APPENDIX D

Transport and Accessibility Report

Wagga Wagga Base Hospital - Phase 2-3 Redevelopment

Transport and Accessibility Study

March 2013

Health Infrastructure, NSW Government

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Issue and revision record

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Executive Summary

BASIS OF ASSESSMENT

This transport study has been prepared as part of the environmental assessment for the Phase 2/3 redevelopment of the Wagga Wagga Base Hospital (WWBH).

The overall development of WWBH provides for :

The latest Phase 2/3 redevelopment information provides for the following :

- Increase in bed numbers 26
- Increase in full time equivalent employment of 174

The above net increases are additional to that provided as part of the Phase 1 redevelopment.

The scope of this report covers traffic and parking issues both internal and external to the site and is based on the NSW Health Director General's environmental assessment requirements for WWBH Phase 2/3 redevelopment dated 16 April 2012.

TRAFFIC CONSULTATION MEETINGS

The Roads and Maritime Services (RMS) and Wagga Wagga City Council (WWCC) have been consulted though a series of meetings during the traffic assessment process. Through this consultation the following issues in particular were raised with regard the works associated with the Phase 2/3 of the Wagga Wagga Base Hospital Redevelopment :

- Right turn into Lewis Drive off Edward Street – protected turning arrangement supported.
- Right turn out of Lewis Drive onto Edward Street – not supported.
- Edwards Street through traffic – supported on the basis that the provision of two through traffic lanes on Edward Street consisting of separate right turn lane into Lewis Drive, indented bus lay by and modifications to kerbside parking arrangements.

This traffic assessment and future proposed design of these works takes into account these issues.

TRAFFIC ASSESSMENT

It is expected that the additional development associated with Phase 2/3 will generate a relatively minor increase in traffic volumes on adjacent streets. The small increase in traffic volumes caused by the proposed redevelopment is considered to be within the capacity of the existing road system to accommodate.

The traffic layout for the proposed modifications to the Lewis Drive connection to Edward Street includes a median protected right turn lane from Edward Street to Lewis Drive together with a left in left out arrangement. This arrangement will assist in reducing traffic movements on local streets in the vicinity of the hospital. The provision of these road improvements is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan".

Traffic modelling has been undertaken on Edward Street between Docker Street and Murray Street including the proposed access/egress arrangements for Lewis Drive. This traffic modelling, to the year 2021 with the completion of Phase 2/3, indicated that :

- The proposed length of the protected right turn bay on Edward Street into Lewis Drive is adequate.
- The Edward Street/Murray Street intersection does not require signalisation to allow sufficient gaps for the right turn movement from Edward Street to Lewis Drive.
- Queues from adjacent intersections are not expected to regularly extend past the Edward Street/Lewis Street intersection at peak times.

There will be multiple vehicular access/egress points to the WWBH off the adjoining roads including Edward Street, Docker Street, Rawson Lane, Yathong Street, Yathong Lane, Yabtree Lane and Doris Roy Lane. These vehicular access arrangements and overall road network layout provide for :

- Flexibility and choice of routes to the hospital facilities
- Distribution of traffic throughout the network to assist in managing traffic volumes
- Provides alternative traffic routes in the event of vehicle accidents/breakdowns

PUBLIC TRANSPORT

It is proposed that the westbound bus stop on Edward Street be provided with a layback indented bus bay which will allow the bus to park off the road carriageway and permit two lanes of traffic to operate without the need to stop behind buses. The indented bus bay will improve road safety on this section of the highway including the safety of bus patrons. The proposed improvements to the bus bay is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan".

SERVICE AND EMERGENCY VEHICLES

The proposed relocation of the Emergency Department to the south of the site respectively will improve safety and the efficiency and capacity of the internal road network and accesses off adjoining streets. This improved safety brought about by the separation of larger vehicles from smaller vehicles using the carparks is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan". The proposed patient drop off area arrangements are consistent with "NSW Guideline for Planning and Development - Integrating Land Use and Transport" in providing sufficient off-street space for the movement of special vehicles.

PEDESTRIANS

Paved pedestrian footpaths are provided on all road approaches to the hospital. As part of the existing traffic signals at the intersection of Edward Street (Sturt Highway) and Docker Street signalised pedestrian crossings are provided. This pedestrian facility assists bus users to cross Edward Street. A series of marked pedestrian crossings will be provided within the site on the internal access roads and carpark aisles. These pedestrian facilities are consistent with the "NSW Planning Guideline for Walking and Cycling".

CYCLING

Bike storage facilities proposed as part of the WWBH redevelopment which will encourage more people travel to and from the Hospital by bicycle in the future. This approach will be consistent with the "NSW Planning Guidelines for Walking and Cycling", "NSW Guideline for Planning and Development - Integrating Land Use and Transport" and the "NSW Bike Plan".

PARKING

An increased parking supply of approximately 70 on site parking spaces is proposed as part of the Phase 2/3 redevelopment. For a city such as Wagga Wagga it is considered appropriate for parking requirements to be based on regionally based criteria. The proposed additional parking supply of 70 on site parking spaces proposed as part of the Phase 2/3 redevelopment meets the parking requirement criteria for a regional hospital.

Plan No CP-0001, contained in Appendix B, indicates the parking supply upon completion of Phase 1 as well as upon completion of Phase 2/3.

STAGED DEMOLITION AND CONSTRUCTION

Detailed temporary traffic management plans will be required to be prepared by the builder and approved by relevant authorities prior to construction commencing to address potential issues such as :

- Vehicular access to WWBH on site parking
- Safety for all road users and pedestrians
- Operation of adjacent properties and land uses
- Existing road network operation
- Parking supply with additional parking demand by construction workers

The development of these traffic management plans should be undertaken in full consultation with relevant stakeholders. The process of review, approval and implementation of these plans should address the relevant traffic impacts of demolition and construction.

1. Introduction

1.1 Background and Purpose of Report

This report has been prepared as part of the Phase 2/3 redevelopment of the Wagga Wagga Base Hospital (WWBH). This study considers the incremental development associated with the Phase 2/3 works only.

Wagga Wagga Base Hospital is located on the southern side of Edward Street south east of the intersection of Edward Street with Docker Street. The site is bounded by Edward Street, Docker Street, Rawson Lane and Murray Street.

Figure 1.1: Aerial Photograph of Site

Source: Nearmap, accessed 26 November 2012

1.2 Previous Study

Sinclair Knight Merz (SKM) have previously prepared a Transport Report as part of the Phase 2/3 Concept Design Report and that report is attached to this document in Appendix A.

The SKM report was prepared at the Concept Design stage and further design development to 100% Schematic Design has meant there have been a change in bed and staff numbers for the proposed WWBH Redevelopment Phase 2/3. No traffic data from the SKM report has been used in this Mott MacDonald report.

1.3 Redevelopment Details

WWBH Phase 1 Redevelopment consisted of the provision of a new mental health facility. WWBH Phase 2/3 Redevelopment consists of new acute care facilities which will include a new Emergency Department & Imaging Facility.

The overall development of WWBH is summarised in the following table :

TABLE 1.1
WWBH DEVELOPMENT DETAILS

	Full Time Equivalent Employment	Beds
Prior to Phase 1 commencement	654	243
Upon completion of Phase 1	738	273
Upon completion of Phase 2/3	912	299

The latest Phase 2/3 redevelopment information consists of an increase in bed numbers of 26. This increase is additional to that provided as part of the Phase 1 redevelopment.

In addition the current employment projection figures from NSW Health indicate that with the completion of Phase 2/3 full time equivalent employees will increase by 174 over Phase 1 employment.

The above development details for Phase 2/3 have been utilised in the transport study contained herein. This is on the basis of net increases in bed & staff numbers taking into account the reductions associated with demolition of existing facilities to make way for the redevelopment.

The basis of this study is the proposed redevelopment indicated on the BLP architectural drawings contained in Appendix B including :

- Existing Site Plan (No. 03.0002/6)) dated 19/11/2012; and
- Ground Floor Plan (No. 03.0001/10) dated 1/2/2013.

1.4 Assessment Requirements

The scope of this report covers traffic and parking issues both internal and external to the site based on the NSW Health Director General's environmental assessment requirements (DGR) for WWBH Phase 2/3 redevelopment dated 16 April 2012.

This report assesses the proposed redevelopment against the relevant guidelines referred to in the environmental assessment requirements including the "NSW State Plan". The "Development Near Rail Corridors and Busy Roads – Interim Guideline" listed in the DGR does not apply to this redevelopment as the traffic data volumes on the Sturt Highway (Edward Street) adjacent to the site are less than 20,000 vehicles per day.

1.5 Traffic Consultation Meetings

As part of the process in preparing the traffic management report for Phase 2/3 of the Wagga Wagga Base Hospital Redevelopment three meetings were held with the Roads and Maritime Services (RMS) and Wagga Wagga City Council (WWCC) in October and November 2012.

The issues raised through this consultation included :

- For safety reasons the right turn into Lewis Drive off Edward Street would not be supported without a protected right turn lane.
- Right turn out of Lewis Drive onto Edward Street would not be supported as there are existing alternatives for traffic leaving the hospital and heading in that direction.
- The provision of two through traffic lanes on Edward Street consisting of separate right turn lane into Lewis Drive, indented bus lay by and modifications to kerbside parking arrangements.

The proposed design of the Phase 2/3 WWBH redevelopment incorporates these issues.

With respect to funding of these works in Edward Street the RMS indicated there would be no funding commitment until there was an opportunity to review the completed traffic report associated with the Phase 2/3 WWBH redevelopment.

There has been discussion in general terms with RMS and Council regarding the potential signalisation of the intersection of Murray Street with Edward Street which was identified in the earlier SKM Transport Report, Section 8.3.1. Meetings with RMS and Council indicated that, subject to traffic modelling, there was no objection in principal to signals not being provided at the Murray Street / Edward Street intersection. This was on the basis that the existing signalised intersection further to the west at Edward Street/Fox Street assisted in providing gaps in the westbound traffic on Edward Street to accommodate the Edward Street right turn into Lewis Drive.

These consultation meetings have reviewed carparking issues both onsite and offsite (on street). As adjacent on street parking is currently utilised by hospital visitors it was considered that this parking could be reasonably considered part of the parking supply of the hospital precinct. Council is completing new line marking of on street parking in these adjacent streets. This line marking should improve the parking efficiency of these parking areas.

The notes related to these traffic consultation meetings are contained in Appendix D.

2. Traffic Assessment - External to Site

2.1 Existing Road Network

Roads in the vicinity of the hospital are described below:

- Edward Street (Sturt Highway) – arterial road aligned along the northern boundary of the hospital containing two lanes in each direction and has a posted speed limit of 60kmh.
- Docker Street – collector road aligned along the western boundary of the hospital containing two traffic lanes in each direction and has a posted speed limit of 50kmh.
- Lewis Drive – local road off Edward Street providing access to the hospital's parking facilities and internal road system.
- Rawson Lane – local road off Docker Street providing access to the WWBH internal road system

2.2 Proposed Access Improvements

2.2.1 Edward Street / Lewis Drive Access

Edward Street is an 18.8m wide carriageway with 2 traffic lanes in both directions. In addition kerb side parallel parking is provided on both sides of Edward Street. An existing median is located in Edward Street starting at the intersection with Docker Street and extends for 120m to the east. This median provides protection for a right turn bay for traffic travelling west bound along Edward Street to turn into Docker Street.

The SKM Transport Report Section 8.2.5 details the history of accident record along this section of Edward Street in particular the high proportion of rear-end and turning crashes. On this basis it is understood that RMS (Roads and Maritime Services) proposed to extend this median to and beyond the intersection with Lewis Drive. The median will be positioned in order to provide a protected right turn bay for traffic travelling east bound on Edward Street to access Lewis Drive. Vehicles exiting Lewis Drive to Edward Street will be left turn only. It is understood that RMS does not support a right turn exit from Lewis Drive to Edward Street. The proposed traffic arrangement is shown on the attached plan ES-0001 in Appendix B. The provision of these road works is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan".

Prior to the Phase 1 works access off Edward Street to Lewis Drive was entry only with no exit onto the highway. At the time all vehicles exiting the hospital did so by using other local streets to east and the south of the site. The proposed access arrangement as part of Phase 2/3 provides for the addition of an exit as a left out only from Lewis Drive to Edward Street. This arrangement will assist in reducing traffic movements on local streets in the vicinity of the hospital.

2.2.2 Emergency Vehicles Access

A significant change for the Phase 2/3 access strategy includes the relocation of the Emergency Department to the southern side of the site. Ambulances are likely to enter and exit the site via the southern and eastern road connections.

This arrangement will assist in minimising the number of emergency vehicles circulating the site and mixing with public and staff accessing the northern carparks. This access strategy will improve safety and also improve the efficiency and capacity of the internal road network and vehicle access points off adjoining streets. The improved safety brought about by the separation of larger service vehicles from smaller vehicles using the carparks is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan".

The emergency access arrangements are shown on Figure 3.1 in section 3.3 of this report.

2.3 Traffic Generation from Phase 2/3 Redevelopment

The RTA Guideline to Traffic Generating Developments does not provide traffic generation rates for public hospitals. However, the guide does provide traffic generation rates for private hospitals in peak traffic periods based on the number of shift staff and beds. Adopting the private hospital generation rates with the average staff per weekday shift being ¾ of total staff ie 135 shift staff and 26 beds the peak period additional traffic generation from the Phase 2/3 redevelopment is estimated to be 60 vehicle movements per hour. This is similar traffic generation to each of the 70 parking spaces, being supplied in Phase 2/3, being turned over in the peak hour. Section 3.4 of this report provides details on the proposed parking requirement for the WWBH Phase 2/3 redevelopment.

The additional 70 space parking requirement is expected to generate in the order of an additional 630 vehicle movements per day. This is based on approximately 50% of the additional parking spaces being time limited and being turned over 6 times per day ie 12 vehicle movements per day. It is assumed that the remainder long stay parking spaces being turned over 3 times per day ie 6 vehicle movements per day.

2.4 Impact on Adjacent Intersections

Using the RTA Guideline to Traffic Generating Developments for private hospitals the estimated traffic generation by the Phase 2/3 redevelopment will be in the order of 60 vehicles per hour. On this basis it is expected that the additional development associated with Phase 2/3 will generate a minor increase in traffic volumes on adjacent streets ie in the order of 1 vehicle per minute spread across a number of access roads. This relatively small increase additional traffic is not expected to have a significant impact on traffic operations on the adjacent roads and intersections. The small increase in traffic volumes caused by the proposed redevelopment is expected to be within the capacity of the existing road system to accommodate.

2.5 Traffic Modelling

2.5.1 Extent of Traffic Modelling

As part of this traffic report modelling has been undertaken on Edward Street between Docker Street and Murray Street. The Edward Street / Docker Street intersection is currently signalised and the Edward Street / Murray Street intersection is priority controlled. This modelling also considered the proposed traffic arrangements for Edward Street, shown on plan No. ES-0001 in Appendix B, in particular the access arrangements to Lewis Drive.

The SKM Transport Report Section 8.3.2 indicates that the peak hour traffic modelling forming part of that report considered each intersection in isolation and that further more detailed analysis is required which considers the three intersections of Docker Street, Lewis Drive and Murray Street with Edward Street as a network. This network modelling has been undertaken as part of this study.

2.5.2 Micro-Simulation Traffic Model

Due to the close proximity of both un-signalised and signalised intersections adjacent to the proposed redevelopment site, it is considered appropriate to model the traffic behaviour for this redevelopment using AIMSUN (Advanced Interactive Microscopic Simulator for Urban and Non-Urban Networks), a micro-simulation program. Allowing dynamic modelling of the traffic movements is considered a more realistic reflection of both the existing and future traffic conditions adjacent to the site than an analysis that considers each intersection in isolation.

AIMSUN provides output inclusive of vehicle delays and queues at intersections. The vehicle delays can be correlated to a level of service (LOS) which ranks both intersection and traffic movement LOS based on average vehicle delay.

In cases where intersections are reaching their capacity traffic finds it difficult to make the required transaction through the intersection and may use alternative routes to minimise delays. Micro-simulation models similarly reflect this situation where traffic volumes are not able to be increase through intersections which are operating at or beyond their capacity.

2.5.3 Traffic Model 2012 Existing Base Case

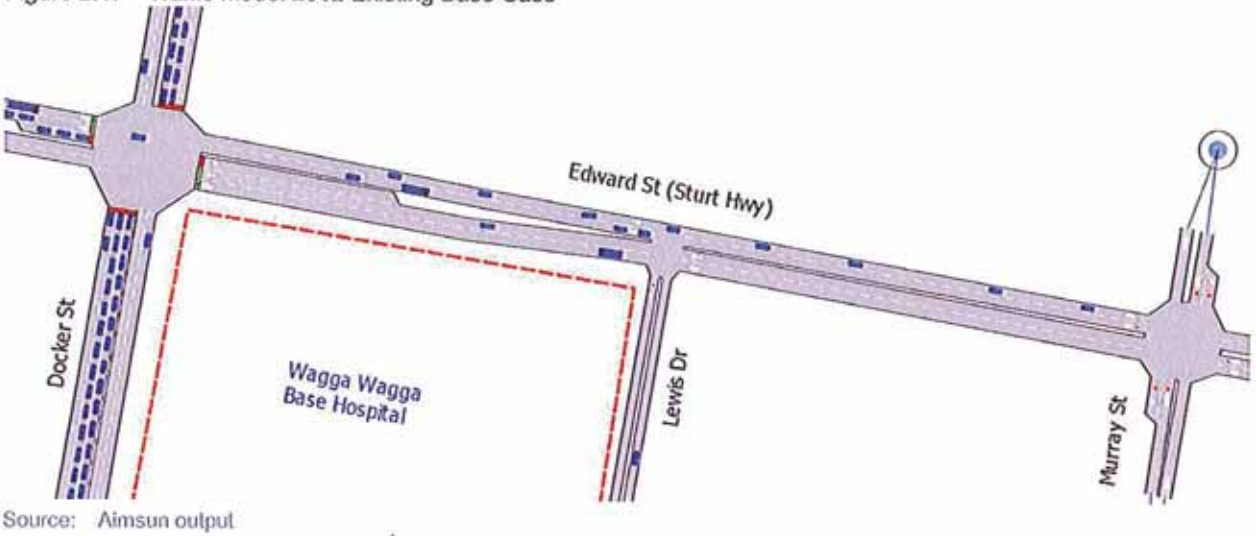
The existing traffic volumes for the traffic model were derived 2010 traffic data from the 2011 Wagga Wagga Traffic Models report by Transport Modelling. These traffic volumes were adjusted for 2012 by using the historical traffic growth figure of 2.1% provided in the WWTM report. This data was supplemented by additional peak hour traffic counts for turning movements at the Edward St / Lewis Drive intersection during October 2012.

All of the traffic data was arranged into an origin to destination matrix. This model then became the base model prior to the redevelopment of Phase 2/3.

The phasing of the traffic signals at Edward St and Docker St was derived from output from SCATS for this intersection. The dynamic function of SCATS makes it difficult in completely replicate the function of the lights within the micro-simulation model but the best approximation of the phase times during the peak hour period has been used.

The traffic model was checked against observations of the existing intersections undertaken on-site during October 2012 to assist in the calibration of the traffic model. The queuing and delays provided by the model were generally similar to those observed on site during peak traffic periods.

Figure 2.1: Traffic Model 2012 Existing Base Case



Source: Aimsun output

2.5.4 Traffic Model 2021 Future Case

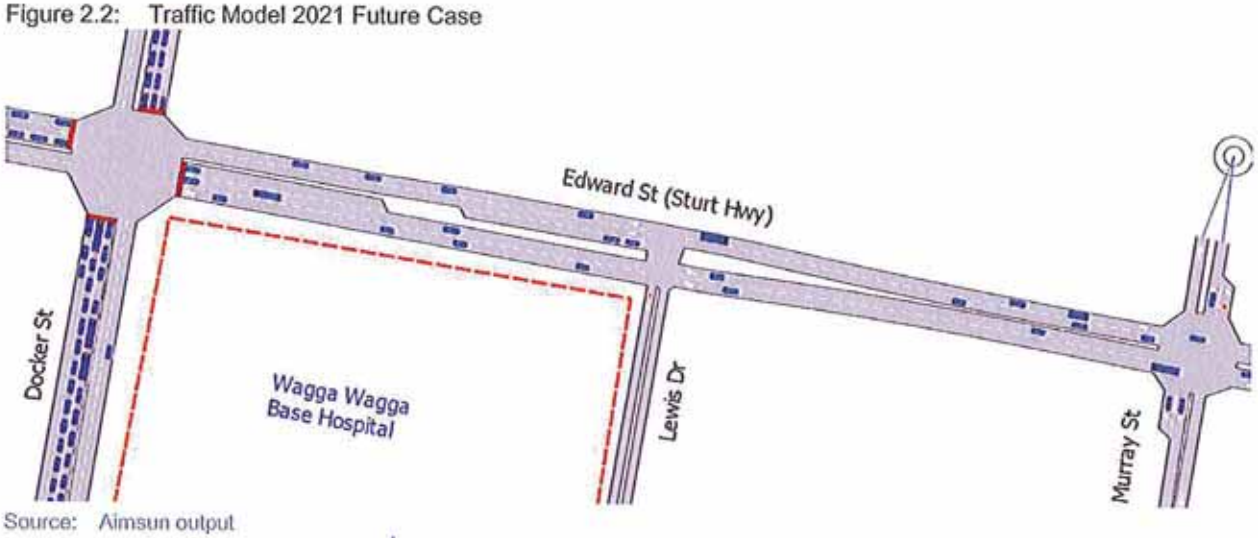
The future case traffic model provides traffic volumes to the year 2021 with the completion of Phase 2/3 works. The traffic arrangement includes the provision of a protected right turn lane from Edward Street to Lewis Drive as well as left in left out arrangement on Lewis Street.

Traffic volumes using the Lewis Drive connection have been increased from existing volumes by 40% in line with the proposed increasing parking capacity up to the completion of Phase 2/3, carparking growth details are indicated in section 3.4 of this report.

The 2011 Wagga Wagga Traffic Models report indicates that the future historical traffic growth in traffic volumes to be in the order of 2.1% per year.

The future case modelling provides for both the additional 40% traffic volumes from the Phase 2/3 hospital redevelopment on Lewis Drive as well as the estimated 23% growth in traffic volumes on Edward Street to the year 2021.

Figure 2.2: Traffic Model 2021 Future Case



Source: Aimsun output

2.5.5 Results of Modelling

The traffic modelling considered the AM peak hour (8am to 9am) and PM peak hour (5pm to 6pm) as these times are the critical period with the highest traffic volumes on Edward Street.

The traffic modelling for the 2021 future case indicates the following :

- The proposed length of the protected right turn bay (shown on plan No. ES-0001 in Appendix B) on Edward Street into Lewis Drive is adequate. The right turn is expected to operate at LOS B (Very Good) in both the AM and PM peak hour with an average delay of 20-30seconds for vehicles waiting to turn right from Edward Street with an average queue length of three vehicles.
- The queues on the right turn bay Edward Street to Lewis Drive has no impact on adjacent intersection of Edward Street/Docker Street
- The Edward Street/Murray Street intersection does not require signalisation to allow sufficient gaps for the right turn movement from Edward Street to Lewis Drive.
- Queues from adjacent intersections are not expected to regularly extend past the Edward Street/Lewis Street intersection at peak times.

The modelling results are based on traffic data provided and collected at the time. Traffic patterns and volumes as well as signal operation are subject to variation at different times for a variety of reasons. It is not possible to model all these variations and for this reason this modelling is an approximation only of the actual traffic operation.

The modelling indicated that the existing traffic signals at Edward St / Docker St are operating at LOS F signifying that it is currently exceeding capacity with the existing signal phasing arrangements and lane configuration. The operation of the signals appears to give priority to east and westbound traffic on the Sturt Highway with significant delays and queues in Docker St in both AM and PM. There appears to be some capacity for reducing delays at peak times by adjustments to signal phasing times.

The traffic modelling results are contained in Appendix C.

2.6 Road Improvement Works

The proposed road improvement works on Edward Street consisting of a protected right turn bay into Lewis Drive will assist in improving the operation and safety of this turning movement. The works at this intersection will also provide for a left in left out arrangement on Lewis Drive. These road improvement works are shown on Plan ES-0001 in Appendix B. Based on the estimated additional traffic to be generated by the Phase 2/3 redevelopment no other road improvement works are proposed.

2.7 Sustainable Transport

2.7.1 Buses

The SKM Transport Report Section 8.2.3 provides information bus routes, service frequency and patronage. There are three bus routes providing 10-12 services per day. There bus routes are adjacent to the hospital site on Edward Street that are conveniently located for hospital staff, visitors and patients. The bus routes provide services to and from the city centre where all bus routes terminate. These services appear to have capacity for increased patronage associated with the hospital expansion.

It is proposed to retain these stops as part of the road improvement works on Edward Street adjacent to the hospital. The westbound bus stop will be provided with a layback indented bus bay which will allow the bus to park off the carriageway and permit two lanes of traffic to operate without the need to stop behind stopped buses. This arrangement will improve the efficiency of the traffic lanes and provide an improved level of service for hospital users accessing the Lewis Drive entry from the east. The indented bus bay will improve road safety on this section of the highway including the safety of bus patrons. Refer Plan ES-0001 in Appendix B for details of proposed modified bus facilities. The proposed improvements to the bus bay is consistent with "Goal 10 Improve Road Safety" of the "NSW State Plan".

2.7.2 Pedestrians

Paved pedestrian footpaths are provided on all road approaches to the hospital. As part of the traffic signals at the intersection of Edward Street (Sturt Highway) and Docker Street signalised pedestrian crossings are provided. This pedestrian facility assists bus users to cross Edward Street. These existing pedestrian facilities are expected to meet likely future demand and are consistent with the "NSW Planning Guideline for Walking and Cycling".

Consideration has been given to the provision of pedestrian facilities on Docker Street near Hardy Avenue to improve the pedestrian connection between WWBH and Calvary Hospital. Unsignalised marked pedestrian crossings are not generally recommended by road authorities for 4 lane roads such as Docker Street. A signalized pedestrian crossing across Docker Street could be installed at a mid block location ie between Rawson Lane and Hardy Avenue or on Docker Street north of Hardy Avenue. Alternatively, a signalized

pedestrian crossing could be installed as part of intersection traffic signals at the intersection of Docker Street and Hardy Avenue. AS1742.10 indicates that intersection traffic signals should be considered if signalized pedestrian signals are proposed close by or at an existing unsignalised intersection. The incorporation of pedestrian facilities into a signalized intersection provides the best overall pedestrian safety and traffic management alternative.

2.7.3 Cyclists

The SKM Transport Report Section 8.2.4 assessed on road and off road cycle facilities in the vicinity of the hospital. There are no formal on road cycle routes or off road cycle paths in close proximity to the site. Future on road cycle lanes are proposed on Docker Street adjacent to the hospital in the report Integrated Movement Study for the City of Wagga Wagga December 2008.

It is understood that there are bike storage facilities proposed as part of the WWBH redevelopment which will encourage more people travel to and from the Hospital by bicycle in the future. This approach will be consistent with the "NSW Planning Guidelines for Walking and Cycling", "NSW Guideline for Planning and Development - Integrating Land Use and Transport" and the "NSW Bike Plan".

2.7.4 Car Sharing

It is understood that there are no existing formal car sharing schemes in place at the WWBH. A workplace travel plan or similar incorporating opportunities for car sharing would assist in reducing traffic movements and parking occupancy in the future.

2.7.5 Taxis

There is an existing taxi rank adjacent to the hospital site on Edward Street which is conveniently located for hospital staff, visitors and patients. It is proposed to retain this existing taxi rank as part of the road improvement works on Edward Street adjacent to the hospital. These existing taxi facilities are expected to meet likely future demand. Refer plan No. ES-0001 attached in Appendix B for the location of the taxi rank in Edward Street.

3. Traffic Assessment - Internal to Site

3.1 Traffic Patterns

Generally the layout of the site is expected to determine the traffic pattern ie

- Majority of parking located on the northern side of the site.
- Access to carparks most directly accessed from the north (Edward Street) and local streets to the east of the site.
- Loading dock facilities/access on the western side of the site.
- Ambulance drop off and parking on the southern side of the site
- Both emergency and main entry drop off / pick off centrally located but more easily accessed from the north and east

The proposed traffic directional flow pattern within the site is indicated on plan No.TP-0001 in Attachment B. The main features of this traffic pattern are as follows :

- Lewis Drive connection off Edward Street is the main access road and services the carparks at the northern end of the site as well as providing access to entry pick up / set down areas.
- These carparks and pick up / set down areas can also be accessed from the east via Yabtree Street and from the south by Yathong Street and Rawson Lane.
- Carpark circulation within the new carpark in the north western corner of the site and the entry forecourt will both have one way clockwise circulation. Both of these carparks are located on the western side of the Lewis Drive access road.
- The existing carparks on the eastern side of the Lewis Drive access road will retain the two way aisles currently in place.

3.2 Traffic Calming Measures

AS2890.1 Off Street Carparking indicates that if a parking aisle exceeds 100 m in length traffic control devices such as speed humps shall be placed along the parking aisle to control vehicle speeds. The layout provides for both the parking aisles as well as the main access road of Lewis Drive to be less than this 100m. On this basis there does not appear to be a mandatory requirement to provide speed control devices.

As part of detail design consideration should be given to uniform threshold treatment to all roads entering the WWBH precinct. This threshold treatment could consist of a section of pavement colour changes with appropriate signage. This signage could include a 40kph speed limit. In addition consideration could also be given to the proposed pedestrian crossings being constructed as raised platforms to enhance pedestrian safety as well as providing speed control device to vehicular traffic.

A series of marked pedestrian crossings will be provided within the site on the internal access roads and carpark aisles. These pedestrian facilities will include in particular :

- Pedestrian connection from the Lewis Drive access off Edward Street to the main entry into the hospital buildings
- Pedestrian connection from the entry forecourt carpark the main entry into the hospital
- Pedestrian connection from the existing north eastern carparks to the main entry into the hospital

Refer to the attached plan No.03.0001/10 in Appendix B which indicates the proposed marked pedestrian crossings within the site.

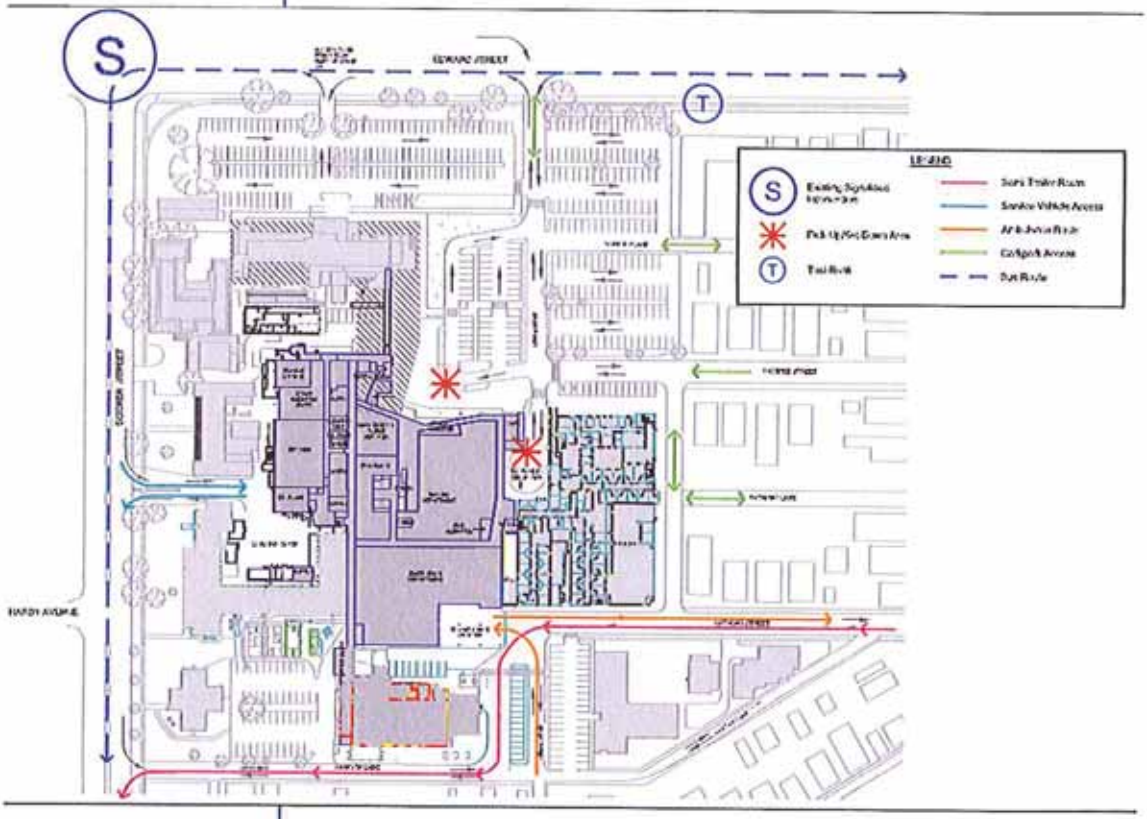
3.3 Internal Works

3.3.1 Access

There are existing multiple vehicular access/egress points to the WWBH off the adjoining roads including Edward Street, Docker Street, Rawson Lane, Yathong Street, Yathong Lane, Yabtree Lane and Doris Roy Lane, refer Figure 3.1.

Edward Street will provide direct access to both the on-site carparking located in the northern portion as well as the set down pick up area located adjacent to the main hospital entry. Similarly, Yabtree Street is the main local street from the east providing access to the carparks and set down areas.

Figure 3.1 Traffic Arrangements



These vehicular access arrangements and overall road network layout provide for :

- Flexibility and choice of routes to the hospital facilities
- Distribution of traffic throughout the network to assist in managing traffic volumes
- Provides alternative traffic routes in the event of vehicle accidents/breakdowns

3.3.2 Emergency Vehicle Access

Rawson Lane and Yathong Street will provide access to ambulance patient drop off area and parking bays on the southern side of the hospital, refer Figure 3.1. Also refer to attached drawing No. TC-0003 in Appendix B which indicates turning templates related to this movement. This arrangement is consistent with "NSW Guideline for Planning and Development - Integrating Land Use and Transport" in providing sufficient off-street space for the movement of special vehicles such as emergency vehicles.

3.3.3 Loading Facilities

A new driveway off Docker Street will provide access to the proposed hospital loading dock. It is understood that this loading dock is not part of the Phase 2/3 WWBH redevelopment but subject to a separate approval process.

Docker Street is a collector road running north south adjacent to the western boundary of the Hospital. It consists of a central median with 2 traffic lanes each way with parallel parking adjacent to the kerb. The proposed driveway is to be restricted to a left-in / left-out manoeuvre. Access to the loading dock would only be available to vehicles travelling south bound on Docker Street. Exiting vehicles would be required to proceed south bound along Docker Street.

Based on the WWBH report "Logistics, Spatial and Operational Analysis of External Supply" it is expected that the loading dock will receive approximately 40 delivery vehicles per day. It is expected that this number of movements will have insignificant impact on existing traffic flows on Docker Street. The provision of a left in left out and the central island to the driveway will assist in minimising delays to through vehicles on Docker Street.

3.3.4 Service Vehicles

It is proposed to use Rawson Lane and Yathong Street as access for semi trailers delivering and decanting bulk oxygen to the WWBH. It is understood that the proposed access arrangement for this service vehicle is not part of the Phase 2/3 WWBH redevelopment but subject to a separate approval process.

It is estimated that there will only be two semi-trailer movements per week similar to the existing number of movements. Entry would be via Yathong Street and with egress to Docker Street via Rawson Lane. This arrangement would limit Rawson Lane to one way traffic for semi trailers. It is understood that these semi-trailers will be limited to making deliveries during non peak times thus minimising disruption to local traffic.

3.4 Parking

3.4.1 On Site Parking Supply

The overall development of WWBH provides for the following on site carparking supply :

TABLE 3.1
PARKING SUPPLY

	Onsite Carparking
Prior to Phase 1 commencement	320
Upon completion of Phase 1	370
Upon completion of Phase 2/3	440

On this basis an increased parking supply of approximately 70 on site parking spaces is proposed as part of the Phase 2/3 redevelopment. It is noted that 50 spaces are proposed as part of Phases 2/3 and the remaining 20 spaces will be provided as part of a separate application under the provisions of ISEPP.

Parking supply prior to commencement of Phase 1 is referenced from BLP Plan No 01.0002/6 contained in Appendix B. Plan No CP-0001, also in Appendix B, indicates both the parking supply upon completion of Phase 1 as well as upon completion of Phase 2/3.

3.4.2 Parking Guidelines

There are a number of guidelines related to hospital parking requirements. The SKM Transport Report under Section 8.3.3 refers to parking requirements for two other regional hospitals based on beds and staff numbers. The RTA Guideline to Traffic Generating Developments provides parking requirements for private hospitals but not public hospitals. The Austroads parking document also provides parking rates from a number of different sources. These parking requirements are summarised in the following table which includes the relevant parking requirements for the Phase 2/3 WWBH redevelopment.

TABLE 3.2
PARKING REQUIREMENTS

Source	Criteria	Parking Requirement#
Austroads Traffic Part 11 Parking 2009	Victoria 1.3 parking spaces per bed	34
RTA Traffic Generating Developments 2002	Private Hospital (not public hospitals) Formulae based on no. beds & av. staff per weekday shift. Assume av. staff per weekday shift is equivalent to ¾ of total staff.	38
SKM Report Section 8.3.3.1	Bathurst Council 1 additional space per additional five beds and per three staff	63
SKM Report Section 8.3.3.1	Gosford Council 1 additional space per additional three beds and per three staff	67
ACT Parking & Vehicular Access Code 2012	0.8 spaces/peak shift employee plus 0.5 spaces per bed Assume staff peak shift is equivalent to ¾ of total staff.	117

Parking requirement based on an additional 26 beds and 174 staff

There are some variations in these parking requirements. For a city such as Wagga Wagga it is considered appropriate for parking requirements to be based on the more regionally based criteria. Ignoring the private hospital parking criteria and adopting the regionally based parking criteria the parking requirement is in the order of 65 parking spaces.

The proposed additional parking supply of 70 on site parking spaces proposed as part of the Phase 2/3 redevelopment meets the parking requirement for a regional hospital.

There will be a small reduction in the off site parking supply from the proposed road works associated with the hospital redevelopment. The proposed road improvements to Edward Street and the new service vehicle access off Docker Street will reduce kerbside parallel parking in the adjacent verges to the WWBH by 6 spaces.

Currently line marking is being undertaken to existing parallel kerbside parking in streets adjacent to WWBH such as Docker Street and Bookong Avenue. The line marking should improve the efficiency of these parking areas.

The "NSW Guideline for Planning and Development - Integrating Land Use and Transport" indicates that the control of parking is an effective tool in managing the demand for travel and that consideration needs to be given to reducing parking requirements for development in areas with good public transport. In addition the guideline indicates that parking requirements should seek a balance between satisfying a proportion of parking demand on-site, addressing car reduction objectives and minimising the spread of parking into surrounding areas. The proximity of the existing bus network to the WWBH site provides for some consideration to be given to a reduced parking requirement based on good access to public transport but the SKM report Section 8.3.2 indicates that bus patronage is currently relatively low. The proposed additional 70 on site parking spaces as part of the Phase 2/3 redevelopment which is in close proximity to the adjacent bus routes appears to be consistent with some aspects of this guideline.

3.4.4 Visitor and Staff Parking

Existing carparking on site contains the following categories :

- Unrestricted
- Staff Only
- Time Limited – 2 hours, 1 hour, ½ hour

The existing parking spaces on the northern side of the site are numerically evenly divided between these three categories. Refer to the existing carparking plan No. TP-0001 provided in Appendix B.

Acknowledging that time restricted parking spaces for visitors/patients will turnover more frequently than long stay parking the proposed parking strategy forming part of the Phase 2/3 redevelopment incorporates the following :

- Maximising the use of time restricted parking for visitors/patients within the on site carpark particularly those spaces that are closest to hospital facilities.
- On this basis patient visitors/patients movements through the precinct can be minimised improving both safety and convenience.
- Longer term parking including staff parking will be provided in those carparking areas more distant from the patient hospital facilities.

3.5 Staged Demolition and Construction

The SKM Transport Report Section 4 considers the potential traffic impacts of the Phase 2/3 construction works. Detailed temporary traffic management plans will be required to be prepared by the builder and approved by relevant authorities prior to construction commencing to address potential issues such as :

- Vehicular access to WWBH on site parking
- Safety for all road users and pedestrians
- Operation of adjacent properties and land uses
- Existing road network operation
- Parking supply with additional parking demand by construction workers

One of the main criteria for the determination of routes for construction vehicles will be the need to miminise disturbance to as many adjoining residents as possible. The temporary traffic management plans should include construction vehicle routes.

The criteria for the determination of routes for construction vehicles should include :

- The need to miminise disturbance to as many adjoining residents as possible.
- Separation of construction vehicles from hospital staff, visitor and patient parking.

The development of these traffic management plans should be undertaken in full consultation with relevant stakeholders. The process of review, approval and implementation of these plans should address the relevant traffic impacts of demolition and construction.

The staging of the works including the now complete new carpark located at the north western corner of the site in advance of the Phase 2/3 works will assist in meeting parking demand during construction.

Appendices

Mott MacDonald

Appendix A. SKM Transportation Report

8. Transport Report (SKM)

8.1. Introduction

This Transport Report has been prepared by Sinclair Knight Merz as part of the Phase2/3 Concept Design Report in relation to the Wagga Wagga Base Hospital (WWBH) Redevelopment.

The site is located south west of the Central Business District of Wagga Wagga, at the corner of the Sturt Highway (Edward Street) and the current regional road (Docker Street). The site itself is part of a wider health precinct bounded by Edward Street and Rawson Lane to the north and south and by Murray Street and Docker Street to the east and west, along with the adjacent Calvary Hospital and medical consulting rooms between Docker Street and Emblen Street. This report does npot consider precinct wide traffic issues, these being the domain of Wagga Wagga Council urban planning.

The WWBH Redevelopment Phase 2/3 provides an increase of 27,253 m^2 for re-development of the existing hospital block, largely bringing the functional areas to current standards for medical and care services. Associated with these works is an increase in staff and bed numbers of approximately 125 and 38 respectively over post Phase 1 figures bringing the total to 666 staff and 299 beds.

8.2. Pre Phase 1 (Current) Traffic Conditions

8.2.1. Road network

It is usual to classify roads according to a hierarchy in order to determine their functional role within the road network. Roads are classified according to the role they fulfil and the volume of traffic they can appropriately convey. Changes to traffic flows on roads can then be assessed within the context of the road hierarchy. The guidelines for the functional classification of roads were developed by the New South Wales Roads and Maritime Services (RMS), and are described below:

- **Arterial Road:** typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per hour);
- **Sub-Arterial Road:** defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per hour). These roads supplement arterial roads in providing for through movement, to an individually determined limit that is sensitive to both roadway characteristics and abutting land uses;
- **Collector Road:** provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity deigns to decline noticeably. Trunk collector and spine roads with limited property access can reasonably carry traffic flows greater than 5,000 vehicles per day; and

- **Local Road:** provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per hour).

Key roads in the vicinity of the hospital are described below:

- **Edward Street (Sturt Highway)** – is an arterial road running east-west along the northern boundary of the hospital. It is part of the Auslink national network and forms part of the main highway route between Sydney and Adelaide. It has two lanes in each direction and has a posted speed limit of 60kmh.
- **Docker Street** – is a collector road running north-south along the western boundary of the hospital. It has three lanes in each direction (including one parking lane in each direction) and has a posted speed limit of 50kmh.
- **Lewis Drive** – is a local road running north-south along the eastern boundary of the hospital. It provides access to the hospital's parking facilities and internal road system.
- **Brookong Avenue** – is a local road running north-south and east-west to the east and south of the hospital. It has four lanes in each direction (including one parking lane in each direction) and has a posted speed limit of 50kmh. It currently serves as a bypass road for commuters wishing to avoid the traffic signals at Edward/ Docker Streets.

The performance of the road network is largely governed by the ability of key intersections to accommodate traffic demand. The performance of an intersection is determined in terms of its Level of Service (LoS) and is categorised from A to F (refer **Table 8-1**).

- **Table 8-1: Level of Service Criteria and Average Delay**

Level of Service	Average delay (seconds per vehicle)	Conditions for signalised intersections
A	0-14.5	Good operation
B	14.5 – 28.5	Acceptable delays & spare capacity
C	28.5 – 42.5	Satisfactory
D	42.5 – 56.5	Operating near capacity
E	56.5 – 70.5	At capacity
F	>70.5	Extra capacity required

Source: RMS Guide to Traffic Generating Developments

SIDRA intersection software was used to analyse the performance of the intersections within the WWBH precinct. Key input data for the SIDRA model include:

- Classified intersection counts dated 22nd June 2011;
- Intersection geometry referenced from a variety of sources including aerial photographs and site inspections;

- Phase times and movement descriptions as specified by historical SCATS data, sourced from the RMS.

The results of the analysis undertaken indicate that Edward/Murray Street is currently operating at a unsatisfactory LoS "F" during the AM peak hour. Edward/ Docker has an acceptable LoS "D". Sidra results for the intersections are summarised in **Table 8-2:**

- **Table 8-2: Existing Intersection Performance Results**

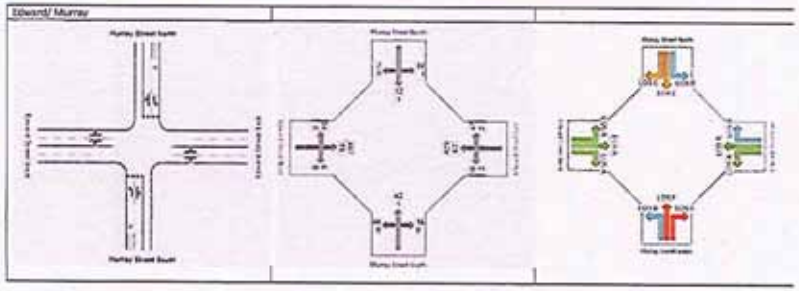
Intersection	LoS (overall)	DOS (overall)	95% Queue (m)	95% Queue Approach
Edward / Murray	F	0.57	20m	Murray St south approach
Edward / Docker (Optimised cycle time, No Pedestrians)	D	0.86	141m	Docker St south approach

The results of the analysis by intersection are described below:

Edward and Murray Street Intersection

The intersection of Edward Street (Sturt Highway) and Murray Street is a give-way sign controlled intersection. Sidra analysis suggests that the intersection is currently operating at LoS "F" with the worst approach at Murray Street South during the AM peak hour. The Edwards Street arms of the intersection have ample capacity, with degrees of saturation of 0.57 (less than 0.78). Detailed results are shown in Figure 8-1.

- **Figure 8-1: Existing Intersection Performance at Edward Street and Murray Street**

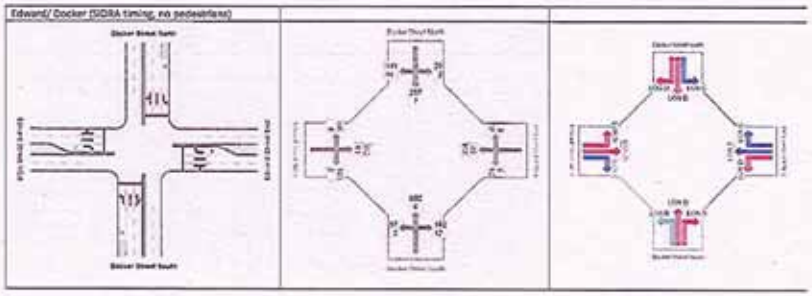


Edward and Docker Street Intersection

The intersection of Edward Street (Sturt Highway) and Docker Street is signalised with pedestrian crossings on all approaches. In most circumstances the signals operate using four phases (Edward Street westbound, Edward Street eastbound, diamond right turn from Docker Street, and Docker Street northbound and southbound.

Sidra analysis indicates that the Edward Street and Docker Street intersection is operating at LoS "D" with the worst approach being Docker Street South (LoS "D"). The results also indicated that during the AM peak hour, this intersection has limited spare capacity available, with an overall degree of saturation of 0.86 (more than the 0.78 threshold). Detailed results are shown in **Figure 8-2.**

- **Figure 8-2: Existing Intersection Performance at Edward Street and Docker Street**

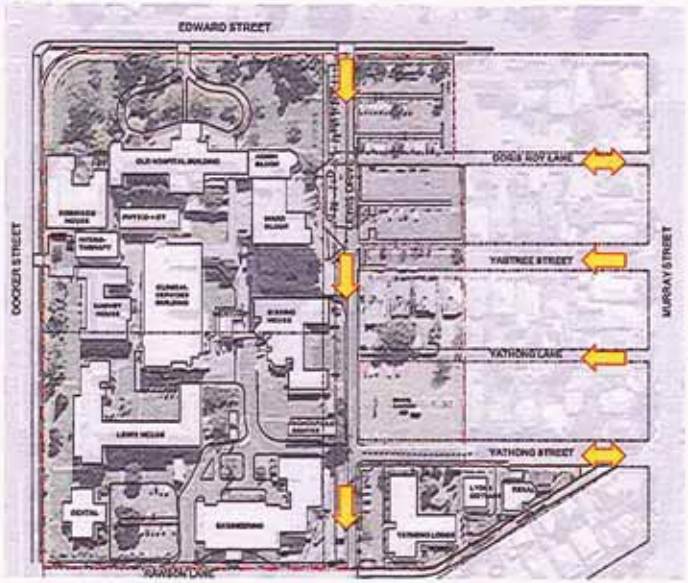


8.2.2. Site access and parking

Vehicular access to car parking, the Main Building and the Emergency Department is directly off Edward Street via Lewis Drive. Vehicular access to the existing Hydrotherapy Pool is directly off Docker Street but parking is limited and shared with the UNSW School of Rural Health. Vehicular access to the Dental Unit, Community Health and the Australian Red Cross Blood Service Donor Centre is via the rear of the site, off Rawson Lane; and the Renal Unit and Yathong Lodge are accessed via Yathong Street and Lewis Drive.

Staff access is via Lewis Drive to the main car park. An additional staff car park can be accessed via Yathong Street or Rawson Lane. Service vehicles enter the site via Lewis Drive, Yathong Street and Rawson Lane. Ambulance access is via Lewis Drive. The existing site vehicular circulation is illustrated in Figure 8-3.

- Figure 8-3 Current site access and circulation



Hospital car parking is provided within the hospital precinct, adjacent to the core hospital premises, providing 333 unallocated general access parking spaces. Much of the existing parking is time restricted, or permit restricted, being enforced by Wagga Council rangers. Street parking is also prevalent, much of it time-restricted.

8.2.3. Public transport

Bus

The hospital is currently serviced by three bus routes, operated by Busabout Wagga Wagga:

- Route 961 – Wagga Wagga City Centre to Bourkelands via Malaya Drive and Mount Austin;
- Route 962 – Wagga Wagga City Centre to Glenfield Park via Ashmont; and
- Route 963 – Wagga Wagga City Centre to Glenfield Park via Turvey Park and Bruce Street.

The route map is shown in **Figure 8-4**, and service frequencies are provided in **Table 8-3** below.

- Figure 8-4: Bus routes servicing WWBH

Source: http://www.fearnes.com.au/pdf/wagga_wagga_network_map_OCT10.pdf

- Table 8-3: Bus service provision

Route number	Direction, relative toWagga Wagga City Centre	Number of weekday services	Number of Saturday services	Number of Sunday services
961	To	12	9	No service
	From	9	9	No service
962	To	13	11	No service
	From	11	10	No service
963	To	12	9	No service
	From	11	10	No service

Bus stops in the vicinity of the hospital are located at:

- Northern side of Edward Street (Sturt Highway), 45m east of Docker Street; and

- Southern side of Edward Street (Sturt Highway), 25m east of Lewis Drive.

The frequency of bus arrivals and departures reflect the current low patronage levels.

Rail

Wagga Wagga railway station is located approximately 1.1km east of the hospital. A total of four services are provided by CountryLink:

- To Sydney (two services daily); and
- To Melbourne (two services daily).

These rail services do not provide any realistic travel options for the hospital workforce, or patients, but could serve regional hospital visitors.

8.2.4. Sustainable transport

Paved pedestrian footpaths are provided on all road approaches to the hospital, including Edward Street (Sturt Highway), Docker Street, Gormly Avenue, Hardy Avenue, Murray Street, Yabtree Street, Yathong Street and Brookong Avenue. Signalised pedestrian crossings are provided on all approaches at the intersection of Edward Street (Sturt Highway) and Docker Street.

There are currently no formal on-road or off-road cycle paths / routes in close proximity to the hospital. The nearest off-road cycle path to the hospital is located at the railway overpass linking Brookong Avenue and Cassidy Parade / Kildare Street, approximately 520m south-east of the hospital. The *Integrated Movement Study for City of Wagga Wagga*, prepared by URaP – TTW Pty Ltd in December 2008, proposes formal on-road cycle routes on the following roads in the vicinity of the hospital:

- Docker Street;
- Murray Street;
- Salmon Street; and
- Morgan Street.

Figure 8-5 illustrates the existing routes and those recommended for future implementation.

Currently, there are no facilities available within the Hospital Campus for bike storage and it will be recommended that bike facilities should be provided for WWBH as part of the re-development to encourage more people travel to and from the Hospital by active transport in the future.

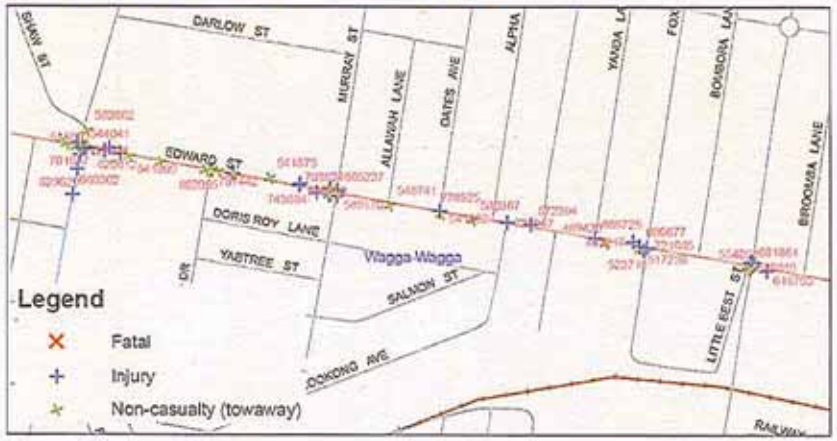
- **Figure 8-5: Wagga Wagga City Bike Plan**

Source: Integrated Movement Study for City of Wagga Wagga, URaP – TTW Pty Ltd, December 2008

8.2.5. Road safety

Edward Street as a State Highway provides good regional connectivity for the Hospital as a regional facility. However, this creates safety issues for vehicles directly accessing the Hospital. The result is a number of crashes in the vicinity of the Hospital, with 39 casualties over a 5 year period (2006-2011) between Best and Docker Streets, with more than half being rear-end and turning crashes. Figure 8-6 shows the location and severity of these crashes.

- Figure 8-6 Crash profile on Edward St near WWBH 2005-2011



Source: RMS July 2011

The Roads and Maritime Services has determined that the appropriate crash counter-measure is construction of a dividing median strip between Best and Docker Streets. Of direct relevance to the WWBH will be the prohibition of right turns and cross-traffic at the Edward/ Murray intersection, and prohibition of the right-turn for eastbound traffic into the main entry to Hospital at Lewis Drive.

The median across Murray Street will not have an immediate effect, other than encouraging alternate approaches to the Hospital for traffic from the north.

The implementation of the median across Lewis Drive entry will have a serious impact on Hospital access. Traffic from the east along Edward Street will not be affected. However, regional traffic from all other points will need to access the Hospital via Docker/ Brookong/ Murray/ Yabtree Streets as opposed to the current right turn manoeuvre.

To maintain current levels of access afforded to the hospital, it is proposed to construct in the median a right-turn bay for hospital access.

8.2.6. Phase 1 Traffic Conditions

Phase 1 will provide for enhanced Mental Health acute and sub-acute patient care. It will occupy the land between Yathong and Yabtree Streets, where currently there are 74 unallocated parking spaces and four houses now owned by NSW Health. This will be implemented prior to the Phase 2/3 works and as such effectively forms the baseline conditions for Phase 2/3.

During Phase 1, Emergency vehicles will continue to access the hospital via Lewis Drive off Edward Street and egress via Yabtree or Yathong Streets. Service vehicles will continue to access the hospital via Yathong Street, off Murray Street. The site circulation for Phase 1 is depicted in Figure 8-7.

- Figure 8-7 Phase 1 site circulation

Phase 1 makes the following changes to existing conditions, which effectively form the base conditions for Phase 2/3:

- A new 121 space car park in the northern end of the site to accommodate displaced parking and additional demand;

- The severance of the existing Lewis Drive to accommodate the footprint of Phase 1, and the inclusion of New Lewis Drive to retain circulation to the east of Phase 1.

8.3. Phase 2/3

8.3.1. Proposals

Associated with the Phase 2/3 works is a significant change in the way some traffic will enter and circulate the site, therefore the following will be required to be undertaken:

- Site access strategy.
- Traffic modelling of local intersections.
- Re-assessment of carpark numbers.

Contrary to the current RMS/Council scheme to install a median strip along Edward Street, it is proposed that the primary vehicular access to car parking, the Main Building and the Emergency Department (for members of the public only) is directly off Edward Street via Lewis Drive.

Various scenarios have been investigated for this arrangement. A review of Austroads guidelines in relation to intersection spacing requirements stipulates that a signalised intersection is not possible at Lewis Drive as it does not meet the minimum spacing requirement of 400m. This is also the case for a potential alternative access location adjacent to the motel.

In order to maintain Lewis Drive as the main entry to the hospital it is proposed that the intersection of Murray Street/Edward Street be signalised in conjunction with the continuation of permitted right turn access to the site from Edward Street into Lewis Drive. The combination of the existing signalised intersection of Edward Street / Docker Street with the proposed signalisation of Edward Street / Murray Street will create sufficient gaps in opposing traffic flow to allow safe uncontrolled entry to the site at Lewis Drive, also satisfying intersection spacing requirements. Vehicular access to the existing Hydrotherapy Pool will remain off Docker Street. Vehicular access to the Dental Unit, Community Health and the Australian Red Cross Blood Service Donor Centre is via the rear of the site, off Rawson Lane; and the Renal Unit and Yathong Lodge are accessed via Yathong Street and Lewis Drive. Staff access is via Lewis Drive to the main car park. An additional staff car park can be accessed via Yathong Street or Rawson Lane.

The significant change for the Phase 2/3 access strategy includes the relocation of the service yard and Emergency Department. The service yard is now located to the west of the site and accessed via a left in-left out only intersection for the sole use of service vehicles, reducing the number of large vehicles circulating the site mixing with public, staff and emergency vehicles. Ambulances are now proposed to enter the site via the southern section of the existing Lewis Drive which will

be one-way northbound and restricted to use by ambulances only. Ambulances will exit the site via Yathong Street.

Phase 2/3 also includes the development of a Central Energy Plant (CEP) in the southern end of the site adjacent to the existing Rawson Lane. It is proposed that vehicles accessing the CEP approach along Rawson Lane, travelling westbound. At this stage, it is unknown which type of vehicles require access to the CEP.

The strategy of using Rawson Lane for access will require traffic management measures to be implemented at its intersection with Lewis Drive and existing on-street parking to be removed on Rawson Lane. In addition, and once the vehicle types and demands have been confirmed the requirement to widen and upgrade Rawson Lane and its intersection with Docker Street will need to be investigated.

The Phase 2/3 site circulation strategy is identified in Figure 8-8.

- Figure 8-8 Phase 2/3 site circulation

8.3.2. Phase 2/3 Traffic Impact Assessment

The traffic impact assessment carried out for Phase 2/3 assumes implementation of the access proposals as described in Section 8.3.1 and seeks to:

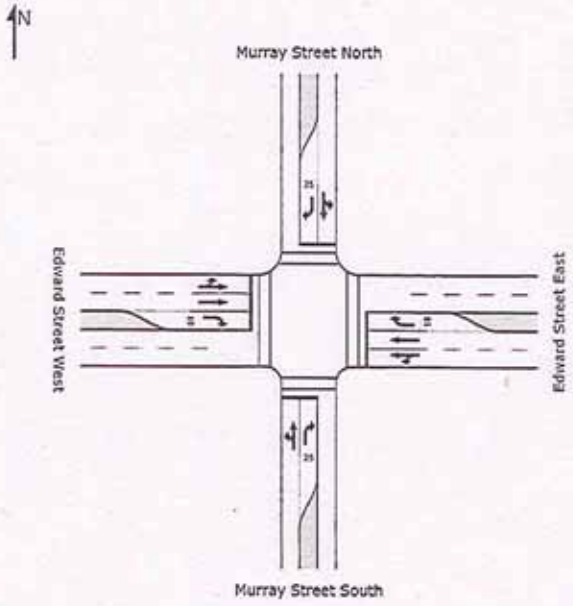
- Determine the required length of the right turn bay on Edward Street for vehicles turning into Lewis Drive.
- Determine the effect of the right turn bay on adjacent intersections (Edward Street/Docker Street and Edward Street/Murray Street).
- Determine the performance of the Edward Street/Murray Street intersection following its conversion to a signalised intersection.

- Determine whether queues from adjacent intersections will extend past the Edward Street/Lewis Street intersection.

In order to create traffic demands representative of Phase 2/3, existing demands have been increased by 23% in association with the increased staff numbers.

The results of the traffic analysis are described below:

- The Edward Street/Lewis Drive intersection (with the right turn bay) is expected to operate at LoS A with an average delay of 11.1 seconds for vehicles waiting to turn right from Edward Street. The average queue length is less than one vehicle; therefore the required length of the turning bay is 7m (sufficient for one vehicle). In practice, the turning bay will need to be approximately 50m in length to allow for storage of longer vehicles and sufficient deceleration.
- The right turn bay at the Edward Street/Lewis Drive intersection is not expected to result in any change to the operation of adjacent intersections. Provision of the right turn bay allows turning vehicles to be separated from through vehicles.
- The Edward Street/Murray Street intersection is expected to operate at LoS A with an average delay of 13.7 seconds following its conversion to signals. Given existing volumes, the intersection was modelled with two phases. The assumed layout is presented below:



- The distance between the Edward Street/Lewis Drive intersection to both adjacent intersections is approximately 150m. The approximate queue length on the westbound approach at the Edward Street/Docker Street intersection is 94m. The approximate queue length on the eastbound approach at the Edward Street/Murray Street intersection is 59m. Therefore it is expected that queue lengths from both adjacent intersections will not impact on the operation of the Edward Street/Lewis Drive intersection.

This analysis considers each intersection in isolation and demonstrates that they will perform satisfactorily and have no impact upon each other. It is considered that providing a right turn bay for vehicles turning right from Edward Street to Lewis Lane, and the conversion of the Edward Street/Murray Street intersection to signals, will have minimal impact on the existing road network.

Roads and Maritime Services and Council are likely to require further analysis to support a decision to allow right turn access from Edward Street and it is recommended that once further clarity is determined with RMS and Council regarding the feasibility of this strategy, further more detailed analysis is carried out which considers these three intersections as a network.

8.3.3. Car Parking

8.3.3.1. On site

It should be noted that the demand for parking spaces can be based on a number of premises. The current Wagga Wagga Development Control Plan identifies the key metric as increased hospital area, nominating 1 additional parking space for each additional 25m2 of gross floor area. The underpinning assumption is that hospital services are directly proportional to increased area. In the case of Wagga Wagga Base Hospital, the increased area is only modernising the standard of facilities rather than hospital functionality. In other jurisdictions, hospital car parking is associated variously with the number of beds and the number of staff. For example, Gosford Council requires 1 additional space per additional three beds and per three staff, while Bathurst Council requires 1 additional space per additional five beds and per three staff and per one doctor. The Roads and Maritime Services "Guide to Traffic Generating Developments" (2002) is silent on regional or public hospitals.

In the present project, it is contended that the key indicator for increase demand for parking is the increase in staffing. This assumes that the levels of parking currently provided at WWBH are appropriate for current demand.

As part of Phase 1, a new permanent car park has been constructed along the Edward Street frontage of the Hospital. The car park is accessed off Lewis Drive, with general egress back onto Lewis Drive, while Patient Transport services that use the front of the Old Hospital will continue to egress onto Edward Street via the existing Patient Transport Only egress driveway. The carpark provides a total of 121 spaces, available for general use and are proposed as unrestricted "all day

parking". The capacity of the carpark has been determined to offset those spaces displaced by Phase 1, and provide additional spaces to meet the increased parking requirement of Phase 1 based on staffing increase (21 spaces). This results in a total site provision at the end of Phase 1 of 371 spaces.

Consistent with the approach adopted during Phase 1, the car parking requirements for Phase 2/3 have been determined using the increased staff numbers over and above Phase 1, resulting in an increase in required provision of 64 spaces to a total of 435. The current site plan shows a total provision of 472 spaces.

8.3.3.2. Off site

Off site parking associated with the hospital currently occurs on the streets surrounding the WWBH site, with an estimated 275 spaces being used in association with WWBH activities. The increased parking on site associated with the Phase 2/3 works provides an over provision of 37 spaces using the adopted forecast method, it is therefore not expected that Phase 2/3 will increase off site parking demand.

Notwithstanding this, Wagga Wagga council have recently committed to the introduction of additional on street parking along Brookong Street further increasing available capacity.

8.4. Construction Traffic Impact Assessment

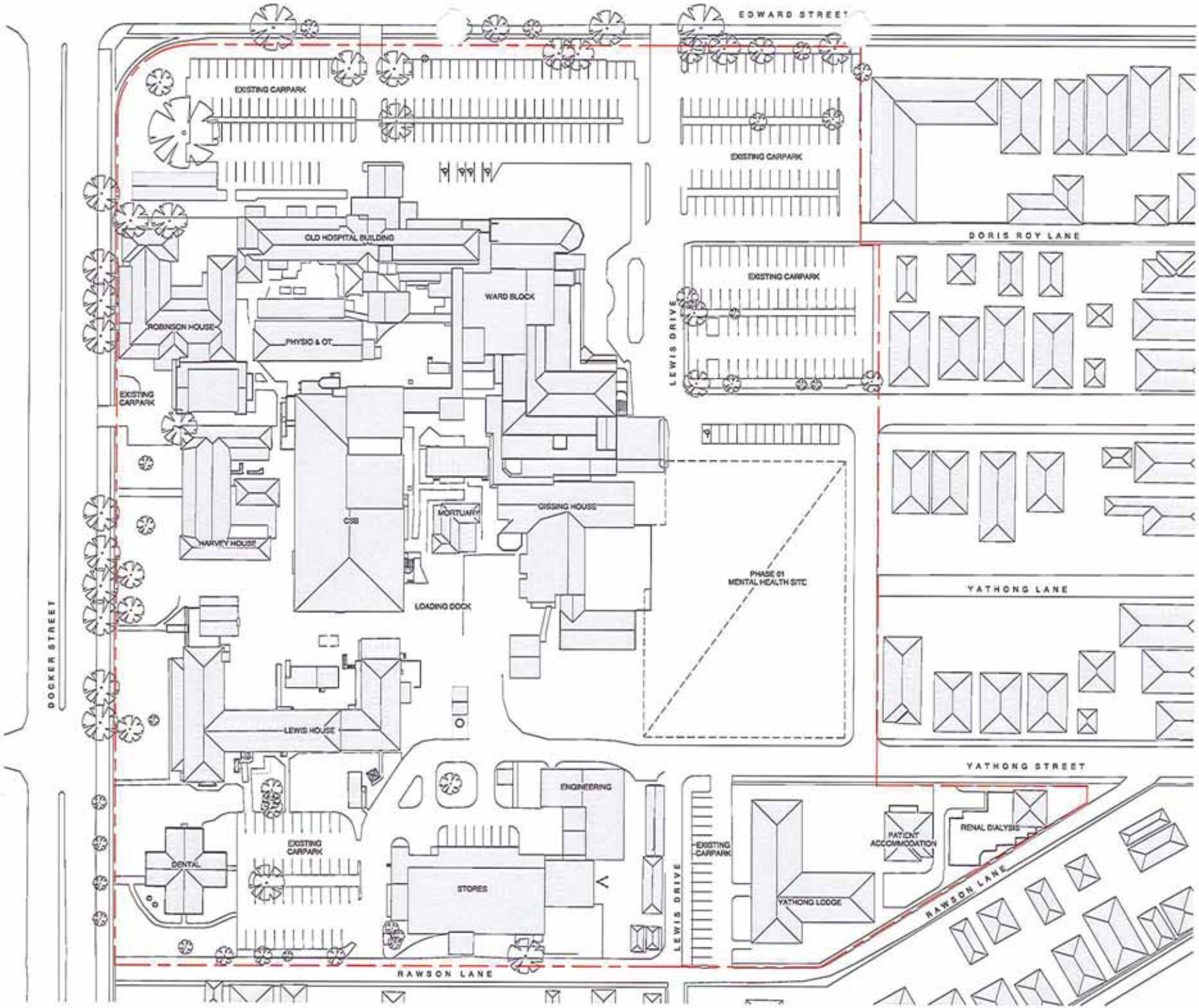
The potential impacts of construction activities and construction traffic with regard to traffic and parking include:

- Disruption to service vehicles accessing the CSB, Engineering and Mortuary
- Construction vehicle access arrangements:
  - Impact on adjacent properties and land uses:
  - Access to WWBH;
- Degradation of amenity via construction traffic noise, dust and fumes which is potentially more significant at a hospital site;
- Road network operation – loss of intersection capacity with additional construction vehicles; and
- Safety implications for all road users as a result of additional heavy vehicle flows and new construction vehicle access arrangements.
- Potential loss of available on street parking:
  - Additional parking demand by construction workers;
  - Loss of on street parking to accommodate construction vehicle access.

A detailed construction traffic management plan (CTMP) will need to be prepared by the Main Contractor and approved by Council prior to construction works to address the potential impacts identified above. In advance of this a more general CTMP will be prepared similar to that prepared for the Phase 1 PPR which will discuss the issues highlighted above.

Mott MacDonald

Appendix B. Plans



STEENSENVARMING

Davis Langdon

Health Infrastructure

WAGGA WAGGA BASE HOSPITAL REDEVELOPMENT
EDWARD STREET
WAGGA WAGGA, NSW, 2650

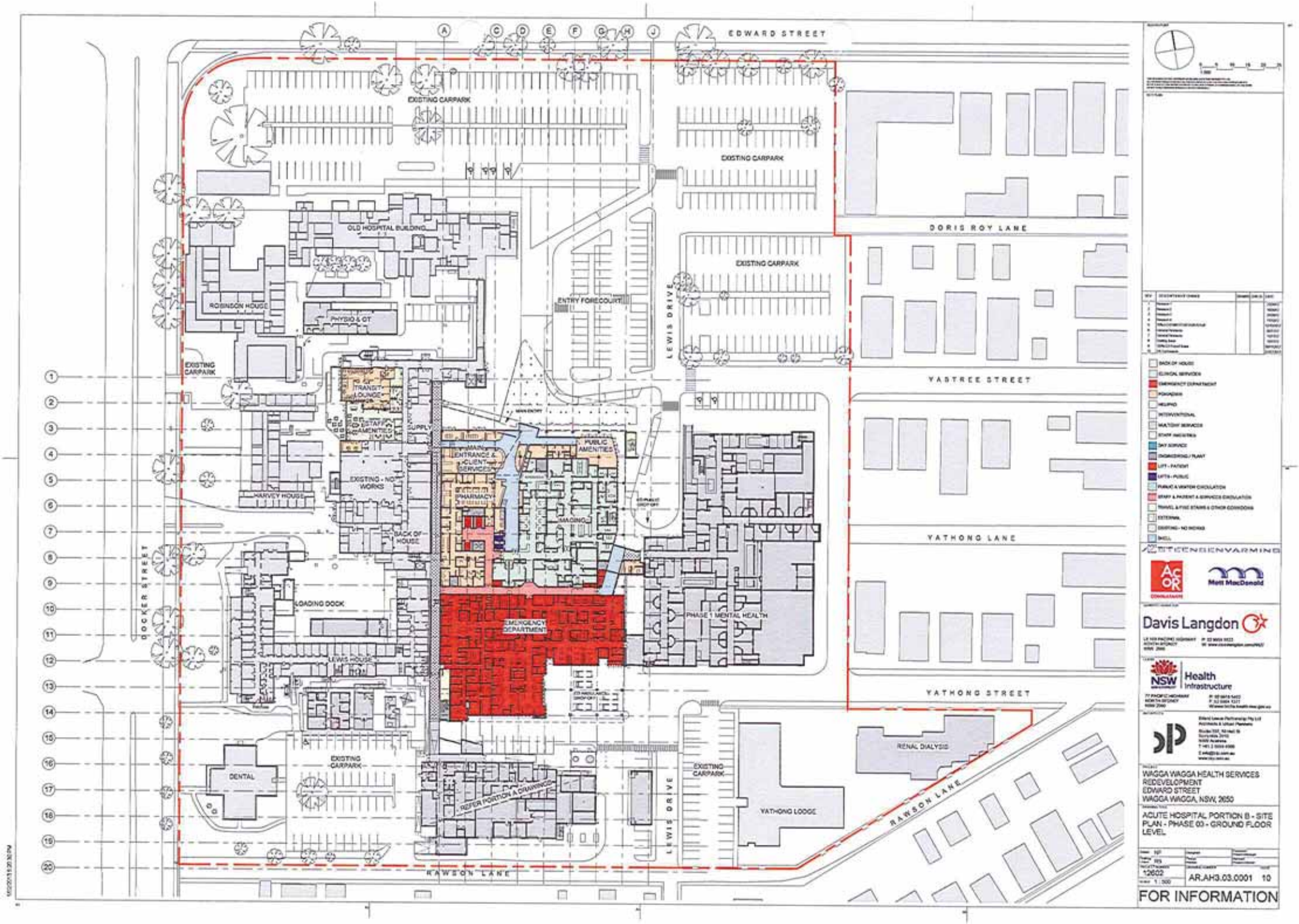
ACUTE HOSPITAL PORTION B - EXISTING SITE PLAN

Author | Designer | Checker

12602

ARAH3.01.0002 6

PRELIMINARY



BACK OF HOUSE
CLINICAL SERVICES
EMERGENCY DEPARTMENT
POWERED
HELIPAD
INTERVENTIONAL
MULTIDAY SERVICES
STAFF AMENITIES
SKY SERVICE
ENGINEERING / PLANT
LIFT - PATIENT
LIFTS - PUBLIC
PUBLIC & VISITOR CIRCULATION
STAFF & PATIENT & SERVICES CIRCULATION
TRAVEL & FIRE STAIRS & OTHER CORRIDORS
EXTERNAL
EXISTING - NO WORKS
SHELL

ARUP ENGENVARMING

AC OR CONSULTANTS

Matt MacDonald

Davis Langdon

NSW Health Infrastructure

77 PACIFIC HIGHWAY
NORTH SYDNEY
NSW 2060

Billard Leece Partnership Pty Ltd
Architects & Urban Planners

WAGGA WAGGA HEALTH SERVICES
REDEVELOPMENT
EDWARD STREET
WAGGA WAGGA, NSW, 2650

ACUTE HOSPITAL PORTION B - SITE PLAN - PHASE 03 - GROUND FLOOR LEVEL

Date: NP	Designed:	Reviewed:	
Scale: 1:500	Drawn:	Approved:	
PROJECT NUMBER: 12602	DRAWING NUMBER: AR.AH3.03.0001	ISSUE: 10	

FOR INFORMATION

Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	14.03.2013	L.R.	Preliminary - issued for information	L.R.	L.R.
P2	12.03.2013	L.R.	Preliminary - issued for information	L.R.	L.R.
P1	26.01.2013	L.R.	Preliminary - issued for information	L.R.	L.R.

Mott MacDonald

Client
Health Infrastructure
77 Pacific Highway
North Sydney, NSW. 2060

Title
Wagga Wagga Base Hospital
Redevelopment
Edward Street
Wagga Wagga NSW 2650
On-Site Carparking

Designed	L.Ryan		Eng check	L.Ryan	
Drawn	N. Alvin		Coordination		
Dwg check	H Campbell		Approved	L.Ryan	

Scale at A1: NTS | Status: PRE | Rev: P3

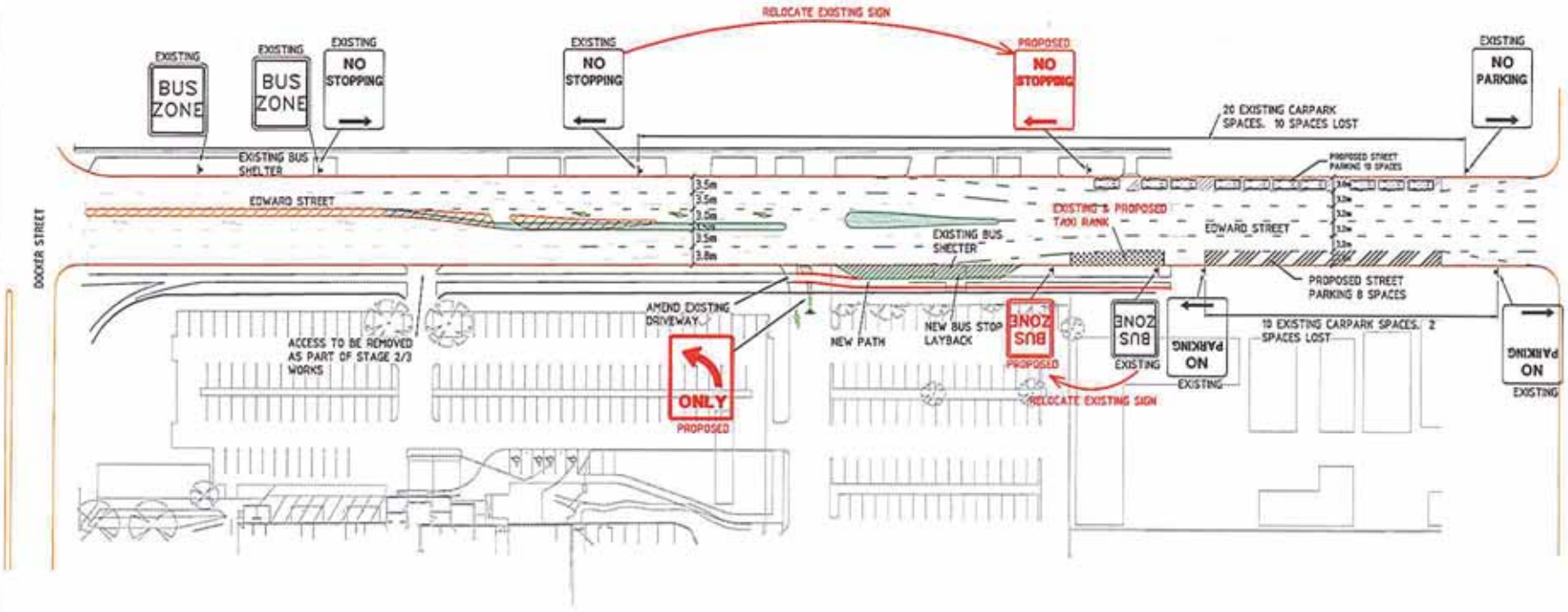
Drawing Number
MMD-313119-C-DR-00-CP-0001

LEGEND

NEW MEDIAN

NEW CONCRETE BUS LAYBACK

NEW LINEMARKING



Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Chk'd	App'd
P1	16.11.2012	L.R	Preliminary - Issued for information	L.R	L.R

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Client

Proten Limited
PO Box 746
North Sydney, NSW, 2060

Title

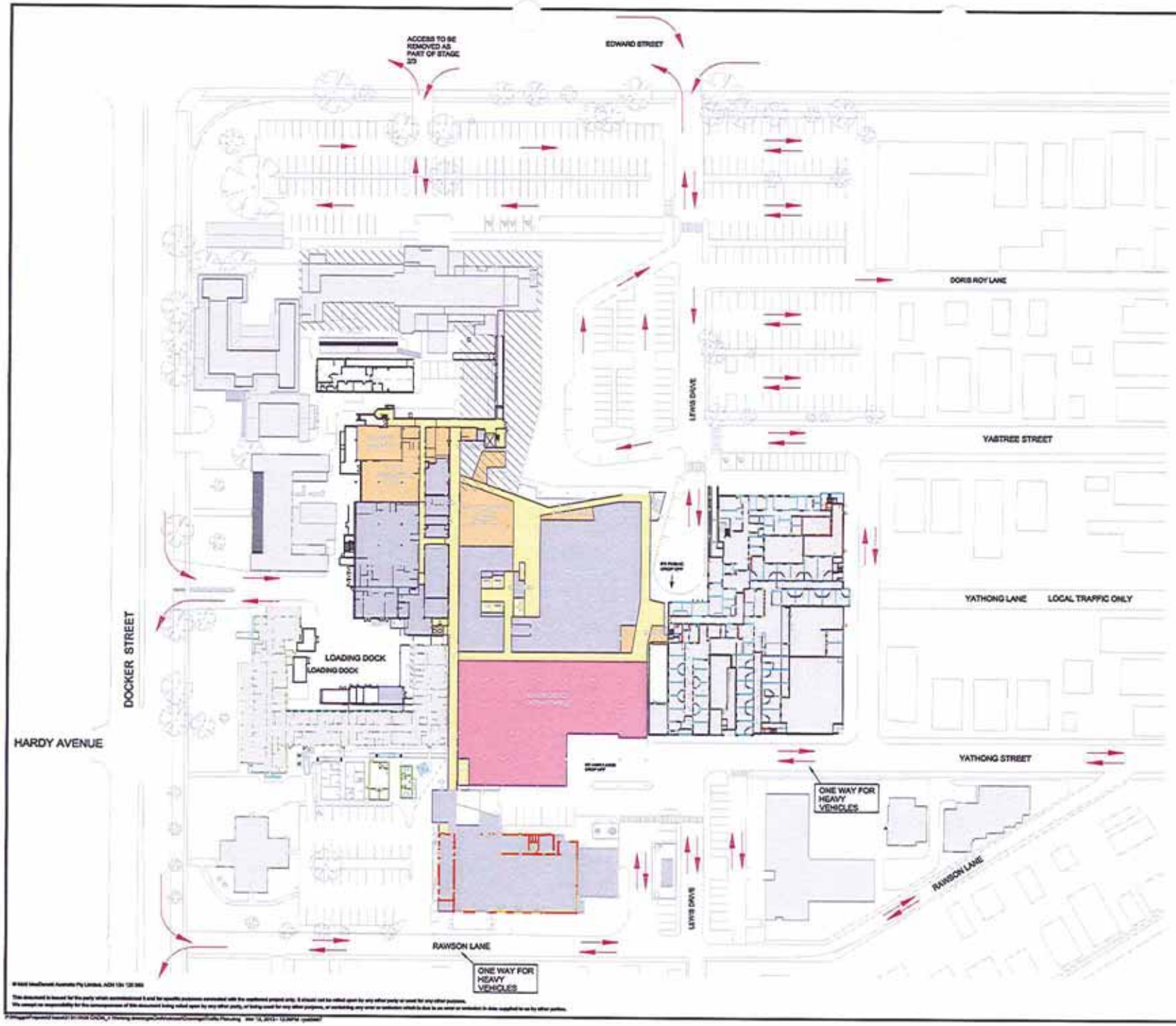
Wagga Wagga Base Hospital
Redevelopment
Edward Street
Wagga Wagga NSW 2650
Edward Street Traffic Plan

Designed	L Ryan		Eng check	L Ryan	
Drawn	N. Attix		Coordination		
Dwg check	H Campbell		Approved	L Ryan	

Scale at A1	Status	Rev
1:500	PRE	P1

Drawing Number

MMD-313119-C-DR-CW01-ES-0001



Notes

Key to symbols

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P1	10.10.2012	LR	Preliminary - Issued for Information	LR	LR

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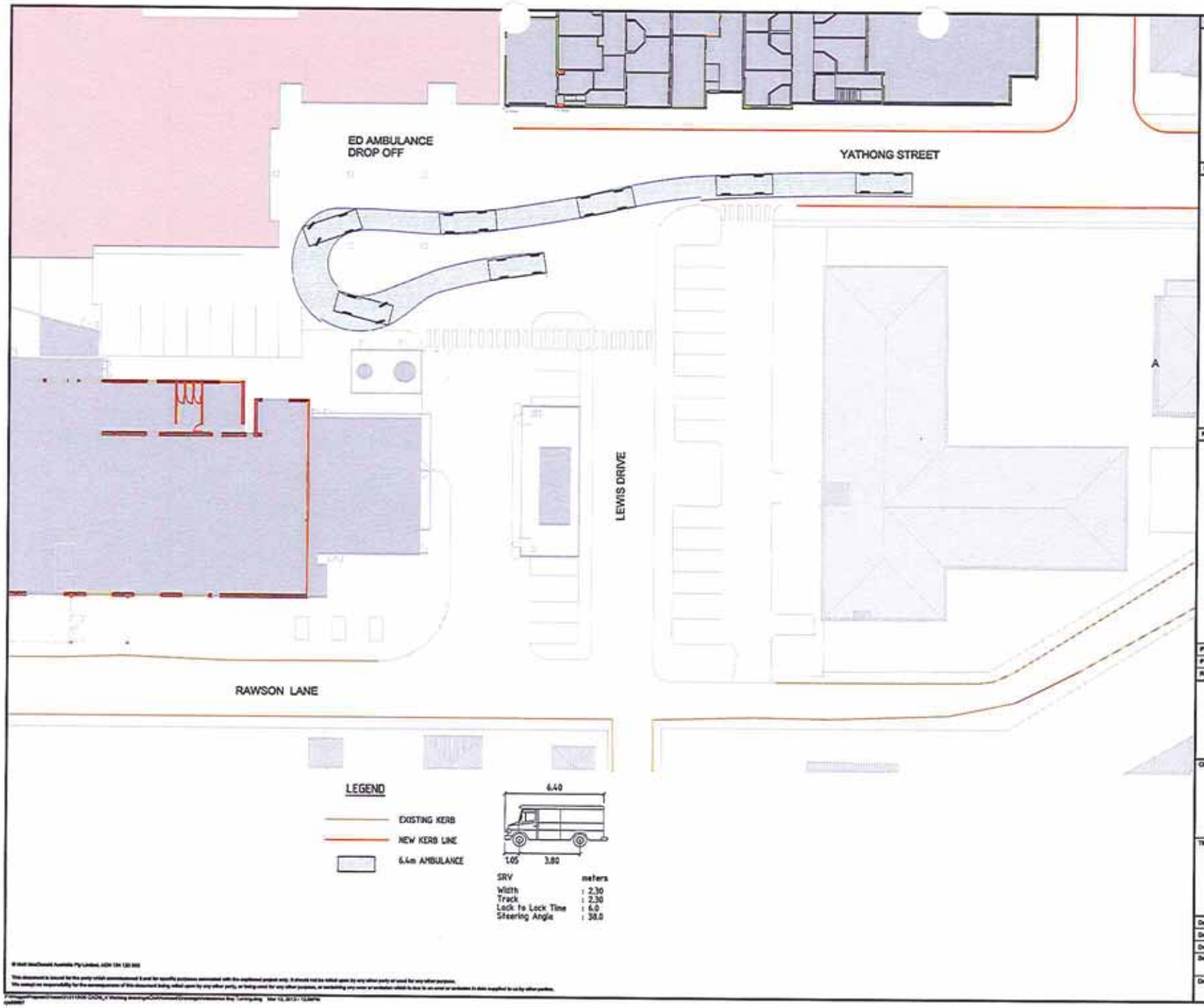
Client
Health Infrastructure
77 Pacific Hwy
North Sydney NSW 2060

Title
Wagga Wagga Base Hospital
Redeveopment
Edward Street
Wagga Wagga NSW 2650
Site Traffic Plan

Designed	L Ryan		Eng check	L Ryan	
Drawn	N. Akhi		Coordination		
Dwg check	H Campbell		Approved	L Ryan	

Scale at A1: NTS | Status: PRE | Rev: P2

Drawing Number
MMD-313119-C-DR-CW01-TP-0001



Notes

Key to symbols

Reference drawings

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P1	10.10.2012	LJR	Preliminary - Issued for Information	LJR	LJR

Mott MacDonald

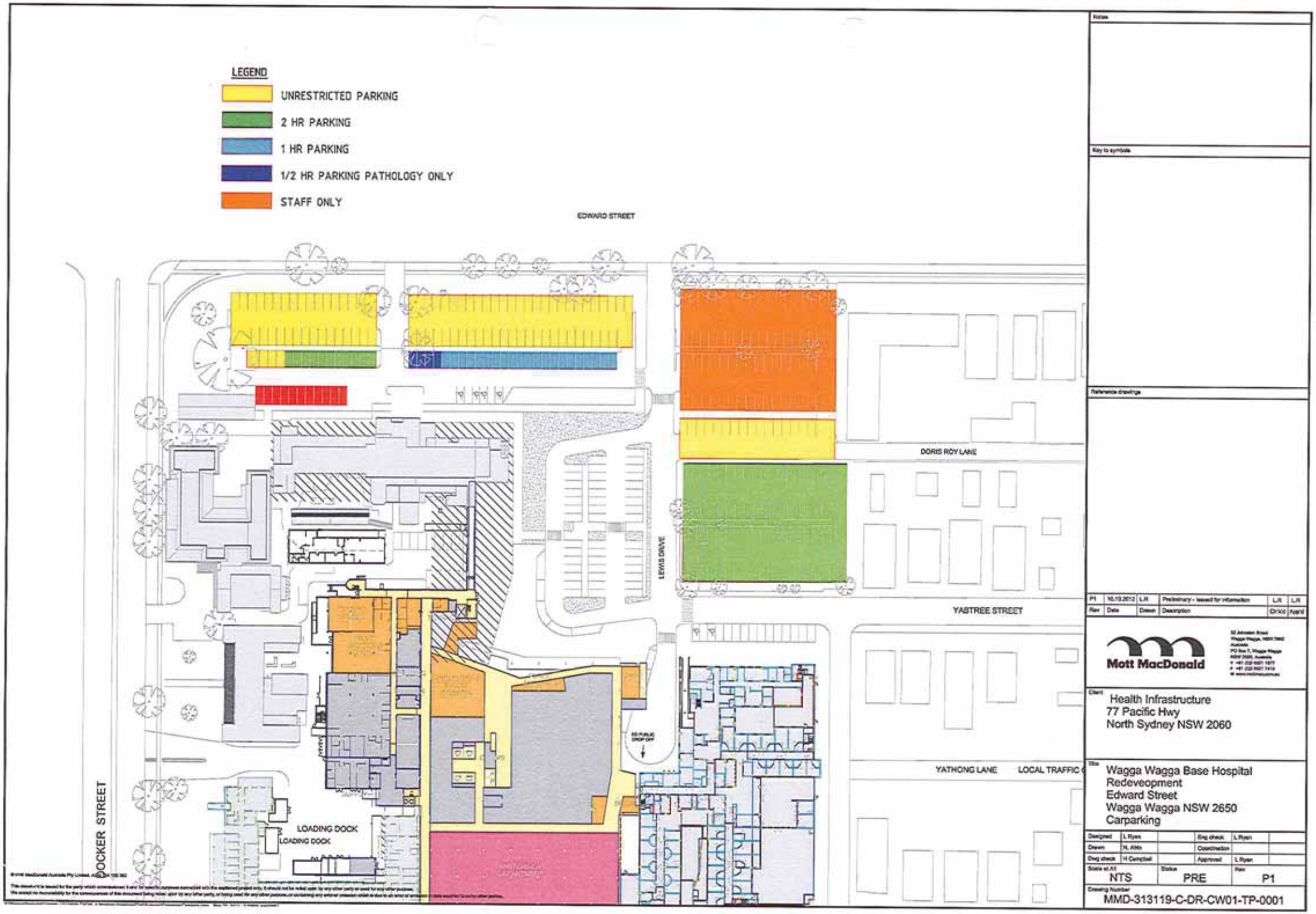
Client
Health Infrastructure
77 Pacific Hwy
North Sydney NSW 2060

Title
Wagga Wagga Base Hospital
Redevelopment
Edward Street
Wagga Wagga NSW 2650
Ambulance Bay Turning Circle

Designed	L Ryan		Eng check	L Ryan	
Drawn	N. Atkin		Coordination		
Dwg check	H Campbell		Approved	L Ryan	

Scale at A1: 1:200 | Status: PRE | Rev: P2

Drawing Number
MMD-313119-C-DR-CW01-TC-0003



Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'kd	Apr'd
P1	10.12.2012	L.R	Preliminary - issued for information	L.R	L.R

Mott MacDonald

Client
Health Infrastructure
77 Pacific Hwy
North Sydney NSW 2060

Title
Wagga Wagga Base Hospital
Redeveopment
Edward Street
Wagga Wagga NSW 2650
Carparking

Designed	L Ryan		Eng check	L Ryan	
Drawn	N. Ahlin		Coordination		
Dwg check	H Campbell		Approved	L Ryan	

Scale at A1: NTS | Status: PRE | Rev: P1

Drawing Number
MMD-313119-C-DR-CW01-TP-0001

Mott MacDonald

Appendix C. Traffic Modelling Output

(2012) Existing AM

Node	Turn	Count	Delay	Queue Mean	Queue Max	Stops	Speed	LOS Signal
Edward / Docker								
East								
	Left	78	40.2	0.8	5.2	0.1	18.6	LOS D
	Right	37	60.1	0.6	3.2	0.1	14.0	LOS E
	Thru	379	39.7	1.9	8.2	0.1	20.9	LOS D
North								
	Left	26	46.3	0.3	3.4	0.1	16.0	LOS D
	Right	145	64.5	2.4	10.8	0.2	11.2	LOS E
	Thru	221	54.9	1.6	6.2	0.1	13.0	LOS D
South								
	Left	77	61.0	1.0	5.8	0.1	15.1	LOS E
	Right	161	747.2	6.1	12.0	0.3	3.5	LOS F
	Thru	476	699.8	8.9	13.1	0.1	3.5	LOS F
West								
	Left	182	76.1	2.3	8.8	0.3	12.8	LOS E
	Right	117	199.0	4.7	11.8	0.2	3.4	LOS F
	Thru	428	82.6	3.2	9.9	0.1	12.6	LOS F
Totals:		2327	246.5 (Weighted)			Intersection LOS:		LOS F
Edward / Lewis								
East								
	Left	75	1.8	0.0	0.2	0.0	42.6	LOS A
	Thru	492	0.1	0.0	0.0	0.0	51.5	LOS A
South								
	Left	0	-1.0	0.0	0.0	-1.0	-1.0	LOS A
West								
	Right	49	9.7	0.1	3.2	0.0	32.6	LOS A
	Thru	563	0.7	0.0	1.6	0.0	49.4	LOS A
Totals:		1179	0.9 (Weighted)			Intersection LOS:		LOS A
Edward / Murray								
st								
	Left	16	1.0	0.0	0.0	0.0	43.3	LOS A
	Right	70	7.8	0.1	3.2	0.0	35.0	LOS A
	Thru	515	0.1	0.0	0.4	0.0	51.7	LOS A
North								
	Left	40	5.8	0.1	1.4	0.0	29.6	LOS A
	Right	10	12.7	0.0	1.0	0.5	20.4	LOS B
	Thru	42	15.7	0.2	2.4	0.0	19.1	LOS B
South								
	Left	42	7.8	0.1	2.2	0.1	24.3	LOS A
	Right	17	14.3	0.1	1.6	0.1	19.7	LOS B
	Thru	62	15.6	0.2	3.0	0.0	23.0	LOS B
West								
	Left	35	1.3	0.0	0.4	0.0	44.8	LOS A
	Right	26	7.1	0.0	2.0	0.0	37.4	LOS A
	Thru	497	0.2	0.0	0.5	0.0	51.4	LOS A
Totals:		1374	2.6 (Weighted)			Intersection LOS:		LOS A

(2012) Existing PM

Node	Turn	Count	Delay	Queue Mean	Queue Max	Stops	Speed	LOS Signal
Edward / Docker								
East								
	Left	122	46.1	1.4	8.0	0.2	15.8	LOS D
	Right	68	52.3	0.9	5.2	0.2	16.7	LOS D
	Thru	513	46.2	2.9	11.4	0.1	17.6	LOS D
North								
	Left	38	55.6	0.6	4.0	0.2	11.2	LOS E
	Right	172	1285.7	10.0	15.4	0.3	2.2	LOS F
	Thru	270	1064.4	7.5	11.3	0.1	2.2	LOS F
South								
	Left	56	60.5	0.8	4.8	0.1	12.1	LOS E
	Right	150	519.7	8.4	13.6	0.2	2.3	LOS F
	Thru	293	464.6	7.8	11.9	0.1	2.3	LOS F
West								
	Left	134	47.6	1.6	7.0	0.2	13.1	LOS D
	Right	100	90.9	2.3	8.8	0.2	6.1	LOS F
	Thru	446	45.7	2.5	9.7	0.1	15.5	LOS D
Totals:		2361	337.6 (Weighted)				Intersection LOS:	LOS F
Edward / Lewis								
East								
	Left	50	1.8	0.0	0.2	0.0	42.7	LOS A
	Thru	694	0.2	0.0	0.0	0.0	51.4	LOS A
South								
	Left	0	-1.0	0.0	0.0	-1.0	-1.0	LOS A
West								
	Right	38	13.6	0.1	2.6	0.0	29.1	LOS B
	Thru	591	1.0	0.0	2.2	0.0	48.6	LOS A
Totals:		1373	1.0 (Weighted)				Intersection LOS:	LOS A
Edward / Murray								
East								
	Left	33	1.1	0.0	0.0	0.0	43.1	LOS A
	Right	33	6.6	0.0	2.4	0.0	36.6	LOS A
	Thru	666	0.1	0.0	0.3	0.0	51.7	LOS A
North								
	Left	71	10.4	0.2	2.6	0.0	25.9	LOS B
	Right	30	17.8	0.1	2.0	0.4	20.2	LOS B
	Thru	63	21.2	0.3	3.2	0.0	16.3	LOS C
South								
	Left	48	5.8	0.2	2.4	0.1	26.4	LOS A
	Right	17	17.1	0.1	1.4	0.1	17.8	LOS B
	Thru	23	14.5	0.1	1.6	0.0	22.0	LOS B
West								
	Left	29	1.5	0.0	1.0	0.0	44.5	LOS A
	Right	13	13.6	0.0	1.8	0.0	29.8	LOS B
	Thru	548	0.3	0.0	0.6	0.0	51.1	LOS A
Totals:		1574	2.7 (Weighted)				Intersection LOS:	LOS A

(2020) Existing AM+ Network Growth + Phase 2/3

Node	Turn	Count	Delay	Queue Mean	Queue Max	Stops	Speed	LOS Signal
Edward / Docker								
East								
	Left	94	45.2	1.1	7.2	0.1	16.0	LOS D
	Right	51	64.8	0.8	4.8	0.2	12.3	LOS E
	Thru	465	42.1	2.4	10.2	0.1	19.3	LOS D
North								
	Left	31	49.6	0.4	3.8	0.1	14.8	LOS D
	Right	162	76.7	3.2	12.4	0.3	9.2	LOS E
	Thru	276	63.1	2.2	8.1	0.1	11.3	LOS E
South								
	Left	96	83.8	1.4	6.0	0.1	13.4	LOS F
	Right	158	901.1	6.5	13.0	0.3	3.4	LOS F
	Thru	474	859.4	8.9	13.3	0.1	3.5	LOS F
West								
	Left	197	254.0	3.6	10.2	0.3	9.8	LOS F
	Right	130	395.0	7.3	13.6	0.2	2.3	LOS F
	Thru	479	255.3	5.7	10.5	0.1	7.7	LOS F
Totals:		2612	321.4 (Weighted)			Intersection LOS:		LOS F
Edward / Lewis								
East								
	Left	97	0.2	0.0	0.0	0.0	51.5	LOS A
	Thru	568	0.2	0.0	0.0	0.0	51.4	LOS A
South								
	Left	40	5.2	0.0	1.8	0.0	29.9	LOS A
West								
	Right	47	10.2	0.1	3.0	0.0	32.1	LOS B
	Thru	617	0.4	0.0	0.0	0.0	50.2	LOS A
Totals:		1369	0.8 (Weighted)			Intersection LOS:		LOS A
Edward / Murray								
East								
	Left	18	1.1	0.0	0.0	0.0	43.4	LOS A
	Right	82	8.7	0.2	2.6	0.0	33.9	LOS A
	Thru	605	0.2	0.0	0.4	0.0	51.5	LOS A
North								
	Left	46	6.6	0.1	2.0	0.0	29.1	LOS A
	Right	11	15.8	0.0	1.2	0.5	18.5	LOS B
	Thru	40	21.3	0.2	3.0	0.0	16.2	LOS C
South								
	Left	49	11.9	0.2	2.2	0.1	21.8	LOS B
	Right	16	19.5	0.1	1.6	0.1	18.6	LOS B
	Thru	73	21.5	0.4	3.6	0.0	18.6	LOS C
West								
	Left	40	1.4	0.0	1.0	0.0	44.5	LOS A
	Right	28	9.1	0.1	2.8	0.0	33.9	LOS A
	Thru	543	0.2	0.0	0.6	0.0	51.5	LOS A
Totals:		1550	3.2 (Weighted)			Intersection LOS:		LOS A

(2020) Existing PM+ Network Growth + Phase 2/3

Node	Turn	Count	Delay	Queue Mean	Queue Max	Stops	Speed	LOS Signal
Edward / Docker								
East								
	Left	160	59.6	2.4	10.0	0.2	12.2	LOS E
	Right	86	69.0	1.5	6.8	0.2	11.8	LOS E
	Thru	695	57.9	5.0	16.2	0.1	13.1	LOS E
North								
	Left	43	51.9	0.6	4.6	0.1	13.1	LOS D
	Right	162	1548.6	9.5	14.8	0.3	2.2	LOS F
	Thru	280	1288.7	7.9	11.5	0.1	2.2	LOS F
South								
	Left	64	80.3	1.0	5.6	0.1	10.8	LOS F
	Right	139	877.5	7.7	13.0	0.2	2.3	LOS F
	Thru	302	801.2	8.3	12.5	0.1	2.2	LOS F
West								
	Left	168	177.0	3.2	9.6	0.3	8.6	LOS F
	Right	130	245.2	4.9	11.8	0.2	3.6	LOS F
	Thru	542	176.4	5.8	11.8	0.1	8.0	LOS F
Totals:		2771	431.3 (Weighted)			Intersection LOS:		LOS F
Edward / Lewis								
East								
	Left	67	0.4	0.0	0.8	0.0	51.2	LOS A
	Thru	875	0.5	0.0	2.7	0.0	50.6	LOS A
South								
	Left	56	11.2	0.1	3.0	0.0	23.2	LOS B
West								
	Right	44	17.5	0.2	3.4	0.0	24.9	LOS B
	Thru	676	0.5	0.0	0.2	0.0	49.8	LOS A
Totals:		1718	1.3 (Weighted)			Intersection LOS:		LOS A
Edward / Murray								
East								
	Left	45	1.1	0.0	0.0	0.0	43.2	LOS A
	Right	39	8.3	0.1	2.6	0.0	34.8	LOS A
	Thru	848	0.2	0.0	1.0	0.0	51.5	LOS A
North								
	Left	94	17.9	0.3	3.2	0.1	19.4	LOS B
	Right	38	26.6	0.2	2.2	0.3	14.6	LOS C
	Thru	73	32.9	0.5	3.2	0.0	11.6	LOS C
South								
	Left	55	9.8	0.4	2.6	0.1	22.0	LOS A
	Right	20	22.6	0.1	2.0	0.1	15.3	LOS C
	Thru	29	22.5	0.2	2.4	0.0	15.7	LOS C
West								
	Left	33	1.3	0.0	1.0	0.0	44.9	LOS A
	Right	12	13.8	0.0	1.4	0.0	29.9	LOS B
	Thru	632	0.3	0.0	1.7	0.0	51.1	LOS A
Totals:		1918	4.0 (Weighted)			Intersection LOS:		LOS A

Appendix D. Traffic Consultation Meetings

Traffic Consultation Meetings.

As part of the process in preparing a traffic management report in relation to Stages 2/3 of the Wagga Wagga Base Hospital Redevelopment 3 meetings were held with the Roads and Maritime Services (RMS) and Wagga Wagga City Council (WWCC).

Meeting 11 October 2012

Attendees
RMS – Maurice Morgan'
WWCC – Bill Harvey
Health Infrastructure – Bruce Gould, Greg Beevor
Hansen Yunkon – Michael Martin
Mott MacDonald – Lance Ryan

This meeting was held to present the latest internal layouts for the Stage 2/3 redevelopment and discuss traffic related issues.

A previous report prepared by Sinclair Knight Merz (SKM) had recommended that traffic lights be installed at the intersection of Edward / Murray Street and a right turn bay be created in Edward Street for vehicles turning into Lewis Drive. Mott MacDonald informed the RMS and WWCC that they would be undertaking detailed traffic modelling in Edward Street to determine the needs for the proposed traffic lights and right turn bay.

With respect to funding of the works in Edwards Street the RMS would not commit at this meeting to any funding until further information was received in particular the findings and recommendations of the traffic modelling study.

Other issues discussed were not related to the Stage 2/3 redevelopment and centred mainly around access to the proposed Loading Dock from Docker Street and Semi Trailer access for oxygen delivery.

Meeting 18 October 2012

Attendees
RMS – Maurice Morgan'
WWCC – Bill Harvey, Amanda Gray
Health Infrastructure – Bruce Gould, Greg Beevor
Hansen Yunkon – Michael Martin
Mott MacDonald – Lance Ryan

With respect to Stages 2/3 of the redevelopment this meeting was held so Mott MacDonald could present preliminary layouts for the proposed right turn bay in Edward Street for vehicles entering Lewis Drive. Two options were presented. One was for the extension of the existing central median to the eastern boundary of the Hospital site and the other was for the extension of a central median to the Murray Street intersection. Both options were presented to show the effects on the existing parallel carparking in Edward Street and also on the existing bus stop on the southern side of Edward Street. Mott MacDonald explained that the detailed traffic modelling was still being carried out and the need for the traffic lights at the Murray Street intersection had not yet been determined.

The RMS and Council both agreed that ambulance access via Lewis Drive South needed to be maintained as a two way access and that semi trailers delivering oxygen should not use Lewis Drive South but have their own access onto Rawson Lane.

Other issues discussed were not related to the Stage 2/3 redevelopment.

Meeting 14 November 2012

Attendees
RMS – Maurice Morgan'
WWCC – Bill Harvey
Health Infrastructure –Greg Beevor
Mott MacDonald – Lance Ryan, Graeme Shoobridge

This meeting was held to present the findings of the traffic modelling study carried out in Edward Street. The modelling carried out by Mott MacDonald indicated the Edward Street/Murray Street intersection does not require signalisation to allow sufficient gaps for the right turn movement from Edward Street to Lewis Drive. The modelling also showed that a dedicated and protected right turn bay for vehicles entering Lewis Drive via Edward Street was not required on the basis of traffic capacity. RMS stated that for safety reasons the right turn into Lewis Drive off Edwards Street would not be supported without a protected right turn lane. RMS indicated that right turn out of Lewis Drive onto Edward Street would not be supported as there are existing alternatives for traffic leaving the hospital and heading in that direction.

The RMS asked that additional assessment be considered on the traffic generated by the redevelopment on surrounding intersections.

Meeting 6 February 2013

Attendees
RMS – Maurice Morgan
WWCC – Bill Harvey
Health Infrastructure – Bruce Gould, Greg Beevor
Billard Leece – Tara Veldman
Mott MacDonald – Lance Ryan

Meeting discussed carparking issues both onsite and offsite (on street).

Adjacent on street parking currently utilised by hospital visitors so that this parking could be reasonably considered part of the parking supply of the hospital precinct ie

- Eastern kerbside parking Docker Street
- Kerbside parking Murray Street
- Southern kerbside parking Edwards Street
- Northern kerbside Brookong Street

Noted that Council had recently completed new line marking of on street parking in Brookong Avenue and Murray Street. Docker Street line marking to be completed in near future. This line marking should improve the parking efficiency of these parking areas.

Discussion regarding the relevance of Council DCP parking rates to the WWBH redevelopment and the more relevant parking criteria of other authorities related to regional hospitals.