Georges Cove Marina - Revised Planning Proposal

Addendum Traffic Impact Assessment

Prepared for Mirvac

September 2023

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Mirvac

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Version	Date	Prepared by	Approved by	Comments
V1	1 September	Dr John Mai	Abdullah Uddin	Draft
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13 September 2023

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1 Introduction

1.1 Overview

This planning proposal has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Mirvac Homes (NSW) Pty Ltd ('Mirvac') to amend Liverpool Local Environmental Plan 2008 (LLEP 2008). The proposal relates to the Georges Cove Marina (Lot 3 DP 1246745, highlighted in yellow in Figure 1.1) at 146 Newbridge Road, Moorebank ('the site'). The proposed residential component of the Georges Cove Marina is known as the 'Key Site'.

Specifically, the planning proposal seeks to:

- include a site-specific provision under Schedule 1 to enable residential accommodation as an additional permitted use (limited to multi-dwelling housing and residential flat buildings) within the new Key Site
- amend the Key Sites map to include a designated area for residential accommodation in the RE2 Private Recreation zone at 146 Newbridge Road
- amend the maximum permissible Floor Space Ratio from 0.25:1 to 0.4:1 (limited to the Key Site)
- amend the maximum permissible Height of Building from 21 metres (m) to 35 m (limited to the Key Site).

The planning proposal relates only to the residential component of Georges Cove Marina, however this traffic assessment considers the other development sites withing the broader Georges Cove precinct, which includes the commercial component of Georges Cove Marina, the Georges Cove Village commercial land fronting Newbridge Road, the residential development at Georges Cove residences, and the Moorebank Recyclers land.

The planning proposal site (Georges Cove Marina) is shown in the precinct context in Figure 1.1.

Source: MetroMap

Figure 1.1 Planning proposal site context

1.2 Background

An earlier planning proposal, prepared by the applicant, was approved by the Liverpool Local Planning Panel on 31 August 2020 and approved at a Council meeting on 30 September 2020. Council subsequently forwarded the proposal to the Department of Planning (DPE) for Gateway determination.

In December 2020, the DPE advised that the planning proposal should be resubmitted following the findings of Council's Regional Flood Study. Since that time, a number of new documents and policies regarding flooding and evacuation have been developed by Council and the Department, and this has caused Council to recommend that the planning proposal and relevant supporting information be updated and amended as appropriate.

Council wrote to Mirvac on 14 June 2023, requesting specific additional information and updates to the planning proposal, which would be required to progress the application.

Aspects of the planning proposal requiring additional information are summarised below.

1.2.1 Justification

The planning proposal is to provide justification as to why a site-specific provision under Schedule 1 to enable residential accommodation as an additional permitted use is sought, instead of rezoning the area identified on the Key Site map to R4 – High Density Residential including reference to both the R4 High Density Residential and RE2 Private Recreation zone objectives.

Further justification is to be provided as to why a rezoning of the area of the subject site for the previously approved Marina development from RE2 Private Recreation to W1 Natural Waterways is not sought to permit better alignment with the zone objectives for the intended use of the site.

1.2.2 Updates

Updates to the planning proposal refer to the recently consolidated State Environmental Planning Policies (SEPPs), which were introduced after the original planning proposal was submitted. SEPP names and section numbering have changed and the planning proposal has been revised to now refer to contemporary environmental planning instruments.

1.2.3 Technical assessments

The Council request also identified matters to be updated in supporting reports, including traffic, flood, contamination and acoustics.

In regard to traffic, the following comments have been made:

a) Updated Traffic Impact Assessment

The most recent Traffic Impact Assessment report is prepared by EMM, dated 10 April 2018. Due to the timeframe which has lapsed since the Traffic Impact Assessment Report was prepared, being over 5 years, a revised Traffic Impact Assessment Report is to be submitted to Council. This may be in the form of an addendum as the development intensity of the subject site remains the same of approximately 353 apartments and 21 terrace dwellings.

The Traffic Impact Assessment report is to consider traffic impacts from the proposed development and correlation with the wider Moorebank East precinct which has various separate planning proposals currently under assessment.

The Traffic Impact Assessment report is to update chapter 2 (Existing traffic conditions) including the most recent locality traffic volume surveys and an updated traffic study for accurate traffic volume data. An updated electronic copy of the SIDRA models is to be submitted.

2 Comparison between previous plan and current plan

A comparison of the traffic generating factors in the previous planning proposal[1] (EMM 2018) and the 2023 proposal is provided in Table 2.1.

Table 2.1 Comparison of 2018 proposal and 2023 proposal

Land use	Component	2018 proposal	2023 proposal
Georges Cove residences	Residential	179 dwellings	No change
Moorebank Recyclers land	Industrial	Trucks delivering/dispatching waste and dispatching products	No change
Georges Cove Marina	Commercial	1,243 m^2 commercial gross floor area (GFA), 250 dry storage berths, 186 marina berths	No change
Georges Cove Marina	Residential	374 dwellings	340 (319 apartments and 21 terrace dwellings) and 1500 m2 restaurant & cafe

The table above shows that:

- There will be no changes to Georges Cove residences, Moorebank Recyclers land and the commercial component of Georges Cove Marina.
- The residential component of Georges Cove Marina will see a reduction from 374 dwellings to 340 dwellings. No change in restaurant and cafe component at the ground level.

The architectural plan of the Georges Cove Marina is shown in Appendix A.

[1] EMM TIA dated 10 April 2018

3 Existing traffic and transport conditions

3.1 Current condition of the site and surrounds

During a recent site inspection, it is noted that the vehicular bridge on Promontory Way connecting Brickmakers Drive and Spinnaker Drive is now complete and operational, which connects directly to the Georges Cove residences (Figure 3.1). Dedicated left and right turn lanes are provided on Brickmakers Drive. The residential dwellings along the western fringe of the Georges Cove residences are already occupied while the others are being constructed.

Source: MetroMap

Figure 3.1 Aerial view of the Georges Cove residences (July 2023)

3.2 Road network within the Georges Cove residences

The internal roads and pedestrian infrastructure serving the occupied residential dwellings in the Georges Cove residences are now completed (Photograph 3.1 and Photograph 3.2). The infrastructure along the eastern side of the Georges Cove residences is currently being constructed. Therefore, traffic surveys undertaken as part of the study have captured both residential and construction traffic.

Photograph 3.1 Mast Place (looking north)

Photograph 3.2 Ketch Lane (looking north)

3.3 Public transport

The closest bus stops in the vicinity of the site are served by bus route M90 (Figure 3.2), which operates from Liverpool Station to Burwood Station via Bankstown.

The operating hours of the M90 are:

- Monday to Friday: 5:00 am – 11:00 pm
- Saturdays: 6:00 am – 11:00 pm
- Sundays and Public Holidays: 7:00 am – 9:00 pm.

The M90 service operates at 10-minute intervals during the AM and PM peaks, 15 minute intervals during the day on weekdays and 20-minute intervals during the day on weekends and public holidays.

As the site has a bus service passing it at an acceptable frequency, there is some opportunity for local and regional residents to use it to access the site.

Source: MetroMap

Figure 3.2 Bus stops and bus route in the vicinity of the site

3.4 Bicycle network

An off-road bicycle path is provided on the north side of Newbridge Road (Figure 3.3), which passes the wider precinct on the north side. The paths connect to the wider bicycle network towards Liverpool and Bankstown. From the off-road bicycle path, staff members and visitors can reach to the site via Brickmakers Drive, Promontory Way and Spinnaker Drive.

Source: MetroMap

Figure 3.3 Bicycle network in the vicinity of the site

3.5 Pedestrian connectivity

Pedestrian connectivity within the precinct is adequate. Footpaths are provided in most of the street frontages (Photograph 3.3) within the Georges Cove residences, which will connect to Georges Cove Marina. At Promontory Way, a pedestrian footbridge crossing over Brickmakers Drive is currently being constructed to establish linkage to the Georges Cove residences from the residential precinct located west of Brickmakers Drive (Photograph 3.4).

Photograph 3.3 Footpath in Angler Avenue (looking north)

Photograph 3.4 Pedestrian footbridge currently being constructed

3.6 Workers' place of residence data analysis

Australian Bureau of Statistics (ABS) data from the Census of Population and Housing 2021 is published on https://profile.id.com.au/ (ID). ID data has been used to determine the trip distribution of people going to their place of employment, based on the locations that people reside in who work in the Liverpool Local Government Area (LGA). The route selection for each journey is taken as the fastest route between the site and the destination.

Based on the combination of the 2021 ID data and factoring in the local traffic for commercial premises, a trip distribution has been found for a typical person working in the precinct, which has been compared with the distribution assumed by the previous 2018 EMM report. These results are shown in Table 3.1.

Table 3.1 Trip distribution of workers to the site

Direction	2018 EMM (Georges Cove Marina Commercial)	2023 EMM (this report)
North – Governor Macquarie Drive north of Newbridge Road	20%	10%
East – Newbridge Road east of Davy Robinson Drive	40%	39%
South – Brickmakers Drive south of Promontory Way	10%	16%
West – Newbridge Road west of Governor Macquarie Drive	30%	35%

As seen in Table 3.1, the difference in each direction does not vary by more than 10%, which is unlikely to vary the results significantly. For simplicity, the 2018 EMM distribution has been used for each direction.

3.7 Residents' place of work data analysis

ID data has been used to determine the trip distribution of workers going to their place of employment, based on residents in the Liverpool LGA. The route selection for each journey is taken as the fastest route between the site and the destination.

A trip distribution has been found for a typical resident travelling to and from work, which has been compared with the distribution assumed by the previous 2018 EMM report. These results are shown in Table 3.2.

Table 3.2 Trip distribution of residents from the site

Direction	2018 EMM (Georges Cove Marina Residential)	2023 EMM (this report)
North – Governor Macquarie Drive north of Newbridge Road	10%	9%
East – Newbridge Road east of Davy Robinson Drive	30%	22%
South – Brickmakers Drive south of Promontory Way	40%	50%
West – Newbridge Road west of Governor Macquarie Drive	20%	18%

As seen in Table 3.2, the difference in each direction does not vary by more than 10%, which is unlikely to vary the results significantly. For simplicity, the 2018 EMM distribution has been used for each direction.

3.8 Existing traffic volumes

As part of this traffic report, traffic surveys were conducted on Thursday, 22 June 2023 between 7:00 am – 9:00 am and 4:00 pm – 6:00 pm, during a non-school holiday period. The following intersections were surveyed, as shown in Figure 3.4:

- Brickmakers Drive/Promontory Way
- Newbridge Road/Governor Macquarie Drive/Brickmakers Drive
- Newbridge Road/Access Road
- Newbridge Road/Davy Robinson Drive.

Source: MetroMap

Figure 3.4 Surveyed intersections

The network peak hours have been found to be:

- AM: 7:15 am to 8:15 am
- PM: 4:45 pm to 5:45 pm.

The traffic volumes on the road network in the vicinity of the site are shown in Figure 3.5. The intersection counts can be found in Appendix B.

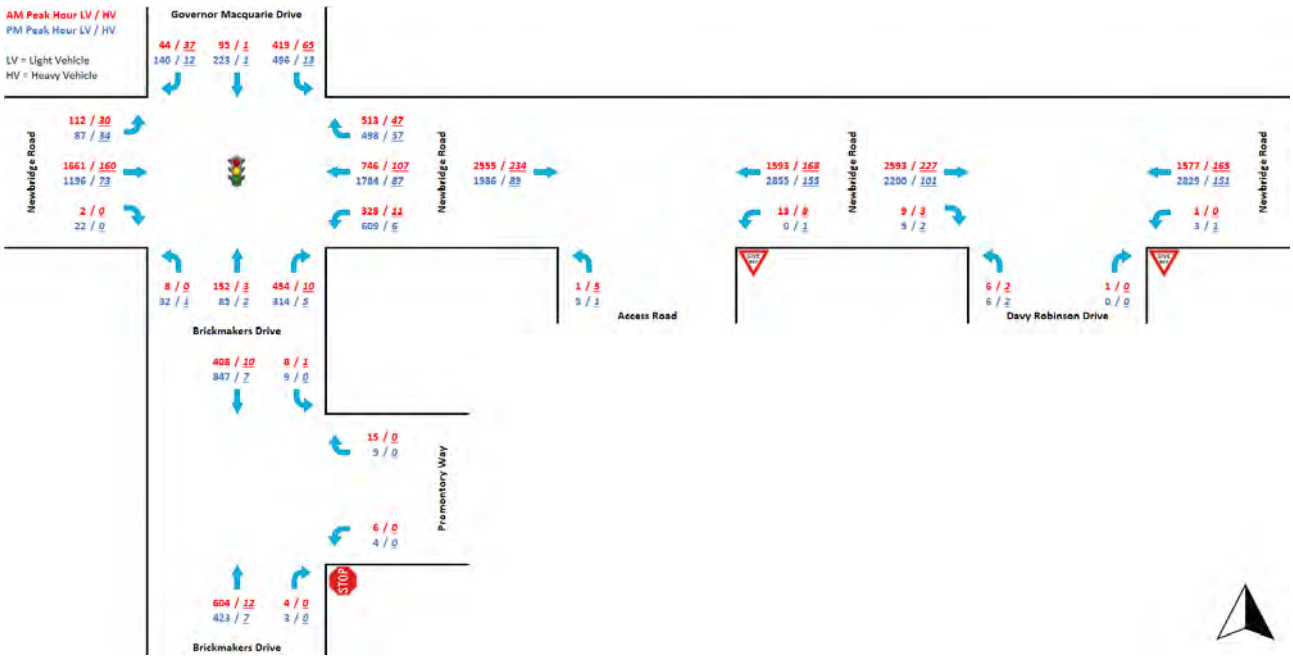


Figure 3.5 2023 surveyed traffic volumes during the AM and PM peak hour

The traffic data in the above figure shows that Newbridge Road carried 4,577 vehicles in the AM peak and 5,092 vehicles in the PM peak. For Promontory Way, the respective AM and PM volumes were 34 and 25.

Along Newbridge Road, the heavy vehicle percentages were found to be:

- AM peak: 9%
- PM peak: 5%.

The heavy vehicle percentages will be used to estimate the proportion of heavy vehicles entering and exiting the site in Chapter 4.

4 Development traffic assessment

To assess the development traffic for the planning proposal, the following components of the broader precinct have been included:

- Georges Cove residences
- Georges Cove Marina (residential) and its associated restaurant and cafe
- Georges Cove Marina (commercial)
- Moorebank Recyclers land.

4.1 Traffic distribution

The traffic distribution for the development has been modelled for two scenarios:

- Scenario 1:
  - DCP Road will not be connected to Davy Robinson Drive.
  - All traffic will be entering and exiting via Promontory Way.
  - Brickmakers Drive/Promontory Way will be modelled as a signalised intersection with the existing approach and departure lane layout and a pedestrian crossing facility at the north approach.
- Scenario 2:
  - DCP Road will be connected to Davy Robinson Drive following the development of Flower Power site and Georges Cove Village site.
  - Traffic will be distributed so that it will enter and exit via both Promontory Way and Davy Robinson Drive.
  - Brickmakers Drive/Promontory Way will be modelled as a signalised intersection with the existing approach and departure lane layout and a pedestrian crossing facility at the north approach.
  - Newbridge Road/Davy Robinson Drive will be modelled as a signalised intersection with the existing approach and departure lane layout and pedestrian crossing facilities on all three approaches (east, south and west approaches).

Scenario 1 has been modelled based on the existing connection of the site to Brickmakers Drive via Promontory Way.

Scenario 2 has been modelled to determine whether there will be potential improvement to the performance of Newbridge Road/Governor Macquarie Drive/Brickmakers Drive and Brickmakers Drive/Promontory Way intersections as a result of providing another signalised intersection at Newbridge Road/Davy Robinson Drive for the development traffic to enter and exit the area.

The development traffic distribution for Scenario 1 and Scenario 2 are shown in Figure 4.1 and Figure 4.2 respectively.

Source: MetroMap

Figure 4.1 Scenario 1 development traffic distribution

Source: MetroMap

Figure 4.2 Scenario 2 development traffic distribution

4.2 Development traffic

The following reports cover the future development traffic to and from the precinct, as there will be no change to their traffic generation:

- Georges Cove Marina (commercial) (EMM Consulting 2018)
- Georges Cove residences (also known as Moorebank Cove Residential Estate) (EMM Consulting 2016)
- Moorebank Recyclers (Lyle Marshall & Associates 2012).

For the Georges Cove Marina residential development, the traffic generation has been recalculated as there have been changes to this proposal.

4.2.1 Georges Cove Marina residential traffic generation rates

In accordance with *Guide to Traffic Generating Developments* (RTA 2002), the following traffic generation rate has been adopted for the Georges Cove Marina residential development:

- 0.485 per medium-density residential dwelling.

In the current proposal, there are a total of 340 dwellings (including 319 apartments and 21 terrace dwellings), which is fewer than the 2018 proposal. Therefore, the residential development traffic volumes have been recalculated, which are shown in Table 4.1. Note that the restaurant and cafe will mostly serve the local residents.

For the residential component, the following split has been assumed for the distribution of movements, which is consistent with the previous analysis (EMM 2018):

- AM: 20% in and 80% out
- PM: 60% in and 40% out.

The vehicle movements for the residential component of Georges Cove Marina are highlighted in Section 4.2.5.

4.2.2 Georges Cove Marina commercial traffic generation rates

In accordance with *Guide to Traffic Generating Developments* (RTA 2002), the following traffic generation rates have been adopted for the Georges Cove Marina commercial development:

- 0.14 per dry boat storage berth
- 0.14 per wet berth marina
- 2 per 100 m^2 commercial GFA (only for the afternoon peak hour).

For the commercial component, the following heavy vehicle percentages of the overall movements to/from the site have been taken based on the existing background traffic conditions, as discussed in Section 3.8:

- AM: 9% heavy vehicles
- PM: 5% heavy vehicles.

It has also been assumed that the same number of heavy vehicles entering Georges Cove Marina will also leave in the same peak hour.

The vehicle movements for both the commercial component of Georges Cove Marina are highlighted in Section 4.2.5.

4.2.3 Georges Cove residences traffic generation rates

The Georges Cove residences is a low-density residential development. A traffic generation rate of 0.85 per dwelling in the peak hours has been adopted, as per the RTA (now TfNSW) *Guide to Traffic Generating Developments.*

For the residences, the following split has been assumed for the distribution of movements:

- AM: 20% in and 80% out
- PM: 60% in and 40% out.

These vehicle movements are highlighted in Section 4.2.5.

4.2.4 Moorebank Recyclers land traffic generation

As no changes are currently authorised for the Moorebank Recyclers land, the same vehicle movements have been used for this assessment. Future development may result in a general industrial facility, however this is speculative only. These vehicle movements are highlighted in Section 4.2.5.

4.2.5 Overall development traffic generation

The traffic generation for the different components of the development are shown in Table 4.1.

Table 4.1 Overall development traffic volumes

Development component	Peak hour	Movements in		Movements out		Total movements
		Light vehicles	Heavy vehicles	Light vehicles	Heavy vehicles	
Georges Cove Marina (residential)	AM	33	0	132	0	165
	PM	99	0	66	0	165
Georges Cove Marina (commercial)	AM	46	3	9	3	61
	PM	41	2	41	2	86
Georges Cove residences	AM	30	0	122	0	152
	PM	91	0	61	0	152
Moorebank Recyclers land	AM	0	23	0	20	43
	PM	0	13	0	16	29
Total	**AM**	**109**	**26**	**263**	**23**	**421**
	PM	**231**	**15**	**168**	**18**	**432**

Due to the reduction of residential dwellings in Georges Cove Marina, the total vehicle movements in the AM and PM peak have been reduced compared to the 2018 EMM report.

4.2.6 Overall development traffic volumes

The development traffic volumes calculated from Table 4.1 are distributed to the wider road network in accordance with Figure 4.1 for Scenario 1 and Figure 4.2 for Scenario 2. The resultant development traffic volumes are shown in Figure 4.3 and Figure 4.4 for Scenario 1 and Scenario 2 respectively. Note that the sum of the movements may be off by one due to rounding.

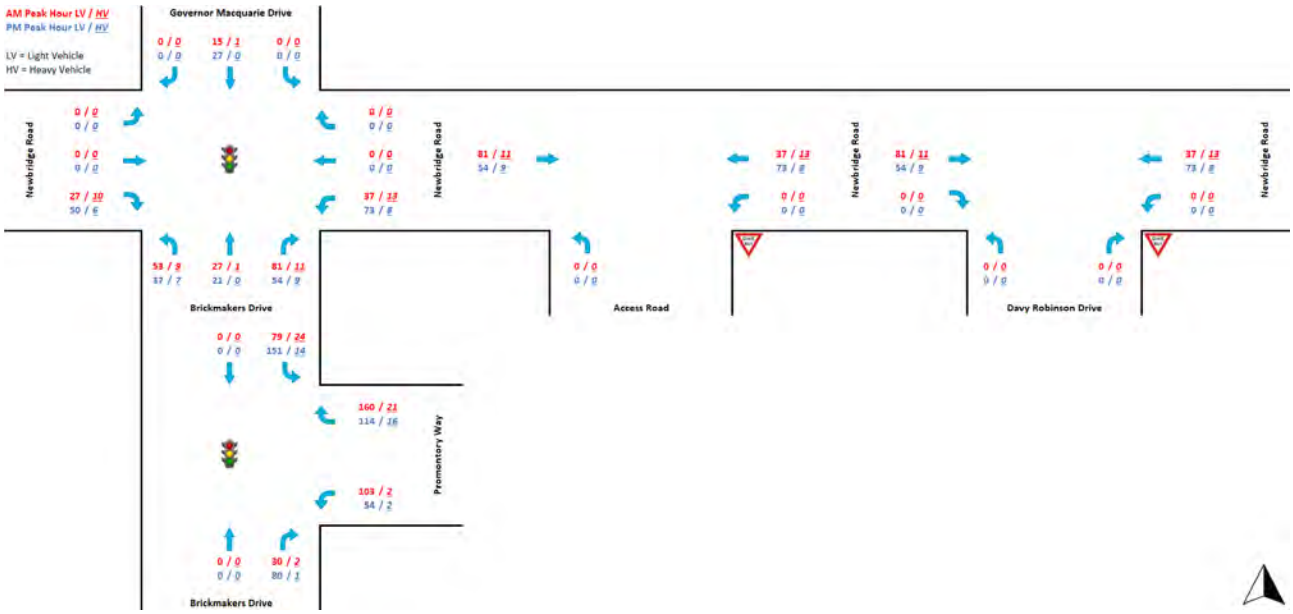


Figure 4.3 Scenario 1 development traffic volumes

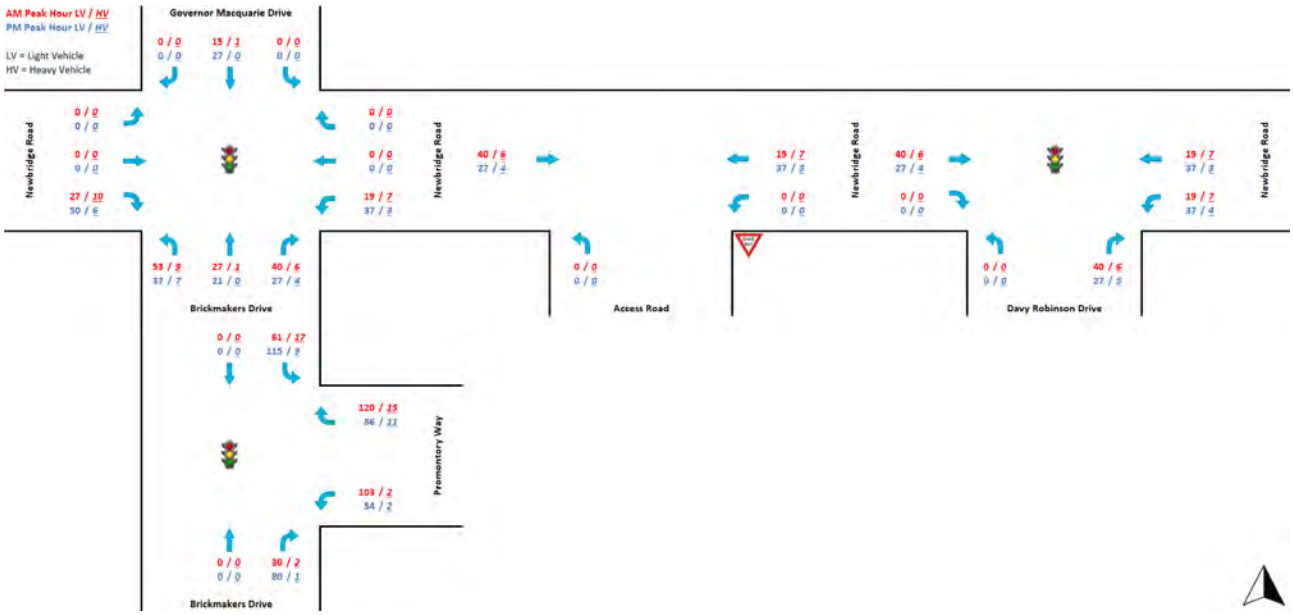


Figure 4.4 Scenario 2 development traffic volumes

4.3 Baseline and development traffic

The baseline and development traffic volumes have been combined and are shown in Figure 4.5 and Figure 4.6. The baseline traffic volumes are taken as the existing 2023 traffic volumes. As the existing traffic volumes captured both residential and construction traffic volumes from the precinct, the baseline traffic volumes should provide a conservative estimate of the background traffic volumes before the development traffic is added.

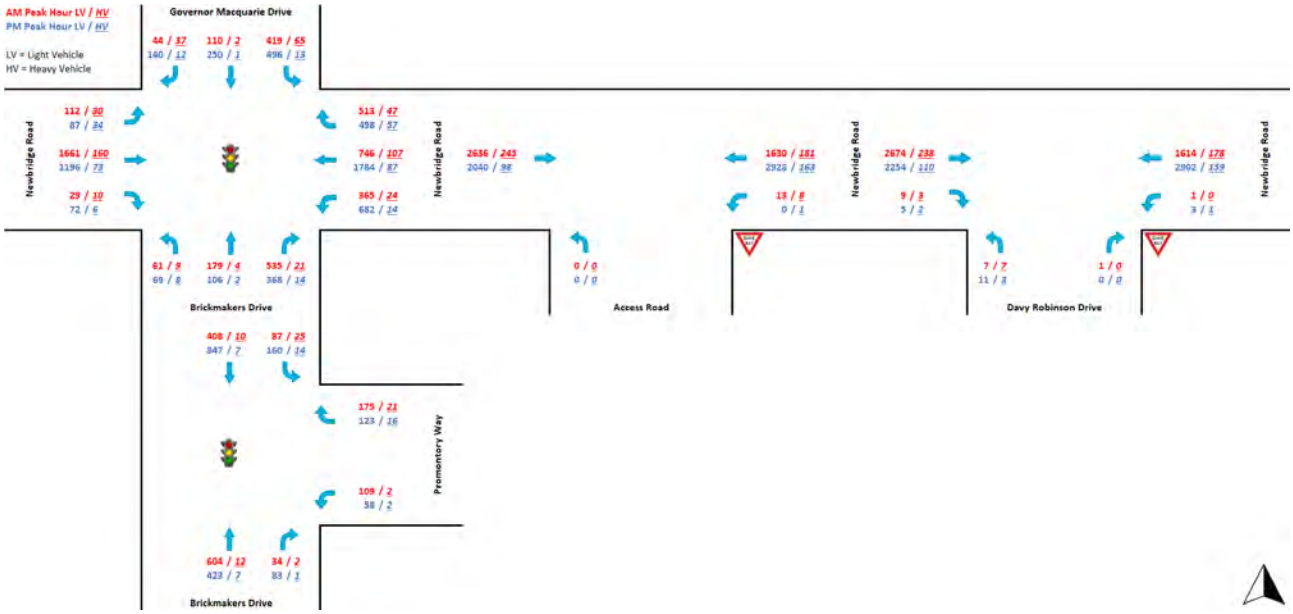


Figure 4.5 Scenario 1 baseline and development traffic volumes

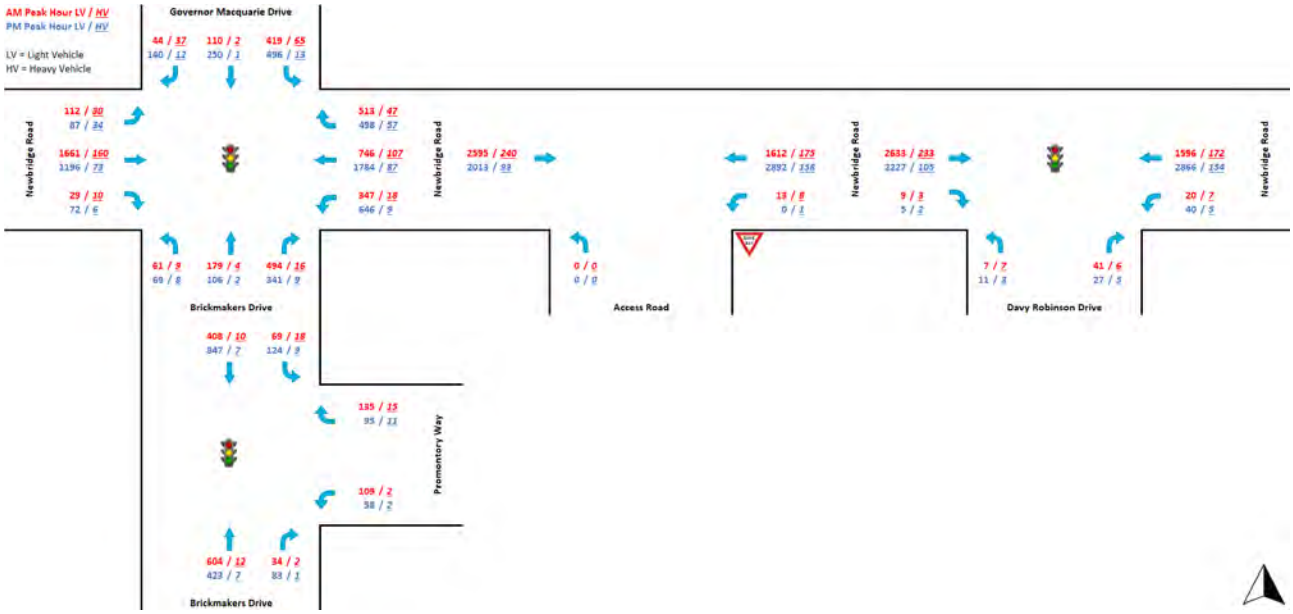


Figure 4.6 Scenario 2 baseline and development traffic volumes

The intersection analysis has been performed with the baseline and development traffic volumes for Scenario 1 and Scenario 2, which are then compared with the existing traffic volumes.

4.4 Intersection impact assessment

The intersections shown in Figure 3.4 have been modelled with the SIDRA Intersection 9.1 software, a micro-analytical tool for individual intersections and linked intersection-network modelling. The modelling is based on the surveyed traffic volumes detailed in Section 3.8 and site traffic volumes in Section 4.1. SIDRA provides the following performance indicators:

- Degree of saturation (DOS) – the total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation (e.g. 0.8 = 80% saturation).

  In practice, the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to. These are usually called 'practical degrees of saturation'.

- Average delay (DEL) – for a signalised or roundabout intersection, this is the average delay in seconds encountered by all vehicles passing through the intersection. For a priority-controlled intersection, this is the average delay experienced by the worst approach and turning movement. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.

- Level of service (LOS) – this is a categorisation of average delay, intended for simple reference. For a priority-controlled intersection, this is the categorisation of the average delay experienced by the worst approach and turning movement.

- 95% queue lengths (Q95) – is defined to be the queue length in metres that has only a 5% probability of being exceeded during the analysed time period. It transforms the average delay into measurable distance units.

The LOS is a good indicator of overall performance for individual intersections, with each level summarised in Table 4.2.

Table 4.2 Intersection LOS standards

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Priority intersection ('Stop' and 'Give Way')
A	<14	Good operation	Good operations
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity. At traffic signals, incidents will cause extensive delays. Roundabouts require other control mode.	At capacity, required other control mode
F	>71	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing; required other control mode

Source: *RTA Guide to Traffic Generating Developments* (RTA 2002)

SIDRA intersection modelling has been conducted for the following scenarios:

- Existing scenario: This scenario includes surveyed traffic volumes only and without any proposed development site traffic volumes.
- Scenario 1: This scenario includes the baseline traffic volumes and the development traffic volumes all entering and exiting via Promontory Way, as discussed in Section 4.1.
- Scenario 2: This scenario includes the baseline traffic volumes and the development traffic volumes distributed via Promontory Way and Davy Robinson Drive, as discussed in Section 4.1.

The following abbreviations are used for the turn movements:

- TH: through
- LT: left turn
- RT: right turn.

The SIDRA results for the key intersections are presented in the following tables. Detailed SIDRA results can be found in Appendix C.

4.4.1 Brickmakers Drive/Promontory Way

Table 4.3 SIDRA modelling result for Brickmakers Drive/Promontory Way

Control: **a) Priority controlled (stop)** **b) and c) Signalised**	**AM Peak**						**PM Peak**					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	1,124	11.6	A	0.337	0.8	RT from Promontory Way (east)	1,378	22.7	B	0.463	1.0	RT from Promontory Way (east)
b) Scenario 1: Baseline + development via Promontory Way	1,567	10.4	A	0.673	71.7	TH from Brickmakers Drive (south)	1,833	12.6	A	0.883	133.7	TH from Brickmakers Drive (north)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	1,493	9.3	A	0.641	66.3	TH from Brickmakers Drive (south)	1,755	12.4	A	0.883	133.8	TH from Brickmakers Drive (north)

Key findings for Brickmakers Drive/Promontory Way intersection:

- In AM and PM, the intersection performs satisfactorily within capacity with LOS A or B and DoS <0.9 for all scenarios.
- The distribution of the development traffic over multiple intersections in the road network reduces the DOS at this intersection in the AM peak.
- Signalisation of the intersection prior to the completion of the development will produce an acceptable level of performance and provide capacity to accommodate additional traffic.

4.4.2 Newbridge Road/Governor Macquarie Drive/Brickmakers Drive

Table 4.4 SIDRA modelling result for Newbridge Road/Governor Macquarie Drive/Brickmakers Drive

Control: Signalised	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	5,268	70.7	F	1.177	368.8	LT from Newbridge Road (west)	6,081	110.3	F	1.128	300.4	LT from Newbridge Road (west)
b) Scenario 1: Baseline + development via Promontory Way	5,568	97.3	F	1.068	567.0	LT from Newbridge Road (west)	6,388	52.9	D	0.879	293.8	TH from Newbridge Road (east)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	5,495	90.7	F	1.049	547.0	LT from Newbridge Road (west)	6,312	51.7	D	0.871	293.8	TH from Newbridge Road (east)

Key findings for Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection:

- In AM and PM, the intersection performs over the capacity with LOS F for existing scenarios.
- Generally the longest queues occurs citybound (eastbound) in the AM peak and outbound (westbound) in the PM peak, which is consistent with Sydney's arterial road network;
- In the existing scenario, the prioritisation of certain movements is contributing to DOS >1.1 in the AM and PM peak, and an average delay greater than 100 seconds in the PM peak.
- As the intersection is already over capacity, the additional traffic volumes from the development make a negligible difference, as it only contributes up to 5.7% of the intersection traffic volumes.

- A comparison of the model parameters between Scenario 1 and 2 shows that distribution of traffic to Davy Robinson Drive via DCP Road will ease the pressure on Newbridge Road/Brickmakers Drive/Government Macquarie Drive in both the AM and PM peak. This shows that the incorporation of this development actually provides a positive overall impact on the existing conditions, which justifies signalisation of Newbridge Road/Davy Robinson Drive.

4.4.3 Newbridge Road/Access Road

Table 4.5 SIDRA modelling result for Newbridge Road/Access Road

Control: Priority controlled (give way)	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	4,818	13.4	A	0.529	1.0	LT from Access Road (south)	5,360	17.2	B	0.560	413.5	TH from Newbridge Road (east)
b) Scenario 1: Baseline + development via Promontory Way	4,961	10.2	A	0.525	0	N/A	5,505	11.4	A	0.624	100.2	TH from Newbridge Road (east)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	4,887	10.2	A	0.522	0	N/A	5,428	11.4	A	0.614	88.9	TH from Newbridge Road (east)

Key findings for Newbridge Road/Site Access intersection:

- In AM, the intersection performs satisfactorily within capacity with LOS A and DoS <0.6 for all scenarios.
- In PM, the intersection performs satisfactorily within capacity with LOS B and DoS <0.7 for all scenarios.
- In all scenarios, the intersection has capacity to accommodate traffic generated by the development.

4.4.4 Newbridge Road/Davy Robinson Drive

Table 4.6 SIDRA modelling result for Newbridge Road/Davy Robinson Drive

Control: a) and b) Priority controlled (give way) c) Signalised	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	4,825	159.7	F	1.013	15.4	LT from Davy Robinson Drive (south)	5,580	448.7	F	1.219	24.6	RT from Newbridge Road (west)
b) Scenario 1: Baseline + development via Promontory Way	4,981	159.3	F	1.028	20.6	LT and RT from Davy Robinson Drive (south)	5,738	448.8	F	1.228	24.8	RT from Newbridge Road (west)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	4,983	22.6	B	0.892	334.9	TH from Newbridge Road (west)	5,735	16.1	B	0.860	344.1	TH from Newbridge Road (east)

Key findings for Newbridge Road/Davy Robinson Drive intersection:

- In AM and PM, the intersection performs over capacity in the existing scenario and Scenario 1, with LOS F and DoS >1.0 for these scenarios with priority controlled (give way) intersections.
- In the review of the existing turning movements of vehicles at the intersection during the AM peak hour, it is noted that the longest delay experienced by a left turning vehicle from Davy Robinson Drive (south approach on minor road) is 40 seconds, while the longest delay experienced by a right turning vehicle from Davy Robinson Drive is 90 seconds, even though there were only 9 and 8 vehicles from Davy Robinson Drive in the AM and PM peak hour respectively.
- Overall, the intersection will have capacity to accommodate the development when it is upgraded to a signalised intersection once the DCP Road is connected to Davy Robinson Drive. Depending on the spatial traffic distribution and broader network connectivity, upgrades may be required to Davy Robinson Drive (south approach), such as dedicated left and right turn lanes to minimise queue lengths and overall delays. This is also dependent on the development of the Flower Power site.
- The intersection is currently over capacity and will continue to operate over capacity in the current format. A comparison of Scenario 1 and 2 shows that signalising the Newbridge Road/Davy Robinson Drive would create significant capacity at this intersection. Hence, signalisation of this intersection is justifiable.

5 Cumulative analysis

It should be noted that another future development within this precinct is Georges Cove Village (Lot 1 DP 1246745). The development site is located south of Newbridge Road and will be accessed via the existing access on Newbridge Road. A planning proposal for this site, which would enable commercial and light industrial land uses, is currently being considered by Liverpool City Council. As such, a sensitivity test has been performed by adding the traffic generation from the likely future development of this site to the overall traffic analysis for this precinct.

A summary of the Georges Cove Village development is shown in Table 5.1.

Table 5.1 Comparison of 2018 and 2023 Georges Cove Village proposal

Land use	Component	2018 proposal	2023 proposal
Georges Cove Village	Mixed use	162 residential, 9 service apartments/terraces, total retail 4110 m^2 GLFA, medical 695 m^2 GLFA, childcare 798 m^2 GLFA (86 children), Gym 551 m^2 GLFA	Total retail 4,039 m^2 GLFA and light industrial (office) 3,519.2 m^2

In the revised design for the future Georges Cove Village development, there is no residential component proposed and a light industrial (office) component has been added. The net retail component has been reduced slightly.

5.1 Georges Cove Village traffic distribution

The traffic distribution has been analysed for two more scenarios:

- **Scenario 3**:
  - DCP Road will not be connected to Davy Robinson Drive.
  - All Georges Cove Village traffic that leaves to the south via DCP Road will connect to the broader road network via Brickmakers Drive/Promontory Way signalised intersection.
  - Light and heavy vehicles will be allowed to turn left from Newbridge Road (east) to enter the Georges Cove Village site, but light vehicles will not be allowed to leave the Georges Cove Village site directly onto Newbridge Road (west).
  - Heavy vehicles will still be allowed to leave the Georges Cove Village site directly via a left turn onto Newbridge Road (west).
- **Scenario 4**:
  - DCP Road will be connected to Davy Robinson Drive, allowing all Georges Cove Village traffic to use the Newbridge Road/Davy Robinson Drive signalised intersection, as well as the Brickmakers Drive/Promontory Way signalised intersection.
  - Light and heavy vehicles will be allowed to turn left from Newbridge Road (east) to enter the Georges Cove Village site, but light vehicles will not be allowed to leave the Georges Cove Village site directly onto Newbridge Road (west).
  - Heavy vehicles will still be allowed to leave the Georges Cove Village site directly via a left turn onto Newbridge Road (west).

The Georges Cove Village traffic distribution for Scenario 3 is shown in Figure 5.1, and Scenario 4 is shown in Figure 5.2.

Source: MetroMap

Figure 5.1 Georges Cove Village traffic distribution for Scenario 3

Source: MetroMap

Figure 5.2 Georges Cove Village traffic distribution for Scenario 4

The local distribution of traffic in the vicinity of the site considers the distance on the local road network to reach the regional road network, as well as overall journey times and delays while joining the existing traffic flows on the regional road network.

A summary of how the modelled scenarios have been set up are shown in Table 5.2.

Table 5.2 Inclusions in modelled scenarios

Scenario	Signalised Newbridge Rd/ Governor Macquarie Dr/ Brickmakers Dr	Signalised Brickmakers Dr/ Promontory Way	Signalised Newbridge Rd/ Davy Robinson Dr	Left in from Newbridge Road to Georges Cove Village for light and heavy vehicles	Left out from Georges Cove Village to Newbridge Road for heavy vehicles	Left out from Georges Cove Village to Newbridge Road for light vehicles
1	Yes	Yes	No	No	No	No
2	Yes	Yes	Yes	No	No	No
3	Yes	Yes	No	Yes	Yes	No
4	Yes	Yes	Yes	Yes	Yes	No

5.2 Georges Cove Village traffic volumes

The development is expected to generate the following morning and evening peak hourly traffic volumes shown in Table 5.3.

Table 5.3 Georges Cove Village development traffic volumes

Peak hour	Movements in		Movements out		Total movements
	Light vehicles	Heavy vehicles	Light vehicles	Heavy vehicles	
AM	158	11	61	11	241
PM	214	11	214	11	450

The Georges Cove Village traffic volumes calculated from Table 5.3 are distributed to the wider road network in accordance with Figure 5.1 and Figure 5.2 (Scenario 3 and Scenario 4 respectively). The resultant Georges Cove Village traffic volumes for Scenario 3 and Scenario 4 are shown in Figure 5.3 and Figure 5.4 respectively. Note that the sum of the movements may be off by one due to rounding.

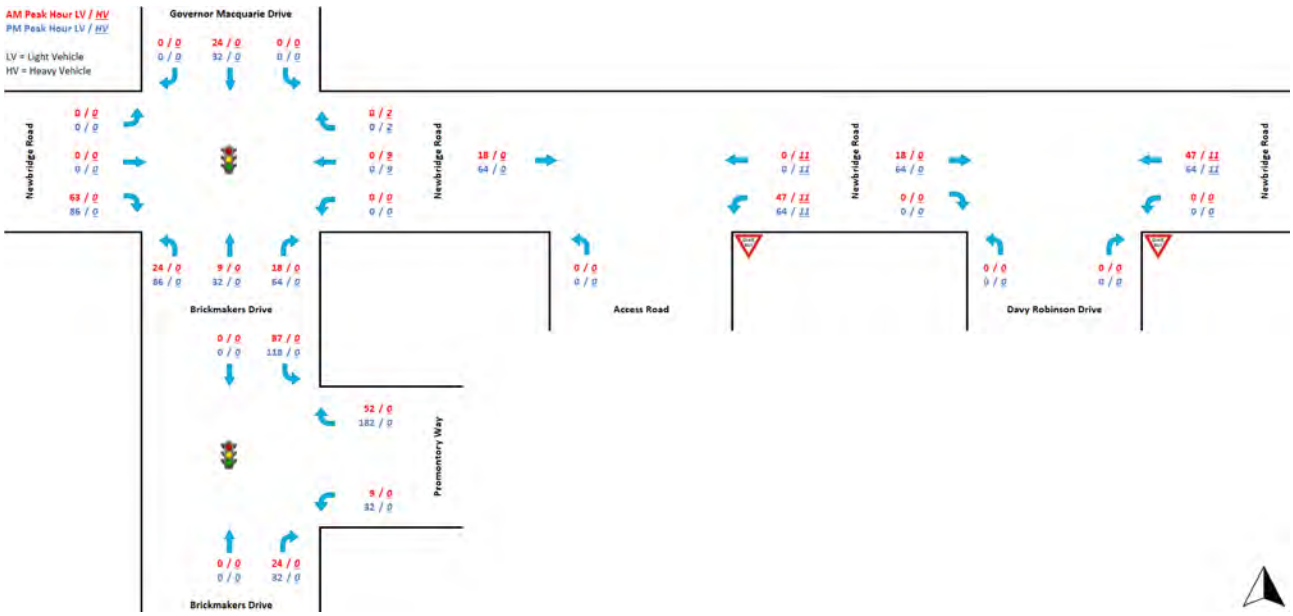


Figure 5.3 Georges Cove Village traffic volumes for Scenario 3

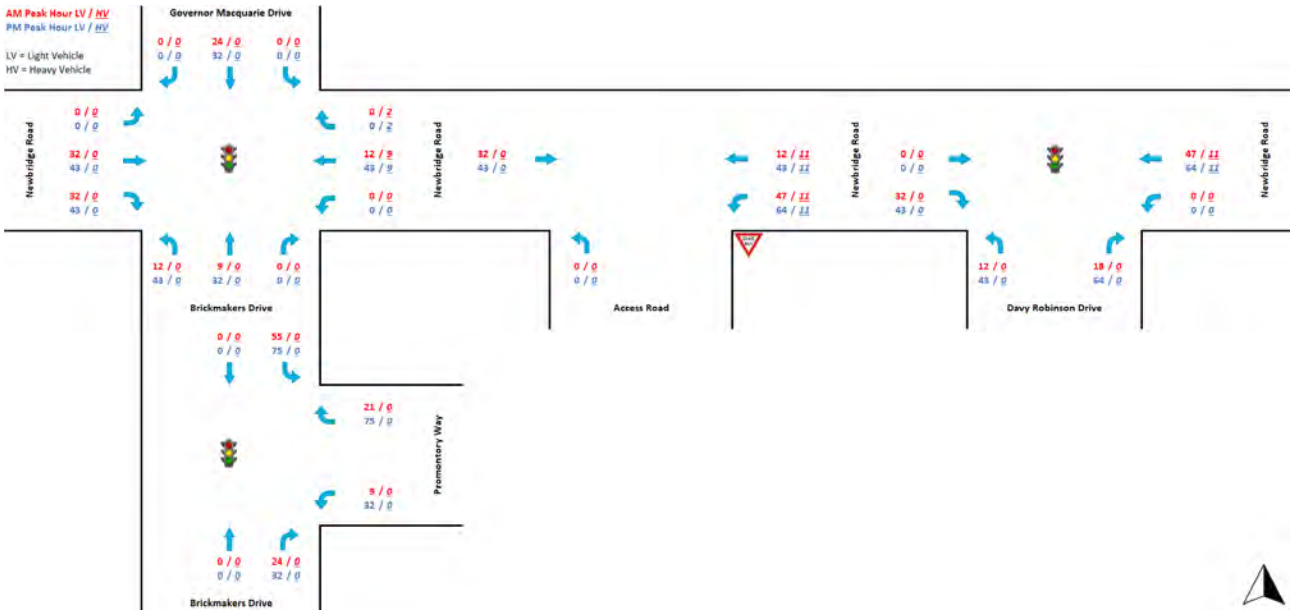


Figure 5.4 Georges Cove Village traffic volumes for Scenario 4

5.3 Baseline, development and Georges Cove Village traffic

Existing left turn light vehicle movements from the site to Newbridge Road at the Newbridge Road/Access Road intersection will be restricted in the future once Georges Cove Village site is developed. All movements exiting the site at the existing intersection will be restricted as the access road will only be for left turning vehicles entering the site.

To calculate the baseline traffic volumes, the existing left turning movements from the site that will be restricted in the future have been redistributed to the other parts of the road network.

The development and Georges Cove Village traffic volumes for Scenario 3 and Scenario 4 are shown in Figure 5.5 and Figure 5.6 respectively.

For Scenario 3, the development traffic will follow the distribution outlined in Scenario 1 (Figure 4.1) and has been added to the Georges Cove Village traffic. Similarly, for Scenario 4, the development traffic will follow the distribution outlined in Scenario 2 (Figure 4.2).

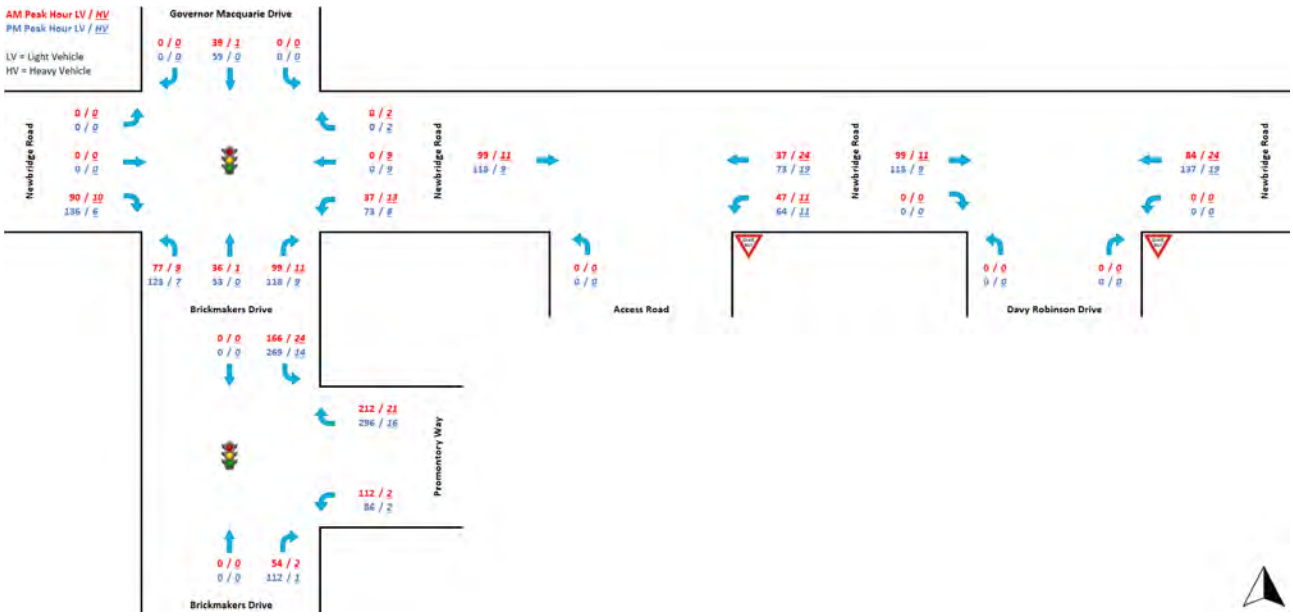


Figure 5.5 Development and Georges Cove Village traffic volumes for Scenario 3

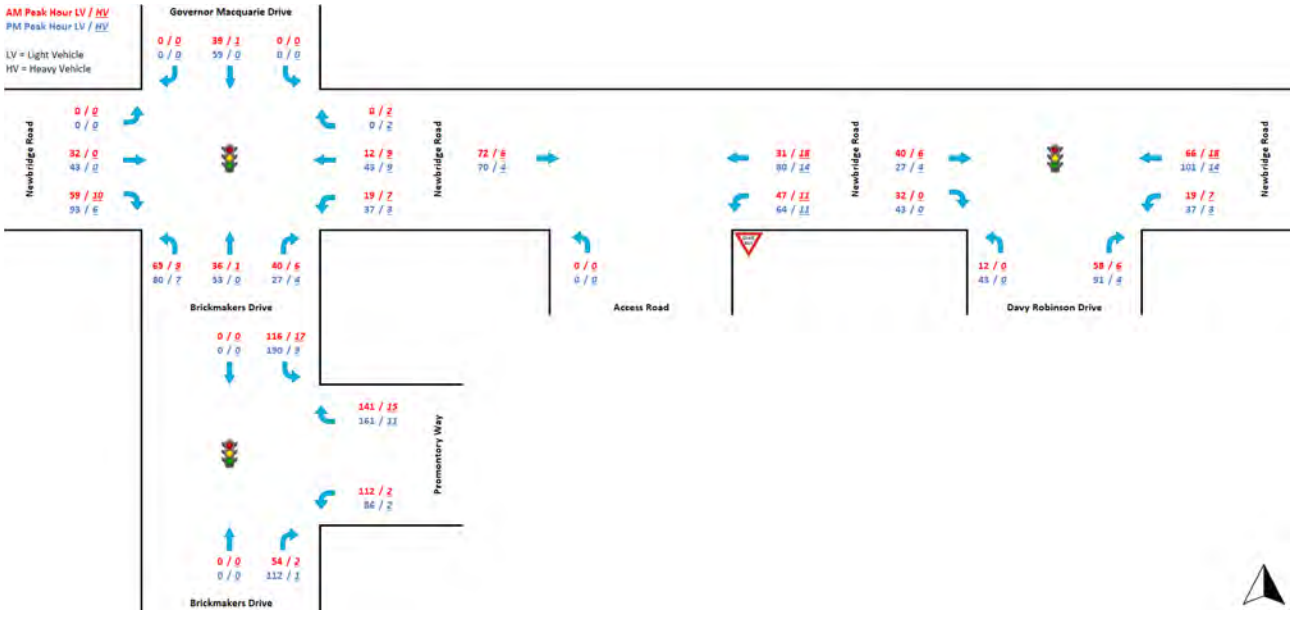


Figure 5.6 Development and Georges Cove Village traffic volumes for Scenario 4

The redistributed baseline, development and Georges Cove Village traffic for Scenario 3 and Scenario 4 have been combined and are shown in Figure 5.7 and Figure 5.8 respectively.

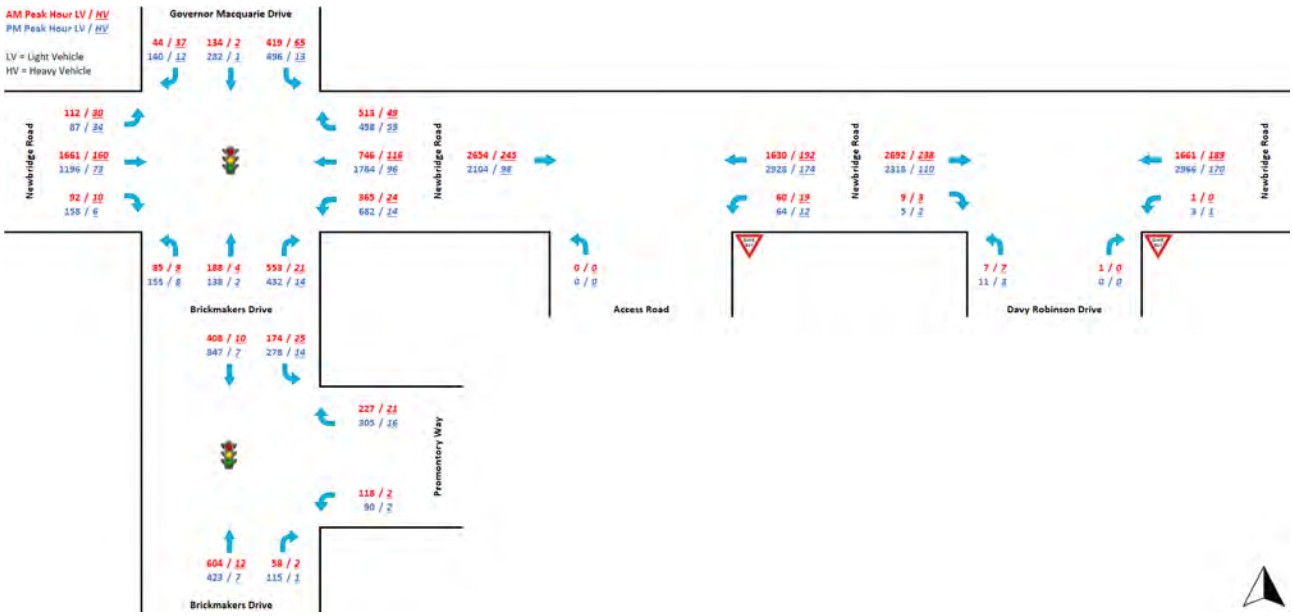


Figure 5.7 Baseline, development and Georges Cove Village traffic volumes for Scenario 3

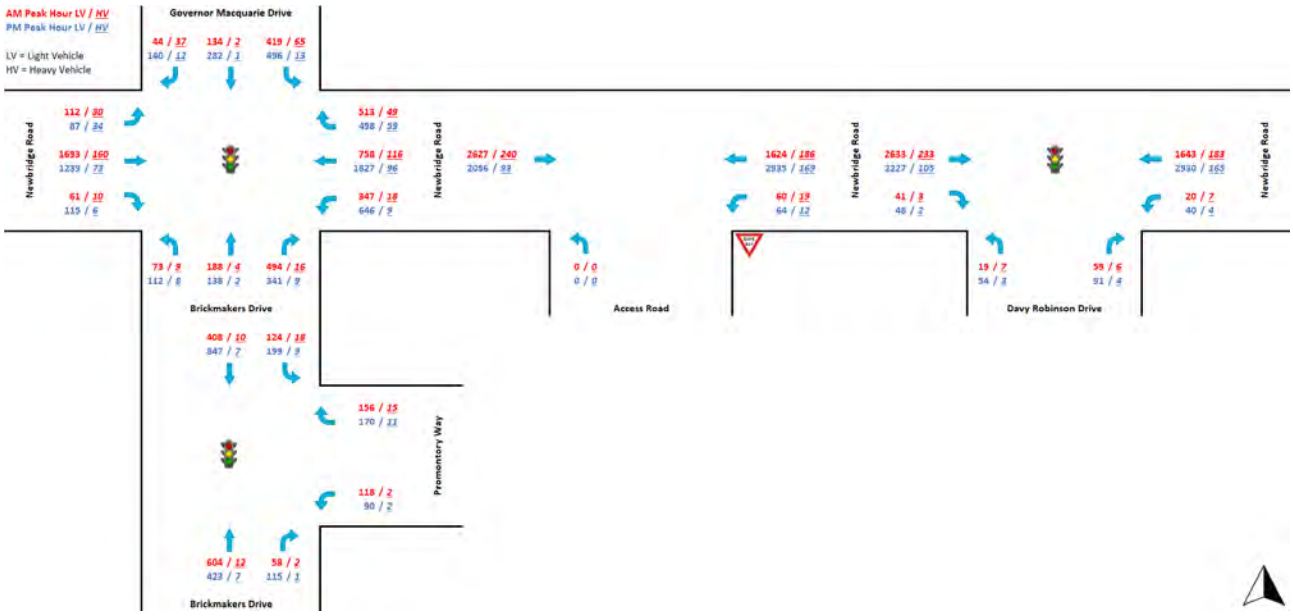


Figure 5.8 Baseline, development and Georges Cove Village traffic volumes for Scenario 4

5.4 Intersection impact assessment with Georges Cove Village traffic volumes

The SIDRA results for the key intersections for the baseline + development + Georges Cove Village scenarios (Scenario 3 and Scenario 4) are compared with the scenarios in Section 4.4 (Existing Scenario, Scenario 1 and Scenario 2) and are presented in the following tables.

5.4.1 Brickmakers Drive/Promontory Way

Table 5.4 SIDRA modelling result for Brickmakers Drive/Promontory Way

Control: a) Priority controlled (stop) b), c), d) and e) Signalised	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	1,124	11.6	A	0.337	0.8	RT from Promontory Way (east)	1,378	22.7	B	0.463	1.0	RT from Promontory Way (east)
b) Scenario 1: Baseline + development via Promontory Way	1,567	10.4	A	0.673	71.7	TH from Brickmakers Drive (south)	1,833	12.6	A	0.883	133.7	TH from Brickmakers Drive (north)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	1,493	9.3	A	0.641	66.3	TH from Brickmakers Drive (south)	1,755	12.4	A	0.883	133.8	TH from Brickmakers Drive (north)
d) Scenario 3: Baseline + development + Georges Cove Village via Promontory Way	1,748	25.5	B	0.573	186.9	TH from Brickmakers Drive (south)	2,216	15.3	B	0.858	142.4	TH from Brickmakers Drive (north)
e) Scenario 4: Baseline + development + Georges Cove Village via Promontory Way and Davy Robinson Drive	1,607	9.7	A	0.641	66.3	TH from Brickmakers Drive (south)	1,980	13.2	A	0.883	133.8	TH from Brickmakers Drive (north)

Key findings for Brickmakers Drive/Promontory Way intersection:

- In AM and PM, the intersection performs satisfactorily within capacity with LOS A or B and DoS <0.9 for all scenarios.
- The distribution of the development traffic over multiple intersections in the road network reduces delays and traffic queues at this intersection in the baseline + development + Georges Cove Village scenarios (Scenario 3 and Scenario 4), with right turn traffic queues from Promontory Way (east) dropping from 111.5 m to 26.9 m in the AM peak once Davy Robinson Drive is connected to the site.
- Signalisation of the Brickmakers Drive/Promontory Way intersection prior to the completion of the development will produce an acceptable level of performance and provide capacity to accommodate additional traffic.

- Overall, the SIDRA results for Scenario 4 are better than Scenario 3 due to less traffic at this intersection.
- Regardless of the timing of the Flower Power development site and the eventual signalisation of Brickmakers Drive/Davy Robinson Drive, all the remaining developments can proceed under Scenario 3 at acceptable levels.

5.4.2 Newbridge Road/Governor Macquarie Drive/Brickmakers Drive

Table 5.5 SIDRA modelling result for Newbridge Road/Governor Macquarie Drive/Brickmakers Drive

Control: Signalised	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	5,268	70.7	F	1.177	368.8	LT from Newbridge Road (west)	6,081	110.3	F	1.128	300.4	LT from Newbridge Road (west)
b) Scenario 1: Baseline + development via Promontory Way	5,568	97.3	F	1.068	567.0	LT from Newbridge Road (west)	6,388	52.9	D	0.879	293.8	TH from Newbridge Road (east)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	5,495	90.7	F	1.049	547.0	LT from Newbridge Road (west)	6,312	51.7	D	0.871	293.8	TH from Newbridge Road (east)
d) Scenario 3: Baseline + development + Georges Cove Village via Promontory Way	5,725	120.1	F	1.113	651.7	LT from Newbridge Road (west)	6,716	72.0	F	0.982	293.8	TH from Newbridge Road (east)
e) Scenario 4: Baseline + development + Georges Cove Village via Promontory Way and Davy Robinson Drive	5,634	105.2	F	1.081	617.7	LT from Newbridge Road (west)	6,572	60.0	E	0.930	293.8	TH from Newbridge Road (east)

Key findings for Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection:

- In AM and PM, the intersection performs over the capacity with LOS F for existing scenarios.
- In the existing scenario, the prioritisation of certain movements is contributing to DOS >1.1 in the AM peak and an average delay greater than 100 seconds in the PM peak.

- As the intersection is already over capacity in the existing scenarios, the additional traffic volumes from the development and Georges Cove Village make a negligible difference, as they only contribute up to 10.4% of the intersection traffic volumes.
- When comparing Scenario 3 and Scenario 4, there is a reduction in the average intersection delay from 120.1 seconds to 105.3 seconds in the AM peak once Davy Robinson Drive is connected to the site.
- When comparing Scenario 3 and Scenario 4, the LOS improves from F to E in the PM peak once Davy Robinson Drive is connected to the site.

5.4.3 Newbridge Road/Access Road

Table 5.6 SIDRA modelling result for Newbridge Road/Access Road

Control: Priority controlled (give way)	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	4,818	13.4	A	0.529	1.0	LT from Access Road (south)	5,360	17.2	B	0.560	413.5	TH from Newbridge Road (east)
b) Scenario 1: Baseline + development via Promontory Way	4,961	10.2	A	0.525	0	N/A	5,505	11.4	A	0.624	100.2	TH from Newbridge Road (east)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	4,887	10.2	A	0.522	0	N/A	5,428	11.4	A	0.614	88.9	TH from Newbridge Road (east)
d) Scenario 3: Baseline + development + Georges Cove Village via Promontory Way	5,053	9.9	A	0.506	0	N/A	5,663	9.8	A	0.578	247.6	TH from Newbridge Road (east)
e) Scenario 4: Baseline + development + Georges Cove Village via Promontory Way and Davy Robinson Drive	5,006	9.9	A	0.514	0	N/A	5,609	9.8	A	0.667	173.4	TH from Newbridge Road (east)

Key findings for Newbridge Road/Site Access intersection:

- In AM, the intersection performs satisfactorily within capacity with LOS A and DoS <0.6 for all scenarios.
- In PM, the intersection performs satisfactorily within capacity with LOS B and DoS <0.7 for all scenarios.

- In all scenarios, the intersection has capacity to accommodate traffic generated by the development.

5.4.4 Newbridge Road/Davy Robinson Drive

Table 5.7 SIDRA modelling result for Newbridge Road/Davy Robinson Drive

Control: a), b) and d) Priority controlled (give way) c) and e) Signalised	AM Peak						PM Peak					
Scenarios	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m)**	**Q95 approach and direction**
a) Existing (without development)	4,825	159.7	F	1.013	15.4	LT from Davy Robinson Drive (south)	5,580	448.7	F	1.219	24.6	RT from Newbridge Road (west)
b) Scenario 1: Baseline + development via Promontory Way	4,981	159.3	F	1.028	20.6	LT and RT from Davy Robinson Drive (south)	5,738	448.8	F	1.228	24.8	RT from Newbridge Road (west)
c) Scenario 2: Baseline + development via Promontory Way and Davy Robinson Drive	4,983	22.6	B	0.892	334.9	TH from Newbridge Road (west)	5,735	16.1	B	0.860	344.1	TH from Newbridge Road (east)
d) Scenario 3: Baseline + development + Georges Cove Village via Promontory Way	5,061	184.8	F	1.029	20.7	LT and RT from Davy Robinson Drive (south)	5,884	436.0	F	1.228	24.6	RT from Newbridge Road (west)
e) Scenario 4: Baseline + development + Georges Cove Village via Promontory Way and Davy Robinson Drive	5,109	22.7	B	0.894	338.3	TH from Newbridge Road (west)	5,972	18.9	B	0.882	382.0	TH from Newbridge Road (east)

Key findings for Newbridge Road/Davy Robinson Drive intersection:

- In AM and PM, the intersection performs over capacity in the existing scenario, Scenario 1 and Scenario 3, with LOS F and DoS >1.0 for these scenarios with priority controlled (give way) intersections.

- Overall, the intersection will have capacity to accommodate the development when it is upgraded to a signalised intersection once the DCP Road is connected to Davy Robinson Drive. Depending on the spatial traffic distribution and broader network connectivity, upgrades may be required to Davy Robinson Drive (south approach), such as dedicated left and right turn lanes to minimise queue lengths and overall delays. This is also dependent on the development of the Flower Power site.

6 Conclusion and summary

This addendum traffic report considers the revised design for the site as provided for under the planning proposal and responds to Liverpool City Council's requirements for a revised report.

In summary:

- The current proposal will have residential land uses on the site.
- Vehicles will be able to access the site via Promontory Way for all scenarios, while vehicles may access the site via Davy Robinson Drive in Scenario 2 and Scenario 4. Scenario 2 and Scenario 4 are dependent on the development of the Flower Power site.
- The SIDRA traffic analysis shows that:
    - Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection is already operating over capacity, with LOS F and DOS >1, so additional traffic volumes from the development will have a negligible impact on the intersection.
    - Efficiencies in the operation of the Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection can reduce the delays in the PM peak compared to the existing scenario, even after the addition of the development and Georges Cove Village traffic volumes.
    - The connection of DCP Road to Davy Robinson Drive and the signalisation of Newbridge Road/Davy Robinson Drive will improve the performance of Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection in the AM and PM peak.
    - The signalised Brickmakers Drive/Promontory Way intersection will operate satisfactorily at LOS A or B, with minimal delays. However, in the AM peak the queue may stretch back to the roundabout. This queuing will be alleviated by the connection of the DCP Road to Davy Robinson Drive.
    - Newbridge Road/Access Road intersection has ample spare capacity to accommodate the development.
    - In the existing scenario, Davy Robinson Drive (south approach) on the Newbridge Road/Davy Robinson Drive intersection experiences LOS F during the AM and PM peak hour.
    - When the development traffic can exit via Davy Robinson Drive, signalisation of Newbridge Road/Davy Robinson Drive intersection will allow it to perform at LOS B.
- Until the DCP Road is constructed, as part of the Flower Power site development (Lot 2 DP 602988), and connection is established with Davy Robinson Drive, all traffic will be required to enter and exit the precinct via Promontory Way. In accordance with the Georges Cove Marina Consent (DA-611/2018), this intersection must be signalised prior to marina operations.
- The DCP Road connection to Davy Robinson Drive would improve the operation of all roads in the precinct once constructed, and Newbridge Road/Davy Robinson Drive intersection is signalised by TfNSW.
- Overall, this development either improves or maintains the existing levels of service surrounding the development. There will be negligible impact on the existing community and users of the surrounding road network.

References

EMM 2018. *Georges Cove Marina Residential Planning Proposal.*

RTA 2002. *Guide to Traffic Generating Developments.* Transport for New South Wales.

Appendix A
Architectural plans

EMM
creating opportunities

MIRVAC
DESIGN

1. Terrace Homes
2. Apartments
3. Dry Dock
4. Broadway
5. Jetty
6. Landscape Park
7. Carparking

Georges Cove Marina

0 18.75 37.5 75

Scale 1 : 1500

SITE PLAN

SK_001

Appendix B
Traffic survey data

EMM
creating opportunities

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Brickmakers Dr and Promontory Wy, Moc

GPS	-33.931536, 150.962727
Date:	Thu 22/06/23
Weather:	Overcast
Suburban:	Moorebank
Customer:	EMM

North:	Brickmakers Dr
East:	Promontory Wy
South:	Brickmakers Dr
West:	N/A

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	4:30 PM-5:30 PM

All Vehicles

Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
7:00	7:15	0	112	4	0	1	1	0	3	139	1085	
7:15	7:30	1	94	2	0	6	2	0	1	155	1073	
7:30	7:45	0	92	2	0	4	0	0	2	198	1107	
7:45	8:00	4	114	3	0	4	2	0	1	138	1112	
8:00	8:15	0	118	2	0	1	2	0	0	125	1197	Peak
8:15	8:30	1	134	1	0	2	1	0	2	154		
8:30	8:45	4	117	1	0	2	4	0	2	173		
8:45	9:00	1	155	1	0	2	0	0	3	189		
16:00	16:15	0	214	0	0	2	0	1	1	121	1315	
16:15	16:30	0	212	2	0	3	1	0	0	91	1299	
16:30	16:45	1	183	2	0	4	3	0	1	137	1338	Peak
16:45	17:00	0	211	2	0	2	0	0	0	121	1310	
17:00	17:15	1	208	0	0	6	0	0	2	106	1263	
17:15	17:30	0	228	1	0	1	3	0	1	114		
17:30	17:45	0	207	6	0	0	1	0	0	89		
17:45	18:00	0	188	1	0	2	1	0	3	94		

Peak Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	6	524	5	0	7	7	0	7	641	1197
16:30	17:30	2	830	5	0	13	6	0	4	478	1338

Pedestrians Crossing

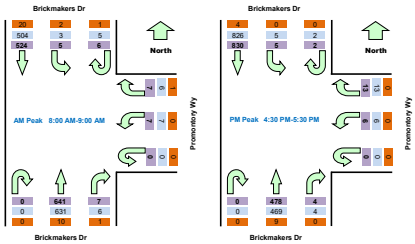
Time		pproach Brickma		pproach Promont		pproach Brickma		ourly Tot
Period Start	Period End	estbour	astboun	orthbou	outhbou	estbour	astboun	
7:00	7:15	0	0	0	0	0	0	3
7:15	7:30	1	0	0	0	0	0	6
7:30	7:45	2	0	0	0	0	0	5
7:45	8:00	0	0	0	0	0	0	6
8:00	8:15	0	3	0	0	0	0	6
8:15	8:30	0	0	0	0	0	0	
8:30	8:45	3	0	0	0	0	0	
8:45	9:00	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	1
16:30	16:45	0	0	0	0	0	0	1
16:45	17:00	0	0	0	0	0	0	1
17:00	17:15	1	0	0	0	0	0	1
17:15	17:30	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	

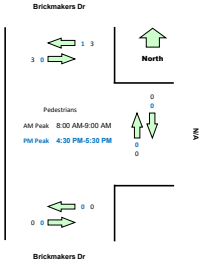
Peak Time		pproach Brickma		pproach Promont		pproach Brickma		Peak total
Period Start	Period End	estbour	astboun	orthbou	outhbou	estbour	astboun	
8:00	9:00	3	3	0	0	0	0	6
16:30	17:30	1	0	0	0	0	0	1

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:00	7:15	0	108	4	0	1	1	0	3	136
7:15	7:30	1	90	2	0	6	2	0	1	153
7:30	7:45	0	92	2	0	4	0	0	2	193
7:45	8:00	4	109	3	0	4	2	0	1	137
8:00	8:15	0	117	1	0	1	2	0	0	121
8:15	8:30	1	129	1	0	1	1	0	2	152
8:30	8:45	4	113	1	0	2	4	0	2	170
8:45	9:00	0	145	0	0	2	0	0	2	188
16:00	16:15	0	208	0	0	1	0	1	1	119
16:15	16:30	0	209	2	0	3	1	0	0	90
16:30	16:45	1	182	2	0	4	3	0	1	133
16:45	17:00	0	210	2	0	2	0	0	0	119
17:00	17:15	1	206	0	0	6	0	0	2	104
17:15	17:30	0	228	1	0	1	3	0	1	113
17:30	17:45	0	203	6	0	0	1	0	0	87
17:45	18:00	0	188	1	0	2	1	0	3	92

Peak Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	5	504	3	0	6	7	0	6	631	1162
16:30	17:30	2	826	5	0	13	6	0	4	469	1325

Heavy Vehicles

Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:00	7:15	0	4	0	0	0	0	0	0	3
7:15	7:30	0	4	0	0	0	0	0	0	2
7:30	7:45	0	0	0	0	0	0	0	0	5
7:45	8:00	0	5	0	0	0	0	0	0	1
8:00	8:15	0	1	1	0	0	0	0	0	4
8:15	8:30	0	5	0	0	1	0	0	0	2
8:30	8:45	0	4	0	0	0	0	0	0	3
8:45	9:00	1	10	1	0	0	0	0	1	1
16:00	16:15	0	6	0	0	1	0	0	0	2
16:15	16:30	0	3	0	0	0	0	0	0	1
16:30	16:45	0	1	0	0	0	0	0	0	4
16:45	17:00	0	1	0	0	0	0	0	0	2
17:00	17:15	0	2	0	0	0	0	0	0	2
17:15	17:30	0	0	0	0	0	0	0	0	1
17:30	17:45	0	4	0	0	0	0	0	0	2
17:45	18:00	0	0	0	0	0	0	0	0	2

Peak Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	1	20	2	0	1	0	0	1	10	35
16:30	17:30	0	4	0	0	0	0	0	0	9	13

Cyclists

Time		rth Approach Brickmakers			st Approach Promontory			uth Approach Brickmakers		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:00	7:15	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Newbridge Rd and Gov Macquarie Dr, Moorebank

GPS	-33.928747, 150.962336
Date:	Thu 22/06/23
Weather:	Overcast
Suburban:	Moorebank
Customer:	EMM

North:	Gov Macquarie Dr
East:	Newbridge Rd
South:	Brickmakers Dr
West:	Newbridge Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	7:15 AM-8:15 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	19	20	88	0	129	207	92	0	114	20	1	0	3	453	22	4969	
7:15	7:30	0	16	22	106	0	123	220	75	0	114	42	0	0	1	491	29	5006	Peak
7:30	7:45	0	21	23	141	0	139	194	73	0	164	42	2	0	1	461	37	4946	
7:45	8:00	0	21	21	125	0	151	233	96	0	103	36	2	0	0	437	39	4859	
8:00	8:15	0	23	30	112	1	147	206	95	0	83	35	4	0	0	432	37	4827	
8:15	8:30	0	16	29	130	1	140	185	100	0	89	58	7	1	3	382	38		
8:30	8:45	0	26	40	117	0	146	211	78	0	86	85	2	0	5	372	43		
8:45	9:00	0	28	58	133	0	109	193	90	0	111	84	2	0	7	357	60		
16:00	16:15	0	47	73	120	0	159	356	139	0	87	35	5	0	2	274	38	5694	
16:15	16:30	0	34	53	120	0	166	472	155	0	62	22	6	0	7	274	31	5755	
16:30	16:45	0	45	70	123	1	142	413	115	0	105	29	12	1	4	304	29	5754	
16:45	17:00	0	36	53	131	0	165	541	149	0	89	22	8	0	8	340	22	5777	Peak
17:00	17:15	0	40	48	133	0	135	446	154	0	79	27	9	0	7	289	29	5514	
17:15	17:30	0	42	76	148	0	128	442	153	0	83	26	10	0	2	260	31		
17:30	17:45	0	34	47	97	0	127	442	159	0	68	12	6	0	5	380	39		
17:45	18:00	0	39	44	91	0	147	424	145	0	70	24	5	0	3	291	18		

Peak Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:15	8:15	0	81	96	484	1	560	853	339	0	464	155	8	0	2	1821	142	5006
16:45	17:45	0	152	224	509	0	555	1871	615	0	319	87	33	0	22	1269	121	5777

Pedestrians Crossing

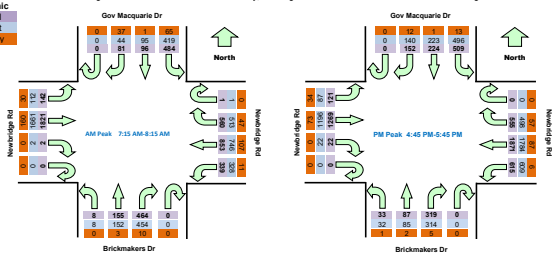
Time		Approach Gov Mac		Approach Newbri		Approach Brickma		Approach Newbri		Hourly Tot
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:00	7:15	0	0	0	0	0	0	0	2	5
7:15	7:30	0	0	0	0	0	0	0	0	6
7:30	7:45	0	0	0	0	0	0	0	0	22
7:45	8:00	0	0	0	1	0	0	0	2	32
8:00	8:15	1	0	0	0	0	0	2	0	29
8:15	8:30	0	0	0	1	0	1	1	13	
8:30	8:45	0	0	0	1	0	1	0	8	
8:45	9:00	0	0	0	0	0	0	0	0	
16:00	16:15	1	0	0	0	0	0	2	0	12
16:15	16:30	0	0	0	0	0	0	3	0	9
16:30	16:45	0	0	0	0	0	0	1	3	9
16:45	17:00	0	0	1	0	0	0	0	0	6
17:00	17:15	0	0	0	0	0	0	0	0	4
17:15	17:30	0	0	0	0	1	0	0	2	
17:30	17:45	0	0	0	0	0	0	0	1	
17:45	18:00	0	0	0	0	0	0	0	0	

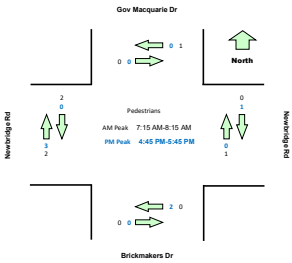
Peak Time		Approach Gov Mac		Approach Newbri		Approach Brickma		Approach Newbri		Peak hour
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:15	8:15	1	0	0	1	0	0	2	2	6
16:45	17:45	0	0	1	0	2	0	0	3	6

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	10	20	73	0	116	168	88	0	113	19	0	0	3	411	13
7:15	7:30	0	9	22	91	0	117	191	71	0	112	42	0	0	1	462	20
7:30	7:45	0	9	23	126	0	131	164	73	0	159	42	2	0	1	419	28
7:45	8:00	0	11	21	101	0	138	206	91	0	103	35	2	0	0	389	32
8:00	8:15	0	15	29	101	1	127	185	93	0	80	33	4	0	0	391	32
8:15	8:30	0	9	28	113	1	116	156	96	0	88	58	6	1	3	339	29
8:30	8:45	0	13	38	96	0	128	174	76	0	85	84	1	0	5	311	30
8:45	9:00	0	18	54	100	0	92	170	83	0	110	83	2	0	7	322	48
16:00	16:15	0	41	72	105	0	144	334	134	0	86	33	5	0	2	252	26
16:15	16:30	0	29	53	117	0	150	449	152	0	61	22	6	0	7	249	24
16:30	16:45	0	39	70	118	1	123	395	114	0	102	28	12	1	4	286	22
16:45	17:00	0	32	53	129	0	149	521	148	0	87	22	8	0	8	324	19
17:00	17:15	0	40	48	128	0	118	413	152	0	77	26	9	0	7	273	23
17:15	17:30	0	39	76	144	0	120	426	153	0	82	26	10	0	2	248	21
17:30	17:45	0	29	46	95	0	111	424	156	0	68	11	5	0	5	351	24
17:45	18:00	0	33	44	86	0	131	403	145	0	69	23	5	0	3	282	13

Peak Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:15	8:15	0	44	95	419	1	513	746	328	0	454	152	8	0	2	1661	112	4535
16:45	17:45	0	140	223	496	0	498	1784	609	0	314	85	32	0	22	1196	87	5486

Heavy Vehicles

Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	9	0	15	0	13	39	4	0	1	1	1	0	0	42	9
7:15	7:30	0	7	0	15	0	6	29	4	0	2	0	0	0	0	29	9
7:30	7:45	0	12	0	15	0	8	30	0	0	5	0	0	0	0	42	9
7:45	8:00	0	10	0	24	0	13	27	5	0	0	1	0	0	0	48	7
8:00	8:15	0	8	1	11	0	20	21	2	0	3	2	0	0	0	41	5
8:15	8:30	0	7	1	17	0	24	29	4	0	1	0	1	0	0	43	9
8:30	8:45	0	13	2	21	0	18	37	2	0	1	1	1	0	0	61	13
8:45	9:00	0	10	4	33	0	17	23	7	0	1	1	0	0	0	35	12
16:00	16:15	0	6	1	15	0	15	22	5	0	1	2	0	0	0	22	12
16:15	16:30	0	5	0	3	0	16	23	3	0	1	0	0	0	0	25	7
16:30	16:45	0	6	0	5	0	19	18	1	0	3	1	0	0	0	18	7
16:45	17:00	0	4	0	2	0	16	20	1	0	2	0	0	0	0	16	3
17:00	17:15	0	0	0	5	0	17	33	2	0	2	1	0	0	0	16	6
17:15	17:30	0	3	0	4	0	8	16	0	0	1	0	0	0	0	12	10
17:30	17:45	0	5	1	2	0	16	18	3	0	0	1	1	0	0	29	15
17:45	18:00	0	6	0	5	0	16	21	0	0	1	1	0	0	0	9	5

Peak Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:15	8:15	0	37	1	65	0	47	107	11	0	10	3	0	0	0	160	30	471
16:45	17:45	0	12	1	13	0	57	87	6	0	5	2	1	0	0	73	34	291

Cyclists

Time		North Approach Gov Macquarie Dr				East Approach Newbridge Rd				South Approach Brickmakers Dr				West Approach Newbridge Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Newbridge Rd and Unnamed Rd, Moore

GPS	-33.928659, 150.964611
Date:	Thu 22/06/23
Weather:	Overcast
Suburban:	Moorebank
Customer:	EMM

North:	N/A
East:	Newbridge Rd
South:	Unnamed Rd
West:	Newbridge Rd

Survey	AM:	7:00 AM-9:00 AM
Period	PM:	4:00 PM-6:00 PM
Traffic	AM:	7:15 AM-8:15 AM
Peak	PM:	4:45 PM-5:45 PM

All Vehicles

Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			Hourly Total	
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	Hour	Peak
7:00	7:15	0	429	7	0	0	1	0	0	646	4562	
7:15	7:30	0	416	4	0	0	1	0	0	710	4577	Peak
7:30	7:45	0	425	5	0	0	0	0	0	777	4473	
7:45	8:00	0	472	4	0	0	3	0	0	662	4266	
8:00	8:15	0	448	8	0	0	2	0	0	640	4132	
8:15	8:30	0	420	1	0	0	3	0	0	603		
8:30	8:45	0	438	2	0	0	2	0	0	558		
8:45	9:00	0	396	5	0	0	2	0	0	604		
16:00	16:15	0	686	1	0	0	1	0	0	470	4972	
16:15	16:30	0	753	0	0	0	1	0	0	455	5074	
16:30	16:45	0	724	1	0	0	1	0	0	543	5064	
16:45	17:00	0	807	1	0	0	4	0	0	524	5092	Peak
17:00	17:15	0	748	0	0	0	2	0	0	510	4967	
17:15	17:30	0	728	0	0	0	0	0	0	471		
17:30	17:45	0	727	0	0	0	0	0	0	570		
17:45	18:00	0	728	0	0	0	0	0	0	483		

Peak Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	1761	21	0	0	6	0	0	2789	4577
16:45	17:45	0	3010	1	0	0	6	0	0	2075	5092

Pedestrians Crossing

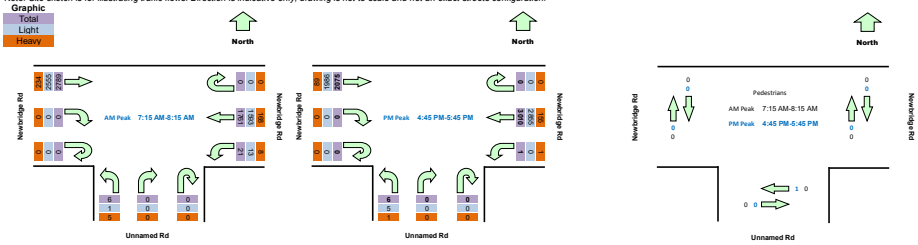
Time		Approach Newbrid	Approach Unnam	Approach Newbrid	Hourly Tot
Period Start	Period End	outhbou	orthbou	estbou	astbou	outhbou	orthbou	
7:00	7:15	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	
8:30	8:45	0	0	0	0	0	0	
8:45	9:00	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	1
16:45	17:00	0	0	0	0	0	0	1
17:00	17:15	0	0	0	0	0	0	1
17:15	17:30	0	0	1	0	0	0	
17:30	17:45	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	

Peak Time		Approach Newbrid	Approach Unnam	Approach Newbrid	Peak
Period Start	Period End	outhbou	orthbou	estbou	astbou	outhbou	orthbou	total
7:15	8:15	0	0	0	0	0	0	0
16:45	17:45	0	0	1	0	0	0	1

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy



Light Vehicles

Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	0	381	4	0	0	0	0	0	587
7:15	7:30	0	377	4	0	0	1	0	0	665
7:30	7:45	0	384	4	0	0	0	0	0	713
7:45	8:00	0	427	2	0	0	0	0	0	593
8:00	8:15	0	405	3	0	0	0	0	0	584
8:15	8:30	0	369	0	0	0	0	0	0	548
8:30	8:45	0	378	2	0	0	1	0	0	472
8:45	9:00	0	349	3	0	0	0	0	0	539
16:00	16:15	0	639	0	0	0	1	0	0	434
16:15	16:30	0	722	0	0	0	0	0	0	425
16:30	16:45	0	687	0	0	0	0	0	0	514
16:45	17:00	0	768	0	0	0	4	0	0	507
17:00	17:15	0	695	0	0	0	1	0	0	485
17:15	17:30	0	699	0	0	0	0	0	0	455
17:30	17:45	0	693	0	0	0	0	0	0	539
17:45	18:00	0	687	0	0	0	0	0	0	465

Peak Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	1593	13	0	0	1	0	0	2555	4162
16:45	17:45	0	2855	0	0	0	5	0	0	1986	4846

Heavy Vehicles

Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	0	48	3	0	0	1	0	0	59
7:15	7:30	0	39	0	0	0	0	0	0	45
7:30	7:45	0	41	1	0	0	0	0	0	64
7:45	8:00	0	45	2	0	0	3	0	0	69
8:00	8:15	0	43	5	0	0	2	0	0	56
8:15	8:30	0	51	1	0	0	3	0	0	55
8:30	8:45	0	60	0	0	0	1	0	0	86
8:45	9:00	0	47	2	0	0	2	0	0	65
16:00	16:15	0	47	1	0	0	0	0	0	36
16:15	16:30	0	31	0	0	0	1	0	0	30
16:30	16:45	0	37	1	0	0	1	0	0	29
16:45	17:00	0	39	1	0	0	0	0	0	17
17:00	17:15	0	53	0	0	0	1	0	0	25
17:15	17:30	0	29	0	0	0	0	0	0	16
17:30	17:45	0	34	0	0	0	0	0	0	31
17:45	18:00	0	41	0	0	0	0	0	0	18

Peak Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	168	8	0	0	5	0	0	234	415
16:45	17:45	0	155	1	0	0	1	0	0	89	246

Cyclists

Time		East Approach Newbridge R		South Approach Unnamed			West Approach Newbridge R			
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	1	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Newbridge Rd and Davy Robinson Dr, Mc

GPS	-33.928536, 150.968867
Date:	Thu 22/06/23
Weather:	Overcast
Suburban:	Moorebank
Customer:	EMM

North:	N/A
East:	Newbridge Rd
South:	Davy Robinson Dr
West:	Newbridge Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	7:15 AM-8:15 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd			Hourly Total	
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	Hour	Peak
7:00	7:15	1	423	0	0	0	2	5	3	652	4586	
7:15	7:30	0	403	1	0	0	0	2	3	704	4595	Peak
7:30	7:45	0	419	0	0	1	2	3	4	779	4552	
7:45	8:00	0	481	0	0	0	4	2	3	689	4342	
8:00	8:15	0	439	0	0	0	2	4	2	648	4173	
8:15	8:30	0	410	1	0	0	0	1	0	658		
8:30	8:45	1	436	0	0	0	1	1	0	559		
8:45	9:00	2	382	1	0	0	1	4	1	619		
16:00	16:15	0	687	2	0	0	6	7	1	455	5124	
16:15	16:30	0	729	2	0	1	3	4	1	502	5278	
16:30	16:45	0	711	3	0	0	4	0	3	602	5276	
16:45	17:00	0	815	1	0	0	4	1	4	576	5311	Peak
17:00	17:15	0	734	1	0	0	3	5	2	567	5174	
17:15	17:30	0	699	0	0	0	1	3	0	537		
17:30	17:45	0	732	2	0	0	0	2	1	621		
17:45	18:00	1	683	2	0	0	4	2	0	572		

Peak Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	1742	1	0	1	8	11	12	2820	4595
16:45	17:45	0	2980	4	0	0	8	11	7	2301	5311

Pedestrians Crossing

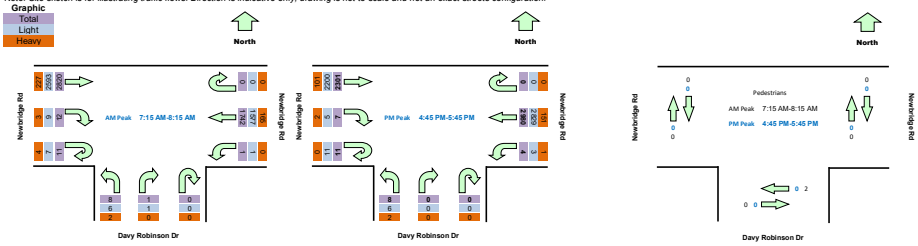
Time		Approach Newbridg	Approach Davy Rob		Approach Newbridg		Hourly Tot
Period Start	Period End	outbound	orthbound	Vestbound	astbound	outbound	orthbound	
7:00	7:15	0	0	0	0	0	0	2
7:15	7:30	0	0	0	0	0	0	2
7:30	7:45	0	0	0	0	0	0	2
7:45	8:00	0	0	2	0	0	0	3
8:00	8:15	0	0	0	0	0	0	1
8:15	8:30	0	0	0	0	0	0	
8:30	8:45	0	0	0	1	0	0	
8:45	9:00	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	

Peak Time		Approach Newbridg	Approach Davy Rob		Approach Newbridg		Peak
Period Start	Period End	outbound	orthbound	Vestbound	astbound	outbound	orthbound	total
7:15	8:15	0	0	2	0	0	0	2
16:45	17:45	0	0	0	0	0	0	0

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy



Light Vehicles

Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd		
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	1	374	0	0	0	0	4	1	597
7:15	7:30	0	367	1	0	0	0	2	3	661
7:30	7:45	0	376	0	0	1	2	2	3	714
7:45	8:00	0	439	0	0	0	2	1	1	626
8:00	8:15	0	395	0	0	0	2	2	2	592
8:15	8:30	0	359	1	0	0	0	0	0	602
8:30	8:45	1	380	0	0	0	0	1	0	475
8:45	9:00	2	336	1	0	0	0	3	0	551
16:00	16:15	0	642	2	0	0	4	7	0	426
16:15	16:30	0	696	2	0	1	2	4	1	474
16:30	16:45	0	676	2	0	0	3	0	2	567
16:45	17:00	0	775	0	0	0	2	1	2	557
17:00	17:15	0	687	1	0	0	3	5	2	540
17:15	17:30	0	671	0	0	0	1	3	0	515
17:30	17:45	0	696	2	0	0	0	2	1	588
17:45	18:00	1	647	2	0	0	4	2	0	550

Peak Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	1577	1	0	1	6	7	9	2593	4194
16:45	17:45	0	2829	3	0	0	6	11	5	2200	5054

Heavy Vehicles

Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd		
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	0	49	0	0	0	2	1	2	55
7:15	7:30	0	36	0	0	0	0	0	0	43
7:30	7:45	0	43	0	0	0	0	1	1	65
7:45	8:00	0	42	0	0	0	2	1	2	63
8:00	8:15	0	44	0	0	0	0	2	0	56
8:15	8:30	0	51	0	0	0	0	1	0	56
8:30	8:45	0	56	0	0	0	1	0	0	84
8:45	9:00	0	46	0	0	0	1	1	1	68
16:00	16:15	0	45	0	0	0	2	0	1	29
16:15	16:30	0	33	0	0	0	1	0	0	28
16:30	16:45	0	35	1	0	0	1	0	1	35
16:45	17:00	0	40	1	0	0	2	0	2	19
17:00	17:15	0	47	0	0	0	0	0	0	27
17:15	17:30	0	28	0	0	0	0	0	0	22
17:30	17:45	0	36	0	0	0	0	0	0	33
17:45	18:00	0	36	0	0	0	0	0	0	22

Peak Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd			Peak
Period Start	Period End	U	WB	L	U	R	L	U	R	EB	total
7:15	8:15	0	165	0	0	0	2	4	3	227	401
16:45	17:45	0	151	1	0	0	2	0	2	101	257

Cyclists

Time		East Approach Newbridge Rd			North Approach Davy Robinson Dr			West Approach Newbridge Rd		
Period Start	Period End	U	WB	L	U	R	L	U	R	EB
7:00	7:15	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	1	0	0	0	0	0	0	1
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	1	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0

Appendix C
SIDRA results

EMM
creating opportunities

MOVEMENT SUMMARY

Site: 101 [Ex Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex AM (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	8	0.0	8	0.0	0.696	70.7	LOS F	11.6	82.6	1.00	0.85	1.04	25.0
2	T1	All MCs	163	1.9	163	1.9	*0.696	65.1	LOS E	11.6	82.6	1.00	0.85	1.04	24.8
3	R2	All MCs	488	2.2	488	2.2	0.890	79.6	LOS F	18.6	132.4	1.00	1.01	1.26	10.9
Approach			660	2.1	660	2.1	0.890	75.9	LOS F	18.6	132.4	1.00	0.97	1.20	14.9
East: Newbridge Road															
4	L2	All MCs	357	3.2	357	3.2	0.252	7.4	LOS A	2.8	20.3	0.16	0.62	0.16	40.8
5	T1	All MCs	898	12.5	898	12.5	0.273	13.6	LOS A	9.4	72.9	0.50	0.44	0.50	50.9
6	R2	All MCs	589	8.4	589	8.4	*1.177	256.7	LOS F	37.7	283.2	1.00	1.39	2.19	8.8
Approach			1844	9.4	1844	9.4	1.177	90.1	LOS F	37.7	283.2	0.60	0.78	0.97	18.2
North: Governor Macquarie Drive															
7	L2	All MCs	509	13.4	509	13.4	0.501	49.1	LOS D	14.3	111.7	0.88	0.82	0.88	23.2
8	T1	All MCs	101	1.0	101	1.0	0.406	62.8	LOS E	6.5	45.6	0.96	0.77	0.96	20.3
9	R2	All MCs	85	45.7	85	45.7	0.305	45.3	LOS D	4.3	42.1	0.89	0.76	0.89	31.2
Approach			696	15.6	696	15.6	0.501	50.6	LOS D	14.3	111.7	0.89	0.80	0.89	24.1
West: Newbridge Road															
10	L2	All MCs	149	21.1	149	21.1	*0.894	36.9	LOS C	48.0	368.8	1.00	0.99	1.11	33.0
11	T1	All MCs	1917	8.8	1917	8.8	0.894	60.2	LOS E	48.8	367.5	1.00	0.99	1.11	24.5
12	R2	All MCs	2	0.0	2	0.0	0.008	56.3	LOS D	0.1	0.6	0.60	0.64	0.60	32.2
Approach			2068	9.7	2068	9.7	0.894	58.5	LOS E	48.8	368.8	1.00	0.99	1.11	25.3
All Vehicles			5268	9.4	5268	9.4	1.177	70.7	LOS F	48.8	368.8	0.84	0.89	1.04	20.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	16.0	LOS B	0.0	0.0	0.48	0.48	32.7	20.0	0.61
East: Newbridge Road											

P2	Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive											
P3	Full	1	34.3	LOS D	0.0	0.0	0.70	0.70	51.0	20.0	0.39
West: Newbridge Road											
P4	Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians		19	59.8	LOS E	0.1	0.1	0.92	0.92	76.5	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Ex Brickmakers Dr/Promontory Way AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex AM (Network Folder: General)]

Intersection with Stop Sign
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	648	1.9	648	1.9	0.337	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	4	0.0	4	0.0	0.005	6.5	LOS A	0.0	0.1	0.46	0.57	0.46	41.8
Approach			653	1.9	653	1.9	0.337	0.2	NA	0.0	0.1	0.00	0.00	0.00	49.8
East: Promontory Way															
4	L2	All MCs	6	0.0	6	0.0	0.009	9.9	LOS A	0.0	0.2	0.46	0.85	0.46	40.0
6	R2	All MCs	16	0.0	16	0.0	0.030	11.6	LOS A	0.1	0.8	0.53	0.90	0.53	20.6
Approach			22	0.0	22	0.0	0.030	11.1	LOS A	0.1	0.8	0.51	0.88	0.51	31.3
North: Brickmakers Drive															
7	L2	All MCs	9	11.1	9	11.1	0.006	4.7	LOS A	0.0	0.0	0.00	0.53	0.00	40.1
8	T1	All MCs	440	2.4	440	2.4	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			449	2.6	449	2.6	0.229	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.8
All Vehicles			1124	2.2	1124	2.2	0.337	0.4	NA	0.1	0.8	0.01	0.02	0.01	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 103 [Ex Newbridge Rd/Site Access Rd AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex AM (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access Road															
1	L2	All MCs	6	83.3	6	83.3	0.028	13.4	LOS A	0.1	1.0	0.75	0.75	0.75	9.3
Approach			6	83.3	6	83.3	0.028	13.4	LOS A	0.1	1.0	0.75	0.75	0.75	9.3
East: Newbridge Road															
4	L2	All MCs	22	38.1	22	38.1	0.015	10.2	LOS A	0.0	0.0	0.00	0.80	0.00	44.3
5	T1	All MCs	1854	9.5	1854	9.5	0.398	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.6
Approach			1876	9.9	1876	9.9	0.398	0.2	NA	0.0	0.0	0.00	0.01	0.00	68.6
West: Newbridge Road															
11	T1	All MCs	2936	8.4	2936	8.4	0.529	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			2936	8.4	2936	8.4	0.529	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			4818	9.1	4818	9.1	0.529	0.2	NA	0.1	1.0	0.00	0.00	0.00	67.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Ex Newbridge Rd/Davy Robinson Dr AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex AM (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	8	25.0	8	25.0	1.013	159.7	LOS F	1.9	15.4	1.00	0.94	1.09	10.2
3	R2	All MCs	1	0.0	1	0.0	1.013	35.7	LOS C	1.9	15.4	1.00	0.94	1.09	17.3
Approach			9	22.2	9	22.2	1.013	146.0	LOS F	1.9	15.4	1.00	0.94	1.09	11.1
East: Newbridge Road															
4	L2	All MCs	1	0.0	1	0.0	0.333	6.4	LOS A	0.0	0.0	0.00	0.00	0.00	65.5
5	T1	All MCs	1834	9.5	1834	9.5	0.333	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1835	9.5	1835	9.5	0.333	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
West: Newbridge Road															
11	T1	All MCs	2968	8.0	2968	8.0	0.534	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
12	R2	All MCs	13	25.0	13	25.0	0.645	151.8	LOS F	1.1	9.3	0.99	1.03	1.16	15.2
Approach			2981	8.1	2981	8.1	0.645	0.8	NA	1.1	9.3	0.00	0.00	0.00	68.4
All Vehicles			4825	8.7	4825	8.7	1.013	0.8	NA	1.9	15.4	0.00	0.00	0.01	68.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Ex Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex PM (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	35	3.0	35	3.0	0.366	37.6	LOS C	7.6	54.3	0.92	0.75	0.92	27.1
2	T1	All MCs	92	2.3	92	2.3	0.366	61.9	LOS E	7.6	54.3	0.92	0.75	0.92	27.0
3	R2	All MCs	336	1.6	336	1.6	* 1.067	156.6	LOS F	17.3	122.7	1.00	1.32	1.83	6.2
Approach			462	1.8	462	1.8	1.067	128.9	LOS F	17.3	122.7	0.98	1.17	1.58	10.1
East: Newbridge Road															
4	L2	All MCs	647	1.0	647	1.0	0.483	48.7	LOS D	11.8	83.1	0.36	1.16	0.36	35.7
5	T1	All MCs	1969	4.6	1969	4.6	* 1.128	195.6	LOS F	40.4	293.8	1.00	1.67	1.91	11.6
6	R2	All MCs	584	10.3	584	10.3	* 0.656	58.0	LOS E	10.4	79.1	0.95	0.85	0.95	32.0
Approach			3201	4.9	3201	4.9	1.128	140.8	LOS F	40.4	293.8	0.86	1.42	1.42	14.1
North: Governor Macquarie Drive															
7	L2	All MCs	536	2.6	536	2.6	0.312	20.5	LOS B	8.4	60.0	0.66	0.75	0.66	36.1
8	T1	All MCs	236	0.4	236	0.4	* 0.679	59.9	LOS E	15.2	107.1	0.99	0.83	0.99	20.9
9	R2	All MCs	160	7.9	160	7.9	0.499	48.4	LOS D	8.7	65.4	0.92	0.79	0.92	33.4
Approach			932	2.9	932	2.9	0.679	35.3	LOS C	15.2	107.1	0.79	0.78	0.79	30.5
West: Newbridge Road															
10	L2	All MCs	127	28.1	127	28.1	0.948	61.7	LOS E	39.0	300.4	1.00	1.12	1.29	26.5
11	T1	All MCs	1336	5.8	1336	5.8	0.948	88.5	LOS F	40.8	299.7	1.00	1.13	1.28	18.1
12	R2	All MCs	23	0.0	23	0.0	0.056	83.6	LOS F	0.8	5.4	0.82	0.69	0.82	32.1
Approach			1486	7.6	1486	7.6	0.948	86.1	LOS F	40.8	300.4	1.00	1.12	1.27	19.2
All Vehicles			6081	5.0	6081	5.0	1.128	110.3	LOS F	40.8	300.4	0.89	1.23	1.30	16.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	34.3	LOS D	0.0	0.0	0.70	0.70	51.0	20.0	0.39
East: Newbridge Road											

P2	Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive											
P3	Full	1	49.7	LOS E	0.0	0.0	0.84	0.84	66.4	20.0	0.30
West: Newbridge Road											
P4	Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians		19	61.7	LOS F	0.1	0.1	0.94	0.94	78.4	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Ex Brickmakers Dr/Promontory Way PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex PM (Network Folder: General)]

Intersection with Stop Sign
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	453	1.6	453	1.6	0.235	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	All MCs	3	0.0	3	0.0	0.007	10.9	LOS A	0.0	0.2	0.68	0.72	0.68	38.5
Approach			456	1.6	456	1.6	0.235	0.1	NA	0.0	0.2	0.00	0.01	0.00	49.8
East: Promontory Way															
4	L2	All MCs	4	0.0	4	0.0	0.013	16.2	LOS B	0.0	0.3	0.72	0.93	0.72	36.2
6	R2	All MCs	9	0.0	9	0.0	0.044	22.7	LOS B	0.1	1.0	0.79	1.00	0.79	13.0
Approach			14	0.0	14	0.0	0.044	20.7	LOS B	0.1	1.0	0.77	0.98	0.77	24.2
North: Brickmakers Drive															
7	L2	All MCs	9	0.0	9	0.0	0.005	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	40.6
8	T1	All MCs	899	0.8	899	0.8	0.463	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
Approach			908	0.8	908	0.8	0.463	0.2	NA	0.0	0.0	0.00	0.01	0.00	49.7
All Vehicles			1378	1.1	1378	1.1	0.463	0.4	NA	0.1	1.0	0.01	0.02	0.01	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 103 [Ex Newbridge Rd/Site Access Rd PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex PM (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access Road															
1	L2	All MCs	6	16.7	6	16.7	0.067	17.2	LOS B	0.1	0.8	0.83	0.83	0.83	9.2
Approach			6	16.7	6	16.7	0.067	17.2	LOS B	0.1	0.8	0.83	0.83	0.83	9.2
East: Newbridge Road															
4	L2	All MCs	1	100.0	1	100.0	0.001	11.4	LOS A	0.0	0.0	0.00	0.79	0.00	42.1
5	T1	All MCs	3168	5.1	3168	5.1	0.560	0.2	LOS A	56.6	413.5	0.00	0.00	0.00	69.4
Approach			3169	5.2	3169	5.2	0.560	0.2	NA	56.6	413.5	0.00	0.00	0.00	69.4
West: Newbridge Road															
11	T1	All MCs	2184	4.3	2163	4.3	0.380	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2184	4.3	2163	4.3	0.380	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			5360	4.8	5339	4.9	0.560	0.1	NA	56.6	413.5	0.00	0.00	0.00	68.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Ex Newbridge Rd/Davy Robinson Dr PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Ex PM (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	8	25.0	8	25.0	1.031	186.9	LOS F	1.8	15.3	1.00	1.05	1.18	8.8
3	R2	All MCs	1	0.0	1	0.0	1.031	68.6	LOS E	1.8	15.3	1.00	1.05	1.18	15.3
Approach			9	22.2	9	22.2	1.031	173.8	LOS F	1.8	15.3	1.00	1.05	1.18	9.6
East: Newbridge Road															
4	L2	All MCs	4	25.0	4	25.0	0.584	6.9	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	All MCs	3137	5.1	3137	5.1	0.584	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	69.3
Approach			3141	5.1	3141	5.1	0.584	0.3	NA	0.0	0.0	0.00	0.00	0.00	69.2
West: Newbridge Road															
11	T1	All MCs	2422	4.4	2401	4.4	0.422	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
12	R2	All MCs	7	28.6	7	28.7	1.219	448.7	LOS F	2.8	24.6	1.00	1.08	1.41	6.3
Approach			2429	4.5	2409	4.5	1.219	1.5	NA	2.8	24.6	0.00	0.00	0.00	67.6
All Vehicles			5580	4.8	5559	4.9	1.219	1.1	NA	2.8	24.6	0.00	0.00	0.00	67.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr AM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 AM Marina excl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	74	12.9	74	12.9	1.068	157.0	LOS F	27.8	203.0	1.00	1.43	1.78	14.0
2	T1	All MCs	193	2.2	193	2.2	* 1.068	151.2	LOS F	27.8	203.0	1.00	1.43	1.78	14.2
3	R2	All MCs	585	3.8	585	3.8	1.030	128.9	LOS F	28.5	205.9	1.00	1.25	1.62	7.4
Approach			852	4.2	852	4.2	1.068	136.3	LOS F	28.5	205.9	1.00	1.31	1.67	10.0
East: Newbridge Road															
4	L2	All MCs	409	6.2	409	6.2	0.321	8.4	LOS A	3.7	27.3	0.27	0.66	0.27	38.9
5	T1	All MCs	898	12.5	898	12.5	0.287	15.7	LOS B	10.1	78.3	0.54	0.47	0.54	48.9
6	R2	All MCs	589	8.4	589	8.4	* 1.049	148.1	LOS F	29.9	224.0	1.00	1.19	1.69	13.6
Approach			1897	9.9	1896	9.9	1.049	55.3	LOS D	29.9	224.0	0.62	0.74	0.84	24.8
North: Governor Macquarie Drive															
7	L2	All MCs	509	13.4	509	13.4	0.438	43.7	LOS D	13.4	104.4	0.82	0.81	0.82	24.9
8	T1	All MCs	118	1.8	118	1.8	0.451	62.3	LOS E	7.5	53.6	0.97	0.78	0.97	20.4
9	R2	All MCs	85	45.7	85	45.7	0.316	44.5	LOS D	4.2	41.1	0.91	0.76	0.91	31.4
Approach			713	15.4	713	15.4	0.451	46.9	LOS D	13.4	104.4	0.86	0.80	0.86	25.2
West: Newbridge Road															
10	L2	All MCs	149	21.1	149	21.1	* 1.058	112.7	LOS F	73.8	567.0	1.00	1.40	1.60	19.4
11	T1	All MCs	1917	8.8	1917	8.8	1.058	139.8	LOS F	74.9	564.0	1.00	1.44	1.60	12.1
12	R2	All MCs	41	25.6	41	25.6	0.217	68.3	LOS E	2.0	17.0	0.72	0.74	0.72	28.2
Approach			2107	10.0	2107	10.0	1.058	136.5	LOS F	74.9	567.0	0.99	1.42	1.59	12.8
All Vehicles			5568	9.8	5568	9.8	1.068	97.3	LOS F	74.9	567.0	0.85	1.09	1.25	16.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	18.0	LOS B	0.0	0.0	0.51	0.51	34.7	20.0	0.58

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	39.4	LOS D	0.0	0.0	0.75	0.75	56.0	20.0	0.36
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.2	LOS F	0.1	0.1	0.92	0.92	76.9	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way AM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 AM Marina excl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	648	1.9	648	1.9	*0.673	8.7	LOS A	10.1	71.7	0.81	0.73	0.83	40.4
3	R2	All MCs	38	5.6	38	5.6	0.091	13.1	LOS A	0.5	3.6	0.65	0.68	0.65	37.0
Approach			686	2.1	686	2.1	0.673	9.0	LOS A	10.1	71.7	0.80	0.73	0.82	40.2
East: Promontory Way															
4	L2	All MCs	117	1.8	117	1.8	0.319	20.3	LOS B	2.1	14.8	0.89	0.76	0.89	33.1
6	R2	All MCs	206	10.7	206	10.7	*0.598	22.0	LOS B	4.0	30.8	0.96	0.83	1.03	12.7
Approach			323	7.5	323	7.5	0.598	21.4	LOS B	4.0	30.8	0.93	0.81	0.98	24.1
North: Brickmakers Drive															
7	L2	All MCs	118	22.3	118	22.3	0.147	10.7	LOS A	1.3	10.6	0.57	0.68	0.57	33.8
8	T1	All MCs	440	2.4	440	2.4	0.458	4.5	LOS A	4.2	30.3	0.51	0.44	0.51	46.3
Approach			558	6.6	558	6.6	0.458	5.8	LOS A	4.2	30.3	0.52	0.49	0.52	44.4
All Vehicles			1567	4.8	1567	4.8	0.673	10.4	LOS A	10.1	71.7	0.73	0.66	0.75	39.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd AM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 AM Marina excl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	22	38.1	22	38.1	0.015	10.2	LOS A	0.0	0.0	0.00	0.80	0.00	44.3
5	T1	All MCs	1906	10.0	1906	10.0	0.378	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1928	10.3	1928	10.3	0.378	0.2	NA	0.0	0.0	0.00	0.01	0.00	68.6
West: Newbridge Road															
11	T1	All MCs	3033	8.5	2911	8.5	0.525	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			3033	8.5	2911	8.5	0.525	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			4961	9.2	4839	9.4	0.525	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr AM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 AM Marina excl. DCP Road connection (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	50.0	15	50.0	1.028	119.7	LOS F	2.1	20.6	1.00	1.07	1.24	12.3
3	R2	All MCs	1	0.0	1	0.0	1.028	47.2	LOS D	2.1	20.6	1.00	1.07	1.24	20.3
Approach			16	46.7	16	46.7	1.028	114.9	LOS F	2.1	20.6	1.00	1.07	1.24	12.9
East: Newbridge Road															
4	L2	All MCs	1	0.0	1	0.0	0.343	6.4	LOS A	0.0	0.0	0.00	0.00	0.00	65.5
5	T1	All MCs	1886	9.9	1886	9.9	0.343	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1887	9.9	1887	9.9	0.343	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
West: Newbridge Road															
11	T1	All MCs	3065	8.2	2945	8.2	0.530	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
12	R2	All MCs	13	25.0	12	25.0	0.744	159.3	LOS F	1.2	10.3	0.99	1.04	1.18	14.7
Approach			3078	8.2	2957	8.3	0.744	0.8	NA	1.2	10.3	0.00	0.00	0.00	68.4
All Vehicles			4981	9.0	4860	9.2	1.028	0.9	NA	2.1	20.6	0.01	0.01	0.01	68.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr PM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 PM Marina excl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	81	10.4	81	10.4	0.642	57.1	LOS E	12.6	92.2	0.98	0.82	0.98	25.2
2	T1	All MCs	114	1.9	114	1.9	0.642	63.8	LOS E	12.6	92.2	0.98	0.82	0.98	25.7
3	R2	All MCs	402	3.7	402	3.7	0.864	78.6	LOS F	15.0	108.1	1.00	0.99	1.23	11.0
Approach			597	4.2	597	4.2	0.864	72.9	LOS F	15.0	108.1	1.00	0.93	1.15	16.1
East: Newbridge Road															
4	L2	All MCs	733	2.0	732	2.0	0.575	25.9	LOS B	15.2	108.3	0.46	1.35	0.46	31.2
5	T1	All MCs	1969	4.6	1969	4.6	* 0.879	47.5	LOS D	40.4	293.8	0.96	0.97	1.05	32.7
6	R2	All MCs	584	10.3	584	10.3	* 0.875	75.8	LOS F	16.8	127.7	1.00	0.99	1.20	24.0
Approach			3286	5.1	3286	5.1	0.879	47.7	LOS D	40.4	293.8	0.86	1.06	0.95	30.3
North: Governor Macquarie Drive															
7	L2	All MCs	536	2.6	536	2.6	0.374	23.8	LOS B	8.8	62.8	0.76	0.78	0.76	33.9
8	T1	All MCs	264	0.4	264	0.4	* 0.864	72.2	LOS F	19.4	136.4	1.00	0.99	1.19	18.4
9	R2	All MCs	160	7.9	160	7.9	0.504	46.0	LOS D	8.3	62.0	0.95	0.80	0.95	34.1
Approach			960	2.9	960	2.9	0.864	40.8	LOS C	19.4	136.4	0.85	0.84	0.91	28.2
West: Newbridge Road															
10	L2	All MCs	127	28.1	127	28.1	* 0.852	33.3	LOS C	32.8	252.3	1.00	0.98	1.10	31.3
11	T1	All MCs	1336	5.8	1336	5.8	0.852	65.1	LOS E	34.5	253.6	1.00	0.96	1.09	23.0
12	R2	All MCs	82	7.7	82	7.7	0.629	91.0	LOS F	3.9	28.9	1.00	0.77	1.05	25.3
Approach			1545	7.7	1545	7.7	0.852	63.8	LOS E	34.5	253.6	1.00	0.96	1.09	24.1
All Vehicles			6388	5.3	6388	5.3	0.879	52.9	LOS D	40.4	293.8	0.90	0.99	0.99	26.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	23.4	LOS C	0.0	0.0	0.58	0.58	40.1	20.0	0.50

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	45.6	LOS E	0.0	0.0	0.81	0.81	62.3	20.0	0.32
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.9	LOS F	0.1	0.1	0.93	0.93	77.5	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way PM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 PM Marina excl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	453	1.6	453	1.6	0.447	6.5	LOS A	5.6	39.9	0.66	0.57	0.66	42.5
3	R2	All MCs	88	1.2	88	1.2	0.395	22.0	LOS B	1.7	12.0	0.93	0.76	0.93	32.2
Approach			541	1.6	541	1.6	0.447	9.0	LOS A	5.6	39.9	0.71	0.60	0.71	40.1
East: Promontory Way															
4	L2	All MCs	63	3.3	63	3.3	0.199	20.8	LOS B	1.1	8.1	0.89	0.73	0.89	32.9
6	R2	All MCs	146	11.5	146	11.5	* 0.487	22.1	LOS B	2.8	21.6	0.95	0.78	0.95	12.6
Approach			209	9.0	209	9.0	0.487	21.7	LOS B	2.8	21.6	0.93	0.77	0.93	22.6
North: Brickmakers Drive															
7	L2	All MCs	183	8.0	183	8.0	0.199	10.2	LOS A	1.9	14.5	0.56	0.69	0.56	34.7
8	T1	All MCs	899	0.8	899	0.8	* 0.883	13.0	LOS A	19.0	133.7	0.85	0.97	1.13	40.7
Approach			1082	2.0	1082	2.0	0.883	12.6	LOS A	19.0	133.7	0.80	0.93	1.03	40.1
All Vehicles			1833	2.7	1832	2.7	0.883	12.6	LOS A	19.0	133.7	0.78	0.81	0.92	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd PM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 PM Marina excl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	1	100.0	1	100.0	0.001	11.4	LOS A	0.0	0.0	0.00	0.79	0.00	42.1
5	T1	All MCs	3254	5.3	3253	5.3	0.624	0.2	LOS A	13.7	100.2	0.00	0.00	0.00	69.2
Approach			3255	5.3	3254	5.3	0.624	0.2	NA	13.7	100.2	0.00	0.00	0.00	69.1
West: Newbridge Road															
11	T1	All MCs	2251	4.6	2251	4.6	0.396	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2251	4.6	2251	4.6	0.396	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			5505	5.0	5505	5.0	0.624	0.2	NA	13.7	100.2	0.00	0.00	0.00	69.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr PM (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 1 PM Marina excl. DCP Road connection (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	21.4	15	21.4	1.049	143.6	LOS F	2.2	17.7	1.00	1.11	1.39	10.6
3	R2	All MCs	1	0.0	1	0.0	1.049	74.1	LOS F	2.2	17.7	1.00	1.11	1.39	17.9
Approach			16	20.0	16	20.0	1.049	139.0	LOS F	2.2	17.7	1.00	1.11	1.39	11.1
East: Newbridge Road															
4	L2	All MCs	4	25.0	4	25.0	0.570	6.9	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	All MCs	3222	5.2	3222	5.2	0.570	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.4
Approach			3226	5.2	3226	5.2	0.570	0.2	NA	0.0	0.0	0.00	0.00	0.00	69.3
West: Newbridge Road															
11	T1	All MCs	2488	4.7	2488	4.7	0.438	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.6
12	R2	All MCs	7	28.6	7	28.6	1.228	448.8	LOS F	2.8	24.8	1.00	1.08	1.43	6.3
Approach			2496	4.7	2496	4.7	1.228	1.4	NA	2.8	24.8	0.00	0.00	0.00	67.6
All Vehicles			5738	5.0	5738	5.0	1.228	1.1	NA	2.8	24.8	0.00	0.00	0.01	67.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr AM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 AM Marina incl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	74	12.9	74	12.9	1.014	121.2	LOS F	25.2	183.8	1.00	1.30	1.58	16.9
2	T1	All MCs	193	2.2	193	2.2	* 1.014	115.4	LOS F	25.2	183.8	1.00	1.30	1.58	17.2
3	R2	All MCs	537	3.1	537	3.1	1.034	132.4	LOS F	26.3	189.0	1.00	1.26	1.65	7.2
Approach			803	3.8	803	3.8	1.034	127.3	LOS F	26.3	189.0	1.00	1.27	1.63	10.7
East: Newbridge Road															
4	L2	All MCs	384	4.9	384	4.9	0.299	8.4	LOS A	3.4	24.8	0.26	0.66	0.26	39.0
5	T1	All MCs	898	12.5	898	12.5	0.283	15.2	LOS B	9.9	77.0	0.53	0.46	0.53	49.4
6	R2	All MCs	589	8.4	589	8.4	* 1.049	148.3	LOS F	29.9	224.2	1.00	1.19	1.69	13.6
Approach			1872	9.7	1872	9.7	1.049	55.7	LOS D	29.9	224.2	0.62	0.73	0.84	24.8
North: Governor Macquarie Drive															
7	L2	All MCs	509	13.4	509	13.4	0.429	42.9	LOS D	13.2	103.2	0.82	0.80	0.82	25.2
8	T1	All MCs	118	1.8	118	1.8	0.428	61.2	LOS E	7.5	53.0	0.96	0.77	0.96	20.6
9	R2	All MCs	85	45.7	85	45.7	0.342	45.7	LOS D	4.3	41.8	0.93	0.76	0.93	31.1
Approach			713	15.4	713	15.4	0.429	46.3	LOS D	13.2	103.2	0.85	0.79	0.85	25.4
West: Newbridge Road															
10	L2	All MCs	149	21.1	149	21.1	* 1.038	100.5	LOS F	71.2	547.0	1.00	1.35	1.52	20.9
11	T1	All MCs	1917	8.8	1917	8.8	1.038	125.9	LOS F	72.3	544.0	1.00	1.38	1.53	13.2
12	R2	All MCs	41	25.6	41	25.6	0.214	67.0	LOS E	2.0	16.8	0.71	0.74	0.71	28.5
Approach			2107	10.0	2107	10.0	1.038	122.9	LOS F	72.3	547.0	0.99	1.37	1.51	14.0
All Vehicles			5495	9.7	5495	9.7	1.049	90.7	LOS F	72.3	547.0	0.85	1.06	1.21	17.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	17.5	LOS B	0.0	0.0	0.50	0.50	34.2	20.0	0.59

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	38.6	LOS D	0.0	0.0	0.74	0.74	55.3	20.0	0.36
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.2	LOS F	0.1	0.1	0.92	0.92	76.8	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way AM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 AM Marina incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	648	1.9	648	1.9	*0.641	7.5	LOS A	9.3	66.3	0.77	0.68	0.77	41.5
3	R2	All MCs	38	5.6	38	5.6	0.084	11.7	LOS A	0.4	3.2	0.60	0.67	0.60	37.9
Approach			686	2.1	686	2.1	0.641	7.8	LOS A	9.3	66.3	0.76	0.68	0.76	41.3
East: Promontory Way															
4	L2	All MCs	117	1.8	117	1.8	0.364	21.5	LOS B	2.2	15.4	0.92	0.76	0.92	32.6
6	R2	All MCs	158	10.0	158	10.0	*0.520	22.2	LOS B	3.0	23.2	0.95	0.79	0.96	12.6
Approach			275	6.5	275	6.5	0.520	21.9	LOS B	3.0	23.2	0.94	0.78	0.94	25.1
North: Brickmakers Drive															
7	L2	All MCs	92	20.7	92	20.7	0.108	10.0	LOS A	0.9	7.6	0.53	0.67	0.53	34.4
8	T1	All MCs	440	2.4	440	2.4	0.436	3.8	LOS A	3.8	27.2	0.46	0.40	0.46	46.9
Approach			532	5.5	532	5.5	0.436	4.9	LOS A	3.8	27.2	0.47	0.44	0.47	45.4
All Vehicles			1493	4.2	1493	4.2	0.641	9.3	LOS A	9.3	66.3	0.69	0.61	0.69	40.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd AM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 AM Marina incl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	22	38.1	22	38.1	0.015	10.2	LOS A	0.0	0.0	0.00	0.80	0.00	44.3
5	T1	All MCs	1881	9.8	1881	9.8	0.373	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1903	10.1	1903	10.1	0.373	0.2	NA	0.0	0.0	0.00	0.01	0.00	68.6
West: Newbridge Road															
11	T1	All MCs	2984	8.5	2896	8.5	0.522	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			2984	8.5	2896	8.5	0.522	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			4887	9.1	4799	9.3	0.522	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr AM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 AM Marina incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	50.0	15	50.0	0.163	34.2	LOS C	2.3	18.6	0.82	0.73	0.82	26.3
3	R2	All MCs	49	12.8	49	12.8	* 0.163	33.9	LOS C	2.3	18.6	0.82	0.73	0.82	35.3
Approach			64	21.3	64	21.3	0.163	34.0	LOS C	2.3	18.6	0.82	0.73	0.82	33.8
East: Newbridge Road															
4	L2	All MCs	28	25.9	28	25.9	0.574	19.7	LOS B	16.7	127.1	0.66	0.60	0.66	47.4
5	T1	All MCs	1861	9.7	1861	9.7	0.574	11.7	LOS A	16.8	127.4	0.66	0.60	0.66	48.3
Approach			1889	10.0	1889	10.0	0.574	11.8	LOS A	16.8	127.4	0.66	0.60	0.66	48.2
West: Newbridge Road															
11	T1	All MCs	3017	8.1	2929	8.2	* 0.892	29.2	LOS C	44.7	334.9	0.93	0.97	1.07	44.0
12	R2	All MCs	13	25.0	12	25.1	0.116	34.3	LOS C	0.4	3.2	0.66	0.71	0.66	37.7
Approach			3029	8.2	2941	8.2	0.892	29.2	LOS C	44.7	334.9	0.93	0.97	1.07	44.0
All Vehicles			4983	9.0	4895	9.2	0.892	22.6	LOS B	44.7	334.9	0.83	0.82	0.91	44.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Davy Robinson Drive											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
East: Newbridge Road											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
West: Newbridge Road											
P4	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
All Pedestrians		158	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr PM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 PM Marina incl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	81	10.4	81	10.4	0.642	56.5	LOS D	12.6	92.2	0.98	0.82	0.98	25.2
2	T1	All MCs	114	1.9	114	1.9	0.642	64.2	LOS E	12.6	92.2	0.98	0.82	0.98	25.7
3	R2	All MCs	368	2.6	368	2.6	0.832	76.6	LOS F	13.4	95.9	1.00	0.95	1.19	11.2
Approach			563	3.6	563	3.6	0.832	71.2	LOS F	13.4	95.9	0.99	0.91	1.12	16.6
East: Newbridge Road															
4	L2	All MCs	689	1.4	689	1.4	0.539	26.3	LOS B	14.6	103.4	0.44	1.35	0.44	32.0
5	T1	All MCs	1969	4.6	1969	4.6	* 0.871	45.8	LOS D	40.4	293.8	0.95	0.96	1.03	33.4
6	R2	All MCs	584	10.3	584	10.3	* 0.844	68.6	LOS E	15.2	115.5	1.00	0.96	1.15	25.7
Approach			3243	5.0	3243	5.0	0.871	45.8	LOS D	40.4	293.8	0.85	1.04	0.93	31.3
North: Governor Macquarie Drive															
7	L2	All MCs	536	2.6	536	2.6	0.367	23.6	LOS B	8.8	62.8	0.75	0.78	0.75	34.1
8	T1	All MCs	264	0.4	264	0.4	* 0.864	72.2	LOS F	19.4	136.4	1.00	0.99	1.19	18.4
9	R2	All MCs	160	7.9	160	7.9	0.525	46.9	LOS D	8.4	62.8	0.95	0.80	0.95	33.8
Approach			960	2.9	960	2.9	0.864	40.8	LOS C	19.4	136.4	0.85	0.84	0.90	28.2
West: Newbridge Road															
10	L2	All MCs	127	28.1	127	28.1	* 0.852	33.8	LOS C	32.8	252.3	1.00	0.98	1.10	31.3
11	T1	All MCs	1336	5.8	1336	5.8	0.852	65.0	LOS E	34.5	253.6	1.00	0.96	1.09	23.0
12	R2	All MCs	82	7.7	82	7.7	0.574	89.6	LOS F	3.8	28.1	1.00	0.76	1.01	25.8
Approach			1545	7.7	1545	7.7	0.852	63.8	LOS E	34.5	253.6	1.00	0.95	1.09	24.1
All Vehicles			6312	5.2	6312	5.2	0.871	51.7	LOS D	40.4	293.8	0.90	0.98	0.98	27.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	23.4	LOS C	0.0	0.0	0.58	0.58	40.1	20.0	0.50

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	45.6	LOS E	0.0	0.0	0.81	0.81	62.3	20.0	0.32
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.9	LOS F	0.1	0.1	0.93	0.93	77.5	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way PM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 PM Marina incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	453	1.6	453	1.6	0.447	6.5	LOS A	5.6	39.9	0.66	0.57	0.66	42.5
3	R2	All MCs	88	1.2	88	1.2	0.391	22.0	LOS B	1.7	12.0	0.93	0.76	0.93	32.2
Approach			541	1.6	541	1.6	0.447	9.0	LOS A	5.6	39.9	0.71	0.60	0.71	40.1
East: Promontory Way															
4	L2	All MCs	63	3.3	63	3.3	0.199	20.8	LOS B	1.1	8.1	0.89	0.73	0.89	32.9
6	R2	All MCs	112	10.4	112	10.4	* 0.369	21.6	LOS B	2.1	15.9	0.92	0.76	0.92	12.8
Approach			175	7.8	175	7.8	0.369	21.3	LOS B	2.1	15.9	0.91	0.75	0.91	24.1
North: Brickmakers Drive															
7	L2	All MCs	140	6.8	140	6.8	0.151	10.0	LOS A	1.4	10.6	0.54	0.68	0.54	34.8
8	T1	All MCs	899	0.8	899	0.8	* 0.883	13.1	LOS A	19.0	133.8	0.85	0.97	1.13	40.7
Approach			1039	1.6	1039	1.6	0.883	12.6	LOS A	19.0	133.8	0.80	0.94	1.05	40.2
All Vehicles			1755	2.2	1755	2.2	0.883	12.4	LOS A	19.0	133.8	0.78	0.81	0.93	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd PM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 PM Marina incl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	1	100.0	1	100.0	0.001	11.4	LOS A	0.0	0.0	0.00	0.79	0.00	42.1
5	T1	All MCs	3211	5.2	3211	5.2	0.614	0.2	LOS A	12.2	88.9	0.00	0.00	0.00	69.2
Approach			3212	5.2	3212	5.2	0.614	0.2	NA	12.2	88.9	0.00	0.00	0.00	69.2
West: Newbridge Road															
11	T1	All MCs	2217	4.4	2217	4.4	0.390	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2217	4.4	2217	4.4	0.390	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			5428	4.9	5428	4.9	0.614	0.2	NA	12.2	88.9	0.00	0.00	0.00	69.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr PM (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 2 PM Marina incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	21.4	15	21.4	0.142	44.2	LOS D	2.1	16.8	0.86	0.73	0.86	23.0
3	R2	All MCs	33	12.9	33	12.9	* 0.142	44.0	LOS D	2.1	16.8	0.86	0.73	0.86	32.1
Approach			47	15.6	47	15.6	0.142	44.1	LOS D	2.1	16.8	0.86	0.73	0.86	29.9
East: Newbridge Road															
4	L2	All MCs	46	9.1	46	9.1	* 0.860	27.1	LOS B	46.9	343.2	0.85	0.81	0.88	44.0
5	T1	All MCs	3179	5.1	3179	5.1	0.860	18.1	LOS B	47.1	344.1	0.85	0.81	0.88	41.3
Approach			3225	5.2	3225	5.2	0.860	18.2	LOS B	47.1	344.1	0.85	0.81	0.88	41.4
West: Newbridge Road															
11	T1	All MCs	2455	4.5	2455	4.5	0.654	12.7	LOS A	25.8	187.9	0.65	0.59	0.65	55.7
12	R2	All MCs	7	28.6	7	28.6	0.110	51.1	LOS D	0.4	3.1	0.83	0.71	0.83	30.2
Approach			2462	4.6	2462	4.6	0.654	12.8	LOS A	25.8	187.9	0.65	0.59	0.65	55.5
All Vehicles			5735	5.0	5735	5.0	0.860	16.1	LOS B	47.1	344.1	0.76	0.72	0.78	48.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Davy Robinson Drive											
P1	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
East: Newbridge Road											
P2	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
West: Newbridge Road											
P4	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
All Pedestrians		158	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr AM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 AM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	99	9.6	99	9.6	1.092	174.3	LOS F	33.0	239.8	1.00	1.48	1.85	13.0
2	T1	All MCs	202	2.1	202	2.1	* 1.092	168.5	LOS F	33.0	239.8	1.00	1.48	1.85	13.1
3	R2	All MCs	604	3.7	604	3.7	1.113	189.7	LOS F	34.4	248.7	1.00	1.43	1.93	5.2
Approach			905	4.0	905	4.0	1.113	183.3	LOS F	34.4	248.7	1.00	1.44	1.91	7.9
East: Newbridge Road															
4	L2	All MCs	409	6.2	409	6.2	0.369	11.3	LOS A	6.9	51.0	0.42	0.71	0.42	33.7
5	T1	All MCs	907	13.5	907	13.4	0.295	16.3	LOS B	10.4	81.3	0.55	0.48	0.55	48.3
6	R2	All MCs	592	8.7	591	8.7	* 1.079	170.9	LOS F	31.7	238.4	1.00	1.24	1.81	12.2
Approach			1908	10.4	1908	10.4	1.079	63.2	LOS E	31.7	238.4	0.66	0.76	0.91	22.8
North: Governor Macquarie Drive															
7	L2	All MCs	509	13.4	509	13.4	0.429	42.9	LOS D	13.2	103.2	0.82	0.80	0.82	25.2
8	T1	All MCs	143	1.5	143	1.5	0.494	61.0	LOS E	9.1	64.6	0.97	0.79	0.97	20.7
9	R2	All MCs	85	45.7	85	45.7	0.328	44.3	LOS D	4.2	40.8	0.92	0.76	0.92	31.5
Approach			738	14.8	738	14.8	0.494	46.6	LOS D	13.2	103.2	0.86	0.80	0.86	25.2
West: Newbridge Road															
10	L2	All MCs	149	21.1	149	21.1	* 1.107	150.6	LOS F	84.9	651.7	1.00	1.55	1.80	16.2
11	T1	All MCs	1917	8.8	1917	8.8	1.107	175.8	LOS F	86.2	649.0	1.00	1.59	1.81	9.7
12	R2	All MCs	107	9.8	107	9.8	0.507	69.6	LOS E	5.9	44.8	0.82	0.80	0.82	26.4
Approach			2174	9.7	2174	9.7	1.107	168.8	LOS F	86.2	651.7	0.99	1.55	1.76	10.6
All Vehicles			5725	9.7	5725	9.7	1.113	120.1	LOS F	86.2	651.7	0.87	1.17	1.39	13.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	18.5	LOS B	0.0	0.0	0.51	0.51	35.2	20.0	0.57

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	39.4	LOS D	0.0	0.0	0.75	0.75	56.0	20.0	0.36
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.3	LOS F	0.1	0.1	0.92	0.92	76.9	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way AM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 AM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	648	1.9	648	1.9	*0.566	18.4	LOS B	26.3	186.9	0.66	0.60	0.66	33.7
3	R2	All MCs	63	3.3	63	3.3	0.163	23.0	LOS B	2.2	15.9	0.54	0.69	0.54	31.9
Approach			712	2.1	712	2.1	0.566	18.8	LOS B	26.3	186.9	0.65	0.60	0.65	33.5
East: Promontory Way															
4	L2	All MCs	126	1.7	126	1.7	0.219	59.5	LOS E	6.3	44.6	0.78	0.75	0.78	24.9
6	R2	All MCs	261	8.5	261	8.5	*0.573	64.9	LOS E	14.8	111.5	0.89	0.82	0.89	6.8
Approach			387	6.3	387	6.3	0.573	63.1	LOS E	14.8	111.5	0.85	0.80	0.85	14.6
North: Brickmakers Drive															
7	L2	All MCs	209	12.6	209	12.6	0.205	18.1	LOS B	6.4	49.4	0.49	0.69	0.49	28.8
8	T1	All MCs	440	2.4	440	2.4	0.382	6.9	LOS A	8.5	60.5	0.31	0.28	0.31	44.6
Approach			649	5.7	649	5.7	0.382	10.5	LOS A	8.5	60.5	0.37	0.41	0.37	40.5
All Vehicles			1748	4.3	1748	4.3	0.573	25.5	LOS B	26.3	186.9	0.59	0.57	0.59	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	6	40.1	LOS E	0.0	0.0	0.76	0.76	56.8	20.0	0.35
All Pedestrians		6	40.1	LOS E	0.0	0.0	0.76	0.76	56.8	20.0	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd AM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 AM Marina+GCV excl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	83	24.1	83	24.0	0.052	9.9	LOS A	0.0	0.0	0.00	0.80	0.00	47.4
5	T1	All MCs	1918	10.5	1918	10.5	0.390	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2001	11.1	2001	11.1	0.390	0.5	NA	0.0	0.0	0.00	0.03	0.00	66.8
West: Newbridge Road															
11	T1	All MCs	3052	8.5	2805	8.5	0.506	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			3052	8.5	2805	8.5	0.506	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			5053	9.5	4805	10.0	0.506	0.3	NA	0.0	0.0	0.00	0.01	0.00	67.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr AM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 AM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	50.0	15	50.0	1.029	121.6	LOS F	2.1	20.7	1.00	1.08	1.25	12.1
3	R2	All MCs	1	0.0	1	0.0	1.029	48.7	LOS D	2.1	20.7	1.00	1.08	1.25	20.1
Approach			16	46.7	16	46.7	1.029	116.7	LOS F	2.1	20.7	1.00	1.08	1.25	12.7
East: Newbridge Road															
4	L2	All MCs	1	0.0	1	0.0	0.355	6.4	LOS A	0.0	0.0	0.00	0.00	0.00	65.4
5	T1	All MCs	1947	10.2	1947	10.2	0.355	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1948	10.2	1948	10.2	0.355	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
West: Newbridge Road															
11	T1	All MCs	3084	8.1	2839	8.2	0.511	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
12	R2	All MCs	13	25.0	12	25.2	0.868	184.8	LOS F	1.4	11.9	1.00	1.05	1.25	13.2
Approach			3097	8.2	2850	8.3	0.868	0.9	NA	1.4	11.9	0.00	0.00	0.01	68.3
All Vehicles			5061	9.1	4814	9.6	1.029	1.0	NA	2.1	20.7	0.01	0.01	0.01	68.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr PM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 PM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	172	4.9	172	4.9	0.970	88.9	LOS F	27.7	199.7	1.00	1.16	1.41	19.6
2	T1	All MCs	147	1.4	147	1.4	*0.970	102.6	LOS F	27.7	199.7	1.00	1.16	1.41	19.7
3	R2	All MCs	469	3.1	469	3.1	0.952	93.8	LOS F	19.6	140.7	1.00	1.11	1.41	9.6
Approach			788	3.2	788	3.2	0.970	94.4	LOS F	27.7	199.7	1.00	1.13	1.41	14.2
East: Newbridge Road															
4	L2	All MCs	733	2.0	732	2.0	0.670	40.9	LOS C	17.9	127.3	0.61	1.28	0.61	25.8
5	T1	All MCs	1979	5.1	1979	5.1	*0.982	88.5	LOS F	40.2	293.8	1.00	1.23	1.33	21.9
6	R2	All MCs	586	10.6	586	10.6	0.950	84.0	LOS F	15.4	117.8	1.00	1.01	1.37	23.2
Approach			3298	5.4	3297	5.4	0.982	77.1	LOS F	40.2	293.8	0.91	1.20	1.18	22.4
North: Governor Macquarie Drive															
7	L2	All MCs	536	2.6	536	2.6	0.381	24.4	LOS B	9.0	64.1	0.76	0.78	0.76	33.6
8	T1	All MCs	298	0.4	298	0.4	0.932	82.4	LOS F	23.8	167.4	1.00	1.10	1.32	16.8
9	R2	All MCs	160	7.9	160	7.9	0.545	45.5	LOS D	8.1	60.5	0.97	0.80	0.97	34.2
Approach			994	2.8	994	2.8	0.932	45.2	LOS D	23.8	167.4	0.87	0.88	0.96	26.7
West: Newbridge Road															
10	L2	All MCs	127	28.1	127	28.1	*0.867	35.7	LOS C	34.2	262.8	1.00	0.98	1.11	31.0
11	T1	All MCs	1336	5.8	1336	5.8	0.867	66.2	LOS E	35.9	263.7	1.00	0.98	1.12	22.5
12	R2	All MCs	173	3.7	173	3.7	*0.872	97.1	LOS F	9.1	65.9	1.00	0.91	1.27	22.9
Approach			1636	7.3	1636	7.3	0.872	67.1	LOS E	35.9	263.7	1.00	0.97	1.13	23.5
All Vehicles			6716	5.2	6715	5.2	0.982	72.0	LOS F	40.2	293.8	0.94	1.09	1.16	21.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	27.7	LOS C	0.0	0.0	0.63	0.63	44.3	20.0	0.45

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	45.6	LOS E	0.0	0.0	0.81	0.81	62.3	20.0	0.32
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	61.1	LOS F	0.1	0.1	0.93	0.93	77.8	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way PM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 PM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	453	1.6	453	1.6	0.434	7.5	LOS A	6.7	47.7	0.64	0.56	0.64	41.5
3	R2	All MCs	122	0.9	122	0.9	0.630	26.9	LOS B	3.1	22.0	0.95	0.87	1.11	30.0
Approach			575	1.5	575	1.5	0.630	11.7	LOS A	6.7	47.7	0.71	0.62	0.74	38.0
East: Promontory Way															
4	L2	All MCs	97	2.2	97	2.2	0.241	22.7	LOS B	2.0	14.5	0.86	0.75	0.86	32.0
6	R2	All MCs	338	5.0	338	5.0	* 0.856	32.5	LOS C	9.9	72.2	1.00	1.05	1.43	9.3
Approach			435	4.4	435	4.4	0.856	30.3	LOS C	9.9	72.2	0.97	0.98	1.30	16.8
North: Brickmakers Drive															
7	L2	All MCs	307	4.8	307	4.8	0.317	11.6	LOS A	4.2	30.7	0.59	0.72	0.59	33.6
8	T1	All MCs	899	0.8	899	0.8	* 0.858	11.7	LOS A	20.2	142.4	0.79	0.85	0.96	41.5
Approach			1206	1.8	1206	1.8	0.858	11.7	LOS A	20.2	142.4	0.74	0.82	0.87	40.1
All Vehicles			2216	2.2	2216	2.2	0.858	15.3	LOS B	20.2	142.4	0.78	0.80	0.92	35.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	1	19.4	LOS B	0.0	0.0	0.88	0.88	36.0	20.0	0.56
All Pedestrians		1	19.4	LOS B	0.0	0.0	0.88	0.88	36.0	20.0	0.56

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd PM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 PM Marina+GCV excl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	80	15.8	80	15.8	0.048	9.8	LOS A	0.0	0.0	0.00	0.81	0.00	49.4
5	T1	All MCs	3265	5.6	3265	5.6	0.578	0.2	LOS A	33.8	247.6	0.00	0.00	0.00	69.4
Approach			3345	5.9	3345	5.8	0.578	0.4	NA	33.8	247.6	0.00	0.02	0.00	67.9
West: Newbridge Road															
11	T1	All MCs	2318	4.5	2318	4.5	0.408	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2318	4.5	2318	4.5	0.408	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			5663	5.3	5662	5.3	0.578	0.3	NA	33.8	247.6	0.00	0.01	0.00	68.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr PM - Copy (2) (Site Folder: Development Scenario 1 and 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 3 PM Marina+GCV excl. DCP Road connection (Network Folder: General)]

Intersection with Give Way Sign
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	15	21.4	15	21.4	1.052	147.2	LOS F	2.2	17.9	1.00	1.12	1.41	10.3
3	R2	All MCs	1	0.0	1	0.0	1.052	77.7	LOS F	2.2	17.9	1.00	1.12	1.41	17.5
Approach			16	20.0	16	20.0	1.052	142.6	LOS F	2.2	17.9	1.00	1.12	1.41	10.9
East: Newbridge Road															
4	L2	All MCs	4	25.0	4	25.0	0.585	6.9	LOS A	0.0	0.0	0.00	0.00	0.00	57.2
5	T1	All MCs	3301	5.4	3301	5.4	0.585	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	69.3
Approach			3305	5.4	3305	5.4	0.585	0.3	NA	0.0	0.0	0.00	0.00	0.00	69.3
West: Newbridge Road															
11	T1	All MCs	2556	4.5	2556	4.5	0.450	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.6
12	R2	All MCs	7	28.6	7	28.6	1.228	436.0	LOS F	2.8	24.6	1.00	1.08	1.43	6.5
Approach			2563	4.6	2563	4.6	1.228	1.4	NA	2.8	24.6	0.00	0.00	0.00	67.7
All Vehicles			5884	5.1	5884	5.1	1.228	1.1	NA	2.8	24.6	0.00	0.00	0.01	67.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr AM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 AM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	86	11.0	86	11.0	1.045	139.9	LOS F	28.8	210.0	1.00	1.37	1.68	15.3
2	T1	All MCs	202	2.1	202	2.1	* 1.045	134.1	LOS F	28.8	210.0	1.00	1.37	1.68	15.5
3	R2	All MCs	537	3.1	537	3.1	1.034	132.4	LOS F	26.3	189.0	1.00	1.26	1.65	7.2
Approach			825	3.7	825	3.7	1.045	133.6	LOS F	28.8	210.0	1.00	1.30	1.66	10.4
East: Newbridge Road															
4	L2	All MCs	384	4.9	384	4.9	0.323	9.6	LOS A	4.6	33.8	0.34	0.68	0.34	36.6
5	T1	All MCs	920	13.3	920	13.3	0.295	15.8	LOS B	10.4	81.2	0.54	0.47	0.54	48.8
6	R2	All MCs	592	8.7	592	8.7	* 1.079	171.1	LOS F	31.7	238.6	1.00	1.24	1.81	12.2
Approach			1896	10.2	1896	10.2	1.079	63.0	LOS E	31.7	238.6	0.65	0.76	0.90	23.0
North: Governor Macquarie Drive															
7	L2	All MCs	509	13.4	509	13.4	0.429	42.9	LOS D	13.2	103.2	0.82	0.80	0.82	25.2
8	T1	All MCs	143	1.5	143	1.5	0.494	61.0	LOS E	9.1	64.6	0.97	0.79	0.97	20.7
9	R2	All MCs	85	45.7	85	45.7	0.342	45.1	LOS D	4.2	41.3	0.93	0.76	0.93	31.3
Approach			738	14.8	738	14.8	0.494	46.7	LOS D	13.2	103.2	0.86	0.80	0.86	25.2
West: Newbridge Road															
10	L2	All MCs	149	21.1	149	21.1	* 1.081	130.8	LOS F	80.5	617.7	1.00	1.48	1.69	17.8
11	T1	All MCs	1951	8.6	1951	8.6	1.081	155.8	LOS F	81.8	614.9	1.00	1.51	1.70	10.9
12	R2	All MCs	75	14.1	75	14.1	0.365	67.9	LOS E	3.8	30.0	0.76	0.77	0.76	27.6
Approach			2175	9.7	2175	9.7	1.081	151.1	LOS F	81.8	617.7	0.99	1.49	1.67	11.7
All Vehicles			5634	9.6	5634	9.6	1.081	105.2	LOS F	81.8	617.7	0.86	1.12	1.30	15.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	18.0	LOS B	0.0	0.0	0.51	0.51	34.7	20.0	0.58

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	38.6	LOS D	0.0	0.0	0.74	0.74	55.3	20.0	0.36
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.2	LOS F	0.1	0.1	0.92	0.92	76.9	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way AM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 AM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	648	1.9	648	1.9	*0.641	7.5	LOS A	9.3	66.3	0.77	0.68	0.77	41.5
3	R2	All MCs	63	3.3	63	3.3	0.143	12.0	LOS A	0.8	5.5	0.62	0.69	0.62	37.8
Approach			712	2.1	712	2.1	0.641	7.9	LOS A	9.3	66.3	0.75	0.68	0.75	41.1
East: Promontory Way															
4	L2	All MCs	126	1.7	126	1.7	0.393	21.6	LOS B	2.4	16.7	0.93	0.77	0.93	32.5
6	R2	All MCs	180	8.8	180	8.8	*0.588	22.8	LOS B	3.6	26.9	0.97	0.83	1.04	12.3
Approach			306	5.8	306	5.8	0.588	22.3	LOS B	3.6	26.9	0.95	0.80	0.99	24.6
North: Brickmakers Drive															
7	L2	All MCs	149	12.7	149	12.7	0.167	10.1	LOS A	1.6	12.0	0.55	0.68	0.55	34.6
8	T1	All MCs	440	2.4	440	2.4	0.436	3.8	LOS A	3.8	27.2	0.46	0.40	0.46	46.9
Approach			589	5.0	589	5.0	0.436	5.4	LOS A	3.8	27.2	0.48	0.47	0.48	44.6
All Vehicles			1607	3.9	1607	3.9	0.641	9.7	LOS A	9.3	66.3	0.69	0.63	0.70	39.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		6	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd AM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 AM Marina+GCV incl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	83	24.1	83	24.1	0.052	9.9	LOS A	0.0	0.0	0.00	0.80	0.00	47.4
5	T1	All MCs	1905	10.3	1905	10.3	0.387	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			1988	10.9	1988	10.9	0.387	0.5	NA	0.0	0.0	0.00	0.03	0.00	66.8
West: Newbridge Road															
11	T1	All MCs	3018	8.4	2853	8.4	0.514	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			3018	8.4	2853	8.4	0.514	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			5006	9.4	4842	9.7	0.514	0.3	NA	0.0	0.0	0.00	0.01	0.00	67.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr AM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 AM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	27	26.9	27	26.9	0.232	34.6	LOS C	3.4	26.9	0.84	0.75	0.84	26.0
3	R2	All MCs	68	9.2	68	9.2	* 0.232	34.4	LOS C	3.4	26.9	0.84	0.75	0.84	35.5
Approach			96	14.3	96	14.3	0.232	34.5	LOS C	3.4	26.9	0.84	0.75	0.84	33.4
East: Newbridge Road															
4	L2	All MCs	28	25.9	28	25.9	0.594	20.0	LOS B	17.5	133.9	0.67	0.61	0.67	47.3
5	T1	All MCs	1922	10.0	1922	10.0	0.594	11.9	LOS A	17.7	134.3	0.67	0.61	0.67	48.0
Approach			1951	10.3	1951	10.3	0.594	12.1	LOS A	17.7	134.3	0.67	0.61	0.67	48.0
West: Newbridge Road															
11	T1	All MCs	3017	8.1	2855	8.1	* 0.894	29.4	LOS C	45.2	338.3	0.94	0.98	1.08	43.5
12	R2	All MCs	46	6.8	44	6.8	0.380	36.1	LOS C	1.5	11.4	0.76	0.77	0.76	36.4
Approach			3063	8.1	2899	8.1	0.894	29.5	LOS C	45.2	338.3	0.93	0.97	1.08	43.4
All Vehicles			5109	9.0	4945	9.3	0.894	22.7	LOS B	45.2	338.3	0.83	0.83	0.91	44.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Davy Robinson Drive											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
East: Newbridge Road											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
West: Newbridge Road											
P4	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97
All Pedestrians		158	39.3	LOS D	0.1	0.1	0.94	0.94	206.0	200.0	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Dev Newbridge Rd/Gov Macquarie Dr/Brickmakers Dr PM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 PM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Four Way Intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
1	L2	All MCs	126	6.7	126	6.7	0.816	61.5	LOS E	19.2	138.9	1.00	0.94	1.12	24.2
2	T1	All MCs	147	1.4	147	1.4	0.816	70.8	LOS F	19.2	138.9	1.00	0.94	1.12	24.4
3	R2	All MCs	368	2.6	368	2.6	0.884	82.0	LOS F	14.0	100.2	1.00	1.01	1.28	10.7
Approach			642	3.1	642	3.1	0.884	75.4	LOS F	19.2	138.9	1.00	0.98	1.21	16.9
East: Newbridge Road															
4	L2	All MCs	689	1.4	689	1.4	0.564	32.9	LOS C	15.8	111.6	0.51	1.33	0.51	28.7
5	T1	All MCs	2024	5.0	2024	5.0	* 0.930	62.5	LOS E	40.2	293.8	1.00	1.08	1.18	27.8
6	R2	All MCs	586	10.6	586	10.6	0.914	79.5	LOS F	16.4	125.5	1.00	1.00	1.28	23.7
Approach			3300	5.2	3300	5.2	0.930	59.3	LOS E	40.2	293.8	0.90	1.12	1.06	26.9
North: Governor Macquarie Drive															
7	L2	All MCs	536	2.6	536	2.6	0.367	23.9	LOS B	9.0	64.4	0.75	0.77	0.75	33.8
8	T1	All MCs	298	0.4	298	0.4	* 0.893	74.4	LOS F	22.5	158.1	1.00	1.04	1.23	18.1
9	R2	All MCs	160	7.9	160	7.9	0.614	47.5	LOS D	8.3	62.4	0.99	0.80	0.99	33.6
Approach			994	2.8	994	2.8	0.893	42.9	LOS D	22.5	158.1	0.86	0.86	0.93	27.4
West: Newbridge Road															
10	L2	All MCs	127	28.1	127	28.1	* 0.866	35.8	LOS C	34.8	266.9	1.00	0.99	1.11	31.1
11	T1	All MCs	1381	5.6	1381	5.6	0.866	65.7	LOS E	36.5	267.8	1.00	0.98	1.11	22.7
12	R2	All MCs	127	5.0	127	5.0	* 0.806	92.8	LOS F	6.1	44.8	1.00	0.85	1.20	24.7
Approach			1636	7.3	1636	7.3	0.866	65.5	LOS E	36.5	267.8	1.00	0.97	1.12	23.8
All Vehicles			6572	5.2	6572	5.2	0.930	60.0	LOS E	40.2	293.8	0.93	1.03	1.07	24.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brickmakers Drive											
P1	Full	1	24.6	LOS C	0.0	0.0	0.59	0.59	41.3	20.0	0.48

East: Newbridge Road										
P2 Full	1	64.1	LOS F	0.0	0.0	0.96	0.96	80.8	20.0	0.25
North: Governor Macquarie Drive										
P3 Full	1	44.8	LOS E	0.0	0.0	0.80	0.80	61.5	20.0	0.33
West: Newbridge Road										
P4 Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	80.8	20.0	0.25
All Pedestrians	19	60.9	LOS F	0.1	0.1	0.93	0.93	77.6	20.0	0.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Dev Brickmakers Dr/Promontory Way PM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 PM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brickmakers Drive															
2	T1	All MCs	453	1.6	453	1.6	0.447	6.5	LOS A	5.6	39.9	0.66	0.57	0.66	42.5
3	R2	All MCs	122	0.9	122	0.9	0.548	22.9	LOS B	2.5	17.3	0.96	0.81	1.03	31.8
Approach			575	1.5	575	1.5	0.548	10.0	LOS A	5.6	39.9	0.72	0.62	0.74	39.3
East: Promontory Way															
4	L2	All MCs	97	2.2	97	2.2	0.303	21.2	LOS B	1.8	12.6	0.91	0.75	0.91	32.7
6	R2	All MCs	191	6.1	191	6.1	*0.612	22.9	LOS B	3.8	28.1	0.97	0.84	1.06	12.3
Approach			287	4.8	287	4.8	0.612	22.4	LOS B	3.8	28.1	0.95	0.81	1.01	23.0
North: Brickmakers Drive															
7	L2	All MCs	219	4.3	219	4.3	0.231	10.3	LOS A	2.4	17.1	0.57	0.70	0.57	34.7
8	T1	All MCs	899	0.8	899	0.8	*0.883	13.1	LOS A	19.0	133.8	0.85	0.97	1.13	40.7
Approach			1118	1.5	1118	1.5	0.883	12.5	LOS A	19.0	133.8	0.79	0.92	1.02	40.0
All Vehicles			1980	2.0	1980	2.0	0.883	13.2	LOS A	19.0	133.8	0.80	0.82	0.94	38.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Brickmakers Drive											
P3	Full	1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64
All Pedestrians		1	14.5	LOS B	0.0	0.0	0.85	0.85	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Dev Newbridge Rd/Site Access Rd PM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 PM Marina+GCV incl. DCP Road connection (Network Folder: General)]

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Newbridge Road															
4	L2	All MCs	80	15.8	80	15.8	0.048	9.8	LOS A	0.0	0.0	0.00	0.81	0.00	49.4
5	T1	All MCs	3267	5.4	3267	5.4	0.667	0.3	LOS A	23.7	173.4	0.00	0.00	0.00	68.9
Approach			3347	5.7	3347	5.7	0.667	0.5	NA	23.7	173.4	0.00	0.02	0.00	67.5
West: Newbridge Road															
11	T1	All MCs	2262	4.3	2262	4.3	0.398	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			2262	4.3	2262	4.3	0.398	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			5609	5.1	5609	5.1	0.667	0.3	NA	23.7	173.4	0.00	0.01	0.00	68.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104 [Dev Newbridge Rd/Davy Robinson Dr PM - Copy (Site Folder: Development Scenario 2 and 4)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [Dev 4 PM Marina+GCV incl. DCP Road connection (Network Folder: General)]

Signalised intersection
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Davy Robinson Drive															
1	L2	All MCs	60	5.3	60	5.3	0.445	46.9	LOS D	7.7	55.8	0.93	0.79	0.93	22.2
3	R2	All MCs	100	4.2	100	4.2	* 0.445	46.9	LOS D	7.7	55.8	0.93	0.79	0.93	32.0
Approach			160	4.6	160	4.6	0.445	46.9	LOS D	7.7	55.8	0.93	0.79	0.93	29.0
East: Newbridge Road															
4	L2	All MCs	46	9.1	46	9.1	* 0.882	30.5	LOS C	52.0	381.1	0.88	0.86	0.94	42.3
5	T1	All MCs	3258	5.3	3258	5.3	0.882	21.4	LOS B	52.2	382.0	0.88	0.86	0.94	38.5
Approach			3304	5.4	3304	5.4	0.882	21.5	LOS B	52.2	382.0	0.88	0.86	0.94	38.6
West: Newbridge Road															
11	T1	All MCs	2455	4.5	2455	4.5	0.669	12.7	LOS A	26.9	195.5	0.66	0.60	0.66	55.5
12	R2	All MCs	53	4.0	53	4.0	0.731	66.6	LOS E	3.2	23.5	0.99	0.90	1.31	26.2
Approach			2507	4.5	2507	4.5	0.731	13.8	LOS A	26.9	195.5	0.66	0.61	0.67	54.2
All Vehicles			5972	5.0	5972	5.0	0.882	18.9	LOS B	52.2	382.0	0.79	0.75	0.83	45.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Davy Robinson Drive											
P1	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
East: Newbridge Road											
P2	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
West: Newbridge Road											
P4	Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93
All Pedestrians		158	49.3	LOS E	0.2	0.2	0.95	0.95	215.9	200.0	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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