PROPOSED RESIDENTIAL DEVELOPMENT
105 CUDGEONG ROAD, ROUSE HILL

Assessment of Traffic and Parking Implications

June 2017

Reference 17125
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1. **INTRODUCTION**

This report has been prepared to accompany a Development Application to Blacktown City Council for the proposed residential apartment development at 105 Cudgegong Road, Rouse Hill (Figure 1).

The site is situated just to the northwest of the Rouse Hill Town Centre within what is designated by Planning and Environment NSW as the Riverstone East Precinct. Development activity in the Precinct is occurring with an evolving road network as prescribed in the Indicative Layout Plan (ILP).

The proposed development scheme comprises:

- 4 buildings
- 201 apartments
- basement parking and servicing
- new access road system

The purpose of this report is to:

- describe the site, its context and the proposed development scheme
- describe the road network serving the site and the prevailing traffic conditions
- describe the future road system
- assess the potential traffic implications
- assess the adequacy of the proposed parking provision
- assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements
2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

The development site (Figure 2) is Lot 80 in DP208203 which occupies an area of some 9458m² just to the north of the new North-West Rail Line. The site is currently occupied by a rural residential dwelling and the surrounding uses comprise:

* the large Rouse Hill Centre located just to the south-east
* the rural-residential properties which adjoin to the north and east and extend along Rouse Road and Cudgegong Road
* the Rouse Hill Anglican College located just to the east
* the developing Kellyville Ridge and The Ponds residential areas to the south

2.2 PRECINCT PLANNING

The Department of Planning and Infrastructure has undertaken the planning for the North West Growth Centre and details of the rezoning, release and growth centre areas are shown on the Departments diagrams reproduced overleaf. Area 20 is bounded to the east by Windsor Road and to the north and west by the Riverstone East Growth Centre and the Indicative Layout Plan for this area is also reproduced overleaf.

2.3 PROPOSED DEVELOPMENT

The proposed development involves 2 lots with 4 residential complexes across the site (which has varying levels) surrounding communal courtyard areas. There will be 2 basement carparks accessed via a new proposed road on the northern frontage and sections of new 15.5m wide access roads connecting Cudgegong Road.
The proposed development comprises 201 apartments in the following compositions:

- One Bed apartments: 49
- Two Bed apartments: 148
- Three Bed apartments: 4

**Total:** 201

It is proposed to provide 248 parking spaces in the basement levels with vehicle access provided on the new northern access road.

Details of the proposed development are provided on the plans prepared by Dreamscape Architects which accompany the application and are reproduced in part in Appendix A.
3. **ROAD NETWORK AND TRAFFIC CONDITIONS**

3.1 **ROAD NETWORK**

The existing road network serving the site (Figure 3) comprises:

- *M7 Motorway* – a privately operated arterial route which connects between the M2 Motorway and the South Western Freeway being part of the Sydney Orbital Route

- *Windsor Road / Old Windsor* – a State Road and arterial route which connects between Windsor and Parramatta

- *Schofields Road* – a State Road and sub-arterial route (future arterial) linking between Windsor Road and Railway Terrace

- *Garfield Road* – a State Road and sub-arterial route (future arterial) linking between Windsor Road and Richmond Road

- the system of collector road routes including:
  - Cudgegong Road
  - Tallawong Road
  - Terry Road
  - Rouse Road

Windsor Road has two lanes in each direction with supplementary turning lanes at intersections while Schofields Road is currently subject to major upgrading works to provide two lanes in each direction with BUS LANE provision and supplementary turning lanes at intersections.

Cudgegong Road currently has 7m wide pavement with one lane in each direction.
3.2 Traffic Controls

The existing traffic controls which have been applied to the road system in the vicinity of the site (Figure 4) include:

- the traffic control signals along Schofields Road at the Cudgegong Road and Tallawong Road intersections
- the traffic control signals at the Windsor Road and Rouse Road/Mile End Road intersection
- the traffic control signals at the Windsor Road and Schofields Road intersection
- the 80 kmph speed restriction on Windsor Road and 60 kmph along Schofields Road with 50 kmph on the local and collector road systems
- the roundabout at the Mile End Road, Adelphi Street and Resolution Place intersection
- the section of 40kmph School Speed restriction on Rouse Road in the vicinity of the Anglican College

3.3 Traffic Conditions

An indication of the current traffic conditions on the road system serving the site is provided by data published by RMS. This data is expressed in terms of Annual Average Daily Traffic (AADT) and that data is provided in the following:

<table>
<thead>
<tr>
<th>AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windsor Road north of Showground Road</td>
</tr>
<tr>
<td>Memorial Avenue west of Windsor Road</td>
</tr>
</tbody>
</table>

The traffic flows along Rouse Road and Cudgegong Road at the present time are quite minor and there are no vehicle delays or road safety issues.
3.4 FUTURE ROAD CIRCUMSTANCES

Issues relevant to the future traffic circumstances on the road system in the vicinity of the site comprise:

- Completion of the proposed road system for the Precinct (see details overleaf) incorporating:
  - the upgrading of the Schofields Road arterial route
  - the development of a sub-arterial route along Clark Street
  - the development of the collector roads of Rouse Road, Terry Road, Cudgegong Road and Tallawong Road
  - the development of the local access roads adjacent to the site

- The upgrading of traffic signal controls at the collector road intersections with the arterial roads. Details of the proposed Schofields Road, intersections with Tallawong Road and Cudgegong Road are provided on the plans overleaf

- The provision of roundabout controls on collector and local road intersections
<table>
<thead>
<tr>
<th>DETECTOR SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detector</td>
</tr>
<tr>
<td>P1</td>
</tr>
<tr>
<td>P2</td>
</tr>
<tr>
<td>P3</td>
</tr>
<tr>
<td>P4</td>
</tr>
<tr>
<td>P5</td>
</tr>
</tbody>
</table>

**POSTS**

<table>
<thead>
<tr>
<th>Position</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>4</td>
</tr>
</tbody>
</table>

**SIGNAL GROUP/PHASE CHART**

<table>
<thead>
<tr>
<th>Signal</th>
<th>Group</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>A</td>
<td>X</td>
</tr>
<tr>
<td>V2</td>
<td>B</td>
<td>X</td>
</tr>
<tr>
<td>V3</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>V4</td>
<td>D</td>
<td>X</td>
</tr>
<tr>
<td>V5</td>
<td>E</td>
<td>X</td>
</tr>
</tbody>
</table>

**ROADS AND MARITIME SERVICES**

<table>
<thead>
<tr>
<th>Roads and Maritime Services</th>
<th>Blacktown Council Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Signals at Schofields Road (MR687) and Cudgegong Road THE PONDS</td>
<td></td>
</tr>
</tbody>
</table>
4. TRANSPORT SERVICES

EXISTING SERVICES

The existing public transport services in the vicinity of the development site (see Appendix B) comprise:

* the bus services along Windsor Road (Routes 615, 612, 741 and T62)
* the ‘line haul’ bus services on the Norwest Transitway along Old Windsor Road (Routes 740 and 750 etc.)
* the bus services along Norwest Boulevard (Routes 714, 715, 745, T62 etc.) providing connections to the City and Blacktown etc.

FUTURE SERVICES

The major elements of future public transport servicing for the area will be:

* the Norwest Rail Line (currently under construction) with the Cudgegong Road Station located just to the south of the site and the Rouse Hill Station at the Town Centre
* the revision and upgrading of bus services for servicing the North West Growth Centre Area (see details overleaf)
5. PROPOSED ACCESS ROAD SYSTEM

The road patterns typically identified on the Department of Planning Indicative Layout Plans:

- generally follow existing property boundaries in order to facilitate development (i.e. half road widths can be achieved sufficient to enable development etc.) and minimise neighbour disputes

- often identify “fixed roads” and local roads that can be varied as development circumstances evolve

The proposed access roads will comply with the road pattern designated in the ILP.

The proposed access roads will be 18m wide (15.5m roadway) in compliance with Council’s design criteria and there will be significant kerbside parking provided even though the parking provided in the basement will be entirely compliant with the DCP assessed needs for residents and visitors.
6. **TRAFFIC**

RMS have recently revised their guideline peak traffic generation rate for High Density Residential Apartments with access to rail services from 0.29vtph per apartment to 0.19 and 0.15vtph (AM and PM respectively). It is apparent that the traffic generation of the proposed Stage 1A & 1B development will reflect this new criteria as the railway station will be completed by the time the development is occupied.

The planning undertaken for Area 20 was based on the former RTA traffic generation rate for apartments and assessment of the traffic implications of the envisaged development indicates that the traffic generation outcome will be significantly lower as follows:

**201 apartments @ 0.29vtph**

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th></th>
<th></th>
<th>PM</th>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>IN</td>
<td>OUT</td>
<td>Total</td>
<td>IN</td>
<td>OUT</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>47</td>
<td>59</td>
<td>47</td>
<td>12</td>
<td>59</td>
</tr>
</tbody>
</table>

**201 apartments @ 0.19 and 0.15vtph**

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th></th>
<th></th>
<th>PM</th>
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<tbody>
<tr>
<td></td>
<td>IN</td>
<td>OUT</td>
<td>Total</td>
<td>IN</td>
<td>OUT</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>31</td>
<td>39</td>
<td>25</td>
<td>6</td>
<td>31</td>
</tr>
</tbody>
</table>

The proposed development scheme being comprised of 201 apartments is entirely compliant with the “yield” permitted under the planning provisions. It follows that the total traffic generation outcome will only be some 52% to 65% of that assessed in the studies undertaken for the Area 20 planning.

It is apparent therefore that the traffic generated by the proposed development will not have any adverse traffic implications for the existing and developing road network.
7. PARKING

The BCC Growth Centres Precincts DCP specifies carparking provision for residential apartments of:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>One bedroom</td>
<td>1 space</td>
</tr>
<tr>
<td>Two bedrooms</td>
<td>1 space</td>
</tr>
<tr>
<td>Three bedrooms</td>
<td>1.5 spaces</td>
</tr>
<tr>
<td>Visitors</td>
<td>1 space per 5 dwellings</td>
</tr>
</tbody>
</table>

Application of this criteria to the proposed development would indicate the following:

<table>
<thead>
<tr>
<th></th>
<th>Apts</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Bed</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Two Bed</td>
<td>148</td>
<td>148</td>
</tr>
<tr>
<td>Three Bed</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Visitors</td>
<td>(201)</td>
<td>40</td>
</tr>
<tr>
<td>Additional spaces</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>248</strong></td>
<td></td>
</tr>
</tbody>
</table>

A total of 251 parking spaces will be provided in compliance with the DCP requirements for residents and visitors. The DCP also specifies a requirement for bicycle provision of 1 space per 3 apartments for residents and visitors (i.e. 67 spaces) and accordingly it is proposed to provide a total of 74 bicycle spaces in the development.

Whilst it is proposed to provide more parking spaces than the DCP criteria, this criteria as a “minimum” and the provision of these additional spaces will reduce the on-street parking overflow without necessarily increasing the traffic generation of the development in any perceptible way.
8. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

Access will be provided by two 6.1m wide combined ingress/egress driveways connecting the basement to the new access roadway.

The proposed driveways will be located sufficiently away from intersections in accordance with the AS2890.1 & 2 design criteria and there will be adequate sight distances.

INTERNAL CIRCULATION

The proposed access ramps will provide for two-way traffic and will accord with the AS2890.1 & 2 design criteria. The carparking areas have been designed to accord with AS 2890.1 and 6 including aisles, ramp width/grade, bays and height clearances and quite adequate manoeuvring provisions would be available as a result of this design compliance.

SERVICING

Refuse will be removed by 8m long Cleanaway contractor’s collection vehicles standing within the basement areas and details of the turning path assessment for the 8m long Cleanaway contractors refuse trucks accessing the basement are provided in Appendix C.

Service personnel and small delivery vehicles will be able to utilise the visitor bays while larger vehicles will be able to stand in the basement (as per Cleanaway contractor’s truck) or on the new access roads as is normal for residential apartment developments of this nature.
9. CONCLUSION

The proposed residential apartment development on Cudgegong Road at Rouse Hill has been assessed in relation to the potential vehicle access, parking, traffic and transport implications. This assessment has concluded that:

- the proposed access road system will be suitable and appropriate
- there will be no adverse or unsatisfactory traffic implications
- the proposed parking provision will be adequate and appropriate
- the proposed vehicle access, internal circulation and servicing provisions will be quite satisfactory
- the convenience and accessibility of public transport services will ensure a sustainable development outcome
1.3  The dimensions shown are general only and are subject to further design dimensioned at later stage.

1.5  The size and position of louvre sun screens is indicative and shown in open and account for services bulkheads or similar partial ceiling protrusions.

1.8  Location of plant, equipment and services on drawings is general and indicative only, and does not include minor elements, such as vent pipes, flues, aerials, etc.

2.  GRAPHIC PRESENTATION

2.1  Colours presented on drawings are generic only and indicative of the architectural

3.  EXISTING STRUCTURES AND SERVICES

3.1  Extent and location of existing structures and services is according to the available survey information and will need to be verified on site at later stage.

### Site Plan

**LOT A**

- **Area**: 4798 sqm
- **Site Coverage**: 2405 sqm (50%)
- **Landscaped Area**: 1440 sqm (30%)
- **Communal Area**: 673 sqm (18%)
- **Deep Soil Area**: 1319 sqm
- **Parking Number**: 128
- **Bicycle Parking**: 30

**LOT B**

- **Area**: 4660 sqm
- **Site Coverage**: 2254 sqm (48%)
- **Landscaped Area**: 1404 sqm (30.13%)
- **Communal Area**: 830 sqm (17.81%)
- **Deep Soil Area**: 1155 sqm
- **Parking Number**: 123
- **Bicycle Parking**: 36

**LOT C**

- **Area**: 6337 sqm
- **Site Coverage**: 2405 sqm (50%)
- **Landscaped Area**: 1440 sqm (30%)
- **Communal Area**: 673 sqm (18%)
- **Deep Soil Area**: 1319 sqm
- **Parking Number**: 128
- **Bicycle Parking**: 30

**Residential Development**

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Phone (02) 80688318
Email: info@thearc.com.au
ACN 169 027 936

**Dreamscapes Architect E**

Planning. Amphibian. Interior. Landscapes

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Phone (02) 80688318
Email: info@thearc.com.au
ACN 169 027 936

**Title**

**DA Submission**

**Date**: 17/03/2019

**Scale**: A:1/101

**Sheet Size**: A1

**Drawing Scale**: ALL DIMENSIONS IN mm - DO NOT SCALE

**Revision**: 17003

**Contractor**

**Supervision**

**Architect**
1. **DESIGN RESOLUTION**
   1.1 The drawings represent general architectural intent for the purpose of this development application only.
   1.2 The internal layout is shown indicatively and is subject to further design development.
   1.3 The dimensions shown are general only and are subject to further design resolution.
   1.4 Location of car park entry point is general only and will be confirmed and dimensioned at later stage.
   1.5 The size and position of louvre sun screens is indicative and shown in open and closed positions.
   1.6 Ceiling RL (where shown) indicates general ceiling design level only, which does not account for services bulkheads or similar partial ceiling protrusions.
   1.7 Landscape component is shown indicatively only and subject to further design development at later stage.
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   3.2 All unchanged site levels are as per the existing survey information.

[Additional notes on project status and revisions]

[Contact information for The Silver Arc Dreamscapes Pty Ltd]
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   - All unchanged site levels are as per the existing survey information.

**Scale:** 1:200

**Drawing Scale:** 1:200

**Sheet Size:** A1

**Date:** 22/06/2017

**Revision:** 1

**Description:**

1. **LOT 2 - SECTION 1**

2. **LOT 2 - SECTION A**

3. **LOT 2 - SECTION B**

4. **LONGITUDINAL SECTION**

**Architectural Roof Feature**

**Height Limit 12M**
APPENDIX B

BUS SERVICES
APPENDIX C

TURNING PATH ASSESSMENT
LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS
OF AN 8m (CLEANAWAY)
REFUSE VEHICLE ENTERING
THE SITE
(LOT 1)
LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS OF AN 8m (CLEANAWAY) REFUSE VEHICLE ENTERING THE SITE (LOT 2)
LEGEND
This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS OF AN 8m (CLEANAWAY) REFUSE VEHICLE EXITING THE SITE (LOT 2)