DA-2022/237
Proposed Mixed Use Development

277 The Grand Parade, Ramsgate Beach

REVISED TRAFFIC AND PARKING ASSESSMENT REPORT

25 October 2023

Ref 23002

VARGA TRAFFIC PLANNING Pty Ltd
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1. INTRODUCTION

This revised report has been prepared to accompany an amended development application (DA-2022/237) to Bayside Council for a mixed use development proposal to be located at 277 The Grand Parade, Ramsgate Beach (Figures 1 and 2).

The proposed development involves the demolition of the existing *Coles Ramsgate* supermarket to facilitate the construction of a new 7-storey mixed-use hotel and supermarket development.

The new, expanded supermarket will have an increased or additional floor area of 383m^2 when compared with the existing *Coles* supermarket on the site.

A specialty shop component of 528m^2 is to be located on the basement and ground floor levels.

A new restaurant component is proposed on Level 1 with a kitchen/service floor area of 469m^2, and a seating area of 1,482m^2.

The hotel component will comprise a 5-star hotel with a total of 102 rooms located on the levels above. The hotel will include a lobby/cocktail bar area at ground floor level (225m^2), and a function area (682m^2) on Level 2, both of which will be used primarily by hotel guests, but will also be open to the public.

The hotel will also include a number of other facilities which will be reserved for hotel guests. These include a hotel gym, hotel yoga studio, hotel day spa, and pool, all of which will be reserved for the use of hotel guests only.

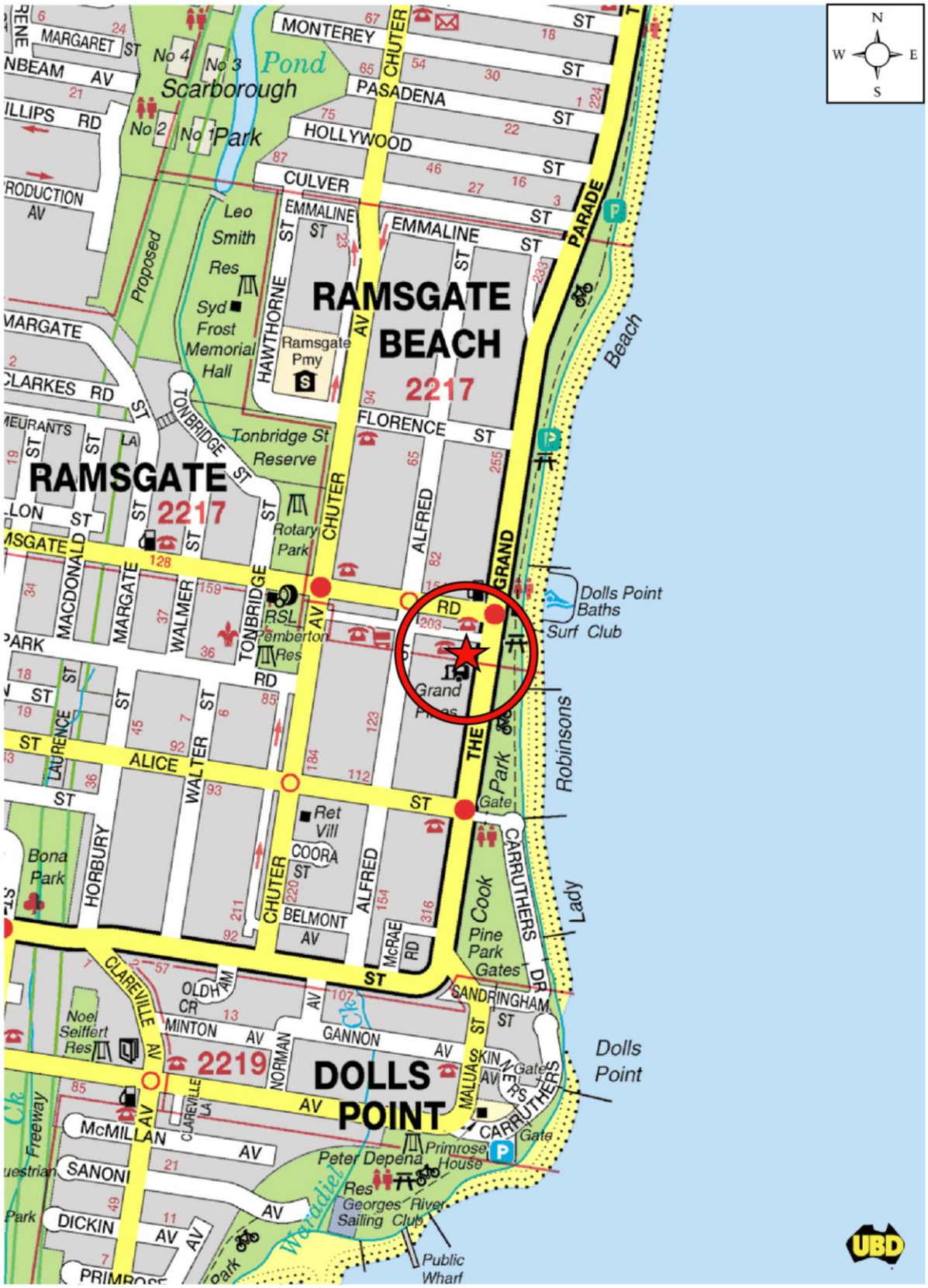
Off-street car parking is to be provided on a new two-level basement car parking area.

Vehicular access to the site is to be provided via a new entry/exit driveway located towards the western end of the Ramsgate Road site frontage, essentially in the same location of the existing "exit-only" driveway in accordance with Option 2 as presented to Council, albeit with 90^0 angle parking retained in front of the hotel lobby.

It is noted that the traffic and parking implications of this revised development proposal have been analysed in greater detail in this revised report, in accordance with Council's requirements.

The purpose of this revised report is to assess the traffic and parking implications of the amended development proposal, and to that end this report:

- describes the site and provides details of the amended development proposal
- reviews the road network and traffic conditions in the vicinity of the site
- reviews the sustainable forms of transport available in the vicinity of the site
- estimates the traffic generation potential of the amended development proposal
- assesses the traffic implications of the amended development proposal on the surrounding local and arterial road network in terms of road network capacity
- reviews the geometric design features of the proposed parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street parking and loading provided on the site.



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LOCATION
FIGURE 1

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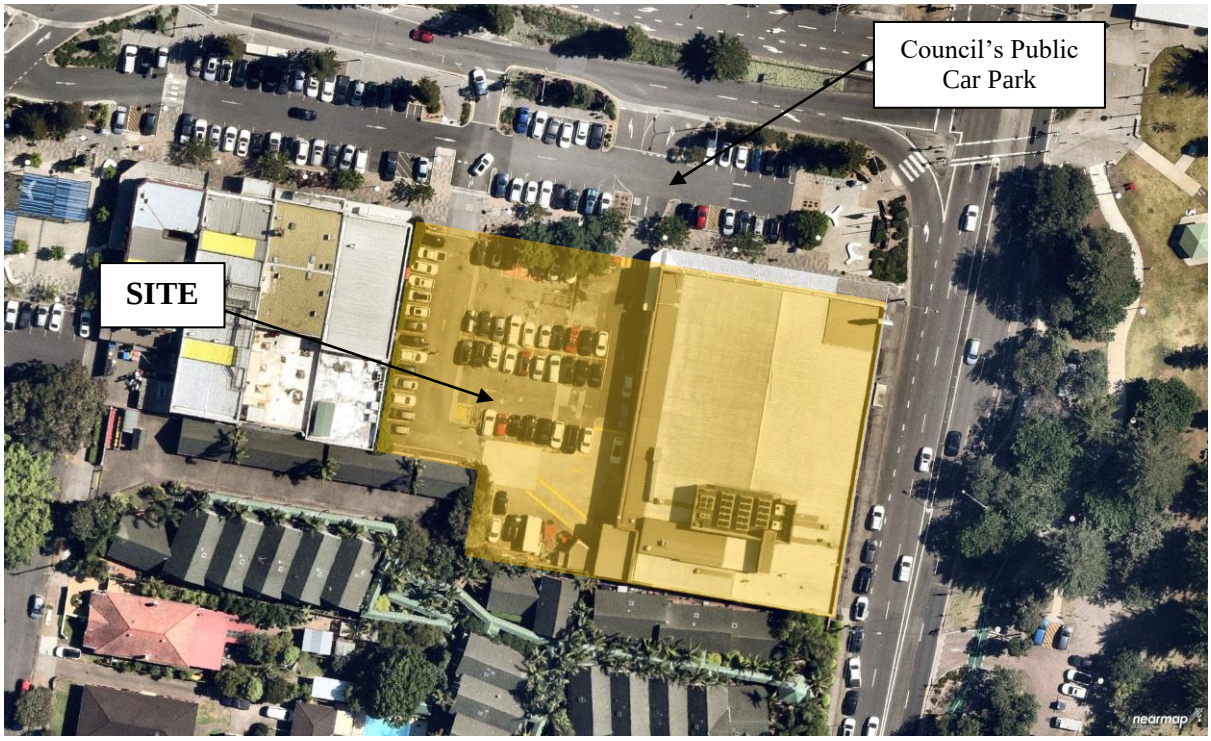
SITE
FIGURE 2

2. PROPOSED DEVELOPMENT

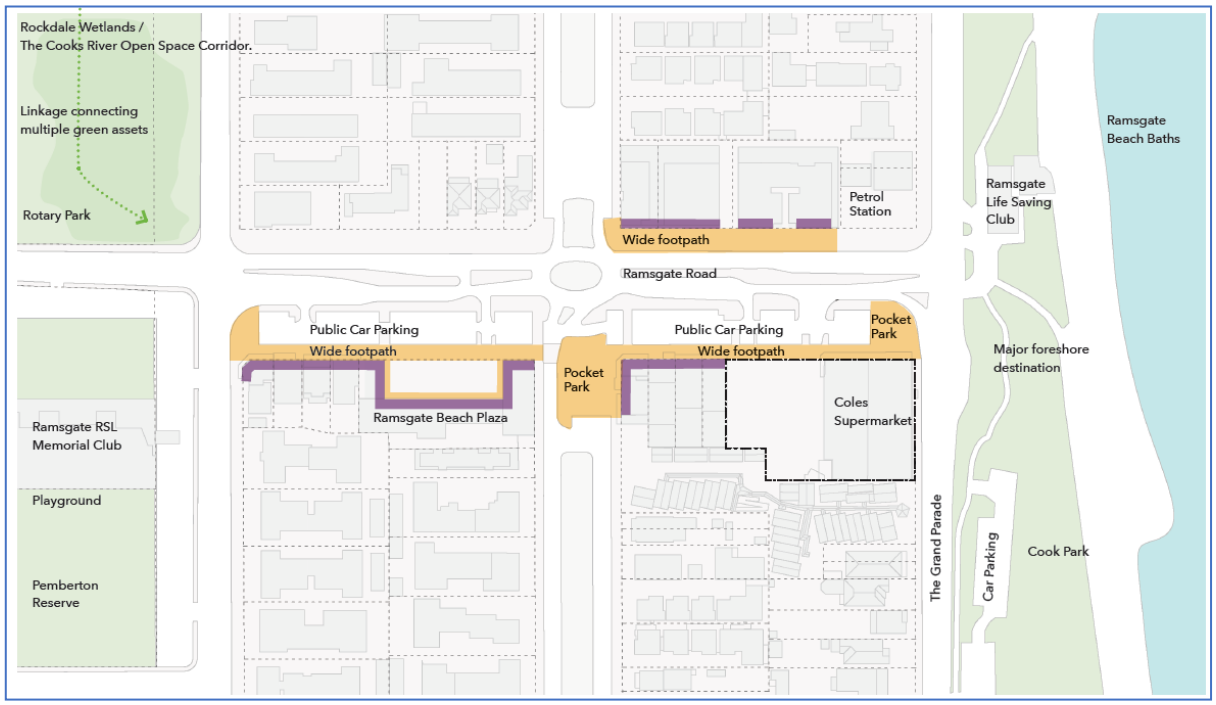
Site

The subject site is located on the western side of The Grand Parade and is located in close proximity of The Grand Parade and Ramsgate Road signalised intersection. The site has a street frontage of approximately 55 in length to The Grand Parade and occupies an area of approximately 4,479m^2.

The site lies within the Ramsgate Beach Town Centre and is zoned *B4 Mixed Use* as defined under *Bayside Local Environmental Plan 2021*. A recent aerial image of the site and its surroundings is reproduced below.



The site is surrounded by a number of existing open spaces owned by Council, with pocket parks and public amenities as well as a footpath adjoining the northern property boundary, as indicated in the image below.



Source: IncluDesign *Urban Design Report and Place Vision - 277 The Grand Parade, Ramsgate (July 2022)*

The subject site is currently occupied by *Coles Ramsgate,* a full-line supermarket with a floor area of approximately 2,200m². The existing commercial/retail uses on the adjacent site immediately to the west have a floor area of approximately 2,010m^2.

Off-street parking is currently provided for a total of 55 cars in an at-grade car parking area located adjacent to the building. A further 27 spaces are located in a Council car park in Ramsgate Road, directly in front of the subject site.

Vehicular access to the site is currently provided via the Council car park which is accessed via three separate driveways off Ramsgate Road and Alfred Street as follows:

- an entry/exit driveway midway off Ramsgate Road
- an 'exit-only' driveway at the western end of Ramsgate Road, and
- an 'entry-only' driveway off Alfred Street.

It is noted in this regard that the "entry-only" driveway off Alfred Street provides the only vehicular access to the site for local residents that avoids the need for local residents to travel "around-the-block" via The Grand Parade.

Loading/servicing for the existing Coles supermarket is currently undertaken by a variety of commercial trucks ranging from small, medium and large rigid trucks up to and including 12.5m long HRV rigid trucks.

The existing vehicular access arrangements along Ramsgate Road into Council's public car park is shown in the *Streetview* images reproduced below.

Site viewed along Ramsgate Road at the existing entry/exit driveway connecting off Council's car park

Site viewed along Ramsgate Road at the existing 'exit-only' driveway connecting off Council's car park

Proposed Development

The proposed development involves the demolition of the existing *Coles Ramsgate* on the site to facilitate the construction of a new 7-storey mixed-use building comprising hotel lobby, specialty stores and a supermarket on the basement/ground floor level, a restaurant/food and beverages component on Level 1, with a 5-star hotel to be located on the levels above.

The existing Coles supermarket will be relocated into the ground floor level of the new building, with the floor area of the new supermarket to be *increased* by approximately 10%, from 2,200m² to 2,583m² (i.e. an increase of 383m^2).

Key development statistics of the proposed development are detailed in the table below.

Use	Proposed Yield
Specialty Retail	528m²
Coles Supermarket	2,583m²
Hotel Lobby Ground Floor	225m^2
Restaurant Kitchen/Services L1	469m²
Restaurant Seating Area L1	1,482m^2
Hotel Lobby & Function Space L2	450m²
Bar & Restaurant L2	229m^2
Gym L2	173m^2
Hotel	122 rooms
Parking	208 car spaces, 14 motorcycles & 28 bicycles

The function space, gym, bar and restaurant proposed on Level 2 are reserved for the use of hotel guests only.

The proposed hotel is expected to cater for the needs of business travellers, key workers, tourists and other visitors to the Ramsgate Beach Town Centre who require short-term accommodation. There will be up to 12 hotel staff on site working in the hotel at any given time, including a manager, front desk/receptionist and room attendants.

Operational experience at other similar hotel developments indicates that the hotel's target market is expected to be approximately 75% corporate / 25% leisure. The corporate guests would often stay for a whole working week whilst leisure guests would typically stay for one

or two nights, usually over the weekend, and comprise family groups visiting friends for weddings, family events/gatherings etc.

The hotel will provide a shuttle bus service to and from the airport or other destinations which will initially comprise a 12-seater bus such as the Toyota Hi-Ace 12-seater bus (which can be accommodated in a standard parking space). The buses will be upgraded to similar sized electric shuttle buses when these become available.

Off-street parking is proposed for a total of 208 cars in accordance with Council's requirements. Vehicular access to the site is to be provided via a new entry/exit driveway located at the western end of the Ramsgate Road site frontage, in accordance with Option 2 as presented to Council, albeit with 90^0 angle parking retained in front of the hotel lobby.

Loading/servicing for the proposed development is expected to be undertaken by a variety of commercial vehicles ranging from courier vans and utilities for the specialty shops, up to and including 12.5m long heavy rigid trucks for the supermarket. Vehicular access to the loading bay is to be provided via the abovementioned driveway connecting off Ramsgate Road.

A shared loading dock area is to be provided on the ground floor level, at the rear of the supermarket tenancy, configured with a turntable thereby allowing vehicles up to and including 12.5m long HRV trucks to enter and exit the site in a forward direction *at all times.* The loading dock will operate under a booking system as part of a Loading Dock Management Plan.

Garbage collection is expected to be undertaken from within the shared loading dock area using a rear-loading truck up to a maximum length of 12.5m. Both the hotel and retail/supermarket waste rooms are to be located adjacent to the loading bay, in close proximity to the rear of the truck.

Plans of the proposed development have been prepared by *Craft Architecture Sydney* 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 Transport for NSW (TfNSW) is illustrated on Figure 3.

The Grand Parade is classified by TfNSW 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. Additional turning lanes are provided at key locations including at its intersection with Ramsgate Road. Clearway restrictions apply along both sides of the road during commuter peak periods.

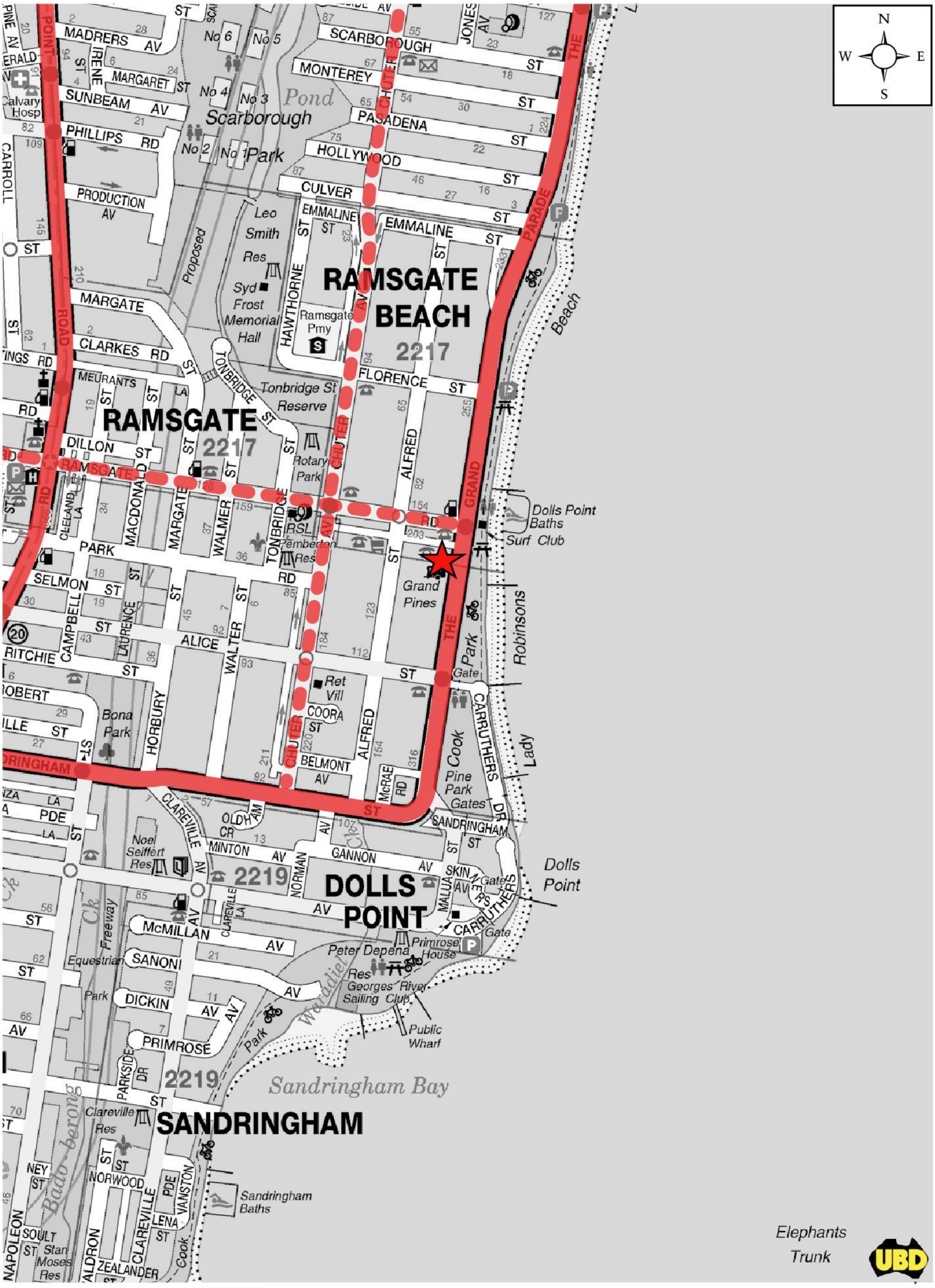
Rocky Point Road is classified by TfNSW as a *State Road* and provides another key north-south road link in the area, linking Taren Point to Kogarah. It typically carries two traffic lanes in each direction in the vicinity of the site, with kerbside parking generally permitted outside of the weekday commuter peak periods.

Chuter Avenue is classified by TfNSW as a *Regional Road* and provides another north-south road link in the area, linking Sandringham Street to Barton Street. It also typically carries one traffic lane in each direction in the vicinity of the site, with kerbside parking generally permitted along both sides of the road.

Ramsgate Road is classified by TfNSW as *Regional Road* which perform the function of a *collector route* through the local area. It typically carries a single traffic lane in each direction in the vicinity of the site. A left-turn (deceleration) slip lane is provided for northbound traffic in The Grand Parade turning left onto Ramsgate Road.

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:



Key:
State Road
Regional Road

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ROAD HIERARCHY
FIGURE 3


FLORENCE ST
FLORENCE
ST
AVE
CHUTER
ALFRED
THE GRAND PDE
RAMSGATE RD
TONBRIDGE
PARK RD
ALICE
COORA ST
BELMONT AVE
McRAE RD
CARRUTHERS DR
Botany Bay
only
50
60
Give Way Sign
One-Way
Stop Sign
Traffic Signal
No Right-Turn
Right-Turn Bay
Roundabout
School Zone
Speed Limit
Signalised Pedestrian Crossing
Pedestrian Crossing
Speed Hump
VARGA TRAFFIC PLANNING Pty Ltd
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EXISTING TRAFFIC CONTROLS
FIGURE 4

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

- a 50 km/h SPEED LIMIT which applies to all other local roads in the area

- TRAFFIC SIGNALS in Ramsgate Road where it intersects with The Grand Parade and also Chuter Avenue, with all turning movements permitted

- a RIGHT-TURN HOLDING BAY in The Grand Parade for southbound traffic turning into Ramsgate Road

- a CENTRAL MEDIAN ISLAND in The Grand Parade and also Ramsgate Road precludes right turn movements into and out of the site

- a ROUNDABOUT in Ramsgate Road where it intersects with Alfred Street

- RAISED PEDESTRIAN CROSSINGS in Ramsgate Road and also Alfred Street in the vicinity of the Ramsgate Beach Town Centre and Council's Public Parking areas.

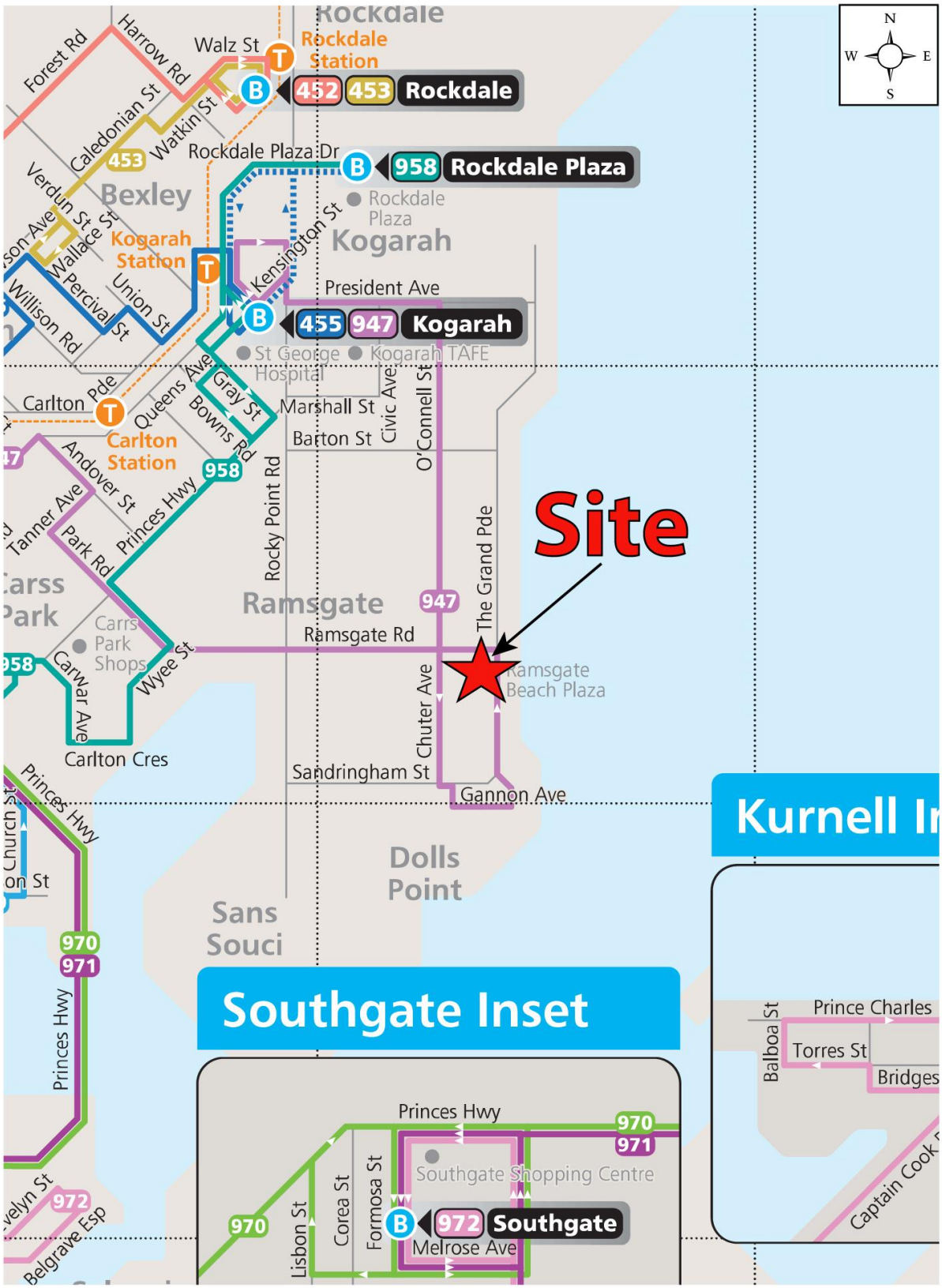
Existing Public Transport Services

The existing public transport services located in close proximity to the site are illustrated on Figure 5. There are currently two bus services which operate in the vicinity of the site, including directly outside the site along The Grand Parade site frontage, as follows:

- Route 303 which operates 7 days per week between Sans Souci and Prince of Wales Hospital via Brighton-Le-Sands, Mascot, Eastlakes, Kingsford, Kensington and Randwick, with services operating every 30 minutes during commuter peak periods

- Route 947 which also operates 7 days per week between Hurstville and Kogarah via Allawah, Carlton, Dolls Point, Ramsgate Beach and Monterrey, with services operating every 30 minutes throughout the day.

The abovementioned bus services can also be used to interchange with connecting train services at numerous railway stations in the south and eastern Sydney area including Mascot, Kogarah and Hurstville.



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PUBLIC TRANSPORT
FIGURE 5

On the above basis, it is clear that the site is considered to be readily accessible to by public transport.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by *weekday* peak period traffic surveys as well as throughout Saturday undertaken as part a previous traffic study on the site.

Those traffic surveys were undertaken at the three driveways that provide access to the site via the public car park, as well as the following two intersections around the perimeter of the site, as follows:

- The Grand Parade and Ramsgate Road
- Ramsgate Road and Alfred Street

The results of the traffic surveys are reproduced in full in **Appendix B** and are summarised on Figure 6, revealing that:

- southbound traffic flows in The Grand Parade past the site frontage are typically in the order of 850 vph during the AM peak period, *increasing* to 2,100 vph during the PM peak period, with a Saturday peak typically in the order of 1,260 vph

- northbound traffic flows in The Grand Parade past the site frontage are typically in the order of 1,450 vph during the AM peak period, *decreasing* to 860 vph during the PM peak period, with a Saturday peak typically in the order of 1,000 vph

- westbound traffic flows in Ramsgate Road past the site frontage are significantly lower in the order of 180 vph during the AM peak period, increasing to 425 vph during the PM peak period, with a weekend Saturday peak typically in the order of 345 vph

- northbound traffic flows in Alfred Street are lower in the order 115 vph during the *weekday* commuter peak periods, with a weekend Saturday peak typically in the order of 150 vph

- southbound traffic flows in Alfred Street are lower still in the order 90-100 vph during the *weekday* commuter peak periods, with a weekend Saturday peak typically in the order of 110 vph.

The traffic surveys were also used to identify the volume of traffic generated by the existing Coles supermarket as well as the existing retail uses located on the adjacent site immediately to the west of the subject site which shares the same public car park access driveways off Ramgsate Road and Alfred Street. The results of those traffic surveys reveal that:

- two-way traffic flows in/out of the public car park during the morning peak were 74 vph/104 vph, yielding a total of 178 vph or *4.2 vph/100m^2*

- two-way traffic flows in/out of the public car park during the afternoon peak were 152 vph/171 vph, yielding a total of 327 vph or *7.8 vph/100m^2*

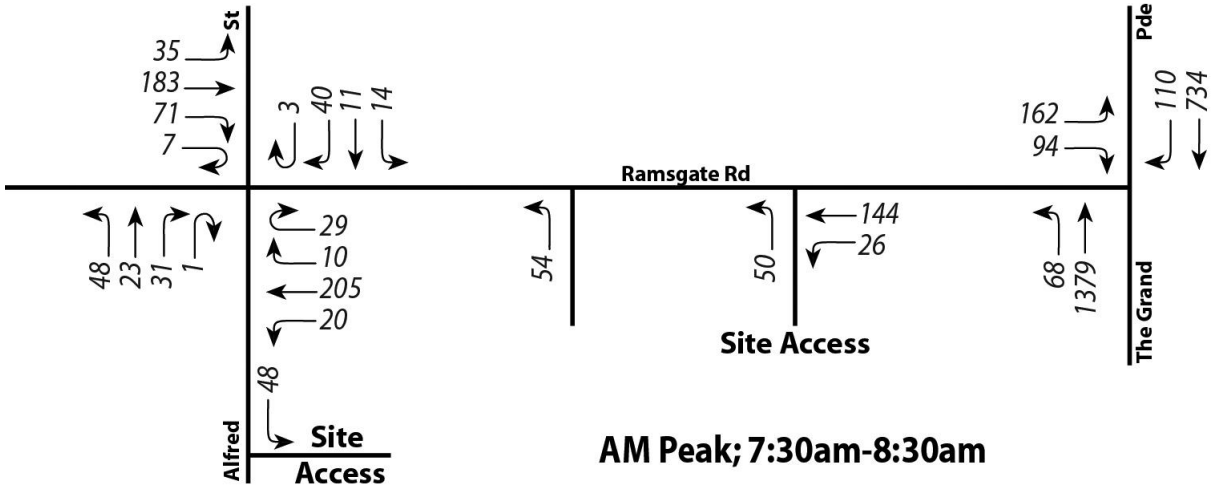
- two-way traffic flows in/out of the public car park during the Saturday peak period were 171 vph/151 vph, yielding a total of 322 vph or *7.6 vph/100m^2*.

The results of those traffic surveys are also summarised on Figure 6 below.

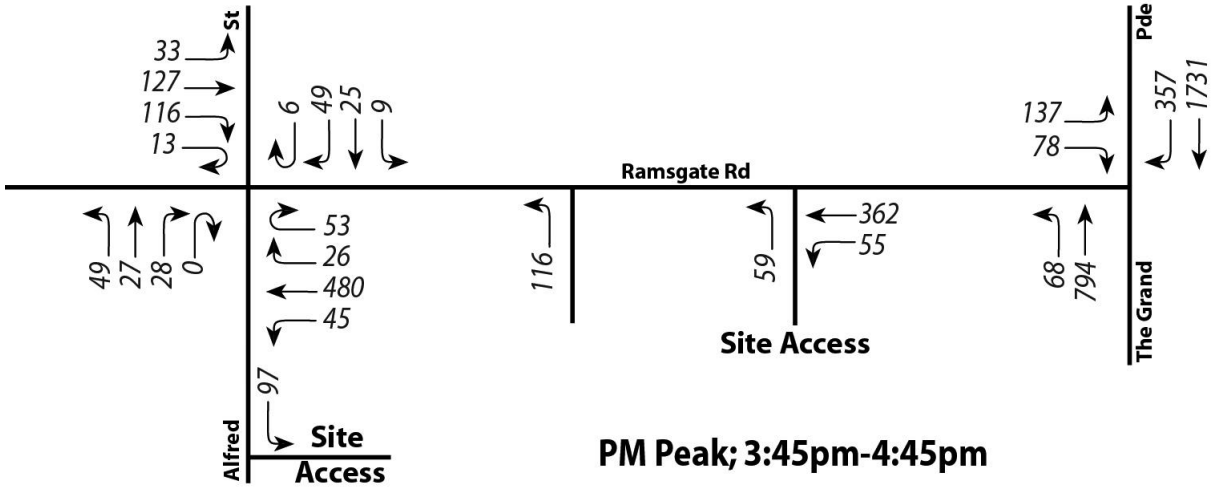
Projected Traffic Generation Potential

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, particularly during the weekday peak periods.

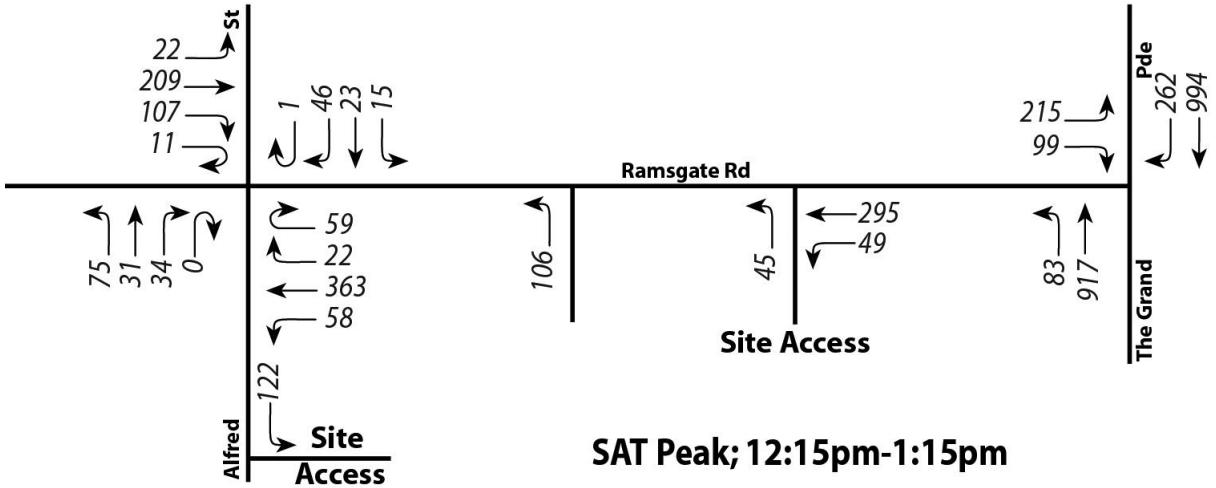
An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services' publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the RMS *Technical Direction (TDT 2013/04a)* document.



AM Peak; 7:30am-8:30am



PM Peak; 3:45pm-4:45pm



SAT Peak; 12:15pm-1:15pm

EXISTING PEAK HOUR TRAFFIC FLOWS
FIGURE 6

The RMS *Guidelines* and the updated *TDT 2013/04a* are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

> **Restaurant**
> 5.0 *evening* peak hour vehicle trips/100m^2 GFA

For the purposes of undertaking a rigorous traffic assessment, the restaurant/food & beverages and function rooms components of the development proposal have been assessed using the above "restaurant premises" traffic generation rate. However, the RMS *Guidelines* do not provide a traffic generation rate for restaurants during the *morning* peak period and, for the purposes of this assessment, it has been assumed that the weekday *morning* peak hour traffic generation rate is to be equivalent to 50% of the *evening* peak hour traffic generation rate.

The RMS Guidelines also nominate the following traffic generation rate which is the most closely applicable to the hotel component of the development proposal:

> **Motels:**
> 0.4 peak hour vehicle trips per unit

It is readily acknowledged however, that "motels" primarily cater for the needs of car travellers who usually only require overnight accommodation before continuing their journey. By contrast, "hotels" cater for the needs of business travellers, staff and visitors who may require accommodation for several days or several weeks.

As such, the proposed hotel component is expected to generate somewhat less traffic activity than a similar sized "motel". Notwithstanding, for the purposes of this assessment, the "motel" traffic generation has been adopted.

The proposed 383m^2 increase in the floor area of the *Coles* supermarket and the proposed new specialty retail of 528m^2 has been assessed in accordance with the results of the traffic surveys which identify the following traffic generation rates for the existing *Coles* supermarket and retail shops:

Coles Ramsgate Supermarket Traffic Generation Rates

AM Peak Hour: 4.2 peak hour vehicle trips per 100m^2

PM Peak Hour: 7.8 peak hour vehicle trips per 100m^2

SAT Peak Hour: 7.6 peak hour vehicle trips per 100m^2

Application of the above traffic generation rates traffic generation rates and assumptions to the various components of the development proposal yields the following traffic generation potential scenarios:

PROJECTED INCREASE IN TRAFFIC GENERATION POTENTAIL OF THE SITE AS A CONSEQUENCE OF THE DEVELOPMENT PROPOSAL				
Use	**Proposed Yield**	**Net Increase in Traffic Generation (Vehicles per Hour)**		
		AM Peak	**PM Peak**	**Saturday Peak**
Specialty Retail	528m^2	32.1 vph	41.2 vph	40.1 vph
Coles Supermarket	383m^2*	16.1 vph	29.8 vph	29.1 vph
Hotel Lobby GF	225m^2	-	-	-
Restaurant Kitchen/Services L1	469m^2	11.7 vph	23.5 vph	23.5 vph
Restaurant Seating Area L1	1,482m^2	37.1 vph	74.1 vph	74.1 vph
Hotel Lobby & Function Space L2	450m^2	-	-	-
Bar & Restaurant L2	229m^2	-	-	-
Gym L2	173m^2	-	-	-
Hotel	122 rooms	48.8 vph	48.8 vph	48.8 vph
TOTAL		**145.8vph**	**217.4vph**	**215.6 vph**

* Net increase in floor area

As noted in the foregoing, the function space, gym, bar and restaurant proposed on Level 2 will be reserved for the use of hotel guests only, and will not result in any additional traffic generation.

Accordingly, the *nett increase* in traffic generation potential of the site is in the order of approximately 146 & 217 vph during the weekday commuter peak periods and 216 vph during the Saturday midday peak period (TO and FROM, combined).

It is pertinent to note that the projected future traffic generation potential of the supermarket and retail components of the proposed development *does not* take into account the number of "linked trips" or any "passing trade" which will occur.

Linked trips occur when a person visits the site but also visits another premises on the same trip whilst not moving their car, thereby not incurring an additional vehicle trip.

Passing trade occurs when a person might visit the Coles supermarket or retail tenancies on the site on their way home from work. That person is already travelling on the nearby road network, thereby not incurring an additional vehicle trip.

The projected future traffic flows have been assigned to the surrounding intersections in accordance with the trends identified by the traffic survey results currently using the surrounding road network.

The distribution of those volumes onto the surrounding road network is shown on Figure 7.

In any event, that projected *nett increase* in the traffic generation potential of the site as a consequence of the development proposal will not have any unacceptable traffic implications in terms of road network capacity, nor will any further road or infrastructure upgrades be required, over and above the agreed upgrades, as is demonstrated by the following section of this report.

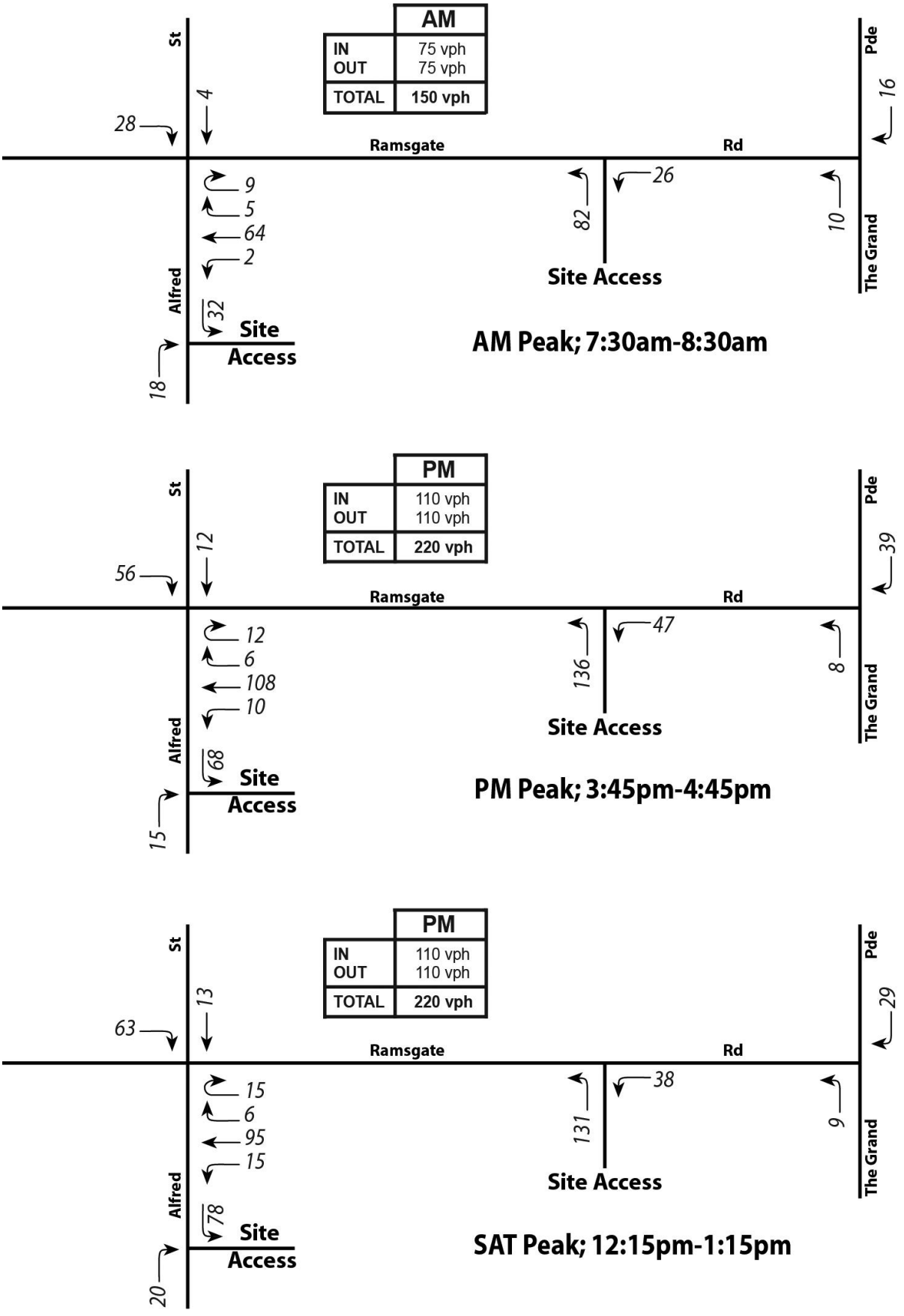
Traffic Implications - Road Network Capacity

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 NETWORK program which is widely used by TfNSW (formerly 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 NETWORK capacity analysis at the two surrounding intersections, *plus* the proposed site access driveways off Ramsgate Road and Alfred Street are reproduced in **Appendix C** and summarised in the table on the following pages.

It is pertinent to note in this regard that the two separate driveways off Ramsgate Road are to be consolidated to a single two-way driveway which is to be located in approximately the same location as the existing "exit-only" driveway. This will allow the existing deceleration/slip-lane in Ramsgate Road to be extended a further 30m to the west from the signalised intersection at The Grand Parade.



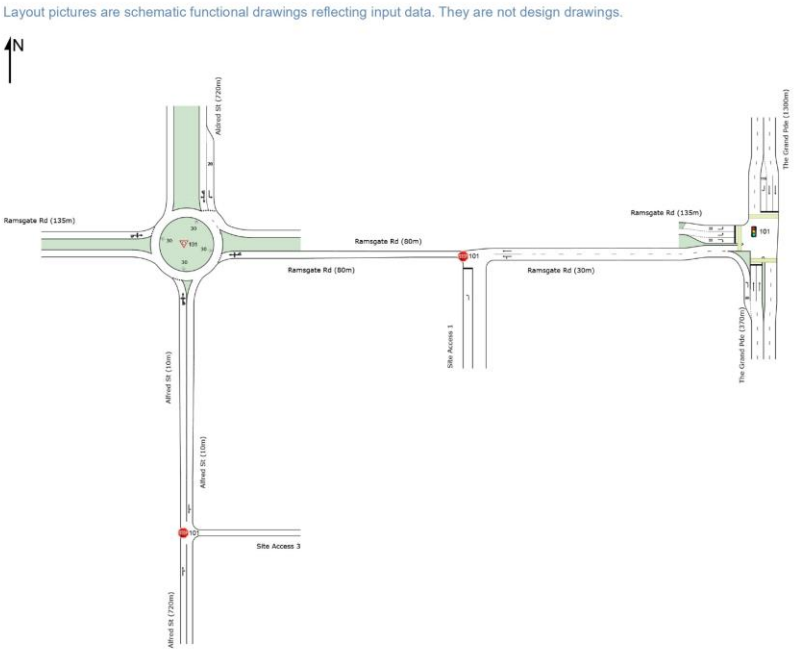
PROJECTED ADDITIONAL PEAK HOUR TRAFFIC FLOWS
FIGURE 7

Consideration had also been given to Council's comments that *investigations should be made for the potential removal of the existing entry driveway located off Alfred Street* (immediately south of the roundabout). However, this "entry-only" driveway provides a primary site access for local residents which avoids the needs for residents to access the external TfNSW classified *State Road* network.

If this "entry-only" access off Alfred Street was deleted, local residents would need to travel *"around-the-block"* via The Grand Parade in order to access their local shops and supermarket. This would result in *additional* unnecessary vehicle-kilometres being driven, as well as *additional* vehicular conflicts at a number of intersections that would need to be used by local residents to access The Grand Parade.

In the circumstances, it is considered that the existing "entry-only" driveway off Alfred Street provides an important access function for local residents which enables them to access the site *without* using The Grande Parade, and should therefore be retained.

The schematic diagram of the SIDRA network which forms the basis of the capacity analysis is summarised in the diagram below. The results of the SIDRA capacity analysis are summarised in table 3.1 below.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Proposed AM)
101	NA	Ramsgate Rd & Alfred St (Proposed AM)
101	NA	Ramsgate Rd & Site Access 1 (Proposed AM)
101	NA	Alfred St & Site Access 3 (Proposed AM)

In summary, the SIDRA analysis confirms that the proposed *nett increase* in traffic movements as a consequence of the proposed development will not result in any unacceptable traffic implications in terms of road network capacity, with *minimal* increases in delays and all respective intersections remaining at existing *Levels of Service "A"* or *"B"*, with the *exception* of The Grand Parade and Ramsgate Road intersection during the weekday AM peak period.

On the above basis, it is clear that the surrounding road network will continue to operate at satisfactory *Levels of Service "A"* or *"B"* and that the proposed development will not result in any unacceptable traffic implications in terms of road network capacity.

TABLE 3.1 - SUMMARY RESULTS OF SIDRA ANALYSIS OF SURROUNDING ROAD NETWORK

Key Indicators	Existing Traffic Demand			Projected Development Traffic Demand		
	AM	**PM**	**SAT**	**AM**	**PM**	**SAT**
The Grand Parade & Ramsgate Road						
LOS	A	B	B	B	B	B
DOS	0.588	0.579	0.518	0.609	0.593	0.467
AVD (Sec/Veh)	14.3	15.0	16.5	14.9	15.7	16.1
Ramsgate Road & Site access road 1						
LOS	A	A	A	A	A	A
DOS	0.077	0.184	0.151	0.182	0.348	0.297
AVD (Sec/Veh)	1.4	1.2	1.2	4.5	4.4	4.4
Ramsgate Road & Site access road 2						
LOS	A	A	A	-	-	-
DOS	0.105	0.222	0.179	-	-	-
AVD (Sec/Veh)	0.6	0.7	0.7	-	-	-
Ramsgate Road & Alfred Street						
LOS	A	A	A	A	A	A
DOS	0.206	0.461	0.376	0.293	0.632	0.541
AVD (Sec/Veh)	5.2	5.9	5.6	5.7	7.0	6.6
Alfred Street & Site access road 3						
LOS	A	A	A	A	A	A
DOS	0.062	0.098	0.100	0.092	0.153	0.162
AVD (Sec/Veh)	1.9	2.4	2.3	2.6	2.7	2.7

LOS – Level of Service; DOS – Degree of Saturation; AVD – Average Vehicle Delays

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 AVD's 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 signals[1] 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 REQUIREMENTS

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 8 and comprise:

- CLEARWAY restrictions along the western side of The Grand Parade during the weekday *morning* commuter peak period and along the eastern side of The Grand Parade during the weekday *afternoon* commuter peak period

- NO STOPPING / NO PARKING restrictions at *all other times* along both sides of The Grand Parade

- BUS ZONES located at regular intervals along both sides of The Grand Parade and also Ramsgate Road, including along the site frontages

- ¼ HOUR / 1 HOUR PARKING restrictions at selected locations along the northern side of Ramsgate Road, between The Grand Parade and Ramsgate Road

- NO STOPPING / NO PARKING restrictions elsewhere along both sides of Ramsgate Road

- a number of COUNCIL PUBLIC CAR PARKS located in the vicinity of the Ramsgate Beach Town Centre, including within Alfred Street and the southern side of Ramsgate Road, including along the site frontage

- generally UNRESTRICTED kerbside parking elsewhere along both sides of Alfred Street and all other local roads, outside the Ramsgate Beach Town Centre.


CHUTER AVE
RAMSGATE
RD
THE GRAND PDE
BZ
Motorbike
LZ
1P
1/4P
BZ
BZ
BZ
Botany Bay
CLEARWAY AM 6am-10am Mon-Fri
CLEARWAY PM 3pm-7pm Mon-Fri
THE GRAND PDE
ALFRED
ALICE
CARRUTHERS DR
N
W
E
S
Key:
No Stopping
Restricted Parking
BZ Bus Zone
LZ Loading Zone
* Permit Holders Excepted
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
EXISTING PARKING RESTRICTIONS
FIGURE 8

Off-Street Parking Requirements

The off-street parking requirements applicable to the amended development proposal are specified in *Rockdale Development Control Plan 2011 (Amendment 8), Section 4.6 - Car Parking, Access and Movement* document in the following terms:

> **Retail and Commercial Premises (including restaurant premises)**
> 1 space per 40m^2 GFA

Reference is also made to the Roads and Maritime Service's publication *Guide to Traffic Generating Developments, Section 5 – Parking Requirements for Specific Land Uses (October 2002),* which nominates the following off-street parking rate for 5-star hotels:

> **Hotel – Tourist**
> 1 space per 5 rooms

Council's *Rockdale DCP 2011* does not nominate an off-street parking rate specifically applicable to supermarkets, and it is noted in this regard that Council's RFI suggested that a rate of *1 space/25m^2* be used. For the purposes of this assessment therefore, that parking rate of *1 space/25m^2* has been adopted for the supermarket component.

Council's RFI also requested an increased parking provision for the function room component of the development proposal. The function room is expected to be used for business meetings on weekdays and functions such as weddings or birthday parties on weekends. In both instances it is anticipated that the majority of attendees will travel to these meetings or functions by taxi or Uber or similar car share. In particular, random breath testing and the avoidance of *drink-driving* provides a strong incentive for travel by taxi/Uber or similar car share, and the use of Council's *retail and commercial premises (including restaurant premises)* car parking rate of *1 space per 40m^2 GFA* is considered appropriate. In addition, it is noted that:

- there is an opportunity for *dual use* of parking spaces because the peak parking demands of the function room are unlikely to coincide with the peak parking demands generated by the supermarket and retail components, and

- car parking surplus to the requirements of Council will not be allocated to any particular user and could be utilised if required, subject to VPA negotiations as detailed below.

Application of the above parking rates to the development proposal yields a cumulative off-street parking requirement of approximately 196 parking spaces, as set out in the table below:

PROJECTED FUTURE OFF-STREET PARKING REQUIREMENTS			
Use	**Proposed Yields**		**Parking Required**
Specialty Retail	528m^2	1/40m^2	13.2 spaces
Coles Supermarket	2,583m^2	1/25m^2	103.3 spaces
Hotel Lobby GF	225m^2	n/a	n/a
Restaurant Kitchen/Services L1	469m^2	1/40m^2	11.7 spaces
Restaurant Seating Area L1	1,482m^2	1/40m^2	37.1 spaces
Hotel Lobby & Function Space L2	450m^2	n/a	n/a
Bar & Restaurant L2	229m^2	n/a	n/a
Gym L2	173m^2	n/a	n/a
Hotel	102 rooms	1/4 rooms	30.5 spaces
TOTAL PARKING REQUIRED			**195.8 spaces**

As noted in the foregoing, gym, bar and restaurant proposed on Level 2 will be reserved for the use of hotel guests only, and will not generate any additional parking requirements.

The proposed development makes provision for a total of 208 car parking spaces, thereby satisfying the above requirements.

The geometric design layout of the proposed car parking facilities has been 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* in respect of parking bay dimensions, ramp grades, overhead clearances and aisle widths.

In addition, the proposed development also provides at total of 28 bicycle and 14 motorcycle spaces across the basement parking levels, thereby satisfying Council's off-street bicycle and motorcycle parking requirement of *'1 space per 200m²'* and *'1 space per 20 car spaces*', respectively for the off-street bicycle and motorcycle parking requirements.

Loading/Servicing Provisions

Loading/servicing for the proposed development is expected to be undertaken by a variety of commercial vehicles ranging from courier vans and utilities for the specialty shops up to and including 12.5m long heavy rigid trucks for the Coles supermarket. Multiple loading/servicing areas are proposed as follows:

A dedicated loading dock located in the south-western corner of the ground floor level, adjoining the bin holding areas and the rear of the supermarket tenancy, which is capable of accommodating commercial vehicles up to and including 12.5m HRV trucks.

The ground floor loading dock area has been designed to accommodate the *swept turning path* requirements of these HRV trucks, which includes a mechanical turntable. The turntable will allow these service vehicles to enter and exit the loading dock in a forward direction at all times, as demonstrated by the attached *swept turning path* diagrams.

The geometric design layout of the proposed loading facilities has been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2:2018* in respect of loading bay dimensions, overhead clearances and service area requirements.

Conclusion

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

- the projected *nett increase* in traffic activity as a consequence of the development proposal is relatively modest, consistent with the current planning controls which apply to the site,

- the SIDRA capacity analysis has confirmed that the surrounding road network will continue to operate at satisfactory *Levels of Service "A"* or *"B"* and that the proposed development will not result in any unacceptable traffic implications in terms of road network capacity

- the proposed extended left-turn deceleration lane will cater for the proposed development traffic, whilst maintaining through traffic along Ramsgate Road to be unobstructed at all times

- the future off-street parking provision complies with the requirements specified in Council's *DCP 2011* as well as the parking rates *recommended* in Council's RFI

- the future vehicular access and parking arrangements will be provided and designed in accordance with the relevant aspects of *AS2890.1:2004*, *AS2890.2:2018*, *AS2890.3:2015* and *AS2890.6:2009*

- the hotel will provide a drop-off/pick-up service to/from the airport and other destinations using a 12-seater bus such as the Toyota Hi-Ace minibus which can be accommodated in conventional parking spaces. The minibuses will be upgraded to electric buses when these become available

- garbage collection and deliveries will all be undertaken on-site and outside of peak periods to ensure safety and minimise disruption to the new at-grade plaza area and are restricted to vehicles up to and including 12.5m long HRV trucks.

In the circumstances it is therefore concluded that the proposed development will not have any unacceptable traffic, parking, access or servicing implications.

APPENDIX A

ARCHITECTURAL PANS

RAMSGATE ROAD

COUNCIL CARPARK TO BE RECONFIGURED TO SUIT NEW TRAFFIC DESIGN

KERBS AND PLANTERS TO BE RE-ALIGNED TO SUIT NEW VEHICLE ENTRIES

KERBS AND PLANTERS TO BE RE-ALIGNED TO SUIT NEW VEHICLE ENTRIES

PAVING TO BE REGRADED TO SUIT NEW CROSSOVER

SITE BOUNDARY

phone booth

Booster

Sub-station

SITE BOUNDARY

EXISTING SINGLE LEVEL COMMERCIAL BUILDING TO BE DEMOLISHED.

Sign

Bus Stop

Sign

BUS STOP TO BE RE-LOCATED

EXISTING CARPARK ASHPHALT, LANDSCAPING, PAVEMENTS, KERBS, AND FIXTURES TO BE DEOMILSHED.

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

THE GRAND PARADE

JO

CP

[10]

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REVISIONS

1	13/07/2022	Development Application Submission
2	03/08/2023	DRP Review Submission
3	04/10/2023	Revised DA Issue

DEVELOPED BY BRONXX

RAMSGATE BEACH HOTEL
277 The Grand Parade, Ramsgate NSW 2217

DEMOLITION PLAN — 1 : 200 @ A1

Drawn: JO
Checked: CP
Project No.: 22.02

A-0103 [3]

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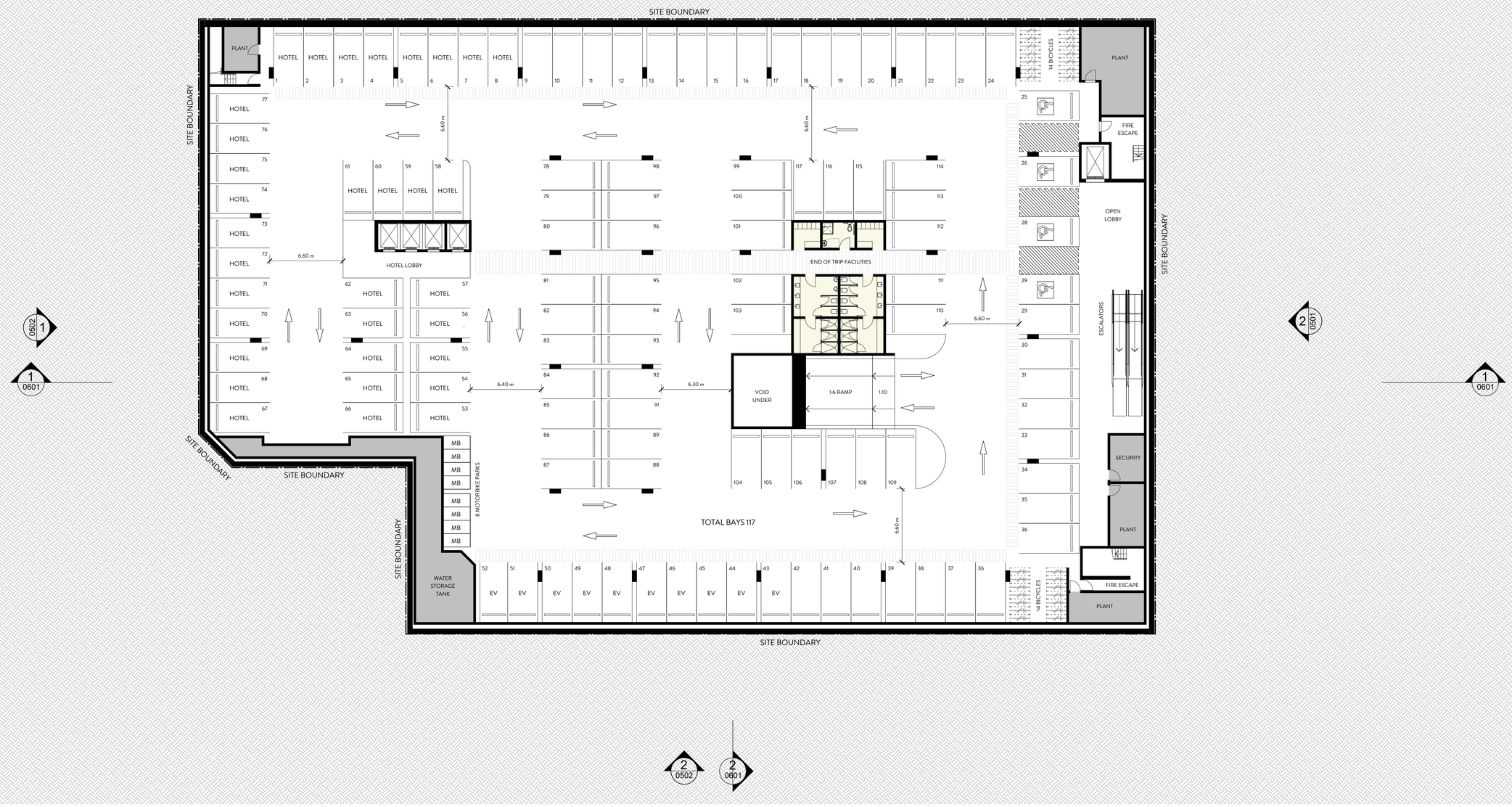

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RAMSGATE BEACH HOTEL
277 The Grand Parade, Ramsgate NSW 2217

FLOOR PLAN B2 — 1 : 200 @ A1
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A-0201 [11]

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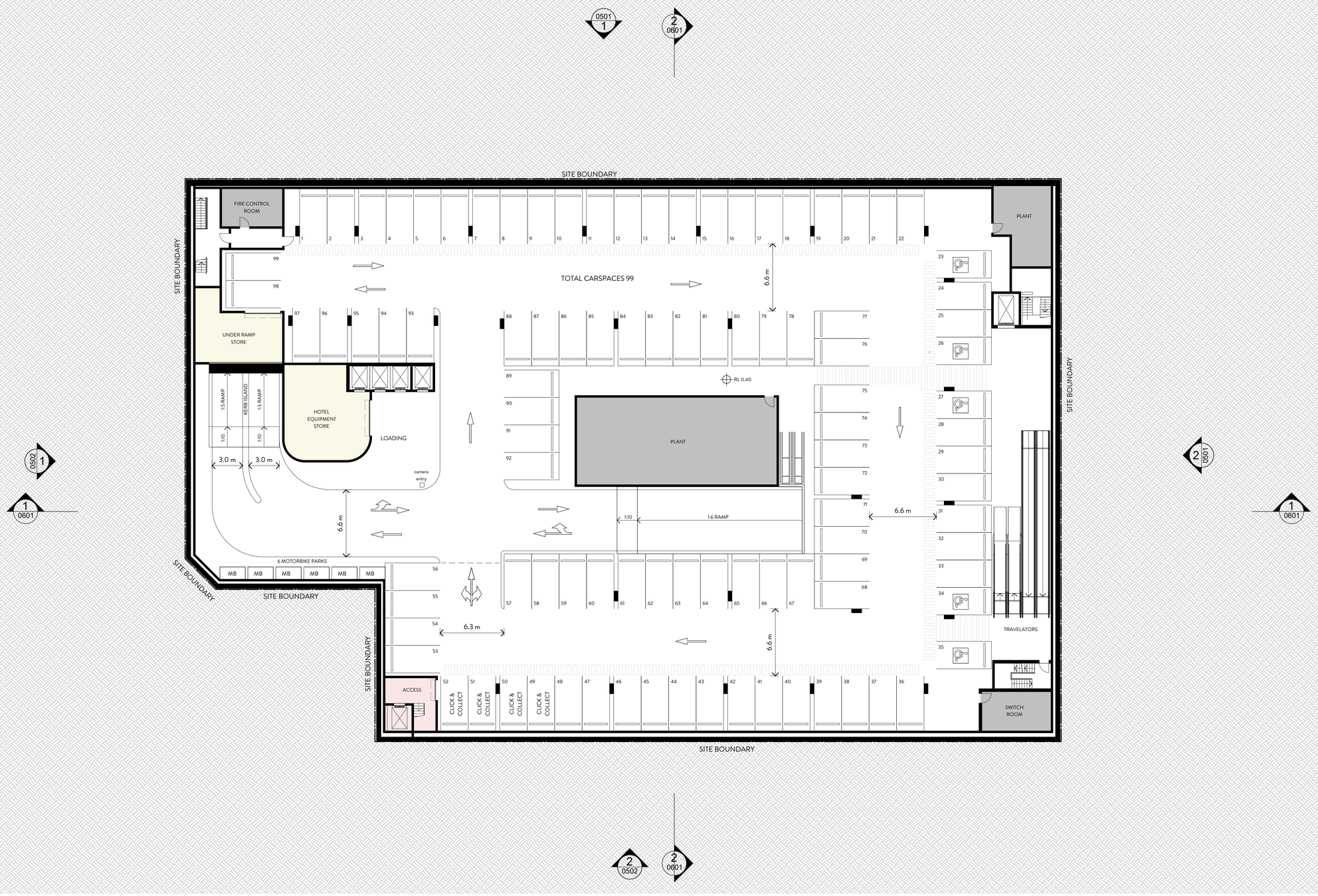
PARKING SCHEDULE

Level	Retail	EV	Hotel	Accessible	Motorbike	Bicycle
B2	70	10	33	4	8	28
B1	95	-	-	4	6	-
Total	165	10	33	8	14	28

Grand Total 208 Carparks



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12	10/06/2022	Issued For Coordination
13	15/06/2022	Issued For Coordination
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RAMSGATE BEACH HOTEL
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FLOOR PLAN B1 — 1 : 200 @ A1

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A-0202 [16]

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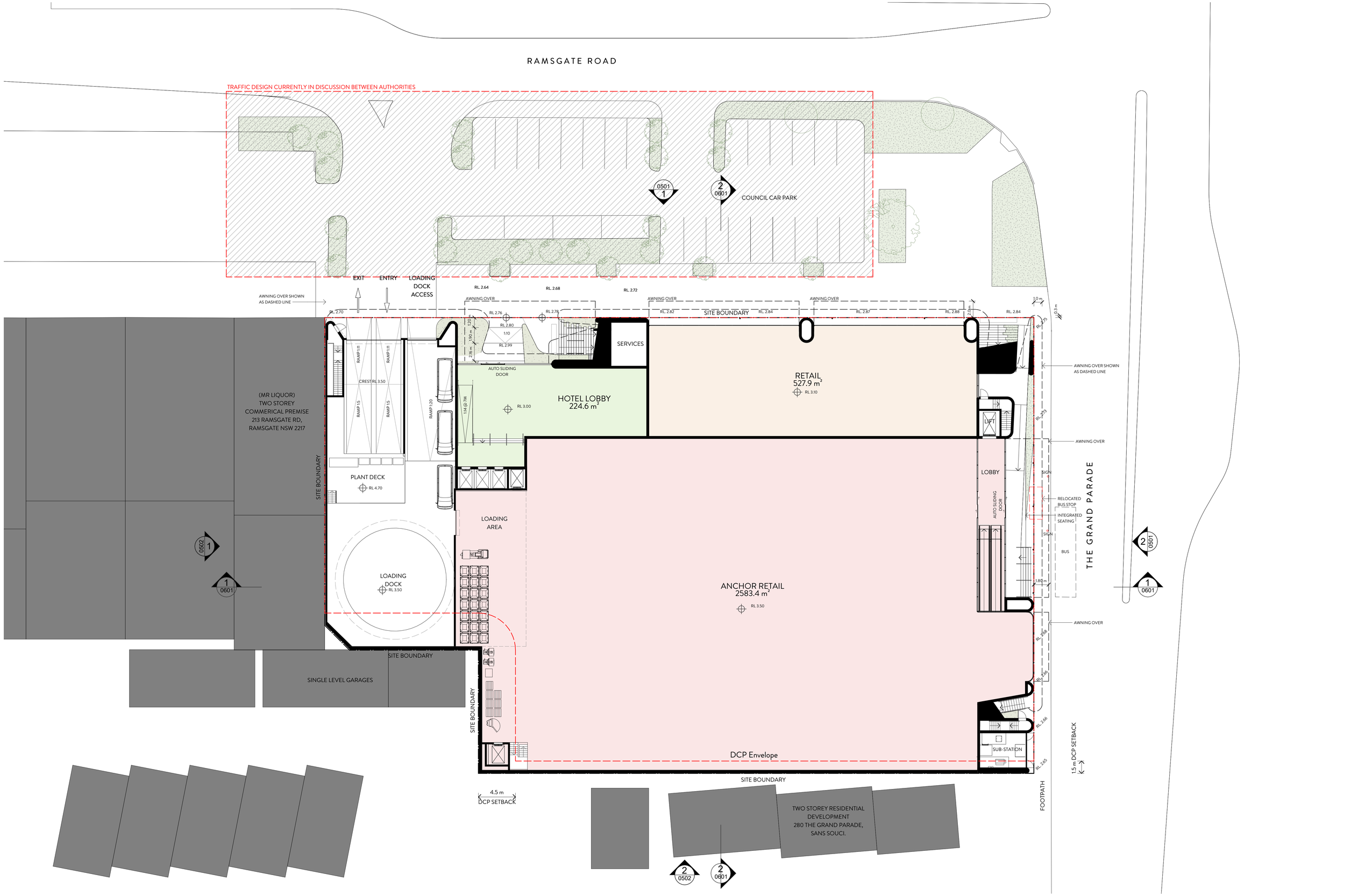

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RAMSGATE BEACH HOTEL
277 The Grand Parade, Ramsgate NSW 2217

FLOOR PLAN G — 1 : 200 @ A1
Drawn: JO
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Project No.: 22.02
A-0203 [15]

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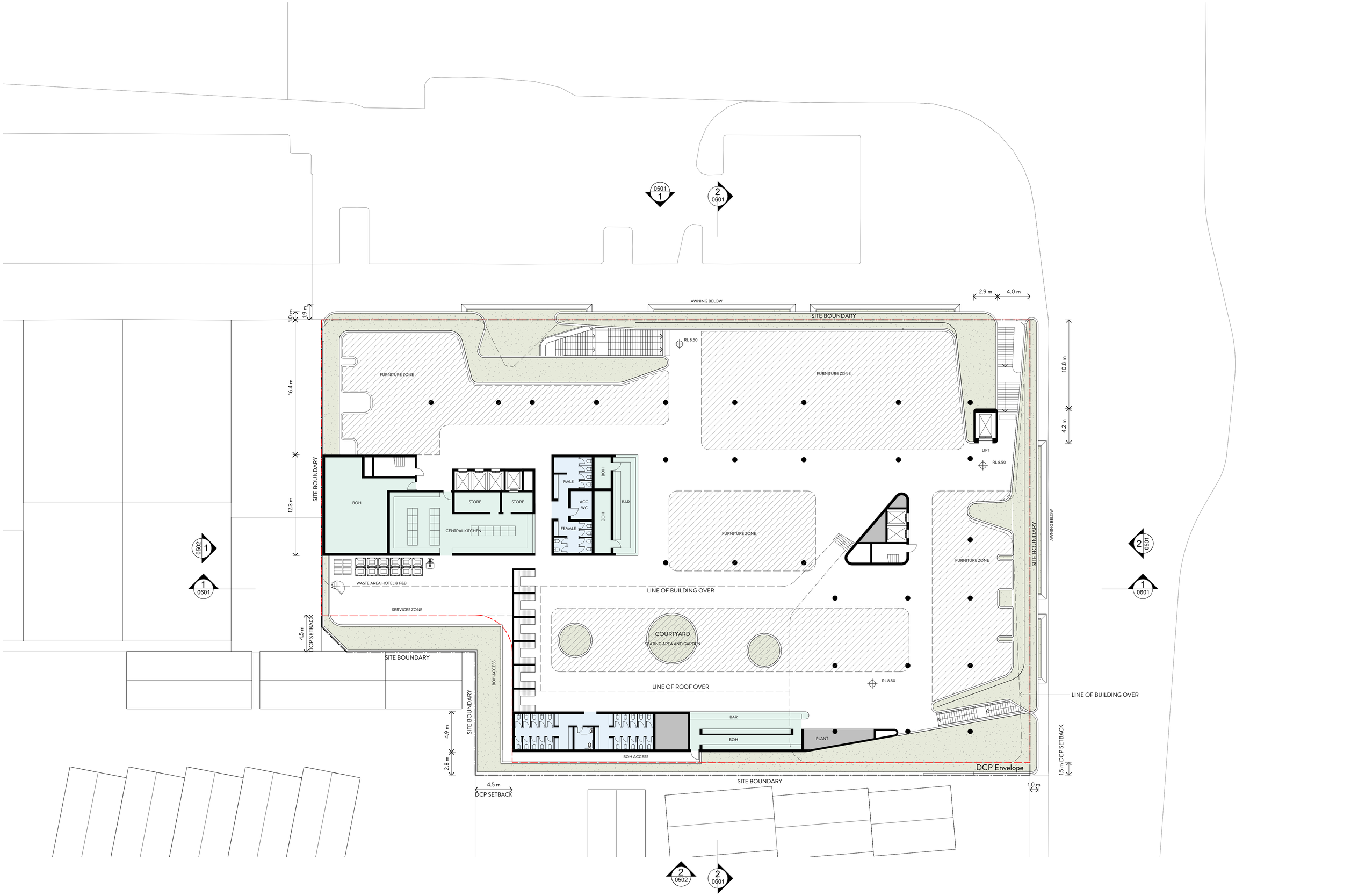

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RAMSGATE BEACH HOTEL
277 The Grand Parade, Ramsgate NSW 2217

FLOOR PLAN L1 — 1:200 @ A1

Drawn	JO
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Project No.	22.02

A-0204 [11]

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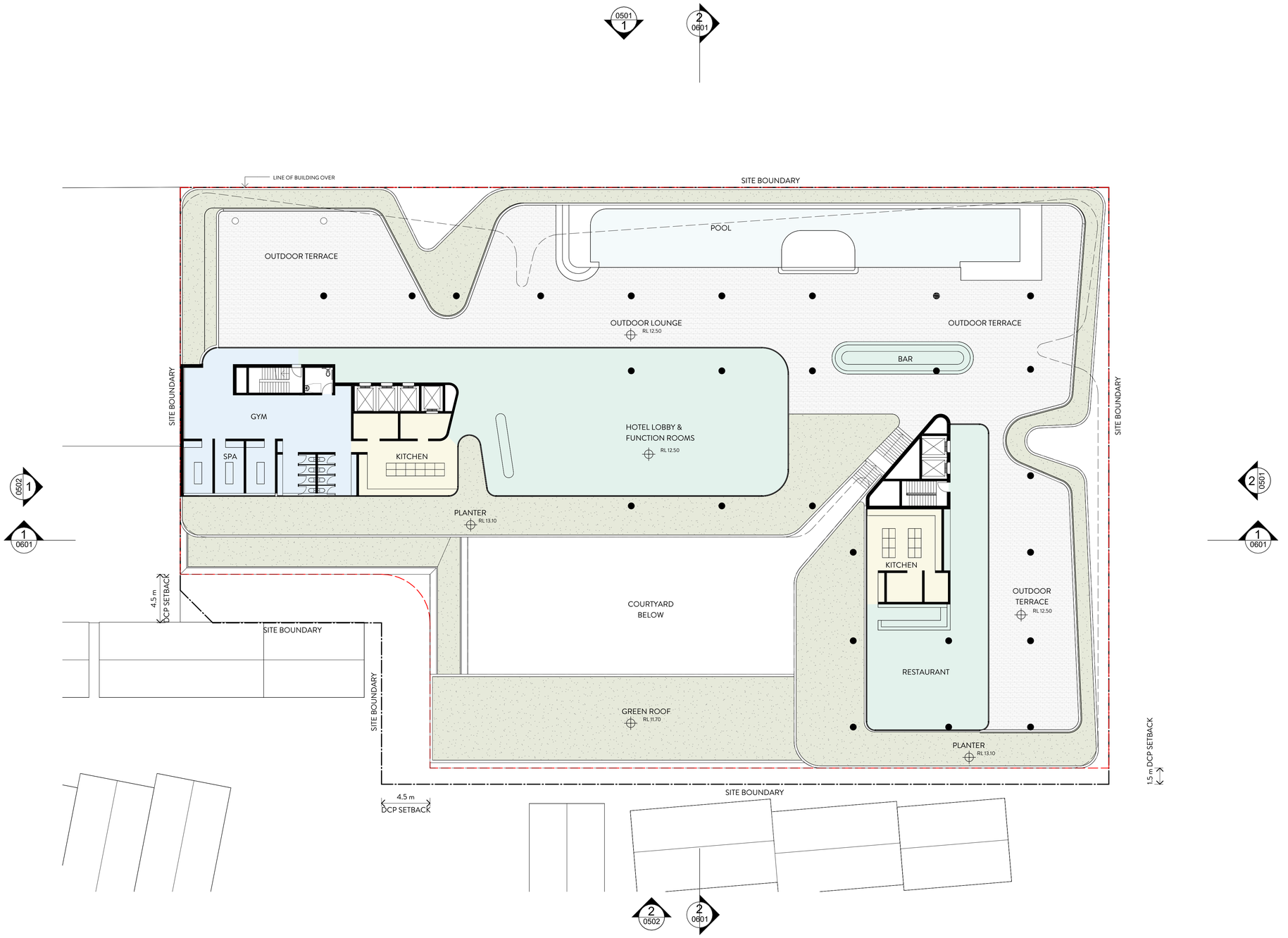

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FLOOR PLAN L2 — 1 : 200 @ A1
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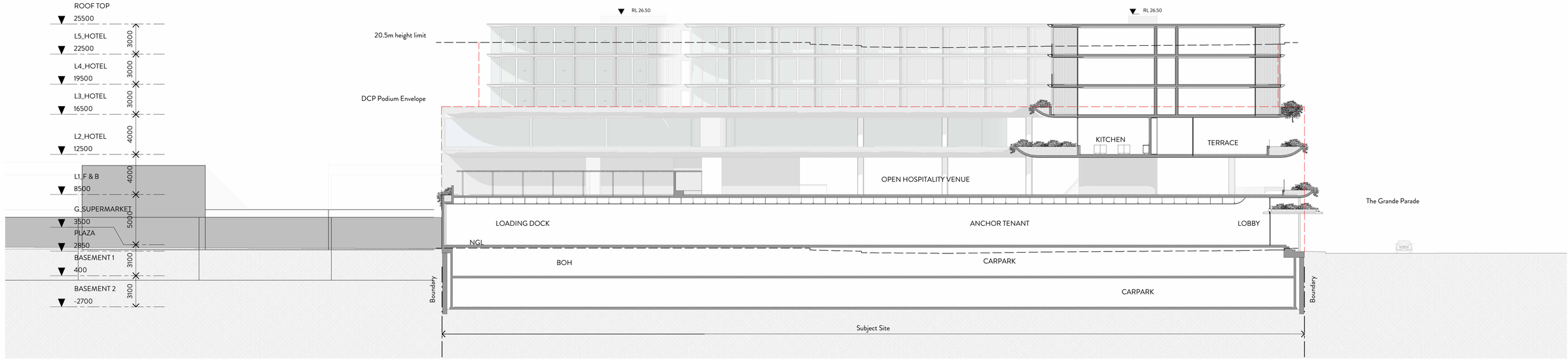
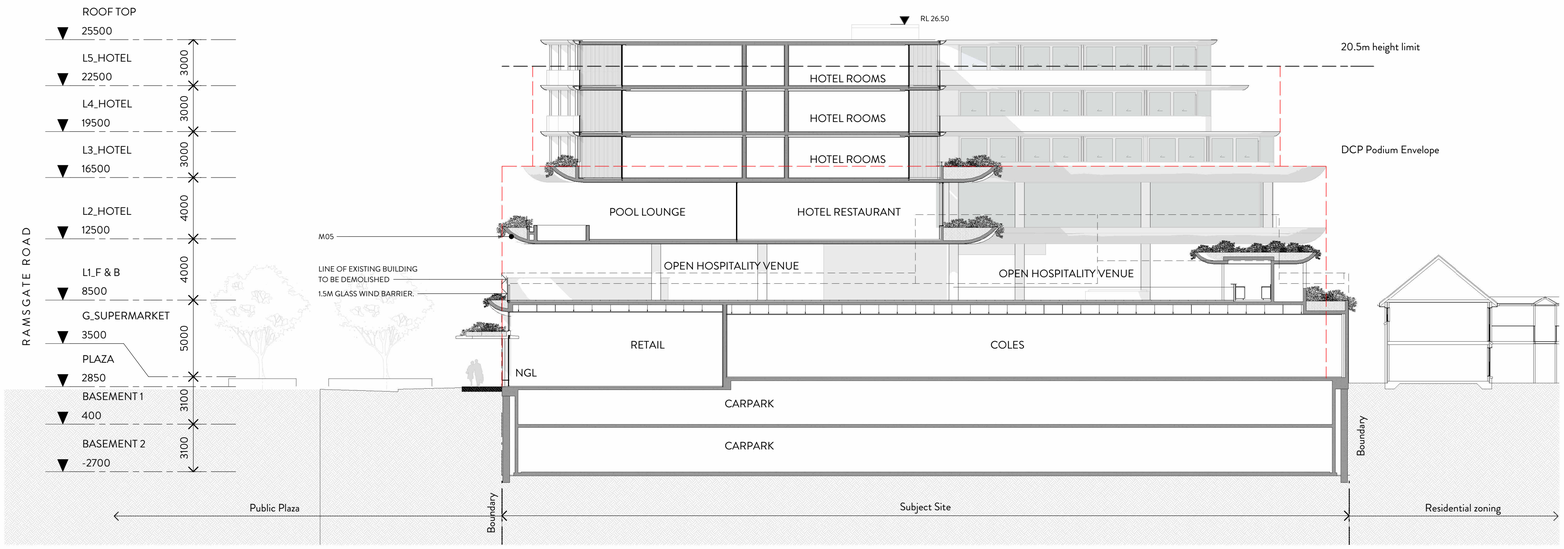
2
0601



1 **SITE SECTION_ EAST WEST**
1 : 200

1
0601



2 **SITE SECTION_ NORTH SOUTH**
1 : 200

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A-0601 [10]

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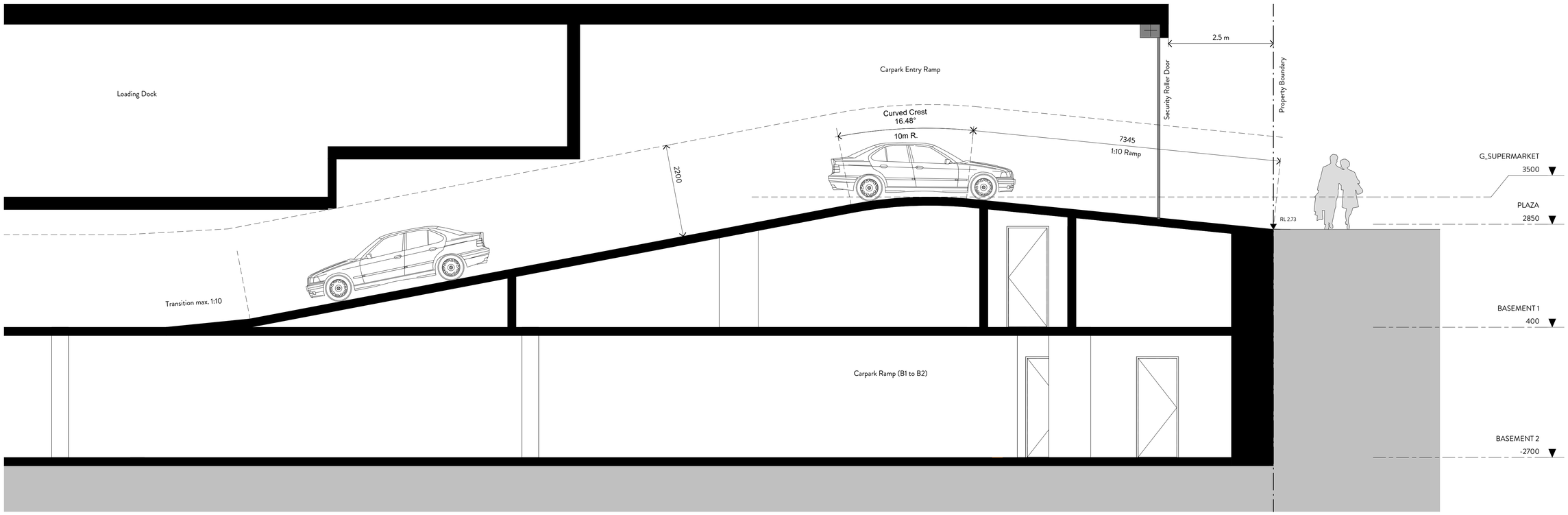

1 **ENTRY RAMP SECTION**
1 : 50

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RAMSGATE BEACH HOTEL
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SECTIONS SHEET 2 — 1 : 50 @ A1
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Checked: CP
Project No.: 22.02
A-0602 [3]

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APPENDIX B

TRAFFIC SURVEY DATA

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Ramsgate Rd and The Grand Parade, Ram

GPS	*-33.985820, 151.147337*
Date:	Thu 24/03/22
Weather:	Overcast
Suburban:	Ramsgate Beach
Customer:	N/A

North:	The Grand Parade
East:	N/A
South:	The Grand Parade
West:	Ramsgate Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-6:00 PM
Traffic Peak	AM:	7:30 AM-8:30 AM
	PM:	3:45 PM-4:45 PM

All Vehicles

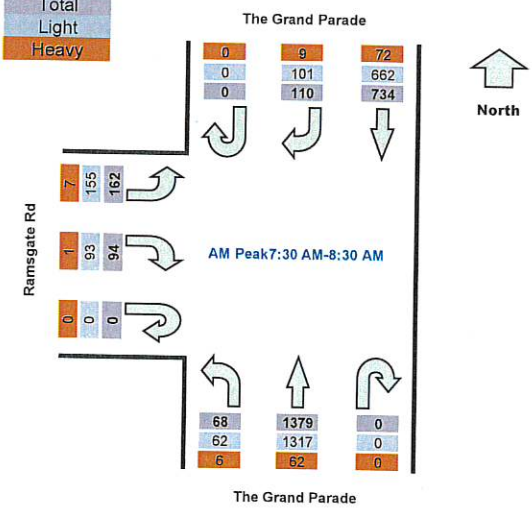
Time		rth Approach The Grand Par			uth Approach The Grand Par			West Approach Ramsgate R			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
7:00	7:15	0	20	117	0	320	15	1	12	39	2428	
7:15	7:30	0	17	157	0	405	16	0	16	52	2510	
7:30	7:45	0	21	179	0	335	13	0	13	43	2547	Peak
7:45	8:00	0	23	202	0	339	12	0	21	40	2485	
8:00	8:15	0	30	173	0	319	20	0	26	38	2469	
8:15	8:30	0	36	180	0	386	23	0	34	41		
8:30	8:45	0	32	167	0	262	20	0	21	40		
8:45	9:00	0	45	214	0	275	21	0	22	44		
15:00	15:15	0	61	235	0	238	31	0	27	43	2747	
15:15	15:30	0	62	278	0	174	18	0	22	33	2934	
15:30	15:45	0	78	412	0	186	24	0	19	36	3126	
15:45	16:00	0	95	406	0	195	20	0	21	33	3165	Peak
16:00	16:15	0	95	454	0	192	16	0	21	44	3154	
16:15	16:30	0	89	440	0	190	13	0	19	28	3095	
16:30	16:45	0	78	431	0	217	19	0	17	32	3102	
16:45	17:00	0	88	413	0	180	13	0	15	50	3065	
17:00	17:15	0	72	370	0	252	20	0	19	30	3021	
17:15	17:30	0	108	404	0	215	14	0	11	34		
17:30	17:45	0	71	380	0	235	18	0	15	38		
17:45	18:00	0	89	340	0	205	19	0	18	44		

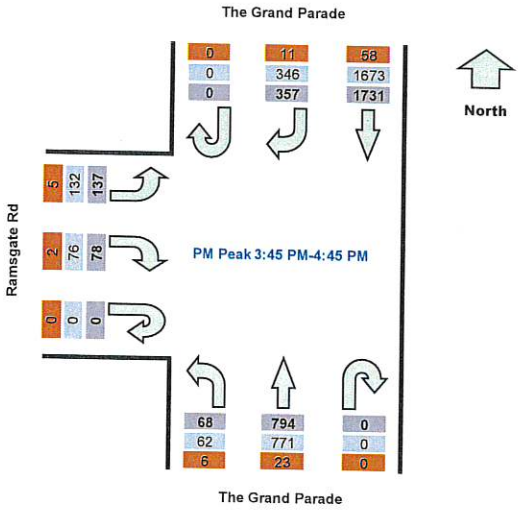
Peak Time		rth Approach The Grand Par			uth Approach The Grand Par			West Approach Ramsgate R			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
7:30	8:30	0	110	734	0	1379	68	0	94	162	2547
15:45	16:45	0	357	1731	0	794	68	0	78	137	3165

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

Graphic

Total
Light
Heavy





TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Ramsgate Rd and The Grand Parade, Ram

GPS -33.985820, 151.147337

Date:	Sat 26/03/22
Weather:	Overcast
Suburban:	Ramsgate Beach
Customer:	N/A

North:	The Grand Parade
East:	N/A
South:	The Grand Parade
West:	Ramsgate Rd

Survey Period	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-2:00 PM
Traffic Peak	AM:	11:30 AM-12:30 PM
	PM:	12:15 PM-1:15 PM

All Vehicles

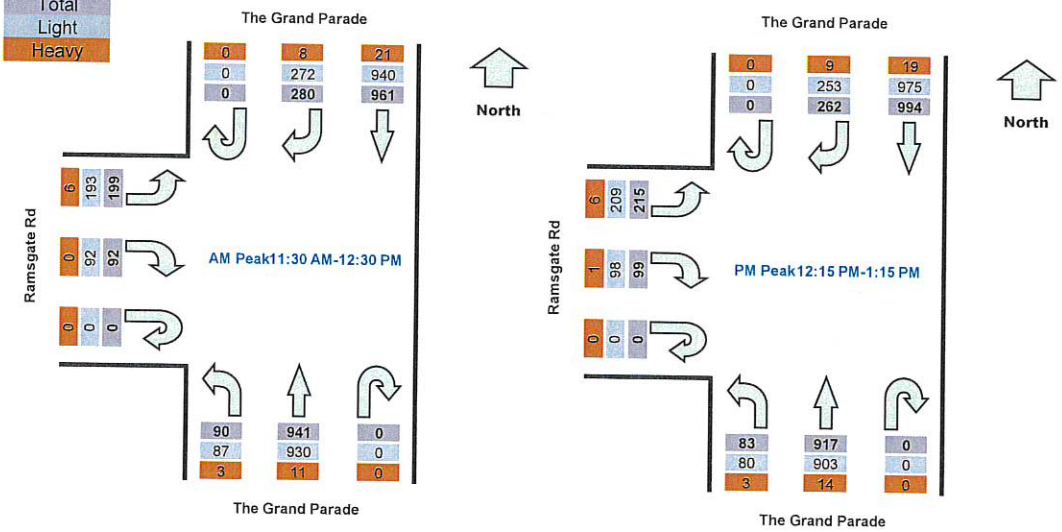
Time		th Approach The Grand Par			th Approach The Grand Par			Vest Approach Ramsgate R			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
11:00	11:15	0	57	213	0	226	21	0	21	55	2510	Peak
11:15	11:30	0	45	214	0	227	28	0	23	44	2509	
11:30	11:45	0	60	238	0	255	28	0	26	61	2563	
11:45	12:00	0	69	265	0	250	20	0	21	43	2545	
12:00	12:15	0	85	229	0	197	21	0	21	39	2566	
12:15	12:30	0	66	229	0	239	21	0	24	56	2570	Peak
12:30	12:45	0	67	248	0	238	25	0	22	50	2502	
12:45	13:00	0	65	279	0	240	19	0	33	53	2564	
13:00	13:15	0	64	238	0	200	18	0	20	56	2510	
13:15	13:30	0	51	198	0	231	25	0	16	46		
13:30	13:45	0	73	325	0	218	22	0	26	48		
13:45	14:00	0	75	274	0	200	17	0	22	47		

Peak Time		th Approach The Grand Par			th Approach The Grand Par			Vest Approach Ramsgate R			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
11:30	12:30	0	280	961	0	941	90	0	92	199	2563
12:15	13:15	0	262	994	0	917	83	0	99	215	2570

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

Graphic

Total
Light
Heavy



TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Ramsgate Rd and Alfred St, Ramsgate Beach

GPS -33.985514, 151.145579

Date:	Thu 24/03/22
Weather:	Overcast
Suburban:	Ramsgate Beach
Customer:	N/A

North:	Alfred St
East:	Ramsgate Rd
South:	Alfred St
West:	Ramsgate Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	3:30 PM-4:30 PM

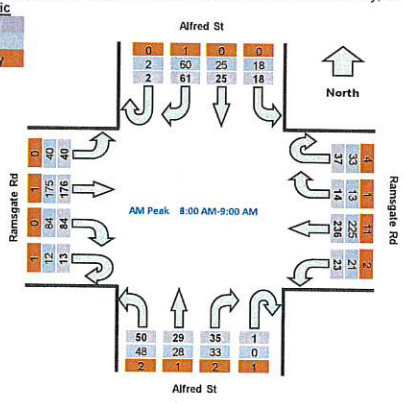
All Vehicles

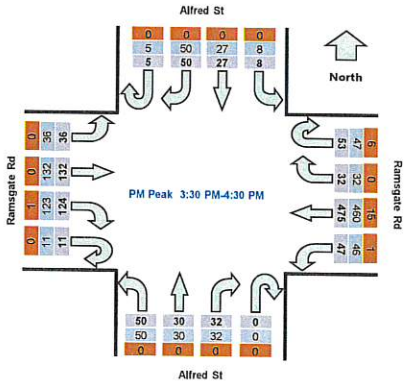
Time		North Approach Alfred St				East Approach Ramsgate Rd				South Approach Alfred St				West Approach Ramsgate Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	6	3	2	9	1	35	1	0	8	2	3	2	14	34	3	597	
7:15	7:30	0	8	3	3	7	3	34	3	0	12	3	6	0	17	48	4	671	
7:30	7:45	1	7	1	4	5	3	40	2	0	8	6	17	2	18	40	4	732	
7:45	8:00	2	11	4	2	8	0	35	8	0	7	6	7	0	21	44	10	784	
8:00	8:15	0	12	3	2	6	4	63	5	0	7	7	10	2	18	48	10	844	Peak
8:15	8:30	0	17	3	6	10	3	67	5	1	9	4	8	3	14	51	11		
8:30	8:45	2	17	3	3	11	3	47	7	0	11	12	24	4	24	36	6		
8:45	9:00	0	15	16	7	10	4	59	6	0	8	6	8	4	28	41	13		
15:00	15:15	2	13	10	5	11	4	92	14	0	12	8	13	0	20	44	6	1012	
15:15	15:30	0	8	5	4	13	7	74	8	1	8	8	4	4	27	30	11	1075	
15:30	15:45	0	9	9	2	10	9	105	11	0	6	7	14	0	39	40	7	1112	Peak
15:45	16:00	4	12	5	1	15	9	121	14	0	9	8	9	4	29	28	10	1098	
16:00	16:15	1	18	5	3	13	7	135	10	0	11	10	15	6	32	40	11	1080	
16:15	16:30	0	11	8	2	15	7	114	12	0	6	5	12	1	24	24	8	1022	
16:30	16:45	1	8	7	3	10	3	110	9	0	4	4	13	2	31	35	14	1050	
16:45	17:00	0	10	8	6	13	4	106	10	0	9	7	17	2	25	37	6	1067	
17:00	17:15	1	11	4	4	10	5	103	14	0	11	8	15	3	37	25	8	1101	
17:15	17:30	1	14	9	4	14	13	114	21	0	5	3	12	5	31	23	8		
17:30	17:45	1	8	9	1	12	11	94	17	0	8	6	12	7	41	32	12		
17:45	18:00	0	18	11	5	17	6	117	19	0	10	4	13	6	31	32	5		

Peak Time		North Approach Alfred St				East Approach Ramsgate Rd				South Approach Alfred St				West Approach Ramsgate Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:00	9:00	2	61	25	18	37	14	236	23	1	35	29	50	13	84	176	40	844
15:30	16:30	5	50	27	8	53	32	475	47	0	32	30	50	11	124	132	36	1112

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

Graphic
Total
Light
Heavy





TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Ramsgate Rd and Alfred St, Ramsgate Beach

GPS -33.985514, 151.145579

Date:	Sat 26/03/22
Weather:	Overcast
Suburban:	Ramsgate Beach
Customer:	N/A

North:	Alfred St
East:	Ramsgate Rd
South:	Alfred St
West:	Ramsgate Rd

Survey Period	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-2:00 PM
Traffic Peak	AM:	11:30 AM-12:30 PM
	PM:	12:00 PM-1:00 PM

All Vehicles

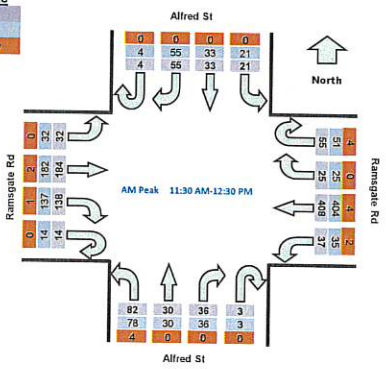
Time		North Approach Alfred St				East Approach Ramsgate Rd				South Approach Alfred St				West Approach Ramsgate Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
11:00	11:15	3	10	10	8	9	5	97	5	0	12	10	24	4	22	49	11	1122	Peak
11:15	11:30	1	19	8	5	11	4	82	15	0	12	7	26	2	36	39	5	1144	
11:30	11:45	2	15	13	2	16	6	98	10	1	12	7	24	3	27	60	5	1157	
11:45	12:00	0	13	7	6	11	6	105	10	1	6	7	14	5	31	41	7	1129	
12:00	12:15	2	17	7	8	14	9	106	7	1	6	7	22	4	46	32	13	1111	Peak
12:15	12:30	0	10	6	5	14	4	99	10	0	12	9	22	2	34	51	7	1073	
12:30	12:45	0	16	6	5	10	7	95	14	0	5	12	17	4	26	53	3	1028	
12:45	13:00	1	8	3	1	15	4	82	15	0	11	6	14	3	22	60	7	1020	
13:00	13:15	0	12	6	4	20	7	87	19	0	6	4	22	2	24	45	5	1025	
13:15	13:30	0	12	5	5	12	5	84	11	0	6	8	20	2	26	39	5		
13:30	13:45	2	9	11	6	14	11	92	13	0	9	2	15	2	24	45	10		
13:45	14:00	0	7	6	6	10	7	99	10	1	9	1	13	6	25	46	11		

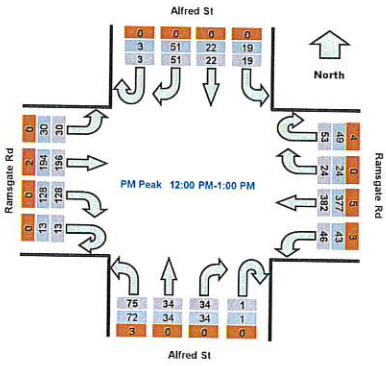
Peak Time		North Approach Alfred St				East Approach Ramsgate Rd				South Approach Alfred St				West Approach Ramsgate Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
11:30	12:30	4	55	33	21	55	25	408	37	3	36	30	82	14	138	184	32	1157
12:00	13:00	3	51	22	19	53	24	382	46	1	34	34	75	13	128	196	30	1111

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

Graphic

Total
Light
Heavy





TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

East Access on Ramsgate Rd, Ramsgate Beach

GPS	*-33.985790, 151.146707*
Date:	Thu 24/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-6:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
7:00	7:15	7	9	0	0
7:15	7:30	6	12	0	0
7:30	7:45	5	11	1	0
7:45	8:00	7	14	0	0
8:00	8:15	8	15	0	0
8:15	8:30	6	10	0	0
8:30	8:45	9	10	0	0
8:45	9:00	11	10	0	0
15:00	15:15	12	10	0	0
15:15	15:30	11	9	1	0
15:30	15:45	16	17	1	1
15:45	16:00	18	11	0	0
16:00	16:15	16	17	0	0
16:15	16:30	12	17	0	0
16:30	16:45	9	14	0	0
16:45	17:00	10	14	0	0
17:00	17:15	6	16	0	0
17:15	17:30	15	17	0	0
17:30	17:45	16	14	0	0
17:45	18:00	15	19	0	0

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

East Access on Ramsgate Rd, Ramsgate Beach

GPS	*-33.985790, 151.146707*
Date:	Sat 26/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-2:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
11:00	11:15	11	9	0	0
11:15	11:30	12	9	0	0
11:30	11:45	11	9	1	0
11:45	12:00	8	12	0	0
12:00	12:15	9	12	1	0
12:15	12:30	12	11	0	0
12:30	12:45	17	11	0	0
12:45	13:00	11	9	0	0
13:00	13:15	9	14	0	0
13:15	13:30	13	16	0	0
13:30	13:45	16	14	0	0
13:45	14:00	14	12	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

West Access on Ramsgate Rd, Ramsgate Beach

GPS -33.985750, 151.146398

Date:	Thu 24/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-6:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
7:00	7:15	0	7	0	0
7:15	7:30	0	9	0	1
7:30	7:45	0	11	0	0
7:45	8:00	0	8	0	1
8:00	8:15	0	16	0	0
8:15	8:30	0	19	0	0
8:30	8:45	0	10	0	0
8:45	9:00	0	9	0	1
15:00	15:15	0	29	0	2
15:15	15:30	0	25	0	0
15:30	15:45	0	23	0	2
15:45	16:00	0	35	0	0
16:00	16:15	0	30	0	0
16:15	16:30	0	28	0	0
16:30	16:45	0	23	0	1
16:45	17:00	0	30	0	0
17:00	17:15	0	30	0	0
17:15	17:30	0	28	0	0
17:30	17:45	0	26	0	0
17:45	18:00	0	27	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

West Access on Ramsgate Rd, Ramsgate Beach

GPS *-33.985750, 151.146398*

Date:	Sat 26/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-2:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
11:00	11:15	0	27	0	1
11:15	11:30	0	21	0	0
11:30	11:45	0	23	0	1
11:45	12:00	0	22	0	0
12:00	12:15	0	20	0	0
12:15	12:30	0	30	0	0
12:30	12:45	0	30	0	0
12:45	13:00	0	23	0	0
13:00	13:15	0	23	0	1
13:15	13:30	0	32	0	0
13:30	13:45	0	17	0	0
13:45	14:00	0	23	0	1

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Access from Alfred St, Ramsgate Beach

GPS -33.985769, 151.145784

Date:	Thu 24/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-6:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
7:00	7:15	18	0	0	0
7:15	7:30	19	0	0	0
7:30	7:45	14	0	0	0
7:45	8:00	11	0	0	0
8:00	8:15	15	1	0	0
8:15	8:30	8	0	0	0
8:30	8:45	23	0	1	0
8:45	9:00	30	0	0	0
15:00	15:15	24	0	0	0
15:15	15:30	22	0	1	0
15:30	15:45	35	0	0	0
15:45	16:00	20	0	0	0
16:00	16:15	29	0	0	0
16:15	16:30	21	1	0	0
16:30	16:45	27	0	1	0
16:45	17:00	20	0	0	0
17:00	17:15	38	0	0	0
17:15	17:30	30	0	0	0
17:30	17:45	38	0	0	0
17:45	18:00	29	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Access from Alfred St, Ramsgate Beach

GPS *-33.985769, 151.145784*

Date:	Sat 26/03/22
Weather:	Fine
Suburban:	Ramsgate Beach
Customer:	

Survey Period	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-2:00 PM

All Vehicles

Time		Lights		Heavies	
Period Start	Period End	In	Out	In	Out
11:00	11:15	29	0	0	0
11:15	11:30	30	0	0	0
11:30	11:45	38	0	0	0
11:45	12:00	20	0	0	0
12:00	12:15	40	0	0	0
12:15	12:30	32	0	0	0
12:30	12:45	28	0	0	0
12:45	13:00	19	0	0	0
13:00	13:15	43	0	0	0
13:15	13:30	26	0	0	0
13:30	13:45	26	0	1	0
13:45	14:00	17	0	0	0

APPENDIX C

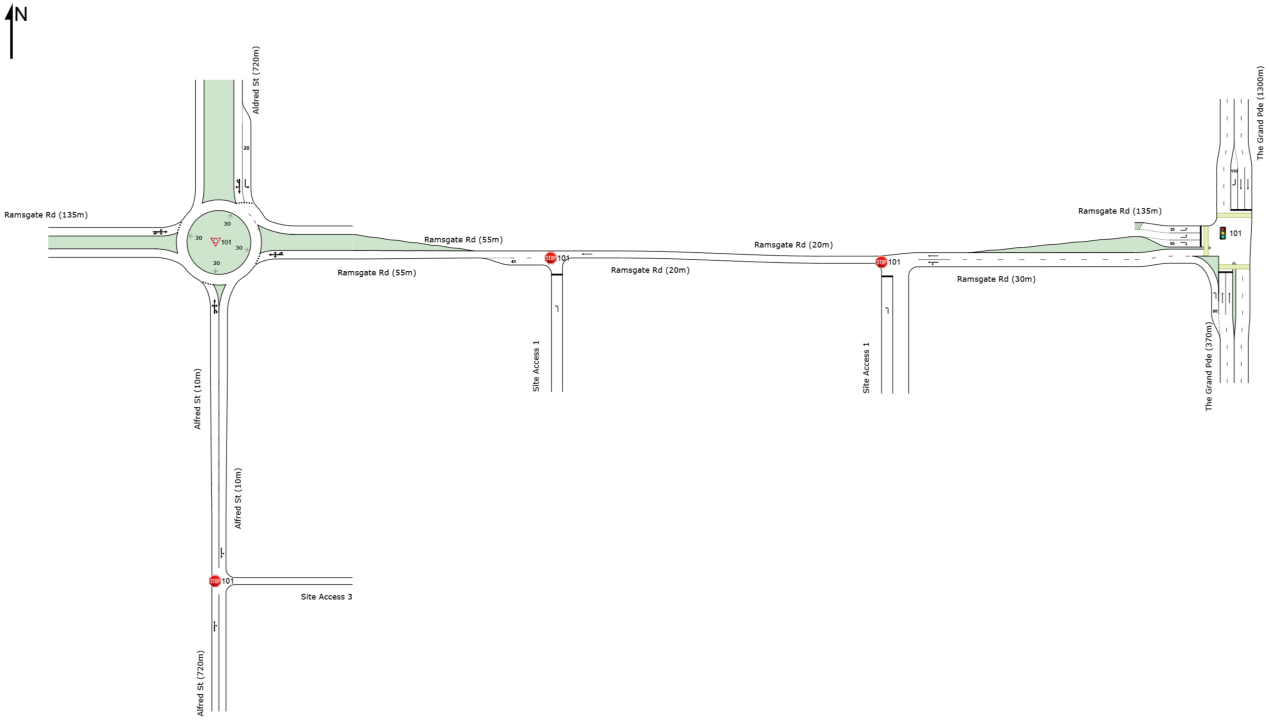
SIDRA MOVEMENT SUMMARIES

NETWORK LAYOUT

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

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Existing AM)
101	NA	Ramsgate Rd & Alfred St (Existing AM)
101	NA	Ramsgate Rd & Site Access 1 (Existing AM)
101	NA	Ramsgate Rd & Site Access 2 (Existing AM)
101	NA	Alfred St & Site Access 3 (Existing AM)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Existing AM) (Site Folder: General)]

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

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	68	8.8	68	8.8	0.039	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	48.7
2	T1	1379	4.5	1379	4.5	* 0.588	14.0	LOS A	14.6	105.9	0.64	0.58	0.64	52.7
Approach		1447	4.7	1447	4.7	0.588	13.6	LOS A	14.6	105.9	0.61	0.58	0.61	52.7
North: The Grand Pde (1300m)														
8	T1	734	9.8	734	9.8	0.256	3.7	LOS A	3.5	26.4	0.29	0.26	0.29	57.9
9	R2	110	8.2	110	8.2	* 0.315	15.9	LOS B	1.6	11.8	0.64	0.74	0.64	50.0
Approach		844	9.6	844	9.6	0.315	5.3	LOS A	3.5	26.4	0.34	0.32	0.34	57.0
West: Ramsgate Rd (135m)														
10	L2	162	4.3	162	4.3	0.163	41.0	LOS C	2.2	16.0	0.80	0.75	0.80	40.2
12	R2	94	1.1	94	1.1	* 0.437	60.4	LOS E	3.2	22.9	0.97	0.78	0.97	20.2
Approach		256	3.1	256	3.1	0.437	48.1	LOS D	3.2	22.9	0.86	0.76	0.86	34.3
All Vehicles		2547	6.2	2547	6.2	0.588	14.3	LOS A	14.6	105.9	0.54	0.51	0.54	52.0

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Existing AM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	50	2.0	50	2.0	0.040	2.8	LOS A	0.1	0.5	0.26	0.86	0.26	9.9
Approach		50	2.0	50	2.0	0.040	2.8	LOS A	0.1	0.5	0.26	0.86	0.26	9.9
East: Ramsgate Rd (30m)														
4	L2	26	0.0	26	0.0	0.015	6.2	LOS A	0.0	0.0	0.00	0.85	0.00	47.8
5	T1	144	10.4	144	10.4	0.077	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.8
Approach		170	8.8	170	8.8	0.077	0.9	NA	0.0	0.0	0.00	0.14	0.00	50.6
All Vehicles		220	7.3	220	7.3	0.077	1.4	NA	0.1	0.5	0.06	0.31	0.06	15.4

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Site Access 2 (Existing AM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	55	1.8	55	1.8	0.039	2.6	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
Approach		55	1.8	55	1.8	0.039	2.6	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
East: Ramsgate Rd (20m)														
5	T1	194	8.2	194	8.2	0.105	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		194	8.2	194	8.2	0.105	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
All Vehicles		249	6.8	249	6.8	0.105	0.6	NA	0.0	0.0	0.00	0.22	0.00	11.5

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Existing AM) (Site Folder: General)]

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

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	42	4.8	42	4.8	0.084	2.2	LOS A	0.2	1.3	0.44	0.52	0.44	42.0
2	T1	23	4.3	23	4.3	0.084	2.4	LOS A	0.2	1.3	0.44	0.52	0.44	49.3
3	R2	31	6.5	31	6.5	0.084	6.7	LOS A	0.2	1.3	0.44	0.52	0.44	30.3
3u	U	1	100.0	1	100.0	0.084	10.0	LOS A	0.2	1.3	0.44	0.52	0.44	25.2
Approach		97	6.2	97	6.2	0.084	3.8	LOS A	0.2	1.3	0.44	0.52	0.44	44.0
East: Ramsgate Rd (55m)														
4	L2	20	10.0	20	10.0	0.196	3.0	LOS A	0.5	3.5	0.31	0.45	0.31	33.6
5	T1	205	4.9	205	4.9	0.196	3.3	LOS A	0.5	3.5	0.31	0.45	0.31	48.8
6	R2	10	10.0	10	10.0	0.196	8.5	LOS A	0.5	3.5	0.31	0.45	0.31	50.1
6u	U	29	10.3	29	10.3	0.196	10.9	LOS A	0.5	3.5	0.31	0.45	0.31	34.8
Approach		264	6.1	264	6.1	0.196	4.3	LOS A	0.5	3.5	0.31	0.45	0.31	46.9
North: Aldred St (720m)														
7	L2	14	0.0	14	0.0	0.013	4.0	LOS A	0.0	0.2	0.45	0.42	0.45	45.8
8	T1	11	0.0	11	0.0	0.037	3.1	LOS A	0.1	0.7	0.43	0.54	0.43	43.5
9	R2	40	2.5	40	2.5	0.037	8.5	LOS A	0.1	0.7	0.43	0.54	0.43	28.8
9u	U	3	0.0	3	0.0	0.037	10.5	LOS A	0.1	0.7	0.43	0.54	0.43	49.0
Approach		68	1.5	68	1.5	0.037	6.8	LOS A	0.1	0.7	0.43	0.51	0.43	33.7
West: Ramsgate Rd (135m)														
10	L2	35	0.0	35	0.0	0.206	3.8	LOS A	0.4	2.9	0.21	0.47	0.21	47.7
11	T1	183	0.5	183	0.5	0.206	4.0	LOS A	0.4	2.9	0.21	0.47	0.21	40.4
12	R2	71	0.0	71	0.0	0.206	9.6	LOS A	0.4	2.9	0.21	0.47	0.21	38.6
12u	U	7	14.3	7	14.3	0.206	12.2	LOS A	0.4	2.9	0.21	0.47	0.21	15.4
Approach		296	0.7	296	0.7	0.206	5.5	LOS A	0.4	2.9	0.21	0.47	0.21	40.7
All Vehicles		725	3.4	725	3.4	0.206	4.9	LOS A	0.5	3.5	0.30	0.47	0.30	40.4

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Existing AM) (Site Folder: General)]

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

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	97	6.2	97	6.2	0.062	0.1	LOS A	0.0	0.3	0.07	0.00	0.07	10.0
3	R2	17	0.0	17	0.0	0.062	0.3	LOS A	0.0	0.3	0.07	0.00	0.07	10.0
Approach		114	5.3	114	5.3	0.062	0.1	NA	0.0	0.3	0.07	0.00	0.07	10.0
North: Alfred St (10m)														
7	L2	31	0.0	31	0.0	0.055	5.1	LOS A	0.0	0.0	0.00	0.75	0.00	43.2
8	T1	72	4.2	72	4.2	0.055	3.5	LOS A	0.0	0.0	0.00	0.75	0.00	44.6
Approach		103	2.9	103	2.9	0.055	4.0	NA	0.0	0.0	0.00	0.75	0.00	44.2
All Vehicles		217	4.1	217	4.1	0.062	1.9	NA	0.0	0.3	0.04	0.36	0.04	15.0

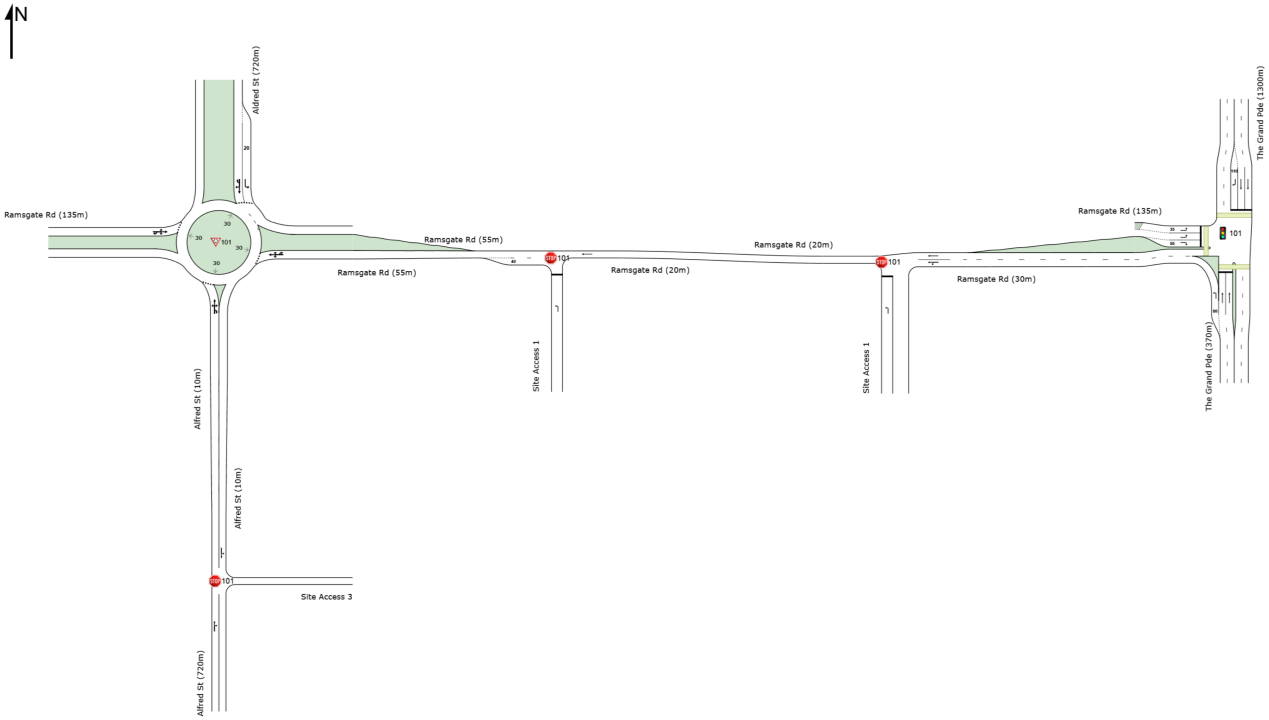
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and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

NETWORK LAYOUT

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

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Existing PM)
101	NA	Ramsgate Rd & Alfred St (Existing PM)
101	NA	Ramsgate Rd & Site Access 1 (Existing PM)
101	NA	Ramsgate Rd & Site Access 2 (Existing PM)
101	NA	Alfred St & Site Access 3 (Existing PM)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Existing PM) (Site Folder: General)]

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

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	68	8.8	68	8.8	0.039	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	48.7
2	T1	794	2.9	794	2.9	0.553	31.6	LOS C	11.2	80.1	0.84	0.74	0.84	45.7
Approach		862	3.4	862	3.4	0.553	29.6	LOS C	11.2	80.1	0.78	0.72	0.78	45.8
North: The Grand Pde (1300m)														
8	T1	1731	3.4	1731	3.4	* 0.579	5.4	LOS A	12.0	86.7	0.43	0.40	0.43	57.0
9	R2	357	3.1	357	3.1	0.429	14.6	LOS B	5.0	35.8	0.68	0.78	0.68	50.7
Approach		2088	3.3	2088	3.3	0.579	7.0	LOS A	12.0	86.7	0.47	0.46	0.47	56.0
West: Ramsgate Rd (135m)														
10	L2	137	3.6	137	3.6	0.072	20.4	LOS B	1.2	8.6	0.52	0.69	0.52	47.8
12	R2	78	2.6	78	2.6	* 0.367	59.9	LOS E	2.7	19.0	0.96	0.77	0.96	20.3
Approach		215	3.3	215	3.3	0.367	34.7	LOS C	2.7	19.0	0.68	0.72	0.68	38.8
All Vehicles		3165	3.3	3165	3.3	0.579	15.0	LOS B	12.0	86.7	0.57	0.55	0.57	51.7

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Existing PM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	59	1.7	59	1.7	0.059	3.9	LOS A	0.1	0.7	0.43	0.86	0.43	9.8
Approach		59	1.7	59	1.7	0.059	3.9	LOS A	0.1	0.7	0.43	0.86	0.43	9.8
East: Ramsgate Rd (30m)														
4	L2	55	1.8	55	1.8	0.037	6.2	LOS A	0.0	0.0	0.00	0.85	0.00	48.4
5	T1	362	4.4	362	4.4	0.184	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	56.3
Approach		417	4.1	417	4.1	0.184	0.8	NA	0.0	0.0	0.00	0.14	0.00	50.9
All Vehicles		476	3.8	476	3.8	0.184	1.2	NA	0.1	0.7	0.05	0.23	0.05	19.2

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Site Access 2 (Existing PM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	117	0.9	117	0.9	0.082	3.1	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
Approach		117	0.9	117	0.9	0.082	3.1	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
East: Ramsgate Rd (20m)														
5	T1	421	4.0	421	4.0	0.222	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		421	4.0	421	4.0	0.222	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		538	3.3	538	3.3	0.222	0.7	NA	0.0	0.0	0.00	0.22	0.00	11.5

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Existing PM) (Site Folder: General)]

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

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	49	0.0	49	0.0	0.119	4.1	LOS A	0.3	2.1	0.68	0.67	0.68	38.8
2	T1	27	0.0	27	0.0	0.119	4.3	LOS A	0.3	2.1	0.68	0.67	0.68	48.0
3	R2	30	0.0	30	0.0	0.119	8.6	LOS A	0.3	2.1	0.68	0.67	0.68	26.9
3u	U	1	0.0	1	0.0	0.119	10.6	LOS A	0.3	2.1	0.68	0.67	0.68	20.5
Approach		107	0.0	107	0.0	0.119	5.4	LOS A	0.3	2.1	0.68	0.67	0.68	42.0
East: Ramsgate Rd (55m)														
4	L2	45	2.2	45	2.2	0.461	3.7	LOS A	1.5	10.5	0.50	0.52	0.50	31.2
5	T1	480	3.1	480	3.1	0.461	4.0	LOS A	1.5	10.5	0.50	0.52	0.50	46.9
6	R2	26	0.0	26	0.0	0.461	9.2	LOS A	1.5	10.5	0.50	0.52	0.50	49.6
6u	U	53	11.3	53	11.3	0.461	11.7	LOS A	1.5	10.5	0.50	0.52	0.50	33.1
Approach		604	3.6	604	3.6	0.461	4.9	LOS A	1.5	10.5	0.50	0.52	0.50	45.5
North: Aldred St (720m)														
7	L2	9	0.0	9	0.0	0.009	4.1	LOS A	0.0	0.1	0.46	0.42	0.46	45.8
8	T1	25	0.0	25	0.0	0.055	3.2	LOS A	0.1	1.0	0.45	0.53	0.45	43.8
9	R2	49	0.0	49	0.0	0.055	8.6	LOS A	0.1	1.0	0.45	0.53	0.45	28.9
9u	U	6	0.0	6	0.0	0.055	10.6	LOS A	0.1	1.0	0.45	0.53	0.45	49.2
Approach		89	0.0	89	0.0	0.055	6.7	LOS A	0.1	1.0	0.45	0.52	0.45	34.5
West: Ramsgate Rd (135m)														
10	L2	33	0.0	33	0.0	0.212	4.1	LOS A	0.4	3.0	0.27	0.53	0.27	46.9
11	T1	127	0.0	127	0.0	0.212	4.2	LOS A	0.4	3.0	0.27	0.53	0.27	38.6
12	R2	116	0.9	116	0.9	0.212	9.9	LOS A	0.4	3.0	0.27	0.53	0.27	36.5
12u	U	13	0.0	13	0.0	0.212	12.2	LOS A	0.4	3.0	0.27	0.53	0.27	15.5
Approach		289	0.3	289	0.3	0.212	6.8	LOS A	0.4	3.0	0.27	0.53	0.27	37.6
All Vehicles		1089	2.1	1089	2.1	0.461	5.6	LOS A	1.5	10.5	0.45	0.54	0.45	40.1

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Existing PM) (Site Folder: General)]

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

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	107	0.0	107	0.0	0.079	0.2	LOS A	0.1	0.6	0.16	0.02	0.16	10.0
3	R2	35	0.0	35	0.0	0.079	0.6	LOS A	0.1	0.6	0.16	0.02	0.16	10.0
Approach		142	0.0	142	0.0	0.079	0.3	NA	0.1	0.6	0.16	0.02	0.16	10.0
North: Alfred St (10m)														
7	L2	63	1.6	63	1.6	0.098	5.1	LOS A	0.0	0.0	0.00	0.75	0.00	43.0
8	T1	123	0.8	123	0.8	0.098	3.5	LOS A	0.0	0.0	0.00	0.75	0.00	44.6
Approach		186	1.1	186	1.1	0.098	4.0	NA	0.0	0.0	0.00	0.75	0.00	44.2
All Vehicles		328	0.6	328	0.6	0.098	2.4	NA	0.1	0.6	0.07	0.43	0.07	16.4

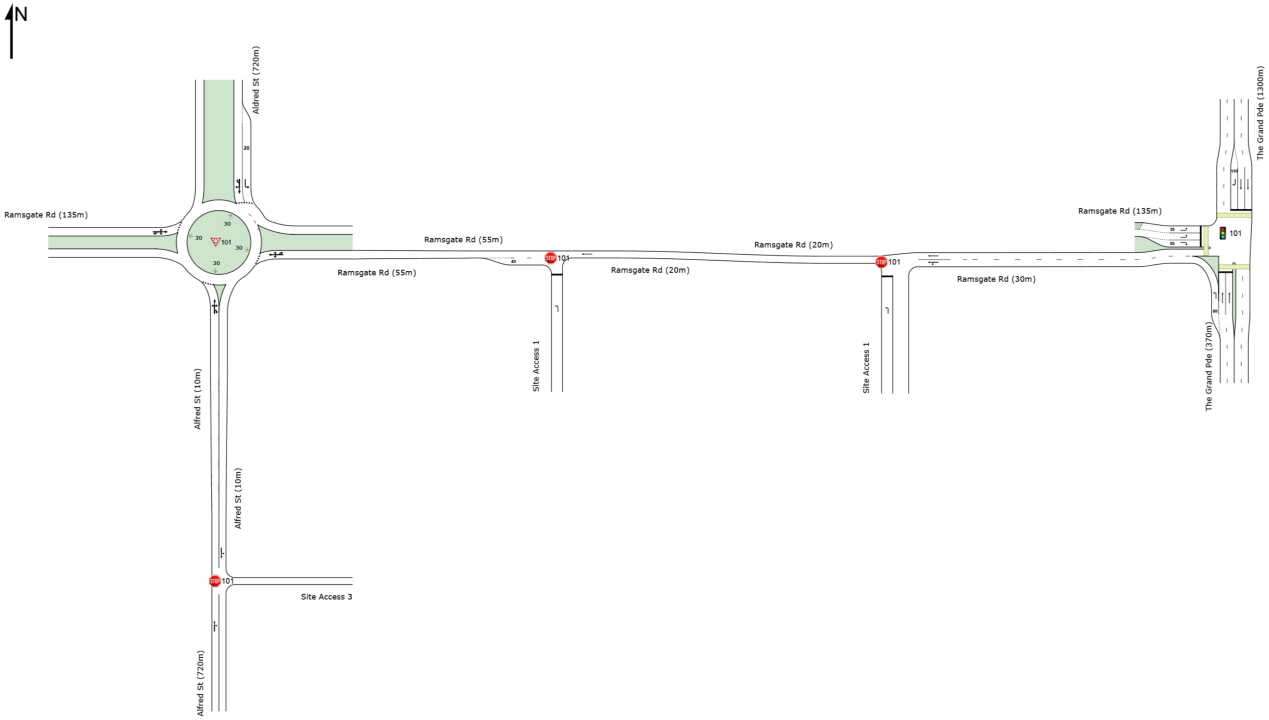
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and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

NETWORK LAYOUT

Network: N101 [Existing SAT (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Existing SAT)
101	NA	Ramsgate Rd & Alfred St (Existing SAT)
101	NA	Ramsgate Rd & Site Access 1 (Existing SAT)
101	NA	Ramsgate Rd & Site Access 2 (Existing SAT)
101	NA	Alfred St & Site Access 3 (Existing SAT)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Existing SAT) (Site Folder: General)]

Network: N101 [Existing SAT (Network Folder: General)]

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	83	3.6	83	3.6	0.046	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	48.7
2	T1	917	1.5	917	1.5	* 0.518	24.6	LOS B	11.5	81.9	0.76	0.67	0.76	48.3
Approach		1000	1.7	1000	1.7	0.518	23.0	LOS B	11.5	81.9	0.70	0.66	0.70	48.3
North: The Grand Pde (1300m)														
8	T1	994	1.9	994	1.9	0.329	4.0	LOS A	5.1	36.1	0.32	0.28	0.32	57.7
9	R2	262	3.4	262	3.4	* 0.372	14.3	LOS A	3.4	24.6	0.64	0.76	0.64	50.9
Approach		1256	2.2	1256	2.2	0.372	6.1	LOS A	5.1	36.1	0.38	0.38	0.38	56.4
West: Ramsgate Rd (135m)														
10	L2	215	2.8	215	2.8	0.134	26.6	LOS B	2.2	16.1	0.63	0.72	0.63	45.2
12	R2	99	1.0	99	1.0	* 0.460	60.6	LOS E	3.4	24.2	0.98	0.78	0.98	20.2
Approach		314	2.2	314	2.2	0.460	37.3	LOS C	3.4	24.2	0.74	0.74	0.74	38.4
All Vehicles		2570	2.0	2570	2.0	0.518	16.5	LOS B	11.5	81.9	0.55	0.53	0.55	50.8

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Existing SAT) (Site Folder: General)]

Network: N101 [Existing SAT (Network Folder: General)]

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	45	2.2	45	2.2	0.042	3.5	LOS A	0.1	0.5	0.38	0.85	0.38	9.8
Approach		45	2.2	45	2.2	0.042	3.5	LOS A	0.1	0.5	0.38	0.85	0.38	9.8
East: Ramsgate Rd (30m)														
4	L2	49	0.0	49	0.0	0.030	6.2	LOS A	0.0	0.0	0.00	0.86	0.00	48.1
5	T1	295	4.1	295	4.1	0.151	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.1
Approach		344	3.5	344	3.5	0.151	0.9	NA	0.0	0.0	0.00	0.14	0.00	50.8
All Vehicles		389	3.3	389	3.3	0.151	1.2	NA	0.1	0.5	0.04	0.22	0.04	20.1

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Site Access 2 (Existing SAT) (Site Folder: General)]

Network: N101 [Existing SAT (Network Folder: General)]

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	107	0.9	107	0.9	0.075	2.9	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
Approach		107	0.9	107	0.9	0.075	2.9	LOS A	0.0	0.0	0.00	1.00	0.00	9.9
East: Ramsgate Rd (20m)														
5	T1	340	3.8	340	3.8	0.179	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		340	3.8	340	3.8	0.179	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		447	3.1	447	3.1	0.179	0.7	NA	0.0	0.0	0.00	0.24	0.00	11.4

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Existing SAT) (Site Folder: General)]

Network: N101 [Existing SAT (Network Folder: General)]

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	75	5.3	75	5.3	0.142	3.4	LOS A	0.3	2.4	0.60	0.62	0.60	40.1
2	T1	31	0.0	31	0.0	0.142	3.5	LOS A	0.3	2.4	0.60	0.62	0.60	48.7
3	R2	34	0.0	34	0.0	0.142	7.8	LOS A	0.3	2.4	0.60	0.62	0.60	28.4
3u	U	1	0.0	1	0.0	0.142	9.8	LOS A	0.3	2.4	0.60	0.62	0.60	22.1
Approach		141	2.8	141	2.8	0.142	4.5	LOS A	0.3	2.4	0.60	0.62	0.60	42.9
East: Ramsgate Rd (55m)														
4	L2	58	5.2	58	5.2	0.376	3.4	LOS A	1.1	7.8	0.44	0.51	0.44	31.7
5	T1	363	1.1	363	1.1	0.376	3.7	LOS A	1.1	7.8	0.44	0.51	0.44	47.7
6	R2	22	0.0	22	0.0	0.376	8.9	LOS A	1.1	7.8	0.44	0.51	0.44	49.7
6u	U	59	6.8	59	6.8	0.376	11.4	LOS A	1.1	7.8	0.44	0.51	0.44	33.5
Approach		502	2.2	502	2.2	0.376	4.8	LOS A	1.1	7.8	0.44	0.51	0.44	45.3
North: Aldred St (720m)														
7	L2	15	0.0	15	0.0	0.015	4.6	LOS A	0.0	0.2	0.52	0.46	0.52	45.6
8	T1	23	0.0	23	0.0	0.050	3.5	LOS A	0.1	0.9	0.51	0.54	0.51	43.7
9	R2	46	0.0	46	0.0	0.050	9.0	LOS A	0.1	0.9	0.51	0.54	0.51	28.9
9u	U	1	0.0	1	0.0	0.050	11.0	LOS A	0.1	0.9	0.51	0.54	0.51	49.2
Approach		85	0.0	85	0.0	0.050	6.7	LOS A	0.1	0.9	0.51	0.53	0.51	34.0
West: Ramsgate Rd (135m)														
10	L2	22	0.0	22	0.0	0.256	4.1	LOS A	0.5	3.8	0.28	0.51	0.28	47.2
11	T1	209	1.0	209	1.0	0.256	4.2	LOS A	0.5	3.8	0.28	0.51	0.28	39.3
12	R2	107	0.9	107	0.9	0.256	9.9	LOS A	0.5	3.8	0.28	0.51	0.28	37.3
12u	U	11	0.0	11	0.0	0.256	12.3	LOS A	0.5	3.8	0.28	0.51	0.28	15.5
Approach		349	0.9	349	0.9	0.256	6.2	LOS A	0.5	3.8	0.28	0.51	0.28	38.0
All Vehicles		1077	1.7	1077	1.7	0.376	5.4	LOS A	1.1	7.8	0.41	0.52	0.41	39.9

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Existing SAT) (Site Folder: General)]

Network: N101 [Existing SAT (Network Folder: General)]

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	141	2.8	141	2.8	0.097	0.2	LOS A	0.1	0.7	0.14	0.01	0.14	10.0
3	R2	35	0.0	35	0.0	0.097	0.6	LOS A	0.1	0.7	0.14	0.01	0.14	10.0
Approach		176	2.3	176	2.3	0.097	0.3	NA	0.1	0.7	0.14	0.01	0.14	10.0
North: Alfred St (10m)														
7	L2	87	0.0	87	0.0	0.100	5.1	LOS A	0.0	0.0	0.00	0.76	0.00	42.9
8	T1	101	4.0	101	4.0	0.100	3.5	LOS A	0.0	0.0	0.00	0.76	0.00	44.4
Approach		188	2.1	188	2.1	0.100	4.2	NA	0.0	0.0	0.00	0.76	0.00	43.8
All Vehicles		364	2.2	364	2.2	0.100	2.3	NA	0.1	0.7	0.07	0.40	0.07	15.3

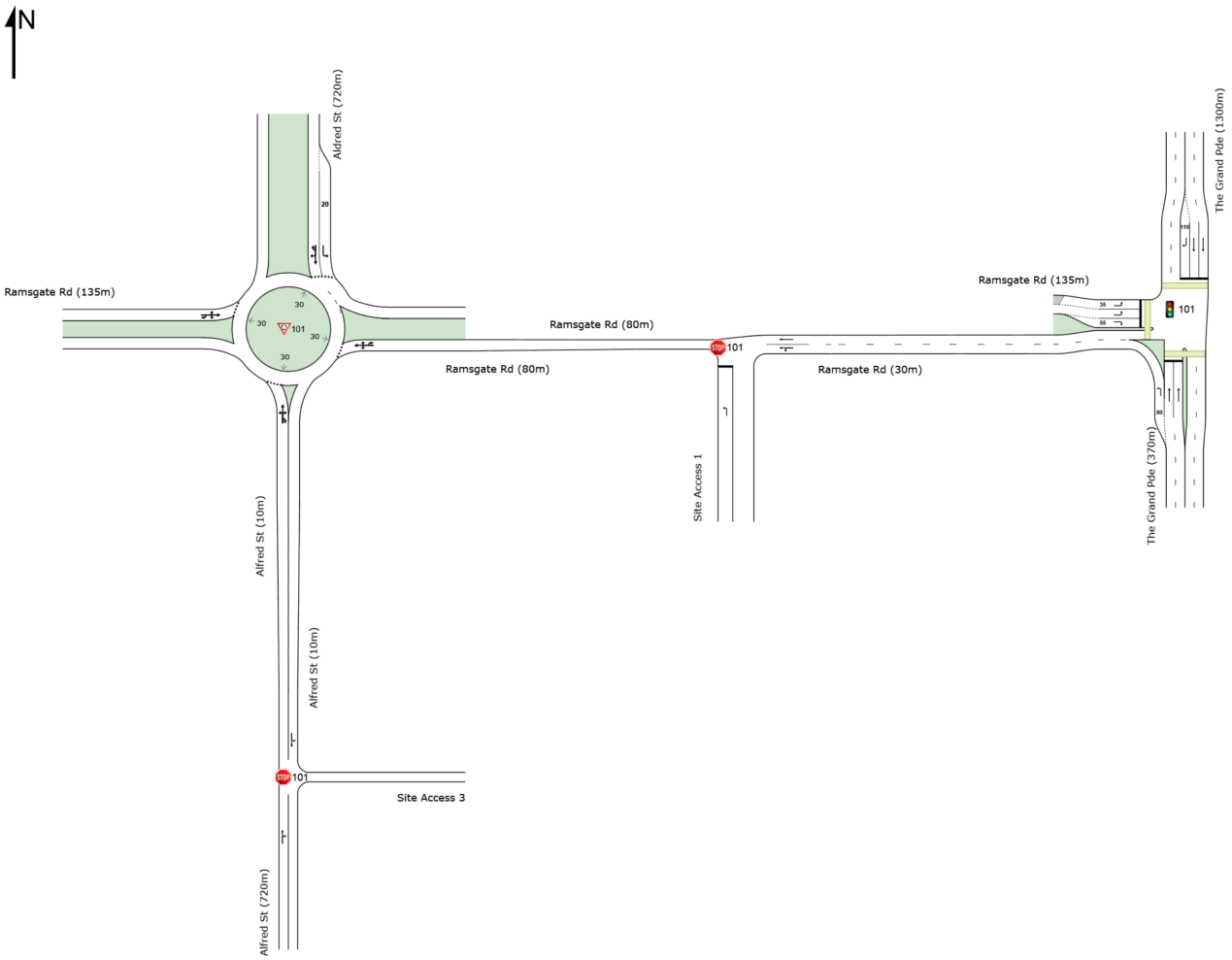
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and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

NETWORK LAYOUT

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

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Proposed AM)
101	NA	Ramsgate Rd & Alfred St (Proposed AM)
101	NA	Ramsgate Rd & Site Access 1 (Proposed AM)
101	NA	Alfred St & Site Access 3 (Proposed AM)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Proposed AM) (Site Folder: General)]

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

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	99	6.1	99	6.1	0.056	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	48.6
2	T1	1379	4.5	1379	4.5	* 0.609	15.3	LOS B	15.4	112.1	0.67	0.61	0.67	52.1
Approach		1478	4.6	1478	4.6	0.609	14.7	LOS B	15.4	112.1	0.62	0.60	0.62	52.1
North: The Grand Pde (1300m)														
8	T1	734	9.8	734	9.8	0.256	3.7	LOS A	3.5	26.4	0.29	0.26	0.29	57.9
9	R2	130	6.9	130	6.9	* 0.347	16.8	LOS B	2.0	15.2	0.68	0.76	0.68	49.5
Approach		864	9.4	864	9.4	0.347	5.7	LOS A	3.5	26.4	0.35	0.33	0.35	56.7
West: Ramsgate Rd (135m)														
10	L2	162	4.3	162	4.3	0.154	39.3	LOS C	2.1	15.6	0.78	0.74	0.78	40.7
12	R2	94	1.1	94	1.1	* 0.437	60.4	LOS E	3.2	22.9	0.97	0.78	0.97	20.2
Approach		256	3.1	256	3.1	0.437	47.1	LOS D	3.2	22.9	0.85	0.76	0.85	34.6
All Vehicles		2598	6.0	2598	6.0	0.609	14.9	LOS B	15.4	112.1	0.55	0.53	0.55	51.7

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Proposed AM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	227	0.9	227	0.9	0.182	7.5	LOS A	0.3	2.5	0.29	0.77	0.29	32.3
Approach		227	0.9	227	0.9	0.182	7.5	LOS A	0.3	2.5	0.29	0.77	0.29	32.3
East: Ramsgate Rd (30m)														
4	L2	72	0.0	72	0.0	0.039	3.8	LOS A	0.0	0.0	0.00	0.53	0.00	50.7
5	T1	144	10.4	144	10.4	0.079	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		216	6.9	216	6.9	0.079	1.3	NA	0.0	0.0	0.00	0.18	0.00	51.9
All Vehicles		443	3.8	443	3.8	0.182	4.5	NA	0.3	2.5	0.15	0.48	0.15	36.1

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Proposed AM) (Site Folder: General)]

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

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	42	4.8	42	4.8	0.092	2.7	LOS A	0.2	1.5	0.53	0.57	0.53	40.8
2	T1	23	4.3	23	4.3	0.092	2.9	LOS A	0.2	1.5	0.53	0.57	0.53	48.9
3	R2	31	6.5	31	6.5	0.092	7.3	LOS A	0.2	1.5	0.53	0.57	0.53	31.8
3u	U	1	100.0	1	100.0	0.092	11.0	LOS A	0.2	1.5	0.53	0.57	0.53	23.7
Approach		97	6.2	97	6.2	0.092	4.3	LOS A	0.2	1.5	0.53	0.57	0.53	43.3
East: Ramsgate Rd (80m)														
4	L2	32	6.3	32	6.3	0.293	4.0	LOS A	0.8	5.6	0.40	0.50	0.40	33.0
5	T1	279	3.6	279	3.6	0.293	4.1	LOS A	0.8	5.6	0.40	0.50	0.40	46.3
6	R2	25	4.0	25	4.0	0.293	9.7	LOS A	0.8	5.6	0.40	0.50	0.40	53.1
6u	U	48	6.3	48	6.3	0.293	12.1	LOS A	0.8	5.6	0.40	0.50	0.40	35.7
Approach		384	4.2	384	4.2	0.293	5.5	LOS A	0.8	5.6	0.40	0.50	0.40	45.5
North: Aldred St (720m)														
7	L2	14	0.0	14	0.0	0.014	4.3	LOS A	0.0	0.2	0.49	0.44	0.49	46.0
8	T1	25	0.0	25	0.0	0.048	4.2	LOS A	0.1	0.9	0.48	0.54	0.48	45.2
9	R2	40	2.5	40	2.5	0.048	8.8	LOS A	0.1	0.9	0.48	0.54	0.48	29.4
9u	U	3	0.0	3	0.0	0.048	10.8	LOS A	0.1	0.9	0.48	0.54	0.48	50.1
Approach		82	1.2	82	1.2	0.048	6.7	LOS A	0.1	0.9	0.48	0.52	0.48	35.7
West: Ramsgate Rd (135m)														
10	L2	35	0.0	35	0.0	0.241	4.0	LOS A	0.5	3.4	0.26	0.51	0.26	47.3
11	T1	183	0.5	183	0.5	0.241	4.1	LOS A	0.5	3.4	0.26	0.51	0.26	40.7
12	R2	109	0.0	109	0.0	0.241	9.8	LOS A	0.5	3.4	0.26	0.51	0.26	37.4
12u	U	7	14.3	7	14.3	0.241	12.4	LOS A	0.5	3.4	0.26	0.51	0.26	15.4
Approach		334	0.6	334	0.6	0.241	6.2	LOS A	0.5	3.4	0.26	0.51	0.26	40.3
All Vehicles		897	2.8	897	2.8	0.293	5.7	LOS A	0.8	5.6	0.37	0.51	0.37	41.0

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Proposed AM) (Site Folder: General)]

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

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	97	6.2	97	6.2	0.088	0.3	LOS A	0.1	0.9	0.21	0.20	0.21	13.9
3	R2	55	0.0	55	0.0	0.088	5.3	LOS A	0.1	0.9	0.21	0.20	0.21	19.2
Approach		152	3.9	152	3.9	0.088	2.1	NA	0.1	0.9	0.21	0.20	0.21	16.1
North: Alfred St (10m)														
7	L2	100	0.0	100	0.0	0.092	2.7	LOS A	0.0	0.0	0.00	0.58	0.00	47.5
8	T1	72	4.2	72	4.2	0.092	3.5	LOS A	0.0	0.0	0.00	0.58	0.00	47.9
Approach		172	1.7	172	1.7	0.092	3.0	NA	0.0	0.0	0.00	0.58	0.00	47.7
All Vehicles		324	2.8	324	2.8	0.092	2.6	NA	0.1	0.9	0.10	0.40	0.10	22.6

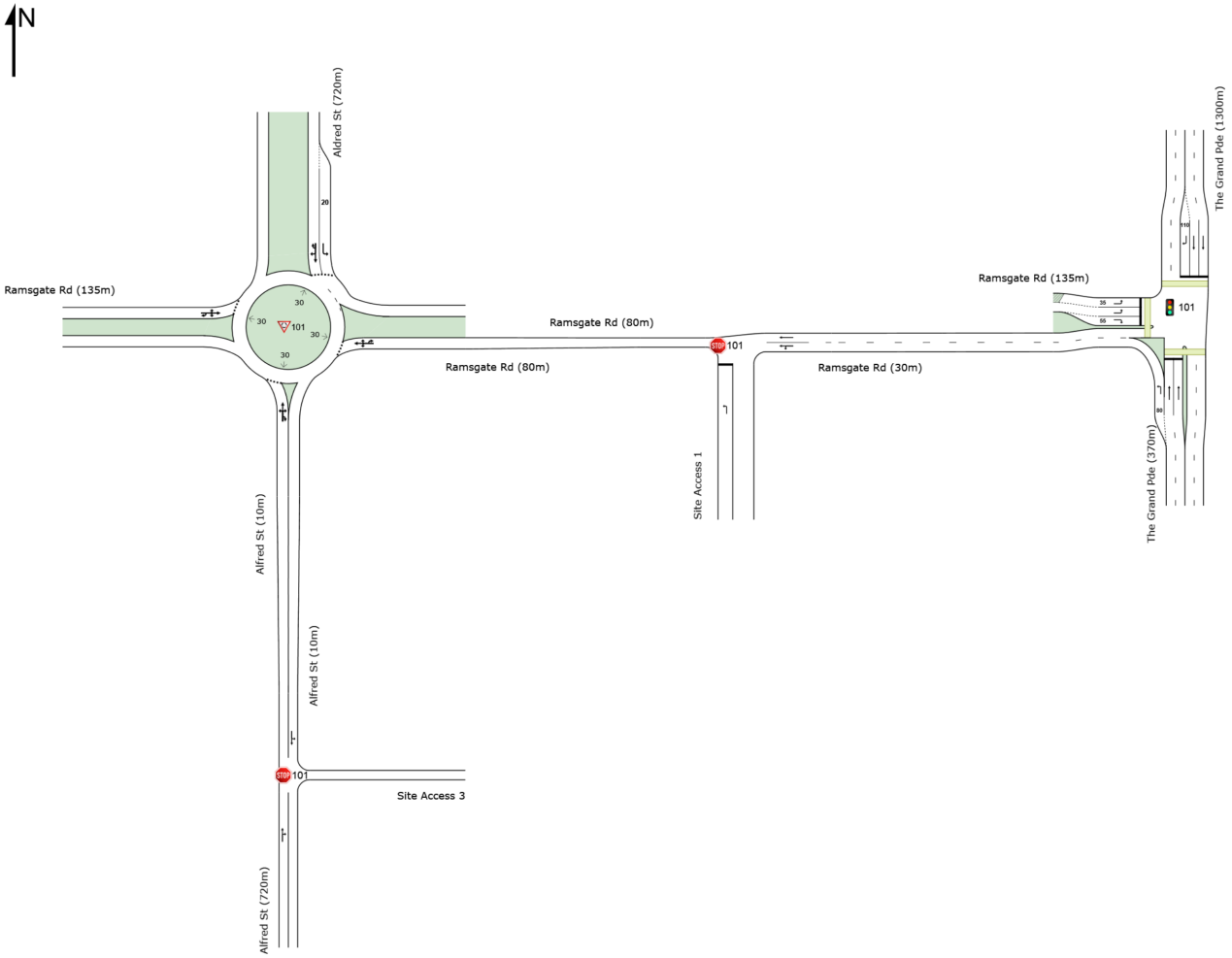
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and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

NETWORK LAYOUT

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

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Proposed PM)
101	NA	Ramsgate Rd & Alfred St (Proposed PM)
101	NA	Ramsgate Rd & Site Access 1 (Proposed PM)
101	NA	Alfred St & Site Access 3 (Proposed PM)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Proposed PM) (Site Folder: General)]

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

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	86	7.0	86	7.0	0.049	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	48.6
2	T1	794	2.9	794	2.9	* 0.593	34.3	LOS C	11.6	83.5	0.88	0.76	0.88	44.8
Approach		880	3.3	880	3.3	0.593	31.5	LOS C	11.6	83.5	0.79	0.74	0.79	44.9
North: The Grand Pde (1300m)														
8	T1	1731	3.4	1731	3.4	0.579	5.4	LOS A	12.0	86.7	0.43	0.40	0.43	57.0
9	R2	406	2.7	406	2.7	* 0.472	15.6	LOS B	6.3	45.0	0.73	0.80	0.73	50.1
Approach		2137	3.2	2137	3.2	0.579	7.4	LOS A	12.0	86.7	0.49	0.48	0.49	55.8
West: Ramsgate Rd (135m)														
10	L2	137	3.6	137	3.6	0.069	18.8	LOS B	1.1	8.1	0.49	0.68	0.49	48.5
12	R2	78	2.6	78	2.6	* 0.367	59.9	LOS E	2.7	19.0	0.96	0.77	0.96	20.3
Approach		215	3.3	215	3.3	0.367	33.7	LOS C	2.7	19.0	0.66	0.71	0.66	39.2
All Vehicles		3232	3.2	3232	3.2	0.593	15.7	LOS B	12.0	86.7	0.58	0.56	0.58	51.4

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Proposed PM) (Site Folder: General)]

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

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	352	0.6	352	0.6	0.348	9.0	LOS A	0.8	5.5	0.52	0.84	0.54	30.3
Approach		352	0.6	352	0.6	0.348	9.0	LOS A	0.8	5.5	0.52	0.84	0.54	30.3
East: Ramsgate Rd (30m)														
4	L2	122	0.8	122	0.8	0.066	4.1	LOS A	0.0	0.0	0.00	0.55	0.00	50.2
5	T1	362	4.4	362	4.4	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		484	3.5	484	3.5	0.191	1.0	NA	0.0	0.0	0.00	0.14	0.00	51.9
All Vehicles		836	2.3	836	2.3	0.348	4.4	NA	0.8	5.5	0.22	0.43	0.23	34.9

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Proposed PM) (Site Folder: General)]

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

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	49	0.0	49	0.0	0.147	5.4	LOS A	0.4	2.9	0.82	0.75	0.82	36.1
2	T1	27	0.0	27	0.0	0.147	5.6	LOS A	0.4	2.9	0.82	0.75	0.82	46.9
3	R2	30	0.0	30	0.0	0.147	9.9	LOS A	0.4	2.9	0.82	0.75	0.82	27.5
3u	U	1	0.0	1	0.0	0.147	11.9	LOS A	0.4	2.9	0.82	0.75	0.82	18.0
Approach		107	0.0	107	0.0	0.147	6.8	LOS A	0.4	2.9	0.82	0.75	0.82	40.2
East: Ramsgate Rd (80m)														
4	L2	65	1.5	65	1.5	0.632	5.5	LOS A	2.5	17.9	0.71	0.64	0.72	29.7
5	T1	598	2.5	598	2.5	0.632	5.7	LOS A	2.5	17.9	0.71	0.64	0.72	43.2
6	R2	40	0.0	40	0.0	0.632	11.2	LOS A	2.5	17.9	0.71	0.64	0.72	50.3
6u	U	75	8.0	75	8.0	0.632	13.8	LOS A	2.5	17.9	0.71	0.64	0.72	33.2
Approach		778	2.8	778	2.8	0.632	6.7	LOS A	2.5	17.9	0.71	0.64	0.72	42.5
North: Aldred St (720m)														
7	L2	9	0.0	9	0.0	0.009	4.6	LOS A	0.0	0.1	0.52	0.44	0.52	45.9
8	T1	47	0.0	47	0.0	0.074	4.3	LOS A	0.2	1.4	0.52	0.55	0.52	45.4
9	R2	49	0.0	49	0.0	0.074	9.0	LOS A	0.2	1.4	0.52	0.55	0.52	29.4
9u	U	6	0.0	6	0.0	0.074	11.0	LOS A	0.2	1.4	0.52	0.55	0.52	50.2
Approach		111	0.0	111	0.0	0.074	6.8	LOS A	0.2	1.4	0.52	0.54	0.52	36.6
West: Ramsgate Rd (135m)														
10	L2	33	0.0	33	0.0	0.270	4.3	LOS A	0.6	4.2	0.32	0.57	0.32	46.4
11	T1	127	0.0	127	0.0	0.270	4.4	LOS A	0.6	4.2	0.32	0.57	0.32	38.8
12	R2	182	0.5	182	0.5	0.270	10.1	LOS A	0.6	4.2	0.32	0.57	0.32	35.2
12u	U	13	0.0	13	0.0	0.270	12.4	LOS A	0.6	4.2	0.32	0.57	0.32	15.4
Approach		355	0.3	355	0.3	0.270	7.6	LOS A	0.6	4.2	0.32	0.57	0.32	37.0
All Vehicles		1351	1.7	1351	1.7	0.632	7.0	LOS A	2.5	17.9	0.60	0.62	0.61	39.6

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Proposed PM) (Site Folder: General)]

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

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	107	0.0	107	0.0	0.100	0.6	LOS A	0.2	1.1	0.28	0.20	0.28	13.1
3	R2	60	0.0	60	0.0	0.100	4.7	LOS A	0.2	1.1	0.28	0.20	0.28	17.1
Approach		167	0.0	167	0.0	0.100	2.1	NA	0.2	1.1	0.28	0.20	0.28	14.7
North: Alfred St (10m)														
7	L2	166	0.6	166	0.6	0.153	2.9	LOS A	0.0	0.0	0.00	0.59	0.00	46.9
8	T1	123	0.8	123	0.8	0.153	3.5	LOS A	0.0	0.0	0.00	0.59	0.00	47.6
Approach		289	0.7	289	0.7	0.153	3.1	NA	0.0	0.0	0.00	0.59	0.00	47.3
All Vehicles		456	0.4	456	0.4	0.153	2.7	NA	0.2	1.1	0.10	0.45	0.10	23.5

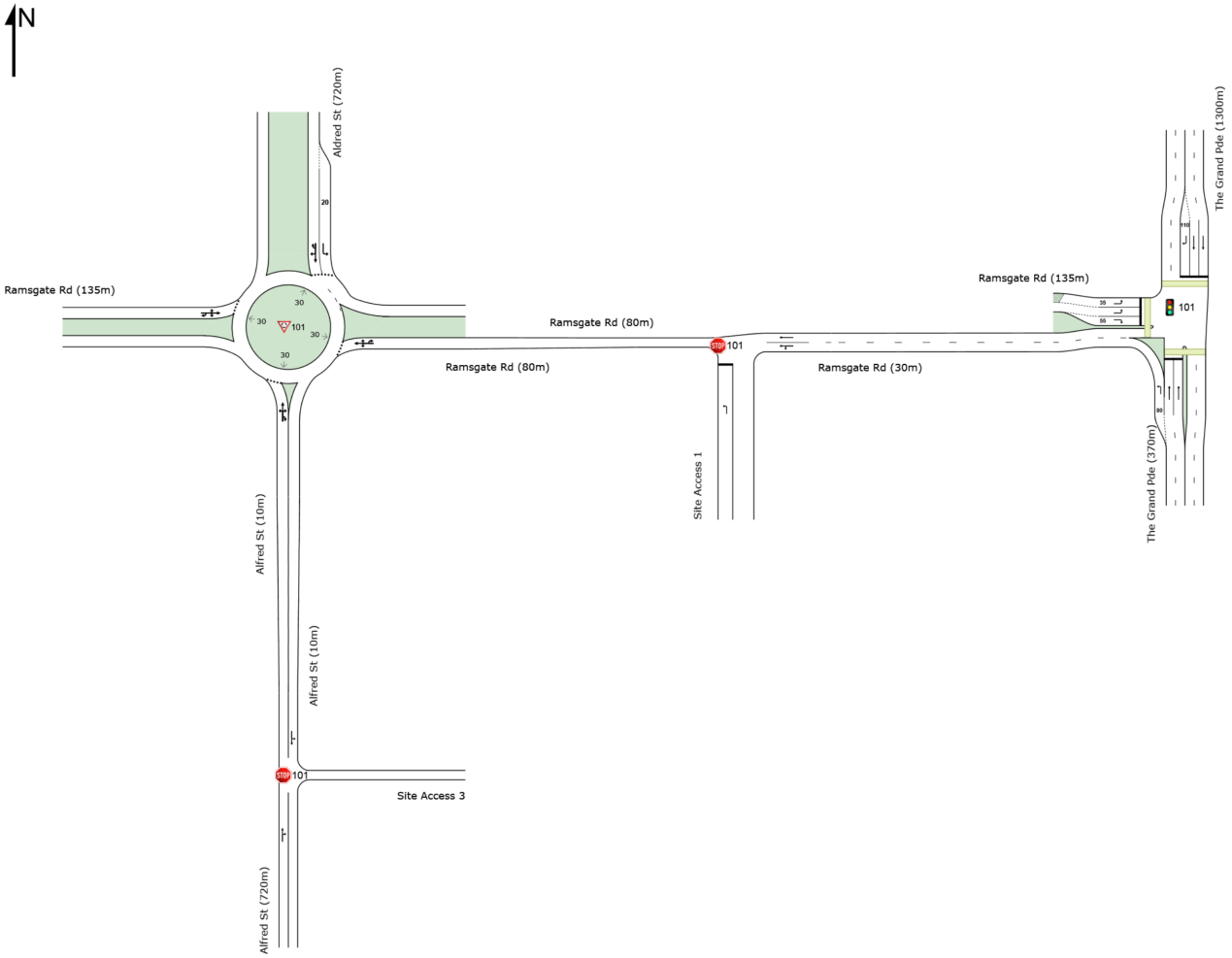
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and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

NETWORK LAYOUT

Network: N101 [Proposed SAT (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Ramsgate Rd & The Grand Pde (Proposed SAT)
101	NA	Ramsgate Rd & Alfred St (Proposed SAT)
101	NA	Ramsgate Rd & Site Access 1 (Proposed SAT)
101	NA	Alfred St & Site Access 3 (Proposed SAT)

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & The Grand Pde (Proposed SAT) (Site Folder: General)]

Network: N101 [Proposed SAT (Network Folder: General)]

Ramsgate Rd & The Grand Pde
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: The Grand Pde (370m)														
1	L2	102	2.9	102	2.9	0.056	5.6	LOS A	0.0	0.0	0.00	0.53	0.00	48.6
2	T1	917	1.5	917	1.5	* 0.467	20.2	LOS B	10.5	74.1	0.69	0.61	0.69	50.0
Approach		1019	1.7	1019	1.7	0.467	18.7	LOS B	10.5	74.1	0.62	0.60	0.62	50.0
North: The Grand Pde (1300m)														
8	T1	994	1.9	994	1.9	0.329	4.0	LOS A	5.1	36.1	0.32	0.28	0.32	57.7
9	R2	301	3.0	301	3.0	* 0.462	22.2	LOS B	7.5	53.8	0.77	0.82	0.77	46.8
Approach		1295	2.2	1295	2.2	0.462	8.2	LOS A	7.5	53.8	0.42	0.41	0.42	55.3
West: Ramsgate Rd (135m)														
10	L2	215	2.8	215	2.8	0.151	30.6	LOS C	2.5	17.6	0.68	0.73	0.68	43.7
12	R2	99	1.0	99	1.0	* 0.460	60.6	LOS E	3.4	24.2	0.98	0.78	0.98	20.2
Approach		314	2.2	314	2.2	0.460	40.1	LOS C	3.4	24.2	0.78	0.75	0.78	37.5
All Vehicles		2628	2.0	2628	2.0	0.467	16.1	LOS B	10.5	74.1	0.54	0.52	0.54	51.0

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Grand Pde (370m)											
P1	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	221.0	216.7	0.98
North: The Grand Pde (1300m)											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
West: Ramsgate Rd (135m)											
P4	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	223.1	219.5	0.98
All Pedestrians		150	54.3	LOS E	0.2	0.2	0.95	0.95	222.1	218.2	0.98

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 [Ramsgate Rd & Site Access 1 (Proposed SAT) (Site Folder: General)]

Network: N101 [Proposed SAT (Network Folder: General)]

Ramsgate Rd & Site Access
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Site Access 1														
1	L2	323	0.6	323	0.6	0.297	8.5	LOS A	0.6	4.4	0.46	0.80	0.46	31.7
Approach		323	0.6	323	0.6	0.297	8.5	LOS A	0.6	4.4	0.46	0.80	0.46	31.7
East: Ramsgate Rd (30m)														
4	L2	107	0.0	107	0.0	0.058	4.1	LOS A	0.0	0.0	0.00	0.55	0.00	50.2
5	T1	295	4.1	295	4.1	0.155	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		402	3.0	402	3.0	0.155	1.1	NA	0.0	0.0	0.00	0.15	0.00	51.8
All Vehicles		725	1.9	725	1.9	0.297	4.4	NA	0.6	4.4	0.20	0.44	0.20	35.9

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

MOVEMENT SUMMARY

Site: 101 [Ramsgate Rd & Alfred St (Proposed SAT) (Site Folder: General)]

Network: N101 [Proposed SAT (Network Folder: General)]

Ramsgate Rd & Alfred St
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (10m)														
1	L2	75	5.3	75	5.3	0.167	4.4	LOS A	0.4	3.2	0.73	0.70	0.73	37.7
2	T1	31	0.0	31	0.0	0.167	4.5	LOS A	0.4	3.2	0.73	0.70	0.73	47.9
3	R2	34	0.0	34	0.0	0.167	8.8	LOS A	0.4	3.2	0.73	0.70	0.73	29.3
3u	U	1	0.0	1	0.0	0.167	10.8	LOS A	0.4	3.2	0.73	0.70	0.73	19.7
Approach		141	2.8	141	2.8	0.167	5.5	LOS A	0.4	3.2	0.73	0.70	0.73	41.4
East: Ramsgate Rd (80m)														
4	L2	83	3.6	83	3.6	0.541	5.0	LOS A	1.9	13.4	0.63	0.60	0.63	30.4
5	T1	468	0.9	468	0.9	0.541	5.2	LOS A	1.9	13.4	0.63	0.60	0.63	44.1
6	R2	38	0.0	38	0.0	0.541	10.7	LOS A	1.9	13.4	0.63	0.60	0.63	51.0
6u	U	84	4.8	84	4.8	0.541	13.2	LOS A	1.9	13.4	0.63	0.60	0.63	33.8
Approach		673	1.6	673	1.6	0.541	6.5	LOS A	1.9	13.4	0.63	0.60	0.63	42.7
North: Aldred St (720m)														
7	L2	15	0.0	15	0.0	0.016	5.2	LOS A	0.0	0.3	0.59	0.49	0.59	45.6
8	T1	46	0.0	46	0.0	0.071	4.9	LOS A	0.2	1.4	0.59	0.57	0.59	45.4
9	R2	46	0.0	46	0.0	0.071	9.5	LOS A	0.2	1.4	0.59	0.57	0.59	29.4
9u	U	1	0.0	1	0.0	0.071	11.5	LOS A	0.2	1.4	0.59	0.57	0.59	50.3
Approach		108	0.0	108	0.0	0.071	7.0	LOS A	0.2	1.4	0.59	0.55	0.59	36.4
West: Ramsgate Rd (135m)														
10	L2	22	0.0	22	0.0	0.322	4.4	LOS A	0.7	5.2	0.34	0.56	0.34	46.6
11	T1	209	1.0	209	1.0	0.322	4.5	LOS A	0.7	5.2	0.34	0.56	0.34	39.3
12	R2	180	0.6	180	0.6	0.322	10.2	LOS A	0.7	5.2	0.34	0.56	0.34	35.8
12u	U	11	0.0	11	0.0	0.322	12.5	LOS A	0.7	5.2	0.34	0.56	0.34	15.4
Approach		422	0.7	422	0.7	0.322	7.1	LOS A	0.7	5.2	0.34	0.56	0.34	37.4
All Vehicles		1344	1.3	1344	1.3	0.541	6.6	LOS A	1.9	13.4	0.55	0.60	0.55	39.7

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

MOVEMENT SUMMARY

Site: 101 [Alfred St & Site Access 3 (Proposed SAT) (Site Folder: General)]

Network: N101 [Proposed SAT (Network Folder: General)]

Alfred St & Site Access 3
Site Category: (None)
Stop (Two-Way)

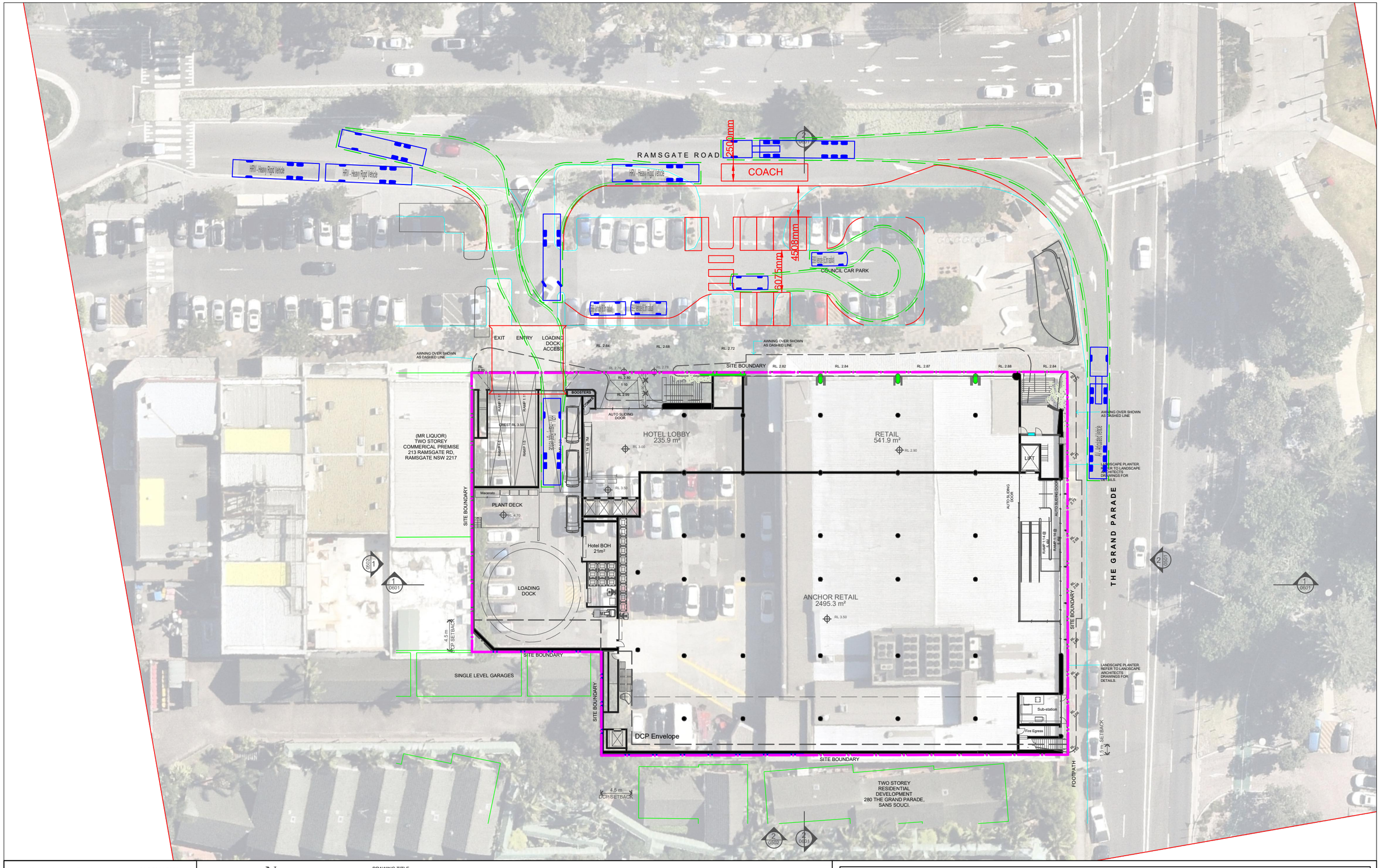
Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred St (720m)														
2	T1	141	2.8	141	2.8	0.122	0.6	LOS A	0.2	1.3	0.27	0.18	0.27	12.8
3	R2	65	0.0	65	0.0	0.122	5.0	LOS A	0.2	1.3	0.27	0.18	0.27	17.0
Approach		206	1.9	206	1.9	0.122	2.0	NA	0.2	1.3	0.27	0.18	0.27	14.3
North: Alfred St (10m)														
7	L2	203	0.0	203	0.0	0.162	3.0	LOS A	0.0	0.0	0.00	0.57	0.00	47.0
8	T1	101	4.0	101	4.0	0.162	3.5	LOS A	0.0	0.0	0.00	0.57	0.00	47.7
Approach		304	1.3	304	1.3	0.162	3.2	NA	0.0	0.0	0.00	0.57	0.00	47.3
All Vehicles		510	1.6	510	1.6	0.162	2.7	NA	0.2	1.3	0.11	0.41	0.11	21.9

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

APPENDIX D

SWEPT TURNING PATH DIAGRAMS



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PROJECT
MIXED-USE DEVELOPMENT

N

DRAWING TITLE
Option_2

1:500 @ A3

ADDRESS
277 The Grand Parade,
Ramsgate

PROJECT NO.
23002

DATE DRAWN
2023-8-2

REVIEWED
RV

PREPARED
MN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants