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'Rippon Grange' private hospital traffic, parking and access review

The NSW Department of Planning (DoP) engaged Sinclair Knight Merz (SKM) in December 2009 to review the traffic impact assessment and construction management plan of the proposed 'Rippon Grange' private hospital in Wahroonga. The traffic impact assessment was undertaken by Traffix Traffic and Transport Planners (referred to in this document as Traffix), who reported in March 2009. The construction management plan was undertaken by Murlan Consulting, who reported in February 2009. Traffix and Murlan Consulting are consultants to Waterbrook at Wahroonga Pty. Ltd., the proponent of the 'Rippon Grange' private hospital.

The proposed development comprises a 129-bed private hospital to be used for rehabilitation, post-operative, post-natal and psychiatric purposes. The proponents are proposing access to the site from Young Street (for cars only) and Water Street (for cars and service vehicles). A total of 92 off-street car parking spaces are also proposed. The DoP is seeking independent advice on traffic impacts, the adequacy of vehicular access arrangements and parking.

Issues to be reviewed

The following documents formed the basis of SKM's review:

- *Traffic Impact Assessment for a proposed private hospital at 35 Water Street, Wahroonga*, prepared by Traffix (March 2009);
- *Construction Management Plan for Proposed Hospital, 35 Water Street, Wahroonga, NSW*, prepared by Murlan Consulting (February 2009);
- An extract of the submission made by Ku-ring-gai Council to the DoP (July 2009);
- A Microsoft PowerPoint presentation to the Minister prepared by local residents (October 2009); and
- A letter from Traffix responding to submissions made by the NSW Roads and Traffic Authority (RTA), Ku-ring-gai Council and local residents to the DoP (November 2009).

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In addition, a site inspection was undertaken on 12th January 2009 to observe existing conditions.

The following issues were highlighted to the DoP by Ku-ring-gai Council and local residents for particular attention:

- Likely traffic impacts of the proposal, including impacts during peak periods;
- Adequacy of the local road network to cater for likely traffic volumes;
- Adequacy of the number of on-site car parking spaces, and the possibility of parking on surrounding streets;
- Adequacy of the construction management plan in minimising conflicts between construction traffic and school-related traffic;
- Adequacy of the design to cater for access and manoeuvrability by service vehicles;
- Adequacy of the design to cater for access and manoeuvrability by ambulances; and
- Adequacy of the design to cater for access and manoeuvrability by fire fighting vehicles, considering the possibilities of a fire within the site and a bush fire.

Results of review

The results of the review are detailed below.

■ Traffic impacts

The impact of traffic generated by the proposal, in particular during peak periods, is considered by SKM to be minor. Based on the RTA *Guide to Traffic Generating Developments*, it was determined that 56 vehicle trips per hour will be generated in the AM peak (defined to be 8:00AM to 9:00AM, which coincides with the morning school peak). The 56 vehicle trips were assumed to be divided equally between the two accesses, resulting in 28 vehicle trips per hour each on Water Street and Young Street. These trips equate to one additional vehicle movement every two minutes. Similarly, it was determined that 99 vehicle trips per hour will be generated in the peak hour of traffic generation for a hospital (defined to be 3:00PM to 4:00PM, which coincides with the afternoon school peak). The 99 vehicle trips divided equally between the two accesses results in one additional vehicle movement per minute each on Water Street and Young Street. It is stated that the expected increase in vehicle trips as a result of the proposal is very small, and the impacts are manageable. The methodology adopted by Traffix to determine traffic generation and distribution is considered adequate and the conclusions acceptable.



In addition, the proponent has proposed amended access arrangements at Young Street, whereby the driveway has been realigned to deflect to the right upon exit from the site (in conjunction with a 'no left turn' sign opposite the driveway) to discourage vehicles from turning left and travelling north towards Water Street and Wairoonga Public School. SKM considers that the amended access arrangements are adequate, and serve to aid in the even distribution of traffic, whereby the Water Street entrance will most likely be used by vehicles travelling to / from the north and west, and the Young Street entrance will most likely be used by vehicles travelling to / from the south and east, therefore minimising the impact of traffic generated by the proposal.

■ **Adequacy of the local road network**

The ability of the local road network to cater for increased traffic volumes as a result of the proposal was determined by modelling key intersections in the vicinity of the site using the *SIDRA Intersection* software package for the AM peak hour. The intersections that were modelled included Young Street / Billyard Avenue, Cleveland Street / Water Street and Young Street / Water Street. The results of the modelling show that the three intersections are expected to operate efficiently with acceptable delays following development of the site, and it is concluded that additional traffic volumes are able to be accommodated. SKM concurs with this assessment.

Residents have raised concerns regarding the insufficient width of Young Street for two vehicles to safely pass. The proponent has proposed two options to address this issue: widening Young Street to 7.5 metres or 9.0 metres between the site access and Billyard Avenue, both of which incorporate a 3.7 metre wide road verge along the site frontage that includes a footpath. The 7.5 metre wide carriageway enables vehicles to pass without difficulty and also permits occasional / intermittent on-street parking to occur. The 9.0 metre wide carriageway enables parallel parking on the western side of Young Street. SKM considers the 7.5 metre wide carriageway option the most appropriate, given that the provision of parallel parking on Young Street is undesirable; and as stated in Traffix's response to submissions, the 9.0 metre wide option has the potential to alter the character of Young Street, which is also undesirable.



■ **On-site car parking provision**

Traffix used Ku-ring-gai Council's Parking DCP 43 as the basis for their assessment of the number of car parking spaces required, which was calculated to be 92. Although this is compliant with DCP 43, this is less than the RTA requirement of 112. In providing average parking rates for private hospitals, the RTA *Guide to Traffic Generating Developments* specifies that "car parking should be provided in accordance with the peak parking accumulation with due consideration being given to reducing the parking required if convenient and safe on-street parking is available provided that the use of such parking does not adversely affect the amenity of the surrounding area".

To justify the adoption of the lower number of parking spaces, Traffix states that the RTA surveys, upon which the average parking rates are based, are outdated and, combined with peak spreading and more flexible visiting hours, parking demands have since reduced. SKM considers that parking demands have actually increased since the RTA surveys were conducted, in line with the growth in car ownership and usage rates.

In addition, Traffix undertook a parking survey at Lady Davidson Hospital in North Turramurra (comprising of 120 beds and a maximum of 100 staff on site at any one time) for comparison purposes. The peak parking demand was determined to be 126 spaces, and it was concluded that since the demands at the proposed hospital are expected to be about 30 percent lower, the parking provision specified in DCP 43 is more applicable. This justification is not considered appropriate as the staff component of parking at a hospital represents a significantly smaller proportion than the amount attributable to the number of beds provided, as evidenced in the following empirical formula determined by the RTA and contained in the *Guide to Traffic Generating Developments*:

$$\text{Parking provision} = -19.56 + (0.85 * \text{number of beds}) + (0.27 * \text{average staff per weekday shift})$$

SKM considers that increasing the provision of car parking spaces to align with the RTA requirements is more appropriate for the proposal given that convenient and safe on-street parking is neither available nor desirable. Furthermore, it is considered that adopting the lower number of parking spaces as specified in DCP 43 would greatly increase the possibility of parking on surrounding streets.



■ **Adequacy of the construction management plan**

SKM considers that the construction management plan prepared by Murlan Consulting contains insufficient detail regarding measures to minimise potential conflicts between construction traffic and school-related traffic. In addition, the volume and type of heavy vehicle movements is not addressed.

■ **Access and manoeuvrability arrangements for service vehicles**

A review of the design drawings (including swept paths) contained in the traffic impact assessment indicates that there is sufficient space for a medium rigid vehicle (8.8 metres in length) to manoeuvre within the main designated loading area to enable entry and exit in a forwards direction. Furthermore, the proposed driveway design and layout on Water Street (which will be the main point of access for service vehicles) is considered adequate. However, it is noted that the swept path for an 11.0 metre-long vehicle is provided, which is not a standard design vehicle. A heavy rigid vehicle (12.5 metres in length) will not be able to be accommodated, either in the driveway or within the site. Further clarification is required.

A swept path diagram for a medium rigid vehicle is provided for an area approximately 40 metres west of the Young Street access. However, the purpose of the diagram is unclear, as there are no loading areas in the vicinity. Furthermore, the diagram suggests that reversing the vehicle (to enable exit from the site in a forwards direction) will result in mounting of the kerb line. Further clarification is required.

■ **Access and manoeuvrability arrangements for ambulances**

A review of the design drawings (including swept paths) contained in the traffic impact assessment indicates that there is sufficient space for ambulance vehicles to manoeuvre around and into the two designated loading areas (one each on ground level and basement level B2), as well as through the site. The configuration and layout of the two driveways are considered adequate for access by ambulance vehicles.

■ **Access and manoeuvrability arrangements for fire fighting vehicles**

A review of the design drawings (including swept paths) contained in the traffic impact assessment indicates that fire fighting vehicles are able to be accommodated in terms of access and manoeuvrability through the site, considering the possibilities of a fire on site and a bush fire.



Summary and recommendations

Based on the review of the traffic impact assessment and construction management plan of the proposed 'Rippon Grange' private hospital in Wahroonga, the following should be considered for implementation / further analysis by the proponent:

- Widen Young Street to 7.5 metres between the site access and Billyard Avenue;
- Adopt the RTA requirement of 112 car parking spaces rather than the 92 spaces specified by Ku-ring-gai Council's Parking DCP 43;
- Prepare a Construction Traffic Management Plan that details the following (but not limited to):
 - Main construction activities;
 - Construction staging;
 - Construction vehicles, including haulage routes, construction employees and access to adjacent properties;
 - Impacts on existing roads and accesses;
 - Traffic control plans; and
 - Safeguards and mitigation measures.
- Clarify the use of a non-standard design vehicle in the swept path analysis for the Water Street driveway; and
- Clarify the location of the loading area near the Young Street access, and whether egress in a forwards direction from the site at this location is possible for a medium rigid vehicle.

Regards,

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