

Planning Proposal for a
Proposed Mixed-Use Development

**64-68 The Grand Parade,
Brighton Le Sands**

TRAFFIC AND PARKING ASSESSMENT REPORT

22 July 2015

Ref 15342

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Document Verification

Job Number:	15342				
Location:	64-68 The Grand Parade, Brighton-Le-Sands				
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		TY	15/07/15	RV	16/07/15
Draft 02	Edit Report	RV	22/07/15	RV	21/07/15

1. INTRODUCTION

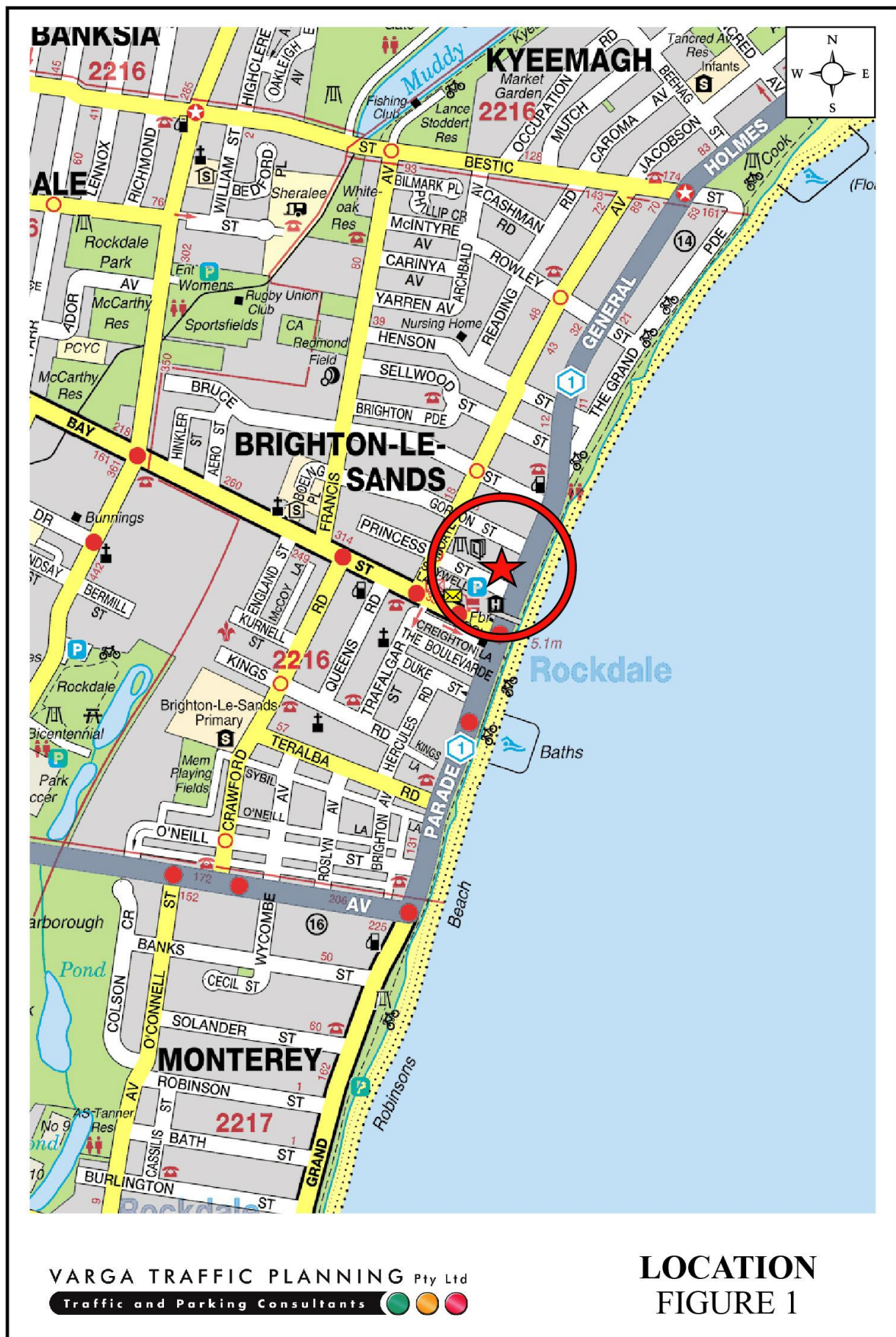
This report has been prepared to accompany a planning proposal to Rockdale City Council for a mixed-use development proposal to be located at 64-68 The Grand Parade, Brighton-Le-Sands (Figures 1 and 2).

The planning proposal seeks approval for increased height (maximum 40m) and floor space (maximum 4.8:1) capable of accommodating a new residential apartment building with a ground floor retail/commercial component behind the existing terrace houses that front The Grand Parade.

Car parking will be accommodated in a new basement car parking area, which will include the allocation of car spaces for the existing residential terraces. The car parking areas will ultimately be designed to comply with the relevant Australian Standards and also Council's requirements.

The purpose of this report is to assess the traffic and parking implications of the planning proposal and to that end this report:

- describes the site and provides details of the planning proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site.



2. PROPOSED DEVELOPMENT

Site

The subject site is located at the north-western corner of The Grande Parade and Princess Street intersection. The site has a street frontage approximately 27m in length to The Grand Parade, approximately 42m in length to Princess Street and approximately 27m in length to the rear service lane. The site occupies an area of approximately 1,089m².

The subject site is currently occupied by five residential terrace houses, each with respective vehicular access driveways to the rear service lane.

Proposed Development

The planning proposal seeks approval for increased height (maximum 40m) and floor space ratio (maximum 4.8:1) capable of accommodating a new residential apartment building with a ground floor retail/commercial component behind the existing terrace houses that front onto The Grand Parade.

A total of 35 residential apartments are envisaged in the new building as follows:

2 bedroom apartments:	21
3 bedroom apartments:	14
TOTAL APARTMENTS:	35

A commercial/retail component is also proposed on the ground and first floor levels, with a cumulative floor area of 989m².

Off-street car parking is to be provided in a basement car parking area, and will ultimately comply with Council's requirements, subject to the number of basement levels being excavated. Vehicular access to the car parking facilities will be provided via a new entry/exit driveway located at the northern end of the Princess Lane site frontage.

Typical plans of the development envisaged by the planning proposal have been prepared by *Architecture & Building Works* and are reproduced in Appendix A.

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

The Grand Parade is classified by the RMS as a *State Road* and provides the key north-south road link in the area, linking Brighton-Le Sands to Dolls Point. It typically carries two traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a centre median island. Clearway restrictions apply along both sides of the road during commuter peak periods.

Bay Street is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Rockdale to Brighton-Le Sands. It typically carries two traffic lanes in each direction in the vicinity of the site with turning bays provided at key locations.

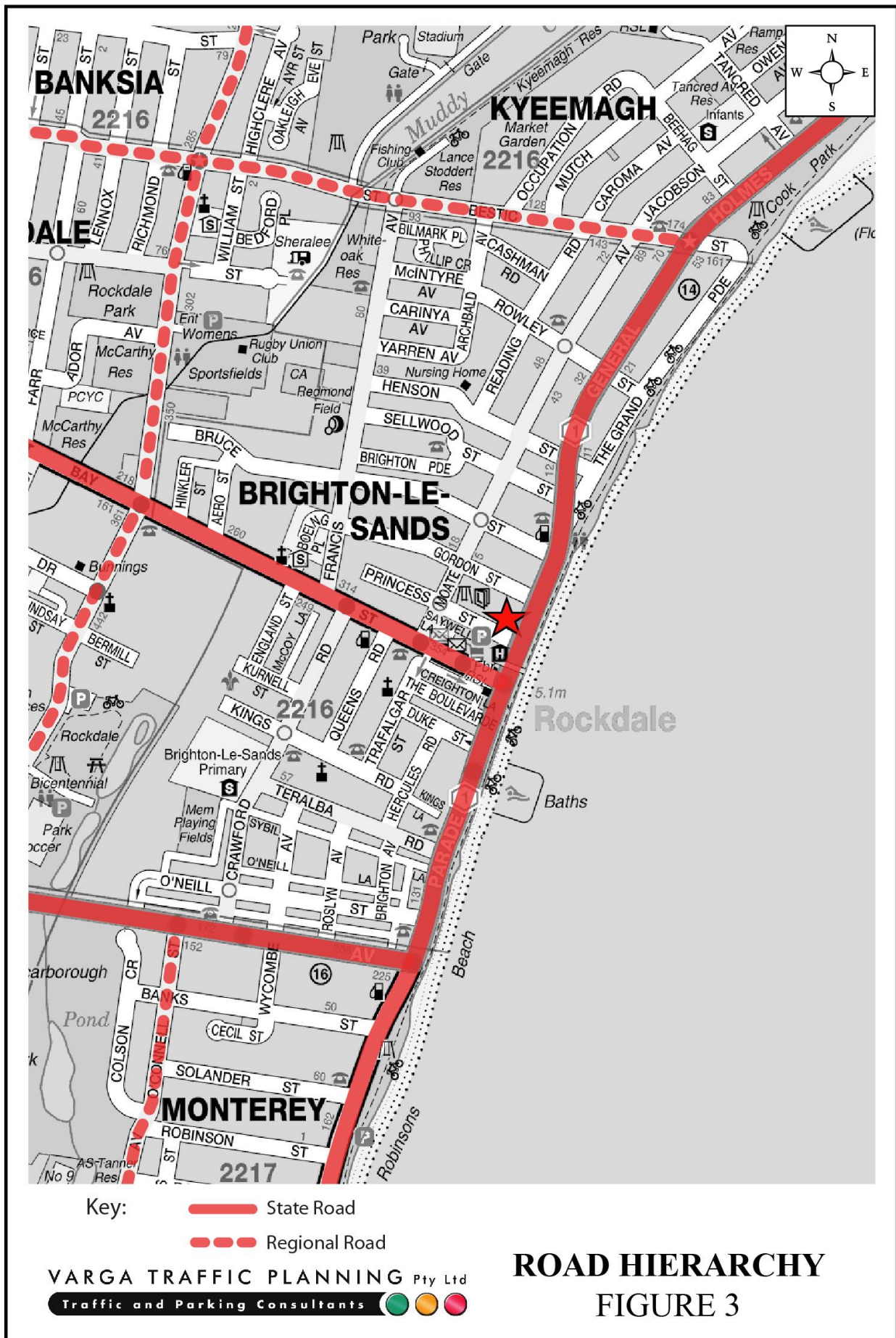
Princess Street is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted along both sides of the road.

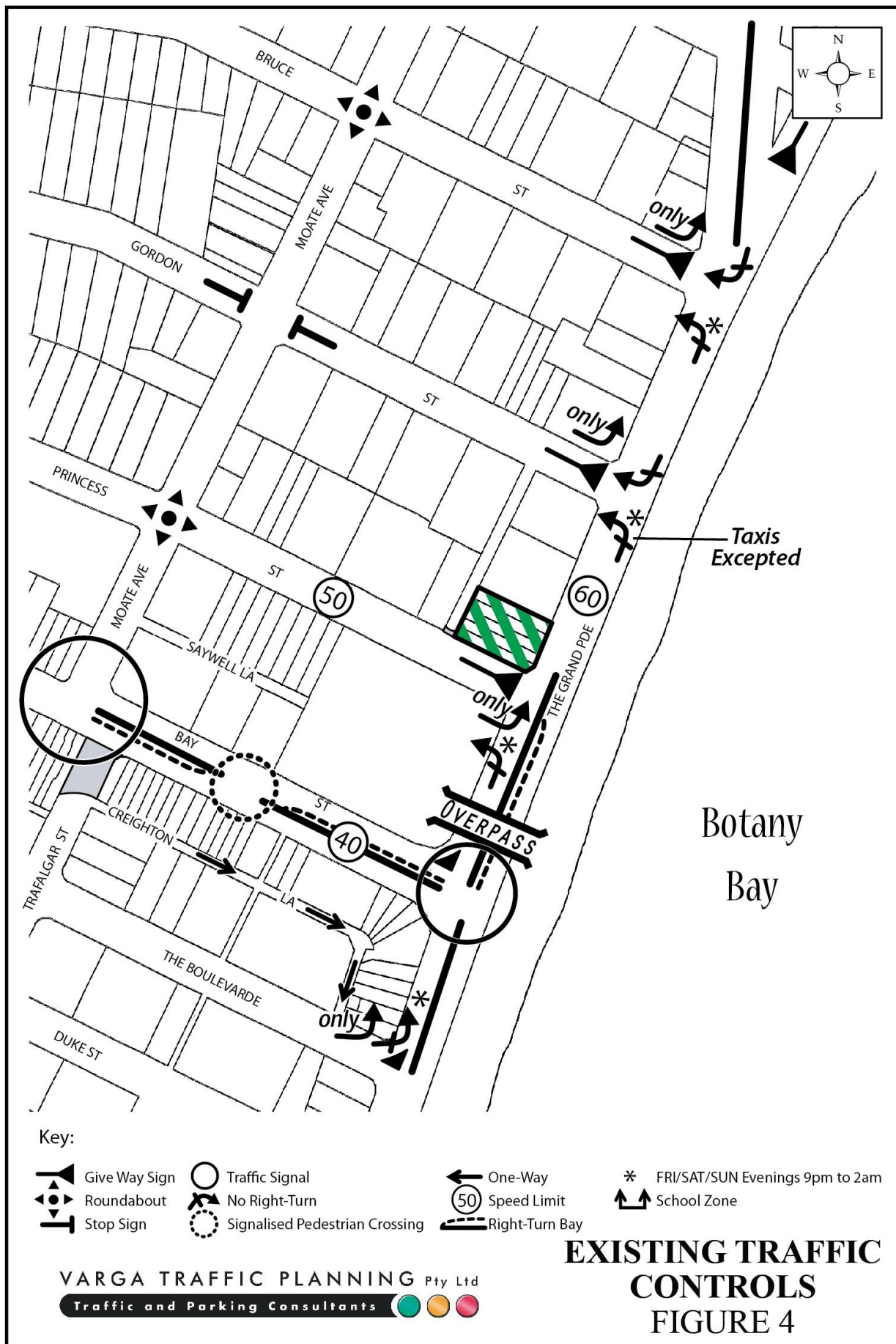
There is also a service lane behind the site, between Princess Street and Gordon Street, primarily providing vehicular access to those properties fronting onto The Grand Parade. The service lane is accessed via Gordon Street and is closed at the Princess Street end. Kerbside parking is generally prohibited along both sides of the lane.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to The Grand Parade





- a 50 km/h SPEED LIMIT which applies to Princess Street and all other local roads in the area
- a 40 km/h SPEED LIMIT which applies to Bay Street
- TRAFFIC SIGNALS in Bay Street where it intersects with Moate Avenue
- TRAFFIC SIGNALS in Bay Street where it intersects with The Grand Parade
- TRAFFIC SIGNALS in Bay Street where it intersects with Bay Street
- a ROUNDABOUT in Princess Street where it intersects with Moate Avenue
- GIVE WAY restrictions in Princess Street, Gordon Street and also Bruce Street where they intersect with The Grande Parade
- a LEFT-TURN ONLY eastbound restriction in Princess Street onto The Grand Parade
- a NO LEFT-TURN (TAXIS EXCEPTED) northbound restriction between 9pm-2am Friday-Saturday-Sunday in The Grand Parade onto Gordon Street
- NO RIGHT-TURN southbound restrictions in The Grand Parade onto Gordon Street and also Bruce Street.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken as part of this traffic study. The traffic surveys were undertaken in Gordon Street where it intersects with the rear service lane. The results of the traffic surveys are reproduced in full in Appendix B and reveal that:

- two-way traffic flows in Gordon Street are typically in the order of 40 to 90 vehicles per hour (vph) during peak periods

- two-way traffic flows in Princess Lane are typically in the order of 10 vehicles per hour (vph) during peak periods.

Projected Traffic Generation

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)*.

The RMS *Guidelines* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

Commercial Premises

2.0 peak hour vehicle trips per 100m² GFA

High Density Residential Flat Buildings in Sub-Regional Centres

0.29 peak hour vehicle trips/dwelling

The RMS *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A high density residential flat building refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

The RMS *Guidelines* do not nominate a traffic generation rate for small, local shops, referring only to major regional shopping centres incorporating supermarkets and department stores. For the purpose of this assessment therefore, the traffic generation rate of 2.0 peak hour vehicle trips per 100m² GFA nominated in the RMS *Guidelines* for *commercial premises* has been adopted in respect of any retail component of the development proposal.

Application of the above traffic generation rates to the residential and commercial/retail components outlined in the development proposal yields a traffic generation potential of approximately 30 vehicle trips per hour during commuter peak periods as set out below:

Projected Future Traffic Generation

Residential Apartments (35 apartments):	10.2 peak hour vehicle trips
Commercial/Retail Premises (989m ²):	19.8 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	30.0 peak hour vehicle trips

That projected increase in the traffic generation potential of the site as a consequence of the development proposal is minimal and will clearly not have any unacceptable traffic implications in terms of road network capacity, as is demonstrated by the following section of this report.

Traffic Implications - Road Network Capacity

The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA program which is widely used by the RMS and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages.

The results of the SIDRA analysis of the Gordon Street/Princess Lane intersection are summarised on Table 3.1 below, revealing that:

- the Gordon Street/Princess Lane intersection currently operates at *Level of Service "A"* under the existing traffic demands with total average vehicle delays in the order of 0.7 second/vehicle
- under the projected future traffic demands expected to be generated by the development proposal, the Gordon Street/Princess Lane intersection will continue to operate at *Level of Service "A"*, with increases in average vehicle delays of ***less than*** 1 second/vehicle.

In the circumstances, it is clear that the proposed development will not have any unacceptable traffic implications in terms of road network capacity.

TABLE 3.1 - RESULTS OF SIDRA ANALYSIS OF GORDON STREET/PRINCESS LANE				
Key Indicators	Existing Traffic Demand		Projected Development Traffic Demand	
	AM	PM	AM	PM
Level of Service	A	A	A	A
Degree of Saturation	0.041	0.011	0.046	0.014
Average Vehicle Delay (secs/veh)				
Service Lane (South) L	0.0	0.0	0.0	0.0
R	0.7	0.6	0.7	0.6
Gordon Street (East) L	4.6	4.6	4.6	4.6
T	0.0	0.0	0.0	0.0
Gordon Street (West) T	0.0	0.0	0.0	0.0
R	4.6	4.6	4.6	4.6
TOTAL AVERAGE VEHICLE DELAY	0.2	0.7	0.8	1.2

GOR_LANX

GOR_LANP

Criteria for Interpreting Results of Sidra Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good operation.	Good operation.
'B'	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVDs listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation.	Good operation.
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 signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹ The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 5 and comprise:

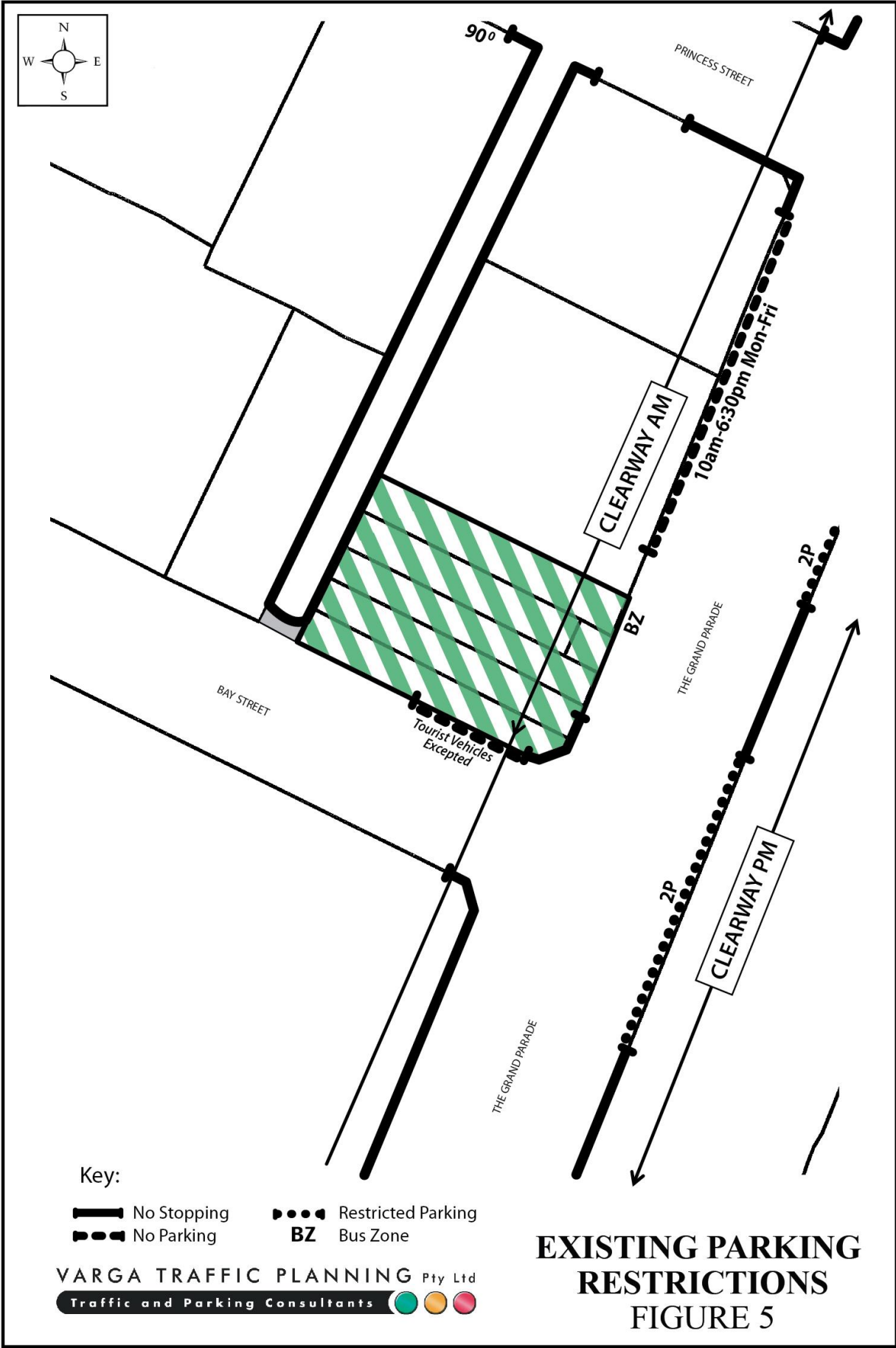
- CLEARWAY restrictions along both sides of The Grand Parade during commuter periods
- 2 HOUR PARKING restrictions along the eastern side of The Grand Parade outside of commuter peak periods
- NO PARKING (TOURIST COACHES EXCEPTED) restrictions along the Bay Street site frontage
- NO STOPPING restrictions along both sides of the service lane
- BUS ZONES located at regular intervals along The Grand Parade
- generally UNRESTRICTED kerbside parking elsewhere throughout the local area.

Off-Street Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in *Rockdale Development Control Plan 2011, Part 4.6 – Car Parking, Access and Movement* document in the following terms:

Multi Dwelling Housing/Residential Flat Buildings/Shoptop Housing

Studio, 1 & 2 bedrooms	1.0 spaces per dwelling
3 or more bedrooms	2.0 spaces per dwelling
Visitors	1.0 spaces per 5 dwelling



Retail and Commercial Premises1 car space per 40m² GFA

Application of the above parking requirements to the residential and commercial/retail components outlined in the development proposal (including the existing 5 terraces that are to be retained on site) yields an off-street parking requirement of 83 parking spaces as set out below:

Residential Apartment (35 apartments):	49.0 spaces
Visitors:	9.0 spaces
Commercial/Retail (989m ²):	24.7 spaces
TOTAL:	82.7 spaces

The proposed development will ultimately satisfy the above car parking provision in a new basement car parking area, subject to the number of basement levels being excavated.

The geometric design layout of the proposed carparking facilities will also be ultimately designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6*.

Off-Street Bicycle and Motorcycle Parking Provisions

The off-street bicycle and motorcycle parking requirements applicable to the development proposal are also specified in *Rockdale DCP 2011, Part 4.6* document in the following terms:

	<u>Bicycle</u>	<u>Motorcycle</u>
Residential Flat Buildings	1 space per 10 dwellings	1 space per 15 dwellings
Retail/Commercial	1 space per 200m ² GFA	1 spaces per 20 car spaces

The above bicycle and motorcycle provisions will also be ultimately satisfied and provided in accordance with the relevant Australian Standards.

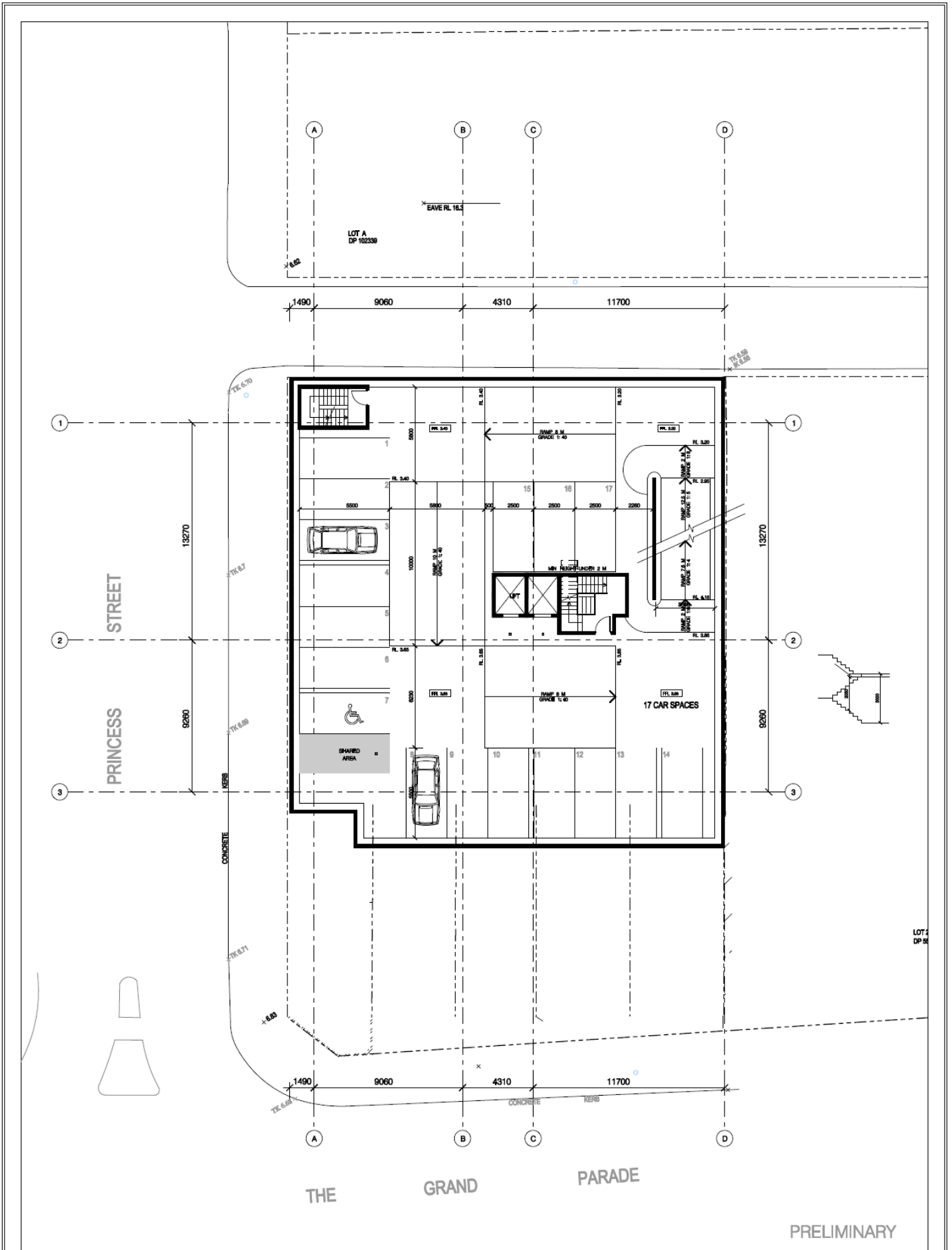
Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

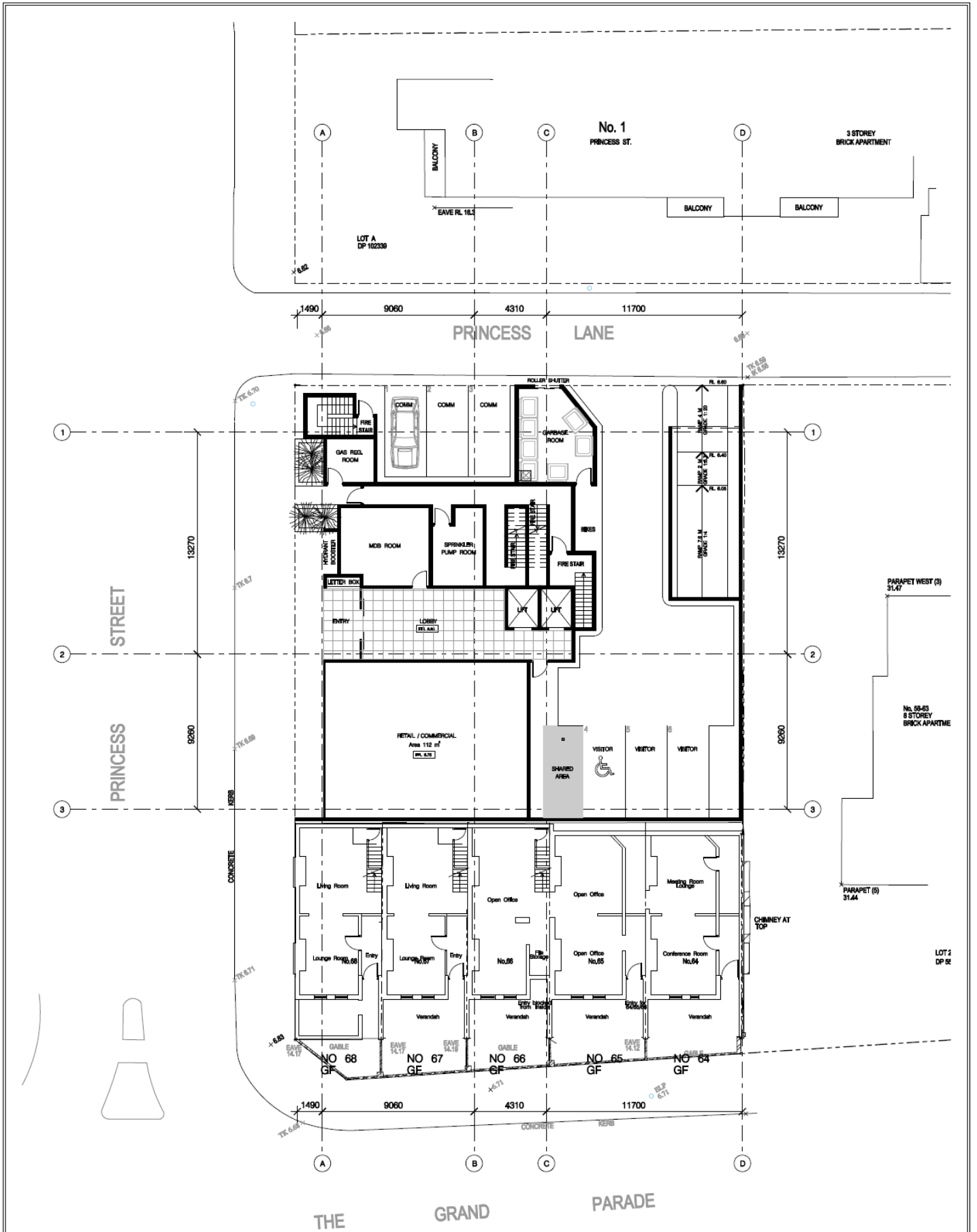
- the proposed development is expected to have a traffic generation potential of approximately 19 vehicles per hour during commuter peak periods
- there is adequate capacity in the surrounding road network to cater for the traffic generated by the development
- preliminary concept plans, which have been prepared for the purposes of this planning proposal indicate the required number of car parking spaces, bicycle spaces and motorcycles spaces can ultimately be provided on the site and in accordance with the relevant standards and Guidelines, subject to the number of basement levels being excavated.

APPENDIX A

TYPICAL FLOOR PLANS



Scale: @A1 @A3	ARCHITECTURE & BUILDING WORKS L1/14 Hopson Street, Brighton 3186 VIC P.O. Box 5071, Deakin VIC 3209 Australia Tel: (03) 9593 4264 Fax: (03) 9593 4265 Email: info@abw.com.au	PROJECT 64-68 THE GRAND PARADE BRIGHTON LE SANDS	DRAWING NO. A-09 DATE 10/06/2015 SHEET B	Drawing Title BASEMENT L1
				Drawing Author AUTHORITY APPROVAL PROJECT NO. PN 0399



	
Scale: @A1	@A3

	
ARCHITECTURE & BUILDING SERVICES 10/14 Hughes Street, Brighton 3980 VIC 3187 P.O. Box 901, Chesham VIC 3186 Australia Tel (03) 9585 4200 Fax (03) 9585 4200 Email info@absservices.com.au	

PROJ: 67	
64-68 THE GRAND PARADE BRIGHTON LE SANDS	
DESIGNED FOR: 10/05/2015 DRAWN BY: 10/05/2015 CHECKED BY: 10/05/2015 PROJECT NO: 10/05/2015	

DESIGNED FOR: 10/05/2015 DRAWN BY: 10/05/2015 CHECKED BY: 10/05/2015 PROJECT NO: 10/05/2015	
4750-040-010 4750-040-010 4750-040-010 4750-040-010	
4750-040-010 4750-040-010 4750-040-010 4750-040-010	

Drawing Name: A-10 Rev: 10/05/2015 Rev: B	
Drawing Title: GROUND FLOOR PLAN	
Drawing Status: AUTHORITY APPROVAL	
Drawing Date: 10/05/2015	
Drawing By: 10/05/2015	
Drawing Check: 10/05/2015	
Drawing Title: PN 0399	

APPENDIX B

TRAFFIC SURVEY DATA



R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

Lights	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
0700 - 0715	11	0	1	0	0	2	14
0715 - 0730	11	0	0	1	0	5	17
0730 - 0745	18	0	1	0	1	1	21
0745 - 0800	13	2	4	0	0	1	20
0800 - 0815	31	0	1	2	0	0	34
0815 - 0830	14	0	1	1	0	4	20
0830 - 0845	9	1	1	0	0	1	12
0845 - 0900	6	0	1	0	1	5	13
Per End	113	3	10	4	2	19	151

Heavies	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
0700 - 0715	0	0	0	0	0	0	0
0715 - 0730	1	0	0	0	0	0	1
0730 - 0745	1	0	0	0	0	0	1
0745 - 0800	0	0	0	0	0	0	0
0800 - 0815	0	0	0	0	0	0	0
0815 - 0830	0	0	0	0	0	0	0
0830 - 0845	0	0	0	0	0	0	0
0845 - 0900	1	0	0	0	0	0	1
Per End	3	0	0	0	0	0	3

Combined	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
0700 - 0715	11	0	1	0	0	2	14
0715 - 0730	12	0	0	1	0	5	18
0730 - 0745	19	0	1	0	1	1	22
0745 - 0800	13	2	4	0	0	1	20
0800 - 0815	31	0	1	2	0	0	34
0815 - 0830	14	0	1	1	0	4	20
0830 - 0845	9	1	1	0	0	1	12
0845 - 0900	7	0	1	0	1	5	14
Per End	116	3	10	4	2	19	154

Lights	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
0700 - 0800	53	2	6	1	1	9	72
0715 - 0815	73	2	6	3	1	7	92
0730 - 0830	76	2	7	3	1	6	95
0745 - 0845	67	3	7	3	0	6	86
0800 - 0900	60	1	4	3	1	10	79

Heavies	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
0700 - 0800	2	0	0	0	0	0	2
0715 - 0815	2	0	0	0	0	0	2
0730 - 0830	1	0	0	0	0	0	1
0745 - 0845	0	0	0	0	0	0	0
0800 - 0900	1	0	0	0	0	0	1

Combined	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
0700 - 0800	55	2	6	1	1	9	74
0715 - 0815	75	2	6	3	1	7	94
0730 - 0830	77	2	7	3	1	6	96
0745 - 0845	67	3	7	3	0	6	86
0800 - 0900	61	1	4	3	1	10	80

PEAK HR	76	2	7	3	1	6	95
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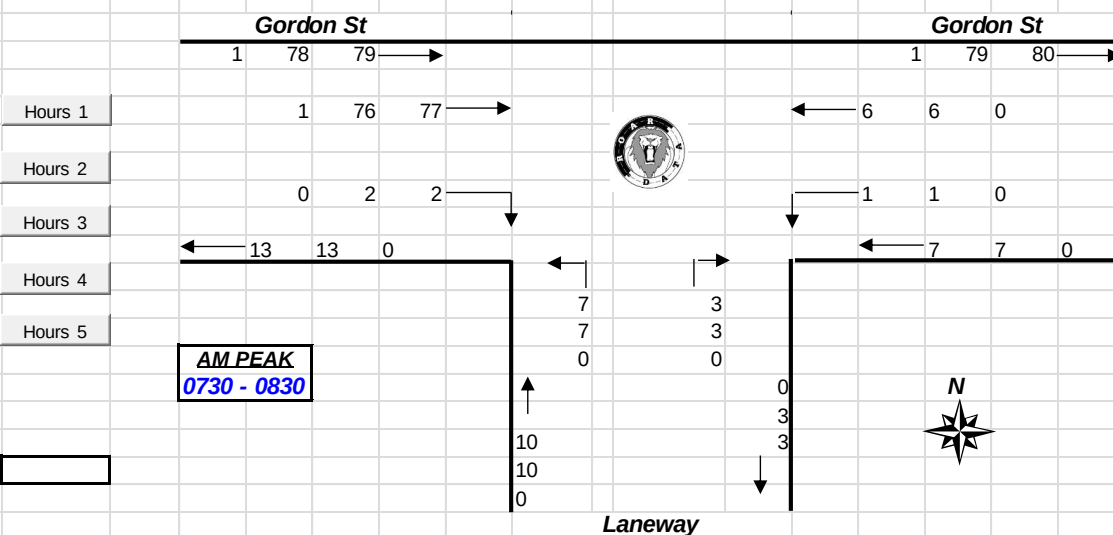
PEAK HR	1	0	0	0	0	0	1
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PEAK HR	77	2	7	3	1	6	96
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Peds	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	Gordon St		Laneway		Gordon St		TOT
0700 - 0715	0		0		0		0
0715 - 0730	0		2		0		2
0730 - 0745	0		1		0		1
0745 - 0800	0		0		1		1
0800 - 0815	1		1		1		3
0815 - 0830	1		0		0		1
0830 - 0845	1		0		0		1
0845 - 0900	0		0		0		0
Per End	3		4		2		9

	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	Gordon St		Laneway		Gordon St		TOT
0700 - 0800	0		3		1		4
0715 - 0815	1		4		2		7
0730 - 0830	2		2		2		6
0745 - 0845	3		1		2		6
0800 - 0900	3		1		1		5

PEAK HR	2	2	2	6
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R.O.A.R DATA

Reliable, Original & Authentic Results

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

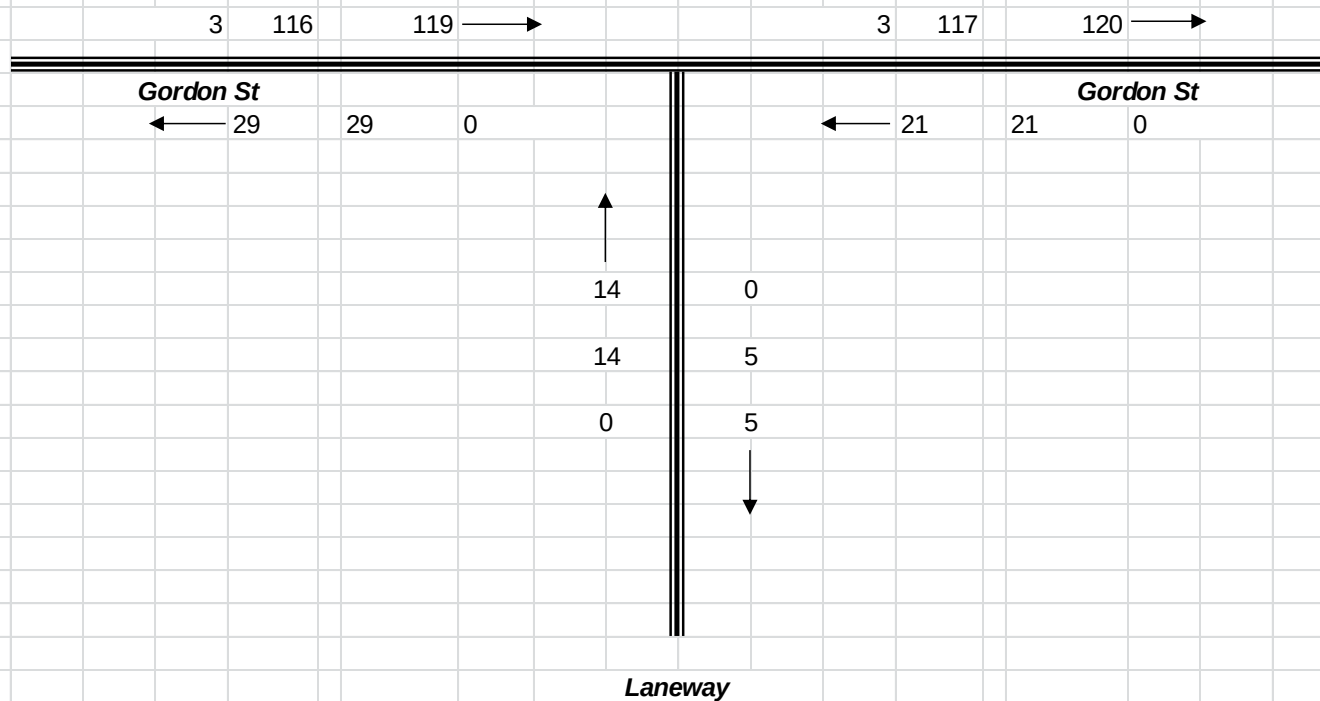
Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

AM

TOTAL VOLUMES
FOR COUNT
PERIOD





R.O.A.R DATA

Reliable, Original & Authentic Results

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

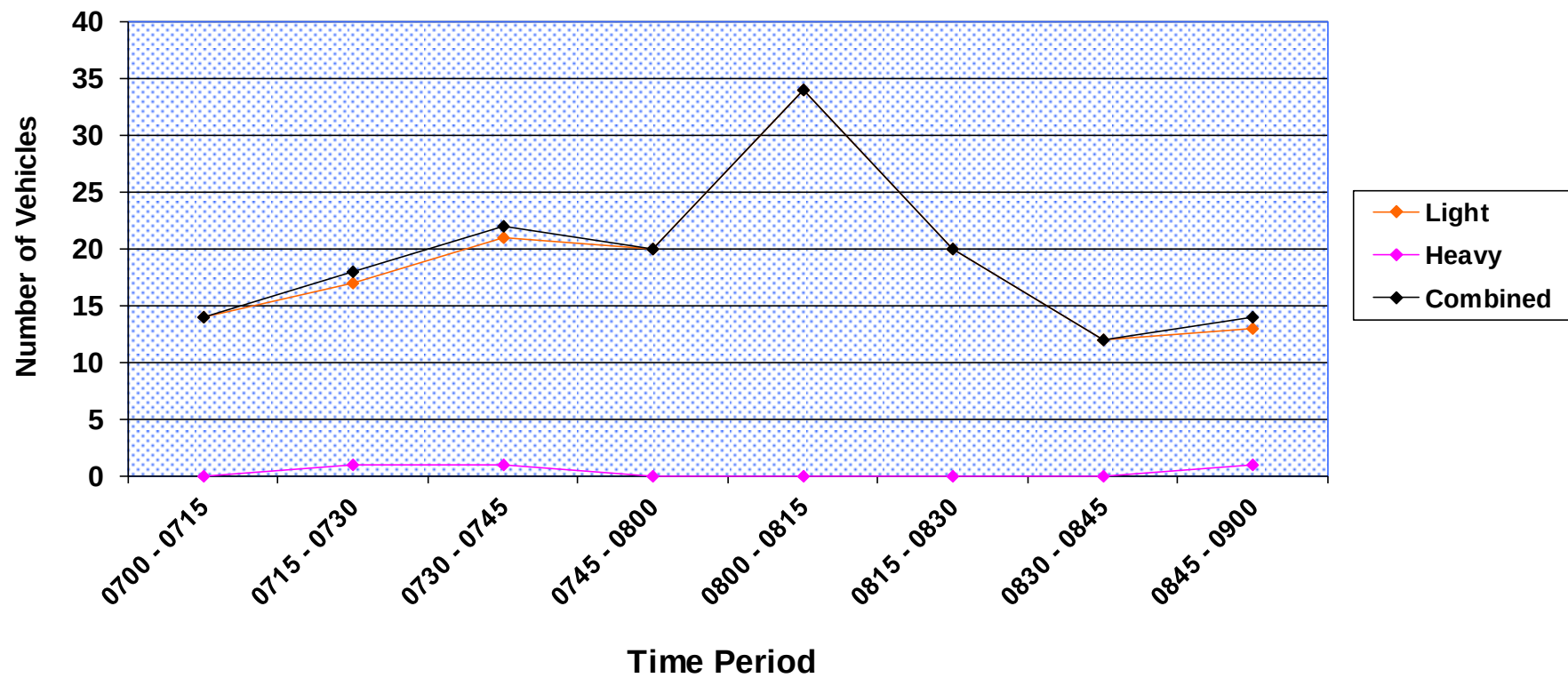
Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

AM

Laneway / Gordon St





R.O.A.R. DATA

Reliable, Original & Authentic Results

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Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

Lights	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
1630 - 1645	0	2	1	0	0	2	5
1645 - 1700	1	1	0	0	0	5	7
1700 - 1715	8	2	1	1	0	9	21
1715 - 1730	2	1	0	0	0	1	4
1730 - 1745	5	2	1	0	0	4	12
1745 - 1800	1	2	0	0	0	2	5
1800 - 1815	6	3	1	0	0	1	11
1815 - 1830	4	3	0	0	0	3	10
Per End	27	16	4	1	0	27	75

Heavies	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
1630 - 1645	0	0	0	0	0	0	0
1645 - 1700	0	0	0	0	0	0	0
1700 - 1715	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0
1730 - 1745	0	0	0	0	0	0	0
1745 - 1800	0	0	0	0	0	0	0
1800 - 1815	0	0	0	0	0	0	0
1815 - 1830	0	0	0	0	0	0	0
Per End	0	0	0	0	0	0	0

Combined	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
1630 - 1645	0	2	1	0	0	2	5
1645 - 1700	1	1	0	0	0	5	7
1700 - 1715	8	2	1	1	0	9	21
1715 - 1730	2	1	0	0	0	1	4
1730 - 1745	5	2	1	0	0	4	12
1745 - 1800	1	2	0	0	0	2	5
1800 - 1815	6	3	1	0	0	1	11
1815 - 1830	4	3	0	0	0	3	10
Per End	27	16	4	1	0	27	75

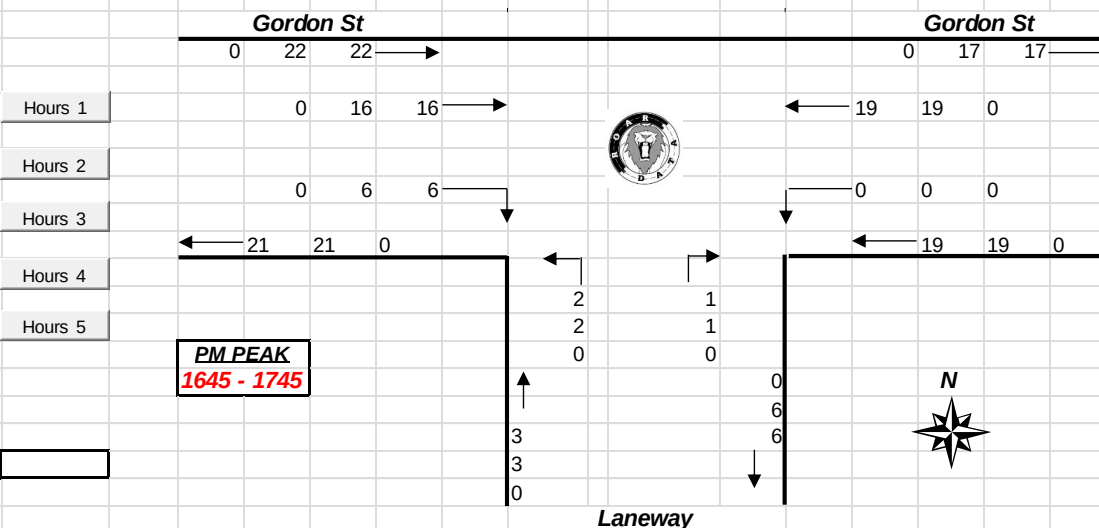
Lights	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
1630 - 1730	11	6	2	1	0	17	37
1645 - 1745	16	6	2	1	0	19	44
1700 - 1800	16	7	2	1	0	16	42
1715 - 1815	14	8	2	0	0	8	32
1730 - 1830	16	10	2	0	0	10	38
PEAK HR	16	6	2	1	0	19	44

Heavies	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
1630 - 1730	0	0	0	0	0	0	0
1645 - 1745	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0
1715 - 1815	0	0	0	0	0	0	0
1730 - 1830	0	0	0	0	0	0	0
PEAK HR	0	0	0	0	0	0	0

Combined	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
1630 - 1730	11	6	2	1	0	17	37
1645 - 1745	16	6	2	1	0	19	44
1700 - 1800	16	7	2	1	0	16	42
1715 - 1815	14	8	2	0	0	8	32
1730 - 1830	16	10	2	0	0	10	38
PEAK HR	16	6	2	1	0	19	44

Peds	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Time Per	T	R	L	R	L	T	TOT
1630 - 1645	1		0		2		3
1645 - 1700	0		0		1		1
1700 - 1715	0		3		0		3
1715 - 1730	0		2		0		2
1730 - 1745	0		0		0		0
1745 - 1800	1		0		0		1
1800 - 1815	1		3		0		4
1815 - 1830	2		3		0		5
Per End	5		11		3		19

	WEST		SOUTH		EAST		
	Gordon St		Laneway		Gordon St		
Peak Per	T	R	L	R	L	T	TOT
1630 - 1730	1		5		3		9
1645 - 1745	0		5		1		6
1700 - 1800	1		5		0		6
1715 - 1815	2		5		0		7
1730 - 1830	4		6		0		10
PEAK HR	0		5		1		6





R.O.A.R DATA

Reliable, Original & Authentic Results

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

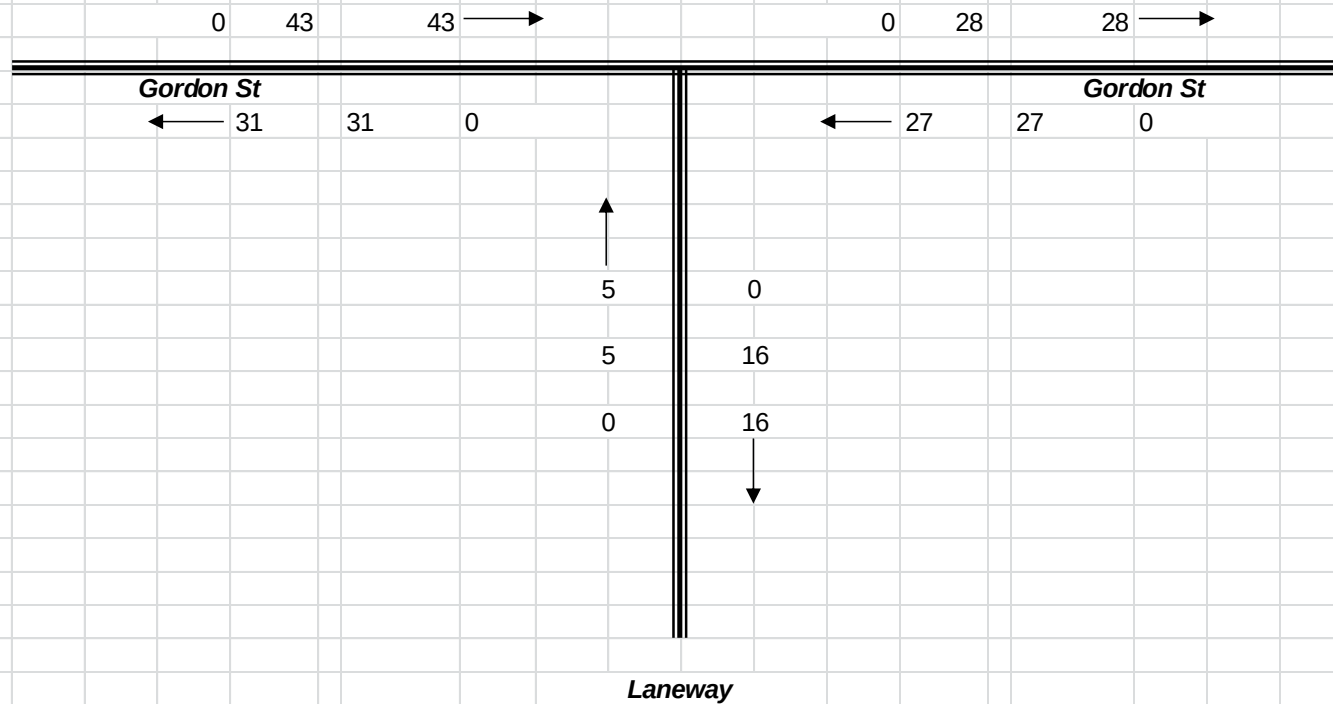
Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

PM

TOTAL VOLUMES
FOR COUNT
PERIOD





R.O.A.R DATA

Reliable, Original & Authentic Results

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

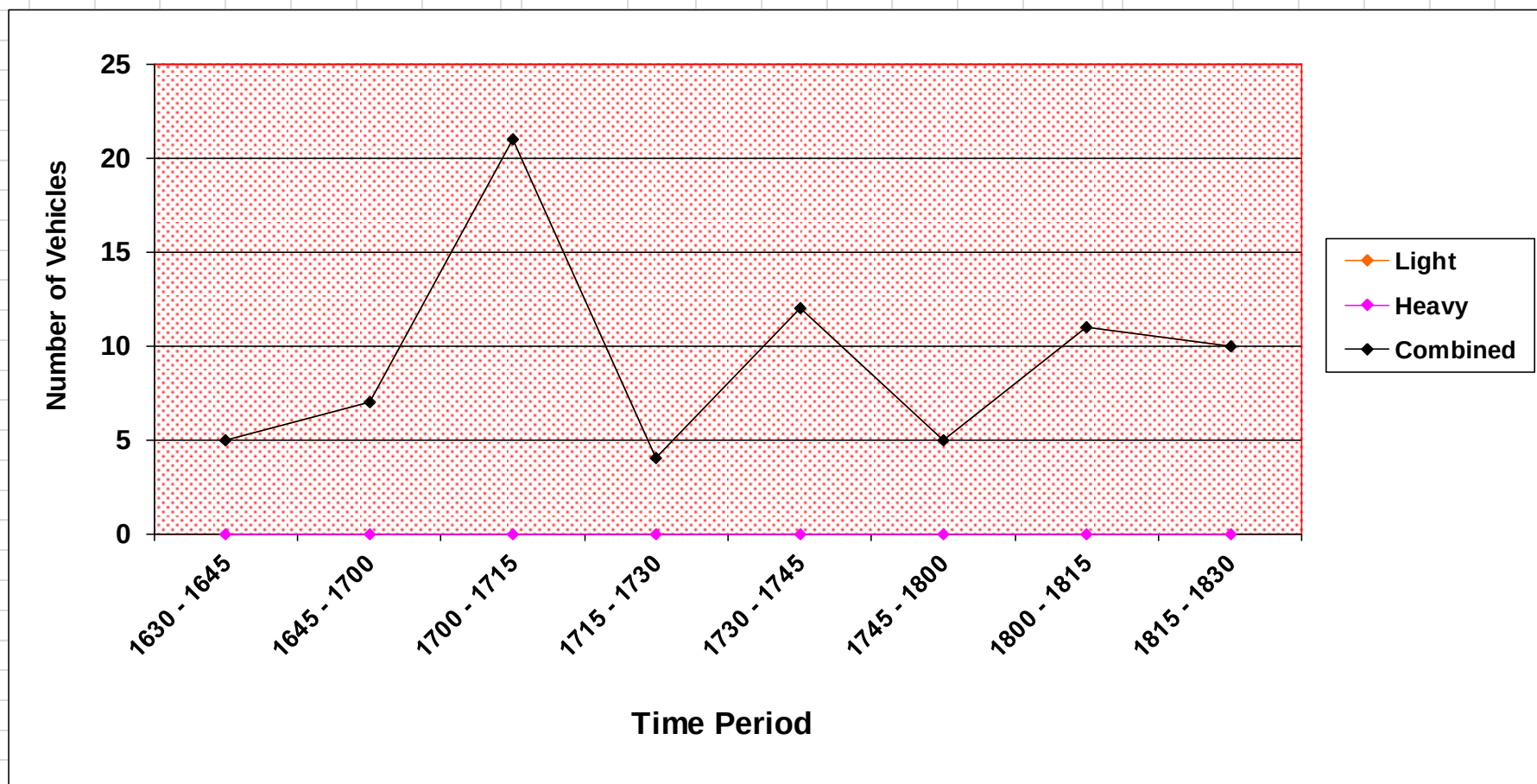
Client : Varga Traffic Planning

Job No/Name : 5128 BRIGHTON LE SANDS Laneways

Day/Date : Friday / 2nd May 2014

PM

Laneway / Gordon St





R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Varga Traffic Planning
Job No/Name : 5128 BRIGHTON LE SANDS Laneways
Day/Date : Friday / 2nd May 2014

Intersection Layout

Obtained via satellite

May be incorrect

No signage or line markings

AM PEAK HOUR
0730 - 0830

