Wagga Wagga Base Hospital Redevelopment – Traffic Summary Report

September 2013

Health Infrastructure, NSW Government

INTRODUCTION

This Traffic Summary Report has been prepared to address the key issues raised by the Wagga Wagga City Council / RMS regarding the proposed Phase 2/3 development at the Wagga Wagga Base Hospital.

This Traffic Summary Report takes into account the cumulative traffic and parking impact of Phase 1 and Phase 2/3 as well as the relevant REFs.

WWBH Development Details	Predevelopment Condition (prior to Phase 1)	Completion of Phase 1 + REFs	Completion Phases 1 & 2/3 + REFs	Outcome
Facilities		Mental Health Facility	Acute Care Facilities Emergency Department Imaging Facility Mental Health Facility	Incorporates REFs 1-5 all of which had no impact on the demand for traffic or parking as there was no new patient accommodation provided and no increase to bed numbers. • REF 1 – Relocation of Demountables and Erection of 2 New Demountables, relocation of existing Emergency Medical Unit (EMU) within the site • REF 2 – Alterations to the Clinical Services Building • REF 3 – Provision of a New Loading Dock and Access Driveway from Docker Street • REF 4 – Demolition of Buildings and Renovation of Existing Store & Supply Building to accommodate the Energy Plant • REF 5 – Carpark and Associated Landscape Works (136 parking spaces)
Beds	243	273	299	Total Increase of 56 beds (25%)
Employment	654	738	912	Total Increase of 258 staff (40%)

Issue	Predevelopment Condition (prior to Phase 1)	Completion Phases 1 & 2/3	Outcome
On Site Parking			
Parking Requirement Parking requirement based on parking criteria providing the maximum requirement from Austroads, RMS and regional hospitals Bathurst and Gosford.	299	404	Criteria generally based on bed and employee numbers which includes allowance for all hospital users including patients, visitors and staff,.
Parking Supply Actual supplied on ground parking spaces	320	450	Parking supply exceeds maximum parking requirement by 46 spaces at completion of both Phases 1 & 2/3.
Distribution of Parking	Staff parking boom gate controlled opposite main entry to hospital Public parking located to the north and south of staff parking	Longer term parking including staff parking will be provided in those carparking areas more distant from the patient hospital facilities Short term visitor parking will be located close to the main hospital entry.	Acknowledging that time restricted parking spaces for visitors/patients will turnover more frequently than long stay parking the proposed parking arrangements will be beneficial for in that visitors/patients movements through the precinct will be minimised improving both safety and convenience.
Access to Parking- Lewis Drive Vehicular Access	The existing connection of Lewis Dr to Edwards Street consisted of entry only to one way traffic direction on Lewis Drive.	The proposed Lewis Drive vehicle access arrangement at Edward Street will provide for : • Two way traffic direction on Lewis Dr • The addition of an exit as a left out only from Lewis Dr onto Edward St • Retention of left turn from Edwards St into Lewis Dr • A protected right turn bay from Edwards St into Lewis Dr	The upgraded Lewis Drive connection off Edwards Street will provide better control for access and egress for visitors ie : • The new traffic arrangement at Lewis Drive / Edward Street will provide direct access/egress to/from the on-site public carparking located in the northern portion of the site. On this basis this new intersection arrangement is expected to cater for the majority of the vehicle movements to and from these adjacent carparks. • This entry point will also provide direct access/egress to/from the patient set down pick up area located adjacent to the main hospital entry.

Issue	Predevelopment Condition (prior to Phase 1)	Completion Phases 1 & 2/3	Outcome
Pedestrians			
Docker Street	Existing signalised pedestrian crossing at the intersection of Docker St / Edwards St which assist bus users. No pedestrian crossing across Docker St near Hardy St for the pedestrian desire line to Calvary Hospital. There can be significant pedestrian traffic across Docker St in the vicinity of Hardy St.	Pedestrian signals at Docker St / Hardy St intersection to be provided as part of signalisation of the intersection.	• Opportunities to enhance pedestrian flow within the precinct are important for the precinct. • Proposed pedestrian signals across Docker Street will improve the pedestrian connection and safety between WWBH and Calvary Hospital. • The proposed pedestrian connection from Docker Street to the main hospital entry will be via a path adjacent to the northern face of the WWBH built form.
Onsite Pedestrian Facilities	Pedestrians served by path system adjacent to the WWBH including along the western side of Lewis Drive connecting the north eastern carparks to the main hospital entry. No pedestrian facilities provided at internal road crossings.	A series of pedestrian facilities such as marked pedestrian and/or raised 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 Edwards Street to the main entry into the hospital buildings • Pedestrian connection from the entry forecourt carpark to the main entry into the hospital • Pedestrian connection from the existing north western carparks to the main entry into the hospital	The main public pedestrian access desire line to the main entry will be from the north associated with the on-site public carparking located in the northern portion of the site. Proposed pedestrian facilities internal to the site will cater for the pedestrian desire lines and improve the pedestrian connection and safety between WWBH and the carparks. Pedestrian access from the south and Brookong Avenue is not expected to be significant as there will be minimal carparking at the southern end of the site. This is consistent with the southern end of the site catering for emergency vehicles and oxygen deliveries separated from the main visitor pedestrian movements on the northern side of the site.

Issue	Predevelopment Condition (prior to Phase 1)	Completion Phases 1 & 2/3	Outcome
Service Vehicles			
Emergency	Emergency Entrance located near the main hospital entry off Lewis Street.	Relocation of Emergency Dept to southern side of the site with access from Rawson Lane and Yathong Street	Relocation of the Emergency Dept will assist in minimising the number of emergency vehicles circulating the site and mixing with the public and staff accessing the northern carparks so improving the safety and efficiency of the WWBH internal road network.
Loading Dock	WWBH served by multiple loading docks for deliveries and waste – many of these vehicles access the WWBH via Yathong Street, off Murray Street.	A new left in left out driveway off Docker Street will provide access to the proposed hospital single central loading dock. It is expected that the loading dock will receive approximately 40 delivery vehicles per day.	The location of the loading dock on the western side of the WWBH will : • Separate loading dock movements from the carparking & pedestrian activities on the northern and eastern side of site enhancing public safety. • Reduce heavy vehicle movements on the residential streets of Murray St and Yathong St It is expected that the number of loading dock movements will not have a significant impact on existing traffic flows on Docker Street in peak periods. 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.
Oxygen Delivery	It is understood that two semi-trailer movements per week were required to deliver and decant bulk oxygen to the WWBH. These semi-trailer deliveries used Rawson Lane and Yathong Street.	It is proposed to continue to use Rawson Lane and Yathong Street as access for semi-trailers delivering and decanting bulk oxygen to the WWBH. It is estimated that there will only be two semi-trailer movements per week.	• It is understood that these semi-trailers will be limited to making deliveries during non-peak times thus minimising disruption to local traffic. • There is expected to be no increase in semi-trailer movements for oxygen delivery.

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Traffic External			
Traffic Volumes	Peak time two way vehicle traffic volumes in the order of : Edwards Street = 1,200 vph Murray Street = 200 vph Docker Street = 1,300 vph Brookong Ave = 300 vph	Using the RTA Guideline to Traffic Generating Developments the estimated peak traffic generation by the WWBH redevelopment will be in the order of 100 vehicles per hour from the 130 additional on site parking spaces. This traffic generation has been determined on the following basis : • 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 the 258 total additional staff (Phase 1 + 2/3) ie 194 shift staff and 56 beds the peak period additional traffic generation is estimated to be 100 vehicle movements per hour.	• It is expected that the additional development associated with Phases 1 & 2/3 will generate a minor increase in traffic volumes on adjacent streets ie in the order of 2 vehicles per minute spread across a number of access roads. • This relatively small increase additional peak hour 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.

Issue	Predevelopment Condition (prior to Phase 1)	Completion Phases 1 & 2/3	Outcome
Traffic External			
Intersections			
Edward St /Lewis Dr	Entry only access from Edward Street to Lewis Drive with no exit permitted. Existing accident history indicates high proportion of rear end accidents. Intersection traffic volume at peak times = 1,200 vph	The proposed intersection arrangement at Lewis Drive/Edward Street provides for : • The addition of an exit as a left out only • A protected right turn bay from Edwards Street to Lewis Drive	• The protected right turn bay from Edwards Street to Lewis Drive which will assist in reducing rear end collisions in this vicinity. • The proposed exit arrangement from Lewis Drive onto Edward Street will assist in reducing traffic movements on adjacent local streets exiting the WWBH carparks. • Traffic modelling indicates that the existing signalised intersection of Edward St / Docker St will create sufficient gaps in opposing traffic flow to allow safe uncontrolled entry to the site at Lewis Dr
Murray St/Edward St	Overall existing priority controlled intersection operating well within capacity at peak times. Vehicles on Murray St approach can experience delays at peak times. Existing accident history indicates high proportion of rear end and turning vehicle accidents. Intersection traffic volume at peak times = 1,400 vph.	Relative traffic volume increase at this intersection due to WWBH redevelopment is expected to be minimal. It is estimated that less than 20 vph additional traffic movements in the peak hour will approach Murray Street from the south at the completion of the WWBH redevelopment.	• Overall existing intersection is expected to be still operating well within capacity at peak times. • There is not expected to be a significant increase in delays for vehicles on the Murray St approach to this intersection. • The expected marginal increase in traffic volumes at this intersection from WWBH redevelopment is not expected to significantly increase traffic accidents at this location.

	Predevelopment Condition (prior to Phase 1)	**Completion Phases 1 & 2/3**	**Outcome**
Traffic External Intersections			
Docker St /Edward St	Overall existing signalised intersection operating at or exceeding capacity at peak times. Intersection traffic volume at peak times = 2,500 vph	Relative traffic volume increase due to WWBH redevelopment is expected to be minimal.	• There is not expected to be a significant increase in delays at this intersection due to WWBH redevelopment. • There appears to be some capacity for reducing delays at peak times by optimising signal phasing times
Docker St/Hardy St	Overall existing priority controlled intersection operating well within capacity at peak times. Intersection traffic volume at peak times = 1,200 vph	Relative traffic volume increase due to WWBH redevelopment is expected to be minimal. Proposed to provide signalised intersection at this location incorporating pedestrian signals.	Proposed intersection signalisation will improve the vehicle and pedestrian operation and safety.
Docker St/Brookong Av	Overall existing priority controlled intersection operating well within capacity at peak times. Intersection traffic volume at peak times = 1,600 vph	Relative traffic volume increase due to WWBH redevelopment is expected to be minimal.	Overall existing intersection is expected to be still operating well within capacity at peak times.
Public Transport	Existing bus stops on Edward St adjacent to the WWBH with three bus routes to and from the city centre.	It is proposed to retain these bus stops as part of the road improvement works on Edwards Street adjacent to the hospital. The westbound bus stop will be provided with a layback 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.	• Bus services appear to have capacity to for increased patronage. • The bus layback 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.

	Predevelopment Condition (prior to Phase 1)	**Completion Phases 1 & 2/3**	**Outcome**
Traffic Internal	The features of the existing road pattern and distribution of facilities consisted of : • Lewis Drive provided a one way road link across the site from Edwards Street to Brookong Street. • Emergency Entrance located near the main hospital entry off Lewis Street. • WWBH served by multiple loading docks for deliveries and waste. Road pattern and location of facilities provided potential for vehicle conflict between large service/small vehicles and visitors/emergency vehicles.	The revised site layout will provide for the following distribution of activities : • Majority of visitor parking located on the northern side of the site. • Access to visitor carparks directly accessed from the north (Edward Street). • Loading dock facilities/access on the western side of the site. • Ambulance drop off and parking on the southern side of the site from the south • Main entry drop off / pick up centrally located but more easily accessed from the north and east	Generally the revised layout of the site will influence the traffic pattern and help to separate service, emergency and visitor/worker vehicles so minimising vehicle conflicts including conflicts between large service/emergency vehicles and smaller visitor vehicles.