Amélie Housing
Building hope through housing

St Vincent de Paul Society
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APPENDIX H

TRAFFIC & PARKING IMPACT ASSESSMENT

gtk consulting
traffic management
and car parking solutions

Traffic and Car Parking Assessment
Proposed Affordable Housing Development
401 – 407 Olive Street and 18 – 22 Richs Lane
South Albury

July 2016

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Table of Contents

1 INTRODUCTION

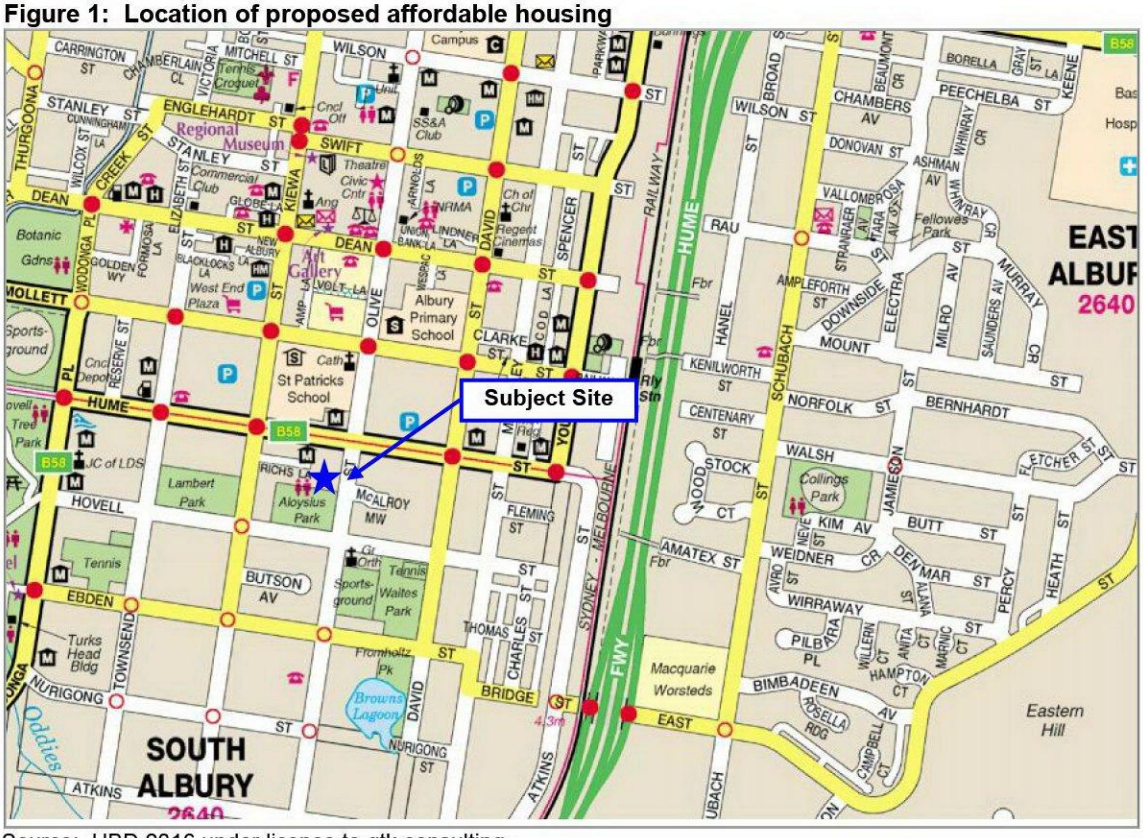
gtk consulting pty ltd has been engaged by St Vincent de Paul Society to prepare a traffic and car parking assessment report to accompany a Development Application to Albury City Council. The proposal is to establish an affordable housing development at 401 – 407 Olive Street and 18 – 22 Richs Lane, South Albury (refer **Figure 1**).

This report will:

- Describe the site and surrounding land use.
- Describe the road network serving the site and the prevailing traffic conditions.
- Describe the proposed development.
- Assess the proposed car parking.
- Assess the potential traffic implications of the development.
- Assess the adequacy of the proposed vehicle access and internal circulation arrangements.

This assessment was undertaken by Garry Kennedy, Director gtk consulting pty ltd. Garry has extensive (42 years) experience in Traffic Engineering, Road Safety and Car Parking. Garry chaired a Local Traffic Committee for seventeen years at a major metropolitan Council. In 2006, Garry established gtk consulting and since that time has undertaken many traffic and car parking assessments and studies for Local and State Government Agencies and private developers.

Figure 1: Location of proposed affordable housing



Source: UBD 2016 under licence to gtk consulting

2 THE SITE AND SURROUNDING LAND USE

The site has dual zoning of *R1 General Residential* and *B4 Mixed Use* and is located on the western side of Olive Street between Hovell and Hume Streets, Albury. South of the site is Aloysius Park playing fields and to the west is light industrial. The areas to the north and east of the site comprise low density detached medium density residential dwellings (**Figure 2**). The site lies approximately 680 metres from Albury CBD, i.e. 10 - 12 minutes walking distance.

Figure 2: Aerial view of site

Source: NSW Land and Property Information 2016

3 THE EXISTING ROAD NETWORK

The road network servicing the site comprises:

- *Wodonga Place* - a State Arterial Road and local transport corridor providing a service link between areas north and south of Albury.
- *Hume Street* - a State Arterial Road and local transport corridor providing a service link between areas east and west of Albury.
- *Hovell Street* - a Local Road servicing residential and recreational areas to the east and west of the site.
- *Olive Street* - a Local Road servicing the residential areas to the north and south of the site also provides access to Albury CBD.

The physical features of the streets servicing the site are described in **Table 1**:

Table 1: Description of streets surrounding the site

Street Name	Street Configuration
Wodonga Place	Divided four-six lane/two-way
Hume Street	Divided four-six lane/two-way
Hovell Street	Undivided two lane/two-way
Olive Street	Undivided two lane/two-way

Source: gtk consulting 2016

4 THE PROPOSAL

The proposal seeks to establish:

- An affordable housing complex comprising 38 dwellings (23 single bedroom, 14 two bedroom and 1 three bedroom).
- 33 car parking spaces (23 resident and 10 visitor spaces).
- Community centre (tenants only).

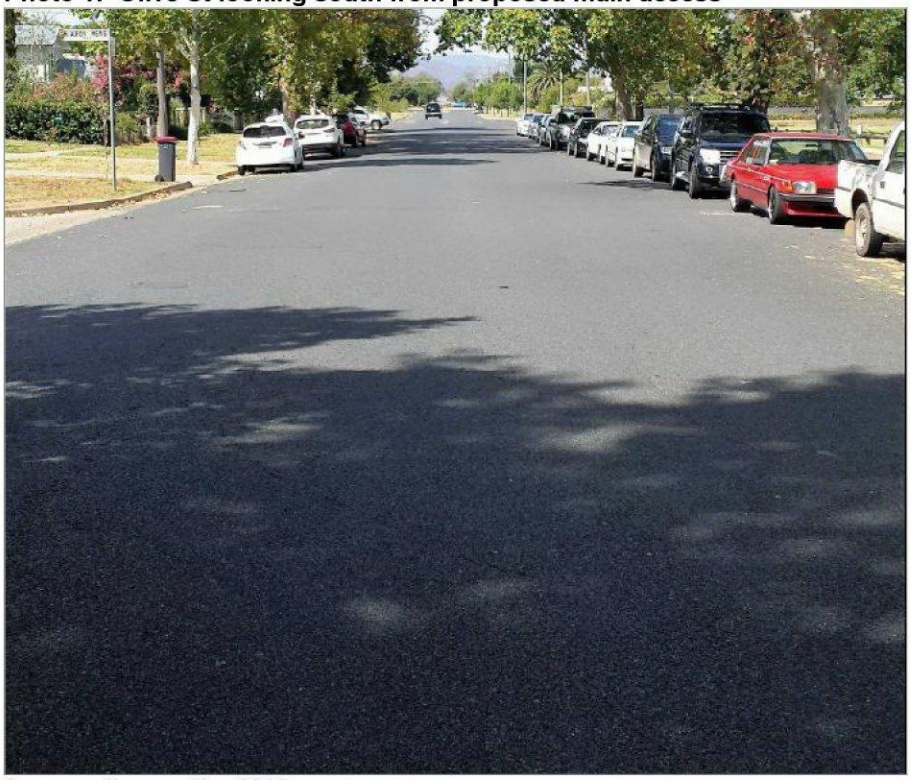
The main vehicle access to the site will be via Olive Street (**Photos 1** and **2**) and a secondary access is via Richs Lane (**Photos 3** and **4**). Olive Street is 13.0 metres wide between kerbs and Richs Lane is 6.1 metres wide. The proposed access driveway on Olive Street is 10.0 metres wide with ingress and egress driveways separated by a 0.5 metres wide median. A separate service vehicle access 3.5 metres wide is provided on the southern side of the vehicle ingress driveway. All new car parking spaces will be constructed in accordance with AS 2890.1:2004 *Parking facilities – Off-street car parking*.

Waste collection will be undertaken by a private contractor using a medium rigid vehicle (MRV) and will collect household waste from the bin area located in the south-eastern corner of the site.

Internal access roads are widened on curves and at intersections to permit a B99 and B85 vehicle to pass in accordance with Section 2.5.2 of AS 2890.1:2004 and for access through the site by a MRV.

Details of the proposed site arrangements are provided on the architectural site plan prepared by Curtin Architects Pty Ltd (refer **Appendix 1**).

Photo 1: Olive St looking south from proposed main access



Source: gtk consulting 2016

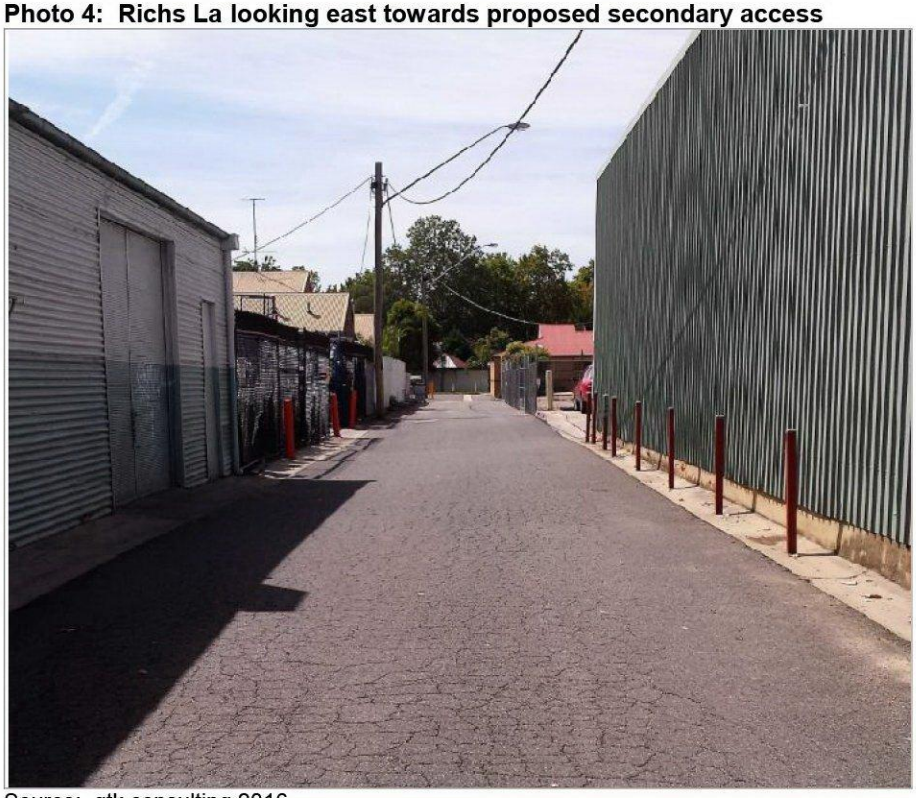
Photo 2: Olive St looking north from proposed main access

Source: gtk consulting 2016

Photo 3: Richs La looking west from proposed secondary access

Source: gtk consulting 2016

Photo 4: Richs La looking east towards proposed secondary access



Source: gtk consulting 2016

5 PARKING

The application proposes the construction of an affordable housing complex comprising 38 dwellings (23 single bedroom, 14 two bedroom and 1 three bedroom).

State Environmental Planning Policy (*Affordable Rental Housing*) 2009 (the SEPP) sets out the specific car parking requirements for rental housing. Regulation 14 (2) of the SEPP sets out standards that cannot be used to refuse development consent for affordable rental housing facilities, i.e.:

"(a) if:

(i) in the case of a development application made by a social housing provider for development on land in an accessible area - at least 0.4 parking spaces are provided for each dwelling containing 1 bedroom, 0.5 parking spaces for each dwelling containing 2 bedrooms and at least 1 parking space for each dwelling containing 3 or more bedrooms, or

(ii) in any other case - at least 0.5 parking spaces are provided for each dwelling containing 1 bedroom, at least 1 parking space for each dwelling containing 2 bedrooms and at least 1.5 parking spaces are provided for each dwelling containing 3 or more bedrooms,"

The St Vincent de Paul Society is a recognised social housing provider and, therefore, the above parking requirements apply to this development proposal.

Table 2 shows the car parking rates for affordable housing facilities as set by the SEPP and uses these to calculate the parking requirements for the proposed development.

Table 2: Car parking requirements for development proposal

Activity	SEPP Parking Rates	No. dwellings	Total Spaces Required
1 bedroom dwelling	0.4 spaces per dwelling	23	**9.2 spaces**
2 bedroom dwelling	0.5 space per dwelling	14	**7.0 spaces**
3 bedroom dwelling	1.0 spaces per dwelling	1	**1.0 spaces**
		TOTAL	**17 SPACES**

Source: State Environmental Planning Policy (*Affordable Rental Housing*) 2009

The SEPP does not set out requirements for visitor car parking, however, the proposal will provide 10 car parking spaces for visitor parking.

The number of car parking spaces proposed for the development (i.e. 33 spaces), therefore, exceeds the requirements of the SEPP.

All resident car parking spaces will be a minimum 2.4 metres wide, 5.4 metres long and, visitor spaces are a minimum 2.5 metres wide. Where spaces are located adjacent to a wall or object higher than 0.15 metres, the space is widened by 0.3 metres in accordance with AS 2890.1:2004.

6 PROPOSED TRAFFIC

Roads and Maritime Services provide average traffic generation rates for a range of different land uses within their *Guide to Traffic Generating Developments*. The rates are based on extensive surveys undertaken throughout the Sydney Metropolitan Area. While the guideline does not specify traffic generation rates for affordable housing facilities, it does, however, provide a rate for medium density developments (which is considered to be a similar activity, but slightly higher trip generator, to that of an affordable housing facility). The peak hour vehicle trips (phvt) generated by medium density developments are 0.4 – 0.5 phvt per dwelling.

The proposal comprises 38 dwellings and, therefore, the phvt generated by the proposed development is:

phvt = 38 x 0.4 – 0.5 = **15 - 19 phvt**

In addition the site currently generates trips from the existing residential and community services activities, i.e. Quamby House, Orana Allanbie, dwellings at Nos. 405 and 407 Olive Street and the buildings at 18 - 22 Richs Lane. These existing trips will be trips removed from the road network with the construction of the proposed affordable housing facility.

Traffic volumes of the magnitude generated by the proposed affordable housing facility:

- Are low and will have minimal impact on existing traffic flows, intersection capacities or neighbourhood amenity.
- Will be readily able to enter and leave the site without delay.
- Will not present any unsatisfactory traffic safety or capacity issues on the surrounding road network.

7 ACCESS AND INTERNAL CIRCULATION

7.1 ACCESS

The minimum requirement in assessing the safety of the proposed access driveways onto Olive Street is the need to provide sufficient sight distance for drivers to observe a possible conflict with other vehicles and allow for sufficient time to take evasive action should it be required.

An accepted approach to calculating the provision of safe and efficient access to and from the development is to ensure that there is sufficient sight distance to enable non-priority traffic (i.e. traffic turning into and out of the site) to carry out their turning movements without unduly interfering with mainstream traffic flow.

AS 2890.1:2004 *Parking facilities – Off-street car parking* sets out the sight distance requirements for access driveways. The speed zone on residential streets is 50 km/h and sight distance from the location of the access driveway is set out in **Table 3**:

Table 3: Sight distance requirements proposed affordable housing facility

Access	Sight Distance Required	Sight Distance Available
Olive Street	69 metres (north)	To intersection Hume St
	69 metres (south)	>100 metres

Source: AS 2890.1:2004 (5 sec gap)

The sight distance in both directions from the proposed driveway accesses, therefore, exceeds the requirements of AS 2890.1:2004. Olive Street, however, experiences high parking demand from CBD/Town Centre employees. In this regard, it is recommended that No Stopping restrictions be placed on the southern side of the proposed service vehicle access for a distance of 20 metres.

Richs Lane terminates at the ingress/egress to the site and, therefore, there are no through traffic movements and/or potential conflicts at this location. Notwithstanding, a splay corner has been provided to improve egress for a MRV and sight lines for entering and exiting vehicles.

7.2 Internal Circulation

Within the development, one-way roads will have a minimum width of 4.0 metres and two-way roads have a minimum width of 5.5 metres. Roads are widened on curves and at intersections to permit a B99 and B85 vehicle to pass in accordance with Section 2.5.2 of AS 2890.1:2004.

The circulation, manoeuvring and parking arrangements comply with the requirements of AS 2890.1:2004, AS 2890.2-2002 for a MRV and RMS *Guide to Traffic Generating Developments*.

7.3 Service Vehicles

Waste collection vehicles will access the site via Olive Street to a bin area at the south-western corner of the site. Vehicles will then travel through the site and exit onto Richs Lane.

All internal roads will be designed to accommodate a medium rigid vehicle for waste collection and removal vans.

8 CONCLUSION

The proposed affordable housing facility at 401 – 407 Olive Street and 18 – 22 Richs Lane, South Albury, has been assessed to determine the likely traffic impacts and compliance with State Environmental Planning Policy (*Affordable Rental Housing*) 2009, the relevant Australian Standards and RMS *Guide to Traffic Generating Developments*.

Assessment of the proposal indicates that:

- The proposed on-site car parking provision exceeds the requirements of State Environmental Planning Policy (*Affordable Rental Housing*) 2009.
- The proposed internal road layout will meet the requirements of AS 2890.1:2004, AS 2890.2-2002 and RMS *Guide to Traffic Generating Developments*.
- The traffic generated by the proposed affordable housing facility will not present any unsatisfactory traffic safety or capacity issues on the existing road network.
- A No Stopping zone 20 metres long, extending from the proposed service vehicle access along Olive Street in a southerly direction, will assist drivers exiting the site during times of high parking demand.

This report concludes that the traffic, road safety and car parking elements of the proposed affordable housing facility are in accordance with State Environmental Planning Policy (*Affordable Rental Housing*) 2009 and comply with the relevant standards and guidelines for such developments.

Garry Kennedy

Director

Figure A1.1: Site plan

Source: Curtin Architects Pty Limited

gtk consulting
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Response to Council Request for Further Information

Proposed Affordable Housing Development

401 – 407 Olive Street and 18 – 22 Richs Lane

South Albury

April 2017

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Table of Contents

1 INTRODUCTION

gtk consulting has been engaged by St Vincent de Paul Society to respond to Council's letter dated 29 March 2017 requesting further information on the proposal to establish an affordable housing development at 401 – 407 Olive Street and 18 – 22 Richs Lane, South Albury. A Traffic and Car Parking Assessment report dated July 2016 was submitted with the development application and placed on exhibition with the development application documents.

This response provides:

- An extract of the Traffic and Car Parking issues raised by Council.
- A response to each of the Traffic and Car Parking issues.

This response was prepared by Garry Kennedy, Director gtk consulting pty ltd. Garry has extensive (43 years) experience in Traffic Engineering, Road Safety and Car Parking. Garry chaired a Local Traffic Committee for seventeen years at a major metropolitan Council. In 2006 Garry established gtk consulting and since that time has undertaken many Traffic and Car Parking assessments and studies for Local and State Government Agencies and private developers. Garry provides expert evidence in the NSW Land and Environment Court, Local Magistrates Court and District Court. Garry's court experience covers a wide range of traffic activities, such as, the suitability of development proposals, traffic accident liabilities, heavy vehicle prosecutions, parking offences and many other offences under the Local Government Act and the Roads Act.

It should be noted that only the Traffic and Car Parking elements have been extracted from Council's letter. The submission extracts which appear in this report have been directly copied from the document provided by Albury City Council.

2 COUNCIL ISSUES AND RESPONSES

"2 Car parking:

Concerns have been raised by Council and the neighbouring land owners regarding existing parking conflicts in the area, arising from all day commuter parking in the streets surrounding the site during the day, and that this development will exacerbate the issue. The site is located in close proximity to the Albury CBD in an area of mixed character where on-street car parking is relied upon to offset historical shortfalls in car parking in the CBD and CBD fringe retail and commercial areas. This development results in the loss of on-street parking in Olive Street by the provision of multiple driveways, the impact of which has not been addressed in the Traffic and Car Parking Assessment report lodged with the DA. It is further noted that the Traffic and Car Parking Assessment report recommends a "No Stopping" restriction on Olive Street for 20m south on the service vehicle entry to provide adequate sight distance, further reducing on-street parking availability.

Albury has limited public transport and, as a result, higher vehicle ownership rates and reliance on private vehicle transport is noted across all socio-economic groups (the 2011 census indicates that 84.6% of Albury households own at least one car). The cumulative impact of the proposed car parking provision on site (proposing less than one car parking space per dwelling), the limited visitor parking provided and the reduction of on-street parking caused by the access driveways and recommendations of the traffic consultant is likely to result in negative impacts to the surrounding street network. These matters have not been adequately addressed in the context of this site and the existing conditions, notwithstanding the numeric compliance of the proposed car parking provision with the SEPP requirements."

Response:

The traffic consultant spoke to residents of Olive Street during the course of his on-site inspection and road network appraisal. These residents advised that the vehicles parked in Olive Street belonged to employees of businesses in the Albury CBD. As stated within the Traffic and Car Parking Assessment report, the location is "*approximately 680 metres from Albury CBD, i.e. 10 - 12 minutes walking distance.*" During the street appraisal it was noted that the employee parking did not extend much further south along Olive Street from the proposed site.

The proposal for 3 dwellings within the development site to have separate access to Olive Street results in no net loss of on-street parking as there are currently 3 residential lots, (Lots B,D,E and F of DP 354294) which have rightful vehicle access to Olive Street (2 of which have existing driveways).

The proposed driveway access to the development is 10.0 metres wide at the kerb and gutter. The access avoids a street tree on the southern side of the driveway and has been checked using the AUTOTURN swept path modelling program (**Appendix 1**) for access by a standard 8.8 metre long medium rigid vehicle (MRV). The standard MRV is slightly longer than a typical waste vehicle.

The Traffic and Car Parking Assessment report recommends the provision of No Stopping restrictions "*on the southern side of the proposed service vehicle access for a distance of 20 metres*". This recommendation will bring the total length of reduced on-street parking to 30 metres (10.0 metres main access driveway + 20.0 metres for No Stopping). In accordance with AS 2890.5 *On-Street Parking* the number of CBD employee parking spaces that will need to be relocated further to the south is only 5 spaces.

It should be noted that the matter of implementing No Stopping restrictions is a matter for Council, as such regulatory parking controls are required to be referred to the Albury City Local Traffic Committee prior to Council determination. Should Council determine not to implement the recommended No Stopping restrictions then only 2 spaces will need to be relocated further to the south.

Council's implication that there is insufficient car parking for the proposed development which "*is likely to result in negative impacts to the surrounding street network*" is unfounded. In accordance with State Environmental Planning Policy (*Affordable Rental Housing*) 2009 the proposed development has 5 resident spaces and 5 visitor spaces in excess of its requirements. In the terms of car parking provision, Regulation 14 (2) of the SEPP sets out standards t**hat cannot be used to refuse development consent for affordable rental housing facilities**, i.e.:

"(a) if:

(i) in the case of a development application made by a social housing provider for development on land in an accessible area - at least 0.4 parking spaces are provided for each dwelling containing 1 bedroom, 0.5 parking spaces for each dwelling containing 2 bedrooms and at least 1 parking space for each dwelling containing 3 or more bedrooms."

"4 Traffic movements and road widths:

The narrow internal road widths (4.0m for one way sections and 5.5m for 2 way sections) are likely to create conflicts as a result of the combination of 2 way traffic through the site for resident, visitor and community centre staff vehicles, garbage truck travel path from Olive Street to Richs Lane and access and manoeuvring for resident vehicles to open car parking and garages.

Richs Lane does not have sufficient width to provide 2 way access to the site and the traffic flows need to be reconsidered in this respect. Both the SEE and the Traffic and Car Parking Assessment state that Richs Lane has a width of 6.1m, however the lane has a trafficable width closer to 5m given the existing constraints from electricity supply poles, bollards, buildings, drains and the like.

The Traffic and Car Parking Assessment report states that Richs Lane terminates at the ingress/egress to the site and, therefore, there are no through traffic movements and/or potential conflicts at this location. It is noted, however, that Richs Lane services a number of commercial sites in the 84 Mixed Use zone, providing access to loading and unloading areas, secondary vehicular access to sites and direct access to car parking areas. The width is not suitable for two-way traffic of this magnitude, particularly as the exit onto Kiewa Street has limited visibility due to the proximity of the existing buildings to the boundary of the lane and the Kiewa Street footpath.

No assessment of the existing traffic volumes in Richs Lane or the capacity of the lane to cater for the proposed 2 way traffic to this development, in addition to service vehicle egress, has been provided.

It is also noted that the path of travel for the garbage truck through the site has not been adequately addressed in either the SEE or the Traffic and Car Parking Assessment report in regard to pedestrian and light vehicle safety within the site."

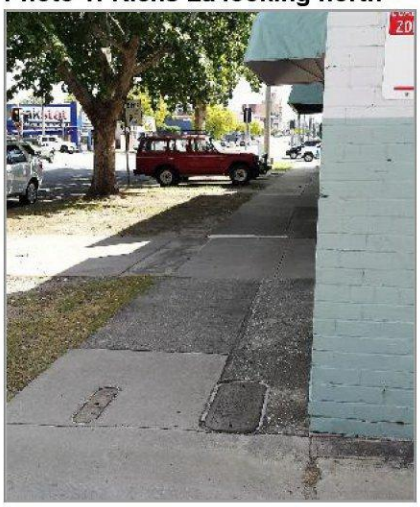
Response:
Internal road widths are determined by AS 2890.1:2004. This standard sets out the minimum widths of circulation roads and ramps as 3.0 metres minimum for one-way roads and 5.5 metres minimum for two-way roads.

It is acknowledged that the waste vehicle will require the full width of the internal roads when negotiating the intersections. This commonly occurs even on public roads. It should also be noted that these vehicles will only access the development once per week for green waste and 2 trucks per fortnight for general refuse and recycling. As a guide, AS 2890.1:2004 states that "*30 or more movements in a peak hour (in and out combined) would usually require provision for two vehicles to pass on a driveway*." The proposed development is estimated to generate approximately 20 vehicles in the peak hour and in the rare event that a passenger vehicle encounters a waste vehicle travelling in the opposite direction there are sufficient sight lines at the internal intersections and curves for these vehicles to stop and wait for an oncoming vehicle to pass. Council would be aware that road narrowing and curvature treatments is common in Local Area Traffic Management (LATM) schemes to reduce vehicle speeds and to increase driver awareness. In this regard, the proposed internal road widths and road curvatures establish a 'traffic calming' environment.

Council acknowledges that Richs Lane currently operates as two-way access for existing developments and is used by commercial vehicles, including waste vehicles. Existing traffic volumes on Richs Lane are considered to be very low. Indeed, on the days of inspection, Richs Lane was observed on numerous occasions and no vehicles were seen travelling on the laneway other than the traffic consultant's own vehicle. The proposed development is estimated to generate approximately 20 vehicles in the peak hour, i.e. an average of 1 vehicle every 3 minutes. The vast majority, estimated at approximately 80% (16 vehicles per peak hour), of these vehicles will use the main access driveway on Olive Street. Richs Lane is a low speed environment and has unobstructed visibility along its entire length. There is sufficient distance between objects such as poles, etc to allow a vehicle to wait should it encounter an opposing vehicle in a narrow section of the laneway. Sight distance at the intersection of Richs Lane and Kiewa Street was assessed in the preparation of Traffic and Car Parking Assessment report and found to be satisfactory (refer **Photos 1** and **2**).

The volume of traffic which may use Richs Lane from the proposed development site will be extremely low (approximately 4 vehicles per peak hour) and will not impact on the operation or serviceability of the laneway, or safety at the intersection of Kiewa Street.

Photo 1: Richs La looking north



Source: gtk consulting 2016

Photo 2: Richs La looking south

Source: gtk consulting 2016

> ***"8 Pedestrian Movement and Safety***
>
> *The plans show that all letterboxes and garbage receptacles are located at the Olive Street frontage of the property. No pedestrian paths are provided through the development to provide safe pedestrian movement from the units to those areas (separate from the internal roads though the development). The safety of pedestrians within the site has been raised above in regard to the internal road widths and, in the absence of any dedicated pedestrian paths within the site, Council is concerned that inadequate provision has been made for safe and efficient pedestrian movement through the site."*

Response:

It is not uncommon in low traffic volume residential developments to allow pedestrians to walk on the internal road system. As previously stated, the use of road narrowing and curvatures is an accepted treatment to reduce vehicle speeds and promote driver awareness. The proposed internal road widths and road curvatures within the proposed development site effectively achieves a 'traffic calming' environment which benefits other users of the road, e.g. pedestrians.

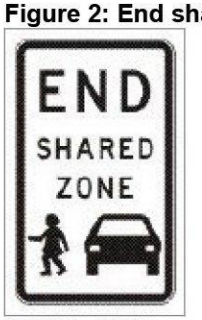
A further treatment that would regulate driver behaviour and establish 'pedestrian right of way' would be to designate the internals roads within the site as pedestrian shared zones. Shared zones are specifically designed to establish pedestrian priority which is considered an appropriate treatment for the proposed affordable housing development. One of the key requirements for implementing a shared zone is that the road environment is attractive and interesting for the community, and reflects the needs and activities of residents. A shared zone is ideally suited to the environment being created within the housing development.

Appropriate traffic signs (**Figures 1** and **2**) can be installed on both sides of the road at the entrances and exits to the site.

Figure 1: Shared zone signs

Source: RMS

Figure 2: End shared zone sign



Source: RMS

Following issue of a Construction Certificate, any proposal to implement a shared zone within the development site will be required to be referred to Council's Local Traffic Committee for consideration and approval by RMS.

3 CONCLUSION

The traffic and car parking elements of Council's letter dated 29 March 2017, following exhibition and assessment of the proposed affordable housing development at 401 - 407 Olive Street and 18 - 22 Richs Lane, South Albury, have been evaluated. The issues raised have been addressed in this response and in the Traffic and Car Parking Assessment report dated July 2016.

The following issue raised, however, is worthy of additional action:

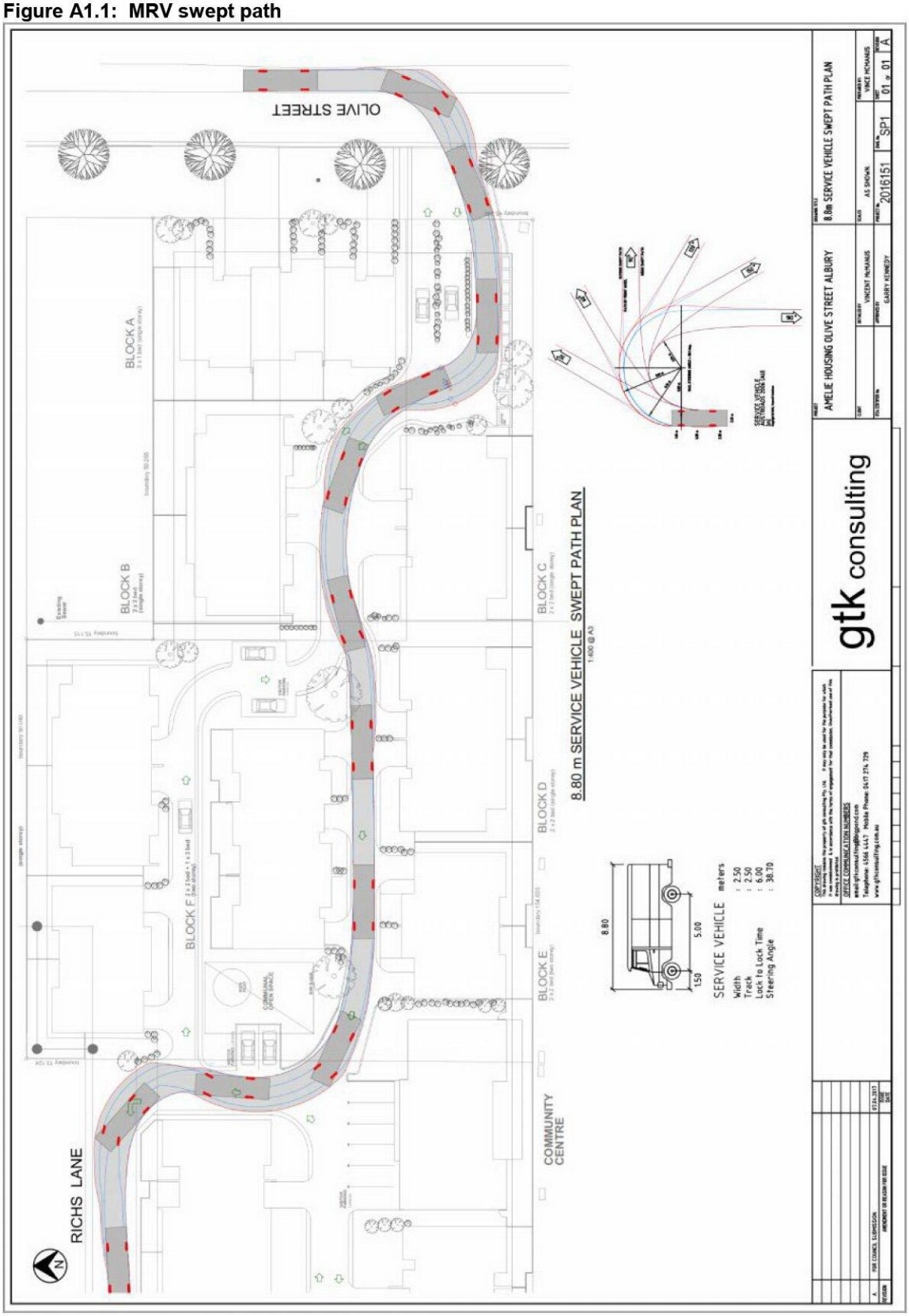
- Council give favourable consideration to designating the internals roads within the proposed affordable housing site as pedestrian shared zones. Following issue of a Construction Certificate, the proposal to implement shared zones within the development site be referred to the Albury City Local Traffic Committee for consideration and approval by RMS.

Garry Kennedy

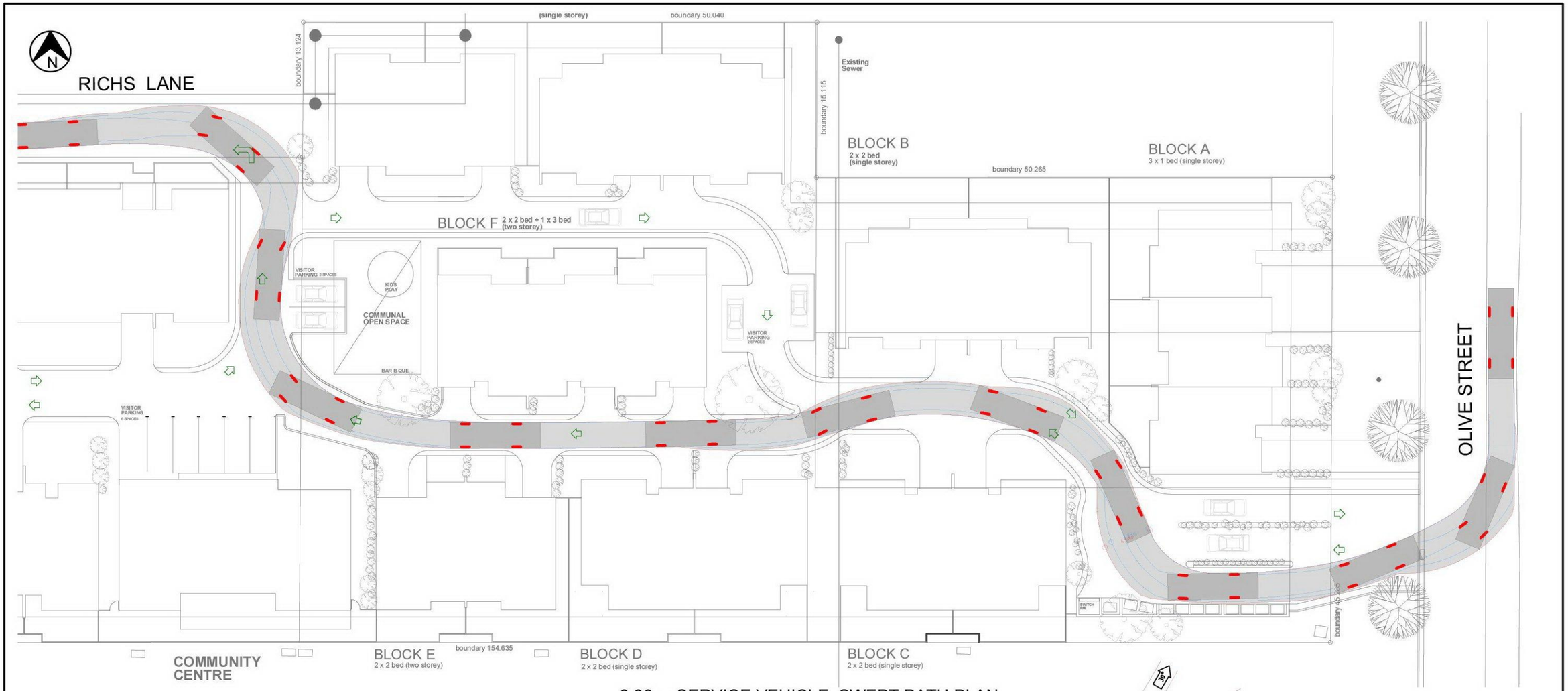
Director

APPENDIX 1 MRV SWEPT PATH PLAN

Figure A1.1: MRV swept path

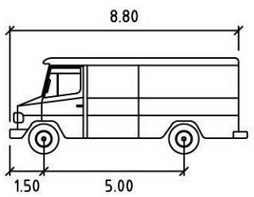


Source: Curtin Architects Pty Ltd & gtk consulting 2017



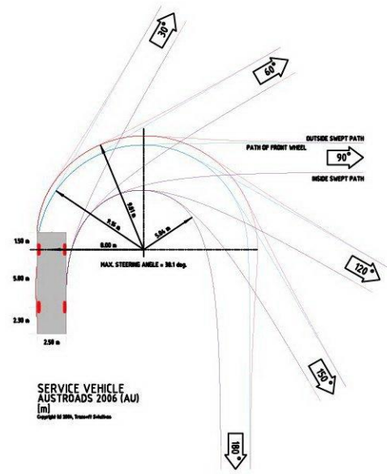
8.80 m SERVICE VEHICLE SWEPT PATH PLAN

1:400 @ A3



SERVICE VEHICLE meters

Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.00
Steering Angle	:	38.70



REVISION	AMENDMENT OR REASON FOR ISSUE	ISSUE DATE
A	FOR COUNCIL SUBMISSION	07.04.2017

OFFICE COMMUNICATION NUMBERS
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PROJECT: AMELIE HOUSING OLIVE STREET ALBURY		DRAWING TITLE: 8.8m SERVICE VEHICLE SWEPT PATH PLAN	
CLIENT	DETAILED BY: VINCENT McMANUS	SCALES: AS SHOWN.	PREPARED BY: VINCE MCMANUS
RTA CERTIFIER No	APPROVED BY: GARRY KENNEDY	PROJECT No. 2016151 / DWG. No. SP1	SHEET 01 OF 01 / REVISION A

DOC17/59313