PLM2022/0131
Planning Proposal for a
Proposed Seniors Housing Development
by Dee Why RSL

2-6 Dee Why Parade, part of 8 Dee Why Parade, 10-12 Dee Why Parade & part of 2 Clarence Avenue, Dee Why

TRAFFIC AND PARKING ASSESSMENT REPORT

18 December 2023

Ref 23173

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

Suite 6, 20 Young Street, Neutral Bay NSW 2089 - PO Box 1868, Neutral Bay NSW 2089
Ph: 9904 3224

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LIST OF ILLUSTRATIONS

1. INTRODUCTION

This report has been prepared to accompany a planning proposal on behalf of Dee Why RSL for a seniors housing development to be located at 2-6 Dee Why Parade, part of 8 Dee Why Parade, 10-12 Dee Why Parade and part of 2 Clarence Avenue, Dee Why (Figures 1 and 2).

This planning proposal envisages the expansion of the Dee Why RSL's existing seniors housing development, known as *'Oceangrove'*, towards the south of the site. The site of the expansion proposal is currently occupied by a vacant shop-top building, a vacant land/parking area, a residential flat building, and a child care centre.

A seven-storey building and a nine-storey building are proposed, in the southeast and southwest corners of the site respectively, to be integrated into the existing *'Oceangrove'* building to provide 51 additional seniors housing dwellings.

Off-street parking will be provided in a new basement car parking area beneath the proposed buildings and will ultimately be designed to comply with Council and *State Environmental Planning Policy (Housing) 2021* requirements as well as the relevant Australian Standards.

Vehicular access to the site is to be provided via the existing *'Oceangrove'* entry/exit driveway located towards the middle of the Dee Why Parade site frontage.

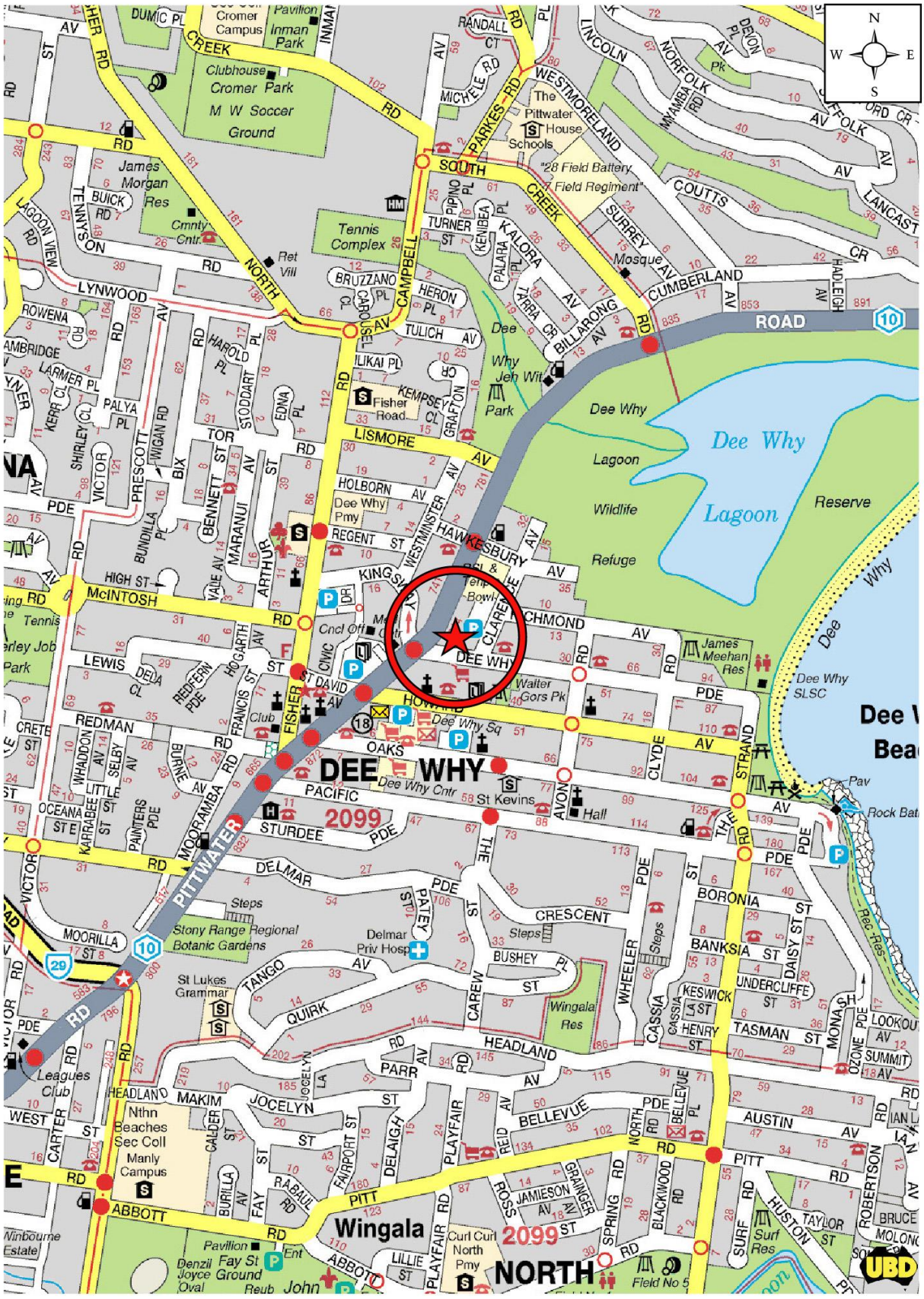
The purpose of this report is to assess the traffic and parking implications of the planning proposal and to that end this report:

- describes the site and provides details of the planning proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- reviews the public transport services available in the vicinity of the site
- estimates the traffic generation potential of the planning proposal and assigns that traffic generation to the road network serving the site

- assesses the traffic implications of the planning proposal in terms of road network capacity

- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards

- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.



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LOCATION
FIGURE 1

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SITE
FIGURE 2

2. PLANNING PROPOSAL

Site

The subject site is located on the northeast corner of the Pittwater Road and Dee Why Parade intersection. The site has street frontages of approximately 39m in length to Pittwater Road and approximately 94m in length to Dee Why Parade, and occupies an area of approximately 2,800m^2.

The site is currently zoned *R3 - Medium Density Residential*, and is located towards the southern portion of the broader *Dee Why RSL* site, adjacent to *Dee Why Town Centre* which is located immediately to the south of the *'Oceangrove'* site. The site is currently occupied by a vacant shop-top building, a parking area, a residential flat building with 6 x 3-bedroom apartments, and the southern portion of the existing *Dee Why Kindergarten* child care centre catering for a maximum of 90 children.

Off-street parking for the various components of the existing site is currently provided in the abovementioned vacant land/parking area and in the existing *'Oceangrove'* parking area.

A recent aerial image of the site and its surroundings is reproduced below.

Source: Metromap

Vehicular access to the *'Oceangrove'* site is currently provided via an existing entry/exit driveway located towards the middle of the Dee Why Parade site frontage.

Vehicular access to the subject site is currently also provided via a driveway off Pittwater Road serving the disused shop-top building located on the north-eastern corner of Pittwater Road/Dee Why Parade, and via a number of separate driveways off Dee Why Parade. All of these driveways (apart from the *'Oceangrove'* driveway) are to be closed as part of the planning proposal.

Loading and servicing for the existing *'Oceangrove'* building and *Dee Why RSL* is currently undertaken by a variety of light commercial vehicles such as the *Hyundai iLoad* or similar B99 sized "white vans", as well as trucks up to and including 8.3m long waste trucks with a travel height of 2.85m provided by the private waste collection contractor *Doyle Bros*. Vehicular access to the existing loading/servicing area is currently provided via the existing Dee Why Parade entry/exit driveway.

Existing Planning Controls

The primary instrument that governs the mass and scale of the development on the site are contained within the *Warringah Local Environment Plan 2011 (WLEP 2011).* As noted in the foregoing, the subject site is currently subject to a height limit of 12m for land at No 2 Dee Why Parade (Lot A in DP307103), and a height limit of 13m for the remainder of the subject site (Lot B in DP307103, southern portion of Lot 1 in DP1136948, Lot CP in SP11488, and Lot 2 in DP1136948).

Planning Proposal

The planning proposal involves the increase of height controls for the subject site up to the maximum RLs of RL 44.60 and RL 34.60 for the proposed nine-storey building and seven-storey building respectively.

The proposed changes to the planning controls have the potential to achieve approximately a total of 51 additional seniors housing apartments to the existing *'Oceangrove'* development, comprising 27 x 2-bedroom units and 24 x 3-bedroom units.

Off-street parking will be provided in a new basement car parking area and will be designed to comply with Council and *SEPP (Housing) 2021* requirements, as well as the relevant Australian Standards.

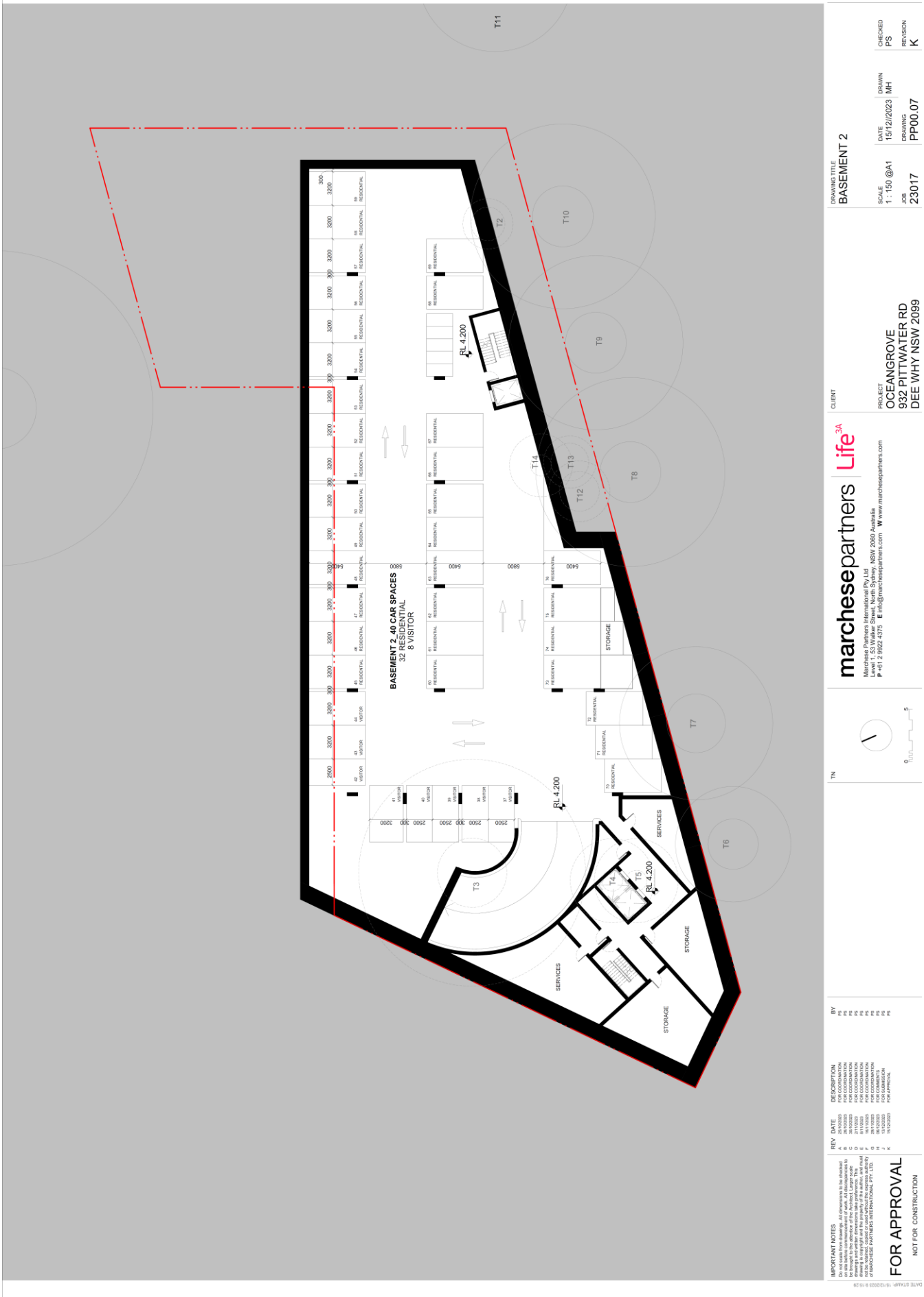
Vehicular access to the site is to be provided via the existing *'Oceangrove'* entry/exit driveway located towards the middle of the Dee Why Parade site frontage. In this regard, *minor changes* are proposed to the existing *'Oceangrove'* vehicular access driveway to accommodate the additional traffic accessing the site as a result of the planning proposal.

All of the other existing access driveways in Pittwater Road and in Dee Why Parade are to be closed as part of this development proposal, allowing kerbside parking to be reinstated (except in Pittwater Road).

Loading/servicing for the proposed development will be undertaken by a variety of light commercial vehicles such as the *Hyundai iLoad* or similar B99 sized "white vans", and trucks up to and including 8.3m long waste trucks already used by the private waste collection contractor *Doyle Bros* for the existing *'Oceangrove'* building.

A dedicated loading/servicing area is to be provided on the lower ground floor within the proposed nine-storey building in the southwestern corner of the site, with vehicular access to be provided via the abovementioned existing *Dee Why RSL* driveway, which allows all service vehicles to enter and exit the site in a forward direction at all times.

Concept plans of the planning proposal have been prepared by *Marchese Partners Architects Pty Ltd* and are reproduced in the following pages.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8 VISITOR
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RL 4.200
RL 4.200
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SERVICES
STORAGE
SERVICES
STORAGE
T1
T2
T3
T4
T5
T6
T7
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TN
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Life 3A
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CLIENT
PROJECT
OCEANGROVE
932 PITTWATER RD
DEE WHY NSW 2099
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J 13/12/2023 FOR COORDINATION PS
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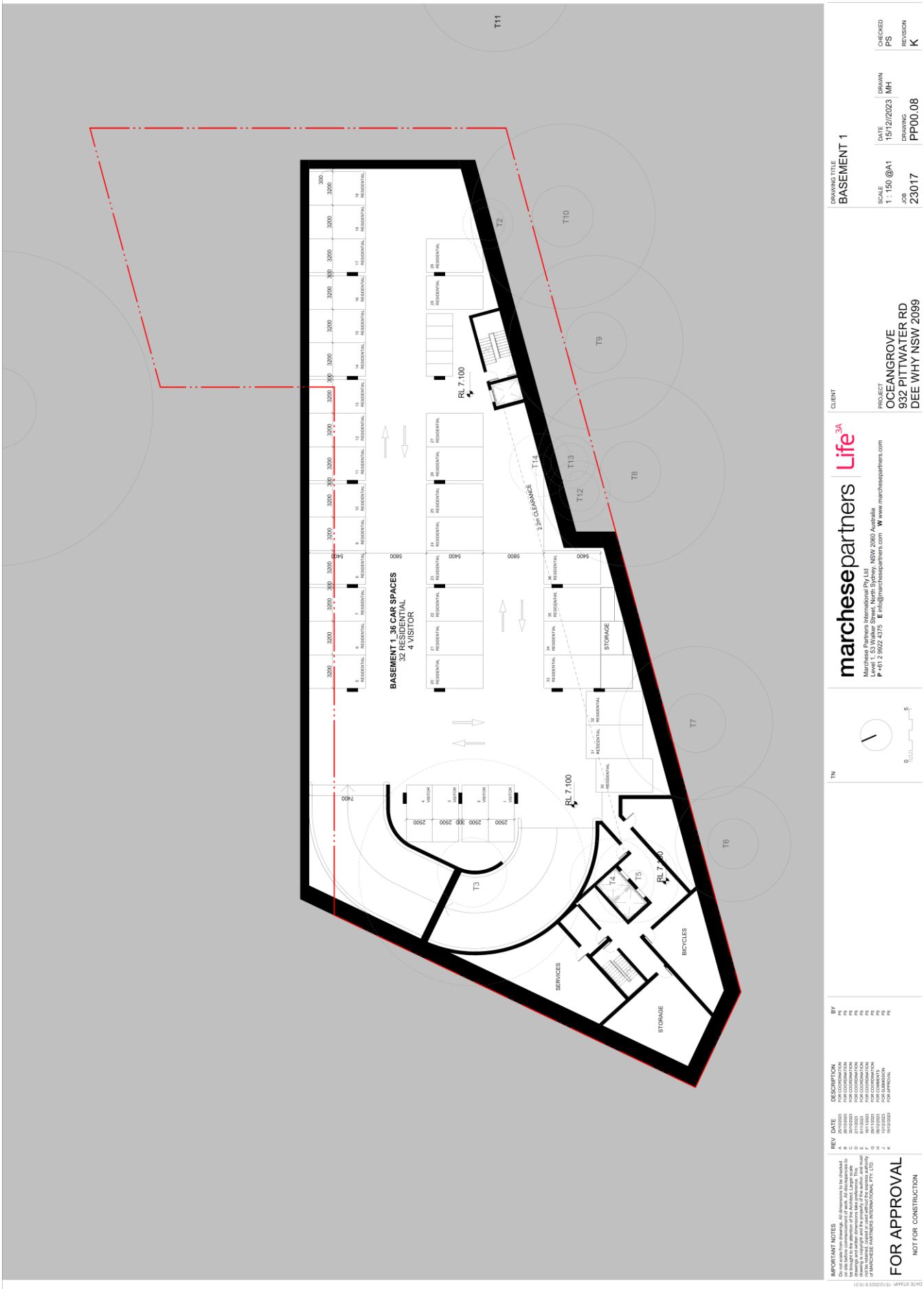
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T2
T3
T4
T5
T6
T7
T8
T9
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T11
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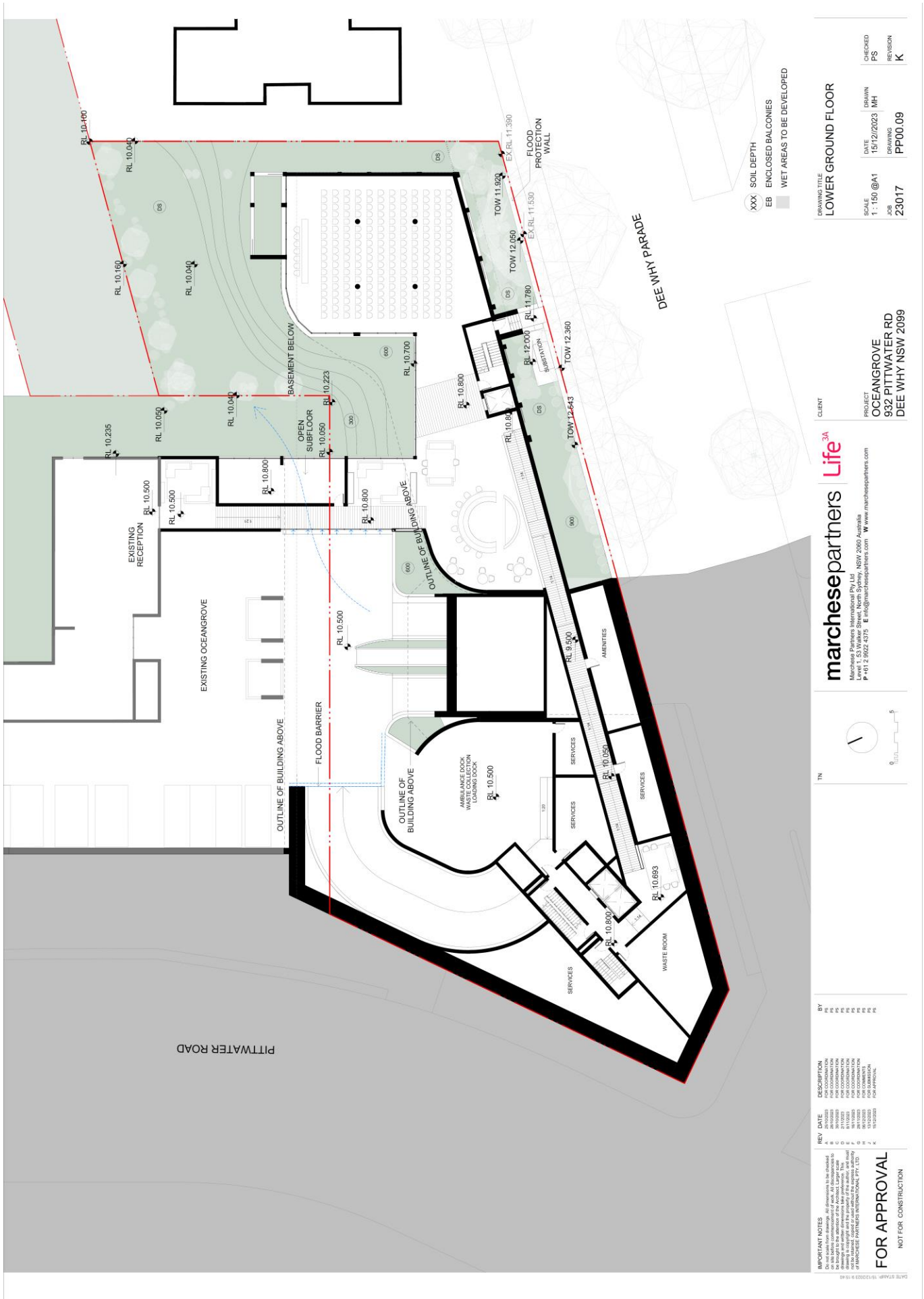
DEE WHY PARADE
PITTWATER ROAD
EXISTING RECEPTION
EXISTING OCEANGROVE
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FLOOD BARRIER
OUTLINE OF BUILDING ABOVE
AMBULANCE DOCK
WASTE COLLECTION
LOADING DOCK
SERVICES
SERVICES
SERVICES
SERVICES
AMENITIES
WASTE ROOM
OPEN SUBFLOOR
BASEMENT BELOW
OUTLINE OF BUILDING ABOVE
SUBSTATION
FLOOD PROTECTION WALL
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RL 10.040
RL 10.160
RL 10.040
RL 10.040
RL 10.050
RL 10.235
RL 10.500
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RL 10.800
TOW 11.920
EX.RL 11.390
TOW 12.050
EX.RL 11.530
RL 11.780
RL 12.000
TOW 12.360
TOW 12.543
XXX SOIL DEPTH
EB ENCLOSED BALCONIES
WET AREAS TO BE DEVELOPED
TN
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PROJECT
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932 PITTWATER RD
DEE WHY NSW 2099
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DEE WHY PARADE
PITTWATER ROAD
EXISTING OCEANGROVE
XXX SOIL DEPTH
EB ENCLOSED BALCONIES
WET AREAS TO BE DEVELOPED
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DEE WHY NSW 2099
UPPER GROUND FLOOR
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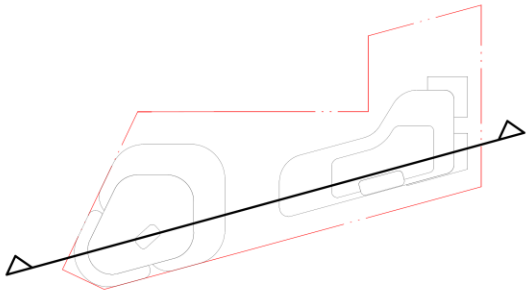

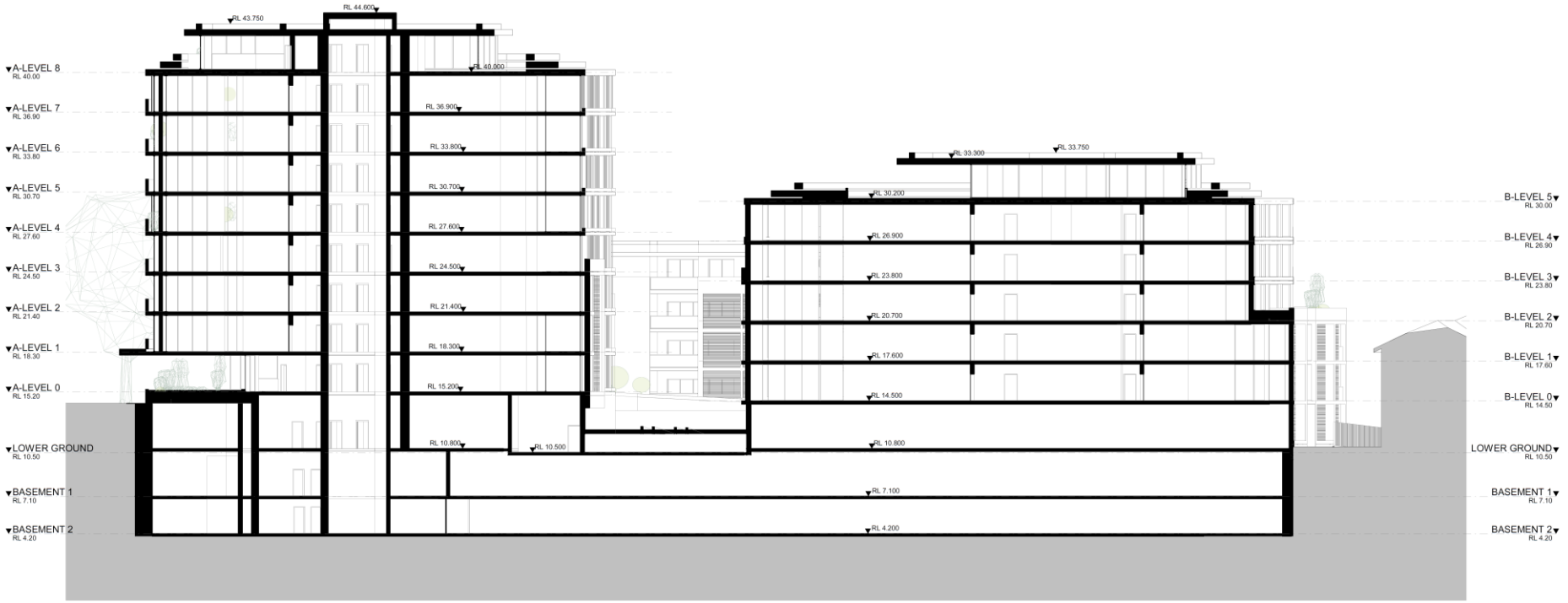

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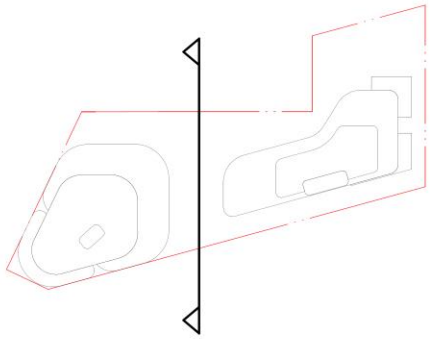

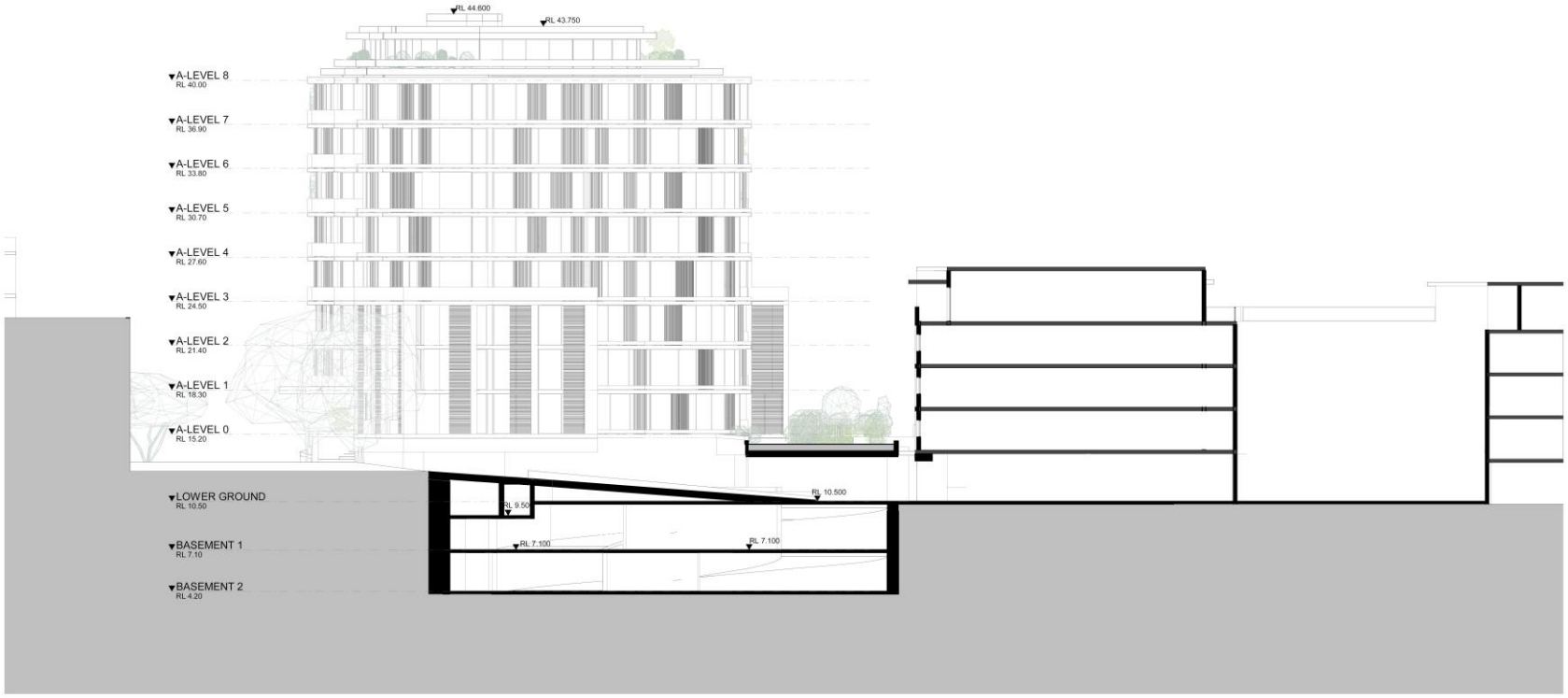

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3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by Transport for New South Wales (TfNSW) is illustrated on Figure 3.

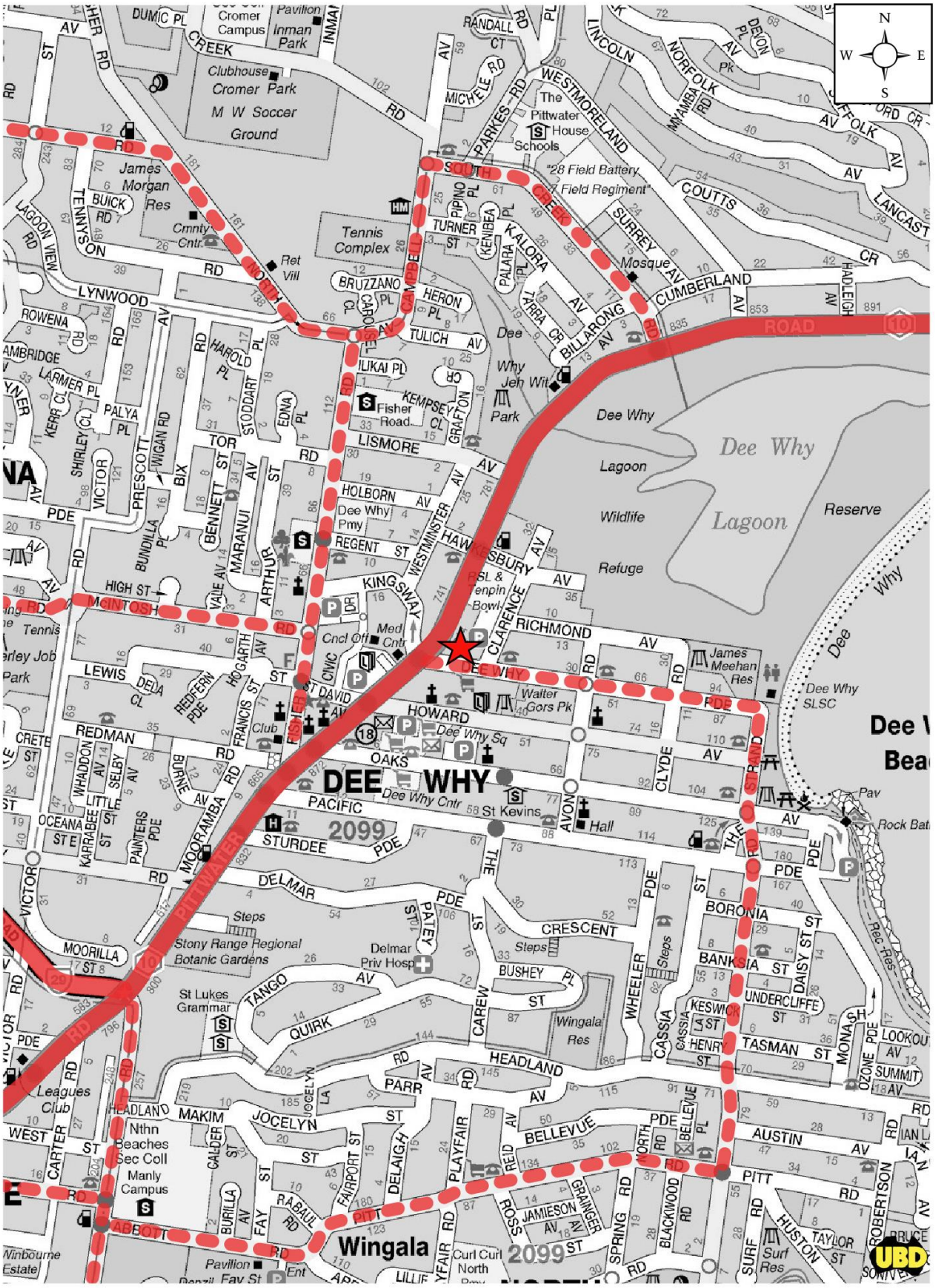
Pittwater Road is classified by TfNSW as a *State Road* and provides the key north-south road link in the area, linking North Manly to Church Point. It typically carries 3 traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island. Kerbside parking is generally permitted on both sides of the road outside of commuter peak periods.

Dee Why Parade is classified by TfNSW as a *Regional Road* and provides an east-west road link in the area, linking Pittwater Road to Dee Why Beach. It typically carries one traffic lane in each direction in the vicinity of the site with kerbside parking generally permitted on both sides of the road, subject to sign-posted restrictions.

Existing Traffic Controls

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

- a 60 km/h SPEED LIMIT which applies to the Pittwater Road
- a 40 km/h SPEED LIMIT which applies to roads located in the high pedestrian activity area to the east of Pittwater Road, including Dee Why Parade
- a 50 km/h SPEED LIMIT which applies to all other local roads in the area
- TRAFFIC SIGNALS in Pittwater Road where it intersects with Howard Avenue, Dee Why Parade and Hawkesbury Avenue



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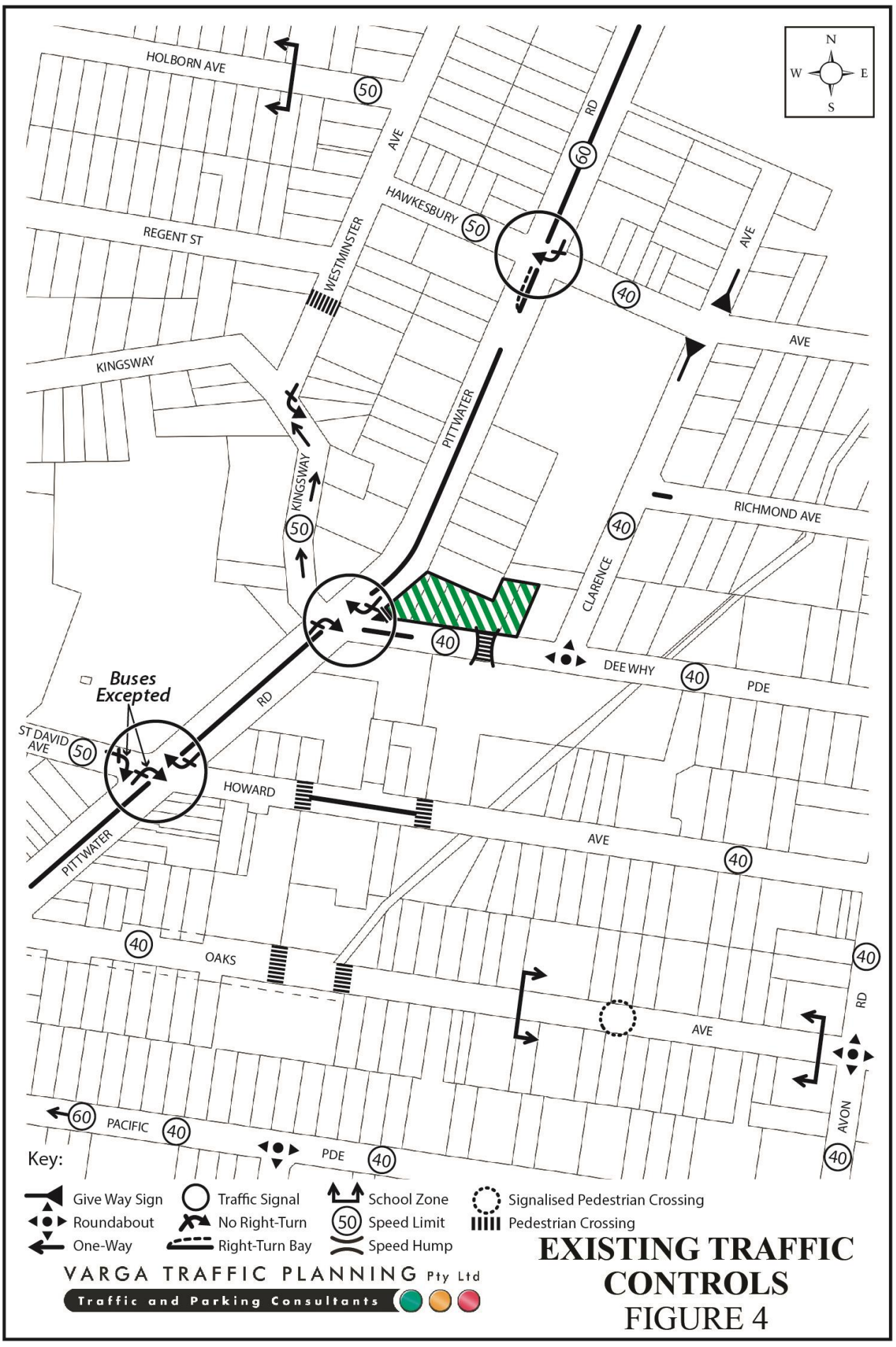
ROAD HIERARCHY
FIGURE 3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50
AVE
WESTMINSTER
REGENT ST
HAWKESBURY
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RD
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AVE
40
AVE
KINGSWAY
PITTWATER
KINGSWAY
50
RICHMOND AVE
40
CLARENCE
40
DEE WHY
40
PDE
Buses Excepted
RD
ST DAVID AVE
50
HOWARD
AVE
40
PITTWATER
40
OAKS
40
AVE
RD
40
60
PACIFIC
40
PDE
40
AVON
40
N
W
E
S
Key:
Give Way Sign
Roundabout
One-Way
Traffic Signal
No Right-Turn
Right-Turn Bay
School Zone
50 Speed Limit
Speed Hump
Signalised Pedestrian Crossing
Pedestrian Crossing
VARGA TRAFFIC PLANNING Pty Ltd
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EXISTING TRAFFIC CONTROLS
FIGURE 4

- a CENTRAL MEDIAN ISLAND in Pittwater Road in the vicinity of the site

- NO RIGHT TURN restrictions in Pittwater Road for northbound traffic turning onto Dee Why Parade, and for southbound traffic turning onto Kingsway

- a ROUNDABOUT at the Dee Why Parade and Clarence Avenue intersection

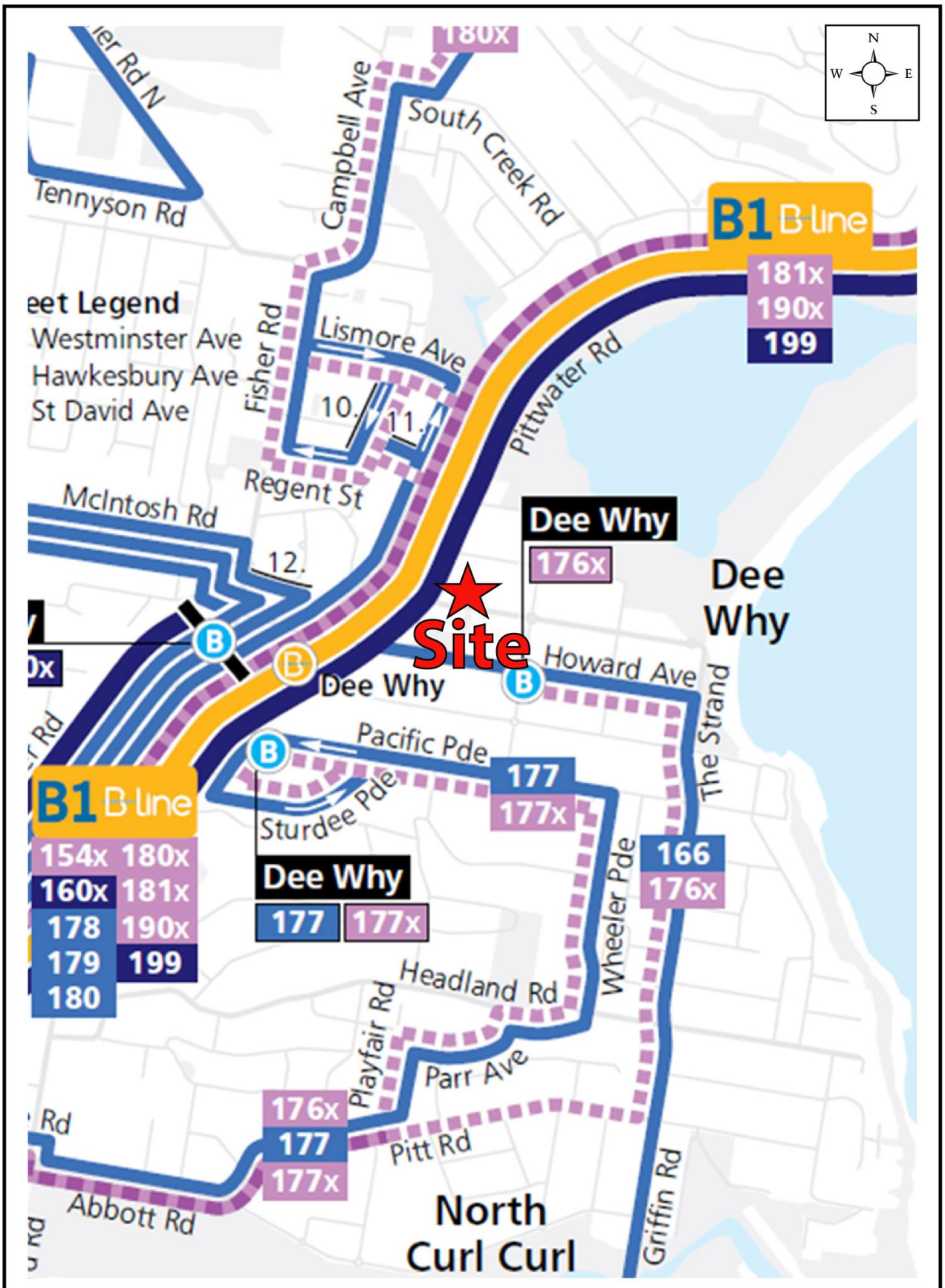
- SPEED HUMP and PEDESTRIAN CROSSING in Dee Why Parade in the immediate vicinity of the site.

Existing Public Transport Services

The existing public transport services available within the vicinity of the subject site are illustrated on Figure 5.

There is an extensive range of bus services available within 300m walking distance from the site along Pittwater Road. A summary of those bus services is provided in the table below, revealing that there are more than 510 bus services per day travelling near the site on weekdays, decreasing to approximately 470 bus services per day on Saturdays and approximately 460 bus services per day on Sundays, as set out in the table below.

Route No.	Route	Weekday		Saturday		Sunday	
		In	Out	In	Out	In	Out
B1	B-Line Mona Vale to City Wynyard	85	85	121	121	122	122
154x	Dee Why to Milsons Point (Express Service)	27	20	-	-	-	-
160x	Dee Why to Chatswood via French Forest (Express Service)	108	108	107	107	107	107
178	Warringah Mall to Cromer Heights	58	57	48	48	46	46
179	Warringah Mall to Wheeler Heights	46	42	35	35	34	34
180	Warringah Mall to Collaroy Plateau	41	40	49	49	47	47
180x	Collaroy Plateau to City Wynyard (Express Service)	16	18	-	-	-	-
181x	Narrabeen to City Wynyard (Express Service)	10	10	-	-	-	-
190x	North Avalon to City Wynyard (Express Service)	11	12	-	-	-	-
199	Palm Beach to Manly via Mona Vale & Dee Why	111	118	112	112	107	104
	TOTAL	**513**	**510**	**472**	**472**	**463**	**460**



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PUBLIC TRANSPORT
FIGURE 5

The site is also located within easy walking distance of the *Dee Why Town Centre* which includes a wide range of essential shops and services including licenced clubs, banks, supermarkets, gymnasiums, restaurants and specialty stores.

On the above basis it is clear that the site is extremely well served by existing public transport and essential services and is ideally located to encourage reduced private car usage and an increased use of public transport and active forms of transport such as walking and cycling.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken on 18 July 2023 as part of this traffic study.

The traffic surveys were undertaken at the following intersections in the vicinity of the site:

- Pittwater Road & Hawkesbury Avenue
- Pittwater Road & Dee Why Parade & Kingsway
- Dee Why Parade & Site Access Driveway
- Dee Why Parade & Clarence Avenue

The results of the traffic surveys are reproduced in full in Appendix A and reveal that:

- two-way traffic flows in Pittwater Road past the site frontage are typically in the order of 2,600 vph during *morning* commuter peak period, increasing to approximately 2,900 vph during the *afternoon* peak period

- two-way traffic flows in Dee Why Parade are significantly lower, typically in the order of 500 - 590 vph during the weekday commuter peak periods

- two-way traffic flows in Hawkesbury Avenue are typically in the order of 900 vehicles per hour (vph) during *morning* commuter peak period, decreasing to approximately 800 vph during the *afternoon* peak period

- two-way traffic flows in Clarence Avenue are typically in the order of 460 - 620 vph during the weekday commuter peak periods.

Projected Traffic Generation

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

The *TDT 2013/04a* document specifies that it replaces those sections of the TfNSW *Guidelines* indicated, and that it must be followed when TfNSW when undertaking trip generation and/or parking demand assessments.

The TfNSW *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 rate which is applicable to the development proposal:

> **Housing for seniors**
> Weekday peak hour vehicle trips = 0.4 per dwelling
> (Note that morning site peak hour does not generally coincide with the network peak hour)

As noted in the TfNSW *Guidelines,* the morning peak hour of seniors housing developments generally does not coincide with the network peak hour, however for a more rigorous assessment, the above traffic generation rate has been adopted for the purpose of determining the traffic generation potential of the planning proposal during commuter peak periods.

Application of the above traffic generation rate to the 51 seniors housing dwellings as outlined in the planning proposal yields a traffic generation potential of approximately 20 vph during both the *morning* and *afternoon* commuter peak periods.

That projected future traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential of the site as a consequence of the planning proposal.

The TfNSW *Guidelines* and *TDT 2013/04a* nominate the following traffic generation rates which are applicable to the existing development on the site:

> **Childcare Centre**
> 0.8 peak hour vehicle trips per child
>
> **Medium Density Residential**
> 0.4-0.5 peak hour vehicle trips/dwelling (up to 2 bedrooms)
> 0.5-0.65 peak hour vehicle trips/dwelling (3 or more bedrooms)

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

> **Definition**
> A *medium density residential flat building* refers to a building containing at least 2 but less than 20 dwellings. This includes villas, town houses, flats, semi-detached houses, terrace or row houses and other medium density developments. This does not include aged or disabled persons' housing.

Application of the above traffic generation rates to the cumulative components of the existing development yields a traffic generation potential of approximately 76 vehicle trips per hour (vph) during both the AM and PM commuter peak periods as set out below:

Existing Traffic Generation Potential of the Site

	AM	**PM**
Residential (6 apartments):	3.9 vph	3.9 vph
Child care centre (90 children):	72.0 vph	72.0 vph
TOTAL TRAFFIC GENERATION POTENTIAL:	**75.9 vph**	**75.9 vph**

Accordingly, the planning proposal could result in a *nett decrease* in the traffic generation potential of the site of approximately -55 vph during both the AM and PM commuter peak periods, as set out below:

Projected Nett *Decrease* in the Traffic Generation Potential of the Site as a Consequence of the Planning Proposal

	AM	**PM**
Projected Future Traffic Generation Potential (Proposed WLEP Controls):	20.4 vph	20.4 vph
Less Existing Traffic Generation Potential:	-75.9 vph	-75.9 vph
NETT DECREASE IN TRAFFIC GENERATION POTENTIAL:	**-55.5 vph**	**-55.5 vph**

However, for the purposes of this assessment it has been assumed that the site is vacant, and that *all* of the projected future traffic flows of 20 vph during both the AM and PM commuter peak periods, will be new or *additional* to the existing traffic flows currently using the adjacent road network.

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

Traffic Implications - Road Network Capacity

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

Those effects can be assessed using the SIDRA program which is widely used by the TfNSW and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages.

Pittwater Road / Hawkesbury Avenue Intersection

- the intersection currently operates at *Level of Service "B"* under the existing traffic demands during the weekday AM peak hour with total average vehicle delays in the order of 22.9 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "B"* during the weekday AM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle

- the intersection currently operates at *Level of Service "B"* under the existing traffic demands during the weekday PM peak hour with total average vehicle delays in the order of 17.7 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "B"* during the weekday PM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle.

Pittwater Road / Dee Why Parade / Kingsway Intersection

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday AM peak hour with total average vehicle delays in the order of 13.0 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "A"* during the weekday AM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday PM peak hour with total average vehicle delays in the order of 13.5 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "A"* during the weekday PM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle.

Dee Why Parade / Site Access Driveway Intersection

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday AM peak hour with total average vehicle delays in the order of 0.1 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of*

Service "A" during the weekday AM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday PM peak hour with total average vehicle delays in the order of 0.1 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "A"* during the weekday PM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle.

Dee Why Parade / Clarence Avenue Intersection

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday AM peak hour with total average vehicle delays in the order of 4.1 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "A"* during the weekday AM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle

- the intersection currently operates at *Level of Service "A"* under the existing traffic demands during the weekday PM peak hour with total average vehicle delays in the order of 3.9 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection is expected to continue to operate at *Level of Service "A"* during the weekday PM peak hour, with increases in total average vehicle delays of ***less than*** 1 seconds/vehicle.

The results of the SIDRA analysis of the surrounding intersections are also summarised on the table reproduced on the following page.

SIDRA Modelling Results

Intersection	Key Indicators	Existing AM Traffic Demand	Projected AM Traffic Demand	Existing PM Traffic Demand	Projected PM Traffic Demand
Pittwater Road & Hawkesbury Avenue	LoS	B	B	B	B
	DoS	0.880	0.883	0.893	0.893
	Delay	22.9	23.1	17.7	18.1
Pittwater Road & Dee Why Parade & Kingsway	LoS	A	A	A	A
	DoS	0.438	0.458	0.713	0.713
	Delay	13.0	13.2	13.5	13.6
Dee Why Parade & Site Access	LoS	A	A	A	A
	DoS	0.192	0.192	0.183	0.187
	Delay	0.1	0.2	0.1	0.2
Dee Why Parade & Clarence Avenue	LoS	A	A	A	A
	DoS	0.457	0.459	0.359	0.362
	Delay	4.1	4.1	3.9	3.9

LoS = Levels of Service
DoS = Degree of Saturation
Delay = Total average vehicle delay (seconds per vehicle)

The detailed SIDRA *movements summaries* are reproduced in full in Appendix B, with criteria for evaluating the results of the analysis reproduced in the following pages.

In essence, the SIDRA capacity analysis has found that all intersections in the vicinity of the site will continue to operate at current *Levels of Service*, with *negligible* increases in average vehicle delays and that no road improvements or intersection upgrades will be required as a consequence of the planning proposal.

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 IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 6. Key features of those parking restrictions are:

- BUS LANE restrictions along the kerbside lanes, during the *morning* and *afternoon* commuter peak periods on the eastern and western side of Pittwater Road respectively

- CLEARWAY restriction during the *morning* commuter peak period, along the southern side of Pittwater Road to the south of the subject site

- NO STOPPING restrictions along some sections of Pittwater Road, Dee Why Parade and Clarence Avenue in the vicinity of the site, including along the Dee Why Parade site frontage on both sides of the road

- 2 HOUR PARKING restriction along the eastern side of Kingsway in the vicinity of the site

- BUS ZONES located at regular intervals along both sides of Pittwater Road, including just north of the site

- NO PARKING restrictions along some sections of Dee Why Parade to the east of the site.

Off-Street Car Parking Provisions

The *minimum* off-street car parking requirement applicable to the planning proposal is specified in the *SEPP (Housing) 2021* document as set out below:

Seniors Housing – Independent Living Units: at least 0.5 parking spaces for each bedroom


N
W
E
S
WESTMINSTER AVE
KINGSWAY
2P
BUS LANE
3pm-7pm Mon-Fri
PITTWATER RD
BZ
BUS LANE
6am-10am Mon-Fri
CLARENCE AVE
DEE WHY
PDE
PITTWATER RD
CLEARWAY
6am-10am Mon-Fri
HOWARD
AVE
Key:
No Stopping
No Parking
Restricted Parking
BZ Bus Zone
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
EXISTING PARKING RESTRICTIONS
FIGURE 6

Application of the above *SEPP (Housing) 2021* parking requirements to the 27 x 2-bedroom and 24 x 3-bedroom seniors housing dwellings as outlined in the planning proposal yields a *minimum* off-street parking requirement of 63 spaces.

By way of comparison, the off-street parking requirements applicable to the development proposal as specified in Council's DCP is set out below:

Multi-dwelling housing, residential flat buildings, serviced apartments (including holiday flats), shop-top housing (residential component)	Within the Dee Why Town Centre: • 0.6 spaces per 1 bedroom dwelling • 0.9 spaces per 2 bedroom dwelling • 1.4 spaces per 3 bedroom dwelling • 1 visitor space per 5 units or part of dwellings

Application of the above parking requirements to the planning proposal yields an off-street car parking requirement of 69 spaces, comprising 58 residential spaces and 11 visitor spaces.

The above requirements are satisfied by the proposed provision of 76 car parking spaces, comprising 64 residential spaces and 12 visitor spaces, as part of the planning proposal.

The geometric design layout of the future car parking facilities will ultimately be designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1:2004* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6*.

Loading/Servicing Provisions

The proposed new seniors housing buildings are expected to be serviced by a variety of commercial vehicles up to and including 8.3m long private contractor waste collection trucks with a travel height of 2.85m. A dedicated service area is to be provided on the lower ground floor level.

The manoeuvring area has been designed to accommodate the swept turning path requirements of these 8.3m long trucks with 2.85m travel height, allowing them to enter and exit the site whilst travelling in a forward direction at all times, as per the attached *swept turning path* diagram.

The geometric design layout of the proposed loading facilities will also ultimately be designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of loading dock dimensions and service area requirements for 8.3m long trucks.

Conclusion

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

- the planning proposal seeks approval to increase the height controls for the site, resulting in the potential for approximately 51 additional senior housing dwellings

- analysis based on the traffic generation rates published by TfNSW indicates that the proposed development will result in a *nett reduction* in the traffic generation potential of the site of approximately -55 vph when compared with the previously approved uses on the site

- the SIDRA capacity analysis of the public road intersections in the vicinity of the site indicates that:

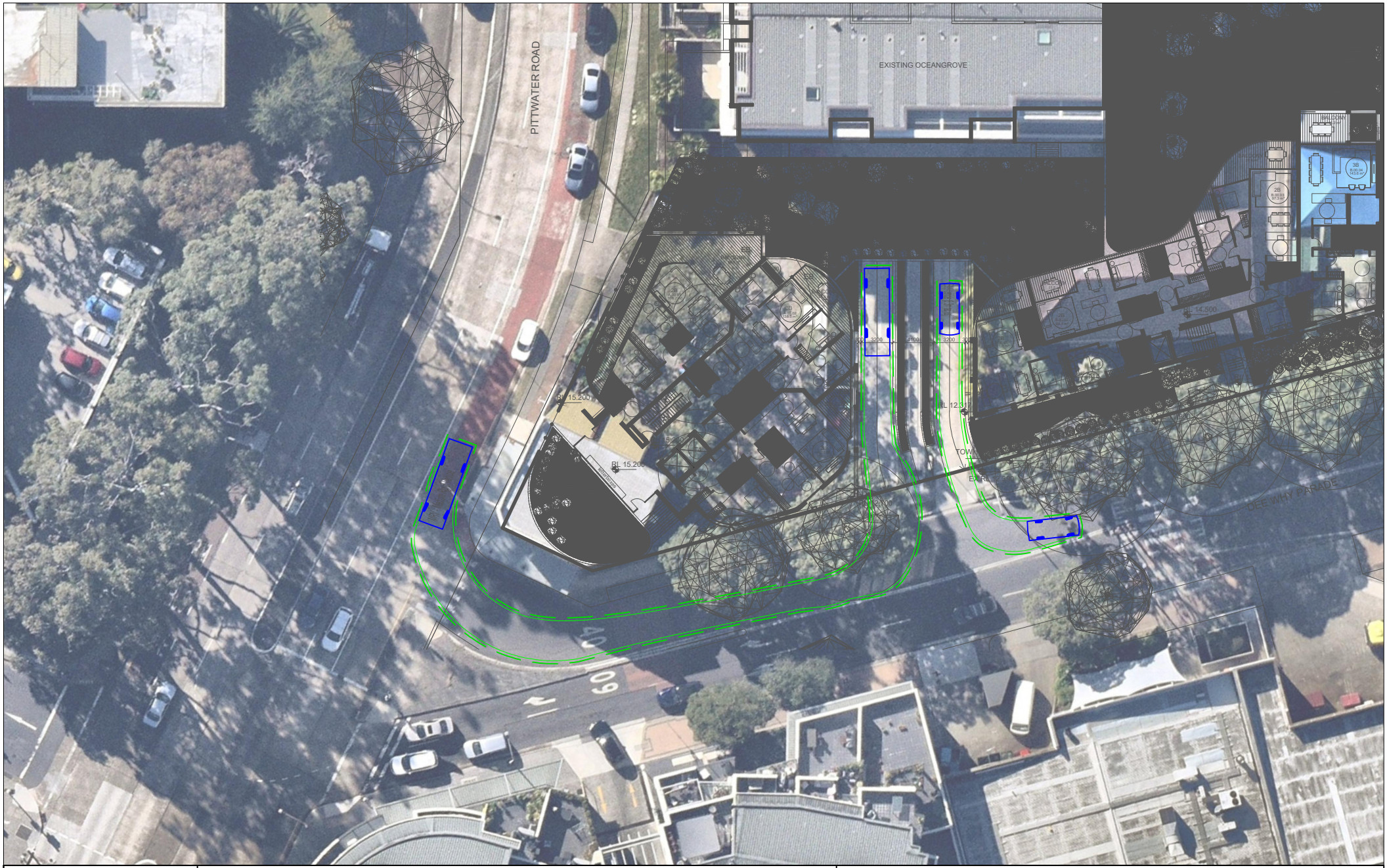
    - the projected "additional" traffic flows expected to be generated by the development proposal (i.e. assuming that the site is currently vacant) indicates that there will be *no change* in current *Levels of Service* to any of the intersections located around the perimeter of the site, and

    - no road improvements or intersection upgrades would be required as a consequence of the planning proposal

- the future car parking, motorcycle parking, bicycle parking and loading facilities will be provided and designed in accordance with Council's requirements, *SEPP (Housing) 2021* and the relevant Australian Standards

- the future vehicular access arrangements will be via the existing *Dee Why 'Oceangrove'* vehicular access driveway in Dee Why Parade with *minor changes* to accommodate the additional traffic, and all other existing site access driveways are to be *removed* allowing kerbside parking to be reinstated.

It is therefore reasonable to conclude that the planning proposal will not have any unacceptable implications in terms of road network capacity or off-street parking/loading/access requirements.



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PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
UpperGF_MRV_Entry

1:500 @ A4

ADDRESS
2 - 14 Dee Why Pde,
Dee Why

PROJECT NO.
23173

DATE DRAWN
2023-12-7

REVIEWED
RV

PREPARED
MN

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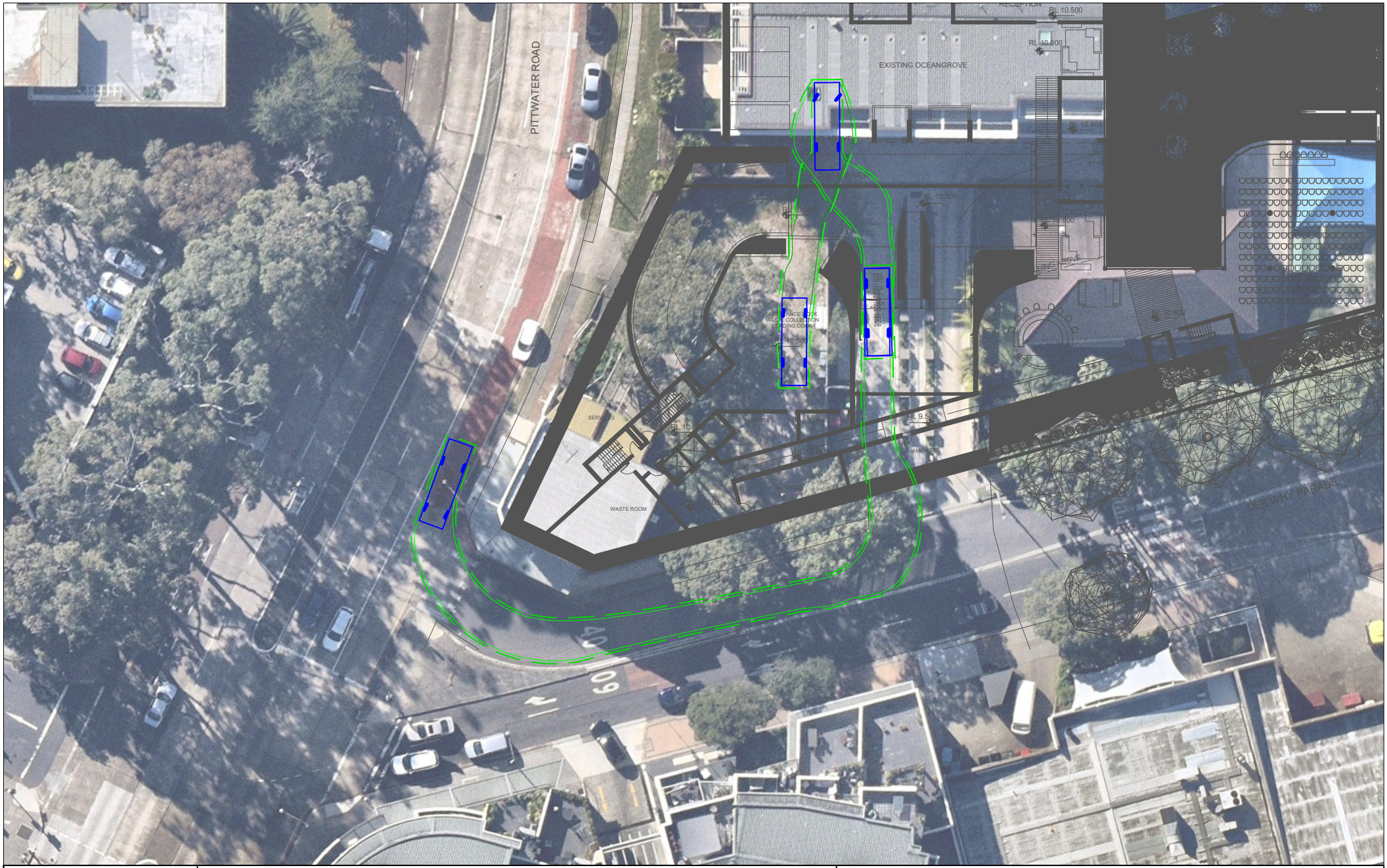

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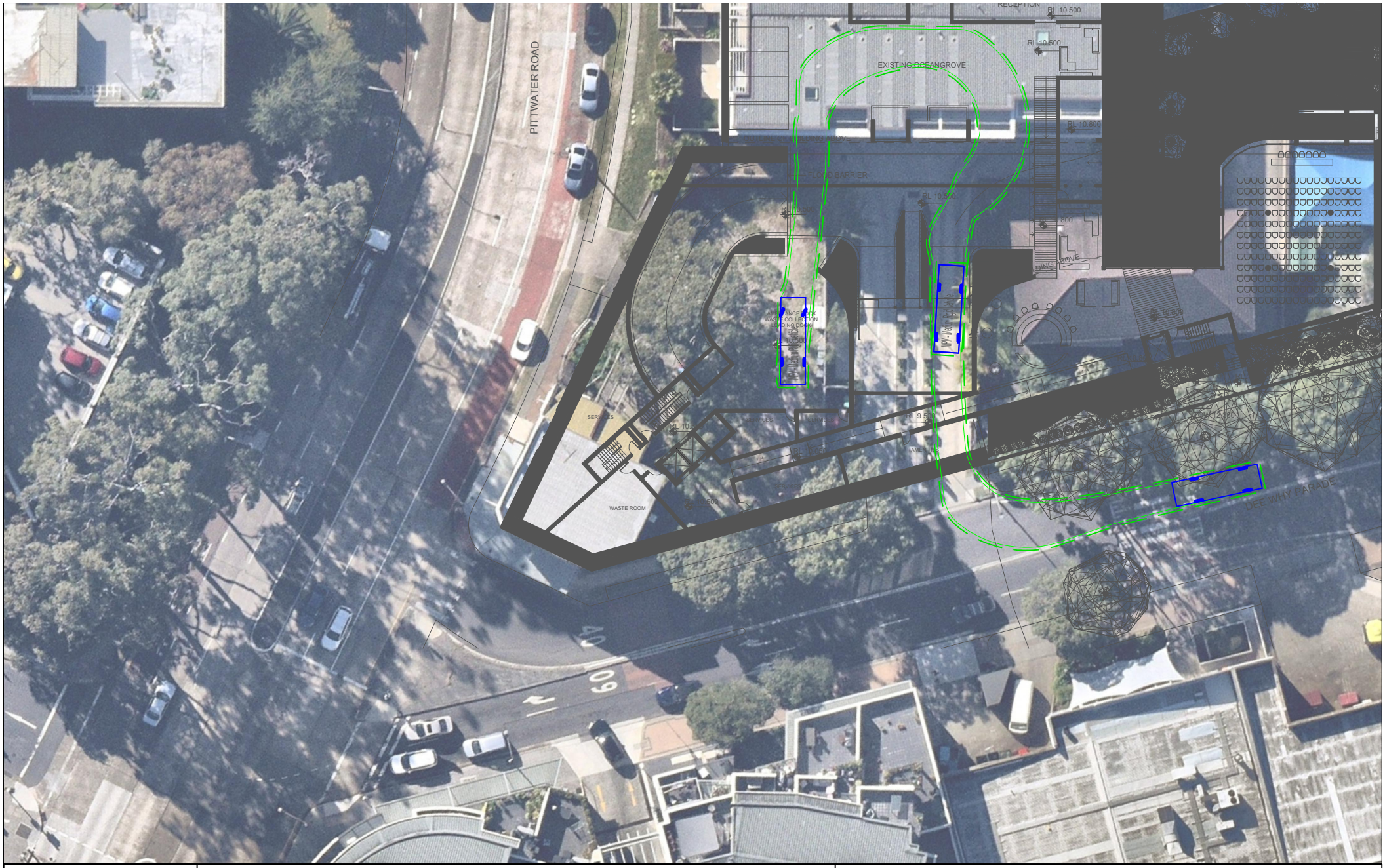

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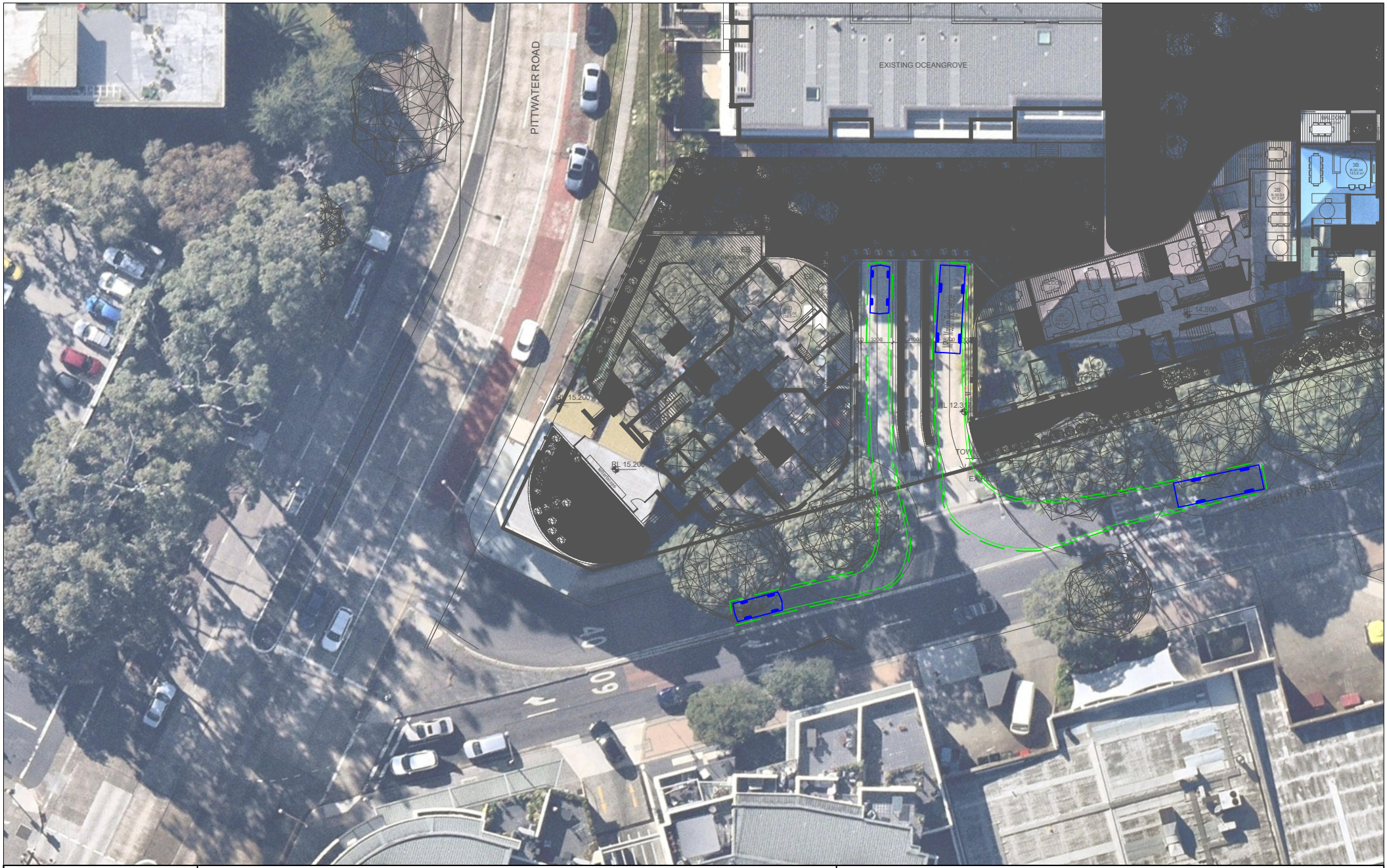

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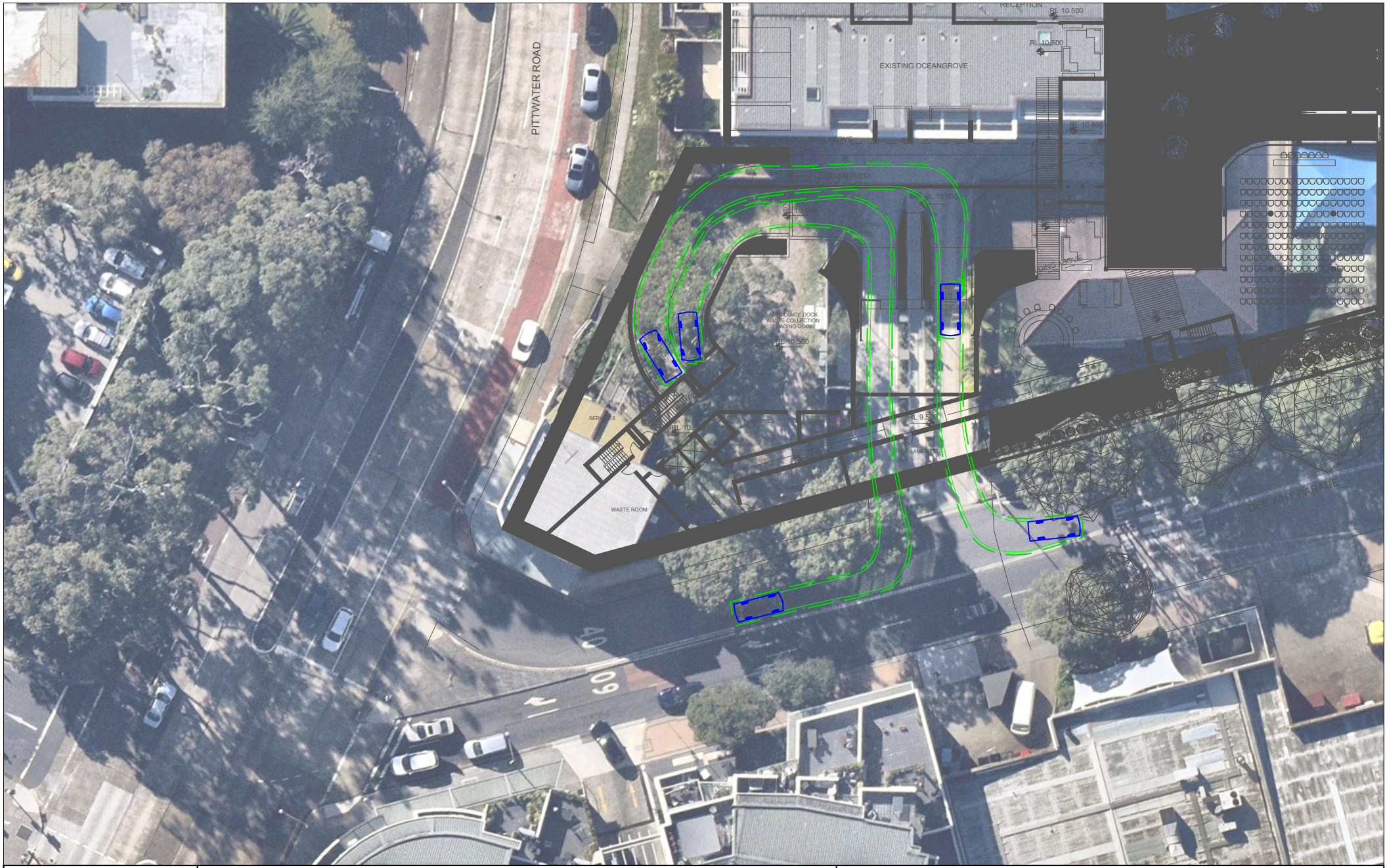

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Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
LowerGF_B99&B85_Passing

1:500 @ A4

ADDRESS
2 - 14 Dee Why Pde,
Dee Why

PROJECT NO.
23173

DATE DRAWN
2023-12-7

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RV

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PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement01_B99&B85_Passing

1:500 @ A4

ADDRESS
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Basement02_B99&B85_Passing

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APPENDIX A

TRAFFIC SURVEY DATA

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Hawkesbury Ave and Pittwater Rd, Dee Why

GPS -33.749324, 151.289746

Date:	Tue 18/07/23
Weather:	Fine
Suburban:	Dee Why
Customer:	Varga

North:	Pittwater Rd
East:	Hawkesbury Ave
South:	Pittwater Rd
West:	Hawkesbury Ave

Survey Period	AM:	6:30 AM-9:30 AM
	PM:	3:30 PM-6:30 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	4:00 PM-5:00 PM

All Vehicles

Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:30	6:45	0	0	261	25	0	31	9	8	0	4	228	5	0	5	9	0	2443	
6:45	7:00	0	0	300	35	0	27	9	4	0	8	233	6	0	4	15	3	2584	
7:00	7:15	0	0	258	29	0	25	9	1	0	8	190	0	0	7	10	5	2728	
7:15	7:30	0	0	324	58	0	30	7	3	0	10	222	2	0	5	9	2	2975	
7:30	7:45	0	0	315	60	0	42	10	3	0	6	260	6	0	9	14	1	3190	
7:45	8:00	0	0	348	80	0	36	20	4	0	10	254	5	0	8	17	6	3323	Peak
8:00	8:15	0	0	324	97	0	30	8	5	0	7	292	2	0	3	15	6	3287	
8:15	8:30	0	0	354	136	0	39	18	5	0	12	271	8	0	11	25	8	3229	
8:30	8:45	0	0	294	166	0	29	17	1	0	13	289	9	0	5	28	8	2943	
8:45	9:00	0	0	228	139	0	33	34	4	0	11	237	5	0	8	46	7		
9:00	9:15	0	0	316	61	0	38	9	1	0	18	245	1	0	11	23	8		
9:15	9:30	0	0	254	39	0	35	8	1	0	7	225	4	0	4	21	3		
15:30	15:45	0	0	300	56	0	67	31	3	0	15	326	2	0	5	26	6	3382	
15:45	16:00	0	0	252	44	0	49	37	5	0	28	378	7	0	6	22	6	3399	
16:00	16:15	0	0	294	50	0	59	31	6	0	25	376	8	0	5	21	12	3414	Peak
16:15	16:30	0	0	269	43	0	51	30	6	0	16	359	8	0	9	25	8	3352	
16:30	16:45	0	0	261	44	0	51	43	6	0	20	390	5	0	4	23	7	3405	
16:45	17:00	0	0	268	63	0	41	32	9	0	24	379	7	0	1	21	4	3395	
17:00	17:15	0	0	246	48	0	65	44	5	0	21	340	8	0	11	28	9	3359	
17:15	17:30	0	0	262	62	0	73	39	11	0	29	345	12	0	5	29	10	3333	
17:30	17:45	0	0	260	54	0	64	42	1	0	27	341	6	0	9	23	17	3123	
17:45	18:00	0	0	264	60	0	57	42	3	0	16	323	7	0	8	25	8		
18:00	18:15	0	0	235	31	0	50	23	4	0	27	386	7	0	3	25	8		
18:15	18:30	0	0	181	50	0	36	13	3	0	27	330	8	0	3	14	2		

Peak Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	0	1320	479	0	134	63	15	0	42	1106	24	0	27	85	28	3323
16:00	17:00	0	0	1092	200	0	202	136	27	0	85	1504	28	0	19	90	31	3414

Pedestrians Crossing

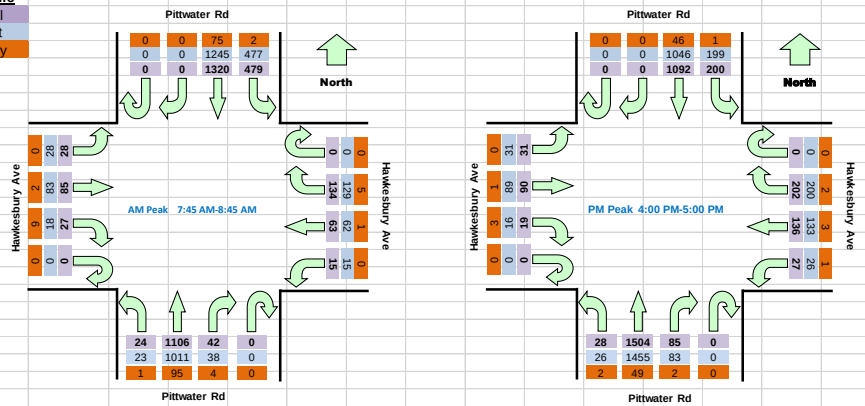
Time		Approach Pittwa	Approach Hawkesbu	Approach Pittwa	Approach Hawkesb	Hourly Tot
Period Start	Period End	estboun	astboun	outhbour	orthbour	
6:30	6:45	3	1	3	1	2	2	1	2	67
6:45	7:00	5	3	3	0	3	0	1	1	71
7:00	7:15	0	4	3	2	2	2	1	0	75
7:15	7:30	1	5	5	1	5	3	1	1	89
7:30	7:45	1	4	2	2	0	4	5	1	94
7:45	8:00	2	0	5	0	3	6	4	0	110
8:00	8:15	1	0	4	2	5	9	3	4	139
8:15	8:30	1	2	5	0	6	11	1	1	138
8:30	8:45	4	5	5	1	12	3	3	2	130
8:45	9:00	12	4	1	2	6	21	2	1	
9:00	9:15	1	0	3	0	9	12	1	1	
9:15	9:30	1	2	4	4	2	2	2	2	
15:30	15:45	1	0	2	2	4	2	3	6	120
15:45	16:00	2	1	6	6	9	6	4	6	133
16:00	16:15	1	7	4	1	6	7	2	4	122
16:15	16:30	4	2	7	2	0	7	2	4	113
16:30	16:45	2	3	8	3	4	4	1	8	107
16:45	17:00	1	1	3	3	4	9	3	5	115
17:00	17:15	1	1	1	2	7	2	2	7	120
17:15	17:30	3	0	1	3	3	4	5	3	123
17:30	17:45	4	2	2	10	8	11	1	3	129
17:45	18:00	2	0	6	6	5	5	6	4	
18:00	18:15	0	0	5	2	4	5	3	7	
18:15	18:30	2	1	0	3	4	5	3	10	

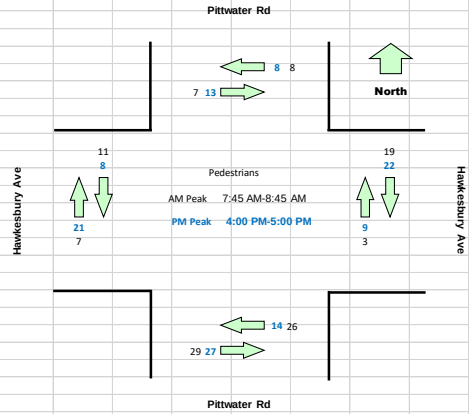
Peak Time		Approach Pittwa	Approach Hawkesbu	Approach Pittwa	Approach Hawkesb	Peak hour
Period Start	Period End	estboun	astboun	outhbour	orthbour	
7:45	8:45	8	7	19	3	26	29	11	7	110
16:00	17:00	8	13	22	9	14	27	8	21	122

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

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
6:30	6:45	0	0	243	23	0	31	8	6	0	2	216	5	0	4	9	0
6:45	7:00	0	0	277	34	0	24	9	4	0	8	202	5	0	2	15	3
7:00	7:15	0	0	233	29	0	24	9	1	0	7	176	0	0	4	10	5
7:15	7:30	0	0	304	58	0	30	7	3	0	10	204	2	0	4	8	2
7:30	7:45	0	0	297	59	0	41	10	3	0	5	236	6	0	8	14	1
7:45	8:00	0	0	330	79	0	35	20	4	0	9	226	5	0	6	17	6
8:00	8:15	0	0	301	97	0	27	8	5	0	7	266	2	0	2	14	6
8:15	8:30	0	0	334	136	0	38	17	5	0	10	249	7	0	9	24	8
8:30	8:45	0	0	280	165	0	29	17	1	0	12	270	9	0	1	28	8
8:45	9:00	0	0	207	138	0	31	33	4	0	11	217	5	0	6	46	7
9:00	9:15	0	0	302	61	0	38	9	1	0	17	226	1	0	10	22	8
9:15	9:30	0	0	244	39	0	34	8	1	0	7	206	4	0	3	21	2
15:30	15:45	0	0	281	56	0	66	31	3	0	14	311	2	0	2	25	6
15:45	16:00	0	0	246	43	0	48	37	5	0	26	355	7	0	5	22	6
16:00	16:15	0	0	274	50	0	59	31	6	0	24	357	6	0	4	21	12
16:15	16:30	0	0	260	42	0	50	30	6	0	16	347	8	0	8	25	8
16:30	16:45	0	0	253	44	0	51	40	5	0	19	379	5	0	3	22	7
16:45	17:00	0	0	259	63	0	40	32	9	0	24	372	7	0	1	21	4
17:00	17:15	0	0	237	47	0	65	44	5	0	21	332	8	0	10	28	9
17:15	17:30	0	0	255	62	0	72	39	11	0	29	336	12	0	4	29	10
17:30	17:45	0	0	255	54	0	62	42	1	0	27	331	6	0	9	23	17
17:45	18:00	0	0	252	60	0	57	42	3	0	16	315	7	0	8	25	8
18:00	18:15	0	0	232	31	0	50	23	4	0	27	372	7	0	2	25	8
18:15	18:30	0	0	177	50	0	36	13	3	0	27	318	8	0	3	13	2

Peak Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	0	0	1245	477	0	129	62	15	0	38	1011	23	0	18	83	28	3129
16:00	17:00	0	0	1046	199	0	200	133	26	0	83	1455	26	0	16	89	31	3304

Heavy Vehicles

Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
6:30	6:45	0	0	18	2	0	0	1	2	0	2	12	0	0	1	0	0
6:45	7:00	0	0	23	1	0	3	0	0	0	0	31	1	0	2	0	0
7:00	7:15	0	0	25	0	0	1	0	0	0	1	14	0	0	3	0	0
7:15	7:30	0	0	20	0	0	0	0	0	0	0	18	0	0	1	1	0
7:30	7:45	0	0	18	1	0	1	0	0	0	1	24	0	0	1	0	0
7:45	8:00	0	0	18	1	0	1	0	0	0	1	28	0	0	2	0	0
8:00	8:15	0	0	23	0	0	3	0	0	0	0	26	0	0	1	1	0
8:15	8:30	0	0	20	0	0	1	1	0	0	2	22	1	0	2	1	0
8:30	8:45	0	0	14	1	0	0	0	0	0	1	19	0	0	4	0	0
8:45	9:00	0	0	21	1	0	2	1	0	0	0	20	0	0	2	0	0
9:00	9:15	0	0	14	0	0	0	0	0	0	1	19	0	0	1	1	0
9:15	9:30	0	0	10	0	0	1	0	0	0	0	19	0	0	1	0	1
15:30	15:45	0	0	19	0	0	1	0	0	0	1	15	0	0	3	1	0
15:45	16:00	0	0	6	1	0	1	0	0	0	2	23	0	0	1	0	0
16:00	16:15	0	0	20	0	0	0	0	0	0	1	19	2	0	1	0	0
16:15	16:30	0	0	9	1	0	1	0	0	0	0	12	0	0	1	0	0
16:30	16:45	0	0	8	0	0	0	3	1	0	1	11	0	0	1	1	0
16:45	17:00	0	0	9	0	0	1	0	0	0	0	7	0	0	0	0	0
17:00	17:15	0	0	9	1	0	0	0	0	0	0	8	0	0	1	0	0
17:15	17:30	0	0	7	0	0	1	0	0	0	0	9	0	0	1	0	0
17:30	17:45	0	0	5	0	0	2	0	0	0	0	10	0	0	0	0	0
17:45	18:00	0	0	12	0	0	0	0	0	0	0	8	0	0	0	0	0
18:00	18:15	0	0	3	0	0	0	0	0	0	0	14	0	0	1	0	0
18:15	18:30	0	0	4	0	0	0	0	0	0	0	12	0	0	0	1	0

Peak Time		North Approach Pittwater Rd				East Approach Hawkesbury Ave				South Approach Pittwater Rd				West Approach Hawkesbury Ave				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	0	0	75	2	0	5	1	0	0	4	95	1	0	9	2	0	194
16:00	17:00	0	0	46	1	0	2	3	1	0	2	49	2	0	3	1	0	110

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Dee Why Parade and Pittwater Rd, Dee Why

GPS -33.751604, 151.288151

Date:	Tue 18/07/23
Weather:	Fine
Suburban:	Dee Why
Customer:	Varga

North:	Pittwater Rd
East:	Dee Why Parade
South:	Pittwater Rd
West:	Kingsway

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

All Vehicles

Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:30	6:45	0	0	217	17	0	34	6	12	0	0	178	3	0	0	0	0	2154	
6:45	7:00	0	0	298	44	0	46	8	9	0	0	190	8	0	0	0	0	2367	
7:00	7:15	0	0	248	15	0	36	3	17	0	0	161	7	0	0	0	0	2421	
7:15	7:30	0	0	287	32	0	41	12	17	0	0	193	15	0	0	0	0	2615	
7:30	7:45	0	0	320	29	0	60	19	15	0	0	224	13	0	0	0	0	2699	Peak
7:45	8:00	0	0	310	42	0	61	15	14	0	0	191	23	1	0	0	0	2642	
8:00	8:15	0	0	284	41	0	70	12	18	0	0	243	13	0	0	0	0	2564	
8:15	8:30	0	0	278	61	0	67	18	17	0	0	229	11	0	0	0	0	2528	
8:30	8:45	0	0	233	56	0	83	17	10	0	0	210	14	0	0	0	0	2386	
8:45	9:00	0	0	244	26	0	50	18	14	0	0	215	12	0	0	0	0		
9:00	9:15	0	0	317	33	0	61	21	16	0	0	187	10	0	0	0	0		
9:15	9:30	0	0	249	13	0	56	18	15	0	0	180	8	0	0	0	0		
15:30	15:45	0	0	256	35	0	63	13	16	0	0	300	8	0	0	0	0	2922	Peak
15:45	16:00	0	0	244	37	0	64	15	15	0	0	357	23	0	0	0	0	2916	
16:00	16:15	0	0	264	27	0	70	11	21	0	0	317	21	0	0	0	0	2907	
16:15	16:30	0	0	259	36	0	64	8	16	0	0	342	20	0	0	0	0	2843	
16:30	16:45	0	0	226	29	0	68	12	12	0	0	325	13	0	0	0	0	2818	
16:45	17:00	0	0	262	32	0	67	14	15	0	0	333	23	0	0	0	0	2822	
17:00	17:15	0	0	217	29	0	60	10	25	0	0	306	20	0	0	0	0	2776	
17:15	17:30	0	0	237	41	0	66	18	16	0	0	319	23	0	0	0	0	2810	
17:30	17:45	0	0	230	31	0	62	19	12	0	0	308	27	0	0	0	0	2685	
17:45	18:00	0	0	268	32	0	54	25	12	0	0	293	16	0	0	0	0		
18:00	18:15	0	0	211	26	0	57	20	20	0	0	354	13	0	0	0	0		
18:15	18:30	0	0	165	24	0	66	16	19	0	0	293	12	0	0	0	0		

Peak Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:30	8:30	0	0	1192	173	0	258	64	64	0	0	887	60	1	0	0	0	2699
15:30	16:30	0	0	1023	135	0	261	47	68	0	0	1316	72	0	0	0	0	2922

Pedestrians Crossing

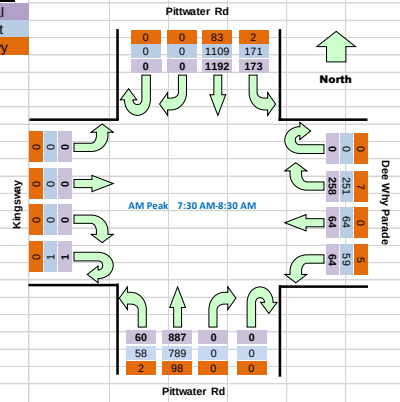
Time		Approach Pittwa		Approach Dee Why		Approach Pittwat		Approach Kings		Hourly Tot
Period Start	Period End	estbound	astbound	outhbound	orthbound	estbound	astbound	outhbound	orthbound	
6:30	6:45	0	0	4	1	3	7	3	3	97
6:45	7:00	0	0	5	2	6	4	2	0	112
7:00	7:15	0	0	3	0	3	11	3	2	136
7:15	7:30	0	0	5	1	3	17	7	2	163
7:30	7:45	0	0	5	0	6	13	8	4	166
7:45	8:00	0	0	4	1	7	21	6	4	177
8:00	8:15	0	0	6	1	12	17	7	6	181
8:15	8:30	0	0	5	2	11	13	4	3	176
8:30	8:45	0	0	2	4	13	16	8	4	173
8:45	9:00	0	0	5	1	17	16	6	2	
9:00	9:15	0	0	7	3	8	19	3	4	
9:15	9:30	0	0	4	2	10	13	4	2	
15:30	15:45	0	0	4	4	18	15	7	18	202
15:45	16:00	0	0	10	8	12	15	9	6	182
16:00	16:15	0	0	3	2	14	5	5	7	175
16:15	16:30	0	0	5	5	11	9	2	8	194
16:30	16:45	0	0	6	5	10	15	1	9	205
16:45	17:00	0	0	4	4	15	15	6	9	203
17:00	17:15	0	0	5	4	18	13	4	11	212
17:15	17:30	0	0	3	2	12	13	7	14	202
17:30	17:45	0	0	4	4	20	7	2	7	214
17:45	18:00	0	1	5	6	19	9	6	16	
18:00	18:15	0	0	4	3	11	9	9	9	
18:15	18:30	0	0	6	3	19	16	9	10	

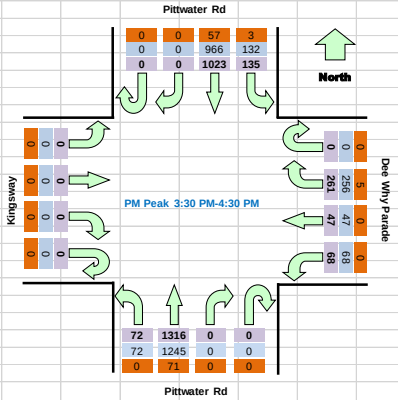
Peak Time		Approach Pittwa		Approach Dee Why		Approach Pittwat		Approach Kings		Peak hour
Period Start	Period End	estbound	astbound	outhbound	orthbound	estbound	astbound	outhbound	orthbound	
7:30	8:30	0	0	20	4	36	64	25	17	166
15:30	16:30	0	0	22	19	55	44	23	39	202

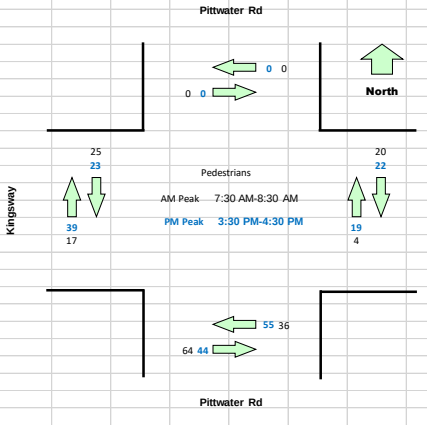
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy







Light Vehicles

Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
6:30	6:45	0	0	198	17	0	34	6	12	0	0	164	3	0	0	0	0
6:45	7:00	0	0	274	43	0	46	8	9	0	0	160	8	0	0	0	0
7:00	7:15	0	0	223	13	0	35	3	16	0	0	146	6	0	0	0	0
7:15	7:30	0	0	265	32	0	40	12	16	0	0	176	15	0	0	0	0
7:30	7:45	0	0	301	29	0	57	19	14	0	0	199	12	0	0	0	0
7:45	8:00	0	0	289	42	0	60	15	12	0	0	165	23	1	0	0	0
8:00	8:15	0	0	262	40	0	69	12	17	0	0	219	12	0	0	0	0
8:15	8:30	0	0	257	60	0	65	18	16	0	0	206	11	0	0	0	0
8:30	8:45	0	0	218	53	0	82	17	10	0	0	192	14	0	0	0	0
8:45	9:00	0	0	222	26	0	46	18	14	0	0	199	12	0	0	0	0
9:00	9:15	0	0	301	33	0	60	21	16	0	0	168	10	0	0	0	0
9:15	9:30	0	0	239	13	0	55	18	14	0	0	163	8	0	0	0	0
15:30	15:45	0	0	238	34	0	62	13	16	0	0	284	8	0	0	0	0
15:45	16:00	0	0	235	36	0	64	15	15	0	0	333	23	0	0	0	0
16:00	16:15	0	0	246	26	0	68	11	21	0	0	297	21	0	0	0	0
16:15	16:30	0	0	247	36	0	62	8	16	0	0	331	20	0	0	0	0
16:30	16:45	0	0	217	28	0	68	12	12	0	0	314	13	0	0	0	0
16:45	17:00	0	0	253	32	0	67	14	14	0	0	325	22	0	0	0	0
17:00	17:15	0	0	209	27	0	60	10	23	0	0	299	20	0	0	0	0
17:15	17:30	0	0	229	41	0	66	18	16	0	0	310	23	0	0	0	0
17:30	17:45	0	0	225	31	0	62	19	12	0	0	298	27	0	0	0	0
17:45	18:00	0	0	257	32	0	54	25	12	0	0	285	16	0	0	0	0
18:00	18:15	0	0	207	26	0	57	20	20	0	0	340	13	0	0	0	0
18:15	18:30	0	0	161	23	0	66	16	19	0	0	281	11	0	0	0	0

Peak Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:30	8:30	0	0	1109	171	0	251	64	59	0	0	789	58	1	0	0	0	2502
15:30	16:30	0	0	966	132	0	256	47	68	0	0	1245	72	0	0	0	0	2786

Heavy Vehicles

Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
6:30	6:45	0	0	19	0	0	0	0	0	0	0	14	0	0	0	0	0
6:45	7:00	0	0	24	1	0	0	0	0	0	0	30	0	0	0	0	0
7:00	7:15	0	0	25	2	0	1	0	1	0	0	15	1	0	0	0	0
7:15	7:30	0	0	22	0	0	1	0	1	0	0	17	0	0	0	0	0
7:30	7:45	0	0	19	0	0	3	0	1	0	0	25	1	0	0	0	0
7:45	8:00	0	0	21	0	0	1	0	2	0	0	26	0	0	0	0	0
8:00	8:15	0	0	22	1	0	1	0	1	0	0	24	1	0	0	0	0
8:15	8:30	0	0	21	1	0	2	0	1	0	0	23	0	0	0	0	0
8:30	8:45	0	0	15	3	0	1	0	0	0	0	18	0	0	0	0	0
8:45	9:00	0	0	22	0	0	4	0	0	0	0	16	0	0	0	0	0
9:00	9:15	0	0	16	0	0	1	0	0	0	0	19	0	0	0	0	0
9:15	9:30	0	0	10	0	0	1	0	1	0	0	17	0	0	0	0	0
15:30	15:45	0	0	18	1	0	1	0	0	0	0	16	0	0	0	0	0
15:45	16:00	0	0	9	1	0	0	0	0	0	0	24	0	0	0	0	0
16:00	16:15	0	0	18	1	0	2	0	0	0	0	20	0	0	0	0	0
16:15	16:30	0	0	12	0	0	2	0	0	0	0	11	0	0	0	0	0
16:30	16:45	0	0	9	1	0	0	0	0	0	0	11	0	0	0	0	0
16:45	17:00	0	0	9	0	0	0	0	1	0	0	8	1	0	0	0	0
17:00	17:15	0	0	8	2	0	0	0	2	0	0	7	0	0	0	0	0
17:15	17:30	0	0	8	0	0	0	0	0	0	0	9	0	0	0	0	0
17:30	17:45	0	0	5	0	0	0	0	0	0	0	10	0	0	0	0	0
17:45	18:00	0	0	11	0	0	0	0	0	0	0	8	0	0	0	0	0
18:00	18:15	0	0	4	0	0	0	0	0	0	0	14	0	0	0	0	0
18:15	18:30	0	0	4	1	0	0	0	0	0	0	12	1	0	0	0	0

Peak Time		North Approach Pittwater Rd				East Approach Dee Why Parade				South Approach Pittwater Rd				West Approach Kingsway				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:30	8:30	0	0	83	2	0	7	0	5	0	0	98	2	0	0	0	0	197
15:30	16:30	0	0	57	3	0	5	0	0	0	0	71	0	0	0	0	0	136

TRANS TRAFFIC SURVEY

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VARGA TRAFFIC PLANNING PTY LTD

TURNING MOVEMENT SURVEY

Intersection of Dee Why Parade and Access Driveway, De

GPS	*-33.751712, 151.288950*

Date:	Tue 18/07/23	***North:***	Access Driveway	***Survey Period***	AM:	6:30 AM-9:30 AM
Weather:	Fine	***East:***	Dee Why Parade		PM:	3:30 PM-6:30 PM
Suburban:	Dee Why	***South:***	N/A	***Traffic Peak***	AM:	7:45 AM-8:45 AM
Customer:	Varga	***West:***	Dee Why Parade		PM:	3:30 PM-4:30 PM

All Vehicles

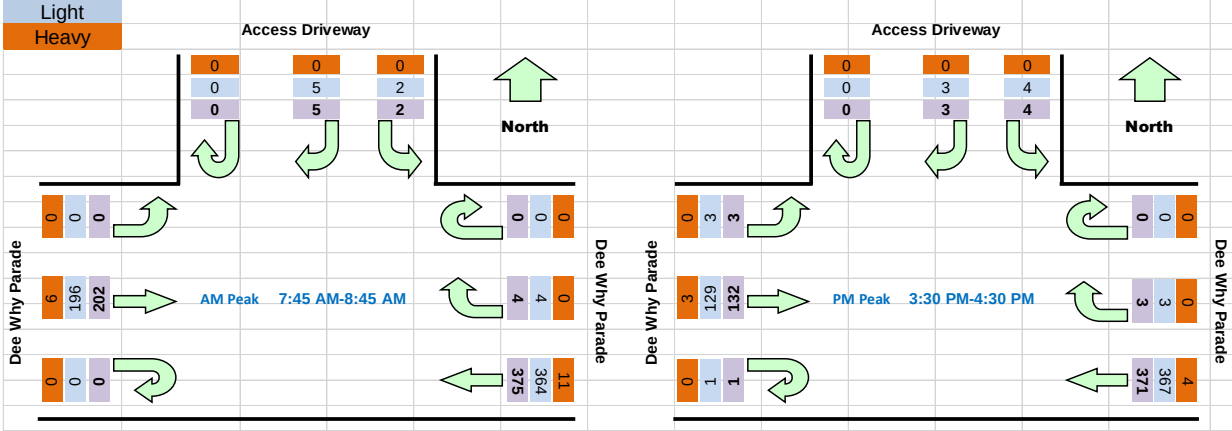
Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
6:30	6:45	0	1	0	0	0	44	0	19	0	333	
6:45	7:00	0	0	0	0	0	59	0	44	1	404	
7:00	7:15	0	0	0	0	0	60	0	15	0	422	
7:15	7:30	0	0	0	0	0	57	0	33	0	489	
7:30	7:45	0	0	2	0	1	103	0	29	0	564	
7:45	8:00	0	1	1	0	2	76	0	42	0	588	Peak
8:00	8:15	0	2	0	0	1	97	0	42	0	579	
8:15	8:30	0	2	1	0	1	99	0	62	0	558	
8:30	8:45	0	0	0	0	0	103	0	56	0	493	
8:45	9:00	0	0	0	0	1	85	0	27	0		
9:00	9:15	0	1	0	1	1	85	0	33	0		
9:15	9:30	0	0	0	1	0	86	0	12	1		
15:30	15:45	0	0	1	0	0	91	0	34	1	517	Peak
15:45	16:00	0	2	2	0	0	96	0	37	0	514	
16:00	16:15	0	0	0	0	1	94	0	24	2	501	
16:15	16:30	0	1	1	0	2	90	1	37	0	501	
16:30	16:45	0	0	3	0	0	92	0	29	0	503	
16:45	17:00	0	1	2	0	0	89	0	32	0	504	
17:00	17:15	0	0	0	0	2	90	0	28	1	509	
17:15	17:30	0	0	0	0	0	95	0	39	0	512	
17:30	17:45	0	0	0	0	1	92	0	32	0	499	
17:45	18:00	0	2	0	0	0	96	0	31	0		
18:00	18:15	0	0	1	0	1	96	0	26	0		
18:15	18:30	0	1	1	0	0	95	0	23	1		

Peak Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
7:45	8:45	0	5	2	0	4	375	0	202	0	588
15:30	16:30	0	3	4	0	3	371	1	132	3	517

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	1	0	0	0	44	0	19	0
6:45	7:00	0	0	0	0	0	59	0	43	1
7:00	7:15	0	0	0	0	0	58	0	13	0
7:15	7:30	0	0	0	0	0	55	0	33	0
7:30	7:45	0	0	2	0	1	99	0	29	0
7:45	8:00	0	1	1	0	2	73	0	42	0
8:00	8:15	0	2	0	0	1	94	0	40	0
8:15	8:30	0	2	1	0	1	95	0	61	0
8:30	8:45	0	0	0	0	0	102	0	53	0
8:45	9:00	0	0	0	0	1	82	0	27	0
9:00	9:15	0	1	0	1	1	83	0	33	0
9:15	9:30	0	0	0	1	0	85	0	12	1
15:30	15:45	0	0	1	0	0	90	0	33	1
15:45	16:00	0	2	2	0	0	95	0	36	0
16:00	16:15	0	0	0	0	1	93	0	23	2
16:15	16:30	0	1	1	0	2	89	1	37	0
16:30	16:45	0	0	3	0	0	92	0	28	0
16:45	17:00	0	1	2	0	0	88	0	32	0
17:00	17:15	0	0	0	0	2	88	0	26	1
17:15	17:30	0	0	0	0	0	95	0	39	0
17:30	17:45	0	0	0	0	1	92	0	32	0
17:45	18:00	0	2	0	0	0	96	0	31	0
18:00	18:15	0	0	1	0	1	96	0	26	0
18:15	18:30	0	1	1	0	0	95	0	22	1

Peak Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
7:45	8:45	0	5	2	0	4	364	0	196	0	571
15:30	16:30	0	3	4	0	3	367	1	129	3	510

Heavy Vehicles

Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	1	0
7:00	7:15	0	0	0	0	0	2	0	2	0
7:15	7:30	0	0	0	0	0	2	0	0	0
7:30	7:45	0	0	0	0	0	4	0	0	0
7:45	8:00	0	0	0	0	0	3	0	0	0
8:00	8:15	0	0	0	0	0	3	0	2	0
8:15	8:30	0	0	0	0	0	4	0	1	0
8:30	8:45	0	0	0	0	0	1	0	3	0
8:45	9:00	0	0	0	0	0	3	0	0	0
9:00	9:15	0	0	0	0	0	2	0	0	0
9:15	9:30	0	0	0	0	0	1	0	0	0
15:30	15:45	0	0	0	0	0	1	0	1	0
15:45	16:00	0	0	0	0	0	1	0	1	0
16:00	16:15	0	0	0	0	0	1	0	1	0
16:15	16:30	0	0	0	0	0	1	0	0	0
16:30	16:45	0	0	0	0	0	0	0	1	0
16:45	17:00	0	0	0	0	0	1	0	0	0
17:00	17:15	0	0	0	0	0	2	0	2	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	1	0

Peak Time		th Approach Access Drive			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
7:45	8:45	0	0	0	0	0	11	0	6	0	17
15:30	16:30	0	0	0	0	0	4	0	3	0	7

TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of Dee Why Parade and Clarence Ave, Dee W

GPS	*-33.751828, 151.289910*

Date:	Tue 18/07/23	***North:***	Clarence Ave	***Survey Period***	AM:	6:30 AM-9:30 AM
Weather:	Fine	***East:***	Dee Why Parade		PM:	3:30 PM-6:30 PM
Suburban:	Dee Why	***South:***	N/A	***Traffic Peak***	AM:	8:00 AM-9:00 AM
Customer:	Varga	***West:***	Dee Why Parade		PM:	4:45 PM-5:45 PM

All Vehicles

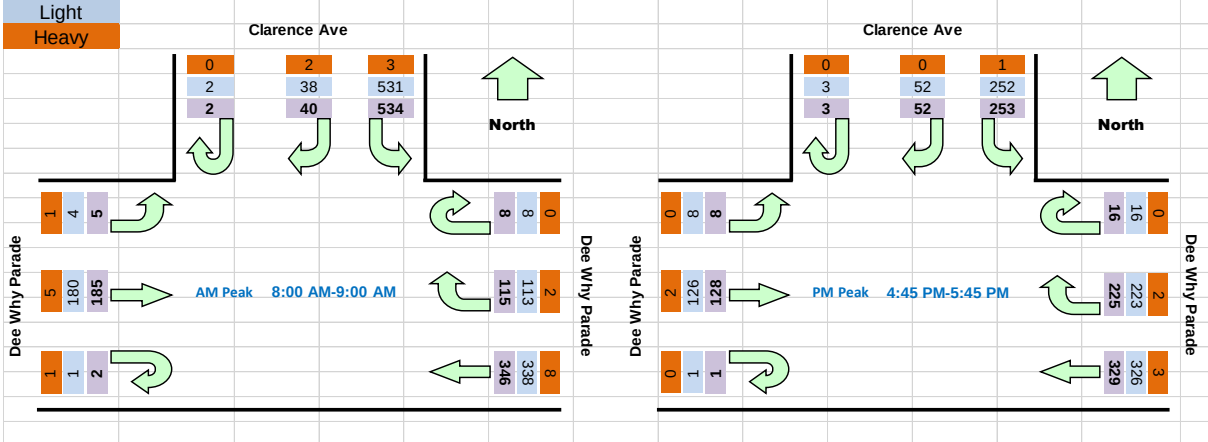
Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para			Hourly Total	
Period Start	**Period End**	**U**	**R**	**L**	**U**	**R**	**WB**	**U**	**EB**	**L**	**Hour**	**Peak**
6:30	6:45	0	4	27	0	26	38	0	18	1	573	
6:45	7:00	0	4	37	1	22	54	0	43	2	671	
7:00	7:15	1	9	31	1	15	53	0	12	1	752	
7:15	7:30	2	8	56	1	22	49	0	35	0	880	
7:30	7:45	1	14	49	1	27	88	2	28	2	1034	
7:45	8:00	0	6	90	1	32	74	0	40	1	1169	
8:00	8:15	0	9	88	2	21	87	1	42	1	1237	Peak
8:15	8:30	0	13	134	0	30	87	1	59	3	1197	
8:30	8:45	1	7	152	2	33	95	0	56	1	1062	
8:45	9:00	1	11	160	4	31	77	0	28	0		
9:00	9:15	0	7	68	1	21	79	2	32	1		
9:15	9:30	1	10	53	3	35	78	0	10	2		
15:30	15:45	3	9	59	1	23	78	3	33	2	884	
15:45	16:00	0	5	66	2	40	88	0	37	1	903	
16:00	16:15	1	13	58	1	41	76	1	18	1	913	
16:15	16:30	0	10	50	1	40	83	0	37	3	946	
16:30	16:45	1	11	51	2	51	82	0	30	2	987	
16:45	17:00	0	12	72	4	43	83	1	31	3	1015	Peak
17:00	17:15	2	19	52	6	58	76	0	28	2	1011	
17:15	17:30	0	8	70	3	57	88	0	37	2	986	
17:30	17:45	1	13	59	3	67	82	0	32	1	924	
17:45	18:00	2	9	48	3	65	88	0	29	1		
18:00	18:15	3	8	44	3	49	84	0	26	1		
18:15	18:30	2	10	49	0	35	82	0	24	1		

Peak Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	**Period End**	U	R	L	U	R	WB	U	EB	L	**total**
8:00	9:00	2	40	534	8	115	346	2	185	5	1237
16:45	17:45	3	52	253	16	225	329	1	128	8	1015

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	4	26	0	26	38	0	18	1
6:45	7:00	0	4	37	1	21	54	0	42	2
7:00	7:15	1	8	31	1	15	51	0	10	1
7:15	7:30	2	8	55	1	22	48	0	35	0
7:30	7:45	1	14	49	1	26	83	2	28	2
7:45	8:00	0	4	90	1	31	73	0	40	1
8:00	8:15	0	8	87	2	20	85	0	41	0
8:15	8:30	0	12	134	0	29	85	1	58	3
8:30	8:45	1	7	151	2	33	94	0	53	1
8:45	9:00	1	11	159	4	31	74	0	28	0
9:00	9:15	0	6	67	1	21	78	2	32	1
9:15	9:30	1	10	53	3	35	77	0	10	2
15:30	15:45	3	9	59	1	23	76	3	32	2
15:45	16:00	0	5	65	2	40	87	0	36	1
16:00	16:15	1	13	58	1	41	75	1	17	1
16:15	16:30	0	10	50	1	38	82	0	37	3
16:30	16:45	1	11	51	2	49	82	0	29	2
16:45	17:00	0	12	71	4	43	82	1	31	3
17:00	17:15	2	19	52	6	58	74	0	26	2
17:15	17:30	0	8	70	3	57	88	0	37	2
17:30	17:45	1	13	59	3	65	82	0	32	1
17:45	18:00	2	9	48	3	65	88	0	29	1
18:00	18:15	3	8	44	3	49	84	0	26	1
18:15	18:30	2	10	49	0	35	82	0	23	1

Peak Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
8:00	9:00	2	38	531	8	113	338	1	180	4	1215
16:45	17:45	3	52	252	16	223	326	1	126	8	1007

Heavy Vehicles

Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	0	1	0	0	0	0	0	0
6:45	7:00	0	0	0	0	1	0	0	1	0
7:00	7:15	0	1	0	0	0	2	0	2	0
7:15	7:30	0	0	1	0	0	1	0	0	0
7:30	7:45	0	0	0	0	1	5	0	0	0
7:45	8:00	0	2	0	0	1	1	0	0	0
8:00	8:15	0	1	1	0	1	2	1	1	1
8:15	8:30	0	1	0	0	1	2	0	1	0
8:30	8:45	0	0	1	0	0	1	0	3	0
8:45	9:00	0	0	1	0	0	3	0	0	0
9:00	9:15	0	1	1	0	0	1	0	0	0
9:15	9:30	0	0	0	0	0	1	0	0	0
15:30	15:45	0	0	0	0	0	2	0	1	0
15:45	16:00	0	0	1	0	0	1	0	1	0
16:00	16:15	0	0	0	0	0	1	0	1	0
16:15	16:30	0	0	0	0	2	1	0	0	0
16:30	16:45	0	0	0	0	2	0	0	1	0
16:45	17:00	0	0	1	0	0	1	0	0	0
17:00	17:15	0	0	0	0	0	2	0	2	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	2	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	1	0

Peak Time		orth Approach Clarence Av			st Approach Dee Why Para			st Approach Dee Why Para			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
8:00	9:00	0	2	3	0	2	8	1	5	1	22
16:45	17:45	0	0	1	0	2	3	0	2	0	8

APPENDIX B

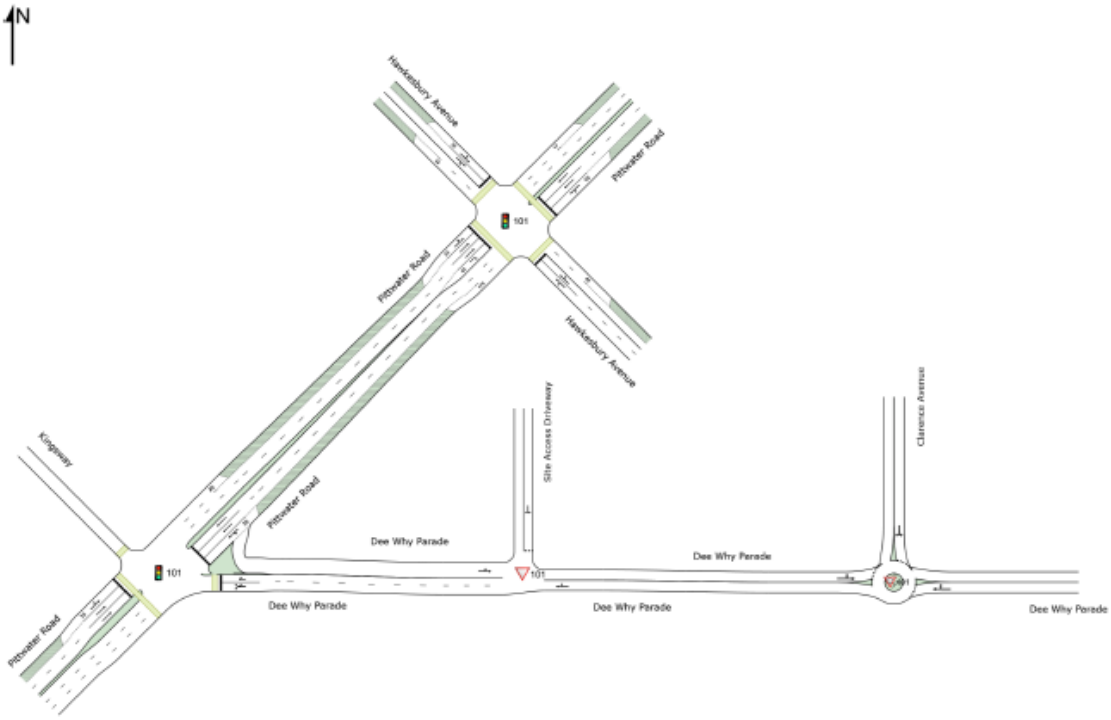
SIDRA MOVEMENT SUMMARIES

NETWORK LAYOUT

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

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	AM Peak Pittwater Rd & Hawkesbury Ave
101	NA	AM Peak Pittwater Rd & Dee Why Pde & Kingsway
101	NA	AM Peak Dee Why Pde & Site Access
101	NA	AM Peak Dee Why Pde & Clarence Ave

MOVEMENT SUMMARY

Site: 101 [AM Peak Pittwater Rd & Hawkesbury Ave (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical 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
SouthEast: Hawkesbury Avenue														
4	L2	15	0.0	15	0.0	0.148	32.8	LOS C	1.1	7.8	0.86	0.67	0.86	12.3
5	T1	63	1.6	63	1.6	*0.628	31.3	LOS C	3.7	26.8	0.90	0.73	0.92	18.2
6	R2	134	3.7	134	3.7	0.628	38.7	LOS C	3.7	26.8	0.98	0.84	1.03	18.7
Approach		212	2.8	212	2.8	0.628	36.1	LOS C	3.7	26.8	0.95	0.79	0.99	18.2
NorthEast: Pittwater Road														
7	L2	479	0.4	479	0.4	0.879	36.4	LOS C	11.0	77.3	0.70	0.92	1.02	20.1
8	T1	1320	5.7	1320	5.7	*0.880	29.4	LOS C	22.1	162.2	0.87	0.95	1.10	17.7
Approach		1799	4.3	1799	4.3	0.880	31.2	LOS C	22.1	162.2	0.82	0.94	1.08	18.5
NorthWest: Hawkesbury Avenue														
10	L2	28	0.0	28	0.0	0.109	35.5	LOS C	0.8	5.4	0.86	0.70	0.86	21.1
11	T1	85	2.4	85	2.4	0.344	32.8	LOS C	2.2	16.8	0.91	0.74	0.91	17.7
12	R2	27	33.3	27	33.3	0.344	36.4	LOS C	2.2	16.8	0.91	0.75	0.91	12.1
Approach		140	7.9	140	7.9	0.344	34.1	LOS C	2.2	16.8	0.90	0.74	0.90	17.5
SouthWest: Pittwater Road														
1	L2	24	4.2	24	4.2	0.087	10.2	LOS A	0.7	5.2	0.30	0.33	0.30	45.5
2	T1	1106	8.6	1106	8.6	0.425	5.7	LOS A	4.6	34.9	0.38	0.34	0.38	50.6
3	R2	42	9.5	42	9.5	*0.181	22.4	LOS B	0.6	4.2	0.88	0.73	0.88	30.5
Approach		1172	8.5	1172	8.5	0.425	6.4	LOS A	4.6	34.9	0.40	0.36	0.40	49.4
All Vehicles		3323	5.8	3323	5.8	0.880	22.9	LOS B	22.1	162.2	0.68	0.72	0.83	27.5

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.
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
SouthEast: Hawkesbury Avenue											
P2	Full	22	34.3	LOS D	0.0	0.0	0.93	0.93	198.9	214.0	1.08
NorthEast: Pittwater Road											
P3	Full	16	34.2	LOS D	0.0	0.0	0.93	0.93	205.5	222.6	1.08
NorthWest: Hawkesbury Avenue											
P4	Full	19	34.3	LOS D	0.0	0.0	0.93	0.93	198.9	214.0	1.08
SouthWest: Pittwater Road											
P1	Full	58	34.3	LOS D	0.1	0.1	0.93	0.93	206.1	223.3	1.08
All Pedestrians		115	34.3	LOS D	0.1	0.1	0.93	0.93	203.4	219.9	1.08

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 [PM Peak Pittwater Rd & Hawkesbury Ave (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Practical 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
SouthEast: Hawkesbury Avenue														
4	L2	27	3.7	27	3.7	0.210	24.4	LOS B	1.4	9.7	0.84	0.68	0.84	15.2
5	T1	136	2.2	136	2.2	0.893	29.9	LOS C	6.3	44.6	0.93	0.97	1.24	18.7
6	R2	202	1.0	202	1.0	*0.893	41.4	LOS C	6.3	44.6	1.00	1.22	1.59	18.1
Approach		365	1.6	365	1.6	0.893	35.9	LOS C	6.3	44.6	0.96	1.08	1.41	18.2
NorthEast: Pittwater Road														
7	L2	200	0.5	200	0.5	0.740	24.0	LOS B	5.0	35.4	0.79	0.82	0.94	26.5
8	T1	1092	4.2	1092	4.2	*0.806	21.7	LOS B	10.8	78.2	0.89	0.90	1.08	21.5
Approach		1292	3.6	1292	3.6	0.806	22.1	LOS B	10.8	78.2	0.87	0.88	1.06	22.5
NorthWest: Hawkesbury Avenue														
10	L2	31	0.0	31	0.0	0.092	27.5	LOS B	0.5	3.8	0.83	0.70	0.83	24.8
11	T1	90	1.1	90	1.1	0.289	23.4	LOS B	1.6	11.7	0.87	0.72	0.87	21.4
12	R2	19	15.8	19	15.8	0.289	26.7	LOS B	1.6	11.7	0.88	0.73	0.88	15.4
Approach		140	2.9	140	2.9	0.289	24.8	LOS B	1.6	11.7	0.86	0.72	0.86	21.6
SouthWest: Pittwater Road														
1	L2	28	7.1	28	7.1	0.139	11.7	LOS A	1.1	8.0	0.43	0.41	0.43	43.8
2	T1	1504	3.3	1504	3.3	0.681	8.9	LOS A	8.2	59.3	0.66	0.60	0.66	46.5
3	R2	85	2.4	85	2.4	*0.259	20.7	LOS B	1.1	7.6	0.75	0.73	0.75	31.4
Approach		1617	3.3	1617	3.3	0.681	9.5	LOS A	8.2	59.3	0.66	0.60	0.66	45.5
All Vehicles		3414	3.2	3414	3.2	0.893	17.7	LOS B	10.8	78.2	0.78	0.76	0.90	32.4

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Hawkesbury Avenue											
P2	Full	22	24.3	LOS C	0.0	0.0	0.90	0.90	188.9	214.0	1.13
NorthEast: Pittwater Road											
P3	Full	16	24.3	LOS C	0.0	0.0	0.90	0.90	195.5	222.6	1.14
NorthWest: Hawkesbury Avenue											
P4	Full	19	24.3	LOS C	0.0	0.0	0.90	0.90	188.9	214.0	1.13
SouthWest: Pittwater Road											
P1	Full	58	24.4	LOS C	0.1	0.1	0.90	0.90	196.1	223.3	1.14
All Pedestrians		115	24.3	LOS C	0.1	0.1	0.90	0.90	193.5	219.9	1.14

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 [AM Peak Pittwater Rd & Dee Why Pde & Kingsway (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical 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
East: Dee Why Parade														
4a	L1	59	6.8	59	6.8	0.438	28.5	LOS C	4.3	30.5	0.87	0.78	0.87	18.6
6a	R1	62	0.0	62	0.0	* 0.438	28.0	LOS B	4.3	30.5	0.87	0.78	0.87	20.1
6b	R3	281	1.8	281	1.8	0.438	30.5	LOS C	4.3	30.5	0.87	0.78	0.87	8.7
Approach		402	2.2	402	2.2	0.438	29.8	LOS C	4.3	30.5	0.87	0.78	0.87	12.5
NorthEast: Pittwater Road														
24b	L3	200	2.5	200	2.5	0.403	14.4	LOS A	4.9	35.6	0.50	0.57	0.50	39.2
8	T1	1105	7.1	1105	7.1	0.403	9.0	LOS A	4.9	35.6	0.50	0.47	0.50	44.8
Approach		1305	6.4	1305	6.4	0.403	9.9	LOS A	4.9	36.0	0.50	0.49	0.50	44.1
SouthWest: Pittwater Road														
1	L2	61	1.6	61	1.6	0.088	13.6	LOS A	1.0	7.2	0.47	0.58	0.47	35.7
2	T1	873	10.4	873	10.4	* 0.407	10.0	LOS A	5.6	43.0	0.59	0.52	0.59	30.3
Approach		934	9.9	934	9.9	0.407	10.3	LOS A	5.6	43.0	0.58	0.53	0.58	30.9
All Vehicles		2641	7.0	2641	7.0	0.438	13.0	LOS A	5.6	43.0	0.59	0.55	0.59	34.8

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
East: Dee Why Parade											
P2	Full	26	34.3	LOS D	0.1	0.1	0.93	0.93	199.6	214.9	1.08
NorthWest: Kingsway											
P4	Full	44	34.3	LOS D	0.1	0.1	0.93	0.93	193.5	207.0	1.07
SouthWest: Pittwater Road											
P1	Full	116	34.4	LOS D	0.2	0.2	0.93	0.93	207.6	225.2	1.08
All Pedestrians		186	34.3	LOS D	0.2	0.2	0.93	0.93	203.1	219.4	1.08

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

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MOVEMENT SUMMARY

Site: 101 [PM Peak Pittwater Rd & Dee Why Pde & Kingsway (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Practical 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
East: Dee Why Parade														
4a	L1	64	1.6	64	1.6	0.356	19.7	LOS B	2.8	20.0	0.81	0.75	0.81	22.9
6a	R1	45	0.0	45	0.0	* 0.356	19.2	LOS B	2.8	20.0	0.81	0.75	0.81	24.3
6b	R3	269	1.5	269	1.5	0.356	21.6	LOS B	2.8	20.0	0.81	0.76	0.81	11.2
Approach		378	1.3	378	1.3	0.356	21.0	LOS B	2.8	20.0	0.81	0.75	0.81	15.6
NorthEast: Pittwater Road														
24b	L3	124	1.6	124	1.6	0.410	15.9	LOS B	3.9	28.3	0.60	0.59	0.60	38.2
8	T1	1011	4.7	1011	4.7	0.410	10.4	LOS A	4.2	30.5	0.64	0.57	0.64	43.4
Approach		1135	4.4	1135	4.4	0.410	11.0	LOS A	4.2	30.5	0.64	0.57	0.64	42.9
SouthWest: Pittwater Road														
1	L2	77	1.3	77	1.3	0.155	14.9	LOS B	1.4	10.1	0.59	0.61	0.59	35.2
2	T1	1317	3.8	1317	3.8	* 0.713	13.5	LOS A	9.6	69.3	0.82	0.75	0.84	25.9
Approach		1394	3.7	1394	3.7	0.713	13.6	LOS A	9.6	69.3	0.80	0.74	0.83	26.7
All Vehicles		2907	3.6	2907	3.6	0.713	13.5	LOS A	9.6	69.3	0.74	0.68	0.75	33.0

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
East: Dee Why Parade											
P2	Full	26	24.3	LOS C	0.0	0.0	0.90	0.90	189.6	214.9	1.13
NorthWest: Kingsway											
P4	Full	44	24.3	LOS C	0.1	0.1	0.90	0.90	183.6	207.0	1.13
SouthWest: Pittwater Road											
P1	Full	116	24.4	LOS C	0.2	0.2	0.90	0.90	197.6	225.2	1.14
All Pedestrians		186	24.4	LOS C	0.2	0.2	0.90	0.90	193.2	219.4	1.14

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 [AM Peak Dee Why Pde & Site Access (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Give-Way (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
East: Dee Why Parade														
5	T1	375	2.9	375	2.9	0.192	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	39.7
6	R2	4	0.0	4	0.0	0.192	4.3	LOS A	0.0	0.1	0.01	0.01	0.01	36.5
Approach		379	2.9	379	2.9	0.192	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.6
North: Site Access Driveway														
7	L2	2	0.0	2	0.0	0.008	0.6	LOS A	0.0	0.1	0.36	0.26	0.36	16.1
9	R2	5	0.0	5	0.0	0.008	2.7	LOS A	0.0	0.1	0.36	0.26	0.36	16.1
Approach		7	0.0	7	0.0	0.008	2.1	LOS A	0.0	0.1	0.36	0.26	0.36	16.1
West: Dee Why Parade														
10	L2	1	0.0	1	0.0	0.098	3.4	LOS A	0.0	0.0	0.00	0.00	0.00	21.7
11	T1	202	3.0	202	3.0	0.098	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		203	3.0	203	3.0	0.098	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.6
All Vehicles		589	2.9	589	2.9	0.192	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.2

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

MOVEMENT SUMMARY

Site: 101 [PM Peak Dee Why Pde & Site Access (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Give-Way (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
East: Dee Why Parade														
5	T1	365	0.8	365	0.8	0.183	0.0	LOS A	0.0	0.1	0.01	0.00	0.01	39.8
6	R2	3	0.0	3	0.0	0.183	4.0	LOS A	0.0	0.1	0.01	0.00	0.01	36.6
Approach		368	0.8	368	0.8	0.183	0.0	NA	0.0	0.1	0.01	0.00	0.01	39.7
North: Site Access Driveway														
7	L2	6	0.0	6	0.0	0.006	0.3	LOS A	0.0	0.1	0.20	0.10	0.20	18.2
9	R2	2	0.0	2	0.0	0.006	2.2	LOS A	0.0	0.1	0.20	0.10	0.20	18.2
Approach		8	0.0	8	0.0	0.006	0.8	LOS A	0.0	0.1	0.20	0.10	0.20	18.2
West: Dee Why Parade														
10	L2	2	0.0	2	0.0	0.059	3.4	LOS A	0.0	0.0	0.00	0.01	0.00	21.7
11	T1	122	1.6	122	1.6	0.059	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.7
Approach		124	1.6	124	1.6	0.059	0.1	NA	0.0	0.0	0.00	0.01	0.00	38.9
All Vehicles		500	1.0	500	1.0	0.183	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.1

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 [AM Peak Dee Why Pde & Clarence Ave (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
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
East: Dee Why Parade														
5	T1	343	1.7	343	1.7	0.326	2.8	LOS A	0.9	6.7	0.20	0.42	0.20	33.9
6	R2	116	2.6	116	2.6	0.326	5.6	LOS A	0.9	6.7	0.20	0.42	0.20	36.2
Approach		459	2.0	459	2.0	0.326	3.5	LOS A	0.9	6.7	0.20	0.42	0.20	34.6
North: Clarence Avenue														
7	L2	464	0.4	464	0.4	0.457	4.7	LOS A	1.3	9.4	0.53	0.58	0.53	34.3
9	R2	35	11.4	35	11.4	0.457	7.2	LOS A	1.3	9.4	0.53	0.58	0.53	27.7
Approach		499	1.2	499	1.2	0.457	4.9	LOS A	1.3	9.4	0.53	0.58	0.53	34.0
West: Dee Why Parade														
10	L2	6	16.7	6	16.7	0.178	4.0	LOS A	0.4	2.8	0.31	0.41	0.31	32.7
11	T1	197	2.5	197	2.5	0.178	3.3	LOS A	0.4	2.8	0.31	0.41	0.31	36.2
Approach		203	3.0	203	3.0	0.178	3.3	LOS A	0.4	2.8	0.31	0.41	0.31	36.1
All Vehicles		1161	1.8	1161	1.8	0.457	4.1	LOS A	1.3	9.4	0.36	0.49	0.36	34.6

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

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MOVEMENT SUMMARY

Site: 101 [PM Peak Dee Why Pde & Clarence Ave (Site Folder: Existing)]

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

2-12 Dee Why Pde, Dee Why
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
East: Dee Why Parade														
5	T1	324	0.9	324	0.9	0.359	2.9	LOS A	1.0	7.2	0.22	0.45	0.22	33.5
6	R2	175	2.3	175	2.3	0.359	5.6	LOS A	1.0	7.2	0.22	0.45	0.22	35.9
Approach		499	1.4	499	1.4	0.359	3.8	LOS A	1.0	7.2	0.22	0.45	0.22	34.5
North: Clarence Avenue														
7	L2	231	0.4	231	0.4	0.235	3.8	LOS A	0.6	3.9	0.33	0.50	0.33	34.7
9	R2	46	0.0	46	0.0	0.235	6.1	LOS A	0.6	3.9	0.33	0.50	0.33	28.7
Approach		277	0.4	277	0.4	0.235	4.2	LOS A	0.6	3.9	0.33	0.50	0.33	34.2
West: Dee Why Parade														
10	L2	9	0.0	9	0.0	0.118	4.1	LOS A	0.2	1.7	0.36	0.44	0.36	32.5
11	T1	116	1.7	116	1.7	0.118	3.6	LOS A	0.2	1.7	0.36	0.44	0.36	35.9
Approach		125	1.6	125	1.6	0.118	3.7	LOS A	0.2	1.7	0.36	0.44	0.36	35.7
All Vehicles		901	1.1	901	1.1	0.359	3.9	LOS A	1.0	7.2	0.28	0.46	0.28	34.6

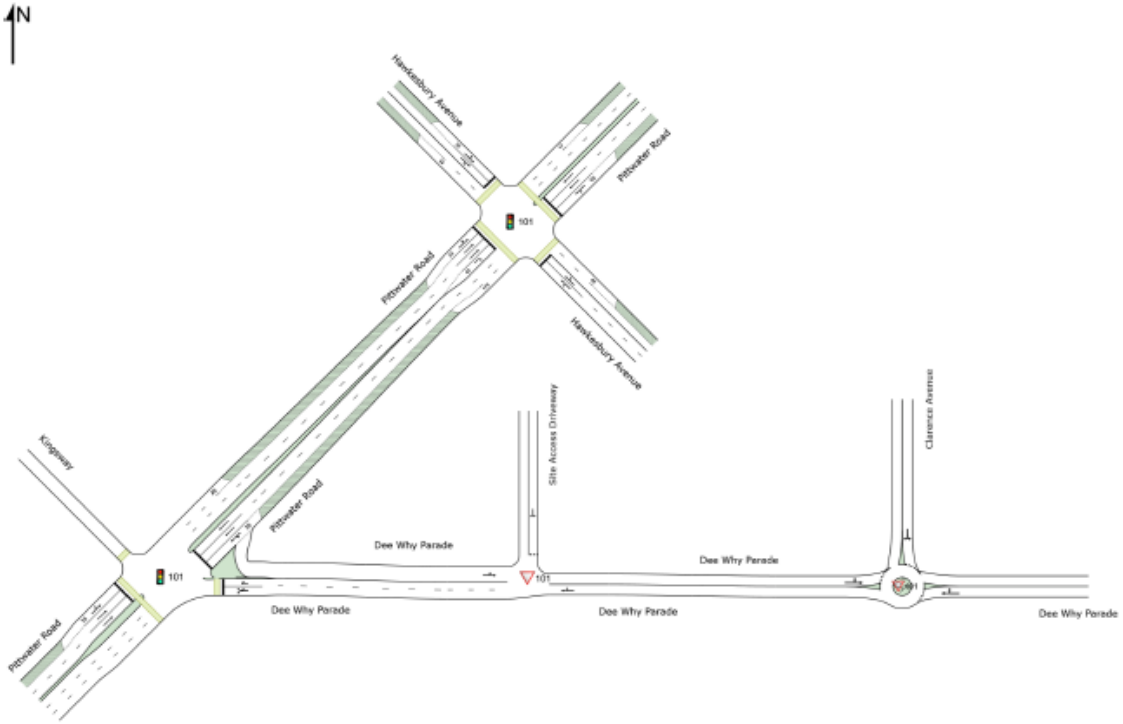
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity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

NETWORK LAYOUT

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

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	AM Peak Pittwater Rd & Hawkesbury Ave
101	NA	AM Peak Pittwater Rd & Dee Why Pde & Kingsway
101	NA	AM Peak Dee Why Pde & Site Access
101	NA	AM Peak Dee Why Pde & Clarence Ave

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MOVEMENT SUMMARY

Site: 101 [AM Peak Pittwater Rd & Hawkesbury Ave (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical 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
SouthEast: Hawkesbury Avenue														
4	L2	15	0.0	15	0.0	0.148	32.8	LOS C	1.1	7.8	0.86	0.67	0.86	12.3
5	T1	63	1.6	63	1.6	*0.628	31.3	LOS C	3.7	26.8	0.90	0.73	0.92	18.2
6	R2	134	3.7	134	3.7	0.628	38.7	LOS C	3.7	26.8	0.98	0.84	1.03	18.7
Approach		212	2.8	212	2.8	0.628	36.1	LOS C	3.7	26.8	0.95	0.79	0.99	18.2
NorthEast: Pittwater Road														
7	L2	479	0.4	479	0.4	0.881	36.8	LOS C	11.1	77.8	0.70	0.92	1.03	20.0
8	T1	1325	5.7	1325	5.7	*0.883	29.9	LOS C	22.4	164.2	0.87	0.96	1.11	17.5
Approach		1804	4.3	1804	4.3	0.883	31.7	LOS C	22.4	164.2	0.82	0.95	1.09	18.3
NorthWest: Hawkesbury Avenue														
10	L2	28	0.0	28	0.0	0.109	35.5	LOS C	0.8	5.4	0.86	0.70	0.86	21.1
11	T1	85	2.4	85	2.4	0.344	32.8	LOS C	2.2	16.8	0.91	0.74	0.91	17.7
12	R2	27	33.3	27	33.3	0.344	36.4	LOS C	2.2	16.8	0.91	0.75	0.91	12.1
Approach		140	7.9	140	7.9	0.344	34.1	LOS C	2.2	16.8	0.90	0.74	0.90	17.5
SouthWest: Pittwater Road														
1	L2	24	4.2	24	4.2	0.088	10.1	LOS A	0.7	5.2	0.29	0.33	0.29	45.6
2	T1	1125	8.4	1125	8.4	0.433	5.7	LOS A	4.7	35.6	0.38	0.35	0.38	50.6
3	R2	42	9.5	42	9.5	*0.181	22.4	LOS B	0.6	4.3	0.90	0.73	0.90	30.5
Approach		1191	8.4	1191	8.4	0.433	6.3	LOS A	4.7	35.6	0.40	0.36	0.40	49.5
All Vehicles		3347	5.8	3347	5.8	0.883	23.1	LOS B	22.4	164.2	0.68	0.72	0.83	27.4

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Hawkesbury Avenue											
P2	Full	22	34.3	LOS D	0.0	0.0	0.93	0.93	198.9	214.0	1.08
NorthEast: Pittwater Road											
P3	Full	16	34.2	LOS D	0.0	0.0	0.93	0.93	205.5	222.6	1.08
NorthWest: Hawkesbury Avenue											
P4	Full	19	34.3	LOS D	0.0	0.0	0.93	0.93	198.9	214.0	1.08
SouthWest: Pittwater Road											
P1	Full	58	34.3	LOS D	0.1	0.1	0.93	0.93	206.1	223.3	1.08
All Pedestrians		115	34.3	LOS D	0.1	0.1	0.93	0.93	203.4	219.9	1.08

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 [PM Peak Pittwater Rd & Hawkesbury Ave (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Practical 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
SouthEast: Hawkesbury Avenue														
4	L2	27	3.7	27	3.7	0.210	24.4	LOS B	1.4	9.7	0.84	0.68	0.84	15.2
5	T1	136	2.2	136	2.2	0.893	29.9	LOS C	6.3	44.6	0.93	0.97	1.24	18.7
6	R2	202	1.0	202	1.0	*0.893	41.4	LOS C	6.3	44.6	1.00	1.22	1.59	18.1
Approach		365	1.6	365	1.6	0.893	35.9	LOS C	6.3	44.6	0.96	1.08	1.41	18.2
NorthEast: Pittwater Road														
7	L2	200	0.5	200	0.5	0.752	24.5	LOS B	5.1	36.4	0.80	0.84	0.97	26.2
8	T1	1111	4.1	1111	4.1	*0.819	22.6	LOS B	11.2	81.5	0.89	0.92	1.11	21.0
Approach		1311	3.6	1311	3.6	0.819	22.9	LOS B	11.2	81.5	0.88	0.90	1.09	22.0
NorthWest: Hawkesbury Avenue														
10	L2	31	0.0	31	0.0	0.092	27.5	LOS B	0.5	3.8	0.83	0.70	0.83	24.8
11	T1	90	1.1	90	1.1	0.289	23.4	LOS B	1.6	11.7	0.87	0.72	0.87	21.4
12	R2	19	15.8	19	15.8	0.289	26.7	LOS B	1.6	11.7	0.88	0.73	0.88	15.4
Approach		140	2.9	140	2.9	0.289	24.8	LOS B	1.6	11.7	0.86	0.72	0.86	21.6
SouthWest: Pittwater Road														
1	L2	28	7.1	28	7.1	0.140	11.7	LOS A	1.1	8.0	0.43	0.41	0.43	43.8
2	T1	1507	3.3	1507	3.3	0.683	8.9	LOS A	8.3	59.5	0.66	0.60	0.66	46.5
3	R2	85	2.4	85	2.4	*0.261	20.8	LOS B	1.1	7.6	0.75	0.73	0.75	31.4
Approach		1620	3.3	1620	3.3	0.683	9.6	LOS A	8.3	59.5	0.66	0.60	0.66	45.5
All Vehicles		3436	3.2	3436	3.2	0.893	18.1	LOS B	11.2	81.5	0.79	0.77	0.91	32.1

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.
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
SouthEast: Hawkesbury Avenue											
P2	Full	22	24.3	LOS C	0.0	0.0	0.90	0.90	188.9	214.0	1.13
NorthEast: Pittwater Road											
P3	Full	16	24.3	LOS C	0.0	0.0	0.90	0.90	195.5	222.6	1.14
NorthWest: Hawkesbury Avenue											
P4	Full	19	24.3	LOS C	0.0	0.0	0.90	0.90	188.9	214.0	1.13
SouthWest: Pittwater Road											
P1	Full	58	24.4	LOS C	0.1	0.1	0.90	0.90	196.1	223.3	1.14
All Pedestrians		115	24.3	LOS C	0.1	0.1	0.90	0.90	193.5	219.9	1.14

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 [AM Peak Pittwater Rd & Dee Why Pde & Kingsway (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical 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
East: Dee Why Parade														
4a	L1	62	6.5	62	6.5	0.458	28.7	LOS C	4.5	32.1	0.88	0.78	0.88	18.5
6a	R1	65	0.0	65	0.0	*0.458	28.2	LOS B	4.5	32.1	0.88	0.78	0.88	20.0
6b	R3	294	1.7	294	1.7	0.458	30.6	LOS C	4.5	32.1	0.88	0.79	0.88	8.6
Approach		421	2.1	421	2.1	0.458	30.0	LOS C	4.5	32.1	0.88	0.79	0.88	12.4
NorthEast: Pittwater Road														
24b	L3	205	2.4	205	2.4	0.405	14.4	LOS A	4.9	35.9	0.50	0.58	0.50	39.1
8	T1	1105	7.1	1105	7.1	0.405	9.1	LOS A	4.9	35.9	0.50	0.47	0.50	44.8
Approach		1310	6.4	1310	6.4	0.405	9.9	LOS A	4.9	36.2	0.50	0.49	0.50	44.0
SouthWest: Pittwater Road														
1	L2	61	1.6	61	1.6	0.088	13.6	LOS A	1.0	7.2	0.47	0.58	0.47	35.7
2	T1	873	10.4	873	10.4	*0.407	10.0	LOS A	5.6	43.0	0.59	0.52	0.59	30.3
Approach		934	9.9	934	9.9	0.407	10.3	LOS A	5.6	43.0	0.58	0.53	0.58	30.9
All Vehicles		2665	6.9	2665	6.9	0.458	13.2	LOS A	5.6	43.0	0.59	0.55	0.59	34.5

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.
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
East: Dee Why Parade											
P2	Full	26	34.3	LOS D	0.1	0.1	0.93	0.93	199.6	214.9	1.08
NorthWest: Kingsway											
P4	Full	44	34.3	LOS D	0.1	0.1	0.93	0.93	193.5	207.0	1.07
SouthWest: Pittwater Road											
P1	Full	116	34.4	LOS D	0.2	0.2	0.93	0.93	207.6	225.2	1.08
All Pedestrians		186	34.3	LOS D	0.2	0.2	0.93	0.93	203.1	219.4	1.08

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

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MOVEMENT SUMMARY

Site: 101 [PM Peak Pittwater Rd & Dee Why Pde & Kingsway (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Practical 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
East: Dee Why Parade														
4a	L1	64	1.6	64	1.6	0.359	19.7	LOS B	2.9	20.2	0.81	0.75	0.81	22.8
6a	R1	45	0.0	45	0.0	*0.359	19.2	LOS B	2.9	20.2	0.81	0.75	0.81	24.2
6b	R3	272	1.5	272	1.5	0.359	21.7	LOS B	2.9	20.2	0.81	0.76	0.81	11.2
Approach		381	1.3	381	1.3	0.359	21.0	LOS B	2.9	20.2	0.81	0.76	0.81	15.5
NorthEast: Pittwater Road														
24b	L3	143	1.4	143	1.4	0.416	16.0	LOS B	4.1	29.3	0.61	0.61	0.61	37.8
8	T1	1011	4.7	1011	4.7	0.416	10.5	LOS A	4.3	31.0	0.64	0.58	0.64	43.2
Approach		1154	4.3	1154	4.3	0.416	11.1	LOS A	4.3	31.0	0.64	0.58	0.64	42.7
SouthWest: Pittwater Road														
1	L2	77	1.3	77	1.3	0.155	14.9	LOS B	1.4	10.1	0.59	0.61	0.59	35.2
2	T1	1317	3.8	1317	3.8	*0.713	13.5	LOS A	9.6	69.3	0.82	0.75	0.84	25.9
Approach		1394	3.7	1394	3.7	0.713	13.6	LOS A	9.6	69.3	0.80	0.74	0.83	26.7
All Vehicles		2929	3.6	2929	3.6	0.713	13.6	LOS A	9.6	69.3	0.74	0.68	0.75	33.0

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
East: Dee Why Parade											
P2	Full	26	24.3	LOS C	0.0	0.0	0.90	0.90	189.6	214.9	1.13
NorthWest: Kingsway											
P4	Full	44	24.3	LOS C	0.1	0.1	0.90	0.90	183.6	207.0	1.13
SouthWest: Pittwater Road											
P1	Full	116	24.4	LOS C	0.2	0.2	0.90	0.90	197.6	225.2	1.14
All Pedestrians		186	24.4	LOS C	0.2	0.2	0.90	0.90	193.2	219.4	1.14

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 [AM Peak Dee Why Pde & Site Access (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Give-Way (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
East: Dee Why Parade														
5	T1	375	2.9	375	2.9	0.192	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	39.6
6	R2	5	0.0	5	0.0	0.192	4.3	LOS A	0.0	0.1	0.01	0.01	0.01	36.4
Approach		380	2.9	380	2.9	0.192	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.5
North: Site Access Driveway														
7	L2	7	0.0	7	0.0	0.038	0.6	LOS A	0.1	0.4	0.38	0.32	0.38	15.7
9	R2	24	0.0	24	0.0	0.038	2.9	LOS A	0.1	0.4	0.38	0.32	0.38	15.7
Approach		31	0.0	31	0.0	0.038	2.4	LOS A	0.1	0.4	0.38	0.32	0.38	15.7
West: Dee Why Parade														
10	L2	6	0.0	6	0.0	0.100	3.4	LOS A	0.0	0.0	0.00	0.01	0.00	21.6
11	T1	202	3.0	202	3.0	0.100	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.4
Approach		208	2.9	208	2.9	0.100	0.1	NA	0.0	0.0	0.00	0.01	0.00	38.1
All Vehicles		619	2.7	619	2.7	0.192	0.2	NA	0.1	0.4	0.03	0.02	0.03	37.5

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 [PM Peak Dee Why Pde & Site Access (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
Site Category: (None)
Give-Way (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
East: Dee Why Parade														
5	T1	365	0.8	365	0.8	0.187	0.0	LOS A	0.0	0.2	0.02	0.01	0.02	39.4
6	R2	8	0.0	8	0.0	0.187	4.0	LOS A	0.0	0.2	0.02	0.01	0.02	36.3
Approach		373	0.8	373	0.8	0.187	0.1	NA	0.0	0.2	0.02	0.01	0.02	39.3
North: Site Access Driveway														
7	L2	9	0.0	9	0.0	0.012	0.3	LOS A	0.0	0.1	0.21	0.12	0.21	17.9
9	R2	5	0.0	5	0.0	0.012	2.3	LOS A	0.0	0.1	0.21	0.12	0.21	17.9
Approach		14	0.0	14	0.0	0.012	1.1	LOS A	0.0	0.1	0.21	0.12	0.21	17.9
West: Dee Why Parade														
10	L2	21	0.0	21	0.0	0.068	3.4	LOS A	0.0	0.0	0.00	0.07	0.00	21.2
11	T1	122	1.6	122	1.6	0.068	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	37.4
Approach		143	1.4	143	1.4	0.068	0.5	NA	0.0	0.0	0.00	0.07	0.00	32.5
All Vehicles		530	0.9	530	0.9	0.187	0.2	NA	0.0	0.2	0.02	0.03	0.02	36.7

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.
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 [AM Peak Dee Why Pde & Clarence Ave (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
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
East: Dee Why Parade														
5	T1	344	1.7	344	1.7	0.326	2.8	LOS A	0.9	6.7	0.20	0.42	0.20	33.9
6	R2	116	2.6	116	2.6	0.326	5.6	LOS A	0.9	6.7	0.20	0.42	0.20	36.2
Approach		460	2.0	460	2.0	0.326	3.5	LOS A	0.9	6.7	0.20	0.42	0.20	34.6
North: Clarence Avenue														
7	L2	464	0.4	464	0.4	0.459	4.8	LOS A	1.3	9.4	0.53	0.59	0.53	34.2
9	R2	35	11.4	35	11.4	0.459	7.2	LOS A	1.3	9.4	0.53	0.59	0.53	27.7
Approach		499	1.2	499	1.2	0.459	4.9	LOS A	1.3	9.4	0.53	0.59	0.53	34.0
West: Dee Why Parade														
10	L2	6	16.7	6	16.7	0.182	4.0	LOS A	0.4	2.8	0.31	0.41	0.31	32.7
11	T1	202	2.5	202	2.5	0.182	3.3	LOS A	0.4	2.8	0.31	0.41	0.31	36.2
Approach		208	2.9	208	2.9	0.182	3.3	LOS A	0.4	2.8	0.31	0.41	0.31	36.1
All Vehicles		1167	1.8	1167	1.8	0.459	4.1	LOS A	1.3	9.4	0.36	0.49	0.36	34.6

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

MOVEMENT SUMMARY

Site: 101 [PM Peak Dee Why Pde & Clarence Ave (Site Folder: Proposed)]

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

2-12 Dee Why Pde, Dee Why
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
East: Dee Why Parade														
5	T1	329	0.9	329	0.9	0.362	2.9	LOS A	1.0	7.3	0.22	0.45	0.22	33.5
6	R2	175	2.3	175	2.3	0.362	5.6	LOS A	1.0	7.3	0.22	0.45	0.22	35.9
Approach		504	1.4	504	1.4	0.362	3.8	LOS A	1.0	7.3	0.22	0.45	0.22	34.5
North: Clarence Avenue														
7	L2	231	0.4	231	0.4	0.236	3.9	LOS A	0.6	4.0	0.34	0.50	0.34	34.7
9	R2	46	0.0	46	0.0	0.236	6.1	LOS A	0.6	4.0	0.34	0.50	0.34	28.6
Approach		277	0.4	277	0.4	0.236	4.2	LOS A	0.6	4.0	0.34	0.50	0.34	34.2
West: Dee Why Parade														
10	L2	9	0.0	9	0.0	0.121	4.1	LOS A	0.2	1.8	0.37	0.45	0.37	32.5
11	T1	119	1.7	119	1.7	0.121	3.6	LOS A	0.2	1.8	0.37	0.45	0.37	35.9
Approach		128	1.6	128	1.6	0.121	3.7	LOS A	0.2	1.8	0.37	0.45	0.37	35.7
All Vehicles		909	1.1	909	1.1	0.362	3.9	LOS A	1.0	7.3	0.28	0.46	0.28	34.6

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