Green Travel Plan

Stage 3 Development for Wagga Wagga Hospital

Prepared for Health Infrastructure NSW
November 2020

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Green Travel Plan

Stage 3 Development for Wagga Wagga Hospital

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Executive Summary

This Green Travel Plan (GTP) has been prepared as part of the Stage 3 Development of the Wagga Wagga Base Hospital (WWBH). This plan describes the existing travel modes of the personnel who currently are and will work at the hospital campus following the completion of Stage 3 work in early 2021. This GTP satisfies condition of consent #D8 which applies to the development. This plan has been developed with consultation with Transport for NSW (TfNSW) and City of Wagga Wagga (Council).

This document identifies the requirement and purpose of a GTP, the steps to implement a GTP and the specific circumstances relating to WWBH.

An online survey has been conducted to collect the travel mode of staff. The results show that there is currently a high car dependency for the staff members. The survey data forms the basis which will be benchmarked against future mode shares to monitor the effectiveness of different initiatives. The existing travel survey results are outlined in Section 6 and future short and long term mode share targets are presented in Section 7. The ultimate objective of the future mode share targets is to minimise the car travel more and increase the uptake of active and public transport. The targets are realistic, achievable and time based with a proper implementation strategies as described in Section 8.

This GTP requires necessary promotion and marketing strategies for its success. Council is currently constructing bike paths in close proximity to the hospital campus which will provide direct, safe and secured bike connectivity to all directions. The hospital should take the opportunity to publish and promote this bike paths, along with the bike parking and End of Trip Facilities (EOTF) to update the bike mode share to/ from the hospital.

The GTP would require regular monitoring and review, preferably on annual basis. It is critical to understand whether and how the travel plan is having an impact on the mode share and how the barriers will be reduced or eliminated. The plan should be reviewed on annual basis and regular consultation will be required with the key stakeholders and senior management. It is also noted that the hospital will not be able to implement all the initiatives by its own. Therefore, regular communication will be required with Council, RMS, TfNSW and other relevant stakeholders so that all parties are aligned with an integrated objectives and targets.

In summary, this GTP provides an analysis of the existing transport framework operating for the WWBH and surrounding areas, and the strategies to deliver appropriate outcomes in terms of sustainable transport.

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1 Introduction

EMM consulting has been engaged by Savills, on behalf of NSW Health Infrastructure (NSWHI), to prepare a Green Travel Plan (GTP) for Stage 3 Development of the WWBH, in order to satisfy Consent Condition D8 pursuant to Development Consent SSD 9033 which was made under Section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Condition D8 states:

> Prior to the commencement of operation, a Green Travel Plan (GTP), must be prepared and be submitted to the Secretary to promote the use of active and sustainable transport modes. The plan must:
>
> (a) be prepared by a suitably qualified traffic consultant in consultation with TfNSW;
>
> (b) include objectives and modes share targets (i.e. Site and land use specific, measurable and achievable and timeframes for implementation) to define the direction and purpose of the GTP;
>
> (c) include specific tools and actions to help achieve the objectives and mode share targets;
>
> (d) include measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the GTP; and
>
> (e) include details regarding the methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the GTP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours of staff to and from the hospital campus.

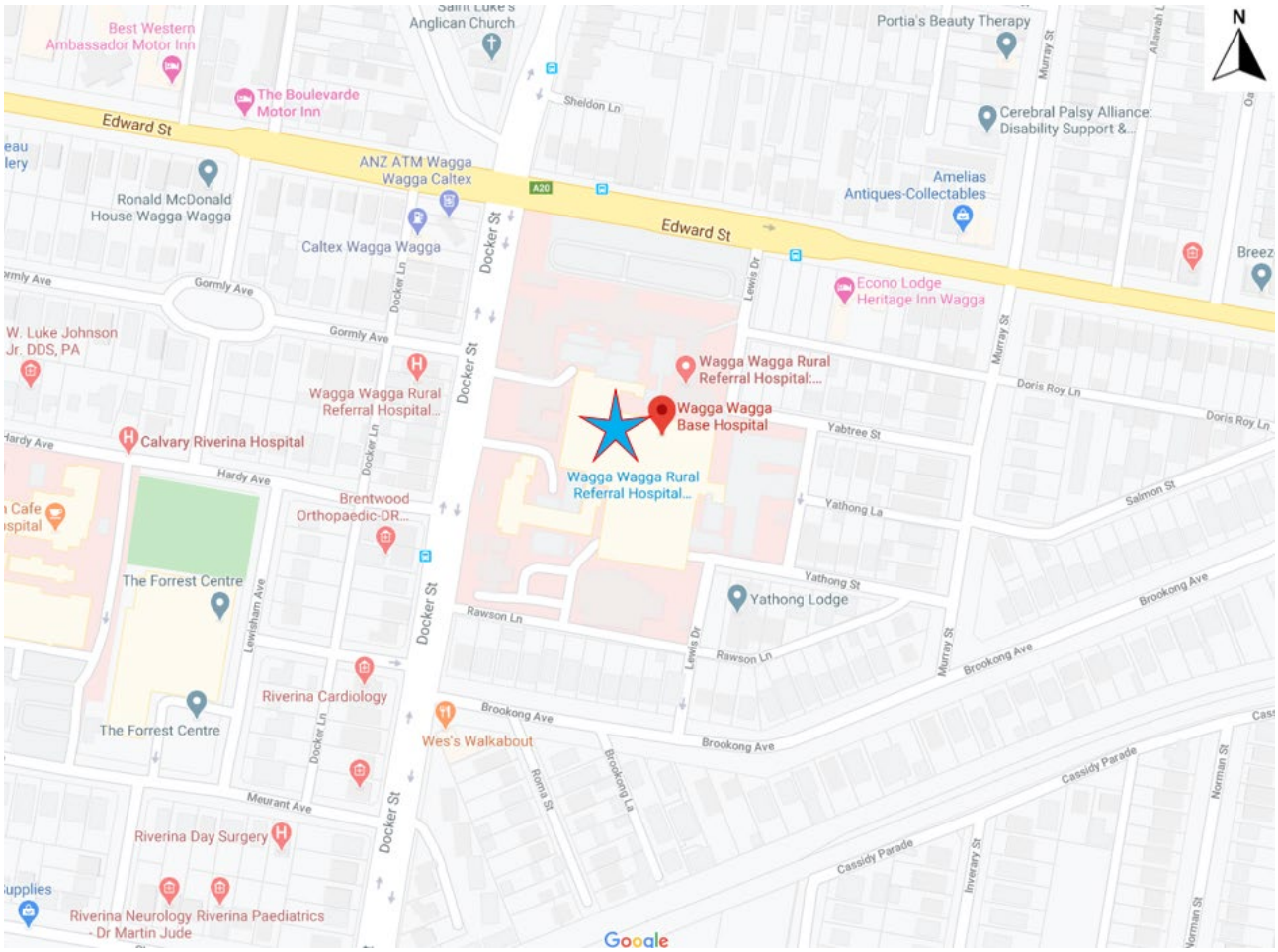
The key objectives of the GTP is to encourage more sustainable modes of transport and a move away from the use of private vehicles.

WWBH is a 393-bed hospital located within the Murrumbidgee Local Health District (MLHD). WWBH currently has a total of 1,338 staff working across three shifts on a typical day. Adopting a factor of 0.6 of the total staff, the average staff per weekday shift (ASDS) is calculated to be 803.

The key features of the WWBH Stage 3 redevelopment are a six-storey building for ambulatory clinics, Aboriginal health, aged care inpatients, mental health clinic, drug and alcohol services, allied health services, oral health and rehabilitation. The Stage 3 project includes 132 additional spaces on the hospital campus (including 32 in a basement extension approved by modification to the SSDA). The Stage 3 redevelopment also includes an education area including a library, conference rooms (60 seats) and a lecture theatre (100 seats), workforce and office accommodation and provides extended hours services including hospital in the home, integrated care, rapid assessment clinic and after hours General Practitioners. The Stage 3 work is expected to be completed at the end of 2020.

1.1 Site context

WWBH is located at 260-280 Edward Street, Wagga Wagga which is approximately 1km south-west of the Wagga Wagga Town Centre. The key roads in the vicinity of the hospital are Sturt Highway (north), Docker Street (west), Lewis Drive (east) and Rawson Lane (south) (Figure 1.1).



Source: Google Maps

Figure 1.1 Site location

The surrounding land uses to the hospital are predominantly health care, low and medium density residential dwellings and commercial precincts.

The site currently has a land use classification as SP2 – Infrastructure under the Wagga Wagga Local Environment Plan (LEP) 2010, as presented in Figure 1.2.

Source: NSW ePlanning Viewer

Figure 1.2 LEP Zoning Map (source:)

1.2 Development consent and report reference

The details of Development Consent Conditions D8 and the relevant responses are provided in Table 1.1.

Table 1.1 Development Consent Conditions (D8) and EMM responses

Item no.	Consent condition items	EMM responses
Prior to the commencement of operation, a Green Travel Plan (GTP), must be prepared and be submitted to the Secretary to promote the use of active and sustainable transport modes. The plan must:		
a	be prepared by a suitably qualified traffic consultant in consultation with TfNSW;	This report has been prepared by Abdullah Uddin of EMM Consulting who has 17 years' experience in traffic engineering and transport planning in Australia. This report has been prepared in consultation with TfNSW.
b	include objectives and modes share targets (i.e. site and land use specific, measurable and achievable and timeframes for implementation) to define the direction and purpose of the GTP;	Refer to Section 7.
c	include specific tools and actions to help achieve the objectives and mode share targets;	Refer to Section 8.
d	include measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the GTP; and	Refer to Section 9.
e	include details regarding the methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the GTP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours of staff to and from the Hospital campus.	Refer to Section 10.

1.3 Consultation with relevant authorities

As part of preparation of this GTP, the following authorities have been consulted:

1.3.1 TfNSW

TfNSW's [1]comments are summarised below:

- future Transport Strategy 2056 identifies a 13% mode share target from cars to active transport for regional NSW. This is consistent with Wagga Wagga Active Travel Project;
- TfNSW are currently trialling a bookable bus service (on demand) to Bomen to support the future growth of the industrial precinct community transport;
- community transport in Wagga Wagga will continue;
- the TfNSW and NSWHI can work together to contribute the mode shift towards the active transport by:
  - TfNSW Road User Safety team in Wagga could provide education and awareness of bike and pedestrian safety to the hospital users;

[1] Email from David Looney dated 21 August 2020

- TfNSW can encourage/condition NSWHI to provide bike storage for visitors, employees etc as part of upgrades and extensions to the hospital;

- TfNSW can encourage/condition NSWHI to provide showers, lockers, change rooms to support and encourage those to use active transport;

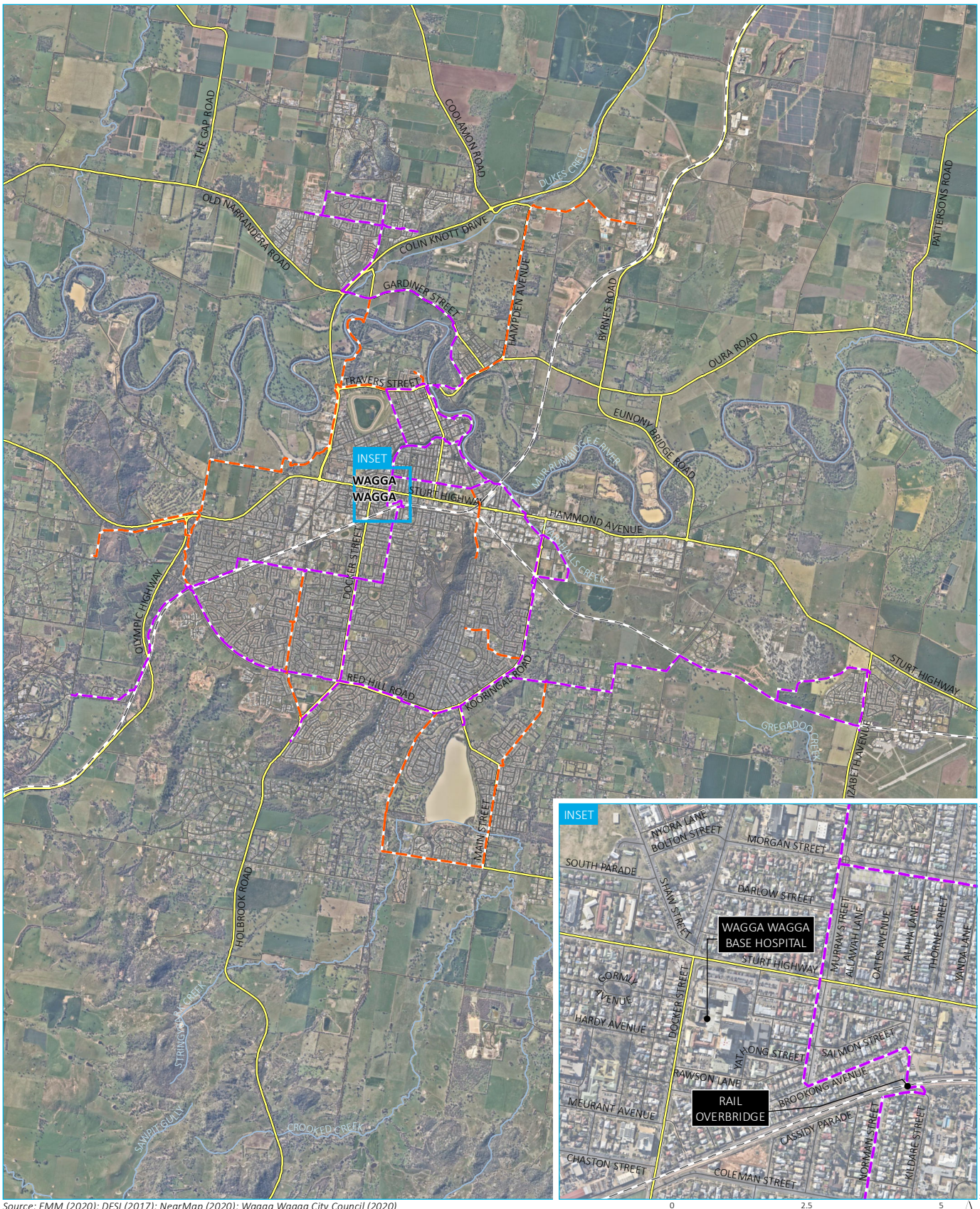
- TfNSW can work with Council and NSWHI to create a better level of service for walking and cycling on streets around the hospital precinct;

- TfNSW will continue to monitor the recently improved bus network including services to the precinct and work with Council to create walking and bus priority along Sturt Highway; and

- TfNSW will continue to monitor traffic signal phasing to support safe pedestrian movement and access to the health precinct.

1.3.2 City of Wagga Wagga

Council has advised that they are aiming to increase the mode share to cycling from current 0.7% to 5%. Council has provided a map of existing cycleway projects that are currently being constructed and will be constructed in the future, subject to funding (Figure 1.3). The figure shows that a cycleway project is currently underway along Murray Street which is within close proximity to the hospital.



Source: EMM (2020); DFSI (2017); NearMap (2020); Wagga Wagga City Council (2020)

0 2.5 5 km

GDA 1994 MGA Zone 55

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KEY

- ATP routes (projects currently being constructed)
- ATP routes - Stage 2 (future projects, subject to availability of funding)
- Rail line
- Major road
- Minor road
- Watercourse

City of Wagga Wagga Cycleway Projects

Wagga Wagga Stage 3 Hospital Development
Green Travel Plan
Figure 1.3

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2 Green Travel Plan

2.1 What is a Green Travel Plan?

A GTP is a document that outlines how a development intends to make travel to and from the site safer and more sustainable for their users. The GTP addresses local traffic issues around the site and encourages safe and sustainable travel methods such as walking, cycling, scooting, public transport or carpooling/sharing. A GTP correlates with the development's overall staging and is a document that should be monitored and reviewed regularly.

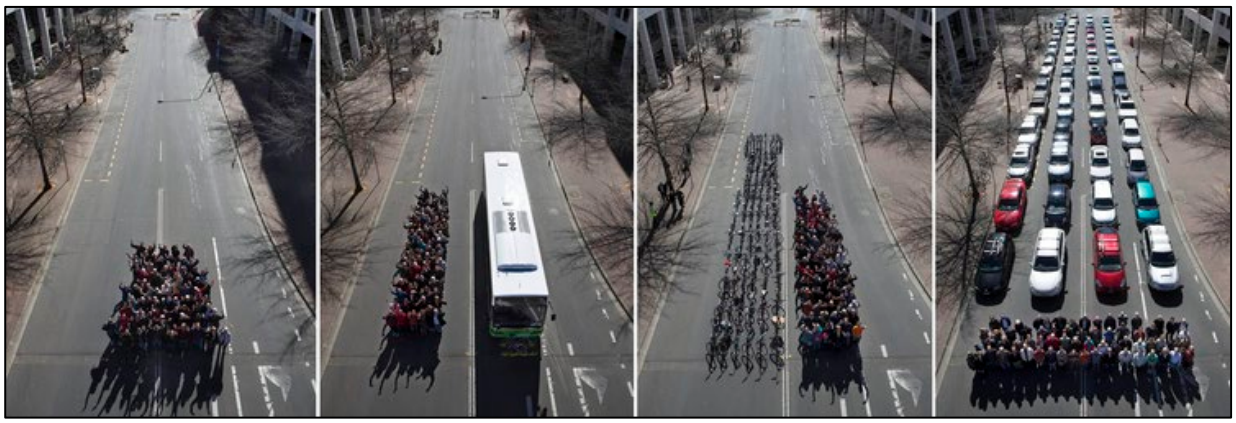
An effective GTP aims to promote and maximise the use of more sustainable modes of travel via a range of actions, promotional campaigns and incentives. The plan includes site management tools that encourage staff and visitors to make more sustainable transport choices. A GTP requires ongoing implementation, monitoring and review. As such, nominating an individual or a team to oversee the implementation of a travel plan is a crucial component of success.

2.2 Why is a Green Travel Plan required?

Development of a GTP is widely accepted as one of the best ways to increase the use of sustainable modes of transport. A successful GTP offers the following benefits for staff and visitors:

- creating opportunities for healthier lifestyles:
    - research in the United States revealed that those who cycle and walk regularly can reduce the risk of cancer, type 2 diabetes and early death. Studies also show that staying active can also strengthen mental health (People Powered Movement[2]).
- reducing traffic and local road congestion:
    - it is widely accepted that the increased use of active and public transport can reduce traffic and relieve road congestion. The following figure was taken in Canberra which compares the road space required to accommodate 69 people, using difference modes of transport;
- improving the environment by reducing air pollution from private vehicles; and
- improving social interaction by walking and/or cycling with other staff members.

[2] https://www.peoplepoweredmovement.org/benefits-of-biking-walking

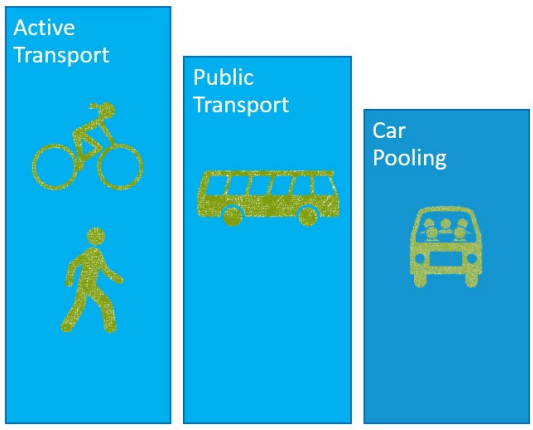


Source: Human Transit

Figure 2.1 Road space comparison

2.3 Purpose of the Plan

The purpose of the GTP is to provide a package of measures and incentives with the aim to promote and reduce the reliance of private car usage and encourage and support the uptake of daily business in a more sustainable way. This may be achieved through the review of existing policies, infrastructures and identifying programmes to encourage staff and visitors to adopt more active and sustainable forms of transport.



This document identifies the following:

- review of existing public transport infrastructure and future transport options;
- assessment of existing travel patterns within the area;
- a modal share target for the development;
- a framework to identify and respond to travel demand from the development and surrounding area;
- strategies to implement prior and during occupancy; and
- the monitoring strategy to track performance of the GTP.

3 Steps to implement the Green Travel Plan

There are five key steps to follow when implementing a GTP:

3.1 Step 1 – set up an advisory committee

- appoint an interested member of staff to coordinate specific actions and to track the progress of this work;
- develop a Hospital Working Group that involves representatives from the whole hospital community (ie Hospital CEO, staff, etc);
- discuss in a meeting current and potential hospital travel trends to identify the main issue/s to be addressed; and
- identify ways for the whole hospital community to be involved and informed of the work (eg regular articles in the hospital intranet).

3.2 Step 2 – data collection and review existing situation

- a hospital audit will reveal the existing constraints and opportunities for active modes of transport including current crossing facilities and missing links, hospital facilities such as bicycle/scooter parking, car parking, drop off areas and key areas of concern etc.
- consultation should take place with staff, patients and visitors to collect baseline travel data, their current and preferred travel habits, as well as possible barriers and incentives relating to the hospital travel journey. Using online survey tools is the best way to gather information on existing travel mode of staff, while an intercept survey is more appropriate for outpatients and visitors. Subsequently, the data can be analysed to provide a useful tool for benchmarking and developing a realistic and achievable travel plan.

3.3 Step 3 – prepare hospital travel plan

Based on the existing data, an overall vision for the hospital travel mode should be considered with establishment of clear objectives. The GTP is then prepared based on these objectives, notably to:

- build a culture that supports active travel by motivating, encouraging and educating staff, outpatients and visitors;
- set specific SMART (Specific, Measurable, Achievable, Relevant, Timed) targets for staff, outpatients and visitors travelling to and from the Hospital other than by private vehicles;
- develop an action plan that lists activities and strategies that eliminates the hospital community's barriers to active travel to meet the objectives and targets (eg establish a calendar of regular active travel events at the Hospital, deliver bicycle education to staff, organise fun run and celebrate annual walk to work day etc);
- estimate the budget required to meet the objectives, identify funding source and develop implementation strategies; and

- review and consult the GTP with hospital working group and hospital community.

3.4 Step 4 – deliver and implement

Once developed, the hospital should launch the GTP. Regular monitoring is part of the implementation strategy. Staff, outpatient and visitor travel mode data should be collected and reviewed annually.

3.5 Step 5 – recognise process

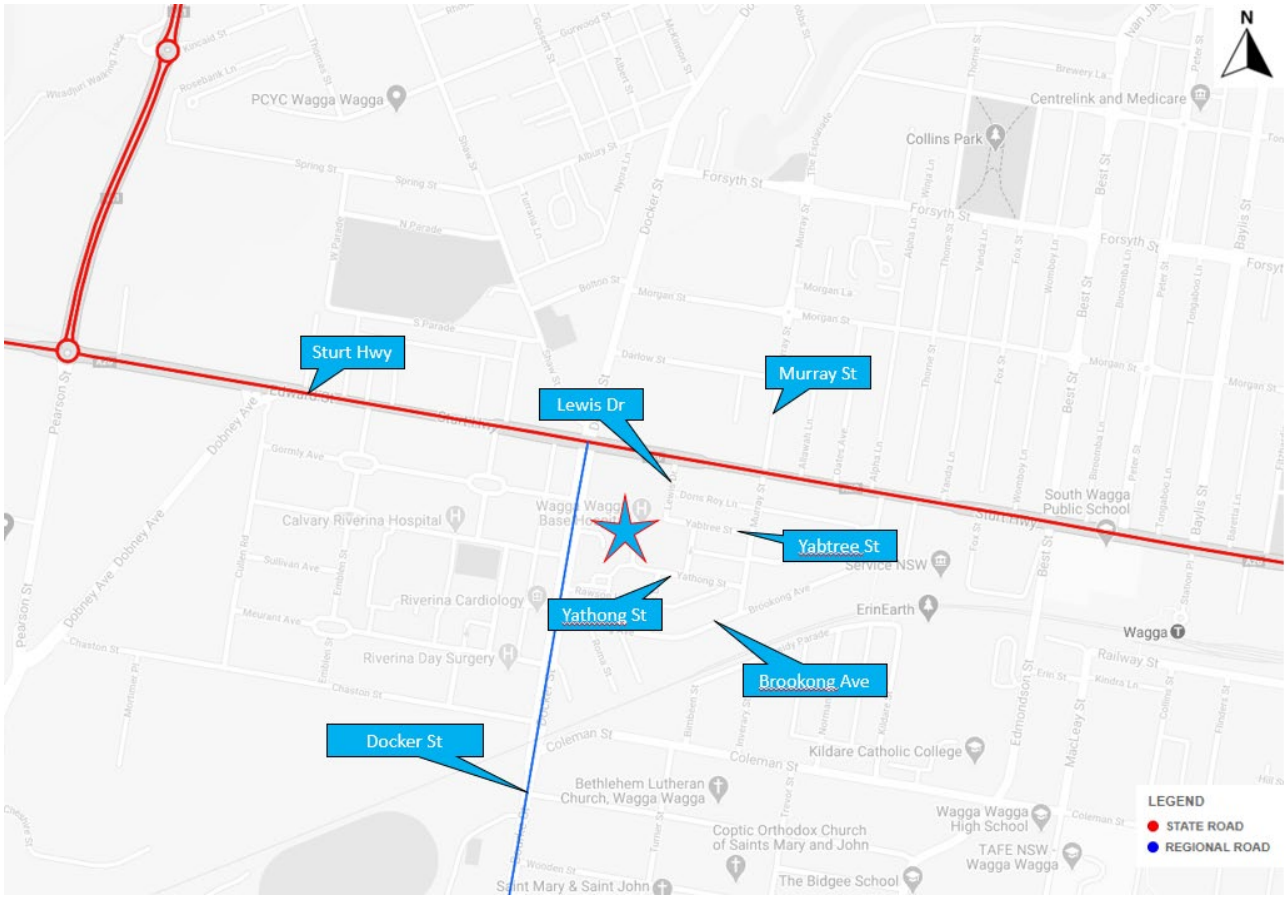
The successes of the GTP should be celebrated regularly, say annually. The plan should be reviewed regularly and incorporate new ideas, targets and benchmarks.

4 Existing transport facilities

4.1 Road hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- state roads - freeways and primary arterials (TfNSW managed)
- regional roads - secondary or sub arterials (council managed, and part funded by the State)
- local roads - collector and local access roads (council managed).



Source: TfNSW carto

Figure 4.1 Road hierarchy

4.2 Active transport

4.2.1 Walking

The site is well served by pedestrian infrastructure including footpaths along both sides of Sturt Highway and surrounding residential streets in the vicinity of the site (Photograph 4.1). There are existing pedestrian crossing facilities on all four approaches at the intersection of Sturt Highway with Docker Street. It is expected that future signalisation of Sturt Highway/ Murray Street and intersection upgrade of Brookong Avenue/ Murray Street will improve further pedestrian connectivity in the area.

Photograph 4.1 Footpath along Sturt Highway

4.2.2 Cycling

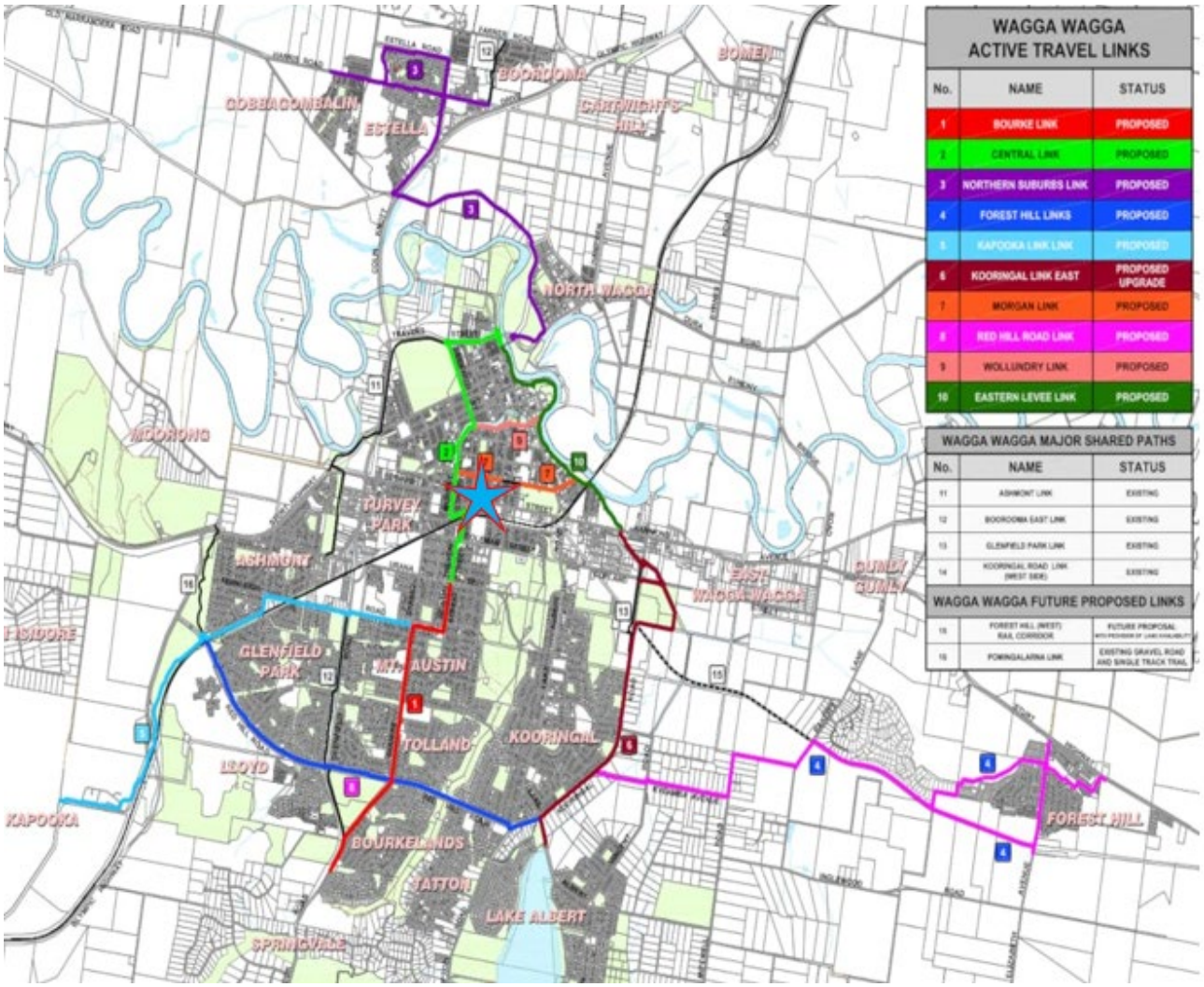
The Wagga Wagga Bicycle Plan was released in 2011 and set out the Bicycle Network development priorities within Wagga Wagga LGA. The key vision developed as part of the Bicycle Plan was *"to create an environment where cycling is an easy, enjoyable and convenient way to get about, where there are no barriers, and everyone has the confidence and desire to simply 'pick up a bike and go', whenever they feel like it"*.

It recognises the benefits of cycling, including the contribution to Council's quadruple bottom line (environmental, social, economic and governance), as well as to the wider transport network, but also the considerable barriers to cycling, which include major roads, traffic volumes and speeds, and the lack of continuity in the bicycle network.

Subsequently in 2019, Council approved the Wagga Wagga Active Travel Plan which has over 50 km of cycleways. Construction has commenced at the time of preparing this GTP and the entire upgrades will be completed by May 2021. This improvement to cycling infrastructure will coincide with the completion of the Stage 3 development.

The following additional cycleway links will connect with the existing bicycle networks to provide improved continuity of bicycle access using cycleways:

- Levee Link;
- University Link;
- Kapooka Link;
- Red Hill Link;
- Kooringal Link;
- Morgan Link;
- Wollundry Link;
- Bourke Link;
- Forest Hill Link; and
- Central Link.



Source: Wagga Wagga Active Travel Plan

Figure 4.2 Wagga Wagga Active Travel Links

In addition, Council is introducing the RECHARGE Scheme in partnership with Recharge Scheme Australia[3]. This scheme aims to facilitate mobility through providing designated electric scooters and wheelchair recharge outlets for people with restricted mobility and people with disabilities. Within the LGA, the Wagga Wagga City Library, Wagga Civic Theatre and Seniors Community Centre are currently participating in the recharge Scheme.

4.3 Public transport

4.3.1 Bus services

The bus stop at the site frontage is currently serviced by seven bus routes (1W, 3W, 22, 24, 961, 962 and 963) operated by Busabout Wagga, Junee Buses and Allens Coaches. These bus services provide local connections to local suburbs, Wagga Wagga City Centre and Junee. By interchange with other buses in the City Centre, many other destinations are accessible. Figure 4.3 presents a map of the bus services network operated by Busabout Wagga.

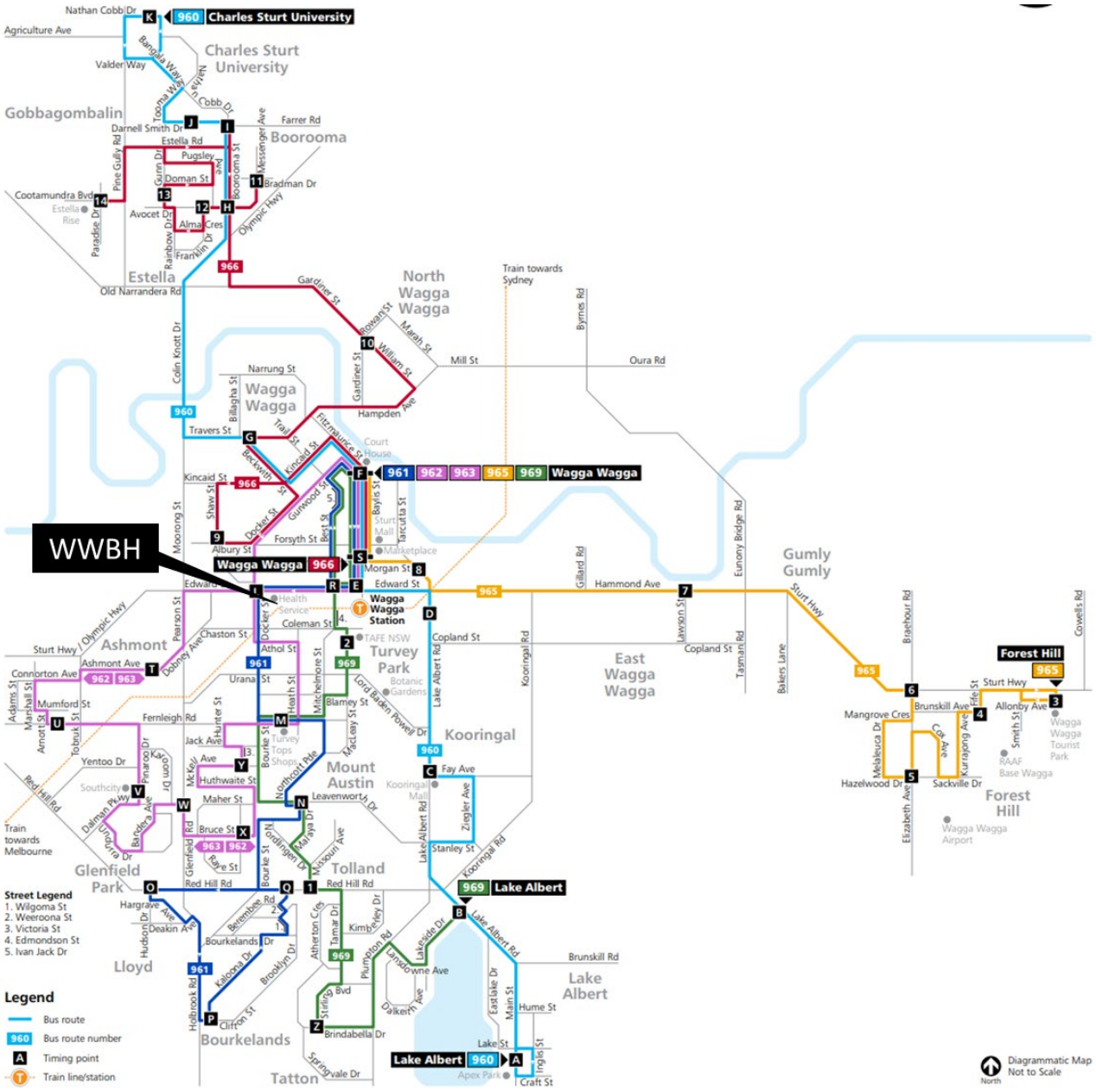
[3] https://www.rechargescheme.org.au/

A summary of the available bus routes at the site frontage is presented in Table 4.1.

Table 4.1 Summary of existing bus services

Bus Route	Coverage (to and from)	Service Frequency
961	Wagga Wagga to Bourkelands	Hourly between 7:27 am and 6:37 pm from Sunday to Wednesday, services extend to 9:16 pm from Thursday to Saturday
962	Wagga Wagga to Glenfield Park via Ashmont & Turvey Park	Hourly between 7:32 am and 8:55 pm from Monday to Saturday, bihourly between 8 am and 6 pm on Sunday
963	Wagga Wagga to Glenfield Park via Turvey Park & Ashmont	Hourly between 7:24 am and 9:25 pm from Monday to Saturday, bihourly between 9 am and 5 pm on Sunday
1W	Coolamon to Wagga Wagga via Downside	Only operates two services at 7:23 am and 2 pm on weekdays
3W	Coolamon to Wagga Wagga	Only operate one service at 5:28 pm on weekdays
22	Junee to Wagga Wagga	Only operate one service at 5:33 pm on weekdays
24	Junee to Wagga Wagga via Jail Break Inn, Wallacetown and Brucedale Dr	Only operate one service at 12:47 pm on weekdays

The frequency of bus services serving the hospital shows that except 961, 962 and 963, the frequency for other services are inadequate. Route maps are shown in the following two figures indicates that services 961 to 963 provide good north-south connection between the city centre and the suburbs located south and south-west. Some services are provided to the northeast and northwest, however, there is no service to the east or west along the highway.



Source: Busabout Wagga

Figure 4.3 Bus services

Source: Google Maps

Figure 4.4 Regional public transport connections

4.3.2 Community transport

In the Wagga Wagga urban area, community transport is provided by Valmar. It is a door to door community service where booking is required by the mid-day of a day prior. Currently the service is restricted to elderly citizens eg over 65, those who have specific health issues, or who are registered with the National Disability Insurance Scheme (NDIS). The travel costs are below:

- trips under 2 km - $5 (single) or $10 (return); and
- trips over 2 km - $8 (single) or $15 (return).

This facility is subsidised by TfNSW and is popular within the elderly community in the township. The service runs between 7am and 4pm on weekdays only and no service during the weekend or public holidays.

4.3.3 Rail transport

Wagga Wagga Railway Station is located approximately 1.1 km walking distance from the hospital and is serviced by the Southern NSW line running from Wagga Wagga to Sydney Central and Melbourne twice a day in each direction. However, due to the current Covid-19 situation, regional trains are currently operating on an amended schedule. No train is currently connecting to Victoria due to Covid 19 border restrictions. However, one additional train-coach connection is provided between Sydney and Wagga Wagga via Canberra.

5 Existing parking arrangements

5.1 Bicycle parking

There is currently a bicycle storage area adjacent to the Support Services Building with 11 bicycle racks that can accommodate up to 16 bicycles for the use by staff [4] (Photograph 5.1).

Photograph 5.1 Existing bicycle parking provision to the hospital campus

5.2 Car parking

5.2.1 Off-street

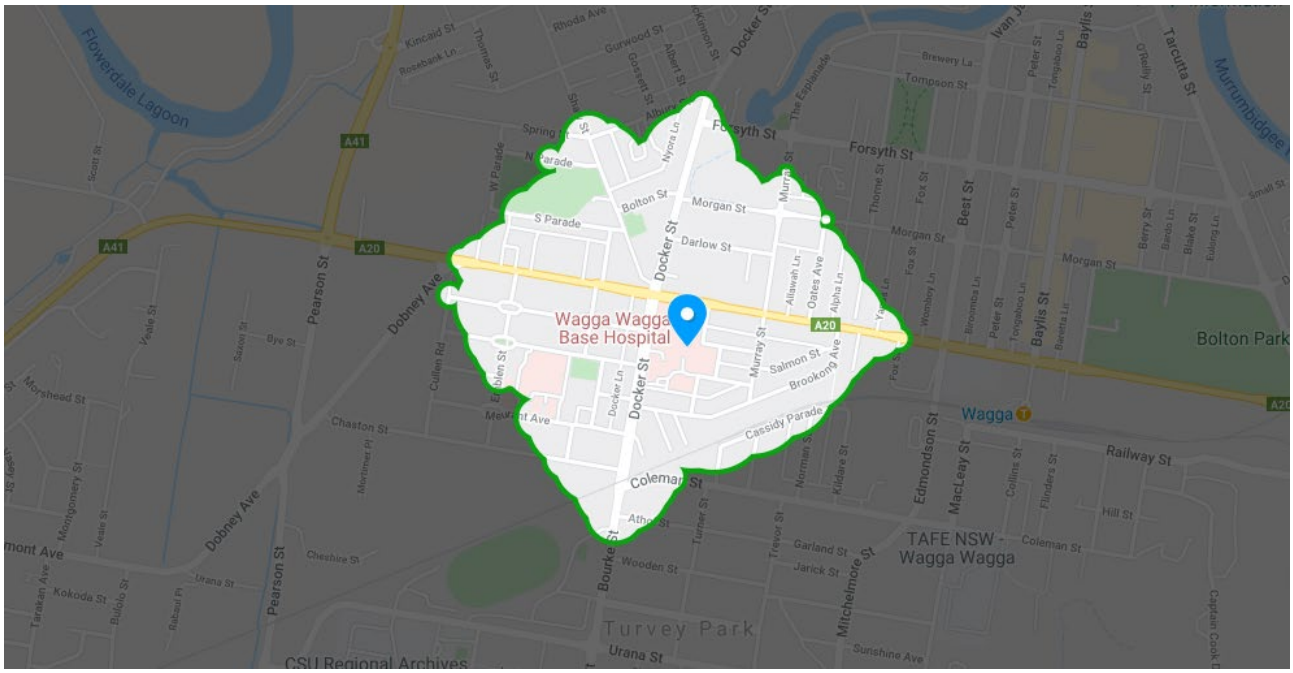
At the end of the stage 3 project, (prior to provision of any further car parking) the campus will have a total of 503 spaces.

Some on-site parking is time restricted (eg 3 hours), however, there is no fee for parking within the hospital campus.

5.2.2 On-street

On-street parking is generally unrestricted within the vicinity of the hospital. Figure 5.1 shows the catchment area of a 10-minute walk from the hospital campus.

[4] GTA Schematic Development TIA report dated 03/10/2018



Source: walkscore.com

Figure 5.1 10 minute walking catchment of the hospital

The on-street parking availability is determined from parking surveys conducted across two weekdays, during midday of Wednesday 26th February and Thursday, 27th February 2020[5].

On-street parking availability within walking distance of the hospital is summarised below:

- within 250 m radius: 52 available parking spaces; and
- between 250 m and 500 m radius: 275 available parking spaces.

Overall, there are 327 available spaces within a 500 m radius of the campus, however, this is likely to reduce in the near future with loss of approximately 56 on-street parking spaces from road carriageway changes after the signalisation of the Sturt Highway/Murray Street intersection (Figure 5.2[5]).

[5] Source: EMM UNSW Biomedical Sciences Centre, Wagga Wagga TIA, dated 16 April 2020

Figure 5.2 Available on-street parking in the vicinity of the hospital campus

6 Staff travel mode

The travel patterns of current and future staff who will work in the hospital campus from 2021 (following the completion of Stage 3 development) have been analysed by means of a travel mode survey.

An online survey was conducted by SurveyMonkey to all hospital staff to understand their travel behaviours and preferences. The survey was available for a period of 17 days from 8 September to 24 September 2020. In total 178 responses were received out of 350 staff who are currently or will work in the hospital campus from 2021. Overall, 31.25% respondents live within the 5 km radium and the remaining 68.75% live outside the 5 km radius (Figure 6.1).

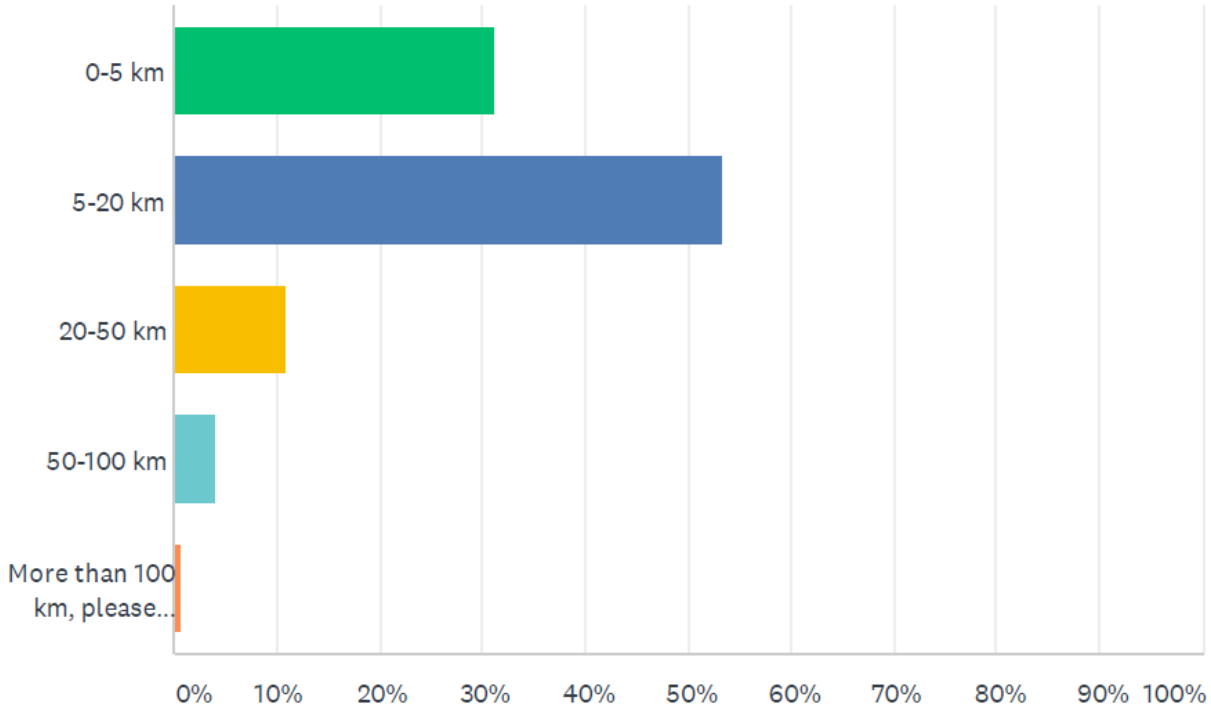


Figure 6.1 Travel distance by hospital staff

The staff travel modes for those living within and outside of 5 km radius of the hospital, based on the survey results, are presented in Figure 6.2 and Figure 6.3 respectively. The figures show that there is high dependency on car usage over other modes of transport. Approximately 70% of the staff who are living within the 5 km radius use private vehicles for their journey to/from work. Other transport modes are walk (15%), followed by bicycle (4%). None uses the bus service for their commute.

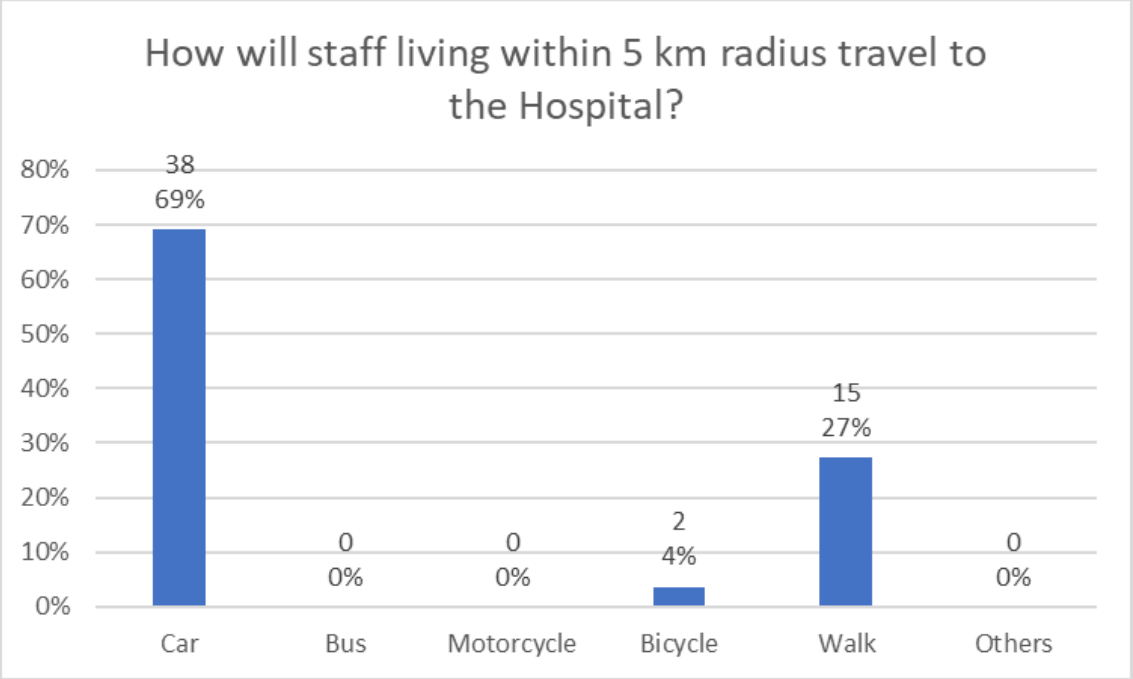


Figure 6.2 **Future staff travel mode (living within 5 km radius)**

For those who live outside the 5km radius, car is the dominant mode share (98%) and only two respondents currently cycle or will be cycling to the campus from 2021.

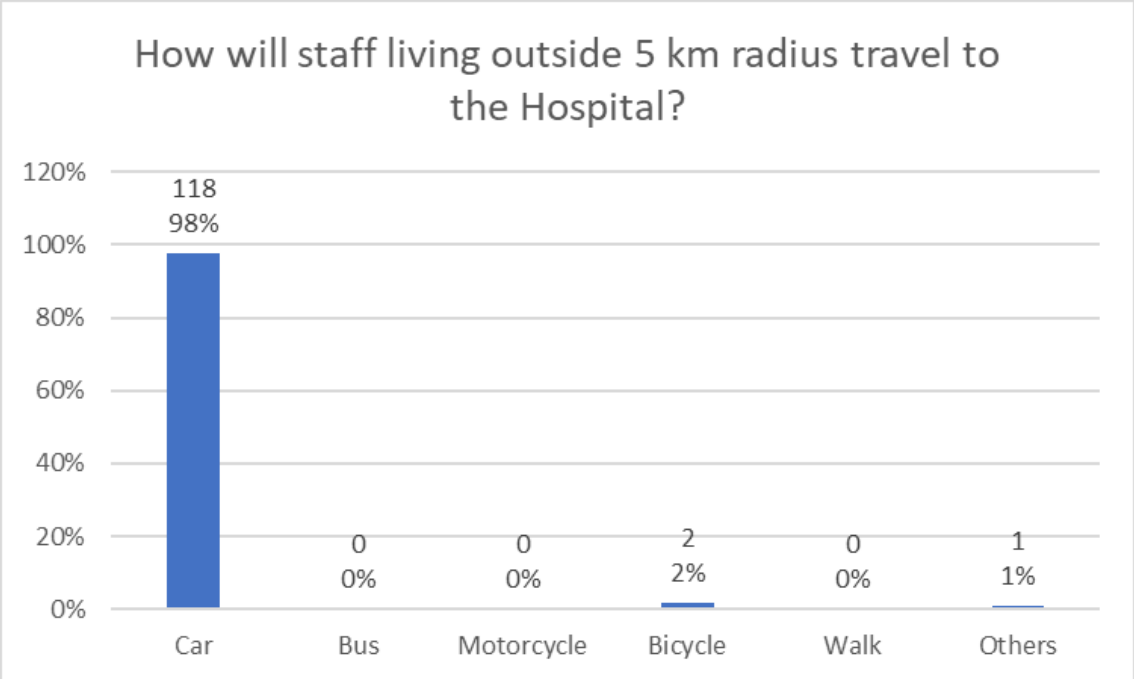


Figure 6.3 **Future staff travel mode (living outside 5 km radius)**

Figure 6.4 below shows the occupants per car. Close to 90% of the respondents are sole driver and the remaining 10% have two or more occupants. This group (multiple occupant cars) has potential to represent a greater share of the transport modes if a designated car parking spaces are provided within the hospital campus for carpool-only vehicles.

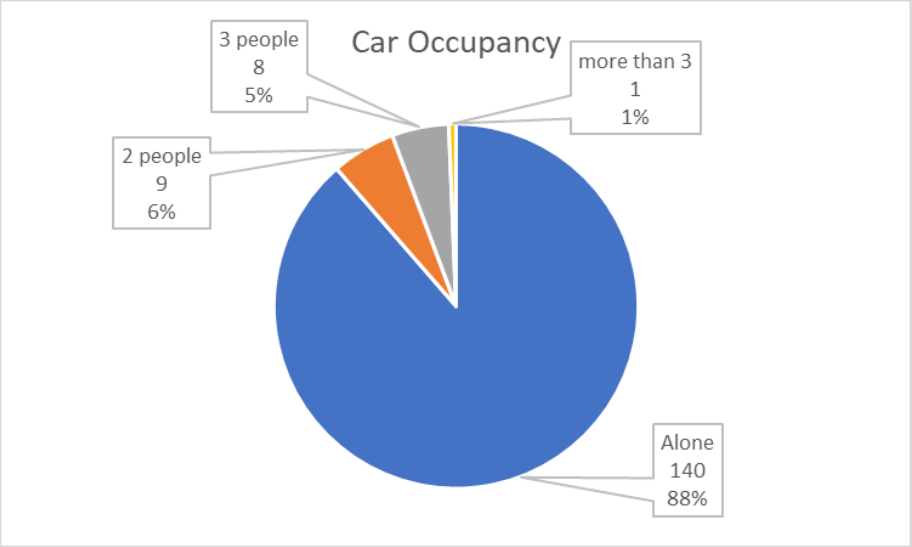


Figure 6.4 Occupancy per car

Approximately 70% of the staff park their vehicles off campus, likely in nearby residential streets (Figure 6.5) where there is no on-street car parking restriction. The remaining 30% park on campus. The majority currently parking off site indicates that there are existing parking deficiencies, relative to current demand, within the hospital campus. A minor proportion is currently being dropped off to the campus.

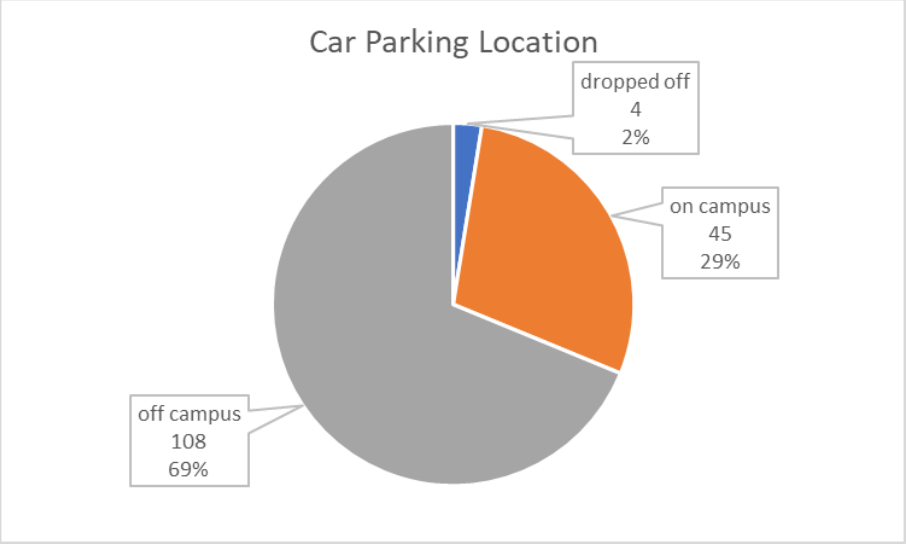


Figure 6.5 Parking location

The survey required respondents to indicate the reason for driving (Figure 6.6). The majority indicated that either driving is more convenient and comfortable, or they needed the car for multiple reasons. Interestingly the higher proportion of respondents indicating this reason live within the 5 km radius, despite the availability of alternate mode of transport. The other dominant reasons are lack of other alternatives and public transport takes longer for those living outside the 5 km radius.

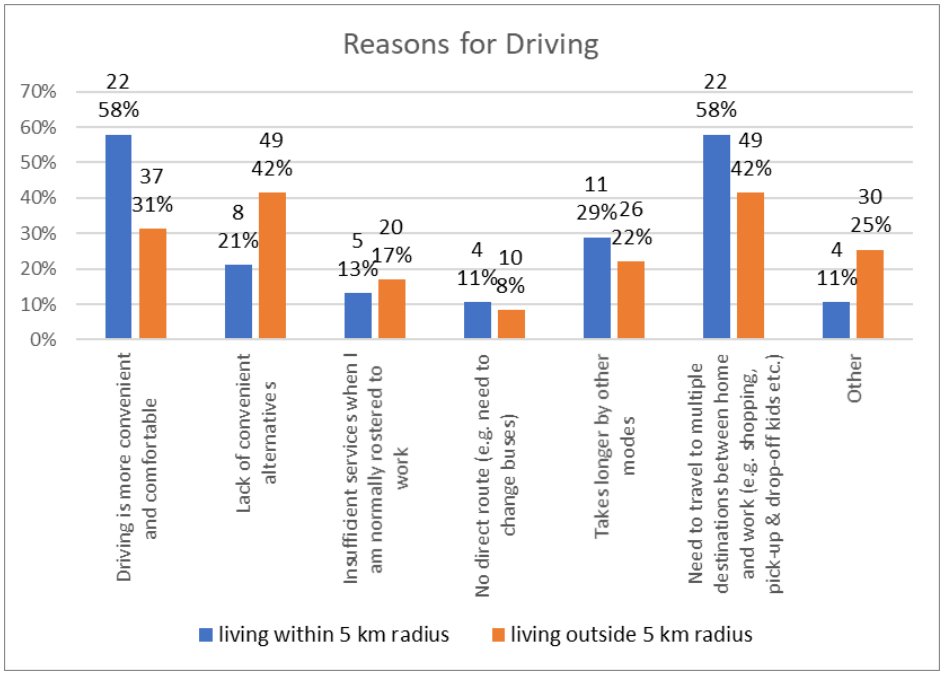


Figure 6.6 Reasons for driving

The survey also revealed that there is a strong interest (36%) for cycling as a commute option for staff living within 5 km radius (Figure 6.7). Even 6% respondents who live outside the 5 km radius have indicated that they are willing to consider cycling as an alternate mode of travel. These positive responses to cycling as a mode of transport may be prompted by the current construction of a cycleway along Murray Street and other adjoining streets which will establish direct north-south and east-west cycling connectivity (Figure 1.3).

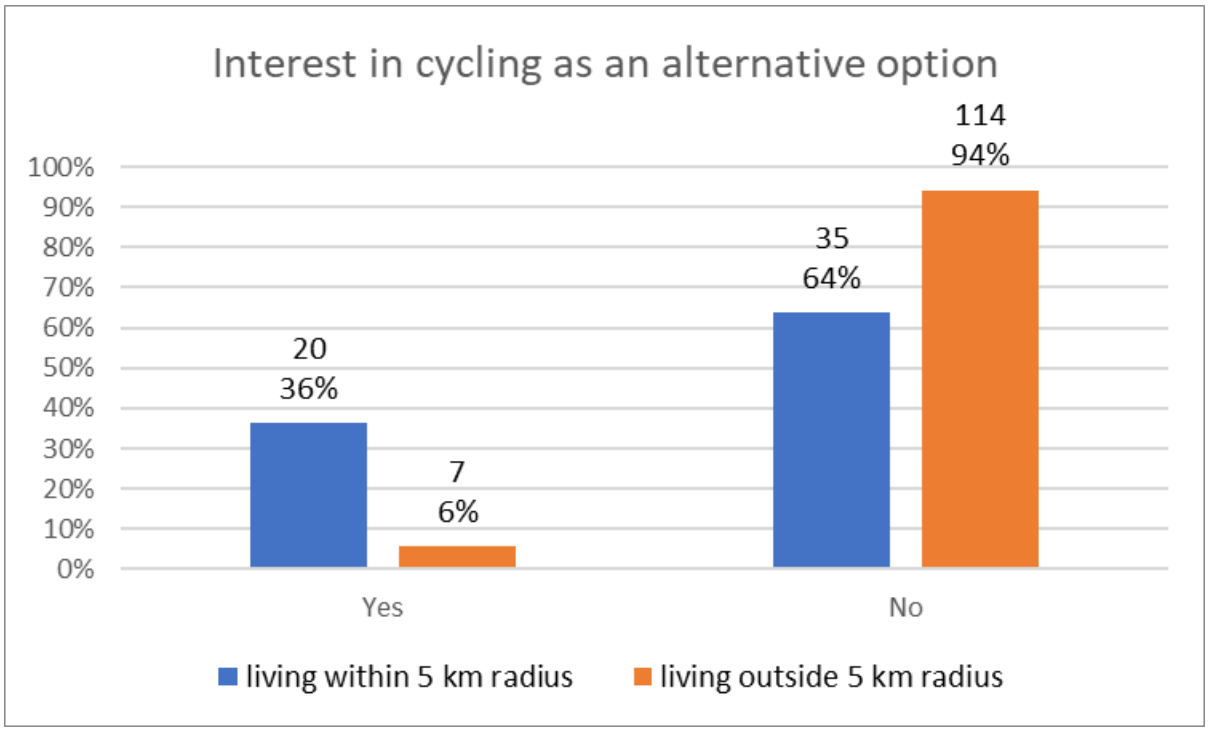


Figure 6.7 **Interest in cycling to work**

7 Opportunities and targets

Based on the existing travel mode data, the future short term (1 to 5 years) and long term (5 to 10 years) travel mode targets are presented in the following two tables. Any discrepancy of 100% mode share relates to other modes (e.g. multiple modes (bus & walk), taxi/ uber etc.).

Table 7.1 below presents the mode share target for the staff living within 5 km radius of the hospital campus. The current mode share to driving is approximately 70% which has been reduced by 6.5% in the short term and 13% in the longer term which is aligned with TfNSW long term objective for regional towns (Section 1.3.1). For the longer term, cycling mode has been established to 5% which is aligned with Council's long term objective (Section 1.3.2).

Table 7.1 Mode share targets for staff living within the 5 km radius

	Private Vehicles	Bus	Cycling	Walking/ Combined mode
Existing	69.1%	0.0%	3.6%	27.3%
Short-term (1-5 years)	62.6% (-6.5%)	1.5% (+1.5%)	6.1% (+2.5%)	29.8% (+2.5%)
Medium to Long-term (5-10 years)	56.1% (-13.0%)	3.0% (+3.0%)	8.6% (+5.0%)	32.3% (+5.0%)

Table 7.2 shows the short term and long term mode share targets for the staff who live outside the 5 km radius of the hospital campus. It is realistic to consider that private vehicle will continue to be the primary mode of transport, however, there might be some opportunities to increase the carpooling or car sharing by the hospital staff. In addition, there are other opportunities to improve the bike mode share to 4.5% in the longer term by provision of improved, safe and connected cycleways that are already in place as part of the Stage 2 and 3 developments.

Table 7.2 Mode share targets for staff living outside the 5 km radius

	Private Vehicles	Bus	Cycling	Walking/ Combined mode
Existing	97.5%	0.0%	1.7%	0.8%
Short-term (1-3 years)	94.3% (-3.2%)	0.5% (+0.5%)	3.9% (+2.2%)	1.3% (+0.5%)
Medium to Long-term (5-10 years)	91.0% (-6.5%)	1.0% (+1.0%)	6.2% (+4.5%)	1.8% (+1.0%)

Overall, the above targets are realistic, measurable, achievable and time based, however, it should also be noted that the overall hospital mode share will depend on the proportion of staff living within the 5 km radius. For simplicity, the long term targets are generally set as the double of the short term targets.

Table 7.3 shows the existing and future cycle users as per short term and long-term mode share targets, for staff living within and outside the 5 km radius. The short term and long-term cycle users are calculated based on the existing cycling ratio. It is expected that there would be 5 staff within the 5 km radius and 8 staff outside the 5 km radius that would cycle to work as per the medium to long-term mode share targets.

Table 7.3 Cycling staff as per mode share targets

	staff living within the 5 km radius		staff living outside the 5 km radius		Total
	%	No. of cycling staff	%	No. of cycling staff	No. of cycling staff
Existing users	3.6	2	1.7	2	4
Short-term target (1-3 years)	6.1	4	3.9	5	9
Medium to Long-term target (5-10 years)	8.6	5	6.2	8	13

As per Table 7.3, there will be potentially up to 13 staff cycling to work as per medium to long term mode share targets. At the end of the Stage 3 project, the WWHS Campus will have secure bike storage for 22 bikes for staff and 22 bike racks in public areas. The bike storage facility can accommodate the estimated medium to long-term mode share targets for cycling staff.

Table 7.4 provides NSW Government's Planning guidelines for walking and cycling 2004 minimum requirements for lockers, showers, and change rooms.

Table 7.4 Minimum locker, shower and change room provision

Staff	Lockers	Showers	Change rooms
0-12	1 per 3 racks	1	-
13-49	1 per 3 racks	2 (1 male and 1 female)	2 (1 male and 1 female)
50-149	1 per 3 racks	4 (2 male and 2 female)	2 (1 male and 1 female)
150-299	1 per 3 racks	6 (3 male and 3 female)	2 (1 male and 1 female)
300-500	1 per 3 racks	8 (4 male and 4 female)	2(1 male and 1 female)

Following the above guidelines, the Stage 3 project is to have minimum of 2 showers (1 male and 1 female) for 13 staff. The number of lockers required are based off on bicycle racks provision. With the storage provision of 22 bikes for staff, 8 lockers are to be provided.

Staff end of trip facilities on WWHS campus are distributed across the Support Services Building (SSB), Acute Services Building (ASB), Mental Health Building and other buildings. These facilities are presented in Table 7.5.

Table 7.5 WWHS Campus EOTF facilities

Area	Male facilities	Female facilities	Additional facilities
SSB	5 showers 3 WC (incl 1 ambulatory) 14 lockers	4 showers 3 WC (incl 1 amb) 28 lockers	1 unisex shower/WC 1 unisex WC 128 lockers
ASB (GF) Medical imaging	1 shower 1 WC 33 lockers	1 shower 1 WC 40 lockers	2 unisex WC
ASB (GF) Emergency Dept	1 shower 1 WC 40 lockers	1 shower 1 WC 44 lockers	2 unisex WC
ASB (L1) Procedures Dept	1 shower 4 WC (incl 1 amb) 134 lockers	1 shower 3 WC (incl 1 amb) 100 lockers	
ASB (GF) Mortuary			1 shower 1 WC 4 lockers
Stage 3 Project			496 lockers

Overall, The WWHS Campus will provide with sufficient EOTF facilities to cater for existing and medium to long term mode share targets for staff members.

8 Strategies and initiatives

There are a number of approaches that can incentivise usage of public transport and active transport options, and reduce private car usage to ultimately meet the mode shift targets set in Section 7. They are summarised into the following aspects:

- parking;
- carpooling;
- public transport;
- shuttle buses;
- cycling; and
- walking.

8.1 Parking

Availability of on-site parking is the most influential parameter on travel mode. Parking is free at the existing at-grade car parks within the hospital and there is no intention to introduce paid parking at the proposed multi deck car park which will be built as part of the hospital development. Without introducing the parking fee, the following initiatives could be considered to promote the uptake the public and active transport by the hospital staff and visitors:

- some parking could be restricted to two to three hours. If there is no parking management in place at the hospital, all the available spaces closer to the hospital entrance will be taken by the hospital staff or campus visitors. Hence, some parking management will be required such as upper level spaces at the multi-level car park for the staff for all day parking (low turnover) and lower level spaces for the visitors (high turnover); and
- the hospital can liaise with Council for parking restrictions/resident parking schemes in the streets surrounding the hospital (within a 400 m radius) to deter staff parking on residential streets and promote cycling or walking.

8.2 Carpooling

Another way to reduce the overall vehicular trips is to increase the occupancy per vehicle. Dedicated carpooling spaces can be introduced to increase occupancy per car towards greener and more sustainable travel, a small number of carpooling spaces, say five, can be trialled initially and gradually increased as required. Use of these spaces could be monitored by car park security and fellow colleagues who will report the users if they see any violation of the rules. A minimum number of occupants (in addition to the driver) would need to be set in order to distinguish genuine carpooling.

Note that carpooling is different to car share schemes.

8.3 Public transport

None of the hospital staff currently uses the bus services despite a number of bus services currently operates within close proximity to the hospital (Section 4.3.1). In order to encourage the hospital staff towards using public transport as an option, the existing public transport must realistically meet the demands of the staff, this can be achieved by reviewing the bus timetable and peak staff arrival/departure times or staff changeover times. In order to improve synchronisation, the de-personalised employee travel data and survey results can be shared with TfNSW, Council and other transportation providers.

Another barrier to using public transport is the inconsistency of service, as a recommendation, free SMS alerts can be provided to staff about possible service delays due to traffic congestion along the main bus routes.

Financial incentives such as Opal Card subsidy through the 'Salary sacrifice scheme' can also be provided to staff using public transport to increase their involvement. Opal usage record can be downloaded from the Opal website.

8.4 Community transport

As discussed in Section 4.3.2, Valmar currently operates community transport services in the area which is a door to door service. However, this service is restricted to elderly visitors (over 65, or registered as special needs), compared to Easylink which provides community transport to persons over 55 at Northern Beaches Hospital in Sydney. Also, the Valmar services are only available between 7am to 4pm on weekdays. Booking needs to be made by midday one day prior by anyone who wishes to use the service which is a disincentive to its potential users. These are deterrents to higher uptake of community transport.

This should be discussed with the operator and app-based booking is recommended to increase users. In summary, this community service should not only rely on elderly occupants, rather, it should extend their target market to younger generation. Depending on the popularity of this service, the usage data could be monitored regularly with continuous liaison with the service provider and TfNSW to improve usage. As discussed in Section 1.3.1, TfNSW is considering an on demand to Bomen which should be further discussed with them.

In addition, free shuttle bus services could be provided to improve link to key destinations such as city centre, railway station etc, especially for late night shift staff. More information/exposure of the services, such as route maps and timetables as well as pick up locations, should be readily available to all staff. The proper marketing is recommended to promote usage of such services to staff members and visitors.

8.5 Cycling

In order to promote cycling as an alternative transport option, adequate bicycle infrastructure must be provided to ensure the safety of cyclists. The main difficulty of cycling is the distance between the home and work place, as well as a lack of quality cycling facilities, such as storage and change rooms. Positively, the Council is currently developing a new bicycle network connecting Murray Street which will be easily accessible from the hospital. There will be further opportunities to establish linkage throughout the locality and neighbouring suburbs which are located within 3 to 5 km radius. Therefore, it is recommended that regular liaison with Council is maintained to minimise existing cycling deficiencies and identify cycling opportunities.

As stated in Section 5.1, the hospital currently provides 16 bicycle parking spaces. As part of the Stage 3 development, additional six bike parking will be provided in the existing secured bike parking area. Further, 22 bike parking will be provided to the visitors. This equates to 22 bike parking for the staff and 22 bike parking for the hospital visitors, totalling 44 bike parking spaces (275% increase).

In addition to provision of bike parking, existing wayfinding signage of the bike parking and EOTF should be reviewed and improved, if necessary. As council installs new bike paths, local cycling maps should be updated and indicating and safest and easiest routes to and from the hospital.

Financial incentives such as free coffee for cyclists and free bicycle repair workshops could also be implemented to motivate cycling. From a social prospective, bicycle groups could be organised to increase safety and socialising while bicycle events such as National Ride 2 Work Day, Biketober Business Challenge, and NSW Bike Week could be held to raise the environmental awareness.

8.5.1 End of Trip Facilities

At the end of the Stage 3 project, the WWHS Campus will have existing EOTF facilities upgraded to have secure bike storage for staff for 22 bikes and bike racks for at least 22 bikes in public areas. This will contribute to uptake the bike mode share to the staff members as stipulated in Section 7. Staff end of trip facilities on campus are distributed across the Support Services Building (SSB), Acute Services Building (ASB) and Mental Health Building. The upgraded EOTF facilities can accommodate the future estimated medium to long-term mode share targets for cycling.

8.6 Walking

As stated earlier, the hospital is well served by pedestrian infrastructure in the vicinity. Due to the adjoining UNSW campus, it is envisaged that local students will prefer to walk to the campus. It is recommended that local walking and cycling maps should be prepared and installed around the hospital to educate staff on the safest and easiest routes to and from the hospital.

Local and state-wide walking events such as Walk to Work Day, Walk4BrainCancer, National Walk For Mental Health, and Pedestrian Safety Awareness campaigns could also be hosted by the hospital to raise awareness.

8.7 Other initiatives

Apart from the above recommendations, there are other ways to promote sustainable travel.

One option is to allocate hybrid or electric only car spaces inside the car park, another way is to encourage and promote ‘work from home’ for administrative staff. This Covid-19 environment has created an ideal platform for ‘work from home’ culture and remote meeting which do not require any transport needs.

Furthermore, use of mobile phone public transport and journey planning apps can be promoted within the hospital and possibly expand to include community transport such as Valmar as stated earlier.

9 Promotion and marketing strategy

Once the plan has been adopted by the hospital, it is essential to maintain interest in the scheme. Each new initiative in the plan will need to be publicised with effective marketing. Actions are the core of a GTP. Therefore, the GTP needs to have a variety of actions that guide strategies relating to promotion, facilities and policies to create incentives for sustainable travel behaviour. If actions are to be staged, a staging strategy should be outlined in the plan. Typically, a travel coordinator, appointed by the hospital, will be responsible to monitor, implementation and oversee the plan.

Strategic promotion of travel plans, and associated initiatives tend to result in higher uptake of sustainable travel modes. It is imperative to ensure that all staff are aware of the initiatives. From time to time, assistance should be sought from Council, Bicycle NSW, Pedestrian Council Australia, TfNSW (Section 1.3.1) and other stakeholders.

The information provided within the GTP could be provided to staff in the form of a package of easy to understand travel information known as a Travel Access Guide (TAG). This should be included in the information pack provided to staff as part of their induction package. If necessary, the TAG should provide customised travel information for staff/visitor to/ from a particular area. The TAG should be available for pick up at various locations of the hospital campus.

Another way to promote non-vehicle mode of transport is to print a map on the back of business cards or brochures. Best practice suggests that the information should be as concise, simple and site specific as possible. If instructions are too complex, staff members and visitors are likely to ignore them.

10 Monitoring and evaluation strategy

A GTP should not simply be a list of actions. Monitoring and reviewing a travel plan is one of the most critical components of the travel planning process. It is crucial to understand whether and how the travel plan is having an impact on the mode share. An annual review of the GTP should be carried out with demonstration on how mode share has changed over time. This will assist in understanding whether progress is being made.

The monitoring strategy should ensure that the GTP is achieving the desired benefits. As stated in Section 8, it is essential to use the initial data collected of the existing mode share as a benchmark from which to measure results. Surveys will help to identify which actions are having an impact on occupant's travel behaviour and whether some are more effective than others. It may also help to identify ongoing or unresolved issues and barriers that are preventing greater improvement.

The overall success of the GTP will depend on good communication. It will be necessary to explain the reason for adopting the plan, promote benefits and provide information about alternatives to driving. It will also be necessary to provide feedback to staff members to ensure that they can see the benefits of sustainable transport.

Once data are updated, the targets and actions of the travel plan will need to be reviewed. The review should consider the following:

- are the targets still realistic? Are they still ambitious? Should they be updated?
- is the hospital struggling to achieve particular targets? What are the likely reasons for this?
- are there any gaps with regards to actions?
- what is preventing further improvement on mode share and how can this be addressed?

The steps outlined above should not be considered as a linear process, rather as an ongoing cycle. Travel planning requires regular review and adjustment which may reveal the need to reconsider objectives or targets or to add new actions to create greater incentives for the uptake of sustainable transport choices.

11 Conclusion

This GTP has been prepared for the Stage 3 Redevelopment of WWBH, as required as a condition (#D8) of the development consent. The key objectives of this document are to encourage promotion of non-car mode of travel for WWBH staff and visitors. As such, the guidelines outlined in this GTP will be an important component of the hospital's transport management.

There are many benefits of non-motorised traffic to/from the hospital. In summary, more staff actively travelling to the hospital means:

- less vehicles around the hospital;
- more active staff and visitors;
- healthier staff;
- improved concentration at work; and
- minimised impact on the environment.