

**POTENTIAL RESIDENTIAL APARTMENT  
DEVELOPMENT**

**DUNTROON AVENUE, ST LEONARDS**

***Assessment of Community Concerns in  
Relation to Traffic and Parking Issues***

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## **1. INTRODUCTION**

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Australand Pty Ltd is seeking to redevelop a consolidated site in Duntroon Avenue for residential apartments and a community consultation process is being undertaken to deal with various aspects of the proposal. In this regard, discussions involving the Community and Council to date have served to identify a number of traffic and parking issues.

There is no resolved development scheme at this stage of the process and it is therefore not possible to undertake a detailed assessment of the potential implications of development. However it is possible to provide an assessment of traffic and parking issues which have been identified to date in order to assist with the community consultation process.

The purpose of this document is to outline the results of an assessment of these identified traffic and parking issues.

## 2. UPDATED TRAFFIC CIRCUMSTANCES

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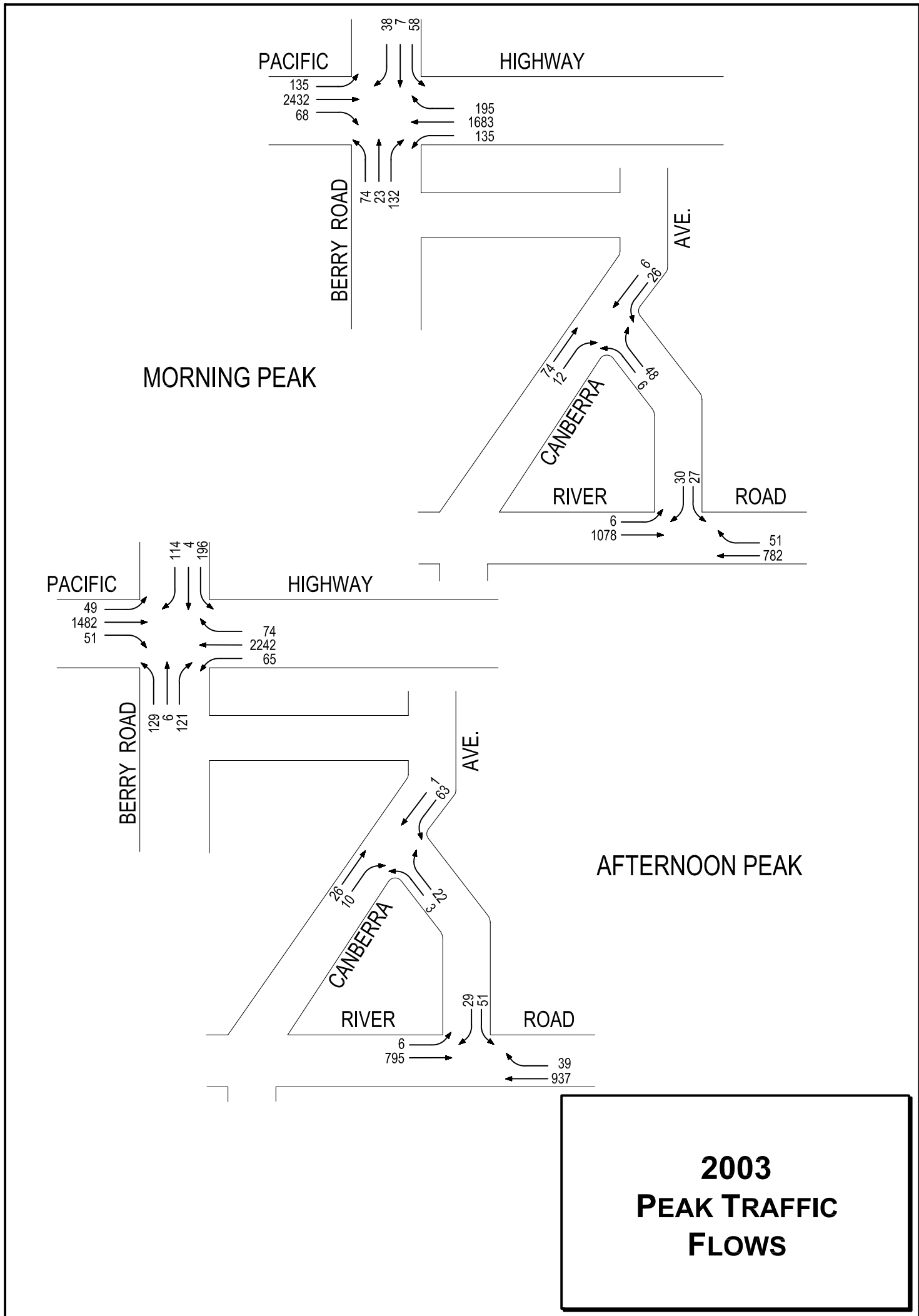
The traffic assessment undertaken for the earlier development proposal by Australand included traffic surveys undertaken in March 2003. In order to provide an update of the current traffic circumstances on the road system in the vicinity of the site new traffic surveys have been carried out and published RTA data has been reviewed.

The relevant traffic data is compared in the following:

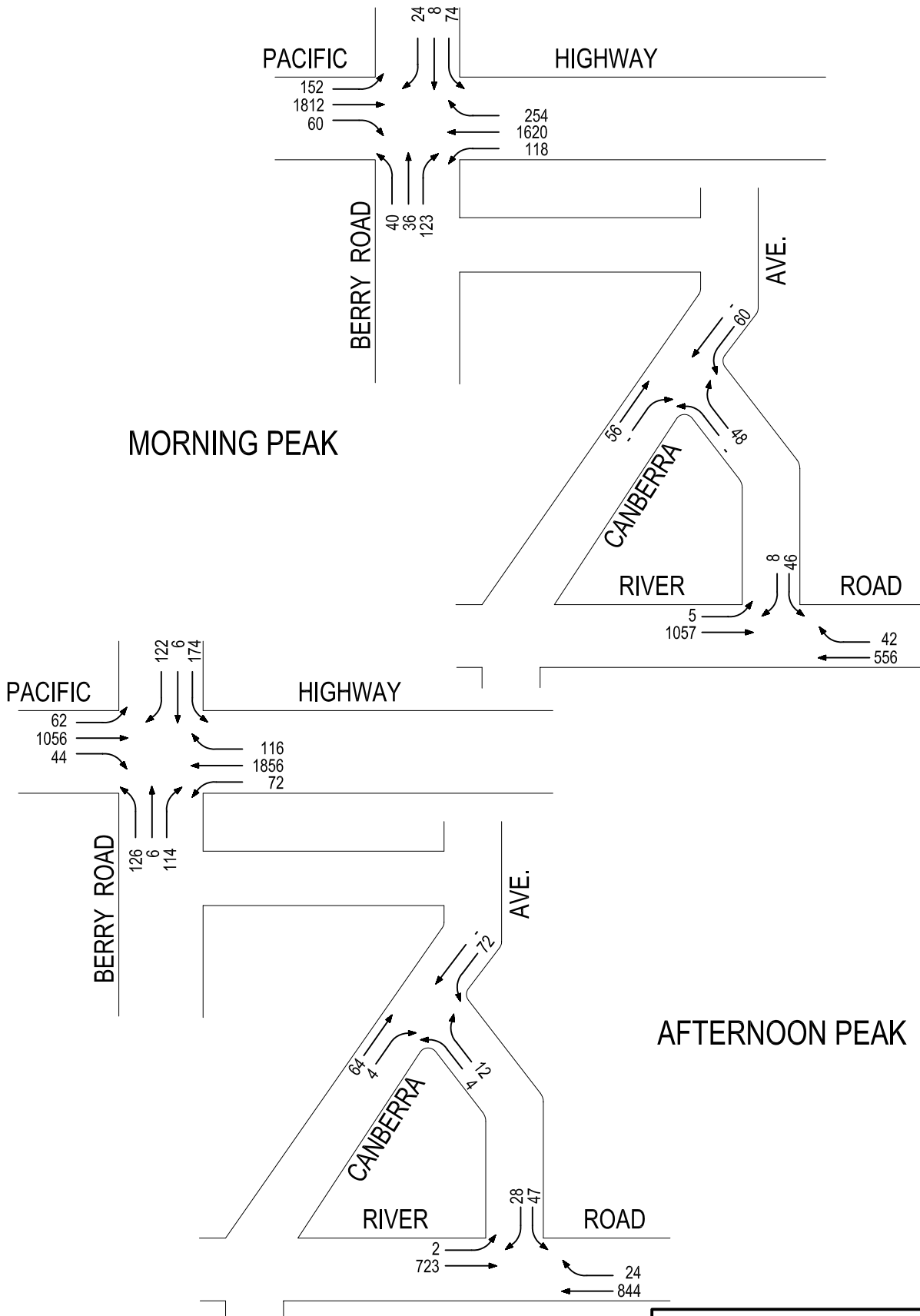
- \* 'Average Annual Daily Traffic' data (AADT) for the 2003 assessment relied on the RTA published data at that time whereas new data is now available as follows:

	<b>Previous RTA Data</b>	<b>Current RTA data</b>
River Road at Greenwich Road	27,262	26,798
River Road at Shirley Road	20,104	16,647
Pacific Highway at Shirley Road	32,443	29,609

- \* the surveyed 2003 and 2005 morning and afternoon peak hour flows at intersections in the area are compared in the diagrams overleaf. It is apparent that there is a marked reduction in the traffic flows recorded in 2005 as compared with those recorded for the 2003 assessment. The reason/s for this change are not apparent, however the magnitude of the reductions appear to be somewhat more than any 'day to day' variation (as confirmed by the AADT reductions)
- \* the operational performance of the River Road and Duntroon Avenue intersection during peak traffic periods, has been assessed using the SIDRA traffic simulation program, which indicates a Level of Service 'A'.



**2003  
PEAK TRAFFIC  
FLOWS**



**2005  
PEAK TRAFFIC  
FLOWS**

### 3. TRAFFIC GENERATION CHARACTERISTICS

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The traffic generation characteristics of residential apartment developments has been established by an extensive survey and assessment process undertaken by the Roads and Traffic Authority. The results of that assessment are published in the Authority's 'Guide to Traffic Generating Developments' and fall into two categories namely:

Regional Centre Locations	(Sydney CBD and North Sydney)
Sub-Regional Centre Locations	(Artarmon, Burwood, Bankstown, Caringbah etc)

The traffic generation rates, which were established by the RTA for the weekday morning and afternoon peak periods, are as follows:

Regional Location	-	0.24 vtpm per apartment
Sub-Regional Location	-	0.29 vtpm per apartment

*(vtpm – vehicles trips per hour)*

The research undertaken by the RTA collated a range of data criteria in relation to the surveyed developments, including No of units, No of bedrooms and No of parking spaces etc. Statistical analysis was undertaken using 'multiple linear regression' and it was established that the No of units was the most suitable single predictor for generated peak vehicle trips (ie rather than No of bedrooms or No of parking spaces etc).

It has been suggested that the existing 'Northmark' and 'Southmark' residential apartment complex at St Leonards presents a more suitable traffic generation circumstance than that adopted for the 2003 Traffic Study. The complex, which has access from Lithgow Street comprises:

- 187 apartments
  - 13 x one-bedroom
  - 101 x two-bedroom
  - 73 x three-bedroom
- 329 parking spaces

Traffic surveys during the morning and afternoon peak periods have been undertaken on four separate occasions (different days of the week) at the Northmark/Southmark vehicle access on Lithgow Street. The results of those surveys and the respective calculated generation rates are summarised in the following:

	1 <sup>st</sup>		2 <sup>nd</sup>		3 <sup>rd</sup>		4 <sup>th</sup>	
	AM	PM	PM	AM	AM	PM	AM	PM
IN/OUT	45	47	50	45	41	46	46	48
Vtph*	0.24	0.25	0.27	0.24	0.22	0.25	0.23	0.26

\* vtph per apartment

It is apparent that the Northmark/Southmark residential apartment development has the traffic generation characteristics of a 'Regional Centre' location and this is due to:

- \* the proximity to good rail services
- \* the proximity to bus services
- \* the proximity to employment.

The 2003 Traffic Assessment for the proposed Duntroon Avenue development adopted generation rates (established by surveys of developments in Herbert Street, St Leonards) of 0.22 vtph in the morning and 0.25 vtph in the afternoon.

The surveys of the Lithgow Street development indicate a traffic generation characteristic which has very little difference to that adopted in 2003 (namely equivalent at the lowest recorded level and some 4% higher at the average level).

The Lithgow Street development has 329 parking spaces including 35 designated for visitors suggesting a provision as follows:

One-bedroom	-	1 space
Two-bedroom	-	1.33 spaces
Three-bedroom	-	2 spaces
Visitors	-	1 per 5.34 apartments

This is a relatively high rate of provision, however it is not reflected in a higher than normal traffic generation outcome. This circumstance serves to confirm the RTA research that traffic generation for apartments is directly related to the No of apartments and not the number of parking spaces provided. To some extent this can be explained by surveys also undertaken at midday which revealed that a significant number of parking spaces in the carpark were still occupied (ie 'recreation' or part-time use vehicles).

It is apparent that the Northmark/Southmark traffic generation characteristics are appropriate for assessment of any potential residential apartment development in Duntroon Avenue. Application of these rates to a potential development in Duntroon Avenue of, for example, 220 apartments would indicate additional traffic movements as follows:

	<b>AM</b>	<b>PM</b>
220 @ 0.24	53	55
Less existing 16 @ 0.85	14	14
Additional trips	39	41

<b><u>Additional Movements</u></b>			
<b>AM</b>		<b>PM</b>	
<b>IN</b>	<b>OUT</b>	<b>IN</b>	<b>OUT</b>
9	30	30	11

If distributed evenly between River Road and Pacific Highway, then the maximum additional peak directional movements would be 15 vehicles per hour.

## 4. PARKING DEMAND CHARACTERISTICS

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It has been suggested that the Duntroon Avenue development could provide on-site parking at a higher rate than that specified in SEPP53 in order to overcome any potential on-street overflow parking. The prevailing criteria for parking provision relevant to residential apartment development at St Leonards is provided in the following:

	<b>SEPP53</b>
One-bedroom	1 space
Two-bedroom	1 space
Three-bedroom	1.5 spaces
Visitors	1 per 10

Indications of 'actual parking demands' for residential apartments are provided by the results of questionnaire surveys undertaken for the RTA assessment and a study undertaken for Willoughby Council. That surveyed demand data is reproduced in the following:

### **Parking Space Demands for Residential Apartments**

	<b>RTA Regional</b>	<b>RTA Sub-Regional</b>	<b>Willoughby Council</b>
One-bedroom	0.4	0.6	0.6
Two-bedroom	0.7	0.9	1.0
Three-bedroom	1.2	1.4	1.5
Visitors	1 per 7	1 per 5	N/A

The RTA surveys involved some 1,060 apartments while the Willoughby Council survey involved 540 apartments in St Leonards, Chatswood and Artarmon. The RTA surveys established that a significant number of superfluous parking spaces in apartment complexes were either used for storage or were sublet. It is apparent that the SEPP53 rate for parking provision very closely reflects the actual surveyed demand levels for comparable developments.

## 5. DUNTROON AVENUE WIDTH AND ACCESS OPTIONS

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### Road Width

Duntroon Avenue has a roadway width which varies between 6.5 and 7.4 metres with a slightly curvilinear alignment and parking generally occurs along the eastern side. Due to the width/parking circumstance there are some 'passing' constraints at times however the existing driveways (where parking does not occur) assist in this regard and this arrangement also acts to desirably constrain vehicle speeds.

To a large extent the parking which occurs along Duntroon Avenue involves commuter's vehicles and these 'passing' constraints could be overcome by imposition of sections of NO PARKING restrictions (to facilitate passing) avoiding any need to widen the roadway whilst continuing to constrain vehicle speeds.

### Access

There has been discussion as to whether one or two access driveways should be provided for the development. Even for the most optimistic outcome in relation to the apartment yield for development, one access driveway will be more than adequate to accommodate the ingress and egress movements without any adverse capacity or conflict outcomes.

## 6. CONCLUSION

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Assessment of the traffic and parking issues raised in discussion with the community and Council to date has indicated that:

- \* the current traffic flows on the roads in the vicinity of the site are somewhat less than that recorded for the 2003 study, however the reason for this circumstance is not apparent
- \* the traffic generation surveys undertaken at the nearby Northmark/Southmark development reveal rates which are similar to that of the published RTA criteria and only very slightly higher than those adopted for the 2003 Traffic Study for the Duntroon Avenue development
- \* the surveys undertaken at Northmark/Southmark serve to confirm the RTA research that the No of apartments is the determinant for traffic generation rather than the No of parking spaces
- \* the SEPP53 criteria for parking provision closely reflects the reality of parking demands in residential apartment buildings as confirmed by RTA and Willoughby Council studies
- \* the width constraint in Duntroon Avenue can be overcome by provision of NO PARKING restrictions and therefore road widening is not required
- \* the vehicle access requirements of the Duntroon Avenue development can be quite adequately accommodated with one access driveway.