Proposed Mixed Use Residential Development

# 277 The Grand Parade, Ramsgate Beach

**TRAFFIC AND PARKING ASSESSMENT REPORT**

1 October 2024

Ref 23002

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

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# TABLE OF CONTENTS



## LIST OF ILLUSTRATIONS

# 1. INTRODUCTION

This report has been prepared to accompany a residential development application 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 6-storey mixed-use residential apartment and supermarket development.

The new, expanded supermarket will have an increased or additional floor area of 107.7m$^2$ when compared with the existing *Coles* supermarket on the site.

A specialty shop component of 654.0m$^2$ is to be located on the ground floor level.

The residential component will have a total of 50 apartments, comprising 10 x 2-bedroom units and 40 x 3-bedroom units.

Off-street car parking is to be provided on a new three-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 proposed specialty shop component.

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

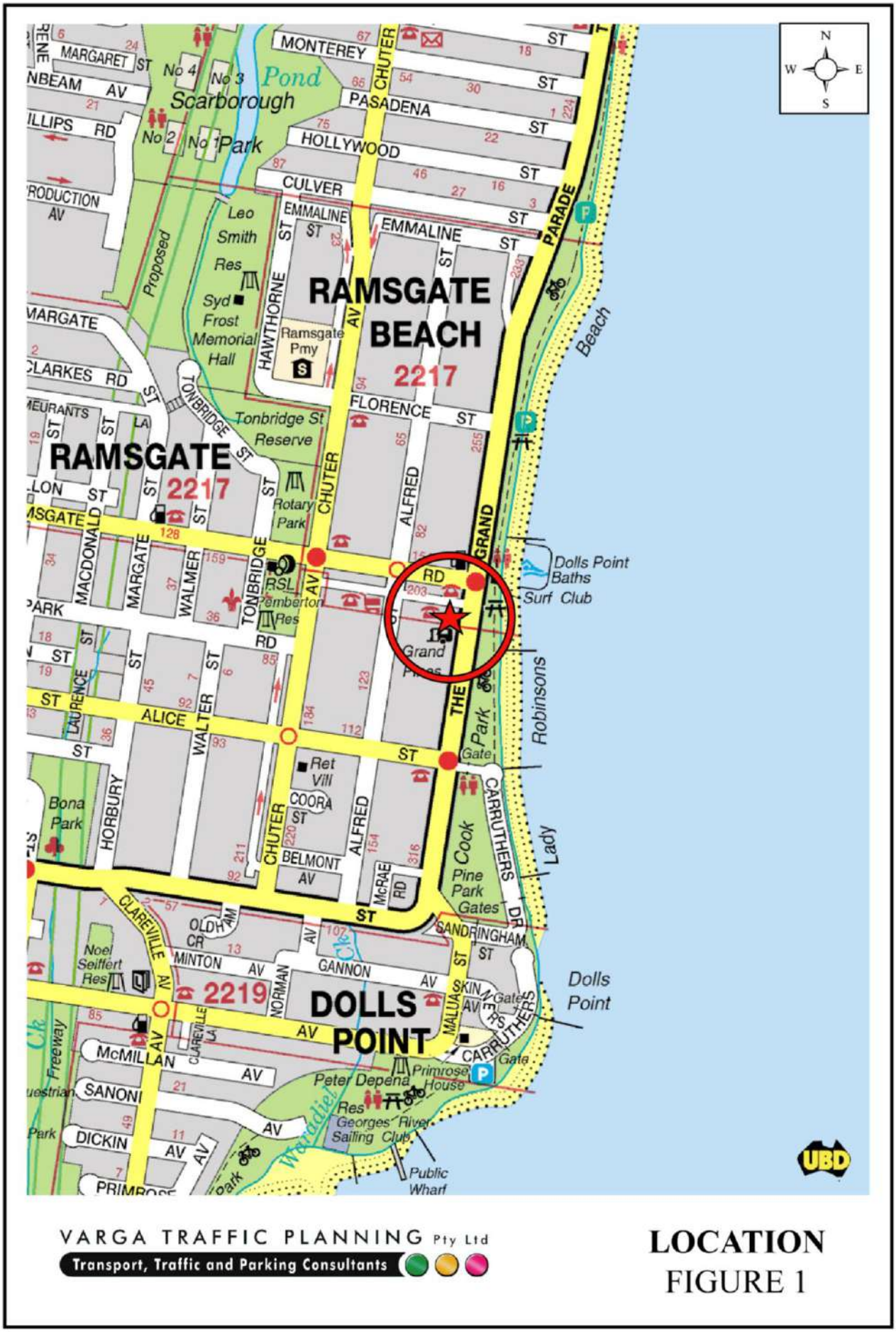
- describes the site and provides details of the development proposal
- reviews the road network and traffic conditions in the vicinity of the site
- reviews the sustainable forms of transport available in the vicinity of the site

- estimates the traffic generation potential of the development proposal

- assesses the traffic implications of the 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


FLORENCE ST
AVE
FLORENCE
ST
ST
CHUTER
ALFRED
THE GRAND PDE
RAMSGATE RD
RAMSGATE
RD
TONBRIDGE
PARK RD
AVE
ST
THE GRAND PDE
ALICE
ST
CHUTER
COORA ST
ALFRED
CARRUTHERS
DR
Botany Bay
N
W
E
S
VARGA TRAFFIC PLANNING Pty Ltd
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SITE
FIGURE 2

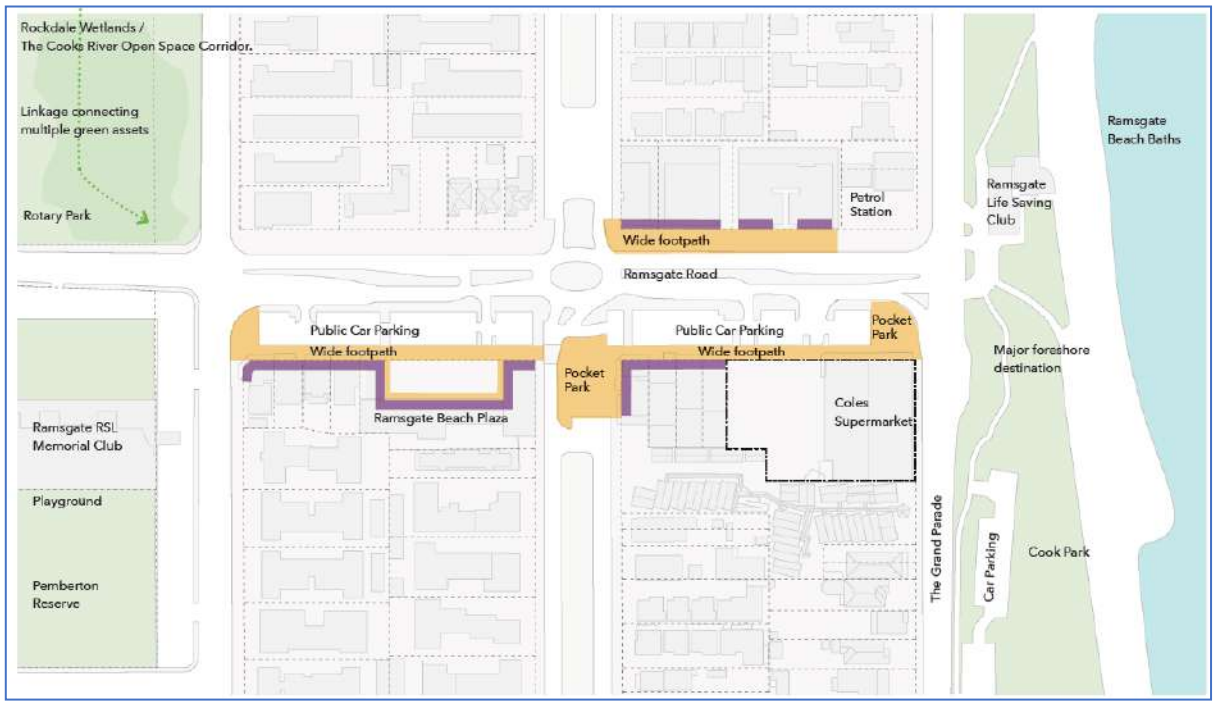
# 2. PROPOSED DEVELOPMENT

**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 *MU1 - 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 6-storey mixed-use building comprising specialty stores and a supermarket on the ground floor level, and a residential apartment component 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 5%, from 2,200m² to 2,307.7m² (i.e. an increase of 107.7m$^2$).

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

| Use | Proposed Yield |
|---|---|
| Specialty Retail | 654.0m² |
| Coles Supermarket | 2,307.7m² |
| Residential Apartments | 50 units (10 x 2-bedroom and 40 x 3-bedroom units) |
| Parking | 226 car spaces, 15 motorcycles & 84 bicycles |

Off-street parking is proposed for a total of 226 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 proposed specialty shop component.

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 also makes provision for a number of B99-sized *"white van"* delivery vehicles such as the *Hyundai iLoad* or similar delivery vehicles. 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.

Plans of the proposed development have been prepared by *fjcstudio* 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.

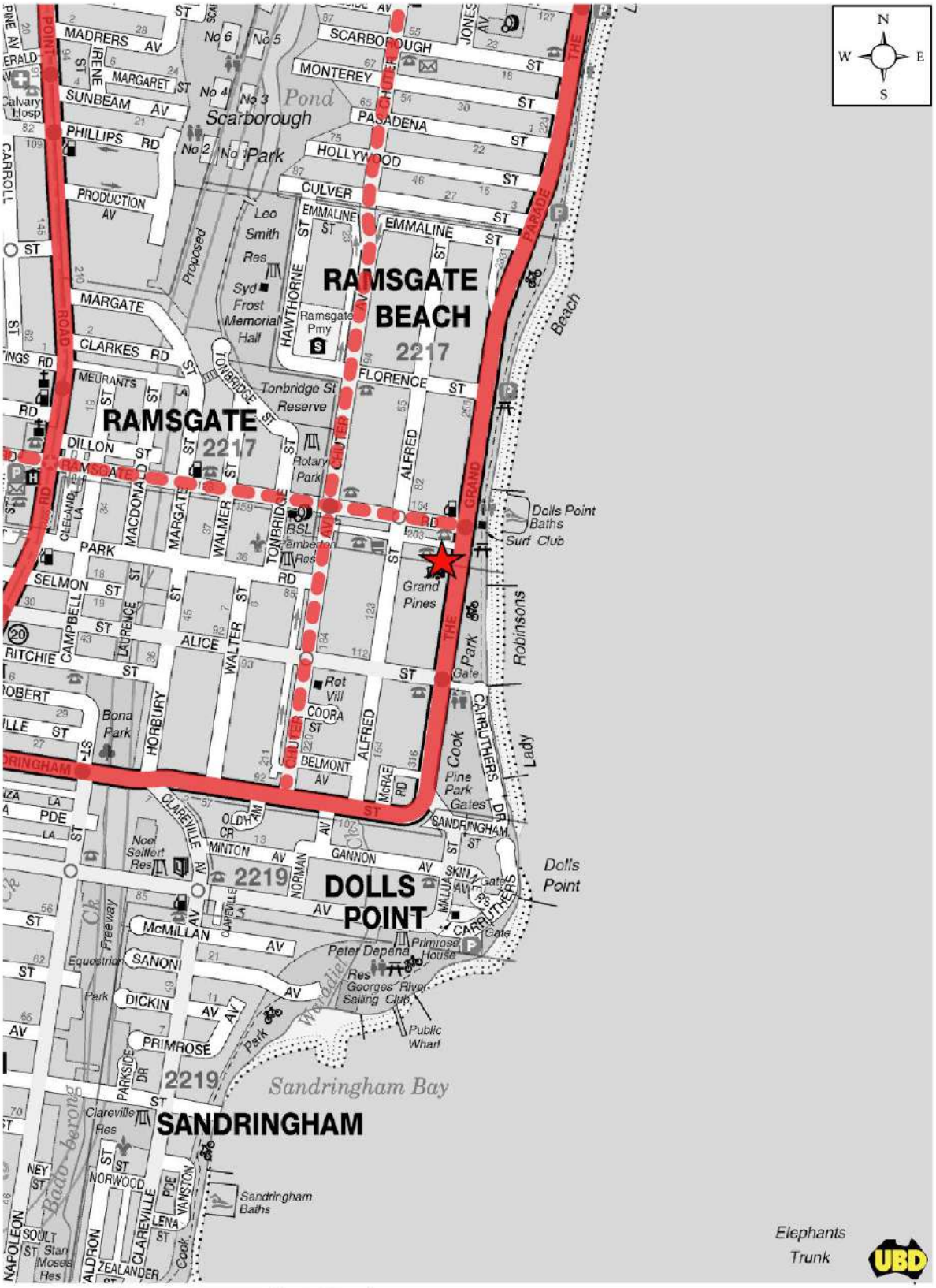
Rocky Point Road is classified by TfNSW as a *State Road* and provides another key north-south road link in the area, linking Taren Point to Kogarah. It typically carries two traffic lanes in each direction in the vicinity of the site, with kerbside parking generally permitted outside of the weekday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


N
W
E
S
RAMSGATE BEACH
2217
RAMSGATE
2217
DOLLS POINT
2219
SANDRINGHAM
2219
Sandringham Bay
Scarborough Park
Pond
Leo Smith Res
Syd Frost Memorial Hall
Ramsgate Pmy
Tonbridge St Reserve
Rotary Park
RSL
Timberton Res
Ret Vill
Bona Park
Noel Seiffert Res
Peter Depena Res
Primrose House
Georges River Sailing Club
Public Wharf
Grand Pines
Dolls Point Baths
Surf Club
Park Gate
Pine Park Gates
Sandringham Baths
Clareville Res
St Stan Moses Res
Elephants Trunk
Cook
Lady Robinsons
Beach
Creek
Freeway
Equestrian Park
Proposed
MADRERS AV
SUNBEAM AV
PHILLIPS RD
PRODUCTION AV
SCARBOROUGH ST
MONTEREY ST
PASADENA ST
HOLLYWOOD ST
CULVER ST
EMMALINE ST
MARGATE
CLARKES RD
DILLON ST
FLORENCE ST
ALICE ST
SELMON ST
PARK RD
BELMONT AV
OLDHAM CR
MINTON AV
GANNON AV
McMILLAN AV
SANONI
DICKIN AV
PRIMROSE
NORWOOD
SANDRINGHAM
CARRUTHERS DR
PARADE
GRAND
POINT ROAD
TONBRIDGE
HAWTHORNE
ALFRED
WALTER
HORBURY
CLAREVILLE
NORMAN
MALUA
SKINNER
PARKSIDE DR
VANSTON
ZEALANDER
ALDRON
SOULT
LENA
NAPOLEON
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
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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.

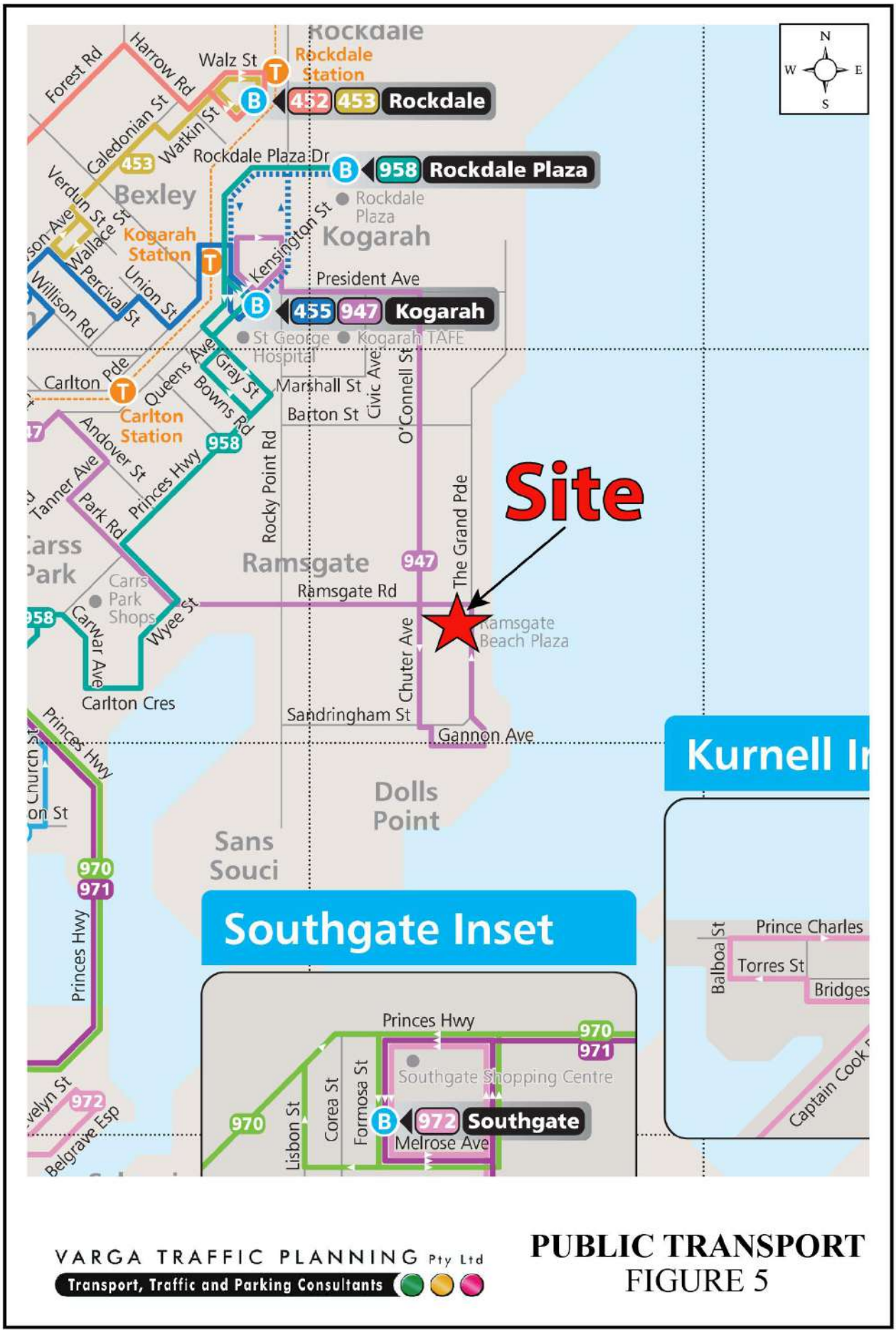
**Existing Public Transport Services**

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$^2$*

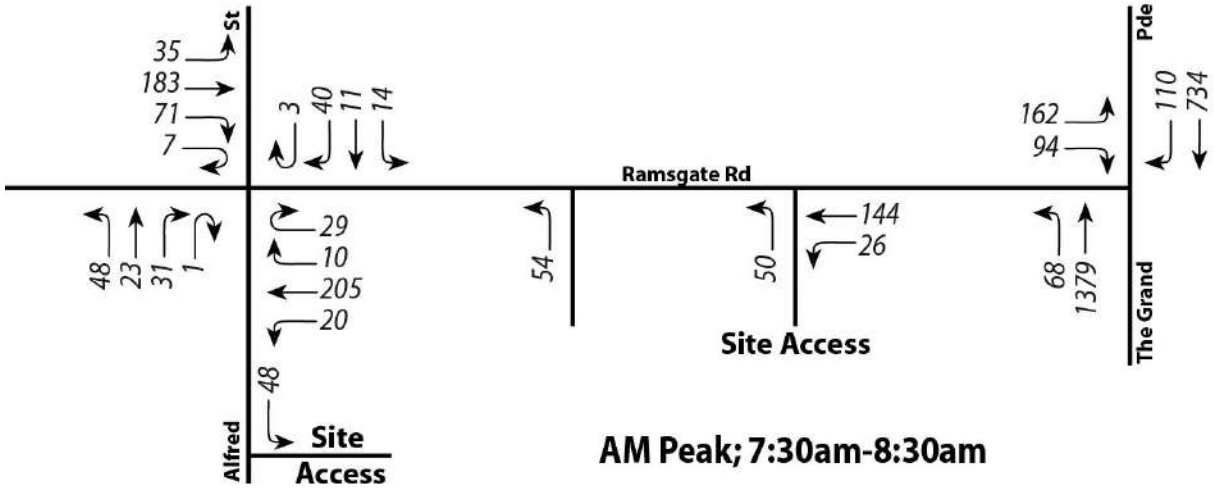
- two-way traffic flows in/out of the public car park during the Saturday peak period were 171 vph/151 vph, yielding a total of 322 vph or *7.6 vph/100m$^2$*.

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

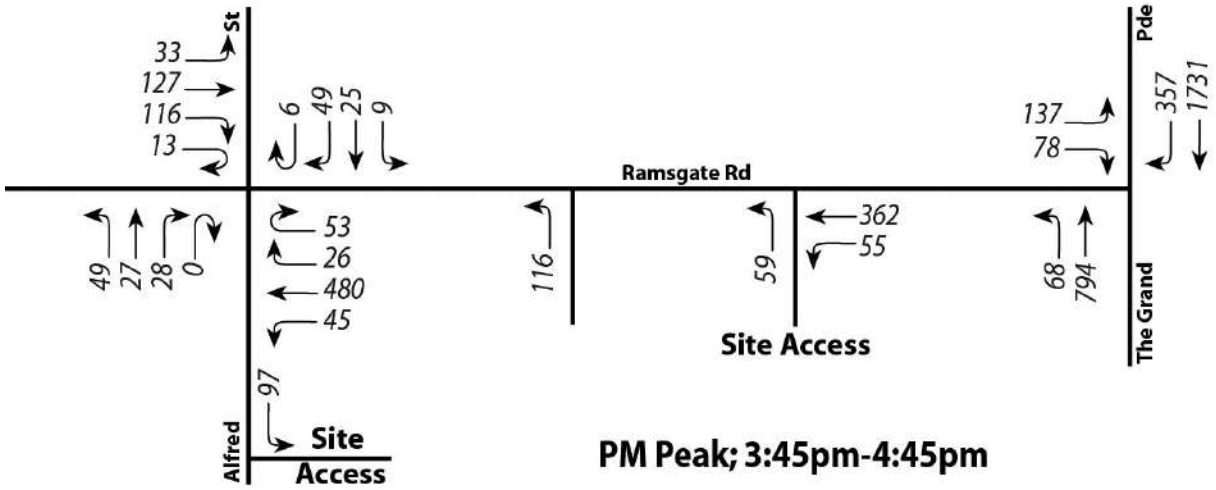
**Projected Traffic Generation Potential**

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.

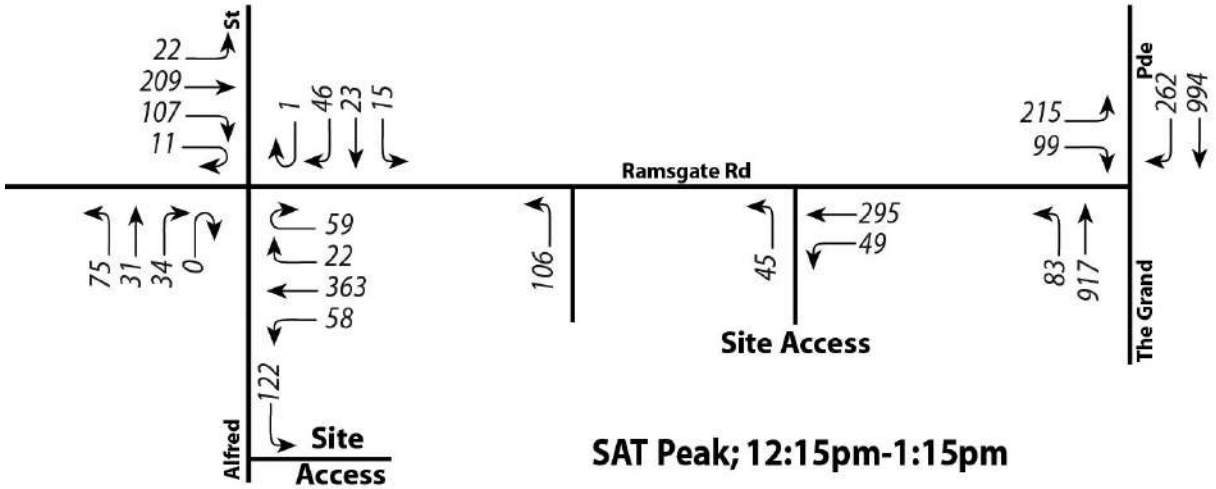
An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services' publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the RMS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

**High Density Residential Flat Dwellings**

AM: 0.19 peak hour vehicle trips/unit

PM: 0.15 peak hour vehicle trips/unit

The proposed 107.7m$^2$ increase in the floor area of the *Coles* supermarket and the proposed new specialty retail of 654.0m$^2$ have 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 | 654.0m$^2$ | 27.5 vph | 51.0 vph | 49.7 vph |
| Coles Supermarket | 107.7m$^2$* | 4.5 vph | 8.4 vph | 8.2 vph |
| Residential Apartments | 50 units | 9.5 vph | 7.5 vph | 9.5 vph |
| **TOTAL** | | **41.5 vph** | **66.9 vph** | **67.4 vph** |

* Net increase in floor area

Accordingly, the *nett increase* in traffic generation potential of the site is in the order of approximately 42 & 67 vph during the weekday commuter peak periods and 67 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.

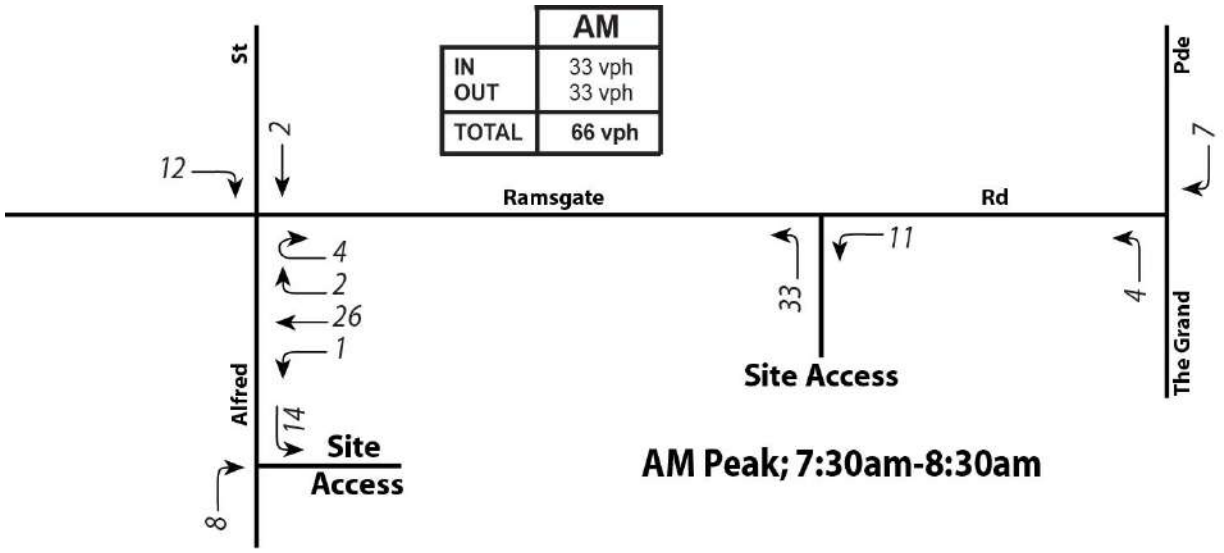
In any event, that projected *nett increase* in the traffic generation potential of the site as a consequence of the development proposal will not have any unacceptable traffic implications in terms of road network capacity, nor will any further road or infrastructure upgrades be required, over and above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

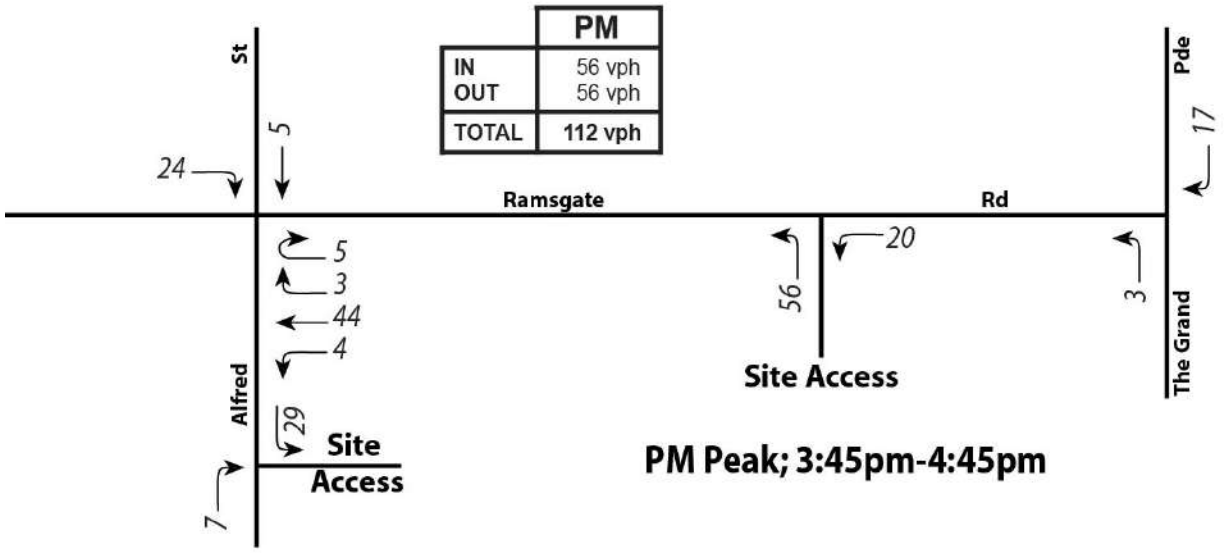
**Traffic Implications - Road Network Capacity**

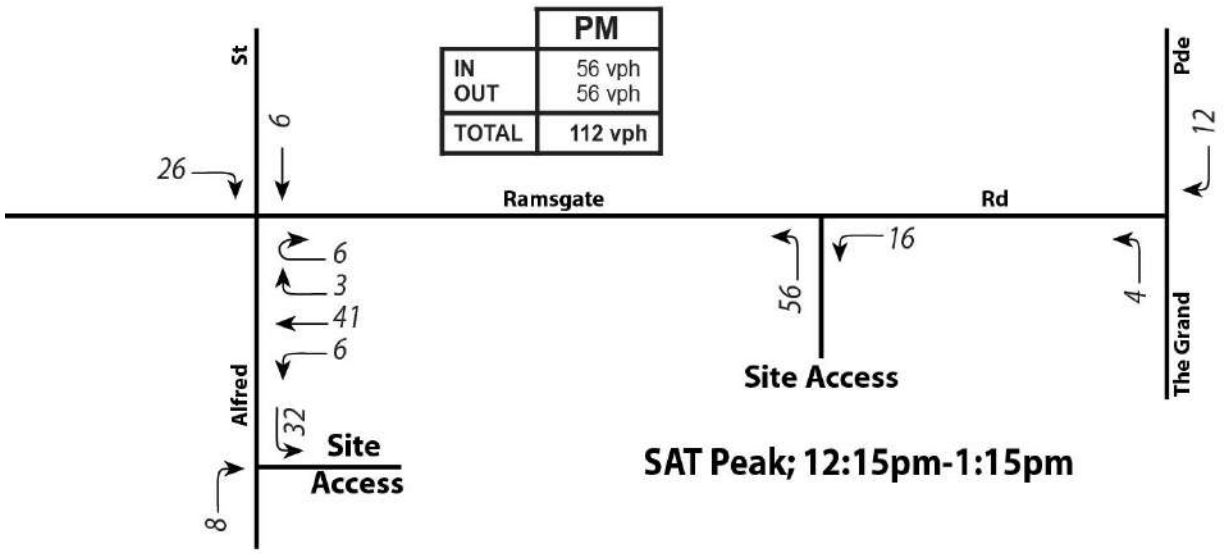
The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network.

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 in the following pages.




**PROJECTED ADDITIONAL PEAK HOUR TRAFFIC FLOWS**
FIGURE 7

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.

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.

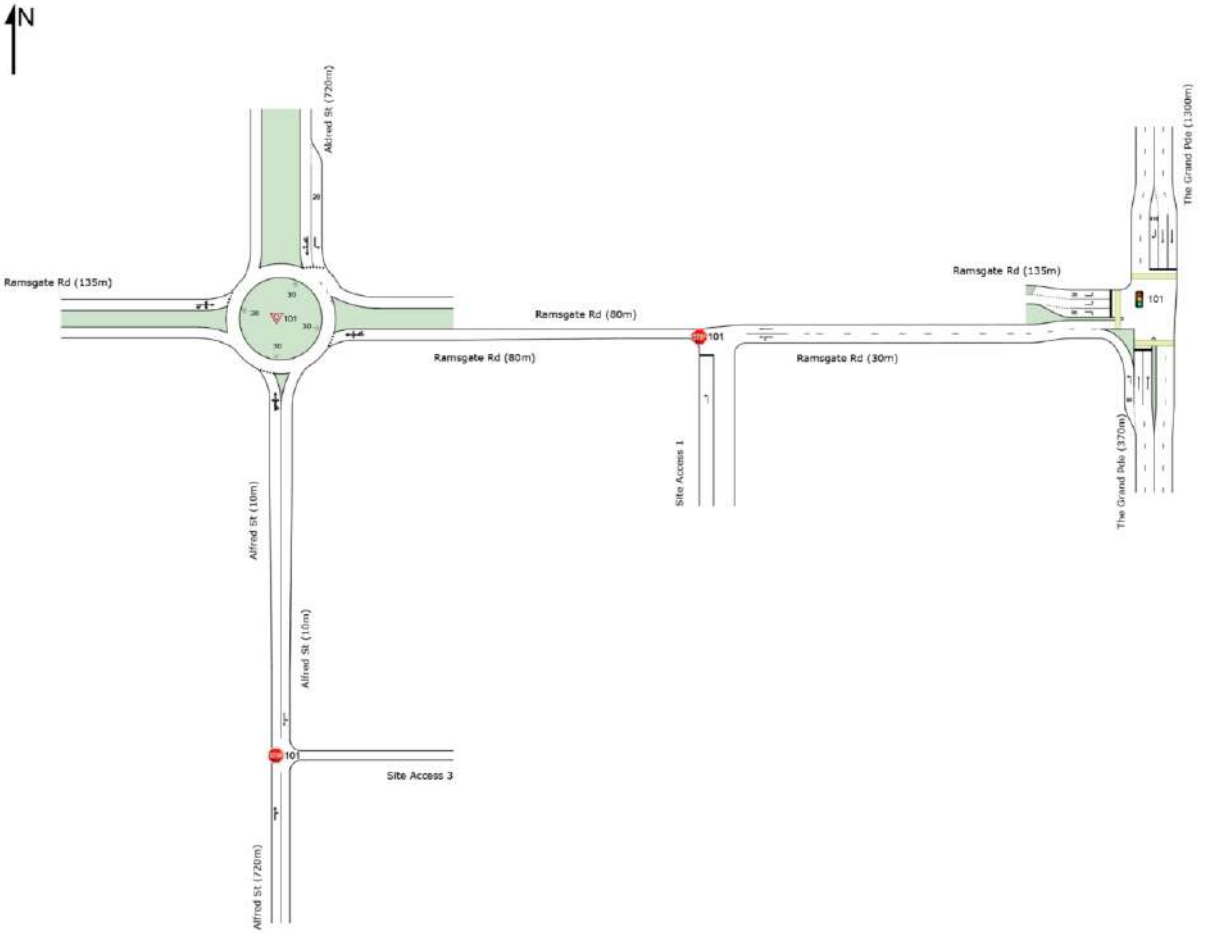
In the circumstances, it is considered that the existing "entry-only" driveway off Alfred Street provides an important access function for local residents which enables them to access the site *without* using The Grande Parade, and should therefore be retained.

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

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.

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) |

**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 | A | B | B |
| DOS | 0.588 | 0.579 | 0.518 | 0.589 | 0.579 | 0.528 |
| AVD (Sec/Veh) | 14.3 | 15.0 | 16.5 | 14.3 | 15.2 | 16.7 |
| **Ramsgate Road & Site access road 1** | | | | | | |
| LOS | A | A | A | A | A | A |
| DOS | 0.077 | 0.184 | 0.151 | 0.111 | 0.230 | 0.193 |
| AVD (Sec/Veh) | 1.4 | 1.2 | 1.2 | 3.2 | 3.1 | 3.2 |
| **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 | 0.222 | 0.514 | 0.428 |
| AVD (Sec/Veh) | 5.2 | 5.9 | 5.6 | 5.3 | 6.2 | 5.9 |
| **Alfred Street & Site access road 3** | | | | | | |
| LOS | A | A | A | A | A | A |
| DOS | 0.062 | 0.098 | 0.100 | 0.067 | 0.113 | 0.117 |
| AVD (Sec/Veh) | 1.9 | 2.4 | 2.3 | 2.2 | 2.5 | 2.4 |

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
Botany Bay
CLEARWAY AM 6am-10am Mon-Fri
CLEARWAY PM 3pm-7pm Mon-Fri
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 development proposal are specified in *Bayside Development Control Plan 2022, Chapter 3.5.3 – On-site Car Parking Rates* document in the following terms:

> **Table 3: Car Parking Rates**
>
> **Shop-top Housing**
>
> 1 space per dwelling with 1 bedroom or less
>
> 2 spaces per dwelling with 2 bedrooms or more
>
> 1 visitor parking space per 5 dwellings.
>
> **Commercial Premises (including business premises, office premises and retail premises)**
>
> 1 space / 40m$^2$ GFA

Council's *Bayside DCP 2022* 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.

Application of the above parking rates to the development proposal yields a cumulative off-street parking requirement of approximately 219 parking spaces, as set out in the table below:

| **PROJECTED FUTURE OFF-STREET PARKING REQUIREMENTS** | | | |
|---|---|---|---|
| **Use** | **Proposed Yields** | | **Parking Required** |
| Specialty Retail | 654.0m$^2$ | 1/40m$^2$ | 16.4 spaces |
| Coles Supermarket | 2,307.7m$^2$ | 1/25m$^2$ | 92.3 spaces |
| Residential Apartments | 50 units | 2 spaces per dwelling | 100.0 spaces |
| Residential Visitors | 50 units | 1 space per 5 dwellings | 10.0 spaces |
| **TOTAL PARKING REQUIRED** | | | **218.7 spaces** |

The proposed development makes provision for a total of 226 off-street car parking spaces, comprising 100 residential spaces, 10 residential visitor spaces, 115 retail spaces and a car wash bay, 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 off-street bicycle and motorcycle parking requirements applicable to the development proposal are specified in *Bayside Development Control Plan 2022, Chapter 3.5.4 – Bicycle and Motorcycle Parking* document in the following terms:

**Shop-top Housing**

1 bicycle space per dwelling (for residents)

1 bicycle space per 10 dwellings (for visitors)

1 motorcycle space per 15 car spaces

**Commercial Premises (business premises, office premises and retail premises)**

1 bicycle space per 150sqm GFA

1 bicycle space per 400sqm GFA provided for visitors

1 motorcycle space per 15 car spaces

Application of the above parking rates to the development proposal yields a cumulative off-street parking requirement of approximately 83 bicycle spaces and 15 motorcycle spaces, as set out in the table below:

| PROJECTED FUTURE OFF-STREET PARKING REQUIREMENTS | | | |
|---|---|---|---|
| **Use** | **Proposed Yields** | **Bicycle Parking** | **Motorcycle Parking** |
| Specialty Retail Staff | 654.0m$^2$ | 4.4 spaces | 7.7 spaces |
| Specialty Retail Visitors | 654.0m$^2$ | 1.6 spaces | |
| Coles Supermarket Staff | 2,307.7m$^2$ | 15.4 spaces | |
| Coles Supermarket Visitors | 2,307.7m$^2$ | 5.8 spaces | |
| Residential Apartments | 50 units | 50.0 spaces | 7.3 spaces |
| Residential Visitors | 50 units | 5.0 spaces | |
| **TOTAL PARKING REQUIRED** | | **82.2 spaces** | **15.0 spaces** |

The proposed development makes provision for a total of 84 bicycle parking spaces and 15 motorcycle parking spaces, thereby satisfying the above 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 2022* 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*

- 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 PLANS

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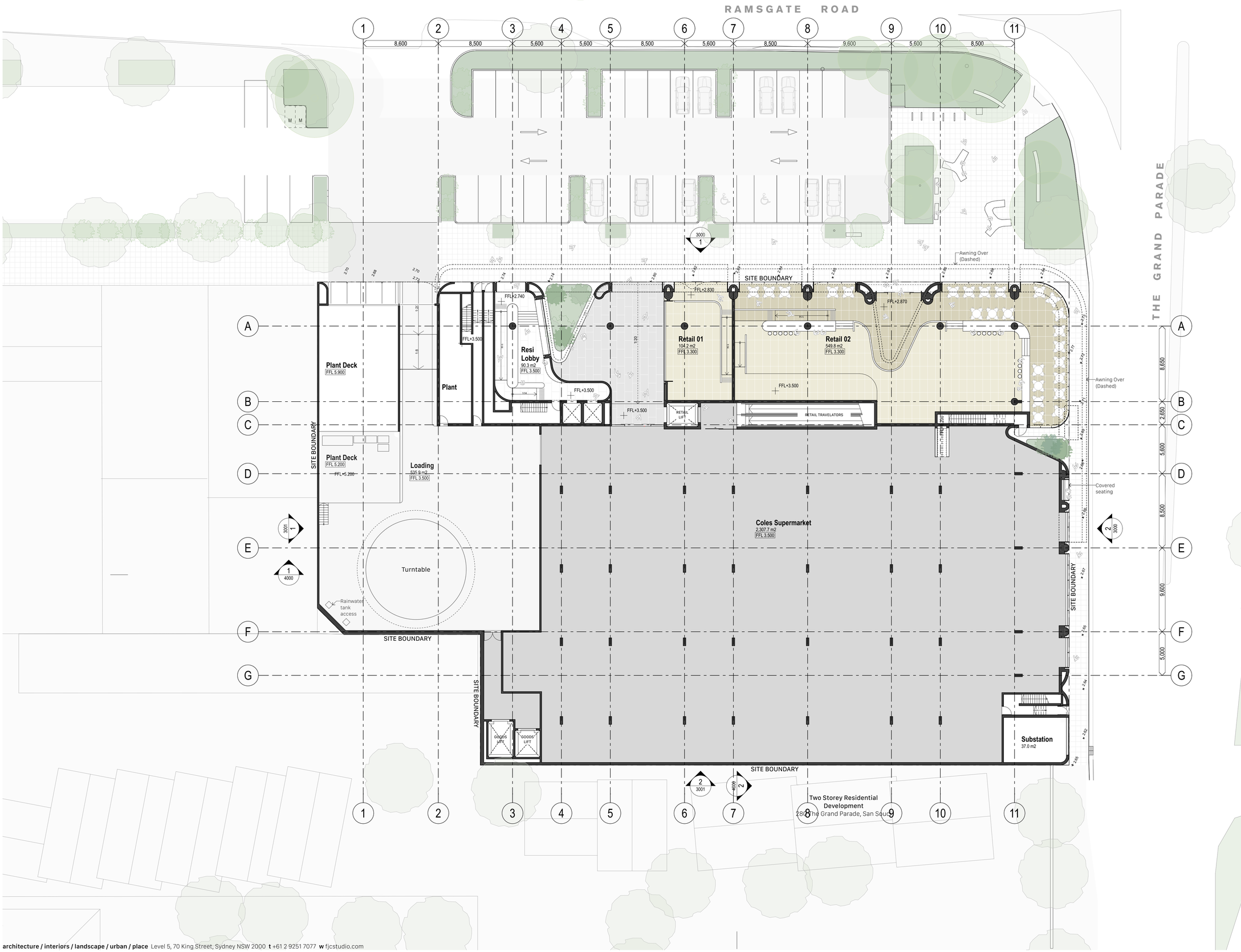


fjcstudio
formerly fjmtstudio

0 2 5 10m

**General notes**
- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

**Legend**

**Notes**

ALL STAIRS, RAMPS AND HANDRAILS COMPLIANT WITH **AS1428.1**
ALL ACC. SANITARY FACILITIES COMPLIANT WITH **AS1428.1**
ALL ACC. CARPARK SPACES COMPLIANT WITH **AS2890.6**

**DESIGN RESOLUTION**

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Location of plant, equipment and services on drawings is general and indicative, and does not include minor elements.

**GRAPHIC PRESENTATION**

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**EXISTING STRUCTURES AND SERVICES**

Extent and location of existing structures services is according to the available survey information and will need to be verified on site at later stage.

All unchanged site levels are as per the existing survey information.

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| 03 | 13/9/2024 | DA Submission | KT | |
| 02 | 8/9/2024 | DA Submission - SECPP | KT | |
| 01 | 1/8/2024 | DRP Meeting | KT | |

**277 The Grand Parade Ramsgate**
Australia
277 The Grand Parade Ramsgate
Sydney NSW 2217

**General Arrangement Plans**
GF Ground Floor Plan

**Scale**
1:200 @ A1

**Project Code**
BRAM

**First Issued**
1/8/2024

**Sheet No.**
2000

**Rev**
03

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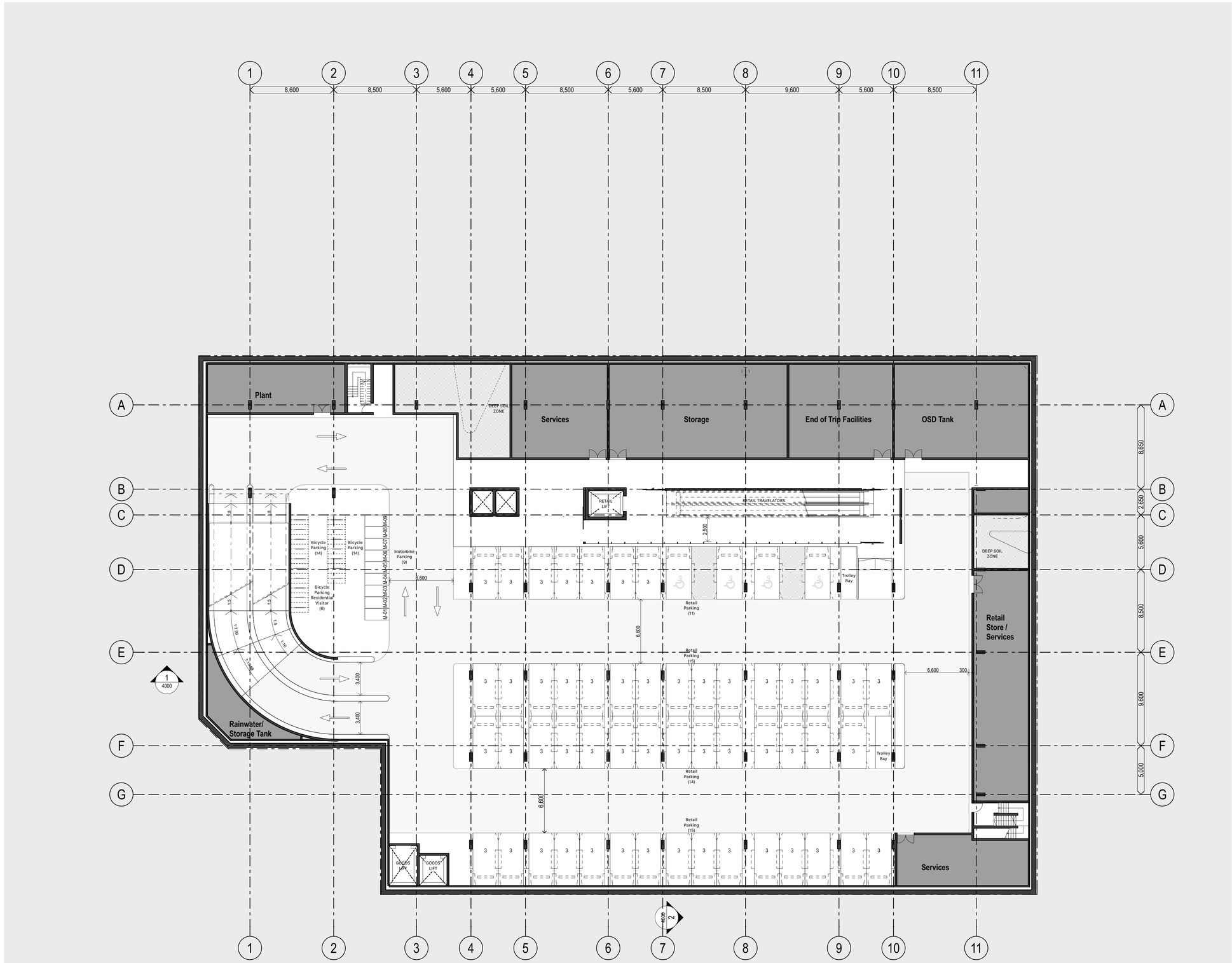


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**Legend**

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All unchanged site levels are as per the existing survey information.

**BASEMENT 1 PARKING SUMMARY**

| Floor (Storey) | User Class (AS/NZS2890.1) | Quantity | |
|---|---|---|---|
| **Basement 1** | | | |
| Retail Parking | | 3 | 55 |
| Trolley Bay | | Custom | 2 |
| | | Motorcycle | 9 |
| Bicycle Parking | | | 28 |
| Bicycle Parking - Residential Visitor | | | 6 |

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| 03 | 13/9/2024 | DA Submission | KT | |
| 02 | 8/9/2024 | DA Submission - SECPP | KT | |
| 01 | 1/8/2024 | DRP Meeting | KT | |

**277 The Grand Parade Ramsgate**
Australia
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Sydney NSW 2217

**General Arrangement Plans**
B1 Basement 1 Floor Plan

**Scale**
1:200 @ A1

**Project Code**
BRAM

**First Issued**
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**Sheet No.**
2015

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03

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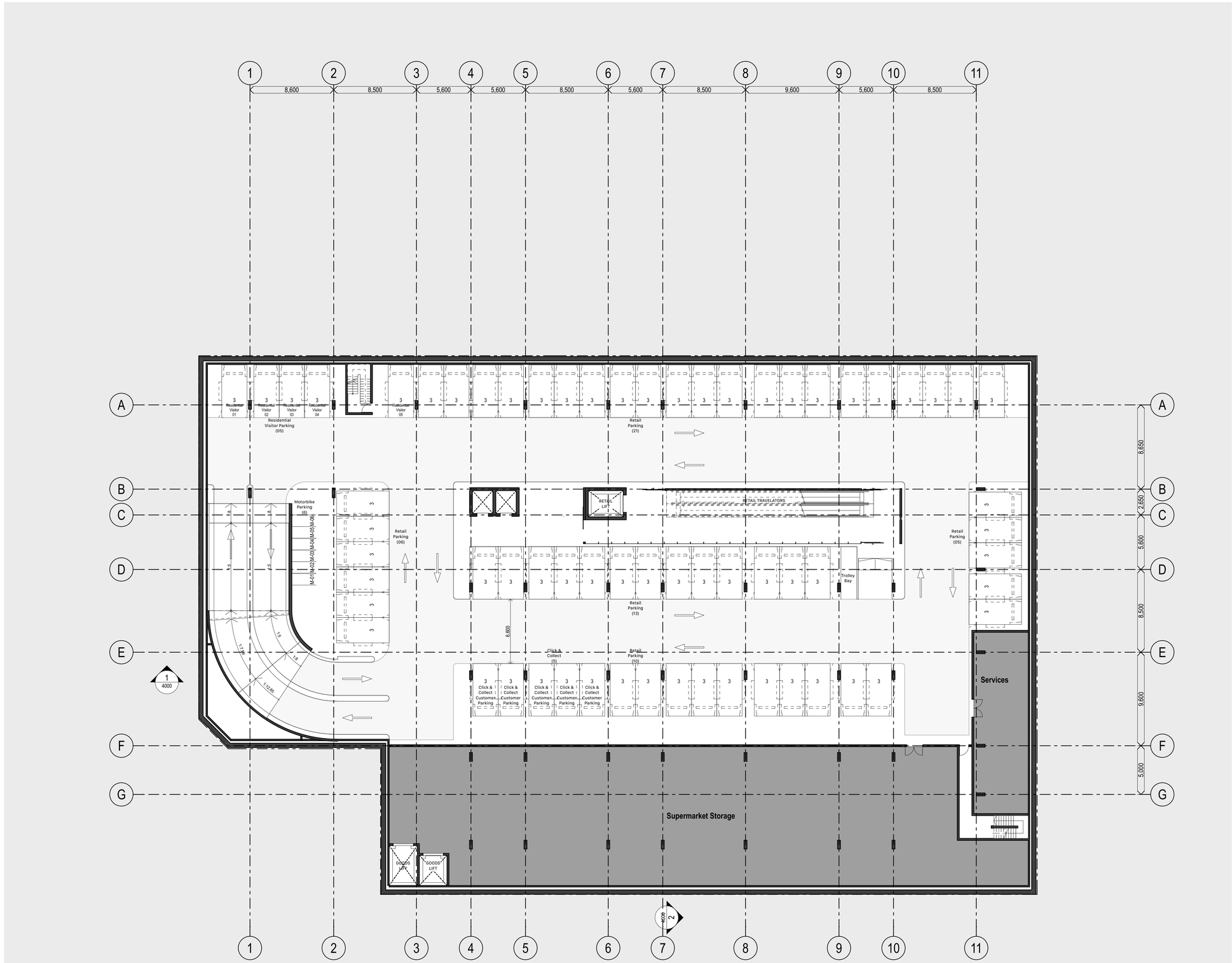


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- All levels relative to 'Australian Height Datum'.
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**Legend**

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ALL ACC. CARPARK SPACES COMPLIANT WITH **AS2890.6**

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All unchanged site levels are as per the existing survey information.

BASEMENT 2 PARKING SUMMARY

| Floor (Storey) | User Class (AS/NZS2890.1) | Quantity |
|---|---|---|
| **Basement 2** | | |
| Retail Parking | 3 | 55 |
| Trolley Bay | Custom | 1 |
| | Motorcycle | 6 |
| Retail Click & Collect Parking | | 5 |
| Residential Visitor Parking | | 5 |

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| 03 | 13/9/2024 | DA Submission | KT | |
| 02 | 8/9/2024 | DA Submission - SECPP | KT | |
| 01 | 1/8/2024 | DRP Meeting | KT | |

**277 The Grand Parade Ramsgate**
Australia
277 The Grand Parade Ramsgate
Sydney NSW 2217

**General Arrangement Plans**
B2 Basement 2 Floor Plan

**Scale**
1:200 @ A1

**Project Code**
BRAM

**First Issued**
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**Sheet No.**
2016

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03

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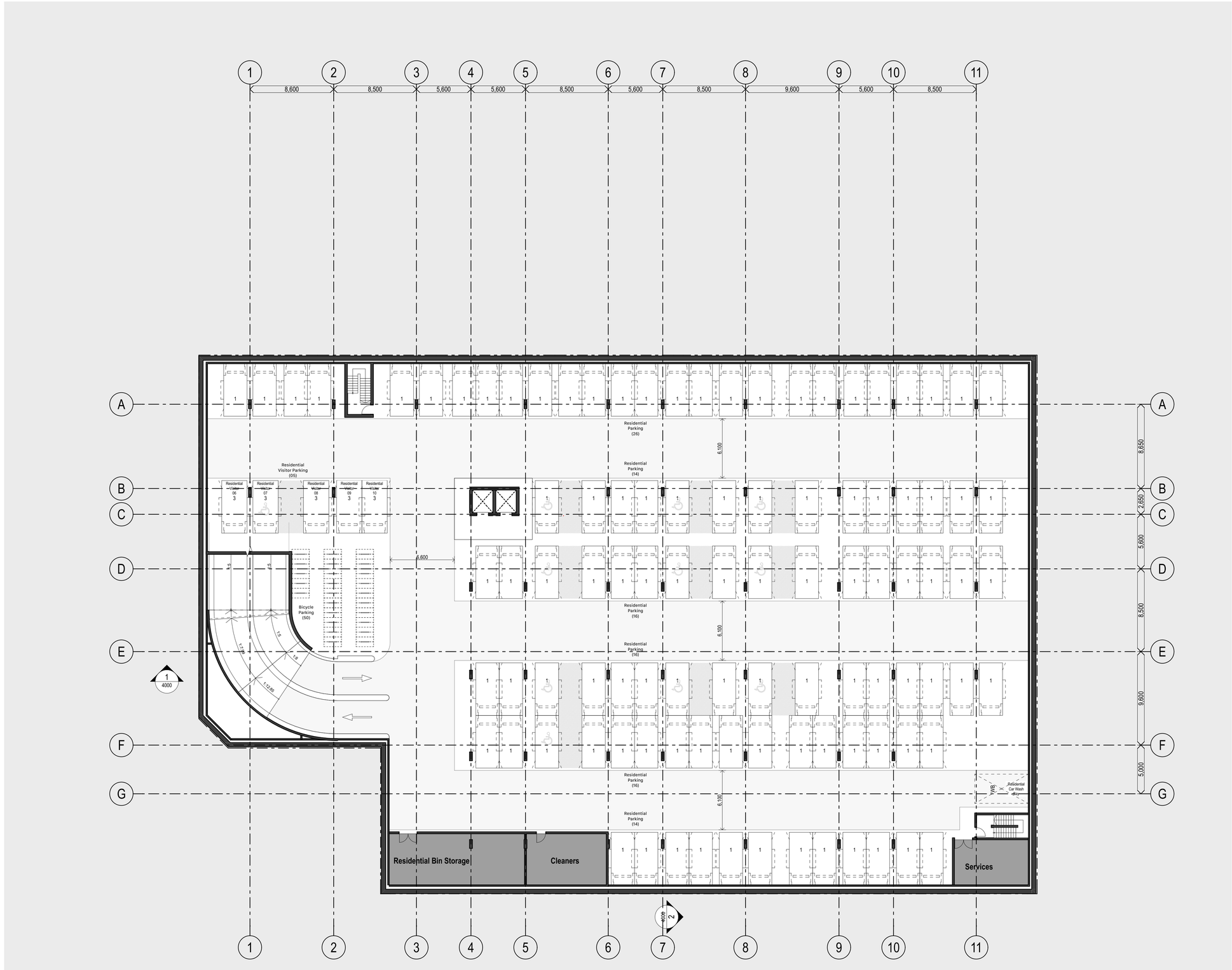


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- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

**Legend**

## Notes

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ALL ACC. CARPARK SPACES COMPLIANT WITH **AS2890.6**

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All unchanged site levels are as per the existing survey information.

**BASEMENT 3 PARKING SUMMARY**

| Floor (Storey) | User Class (AS/NZS2890.1) | | Quantity |
|---|---|---|---|
| **Basement 3** | | | |
| Retail Parking | | 1 | 100 |
| Residential Visitor Parking | | 3 | 5 |
| | Washing Bay | | 1 |
| Bicycle Parking | | | 50 |

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| 03 | 13/9/2024 | DA Submission | KT | |
| 02 | 8/9/2024 | DA Submission - SECPP | KT | |
| 01 | 1/8/2024 | DRP Meeting | KT | |

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Australia
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Sydney NSW 2217

**General Arrangement Plans**
B3 Basement 3 Floor Plan

**Scale**
1:200 @ A1

**Project Code**
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2017

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COUNCIL CARPARK TO BE RECONFIGURED TO SUIT NEW TRAFFIC DESIGN

Kerbs and planters to be re-aligned to suit new traffic design.

Kerbs and planters to be re-aligned to suit new traffic design.

Paving to be regraded to suit new crossover.

**Existing Carpark**

Existing carpark, asphalt, landscaping, pavements, kerbs and fixtures to be demolished.

**LOT 55**
DP 613007
AREA 487.4m

**LOT 6**
DP 11037
AREA 492m

**LOT 7**
DP 11037
AREA 492m

**LOT 8**
DP 11037
AREA 492m

**LOT 9**
DP 11037
AREA 505.6m

**Existing Single Level Commercial Building**
To be demolished.

**LOT 10**
DP 11037
AREA 500.7m

**LOT 11**
DP 11037
AREA 500.7m

**LOT 8**
SEC D
DP 10747
AREA 1008.9m

**Supermarket Loading Dock**

FFL 3.500

PARAPET RL 10.84

PARAPET RL 12.45

ROOF RL 8.82

PARAPET RL 8.93

RIDGE RL 8.22

RIDGE RL 8.26

RIDGE RL 9.02

RIDGE RL 8.31

RIDGE RL 11.18

RIDGE RL 11.48

SINGLE STOREY BRICK BUILDING TILE ROOF

2 STOREY BRICK BUILDING TILE ROOF

SINGLE STOREY RENDERED BUILDING

2 STOREY RENDERED SHOP

AWNING

BICYCLE RACKS

BENCH

BIN

POLE

BUS STOP

SUBSTATION

PHONE BOOTH

CARPARK

SIGN

LP

PIT

SMH

TEL

ELEC

GUT

DP

SL 2.42

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0 1 2 5m

**General notes**
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- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

**Legend**

PROPOSED DEMOLITION SHOWN IN RED

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| 01 | 13/9/2024 | DA Submission | | KT |

**277 The Grand Parade Ramsgate**
Australia
277 The Grand Parade Ramsgate
Sydney NSW 2217

**Demolition / Bulk Excavation**
Demolition Plan

**Scale**
1:100 @ A1

**Project Code**
BRAM

**First Issued**
13/9/2024

**Sheet No.**
2100

**Rev**
01

**architecture / interiors / landscape / urban / place** Level 5, 70 King Street, Sydney NSW 2000 **t** +61 2 9251 7077 **w** fjcstudio.com

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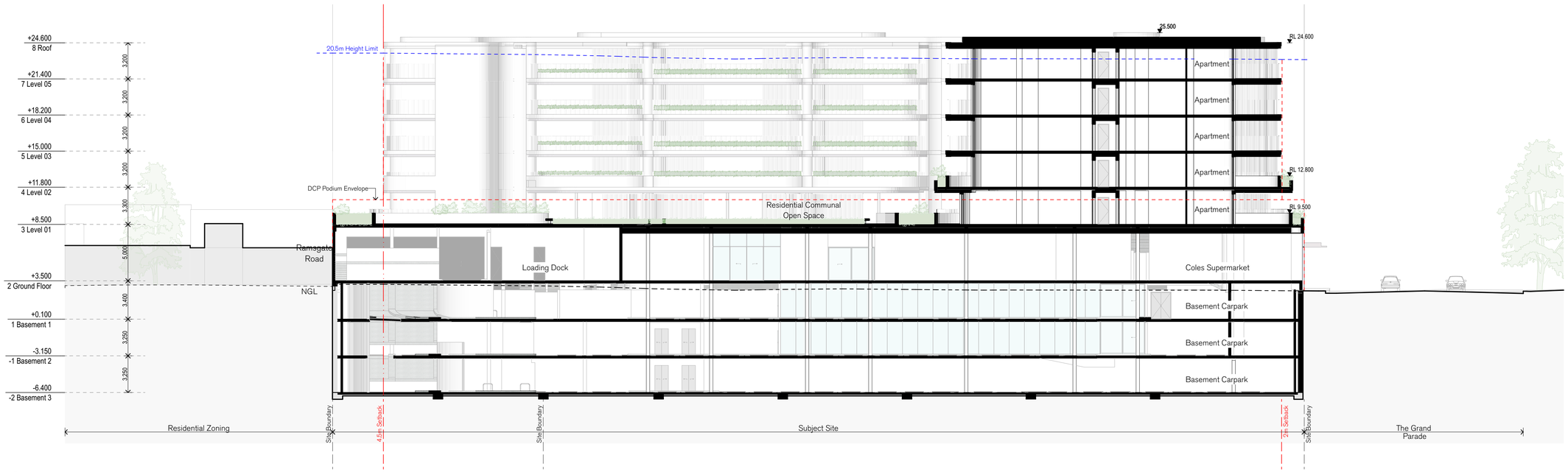
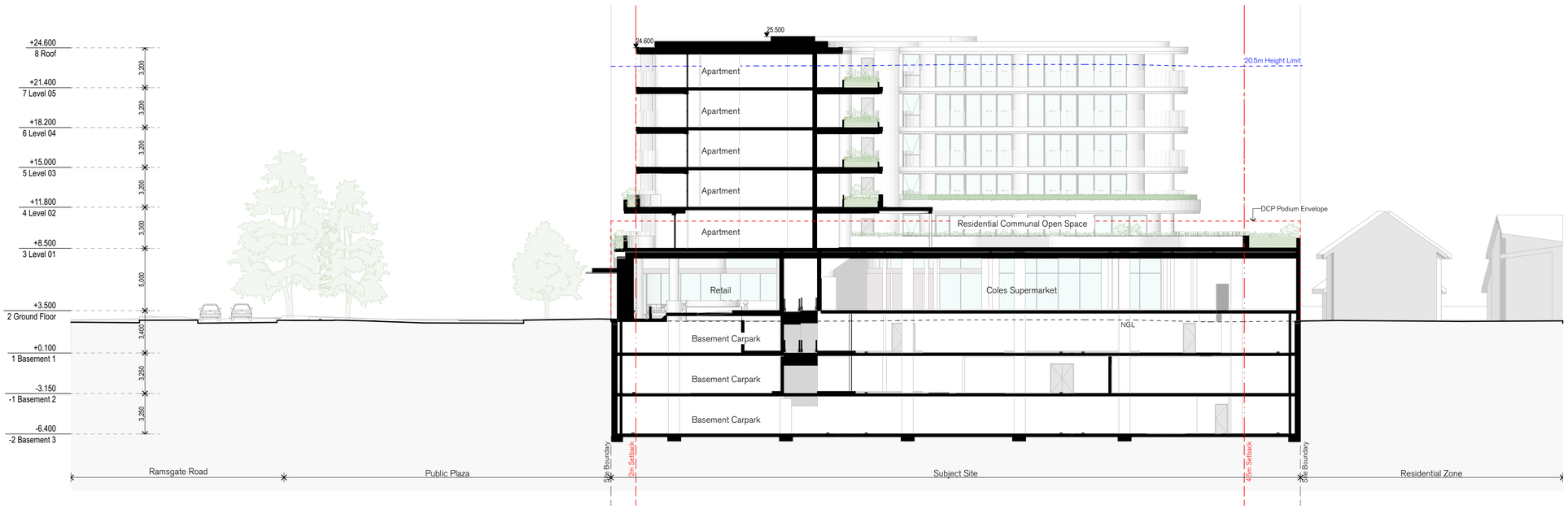



1 SECTION A-A
1:200




2 SECTION B-B
1:200

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0 2 5 10m

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- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

**Legend**

| | |
|---|---|
| **FT01** | Full height large format glazing framed with powdercoated aluminium framing. Vertical sliding sash windows provided to retail facing Ramsgate Road. Curved glazing provided to expressed corners. |
| **FT02** | Off form concrete with textured finish |
| **FT03** | Full height large format glazing framed with powdercoated aluminium framing. |
| **FT04** | Full height large format glazing framed with powdercoated aluminium framing and sliding doors to balconies |
| **FT05** | Full height glazing framed with powdercoated aluminium framing and operable awning window with limiter |
| **FT06** | Rendered masonry with textured finish |
| **FT07** | Full height powdercoated rod privacy screening |
| **FT08** | Off form concrete |
| **FT09** | Rendered masonry with textured finish |
| **BS02** | Rendered masonry with textured finish. Ribbon to be optional Glass Reinforced Concrete |
| **BS03** | Rendered masonry with textured finish |

**Notes**

ALL STAIRS, RAMPS AND HANDRAILS COMPLIANT WITH **AS1428.1**
ALL ACC. SANITARY FACILITIES COMPLIANT WITH **AS1428.1**
ALL ACC. CARPARK SPACES COMPLIANT WITH **AS2890.6**

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|---|---|---|---|---|
| 03 | 13/9/2024 | DA Submission | KT | |
| 02 | 8/9/2024 | DA Submission - SECPP | KT | |
| 01 | 1/8/2024 | DRP Meeting | KT | |

**277 The Grand Parade Ramsgate**
Australia
277 The Grand Parade Ramsgate
Sydney NSW 2217

**1:200 Sections**
Sections Sheet 1

**Scale**
1:200 @ A1

**Project Code**
BRAM

**First Issued**
1/8/2024

**Sheet No.**
4000

**Rev**
03

# 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*

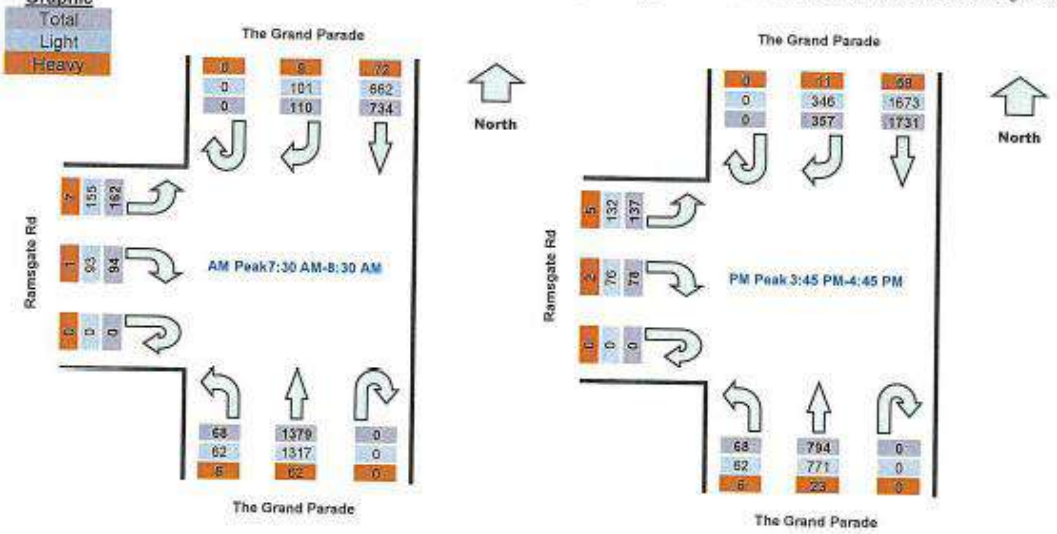
| Time | | th Approach The Grand Par | | | uth Approach The Grand Par | | | West Approach Ramsgate R | | | Hourly Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | U | NB | L | U | R | L | Hour | Peak |
| 7:00 | 7:15 | 0 | 20 | 117 | 0 | 320 | 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 | | th 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

## TURNING MOVEMENT SURVEY

trafficsurvey.com.au

### Intersection of Ramsgate Rd and The Grand Parade, Ran

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*

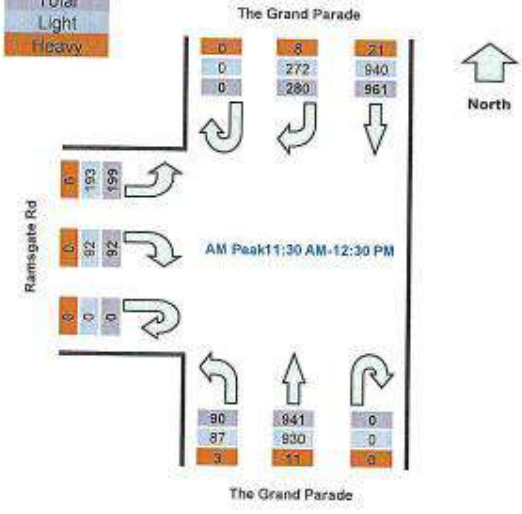
| Time | | th Approach The Grand Par | | | th Approach The Grand Par | | | West Approach Ramsgate R | | | Hourly Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | U | NB | L | U | R | L | Hour | Peak |
| 11:00 | 11:15 | 0 | 57 | 213 | 0 | 226 | 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 | | |

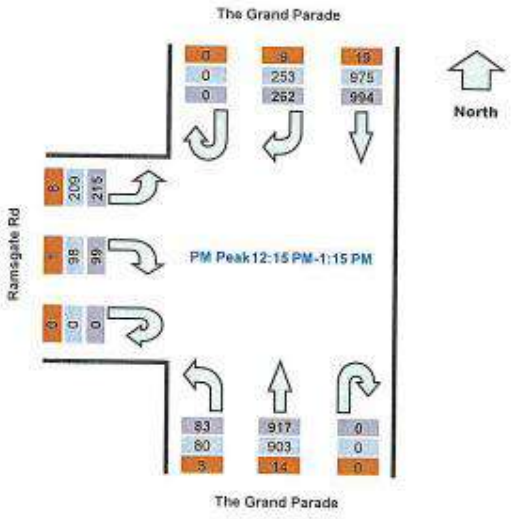
| Peak Time | | th Approach The Grand Par | | | th Approach The Grand Par | | | West Approach Ramsgate R | | | Peak |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | U | NB | L | U | R | L | total |
| 11:30 | 12:30 | 0 | 280 | 961 | 0 | 941 | 90 | 0 | 92 | 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 |

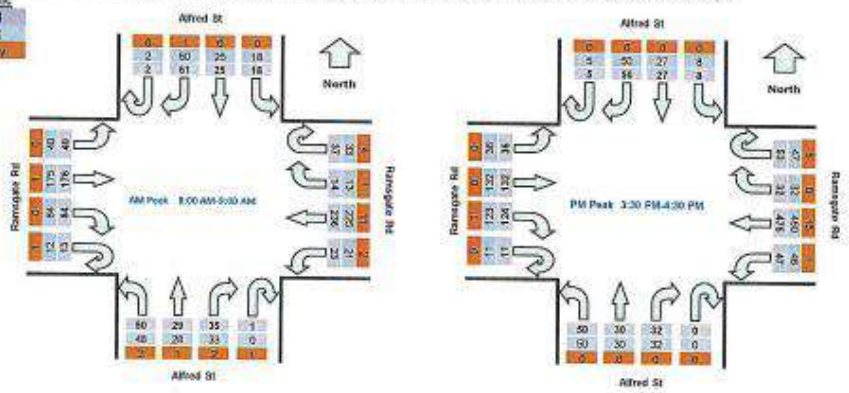
*All Vehicles*

| 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 | 8 | 0 | 17 | 48 | 4 | 671 | |
| 7:30 | 7:45 | 1 | 7 | 1 | 4 | 5 | 3 | 40 | 2 | 0 | 8 | 5 | 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 | 57 | 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 | 8 | 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 | 106 | 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 | 10 | 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 | 8 | 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 | 238 | 23 | 1 | 35 | 29 | 50 | 13 | 64 | 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 -33.965514, 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*

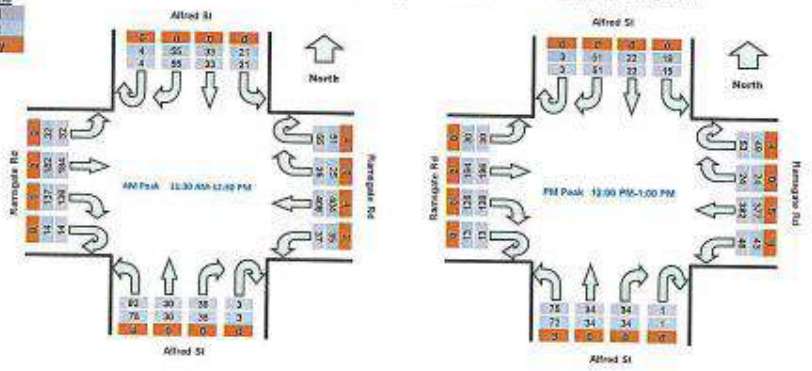
| Time | | North Approach Alfred St | | | | East Approach Ramsgate Rd | | | | South Approach Alfred St | | | | West Approach Ramsgate Rd | | | | Hourly Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | L | U | R | WB | L | U | R | NB | L | U | R | EB | L | Hour | Peak |
| 11:00 | 11:15 | 3 | 10 | 10 | 8 | 9 | 5 | 87 | 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 | 15 | 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 | 8 | 7 | 14 | 5 | 31 | 41 | 7 | 1129 | |
| 12:00 | 12:15 | 2 | 17 | 7 | 8 | 14 | 9 | 106 | 7 | 1 | 8 | 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 | 5 | 8 | 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

## TURNING MOVEMENT SURVEY

trafficsurvey.com.au

### 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

trafficsurvey.com.au

## TURNING MOVEMENT SURVEY

## 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

## TURNING MOVEMENT SURVEY

trafficsurvey.com.au

### 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

## TURNING MOVEMENT SURVEY

trafficsurvey.com.au

### 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

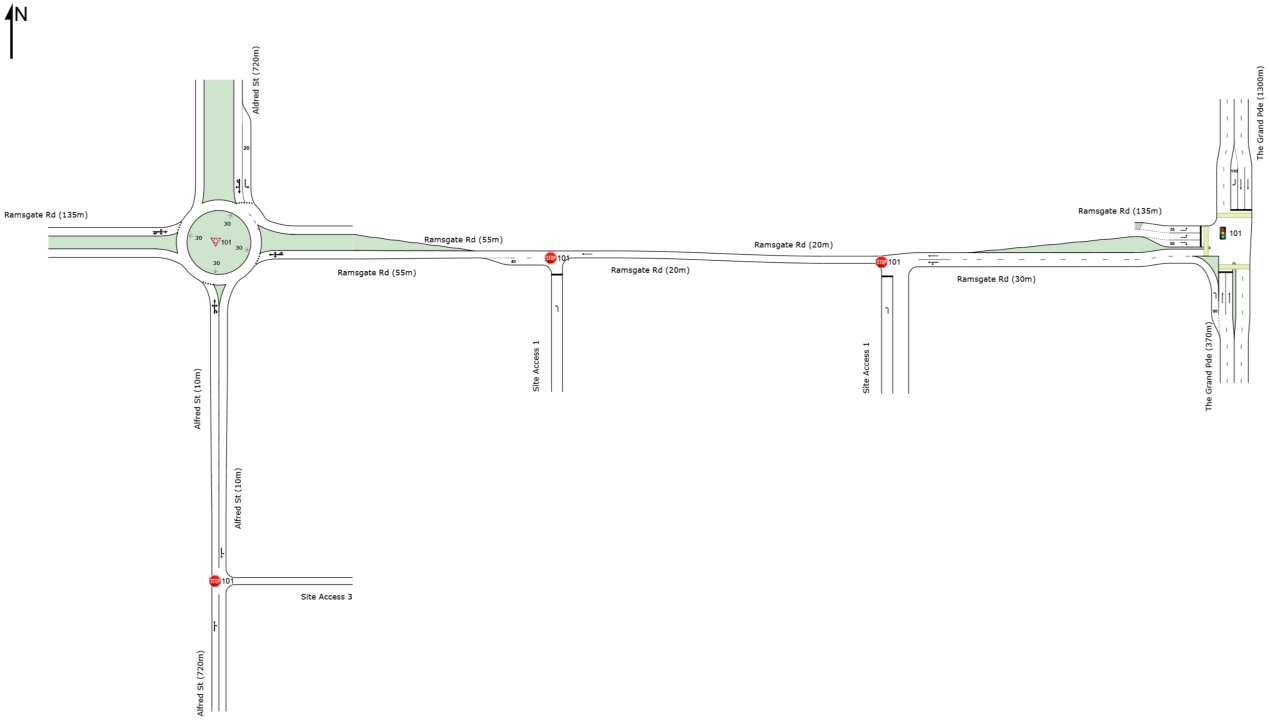
# SIDRA MOVEMENT SUMMARIES

# 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) |

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# 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 |

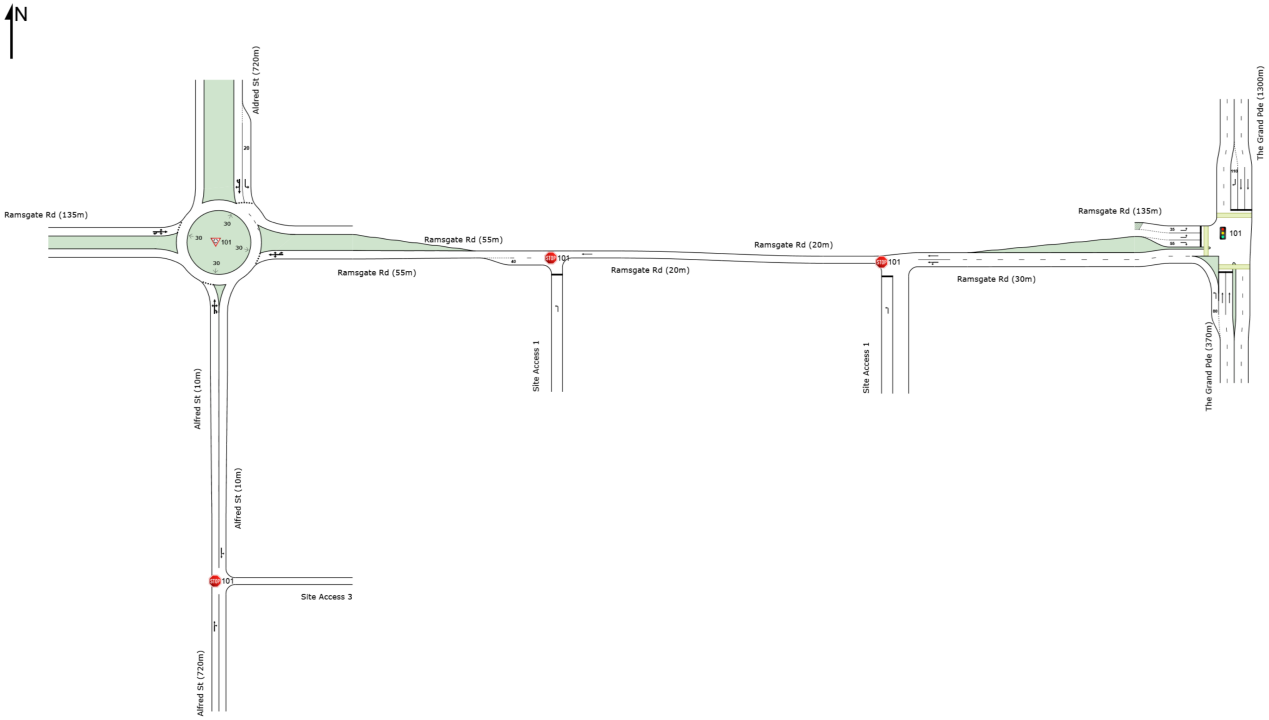
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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.

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# 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 |

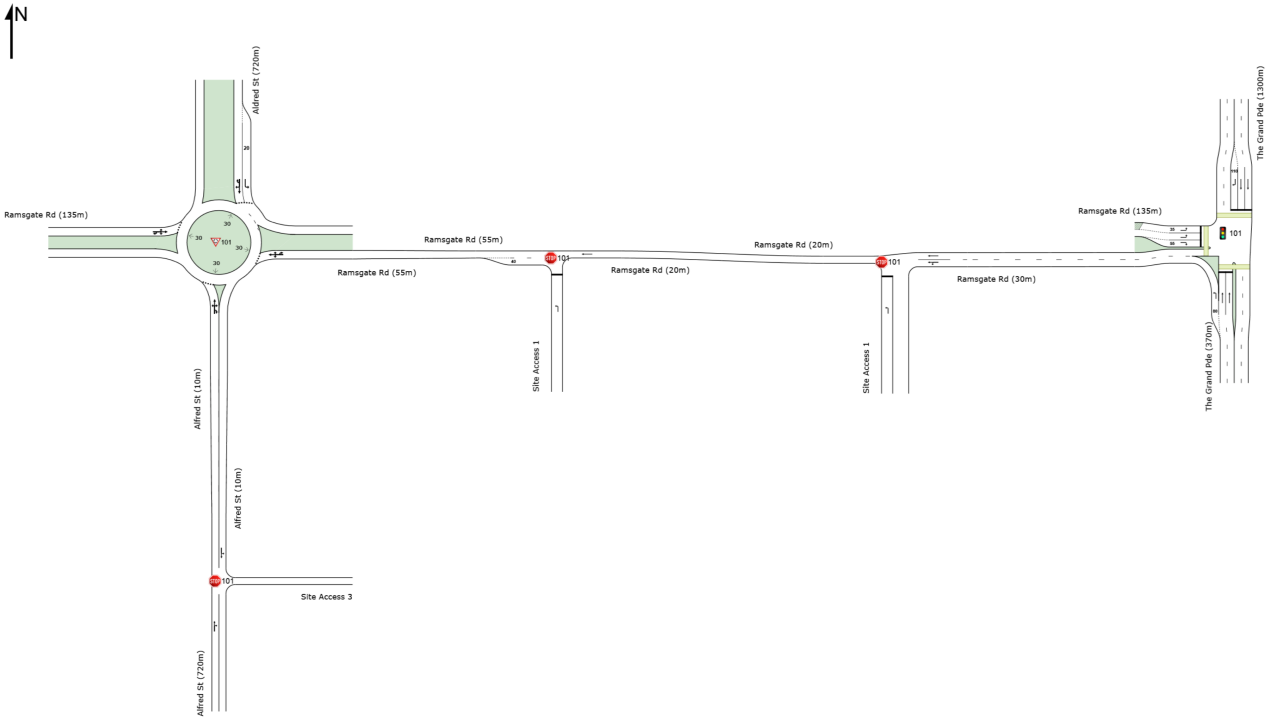
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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 |

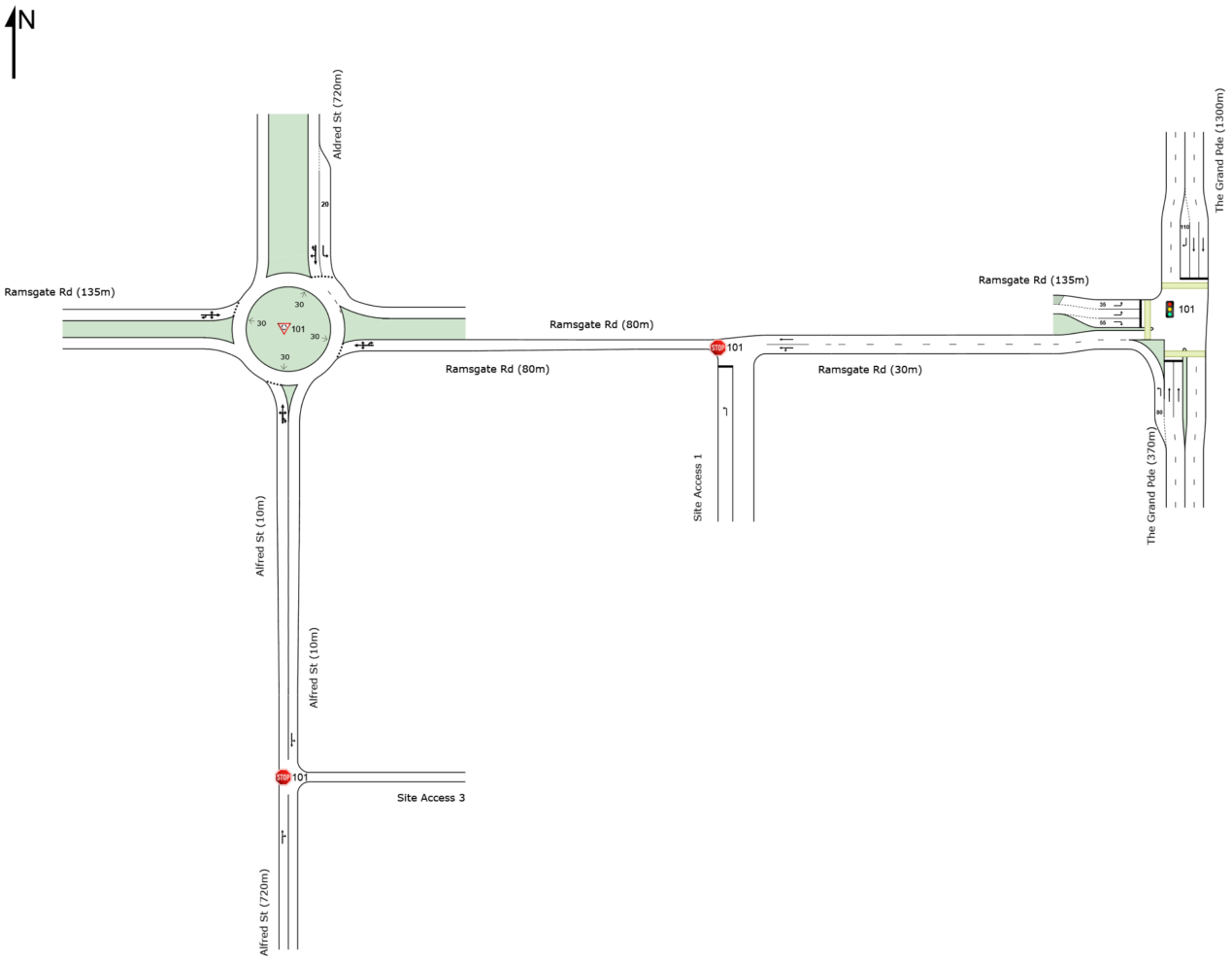
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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 | 72 | 8.3 | 72 | 8.3 | 0.041 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 48.7 |
| 2 | T1 | 1379 | 4.5 | 1379 | 4.5 | * 0.589 | 14.0 | LOS A | 14.6 | 106.0 | 0.64 | 0.58 | 0.64 | 52.7 |
| Approach | | 1451 | 4.7 | 1451 | 4.7 | 0.589 | 13.6 | LOS A | 14.6 | 106.0 | 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 | 117 | 7.7 | 117 | 7.7 | * 0.334 | 16.1 | LOS B | 1.7 | 12.8 | 0.65 | 0.74 | 0.65 | 49.9 |
| Approach | | 851 | 9.5 | 851 | 9.5 | 0.334 | 5.4 | LOS A | 3.5 | 26.4 | 0.34 | 0.32 | 0.34 | 56.9 |
| 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 | | 2558 | 6.1 | 2558 | 6.1 | 0.589 | 14.3 | LOS A | 14.6 | 106.0 | 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 & 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 | 0.087 | 2.3 | LOS A | 0.2 | 1.4 | 0.47 | 0.54 | 0.47 | 41.7 |
| 2 | T1 | 23 | 4.3 | 23 | 4.3 | 0.087 | 2.5 | LOS A | 0.2 | 1.4 | 0.47 | 0.54 | 0.47 | 49.2 |
| 3 | R2 | 31 | 6.5 | 31 | 6.5 | 0.087 | 6.9 | LOS A | 0.2 | 1.4 | 0.47 | 0.54 | 0.47 | 32.6 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.087 | 10.3 | LOS A | 0.2 | 1.4 | 0.47 | 0.54 | 0.47 | 24.8 |
| Approach | | 97 | 6.2 | 97 | 6.2 | 0.087 | 3.9 | LOS A | 0.2 | 1.4 | 0.47 | 0.54 | 0.47 | 43.9 |
| East: Ramsgate Rd (80m) | | | | | | | | | | | | | | |
| 4 | L2 | 21 | 9.5 | 21 | 9.5 | 0.222 | 3.7 | LOS A | 0.5 | 4.0 | 0.34 | 0.46 | 0.34 | 34.2 |
| 5 | T1 | 231 | 4.3 | 231 | 4.3 | 0.222 | 3.9 | LOS A | 0.5 | 4.0 | 0.34 | 0.46 | 0.34 | 47.5 |
| 6 | R2 | 12 | 8.3 | 12 | 8.3 | 0.222 | 9.5 | LOS A | 0.5 | 4.0 | 0.34 | 0.46 | 0.34 | 50.8 |
| 6u | U | 33 | 9.1 | 33 | 9.1 | 0.222 | 11.9 | LOS A | 0.5 | 4.0 | 0.34 | 0.46 | 0.34 | 36.5 |
| Approach | | 297 | 5.4 | 297 | 5.4 | 0.222 | 5.0 | LOS A | 0.5 | 4.0 | 0.34 | 0.46 | 0.34 | 46.0 |
| North: Aldred St (720m) | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 0.0 | 14 | 0.0 | 0.014 | 4.1 | LOS A | 0.0 | 0.2 | 0.46 | 0.43 | 0.46 | 46.1 |
| 8 | T1 | 13 | 0.0 | 13 | 0.0 | 0.039 | 3.4 | LOS A | 0.1 | 0.7 | 0.44 | 0.54 | 0.44 | 43.8 |
| 9 | R2 | 40 | 2.5 | 40 | 2.5 | 0.039 | 8.6 | LOS A | 0.1 | 0.7 | 0.44 | 0.54 | 0.44 | 28.9 |
| 9u | U | 3 | 0.0 | 3 | 0.0 | 0.039 | 10.6 | LOS A | 0.1 | 0.7 | 0.44 | 0.54 | 0.44 | 49.2 |
| Approach | | 70 | 1.4 | 70 | 1.4 | 0.039 | 6.8 | LOS A | 0.1 | 0.7 | 0.45 | 0.52 | 0.45 | 34.1 |
| West: Ramsgate Rd (135m) | | | | | | | | | | | | | | |
| 10 | L2 | 35 | 0.0 | 35 | 0.0 | 0.216 | 3.9 | LOS A | 0.4 | 3.0 | 0.22 | 0.48 | 0.22 | 47.6 |
| 11 | T1 | 183 | 0.5 | 183 | 0.5 | 0.216 | 4.0 | LOS A | 0.4 | 3.0 | 0.22 | 0.48 | 0.22 | 41.4 |
| 12 | R2 | 83 | 0.0 | 83 | 0.0 | 0.216 | 9.7 | LOS A | 0.4 | 3.0 | 0.22 | 0.48 | 0.22 | 38.3 |
| 12u | U | 7 | 14.3 | 7 | 14.3 | 0.216 | 12.3 | LOS A | 0.4 | 3.0 | 0.22 | 0.48 | 0.22 | 15.4 |
| Approach | | 308 | 0.6 | 308 | 0.6 | 0.216 | 5.7 | LOS A | 0.4 | 3.0 | 0.22 | 0.48 | 0.22 | 41.0 |
| All Vehicles | | 772 | 3.2 | 772 | 3.2 | 0.222 | 5.3 | LOS A | 0.5 | 4.0 | 0.32 | 0.48 | 0.32 | 40.7 |

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 [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 | 138 | 1.4 | 138 | 1.4 | 0.111 | 6.1 | LOS A | 0.2 | 1.4 | 0.27 | 0.78 | 0.27 | 20.6 |
| Approach | | 138 | 1.4 | 138 | 1.4 | 0.111 | 6.1 | LOS A | 0.2 | 1.4 | 0.27 | 0.78 | 0.27 | 20.6 |
| East: Ramsgate Rd (30m) | | | | | | | | | | | | | | |
| 4 | L2 | 37 | 0.0 | 37 | 0.0 | 0.020 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 49.0 |
| 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 | | 181 | 8.3 | 181 | 8.3 | 0.079 | 1.0 | NA | 0.0 | 0.0 | 0.00 | 0.13 | 0.00 | 51.4 |
| All Vehicles | | 319 | 5.3 | 319 | 5.3 | 0.111 | 3.2 | NA | 0.2 | 1.4 | 0.12 | 0.41 | 0.12 | 24.6 |

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.

# 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 | 0.067 | 0.1 | LOS A | 0.1 | 0.4 | 0.10 | 0.10 | 0.10 | 11.5 |
| 3 | R2 | 25 | 0.0 | 25 | 0.0 | 0.067 | 3.6 | LOS A | 0.1 | 0.4 | 0.10 | 0.10 | 0.10 | 14.9 |
| Approach | | 122 | 4.9 | 122 | 4.9 | 0.067 | 0.8 | NA | 0.1 | 0.4 | 0.10 | 0.10 | 0.10 | 12.3 |
| North: Alfred St (10m) | | | | | | | | | | | | | | |
| 7 | L2 | 45 | 0.0 | 45 | 0.0 | 0.062 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 44.6 |
| 8 | T1 | 72 | 4.2 | 72 | 4.2 | 0.062 | 3.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.6 |
| Approach | | 117 | 2.6 | 117 | 2.6 | 0.062 | 3.6 | NA | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.3 |
| All Vehicles | | 239 | 3.8 | 239 | 3.8 | 0.067 | 2.2 | NA | 0.1 | 0.4 | 0.05 | 0.38 | 0.05 | 18.0 |

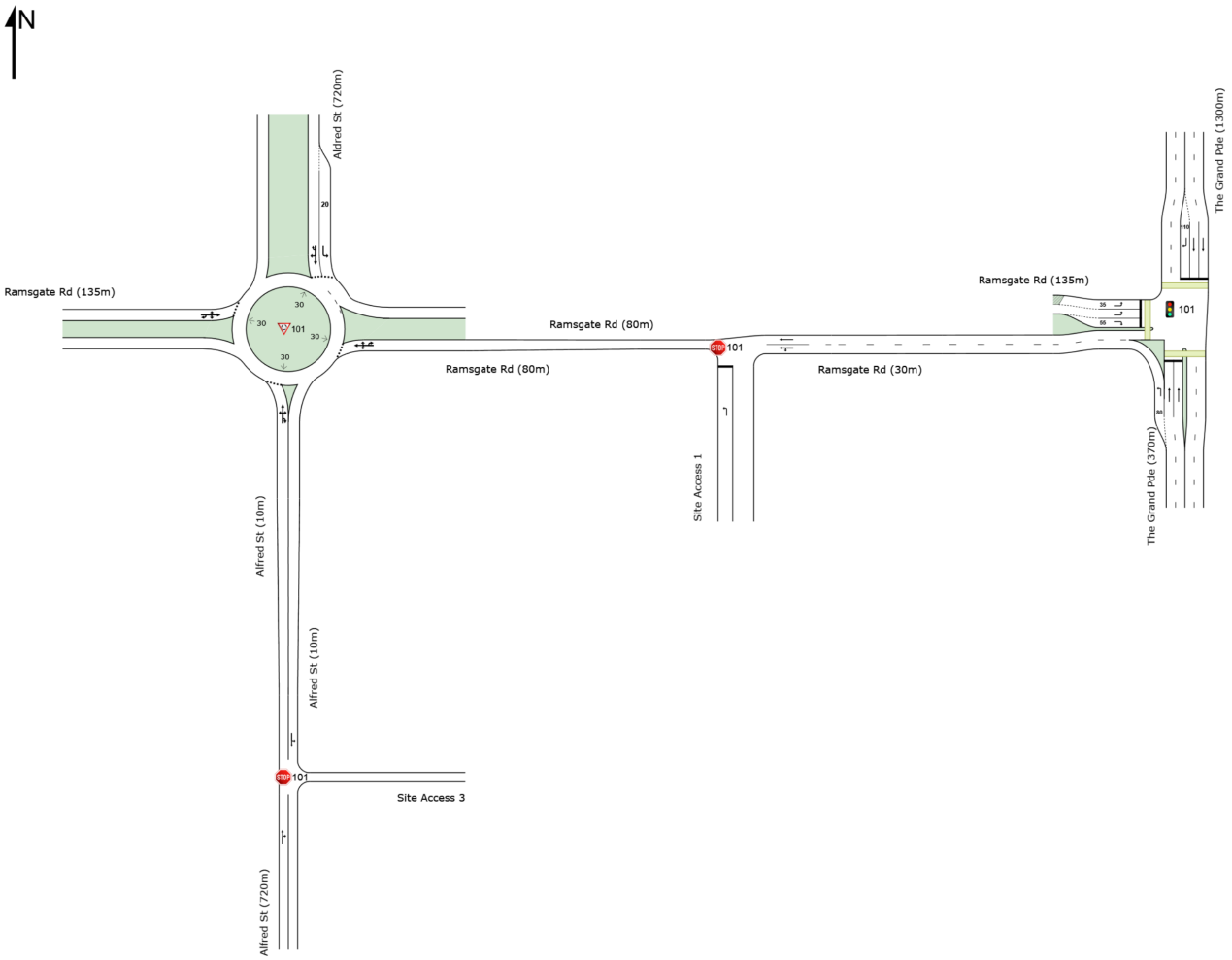
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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 [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 | 71 | 8.5 | 71 | 8.5 | 0.041 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 48.7 |
| 2 | T1 | 794 | 2.9 | 794 | 2.9 | * 0.566 | 32.5 | LOS C | 11.3 | 81.2 | 0.86 | 0.75 | 0.86 | 45.4 |
| Approach | | 865 | 3.4 | 865 | 3.4 | 0.566 | 30.3 | LOS C | 11.3 | 81.2 | 0.78 | 0.73 | 0.78 | 45.5 |
| 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 | 374 | 2.9 | 374 | 2.9 | * 0.445 | 14.8 | LOS B | 5.4 | 38.9 | 0.70 | 0.78 | 0.70 | 50.5 |
| Approach | | 2105 | 3.3 | 2105 | 3.3 | 0.579 | 7.1 | LOS A | 12.0 | 86.7 | 0.48 | 0.47 | 0.48 | 55.9 |
| West: Ramsgate Rd (135m) | | | | | | | | | | | | | | |
| 10 | L2 | 137 | 3.6 | 137 | 3.6 | 0.071 | 19.9 | LOS B | 1.2 | 8.4 | 0.51 | 0.69 | 0.51 | 48.0 |
| 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 | 34.4 | LOS C | 2.7 | 19.0 | 0.67 | 0.72 | 0.67 | 39.0 |
| All Vehicles | | 3185 | 3.3 | 3185 | 3.3 | 0.579 | 15.2 | LOS B | 12.0 | 86.7 | 0.57 | 0.56 | 0.57 | 51.6 |

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.
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 & 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 | 0.127 | 4.5 | LOS A | 0.3 | 2.3 | 0.73 | 0.69 | 0.73 | 37.9 |
| 2 | T1 | 27 | 0.0 | 27 | 0.0 | 0.127 | 4.7 | LOS A | 0.3 | 2.3 | 0.73 | 0.69 | 0.73 | 47.7 |
| 3 | R2 | 30 | 0.0 | 30 | 0.0 | 0.127 | 9.0 | LOS A | 0.3 | 2.3 | 0.73 | 0.69 | 0.73 | 29.0 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.127 | 11.0 | LOS A | 0.3 | 2.3 | 0.73 | 0.69 | 0.73 | 19.7 |
| Approach | | 107 | 0.0 | 107 | 0.0 | 0.127 | 5.8 | LOS A | 0.3 | 2.3 | 0.73 | 0.69 | 0.73 | 41.6 |
| East: Ramsgate Rd (80m) | | | | | | | | | | | | | | |
| 4 | L2 | 49 | 2.0 | 49 | 2.0 | 0.514 | 4.6 | LOS A | 1.7 | 12.5 | 0.57 | 0.55 | 0.57 | 31.5 |
| 5 | T1 | 524 | 2.9 | 524 | 2.9 | 0.514 | 4.8 | LOS A | 1.7 | 12.5 | 0.57 | 0.55 | 0.57 | 45.1 |
| 6 | R2 | 29 | 0.0 | 29 | 0.0 | 0.514 | 10.4 | LOS A | 1.7 | 12.5 | 0.57 | 0.55 | 0.57 | 49.5 |
| 6u | U | 58 | 10.3 | 58 | 10.3 | 0.514 | 12.9 | LOS A | 1.7 | 12.5 | 0.57 | 0.55 | 0.57 | 34.5 |
| Approach | | 660 | 3.3 | 660 | 3.3 | 0.514 | 5.7 | LOS A | 1.7 | 12.5 | 0.57 | 0.55 | 0.57 | 44.0 |
| North: Aldred St (720m) | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 0.0 | 9 | 0.0 | 0.009 | 4.2 | LOS A | 0.0 | 0.1 | 0.48 | 0.43 | 0.48 | 46.0 |
| 8 | T1 | 30 | 0.0 | 30 | 0.0 | 0.059 | 3.6 | LOS A | 0.2 | 1.1 | 0.47 | 0.54 | 0.47 | 44.2 |
| 9 | R2 | 49 | 0.0 | 49 | 0.0 | 0.059 | 8.7 | LOS A | 0.2 | 1.1 | 0.47 | 0.54 | 0.47 | 29.1 |
| 9u | U | 6 | 0.0 | 6 | 0.0 | 0.059 | 10.7 | LOS A | 0.2 | 1.1 | 0.47 | 0.54 | 0.47 | 49.5 |
| Approach | | 94 | 0.0 | 94 | 0.0 | 0.059 | 6.8 | LOS A | 0.2 | 1.1 | 0.47 | 0.53 | 0.47 | 35.1 |
| West: Ramsgate Rd (135m) | | | | | | | | | | | | | | |
| 10 | L2 | 33 | 0.0 | 33 | 0.0 | 0.231 | 4.1 | LOS A | 0.5 | 3.4 | 0.28 | 0.55 | 0.28 | 46.7 |
| 11 | T1 | 127 | 0.0 | 127 | 0.0 | 0.231 | 4.2 | LOS A | 0.5 | 3.4 | 0.28 | 0.55 | 0.28 | 39.5 |
| 12 | R2 | 140 | 0.7 | 140 | 0.7 | 0.231 | 9.9 | LOS A | 0.5 | 3.4 | 0.28 | 0.55 | 0.28 | 36.0 |
| 12u | U | 13 | 0.0 | 13 | 0.0 | 0.231 | 12.3 | LOS A | 0.5 | 3.4 | 0.28 | 0.55 | 0.28 | 15.5 |
| Approach | | 313 | 0.3 | 313 | 0.3 | 0.231 | 7.1 | LOS A | 0.5 | 3.4 | 0.28 | 0.55 | 0.28 | 37.7 |
| All Vehicles | | 1174 | 2.0 | 1174 | 2.0 | 0.514 | 6.2 | LOS A | 1.7 | 12.5 | 0.50 | 0.56 | 0.50 | 40.0 |

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 [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 | 232 | 0.9 | 232 | 0.9 | 0.230 | 7.5 | LOS A | 0.4 | 3.1 | 0.48 | 0.83 | 0.48 | 20.4 |
| Approach | | 232 | 0.9 | 232 | 0.9 | 0.230 | 7.5 | LOS A | 0.4 | 3.1 | 0.48 | 0.83 | 0.48 | 20.4 |
| East: Ramsgate Rd (30m) | | | | | | | | | | | | | | |
| 4 | L2 | 75 | 1.3 | 75 | 1.3 | 0.041 | 4.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.65 | 0.00 | 48.8 |
| 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 | | 437 | 3.9 | 437 | 3.9 | 0.191 | 0.8 | NA | 0.0 | 0.0 | 0.00 | 0.11 | 0.00 | 51.5 |
| All Vehicles | | 669 | 2.8 | 669 | 2.8 | 0.230 | 3.1 | NA | 0.4 | 3.1 | 0.17 | 0.36 | 0.17 | 25.4 |

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 [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 | 0.084 | 0.3 | LOS A | 0.1 | 0.8 | 0.20 | 0.12 | 0.20 | 11.4 |
| 3 | R2 | 42 | 0.0 | 42 | 0.0 | 0.084 | 2.9 | LOS A | 0.1 | 0.8 | 0.20 | 0.12 | 0.20 | 13.5 |
| Approach | | 149 | 0.0 | 149 | 0.0 | 0.084 | 1.0 | NA | 0.1 | 0.8 | 0.20 | 0.12 | 0.20 | 12.2 |
| North: Alfred St (10m) | | | | | | | | | | | | | | |
| 7 | L2 | 92 | 1.1 | 92 | 1.1 | 0.113 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 44.7 |
| 8 | T1 | 123 | 0.8 | 123 | 0.8 | 0.113 | 3.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.8 |
| Approach | | 215 | 0.9 | 215 | 0.9 | 0.113 | 3.6 | NA | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.4 |
| All Vehicles | | 364 | 0.5 | 364 | 0.5 | 0.113 | 2.5 | NA | 0.1 | 0.8 | 0.08 | 0.45 | 0.08 | 19.6 |

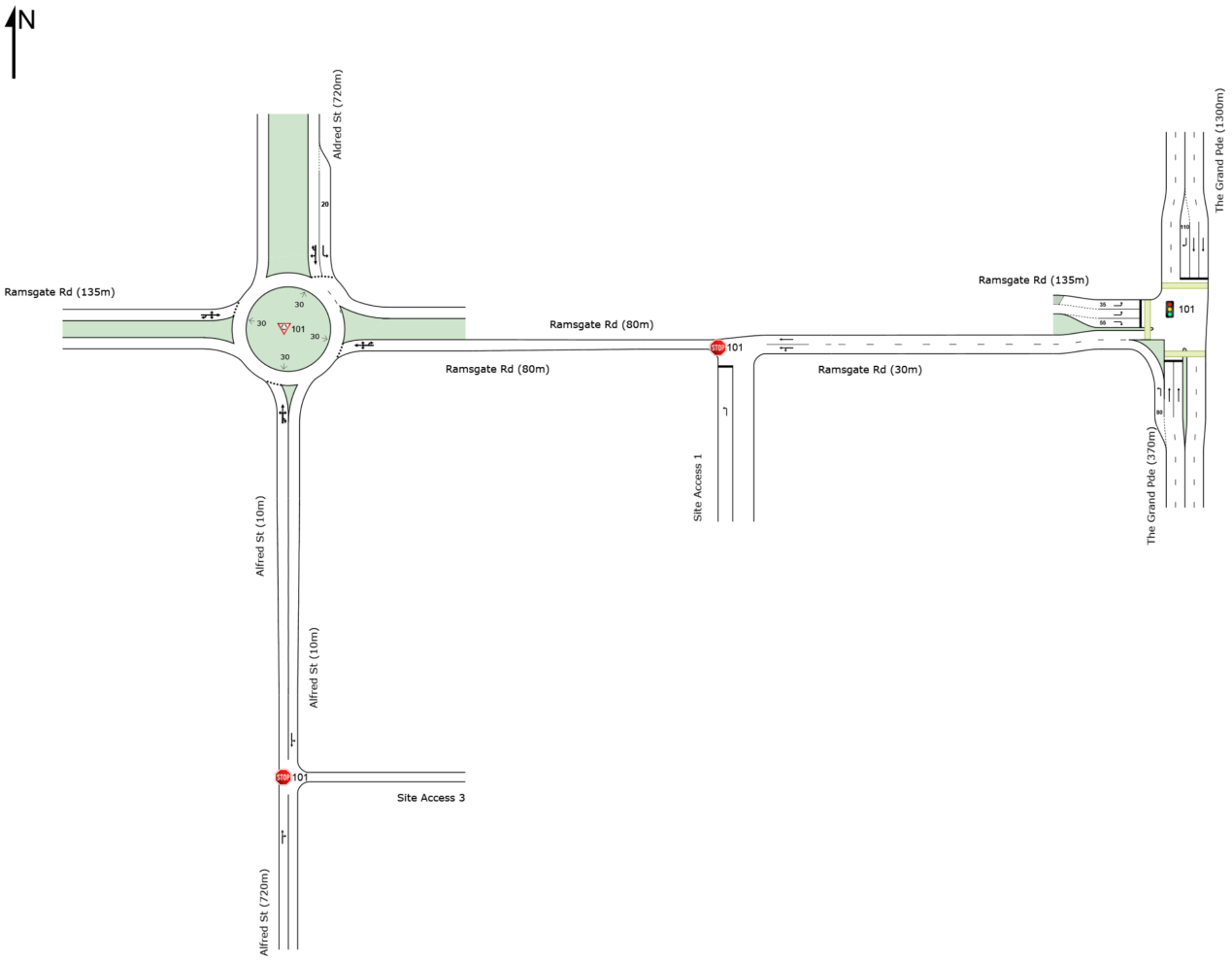
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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 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 | 87 | 3.4 | 87 | 3.4 | 0.048 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 48.7 |
| 2 | T1 | 917 | 1.5 | 917 | 1.5 | * 0.528 | 25.3 | LOS B | 11.7 | 83.2 | 0.77 | 0.68 | 0.77 | 48.0 |
| Approach | | 1004 | 1.7 | 1004 | 1.7 | 0.528 | 23.6 | LOS B | 11.7 | 83.2 | 0.71 | 0.67 | 0.71 | 48.0 |
| 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 | 274 | 3.3 | 274 | 3.3 | * 0.383 | 14.4 | LOS A | 3.7 | 26.5 | 0.65 | 0.76 | 0.65 | 50.8 |
| Approach | | 1268 | 2.2 | 1268 | 2.2 | 0.383 | 6.2 | LOS A | 5.1 | 36.1 | 0.39 | 0.39 | 0.39 | 56.4 |
| West: Ramsgate Rd (135m) | | | | | | | | | | | | | | |
| 10 | L2 | 215 | 2.8 | 215 | 2.8 | 0.131 | 26.0 | LOS B | 2.2 | 15.9 | 0.62 | 0.72 | 0.62 | 45.5 |
| 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 | 36.9 | LOS C | 3.4 | 24.2 | 0.73 | 0.74 | 0.73 | 38.6 |
| All Vehicles | | 2586 | 2.0 | 2586 | 2.0 | 0.528 | 16.7 | LOS B | 11.7 | 83.2 | 0.55 | 0.54 | 0.55 | 50.7 |

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 & 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 | 0.149 | 3.7 | LOS A | 0.4 | 2.6 | 0.65 | 0.65 | 0.65 | 39.3 |
| 2 | T1 | 31 | 0.0 | 31 | 0.0 | 0.149 | 3.8 | LOS A | 0.4 | 2.6 | 0.65 | 0.65 | 0.65 | 48.5 |
| 3 | R2 | 34 | 0.0 | 34 | 0.0 | 0.149 | 8.1 | LOS A | 0.4 | 2.6 | 0.65 | 0.65 | 0.65 | 30.7 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.149 | 10.1 | LOS A | 0.4 | 2.6 | 0.65 | 0.65 | 0.65 | 21.3 |
| Approach | | 141 | 2.8 | 141 | 2.8 | 0.149 | 4.8 | LOS A | 0.4 | 2.6 | 0.65 | 0.65 | 0.65 | 42.6 |
| East: Ramsgate Rd (80m) | | | | | | | | | | | | | | |
| 4 | L2 | 64 | 4.7 | 64 | 4.7 | 0.428 | 4.4 | LOS A | 1.3 | 9.4 | 0.50 | 0.53 | 0.50 | 32.0 |
| 5 | T1 | 404 | 1.0 | 404 | 1.0 | 0.428 | 4.5 | LOS A | 1.3 | 9.4 | 0.50 | 0.53 | 0.50 | 45.8 |
| 6 | R2 | 25 | 0.0 | 25 | 0.0 | 0.428 | 10.1 | LOS A | 1.3 | 9.4 | 0.50 | 0.53 | 0.50 | 49.8 |
| 6u | U | 65 | 6.2 | 65 | 6.2 | 0.428 | 12.5 | LOS A | 1.3 | 9.4 | 0.50 | 0.53 | 0.50 | 35.0 |
| Approach | | 558 | 2.0 | 558 | 2.0 | 0.428 | 5.7 | LOS A | 1.3 | 9.4 | 0.50 | 0.53 | 0.50 | 44.0 |
| North: Aldred St (720m) | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 0.0 | 15 | 0.0 | 0.016 | 4.8 | LOS A | 0.0 | 0.3 | 0.54 | 0.46 | 0.54 | 45.8 |
| 8 | T1 | 29 | 0.0 | 29 | 0.0 | 0.056 | 4.0 | LOS A | 0.2 | 1.1 | 0.54 | 0.55 | 0.54 | 44.3 |
| 9 | R2 | 46 | 0.0 | 46 | 0.0 | 0.056 | 9.1 | LOS A | 0.2 | 1.1 | 0.54 | 0.55 | 0.54 | 29.1 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.056 | 11.2 | LOS A | 0.2 | 1.1 | 0.54 | 0.55 | 0.54 | 49.5 |
| Approach | | 91 | 0.0 | 91 | 0.0 | 0.056 | 6.8 | LOS A | 0.2 | 1.1 | 0.54 | 0.54 | 0.54 | 34.8 |
| West: Ramsgate Rd (135m) | | | | | | | | | | | | | | |
| 10 | L2 | 22 | 0.0 | 22 | 0.0 | 0.277 | 4.2 | LOS A | 0.6 | 4.2 | 0.29 | 0.53 | 0.29 | 47.0 |
| 11 | T1 | 209 | 1.0 | 209 | 1.0 | 0.277 | 4.3 | LOS A | 0.6 | 4.2 | 0.29 | 0.53 | 0.29 | 40.1 |
| 12 | R2 | 133 | 0.8 | 133 | 0.8 | 0.277 | 10.0 | LOS A | 0.6 | 4.2 | 0.29 | 0.53 | 0.29 | 36.8 |
| 12u | U | 11 | 0.0 | 11 | 0.0 | 0.277 | 12.3 | LOS A | 0.6 | 4.2 | 0.29 | 0.53 | 0.29 | 15.5 |
| Approach | | 375 | 0.8 | 375 | 0.8 | 0.277 | 6.5 | LOS A | 0.6 | 4.2 | 0.29 | 0.53 | 0.29 | 38.3 |
| All Vehicles | | 1165 | 1.5 | 1165 | 1.5 | 0.428 | 5.9 | LOS A | 1.3 | 9.4 | 0.45 | 0.54 | 0.45 | 40.0 |

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 [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 | 208 | 1.0 | 208 | 1.0 | 0.193 | 7.2 | LOS A | 0.4 | 2.6 | 0.42 | 0.80 | 0.42 | 21.7 |
| Approach | | 208 | 1.0 | 208 | 1.0 | 0.193 | 7.2 | LOS A | 0.4 | 2.6 | 0.42 | 0.80 | 0.42 | 21.7 |
| East: Ramsgate Rd (30m) | | | | | | | | | | | | | | |
| 4 | L2 | 65 | 0.0 | 65 | 0.0 | 0.035 | 5.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.66 | 0.00 | 48.8 |
| 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 | | 360 | 3.3 | 360 | 3.3 | 0.155 | 0.9 | NA | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 51.4 |
| All Vehicles | | 568 | 2.5 | 568 | 2.5 | 0.193 | 3.2 | NA | 0.4 | 2.6 | 0.15 | 0.37 | 0.15 | 26.5 |

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 [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)

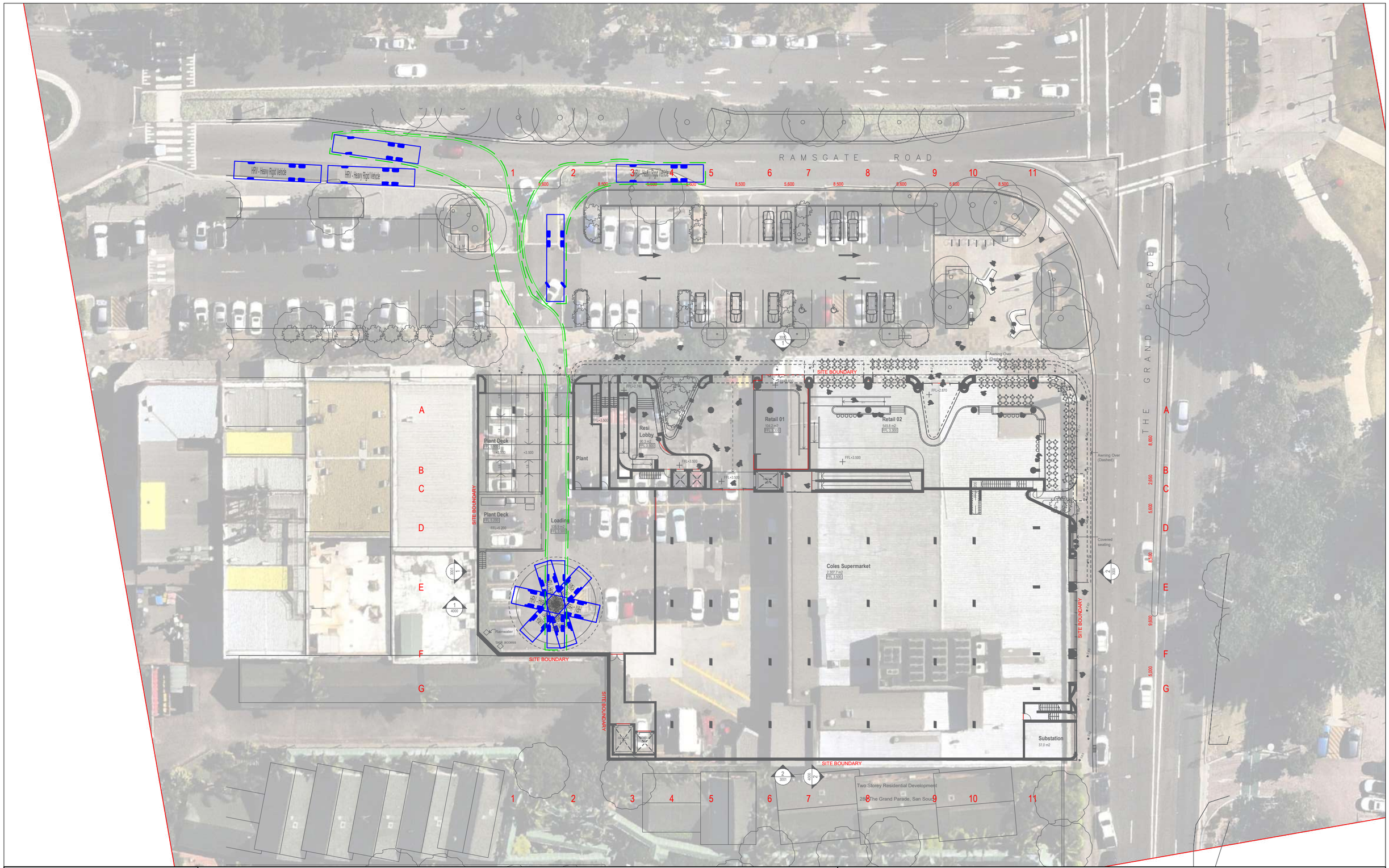
**Vehicle Movement Performance**

| 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 | 0.103 | 0.3 | LOS A | 0.1 | 0.9 | 0.17 | 0.11 | 0.17 | 11.2 |
| 3 | R2 | 43 | 0.0 | 43 | 0.0 | 0.103 | 3.1 | LOS A | 0.1 | 0.9 | 0.17 | 0.11 | 0.17 | 13.6 |
| Approach | | 184 | 2.2 | 184 | 2.2 | 0.103 | 0.9 | NA | 0.1 | 0.9 | 0.17 | 0.11 | 0.17 | 12.0 |
| North: Alfred St (10m) | | | | | | | | | | | | | | |
| 7 | L2 | 119 | 0.0 | 119 | 0.0 | 0.117 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 44.6 |
| 8 | T1 | 101 | 4.0 | 101 | 4.0 | 0.117 | 3.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.7 |
| Approach | | 220 | 1.8 | 220 | 1.8 | 0.117 | 3.7 | NA | 0.0 | 0.0 | 0.00 | 0.67 | 0.00 | 45.2 |
| All Vehicles | | 404 | 2.0 | 404 | 2.0 | 0.117 | 2.4 | NA | 0.1 | 0.9 | 0.08 | 0.41 | 0.08 | 18.2 |

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.

# APPENDIX D

# SWEPT TURNING PATH DIAGRAMS




| | |
|---|---|
| VARGA TRAFFIC PLANNING Pty Ltd<br>ABN 88 071 762 537<br>Suite 6, Level 1<br>20 Young Street<br>Neutral Bay, NSW 2089 | Phone +61 2 9904 3224<br>PO Box 1868<br>Neutral Bay, NSW 2089<br>www.vargatraffic.com.au<br>Sydney, Australia |

PROJECT
MIXED-USE DEVELOPMENT

N

DRAWING TITLE
GF_HRV_Entry&Exit

1:500 @ A3

ADDRESS
277 The Grand Parade,
Ramsgate

PROJECT NO.
23002

DATE DRAWN
2024-9-17

REVIEWED
RV

PREPARED
MN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants