STANBURY
TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

TRAFFIC & PARKING IMPACT ASSESSMENT

PLANNING PROPOSAL
RESIDENTIAL CARE FACILITY
20 – 21 BOOREA AVENUE, LAKEMBA

PREPARED FOR LEBANESE MUSLIM ASSOCIATION
OUR REF: 17-044

JUNE 2017

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1. INTRODUCTION

1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by the Lebanese Muslim Association to prepare a Traffic & Parking Impact Assessment with respect to a Planning Proposal to amend Schedule 1 Additional Permitted Uses of Canterbury Local Environmental Plan 2012 to allow development for the purposes of a Residential Care Facility at 21 Boorea Avenue, Lakemba.

This aim of this assessment is to investigate and report upon the potential traffic and parking consequences of the Proposal and to recommend appropriate ameliorative measures where required. This report provides the following scope of assessment:

- Section 1 provides a summary of the site location, details, existing and surrounding land-uses;
- Section 2 describes the Planning Proposal;
- Section 3 assesses the existing traffic, parking and transport conditions surrounding and servicing the subject development site including a description of the surrounding road network, traffic demands, operational performance and available public transport infrastructure;
- Section 4 estimates the traffic generating ability of the proposed development and assesses the ability or otherwise of the surrounding road network to be capable of accommodating the altered demand in a safe and efficient manner; and
- Section 5 provides an indicative assessment of the required site access arrangements, parking provision, internal circulation and servicing arrangements with reference to relevant Council, Roads & Maritime Services, Australian Standard and State Environmental Planning Policy specifications.

The report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

1.2 Reference Documents

Reference is made to the following documents throughout this report:

- State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (hereafter referred to as the 'Housing for Seniors SEPP');
- The Roads & Maritime Services' *Guide to Traffic Generating Developments*;
- Australian Standard for *Parking Facilities Part 1: Off-Street Car Parking* (AS2890.1:2004);

- Australian Standard for *Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities* (AS2890.2:2002); and

- Australian Standard for *Parking Facilities Part 6: Off-Street Parking for People with Disabilities* (AS2890.6:2009).

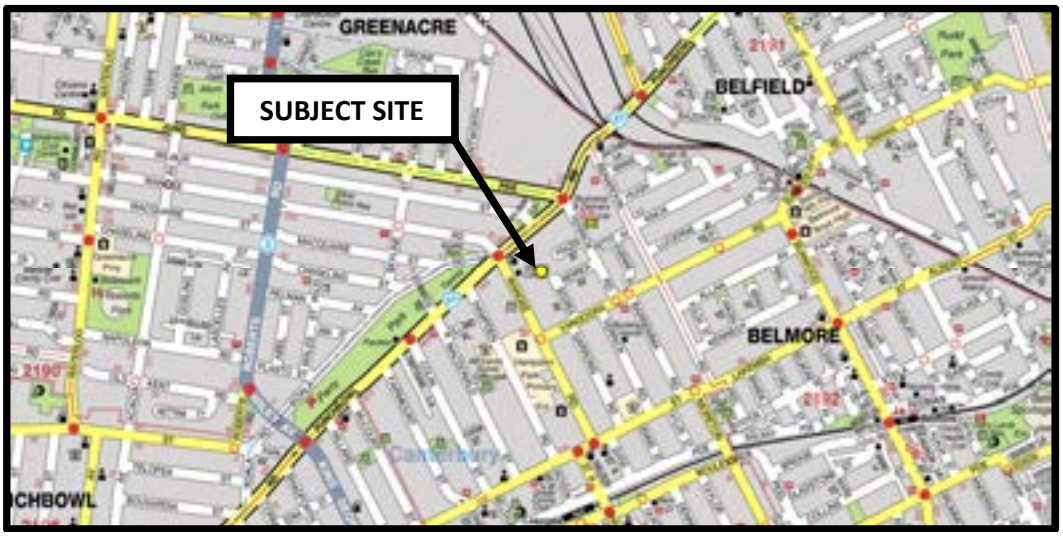
Architectural plans have been prepared by Thomson Adsett should be read in conjunction with this report, reduced copies of a selection of which are included as **Appendix 1** for reference.

1.3 Site Details

1.3.1 Site Location

The subject site is situated to the north-west of the Boorea Avenue terminating cul-de-sac, approximately 30m to the north of its junction with Merrick Avenue, Lakemba. The site location is illustrated below and overleaf within a local and aerial context by **Figure 1** and **Figure 2**, respectively.

FIGURE 1
SITE LOCATION WITHIN A LOCAL CONTEXT



Source: UBD's Australian City Streets – Version 4

FIGURE 2
SITE LOCATION WITHIN AN AERIAL CONTEXT

Source: Google Earth (accessed 09/05/17)

1.3.2 Site Description

The subject site provides a street address of 20 – 21 Boorea Avenue, Lakemba.

The allotments combine to provide an irregularly shaped parcel of land, providing an approximate frontage to Boorea Avenue at its terminating cul-de-sac of 18m.

The site extends to the west and north away from Boorea Avenue some 45m and 65m, respectively, resulting in an approximate site area of 3,200m^2.

1.3.3 Existing Site Use

The subject site currently accommodates the following land-uses:

- A single storey detached residential dwelling is contained within the southern portion of the site, located within No. 20 Boorea Avenue, being serviced by a access driveway connecting with the western portion of the terminating Boorea Avenue cul-de-sac bulb; and

- An industrial development comprising an approximate factory / warehouse floor area of 1,700m^2 and an ancillary office area of 100m^2 is contained within the central and northern portion of the site, located within 21 Boorea Avenue, being serviced by an access driveway connecting with the north-western portion of the terminating Boorea Avenue cul-de-sac bulb.

1.3.3 Surrounding Uses

The site is adjoined by the following land-uses:

- A series of detached residential dwellings occupy land to the south-east fronting Boorea Avenue;
- An industrial development is located to the east providing a primary frontage to Fraser Street;
- A detached dwelling house is located to the west fronting Wangee Road;
- The Mam Ali bin Abi Taleb Mosque is located to the south-west fronting Wangee Road; and
- A series of mixed industrial / commercial buildings are located to the north and north-west on the opposite side of the drainage canal, providing both Wangee Road and Punchbowl Road.

2. PLANNING PROPOSAL

2.1 Built Form

The Planning Proposal involves amending Schedule 1 Additional Permitted Uses of Canterbury Local Environmental Plan 2012 to allow development for the purposes of a Residential Care Facility at 21 Boorea Avenue, Lakemba. The amendment is to facilitate the provision of a Residential Care Facility at 20 – 21 Boorea Avenue accommodating a total of 112 beds, to be split into 40 double bed and 32 single bed accommodation rooms. A total of 28 of the beds are to be dementia specific, whilst the remaining 84 beds are to be standard care beds.

The Facility is proposed to be contained within a single "L" shaped four storey building, approximately centrally located within the subject site.

The development is to be accessed via a single access driveway connecting with the north-western portion of the existing terminating Boorea Avenue cul-de-sac, providing connectivity to the following:

- An at-grade porte cochere; and
- A basement vehicle parking and servicing area, containing 40 passenger vehicle parking spaces, one ambulance parking space and a formalised servicing bay capable of accommodating vehicles up to and including Small Rigid Vehicles (SRVs).

2.2 Operational Details

The facility is proposed to be operated by the Lebanese Muslim Association with the aim of providing a culturally and religiously appropriate facility for elderly Muslim Australians. The facility will cater to Muslim requirements such as appropriate prayer facilities, halal accommodations, and important cultural etiquettes needed when caring for the elderly.

The facility will generate employment for up to 100 people, whereby a maximum of 33 staff will be on-site at any one time. A staffing roster has been formulated which provides for differing shift times for specific employee types (management, nursing staff, kitchen staff etc), a copy of which is attached as **Appendix 2**. The roster indicates the following:

- Less than 10 staff will be on-site between 9:00pm and 7:00am;
- Between 15 and 33 staff will be on-site at any one time between 7:00am and 9:00pm;
- Peak morning staff changeover will occur between 7:00am and 8:00am when 19 staff will commence a shift and 5 staff will finish a shift; and
- Peak afternoon staff changeover will occur between 3:00pm and 4:00pm when 15 staff will commence a shift and 13 staff will finish a shift.

3. EXISTING TRAFFIC CONDITIONS

3.1 Surrounding Road Network

The following provides a description of the local road network surrounding the subject site:

- **Boorea Avenue** performs a local access function to the primarily abutting low and medium density residential development and Yangoora Road to the south, with which it intersects under major / minor priority control with Yangoora Road performing the priority route.

  Boorea Avenue extends to the north from Yangoora Road approximately 180m, prior to forming a terminating cul-de-sac adjacent to the subject site.

  Boorea Avenue provides a 10m wide pavement providing one through lane of traffic in each direction in conjunction with untimed parallel parking along both kerb alignments. The pavement widens adjacent to the site to provide a terminating cul-de-sac bulb with a diameter of 17m.

  Traffic flow within Boorea Avenue is governed by a speed limit of 40km/h.

  Boorea Avenue forms a T-junction with Merrick Avenue, approximately 30m to the south of the subject site, under major / minor priority control with Boorea Avenue performing the priority route.

- **Merrick Avenue** performs local access function to abutting residential development, providing an east-west alignment between Yerrick Road in the east and Boorea Avenue in the west.

  Merrick Avenue provides an 8m wide pavement, providing one through lane of traffic in each direction. Untimed parallel parking is accommodated along both kerb alignments, thereby resulting in two-way traffic flow occurring under curtesy conditions, whereby oncoming vehicles pass in breaks in kerb side parking, assisted by abutting development access driveways.

  Merrick Avenue forms a T-junction with Yerrick Road to the east, operating under major / minor priority control with Yerrick Road performing the priority route.

  Traffic flow within Merrick Avenue is governed by a speed limit of 40km/h.

- **Yangoora Road** performs a collector road function providing an east-west connection between Burwood Road in the east and Wangee Road in the west.

  Yangoora Road provides a 12m wide pavement, providing one through lane of traffic in each direction in conjunction with marked parallel parking lanes (facilitating untimed parking) along both kerb alignments.

  Yangoora Road intersects with Wangee Road to the west of Boorea Avenue under single lane circulating roundabout control. Yangoora Road also

intersects with Yerrick Road, Barremma Road and Neale Street to the east of Boorea Avenue under single lane circulating roundabout control.

Yangoora Road, at its eastern extremity forms a T-junction with Burwood Road, under Give Way control, with Burwood Road performing the priority route.

Traffic flow within Yangoora Road is governed by a sign posted speed limit of 40km/h.

- **Yerrick Road** performs a collector road function providing a north-south connection between Punchbowl Road / Juno Parade, with which it intersects under traffic signal control, and Yangoora Road. Right turn movements from Punchbowl Road to Yerrick Road are prohibited.

  Yerrick Road provides a 13m wide pavement, providing one through lane of traffic in each direction in conjunction with untimed parallel parking along both alignments. Kerb-side parking restrictions apply in the northern end of Yerrick Road to facilitate the provision of two northbound travel lanes on approach to the signalised intersection at Punchbowl Road / Juno Parade.

  Traffic flow within Yerrick Road is governed by a sign posted speed limit of 50km/h, whilst a raised pavement narrowing treatment is provided to calm traffic within Yerrick Road to the north of Merrick Avenue.

- **Wangee Road** performs a collector road function, facilitating a north-south connection between Punchbowl Road in the north and Lakemba Street in the south, intersecting with both under traffic signal control.

  Wangee Road provides a 13m wide pavement providing one through lane of traffic in each direction in conjunction with largely untimed parallel parking along both kerb alignments. Parking restrictions apply at both the northern and southern extremities of the route to facilitate the provision of two lanes on approach to both Punchbowl Road and Lakemba Street.

  Traffic flow within Wangee Road is governed by a sign posted speed limit of 50km/h, however a 40km/h school zone speed limit applies during the prescribed school start and finish periods to a significant portion of the route associated with the abutting Hampton Park Primary School.

3.2 Existing Traffic Volumes

Staff of Stanbury Traffic Planning have undertaken surveys of the following intersections in order to accurately ascertain traffic existing demands within the immediate precinct:

- The junction of Yangoora Road and Boorea Avenue; and

- The junction of Yerrick Road and Merrick Avenue.

Surveys were undertaken between 7:00am – 9:00am and 4:00pm – 6:00pm on the 2nd of May 2017.

Figure 3 below and **Figure 4** overleaf provide a summary of the surveyed commuter peak hour (8:00am – 9:00am and 4:00pm – 5:00pm) traffic flows at the surveyed intersection. Full details are contained within **Appendix 3** for reference.

FIGURE 3
EXISTING WEEKDAY COMMUTER PEAK HOUR TRAFFIC VOLUMES
JUNCTION OF YANGOORA ROAD & BOOREA AVENUE

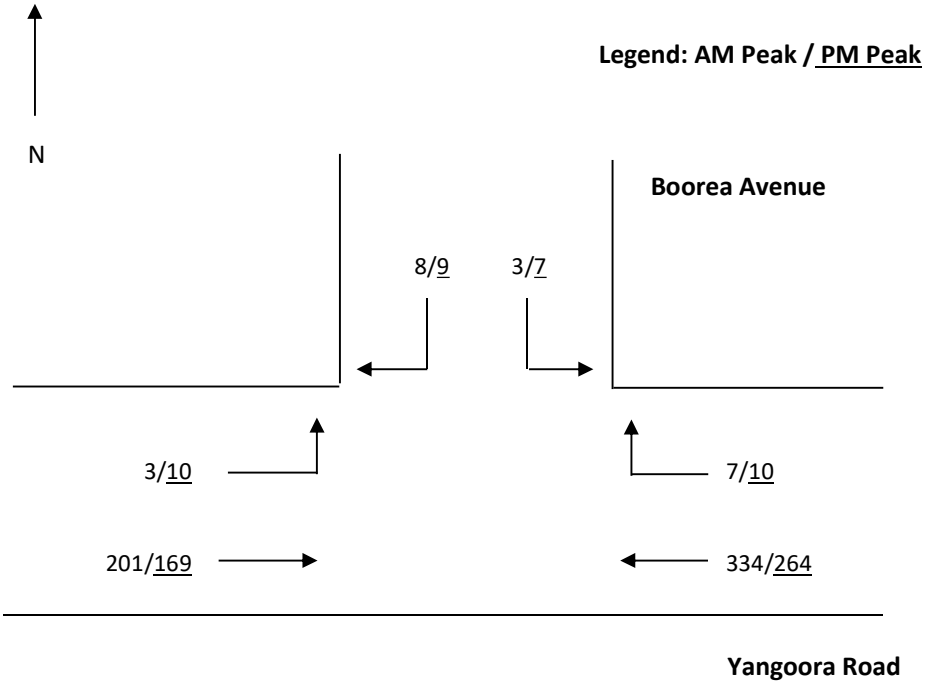
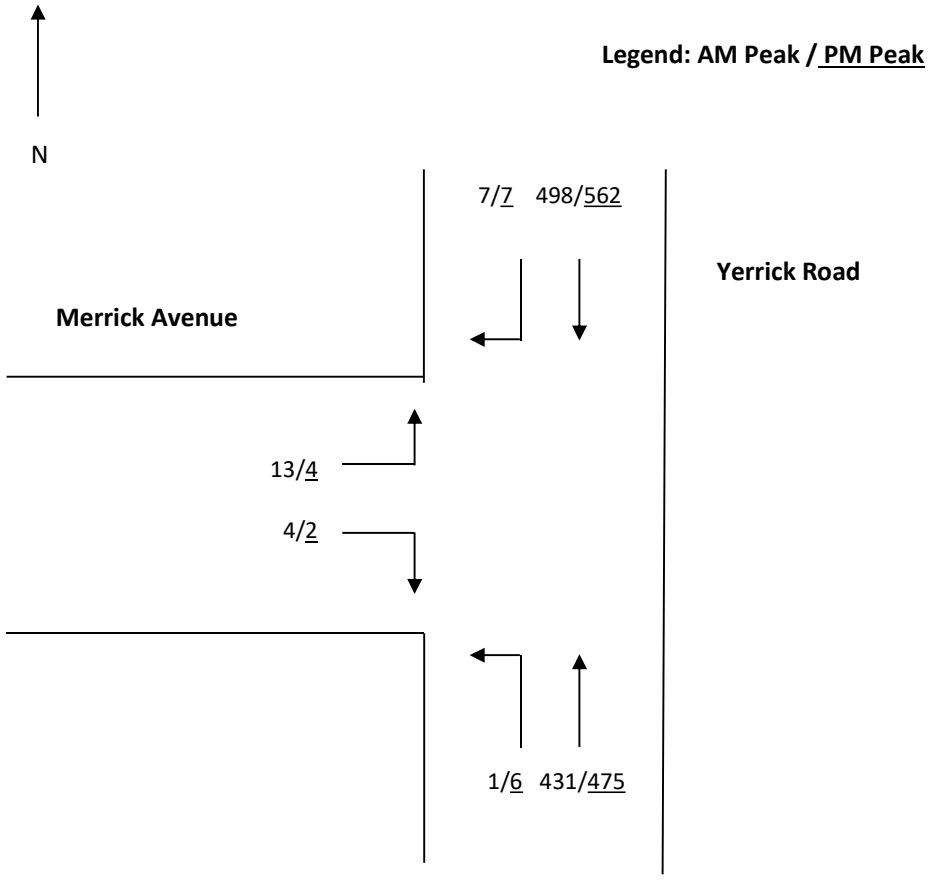


FIGURE 4
EXISTING WEEKDAY COMMUTER PEAK HOUR TRAFFIC VOLUMES
JUNCTION OF YERRICK ROAD & MERRICK AVENUE



Figures 3 and **4** indicate the following:

- Boorea Avenue and Merrick Avenue accommodate two directional traffic demands of less than 50 vehicles per hour during peak periods;
- Yangoora Road accommodates directional traffic demands of between 200 – 350 vehicles per hour during peak periods; and
- Yerrick Road accommodates directional traffic demands of between 400 – 600 vehicles per hour during peak periods.

3.3 Existing Road Network Operation

3.3.1 Local Precinct Access Intersection Operation

The surveyed intersections of Yangoora Road / Boorea Avenue and Yerrick Road / Merrick Avenue have been analysed utilising the SIDRA computer intersection analysis program in order to objectively assess the operation of the nearby public road intersections. SIDRA is a computerised traffic arrangement program which,

when volume and geometrical configurations of an intersection are imputed, provides an objective assessment of the operation efficiency under varying types of control (i.e. signs, signal and roundabouts). Key indicators of SIDRA include level of service where results are placed on a continuum from A to F, with A providing the greatest intersection efficiency and therefore being the most desirable by the Roads and Maritime Services.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Degree of saturation is a useful and professionally accepted measure of intersection performance.

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 1** below (being the RMS NSW method of calculation of Level of Service).

TABLE 1
LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS
PRIORITY CONTROLLED INTERSECTIONS

Level of Service	Average Delay per Vehicle (secs/veh)	Expected Delay
A	Less than 14	Good
B	15 to 28	Acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Near capacity
E	57 to 70	At capacity and requires other control mode
F	> 70	Unsatisfactory and requires other control mode

The existing conditions have been modelled utilising the peak hour traffic volumes presented within **Figures 3** and **4**.

Table 2 overleaf provides a summary of the SIDRA output data whilst more detailed summaries are included as **Appendix 4**.

TABLE 2
SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE

	AM	PM
Yangoora Road & Boorea Avenue		
Delay	8.0	7.4
Degree of Saturation	0.18	0.15
Level of Service	A	A
Yerrick Road & Merrick Avenue		
Delay	11.6	13.1
Degree of Saturation	0.27	0.30
Level of Service	A	A

Table 2 indicates that both the immediate precinct access junctions of Yangoora Road / Boorea Avenue and Yerrick Road / Merrick Avenue provide a good level of service during peak commuter periods.

Whilst not necessarily accounted for in the above SIDRA analysis, turning movements at the surveyed precinct access junctions are assisted by the punctuation of directional traffic flow within both Yangoora Road and Yerrick Road by nearby roundabout and traffic signal intersection control. These intersection controls punctuate directional traffic demands within Yangoora Road and Yerrick Road, providing regular and extended gaps in directional traffic flows, allowing turning movements to occur with acceptable delays.

3.3.2 Regional Road Access Conditions

Access between the local precinct and the adjoining regional road network is provided as follows:

- The signalised intersection of Punchbowl Road, Juno Parade and Yerrick Road;
- The signalised intersection of Punchbowl Road and Wangee Road; and
- The signalised junction of Lakemba Street and Wangee Road.

Whilst Punchbowl Road and Lakemba Street accommodate considerable traffic demands during peak periods commensurate with their higher functional order within the road hierarchy, the signalised nature of the surrounding precinct access junctions provide regular and exclusive signal phases to facilitate access movements to / from Yerrick Road and Wangee Road. In this regard, vehicular queues within both Yerrick Road and Wangee Road on approach to Punchbowl Road have been observed, at times, to extend to the south on approach to and past Merrick Avenue and the Mosque respectively. Precinct egress delays for movements to Punchbowl Road have however been observed to rarely extend longer than one signal cycle.

Precinct ingress movements from the west along Punchbowl Road are assisted by an exclusive right turn lane within the arterial road servicing Wangee Road. Similarly, ingress movements along Punchbowl Road from the east are assisted by an exclusive left turn lane within the State Road servicing Yerrick Road.

3.3.3 Site Access Assessment

Movements between the subject site and Boorea Avenue primarily occur in an unopposed manner, given the proximity of the site frontage to the terminating Boorea Avenue cul-de-sac. The relatively straight alignment of site access / egress movements, combined with the consistent vertical and horizontal alignment of Boorea Avenue to the south, is such that site access / egress occurs in a simple manner, being assisted by good sight distance conditions.

3.4 Public Transport

3.4.1 Heavy Rail

The site is located approximately 900m to the north of Lakemba Railway Station. This station provides access to train services which operate along the T3 (Bankstown) Line. Services along this Line provide regular and efficient connectivity to the remainder of the Sydney metropolitan rail network as follows:

- The T1 (North Shore, Northern & Western) Line via interchanges at Lidcombe, Redfern and the City;
- The T2 (Airport, Inner West & South) Line via interchanges at Liverpool Cabramatta, Lidcombe, Sydenham, Redfern and the City;
- The T4 (Eastern Suburbs & Illawarra) Line via interchanges at Sydenham, Redfern and the City;
- The T5 (Cumberland) Line via interchanges at Campbelltown, Liverpool and Cabramatta; and
- The T7 (Olympic Park) Line via an interchange at Lidcombe.

3.4.2 Buses

Punchbowl Bus Company operates the following bus routes in the vicinity of the subject site:

- Route 450 between Hurstville and Burwood; and
- Route 946 between Hurstville and Bankstown.

Route 450 operates along Yerrick Road with the closest stops being located immediately to the south of Merrick Avenue, less than 200m walking distance from the site.

Route 450 provides a service frequency of 15 minutes during weekday commuter peaks, extending to 30 minutes during other weekday and Saturday periods and 60 minutes on Sundays and public holidays.

Route 946 operates along Punchbowl Road with the closest stops being less than 500m walking distance from the site.

Route 946 provides a service frequency of 30 minutes during weekday commuter peaks, extending to 60 minutes during other weekday, weekend and public holiday periods.

3.4.3 Pedestrians

Pedestrians are provided with the following access and mobility infrastructure within the immediate vicinity of the subject site:

- A footpath is provided along the eastern side of the southern portion of Boorea Avenue on approach to Yangoora Road;
- Footpaths are provided along both sides of Yangoora Road, Yerrick Road, Wangee Road and Punchbowl Road;
- A pedestrian refuge is provided over Yangoora Road to the east of Boorea Avenue;
- A pedestrian refuge is provided over Yerrick Road at Yangoora Road;
- Marked pedestrian crossings are provided over Wangee Road to the north and south of Yangoora Road;
- Signalised pedestrian crossings are provided over the northern, western and southern approaches of the intersection of Punchbowl Road and Wangee Road; and
- Signalised pedestrian crossings are provided over the north, western and southern approaches of the intersection of Punchbowl Road, Juno Parade and Yerrick Road.

3.4.4 Cyclists

Cyclists are provided with the following infrastructure in the vicinity of the site:

- Yangoora Road forms an on-road cycle route between Burwood Road and Wangee Road;
- Wangee Road forms an on-road cycle route between Punchbowl Road and Lakemba Street;
- Burwood Road forms an on-road cycle route between Bruce Street and Punchbowl Road; and
- Lakemba Street forms an on-road cycle route between Hampton Road and Hillard Street.

The above on-road cycle routes provide reasonable connection to regional off-road cycle paths between Strathfield and Mascot (and beyond), largely running along Cooks River.

4. PROJECTED TRAFFIC CONDITIONS

4.1 Traffic Generation

Traffic generation rates for various land-uses have been established through extensive surveys undertaken throughout NSW and published within their *Guide to Traffic Generating Developments*. The following sub-sections provide a summary of the traffic generating potential of the existing and proposed site uses with respect to those rates established by the Roads & Maritime Services.

4.1.1 Existing Site Uses

Section 1.3.3 of this report presented that the subject site currently contains the following:

- A single detached residential dwelling; and
- An industrial development providing approximately 1,700m^2 of warehouse / factory floor space and 100m^2 office floor space.

The Roads & Maritime Services' *Guide to Traffic Generating Developments* provide the following applicable average weekday peak hour traffic generation rates:

- 0.85 peak hour trips per residential dwelling;
- 1 peak hour trip per 100m^2 factory floor space;
- 0.5 peak hour trips per 100m^2 warehouse floor space; and
- 2 peak hour trips per 100m^2 office floor space.

Application of the above traffic generation rates to the existing site infrastructure (assuming there is a 50% / 50% split of the industrial floor space between factory and warehouse use), results in the following existing peak hour traffic generating capability:

(0.85 x 1) + 1(850 / 100) + 0.5(850 / 100) + (2 x 100) = 14.8 (adopt 15) trips

The existing site development is therefore considered to be capable of generating 15 peak hour vehicle movements to and from the subject site.

4.1.2 Planning Proposal

The Roads & Maritime Services' *Guide to Traffic Generating Developments* specifies that 'Housing for Aged and Disabled Persons' provide an average peak hour traffic generation rate of 0.1 – 0.2 trips per dwelling. The *Guide* states that the figures at the lower end of the range are based on research concentrating on subsidised development (often run by religious organisations), whilst generation

rates of resident funded developments are often greater, as indicated at the higher end of the range.

The aged care nature of the Planning Proposal would suggest that residents would not drive or own a vehicle given their limited abilities. Considering this, the abovementioned lower traffic generation rate has been adopted, resulting in a peak hour traffic generation of 11.2 (adopt 12) peak hour vehicle trips, based on 112 beds / dwellings.

This Practice is however not convinced that the number of beds / dwellings is the most accurate way of determining the traffic generating capability of a residential care facility. The traffic generating capability of the development is therefore most accurately determined on the basis of the number of staff provided within parking spaces and the number of visitors expected associated with the residents. Indeed, Section 5.2 of this report presents that these are the critical factors when determining the parking provision provided.

On the basis of the Housing for Seniors SEPP requiring 50% of the maximum number of staff on-site at any one time being provided with a parking space, Section 5.2 of this report presents that 17 employees are to be provided with on-site car parking. Adopting the assumption that 50% of staff drive to and from the site and the peak employee shift changeover periods presented within Section 2.2 of this report, staff of the development are expected to generate the following peak hour vehicle movements:

- 10 ingress and 3 egress movements during the morning peak hour; and

- 8 ingress movements and 7 egress movements during the afternoon peak hour.

Residential visitors could be expected to be generated in accordance with the parking requirements of the Housing for Seniors SEPP, being 1 space per 10 standard care beds and 1 space per 15 dementia specific beds. On this basis, the development could be expected to generate up to 11 visitors on-site at any given time during visitor hours. Assuming an average length of staff of one hour per visitor, this equates to 11 ingress movements and 11 egress movements in any given hourly period.

The peak hour traffic generating capacity of the development is therefore calculated to be as follows, being the sum of the staff and visitor demands:

- 21 ingress movements and 14 egress movements during the morning peak hour; and

- 19 ingress movements and 18 egress movements during the afternoon peak hour.

4.2 Traffic Impacts

The development has been projected to generate up to 37 vehicle movements to and from the subject site during any one hourly period. This represents a traffic generation of approximately one vehicle movement every two minutes or approximately one additional vehicle movement every three minutes during any one hourly period, over and above that being capable of being generated by the existing site uses.

The estimated level of additional traffic is not projected to, in itself, result in any unreasonable impacts on the existing operational performance of the surrounding local road network. The previous assessment contained within this report has revealed that traffic demands within the surrounding local road network are reasonably moderate and accordingly motorists are provided with a good level of service with spare capacity.

Whilst it is acknowledged that traffic demands within the surrounding regional and arterial road network are more considerable, the presence of positive intersection control at and nearby the precinct access points provide motorists with safe and efficient means with which to access and exit the subject precinct.

In consideration of the above, the impact of the development is most likely to be a result of the safety and efficiency with which motorists are capable of entering and exiting the development. The low traffic demands within both Boorea Avenue combined with the good sight distance provisions between the site access location and the frontage road is such that it is envisaged that motorists will be capable of entering and exiting the site in a safe and efficient manner.

4.3 Transport Impacts

The subject site is located within easy walking distance of bus services operating along Yerrick Road and Punchbowl Road. It is accordingly expected that a proportion of the future facility employees and visitors will utilise the surrounding public transport infrastructure to travel to and from the site. The capacity of the existing public transport system is however not envisaged to be measurably affected by any additional demand associated with the development.

5. SITE ACCESS & INTERNAL CIRCULATION

5.1 Vehicular Access

The development is to be accessed via a 6.5m wide combined ingress / egress driveway connecting with terminating Boorea Avenue cul-de-sac. This access driveway is primarily proposed to accommodate passenger vehicles, however it is understood that vehicles up to and including SRVs will also be required to access the site associated with private contractor refuse collection, deliveries, ambulance servicing of the site and the servicing of the site by a mini-bus.

AS2890.1:2004 provides driveway design specifications based on the proposed primary land use, the functional order of the access road and the number of spaces the driveway is to serve. Tables 3.1 and 3.2 of AS2890.1:2004 specify that, at minimum, a Category 1 type driveway is required, providing a combined ingress / egress driveway width of between 3m and 5.5m based on the local (non-arterial) functional order of Boorea Avenue, the aged care facility use proposed and the passenger vehicle parking provision within the parking area of 40 spaces.

Further, AS2890.2:2002 specifies a minimum driveway width requirement of 6m where vehicles up to and including SRVs are to be accommodated.

The proposed combined ingress / egress driveway width of 6.5m therefore exceeds the minimum AS2890.1-2004 and AS2890.2:2002 specifications and accordingly is considered to be satisfactory.

Swept path plans have been prepared in order to demonstrate the ability of passenger vehicles and SRVs to enter and exit the site, copies of which are included as **Appendix 5**.

The safety and efficiency of access / egress movements are also proposed to be assisted by the provision of a relatively level (less than 1:20) grade within the first 6m inside the property boundary. It is further noted that sight distance between exiting vehicles and Boorea Avenue is not proposed to be impeded by any obstructions along the site frontage to the east of the driveway, suitably according with the requirements of Figure 3.3 of AS2890.1:2004 and Figure 3.4 of AS2890.2:2002.

It has previously been presented that Boorea Avenue provides a reasonably consistent vertical and horizontal alignment within the vicinity of the subject site, resulting in good sight distance between the frontage road and the proposed site access driveway.

5.2 Parking Provision

The residential care facility is proposed to provide an off-street parking area containing a total of 35 parking spaces and a separate ambulance parking space.

Clause 48 of the Housing for Seniors SEPP stipulates the following off-street parking requirements for the aged 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:

(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.

In relation to (i) above, based on the provision of 84 standard and 28 dementia specific beds, the following resident / visitor parking provision is required:

(84 / 10) + (28 / 15) = 10.3 (adopt 11) spaces

In relation to (ii) above, a total of 17 staff parking spaces are required on the basis of a maximum of 33 employees being on-site at any one time.

It is therefore required that the development provide a total of 28 off-street passenger vehicle parking spaces in addition to one parking space suitable for an ambulance.

Adequate off-street parking in relation to the provisions of the SEPP is therefore considered to be proposed.

5.3 Internal Circulation and Manoeuvrability

5.3.1 Passenger Vehicles

Connectivity between the access driveway and the basement passenger vehicle parking area is proposed via an access ramp running along the southern site boundary. This basement passenger vehicle parking area is proposed to comprise a series of 90 degree angled parking rows serviced by adjoining circulation aisles. The basement passenger vehicle parking area (and access ramp) has been designed to accord with the requirements of AS2890.1:2004 and AS2890.6:2009, providing the following minimum characteristics:

- Staff parking space width = 2.4m;
- Standard visitor parking space width = 2.6m;

- Resident and disabled visitor parking space width = 2.4m (in conjunction with an adjoining shared area width of 2.4m);
- Parking space length = 5.4m;
- Vehicular parking aisle width = 5.8m;
- Headroom =2.2m (2.5m above disabled parking spaces);
- Aisle extension past the end parking bay = 1m;
- Two way roadway width = 6.2m;
- One-way roadway = 3.5m;
- Maximum ramp grade = 1:6.5;
- Maximum change in grade = 1:12 over 2m; and
- Maximum grade within 6m of property boundary = 1:20.

Safe and efficient internal manoeuvring and parking space accessibility is anticipated to result, taking into consideration the above compliance with the relevant AS2890.1:2004 and AS2890.6:2009 specifications.

5.3.2 Service Vehicles

It has previously been presented that the proposal will be required to accommodate vehicles up to and including SRVs will also be required to access the site associated with private contractor refuse collection, deliveries, ambulance servicing of the site and the servicing of the site by a mini-bus. Refuse collection and deliveries are proposed to be accommodated within a formalised servicing bay located within the basement area. Ambulance servicing of the site is proposed to be contained within the formalised ambulance parking space within the basement. Mini-bus servicing of the site is proposed to be contained within the Porte cochere (the mini bus is not proposed to be stored on-site when not in use).

The internal circulation arrangements associated with heavy vehicle servicing has been designed to be compliant with the relevant AS2890.2:2002 specifications, providing the following minimum provisions:

- Two way roadway width = 6.2m;
- One-way roadway = 3.5m;
- Maximum ramp grade = 1:6.5;
- Maximum grade within 6m of property boundary = 1:20; and

- Minimum clearance = 3.5m.

In order to demonstrate the internal SRV manoeuvrability throughout the development, this Practice has prepared a number of swept path plans which are included as **Appendix 5**. The turning paths provided on the plans have been generated using Autoturn software and derived from SRV vehicle specifications contained within AS2890.2:2002. The swept path plans illustrate that SRVs are able to manoeuvre throughout the development in a safe and efficient manner.

6. CONCLUSION

This report assesses the potential traffic and parking implications associated with a Planning Proposal to amend Schedule 1 Additional Permitted Uses of Canterbury Local Environmental Plan 2012 to allow development for the purposes of a Residential Care Facility at 21 Boorea Avenue, Lakemba. The amendment is to facilitate the provision of a Residential Care Facility at 20 – 21 Boorea Avenue accommodating a total of 112 beds. Based on this assessment, the following conclusions are now made:

- The surrounding road network operates with a reasonable level of service during peak periods and is capable of accommodating additional demand;

- The Planning Proposal has been projected to generate up to 37 peak hour vehicle trips to and from the subject site, being 22 trips over and above that capable of being generated by existing site uses;

- It is considered that the adjoining road network is capable of accommodating the traffic projected to be generated by the subject development;

- The proposed site access arrangements are projected to result in motorists being capable of entering and exiting the subject site in a safe and efficient manner;

- The proposed off-street vehicular parking provision complies with the requirements specified by the Housing for Seniors SEPP; and

- The internal vehicle circulation arrangements are capable of providing for safe and efficient internal manoeuvring and servicing.

It is considered, based on the contents of this report and the conclusions contained herein, there are no traffic or parking related issues that should prevent approval of Proposal.