Proposed Residential Aged Care Facility

238 Mona Vale Road, St Ives

TRAFFIC AND PARKING ASSESSMENT REPORT

24 March 2014

Ref 14062

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

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1. INTRODUCTION

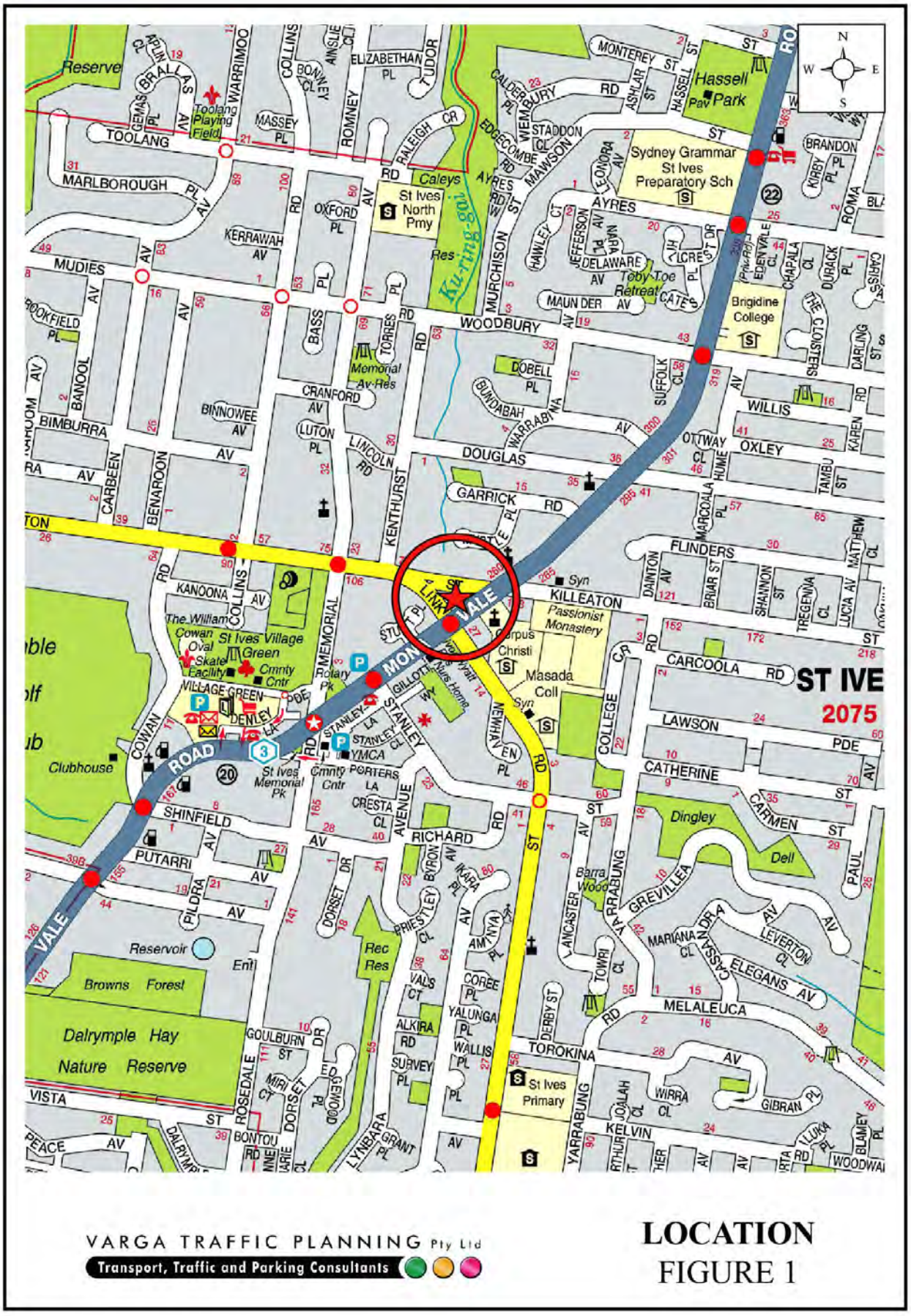
This report has been prepared on behalf of *Bupa Aged Care* to accompany a Development Application to Ku-ring-gai Council for a residential aged care facility to be located at 238 Mona Vale Road, St Ives (Figures 1 and 2).

The proposed development will involve the demolition of the existing Flower Power garden nursery on the site (now closed) to facilitate the construction of a new residential aged care facility in accordance with *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.*

Car parking is to be provided in a new single-level basement car parking area, in accordance with *SEPP* requirements.

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

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site.



VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

LOCATION
FIGURE 1


LINCOLN RD
RD
DOUGLAS
ST
N
W
E
S
MEMORIAL AVE
KENTHURST
GARRICK
RD
PL
MYRTLE
MONA VALE RD
KILLEATON
LINK
ST
STURT PL
MONA VALE RD
STANLEY
NEWHAVEN PL
RD
AVE
ST
PORTERS LA
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
SITE
FIGURE 2

2. PROPOSED DEVELOPMENT

Site

The subject site is located on the triangular parcel of land surrounded by Killeaton Street, Link Road and Mona Vale Road, and has street frontages approximately 134m, 96m and 105m in length respectively. The site occupies an area of approximately 5,539m^2.

The subject site is currently vacant however was previously occupied by a Flower Power garden nursery.

Off-street parking was previously provided for approximately 10 cars in an informal car parking area located in the north-eastern corner of the site. Vehicular access to the car parking area was provided via a single driveway located at the eastern end of the Killeaton Street site frontage.

A separate vehicular access driveway located near the western end of the Killeaton Street site frontage provided vehicular access to the site for service vehicles.

Proposed Development

The proposed development will involve the demolition of the existing buildings on the site to facilitate the construction of a new three-storey residential aged care facility (RACF) comprising a total of 98 beds as follows:

Standard Care Beds:	68
Specialised Care Dementia Beds:	30
TOTAL BEDS:	**98**

A number of ancillary facilities are proposed at the RACF for the use of residents, including a hair dresser/day spa, a café, and numerous common areas. A number of back-of-house areas are also proposed, such as laundry, kitchen, loading dock etc.

Anticipated shift-times will be 7am-3pm, 3pm-10pm and 10pm-7am. The peak staffing levels will occur during the afternoon shift changes at 3pm when there are expected to be approximately 28 staff on site.

Off-street car parking is proposed for a total of 29 cars in a new single-level basement car parking area in accordance with Council's requirements.

Vehicular access to the car parking facilities is to be provided via separate new entry and exit driveways located in the centre of the Killeaton Street site frontage. The driveways connect via an internal loop road which leads to a porte cochere and drop-off area.

Loading/servicing for the existing proposed development is expected to be undertaken by a variety of commercial vehicles up to and including 8.8m long medium rigid garbage trucks, however, the majority of deliveries will be undertaken by light commercial vehicles such as white vans and small rigid trucks. The loading dock is to be located on the ground floor level at the rear of the building. Vehicular access to the loading dock is to be provided via a dedicated "service vehicles only" driveway located towards the centre of the Link Road site frontage.

Pre-DA discussions with the RMS have indicated that they are satisfied with the location of the proposed loading dock access driveway in Link Road, subject to the following conditions:

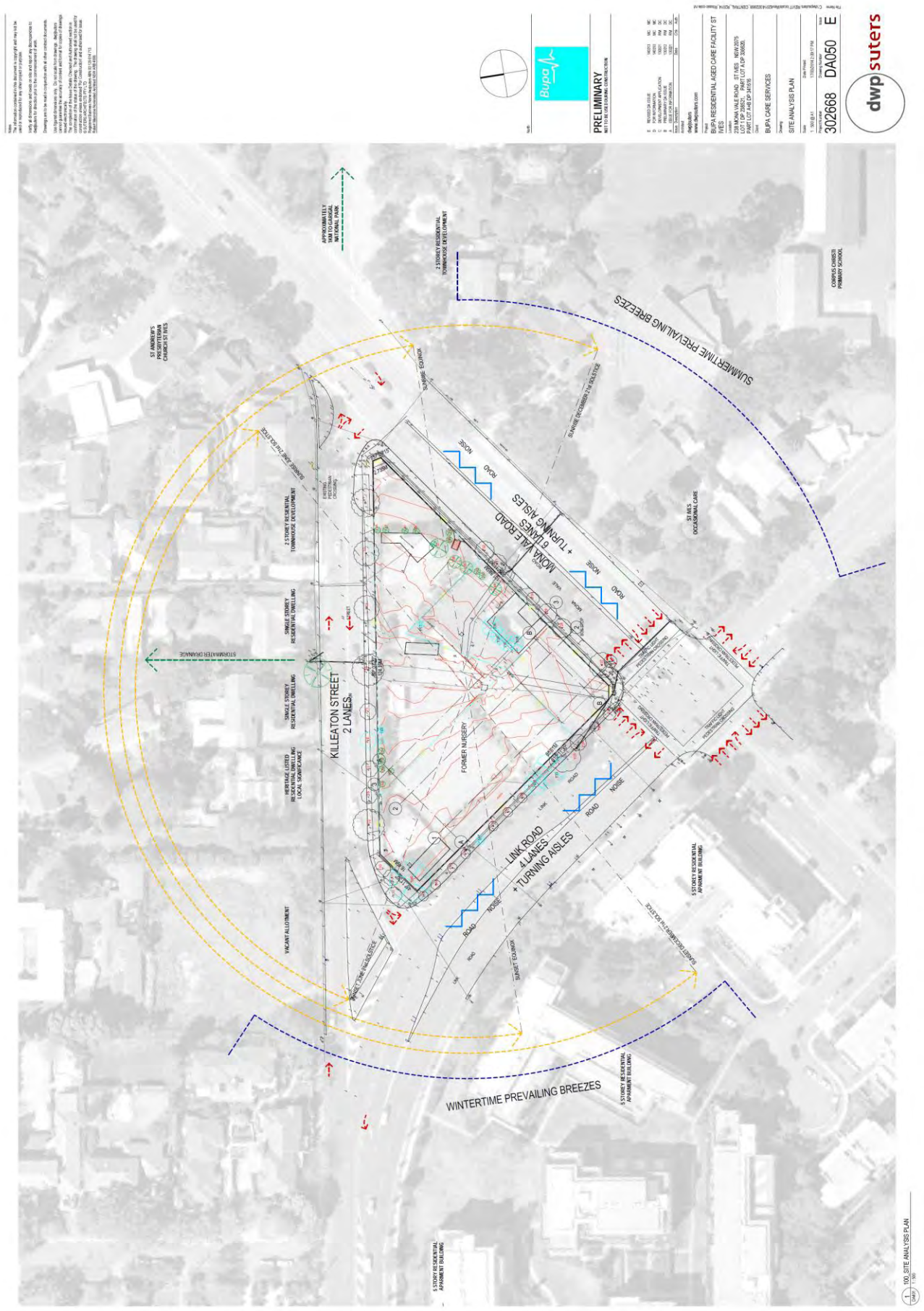
- truck sizes are limited to a maximum 8.8m long MRV rigid truck

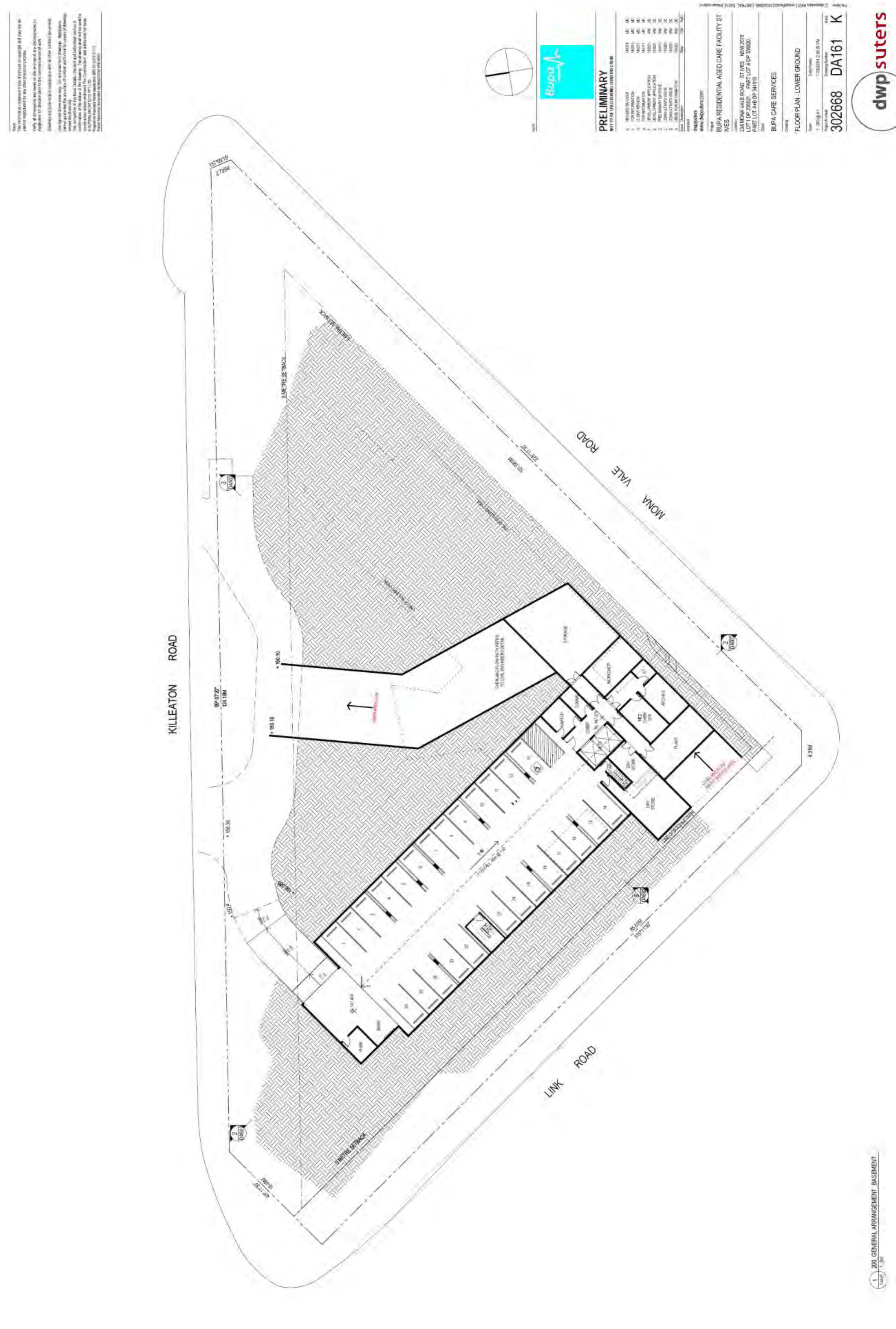
- a condition of consent should be imposed for use of the loading dock to occur only outside the hours of 6am-10am, to avoid the morning peak period, and

- a Loading Dock Management Plan detailing the proposed usage of the loading dock should be submitted with the Development Application.

A copy of the letter dated 28 November 2012 detailing the RMS requirements is reproduced in Appendix A.

Plans of the proposed development have been prepared by *DWP Suters Architects* and are reproduced in the following pages.


PRELIMINARY
BUPA RESIDENTIAL AGED CARE FACILITY ST IVES
BUPA CARE SERVICES
SITE ANALYSIS PLAN
302668 DA050 E
dwp suters
SUMMERTIME PREVAILING BREEZES
WINTERTIME PREVAILING BREEZES
KILLEATON STREET 2 LANES
MONA VALE ROAD 6 LANES + TURNING AISLES
LINK ROAD 4 LANES + TURNING AISLES
FORMER NURSERY
2 STOREY RESIDENTIAL TOWNHOUSE DEVELOPMENT
SINGLE STOREY RESIDENTIAL DWELLING
HERITAGE LISTED RESIDENTIAL DWELLING LOCAL SIGNIFICANCE
VACANT ALLOTMENT
5 STOREY RESIDENTIAL APARTMENT BUILDING
ST IVES OCCASIONAL CARE
CORPUS CHRISTI PRIMARY SCHOOL
ST ANDREW'S PRESBYTERIAN CHURCH ST IVES
APPROXIMATELY 34 HECTARES NATIONAL PARK
STORMWATER DRAINAGE
SUNRISE EQUINOX
SUNRISE DECEMBER 21st SOLSTICE
SUNSET DECEMBER 21st SOLSTICE
SUNSET EQUINOX
NOISE
ROAD
100 SITE ANALYSIS PLAN


KILLEATON ROAD
MONA VALE ROAD
LINK ROAD
PRELIMINARY
BUPA RESIDENTIAL AGED CARE FACILITY ST IVES
BUPA CARE SERVICES
FLOOR PLAN - LOWER GROUND
302668
DA161
K
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200_GENERAL ARRANGEMENT_BASEMENT


KILLEATON ROAD
MONA VALE ROAD
LINK ROAD
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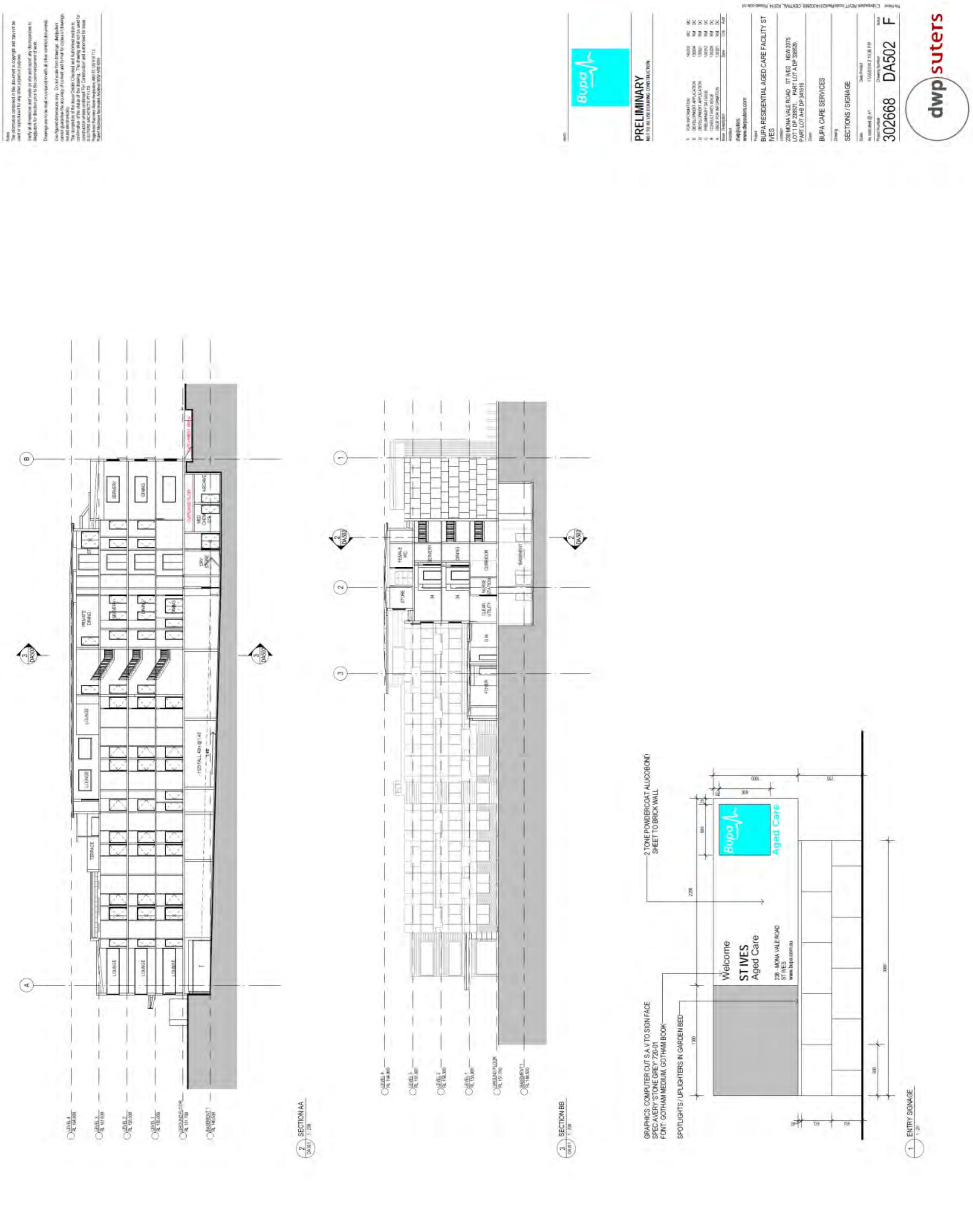

PRELIMINARY
BUPA RESIDENTIAL AGED CARE FACILITY ST IVES
BUPA CARE SERVICES
SECTIONS / SIGNAGE
302668
DA502
F
dwp suters
SECTION AA
SECTION BB
ENTRY SIGNAGE
Welcome
ST IVES
Aged Care
Bupa
Aged Care

3. TRAFFIC ASSESSMENT

Road Hierarchy

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

Mona Vale Road is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Pymble/Gordon to Mona Vale. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a centre median island. Kerbside parking is permitted at selected locations on both sides of the road.

Killeaton Street (west of Link Road), Link Road and Horace Street are classified by the RMS as *Regional Roads* which perform the function of a *collector route* through the area. They typically carries two traffic lanes in each direction in the vicinity of the site with turning bays provided at key locations.

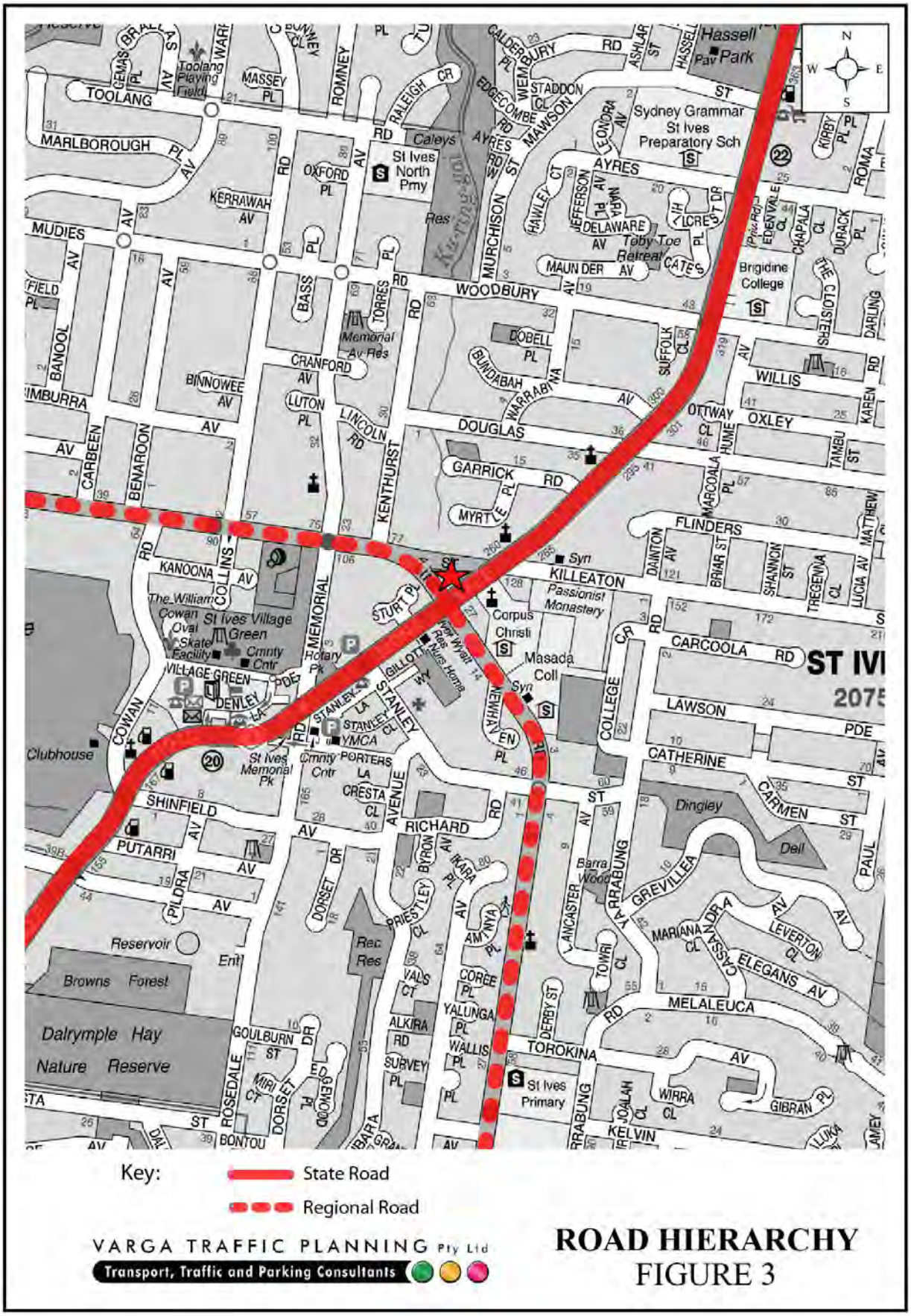
Killeaton Street (east of Link Road) is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted along both sides of the road.

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 Mona Vale Road, Link Road and Killeaton Street (west of Link Road)

- a 50 km/h SPEED LIMIT which applies to Killeaton Street (east of Link Road) and all other local roads in the area


Key:
State Road
Regional Road
VARGA TRAFFIC PLANNING Pty Ltd
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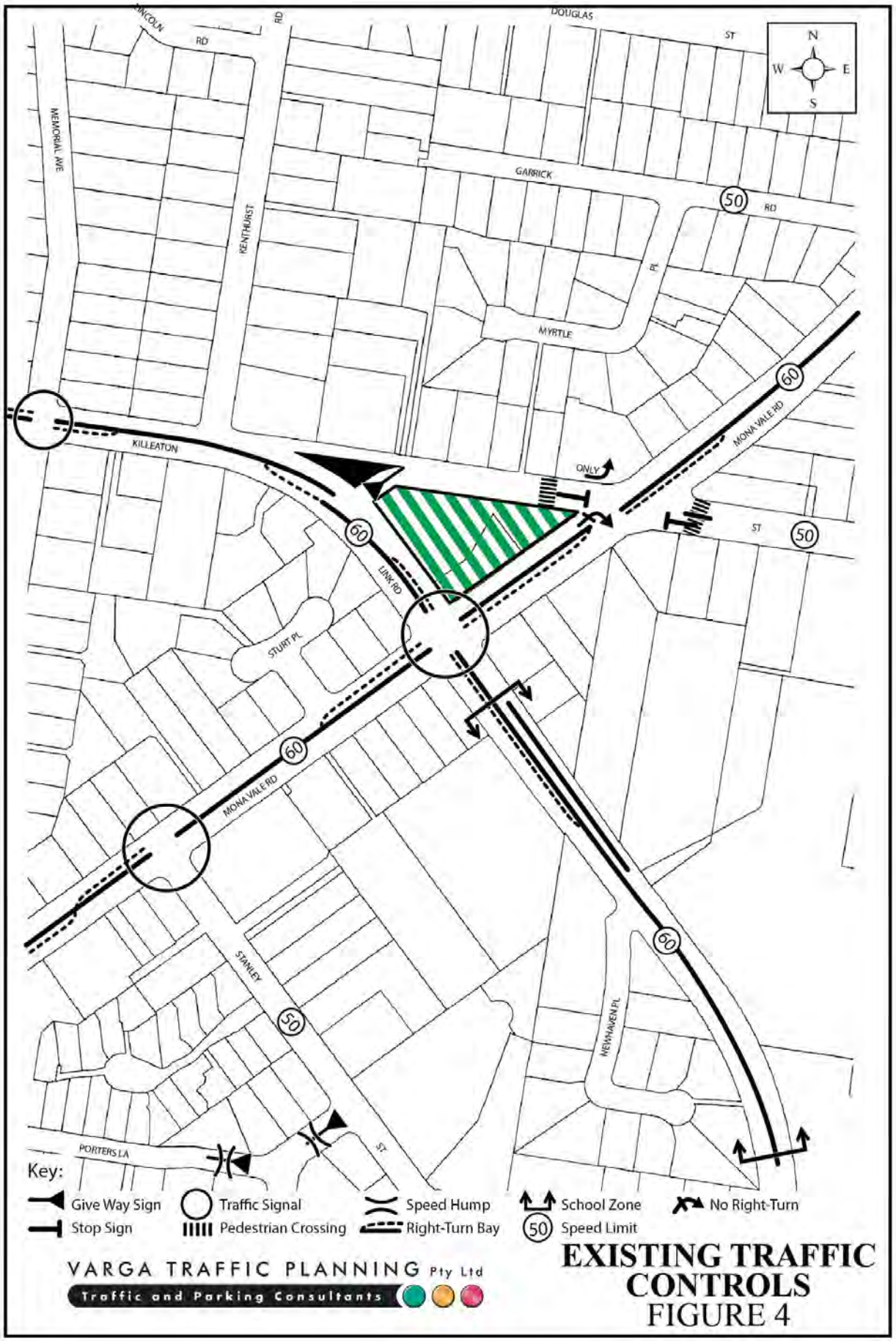
ROAD HIERARCHY
FIGURE 3


LINCOLN RD
DOUGLAS ST
N
W
E
S
MEMORIAL AVE
KENTHURST RD
GARRICK RD
50
MYRTLE PL
60
KILLEATON ST
ONLY
MONA VALE RD
LINK RD
STURT PL
MONA VALE RD
STANLEY ST
50
NEWHAVEN PL
PORTERS LA
Key:
Give Way Sign
Stop Sign
Traffic Signal
Pedestrian Crossing
Speed Hump
Right-Turn Bay
School Zone
Speed Limit
No Right-Turn
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
EXISTING TRAFFIC CONTROLS
FIGURE 4

- TRAFFIC SIGNALS in Mona Vale Road where it intersects with Link Road, with all turning movements permitted

- a RIGHT-TURN HOLDING BAY in Mona Vale Road southbound turning onto Killeaton Street

- a LEFT-TURN ONLY eastbound restriction in Killeaton Street turning onto Mona Vale Road.

Existing Public Transport Services

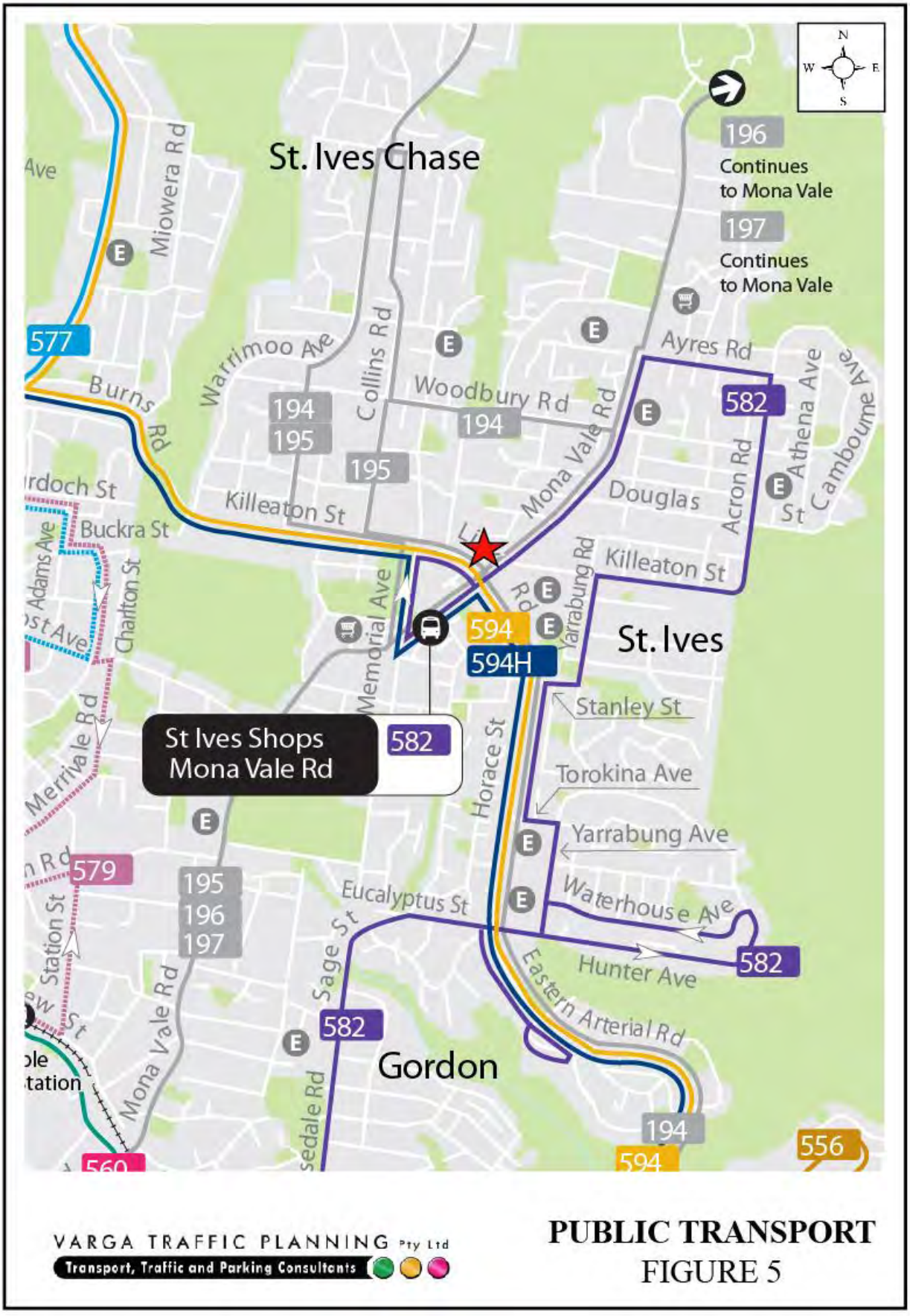
The existing public transport services available in the vicinity of the site are illustrated on Figure 5.

The site is within 400m walking distance of a number of bus stops and bus services into and out of the City and the local area including directly outside the site in Link Road.

The bus services are operated by Forest Coach Lines (190 series routes) and also Shorelink Buses (500 series routes) and comprise a total of 224 weekday services, 75 Saturday services and 67 Sunday/public holiday services.

The site is therefore considered to be well served by public transport services.

Bus Routes and Frequencies							
Route No.	**Route**	**Weekdays**		**Saturday**		**Sunday**	
		IN	**OUT**	**IN**	**OUT**	**IN**	**OUT**
194	St Ives Chase to City	15	16	-	-	-	-
195	St Ives Chase to Gordon	34	29	12	12	12	12
196	Gordon to Mona Vale	14	12	12	13	12	13
197	Macquarie Uni to Mona Vale	30	33	4	4	4	4
582	Gordon to St Ives	10	11	9	9	5	5
594	Hornsby to City	10	10	-	-	-	-
TOTAL		**113**	**111**	**37**	**38**	**33**	**34**



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PUBLIC TRANSPORT
FIGURE 5

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken as part of this traffic study. The traffic surveys were undertaken in Mona Vale Road where it intersects with Link Road and also Killeaton Street on Tuesday 4th December, 2012. The results of the traffic surveys reveal that:

- two-way traffic flows in Mona Vale Road past the site frontage is typically in the order of 3,800-4,000 vehicles per hour (vph) during peak periods

- two-way traffic flows in Link Road are lower, typically in the order of 1,200 vph during peak periods

- two-way traffic flows in Killeaton Street are slightly lower still, typically in the order of 1,100 during peak periods.

Projected Traffic Generation

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

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

Housing for Aged and Disabled Persons
0.1-0.2 peak hour vehicle trips per dwelling

The RMS *Guidelines* also make the following observation in respect of housing for aged and disabled persons:

Definition
Residential accommodation which may take any building form which is to be intended to be used permanently as housing for the accommodation of aged or disabled persons. The hostel may consist of

residencies or a grouping of 2 or more self-contained dwellings and include facilities such as staff accommodation, chapels, medical rooms, recreation facilities, shops and/or therapy rooms.

Factors

These figures at the lower end of the above rates concentrate on *subsidised* developments (often run by religious organisations). Generation rates of *resident fun*ded developments are often greater, as indicated at the higher end of the range.

It is pertinent to note that the ancillary services on the site such as the café and hairdresser are intended for the use of the residents of the RACF, and are not expected to generate any additional traffic activity.

Application of the higher (i.e. privately-operated) traffic generation rate to the 98 RACF beds outlined in the development proposal yields a traffic generation potential of approximately 20 vehicle trips per hour during commuter peak periods.

That projected future level of 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 which is expected to occur as a consequence of the development proposal.

The RMS *Guidelines* nominate the following traffic generation rate which is applicable to the development proposal:

Plant Nurseries

57 peak hour vehicle trips + 0.7 peak hour vehicle trips per $100m^2$ of site area

Application of the above traffic generation rate to the site area of $5,535m^2$ as outlined in the development proposal yields a traffic generation potential of approximately 96 vehicle trips per hour during commuter peak periods.

Accordingly, it is likely that the proposed development will result in a significant *reduction* in the traffic generation potential the site of approximately 76 vph as set out below:

Projected Nett Decrease in Peak Hour Traffic Generation Potential
as a consequence of the development proposal

Projected Future Traffic Generation Potential:	19.6 vehicle trips
Existing Traffic Generation Potential:	-95.7 vehicle trips
NETT DECREASE IN TRAFFIC GENERATION POTENTIAL:	**-76.1 vehicle trips**

That projected *reduction* in traffic activity as a consequence of the development proposal will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The construction activities are expected to be undertaken over a duration of approximately 18 months and will involve between 5 and 20 staff as set out below. Working hours are proposed from 7:00am to 5:00pm Monday to Friday and 8:00am to 12 noon on Saturday. No work is to be carried out on Sundays or Public Holidays.

CONSTRUCTON PROGRAM - DURATION AND STAFFING LEVELS			
Stage	**Work**	**Duration**	**Number of Staff**
1	Demolition	1 month	5 - 8
2	Excavation	3 months	5 - 8
3	Construction	14 months	5 - 20

Demolition & Excavation Stage

All spoil will be loaded wholly within the site with all trucks to enter and exit the site whilst travelling in a forward direction at all times, most likely via Killeaton Street, under the supervision of an authorised traffic controller.

Construction Stage

All deliveries will be unloaded wholly within the site, most likely via Killeaton Street, with the movement of trucks across the footpath during major deliveries to be supervised by an authorised traffic controller.

Works Zone

A *Works Zone* may be required along the northern side of Killeaton Street along a section of the site frontage. The *Works Zone* parking restrictions, if required, would apply during working hours only and are provided specifically for the set down and pick-up of materials and not for the parking of private vehicles associated with the site.

Construction Truck Routes

All heavy vehicles involved in the demolition, excavation and construction of the proposed development would approach and depart the site using a left-in/left-out arrangement via Killeaton Street as shown on Figure 6.

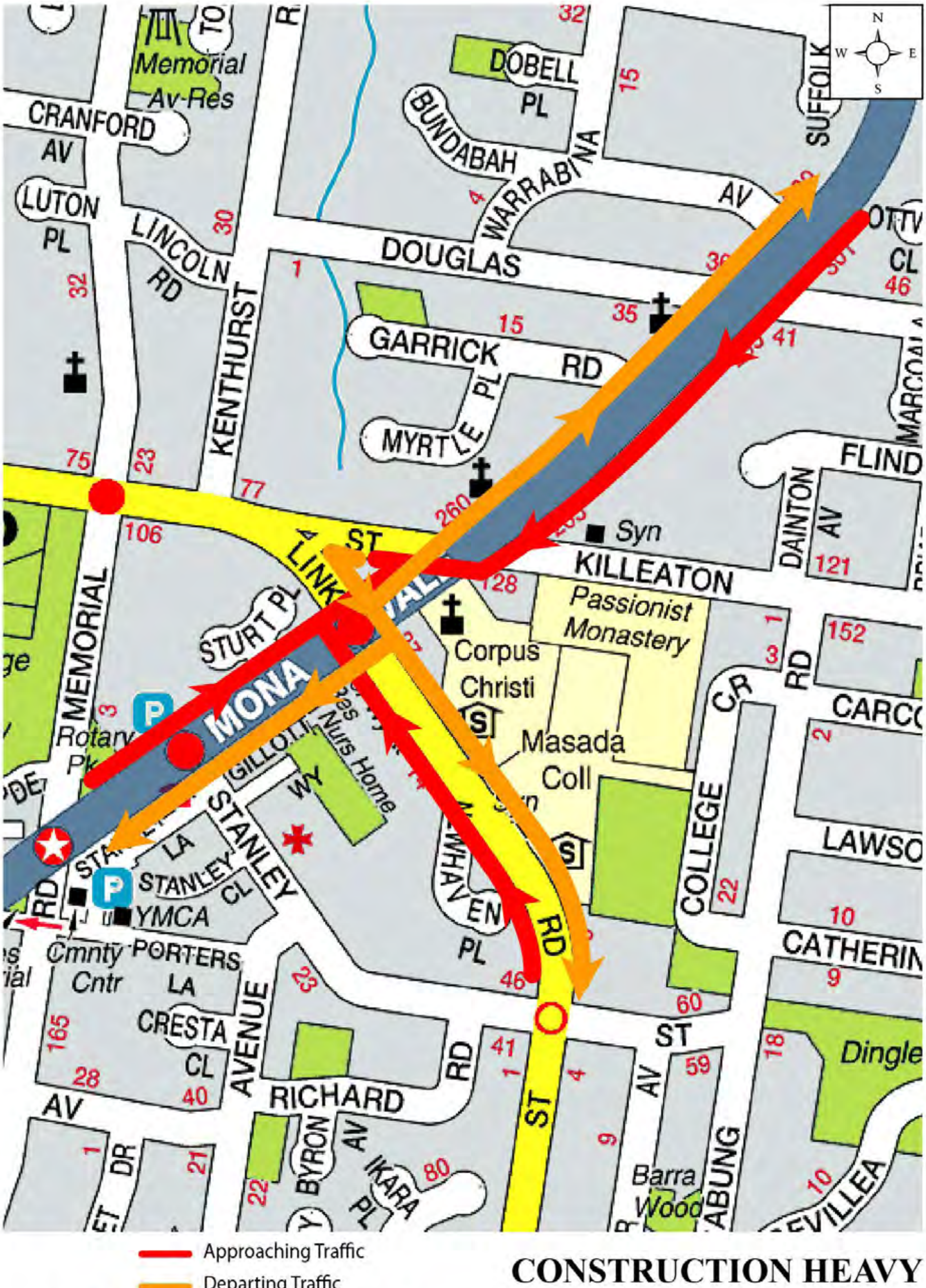
Trucks approaching the site would turn left or right off Mona Vale Road into Killeaton Street and then left into the site. Trucks departing the site would turn left out of the site, left onto Link Road and then either straight onto Link Road or left/right back onto Mona Vale Road.

Authorised Traffic Controller

An authorised traffic controller will be required to supervise the movement of all vehicles across the footpath during the demolition and excavation stages of the project. An authorised traffic controller will also be required during the construction stage of the project to facilitate major deliveries to the site, such as concrete pours.

Tradesmen and Contractor Car Parking

The site manager will ensure that adequate on-site parking is available for employee, tradesperson and construction vehicles, whenever practical. Parking shall be provided in the basement car parking area as soon as practicable.



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CONSTRUCTION HEAVY VEHICLE ROUTE MAP

FIGURE 6

5. 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 7 and comprise:

- NO STOPPING restrictions in the vicinity of the Mona Vale Road and Link Road intersection as well as the Mona Vale Road and Killeaton Street intersection

- NO PARKING restrictions during the AM and PM peak periods on the northern side of Link Road, along the frontage of the site

- NO STOPPING restrictions on the opposite (ie; southern) side of Link Road

- 3 HOUR PARKING restrictions along the Killeaton Street site frontage

- 3 HOUR PARKING restrictions on the opposite (ie. northern) side of Killeaton Street

- generally UNRESTRICTED kerbside parking along the Mona Vale Road site frontage

- BUS ZONES located at regular intervals along both sides of Mona Vale Road, Link Road and also Killeaton Street including directly outside the site.

Off-Street Parking Provisions

The off-street parking requirements applicable to the residential component of the development proposal are specified in *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* in the following terms:

> **Division 2 Residential Care Facilities**
>
> **48 Standards that cannot be used to refuse development consent for residential care facilities**
>
> A consent authority must not refuse consent to a development application made pursuant to this Chapter for the carrying out of development for the purpose of a residential care facility on any of the following grounds:


N
W
E
S
MYRTLE
PL
u/r
KILLEATON
3P 8am-6pm MON-FRI
3P 8am-6pm MON-FRI
LINK
8am-10am, 3pm-7pm
NP
10am-3pm MON-FRI
8am-6pm SAT-SUN
3P
u/r
BZ
BZ
MONA VALE RD
BZ
AM CLEARWAY
2P
STURT PL
2P
2P
MONA VALE RD
1P 60°
RD
ST
Key:
No Stopping
No Parking
Restricted Parking
BZ Bus Zone
u/r Unrestricted Parking
VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants
EXISTING PARKING RESTRICTIONS
FIGURE 7

(d) parking for residents and visitors: if at least the following is provided:

(i) 1 parking space for each 10 beds in the residential care facility (or 1 parking space for each 15 beds if the facility provides care only for persons with dementia), and

(ii) 1 parking space for each 2 persons to be employed in connection with the development and on duty at any one time, and

(iii) 1 parking space suitable for an ambulance.

Application of the above *SEPP* parking requirements to the 68 standard beds, 30 dementia beds and maximum of 28 staff on-site as outlined in the development proposal yields an off-street parking requirement of 23 parking spaces plus an ambulance bay.

The above *SEPP* parking requirements are satisfied by the proposed provision of 29 off-street parking spaces as well as sufficient room underneath the porte cochere for an ambulance.

The geometric design layout of the proposed car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* in respect of parking bay dimensions, ramp gradients and aisle widths.

Loading/Servicing Provisions

The internal loop road and porte-cochere at the front of the site in Killeaton Street has been designed to accommodate the swept turning path requirements of a community bus such as a 22 seat, 7.0m long Toyota Coaster mini-bus, allowing them to enter and exit the site in a forward direction at all times.

The proposed new RACF is expected to be serviced by a variety of light commercial vehicles such as “white vans” and the like, and small to medium sized rigid trucks up to and including 8.8m long MRV garbage trucks. The loading dock is to be located on the ground floor level at the rear of the building. The manoeuvring area has been designed to accommodate the swept turning path requirements of medium 8.8m long MRV rigid trucks, allowing them to enter and exit the site in a forward direction at all times.

Swept turning path diagrams illustrating the manoeuvring requirements of 8.8m long MRV rigid trucks accessing the loading dock and a community bus traversing the porte-cochere are reproduced in the following pages.

In accordance with pre-DA discussions held with the RMS, a Loading Dock Management Plan has been prepared detailing the operational characteristics of the proposed loading dock, as set out below:

Loading Dock Management Plan

- there will be approximately 4 to 6 service vehicle visits to the site each day
- the majority of service vehicles will comprise light commercial vehicles such as "white vans", utilities and the like
- the maximum service vehicle size shall be limited to a medium sized 8.8m long MRV rigid truck
- service vehicles shall not access the loading dock between the hours of 6am-10am on weekdays, and
- all service vehicles shall enter and exit the site travelling in a forward direction at all times.

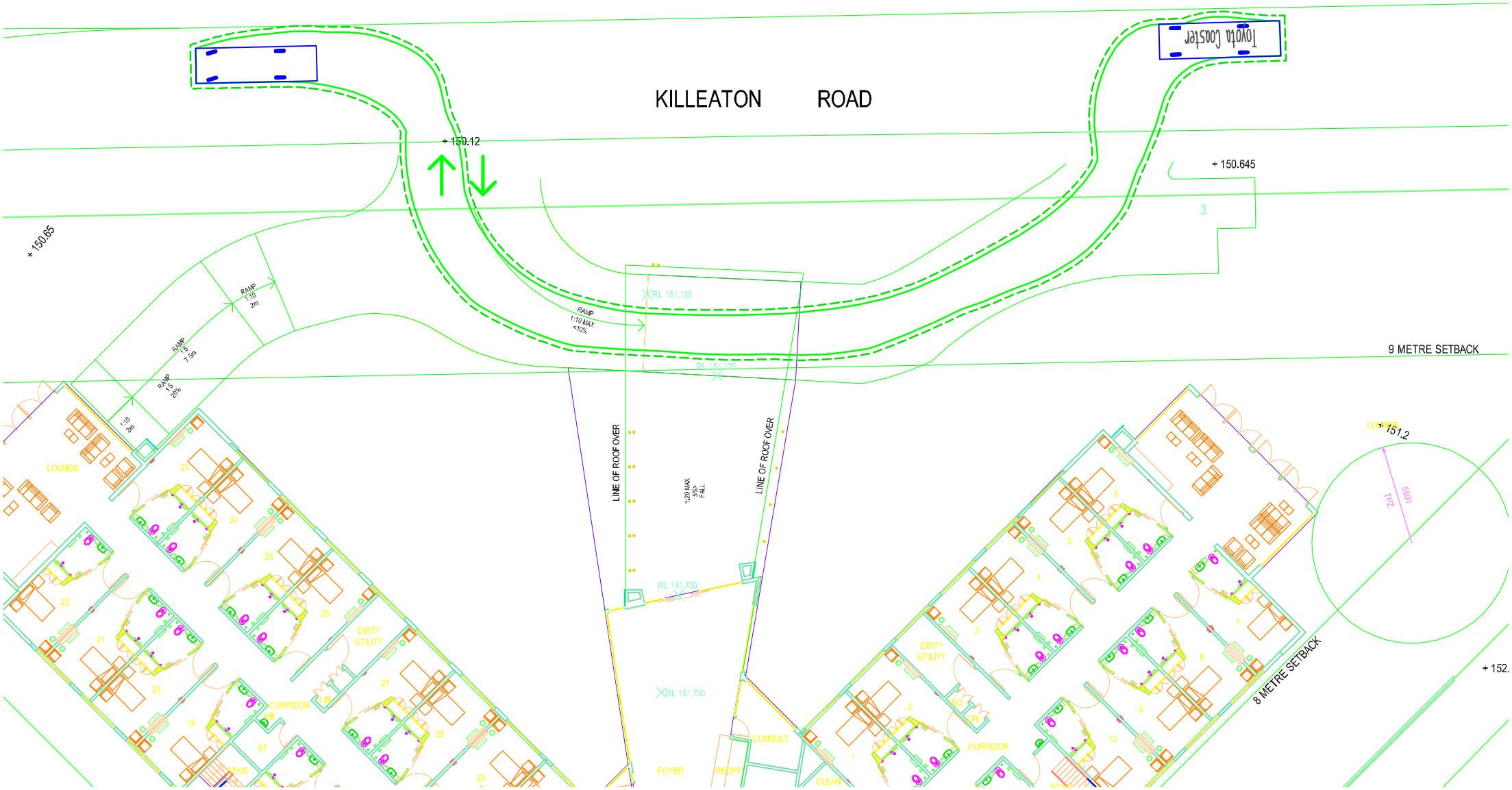
Conclusion

In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in *SEPP (2004),* Council's Parking Code, Australian Standards and by the RMS, and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications.

7.0m Toyota Coaster Swept Turning Path

0 2 4 6 8 10 20 Metres

Scale 1:300 @ A4 Size



8.8m MRV Truck Entry Turning Path

0 2 4 6 8 10 20 Metres

Scale 1:300 @ A4 Size

8.8m MRV Truck Exit Turning Path

0 2 4 6 8 10 20 Metres

Scale 1:300 @ A4 Size

APPENDIX A

COPY OF RMS LETTER

Our Reference: SYD12/01340
Contact: Sofia Romic
Telephone 8849 2914

Transport Roads & Maritime Services

Mr Robert Varga - Director
Varga Traffic Planning Pty Ltd
PO Box 1868,
NEUTRAL BAY 2089

Attention: Robert Varga

RE: PRE-DA MEETING FOR PROPOSED RESIDENTIAL AGED CARE FACILITY CONTAINING 3 LEVELS AND BASEMENT CAR PARKING AT 238 MONA VALE ROAD, ST IVES

Dear Mr Varga,

I refer to the pre-Development Application (DA) meeting that was held with the Roads and Maritime Services (RMS) on the 21 November 2012 for the abovementioned development proposal.

Following the meeting, RMS provides the subsequent points for consideration should a Development Application be lodged to the relevant Consent Authority:

1. RMS is concerned about the proposed location of the loading dock egress driveway on Link Road. RMS believes vehicles departing from this egress driveway may directly cross thru travel lanes on Link Road, to turn right at the signals on Mona Vale Road, which may cause traffic congestion and affect road user safety.

   As a result, a loading dock traffic management plan should be submitted as part of the formal Development Application to determine the type and number of vehicles that will be using the loading dock egress per week and operation should not occur during the morning peak period.

   It is also recommended that should the development proposal be approved by the Consent Authority, that a condition of consent be imposed for use of the loading dock hours to occur only outside the hours of 6am to 10am. This condition is necessary to avoid peak hour traffic congestion.

2. A Traffic Impact Assessment should be undertaken to confirm the existing traffic conditions, and the traffic impacts of the proposed development will have in the vicinity of the area.

3. RMS is also concerned with pedestrian access around the subject site (particularly Killeaton Street) as a result of the proposed development. Pedestrian accessibility should be considered in the application.

4. The subject site is affected by two drainage easements (refer to attachment). The access of these easements must not be comprised by the proposed development, and both easements are to be maintained by the proponent.

5. All works associated with the proposed development are to be at no cost to RMS.

It is emphasised that the comments provided above are informal and of a Pre-DA nature, they are not to be interpreted as binding upon RMS and may change following the formal assessment of submitted development application from the appropriate Consent Authority.

Any further enquiries in relation to this matter can be directed to Sofia Romic by telephone on 8849 2914.

Yours sincerely

Chris Goudanas
Land Use Planning and Assessment Manager
Transport Planning Section, Roads & Maritime Services

28 November 2012