APRIL 2009

TRAFFIC & PARKING REPORT
FOR PROPOSED REDEVELOPMENT OF
MANILLA HOSPITAL, MANILLA

M[C]LAREN TRAFFIC ENGINEERING
LEVEL 1, 29 KIORA ROAD
MIRANDA NSW 2228
PH (02) 8543-3811 FAX (02) 8543-3849
EMAIL: mclarenc@ozemail.com.au

2008/109

TABLE OF CONTENTS

1. INTRODUCTION

M^{C}Laren Traffic Engineering was commissioned in December 2008 by Rice Daubney & Environmental Planning to undertake a traffic and parking report for the proposed redevelopment of Manilla Hospital, Manilla.

The existing Manilla Hospital contains **29** beds (13 high care / 16 acute / sub-acute). The overall floor area of the current facility is 1,918.57m^2.

The existing services at Manilla Hospital have been identified as a significant impediment to providing quality integrated health care services to the 3,300 strong Manilla area population.

The proposed upgrading of the Manilla Hospital will result in a total of **32** beds (20 high care / 12 acute / sub-acute), with a revised floor area of 3,372.5m^2. The increase is due to clinical services, back of house (kitchen, laundry etc) and community health.

1.1 Summary of Project

A staged approach is proposed to enable the hospital to remain operational whilst work is underway. The key proposals in line with the preferred option outlined in the PDP are as follows:

> *Stage 1: Partial demolition of the eastern portion of the hospital followed by construction of aged care and support and part acute/sub-acute wings with a new building containing 24 beds and associated facilities, new entry points, a new loading and services compound, new kitchen and support services and a new covered pedestrian link to the existing Manellae Lodge aged care facility.*
>
> *Stage 2: Construction of primary health, emergency department and staff accommodation components including a new building containing 8 beds (including a birthing suite), 9 consulting rooms and associated facilities, a new building containing 4 beds for staff accommodation, new entry points, new car parking area, new permanent internal road and landscaping.*

The redevelopment will transform the existing hospital campus into a high quality 'state of- the-art' health facility responding to the needs of a modern day health service in combination with a new level of integration between acute inpatient, sub-acute, community health and aged care services.

A total of **35** off-street parking spaces are proposed within two separated areas (31 in the main / front parking area; and 4 spaces in the authorised staff parking area at the end of the cul-de-sac). 1 ambulance space is proposed in the emergency porte-cochere area. A drop off zone is proposed, as well as two bus bays, one in the main area and the other in the authorised staff parking area. A loading dock is provided in the authorised staff parking area at the end of the cul-de-sac. Parking for motorcycles and bicycles is also provided.

The breakdown of on-site parking by category / size is as follows:

Main / Front Parking Area

- Standard car bays ... 31 bays.
- Community bus bay ... 1 bay.
- Drop-off bays ... 1 bay.
- Motorcycle bays ... 3 bays.
- Space for up to 8 bicycles.

Emergency Porte-Cochere Area

- Ambulance ... 1 main bay (although room for at least 3).

Staff Only Authorised Area at Cul-de-sac end

- Standard car bays ... 4 bays.
- Bus bay ... 1 bay.
- Loading Dock.

Emergency and service vehicles are adequately accommodated by the design.

The vehicle entry and exit arrangements for staff, visitors, service vehicles and emergency vehicles will ensure that all vehicles can enter and leave the site in a forward direction.

In addition to the above, 14 on-street car parking spaces are formalised along the hospital frontage comprising 4 parallel bays and 10 angled bays.

This report documents the findings of our investigations and should be read in the context of the Environmental Assessment report prepared separately by Environmental Planning Pty Ltd. The development is within the local government area of Tamworth.

1.2 Director-General's Requirements

Under the Director-General's Requirements (DGR's) the Traffic Impact Assessment is required to satisfactorily address the following transport, traffic and access issues:

1. *Provide a Transport and Accessibility report that takes into consideration the objectives of the draft West Central Subregional Strategy and addresses the following:*
   - *Surrounding context and how proposal fits within the Hospital Precinct in terms of transport and traffic management;*
   - *Measures to encourage mode shift to public transport and reduce reliance on on-site car parking;*
   - *Identify existing public transport services in the site, together with other transport services offered by the hospital;*
   - *Detail existing pedestrian and cycle movements within the vicinity of the subject site and determine the adequacy of the proposal to meet the likely future demand for increased pedestrian and cycle access. May include facilities for secure bike storage;*
   - *Identify Travel Demand Management (TDM) measures that will optimise the opportunity provided by the project site's proximity to public transport;*
2. *Demonstrate compliance with the RTA Guidelines for Traffic Generating Development;*
3. *Internal road and access arrangements including entry points, drop off points, traffic management and hierarchy;*
4. *Off street car parking provision and management of on street parking;*
5. *Service delivery;*
6. *Proposed emergency evacuation and public access.*
7. *Traffic management during construction including car parking requirements for construction workers.*

These matters are addressed in the following sections of this report:

Matter	Section(s) of this report
Provide a Transport and Accessibility report	2.1, 2.2, 3 & 4
Demonstrate compliance with the RTA Guidelines for Traffic Generating Development	2.4 & 5
Internal road and access arrangements	6
Off street car parking provision and management of on street parking	3
Service delivery	2.3 & 6.2
Proposed emergency evacuation and public access	6.2
Traffic management during construction including car parking requirements for construction workers.	7

1.3 SEPP (Infrastructure) 2007 Requirements

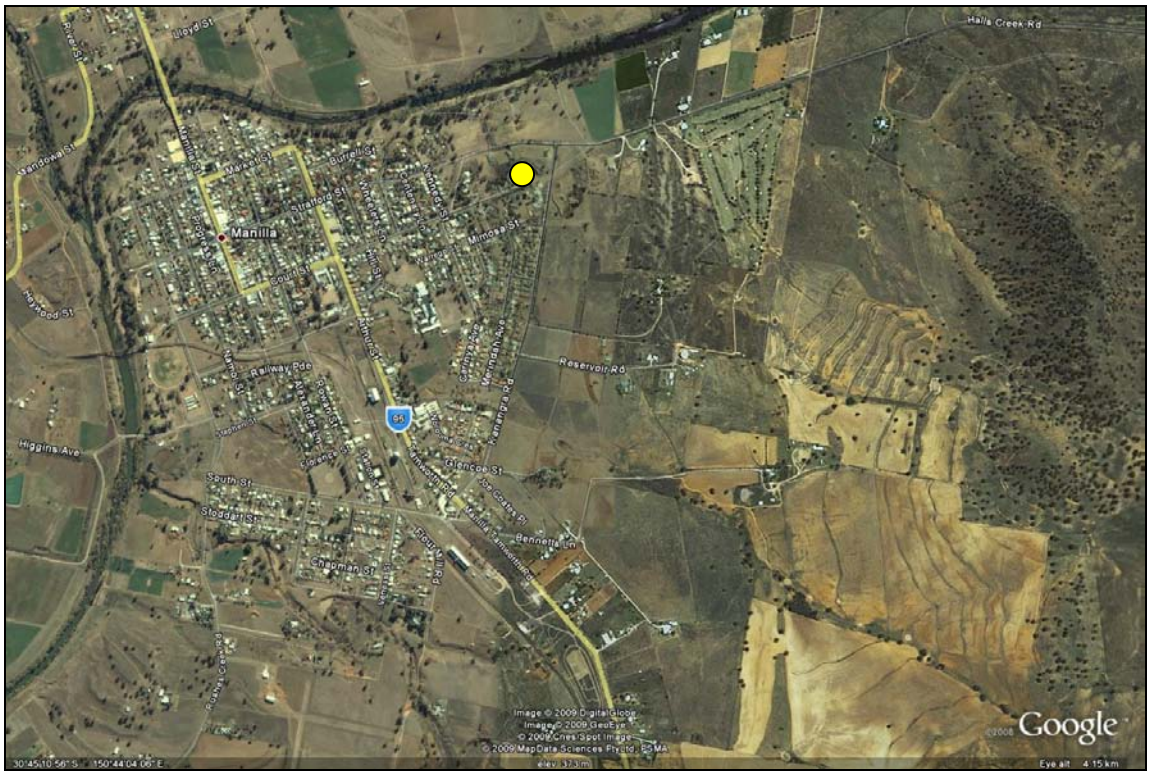
The proposed development does not qualify as a development with relevant size or capacity under Clause 104 of State Environmental Planning Policy (Infrastructure) 2007.

Accordingly, the proposed development does not require formal referral to the local traffic committee or the RTA for consideration. Therefore the proposed development can be dealt with by the Department of Planning.

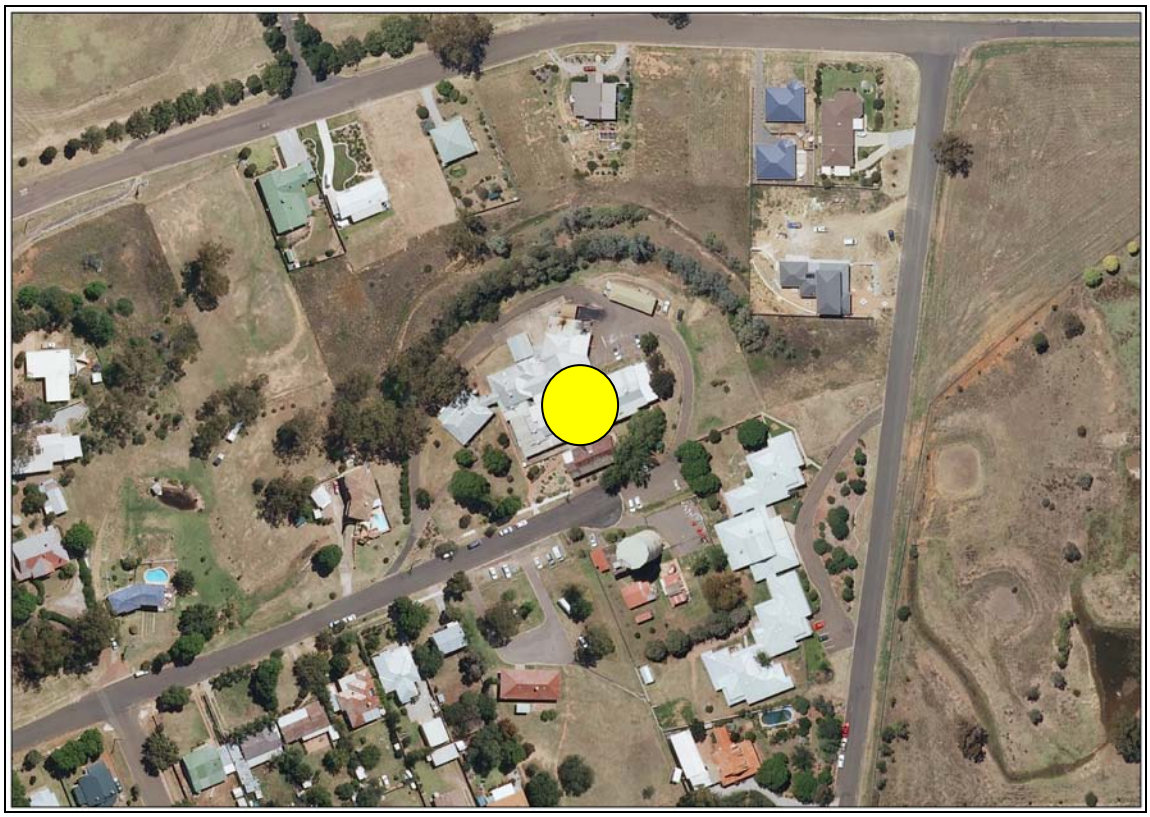
2. SITE LOCATION & LOCAL TRANSPORT CONDITIONS

The Manilla Hospital is situated off the eastern end of Court Street, Manilla. It is located approximately 45 kilometres by road northwest of Tamworth town centre, with Manilla Road providing regional road access between the two towns.

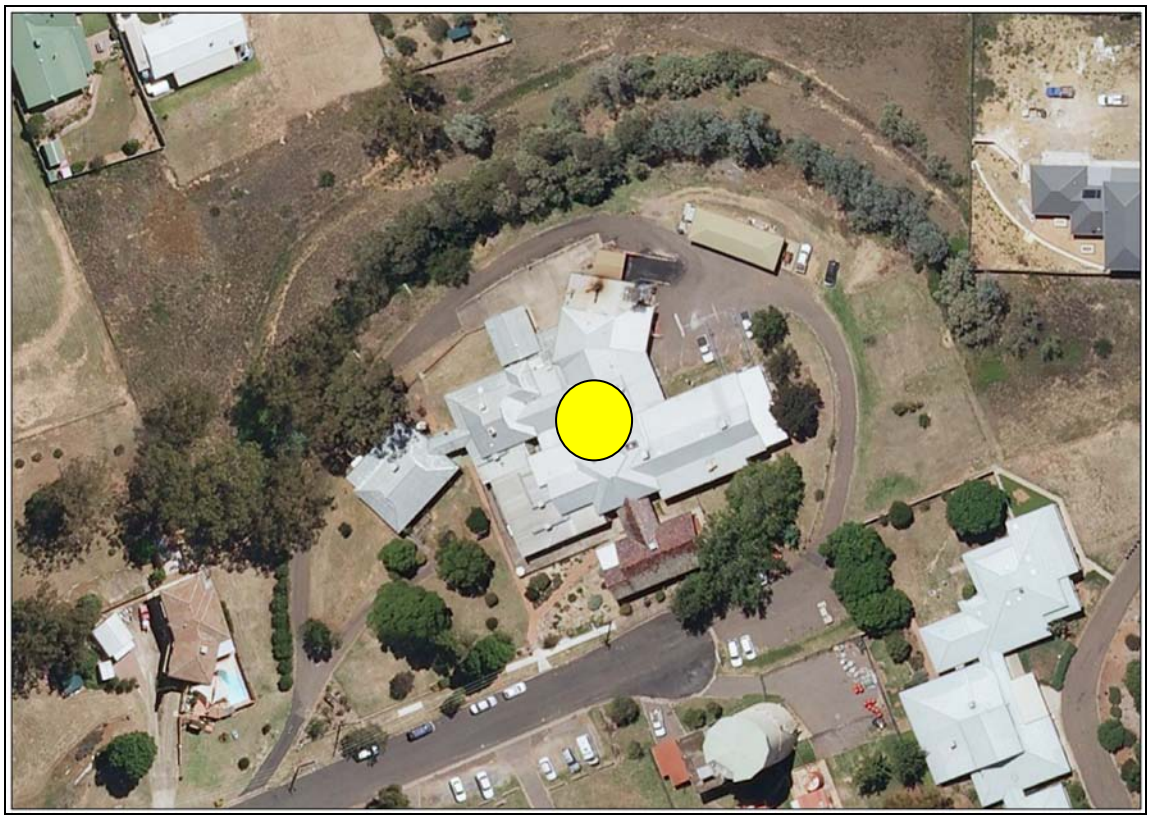
The site location is shown in the aerial photographs below and in **Figure 1**.



Manilla Town Area (○ Subject Hospital site)



(○ Subject Hospital site)



(○ Subject Hospital site)

2.1 Road, Bicycle & Pedestrian Conditions

The site is served by an established local road network that provides good accessibility to the nearby regional road network in the locality.

Vehicular access to the site is through the adjoining residential area to the west. The principal access route from the site to the nearest regional road of Manilla-Tamworth Road involves the use of Court Street to Arthur Street. Arthur Street changes to Tamworth Road and Manilla-Tamworth Road further to the south.

The existing directional signage to assist those unfamiliar with the area to find the hospital is poor. Therefore improved directional signage is necessary at the intersection of Arthur Street / Court Street and on the approaches to identify the direction to the hospital.

The hospital is accessed at the eastern cul-de-sac end of Court Street, which has a carriageway width of 9.7 to 9.9m wide. On-road bicycle lanes are provided along Court Street linking the Manilla town centre to Kennedy Street and Carinya Avenue / Monash Street, located some 300m west of the subject hospital.

A separated 1.2m wide concrete footpath links the Manilla town centre to the subject hospital along the southern side of Court Street. A 1.2m wide footpath is also provided along the frontage of the hospital (north side of Court Street). There is little pedestrian and bicycle activity along Court Street.

2.2 Public Transport Access & Services

The rail line through Manilla is no longer operational. Rail services are accessed from Tamworth. There is a *CountryLink* bus that provides a connection to the rail service in Tamworth.

Air services are accessed from Tamworth, which has at least two flights daily to Sydney with a flight time of 50 minutes. There is no direct flight to Newcastle.

There is a one-vehicle taxi service in Manilla, which operates on a booking system and is subsidised to daily take people to and from the hospital and Day Centre (Oxley Community Transport Service). There is no town bus service.

A Health Care Bus owned and operated by volunteer drivers is used to collect people in Manilla for appointments in Manilla and Tamworth.

The Oxley Community Transport Service is a rural community transport service based in Tamworth but servicing other areas including Manilla. A fortnightly bus service to Tamworth is provided. Manilla HACC arranges transport to assist residents in need. The school bus will also pick up members of the community along the route.

The catchment area of the Ambulance Service at Manilla covers an area of approximately 500 square kilometres radiating out from Manilla incorporating the areas of Keepit, Tamworth, Barraba and Attunga.

2.3 Characteristics of Existing Hospital & Raised Concerns

The existing staff and travel mode / parking needs of the current 29 bed hospital is outlined below:

1. Number of all staff (break down by admin, nurses, doctors, others) by shift period by day of week (with mode of travel specified to identify car driver %).

STAFF TRAVEL MODE: Monday to Friday

	Morning	Afternoon	Night
Admin	2 car, 1 bike		
Nurses	9 car, 1 walk	3 car	2 car
Doctors	4 car, 1 on call car	1 on call car	1 On call car
Support Services	5 car	2 car	1 On call car
Visiting Hth Profs	3 car	3 car	
PEAK TOTALS	24 cars, 1 bike, 1 walk	9 cars	4 cars

STAFF TRAVEL MODE: Weekends

	Morning	Afternoon	Night
Admin			
Nurses	6 car	3 car	2 car
Doctors	1 on call car	1 on call car	1 on call car
Support Services	3 car	2 car	
Visiting Hth Profs	Nil	Nil	Nil
PEAK TOTALS	10 cars	6 cars	3 cars

2. Typical visitation by day of week (specify visiting hours).

Physiotherapy	Monday & Thursday	8.00 -4.30
X-Ray	Monday and Thursday	2.00-4.30
Dietician	Tuesday-1/month	9.00-4.00
Speech Therapy	Thursday-2/month	9.00-4.00
Women's Health	Wednesday-1/month	8.00-5.00
Audiometric	Wednesday-2/month	8.00-4.00
Outreach Mental Health	Tuesday	8.00-12.00
Early Childhood	Wednesday	8.30-5.00
Maternity Clinic	Thursday	8.30-5.00
Occupational Therapy	Wednesday-1/month	8.00-4.30
HACC	Monday-Friday	8.30-5.00
Day Care	Thursday	8.00-4.30
Community Nurses	Monday-Friday	8.00-4.30
Quality Coordinator	Friday-2/month	8.30-5.00
Podiatrist	Wednesday-1/month	8.00-6.00

3. Current parking for doctors, including any special arrangements regarding staff / doctor / visitor parking provision.

- Two (2) designated car park spaces located near the hospital entry.
- Provision for emergency parking for on call attendance nearby to the rear service entry and emergency department. After hours parking for staff near the rear entry of the hospital (7 spaces). Two (2) spaces at Emergency Department entrance for Ambulance vehicles and let down

for patients (on-street). Provision for Emergency vehicles. Designated on-site parking area for Community bus 25 seater. Designated on-site parking area for Tip-trailer. Designated parking area for Disabled Access (on-street).

4. Emergency access / parking of ambulances.

   - Two (2) spaces at Emergency Department entrance for Ambulance vehicles.
   - Provision for Emergency vehicles.

5. Issues of concern with regard to parking supply, pedestrian access, emergency access provision and taxi / public transport integration.

- Access to the hospital is in a cul-de-sac.
- The point of entry to the hospital needs to be supported with appropriately graded ramps to allow stretcher movement and disabled access.
- Pedestrian access to the hospital needs to be near the car park.
- Parking area needs to be under CCTV monitoring and well lit to ensure security of vehicles and people.
- The township of Manilla currently only offers 1 taxi service which is common transport to the hospital. This is the only public transport.
- Supply vehicles need appropriate access and loading/unloading areas.
- Mortuary vehicle direct access to mortuary on level ground for stretchers – long vehicles.

6. What types of public transport services are currently offered and details of whether any other systems have been employed & the success / failure of these, if known.

- The taxi service is the only public transport service and is very busy and successful.
- CountryLink Train Service runs a bus which passes through Manilla to Tamworth and return on a daily basis, except Tuesday. The nearest railway and bus station and airport is 50 kms away at Tamworth.
- Manilla Community Hospital has links to community based transport Oxley Community Transport for special needs persons.

The responses to these concerns are discussed in Sections 3 and 4 of this report.

2.4 Traffic Flows

Traffic flows along the nearby local road network are best described as low to moderate with minimal delay and with good levels of service.

The most recent traffic counts conducted by the RTA in 2004 indicate a daily traffic volume of 2,000 vehicles per day along Arthur Street within the town of Manilla and near the junction with Court Street. Peak hourly flows are typically 10% of daily activity and hence the peak hourly volume along Arthur Street is expected to be 200 vehicles per hour (two-way).

This daily and peak hourly traffic flow is consistent with a LOCAL road function. All other roads within the town of Manilla would also be consistent with a local road function.

It is expected therefore that all nearby intersections operate at good levels of service during the critical weekday morning commuter peak hour periods, given that all roads and intersections accommodate low LOCAL ROAD traffic volumes.

3. PARKING REQUIREMENTS

3.1 Parking Requirements & Parking Demand Assessment

Tamworth Regional Council's *Traffic & Parking Guidelines DCP # 1* does not apply to the township of Manilla, however, it is appropriate to consider its application to the proposed project, in the absence of any other DCP. It is evident from DCP1 that there is no specified parking rate for hospitals. It does however specify that comparisons be made with similar developments. Further, application of parking rates for *Professional Consulting Rooms* or *Medical Centres* is inappropriate for hospitals. Thus, in relation to undefined development, DCP #1 states as follows:

> *"Where a proposed development does not fall within any of the development categories specified in Appendix I, the assessment of on-site parking requirements shall be calculated having regard to the experience of similar existing developments and a detailed assessment of the likely traffic generating potential of the development."*

The current operational characteristics of the existing hospital with respect to staff parking are identified in Section 2.3 of this report. Visitor parking demand is not identified.

By comparison, the RTA's "Guide to Traffic Generating Developments" specifies the following with respect to hospitals (albeit private hospitals):

> *"The peak parking accumulation (PPA) at a private hospital may be estimated by*
>
> - *PPA = -19.56 + 0.85 B + 0.27 ASDS (R^2 = 0.74)*
>
> *The hospitals surveyed had between 30 - 99 beds (B) and between 10 - 102 average staff per weekday day shift (ASDS).*
>
> *The average length of stay at a private hospital varies according to the purpose of the trip. The average length of stay for a member of staff, i.e. nurses, doctors, etc. is 5.1 hours. The average length of stay for visitors to the hospital is 1.1 hours.*
>
> *The mean proportion of people who travelled to the site by vehicle was 87.4%, with a range of 67.3% - 98.2%. Average vehicle occupancy was found to be 1.3 persons per car.*
>
> *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."*

Application of the RTA rates to the existing 29 bed and 26 staff adjusted for a higher proportion of private vehicle transport (i.e. 92% / 87.4% = 1.05 adjustment factor), results in the following parking requirement:

- PPA = [-19.56 + (0.85 x 29) + (0.27 x 26)] x 1.05 = 13 cars.

It is evident that the RTA parking formula is too low for the current hospital, particularly due to the low number of beds.

Further comparisons with other council's parking codes reveal the following generic parking rates:

- 1 visitor space per 3 beds; plus
- 1 space per 2 employees; plus
- 1 space per doctor;
- Plus adequate space for ambulance parking.

It is evident from the staff / doctor peak parking details provided by hospital management (see Section 2.3 of this report) that peak staff parking is 24 cars and that visitor parking demand may account for a further 10 cars (1 per 3 beds), with the majority of these occurring on-street. The ambulance service mainly uses the on-street location immediately fronting the entry to the hospital.

Therefore, in view of the foregoing the current peak parking demand is **34** cars plus 1 ambulance bay for the existing 29 bed hospital with 26 staff (including doctors) on a weekday, comprising 24 staff spaces, 10 visitor spaces and 1 ambulance bay.

The proposed 32 bed upgrade of the existing Manilla Hospital with 28 staff (including doctors) on a weekday will generate a peak car parking demand of **37** cars comprising 26 staff spaces plus 11 visitor spaces. A separate ambulance bay is also required.

In relation to bicycle parking, AUSTROADS suggests 1 employee bike space per 15 beds and 1 visitor bike space per 30 beds. The current 29 bed hospital would therefore require 2 staff bike spaces and 1 visitor bike space. The proposed 32 bed hospital would not significantly alter the required number of bike spaces, with 3 bike spaces being the minimum requirement (2 staff, 1 visitor).

3.2 Current Parking Supply

The current Manilla Hospital is served by a total of **23** off-street parking spaces within two separated areas (17 in the main parking area located at the end of the cul-de-sac including 1 dedicated doctor's space; 6 in the rear staff only car park including a minibus parking space).

The community minibus that is operated by the hospital and garaged on-site has the following characteristics:

- Vehicle Type: Mitsubishi "Fuso – Rosa".
- Length (rigid): 8.1m.
- Width: 2.5m including side mirrors.
- Height: 3m including diesel exhaust height.
- Turning Circle: 14.4m (kerb to kerb).
- T 4560; GVM 6185.

Manilla Hospital also benefits from a total of **17** on-street parking spaces immediately fronting the site in Court Street, comprising 9 angled spaces opposite the site (in front of the Manilla Senior Citizen's Centre) and 8 parallel spaces on the hospital side of Court Street.

3.3 Proposed Parking Supply

The proposed redevelopment of Manilla Hospital proposes a total of **35** off-street parking spaces are proposed within two separated areas (31 in the main / front parking area; and 4 spaces in the authorised staff parking area at the end of the cul-de-sac). 1 ambulance space is proposed in the emergency porte-cochere area. A drop off zone is proposed, as well as two bus bays, one in the main area and the other in the authorised staff parking area. A loading dock is provided in the authorised staff parking area at the end of the cul-de-sac. Parking for **3** motorcycles and **8** bicycles is also provided. The number of bicycle spaces exceeds the minimum number required, by 5 bicycles, although a secure area for at least 2 staff spaces should be further considered within the authorised secure courtyard or elsewhere on the site.

With the proposed off-street parking increase from 23 to **35** spaces and associated vehicular access improvements, the immediately available on-street parking will largely be retained except where new driveways are proposed. The existing western access driveway will be replaced by new kerb and gutter, with the existing perimeter access road removed as the service dock / mortuary facility will be relocated to the staff car park at the end of the cul-de-sac. The estimated change in on-street parking due to the proposed driveway changes reduces from 17 spaces to **14** spaces (10 angled spaces and 4 parallel spaces)

Therefore, the proposed upgraded hospital significantly increases the off-street parking supply by **12** spaces, which exceeds the 3 space additional requirement assessed by comparison with appropriate rates (i.e. 34 compared to 37). Further, much of the existing on-street spaces have been retained with a loss of only 3 spaces.

The RTA guide suggests that convenient and safe on-street parking can be relied upon provided that such on-street parking does not adversely affect the amenity of the surrounding area. To this end, it should be noted that Manilla Hospital currently relies upon the use of up to 11 on-street parking spaces to meet the requirement assessed to be needed by comparison with appropriate rates and that the subject project application reduces this reliance to 2 spaces (i.e. 37 less 35), which is a significant improvement compared with to existing conditions. No residents will be adversely affected by the use of such on-street parking.

In view of the foregoing, the proposed on-site parking supply, separate on-site ambulance drop off/pick up area and separated service dock is superior to existing conditions with reduced reliance on the use of on-street parking for typical weekday peak parking demands.

4. PUBLIC TRANSPORT SERVICES

Public transport services will be improved by the provision of conveniently located and dedicated community bus parking bay within the main car park. In addition, the following action plans are to be implemented as part of a programme to improve public transport usage and services:

- Ensuring that patients / others of the hospital are aware of the availability of assistance programs including the Isolated Patients Travel and Accommodation Assistance Scheme (IPTAAS), Health Related Transport Program (HRTP), inter-facility transport, State Wide Infant Screening-Hearing (SWISH) Travel and other services funded under the former Transport for Health Program.
- Establishing a HNE Health Transport Unit (HTU) to co-ordinate and manage all non-emergency health related transport and travel subsidy schemes.
- Reviewing current Health Transport Networks and where appropriate establishing new networks to better meet need.
- Petitioning the Minister of Transport to attract a Taxi Transport Subsidy for people requiring centre-based renal dialysis.
- Formally requesting the extension of eligibility criteria by NSW Ambulance Services with special consideration of the increased age and acuity of people who require health services in rural and remote areas.

The above action plans are not part of this project application.

5. TRAFFIC IMPACT

The change in traffic generation associated with an increase of 3 beds and 4 staff for the existing hospital will not be readily perceivable in peak hourly or daily traffic terms.

Assuming that all 4 extra staff drive and that 1 extra visitor vehicle trip were to occur in the staff changeover peak period equates to 5 extra vehicles during a peak hour period, which is a low traffic generation addition.

Traffic volumes along Court Street are low and consistent with a LOCAL road classification. Current peak hourly volumes associated with the existing Manilla Hospital are in the order of 34 vehicle trips AS A WORST CASE if it is assumed that all non-doctor staff changeover at the same time and all 10 car borne visitors occur at the same time. Other peak hour trips associated with the existing residential dwellings along Court Street, east of Arthur Street would add some 40 additional peak hour trips. Thus the resulting peak hourly volume along Court Street is estimated at LESS THAN 80 vehicles per hour (two-way).

The existing and forecast minor increase in peak hourly traffic flows along Court Street are well below both the RTA's environmental goal limit of 200 vehicles per hour and maximum goal limit of 300 vehicles per hour for a local street, as referred to in the table on the following page extracted from the RTA guidelines.

Table 4.6
Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental goal
			500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

These additional peak hourly flows are low in terms of intersection performance and will not alter the existing levels of service experienced at any nearby intersection.

Therefore, in view of the foregoing the level of additional traffic generated will have a minor and therefore acceptable impact on the surrounding road system with due consideration to traffic flow efficiency, road safety and residential amenity considerations.

Given the low peak hourly and daily traffic volumes along Court Street, the existing on-road bicycle lane on the wider section of Court Street, west of Carinya Avenue can be extended by allowing bicycle access within the existing tight road space of Court Street, east of Carinya Avenue, by SIGNPOST METHOD ONLY as traffic volumes are low and traffic speeds are below 50km/h, in accordance with *Figure 3.2* from the RTA's *NSW Bicycle Guidelines* (July 2005), extract shown in **Annexure A**.

6. ACCESS & INTERNAL DESIGN ASPECTS

6.1 Access

The proposed internal roadways are acceptable for the intended vehicle types. All two-way roads will be at least 6m wide, whilst one lane road corridors for security will be at least 4m wide.

The access arrangements are therefore considered to be appropriate and adequate for the scale of development proposed.

6.2 Parking & Servicing

The internal design of the two proposed separate car parks and servicing access will be made to comply with or be superior to the requirements of AS2890.1 (2004) & AS2890.2 (2002) where appropriate. It should be noted that all vehicles associated with this development, including emergency and service vehicles, can enter and leave the site in a forward direction. The current emergency evacuation plan will be detailed at construction certificate stage and will identify an appropriate meeting point in the new car park.

7. CONSTRUCTION TRAFFIC MANAGEMENT & IMPACT

A construction traffic management compound is presented in **Annexure B**. It is expected that there will be up to 40 workers on-site during peak periods with transport arrangements to be identified within the construction management plan. The peak parking of construction employee vehicles will be identified within the construction management plan, with construction staff either park on-street or within dedicated fenced areas opposite the site as shown in **Annexure B**.

The construction compound will be used to store plant, equipment and materials and will be locked each day / evening after construction hours.

A more detailed construction traffic management plan will be prepared for the proposed development by the contractor as part of their Service Delivery Methodology report, identifying:

- Construction period, including stages of construction.
- The daily volume of construction traffic generated (trucks, plant & equipment vehicles, materials delivery and construction staff vehicles) for demolition and construction phases.
- Truck routes (Restricted to Court Street and Arthur Street – Manilla Road only).
- Site Access for trucks & construction staff. Control of soil / mud from being dropped from the wheels of construction vehicles onto adjacent public streets when those vehicles leave the construction site.
- Construction staff parking zones / compound.

In relation to the forecast number of daily trucks associated with the demolition and construction phases of the project, the following parameters are relevant:

The demolition and excavation / import of fill component of the construction phase will involve an estimated period of 6 months with a total of 300 truck loads, estimated as follows:

- Export of spoil 1,450m^3 x 1.42t/m3 = 2059t = 103 x 20t truckloads.
- Import of VENM 1,800m^3 x 1.45t/m3 = 2556t = 128 x 20t truckloads.
- Waste removal = 562t from waste management plan = 28 x 20t truckloads.
- Total = 259 x 20 tonne truckloads plus 40 loads to local Manilla tip = 300 truckloads.

The number of truck trips over the 6 month demolition and excavation / import period equates to 600 truck trips (300 inbound; 300 outbound). For a period of 24 weeks with 5.5 days per week equates to approximately 4 to 6 truck trips (2 to 3 in; 2 to 3 out) per day on average. During the demolition & excavation period it is anticipated that there will be less than 10 workers.

For the residual 18 month construction period, the anticipated truck activity associated with the delivery of building materials is expected to be variable ranging from 2 to 10 movements per day (i.e. 1 to 5 inbound trips; 1 to 5 outbound trips). During this period it is anticipated that there will be between 20 to 40 workers on-site.

The following table summarises the expected construction traffic activity over the 2 year construction period, based upon the construction program and comparisons with other similar hospital upgrades.

Action	Time Required	Daily Construction Workers	Anticipated Daily Truck Movements (in & out)
Demolition	8 weeks	< 10	4 (2 in; 2 out)
Excavation	16 weeks	< 10	6 (3 in; 3 out)
Construction	18 months	20 to 40	Variable 2 to 10 (up to 5 in; 5 out)

The construction traffic routes will be restricted to Court Street and Arthur Street – Manilla Road only, except for trucks transporting waste to the nearby Manilla tip.

The worst case construction traffic generation effect of up to 70 vehicles per day, comprising 30 arriving worker's (cars, utes and vans), 30 departing worker's (cars, utes and vans), 5 arriving trucks and 5 departing trucks will be readily accommodated by the surrounding road network.

In peak hourly terms, 30 arriving or departing worker vehicles equates to 1 arriving or departing vehicle every 2 minutes during the peak hour of traffic arrival or departure. This level of traffic generation is moderately low to have a minor impact on Court Street or on Arthur Street – Manilla Road. The environmental capacity of Court Street (the more sensitive street) is discussed in Section 5 of this report, which is not exceeded by the anticipated peak hourly construction vehicle effect.

Detailed construction traffic management plans will be prepared by the successful construction company that maintains the above mentioned construction traffic routes. In addition, partial closure of Court Street may occur at times in line with delivery of steel by large trucks / semi-trailers and kerbside construction zones may also temporarily reduce the quantum of kerbside parking available, however, it is intended that construction staff and plant / equipment be stored within the designated construction compound areas presented in **Annexure B**.

8. CONCLUSION

In view of the foregoing, it is concluded that:

(a) The level of traffic generated will have a marginal and acceptable impact on the surrounding road system with due consideration to traffic flow efficiency, road safety and residential amenity considerations. Accordingly, the traffic impact of the development will be satisfactory, without the need for external traffic improvement works to the traffic and pedestrian network within the immediate vicinity of the site other than the following measures:

- Allowing bicycle access within the existing tight road space of Court Street, east of Carinya Avenue, by SIGNPOST METHOD ONLY as traffic volumes are low and traffic speeds are below 50km/h, in accordance with *Figure 3.2* from the RTA's *NSW Bicycle Guidelines* (July 2005).

- Improved directional signage is necessary at the intersection of Arthur Street / Court Street and on the approaches to identify the direction to the hospital.

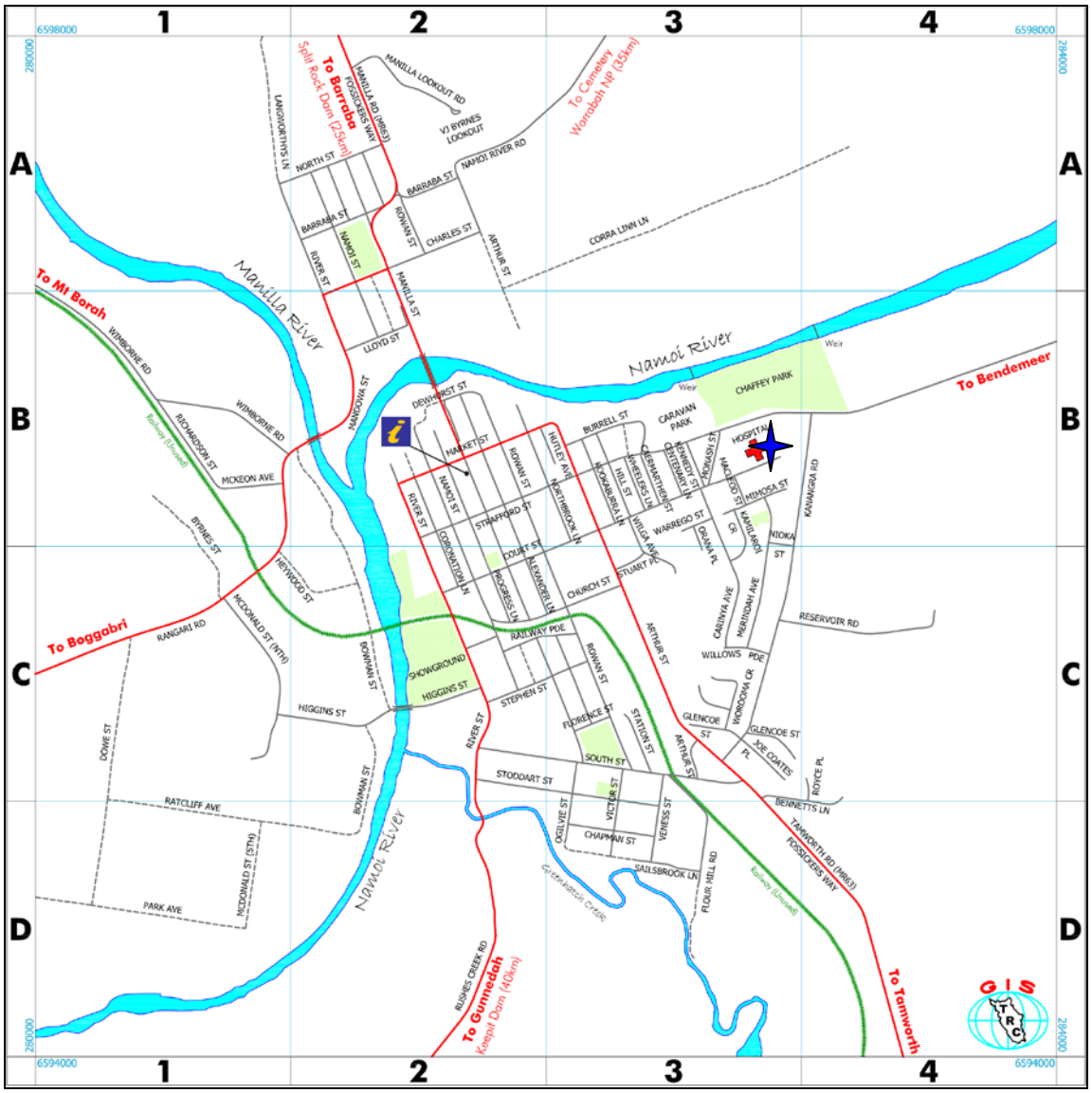
(b) The proposed parking supply is considered to be adequate for the needs of the proposed development.

(c) All parking spaces and access thereto will be made to comply with AS2890.1 (2004) requirements for the intended User Class.

(d) All service areas will be made to comply with AS2890.2 (2002) requirements.

(e) The number of bicycle spaces exceeds the minimum number required, by 5 bicycles, although a secure area for at least 2 staff spaces should be further considered within the authorised secure courtyard or elsewhere on the site.

Accordingly, the subject proposal is supportable on traffic and parking grounds.



(Source: Tamworth Council Maps)

THE SITE

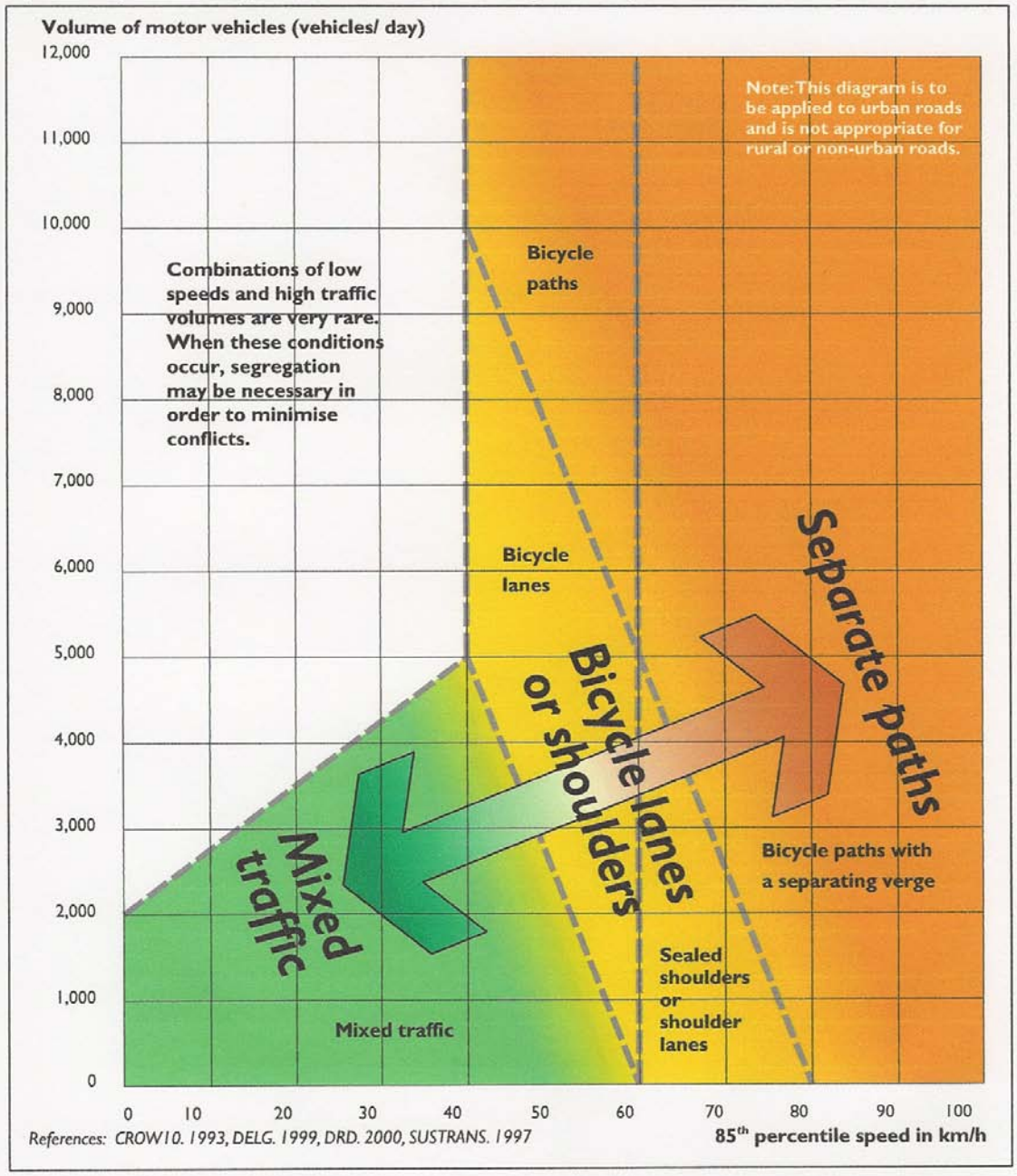
MANILLA HOSPITAL UPGRADE

FIGURE 1: SITE LOCATION

ANNEXURE A:

EXTRACT FROM RTA's JULY 2005 NSW BICYCLE GUIDELINES

Figure 3.2: Separation of bicycles and motor vehicles according to traffic speed and volume.



ANNEXURE B: CONSTRUCTION COMPOUND

Use of Louis Johnson House and associated land for temporary Hospital services

Proposed Contractor Compound and car parking