



# **Attachment 3 to Item 3.1.1**

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## **Transport Assessment**

Date of meeting: 17 August 2023  
Location: By audio-visual link  
Time: 10:00 a.m.





# **172 Commercial Road, Vineyard**

## **Transport Assessment**

Prepared for:

**EG Funds Management**

26 May 2023

## PROJECT INFORMATION

<b>Project Name:</b>	172 Commercial Road, Vineyard
<b>Client:</b>	EG Funds Management
<b>Project Number:</b>	2325
<b>Prepared By:</b>	JMT Consulting

## DOCUMENT HISTORY

Document Title	Revision	Date issued	Author
172 Commercial Road Transport Assessment	Draft	11.05.23	JM
172 Commercial Road Transport Assessment	Draft #2	19.05.23	JM
172 Commercial Road Transport Assessment	Issue	26.05.23	JM

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## Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	<i>Background</i>	1
1.2	<i>Site location</i>	1
<b>2</b>	<b>Existing Transport Conditions</b>	<b>2</b>
2.1	<i>Road hierarchy</i>	2
2.2	<i>Site access arrangements</i>	3
2.3	<i>Existing site uses</i>	3
<b>3</b>	<b>Transport Impact Assessment</b>	<b>4</b>
3.1	<i>Potential site access</i>	4
3.2	<i>Car parking</i>	5
3.3	<i>Forecast traffic generation</i>	5
3.4	<i>Road network impacts</i>	6
3.5	<i>Sensitivity analysis</i>	9
<b>4</b>	<b>Summary</b>	<b>11</b>
	<b>Appendix A: Traffic Modelling Outputs</b>	<b>12</b>

## Figures

Figure 1	Site location.....	1
Figure 2	Surrounding road network.....	2
Figure 3	Current site access arrangements.....	3
Figure 4	Indicative development plan.....	4
Figure 5	Forecast traffic distribution.....	7

## Tables

Table 1	Forecast traffic generation.....	5
Table 2	Level of service grades / description.....	6
Table 3	Road network performance – AM Peak Hour (8am – 9am).....	8
Table 4	Road network performance – PM Peak Hour (5pm – 6pm).....	8
Table 1	Forecast traffic generation (sensitivity analysis – low case).....	9
Table 1	Forecast traffic generation (sensitivity analysis – high case).....	9
Table 3	Road network performance – sensitivity test - AM Peak Hour.....	10
Table 4	Road network performance – sensitivity test - PM Peak Hour.....	10

# 1 Introduction

## 1.1 Background

This Transport Assessment has been prepared by JMT Consulting on behalf of EG Funds Management (EG) to support a Planning Proposal for the site at 172 Commercial Road, Vineyard. The proposal seeks to enable additional permitted uses on the site to enable light industry, warehouses and depot which will in turn permit upgrades/improvements and enhance the environmental management of the site. Potential improvements (subject to a separate detailed DA) may include the following:

- Upgrade of unsealed driveway / hardstand storage areas to sealed surfaces
- Formalisation of the entry, exit and accessways.
- Site-wide landscaping including vegetative buffers to adjoining properties
- Provision of warehouse structures to contain external activity and storage of machinery, equipment and materials

## 1.2 Site location

The site is approximately 4.2 hectares and has direct frontage to two roads – Commercial and Chapman Roads. Vineyard train station is located approximately 1.5km (less than a 5 minute drive) away from the site.



Figure 1 Site location

## 2 Existing Transport Conditions

### 2.1 Road hierarchy

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State*, *Regional*, and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Key State and Regional roads which provide access to the site are illustrated in Figure 2 below. Windsor Road to the west of the site is a State Road which provides the primary access route to/from the area – facilitating access to nearby centres including Windsor and Rouse Hill. Bandon Road meets Windsor Road at the intersection with Chapman Road and is a Regional Road that provides connectivity to Vineyard train station. Chapman Road and Commercial Road are local roads under the control of Council.

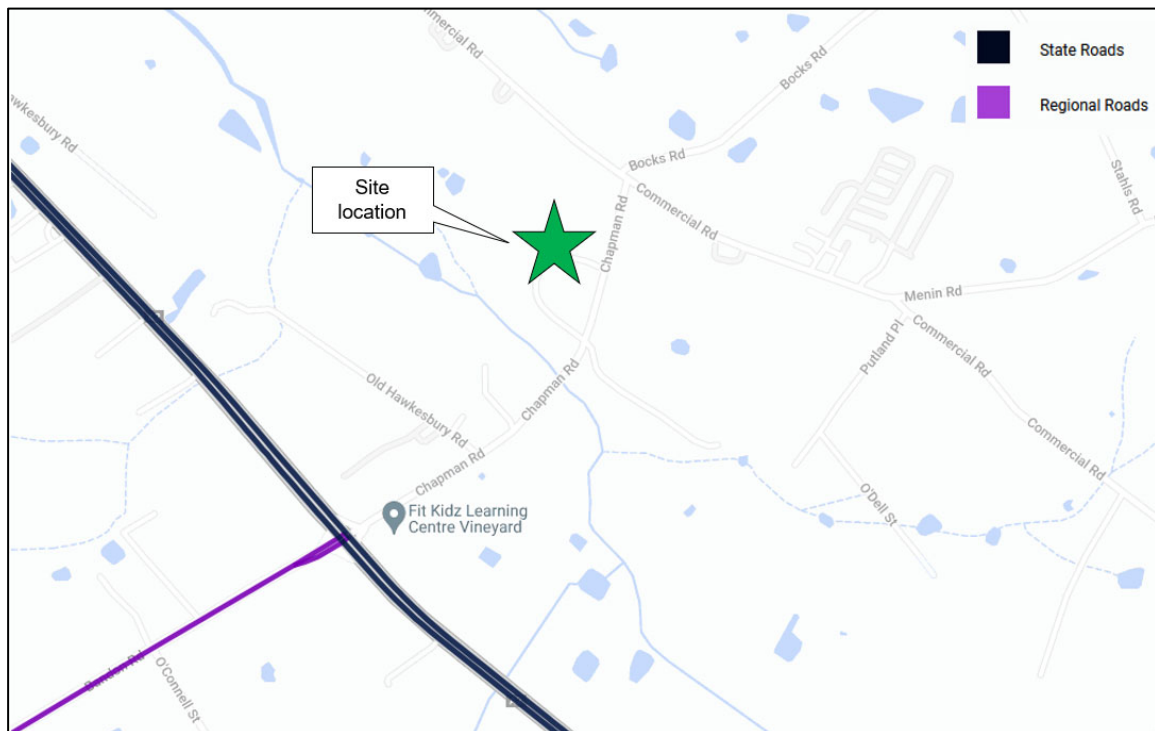


Figure 2 Surrounding road network



## 2.2 Site access arrangements

Site access arrangements for vehicles are presented in Figure 3 below. Two driveways are currently provided from Chapman Road, with no direct vehicle access currently available from Commercial Road. It should be noted however that access from Commercial Road into the site was previously available however this driveway is gated off and not currently in use.

The southern driveway facilitates the entry of heavy vehicles into the site, with the northern driveway providing for exit movements back onto Chapman Road.



Figure 3 Current site access arrangements

## 2.3 Existing site uses

There are long standing established uses on-site being depot and light industry totalling approximately 3,730m<sup>2</sup> GFA.



## 3 Transport Impact Assessment

### 3.1 Potential site access

The reference scheme prepared for the purposes of the Planning Proposal envisages a rationalisation of vehicle site access as illustrated in Figure 4. The revised site access arrangements include a re-establishing the access point from Commercial Road and connecting this through to the existing southern driveway on Chapman Road through an internal loop road. The existing Chapman Road northern driveway would be closed off under this concept.

The final access arrangements, including details of new/modified driveway crossovers, will be detailed as part of a future Development Application for the site.



Figure 4 Indicative development plan

### 3.2 Car parking

The Hawkesbury Council Development Control Plan (DCP) requires parking for industrial uses to be provided at the following rate:

*4 spaces for all development up to 300m<sup>2</sup> of GFA, then 1 space for each 90m<sup>2</sup> of GFA or part thereof, in excess of 300m<sup>2</sup>.*

Based on the net increase of 5,500m<sup>2</sup> GFA as a result of the proposal (as contemplated under the reference scheme) approximately 62 additional on-site car parking spaces would be required. The quantum and layout of on-site car parking will be detailed as part of a future Development Application for the site.

### 3.3 Forecast traffic generation

The forecast traffic generation arising from the proposal has been determined using trip generation rates outlined in the Transport for NSW *Guide to Traffic Generating Developments* (TDT 2013/04a) for business parks and industrial estates.

Based on the increase of the additional 5,500m<sup>2</sup> of floor space for the site contemplated under the reference scheme there are expected to be an additional 29 vehicles generated in the morning peak hour and 31 vehicles in the afternoon peak hour as summarised in Table 1. This level of traffic generation is equivalent to approximately one vehicle every two minutes and would not have a significant impact on the surrounding road network.

Table 1 Forecast traffic generation

Peak Hour	Increase in GFA compared to existing	Traffic generation rate	Vehicles into site	Vehicles out of site	Total vehicles
AM peak hour	5,500m <sup>2</sup>	0.52 trips / 100m <sup>2</sup>	20	9	29
PM peak hour		0.56 trips / 100m <sup>2</sup>	9	22	31

## 3.4 Road network impacts

### 3.4.1 Overview

Traffic modelling has been undertaken using the TfNSW approved SIDRA modelling software package to consider the impacts of a potential redevelopment of the site at the following intersections:

- Windsor Road / Chapman Road; and
- Chapman Road / Commercial Road.

The traffic modelling metric used to analyse the performance of the road network is Level of Service (LOS). Level of Service is a measure that uses the average delay experienced by vehicles to categorically assign each approach and movement with a qualitative ordinal grade (A through F, with A being the best and F being the worst). RMS Traffic Modelling Guidelines indicate the average delay relating to each grade, this is outlined in Table 2. In typical urban environments it is typical for intersections to operate at Level of Service D or E and still remain within acceptable performance levels.

Table 2 Level of service grades / description

Level of service grade	Average delay (seconds)	Description
<b>A</b>	Less than 14	Good operation
<b>B</b>	15 to 28	Good with acceptable delays and spare capacity
<b>C</b>	29 to 42	Satisfactory
<b>D</b>	43 to 56	Operating near capacity
<b>E</b>	57 to 70	At capacity. At signals, incidents will cause excessive delays. Roundabouts require other control mode
<b>F</b>	Greater than 71	Unsatisfactory with excessive queuing

Another common measure of intersection performance is the degree of saturation (DOS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DOS of 1.0 indicates that an intersection is operating at capacity.

### 3.4.2 Scenarios considered

The traffic modelling has considered the following two scenarios:

- (i) Existing conditions – Based on traffic counts undertaken in March 2023
- (ii) Existing conditions + background growth ('Future Base'): A background traffic growth rate of 2.5% per annum over a 10 year period has been applied. A review of historical traffic data on Windsor Road via the TfNSW traffic volume viewer (station ID 71024) indicates that traffic growth averaged approximately 1.8% per annum between 2011 and 2019 (i.e. pre COVID years). The 2.5% assumption is therefore considered robust.
- (iii) Existing conditions + background growth + proposal: As per scenario (ii) above with the additional traffic volumes from the Planning Proposal included.

### 3.4.3 Traffic distribution

Based on current traffic flows the majority of traffic is expected to arrive to the site from Windsor Road given its status as a classified State Road. The majority of traffic would access the site via the Windsor Road / Chapman Road signalised intersection as indicated in Figure 5 below and travel towards the Chapman Road / Commercial Road intersection. A small proportion of traffic is projected to access the site via Commercial Road.



Figure 5 Forecast traffic distribution



### 3.4.4 Traffic modelling results

The forecast performance of the key intersections surrounding the site is summarised in Table 3 (for the AM peak hour) and Table 4 (for the PM peak hour), with detailed traffic modelling outputs provided as Appendix A of this document.

Table 3 Road network performance – AM Peak Hour (8am – 9am)

Intersection	Existing Conditions		Existing + background growth		Existing + background growth + Proposal	
	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*
Windsor Road / Chapman Road	0.79	B	0.94	C	0.96	C
Commercial Road / Chapman Road	0.08	A	0.10	A	0.11	A

Table 4 Road network performance – PM Peak Hour (5pm – 6pm)

Intersection	Existing Conditions		Existing + background growth		Existing + background growth + Proposal	
	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*
Windsor Road / Chapman Road	0.87	B	0.99	E	0.99	E
Commercial Road / Chapman Road	0.09	A	0.11	A	0.12	A

The traffic modelling demonstrates that the relatively small increase in traffic flows associated with a potential redevelopment of the site will not result in adverse impacts on the surrounding road network. The two key intersections in the vicinity of the site retain their Level of Service when compared to a ‘future base’ scenario. This demonstrates that the proposal can be supported by the existing road network with no additional measures required to accommodate future traffic demands.

### 3.5 Sensitivity analysis

Given the reference scheme represents an indicative design prepared for the purposes of the Planning Proposal, which is subject to change during the development of a detailed Development Application for the site, a sensitivity analysis for the road network has been undertaken which considers both a 'low case' and 'high case' development scenario. These scenarios conducted for the sensitivity analysis are as follows:

- Low case: Additional 3,000m<sup>2</sup> GFA on the site (reduction of 2,500m<sup>2</sup> compared to reference scheme)
- High case: Additional 8,250m<sup>2</sup> GFA on the site (increase of 2,750m<sup>2</sup> compared to reference scheme)

The resultant traffic generation from these scenarios is presented in the tables below.

Table 5 Forecast traffic generation (sensitivity analysis – low case)

Peak Hour	Increase in GFA compared to existing	Traffic generation rate	Vehicles into site	Vehicles out of site	Total vehicles
AM peak hour	3,000m <sup>2</sup>	0.52 trips / 100m <sup>2</sup>	11	5	16
PM peak hour		0.56 trips / 100m <sup>2</sup>	12	5	17

Table 6 Forecast traffic generation (sensitivity analysis – high case)

Peak Hour	Increase in GFA compared to existing	Traffic generation rate	Vehicles into site	Vehicles out of site	Total vehicles
AM peak hour	8,250m <sup>2</sup>	0.52 trips / 100m <sup>2</sup>	30	13	43
PM peak hour		0.56 trips / 100m <sup>2</sup>	32	14	46



Table 7 Road network performance – sensitivity test - AM Peak Hour

Intersection	Low Case (Additional 3,000m <sup>2</sup> )		Base Case (Additional 5,500m <sup>2</sup> )		High Case (Additional 8,250m <sup>2</sup> )	
	Degree of Saturation	Level of Service	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service
Windsor Road / Chapman Road	0.94	C	0.96	C	0.95	C
Commercial Road / Chapman Road	0.10	A	0.11	A	0.11	A

Table 8 Road network performance – sensitivity test - PM Peak Hour

Intersection	Low Case (Additional 3,000m <sup>2</sup> )		Base Case (Additional 5,500m <sup>2</sup> )		High Case (Additional 8,250m <sup>2</sup> )	
	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*	Degree of Saturation	Level of Service*
Windsor Road / Chapman Road	0.99	E	0.99	E	0.99	E
Commercial Road / Chapman Road	0.11	A	0.12	A	0.12	A

The sensitivity analysis demonstrates that the nearby intersections will operate in a very similar manner under the range of scenarios considered. The level of service remains unchanged under both the 'low' and 'high' scenarios in comparison to the reference scheme – demonstrating the volume of additional traffic generated by any future development of the site would be negligible in the context of background traffic flows.

This sensitivity analysis provides further confidence that any future development arising from the Planning Proposal will not unduly impact the performance of the surrounding road network.

## 4 Summary

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JMT Consulting has prepared this transport impact assessment to support a Planning Proposal for the site at 172 Commercial Road, Vineyard. The proposal seeks to enable additional permitted uses on the site to enable light industry, warehouses and depot which will in turn permit upgrades/improvements and enhance the environmental management of the site.

The reference scheme developed for the proposal envisages a rationalisation of vehicle site access compared to current conditions – providing an overall benefit for the surrounding road network. Details around vehicle site access locations and car parking numbers would be outlined as part of a future Development Application for the site.

The proposal may result in additional traffic movements of approximately 30 vehicles per hour in the commuter peak periods - equivalent to one vehicle every two minutes. This level of traffic generation is equivalent to approximately one vehicle every two minutes and would not have a significant impact on the surrounding road network.

Traffic modelling undertaken in accordance with Transport for NSW guidelines demonstrates that the operation of key intersections in the vicinity of the site will not be impacted by the small number of additional vehicle movements associated with a future DA for the site. A sensitivity assessment was conducted which considered both a low and high case development scenario. This sensitivity assessment showed the level of service of key intersections remained unchanged under the scenarios modelled - confirming that any future development arising from the Planning Proposal will not unduly impact the performance of the surrounding road network.

In the above context the traffic and transport impacts of the Planning Proposal are considered acceptable.

## Appendix A: Traffic Modelling Outputs

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# MOVEMENT SUMMARY

Site: 101 [AM Existing (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	67	7.5	71	7.5	0.045	5.7	LOS A	0.2	1.4	0.07	0.55	0.07	53.1
2	T1	28	10.7	29	10.7	0.059	4.8	LOS A	0.2	1.6	0.27	0.57	0.27	53.3
3	R2	24	25.0	25	25.0	0.059	7.1	LOS A	0.2	1.6	0.27	0.57	0.27	51.9
Approach		119	11.8	125	11.8	0.059	5.8	LOS A	0.2	1.6	0.16	0.56	0.16	52.9
East: Commercial Road (E)														
4	L2	18	11.1	19	11.1	0.023	5.7	LOS A	0.0	0.3	0.01	0.35	0.01	54.9
5	T1	15	13.3	16	13.3	0.023	0.0	LOS A	0.0	0.3	0.01	0.35	0.01	56.9
6	R2	4	25.0	4	25.0	0.023	5.8	LOS A	0.0	0.3	0.01	0.35	0.01	53.7
Approach		37	13.5	39	13.5	0.023	3.4	NA	0.0	0.3	0.01	0.35	0.01	55.5
North: Bocks Road (N)														
7	L2	1	0.0	1	0.0	0.065	5.6	LOS A	0.2	1.7	0.18	0.53	0.18	54.2
8	T1	65	4.6	68	4.6	0.065	4.8	LOS A	0.2	1.7	0.18	0.53	0.18	54.1
9	R2	3	33.3	3	33.3	0.065	7.5	LOS A	0.2	1.7	0.18	0.53	0.18	52.1
Approach		69	5.8	73	5.8	0.065	4.9	LOS A	0.2	1.7	0.18	0.53	0.18	54.1
West: Commercial Road (W)														
10	L2	2	0.0	2	0.0	0.078	5.7	LOS A	0.3	2.4	0.12	0.53	0.12	53.5
11	T1	4	0.0	4	0.0	0.078	0.1	LOS A	0.3	2.4	0.12	0.53	0.12	54.8
12	R2	96	4.2	101	4.2	0.078	5.7	LOS A	0.3	2.4	0.12	0.53	0.12	53.0
Approach		102	3.9	107	3.9	0.078	5.5	NA	0.3	2.4	0.12	0.53	0.12	53.1
All Vehicles		327	8.3	344	8.3	0.078	5.2	NA	0.3	2.4	0.13	0.52	0.13	53.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

Site: 101 [AM Existing + Background Growth (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	87	11.5	92	11.5	0.060	5.7	LOS A	0.2	1.9	0.08	0.55	0.08	52.9
2	T1	36	16.7	38	16.7	0.080	5.2	LOS A	0.3	2.4	0.32	0.59	0.32	52.8
3	R2	28	35.7	29	35.7	0.080	7.9	LOS A	0.3	2.4	0.32	0.59	0.32	51.1
Approach		151	17.2	159	17.2	0.080	6.0	LOS A	0.3	2.4	0.19	0.57	0.19	52.5
East: Commercial Road (E)														
4	L2	24	16.7	25	16.7	0.033	5.7	LOS A	0.1	0.5	0.02	0.35	0.02	54.6
5	T1	20	20.0	21	20.0	0.033	0.0	LOS A	0.1	0.5	0.02	0.35	0.02	56.8
6	R2	6	33.3	6	33.3	0.033	5.9	LOS A	0.1	0.5	0.02	0.35	0.02	53.2
Approach		50	20.0	53	20.0	0.033	3.5	NA	0.1	0.5	0.02	0.35	0.02	55.3
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.094	5.6	LOS A	0.3	2.6	0.20	0.55	0.20	53.9
8	T1	85	8.2	89	8.2	0.094	5.1	LOS A	0.3	2.6	0.20	0.55	0.20	53.8
9	R2	5	40.0	5	40.0	0.094	8.4	LOS A	0.3	2.6	0.20	0.55	0.20	51.6
Approach		92	9.8	97	9.8	0.094	5.3	LOS A	0.3	2.6	0.20	0.55	0.20	53.6
West: Commercial Road (W)														
10	L2	3	0.0	3	0.0	0.100	5.7	LOS A	0.4	3.2	0.14	0.53	0.14	53.4
11	T1	6	0.0	6	0.0	0.100	0.2	LOS A	0.4	3.2	0.14	0.53	0.14	54.8
12	R2	120	6.7	126	6.7	0.100	5.8	LOS A	0.4	3.2	0.14	0.53	0.14	52.9
Approach		129	6.2	136	6.2	0.100	5.5	NA	0.4	3.2	0.14	0.53	0.14	53.0
All Vehicles		422	12.6	444	12.6	0.100	5.4	NA	0.4	3.2	0.16	0.52	0.16	53.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
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 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

Site: 101 [AM Existing + Background Growth + Proposal (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	105	8.8	111	8.8	0.072	5.7	LOS A	0.3	2.3	0.09	0.55	0.09	53.0
2	T1	36	16.7	38	16.7	0.073	5.2	LOS A	0.3	2.2	0.33	0.59	0.33	52.8
3	R2	23	35.7	24	35.7	0.073	8.0	LOS A	0.3	2.2	0.33	0.59	0.33	51.2
Approach		164	14.3	173	14.3	0.073	5.9	LOS A	0.3	2.3	0.17	0.56	0.17	52.7
East: Commercial Road (E)														
4	L2	24	16.7	25	16.7	0.034	5.7	LOS A	0.1	0.5	0.02	0.33	0.02	54.8
5	T1	22	14.8	23	14.8	0.034	0.0	LOS A	0.1	0.5	0.02	0.33	0.02	57.0
6	R2	6	33.3	6	33.3	0.034	5.9	LOS A	0.1	0.5	0.02	0.33	0.02	53.4
Approach		52	17.8	55	17.8	0.034	3.3	NA	0.1	0.5	0.02	0.33	0.02	55.5
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.095	5.6	LOS A	0.4	2.7	0.20	0.55	0.20	53.9
8	T1	85	8.2	89	8.2	0.095	5.1	LOS A	0.4	2.7	0.20	0.55	0.20	53.7
9	R2	5	40.0	5	40.0	0.095	8.7	LOS A	0.4	2.7	0.20	0.55	0.20	51.5
Approach		92	9.8	97	9.8	0.095	5.3	LOS A	0.4	2.7	0.20	0.55	0.20	53.6
West: Commercial Road (W)														
10	L2	3	0.0	3	0.0	0.106	5.8	LOS A	0.5	3.4	0.15	0.53	0.15	53.4
11	T1	6	0.0	6	0.0	0.106	0.2	LOS A	0.5	3.4	0.15	0.53	0.15	54.8
12	R2	128	5.7	135	5.7	0.106	5.8	LOS A	0.5	3.4	0.15	0.53	0.15	52.9
Approach		137	5.3	144	5.3	0.106	5.5	NA	0.5	3.4	0.15	0.53	0.15	53.0
All Vehicles		445	11.0	468	11.0	0.106	5.4	NA	0.5	3.4	0.15	0.52	0.15	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
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 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

Site: 101 [AM Existing + Background Growth + Proposal  
(Low Case) (Site Folder: General)]

New Site  
Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	97	8.8	102	8.8	0.066	5.7	LOS A	0.3	2.1	0.08	0.55	0.08	53.0
2	T1	36	16.7	38	16.7	0.073	5.2	LOS A	0.3	2.2	0.32	0.59	0.32	52.9
3	R2	23	35.7	24	35.7	0.073	7.9	LOS A	0.3	2.2	0.32	0.59	0.32	51.2
Approach		156	14.6	164	14.6	0.073	5.9	LOS A	0.3	2.2	0.17	0.56	0.17	52.7
East: Commercial Road (E)														
4	L2	24	16.7	25	16.7	0.033	5.7	LOS A	0.1	0.5	0.02	0.34	0.02	54.7
5	T1	21	14.8	22	14.8	0.033	0.0	LOS A	0.1	0.5	0.02	0.34	0.02	57.0
6	R2	6	33.3	6	33.3	0.033	5.9	LOS A	0.1	0.5	0.02	0.34	0.02	53.3
Approach		51	17.9	54	17.9	0.033	3.4	NA	0.1	0.5	0.02	0.34	0.02	55.5
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.095	5.6	LOS A	0.3	2.7	0.20	0.55	0.20	53.9
8	T1	85	8.2	89	8.2	0.095	5.1	LOS A	0.3	2.7	0.20	0.55	0.20	53.7
9	R2	5	40.0	5	40.0	0.095	8.6	LOS A	0.3	2.7	0.20	0.55	0.20	51.6
Approach		92	9.8	97	9.8	0.095	5.3	LOS A	0.3	2.7	0.20	0.55	0.20	53.6
West: Commercial Road (W)														
10	L2	3	0.0	3	0.0	0.103	5.8	LOS A	0.4	3.2	0.15	0.53	0.15	53.4
11	T1	6	0.0	6	0.0	0.103	0.2	LOS A	0.4	3.2	0.15	0.53	0.15	54.8
12	R2	124	5.7	131	5.7	0.103	5.8	LOS A	0.4	3.2	0.15	0.53	0.15	52.9
Approach		133	5.3	140	5.3	0.103	5.5	NA	0.4	3.2	0.15	0.53	0.15	53.0
All Vehicles		432	11.1	455	11.1	0.103	5.4	NA	0.4	3.2	0.15	0.52	0.15	53.3

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

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

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# MOVEMENT SUMMARY

▽ Site: 101 [AM Existing + Background Growth + Proposal  
(High Case) (Site Folder: General)]

New Site  
Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	114	8.8	120	8.8	0.078	5.7	LOS A	0.3	2.5	0.09	0.55	0.09	53.0
2	T1	36	16.7	38	16.7	0.074	5.2	LOS A	0.3	2.2	0.33	0.59	0.33	52.8
3	R2	23	35.7	24	35.7	0.074	8.0	LOS A	0.3	2.2	0.33	0.59	0.33	51.2
Approach		173	14.0	182	14.0	0.078	5.9	LOS A	0.3	2.5	0.17	0.56	0.17	52.7
East: Commercial Road (E)														
4	L2	24	16.7	25	16.7	0.034	5.7	LOS A	0.1	0.5	0.02	0.33	0.02	54.8
5	T1	23	14.8	24	14.8	0.034	0.0	LOS A	0.1	0.5	0.02	0.33	0.02	57.1
6	R2	6	33.3	6	33.3	0.034	5.9	LOS A	0.1	0.5	0.02	0.33	0.02	53.4
Approach		53	17.7	56	17.7	0.034	3.3	NA	0.1	0.5	0.02	0.33	0.02	55.6
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.096	5.6	LOS A	0.4	2.7	0.20	0.55	0.20	53.8
8	T1	85	8.2	89	8.2	0.096	5.2	LOS A	0.4	2.7	0.20	0.55	0.20	53.7
9	R2	5	40.0	5	40.0	0.096	8.9	LOS A	0.4	2.7	0.20	0.55	0.20	51.5
Approach		92	9.8	97	9.8	0.096	5.4	LOS A	0.4	2.7	0.20	0.55	0.20	53.6
West: Commercial Road (W)														
10	L2	3	0.0	3	0.0	0.110	5.8	LOS A	0.5	3.5	0.15	0.53	0.15	53.4
11	T1	6	0.0	6	0.0	0.110	0.2	LOS A	0.5	3.5	0.15	0.53	0.15	54.7
12	R2	132	5.7	139	5.7	0.110	5.8	LOS A	0.5	3.5	0.15	0.53	0.15	52.9
Approach		141	5.3	148	5.3	0.110	5.6	NA	0.5	3.5	0.15	0.53	0.15	53.0
All Vehicles		459	10.9	483	10.9	0.110	5.4	NA	0.5	3.5	0.15	0.52	0.15	53.3

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

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

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Project: C:\JMT Consulting\Projects\2325 - 172 Commercial Road, Vineyard\Internal\172 Commercial Road SIDRA\_Commercial Road.sip9

# MOVEMENT SUMMARY

Site: 101 [PM Existing (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	72	9.7	76	9.7	0.049	5.7	LOS A	0.2	1.5	0.05	0.55	0.05	53.1
2	T1	53	0.0	56	0.0	0.090	4.5	LOS A	0.3	2.4	0.21	0.55	0.21	53.9
3	R2	38	18.4	40	18.4	0.090	6.4	LOS A	0.3	2.4	0.21	0.55	0.21	52.4
Approach		163	8.6	172	8.6	0.090	5.5	LOS A	0.3	2.4	0.14	0.55	0.14	53.2
East: Commercial Road (E)														
4	L2	31	12.9	33	12.9	0.028	5.7	LOS A	0.0	0.4	0.01	0.47	0.01	53.8
5	T1	8	12.5	8	12.5	0.028	0.0	LOS A	0.0	0.4	0.01	0.47	0.01	55.8
6	R2	5	20.0	5	20.0	0.028	5.7	LOS A	0.0	0.4	0.01	0.47	0.01	52.9
Approach		44	13.6	46	13.6	0.028	4.7	NA	0.0	0.4	0.01	0.47	0.01	54.1
North: Bocks Road (N)														
7	L2	1	0.0	1	0.0	0.034	5.6	LOS A	0.1	0.9	0.13	0.52	0.13	54.3
8	T1	36	5.6	38	5.6	0.034	4.6	LOS A	0.1	0.9	0.13	0.52	0.13	54.2
9	R2	1	0.0	1	0.0	0.034	6.4	LOS A	0.1	0.9	0.13	0.52	0.13	53.7
Approach		38	5.3	40	5.3	0.034	4.7	LOS A	0.1	0.9	0.13	0.52	0.13	54.2
West: Commercial Road (W)														
10	L2	3	0.0	3	0.0	0.044	5.7	LOS A	0.2	1.3	0.12	0.51	0.12	53.6
11	T1	4	0.0	4	0.0	0.044	0.2	LOS A	0.2	1.3	0.12	0.51	0.12	54.9
12	R2	52	1.9	55	1.9	0.044	5.7	LOS A	0.2	1.3	0.12	0.51	0.12	53.2
Approach		59	1.7	62	1.7	0.044	5.3	NA	0.2	1.3	0.12	0.51	0.12	53.4
All Vehicles		304	7.6	320	7.6	0.090	5.2	NA	0.3	2.4	0.12	0.53	0.12	53.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

Site: 101 [PM Existing + Background Growth (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	88	13.6	93	13.6	0.061	5.7	LOS A	0.3	2.0	0.06	0.55	0.06	52.8
2	T1	69	0.0	73	0.0	0.114	4.7	LOS A	0.4	3.2	0.26	0.56	0.26	53.8
3	R2	40	30.0	42	30.0	0.114	7.1	LOS A	0.4	3.2	0.26	0.56	0.26	51.8
Approach		197	12.2	207	12.2	0.114	5.6	LOS A	0.4	3.2	0.17	0.55	0.17	53.0
East: Commercial Road (E)														
4	L2	42	16.7	44	16.7	0.041	5.7	LOS A	0.1	0.6	0.02	0.45	0.02	53.8
5	T1	13	15.4	14	15.4	0.041	0.0	LOS A	0.1	0.6	0.02	0.45	0.02	55.9
6	R2	8	25.0	8	25.0	0.041	5.8	LOS A	0.1	0.6	0.02	0.45	0.02	52.8
Approach		63	17.5	66	17.5	0.041	4.6	NA	0.1	0.6	0.02	0.45	0.02	54.1
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.052	5.6	LOS A	0.2	1.4	0.15	0.53	0.15	54.1
8	T1	51	5.9	54	5.9	0.052	4.8	LOS A	0.2	1.4	0.15	0.53	0.15	54.1
9	R2	2	0.0	2	0.0	0.052	6.8	LOS A	0.2	1.4	0.15	0.53	0.15	53.6
Approach		55	5.5	58	5.5	0.052	4.9	LOS A	0.2	1.4	0.15	0.53	0.15	54.1
West: Commercial Road (W)														
10	L2	5	0.0	5	0.0	0.059	5.8	LOS A	0.2	1.8	0.16	0.51	0.16	53.5
11	T1	6	0.0	6	0.0	0.059	0.2	LOS A	0.2	1.8	0.16	0.51	0.16	54.9
12	R2	66	6.1	69	6.1	0.059	5.8	LOS A	0.2	1.8	0.16	0.51	0.16	53.0
Approach		77	5.2	81	5.2	0.059	5.4	NA	0.2	1.8	0.16	0.51	0.16	53.2
All Vehicles		392	10.7	413	10.7	0.114	5.3	NA	0.4	3.2	0.14	0.53	0.14	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

Site: 101 [PM Existing + Background Growth + Growth (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	93	12.4	98	12.4	0.064	5.7	LOS A	0.3	2.1	0.06	0.55	0.06	52.9
2	T1	69	0.0	73	0.0	0.117	4.7	LOS A	0.4	3.3	0.28	0.57	0.28	53.8
3	R2	40	30.0	42	30.0	0.117	7.2	LOS A	0.4	3.3	0.28	0.57	0.28	51.7
Approach		202	11.6	213	11.6	0.117	5.7	LOS A	0.4	3.3	0.18	0.56	0.18	53.0
East: Commercial Road (E)														
4	L2	42	16.7	44	16.7	0.040	5.7	LOS A	0.1	0.6	0.02	0.47	0.02	53.6
5	T1	11	15.4	12	15.4	0.040	0.0	LOS A	0.1	0.6	0.02	0.47	0.02	55.8
6	R2	8	25.0	8	25.0	0.040	5.8	LOS A	0.1	0.6	0.02	0.47	0.02	52.7
Approach		61	17.5	64	17.5	0.040	4.7	NA	0.1	0.6	0.02	0.47	0.02	53.9
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.053	5.6	LOS A	0.2	1.4	0.16	0.53	0.16	54.1
8	T1	51	5.9	54	5.9	0.053	4.9	LOS A	0.2	1.4	0.16	0.53	0.16	54.0
9	R2	2	0.0	2	0.0	0.053	7.0	LOS A	0.2	1.4	0.16	0.53	0.16	53.5
Approach		55	5.5	58	5.5	0.053	5.0	LOS A	0.2	1.4	0.16	0.53	0.16	54.0
West: Commercial Road (W)														
10	L2	5	0.0	5	0.0	0.075	5.8	LOS A	0.3	2.3	0.16	0.51	0.16	53.5
11	T1	7	0.0	7	0.0	0.075	0.2	LOS A	0.3	2.3	0.16	0.51	0.16	54.9
12	R2	86	4.2	91	4.2	0.075	5.8	LOS A	0.3	2.3	0.16	0.51	0.16	53.1
Approach		98	3.7	103	3.7	0.075	5.4	NA	0.3	2.3	0.16	0.51	0.16	53.2
All Vehicles		416	9.8	438	9.8	0.117	5.4	NA	0.4	3.3	0.15	0.53	0.15	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

Site: 101 [PM Existing + Background Growth + Growth (Low Case) (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	90	12.4	95	12.4	0.062	5.7	LOS A	0.3	2.0	0.06	0.55	0.06	52.9
2	T1	69	0.0	73	0.0	0.116	4.7	LOS A	0.4	3.3	0.27	0.56	0.27	53.8
3	R2	40	30.0	42	30.0	0.116	7.2	LOS A	0.4	3.3	0.27	0.56	0.27	51.8
Approach		199	11.6	209	11.6	0.116	5.7	LOS A	0.4	3.3	0.17	0.56	0.17	53.0
East: Commercial Road (E)														
4	L2	42	16.7	44	16.7	0.040	5.7	LOS A	0.1	0.6	0.02	0.47	0.02	53.6
5	T1	11	15.4	12	15.4	0.040	0.0	LOS A	0.1	0.6	0.02	0.47	0.02	55.8
6	R2	8	25.0	8	25.0	0.040	5.8	LOS A	0.1	0.6	0.02	0.47	0.02	52.7
Approach		61	17.5	64	17.5	0.040	4.7	NA	0.1	0.6	0.02	0.47	0.02	53.9
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.052	5.6	LOS A	0.2	1.4	0.17	0.53	0.17	54.1
8	T1	51	5.9	54	5.9	0.052	4.9	LOS A	0.2	1.4	0.17	0.53	0.17	54.0
9	R2	2	0.0	2	0.0	0.052	6.9	LOS A	0.2	1.4	0.17	0.53	0.17	53.6
Approach		55	5.5	58	5.5	0.052	5.0	LOS A	0.2	1.4	0.17	0.53	0.17	54.0
West: Commercial Road (W)														
10	L2	5	0.0	5	0.0	0.068	5.8	LOS A	0.3	2.1	0.15	0.50	0.15	53.6
11	T1	8	0.0	8	0.0	0.068	0.2	LOS A	0.3	2.1	0.15	0.50	0.15	54.9
12	R2	77	4.2	81	4.2	0.068	5.8	LOS A	0.3	2.1	0.15	0.50	0.15	53.1
Approach		90	3.6	95	3.6	0.068	5.3	NA	0.3	2.1	0.15	0.50	0.15	53.3
All Vehicles		405	9.9	426	9.9	0.116	5.3	NA	0.4	3.3	0.15	0.53	0.15	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

Site: 101 [PM Existing + Background Growth + Growth (High Case) (Site Folder: General)]

New Site  
 Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Chapman Road (S)														
1	L2	97	12.4	102	12.4	0.067	5.7	LOS A	0.3	2.2	0.06	0.55	0.06	52.9
2	T1	69	0.0	73	0.0	0.119	4.8	LOS A	0.4	3.3	0.29	0.57	0.29	53.7
3	R2	40	30.0	42	30.0	0.119	7.3	LOS A	0.4	3.3	0.29	0.57	0.29	51.7
Approach		206	11.7	217	11.7	0.119	5.7	LOS A	0.4	3.3	0.18	0.56	0.18	52.9
East: Commercial Road (E)														
4	L2	42	16.7	44	16.7	0.041	5.7	LOS A	0.1	0.6	0.02	0.45	0.02	53.8
5	T1	13	15.4	14	15.4	0.041	0.0	LOS A	0.1	0.6	0.02	0.45	0.02	55.9
6	R2	8	25.0	8	25.0	0.041	5.8	LOS A	0.1	0.6	0.02	0.45	0.02	52.8
Approach		63	17.5	66	17.5	0.041	4.6	NA	0.1	0.6	0.02	0.45	0.02	54.1
North: Bocks Road (N)														
7	L2	2	0.0	2	0.0	0.053	5.6	LOS A	0.2	1.4	0.17	0.54	0.17	54.0
8	T1	51	5.9	54	5.9	0.053	5.0	LOS A	0.2	1.4	0.17	0.54	0.17	54.0
9	R2	2	0.0	2	0.0	0.053	7.1	LOS A	0.2	1.4	0.17	0.54	0.17	53.5
Approach		55	5.5	58	5.5	0.053	5.1	LOS A	0.2	1.4	0.17	0.54	0.17	54.0
West: Commercial Road (W)														
10	L2	5	0.0	5	0.0	0.083	5.8	LOS A	0.4	2.6	0.16	0.51	0.16	53.5
11	T1	8	0.0	8	0.0	0.083	0.2	LOS A	0.4	2.6	0.16	0.51	0.16	54.9
12	R2	95	4.2	100	4.2	0.083	5.8	LOS A	0.4	2.6	0.16	0.51	0.16	53.1
Approach		108	3.7	114	3.7	0.083	5.4	NA	0.4	2.6	0.16	0.51	0.16	53.2
All Vehicles		432	9.7	455	9.7	0.119	5.4	NA	0.4	3.3	0.15	0.53	0.15	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Vehicle movement LOS values are based on average delay per movement.  
 Minor Road Approach LOS values are based on average delay for all vehicle movements.  
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

**Site: 101 [AM Existing (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
SouthEast: Windsor Road (SE)														
21	L2	126	7.4	126	7.4	0.100	7.4	LOS A	1.2	9.1	0.20	0.60	0.20	52.8
22	T1	1324	5.2	1324	5.2	0.657	18.9	LOS B	28.5	208.1	0.68	0.62	0.68	45.9
23	R2	93	8.5	93	8.5	* 0.744	80.1	LOS F	6.7	50.5	1.00	0.85	1.17	25.6
Approach		1543	5.6	1543	5.6	0.744	21.6	LOS B	28.5	208.1	0.66	0.63	0.67	44.2
NorthEast: Chapman Road (NE)														
24	L2	54	6.5	54	6.5	0.083	18.5	LOS B	1.6	11.6	0.49	0.67	0.49	45.5
25	T1	19	5.1	19	5.1	0.083	59.3	LOS E	1.2	8.5	0.92	0.66	0.92	30.5
26	R2	56	6.2	56	6.2	0.226	58.8	LOS E	3.4	25.0	0.90	0.73	0.90	30.3
Approach		129	6.2	129	6.2	0.226	42.0	LOS C	3.4	25.0	0.73	0.69	0.73	35.3
NorthWest: Windsor Road (NW)														
27	L2	112	4.7	112	4.7	0.090	7.6	LOS A	1.2	8.8	0.21	0.60	0.21	52.6
28	T1	1655	4.9	1655	4.9	* 0.786	21.8	LOS B	40.9	298.5	0.79	0.73	0.79	44.2
29	R2	67	4.1	67	4.1	0.520	76.4	LOS F	4.6	33.5	1.00	0.76	1.00	26.4
Approach		1834	4.9	1834	4.9	0.786	22.9	LOS B	40.9	298.5	0.76	0.72	0.76	43.6
SouthWest: Chapman Road (SW)														
30	L2	78	4.7	78	4.7	0.100	12.9	LOS A	1.7	12.4	0.38	0.65	0.38	48.9
31	T1	25	4.4	25	4.4	* 0.109	59.5	LOS E	1.5	11.2	0.92	0.67	0.92	30.5
32	R2	67	6.9	67	6.9	* 0.267	59.3	LOS E	4.1	30.3	0.91	0.74	0.91	30.1
Approach		170	5.5	170	5.5	0.267	38.1	LOS C	4.1	30.3	0.67	0.69	0.67	36.7
All Vehicles		3676	5.2	3676	5.2	0.786	23.7	LOS B	40.9	298.5	0.71	0.68	0.72	43.1

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped ]	[ Dist m ]					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												
P7	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94

# MOVEMENT SUMMARY

**Site: 101 [AM Existing + Growth (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h	HV ] %	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m				
SouthEast: Windsor Road (SE)														
21	L2	151	7.4	151	7.4	0.121	7.7	LOS A	1.7	12.4	0.20	0.60	0.20	52.6
22	T1	1589	5.2	1589	5.2	0.784	21.1	LOS B	40.7	297.8	0.74	0.68	0.74	44.6
23	R2	112	8.5	112	8.5	*0.872	91.7	LOS F	9.1	68.6	1.00	0.96	1.40	23.7
Approach		1852	5.6	1852	5.6	0.872	24.3	LOS B	40.7	297.8	0.71	0.69	0.74	42.9
NorthEast: Chapman Road (NE)														
24	L2	65	6.5	65	6.5	0.122	31.5	LOS C	2.8	20.9	0.65	0.71	0.65	39.2
25	T1	23	5.1	23	5.1	0.102	63.9	LOS E	1.5	11.0	0.92	0.67	0.92	29.4
26	R2	67	6.2	67	6.2	0.285	64.1	LOS E	4.4	32.6	0.92	0.74	0.92	29.0
Approach		155	6.2	155	6.2	0.285	50.4	LOS D	4.4	32.6	0.81	0.72	0.81	32.6
NorthWest: Windsor Road (NW)														
27	L2	134	4.7	134	4.7	0.109	8.0	LOS A	1.7	12.3	0.22	0.61	0.22	52.3
28	T1	1986	4.9	1986	4.9	*0.937	46.2	LOS D	77.7	567.0	0.91	0.96	1.05	34.2
29	R2	80	4.1	80	4.1	0.605	81.7	LOS F	6.0	43.1	1.00	0.78	1.03	25.4
Approach		2200	4.9	2200	4.9	0.937	45.1	LOS D	77.7	567.0	0.87	0.93	1.00	34.5
SouthWest: Chapman Road (SW)														
30	L2	94	4.7	94	4.7	0.139	18.2	LOS B	2.9	20.9	0.48	0.68	0.48	45.7
31	T1	30	4.4	30	4.4	*0.132	64.1	LOS E	2.0	14.4	0.93	0.68	0.93	29.4
32	R2	80	6.9	80	6.9	*0.335	64.7	LOS E	5.3	39.6	0.92	0.75	0.92	28.9
Approach		204	5.5	204	5.5	0.335	43.2	LOS D	5.3	39.6	0.72	0.71	0.72	34.9
All Vehicles		4411	5.2	4411	5.2	0.937	36.5	LOS C	77.7	567.0	0.79	0.81	0.87	37.5

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
						[ Ped ped	Dist ] m					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	238.9	220.5	0.92
NorthEast: Chapman Road (NE)												
P6	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	234.8	215.2	0.92
NorthWest: Windsor Road (NW)												

# MOVEMENT SUMMARY

**Site: 101 [AM Existing + Growth + Proposal (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV %	[ Total veh/h	HV %				[ Veh. veh	Dist ] m				
SouthEast: Windsor Road (SE)														
21	L2	151	7.4	151	7.4	0.121	7.7	LOS A	1.7	12.4	0.20	0.60	0.20	52.6
22	T1	1589	5.2	1589	5.2	0.788	21.1	LOS B	40.4	295.4	0.74	0.68	0.74	44.6
23	R2	124	8.5	124	8.5	* 0.966	114.6	LOS F	11.7	87.6	1.00	1.13	1.78	20.7
Approach		1864	5.6	1864	5.6	0.966	26.3	LOS B	40.4	295.4	0.71	0.70	0.76	41.9
NorthEast: Chapman Road (NE)														
24	L2	70	6.5	70	6.5	0.131	31.6	LOS C	3.1	22.6	0.65	0.71	0.65	39.2
25	T1	23	5.1	23	5.1	0.102	63.9	LOS E	1.5	11.0	0.92	0.67	0.92	29.4
26	R2	70	6.2	70	6.2	0.298	64.3	LOS E	4.6	34.1	0.93	0.74	0.93	29.0
Approach		163	6.2	163	6.2	0.298	50.2	LOS D	4.6	34.1	0.81	0.72	0.81	32.7
NorthWest: Windsor Road (NW)														
27	L2	140	4.7	140	4.7	0.115	8.2	LOS A	1.9	13.5	0.23	0.61	0.23	52.2
28	T1	1986	4.9	1986	4.9	* 0.939	47.1	LOS D	78.6	573.2	0.91	0.96	1.05	33.9
29	R2	80	4.1	80	4.1	0.605	81.7	LOS F	6.0	43.1	1.00	0.78	1.03	25.4
Approach		2206	4.9	2206	4.9	0.939	45.9	LOS D	78.6	573.2	0.87	0.93	1.00	34.3
SouthWest: Chapman Road (SW)														
30	L2	94	4.7	94	4.7	0.140	18.2	LOS B	2.9	20.9	0.48	0.68	0.48	45.7
31	T1	30	4.4	30	4.4	* 0.132	64.1	LOS E	2.0	14.4	0.93	0.68	0.93	29.4
32	R2	80	6.9	80	6.9	* 0.335	64.7	LOS E	5.3	39.6	0.92	0.75	0.92	28.9
Approach		204	5.5	204	5.5	0.335	43.2	LOS D	5.3	39.6	0.72	0.71	0.72	34.9
All Vehicles		4437	5.2	4437	5.2	0.966	37.7	LOS C	78.6	573.2	0.79	0.82	0.88	37.1

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	238.9	220.5	0.92
NorthEast: Chapman Road (NE)												
P6	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	234.8	215.2	0.92

# MOVEMENT SUMMARY

**Site: 101 [AM Existing + Growth + Proposal (Low Case) (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV %	[ Total veh/h	HV %				[ Veh. veh	Dist ] m				
SouthEast: Windsor Road (SE)														
21	L2	151	7.4	151	7.4	0.121	7.7	LOS A	1.7	12.4	0.20	0.60	0.20	52.6
22	T1	1589	5.2	1589	5.2	0.786	21.1	LOS B	40.5	296.4	0.74	0.68	0.74	44.6
23	R2	119	8.5	119	8.5	* 0.927	100.3	LOS F	10.3	77.4	1.00	1.05	1.60	22.5
Approach		1859	5.6	1859	5.6	0.927	25.1	LOS B	40.5	296.4	0.71	0.70	0.75	42.5
NorthEast: Chapman Road (NE)														
24	L2	68	6.5	68	6.5	0.127	31.6	LOS C	3.0	21.9	0.65	0.71	0.65	39.2
25	T1	23	5.1	23	5.1	0.102	63.9	LOS E	1.5	11.0	0.92	0.67	0.92	29.4
26	R2	68	6.2	68	6.2	0.289	64.2	LOS E	4.5	33.1	0.92	0.74	0.92	29.0
Approach		159	6.2	159	6.2	0.289	50.2	LOS D	4.5	33.1	0.81	0.72	0.81	32.7
NorthWest: Windsor Road (NW)														
27	L2	137	4.7	137	4.7	0.112	8.2	LOS A	1.8	13.1	0.23	0.61	0.23	52.2
28	T1	1986	4.9	1986	4.9	* 0.937	46.1	LOS D	77.6	566.2	0.91	0.96	1.05	34.2
29	R2	80	4.1	80	4.1	0.605	81.7	LOS F	6.0	43.1	1.00	0.78	1.03	25.4
Approach		2203	4.9	2203	4.9	0.937	45.0	LOS D	77.6	566.2	0.87	0.93	0.99	34.5
SouthWest: Chapman Road (SW)														
30	L2	94	4.7	94	4.7	0.140	18.2	LOS B	2.9	20.9	0.48	0.68	0.48	45.7
31	T1	30	4.4	30	4.4	* 0.132	64.1	LOS E	2.0	14.4	0.93	0.68	0.93	29.4
32	R2	80	6.9	80	6.9	* 0.335	64.7	LOS E	5.3	39.6	0.92	0.75	0.92	28.9
Approach		204	5.5	204	5.5	0.335	43.2	LOS D	5.3	39.6	0.72	0.71	0.72	34.9
All Vehicles		4425	5.2	4425	5.2	0.937	36.7	LOS C	77.6	566.2	0.79	0.81	0.87	37.4

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	238.9	220.5	0.92
NorthEast: Chapman Road (NE)												
P6	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	234.8	215.2	0.92

# MOVEMENT SUMMARY

**Site: 101 [AM Existing + Growth + Proposal (High Case) (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV %	[ Total veh/h	HV %				[ Veh. veh	Dist ] m				
SouthEast: Windsor Road (SE)														
21	L2	151	7.4	151	7.4	0.121	7.7	LOS A	1.7	12.4	0.20	0.60	0.20	52.6
22	T1	1589	5.2	1589	5.2	0.799	21.9	LOS B	41.0	299.7	0.75	0.69	0.75	44.2
23	R2	130	8.5	130	8.5	* 0.928	100.3	LOS F	11.3	84.8	1.00	1.05	1.58	22.5
Approach		1870	5.6	1870	5.6	0.928	26.2	LOS B	41.0	299.7	0.72	0.71	0.76	41.9
NorthEast: Chapman Road (NE)														
24	L2	73	6.5	73	6.5	0.136	32.9	LOS C	3.3	24.2	0.66	0.72	0.66	38.6
25	T1	23	5.1	23	5.1	0.102	63.9	LOS E	1.5	11.0	0.92	0.67	0.92	29.4
26	R2	71	6.2	71	6.2	0.302	64.3	LOS E	4.7	34.6	0.93	0.74	0.93	29.0
Approach		167	6.2	167	6.2	0.302	50.5	LOS D	4.7	34.6	0.81	0.72	0.81	32.6
NorthWest: Windsor Road (NW)														
27	L2	143	4.7	143	4.7	0.118	8.4	LOS A	2.0	14.3	0.24	0.61	0.24	52.0
28	T1	1986	4.9	1986	4.9	* 0.948	53.4	LOS D	83.2	606.5	0.92	1.01	1.10	32.0
29	R2	80	4.1	80	4.1	0.554	80.0	LOS F	5.9	42.5	1.00	0.77	1.00	25.7
Approach		2209	4.9	2209	4.9	0.948	51.5	LOS D	83.2	606.5	0.88	0.97	1.04	32.6
SouthWest: Chapman Road (SW)														
30	L2	94	4.7	94	4.7	0.140	18.7	LOS B	2.9	21.3	0.49	0.68	0.49	45.4
31	T1	30	4.4	30	4.4	* 0.132	64.1	LOS E	2.0	14.4	0.93	0.68	0.93	29.4
32	R2	80	6.9	80	6.9	* 0.335	64.7	LOS E	5.3	39.6	0.92	0.75	0.92	28.9
Approach		204	5.5	204	5.5	0.335	43.4	LOS D	5.3	39.6	0.72	0.71	0.72	34.8
All Vehicles		4450	5.3	4450	5.3	0.948	40.4	LOS C	83.2	606.5	0.80	0.84	0.90	36.1

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	238.9	220.5	0.92
NorthEast: Chapman Road (NE)												
P6	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	234.8	215.2	0.92

# MOVEMENT SUMMARY

**Site: 101 [PM Existing (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
SouthEast: Windsor Road (SE)														
21	L2	97	6.4	97	6.4	0.077	7.4	LOS A	0.9	6.9	0.19	0.60	0.19	52.8
22	T1	1794	5.9	1794	5.9	*0.870	27.5	LOS B	51.4	378.3	0.85	0.81	0.88	41.4
23	R2	84	7.0	84	7.0	*0.831	85.3	LOS F	6.3	46.9	1.00	0.92	1.36	24.8
Approach		1975	6.0	1975	6.0	0.870	28.9	LOS C	51.4	378.3	0.82	0.81	0.87	40.7
NorthEast: Chapman Road (NE)														
24	L2	79	6.0	79	6.0	0.097	11.3	LOS A	1.5	11.1	0.34	0.64	0.34	49.9
25	T1	31	7.2	31	7.2	0.137	60.0	LOS E	1.9	14.2	0.93	0.68	0.93	30.4
26	R2	61	6.9	61	6.9	0.230	56.2	LOS D	3.6	26.5	0.90	0.74	0.90	30.9
Approach		171	6.5	171	6.5	0.230	36.1	LOS C	3.6	26.5	0.65	0.68	0.65	37.4
NorthWest: Windsor Road (NW)														
27	L2	97	4.0	97	4.0	0.078	7.6	LOS A	1.0	7.5	0.21	0.60	0.21	52.7
28	T1	1148	5.3	1148	5.3	0.514	17.6	LOS B	22.5	164.5	0.63	0.57	0.63	46.6
29	R2	59	4.9	59	4.9	0.575	79.3	LOS F	4.2	30.5	1.00	0.77	1.03	25.8
Approach		1304	5.2	1304	5.2	0.575	19.6	LOS B	22.5	164.5	0.62	0.58	0.62	45.3
SouthWest: Chapman Road (SW)														
30	L2	86	5.0	86	5.0	0.140	23.1	LOS B	3.0	21.7	0.57	0.70	0.57	43.1
31	T1	33	5.2	33	5.2	*0.144	59.9	LOS E	2.0	14.9	0.93	0.69	0.93	30.4
32	R2	84	6.3	84	6.3	*0.314	57.1	LOS E	5.0	36.9	0.92	0.75	0.92	30.7
Approach		203	5.6	203	5.6	0.314	43.1	LOS D	5.0	36.9	0.77	0.72	0.77	34.9
All Vehicles		3653	5.7	3653	5.7	0.870	26.7	LOS B	51.4	378.3	0.74	0.72	0.76	41.7

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped ]	[ Dist m ]					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												
P7	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94

# MOVEMENT SUMMARY

**Site: 101 [PM Existing + Growth (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [ Total HV ]		DEMAND FLOWS [ Total HV ]		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [ Veh. Dist ]		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
SouthEast: Windsor Road (SE)														
21	L2	116	6.4	116	6.4	0.093	7.6	LOS A	1.2	8.8	0.20	0.60	0.20	52.7
22	T1	2053	5.9	2053	5.9	*0.990	88.1	LOS F	103.4	760.8	0.96	1.25	1.40	24.6
23	R2	101	7.0	101	7.0	*0.888	89.0	LOS F	7.8	58.2	1.00	1.00	1.50	24.1
Approach		2270	6.0	2270	6.0	0.990	84.0	LOS F	103.4	760.8	0.93	1.20	1.34	25.3
NorthEast: Chapman Road (NE)														
24	L2	95	6.0	95	6.0	0.134	14.4	LOS A	2.3	17.0	0.43	0.67	0.43	48.0
25	T1	37	7.2	37	7.2	0.164	60.3	LOS E	2.3	17.1	0.93	0.69	0.93	30.3
26	R2	73	6.9	73	6.9	0.310	59.6	LOS E	4.5	33.2	0.92	0.75	0.92	30.1
Approach		205	6.5	205	6.5	0.310	38.8	LOS C	4.5	33.2	0.70	0.70	0.70	36.4
NorthWest: Windsor Road (NW)														
27	L2	116	4.0	116	4.0	0.094	8.0	LOS A	1.4	10.0	0.23	0.61	0.23	52.4
28	T1	1378	5.3	1378	5.3	0.645	18.6	LOS B	29.5	216.1	0.68	0.62	0.68	46.0
29	R2	71	4.9	71	4.9	0.615	78.6	LOS F	5.0	36.6	1.00	0.79	1.05	25.9
Approach		1565	5.2	1565	5.2	0.645	20.5	LOS B	29.5	216.1	0.66	0.63	0.67	44.8
SouthWest: Chapman Road (SW)														
30	L2	103	5.0	103	5.0	0.195	34.8	LOS C	4.7	34.1	0.72	0.74	0.72	37.9
31	T1	40	5.2	40	5.2	*0.175	60.2	LOS E	2.5	18.2	0.93	0.70	0.93	30.3
32	R2	101	6.3	101	6.3	*0.424	61.5	LOS E	6.3	46.4	0.94	0.80	0.94	29.6
Approach		244	5.6	244	5.6	0.424	50.1	LOS D	6.3	46.4	0.85	0.75	0.85	32.8
All Vehicles		4284	5.7	4284	5.7	0.990	56.7	LOS E	103.4	760.8	0.81	0.94	1.04	31.1

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [ Ped Dist ]		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	m/sec	
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												
P7	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94



# MOVEMENT SUMMARY

**Site: 101 [PM Existing + Growth + Proposal (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV %	[ Total veh/h	HV %				[ Veh. veh	Dist ] m				
SouthEast: Windsor Road (SE)														
21	L2	116	6.4	116	6.4	0.093	7.6	LOS A	1.2	8.8	0.20	0.60	0.20	52.7
22	T1	2053	5.9	2053	5.9	*0.992	90.0	LOS F	104.1	765.6	0.96	1.26	1.41	24.3
23	R2	107	7.0	107	7.0	*0.941	98.9	LOS F	8.9	66.0	1.00	1.09	1.72	22.7
Approach		2276	6.0	2276	6.0	0.992	86.3	LOS F	104.1	765.6	0.93	1.21	1.36	24.9
NorthEast: Chapman Road (NE)														
24	L2	108	6.0	108	6.0	0.152	14.5	LOS B	2.7	19.6	0.44	0.67	0.44	47.9
25	T1	37	7.2	37	7.2	0.164	60.3	LOS E	2.3	17.1	0.93	0.69	0.93	30.3
26	R2	80	6.9	80	6.9	0.340	59.9	LOS E	4.9	36.6	0.93	0.75	0.93	30.0
Approach		225	6.5	225	6.5	0.340	38.2	LOS C	4.9	36.6	0.69	0.70	0.69	36.6
NorthWest: Windsor Road (NW)														
27	L2	119	4.0	119	4.0	0.097	8.2	LOS A	1.5	10.8	0.23	0.61	0.23	52.2
28	T1	1378	5.3	1378	5.3	0.645	18.6	LOS B	29.5	215.9	0.68	0.62	0.68	46.0
29	R2	71	4.9	71	4.9	0.615	78.6	LOS F	5.0	36.6	1.00	0.79	1.05	25.9
Approach		1568	5.2	1568	5.2	0.645	20.5	LOS B	29.5	215.9	0.66	0.63	0.67	44.8
SouthWest: Chapman Road (SW)														
30	L2	103	5.0	103	5.0	0.197	35.0	LOS C	4.7	34.2	0.72	0.74	0.72	37.8
31	T1	40	5.2	40	5.2	*0.175	60.2	LOS E	2.5	18.2	0.93	0.70	0.93	30.3
32	R2	101	6.3	101	6.3	*0.424	61.5	LOS E	6.3	46.4	0.94	0.80	0.94	29.6
Approach		244	5.6	244	5.6	0.424	50.1	LOS D	6.3	46.4	0.85	0.75	0.85	32.7
All Vehicles		4313	5.7	4313	5.7	0.992	57.8	LOS E	104.1	765.6	0.81	0.95	1.05	30.8

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												

# MOVEMENT SUMMARY

**Site: 101 [PM Existing + Growth + Proposal (Low Case) (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [ Total veh/h HV % ]		DEMAND FLOWS [ Total veh/h HV % ]		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [ Veh. veh Dist m ]		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (SE)														
21	L2	116	6.4	116	6.4	0.093	7.6	LOS A	1.2	8.8	0.20	0.60	0.20	52.7
22	T1	2053	5.9	2053	5.9	*0.991	89.1	LOS F	103.8	763.2	0.96	1.25	1.40	24.4
23	R2	104	7.0	104	7.0	*0.915	92.8	LOS F	8.3	61.6	1.00	1.04	1.60	23.6
Approach		2273	6.0	2273	6.0	0.991	85.1	LOS F	103.8	763.2	0.93	1.21	1.35	25.1
NorthEast: Chapman Road (NE)														
24	L2	102	6.0	102	6.0	0.144	14.5	LOS A	2.5	18.4	0.43	0.67	0.43	47.9
25	T1	37	7.2	37	7.2	0.164	60.3	LOS E	2.3	17.1	0.93	0.69	0.93	30.3
26	R2	77	6.9	77	6.9	0.327	59.8	LOS E	4.7	35.1	0.93	0.75	0.93	30.0
Approach		216	6.5	216	6.5	0.327	38.5	LOS C	4.7	35.1	0.69	0.70	0.69	36.5
NorthWest: Windsor Road (NW)														
27	L2	118	4.0	118	4.0	0.096	8.0	LOS A	1.4	10.2	0.23	0.61	0.23	52.4
28	T1	1378	5.3	1378	5.3	0.645	18.6	LOS B	29.5	216.0	0.68	0.62	0.68	46.0
29	R2	71	4.9	71	4.9	0.615	78.6	LOS F	5.0	36.6	1.00	0.79	1.05	25.9
Approach		1567	5.2	1567	5.2	0.645	20.5	LOS B	29.5	216.0	0.66	0.63	0.67	44.8
SouthWest: Chapman Road (SW)														
30	L2	103	5.0	103	5.0	0.196	34.9	LOS C	4.7	34.2	0.72	0.74	0.72	37.9
31	T1	40	5.2	40	5.2	*0.175	60.2	LOS E	2.5	18.2	0.93	0.70	0.93	30.3
32	R2	101	6.3	101	6.3	*0.424	61.5	LOS E	6.3	46.4	0.94	0.80	0.94	29.6
Approach		244	5.6	244	5.6	0.424	50.1	LOS D	6.3	46.4	0.85	0.75	0.85	32.7
All Vehicles		4300	5.7	4300	5.7	0.991	57.2	LOS E	103.8	763.2	0.81	0.95	1.04	30.9

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [ Ped ped Dist m ]		Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												

# MOVEMENT SUMMARY

**Site: 101 [PM Existing + Growth + Proposal (High Case) (Site Folder: General)]**

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [ Total veh/h HV % ]		DEMAND FLOWS [ Total veh/h HV % ]		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [ Veh. veh Dist m ]		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (SE)														
21	L2	116	6.4	116	6.4	0.093	7.6	LOS A	1.2	8.8	0.20	0.60	0.20	52.7
22	T1	2053	5.9	2053	5.9	*0.992	90.7	LOS F	104.3	767.2	0.96	1.26	1.41	24.2
23	R2	109	7.0	109	7.0	*0.959	105.2	LOS F	9.4	69.9	1.00	1.13	1.81	21.8
Approach		2278	6.0	2278	6.0	0.992	87.2	LOS F	104.3	767.2	0.93	1.22	1.37	24.7
NorthEast: Chapman Road (NE)														
24	L2	114	6.0	114	6.0	0.161	14.6	LOS B	2.8	20.9	0.44	0.67	0.44	47.8
25	T1	37	7.2	37	7.2	0.164	60.3	LOS E	2.3	17.1	0.93	0.69	0.93	30.3
26	R2	83	6.9	83	6.9	0.353	60.0	LOS E	5.1	38.1	0.93	0.75	0.93	30.0
Approach		234	6.5	234	6.5	0.353	37.9	LOS C	5.1	38.1	0.69	0.70	0.69	36.7
NorthWest: Windsor Road (NW)														
27	L2	120	4.0	120	4.0	0.098	8.2	LOS A	1.5	10.9	0.23	0.61	0.23	52.2
28	T1	1378	5.3	1378	5.3	0.645	18.6	LOS B	29.5	215.9	0.68	0.62	0.68	46.0
29	R2	71	4.9	71	4.9	0.615	78.6	LOS F	5.0	36.6	1.00	0.79	1.05	25.9
Approach		1569	5.2	1569	5.2	0.645	20.5	LOS B	29.5	215.9	0.66	0.63	0.67	44.8
SouthWest: Chapman Road (SW)														
30	L2	103	5.0	103	5.0	0.198	35.0	LOS C	4.7	34.3	0.72	0.74	0.72	37.8
31	T1	40	5.2	40	5.2	*0.175	60.2	LOS E	2.5	18.2	0.93	0.70	0.93	30.3
32	R2	101	6.3	101	6.3	*0.424	61.5	LOS E	6.3	46.4	0.94	0.80	0.94	29.6
Approach		244	5.6	244	5.6	0.424	50.1	LOS D	6.3	46.4	0.85	0.75	0.85	32.7
All Vehicles		4325	5.7	4325	5.7	0.992	58.2	LOS E	104.3	767.2	0.81	0.95	1.05	30.7

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [ Ped ped Dist m ]		Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Windsor Road (SE)												
P5	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94
NorthEast: Chapman Road (NE)												
P6	Full	50	50	64.3	LOS F	0.2	0.2	0.96	0.96	229.8	215.2	0.94
NorthWest: Windsor Road (NW)												