



t 02 8411 2271
f 02 8407 9728
m 0419 338 081
e tartec@optusnet.com.au
o Suite 3, 32 Grandview Drive
Newport NSW 2106

120-122 MONA VALE
ROAD, WARRIEWOOD

Traffic Report

For:
OPERA PROPERTIES PTY LTD

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2010326RP26

Report No. 2010326RP26

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Chapter 1

INTRODUCTION

TAR Technologies Pty Ltd (TAR) has been commissioned by Roy Mustaca to report on the impacts of providing approximately 79 lots for single dwellings over approximately 28 acres on vacant non-urban 1(a) zoned land at 120-122 Mona Vale Road, Warriewood.

Extensive studies regarding the development and liaison between Pittwater Council and Mr Roy Mustaca OAM has already occurred. This report further addresses Council's concerns about access in and out of the site and the potential impact of increased traffic on the surrounding local streets.

In response, various access arrangements, including a new deceleration lane off Mona Vale Road combined with use of the existing local road, or the construction of a new road from Jubilee Lane into the site have now been examined and are described in detail in Chapter 4.

The report references the Roads and Traffic Authority's (RTA) *Guide to Traffic Generating Developments*.

Chapter 2

SITE LOCATION

The site is triangular in shape and bounded on the north by Mona Vale Road, to the east by Boundary Street and the west by Narrabeen Creek bushland. The site area comprises approximately 28 acres falls and falls steeply to the east to Boundary Street. Boundary Street is currently closed at Mona Vale Road with vehicular access to the property available from Jubilee Parade a common access laneway also used by Pittwater Uniting Church.

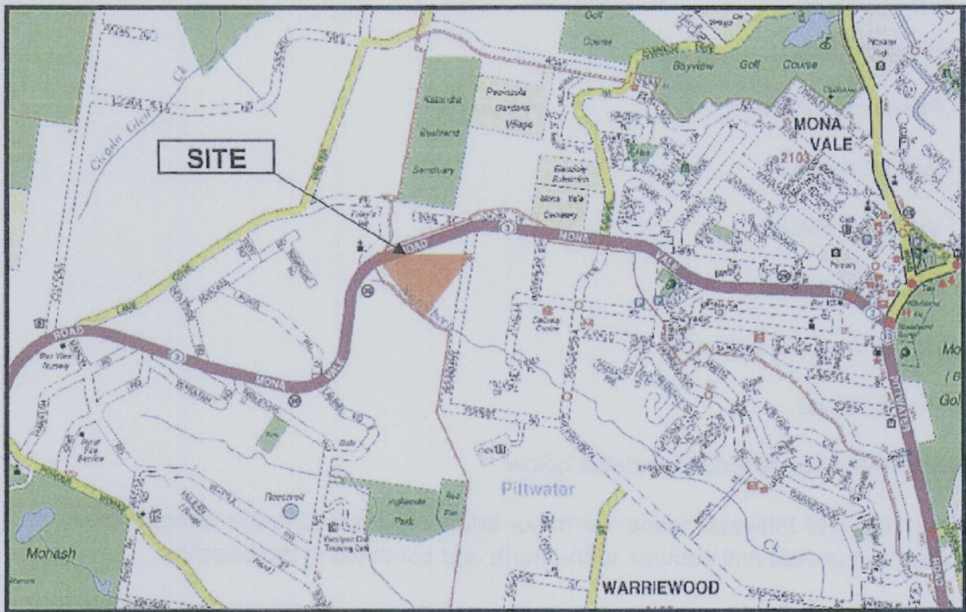


Figure 2.1 Site location

The site in relation to the surrounding area is shown in Figure 2.1. The site is approximately 500 metres from Mona Vale Road which provides a major link to the city and westwards to Parramatta. Jubilee Avenue itself connects to Ponderosa Parade linking Mona Vale Road, and Pittwater Road via Vineyard Street and MacPherson Street.

EXISTING CONDITIONS

3.1 ROAD NETWORK

The local traffic routes that would be used by the site are:

- ☐ Mona Vale Road;
- ☐ Pittwater Road;
- ☐ Ponderosa Parade;
- ☐ Jubilee Avenue;
- ☐ Vineyard Street;
- ☐ Boundary Street;
- ☐ MacPherson Street; and
- ☐ Jubilee Lane

These routes are described in detail below:

Mona Vale and Pittwater roads are major arterial roads linking the western areas of Sydney to the east and suburbs to the north and south along the beaches.

Ponderosa Parade, Jubilee Avenue, Vineyard Street and MacPherson Street are local roads that service a light industrial area near the site. Road widths vary from 13.2 metres in width in Ponderosa Avenue to 11.5 metres in wide in Jubilee Avenue.

Jubilee Lane is a six metre wide road that serves Pittwater Uniting Church and pre-school, and a sport and recreation centre. The lane has 90 degree angle parking and connects to Boundary Street. Jubilee Lane has a 10km/h speed limit which is self enforcing with a number of speed humps.

Boundary Street runs north south and currently meets Jubilee Lane at right angles. The road is undulating and narrow with no connection to Mona Vale Road and providing access to a single dwelling to the south.

3.2 BASE TRAFFIC NETWORK OPERATION

To establish the future base case reference to Pittwater Council's 'Warriewood Valley Traffic and Transportation Study' as supplied by Council on 25 June 2011 was used. The growth projections in this report were applied to the critical intersection to the subject development site at Jubilee Avenue and Ponderosa Avenue.

Chapter 4

DESCRIPTION OF PROPOSAL

4.1 GENERAL

120-122 Mona Vale Road is triangular in shape covering approximately 11.33 hectares with vehicular access to the property currently only available from Jubilee Lane. The site is currently zoned non-urban 1(a) under Pittwater Local Environmental Plan 1993.

The current proposal is the rezoning of land for the provision of 79 single dwelling allotments (option 1) or 77 single dwelling allotments (option 2). Indicative layouts containing both options for the site for re-development are shown in *Appendix A*.

The development considers two options which are summarised in *Table 4.1*

Table 4.1 Dwelling allotment options

	OPTION 1	OPTION 2
>2000 sqm:	4	4
1000-2000 sqm:	21	23
700-800 sqm:	5	5
400 - 650 sqm:	49	45
TOTAL	79	77

Access arrangements are different for each option. They are summarised below and further explored in section 4.2:

General access for all lots excluding four at the northern top end of the development is planned for Boundary Street, via an access lane catering exclusively for residential traffic and non-commercial vehicles.

Access option 1: Left in and left out of Mona Vale Road without the road through No. 4 Boundary Street.

Access option 2: With the road through No.4 Boundary Street and no access from Mona Vale Road except for four lots at the top of the site.

4.2 ACCESS

The proposal has thoroughly considered vehicular access and aims to minimise the impact of the development on existing local roads surrounding the area.

Current vehicular access to the property at Boundary Street is available from Jubilee Lane via Jubilee Parade. This access will not be available to the proposed development.

Two access options have been investigated and are described below.

Option 1: Mona Vale Road deceleration/acceleration lane – turning left from Mona Vale Road into Boundary Street and left out of Boundary Street onto Mona Vale Road. The new lane can be accommodated within the confines of Mona Vale Road and adjacent land reserves.

The deceleration/acceleration lane includes a pedestrian link to a nearby bus stop on Mona Vale Road and also accommodates landscaping.

It must be noted the left in/left out access option lane on Mona Vale Road replaces the need to construct a new access road through No. 4 Boundary Street DP 816070, which forms Option 2 access. The main access point for the development would be via Mona Vale Road onto Boundary Street, with no alternative access options. A cul-de-sac constructed at the south-east corner of the development would provide access into lots at this location. Access to the south requires residents to travel north, right turn into Lane Cove Road and then performing a U-turn back to Mona Vale Road.

The existing driveway onto Mona Vale Road at the northwest corner would be retained to service four new lots.

Option 2: Construction of a new road from Jubilee Avenue (through the Pittwater Uniting Church land Lot 10 (DP5055) and land owned by the developer) up to No. 4 Boundary Street. This new road would begin at the junction of Jubilee Avenue and Jubilee Lane and traverse directly west to connect with Boundary Street.

Under this option only four large lots situated at the north-west corner of the site would be able to directly access the development from Mona Vale Road.

See Appendix B for a copy of the plans prepared by GMU.

Existing access: The existing road, Jubilee Lane that services Pittwater Uniting Church, a pre-school and a sports and recreation centre that connects to Boundary Street would not allow access to Boundary Street.

The existing road is potentially capable of accommodating traffic entering the development site as well as the services nearby. These services do not generate significant traffic amounts at peak travel times on weekdays. For example, the church traffic peaks on Sundays, which is when traffic generated from the development site would be at its lowest.

Since traffic generated by the proposed development is likely to peak on weekdays at peak travel times (AM and PM, see section 4.3), and not correspond with peak traffic times of the nearby amenities, Jubilee Lane could possibly be considered as another access option.

4.3 TRIP GENERATION AND DISTRIBUTION

Based on the RTA Guide to Traffic Generating Developments (2002) the potential traffic generation of the proposed development has been estimated to be 68 trips per weekday peak hour, based on 0.85 trips per dwelling for 79 lots (possibly lower to 73 dwellings reducing trip numbers even further).

Traffic generation associated with the rezoning to allow 79 lots has been based on the assumption that 100 per cent of all trips leaving the site in the morning would travel in an easterly direction and 100 per cent of all trips in the afternoon would travel along Jubilee Avenue in a westerly direction.

There may be occasions where a small proportion of trips would travel against the peak direction however, for the purposes of the assessment the worst case scenario has been assessed, that is, 100 per cent.

Based on existing traffic patterns the forecast 68 trips would be distributed as follows:

- ☐ 24 per cent to the west via Mona Vale Road
- ☐ 23 per cent to the north along Ponderosa Parade
- ☐ 30 per cent to Jubilee Avenue east and
- ☐ 23 per cent to Ponderosa Parade south.

It is expected that traffic leaving and entering the site would generally in the peak of 7:00- 8:00am to allow commuters sufficient time to arrive at their destination before 9:00am. Similarly the arrival time to the site would occur between 6:00pm - 7:00pm.

Consequently these times are generally outside the existing activities of the pre-school which operates between 9:00am - 3:00pm Monday - Friday as well as the activities of the sport centre and church.

4.4 INTERSECTION PERFORMANCE

To assess the future operation of the roundabout at Ponderosa Avenue and Jubilee Avenue the SIDRA model has been re-run incorporating the additional traffic generated by the development with traffic generations that are expected to occur with Warriewood Valley at full development.

The study examined a future growth and network development scenarios when the area is developed with the existing road network, **Scenario 3 (S3)**.

Intersection turning movement surveys were recently conducted at the intersection of Ponderosa Parade and Jubilee Avenue, Warriewood and modelled using the intersection analytical program, SIDRA. These volumes were factored up in line with the Warriewood Valley Urban Land Release report forecasts at the intersection of Jubilee Avenue and Ponderosa Road.

To examine the impacts of 79 dwellings it was assumed that 100 per cent of trips would leave the site in the AM peak and the reverse for the PM peak. The generated trips at the intersection of Ponderosa Parade and Jubilee Avenue were distributed as per existing patterns. The Roads and Traffic Authority provide generation rates of 0.85 trips per dwelling for single residential developments as seen in their publication, 'Guide to traffic generating developments'. Based on 79 dwellings it has been assumed that there would be 68 vehicles leaving the site in the AM peak and 68 returning in the PM peak.

The assessment used an RTA adopted intersection analytical program, SIDRA. The Warriewood study used another intersection program, INTANAL which is no longer available however, the results compare favourably. SIDRA reports on the performance of intersections in terms of average delay (seconds per vehicle) and Level of Service (LOS). *Table 4.1* sets out the criteria.

Table.4.2 INTERSECTION LEVEL OF SERVICE CRITERIA

LOS	Average delay (secs/veh)	Traffic signals, roundabout	Give way and stop signs
A	Less than 14	Good.	Good.
B	15 to 28	Good, with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory.	Satisfactory, but accident study required.
D	43 to 56	Satisfactory, but operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity and incidents will cause excessive delays; roundabouts require other control mode.	At capacity and requires other control mode.
F	Greater than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

Adapted from RTA Guide to Traffic Generating Developments, 1993

SIDRA results for Jubilee Avenue/Ponderosa Parade for the existing situation and for the two scenarios are summarised in Table 4.2 and 4.3 and the AM and PM peaks.

Table 4.3 AM WARRIEWOOD VALLEY AND DEVELOPMENT FLOWS

S3 Base		S3 with 120-122 Mona Vale Road development	
Average delay (s/v)	Level of service	Average delay (s/v)	Level of service
21.9	B	30.6	C

Table 4.4 PM WARRIEWOOD VALLEY AND DEVELOPMENT FLOWS

S3 Base		S3 with 120-122 Mona Vale Road development	
Average delay (s/v)	Level of service	Average delay (s/v)	Level of service
19.8	B	22.8	B

The results show that the 79 lots proposed for 120-122 Mona Vale Road, Warriewood can be accommodated within the Warriewood Valley road network at full development.

Whilst the analysis indicates that the traffic from the proposed development can be accommodated satisfactorily at the intersection of Ponderosa Parade and Jubilee Avenue, in the event that development of the Warriewood Valley exceed forecasts, there is the potential to improve the capacity of the roundabout (as seen in Appendix C).

Chapter 5

CONCLUSIONS

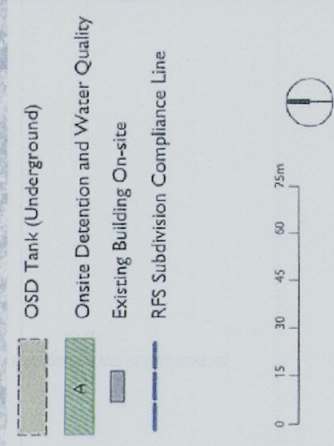
- ❑ This traffic study examined the impacts of rezoning 120-122 Mona Vale Road from non-urban (1A) to residential. The assessment has been carried out in accordance with generations contained within the RTA's Guide to Traffic Generating Developments. The findings of the study are summarised below:
- ❑ The proposal includes the development options with either 77 or 79 single dwelling residential allotments.
- ❑ The development proposal presents two access options: Option 1: Left in and left out of Mona Vale Road, no new road through No. 4 Boundary Street and option 2: new road through No.4 Boundary Street linking to Jubilee Avenue and no access from Mona Vale Road except for four lots at the top of the site.
- ❑ Retention of an existing driveway providing access for four lots at the northern perimeter of the site.
- ❑ The expected additional traffic generated by the proposal is 68 trips per hour during the morning and afternoon commuter peak periods (based on the development of 79 single dwelling residences which could be further reduced in the event only 77 residences are constructed).
- ❑ The impact of traffic generated by the development on the surrounding road network has been assessed for the AM and PM peak hour periods under a future scenario for when the Warriewood Valley is fully developed. Results indicate the additional traffic will have a negligible impact on the critical intersection near the development site; Ponderosa Parade and Jubilee Avenue.

In summary, the assessment shows that the additional traffic impacts are negligible and can be easily accommodated within the Warriewood Valley road network at full development.

Appendix A

SITE LAYOUT



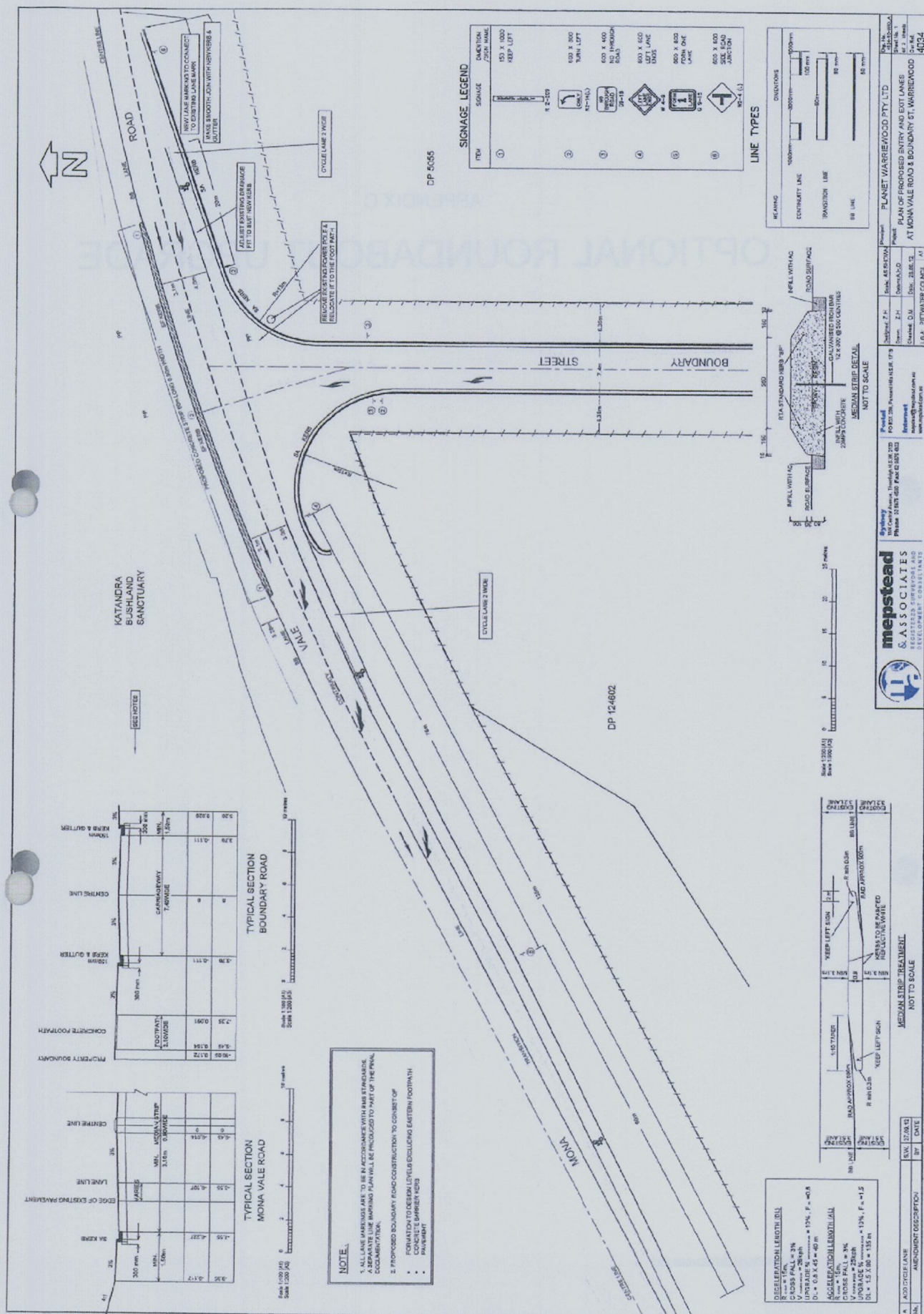


OPTION 2



Appendix B

MONA VALE RD ACCESS DETAIL

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APPENDIX C

OPTIONAL ROUNDABOUT UPGRADE

