21 June 2018

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Ernest Dupere
Director
Benedict Industries Pty Ltd

Re: Georges Cove Marina - construction access routes and traffic impact assessment

Dear Ernest,

1 Introduction

Benedict Industries Pty Ltd (Benedict Industries) proposes to construct and operate a marina and related facilities on the southern portion of Lot 7 DP 1065574, 146 Newbridge Road, Moorebank, referred to in this report as the "marina site") in the Liverpool City Council Local Government Area (LGA). The location of the proposed marina and adjoining development sites is shown in Figure 1.

During construction of the marina, vehicle access is proposed via the existing site access road from Newbridge Road or via a new access road (The Link Road) from Brickmakers Drive, about 300 m south of Newbridge Road. The Link Road may not be opened by the time the marina construction work commences.

This assessment considers the impacts of construction traffic on safety, efficiency and ongoing operation on the surrounding roads in accordance with the requirements of the State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP), Clause 101 (provided in Appendix A). The construction traffic impacts are assessed for access from Newbridge Road and for access from Brickmakers Drive.

2 Construction

2.1 Marina construction

Marina construction activities will involve a range of construction methods and equipment. The main activities will be the construction of marina buildings, carparks and the marina floating walkways and berths. The basin has been formed by previous quarrying and there are no existing structures on the marina site which would need to be removed.

Marina construction is expected to take about 48 weeks and will include:

- earthworks to complete the marina basin and entrance;
- installation of piles;
- installation of pontoons;
- construction of carparking areas, service roadways and access ramps;
- structural works (including concrete) for buildings;

- facade works and internal fitout of buildings;
- installation of utilities and services; and
- site landscaping.

The estimated daily and peak hourly vehicle movements for this traffic are summarised in Section 5.2.

2.2 Adjacent residential construction

Mirvac Homes (NSW) Pty Ltd is preparing to undertake site civil engineering works (for subdivision and local road construction) for a development of 179 detached residential dwellings on the northern portion of Lot 7. This construction work may take place concurrently with some stages of the marina construction and is likely to require the same construction vehicle access arrangement, ie access will be directly from Newbridge Road initially and then from The Link Road once completed.

Residential development construction on the northern portion of Lot 7 may include:

- bulk earthworks;
- construction of supporting infrastructure, including:
  - a retaining wall;
  - local roads;
  - rain gardens;
  - services; and
- building construction.

The estimated daily and peak hourly vehicle movements for this residential development construction are also summarised in Section 5.2.

3 Traffic assessment scope

This construction traffic impact assessment documents the following matters in relation to the requirements of the Infrastructure SEPP, Clause 101:

- proposed road transport routes to access the site;
- existing peak hour traffic volumes for roads and intersections in the area;
- predicted daily and peak hourly road traffic volume predictions during construction;
- an assessment of predicted impacts to Newbridge Road and Brickmakers Drive;
- an assessment of predicted impacts to operations of intersections during peak hours; and
- an assessment of the safety of driveway access locations and designs.

4 Current conditions

4.1 Newbridge Road

The marina site is located on the southern side of Newbridge Road. The existing site access is on Newbridge Road between the Governor Macquarie Drive/Brickmakers Drive intersection and the Davy Robinson Drive intersection. This section of Newbridge Road has three lanes in each direction. The road is divided by a central concrete median barrier which restricts westbound carriageway vehicle access to and from developments on the southern side of the road to left-turn only traffic movements .

The peak hourly intersection traffic survey results at the intersection of Newbridge Road with Governor Macquarie Drive/Brickmakers Drive are provided in Appendix B.

Traffic volumes on the westbound carriageway of Newbridge Road at the existing marina site access road, surveyed on Tuesday 1 March 2016. They were:

- 1,682 vehicles during the morning peak hour (7.15 to 8.15 am); and
- 3,171 vehicles during the afternoon peak hour (4.45 to 5.45 pm).

The Roads and Maritime Services (RMS) provides urban road traffic capacity standards. The capacity standard for a divided road with three traffic lanes in each direction is up to 1,400 vehicles per hour per lane which corresponds to a maximum peak hourly traffic capacity of 4,200 vehicles per hour in the peak direction of travel.

The westbound carriageway of Newbridge Road during the morning peak hour is currently operating with 1,682 vehicles per hour, which is about 40% of capacity, and has relatively free-flowing traffic conditions. During the afternoon peak hour the road is operating with 3,171 vehicles per hour, which is about 75% of capacity and the traffic is generally travelling moving more slowly in congested conditions.

Newbridge Road carries significant proportions of heavy vehicle traffic at all times of the day. Many large trucks use the road as a primary access route for the large number of industrial sites located within industrial precincts in Moorebank. Due to the high existing level of truck traffic usage, Newbridge Road is generally less sensitive than Brickmakers Drive to accommodating additional truck traffic in terms of the related residential amenity and other environmental traffic impacts.

4.2 Brickmakers Drive

Peak hour traffic volumes on Brickmakers Drive on the section between the intersection and 300 m south of the intersection (where the Link Road intersection will be located), were surveyed on Tuesday 1 March 2016. They were:

- 803 vehicles northbound during the morning peak hour (7.15 to 8.15 am); and
- 815 vehicles southbound during the afternoon peak hour (4.45 to 5.45 pm).

The RMS urban road traffic capacity standard is up to 1,400 vehicles per hour per lane in the peak direction of travel.

The northbound traffic on Brickmakers Drive during the morning peak hour is operating at about 57% of the road's capacity, with reasonable traffic speeds and moderately congested traffic conditions, away from the direct influence of the traffic queuing at the Newbridge Road intersection. During the afternoon peak hour the southbound traffic on the road is operating at about 58% of capacity with potentially higher traffic speeds than during the morning peak hour, as the afternoon peak traffic is travelling away from the Newbridge Road intersection.

Due to the five-tonne load limit imposed by Liverpool City Council on Brickmakers Drive, the road has virtually no heavy vehicle traffic at most times of the day. Consequently, the route is generally more sensitive to adverse impacts from additional future truck traffic to residential amenity than Newbridge Road.

5 Project traffic

5.1 Routes

The primary transport routes (for both light vehicles and heavy vehicles) that would be used by construction traffic when accessing the site from Newbridge Road are shown in Figure 2. The alternative access routes that would be used by the site construction traffic accessing the site from Brickmakers Drive are shown in Figure 3.

As Brickmakers Drive south of Newbridge Road currently has a five-tonne load limit, the proposed marina construction traffic should only use Brickmakers Drive to travel and from the site the north via the Newbridge Road intersection. This would minimise the future potential environmental amenity impacts of additional truck traffic for the adjacent residential areas to Brickmakers Drive, south of the future Link Road intersection location, which is shown in Figure 3.

The five tonne load limit does not legally prevent access by larger trucks to areas which are located within the restricted area where there is no alternative vehicle access route. However, it is an indication that future additional truck traffic should mininise the distance travelled on Brickmakers Drive (ie enter and leave Brickmakers Drive via Newbridge Road).

5.2 Traffic generation

The daily marina construction traffic movements will vary over the construction stages. On average, there are likely to be approximately 100 daily vehicle movements (light and heavy vehicles), with approximately 10 vehicle movements during the morning peak hour (7.15 to 8.15 am) and the same number during the afternoon peak hour (4.45 to 5.45 pm).

The maximum daily marina construction traffic movements would be approximately 300 daily vehicle movements (light and heavy vehicles), with approximately 30 peak vehicle movements during both the morning and afternoon peak hours. During these peaks, the marina construction traffic will be approximately 80% light vehicles and 20% heavy vehicles. At other times of the day, the proportion of heavy vehicles may be higher. The directional split of these construction traffic movements is predicted be approximately 75% travelling into the site and 25% out of the site during the morning peak hour and approximately 25% travelling into the site and 75% out of the site during the afternoon peak hour.

As the marina construction traffic may occur concurrently with the adjacent Moorebank Cove residential development construction traffic on the northern portion of Lot 7, the combined construction traffic movements from both developments have been considered in this assessment.

The adjacent residential development has also been estimated by EMM to have an average of 100 daily vehicle movements (light and heavy vehicles) during construction, with approximately 10 peak hourly vehicle movements during both the morning and afternoon commuter peak traffic periods (EMM Letter 14 December 2016, *Moorebank Cove Residential Development, Preliminary Works, Construction Traffic Assessment)*.

The combined construction traffic movements from the marina site and the residential development site are summarised in Table 1.

Table 1 Construction traffic generation (vehicle movements)

Development	Daily traffic movements	Morning peak hour traffic movements	Afternoon peak hour traffic movements
Marina (average) construction	100	10	10
Marina (peak) construction	300	30	30
Residential development construction (average)	100	10	10
Marina (average) and residential development construction (average) development	200	20	20
Marina (peak) and residential construction traffic (average)	400	40	40

5.3 Proportional site traffic increases on the adjoining roads

5.3.1 Newbridge Road

The existing Newbridge Road access road would only be used while The Link Road from Brickmakers Drive is being constructed. During this time, the maximum combined site construction traffic during the morning peak hour (7.15 to 8.15 am), would be 40 vehicle movements per hour, with 30 vehicle movements per hour using Newbridge Road east of the site access road (travelling in to the site) and 10 vehicle movements per hour using Newbridge Road west of the site access road (travelling away from the site).

The maximum combined site construction traffic during the afternoon peak hour (4.45 to 5.45 pm), would also be 40 vehicle movements per hour, with 10 vehicle movements per hour using Newbridge Road east of the site access road (travelling in to the site) and 30 vehicle movements per hour using Newbridge Road west of the site access (travelling away from the site).

The predicted maximum of 30 hourly vehicle movements using any section of Newbridge Road, would increase the existing Newbridge Road morning peak hour westbound traffic by 1.8% (from 1,682 to 1,712 hourly vehicle movements). The traffic volume to capacity ratio for Newbridge Road westbound would remain at approximately 40% and there would be no effect on the existing morning peak hour traffic speeds or traffic flow conditions, which would remain relatively free flowing.

During the afternoon traffic peak hour, the additional maximum site construction traffic of 30 hourly vehicle movements using any section of Newbridge Road, would increase the existing Newbridge Road westbound peak hourly traffic by 1.0% (from 3,171 to 3,201 hourly vehicle movements). The traffic volume to capacity ratio for Newbridge Road westbound would remain at approximately 75% and there would be no effect on the existing afternoon peak hour traffic speeds or traffic flow conditions, which would remain relatively congested and slow moving.

During both the morning and afternoon traffic peak hour periods which have been considered, the additional marina site and adjacent resident development construction traffic movements using Newbridge Road would have no noticeable effect on the high existing peak hourly traffic volumes or traffic flow conditions for the traffic which is using the road currently.

5.3.2 Brickmakers Drive

It has been assumed in this assessment, in order to minimise the future amenity related impacts of the additional truck traffic on the adjacent residential areas, that the heavy vehicle movements associated with the marina construction would not use Brickmakers Drive, south of the location of the Link Road access intersection, to travel to and from the south. However, the marina light vehicle construction traffic would still be free to travel via this route and overall the future marina construction traffic movements would probably still be distributed approximately 50% to and from the north and 50% to and from the south,

where a slight bias in the car traffic movements travelling to and from the south, would balance the other heavy vehicle traffic movements all travelling to and from the north.

The predicted future maximum site construction traffic movements using the Brickmakers Drive access during the morning peak hour would therefore be:

- 15 vehicles per hour travelling in from the north;
- 15 vehicles per hour travelling in from the south;
- 5 vehicles per hour travelling out to the north; and
- 5 vehicles per hour travelling out to the south.

The predicted future maximum site construction traffic movements using the Brickmakers Drive access during the afternoon peak hour would be:

- 5 vehicles per hour travelling in from the north;
- 5 vehicles per hour travelling in from the south;
- 15 vehicles per hour travelling out to the north; and
- 15 vehicles per hour travelling out to the south.

As described in Section **4.2**, the existing peak hourly peak direction traffic flows using Brickmakers Drive, which are:

- 803 vehicles per hour northbound during the morning peak hour (7.15 to 8.15 am); and
- 815 vehicles per hour southbound during the afternoon peak hour (4.45 to 5.45 pm).

The maximum additional 15 vehicles per hour travelling in any direction on any section of Brickmakers Drive, would therefore increase the peak direction traffic by 1.8% approximately.

The northbound lane of Brickmakers Drive is currently operating at about 57% of capacity during the morning peak hour, with reasonable traffic speeds and moderately congested traffic conditions.

The southbound lane is operating at about 58% of capacity during the afternoon peak hour. These peak hour peak direction volume to capacity ratios for Brickmakers Drive would increase to 58% and 59% respectively with the predicted future maximum marina plus residential site construction traffic movements using the Brickmakers Drive access.

The peak traffic flows in the opposite directions (morning peak hour southbound and afternoon peak hour northbound) are much lower (between 250 to 290 vehicles per hour) and are currently operating at around 20% of the lane capacity so have greater available capacity.

During both the morning and afternoon traffic peak hour periods, the proposed marina site and adjacent resident development construction traffic movements using Brickmakers Drive would have no noticeable effect on the high existing peak hourly traffic volumes or traffic flow conditions.

In summary, the project construction traffic will only result in minimal proportional increases to traffic movements on either the Newbridge Road or Brickmakers Drive routes, regardless of whether the existing site access via Newbridge Road or the future Link Road intersection access off Brickmakers Drive is used.

6 Site traffic increases at intersections

The impact of marina construction traffic using either the Newbridge Road or Brickmakers Drive routes has been examined using the SIDRA 7 intersection analysis model. An adjustment to the surveyed March 2016 base intersection traffic volumes was made to estimate the 2018 base intersection traffic conditions.

The surveyed Brickmakers Drive peak hourly traffic movements (and consequently the turning traffic movements at the Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection) have been increased by the amounts of the forecast peak hourly traffic movements from the recently constructed Brighton Lakes residential estate and clubhouse developments, from the respective traffic reports for these developments by GHD in 2011 and 2014. The following additional Brickmakers Drive peak hourly traffic movements were included from the two Brighton Lakes developments:

- morning peak hour:
  - 98 additional vehicles using Brickmakers Drive northbound; and
  - 45 additional vehicles using Brickmakers Drive southbound.
- afternoon peak hour:
  - 40 additional vehicles using Brickmakers Drive northbound; and
  - 109 additional vehicles using Brickmakers Drive southbound.

The marina site construction traffic (including the adjacent residential development construction traffic), has been assessed using the SIDRA 7 intersection model in accordance with the RMS intersection traffic delay and level of service (LOS) standards (Table 2).

Table 2 RMS SIDRA intersection level of service and delay standards

Description	LoS (RMS definition)	Average vehicle delay (seconds)
Very Good	A	<14.5
Good	B	14.5 to ≤28.5
Satisfactory	C	28.5 to ≤42.5
Near Capacity	D	42.5 to ≤56.5
At Capacity	E	56.5 to ≤70.5
Over Capacity	F	≥70.5

The following scenarios were considered for each intersection:

- no construction traffic – not assessed for The Link Road which has not yet been constructed;
- construction access to the marina site using the existing access to Lot 7 directly from Newbridge Road; and
- construction access to the marina site using The Link Road once opened.

The modelled existing and predicted intersection performance of the Governor Macquarie Drive/Brickmakers Drive and Newbridge Road intersection is summarised in Table 3. The detailed SIDRA intersection outputs are provided in Appendix C. The modelled existing and predicted intersection performance of the Brickmakers Drive and The Link Road intersection is summarised in Table 4. The detailed SIDRA intersection outputs are provided in Appendix D.

A linked intersection analysis is not required for the two intersections as the Brickmakers Drive and Link Road intersection is proposed to remain unsignalised during the marina construction period and there will be no interaction of the traffic queuing and delays between the two intersections.

Table 3 SIDRA intersection analysis results (2018) for the Newbridge Road intersection

Peak hour period assessed	Location of construction access	Vehicle throughput (vehicles/hour)	Level of service	Average delay (seconds)	Degree of saturation	Queue length (metres)
Morning peak	No construction traffic	5,646	F	140.2	1.124	671
Morning peak	Construction access directly from Newbridge Road	5,657	F	145.9	1.126	701
Morning peak	Construction access using The Link Road	5,667	F	141.3	1.124	676
Afternoon peak	No construction traffic	6,124	D	53.0	0.923	400
Afternoon peak	Construction access directly from Newbridge Road	6,156	D	55.0	0.936	412
Afternoon peak	Construction access using The Link Road	6,146	D	53.4	0.926	404

The Newbridge Road intersection currently has LOS F in the morning peak hour and LOS D in the afternoon peak hour (Table 3). These levels of service would not change regardless of whether the marina construction traffic were to access the marina site via Newbridge Road or via The Link Road.

For either access option, there would be only marginal increases to the current intersection delays, from 140 seconds to either 141 or 146 seconds in the morning peak hour and from 53.0 seconds to either 53.4 or 55.0 seconds in the afternoon peak hour.

Table 4 SIDRA intersection analysis results for Brickmakers Drive and Link Road intersection

Peak hour period assessed	Location of construction access	Vehicle throughput (vehicles/hour)	Level of service	Average delay (seconds)	Degree of saturation	Queue length (metres)
Morning peak	No construction traffic	1,309	C	35.4	0.246	1
Morning peak	Construction access directly from Newbridge Road	1,313	C	35.6	0.246	1
Morning peak	Construction access using The Link Road	1,343	C	37.6	0.253	1
Afternoon peak	No construction traffic	1,288	D	47.2	0.502	0
Afternoon peak	Construction access directly from Newbridge Road	1,298	D	48.5	0.507	0
Afternoon peak	Construction access using The Link Road	1,322	D	52.8	0.502	5

The Link Road intersection, with no construction traffic and only minimal base traffic from other sources (a maximum of two vehicles per hour for any turning traffic movement), would have LOS C in the morning peak hour and LOS D in the afternoon peak hour (Table 4). These levels of service would remain the same regardless of whether the proposed marina construction traffic was to access the marina site directly from Newbridge Road or via The Link Road.

The Brickmakers Drive/Link Road intersection analysis results (Table 4) show there would be minimal increases to the average intersection delay for the unsignalised right turning movement from the Link Road, from 35 seconds to between 36 and 38 seconds in the morning peak hour and from 47 seconds to between 48 and 53 seconds in the afternoon peak hour, for the two traffic scenarios considered.

7 Intersection traffic safety assessment

The existing access road to the marina site from Newbridge Road (left-turn-only access intersection) is located approximately 200 m east of the Newbridge Road/Governor Macquarie Drive/Brickmakers Drive intersection. The current design configuration of the access road intersection is shown in Photographs 1, 2 and 3. This access road was formerly used by industrial traffic accessing the waste recycling and extractive industries on the site.

The intersection has been designed for use by large articulated trucks and includes a 70 m long (including taper) deceleration lane on Newbridge Road. Right-turn movements at the intersection are physically prevented by a concrete median barrier in Newbridge Road. For left-turn only traffic movements, there will generally be no traffic safety conflicts at the intersection for the site traffic or any other traffic using Newbridge Road. The intersection will also have no traffic delay impacts for the traffic using Newbridge Road as there is an adequate left-turn deceleration lane for all traffic entering the site and all traffic departing from the site will have to give way to the passing westbound through traffic on Newbridge Road.

Further, as shown in Photograph 1, the internal site access road has sufficient width for large articulated trucks to safely pass each other when trucks are entering and leaving the site simultaneously. This existing site access driveway and intersection design are considered to be safe and suitable for the proposed marina (and residential development) construction traffic.

Photograph 1 Newbridge Road access driveway looking into the site

Photograph 2 Newbridge Road access driveway looking east along Newbridge Road

Photograph 3 Newbridge Road access driveway looking west along Newbridge Road

8 Summary

There will be no site traffic capacity or traffic safety constraints affecting the proposed marina construction traffic whether using the existing site access road off Newbridge Road or the new Link Road connection to Brickmakers Drive, once it has been constructed.

Once the alternative access via The Link Road has been fully constructed and is opened to traffic, all the site construction access should only occur via The Link Road in accordance with the general requirements of Infrastructure SEPP, Clause 101 (2) (a), which are provided in Appendix A,

However in the interim, prior to the completion of The Link Road, this analysis has found that there will be no adverse traffic capacity, traffic safety or road congestion impacts from the proposed marina construction traffic using the existing Newbridge Road site access. Therefore, in accordance with the requirements of Infrastructure SEPP, Clause 101 (2) (b), , the marina construction traffic should be permitted to have continuing use of the existing vehicular access via Newbridge Road until the alternative access via The Link Road opened to traffic.

Yours sincerely

Tim Brooker
Associate Transport Planner
tbrooker@emmconsulting.com.au

\\Emmsvr1\emmJobs\2018\J180179 - Georges Cove Marina 2018 EIS\GIS\02_Maps\CTA001_DCPRoadNetwork_20180607_01.mxd 7/06/2018

KEY

- Moorebank Cove proposed residential estate
- Moorebank Recyclers Land
- Roundabout
- Moorebank East locality boundary
- Open space

Street network

- Collector street 20 m
- Proposed Moorebank Recyclers private access road

Site location

Georges Cove Marina

Construction traffic assessment

Figure 1

EMM

Source: EMM (2018); LPMA (2016); Mirvac (2016)

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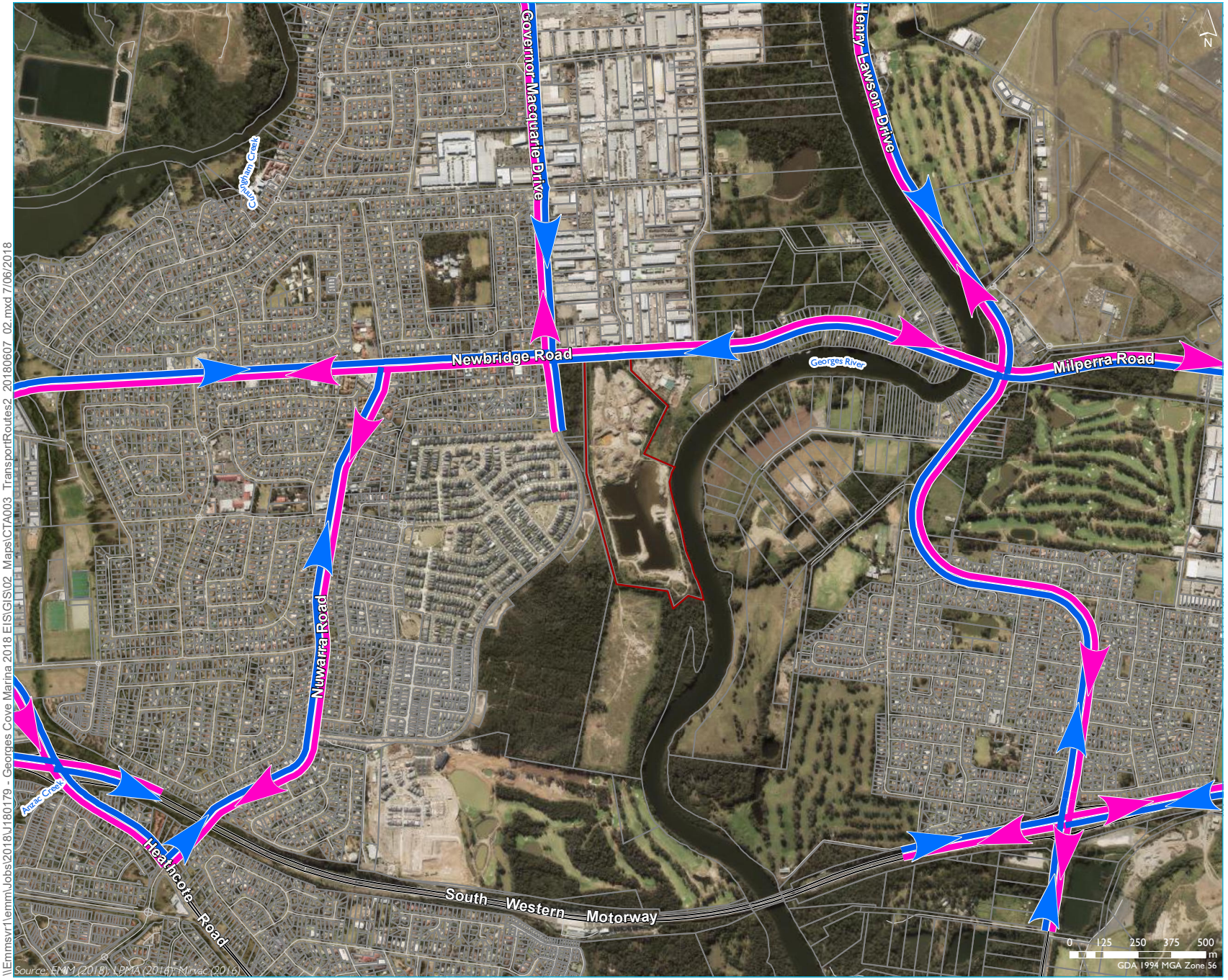
Construction traffic routes for Newbridge Road access

Georges Cove Marina
Construction Traffic Assessment
Figure 2

EMM



KEY

- Truck access route from the site
- Truck access route to the site
- Project area
- Cadastre
- Main road
- Local road

Construction traffic routes for Brickmakers Drive access

Georges Cove Marina
Construction Traffic Assessment
Figure 3

EMM

\\Emmsvr1\emm\Jobs\2018\J180179 - Georges Cove Marina 2018 EIS\GIS\02_Maps\CTA003_TransportRoutes2_20180607_02.mxd 7/06/2018

Appendix A

Infrastructure SEPP Clause 101 Details

State Environmental Planning Policy (Infrastructure) 2007

Current version for 3 April 2018 to date (accessed 11 May 2018 at 14:30)

101 Development with frontage to classified road

(1) The objectives of this clause are:

(a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and

(b) to prevent or reduce the potential impact of traffic noise and vehicle emission on development adjacent to classified roads.

(2) The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that:

(a) where practicable, vehicular access to the land is provided by a road other than the classified road, and

(b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of:

(i) the design of the vehicular access to the land, or

(ii) the emission of smoke or dust from the development, or

(iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and

(c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.

Appendix B

Intersection Traffic Survey Details

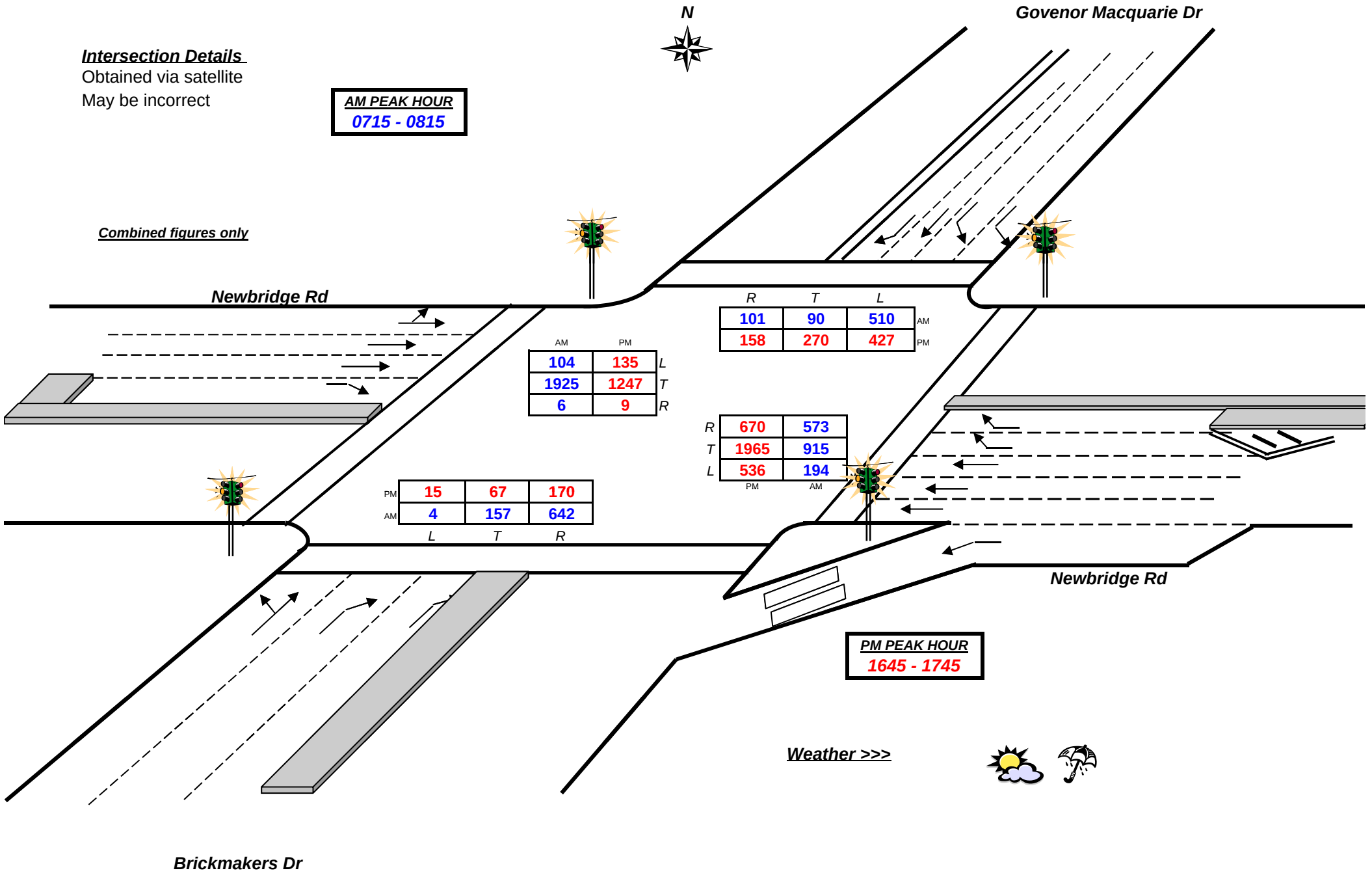
R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMM
Job No/Name : 5958 MOOREBANK Brickmakers Dr
Day/Date : Tuesday 1st March 2016

Intersection Details
Obtained via satellite
May be incorrect

AM PEAK HOUR
0715 - 0815

Combined figures only



	AM	PM	
	104	135	L
	1925	1247	T
	6	9	R

	R	T	L	
	101	90	510	AM
	158	270	427	PM

PM	15	67	170
AM	4	157	642
	L	T	R

R	670	573
T	1965	915
L	536	194
	PM	AM

PM PEAK HOUR
1645 - 1745

Weather >>>

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMM
Job No/Name : 5958 MOOREBANK Brickmakers Dr
Day/Date : Tuesday 1st March 2016

Lights

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0615	93	11	12	20	477	0	3	11	124	39	156	39	**985**
0615 - 0630	97	12	12	21	518	3	1	16	140	40	164	54	**1078**
0630 - 0645	97	11	19	27	504	0	1	21	127	51	204	60	**1122**
0645 - 0700	110	11	10	19	476	3	2	26	133	68	204	104	**1166**
0700 - 0715	93	15	13	18	468	1	0	25	136	51	184	103	**1107**
0715 - 0730	110	15	17	25	519	2	0	31	146	46	200	141	**1252**
0730 - 0745	119	18	14	17	450	3	1	36	179	51	200	103	**1191**
0745 - 0800	142	22	16	25	473	0	0	53	176	50	227	153	**1337**
0800 - 0815	114	35	23	19	449	1	3	36	140	46	233	151	**1250**
0815 - 0830	116	23	20	17	439	1	1	55	126	36	234	134	**1202**
0830 - 0845	103	42	22	35	358	2	1	70	177	41	231	161	**1243**
0845 - 0900	107	36	22	59	316	5	2	62	105	40	222	154	**1130**
Period End	**1301**	**251**	**200**	**302**	**5447**	**21**	**15**	**442**	**1709**	**559**	**2459**	**1357**	**14063**

Lights

Peak Time	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0700	397	45	53	87	1975	6	7	74	524	198	728	257	**4351**
0615 - 0715	397	49	54	85	1966	7	4	88	536	210	756	321	**4473**
0630 - 0730	410	52	59	89	1967	6	3	103	542	216	792	408	**4647**
0645 - 0745	432	59	54	79	1913	9	3	118	594	216	788	451	**4716**
0700 - 0800	464	70	60	85	1910	6	1	145	637	198	811	500	**4887**
0715 - 0815	485	90	70	86	1891	6	4	156	641	193	860	548	**5030**
0730 - 0830	491	98	73	78	1811	5	5	180	621	183	894	541	**4980**
0745 - 0845	475	122	81	96	1719	4	5	214	619	173	925	599	**5032**
0800 - 0900	440	136	87	130	1562	9	7	223	548	163	920	600	**4825**
PEAK HOUR	**485**	**90**	**70**	**86**	**1891**	**6**	**4**	**156**	**641**	**193**	**860**	**548**	**5030**

Heavies

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0615	4	0	6	2	10	0	0	0	0	0	10	4	**36**
0615 - 0630	6	0	8	2	9	0	0	0	0	0	15	5	**45**
0630 - 0645	6	0	10	3	11	0	0	0	0	0	16	6	**52**
0645 - 0700	3	0	5	8	9	0	0	0	0	1	13	6	**45**
0700 - 0715	5	1	3	3	13	0	0	0	0	0	10	2	**37**
0715 - 0730	5	0	8	3	8	0	0	1	0	0	16	10	**51**
0730 - 0745	6	0	8	6	7	0	0	0	0	1	15	4	**47**
0745 - 0800	7	0	9	2	10	0	0	0	0	0	14	6	**48**
0800 - 0815	7	0	6	7	9	0	0	0	1	0	10	5	**45**
0815 - 0830	5	0	5	9	5	0	0	0	0	0	7	9	**40**
0830 - 0845	5	1	5	7	13	0	0	0	0	0	10	11	**52**
0845 - 0900	7	0	4	8	12	0	0	0	0	0	4	8	**43**
Period End	**66**	**2**	**77**	**60**	**116**	**0**	**0**	**1**	**1**	**2**	**140**	**76**	**541**

Heavies

Peak Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0700	19	0	29	15	39	0	0	0	0	1	54	21	**178**
0615 - 0715	20	1	26	16	42	0	0	0	0	1	54	19	**179**
0630 - 0730	19	1	26	17	41	0	0	1	0	1	55	24	**185**
0645 - 0745	19	1	24	20	37	0	0	1	0	2	54	22	**180**
0700 - 0800	23	1	28	14	38	0	0	1	0	1	55	22	**183**
0715 - 0815	25	0	31	18	34	0	0	1	1	1	55	25	**191**
0730 - 0830	25	0	28	24	31	0	0	0	1	1	46	24	**180**
0745 - 0845	24	1	25	25	37	0	0	0	1	0	41	31	**185**
0800 - 0900	24	1	20	31	39	0	0	0	1	0	31	33	**180**
PEAK HOUR	**25**	**0**	**31**	**18**	**34**	**0**	**0**	**1**	**1**	**1**	**55**	**25**	**191**

Combined

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0615	97	11	18	22	487	0	3	11	124	39	166	43	**1021**
0615 - 0630	103	12	20	23	527	3	1	16	140	40	179	59	**1123**
0630 - 0645	103	11	29	30	515	0	1	21	127	51	220	66	**1174**
0645 - 0700	113	11	15	27	485	3	2	26	133	69	217	110	**1211**
0700 - 0715	98	16	16	21	481	1	0	25	136	51	194	105	**1144**
0715 - 0730	115	15	25	28	527	2	0	32	146	46	216	151	**1303**
0730 - 0745	125	18	22	23	457	3	1	36	179	52	215	107	**1238**
0745 - 0800	149	22	25	27	483	0	0	53	176	50	241	159	**1385**
0800 - 0815	121	35	29	26	458	1	3	36	141	46	243	156	**1295**
0815 - 0830	121	23	25	26	444	1	1	55	126	36	241	143	**1242**
0830 - 0845	108	43	27	42	371	2	1	70	177	41	241	172	**1295**
0845 - 0900	114	36	26	67	328	5	2	62	105	40	226	162	**1173**
Period End	**1367**	**253**	**277**	**362**	**5563**	**21**	**15**	**443**	**1710**	**561**	**2599**	**1433**	**14604**

Combined

Peak Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
0600 - 0700	416	45	82	102	2014	6	7	74	524	199	782	278	**4529**
0615 - 0715	417	50	80	101	2008	7	4	88	536	211	810	340	**4652**
0630 - 0730	429	53	85	106	2008	6	3	104	542	217	847	432	**4832**
0645 - 0745	451	60	78	99	1950	9	3	119	594	218	842	473	**4896**
0700 - 0800	487	71	88	99	1948	6	1	146	637	199	866	522	**5070**
0715 - 0815	510	90	101	104	1925	6	4	157	642	194	915	573	**5221**
0730 - 0830	516	98	101	102	1842	5	5	180	622	184	940	565	**5160**
0745 - 0845	499	123	106	121	1756	4	5	214	620	173	966	630	**5217**
0800 - 0900	464	137	107	161	1601	9	7	223	549	163	951	633	**5005**
PEAK HOUR	**510**	**90**	**101**	**104**	**1925**	**6**	**4**	**157**	**642**	**194**	**915**	**573**	**5221**

R.O.A.R DATA

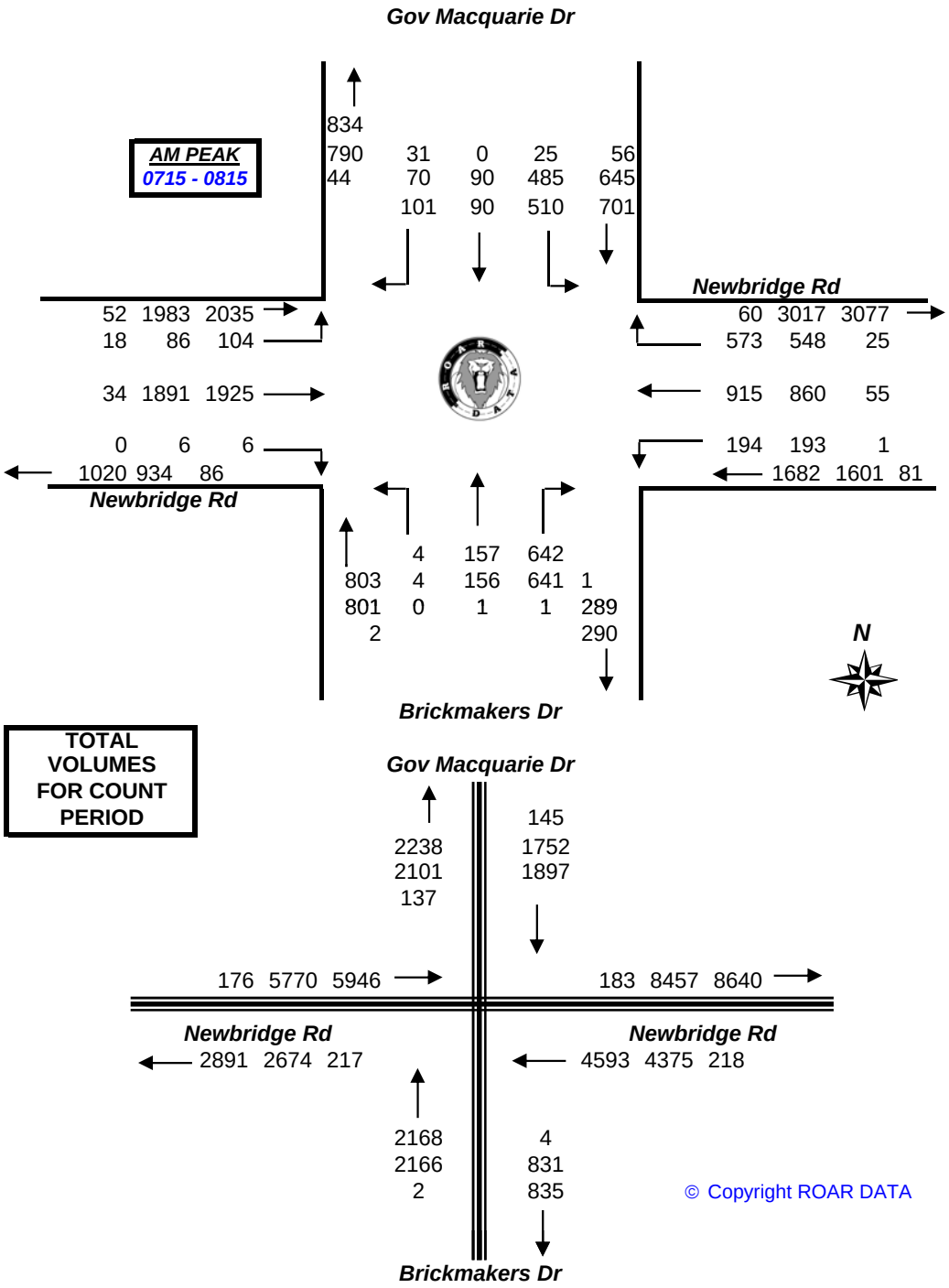
Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMM
Job No/Name : 5958 MOOREBANK Brickmakers Dr
Day/Date : Tuesday 1st March 2016

Peds	NORTH	WEST	SOUTH	EAST	
	Gov Macquarie Dr	*Newbridge Rd*	*Brickmakers Dr*	*Newbridge Rd*	
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
0600 - 0615	0	0	1	0	**1**
0615 - 0630	0	0	0	0	**0**
0630 - 0645	1	0	0	0	**1**
0645 - 0700	0	0	0	0	**0**
0700 - 0715	0	1	0	0	**1**
0715 - 0730	0	1	0	0	**1**
0730 - 0745	0	2	0	0	**2**
0745 - 0800	2	4	0	0	**6**
0800 - 0815	0	5	0	0	**5**
0815 - 0830	0	9	0	0	**9**
0830 - 0845	3	9	0	0	**12**
0845 - 0900	3	6	0	0	**9**
Period End	**9**	**37**	**1**	**0**	**47**

Peds	NORTH	WEST	SOUTH	EAST	
	Gov Macquarie Dr	*Newbridge Rd*	*Brickmakers Dr*	*Newbridge Rd*	
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
0600 - 0700	1	0	1	0	**2**
0615 - 0715	1	1	0	0	**2**
0630 - 0730	1	2	0	0	**3**
0645 - 0745	0	4	0	0	**4**
0700 - 0800	2	8	0	0	**10**
0715 - 0815	2	12	0	0	**14**
0730 - 0830	2	20	0	0	**22**
0745 - 0845	5	27	0	0	**32**
0800 - 0900	6	29	0	0	**35**
PEAK HR	**2**	**12**	**0**	**0**	**14**



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMM
Job No/Name : 5958 MOOREBANK Brickmakers Dr
Day/Date : Tuesday 1st March 2016

Lights

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1515	62	57	31	44	280	7	5	12	58	117	341	139	**1153**
1515 - 1530	88	93	30	37	306	17	9	18	40	128	426	180	**1372**
1530 - 1545	84	66	47	42	347	1	2	18	58	156	429	137	**1387**
1545 - 1600	123	53	39	40	299	2	5	24	67	137	428	154	**1371**
1600 - 1615	88	52	24	27	301	3	7	16	63	145	433	140	**1299**
1615 - 1630	90	58	36	29	310	4	7	24	63	125	406	119	**1271**
1630 - 1645	100	71	20	32	309	1	4	15	52	110	446	148	**1308**
1645 - 1700	108	73	48	31	285	2	3	14	43	117	451	161	**1336**
1700 - 1715	103	69	27	32	322	4	5	17	43	146	500	191	**1459**
1715 - 1730	101	69	29	23	350	1	4	18	37	133	500	122	**1387**
1730 - 1745	105	59	39	27	259	2	3	18	47	140	480	169	**1348**
1745 - 1800	72	50	30	31	320	7	3	19	50	144	455	165	**1346**
Period End	**1124**	**770**	**400**	**395**	**3688**	**51**	**57**	**213**	**621**	**1598**	**5295**	**1825**	**16037**

Lights

Peak Time	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1600	357	269	147	163	1232	27	21	72	223	538	1624	610	**5283**
1515 - 1615	383	264	140	146	1253	23	23	76	228	566	1716	611	**5429**
1530 - 1630	385	229	146	138	1257	10	21	82	251	563	1696	550	**5328**
1545 - 1645	401	234	119	128	1219	10	23	79	245	517	1713	561	**5249**
1600 - 1700	386	254	128	119	1205	10	21	69	221	497	1736	568	**5214**
1615 - 1715	401	271	131	124	1226	11	19	70	201	498	1803	619	**5374**
1630 - 1730	412	282	124	118	1266	8	16	64	175	506	1897	622	**5490**
1645 - 1745	417	270	143	113	1216	9	15	67	170	536	1931	643	**5530**
1700 - 1800	381	247	125	113	1251	14	15	72	177	563	1935	647	**5540**
PEAK HOUR	**417**	**270**	**143**	**113**	**1216**	**9**	**15**	**67**	**170**	**536**	**1931**	**643**	**5530**

Heavies

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1515	7	0	5	8	15	0	0	0	0	1	14	12	**62**
1515 - 1530	5	0	6	7	19	0	0	0	0	0	12	9	**58**
1530 - 1545	5	0	6	10	11	0	0	0	0	0	6	13	**51**
1545 - 1600	4	0	5	5	8	0	0	0	0	1	9	12	**44**
1600 - 1615	3	0	8	7	8	0	0	0	1	0	8	10	**45**
1615 - 1630	2	0	3	5	10	0	0	0	0	0	10	8	**38**
1630 - 1645	6	0	9	6	11	0	0	0	0	0	10	3	**45**
1645 - 1700	0	0	5	6	4	0	0	0	0	0	11	9	**35**
1700 - 1715	3	0	4	3	7	0	0	0	0	0	7	8	**32**
1715 - 1730	3	0	2	7	12	0	0	0	0	0	9	6	**39**
1730 - 1745	4	0	4	6	8	0	0	0	0	0	7	4	**33**
1745 - 1800	2	0	1	0	7	0	0	0	0	0	1	3	**14**
Period End	**44**	**0**	**58**	**70**	**120**	**0**	**0**	**0**	**1**	**2**	**104**	**97**	**496**

Heavies

Peak Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1600	21	0	22	30	53	0	0	0	0	2	41	46	**215**
1515 - 1615	17	0	25	29	46	0	0	0	1	1	35	44	**198**
1530 - 1630	14	0	22	27	37	0	0	0	1	1	33	43	**178**
1545 - 1645	15	0	25	23	37	0	0	0	1	1	37	33	**172**
1600 - 1700	11	0	25	24	33	0	0	0	1	0	39	30	**163**
1615 - 1715	11	0	21	20	32	0	0	0	0	0	38	28	**150**
1630 - 1730	12	0	20	22	34	0	0	0	0	0	37	26	**151**
1645 - 1745	10	0	15	22	31	0	0	0	0	0	34	27	**139**
1700 - 1800	12	0	11	16	34	0	0	0	0	0	24	21	**118**
PEAK HOUR	**10**	**0**	**15**	**22**	**31**	**0**	**0**	**0**	**0**	**0**	**34**	**27**	**139**

Combined

Time Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1515	69	57	36	52	295	7	5	12	58	118	355	151	**1215**
1515 - 1530	93	93	36	44	325	17	9	18	40	128	438	189	**1430**
1530 - 1545	89	66	53	52	358	1	2	18	58	156	435	150	**1438**
1545 - 1600	127	53	44	45	307	2	5	24	67	138	437	166	**1415**
1600 - 1615	91	52	32	34	309	3	7	16	64	145	441	150	**1344**
1615 - 1630	92	58	39	34	320	4	7	24	63	125	416	127	**1309**
1630 - 1645	106	71	29	38	320	1	4	15	52	110	456	151	**1353**
1645 - 1700	108	73	53	37	289	2	3	14	43	117	462	170	**1371**
1700 - 1715	106	69	31	35	329	4	5	17	43	146	507	199	**1491**
1715 - 1730	104	69	31	30	362	1	4	18	37	133	509	128	**1426**
1730 - 1745	109	59	43	33	267	2	3	18	47	140	487	173	**1381**
1745 - 1800	74	50	31	31	327	7	3	19	50	144	456	168	**1360**
Period End	**1168**	**770**	**458**	**465**	**3808**	**51**	**57**	**213**	**622**	**1600**	**5399**	**1922**	**16533**

Combined

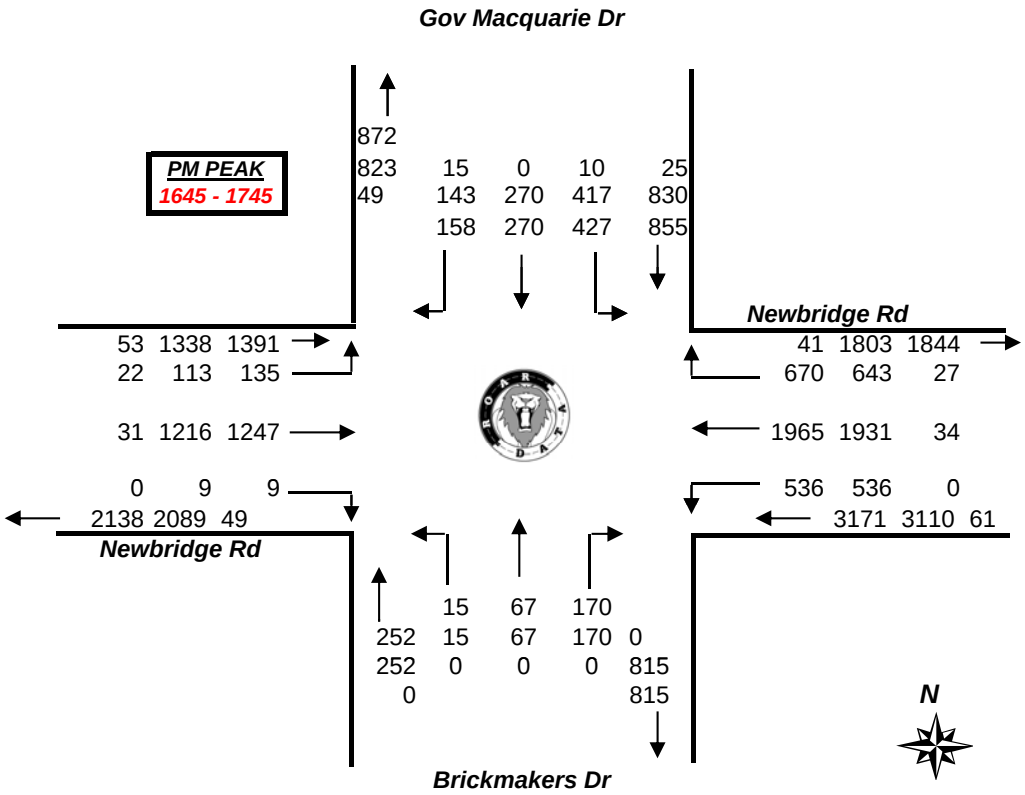
Peak Per	NORTH Gov Macquarie Dr L	T	R	WEST Newbridge Rd L	T	R	SOUTH Brickmakers Dr L	T	R	EAST Newbridge Rd L	T	R	TOT
1500 - 1600	378	269	169	193	1285	27	21	72	223	540	1665	656	**5498**
1515 - 1615	400	264	165	175	1299	23	23	76	229	567	1751	655	**5627**
1530 - 1630	399	229	168	165	1294	10	21	82	252	564	1729	593	**5506**
1545 - 1645	416	234	144	151	1256	10	23	79	246	518	1750	594	**5421**
1600 - 1700	397	254	153	143	1238	10	21	69	222	497	1775	598	**5377**
1615 - 1715	412	271	152	144	1258	11	19	70	201	498	1841	647	**5524**
1630 - 1730	424	282	144	140	1300	8	16	64	175	506	1934	648	**5641**
1645 - 1745	427	270	158	135	1247	9	15	67	170	536	1965	670	**5669**
1700 - 1800	393	247	136	129	1285	14	15	72	177	563	1959	668	**5658**
PEAK HOUR	**427**	**270**	**158**	**135**	**1247**	**9**	**15**	**67**	**170**	**536**	**1965**	**670**	**5669**

R.O.A.R DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

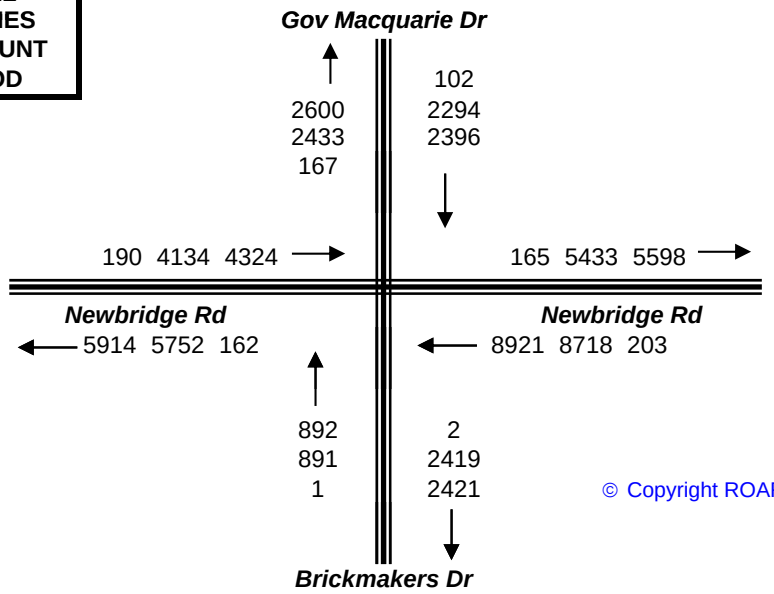
Client : EMM
Job No/Name : 5958 MOOREBANK Brickmakers Dr
Day/Date : Tuesday 1st March 2016

Peds	NORTH	WEST	SOUTH	EAST	
	Gov Macquarie Dr	*Newbridge Rd*	*Brickmakers Dr*	*Newbridge Rd*	
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1500 - 1515	0	0	0	0	**0**
1515 - 1530	1	8	0	0	**9**
1530 - 1545	0	8	0	0	**8**
1545 - 1600	2	2	1	0	**5**
1600 - 1615	1	2	0	0	**3**
1615 - 1630	0	3	0	0	**3**
1630 - 1645	0	1	0	0	**1**
1645 - 1700	0	0	0	0	**0**
1700 - 1715	2	4	2	2	**10**
1715 - 1730	0	1	0	0	**1**
1730 - 1745	0	1	0	0	**1**
1745 - 1800	0	2	1	1	**4**
Period End	**6**	**32**	**4**	**3**	**45**

Peds	NORTH	WEST	SOUTH	EAST	
	Gov Macquarie Dr	*Newbridge Rd*	*Brickmakers Dr*	*Newbridge Rd*	
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1500 - 1600	3	18	1	0	**22**
1515 - 1615	4	20	1	0	**25**
1530 - 1630	3	15	1	0	**19**
1545 - 1645	3	8	1	0	**12**
1600 - 1700	1	6	0	0	**7**
1615 - 1715	2	8	2	2	**14**
1630 - 1730	2	6	2	2	**12**
1645 - 1745	2	6	2	2	**12**
1700 - 1800	2	8	3	3	**16**
PEAK HR	**2**	**6**	**2**	**2**	**12**



TOTAL VOLUMES FOR COUNT PERIOD



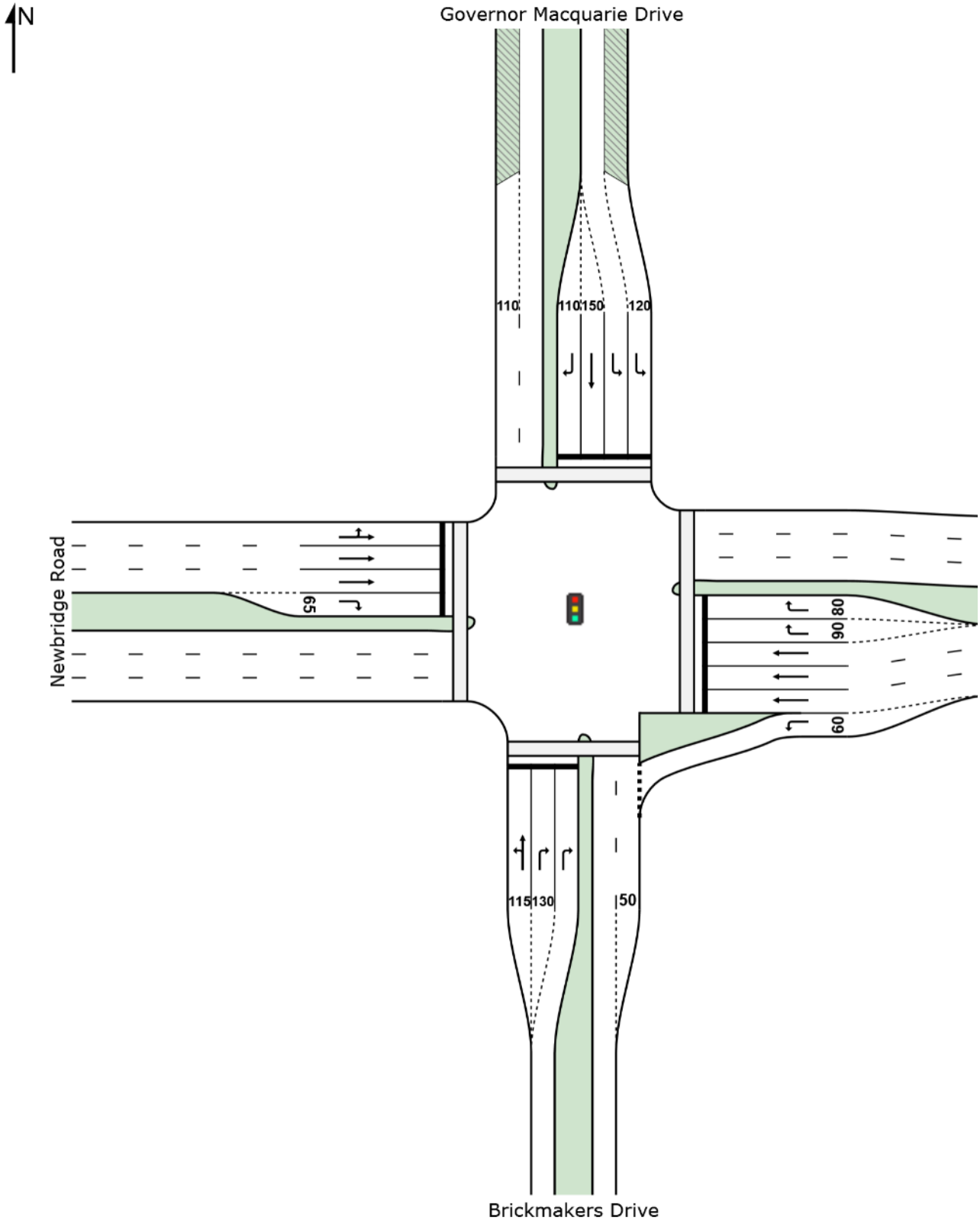
Appendix C

Newbridge Road Intersection SIDRA results

SITE LAYOUT

Site: 101 [Newbridge Road & Brickmakers intersection 2018 AM Peak]

Existing Four Way Intersection
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 101 [Newbridge Road & Brickmakers intersection 2018 AM Peak]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	45	0.0	0.622	64.6	LOS E	15.6	109.8	0.97	0.82	29.1
2	T1	186	0.6	0.622	60.0	LOS E	15.6	109.8	0.97	0.82	29.1
3	R2	717	0.1	1.115	201.0	LOS F	46.8	328.0	1.00	1.40	13.9
Approach		948	0.2	1.115	166.8	LOS F	46.8	328.0	0.99	1.26	15.9
East: Newbridge Road											
4	L2	223	0.5	0.142	7.7	LOS A	1.9	13.5	0.17	0.63	52.3
5	T1	963	6.0	0.347	24.5	LOS B	14.1	103.6	0.65	0.57	47.8
6	R2	603	4.4	1.124	156.8	LOS F	47.3	343.8	1.00	1.10	17.2
Approach		1789	4.8	1.124	67.0	LOS E	47.3	343.8	0.71	0.76	30.0
North: Governor Macquarie Drive											
7	L2	537	4.9	1.122	210.0	LOS F	35.4	258.0	1.00	1.26	13.5
8	T1	104	0.0	0.401	66.3	LOS E	7.1	49.5	0.96	0.77	27.7
9	R2	106	30.7	0.616	76.8	LOS F	7.7	68.1	1.00	0.80	25.4
Approach		747	7.9	1.122	171.0	LOS F	35.4	258.0	0.99	1.13	15.7
West: Newbridge Road											
10	L2	109	17.3	1.104	185.7	LOS F	92.2	668.4	1.00	1.51	15.4
11	T1	2026	1.8	1.104	179.3	LOS F	94.4	670.6	1.00	1.55	15.9
12	R2	25	0.0	0.340	87.0	LOS F	1.9	13.4	1.00	0.71	24.5
Approach		2161	2.5	1.104	178.6	LOS F	94.4	670.6	1.00	1.54	15.9
All Vehicles		5646	3.6	1.124	140.2	LOS F	94.4	670.6	0.91	1.19	18.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	26.4	LOS C	0.1	0.1	0.59	0.59
P2	East Full Crossing	11	69.2	LOS F	0.0	0.0	0.96	0.96
P3	North Full Crossing	21	43.4	LOS E	0.1	0.1	0.76	0.76
P4	West Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
All Pedestrians		105	54.1	LOS E			0.84	0.84

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 [Newbridge Road & Brickmakers intersection 2018 PM Peak]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	33	0.0	0.379	66.5	LOS E	7.4	51.8	0.94	0.76	28.5
2	T1	79	0.0	0.379	62.0	LOS E	7.4	51.8	0.94	0.76	28.6
3	R2	196	0.0	0.791	85.6	LOS F	7.6	53.5	1.00	0.89	24.5
Approach		307	0.0	0.791	77.5	LOS F	7.6	53.5	0.98	0.85	25.9
East: Newbridge Road											
4	L2	611	0.0	0.446	13.3	LOS A	14.8	103.4	0.42	0.73	48.5
5	T1	2068	1.7	0.861	32.9	LOS C	56.3	400.2	0.82	0.79	43.1
6	R2	705	4.0	0.923	69.3	LOS E	32.1	232.3	0.94	0.91	29.0
Approach		3384	1.9	0.923	37.0	LOS C	56.3	400.2	0.77	0.80	39.8
North: Governor Macquarie Drive											
7	L2	449	2.3	0.636	65.9	LOS E	15.2	108.9	0.98	0.83	29.0
8	T1	306	0.0	0.813	68.1	LOS E	22.6	158.4	1.00	0.92	27.3
9	R2	166	9.5	0.896	91.3	LOS F	13.8	104.1	1.00	0.97	24.0
Approach		922	2.9	0.896	71.2	LOS F	22.6	158.4	0.99	0.89	27.4
West: Newbridge Road											
10	L2	142	16.3	0.915	78.9	LOS F	39.9	294.7	1.00	1.03	27.6
11	T1	1313	2.5	0.915	71.6	LOS F	41.4	295.9	1.00	1.04	29.5
12	R2	56	0.0	0.751	91.0	LOS F	4.4	31.0	1.00	0.82	23.9
Approach		1511	3.7	0.915	73.0	LOS F	41.4	295.9	1.00	1.03	29.1
All Vehicles		6124	2.4	0.923	53.0	LOS D	56.3	400.2	0.87	0.87	33.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	22.4	LOS C	0.0	0.0	0.55	0.55
P2	East Full Crossing	11	66.3	LOS F	0.0	0.0	0.94	0.94
P3	North Full Crossing	21	49.7	LOS E	0.1	0.1	0.81	0.81
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	55.7	LOS E			0.85	0.85

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 [Newbridge Road & Brickmakers intersection 2018 AM Peak construction via Newbridge Rd]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	45	0.0	0.622	64.6	LOS E	15.6	109.8	0.97	0.82	29.1
2	T1	186	0.6	0.622	60.0	LOS E	15.6	109.8	0.97	0.82	29.1
3	R2	717	0.1	1.115	201.0	LOS F	46.8	328.0	1.00	1.40	13.9
Approach		948	0.2	1.115	166.8	LOS F	46.8	328.0	0.99	1.26	15.9
East: Newbridge Road											
4	L2	226	0.5	0.144	7.7	LOS A	2.0	13.7	0.17	0.63	52.3
5	T1	967	6.1	0.349	24.5	LOS B	14.2	104.3	0.66	0.57	47.8
6	R2	606	4.5	1.102	145.6	LOS F	45.2	328.9	1.00	1.07	18.1
Approach		1800	4.9	1.102	63.2	LOS E	45.2	328.9	0.71	0.75	31.0
North: Governor Macquarie Drive											
7	L2	537	4.9	1.122	210.0	LOS F	35.4	258.0	1.00	1.26	13.5
8	T1	104	0.0	0.401	66.3	LOS E	7.1	49.5	0.96	0.77	27.7
9	R2	106	30.7	0.616	76.8	LOS F	7.7	68.1	1.00	0.80	25.4
Approach		747	7.9	1.122	171.0	LOS F	35.4	258.0	0.99	1.13	15.7
West: Newbridge Road											
10	L2	109	17.3	1.126	204.3	LOS F	96.5	699.3	1.00	1.58	14.3
11	T1	2026	1.8	1.126	197.9	LOS F	98.8	701.8	1.00	1.62	14.7
12	R2	25	0.0	0.340	87.0	LOS F	1.9	13.4	1.00	0.71	24.5
Approach		2161	2.5	1.126	196.9	LOS F	98.8	701.8	1.00	1.61	14.7
All Vehicles		5657	3.6	1.126	145.9	LOS F	98.8	701.8	0.91	1.21	18.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	26.4	LOS C	0.1	0.1	0.59	0.59
P2	East Full Crossing	11	69.2	LOS F	0.0	0.0	0.96	0.96
P3	North Full Crossing	21	44.1	LOS E	0.1	0.1	0.77	0.77
P4	West Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
All Pedestrians		105	54.2	LOS E			0.84	0.84

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 [Newbridge Road & Brickmakers intersection 2018 PM Peak construction via Newbridge Rd]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	33	0.0	0.379	66.5	LOS E	7.4	51.8	0.94	0.76	28.5
2	T1	79	0.0	0.379	62.0	LOS E	7.4	51.8	0.94	0.76	28.6
3	R2	196	0.0	0.791	85.6	LOS F	7.6	53.5	1.00	0.89	24.5
Approach		307	0.0	0.791	77.5	LOS F	7.6	53.5	0.98	0.85	25.9
East: Newbridge Road											
4	L2	620	0.0	0.453	13.4	LOS A	15.0	105.0	0.42	0.73	48.4
5	T1	2081	1.8	0.868	34.2	LOS C	57.9	411.5	0.82	0.80	42.4
6	R2	715	4.3	0.926	69.2	LOS E	32.8	237.8	0.94	0.92	29.0
Approach		3416	2.0	0.926	37.7	LOS C	57.9	411.5	0.77	0.81	39.5
North: Governor Macquarie Drive											
7	L2	449	2.3	0.636	65.9	LOS E	15.2	108.9	0.98	0.83	29.0
8	T1	306	0.0	0.813	68.1	LOS E	22.6	158.4	1.00	0.92	27.3
9	R2	166	9.5	0.896	91.3	LOS F	13.8	104.1	1.00	0.97	24.0
Approach		922	2.9	0.896	71.2	LOS F	22.6	158.4	0.99	0.89	27.4
West: Newbridge Road											
10	L2	142	16.3	0.936	85.7	LOS F	41.8	308.7	1.00	1.07	26.2
11	T1	1313	2.5	0.936	78.4	LOS F	43.4	310.1	1.00	1.08	28.0
12	R2	56	0.0	0.751	91.0	LOS F	4.4	31.0	1.00	0.82	23.9
Approach		1511	3.7	0.936	79.6	LOS F	43.4	310.1	1.00	1.07	27.7
All Vehicles		6156	2.4	0.936	55.0	LOS D	57.9	411.5	0.87	0.89	33.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	22.4	LOS C	0.0	0.0	0.55	0.55
P2	East Full Crossing	11	66.3	LOS F	0.0	0.0	0.94	0.94
P3	North Full Crossing	21	50.5	LOS E	0.1	0.1	0.82	0.82
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	55.8	LOS E			0.85	0.85

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 [Newbridge Road & Brickmakers intersection 2018 AM Peak Construction via Link Road]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	47	2.2	0.633	64.8	LOS E	15.9	112.0	0.97	0.82	28.9
2	T1	187	0.6	0.633	60.2	LOS E	15.9	112.0	0.97	0.82	29.1
3	R2	719	0.3	1.119	204.7	LOS F	47.4	332.5	1.00	1.41	13.7
Approach		954	0.4	1.119	169.3	LOS F	47.4	332.5	0.99	1.27	15.8
East: Newbridge Road											
4	L2	229	0.9	0.148	7.8	LOS A	2.1	14.9	0.18	0.63	52.2
5	T1	963	6.0	0.353	25.1	LOS B	14.3	105.4	0.66	0.58	47.4
6	R2	603	4.4	1.124	156.8	LOS F	47.3	343.8	1.00	1.10	17.2
Approach		1796	4.8	1.124	67.1	LOS E	47.3	343.8	0.71	0.76	30.0
North: Governor Macquarie Drive											
7	L2	537	4.9	1.122	210.0	LOS F	35.4	258.0	1.00	1.26	13.5
8	T1	107	1.0	0.416	66.4	LOS E	7.3	51.6	0.96	0.77	27.7
9	R2	106	30.7	0.616	76.8	LOS F	7.7	68.1	1.00	0.80	25.4
Approach		751	8.0	1.122	170.6	LOS F	35.4	258.0	0.99	1.12	15.7
West: Newbridge Road											
10	L2	109	17.3	1.107	187.6	LOS F	92.9	673.4	1.00	1.52	15.2
11	T1	2026	1.8	1.107	181.4	LOS F	95.1	675.6	1.00	1.56	15.7
12	R2	32	3.3	0.373	85.8	LOS F	2.4	17.1	1.00	0.72	24.7
Approach		2167	2.6	1.107	180.4	LOS F	95.1	675.6	1.00	1.54	15.8
All Vehicles		5667	3.6	1.124	141.3	LOS F	95.1	675.6	0.91	1.19	18.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	27.0	LOS C	0.1	0.1	0.60	0.60
P2	East Full Crossing	11	69.2	LOS F	0.0	0.0	0.96	0.96
P3	North Full Crossing	21	43.4	LOS E	0.1	0.1	0.76	0.76
P4	West Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
All Pedestrians		105	54.2	LOS E			0.84	0.84

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 [Newbridge Road & Brickmakers intersection 2018 PM Peak Construction via Link Road]

Existing Four Way Intersection
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
1	L2	39	2.7	0.416	67.0	LOS E	8.1	57.5	0.95	0.77	28.2
2	T1	82	1.3	0.416	62.4	LOS E	8.1	57.5	0.95	0.77	28.4
3	R2	202	0.5	0.819	86.9	LOS F	8.0	56.1	1.00	0.92	24.3
Approach		323	1.0	0.819	78.3	LOS F	8.1	57.5	0.98	0.86	25.7
East: Newbridge Road											
4	L2	613	0.2	0.449	13.5	LOS A	14.8	104.0	0.42	0.73	48.4
5	T1	2068	1.7	0.863	33.3	LOS C	56.8	403.7	0.82	0.79	42.9
6	R2	705	4.0	0.926	69.9	LOS E	32.4	234.7	0.94	0.92	28.8
Approach		3386	1.9	0.926	37.3	LOS C	56.8	403.7	0.77	0.81	39.7
North: Governor Macquarie Drive											
7	L2	449	2.3	0.636	65.9	LOS E	15.2	108.9	0.98	0.83	29.0
8	T1	307	0.0	0.815	68.3	LOS E	22.8	159.3	1.00	0.93	27.3
9	R2	166	9.5	0.896	91.3	LOS F	13.8	104.1	1.00	0.97	24.0
Approach		923	2.9	0.896	71.3	LOS F	22.8	159.3	0.99	0.89	27.4
West: Newbridge Road											
10	L2	142	16.3	0.916	79.1	LOS F	40.0	295.6	1.00	1.03	27.5
11	T1	1313	2.5	0.916	71.9	LOS F	41.5	296.8	1.00	1.04	29.5
12	R2	58	1.8	0.789	92.1	LOS F	4.6	33.0	1.00	0.84	23.7
Approach		1513	3.8	0.916	73.3	LOS F	41.5	296.8	1.00	1.03	29.0
All Vehicles		6145	2.5	0.926	53.4	LOS D	56.8	403.7	0.87	0.88	33.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	21	22.4	LOS C	0.0	0.0	0.55	0.55
P2	East Full Crossing	11	66.3	LOS F	0.0	0.0	0.94	0.94
P3	North Full Crossing	21	49.7	LOS E	0.1	0.1	0.81	0.81
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	55.7	LOS E			0.85	0.85

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.

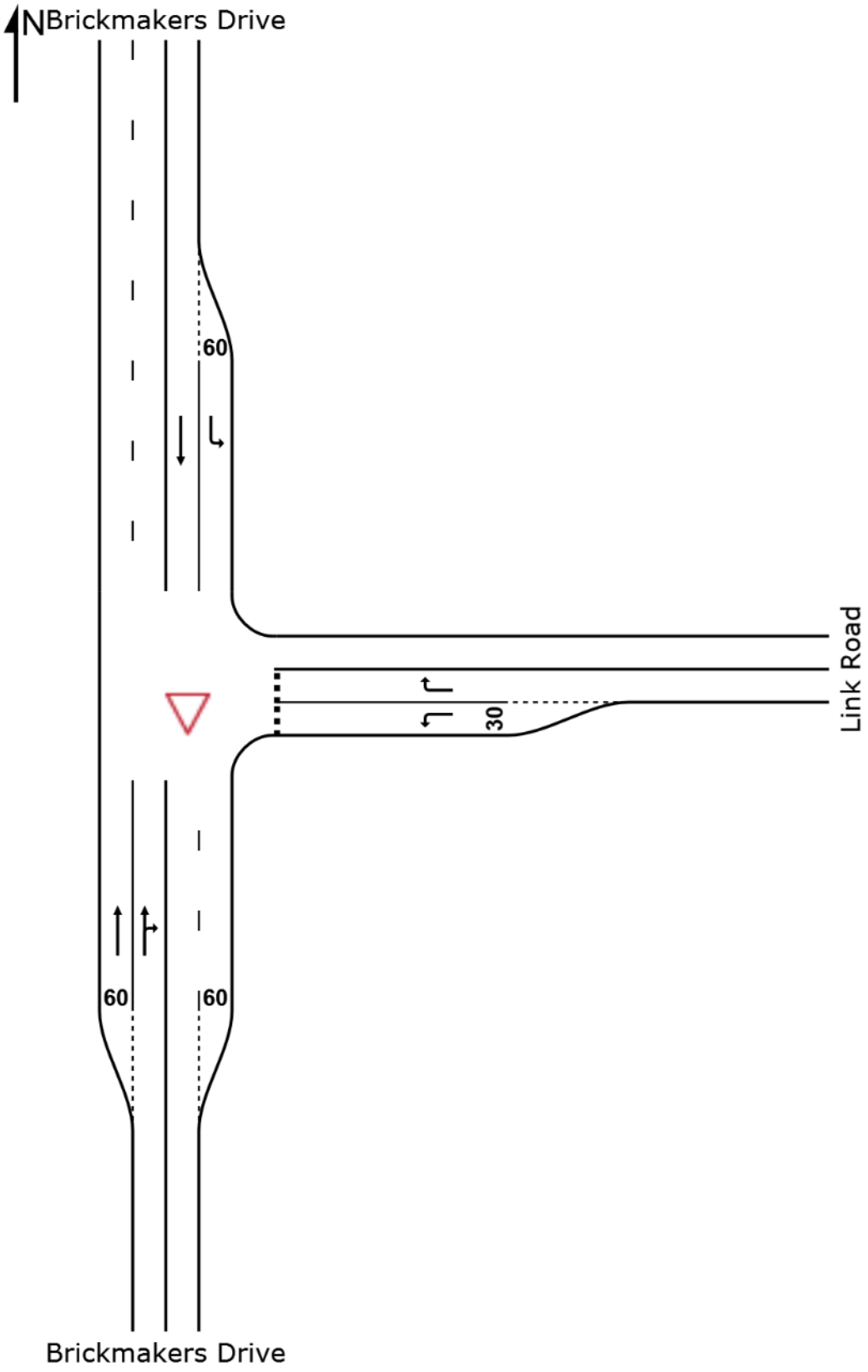
Appendix D

Link Road Intersection SIDRA results

SITE LAYOUT

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Am Peak]

New Intersection
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Am Peak]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	948	1.0	0.246	0.0	LOS A	0.0	0.2	0.00	0.00	50.0
3	R2	2	1.0	0.246	6.7	LOS A	0.0	0.2	0.01	0.00	49.5
Approach		951	1.0	0.246	0.0	NA	0.0	0.2	0.00	0.00	50.0
East: Link Road											
4	L2	2	1.0	0.002	6.0	LOS A	0.0	0.1	0.39	0.53	45.7
6	R2	2	20.0	0.019	35.4	LOS C	0.1	0.5	0.89	0.95	33.2
Approach		4	10.5	0.019	20.7	LOS B	0.1	0.5	0.64	0.74	38.5
North: Brickmakers Drive											
7	L2	2	20.0	0.001	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	353	1.0	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		355	1.1	0.182	0.0	NA	0.0	0.0	0.00	0.00	50.0
All Vehicles		1309	1.1	0.246	0.1	NA	0.1	0.5	0.00	0.00	49.9

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

MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Pm Peak]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	307	1.0	0.082	0.2	LOS A	0.1	0.6	0.02	0.00	49.8
3	R2	2	1.0	0.082	14.9	LOS B	0.1	0.6	0.05	0.01	49.0
Approach		309	1.0	0.082	0.3	NA	0.1	0.6	0.02	0.00	49.8
East: Link Road											
4	L2	2	1.0	0.007	13.5	LOS A	0.0	0.1	0.76	0.80	41.8
6	R2	2	20.0	0.026	47.2	LOS D	0.1	0.6	0.92	0.96	30.0
Approach		4	10.5	0.026	30.4	LOS C	0.1	0.6	0.84	0.88	35.0
North: Brickmakers Drive											
7	L2	2	20.0	0.001	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	973	1.0	0.502	0.1	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		975	1.0	0.502	0.1	NA	0.0	0.0	0.00	0.00	49.9
All Vehicles		1288	1.1	0.502	0.3	NA	0.1	0.6	0.01	0.00	49.8

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

MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Am Peak construction via Newbridge Rd]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	948	1.0	0.246	0.0	LOS A	0.0	0.2	0.00	0.00	50.0
3	R2	2	1.0	0.246	6.8	LOS A	0.0	0.2	0.01	0.00	49.5
Approach		951	1.0	0.246	0.0	NA	0.0	0.2	0.00	0.00	50.0
East: Link Road											
4	L2	2	1.0	0.002	6.0	LOS A	0.0	0.1	0.39	0.53	45.7
6	R2	2	20.0	0.019	35.6	LOS C	0.1	0.5	0.89	0.95	33.2
Approach		4	10.5	0.019	20.8	LOS B	0.1	0.5	0.64	0.74	38.5
North: Brickmakers Drive											
7	L2	2	20.0	0.001	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	356	1.0	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		358	1.1	0.184	0.0	NA	0.0	0.0	0.00	0.00	50.0
All Vehicles		1313	1.1	0.246	0.1	NA	0.1	0.5	0.00	0.00	49.9

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

MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Pm Peak construction via Newbridge Rd]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	307	1.0	0.082	0.3	LOS A	0.1	0.7	0.02	0.00	49.8
3	R2	2	1.0	0.082	15.1	LOS B	0.1	0.7	0.05	0.01	49.0
Approach		309	1.0	0.082	0.4	NA	0.1	0.7	0.03	0.00	49.8
East: Link Road											
4	L2	2	1.0	0.007	13.8	LOS A	0.0	0.1	0.76	0.81	41.7
6	R2	2	20.0	0.027	48.5	LOS D	0.1	0.6	0.92	0.96	29.7
Approach		4	10.5	0.027	31.1	LOS C	0.1	0.6	0.84	0.89	34.7
North: Brickmakers Drive											
7	L2	2	20.0	0.001	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	982	1.0	0.507	0.1	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		984	1.0	0.507	0.1	NA	0.0	0.0	0.00	0.00	49.9
All Vehicles		1298	1.1	0.507	0.3	NA	0.1	0.7	0.01	0.00	49.8

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

MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Am Peak Construction via Link Road]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	948	1.0	0.253	0.1	LOS A	0.2	1.4	0.02	0.01	49.9
3	R2	16	1.0	0.253	6.9	LOS A	0.2	1.4	0.05	0.02	49.2
Approach		964	1.0	0.253	0.2	NA	0.2	1.4	0.02	0.01	49.9
East: Link Road											
4	L2	5	1.0	0.006	6.0	LOS A	0.0	0.1	0.39	0.55	45.7
6	R2	5	20.0	0.050	37.6	LOS C	0.1	1.2	0.90	0.95	32.6
Approach		11	10.5	0.050	21.8	LOS B	0.1	1.2	0.64	0.75	38.0
North: Brickmakers Drive											
7	L2	16	20.0	0.010	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	353	1.0	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		368	1.8	0.182	0.2	NA	0.0	0.0	0.00	0.02	49.8
All Vehicles		1343	1.3	0.253	0.4	NA	0.2	1.4	0.02	0.02	49.7

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

MOVEMENT SUMMARY

Site: 102v [Brickmakers Drive & Link Road Intersection 2018 Pm Peak Construction via Link Road]

New Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Brickmakers Drive											
2	T1	307	1.0	0.087	0.6	LOS A	0.2	1.5	0.06	0.01	49.5
3	R2	5	1.0	0.087	14.8	LOS B	0.2	1.5	0.13	0.02	48.3
Approach		313	1.0	0.087	0.8	NA	0.2	1.5	0.06	0.01	49.4
East: Link Road											
4	L2	16	1.0	0.049	14.0	LOS A	0.1	1.0	0.77	0.89	41.6
6	R2	16	20.0	0.201	52.8	LOS D	0.6	4.9	0.94	0.98	28.7
Approach		32	10.5	0.201	33.4	LOS C	0.6	4.9	0.85	0.94	34.0
North: Brickmakers Drive											
7	L2	5	20.0	0.003	4.7	LOS A	0.0	0.0	0.00	0.52	46.3
8	T1	973	1.0	0.502	0.1	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		978	1.1	0.502	0.1	NA	0.0	0.0	0.00	0.00	49.9
All Vehicles		1322	1.3	0.502	1.1	NA	0.6	4.9	0.03	0.03	49.2

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