

Issue History

File Name	Prepared by	Reviewed by	Issued by	Date	Issued to
P2105_001T Cobaki Development Proposed Mod 4 TIA	P. Bollavaram	A. Bitzios	A. Bitzios	13/02/2017	Reg - LEDA

Cobaki Development Proposed Mod 4 Traffic Impact Assessment**1. INTRODUCTION****1.1 BACKGROUND**

Bitzios Consulting has been previously engaged by LEDA Manorstead Pty Ltd to prepare a Transport and Accessibility Report to address the transport aspects of the *Secretary's Environmental Assessment Requirements* (SEAR) for Major Project Application No. MP 06_0316 MOD 2 known as "Cobaki Residential Development". Further to the initial development application the Concept Plan Approval was modified to propose a University and additional supporting increases in land uses within the town centre. This proposal to modify the town centre to include a university is now no longer proceeding.

The 'Cobaki Residential Development' currently has conditional Concept Plan approval for 17 precincts with a total of 5500 dwellings. The development has been segregated into Precincts and is proposed to be delivered under staged development applications for each individual precinct or combinations of precincts (or part thereof).

A Paramics microsimulation model has been developed for the town centre and the surrounding area to test the impacts of the proposed development generated traffic on the surrounding road network. Figure 1 below shows the extent of the Paramics model and adopted zone structure. This model includes the additional land uses associated with the university and is subsequently considered to be a conservative assessment of traffic impacts.

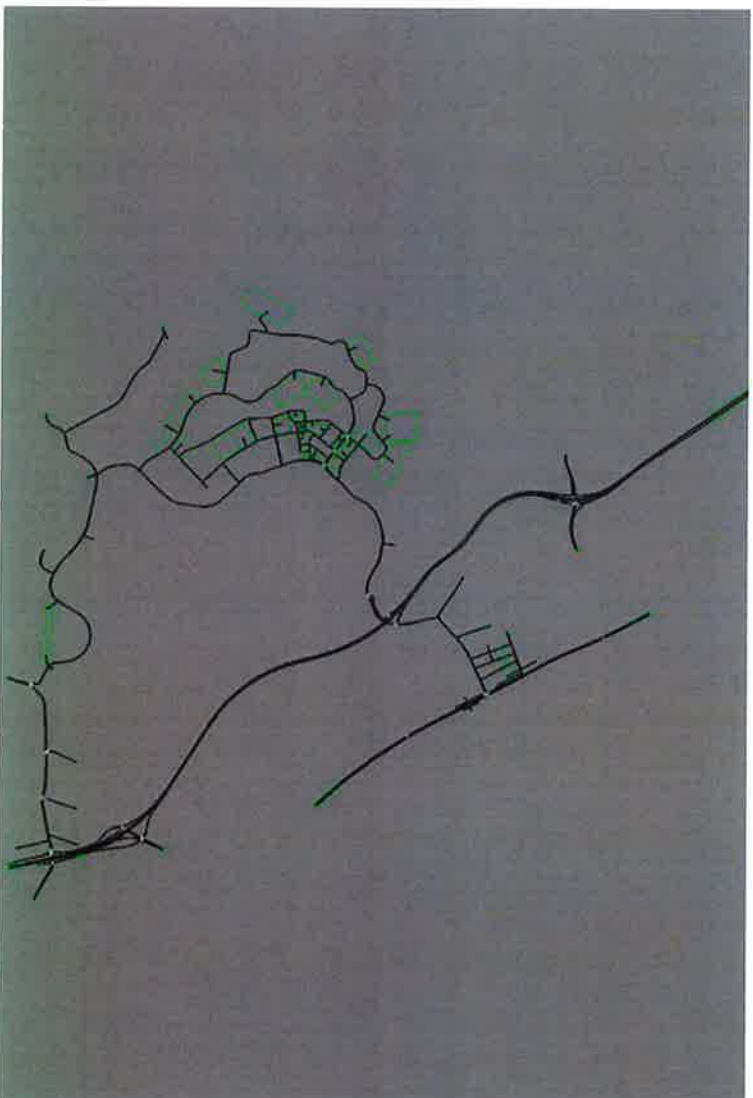


Figure 1: Modelled Network and Zone Structure

1.2 SCOPE

The scope of this assessment include assessing the traffic impacts (if any) of the proposed Tavern, Child Care and a relocated Primary School development within the Cobaki land release area. Specifically, this assessment includes:

- estimating the development's traffic generation and distribution to the external road network;
- assessing the site's access locations and form; and
- assess the impacts of the proposed developments on the surrounding road network by utilising the existing Cobaki masterplan traffic microsimulation model with the inclusion of the proposed development traffic (note, this model also includes additional trips associated with university uses and is considered to be a conservative assessment).

1.3 PROPOSED DEVELOPMENT DETAILS

The following are the development details:

- Tavern GFA of 4246m²;
- Child Care Centre with 80 enrolments and 14 staff; and
- Primary School with approximately 800 enrolments.

The proposed land uses are complimentary of each other, with peak demands for traffic and parking not coinciding. The facility has been designed to cater for Cobaki / Piggabeen locals and is not expected to cater for events that would attract patrons from outside of the local catchment. Figure 2 to Figure 4 below show the approximate location of the proposed developments within the Cobaki development.

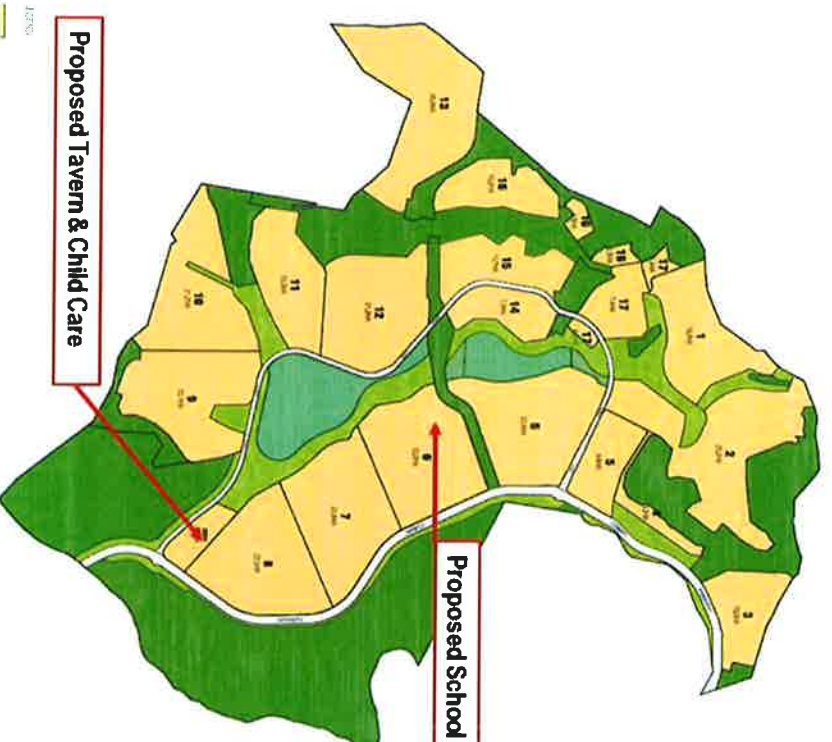


Figure 2: Proposed Developments

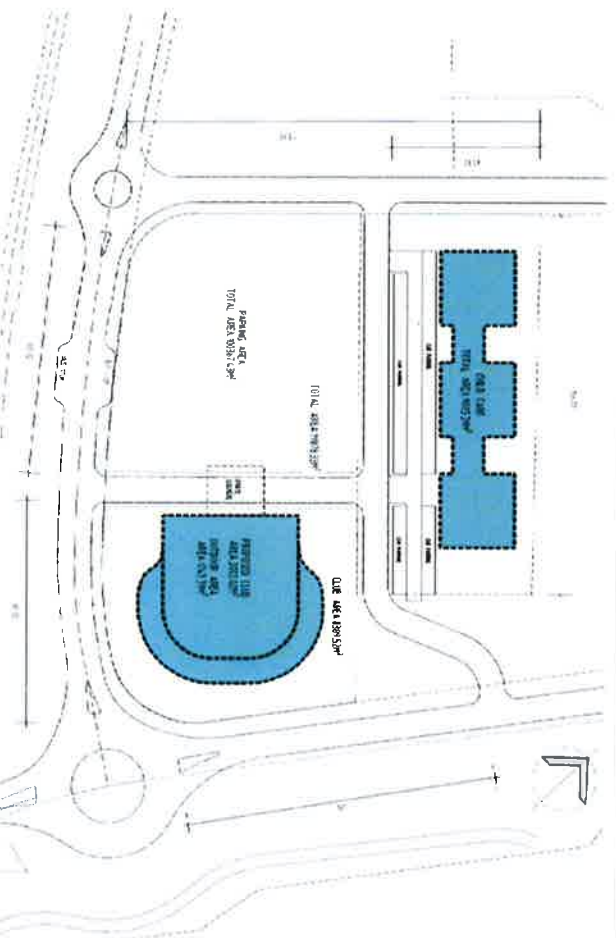


Figure 3: Proposed Child Care and Tavern Layout



Figure 4: Proposed Primary School Development

2. TRAFFIC ASSESSMENT

2.1 DEVELOPMENT GENERATED TRAFFIC

The traffic generation for the Child Care Centre and Tavern was calculated using the Roads and Maritime Services (RMS) *Guide to Traffic Generating Developments (2002)*. The development's peak hour traffic generation is shown in **Table 2.1**.

Table 2.1: Development Traffic Generation

Land Use	Peak Period	Traffic Generation Rate	Students / Dwellings	Vehicle Trips (per hour)
Child Care Centre	AM	0.8 Trips per Student	80	64
Child Care Centre	PM	0.7 Trips per Student	80	56
Function Centre/Restaurant	PM	5 per 100m ²	4246m ²	212
School	AM/PM	0.5 Trip per student	800	400

Key assumptions made for the purpose of this analysis were:

- a 50/50 trip distribution was adopted for vehicles entering/exiting the proposed developments during the AM and PM peak periods;
- it was assumed that a significant proportion of students attending the school will be from the local residential developments (i.e. within the Cobaki development); and
- the peak one hour vehicle trips generated by the development as shown in Table 2.1 above were multiplied by a factor of two to obtain the peak two hour volumes to be included into the Paramics models.

3. PARAMICS MODELLING

3.1 PARAMICS MODELLING ZONES

The year 2031 Paramics models used for the Cobaki Town Centre were modified to include the proposed development generated traffic. Additional zones with access points (approximate location) have been included into the Paramics model to assess the impacts of the proposed development generated traffic on the immediate road network. Figure 5 and Figure 6 below show the access locations for the proposed developments.

Three access points (intersections) are proposed for the Child Care & Tavern developments which include a left in only from Cobaki Parkway and a secondary access onto Sandy Lane which operates as a left in/left out only. An all movement's access is also proposed on the western side of the proposed development which intersects with a local road as a priority controlled intersection.

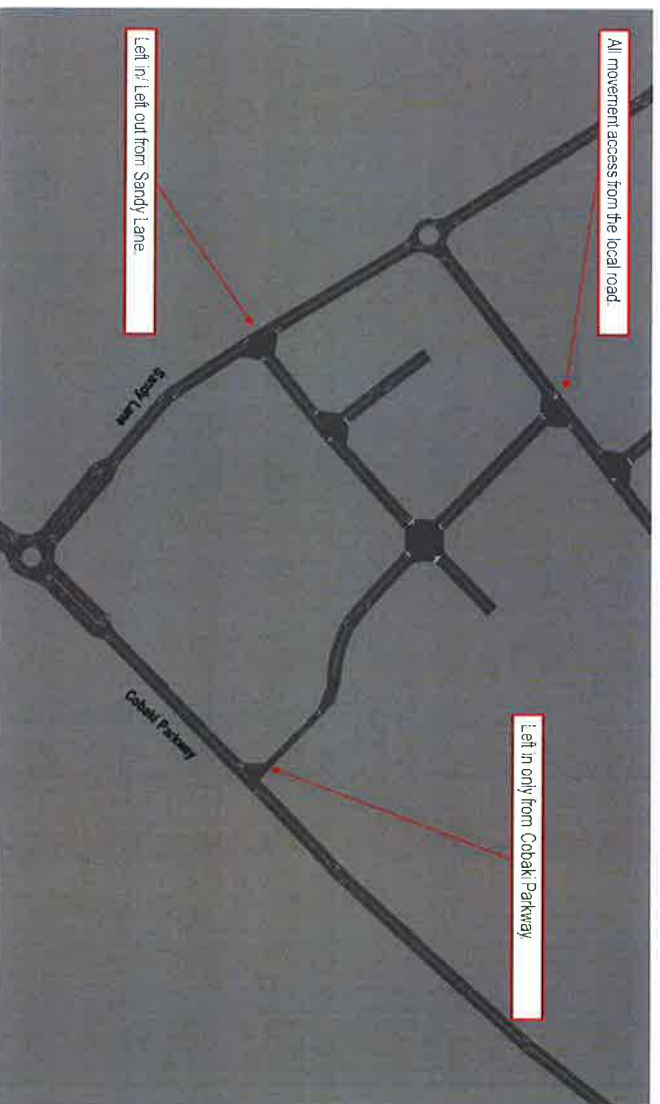


Figure 5: Proposed Child Care and Tavern Access Locations

Figure 6 below shows the approximate location of the proposed school within the Paramics model. All the peak hour generated trips are included within the zone to understand the impact the proposed development will have on the local/proposed road network.

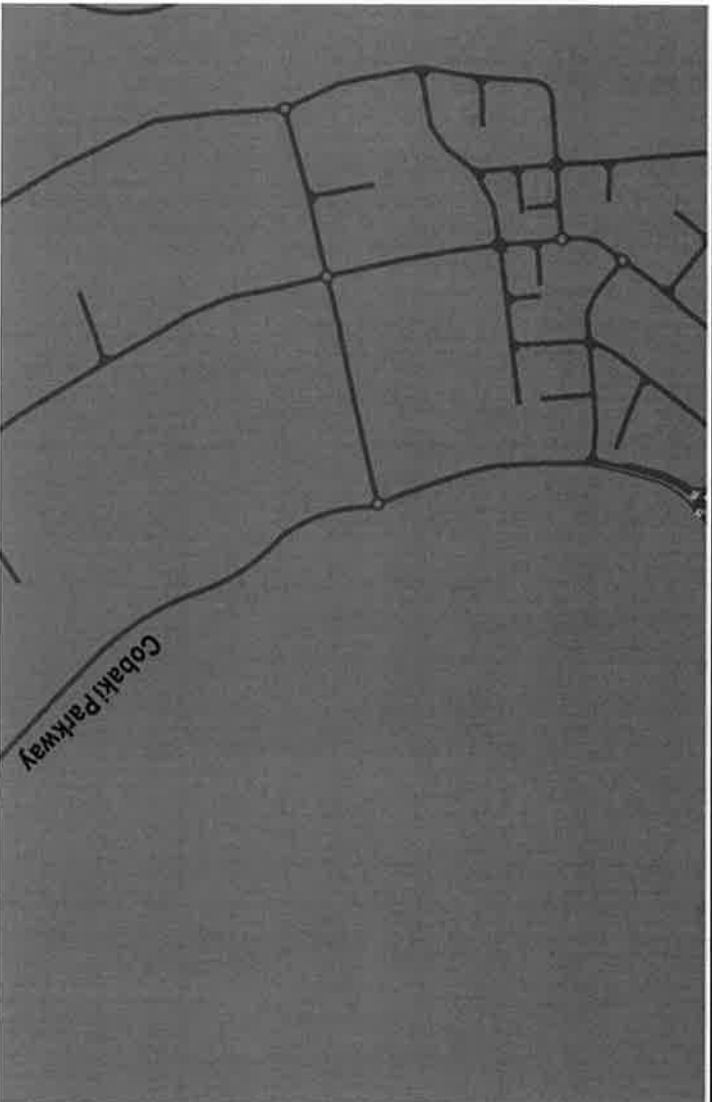


Figure 6: Proposed School Access Location

3.2

PARAMICS MODELLING RESULTS

Visual observations from the year 2031 Paramics models indicated that the inclusion of the proposed development traffic has negligible impact on the immediate road network within the Coabki development. In addition, the proposed developments trip generation will have a significant proportion of the patronage from the residential component within the Cobaki development. Figure 7 and Figure 8 below shows the typical road network operation.

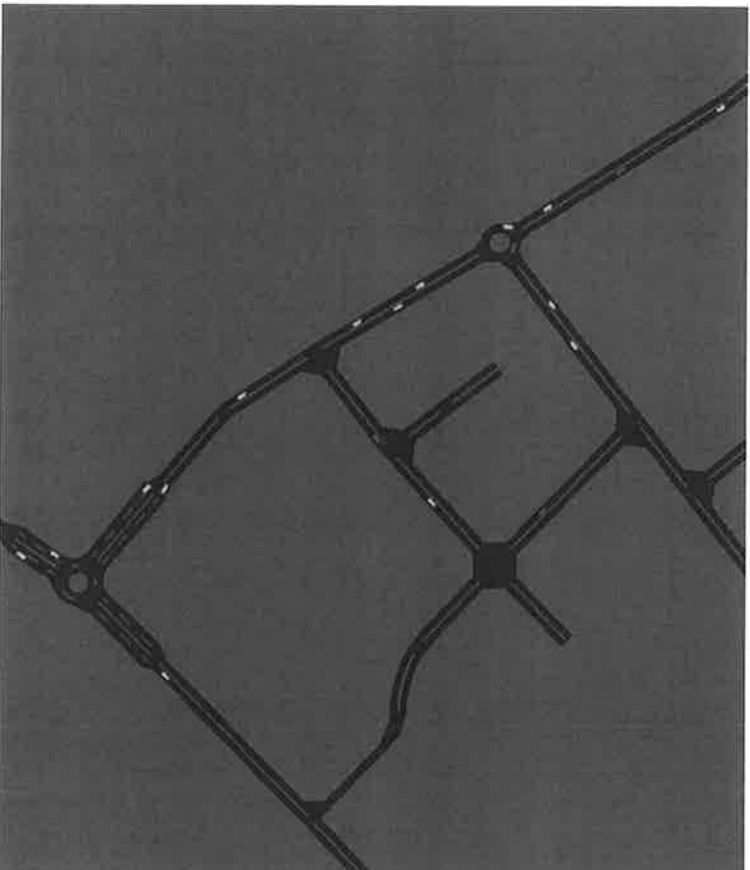


Figure 7: Typical Road Network Operation – Child Care & Tavern

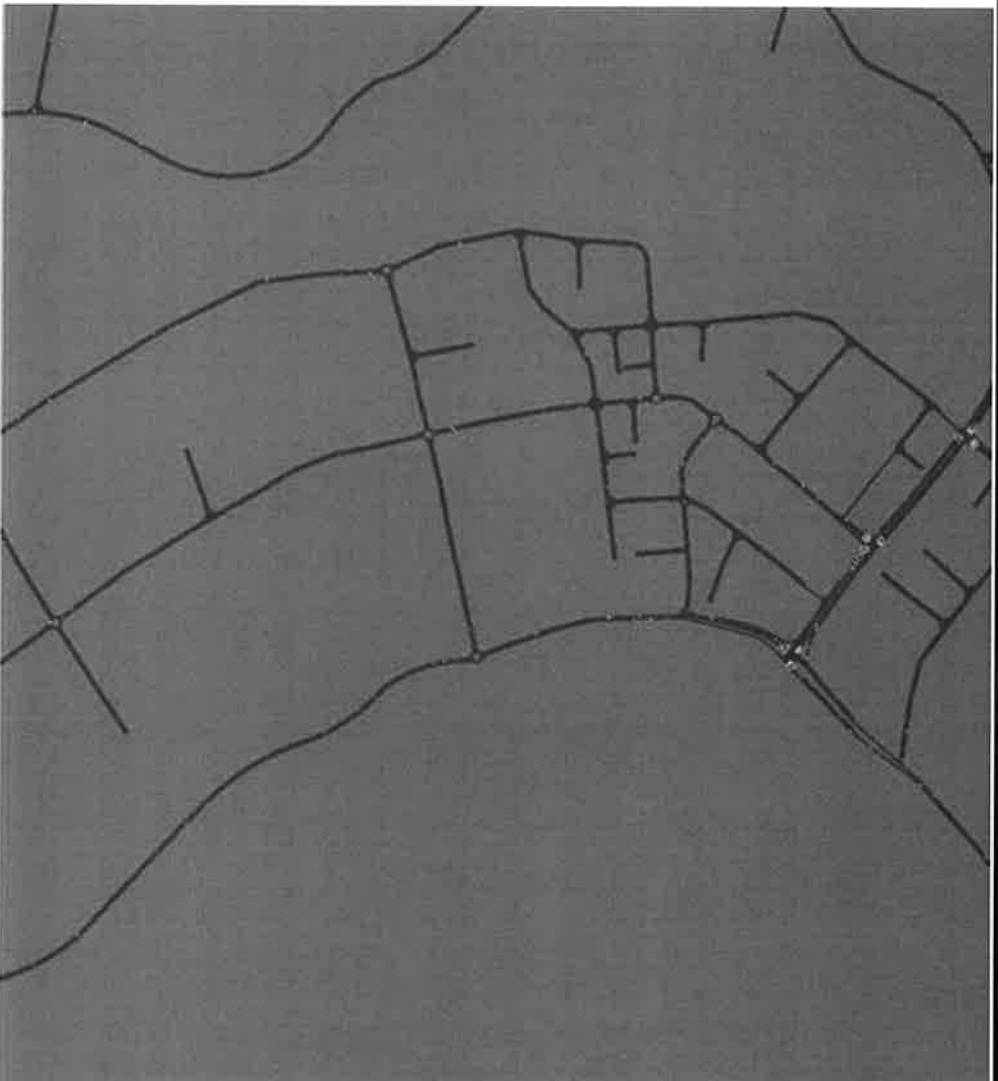


Figure 8: Typical Road Network Operation – School

The initial Paramics modelling assessment undertaken for the Cobaki development included the traffic generated by the proposed Southern Cross University with a total GFA of approximately 12,000sqm. The proposed university generated a total of 1334 trips during the AM peak and 760 trips during the PM peak.

The demands/trips were then doubled to represent a peak two-hour travel demand and were incorporated into the year 2031 AM and PM peak models. The performance outputs extracted from the Paramics models with the inclusion of the university generated traffic had negligible impact on the Cobaki Town Centre road network and the models operated satisfactorily without any major traffic operational issues.

It is understood that Southern Cross University will not be a part of the Cobaki development and as such with the exclusion of the university generated traffic from the Paramics models the models are expected to perform at a more than satisfactory level of service.

4. ROAD NETWORK

4.1 INTERNAL ROADS

The internal road network consists of Access Streets and Low Volume Neighbourhood Connector Roads consistent with Council's "Subdivision Manual – Road Design". The proposed cross-section for the internal Access Streets and Low Volume Neighbourhood Collector Roads are illustrated in Figure 9 and Figure 10 respectively.

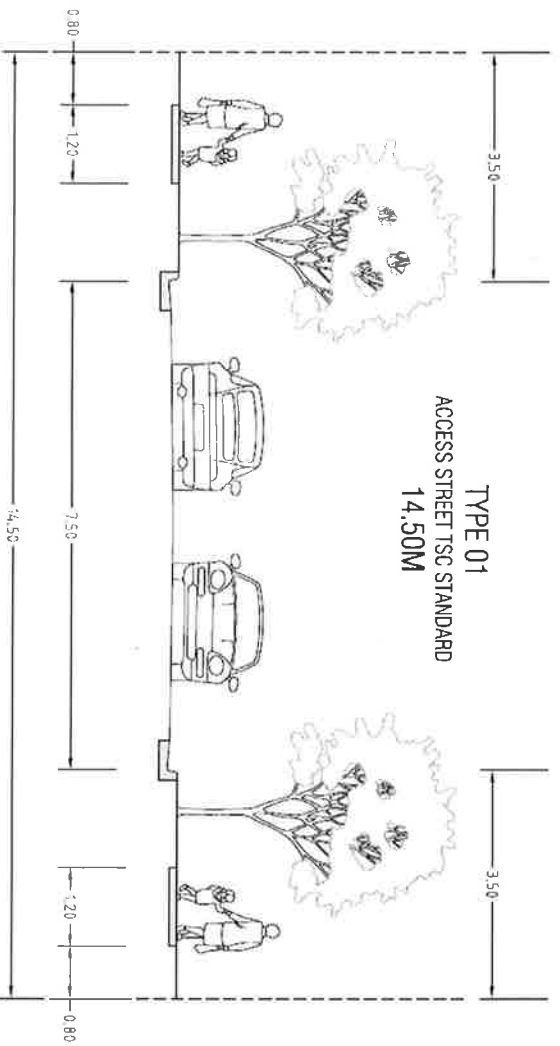


Figure 9: Proposed Access Street Cross-Section

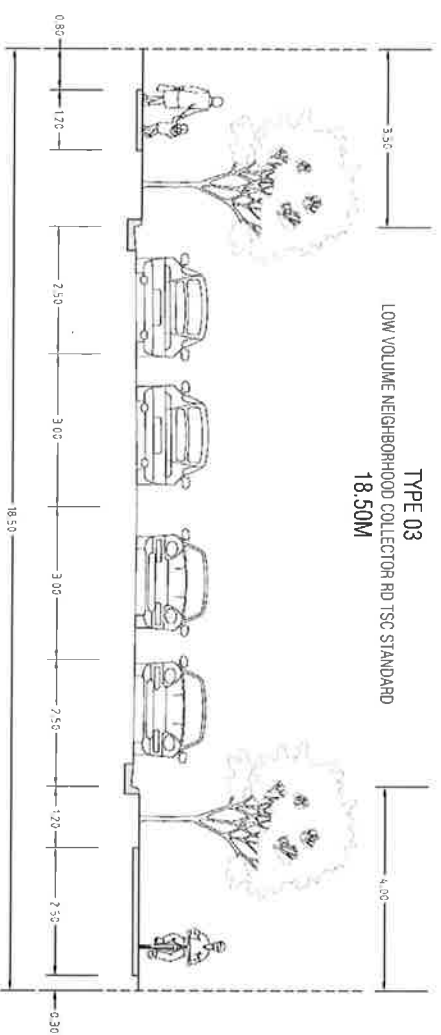


Figure 10: Proposed Low Volume Neighbourhood Collector Road Cross-Section

The proposed 14.5m road reserve Access Street and 18.5m road reserve Low Volume Neighbourhood Collector Road are compliant with Tweed Shire Councils standard drawings S.D.001 (2014) and S.D.002 (2014) respectively. The Access Street has a maximum capacity of 3000 vehicles per day (vpd) and the Low Volume Neighbourhood Collector Road has a capacity range of 3000vpd to 5000vpd which exceeds the expected traffic generation calculations for the development.

TNSW has made a submission to the Department of Planning signed 9th September 2016 requiring the provision of 3.5m carriageway widths plus 3.0m parking lane widths for any collector roads carrying buses.

This is considered to be inappropriate for low volume residential streets even if they are to carry buses. The school is envisaged to attract a relatively low volume of buses only on school days, when it is developed. In addition, there are not expected to be any route bus services on the subject streets in the area.

The primary concern with the road widths recommended by TfNSW is trying to limit vehicle speeds to a 50kph posted speed within an environment where wide roadways suggest higher speeds (ie there is potential for 6.5m wide each way travel lanes to exist outside of school peak parking times). Austroroads "Road Safety" Guidelines also discusses the need to consider a "Safe System Approach".

Consultation with Council has occurred in response to the letter received by TfNSW and the above concerns raised. Council is supportive of the cross-section nominated within the MOD4 application acknowledging the need to ensure a "Safe System Approach" is considered. Council's email response to our concerns states:

"Council's position on the matter is that our Low Volume Connector Road (18.5m wide road reserve, 11m carriageway up to 5000vpd) is adequate to cater for the expected traffic volumes and provide a suitable low speed environment for the roads around the future school site.

The only justification for a wider road would be if traffic volumes were predicted to exceed 5000vpd, or if bus parking facilities were to be provided along the school frontage. Council would oppose this parking arrangement, and require pick up and drop off facilities to be provided within the school site and not on the public road."

Council has also offered to attend a meeting / workshop with TfNSW and Bitzios Consulting to resolve this concern should this be required.

4.2

PEDESTRIAN AND BICYCLE CONNECTIVITY

The pedestrian connectivity within the development area provides easy access to the future school, playground, park and the western stretch of the open space corridor. Footpaths of 1.2m wide are provided on both sides of all Access Streets and one side of the Neighbourhood Collector Roads, whilst the other side of the Neighbourhood Collector Road caters for bikes with a 2.5m wide shared path as illustrated in the cross-sections in Section 4 of this report.

The proposed pathway network is compliant with *Section A5.4.10 Movement Network – Pedestrian Path Network* as it utilises the streets and connects onto open space corridors to the west and north. All areas within the proposed development are highly connected and accessible by both walking and cycling. The pathways and bicycle routes are illustrated in Figure 11. All footpath/road crossings are to provide pram ramps for increased safety and accessibility.

A 2.5m shared path is proposed to all frontages to the proposed school site.



Figure 11: Footpath and Cycleway Connectivity

4.3 PUBLIC TRANSPORT

TfNSW were consulted during the development of the MOD2 Traffic Report. On 5th August 2015 draft report text relating to the public transport strategy was submitted to TfNSW for comment. No response to that email was recorded as being received.

On 6th August TfNSW was invited to attend a presentation at Tweed Shire Council's community hall (Coolangatta) arranged for 14th August 2015. Advice was received from TfNSW that they could not attend the workshop and they advised that the local regional RMS representative, Mr Michael Baldwin could cover off on any TfNSW concerns on their behalf.

A number of cross-border issues relating to public transport were raised at the workshop. The comments raised re-iterated comments made from the Transit Advisory Group when they were consulted. Two face to face meetings and numerous phone calls were held with Dave Bishara from the Transit Advisory Group (TAG) in developing the recommendations contained within the final MOD2 traffic report.

TfNSW will continue to be consulted as part of future submissions of relevant applications.

It is also recommended that TfNSW and Translink agree on a contractual arrangement that enables the service provider (which is the same operator in both Northern NSW and South East Queensland) to operate a bus service for the Cobaki land release area that will promote the use of sustainable modes of transport through the removal of the cross-border barrier.

4.4

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

A CTMP will be completed with the development application (or prior to obtaining a construction certificate) as required by either Council or RMS.

5. CONCLUSION

The following are the key conclusions drawn from the analysis:

- The proposed child care, tavern and school are expected to generate a total of 464 trips during the AM peak and 668 trips during the PM peak period;
- The proposed additional Tavern and Child Care uses nominated at the southern corner of Cobaki Parkway and Sandy Lane introduces a slight increase in traffic on the southern part of the road network;
- The Paramics microsimulation modelling used to assess the development's impacts shows that the Cobaki transport network has suitable spare capacity to cater for the additional trips generated. In addition, the proposed child care uses will result in a large proportion of 'diverted' trips whilst the tavern uses will contain traffic demands outside of typical AM and PM peak periods. The area provided for the proposed facility is considered to be sufficient enough to cater for the required parking and site servicing requirements. The non-coinciding peak demands of the child care centre and the tavern uses will result in the ability to cross-utilise the availability of parking;
- The initial Paramics modelling assessment undertaken for the Cobaki development included the traffic generated by the proposed Southern Cross University with a total GFA of approximately 12,000sqm. The proposed university generated a total of 1334 trips during the AM peak and 760 trips during the PM peak;
- It is understood that Southern Cross University will not be a part of the Cobaki development and as such with the exclusion of the university generated traffic from the Paramics models the models are expected to perform even better including the same local road network within the Cobaki development.
- the internal road cross-sections are in accordance with Councils standard requirements;
- the proposed developments are expected to provide sufficient parking for the proposed land uses and it is expected that a significant proportion of traffic to/from the development will be from the local residential catchment area; and
- the proposed Cobaki development will provide good pedestrian and cyclist connectivity for complementary land uses within the development.

Based on the above, the proposed new/additional land uses are not expected to introduce any traffic operational issues on the proposed local road network within the Cobaki development. Individual development applications will be submitted for each use at some point of time in the future, whereby traffic impacts can be further assessed. In principle, the traffic network appears to more than suitably cater for the forecast traffic volumes generated by the MOD4 related land uses.