.0	720	3.0	1.024	103.2	LOS F	27.6	197.9	1.00	1.09	1.61	19.3
Approach		1660	3.0	1660	3.0	1.024	64.2	LOS E	27.6	197.9	0.85	0.85	1.12	24.4
All Vehicles		6565	2.8	6528 N1	2.9	1.042	90.1	LOS F	51.9	372.5	0.94	1.04	1.30	19.0

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

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

USER REPORT FOR NETWORK SITE

Project: Thu PM Networks

Template: Default Site User Report

Site: 101 [Thu PM 2029 Base + Dev - Rooty Hill Rd - Evans Ave]

Network: 4 [Thu PM 2029 Base + Dev]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	140	2.0	140	2.0	0.848	31.3	LOS C	22.8	162.4	0.93	0.99	1.14	34.8
2	T1	1255	2.0	1255	2.0	0.848	24.8	LOS B	27.4	195.1	0.94	0.98	1.12	23.8
Approach		1395	2.0	1395	2.0	0.848	25.5	LOS B	27.4	195.1	0.94	0.98	1.12	25.7
North: Rooty Hill Road South														
8	T1	1010	2.0	1010	2.0	0.490	7.5	LOS A	10.0	71.5	0.56	0.50	0.56	44.1
9	R2	65	2.0	65	2.0	0.490	18.6	LOS B	9.5	67.5	0.74	0.65	0.74	42.7
Approach		1075	2.0	1075	2.0	0.490	8.2	LOS A	10.0	71.5	0.58	0.51	0.58	43.9
West: Evans Avenue														
10	L2	60	2.0	60	2.0	0.117	21.1	LOS B	1.4	9.9	0.70	0.70	0.70	31.9
12	R2	50	2.0	50	2.0	0.239	36.7	LOS C	1.6	11.7	0.95	0.73	0.95	25.1
Approach		110	2.0	110	2.0	0.239	28.2	LOS B	1.6	11.7	0.81	0.72	0.81	28.4
All Vehicles		2580	2.0	2580	2.0	0.848	18.4	LOS B	27.4	195.1	0.78	0.78	0.88	31.8

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

Site: 103 [Thu PM 2029 Base + Dev - Church Street Access]

Network: 4 [Thu PM 2029 Base + Dev]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Opposed Turns
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
2	T1	1320	2.0	1320	2.0	0.492	8.2	LOS A	19.6	139.6	0.59	0.54	0.59	45.1
3	R2	63	2.0	63	2.0	0.170	19.3	LOS B	2.0	14.4	0.68	0.74	0.68	43.3
Approach		1383	2.0	1383	2.0	0.492	8.7	LOS A	19.6	139.6	0.60	0.55	0.60	44.9
East: Church Street														
4	L2	74	2.0	74	2.0	0.148	38.1	LOS C	3.0	21.3	0.79	0.74	0.79	26.9
6	R2	79	2.0	79	2.0	0.431	57.8	LOS E	4.2	29.6	0.98	0.77	0.98	20.9
Approach		153	2.0	153	2.0	0.431	48.3	LOS D	4.2	29.6	0.89	0.76	0.89	23.4
North: Rooty Hill Road (north)														
7	L2	79	2.0	79	2.0	0.449	17.2	LOS B	14.7	104.4	0.56	0.54	0.56	45.9
8	T1	985	2.0	985	2.0	0.449	11.7	LOS A	14.9	106.0	0.57	0.53	0.57	34.6
Approach		1064	2.0	1064	2.0	0.449	12.1	LOS A	14.9	106.0	0.57	0.53	0.57	36.2
All Vehicles		2600	2.0	2600	2.0	0.492	12.4	LOS A	19.6	139.6	0.60	0.55	0.60	39.1

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

Site: 102 [Thu PM 2029 Base + Dev + Upgrades - Rooty Hill Rd - Cable Pl]

Network: 4 [Thu PM 2029 Base + Dev]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.445	10.8	LOS A	8.9	63.2	0.30	0.28	0.30	52.6
2	T1	1195	2.0	1195	2.0	0.445	5.2	LOS A	8.9	63.2	0.30	0.27	0.30	47.8
3	R2	305	2.0	305	2.0	0.539	22.0	LOS B	8.6	60.9	0.55	0.73	0.55	28.8
Approach		1505	2.0	1505	2.0	0.539	8.6	LOS A	8.9	63.2	0.35	0.37	0.35	42.2
East: Spine Road														
4	L2	284	2.0	284	2.0	0.351	12.8	LOS A	5.8	41.1	0.58	0.73	0.58	22.0
5	T1	2	2.0	2	2.0	0.842	63.8	LOS E	6.0	42.6	1.00	0.94	1.40	21.0
6	R2	195	2.0	195	2.0	0.842	69.3	LOS E	6.0	42.6	1.00	0.93	1.40	5.6
Approach		481	2.0	481	2.0	0.842	35.9	LOS C	6.0	42.6	0.75	0.82	0.91	10.3
North: Rooty Hill Road (north)														
7	L2	179	2.0	179	2.0	0.135	6.6	LOS A	0.9	6.6	0.14	0.59	0.14	47.5
8	T1	840	2.0	840	2.0	0.554	33.9	LOS C	20.6	146.3	0.95	0.83	0.95	25.4
9	R2	5	2.0	5	2.0	0.300	75.5	LOS F	0.3	2.3	1.00	0.62	1.00	24.9
Approach		1024	2.0	1024	2.0	0.554	29.4	LOS C	20.6	146.3	0.81	0.78	0.81	27.7
West: Cable Place														
10	L2	5	2.0	5	2.0	0.065	61.5	LOS E	0.3	2.3	0.97	0.65	0.97	20.3
11	T1	1	2.0	1	2.0	0.065	56.0	LOS D	0.3	2.3	0.97	0.65	0.97	20.3
12	R2	5	2.0	5	2.0	0.070	65.3	LOS E	0.3	2.0	1.00	0.63	1.00	19.3
Approach		11	2.0	11	2.0	0.070	62.7	LOS E	0.3	2.3	0.98	0.64	0.98	19.9
All Vehicles		3021	2.0	3021	2.0	0.842	20.2	LOS B	20.6	146.3	0.57	0.58	0.60	29.8

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

Site: 101 [Thu PM 2029 Base + Dev + Upgrades - GWH - Rooty Hill Rd - Wallgrove Rd]

Network: 4 [Thu PM 2029 Base + Dev]

Weekday Mornign Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B1*, B, C, D1*, D
Output Phase Sequence: A, B, C, D1*, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Wallgrove Road														
1	L2	450	3.0	450	3.0	0.486	24.4	LOS B	15.6	112.0	0.70	0.78	0.70	45.0
2	T1	965	3.0	965	3.0	0.991	86.9	LOS F	37.8	271.2	1.00	1.30	1.59	16.1
3	R2	445	3.0	445	3.0	0.897	69.4	LOS E	13.9	99.8	1.00	1.02	1.40	21.3
Approach		1860	3.0	1860	3.0	0.991	67.6	LOS E	37.8	271.2	0.93	1.11	1.33	22.7
East: Great Western Highway														
4	L2	300	3.0	300	3.0	0.378	28.9	LOS C	10.8	77.4	0.72	0.79	0.72	35.1
5	T1	1395	3.0	1395	3.0	0.990	86.9	LOS F	36.3	260.4	1.00	1.21	1.60	20.2
6	R2	410	3.0	410	3.0	0.564	50.1	LOS D	10.1	72.6	0.95	0.82	0.95	9.6
Approach		2105	3.0	2105	3.0	0.990	71.5	LOS F	36.3	260.4	0.95	1.07	1.35	20.4
North: Rooty Hill Road South														
7	L2	195	2.0	195	2.0	0.234	33.7	LOS C	8.6	61.1	0.88	0.81	0.88	26.0
8	T1	665	2.0	665	2.0	0.864	59.8	LOS E	19.2	136.6	1.00	0.93	1.13	27.7
9	R2	290	2.0	290	2.0	0.968	61.1	LOS E	8.9	63.2	1.00	0.93	1.31	28.4
Approach		1150	2.0	1150	2.0	0.968	55.7	LOS D	19.2	136.6	0.98	0.91	1.13	27.7
West: Great Western Highway														
10	L2	145	3.0	145	3.0	0.209	31.7	LOS C	5.2	37.2	0.71	0.76	0.71	34.1
11	T1	830	3.0	830	3.0	0.589	39.8	LOS C	13.2	95.0	0.94	0.79	0.94	33.9
12	R2	720	3.0	720	3.0	0.990	96.5	LOS F	27.9	200.3	1.00	1.11	1.65	24.5
Approach		1695	3.0	1695	3.0	0.990	63.2	LOS E	27.9	200.3	0.94	0.92	1.22	28.1
All Vehicles		6810	2.8	6810	2.8	0.991	65.7	LOS E	37.8	271.2	0.95	1.02	1.27	24.2

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

Site: 101 [Thu PM 2029 Base + Dev - Lots 1, 2 & 3 Connection Sat full development]

Network: 4 [Thu PM 2029 Base + Dev]

Roundabout connection to Lots 1, 2 & 3
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Lot 1 Access														
1	L2	142	2.0	142	2.0	0.195	5.5	LOS A	0.9	6.2	0.46	0.63	0.46	49.7
2	T1	21	2.0	21	2.0	0.195	5.8	LOS A	0.9	6.2	0.46	0.63	0.46	55.0
3	R2	21	2.0	21	2.0	0.195	10.5	LOS A	0.9	6.2	0.46	0.63	0.46	54.9
Approach		184	2.0	184	2.0	0.195	6.1	LOS A	0.9	6.2	0.46	0.63	0.46	51.5
East: Spine Road (east)														
4	L2	21	2.0	21	2.0	0.062	5.7	LOS A	0.4	2.6	0.51	0.53	0.51	53.2
5	T1	100	2.0	100	2.0	0.062	5.9	LOS A	0.4	2.6	0.51	0.56	0.51	48.5
6	R2	21	2.0	21	2.0	0.062	10.7	LOS A	0.3	2.4	0.52	0.59	0.52	53.5
Approach		142	2.0	142	2.0	0.062	6.6	LOS A	0.4	2.6	0.51	0.56	0.51	50.6
North: Lot 2 Access														
7	L2	21	2.0	21	2.0	0.250	5.2	LOS A	1.6	11.1	0.45	0.64	0.45	51.2
8	T1	21	2.0	21	2.0	0.250	5.5	LOS A	1.6	11.1	0.45	0.64	0.45	52.4
9	R2	253	2.0	253	2.0	0.250	10.1	LOS A	1.6	11.1	0.45	0.64	0.45	46.0
Approach		295	2.0	295	2.0	0.250	9.5	LOS A	1.6	11.1	0.45	0.64	0.45	47.3
West: Spine Road (west)														
10	L2	253	2.0	253	2.0	0.155	4.4	LOS A	0.8	5.6	0.17	0.47	0.17	51.8
11	T1	74	2.0	74	2.0	0.153	4.5	LOS A	0.8	5.5	0.18	0.57	0.18	50.8
12	R2	142	2.0	142	2.0	0.153	9.1	LOS A	0.8	5.5	0.18	0.57	0.18	50.7
Approach		468	2.0	468	2.0	0.155	5.8	LOS A	0.8	5.6	0.18	0.51	0.18	51.3
All Vehicles		1089	2.0	1089	2.0	0.250	7.0	LOS A	1.6	11.1	0.34	0.57	0.34	50.1

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.
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.

USER REPORT FOR NETWORK SITE

Project: Sat MD Network

Template: Default Site User Report

Site: 101 [Sat MD Base - Rooty Hill Rd - Eastern Rd - Francis Rd]

Network: 1 [Sat MD Base]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, C, D, D1*
Output Phase Sequence: A, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	385	2.0	385	2.0	0.457	25.3	LOS B	12.8	91.0	0.73	0.79	0.73	39.3
2	T1	50	2.0	50	2.0	0.858	48.3	LOS D	21.1	150.2	1.00	0.97	1.22	28.3
3	R2	345	2.0	345	2.0	0.858	52.7	LOS D	21.1	150.2	1.00	0.97	1.22	29.5
Approach		780	2.0	780	2.0	0.858	38.9	LOS C	21.1	150.2	0.87	0.88	0.98	33.5
East: Eastern Road														
4	L2	390	2.0	390	2.0	0.473	17.5	LOS B	9.2	65.5	0.74	0.79	0.74	38.4
5	T1	420	2.0	420	2.0	0.873	48.5	LOS D	22.8	162.6	1.00	1.03	1.24	33.4
6	R2	85	2.0	85	2.0	0.232	42.2	LOS C	3.5	25.1	0.88	0.76	0.88	33.3
Approach		895	2.0	895	2.0	0.873	34.4	LOS C	22.8	162.6	0.88	0.90	0.99	34.7
North: Rooty Hill Road South														
7	L2	100	2.0	100	2.0	0.260	36.3	LOS C	3.2	23.0	0.87	0.80	1.12	34.8
8	T1	55	2.0	55	2.0	0.522	52.9	LOS D	3.1	21.8	1.00	0.75	1.01	20.6
9	R2	5	2.0	5	2.0	0.522	57.4	LOS E	3.1	21.8	1.00	0.75	1.01	30.0
Approach		160	2.0	160	2.0	0.522	42.6	LOS D	3.2	23.0	0.92	0.78	1.08	30.2
West: Francis Road														
10	L2	5	2.0	5	2.0	0.350	38.3	LOS C	6.7	47.6	0.86	0.71	0.86	36.4
11	T1	330	2.0	330	2.0	0.350	33.1	LOS C	6.8	48.5	0.86	0.71	0.86	38.9
12	R2	325	2.0	325	2.0	0.887	59.6	LOS E	18.3	130.6	1.00	0.98	1.33	20.5
Approach		660	2.0	660	2.0	0.887	46.2	LOS D	18.3	130.6	0.93	0.84	1.09	30.0
All Vehicles		2495	2.0	2495	2.0	0.887	39.5	LOS C	22.8	162.6	0.89	0.87	1.02	32.7

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

Site: 101 [Sat MD Base - Rooty Hill Rd - Evans Ave]

Network: 1 [Sat MD Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	65	2.0	65	2.0	0.670	23.3	LOS B	8.7	61.9	0.93	0.83	0.98	44.0
2	T1	705	2.0	705	2.0	0.670	17.8	LOS B	8.8	62.8	0.93	0.82	0.98	41.2
Approach		770	2.0	770	2.0	0.670	18.2	LOS B	8.8	62.8	0.93	0.82	0.98	41.6
North: Rooty Hill Road South														
8	T1	780	2.0	780	2.0	0.383	5.4	LOS A	5.5	39.4	0.55	0.48	0.55	47.3
9	R2	65	2.0	65	2.0	0.383	12.0	LOS A	5.2	36.8	0.62	0.54	0.62	46.9
Approach		845	2.0	845	2.0	0.383	5.9	LOS A	5.5	39.4	0.56	0.49	0.56	47.2
West: Evans Avenue														
10	L2	40	2.0	40	2.0	0.047	12.6	LOS A	0.5	3.8	0.58	0.66	0.58	37.3
12	R2	40	2.0	40	2.0	0.182	27.5	LOS B	0.9	6.7	0.93	0.72	0.93	28.7
Approach		80	2.0	80	2.0	0.182	20.0	LOS B	0.9	6.7	0.75	0.69	0.75	32.5
All Vehicles		1695	2.0	1695	2.0	0.670	12.2	LOS A	8.8	62.8	0.74	0.65	0.76	42.9

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

Site: 102 [Sat MD Base - Rooty Hill Rd - Cable Pl]

Network: 1 [Sat MD Base]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.292	16.8	LOS B	5.0	35.3	0.41	0.35	0.41	47.6
2	T1	535	2.0	535	2.0	0.292	7.6	LOS A	5.0	35.3	0.29	0.25	0.29	43.5
3	R2	311	2.0	311	2.0	0.771	55.7	LOS D	15.6	111.3	1.00	0.87	1.05	19.5
Approach		851	2.0	851	2.0	0.771	25.2	LOS B	15.6	111.3	0.55	0.48	0.57	28.3
East: Spine Road														
4	L2	279	2.0	279	2.0	0.372	13.9	LOS A	5.2	36.8	0.62	0.74	0.62	23.0
5	T1	5	2.0	5	2.0	0.010	28.3	LOS B	0.2	1.3	0.75	0.50	0.75	34.6
6	R2	221	2.0	221	2.0	0.873	61.3	LOS E	12.3	87.4	1.00	0.98	1.36	7.2
Approach		505	2.0	505	2.0	0.873	34.8	LOS C	12.3	87.4	0.79	0.84	0.95	12.2
North: Rooty Hill Road (north)														
7	L2	226	2.0	226	2.0	0.182	8.8	LOS A	2.9	20.6	0.34	0.65	0.34	49.7
8	T1	535	2.0	535	2.0	0.421	28.1	LOS B	10.2	72.4	0.83	0.70	0.83	35.2
9	R2	5	2.0	5	2.0	0.039	54.0	LOS D	0.2	1.7	0.96	0.64	0.96	33.4
Approach		766	2.0	766	2.0	0.421	22.6	LOS B	10.2	72.4	0.68	0.68	0.68	39.0
West: Cable Place														
10	L2	5	2.0	5	2.0	0.024	45.8	LOS D	0.3	1.8	0.89	0.64	0.89	24.5
11	T1	1	2.0	1	2.0	0.024	40.3	LOS C	0.3	1.8	0.89	0.64	0.89	27.6
12	R2	5	2.0	5	2.0	0.131	64.1	LOS E	0.3	1.9	1.00	0.63	1.00	19.6
Approach		11	2.0	11	2.0	0.131	53.6	LOS D	0.3	1.9	0.94	0.64	0.94	22.3
All Vehicles		2133	2.0	2133	2.0	0.873	26.7	LOS B	15.6	111.3	0.66	0.64	0.70	29.8

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

Site: 101 [Sat MD Base - Great Western Hwy - Rooty Hill Rd - Wallgrove rd]

Network: 1 [Sat MD Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, B1, C, D, D1*
Output Phase Sequence: A, B, B1, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Wallgrove Road														
1	L2	430	3.0	430	3.0	0.503	18.4	LOS B	8.4	60.0	0.74	0.81	0.80	48.6
2	T1	485	3.0	485	3.0	0.604	39.2	LOS C	10.9	78.4	0.96	0.80	0.96	27.0
3	R2	170	3.0	170	3.0	0.390	51.1	LOS D	4.0	28.6	0.97	0.77	0.97	25.5
Approach		1085	3.0	1085	3.0	0.604	32.8	LOS C	10.9	78.4	0.87	0.80	0.90	35.2
East: Great Western Highway														
4	L2	205	3.0	205	3.0	0.389	25.7	LOS B	6.0	43.4	0.84	0.79	0.84	36.8
5	T1	780	3.0	780	3.0	0.800	48.0	LOS D	13.3	95.6	1.00	0.92	1.17	30.3
6	R2	220	3.0	220	3.0	0.465	51.6	LOS D	5.2	37.1	0.97	0.78	0.97	9.2
Approach		1205	3.0	1205	3.0	0.800	44.8	LOS D	13.3	95.6	0.97	0.87	1.08	28.2
North: Rooty Hill Road South														
7	L2	195	2.0	195	2.0	0.266	29.1	LOS C	7.2	51.6	0.81	0.79	0.81	28.1
8	T1	490	2.0	490	2.0	0.606	42.4	LOS C	11.8	83.8	0.98	0.82	0.98	32.8
9	R2	175	2.0	175	2.0	0.796	61.2	LOS E	9.1	65.1	1.00	0.87	1.12	28.4
Approach		860	2.0	860	2.0	0.796	43.2	LOS D	11.8	83.8	0.95	0.82	0.97	31.0
West: Great Western Highway														
10	L2	160	3.0	160	3.0	0.183	23.1	LOS B	4.4	31.6	0.60	0.74	0.60	40.4
11	T1	680	3.0	680	3.0	0.395	30.0	LOS C	8.8	63.3	0.84	0.70	0.84	39.5
12	R2	590	3.0	590	3.0	0.811	35.5	LOS C	10.2	73.6	1.00	0.90	1.18	41.2
Approach		1430	3.0	1430	3.0	0.811	31.5	LOS C	10.2	73.6	0.88	0.79	0.95	40.4
All Vehicles		4580	2.8	4580	2.8	0.811	37.5	LOS C	13.3	95.6	0.91	0.82	0.98	34.1

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

USER REPORT FOR NETWORK SITE

Project: Sat MD Network

Template: Default Site User Report

Site: 101 [Sat MD Base + Dev + Upgrades - Rooty Hill Rd - Eastern Rd - Francis Rd (Op 2 - RHRS Lane Des)]

Network: 2 [Sat MD Base + Dev]

Saurday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, B1*, D, D1*
Output Phase Sequence: A, B, B1*, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	430	2.0	430	2.0	0.625	10.7	LOS A	6.5	46.4	0.27	0.63	0.27	48.7
2	T1	55	2.0	55	2.0	0.625	6.3	LOS A	6.5	46.4	0.27	0.63	0.27	45.7
3	R2	390	2.0	390	2.0	0.828	32.8	LOS C	15.4	109.3	0.87	1.01	1.45	36.1
Approach		875	2.0	875	2.0	0.828	20.2	LOS B	15.4	109.3	0.54	0.80	0.79	42.0
East: Eastern Road														
4	L2	445	2.0	445	2.0	0.569	20.4	LOS B	12.6	89.9	0.81	0.81	0.81	36.2
5	T1	420	2.0	420	2.0	0.874	52.1	LOS D	24.8	176.2	1.00	1.02	1.22	32.4
6	R2	85	2.0	85	2.0	0.196	41.9	LOS C	3.7	26.1	0.84	0.75	0.84	33.4
Approach		950	2.0	950	2.0	0.874	36.4	LOS C	24.8	176.2	0.90	0.90	0.99	33.6
North: Rooty Hill Road South														
7	L2	100	2.0	100	2.0	0.207	23.4	LOS B	2.7	19.1	0.81	0.73	0.81	39.6
8	T1	65	2.0	65	2.0	0.550	56.6	LOS E	3.9	27.6	1.00	0.77	1.02	19.8
9	R2	5	2.0	5	2.0	0.550	61.2	LOS E	3.9	27.6	1.00	0.77	1.02	29.2
Approach		170	2.0	170	2.0	0.550	37.2	LOS C	3.9	27.6	0.89	0.75	0.90	31.6
West: Francis Road														
10	L2	5	2.0	5	2.0	0.344	41.8	LOS C	7.3	52.3	0.86	0.71	0.86	35.1
11	T1	330	2.0	330	2.0	0.344	36.2	LOS C	7.4	52.8	0.86	0.71	0.86	37.6
12	R2	380	2.0	380	2.0	0.878	60.1	LOS E	22.8	162.6	1.00	0.96	1.25	20.4
Approach		715	2.0	715	2.0	0.878	48.9	LOS D	22.8	162.6	0.94	0.84	1.07	28.7
All Vehicles		2710	2.0	2710	2.0	0.878	34.5	LOS C	24.8	176.2	0.79	0.84	0.94	34.4

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

Site: 101 [Sat MD Base+ Dev - Rooty Hill Rd - Evans Ave]

Network: 2 [Sat MD Base + Dev]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	80	2.0	80	2.0	0.587	34.3	LOS C	19.3	137.4	0.88	0.79	0.88	33.6
2	T1	800	2.0	800	2.0	0.587	29.4	LOS C	20.0	142.3	0.90	0.79	0.90	21.4
Approach		880	2.0	880	2.0	0.587	29.9	LOS C	20.0	142.3	0.89	0.79	0.89	23.3
North: Rooty Hill Road South														
8	T1	900	2.0	900	2.0	0.364	5.1	LOS A	8.8	62.4	0.34	0.33	0.34	47.9
9	R2	65	2.0	65	2.0	0.364	12.6	LOS A	7.4	52.9	0.37	0.37	0.37	46.7
Approach		965	2.0	965	2.0	0.364	5.6	LOS A	8.8	62.4	0.35	0.33	0.35	47.7
West: Evans Avenue														
10	L2	40	2.0	40	2.0	0.044	19.4	LOS B	1.1	7.6	0.53	0.65	0.53	32.9
12	R2	50	2.0	50	2.0	0.250	54.5	LOS D	2.5	18.1	0.95	0.74	0.95	20.3
Approach		90	2.0	90	2.0	0.250	38.9	LOS C	2.5	18.1	0.77	0.70	0.77	24.4
All Vehicles		1935	2.0	1935	2.0	0.587	18.2	LOS B	20.0	142.3	0.61	0.56	0.61	32.2

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

Site: 103 [Sat MD Base + Dev - Church Street Access]

Network: 2 [Sat MD Base + Dev]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Opposed Turns
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
2	T1	710	2.0	710	2.0	0.278	7.6	LOS A	7.1	50.3	0.39	0.34	0.39	46.0
3	R2	132	2.0	132	2.0	0.314	30.6	LOS C	5.6	40.0	0.86	0.80	0.86	37.7
Approach		842	2.0	842	2.0	0.314	11.2	LOS A	7.1	50.3	0.47	0.42	0.47	43.2
East: Church Street														
4	L2	163	2.0	163	2.0	0.213	27.3	LOS B	5.5	39.4	0.68	0.75	0.68	31.9
6	R2	179	2.0	179	2.0	0.538	50.4	LOS D	8.9	63.3	0.96	0.81	0.96	22.8
Approach		342	2.0	342	2.0	0.538	39.4	LOS C	8.9	63.3	0.82	0.78	0.82	26.4
North: Rooty Hill Road (north)														
7	L2	179	2.0	179	2.0	0.535	30.0	LOS C	20.0	142.2	0.85	0.78	0.85	37.3
8	T1	785	2.0	785	2.0	0.535	28.9	LOS C	22.7	161.4	0.90	0.81	0.90	21.3
Approach		964	2.0	964	2.0	0.535	29.1	LOS C	22.7	161.4	0.89	0.81	0.89	25.6
All Vehicles		2148	2.0	2148	2.0	0.538	23.7	LOS B	22.7	161.4	0.71	0.65	0.71	31.4

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

Site: 102 [Sat MD Base + Dev - Rooty Hill Rd - Cable Pl]

Network: 2 [Sat MD Base + Dev]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.228	7.8	LOS A	1.8	13.1	0.12	0.12	0.12	55.4
2	T1	600	2.0	600	2.0	0.228	1.8	LOS A	1.8	13.1	0.10	0.09	0.10	55.0
3	R2	505	2.0	505	2.0	0.646	19.6	LOS B	14.8	105.3	0.59	0.76	0.59	30.5
Approach		1110	2.0	1110	2.0	0.646	9.9	LOS A	14.8	105.3	0.32	0.39	0.32	40.3
East: Spine Road														
4	L2	442	2.0	442	2.0	0.468	12.1	LOS A	8.2	58.4	0.59	0.74	0.59	22.8
5	T1	5	2.0	5	2.0	0.844	63.0	LOS E	6.9	48.9	1.00	0.95	1.38	21.2
6	R2	221	2.0	221	2.0	0.844	68.6	LOS E	6.9	48.9	1.00	0.94	1.38	5.7
Approach		668	2.0	668	2.0	0.844	31.2	LOS C	8.2	58.4	0.73	0.81	0.85	11.7
North: Rooty Hill Road (north)														
7	L2	226	2.0	226	2.0	0.205	7.1	LOS A	1.3	9.4	0.14	0.59	0.14	46.8
8	T1	655	2.0	655	2.0	0.626	43.0	LOS D	16.8	119.8	0.99	0.85	0.99	22.0
9	R2	5	2.0	5	2.0	0.300	75.8	LOS F	0.3	2.3	1.00	0.62	1.00	24.9
Approach		886	2.0	886	2.0	0.626	34.0	LOS C	16.8	119.8	0.77	0.78	0.77	25.6
West: Cable Place														
10	L2	5	2.0	5	2.0	0.065	61.5	LOS E	0.3	2.3	0.97	0.65	0.97	20.3
11	T1	1	2.0	1	2.0	0.065	56.0	LOS D	0.3	2.3	0.97	0.65	0.97	20.3
12	R2	5	2.0	5	2.0	0.070	65.3	LOS E	0.3	2.0	1.00	0.63	1.00	19.3
Approach		11	2.0	11	2.0	0.070	62.7	LOS E	0.3	2.3	0.98	0.64	0.98	19.9
All Vehicles		2676	2.0	2676	2.0	0.844	23.4	LOS B	16.8	119.8	0.58	0.63	0.61	26.7

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

Site: 101 [Sat MD Base + Dev + Upgrades - GWH - Rooty Hill Rd - Wallgrove Rd]

Network: 2 [Sat MD Base + Dev]

Weekday Mornign Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B1*, B, C, D1*, D
Output Phase Sequence: A, B1*, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Wallgrove Road														
1	L2	430	3.0	430	3.0	0.456	23.4	LOS B	14.4	103.4	0.68	0.77	0.68	45.6
2	T1	560	3.0	560	3.0	0.644	42.0	LOS C	13.8	99.0	0.96	0.81	0.96	26.0
3	R2	170	3.0	170	3.0	0.429	56.9	LOS E	4.4	31.8	0.98	0.77	0.98	24.0
Approach		1160	3.0	1160	3.0	0.644	37.3	LOS C	14.4	103.4	0.86	0.79	0.86	33.0
East: Great Western Highway														
4	L2	205	3.0	205	3.0	0.302	32.6	LOS C	7.7	55.6	0.75	0.78	0.75	33.2
5	T1	780	3.0	780	3.0	0.650	43.5	LOS D	13.0	93.2	0.97	0.81	0.97	32.2
6	R2	320	3.0	320	3.0	0.461	49.9	LOS D	7.8	55.7	0.94	0.80	0.94	9.6
Approach		1305	3.0	1305	3.0	0.650	43.4	LOS D	13.0	93.2	0.93	0.81	0.93	27.8
North: Rooty Hill Road South														
7	L2	310	2.0	310	2.0	0.358	27.4	LOS B	12.0	85.2	0.78	0.80	0.78	28.9
8	T1	570	2.0	570	2.0	0.651	46.0	LOS D	15.0	107.1	0.99	0.84	0.99	31.6
9	R2	255	2.0	255	2.0	0.638	41.8	LOS C	5.8	41.4	0.85	0.76	0.86	34.7
Approach		1135	2.0	1135	2.0	0.651	40.0	LOS C	15.0	107.1	0.90	0.81	0.90	31.8
West: Great Western Highway														
10	L2	135	3.0	135	3.0	0.178	28.8	LOS C	4.5	32.3	0.66	0.75	0.66	36.1
11	T1	680	3.0	680	3.0	0.466	37.6	LOS C	10.4	74.4	0.90	0.75	0.90	35.1
12	R2	590	3.0	590	3.0	0.686	49.5	LOS D	14.7	105.7	0.97	0.85	0.98	35.6
Approach		1405	3.0	1405	3.0	0.686	41.8	LOS C	14.7	105.7	0.90	0.79	0.91	35.4
All Vehicles		5005	2.8	5005	2.8	0.686	40.7	LOS C	15.0	107.1	0.90	0.80	0.90	32.2

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

Site: 101 [Sat MD Base + Dev - Lots 1, 2 & 3 Connection Sat full development]

Network: 2 [Sat MD Base + Dev]

Roundabout connection to Lots 1, 2 & 3
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Lot 1 Access														
1	L2	211	2.0	211	2.0	0.285	6.1	LOS A	1.4	9.7	0.54	0.70	0.54	49.4
2	T1	21	2.0	21	2.0	0.285	6.4	LOS A	1.4	9.7	0.54	0.70	0.54	54.8
3	R2	21	2.0	21	2.0	0.285	11.0	LOS A	1.4	9.7	0.54	0.70	0.54	54.8
Approach		253	2.0	253	2.0	0.285	6.5	LOS A	1.4	9.7	0.54	0.70	0.54	50.8
East: Spine Road (east)														
4	L2	21	2.0	21	2.0	0.097	6.3	LOS A	0.6	4.5	0.60	0.58	0.60	52.7
5	T1	163	2.0	163	2.0	0.097	6.6	LOS A	0.6	4.5	0.61	0.60	0.61	48.0
6	R2	21	2.0	21	2.0	0.097	11.5	LOS A	0.6	4.2	0.61	0.63	0.61	53.3
Approach		205	2.0	205	2.0	0.097	7.1	LOS A	0.6	4.5	0.61	0.60	0.61	49.5
North: Lot 2 Access														
7	L2	21	2.0	21	2.0	0.313	6.4	LOS A	2.2	15.5	0.60	0.70	0.60	50.7
8	T1	21	2.0	21	2.0	0.313	6.7	LOS A	2.2	15.5	0.60	0.70	0.60	51.9
9	R2	289	2.0	289	2.0	0.313	11.3	LOS A	2.2	15.5	0.60	0.70	0.60	45.2
Approach		332	2.0	332	2.0	0.313	10.7	LOS A	2.2	15.5	0.60	0.70	0.60	46.4
West: Spine Road (west)														
10	L2	326	2.0	326	2.0	0.230	4.5	LOS A	1.2	8.9	0.20	0.47	0.20	51.6
11	T1	163	2.0	163	2.0	0.227	4.4	LOS A	1.2	8.9	0.18	0.55	0.18	51.2
12	R2	211	2.0	211	2.0	0.227	9.0	LOS A	1.2	8.9	0.18	0.55	0.18	51.1
Approach		700	2.0	700	2.0	0.230	5.8	LOS A	1.2	8.9	0.19	0.51	0.19	51.4
All Vehicles		1489	2.0	1489	2.0	0.313	7.2	LOS A	2.2	15.5	0.40	0.60	0.40	49.8

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.
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.

USER REPORT FOR NETWORK SITE

Project: Sat MD Network

Template: Default Site User Report

Site: 101 [Sat MD 2029 Base - Rooty Hill Rd - Eastern Rd - Francis Rd]

Network: 3 [Sat MD 2029 Base]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, C, D, D1*
Output Phase Sequence: A, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	455	2.0	455	2.0	0.550	30.1	LOS C	18.5	131.4	0.78	0.82	0.78	37.1
2	T1	60	2.0	60	2.0	1.036	117.2	LOS F	42.9	305.8	1.00	1.25	1.79	17.2
3	R2	405	2.0	405	2.0	1.036	121.6	LOS F	42.9	305.8	1.00	1.25	1.79	17.7
Approach		920	2.0	920	2.0	1.036	76.0	LOS F	42.9	305.8	0.89	1.04	1.29	23.8
East: Eastern Road														
4	L2	460	2.0	460	2.0	0.535	18.5	LOS B	12.2	86.9	0.76	0.80	0.76	37.5
5	T1	500	2.0	500	2.0	1.021	105.6	LOS F	44.4	316.0	1.00	1.39	1.70	21.8
6	R2	100	2.0	100	2.0	0.273	47.9	LOS D	4.8	34.2	0.89	0.77	0.89	31.6
Approach		1060	2.0	1060	2.0	1.021	62.4	LOS E	44.4	316.0	0.88	1.08	1.21	25.8
North: Rooty Hill Road South														
7	L2	120	2.0	120	2.0	0.279	25.7	LOS B	3.4	24.1	0.86	0.75	0.86	38.6
8	T1	65	2.0	65	2.0	0.466	57.4	LOS E	3.9	28.1	1.00	0.76	1.00	19.7
9	R2	5	2.0	5	2.0	0.466	61.9	LOS E	3.9	28.1	1.00	0.76	1.00	29.0
Approach		190	2.0	190	2.0	0.466	37.5	LOS C	3.9	28.1	0.91	0.75	0.91	31.9
West: Francis Road														
10	L2	5	2.0	5	2.0	0.382	41.7	LOS C	8.9	63.6	0.86	0.71	0.86	35.2
11	T1	390	2.0	390	2.0	0.382	36.5	LOS C	9.1	64.6	0.86	0.72	0.86	37.5
12	R2	380	2.0	380	2.0	1.051	132.7	LOS F	36.3	258.4	1.00	1.23	1.90	11.2
Approach		775	2.0	775	2.0	1.051	83.7	LOS F	36.3	258.4	0.93	0.97	1.37	21.1
All Vehicles		2945	2.0	2945	2.0	1.051	70.7	LOS F	44.4	316.0	0.90	1.01	1.26	24.1

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

Site: 101 [Sat MD 2029 Base - Rooty Hill Rd - Evans Ave]

Network: 3 [Sat MD 2029 Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	65	2.0	65	2.0	0.741	24.3	LOS B	10.9	77.5	0.94	0.89	1.07	43.6
2	T1	845	2.0	845	2.0	0.741	18.8	LOS B	11.0	78.6	0.95	0.89	1.07	40.6
Approach		910	2.0	910	2.0	0.741	19.2	LOS B	11.0	78.6	0.95	0.89	1.07	40.9
North: Rooty Hill Road South														
8	T1	915	2.0	898	2.0	0.439	5.6	LOS A	6.7	47.4	0.58	0.51	0.58	46.9
9	R2	65	2.0	64	2.0	0.439	12.4	LOS A	6.1	43.6	0.65	0.56	0.65	46.8
Approach		980	2.0	961[N1]	2.0	0.439	6.1	LOS A	6.7	47.4	0.59	0.51	0.59	46.9
West: Evans Avenue														
10	L2	40	2.0	40	2.0	0.050	13.2	LOS A	0.6	4.0	0.60	0.66	0.60	36.9
12	R2	40	2.0	40	2.0	0.182	27.5	LOS B	0.9	6.7	0.93	0.72	0.93	28.7
Approach		80	2.0	80	2.0	0.182	20.4	LOS B	0.9	6.7	0.76	0.69	0.76	32.3
All Vehicles		1970	2.0	1951[N1]	2.0	0.741	12.8	LOS A	11.0	78.6	0.76	0.70	0.82	42.4

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

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

Site: 102 [Sat MD 2029 Base - Rooty Hill Rd - Cable Pl]

Network: 3 [Sat MD 2029 Base]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.333	15.2	LOS B	6.0	43.0	0.34	0.31	0.34	48.8
2	T1	675	2.0	675	2.0	0.333	6.4	LOS A	6.0	43.0	0.24	0.21	0.24	45.6
3	R2	311	2.0	311	2.0	0.848	65.6	LOS E	18.4	131.1	1.00	0.90	1.11	17.4
Approach		991	2.0	991	2.0	0.848	25.0	LOS B	18.4	131.1	0.48	0.43	0.51	28.2
East: Spine Road														
4	L2	279	2.0	279	2.0	0.396	14.6	LOS B	5.5	39.1	0.63	0.74	0.63	22.3
5	T1	5	2.0	5	2.0	0.011	34.1	LOS C	0.2	1.5	0.77	0.51	0.77	31.9
6	R2	221	2.0	221	2.0	0.879	69.1	LOS E	14.0	99.8	1.00	0.97	1.34	6.5
Approach		505	2.0	505	2.0	0.879	38.6	LOS C	14.0	99.8	0.79	0.84	0.94	11.2
North: Rooty Hill Road (north)														
7	L2	226	2.0	222	2.0	0.173	9.2	LOS A	3.2	23.0	0.33	0.64	0.33	49.4
8	T1	670	2.0	658	2.0	0.437	27.5	LOS B	13.4	95.8	0.78	0.68	0.78	35.6
9	R2	5	2.0	5	2.0	0.044	62.4	LOS E	0.3	1.9	0.96	0.64	0.96	31.3
Approach		901	2.0	885 N1	2.0	0.437	23.1	LOS B	13.4	95.8	0.67	0.67	0.67	38.6
West: Cable Place														
10	L2	5	2.0	5	2.0	0.028	53.9	LOS D	0.3	2.1	0.91	0.65	0.91	22.2
11	T1	1	2.0	1	2.0	0.028	48.3	LOS D	0.3	2.1	0.91	0.65	0.91	25.2
12	R2	5	2.0	5	2.0	0.151	73.2	LOS F	0.3	2.2	1.00	0.63	1.00	17.8
Approach		11	2.0	11	2.0	0.151	62.1	LOS E	0.3	2.2	0.95	0.64	0.95	20.3
All Vehicles		2408	2.0	2392 N1	2.0	0.879	27.3	LOS B	18.4	131.1	0.62	0.61	0.66	29.6

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

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

Site: 101 [Sat MD 2029 Base - Great Western Hwy - Rooty Hill Rd - Wallgrove rd]

Network: 3 [Sat MD 2029 Base]

Saturday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, B1, C, D, D1*
Output Phase Sequence: A, B, B1, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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	Aver. No. Cycles	Average Speed km/h
South: Wallgrove Road														
1	L2	510	3.0	510	3.0	0.597	21.4	LOS B	12.2	87.6	0.79	0.84	0.86	46.8
2	T1	570	3.0	570	3.0	0.779	51.3	LOS D	16.2	116.0	1.00	0.91	1.11	23.0
3	R2	200	3.0	200	3.0	0.422	56.7	LOS E	5.3	38.2	0.96	0.78	0.96	24.1
Approach		1280	3.0	1280	3.0	0.779	40.2	LOS C	16.2	116.0	0.91	0.86	0.99	32.1
East: Great Western Highway														
4	L2	240	3.0	240	3.0	0.410	26.5	LOS B	7.7	55.3	0.83	0.79	0.83	36.4
5	T1	915	3.0	915	3.0	0.834	54.8	LOS D	18.1	130.1	1.00	0.94	1.18	27.9
6	R2	250	3.0	250	3.0	0.494	57.2	LOS E	6.7	47.9	0.97	0.79	0.97	8.4
Approach		1405	3.0	1405	3.0	0.834	50.4	LOS D	18.1	130.1	0.97	0.89	1.08	26.2
North: Rooty Hill Road South														
7	L2	220	2.0	217	2.0	0.310	35.2	LOS C	9.8	69.4	0.86	0.80	0.86	25.4
8	T1	570	2.0	563	2.0	0.764	53.9	LOS D	16.3	115.7	1.00	0.89	1.07	29.2
9	R2	200	2.0	198	2.0	0.827	69.6	LOS E	11.8	84.3	1.00	0.88	1.13	26.4
Approach		990	2.0	978 N1	2.0	0.827	52.9	LOS D	16.3	115.7	0.97	0.87	1.03	28.0
West: Great Western Highway														
10	L2	185	3.0	185	3.0	0.198	23.4	LOS B	5.5	39.7	0.58	0.74	0.58	40.2
11	T1	810	3.0	810	3.0	0.427	32.2	LOS C	11.8	84.6	0.83	0.70	0.83	38.1
12	R2	700	3.0	700	3.0	0.851	40.3	LOS C	14.1	101.1	1.00	0.92	1.19	39.1
Approach		1695	3.0	1695	3.0	0.851	34.6	LOS C	14.1	101.1	0.87	0.80	0.95	38.8
All Vehicles		5370	2.8	5358 N1	2.8	0.851	43.4	LOS D	18.1	130.1	0.92	0.85	1.01	31.6

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

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

USER REPORT FOR NETWORK SITE

Project: Sat MD Network

Template: Default Site User Report

Site: 101 [Sat MD 2029 Base + Dev + Upgrades - Rooty Hill Rd - Eastern Rd - Francis Rd (Op 2 - RHRS Lane Des)]

Network: 4 [Sat MD 2029 Base + Dev]

Saurday Midday Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B, B1*, D, D1*
Output Phase Sequence: A, B, B1*, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	500	2.0	500	2.0	0.700	12.8	LOS A	11.3	80.6	0.40	0.68	0.40	47.2
2	T1	65	2.0	65	2.0	0.700	8.4	LOS A	11.3	80.6	0.40	0.68	0.40	44.3
3	R2	450	2.0	450	2.0	0.924	34.4	LOS C	20.7	147.7	0.94	1.06	1.64	35.5
Approach		1015	2.0	1015	2.0	0.924	22.1	LOS B	20.7	147.7	0.64	0.85	0.95	41.0
East: Eastern Road														
4	L2	515	2.0	515	2.0	0.552	16.0	LOS B	11.3	80.7	0.73	0.80	0.73	39.6
5	T1	500	2.0	500	2.0	0.877	47.7	LOS D	28.8	204.9	0.99	1.02	1.19	33.7
6	R2	100	2.0	100	2.0	0.401	53.7	LOS D	5.0	35.9	0.96	0.78	0.96	30.1
Approach		1115	2.0	1115	2.0	0.877	33.6	LOS C	28.8	204.9	0.87	0.90	0.96	34.8
North: Rooty Hill Road South														
7	L2	120	2.0	120	2.0	0.360	28.0	LOS B	3.6	25.7	0.92	0.76	0.92	37.7
8	T1	75	2.0	75	2.0	0.512	54.1	LOS D	4.3	30.7	1.00	0.77	1.00	20.4
9	R2	5	2.0	5	2.0	0.512	58.7	LOS E	4.3	30.7	1.00	0.77	1.00	29.8
Approach		200	2.0	200	2.0	0.512	38.6	LOS C	4.3	30.7	0.95	0.77	0.95	31.2
West: Francis Road														
10	L2	5	2.0	5	2.0	0.647	40.3	LOS C	18.3	130.0	0.92	0.80	0.92	35.7
11	T1	390	2.0	390	2.0	0.647	34.7	LOS C	18.3	130.0	0.92	0.80	0.92	38.2
12	R2	435	2.0	435	2.0	0.871	66.0	LOS E	13.1	93.6	1.00	0.96	1.33	19.1
Approach		830	2.0	830	2.0	0.871	51.2	LOS D	18.3	130.0	0.96	0.88	1.13	28.1
All Vehicles		3160	2.0	3160	2.0	0.924	34.8	LOS C	28.8	204.9	0.82	0.87	1.00	34.3

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

Site: 101 [Sat MD 2029 Base + Dev - Rooty Hill Rd - Evans Ave]

Network: 4 [Sat MD 2029 Base + Dev]

Weekday Morning Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road South														
1	L2	80	2.0	80	2.0	0.625	35.0	LOS C	20.2	144.0	0.89	0.79	0.89	33.4
2	T1	835	2.0	835	2.0	0.625	29.6	LOS C	20.7	147.5	0.90	0.79	0.90	21.3
Approach		915	2.0	915	2.0	0.625	30.1	LOS C	20.7	147.5	0.90	0.79	0.90	23.1
North: Rooty Hill Road South														
8	T1	1035	2.0	1035	2.0	0.411	4.9	LOS A	10.4	74.4	0.34	0.33	0.34	48.3
9	R2	65	2.0	65	2.0	0.411	11.8	LOS A	7.8	55.7	0.34	0.34	0.34	47.3
Approach		1100	2.0	1100	2.0	0.411	5.3	LOS A	10.4	74.4	0.34	0.33	0.34	48.2
West: Evans Avenue														
10	L2	40	2.0	40	2.0	0.043	18.8	LOS B	1.1	7.5	0.52	0.65	0.52	33.2
12	R2	50	2.0	50	2.0	0.250	54.5	LOS D	2.5	18.1	0.95	0.74	0.95	20.3
Approach		90	2.0	90	2.0	0.250	38.7	LOS C	2.5	18.1	0.76	0.70	0.76	24.5
All Vehicles		2105	2.0	2105	2.0	0.625	17.5	LOS B	20.7	147.5	0.60	0.55	0.60	32.7

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

Site: 103 [Sat MD 2029 Base + Dev - Church Street Access]

Network: 4 [Sat MD 2029 Base + Dev]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Opposed Turns
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
2	T1	850	2.0	850	2.0	0.328	7.7	LOS A	8.3	58.8	0.39	0.34	0.39	45.8
3	R2	132	2.0	132	2.0	0.326	27.3	LOS B	5.3	37.9	0.81	0.80	0.81	39.2
Approach		982	2.0	982	2.0	0.328	10.3	LOS A	8.3	58.8	0.45	0.40	0.45	43.9
East: Church Street														
4	L2	163	2.0	163	2.0	0.223	28.7	LOS C	5.7	40.7	0.70	0.75	0.70	31.1
6	R2	179	2.0	179	2.0	0.566	51.5	LOS D	9.0	64.2	0.97	0.81	0.97	22.5
Approach		342	2.0	342	2.0	0.566	40.6	LOS C	9.0	64.2	0.84	0.78	0.84	25.9
North: Rooty Hill Road (north)														
7	L2	179	2.0	179	2.0	0.586	26.6	LOS B	19.1	136.1	0.71	0.69	0.71	39.2
8	T1	920	2.0	920	2.0	0.586	19.3	LOS B	19.1	136.1	0.67	0.62	0.67	27.0
Approach		1099	2.0	1099	2.0	0.586	20.5	LOS B	19.1	136.1	0.67	0.63	0.67	30.4
All Vehicles		2423	2.0	2423	2.0	0.586	19.2	LOS B	19.1	136.1	0.60	0.56	0.60	34.1

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

Site: 102 [Sat MD 2029 Base + Dev - Rooty Hill Rd - Cable Pl]

Network: 4 [Sat MD 2029 Base + Dev]

Rooty Hill Road (north) - twin RT lanes into Spien Road, 4 lanes on Spine Road approach
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase C
Input Phase Sequence: B1, B2, C, D1, D
Output Phase Sequence: B1, B2, C, D1, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Rooty Hill Road (south)														
1	L2	5	2.0	5	2.0	0.280	8.6	LOS A	3.1	21.7	0.17	0.15	0.17	54.7
2	T1	740	2.0	740	2.0	0.280	2.4	LOS A	3.1	21.7	0.13	0.12	0.13	53.6
3	R2	505	2.0	505	2.0	0.690	19.2	LOS B	15.0	106.8	0.59	0.76	0.59	30.8
Approach		1250	2.0	1250	2.0	0.690	9.2	LOS A	15.0	106.8	0.32	0.38	0.32	41.3
East: Spine Road														
4	L2	442	2.0	442	2.0	0.489	13.2	LOS A	9.1	65.1	0.63	0.76	0.64	23.7
5	T1	5	2.0	5	2.0	0.844	63.0	LOS E	6.9	48.9	1.00	0.95	1.38	21.6
6	R2	221	2.0	221	2.0	0.844	68.6	LOS E	6.9	48.9	1.00	0.94	1.38	6.6
Approach		668	2.0	668	2.0	0.844	31.9	LOS C	9.1	65.1	0.75	0.83	0.89	12.9
North: Rooty Hill Road (north)														
7	L2	226	2.0	226	2.0	0.201	6.1	LOS A	0.4	3.1	0.05	0.56	0.05	48.4
8	T1	790	2.0	790	2.0	0.686	32.3	LOS C	17.7	125.8	0.86	0.75	0.86	26.2
9	R2	5	2.0	5	2.0	0.300	75.8	LOS F	0.3	2.3	1.00	0.62	1.00	24.9
Approach		1021	2.0	1021	2.0	0.686	26.7	LOS B	17.7	125.8	0.68	0.71	0.68	29.1
West: Cable Place														
10	L2	5	2.0	5	2.0	0.065	61.5	LOS E	0.3	2.3	0.97	0.65	0.97	20.3
11	T1	1	2.0	1	2.0	0.065	56.0	LOS D	0.3	2.3	0.97	0.65	0.97	20.3
12	R2	5	2.0	5	2.0	0.070	65.3	LOS E	0.3	2.0	1.00	0.63	1.00	19.3
Approach		11	2.0	11	2.0	0.070	62.7	LOS E	0.3	2.3	0.98	0.64	0.98	19.9
All Vehicles		2951	2.0	2951	2.0	0.844	20.6	LOS B	17.7	125.8	0.55	0.59	0.58	29.1

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

Site: 101 [Sat MD 2029 Base + Dev + Upgrades - GWH - Rooty Hill Rd - Wallgrove Rd]

Network: 4 [Sat MD 2029 Base + Dev]

Weekday Mornign Peak Hour Traffic
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase B
Input Phase Sequence: A, B1*, B, C, D1*, D
Output Phase Sequence: A, B1*, B, C, D
(* Variable Phase)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Wallgrove Road														
1	L2	510	3.0	510	3.0	0.532	23.8	LOS B	17.8	127.8	0.71	0.79	0.71	45.3
2	T1	645	3.0	645	3.0	0.773	46.7	LOS D	17.2	123.7	1.00	0.91	1.09	24.4
3	R2	200	3.0	200	3.0	0.550	58.8	LOS E	5.4	38.4	1.00	0.78	1.00	23.6
Approach		1355	3.0	1355	3.0	0.773	39.9	LOS C	17.8	127.8	0.89	0.85	0.93	32.0
East: Great Western Highway														
4	L2	240	3.0	240	3.0	0.363	34.1	LOS C	9.4	67.6	0.78	0.79	0.78	32.5
5	T1	915	3.0	915	3.0	0.763	47.0	LOS D	16.3	116.7	1.00	0.89	1.08	30.7
6	R2	350	3.0	350	3.0	0.504	50.3	LOS D	8.6	61.5	0.94	0.81	0.94	9.5
Approach		1505	3.0	1505	3.0	0.763	45.7	LOS D	16.3	116.7	0.95	0.86	1.00	27.1
North: Rooty Hill Road South														
7	L2	335	2.0	335	2.0	0.395	27.8	LOS B	13.0	92.7	0.78	0.80	0.78	28.7
8	T1	650	2.0	650	2.0	0.774	49.8	LOS D	17.9	127.3	1.00	0.90	1.07	30.4
9	R2	280	2.0	280	2.0	0.765	48.0	LOS D	7.2	51.3	0.95	0.81	1.00	32.4
Approach		1265	2.0	1265	2.0	0.774	43.6	LOS D	17.9	127.3	0.93	0.85	0.98	30.6
West: Great Western Highway														
10	L2	260	3.0	260	3.0	0.335	29.8	LOS C	9.2	66.4	0.71	0.78	0.71	35.3
11	T1	810	3.0	810	3.0	0.518	36.7	LOS C	12.3	88.6	0.90	0.76	0.90	35.5
12	R2	700	3.0	700	3.0	0.756	50.6	LOS D	18.1	130.3	0.98	0.88	1.04	35.2
Approach		1770	3.0	1770	3.0	0.756	41.2	LOS C	18.1	130.3	0.91	0.81	0.93	35.4
All Vehicles		5895	2.8	5895	2.8	0.774	42.6	LOS D	18.1	130.3	0.92	0.84	0.96	31.5

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

Site: 101 [Sat MD 2029 Base + Dev - Lots 1, 2 & 3 Connection Sat full development]

Network: 4 [Sat MD 2029 Base + Dev]

Roundabout connection to Lots 1, 2 & 3
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival 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
South: Lot 1 Access														
1	L2	211	2.0	211	2.0	0.285	6.1	LOS A	1.4	9.7	0.54	0.70	0.54	49.4
2	T1	21	2.0	21	2.0	0.285	6.4	LOS A	1.4	9.7	0.54	0.70	0.54	54.8
3	R2	21	2.0	21	2.0	0.285	11.0	LOS A	1.4	9.7	0.54	0.70	0.54	54.8
Approach		253	2.0	253	2.0	0.285	6.5	LOS A	1.4	9.7	0.54	0.70	0.54	50.8
East: Spine Road (east)														
4	L2	21	2.0	21	2.0	0.097	6.3	LOS A	0.6	4.5	0.60	0.58	0.60	52.7
5	T1	163	2.0	163	2.0	0.097	6.6	LOS A	0.6	4.5	0.60	0.60	0.60	48.0
6	R2	21	2.0	21	2.0	0.097	11.5	LOS A	0.6	4.2	0.61	0.63	0.61	53.3
Approach		205	2.0	205	2.0	0.097	7.0	LOS A	0.6	4.5	0.60	0.60	0.60	49.5
North: Lot 2 Access														
7	L2	21	2.0	21	2.0	0.314	6.4	LOS A	2.2	15.4	0.60	0.70	0.60	50.7
8	T1	21	2.0	21	2.0	0.314	6.7	LOS A	2.2	15.4	0.60	0.70	0.60	51.9
9	R2	289	2.0	289	2.0	0.314	11.3	LOS A	2.2	15.4	0.60	0.70	0.60	45.2
Approach		332	2.0	332	2.0	0.314	10.7	LOS A	2.2	15.4	0.60	0.70	0.60	46.4
West: Spine Road (west)														
10	L2	326	2.0	326	2.0	0.230	4.5	LOS A	1.3	9.0	0.20	0.47	0.20	51.8
11	T1	163	2.0	163	2.0	0.227	4.4	LOS A	1.3	9.0	0.19	0.55	0.19	51.4
12	R2	211	2.0	211	2.0	0.227	9.1	LOS A	1.3	9.0	0.19	0.55	0.19	51.3
Approach		700	2.0	700	2.0	0.230	5.8	LOS A	1.3	9.0	0.19	0.51	0.19	51.6
All Vehicles		1489	2.0	1489	2.0	0.314	7.2	LOS A	2.2	15.4	0.40	0.60	0.40	50.0

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.
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.

ATTACHMENT B

MINUTES OF MEETINGS WITH AUTHORITIES

Eastern Creek Stage 3 – Meeting with TfNSW

Date	5/08/2020	Time	11:30am – 12:30pm
Location	Blacktown City Council		
Attendees	TfNSW attendees: • Maria Swallow • Pahee Rathan • Malgy Coman • Robert Rutledge • David Lueng • Mohammed Irfan Frasers Property Australia (FPA) attendees: • Matthew van Rijswijk - Development Director • Emelie Watkinson – Development Manager • Yvette Fenech – Project Manager • Steven Peters - Project Manager Colston Budd Rogers & Kafes (CBRK) attendees: • Tim Rogers – Director • Michael Corban - Traffic Engineer		

Meeting Minutes

1. Frasers provided an overview of the Eastern Creek site, masterplan and proposed Stage 3 Concept Plan.
    1) This meeting is to talk specifically about the Stage 3 Concept Plan – the planning pathway is an 'Amending Concept Plan'. The target lodgement date is late September 2020.
    2) Frasers noted the Amending Stage 3 Concept Plan is intended to be delivered in two phases:
        i. Phase A – 20,000sqm GLA
        ii. Phase B – 25,000sqm GLA

2. Frasers & CBRK acknowledged receipt of the SEARs and TfNSW response to SEARs and will address all items within the Traffic Report

3. Frasers & CBRK presented the identified external infrastructure works, under the Phase A (20,000sqm GLA) scheme.
    1) <u>Church Street & RHRS Intersection</u>
        i. TfNSW noted their preference for a left turn deceleration lane to be included to minimise impact on traffic flow on RHRS. In particular that provision of a deceleration lane could accommodate any queuing of vehicles out of site car park
        ii. CBRK & FPA noted the preliminary Heritage and Ecological advice is that a land acquisition to accommodate a left turn deceleration lane at this intersection will be very

complicated, given the Lot is on the national heritage register and contains Cumberland Plains Woodlands (CPW). FPA to provide this advice to TfNSW.

iii. CBRK to provide justification and modelling data to support no left hand deceleration lane being provided at this intersection. TR noted that car park will be designed so that queues do not extend back along Church Street.

iv. TfNSW noted left turn lane could be provided at Cable Place or Beggs Road as a secondary option if needed.

v. FPA noted Beggs Road likely not preferred due to clash with loading vehicles.

vi. Swept paths need to be updated to accommodate 19M vehicles.

vii. Exit driveway from carpark to be relocated further East along Church Street.

2) Cable Place & RHRS Intersection

i. PR noted that split phasing not agreed which contradicts TR understanding of previous communication. TR to review previous correspondence on this topic and discuss with PR to explain how we have addressed conditions.

ii. TR to review if diamond phasing will work at this intersection.

iii. TfNSW noted that pedestrian protection is critical. TR noted that this has been allowed for in upgraded intersection.

3) Francis Street & Eastern Road & RHRS intersection

i. MS noted separate left turn on RHRS southern approach may be considered more desirable than separate right turn lane

ii. TR noted that CBRK had considered this option and separate right turn lane gave better benefits

iii. MS noted that banning right turn out of RHRS (northern approach) into Francis Street has benefits. TR agreed and noted that this is a low traffic movement.

iv. TfNSW have done a lot of work on this intersection as part of the corridor study – MS to share sketches with CBRK

v. It was noted that TfNSW do not currently have funding to deliver this intersection upgrade

vi. CBRK noted there is an option for FPA to contribute to intersection upgrade to accommodate the Stage 3 expansion space (Phase B scheme of 25,000sqm GLA)

4) GWH & RHRS Intersection

i. MS requested a copy of the detailed plans – FPA to provide via CBRK

4. Other Business

1) TfNSW noted that the Mount Druitt revitalisation may impact traffic counts and trip distribution – CBRK to review and ensure captured in modelling and Traffic Report.

2) Active Transport & Pedestrian Accessibility

i. Maria raised concerns that we have not delivered on our consent conditions to provide a shared pedestrian and cycle footpath along RHRS. FPA to review.

ii. Stage 1 Childcare pedestrian path – FPA to provide plan to demonstrate pedestrian access

iii. It was noted that Stage 3 will need to provide pedestrian and cyclist accessibility and end of trip facilities. TR indicated that both Stages 1 and 2 have incorporated accessibility for active transport and this will be continued for Stage 3.

3) Next meeting to be arranged in early September, prior to lodgement of the concept plan. CBRK to arrange.

There being no further business the meeting closed at 12:30pm.

Eastern Creek Busines Hub Stage 3 – Meeting with BCC on Traffic & Transport

Date	9/09/2020	Time	1:00pm – 2:00pm
Location	Teams		
Attendees	Blacktown City Council (BCC) attendees: • Nadeem Shaikh • Aneesh Singh Frasers Property Australia (FPA) attendees: • Matthew van Rijswijk - Development Director • Angela Wang – Assistant Development Manager Colston Budd Rogers & Kafes (CBRK) attendees: • Tim Rogers – Director		

Meeting Minutes

1. FPA provided an overview of the Eastern Creek site, masterplan and proposed Stage 3 Concept Plan.
    1) This meeting is to talk specifically about the Stage 3 Concept Plan. Noting the planning pathway is 'Amending Concept Plan' with DPIE. The target concept plan lodgement date is October 2020.
    2) FPA noted the Amending Stage 3 Concept Plan is intended to be delivered in two phases:
        i. Phase A – 20,000sqm GLA
        ii. Phase B – 25,000sqm GLA

2. FPA & CBRK acknowledged TfNSW response to SEARs and will address all items within the Traffic Report. CBRK is in the process of finalising Traffic Report.

3. FPA & CBRK presented the proposed loading zones under Phase A (20,000sqm GLA) scheme:
    i. Beggs Road – Main Loading
    ii. Church St. – Supplementary Loading

        (CBRK noted both loading dock swept paths can accommodate 19-meter semi-trailer)
    iii. FPA advised that Beggs Road is in the process of being privatised. Ron Radd from Blacktown Council is dealing with this matter. Council noted that if Beggs Road is to become private road, need to give notice to the resident (No. 151 Rooty Hill Road South) and obtain their permission. FPA to advise how this is being addressed in the road closure process.

4. FPA & CBRK presented the identified external infrastructure works, under the Phase A (20,000sqm GLA) scheme:
    1) <u>Church Street – Existing Road Upgrade</u>
        i. FPA is proposing to utilise existing Church St to access the future Stage 3 loading dock.

ii. FPA / CBRK acknowledge that a full width road upgrade of Church St will be necessary, in accordance with Blacktown City Council's requirements for an industrial road (with circa 13.5 carriage weight and circa 22 meters width)

iii. FPA/CBRK notes that a Civil Engineer has not yet been engaged for the detailed design, however, Henry and Hymas have prepared the concept design layouts and will likely be the engaged engineers for future design stages.

2) Church Street & RHRS Intersection

i. FPA/CBRK presented on proposed works:

   a. Church Street & RHRS Intersection Upgrade including provision of Separate Right Turn Bay from RHRS into Church Street and Left turn only from Church Street into RHRS.

   b. No right turn out of Church Street.

ii. Regarding TfNSW's initial preference for a left turn deceleration lane, CBRK & FPA received preliminary Heritage and Ecological advice that a land acquisition to accommodate a left turn deceleration lane at this intersection will be very complicated, given the Lot is on the national heritage register and contains Cumberland Plains Woodlands (CPW). FPA has provided this advice to TfNSW.

iii. BCC noted concern with traffic from nearby sporting fields. CBRK noted that the current traffic modelling factored in sporting grounds traffic (including sporting events), and critical period (weekday afternoon, Saturday midday) along RHRS.

iv. BCC noted the need for signalled control at Church St:

   a. Concerns with priority control at intersection

   b. Nearby sporting fields need clear access for vehicles to get in and out of the facilities, especially during major sporting events

   c. Signal control at Church St. may be required in the immediate future (around 5 years), regardless of the actual size of the development

v. CBRK noted that traffic signalling was previously discussed however was not supported by TfNSW on the classified road.

vi. With BCC's feedback, FPA / CBRK will raise with TfNSW the need for traffic signalling. BCC's representatives are happy to attend the meeting if required to provide BCC's views.

3) Cable Place & RHRS Intersection

i. FPA/CBRK presented on proposed works:

   a. Provision of twin RT lanes out of the site required (in accordance with new MOD condition).

   b. Works include revised existing through lane line marking to right turn/through lane from existing Spine Road into RHRS.

   c. Reconstruct south bound lanes on RHRS to suit above mentioned works.

   d. Modify signal phasing

ii. BCC would like to see modelling and queuing analysis before providing further comments.

4) Francis Street & Eastern Road & RHRS intersection

   i. FPA/CBRK presented on proposed modification to lane disciplines on the Southern approach (to provide a shared left and through lane and a designated right turn lane)

5. BCC noted concern with parking capacity:
   1) Noting BCC received complaints about limited disabled parking facilities, there could be people parking wrongly in disabled spots
   2) FPA will address disabled parking management with centre management.

6. Next Steps:
   1) FPA to provide relevant information to Blacktown Council regarding 151 Rooty Hill Road South and Beggs Road closure.
   2) BCC to provide further feedback after receiving CBRK's Traffic and Transport Impact Assessment Report.
   3) FPA to arrange meeting with TfNSW by end of September (potentially including a BCC representative). Meeting includes addressing need for traffic signalling.
   4) FPA to arrange follow up meeting with BCC post meeting with TfNSW.
   5) FPA will lodge Traffic Assessment report addressing all discussed implications as part of SEARs.

There being no further business the meeting closed at 2:00pm.