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PROPOSED PART 3A APPLICATION FOR A HOLISTIC HEALTH CARE CITY AT WARWICK STREET BERKELEY

TRAFFIC IMPACT ASSESSMENT

JUNE 2010

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1.0 INTRODUCTION

This report has been prepared to accompany an application to the Dept of Planning for a Part 3A application for a proposed Holistic Health City at Warwick Street, Berkeley.

The proposal is to develop this land to provide for a Holistic Health City incorporating a broad range of medical and hospital care facilities, research and educational facilities and residential facilities for practitioners, students and residents in a number of clusters and buildings.

The location of the site is shown in Figure 1.

The purpose of this report is to provide a preliminary traffic assessment resulting from the proposed development concept for appropriate consideration by the Dept of Planning.

Traffic Impact Services has been engaged by Dr Rashid for this proposal.

Figure 1 Location of Site

2.0 DEVELOPMENT PROPOSAL

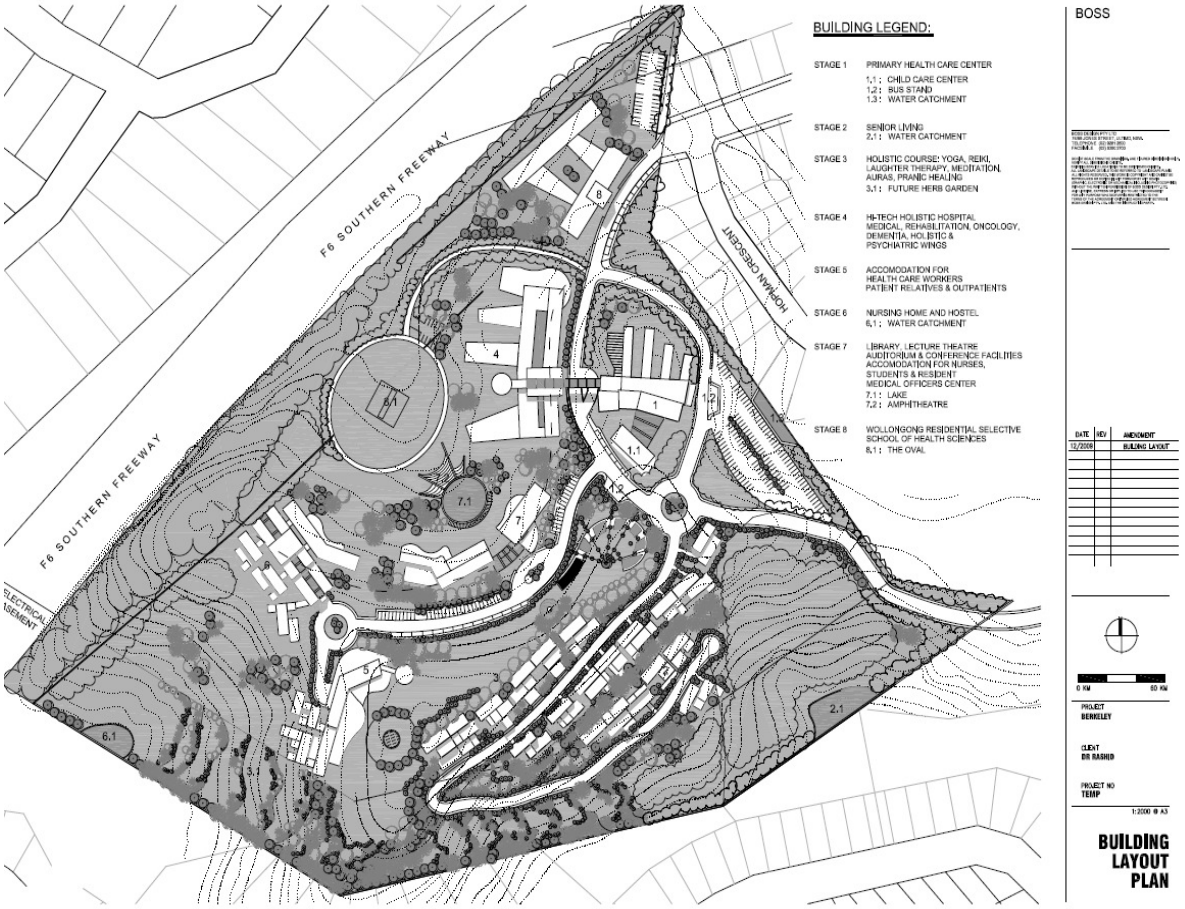
The proposed development, due to its size and diverse nature, will need to be staged over several years and the following provides details of the stages and types of proposed uses and floor space.

A building layout plan is shown as Figure 2.

It is proposed to develop the WHHHC in eight stages as follows:

Stage	Description of Proposed Development	Building GFA & (footprint) m^2	Landscaped Area m^2	Access
1	**Precinct 1** – Primary Health Care Centre (Day-care Centre) & Child Care Centre Precinct 3	4,800	9,703.38	400m extension of Warwick St
2	**Precinct 2** – Seniors Living	8,000	7,489.30	Complete centre access road & roundabout
3	**Precinct 3** – Completion of Holistic Course incl. Yoga, Reiki, Laughter Therapy, Meditation, Auras & Pranic Healing & outdoor structures for these activities	0	48,456.00	Provide 100m of centre access road and on-street parking 15 spaces
4	**Precinct 4** – 320 bed High-tech Holistic Medical Hospital (tertiary referral hospital); 300 beds incl. Medical Rehabilitation, Oncology, Dementia, Holistic & Psychiatric Wings	13,000	8,513.35	Warwick St to be extended to junction with Nolan St
5	**Precinct 5** – Ancillary accommodation for health care workers (75 units), patient relatives & outpatients (ancillary to the hospital)	7,500	13,990.85	60m further extension of Warwick St & three residential cul-de-sacs
6	**Precinct 6** – Residential Care Facility & Hostel with total 120 beds	5,500	3,291.20	No further roads required for this building
7	**Precinct 7** – Library + Lecture theatre + Auditorium + Accommodation for Nurses & Resident Medical Officers	3,000	10,663.12	No further roads required for this building
8	**Precinct 8** – Wollongong Selective School of Health Sciences for 350 Students & Oval	5,000	13,836.31	Internal roads only
Totals	**Subject Site**	45,800m^2	115,943.51m^2	26,159.4m^2

Figure 2
Building Layout Plan



3.0 THE SITE

3.1 Location

The site is bounded by the Southern Freeway to the west, a residential area to the north being adjacent to Warwick Street and Hopman Crescent, Nolan Street to the east and a residential area off Northcliffe Drive to the south. The site topography provides for relatively steep terrain which then permits extensive views in many directions. The site is mainly accessible by car or bus public transport with the nearest rail station of Unanderra being a considerable distance away.

The site is irregular in shape and adjoins a section of Council open space on its northern eastern side which then has frontage to Nolan Street. It is proposed to use some of this open space land to provide a direct road connection between the site and Nolan Street.

3.2 Road Network

Although the site is now accessible from Warwick Street and Hopman Crescent, the proposal is to provide a new road to link directly with Nolan Street. Accordingly, the site will be mainly served by Nolan Street (a major collector road) and to a minimum extent by either Warwick Street or Hopman Crescent, which are both local roads.

Nolan Street links with the Princes Highway to the north and Northcliffe Drive to the south, both these roadways are designated as sub-arterial roads.

Nolan Street has a road width of 13 metres and, with its relatively steep topography, centre and double line markings have been provided to assist in the overall traffic flow. Traffic volumes using Nolan Street are not high for its classification as a Major Collector Road.

Wollongong Council has provided details of traffic volumes in Nolan Street in the sections north and south of the proposed site. The volumes are as follows:

Existing Traffic Volumes

Nolan St	AADT	AM Peak (8am-9am)	PM Peak (4pm-5pm)
Between Warwick St & Doyle St	5,590	445	560
Between Hopman Cres & Norfolk St	4,354	346	370

The volumes usually applicable to a Collector Road are 2,000 to 10,000 vehicles per day (vpd) (Refer Traffic Authority Functional Classification of Roads). Many Councils however often divide Collector Roads into two further classifications namely either Minor and Major Collectors or Collector and Distributor Roads. Wollongong Council is one such Council that adopts the Major and Minor classification.

It is common for the Minor Collector Roads to carry volumes in the order of 2,000 to 6,000 and the Major Collector Roads to carry volumes from 6,000 to 10,000 vpd. As is evident from the above, Nolan Street being a Major Collector Road has a daily volume of around 5,000 which in respect to volumes is at the lower end of its classification.

Warwick Street and Hopman Crescent are both 10 metres wide and classified as local roads. Traffic movement on these roads is relatively light with the upper limit being around 800 vehicles per day.

3.3 Public Transport

Bus public transport operates presently along Nolan Street using Route No. 34 provided by Premier Buses. Premier Buses has indicated that the additional activity arising from the proposed development would improve the viability of this route and, that travel through the site is considered a suitable arrangement.

4.0 TRAFFIC IMPLICATIONS OF PROPOSAL

The proposed development may be staged over some years, however, for the purpose of assessing the traffic impact the assessment has been undertaken for the full or ultimate development. A road connection is to be provided directly from the site to Nolan Street and this will reduce any impact on the existing local road system. The connection will be constructed when volumes reach a reasonable level.

The range of types of land uses proposed means that it does not fit comfortably into a standard planning definition. It is not strictly a hospital or an educational establishment and instead is a mix of a range of elements.

4.1 Traffic Generation

Although the proposed land uses are somewhat in the conceptual stage, the traffic generation of this proposal is able to be assumed and calculated by using data available from:

- RTA publication – "Guide to Traffic Generating Developments – Version 2.2 – 2002.

- Surveys undertaken at various similar land uses by this and various consultancies.

The following table outlines the type of land use, the suggested traffic generation for determining the peak hour and the final calculated number of trips per hour for the proposed development.

Traffic Generation of Land Uses

Stage & Precinct	Land Use	GFA m2	Peak Hour Vehicle Rate	Total Trips After Each Stage	* Trips Per Hour
1	- Primary Health Care Centre - Medical Day Care Centre - Child Care Centre	4,800	- Medical Day Care: Specialists 15 x 4 =60 } Beds 10 x 1 =10 } - Child Care Centre: 70 children = 0.7 trips per child	119	70 49
2	Seniors Living	8,000	- Independent Housing 75 x 0.2 =	135	15
3	Holistic Course outdoor health activity	Open Space	Assume 30 persons at any time: 6 public transport 24 @ 2 per vehicle	147	12
4	Medical Hospital	13,000	320 beds at 0.97 per bed Reduced by 35 as staff accommodation on site	422	275
5	Ancillary accommodation for Health Care Workers	7,500	75 Units Workers on-site and no traffic generation	457	0
6	Residential Care Facility & Hostel	5,500	120 beds Adopting housing for aged & disabled persons RTA Guidelines: 0.1 x 120	469	12
7	Library, Lecture Theatre, Auditorium and accommodation for health carers	3,000	Assume: - High public transport usage for students - Some students accommodation on-site - Say 100 trips	569	100
8	Wollongong Selective High School	5,000	- 350 students Assume: - High public transport usage – small car park encouraging public transport - Students do not all have vehicles so occupancy rate high	670	101

*Reference Background to Trip Generation Rates Per Hour

Ref. 1, Stage 1 - Table 3.1 of RTA Land Use Traffic Generation Data & Analysis 20 – 1992
- Section 3 of RTA Guidelines. Table 3.6

Ref. Stage 2 - RTA Traffic Generating Guidelines – 2002 Residential Section 3.3.4

Ref. Stage 4 - RTA Private Hospital Land Use Traffic Generation Data & Analysis 28

Ref. Stage 6 - RTA Traffic Generating Guidelines – Section 3.3.4 Housing for Aged and Disabled Low Rate

Ref. Stage 7 - No comparative data for this land use. Most will have already been included in the above traffic generation rates as would be already on-site. Assume 60 vehicle trips.

Stage 8 - No established data available.

From the above table it is evident that 670vph will be generated to and from the site upon full development. It is proposed that the direct road connection between the site and Nolan Street be provided for stage 4 and above to cater for these demands. For stage 3 a total of 147vph will be generated and is able to be accommodated within the existing local road system.

4.2 Traffic Impact

This report is a preliminary assessment as to the ability of the surrounding road system to cater for the increase in traffic demand resulting from this development proposal. The main consideration is the likely impact on Nolan Street, which is a Major Collector Road in Council's Road Hierarchy.

The total trip generation for the proposal has been assessed as ranging from 119vph for Stage 1 to 670vph for Stage 8, being the final stage. The direct road connection from the site to Nolan Street will be provided as part of stage 4 of the development. The ultimate traffic generation to and from the site has been assigned to the road system as follows:

Projected Daily Traffic Volume Nolan Street (AADT)

Nolan St	**Existing AADT**	**Increased AADT**	**Total AADT**	***Proposed Hourly**
North of site	5,590	4,020	**9,610**	*△(402vph)*
South of site	4,354	2,680	**7,034**	*△(268vph)*

* The distribution of traffic has been assumed as 60% to and from the north and 40% to and from the south
△ Peak hourly volume x 10 = AADT

The above table indicates that with the increased traffic from the development proposal the volumes in Nolan Street (9,610 and 7,034) will still be within an acceptable range for a Major Collector Road (Distributor) being within the 6,000 to 10,000 AADT guideline. These figures (if divided by 10) will also show suitable peak hourly flows for this road system.

This assessment is only preliminary and any likely impact on both Warwick Street and Hopman Crescent and intersections along Nolan Street would need detailed assessment. The main access road to and from the site will be directly to Nolan Street through the existing Council reserve and would form a significant intersection at Nolan Street. Some form of traffic management may be considered necessary in the local road system of Warwick Street and Hopman Crescent to protect its residential identity.

It is concluded that the increased traffic flows from the development will be suitably assigned to the north and south directions and are within an acceptable volume range for a major collector road.

5.0 SUMMARY AND CONCLUSIONS

This report represents an initial assessment of the traffic implications resulting from a concept plan for the provision of a Holistic Health Care City at Warwick Street, Berkeley.

The main findings are:

- It is proposed to develop the Wollongong Hitech Holistic Health Care City on vacant land to the west of Warwick Street and Nolan Street, Berkeley on an eight stage basis.

- Access to the site will be via both Warwick Street and a proposed road connection through the Council reserve to Nolan Street. The latter connection will be the primary road to and from the site and will be constructed as part of stage 4 of the proposal.

- Nolan Street is a Major Collector Road in Council's Road Hierarchy carrying traffic volumes that are presently at the lower end of the scale for such a road classification and hence spare capacity is available.

- The projected traffic movement to and from the development site to Nolan Street has been assessed as in the range of 670vph upon full development. When assigned to the road system the traffic generation will be 402 vph to and from the north and 268 vph to and from the south. This volume, although considerable, is within the acceptable volume limit of a road that is designated as a Main Collector Road.

- This report provides an initial traffic assessment and does not examine in detail any impact on nearby intersections or along adjoining local roads. Further work may be carried out in due course if required.

Bruce Conneeley

Director

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