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TELPAT Pty Ltd

Proposed Community Title
Subdivision, Lot 211 DP
1044292 and Lot 1 DP 26330,
Moonee Beach
Traffic Impact Assessment

December 2008



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1. Introduction

1.1 Proposed Development

A Development Application (DA) has been prepared and lodged for the subdivision of Lot 211 DP 1044292 and Lot 1 DP 262330, Pacific Highway, Moonee Beach. The proposal involves the demolition and removal of a pet boarding house and the provision of a community title subdivision at the site.

The subdivision design conforms to the traffic circulation plan for the Central Moonee Precinct, in respect of the collector road system, cycleway and pedestrian connections. Stage 1 comprising 20 residential lots will be linked to the existing residential area of Moonee by an established residential street, Woodhouse Road. Stage 2 comprising 12 residential lots will include the construction of a section of the planned north-south Collector Road that will link the shopping centre to future residential land to the south. Plans for Stages 1 and 2 of the proposed development are included in Appendix A.

In response to the DA, Coffs Harbour City Council (CHCC) has requested additional information in relation to traffic, contamination and acid sulfate soils. This report addresses the traffic issues relating to the proposed development.

1.2 Description of Site

Figure 1-1 shows the proposed site in relation to the Pacific Highway at Moonee Beach.



Figure 1-1 Site Location

1.3 Scope of the Report

This Traffic Impact Assessment follows the general principles specified in the *RTA Guide to Traffic Generating Developments* and relevant Austroads publications and includes consideration of the potential traffic that could possibly arise from the proposed development and the resulting effects on the surrounding road network.

1.4 Objective

It is the aim of this Traffic Impact Assessment to enable CHCC to assess the traffic impacts of the proposed development.



2. Existing Environment

2.1 Existing Road Network Characteristics

The existing roads adjacent to the proposed development site are shown on Figure 2-1. The site is located on the eastern side of the Pacific Highway to the west of an established residential area.



Figure 2-1 Development Site

Moonee Beach Road provides access to the existing residential area at Moonee Beach and to the beach. Figure 2-2 shows the roads in the area.

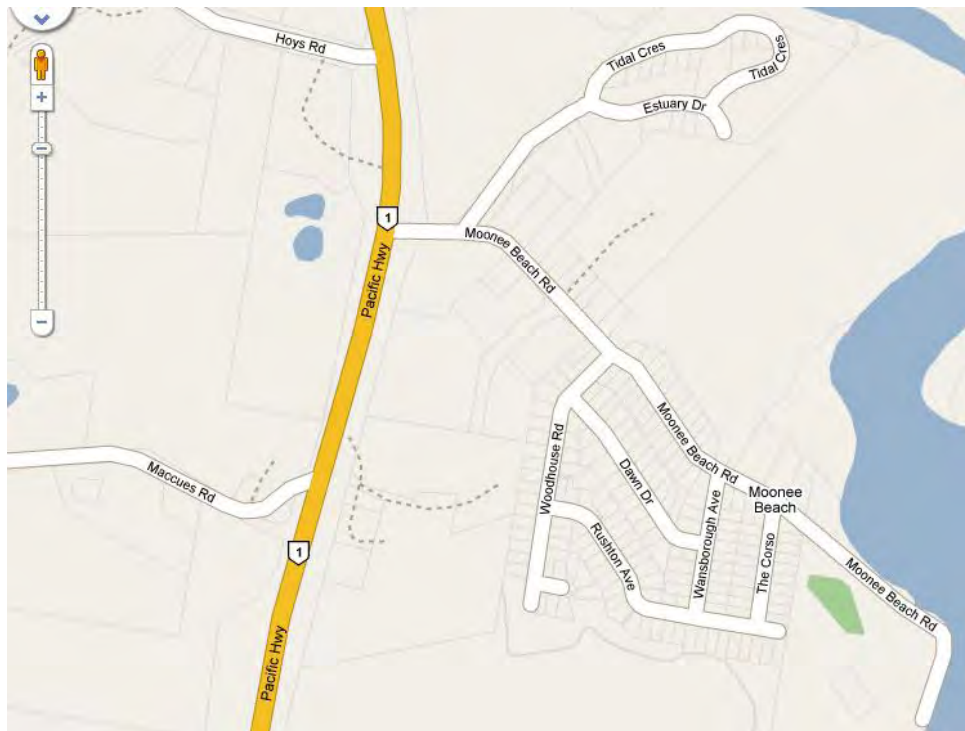


Figure 2-2 Road Network

A brief description of the existing route between the development site and the Pacific Highway is outlined below:

2.1.1 Woodhouse Road

Woodhouse Road is a two-lane bitumen sealed and kerbed minor collector road for the existing residential subdivision adjoining the proposed development site. The grade on Woodhouse Road south of Rushton Avenue is steep and right turn movements at the Rushton Avenue intersection are not permitted for safety reasons associated with the nearby crest curve on Woodhouse Road. Woodhouse Road ends about 50 metres south of the proposed access road.

2.1.2 Moonee Beach Road

Moonee Beach Road functions as a major collector road carrying traffic to the Pacific Highway. Traffic accessing the proposed development will use this road. Moonee Beach Road is a two-lane bitumen sealed and kerbed road between Woodhouse Road and the Pacific Highway. The road has been recently upgraded to the east of Woodhouse Road with a new bitumen seal and kerb and gutter.

A single lane roundabout has been constructed about 100 metres west of Woodhouse Road to regulate the traffic flows from new residential developments to the north and south of Moonee Beach Road.

The intersection of Moonee Beach Road and the Pacific Highway has been recently upgraded.



2.2 Existing Traffic Data

2.2.1 Woodhouse Road

There was no traffic count information available for Woodhouse Road. The existing traffic on Woodhouse Road can be estimated by considering the number of existing residences that are likely to use the road. Between Parish Close and Rushton Avenue, there are about 16 houses that would use Woodhouse Road; between Rushton Avenue and Dawn Drive there are an additional 23 houses and between Dawn Drive and Moonee Beach Road, about a further 25 houses. Based on a rate of 9 trips per dwelling, this corresponds to daily traffic volumes of about 150, 350 and 600 vpd for the three sections of Woodhouse Road.

2.2.2 Moonee Beach Road

Traffic counts were provided by CHCC on Moonee Beach Road for the period 3 January 2003 to 22 January 2003. The counts were taken about 200 metres from the Pacific Highway and therefore represent the maximum traffic volume on the road. The average daily traffic (five day average) during that period was 1830 vpd. After adjusting for an estimated growth rate of 1% pa for the period 2003 to 2008, the existing traffic volume is estimated to be about 1920 vpd.

2.2.3 Existing Crash Data

Crash data for the period from 2002 to 2007 were received from CHCC for Moonee Beach Road between Pacific Highway and Woodhouse Road and are listed in Table 2-1. There were no crash data available for Woodhouse Road.

Table 2-1 Crash Data

Year	Injury	Property only
2002	3	0
2003	0	0
2004	3	1
2005	3	2
2006	3	3
2007	3	2

Source: CHCC

From the data provided in Table 2-1, there were 15 crashes involving injury and 8 property-only crashes on Moonee Beach Road during the period 2002 to 2007. Eighteen of the 23 reported crashes were in fine, dry conditions. Eight crashes were at night of which 6 involved injuries.

2.3 Traffic Generation and Assignment

2.3.1 Traffic Generation

The first stage of the proposed development is planned to provide 20 residential lots. At this location where public transport services are limited, most trips will be by car. It is also assumed that most vehicle trips will be external to the development. Based on the *RTA Guide to Traffic Generating Developments*, a daily generation rate of 9 vpd per dwelling is adopted, giving a generated volume of 180 vehicles per weekday for Stage 1 of the proposed development.

Similarly, the second stage of the development comprising 12 residential lots is estimated to generate 108 vehicles per weekday.

Table 2-2 Additional Traffic Generation

Development Stage	Daily Trips (vpd)
Stage 1 Traffic	180
Stage 2 Traffic	108
Total	288

During the construction of the development, it is estimated that up to 10 to 20 construction vehicles per day would access the site such as concrete trucks and materials delivery trucks as well as construction workers' vehicles.

2.3.2 Traffic Growth

Ambient traffic growth on Woodhouse Road is expected to be minimal as the areas feeding onto this road are fully developed. Traffic growth on Moonee Beach Road also appears to be limited to ongoing subdivisions along Estuary Drive. The construction of the proposed Collector Road is expected to ease traffic growth pressures on Moonee Beach Road. Therefore, no allowance has been made for ambient traffic growth in estimating the traffic impacts of the proposed development.

2.3.3 Traffic Assignment

Following completion of Stage 1 of the development, all generated traffic would use Woodhouse Road and Moonee Beach Road to access the local shops and the highway.

The DCP requires provision for a Collector Road along the western section of the site that ultimately connects Moonee Beach Road in the north to land to the south. This road could provide access to Stage 2 of the proposed subdivision.

If the Collector Road is constructed an open to traffic on completion of Stage 2 of the development it is expected that a significant proportion of traffic from the development would use it to travel north and south to access the shops and the highway rather than use Woodhouse Road.

It is expected that construction traffic would use Woodhouse Road and Moonee Beach Road to access the highway for Stage 1 works and that construction access may be available for Stage 2 of the



development via the new Collector Road, but would depend on the relative timing of the proposed development and adjacent development to the north.

2.4 Traffic Impact

2.4.1 Stage 1

Table 2-3 shows the existing traffic volumes derived from data provided in Section 2.2 and the estimated additional daily traffic volumes on the road network due to Stage 1 of the proposed development.

Table 2-3 Weekday Traffic Flows - Stage 1 Development

	Estimated Existing (vpd)	Estimated Additional Traffic (vpd)	Estimated Total Traffic (vpd)	Increase over existing flows (%)
Woodhouse Road (north of Dawn Drive)	600	180	780	30.0%
Moonee Beach Road (near Woodhouse Rd)	1700*	180	1880	10.6%
Moonee Beach Road (near Pacific Hwy)	1920	180	2100	9.4%

* estimated

The increase in traffic flow on Woodhouse Road and Moonee Beach Road due to Stage 1 of the development will be relatively small and the resultant traffic volumes are within the capacity of these collector roads.

2.4.2 Full Development

If the Collector Road was to be constructed prior to the completion of Stage 2 of the development it is expected that about 50% of traffic from the full development would use the Collector Road and of this traffic about 50% would split between destinations north and south along the Collector Road. This would result in a small reduction in traffic on Woodhouse Road and Moonee Beach Road (between Woodhouse Rd and roundabout) and a small increase in traffic on Moonee Beach Road (between the roundabout and the Pacific Highway), relative to the Stage 1 traffic levels.

However, a conservative estimate of the traffic impact of the proposed development on the existing roads is to assume that traffic from both Stages 1 and 2 would access Moonee Beach Road and the Highway via Woodhouse Road. The resultant traffic volumes on local roads for Stages 1 and 2 of the development are given in Table 2-4.

Table 2-4 Weekday Traffic Flows - Stage 2 Development

	Estimated Traffic after completion of Stage 1 (vpd)	Estimated Additional Stage 2 Traffic (vpd)	Estimated Total Traffic (vpd)	Increase over Stage 1 flows (%)
Woodhouse Road	780	108	888	15.3%
Moonee Beach Road (near Pacific Hwy)	2100	108	2208	5.1%

For Woodhouse Road, the volume of traffic is within the limiting capacity of 2000 vpd for a residential street suggested in the *RTA Guide to Traffic Generating Developments*. For Woodhouse Road, the resultant traffic volume is consistent with its function as a major collector road.

The number of vehicles expected to access the site during the construction phase is relatively small and can be satisfactorily accommodated by the existing road system subject to appropriate traffic management measures being in place.

2.4.3 Intersection Capacity

The intersecting traffic volumes at Moonee Beach Road and Woodhouse Road at full development are estimated to be about 2208 vpd and 888 vpd respectively. This corresponds to a two-way peak flow of about 220 veh/hr and 90veh/hr.

Similarly, the intersecting traffic volume at Woodhouse Road and the access to the site are estimated to be about 888vpd and 288 vpd. This corresponds to a two-way peak flow of about 90veh/hr and 30veh/hr.

For these low combinations of flows, the busier streets can comfortably absorb the minor road traffic at a good level of service. These combinations of flows are below the threshold values where intersection capacity analysis is normally required. (refer Table 8.1, Austroads Part 2, Roadway Capacity).

Table 2-5 Intersection Volumes below which Capacity Analysis is Unnecessary

Type of Road	Light Cross & Turning Volumes Maximum Design Hour Volumes vehicles per hour (twoway)		
Two lane major road	400	500	650
Cross road	250	200	100
Four lane major road	1,000	1,500	2,000
Cross road	100	50	25

Source: Austroads Part 2, Roadway Capacity

2.4.4 Conclusion

The existing capacities of Woodhouse Road and Moonee Beach Road and their associated intersections can satisfactorily accommodate the additional traffic from the proposed development.

2.5 Safety Considerations

The existing median on Woodhouse Road at the Rushton Avenue intersection restricts the width of the carriageway. The resultant clear width is 5.0 metres for southbound traffic and 5.4 metres for northbound traffic. If cars are parked along this narrow section, large construction vehicles may have difficulty in passing between the median and the parked cars (See Photograph 1).



Photograph 1: View of narrow section of Woodhouse Road looking south

Sight distances at the intersection of Woodhouse Road and the proposed access road and at the intersection of Woodhouse Road and Moonee Beach Road are adequate for the speed environment.

The relatively high injury crash rate on Moonee Beach Road may indicate high travel speeds. The recent construction of the roundabout may tend to reduce the injury crash rate.

2.6 Public Transport

Ryans Bus Service provides a service between Coffs Harbour and Woolgoolga that stops at Moonee on the highway several times a day. A bus service from Coffs Harbour to Moonee Beach is also available on request.

2.7 Pedestrians and Cyclists

Council's contributions plan includes provision of cycleways. The private access ways provided in the proposed development allow for and encourage a safe cycling environment.



3. Conclusions and Recommendations

The following conclusions are made based on the above investigations:

- » The estimated total traffic generation as a result of the development is estimated to be 288 additional vehicle trips per day on the road network.
- » The number of heavy vehicles using Woodhouse Road and Moonee Beach Road is not expected to increase except during the construction phase when an additional 10 to 15 construction vehicles per day would use these roads.
- » Under current traffic conditions the capacity of the existing roads provides a satisfactory level of service for the demands of the existing residential areas they serve.
- » The volume of vehicles generated by the proposed development would have a minor impact on the amenity of residents along Woodhouse Road and Moonee Beach Road. .
- » Moonee Beach Road and Woodhouse Road and associated intersections have the capacity to accommodate the traffic expected to be generated by the full development.
- » The median island in Woodhouse Road may restrict the safe passage of large vehicles accessing the site during construction.

Based on these conclusions the following recommendation is made:

- » Appropriate traffic management measures should be in place to manage possible safety issues associated with the restricted width of Woodhouse Road at the narrow median section.

4. References


- » Roads and Traffic Authority of NSW, October, 2002, "Guide to Traffic Generating Developments."
- » Austroads, 2005, "Guide to Traffic Engineering Practice, Part 5: Intersections at Grade."



Appendix A
Staging Plans




NO	NOTE	NO	AMENDMENT


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PROJECT
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PROPOSED LOW DENSITY HOUSING
 PACIFIC HIGHWAY MOONEE


DRAWING
STAGE 1 : SITE SETOUT PLAN

DRAWN	DATE	NORTH POINT	SCALE	AMENDMENT
RDC	JUNE 2007		1 : 1000	
CAD DISK NO	CAD FILE	JOB	SHEET NO	
06-028	06-028-02	R06-028-SK	02	

D.A.




NO	NOTE	NO	AMENDMENT


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PROJECT
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DRAWING
STAGE 2 : SITE SETOUT PLAN

DRAWN	DATE	NORTH POINT	SCALE	AMENDMENT
RDC	JUNE 2007		1 : 1000	
CAD DISK NO	CAD FILE	JOB	SHEET NO	
06-028	06-028-04	R06-028-SK	04	

D.A.

Appendix B
Site Photographs



View of narrow section of Woodhouse Road looking south



View from proposed access on Woodhouse Road looking north



View from proposed access on Woodhouse Road looking south



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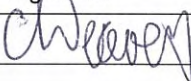
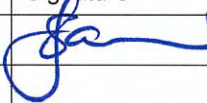
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		Name	Signature	Name	Signature	Date
0	M Lyons	C Weaver		S Lawer		Dec 08