



TaylorThomsonWhitting

Lismore Base Hospital Stage 3A Redevelopment SSD Traffic and Parking Assessment

**for
NSW Health Infrastructure**

25 July 2013

TTW Job No: 121204UTA

Taylor Thomson Whitting (NSW) Pty Ltd Consulting Engineers ACN 113 578 377
48 Chandos Street St Leonards NSW 2065 PO Box 738 Crows Nest 1585
T 61 2 9439 7288 F 61 2 9439 3146 ttwsyd@ttw.com.au www.ttw.com.au

This document is copyright and is the property of Taylor Thomson
Whitting (NSW) Pty Ltd and must not be used without authorisation



Table of Contents

	Page
1. EXECUTIVE SUMMARY	4
1.1 Parking.....	4
1.2 Access	4
1.3 Transport	5
1.4 Traffic Impact.....	5
2. INTRODUCTION	6
2.1 The Site	6
2.2 Study Approach	7
3. EXISTING SITUATION.....	7
3.1 Hospital Population	7
3.2 Parking Situation.....	7
3.3 Access	9
3.4 Transport	9
3.5 Travel Mode.....	10
4. PROPOSED DEVELOPMENT.....	12
4.1 Proposal.....	12
4.2 Parking.....	13
4.3 Access	14
4.4 Impact.....	15
4.5 Accessibility	17
4.6 Consultations	17
4.7 Construction Access	18
5. TRANSPORT MANAGEMENT STRATEGY	20
6. RESPONSE TO DIRECTOR GENERAL’S REQUIREMENTS.....	21

APPENDICES:

Appendix A	Bus Routes and Time Tables
Appendix B	Bicycle Routes
Appendix C	Parking Accessibility
Appendix D	Intersection Counts and Analysis
Appendix E	Vehicular Turning Paths
Appendix F	Proposed Traffic Circulation and Signage

1. EXECUTIVE SUMMARY

This traffic and parking report focuses on the overall aspects of access, traffic and parking within and around the site. This report covers Stage 3A Redevelopment of the Hospital any reference to works beyond Stage 3A is conceptual only and has been provided for planning purposes only.

1.1 Parking

Currently, a total of some 245 parking spaces are available within the Hospital Campus with a further 56 spaces outside the campus accommodating for fleet cars at Gaggin Lane. Over 649 on street parking spaces also are available in the vicinity of the Hospital (within 350m radius). Most on street parking spaces are unrestricted whilst Uralba Street provides some short term parking along its length including pay parking. As part of the enabling works to clear the site, some parking has been relocated. These works have been dealt with under a separate approval and are reflected in the existing parking space numbers contained in this report.

An observation of parking activities showed a high utility of over 90% occupancy rate of parking spaces within the campus and on street.

The existing parking demand for the site is in order of 820 spaces. This is based on 90% car use among hospital's patrons (based on survey questionnaire; July 2012) and an average stay of 2 hours for outpatients and 1 hour for visitors during a peak hour.

In addition to the above some, 50 additional spaces are required for fleet vehicles.

A review of parking demand and supply for the site has revealed a number of options for car parking provision as part of the Hospital redevelopment. Table 1 illustrates car parking requirements for various population scenarios as part of the redevelopment program.

Table 1 - Lismore Hospital Population Scenarios (persons and spaces)

Stage	Staff	No of Spaces	Outpatients	No of Spaces	Visitors	No of Spaces	Total	Increase
Existing	850	650	550/day	120	50	50	820	0
Stage 3A	956	730	650/day	140	60	60	930	110

Note: population data are based on draft FIS, and LBH Redevelopment Service Statement, 2011

1.2 Access

The main access routes to the Hospital are via Hunter and Uralba Streets. Uralba Street is a major route providing access to the Lismore Town Centre with traffic volumes of over nominally 700 vehicles per hour (vph) each way.

Hunter Street, is a local road and provides immediate access to the Hospital Campus with traffic volumes of 200 vph during the peak periods.

The intersection of Hunter and Uralba Street is controlled with a roundabout and currently operates at a good level of service. The above streets also operate within their capacity while

Uralba Street is subject to constant vehicular traffic activities due to its strategic location.

Fermoy Avenue and Weaver Street also provide access to the eastern side of the Hospital Site.

The main access points to the Hospital's car parking areas and its campus are from Hunter Street while other routes such as Uralba Street and its side streets provide access to various locations within the Hospital site. The emergency access to the site is off Uralba Street.

All access points except for the existing mortuary access from Uralba Street will remain with the proposed new development.

Improved access points proposed include;

- Emergency access will be moved to the east along Uralba Street to align with the new emergency department.
- The former emergency access will be converted to a drop-off area for the Community Health refurbishment in Block C.
- A patient drop-off area will be added along the front entry between the proposed Community Health drop-off area and the emergency access.
- Access to the proposed mortuary at Level 4 from Little Uralba Street.

1.3 Transport

Bus Routes 661, 681, 682 and 684 provide services to and from the Hospital. The frequencies of these services are generally limited to one per hour with the exception of the morning peak hour when 2 services occur. A survey questionnaire of staff was carried out as part of the study and its results showed a car use of over 92% (as car driver) among staff.

1.4 Traffic Impact

Considering the level of spare capacity along the streets surrounding the Hospital site, it is anticipated that these routes will continue to operate satisfactorily once the project is completed.

At a meeting with Council, it was understood that at this stage there is a general support for the redevelopment of the Hospital. Council believe consideration should be given to promoting higher use of public transport among the users of the Hospital.

2. INTRODUCTION

As part of the proposed Lismore Base Hospital redevelopment, Taylor Thomson Whitting have been engaged by Health Infrastructure to advise on traffic and parking demand aspects of the project.

This report relates to Stage 3A of the proposed redevelopment.

2.1 The Site

The redevelopment site area includes the southeast corner of the Hospital campus. The Hospital campus is located at the north-east corner of Uralba and Hunter Streets as shown in Figure 1.

The Lismore Base Hospital campus comprises of over 13 individual buildings. This report addresses an overview of the site and redevelopment proposal as shown on architectural drawings.

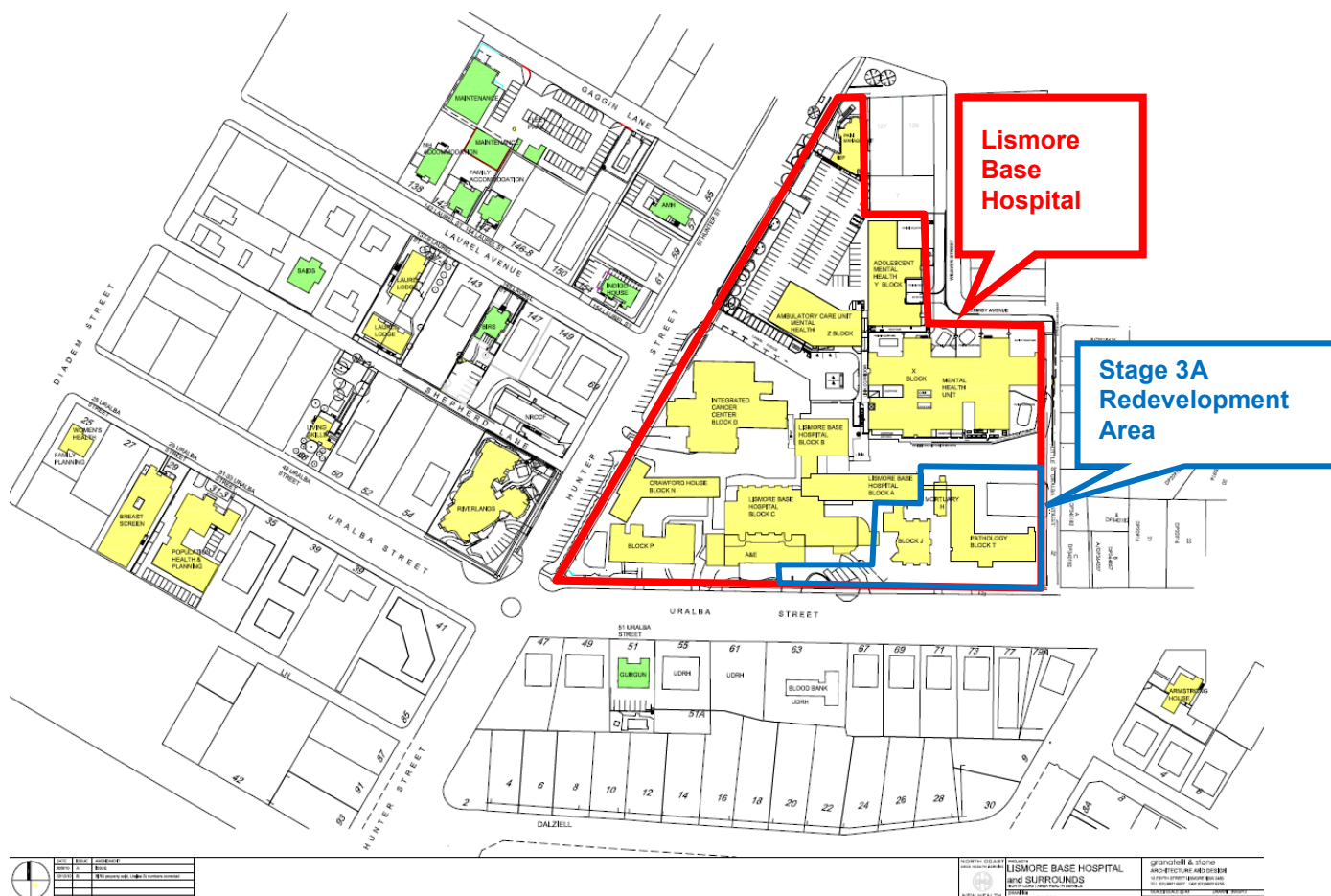


Figure 1 – Hospital Site

2.2 Study Approach

The purpose of this report is to provide information in terms of access, traffic and parking for Lismore Base Hospital Stage 3A Redevelopment proposal. An overall plan for the proposal is shown as part of the architectural drawings.

The study has been carried out on the basis of relevant guidelines and standards such as the RMS's Guide to Traffic Generating Developments, AUSTROADS and state, regional and Lismore Council's planning documents, these include State Plan 2021, *State Environmental Planning Policy (Infrastructure)* and Lismore Council *Development Control Plan* and Council's relevant materials.

Further, documents from reports related to the study area and similar studies (based on our previous assessment of some 30 Hospital and health related facilities in NSW and ACT) have also been utilised.

The following traffic and parking related surveys have been carried out as part of the study process:

- Parking Surveys of on street car parking occupancies
- Car parking occupancy survey of the Hospital carparks
- Intersection traffic counts
- Traffic volume and speed data along streets near the Hospital
- Questionnaire surveys of staff on travel mode and car parking activities.

Further to the above, consultations with relevant authorities and bodies have been undertaken during the study process. Liaison with Lismore Council has been maintained throughout the project and correspondences have been made on certain aspects of traffic and parking management measures.

3. EXISTING SITUATION

3.1 Hospital Population

The current key characteristics of the Hospital comprises of (based on NSW Health Services Data, 2009 and staff numbers provided by the Hospital):

- Accommodation for 267 inpatient beds.
- 136,854 outpatients annually
- A total of some 850 staff

3.2 Parking Situation

Currently, a total of some 245 parking spaces are available within the Hospital Campus with a further 56 spaces outside the campus accommodating for fleet cars at Gaggin Lane. Over 649 on street parking spaces also are available in the vicinity of the Hospital (within 350m radius). Most on street parking spaces are unrestricted whilst Uralba Street provides some short term parking along its length including pay parking.

An observation of parking activities showed a high utility of over 90% occupancy rate of parking spaces within the campus and on street.

The existing parking demand for the site is in order of 820 spaces. This is based on 90% car use among hospital's patrons (based on survey questionnaire; July 2012) and an average stay of 2 hours for outpatients and 1 hour for visitors during a peak hour.

In addition to the above, some 50-70 additional spaces are required for fleet cars and special uses.

The above parking demand corresponds to the existing use of the Hospital's parking spaces available for Hospital use (off and on street).

Existing Parking Demand

Staff Parking Demand: 90% drive car and taking into account shift works, etc.: **650** spaces (for a typical 850 staff head counts at one time and 15% absentees (i.e. holidays, seminars and sick leave).

Outpatients Parking Demand: 85% of 550 per day with 2 hrs stay: **120** spaces

Visitors Parking Demand: 2 visits per bed with 1 hour stay during peak: **50** spaces

Total Parking Demand: 820 spaces

In addition to the above, approximately 56 fleet vehicles are maintained at an offsite location on Gaggin Lane.

Existing Parking supply

On site within the campus: 245 spaces

Surrounding on street: 649 spaces (see Table 2 below)

Total Parking Supply: 894 spaces

In addition to the above the following parking spaces are available for various uses:

Gaggin Lane off Street – Fleet cars: **56** spaces

Currently, there is no major control for access to parking areas within the campus with exception of the Mental Health parking area (38 spaces) which has swipe card for access.

Table 1 On Street Car Parking Supply	
Street	Parking Spaces
Uralba : 86+65 (between Bent-Diadem)	151
Hunter: 122+72 (bet. McKenzie-Jubilee)	194
Laurel (between Hunter-Diadem)	77
Gaggin (between Hunter-Diadem)	10
Weaver	19
Orion	40
Fermoy	40
Dibbs	50
Dalziell	70
Total	649

Note: based on inventory survey of on street parking spaces and previously approved enabling works parking relocation

Parking Use

A parking survey of the area during its peak parking period indicated a car occupancy rate of over 97% within the campus and 90% along the streets. Some parking vacancy about 3 – 5 spaces have been observed along streets with time restrictions and pay parking. A further vacancy (about 10% of total on street) of some 40 and 50 was also observed along Orion, Dibbs and Dalziell Streets.

3.3 Access

The main access routes to the Hospital are via Hunter and Uralba Streets. Uralba Street is a major route providing access to the Lismore Town Centre with traffic volumes of nominally 700 vehicles per hour (vph) each way.

Hunter Street, is a local road and provides immediate access to the Hospital Campus with traffic volumes of **200** vph during the peak periods.

The intersection of Hunter and Uralba Street is controlled with a roundabout and currently operates at a good level of service. The above streets also operate within their capacity while Uralba Street is subject to constant vehicular traffic activities due to its strategic location.

Fermoy Avenue and Weaver Street also provide access to the eastern side of the Hospital Site.

The main access points to the Hospital's car parking areas and its campus is from Hunter Street while other routes such as Uralba Street and its side streets provide access to various locations within the Hospital site. The emergency access to the site is off Uralba Street.

Improved access points proposed include;

- Emergency access will be moved to the east along Uralba Street to align with the new emergency department.
- The former emergency access will be converted to a drop-off area for the Community Health refurbishment in Block C.
- A patient drop-off area will be added along the front entry between the proposed Community Health drop-off area and the emergency access.
- Access to the proposed mortuary at Level 4 from Little Uralba Street.

3.4 Transport

Bus Routes 661, 681, 682 and 684 provide services to and from the Hospital. The time tables are shown in Appendix A. The frequencies of these services are generally limited to one per hour with the exception of the morning peak hour when 2 services occur.

It should be noted that the pick-up and set down activities (i.e. buses) take place along Hunter Street. No formal bus stop on Hunter Street is required as the current "Hail and Ride" system of operation will continue to be used. The above measure has been consulted with relevant authorities and they have indicated their consensus and approval.



Figure 2 - Bus Routes

Pedestrian footpaths are provided along the streets adjacent or near to the Hospital. A

pedestrian crossing facility (marked foot crossing) is available along Uralba Street, opposite the main entry to the Hospital.

Due to the hilly nature of the area, limited bicycle activities have been observed.

3.5 Travel Mode

As part of the study process, a survey questionnaire was distributed among staff to seek their feedback on transport and parking issues within the campus. A total of 443 completed survey questionnaires have been received. These have been coded and analysed and their results are discussed below.

The results of survey showed that over 92% of workers surveyed travel to Lismore Base Hospital as the driver of a car and about 4 % travel as a car passenger while 2% use bicycle or walk to work.

Category Code	Corresponding Travel Method	Number of persons	Percent
A	Drivers	407	92.4%
B	Passengers	17	3.8%
C	Bus	0	0.00%
D	Taxi	2	0.4%
E	Motorcycle	6	1.3%
F	Bicycle	2	0.4%
G	Walk	8	1.7%
H	Other	0	0.0%

Table 2 Staff Travel Mode (based on survey questionnaire)

Of the survey respondents who gave information about where they park their car, about 67% indicated that they use on the street parking surrounding the Hospital while 33% park in a car park as part of the Hospital.

Category	Number	Percentage
Street	271	67.4%
Car park	131	32.6%
Total	402	100%

Table 3 Staff Car Parking Locations

The average number of people travelling in a car was reported at **1.08** persons per car.