

URaP – T T W



Consulting Engineers

INGHAM HEALTH RESEARCH INSTITUTE
Traffic and Parking Report

for



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URaP-TTW Pty Ltd

L3, 48 Chandos Street
St Leonards NSW 2065
Phone: (02) 9439 7288
Fax: (02) 9439 3146
Email: urap@ttw.com.au
ABN 24 101 643 010
ACN 101 643 010

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1 INTRODUCTION

1.1 Background

This study provides a review of the traffic and parking impacts for the new Ingham Research Institute at Liverpool Hospital.

A Concept Plan with attendant strategy for management of transport for the redevelopment of Liverpool Hospital was approved on 2nd February 2007.

This proposal is consistent with that approved Concept Plan.

The Ingham Health Research Institute is the first research centre of its kind in the south west of Sydney, providing a comprehensive facility for south west Sydney that will link clinical health services and universities to clinical practice.

It is a partnership between the Ingham Health Research Institute (**IHRI**), Sydney South West Area Health Service (SSWAHS), the University of New South Wales (UNSW) and the University of Western Sydney (UWS).

The main concerns of this study relate to the site's accessibility, the demand and provision of appropriate parking facilities and overall traffic impact of the proposed Hospital site.

1.2 The Study Area

The site is situated on the north west corner of Forbes and Campbell Street in Liverpool. The site is part of the Liverpool Hospital campus but sites on the fringe of Liverpool CBD. The site is located within Liverpool Local Government Area.

The site is currently occupied by a childcare centre called Rainbow Cottage and a cottage used for Drug and Alcohol services. Both of these structures will be demolished prior to the construction of the new IHRI building.

1.3 Scope of the Report

The report is divided into four sections including the introduction.

- Section 2 provides an analysis of the proposed sites.
- Section 3 covers the proposed development plan and its implications.
- Section 4 provides a summary and conclusions.



Figure 1.1 Development Site

2 SITE ANALYSIS

2.1 The Development Site

The site sits within the Liverpool Health Campus on the opposite side of Campbell Street from the main hospital complex on the fringe of the CBD.

Development to the north of the IHRI site is predominantly a mixture of low and high rise residential in a 2(d) zone. To the east of the site are Liverpool Girls High school and the hospital's multi-storey car park for 800 vehicles. Immediately to the south is the main Liverpool Hospital campus and the Health Services Building is located immediately adjacent to the west.

The general area to the south and east are medical related with general practices, X-ray practices and other allied and paramedical services.

2.2 Traffic Environment

The current site and adjacent carpark (which will figure predominantly in accommodating parking demand of the proposal) has vehicle access directly from Campbell Street. Forbes Street provides a major pedestrian access to the site.

The main vehicular approach routes to site include the Hume Highway, Cumberland Highway and Elizabeth Drive.

The intersection of Campbell and Goulburn Streets is controlled with traffic signals with pedestrian crossing facilities.

Campbell and Forbes Streets are two way roads with one travelling lane and one parking lane in each direction. Approximately 55 parking spaces are provided along these streets.

Peak hour traffic volumes along Campbell Street were recorded at some 400 vehicles per hour (vph), while Forbes Street, to north of Campbell Street, experiences some 260 vph during an afternoon peak hour (2007 Traffic and Parking Report for Liverpool Hospital).

The inspection of the area and its route network has revealed that all access routes to the site and its associated intersections are operating at a good level of service with minimal vehicular delays.

2.3 Public Transport and Accessibility

The IHRI site is located near the mid point to Warwick Farm and Liverpool Train Stations. The site is in walking distance proximity to the above stations within 600m (7 min) and 800m (10 min), respectively.

Liverpool and Warwick Farm Stations are serviced by CityRail along Cumberland, Inner West, Bankstown and Southern Lines with connections to major destinations within the Sydney Metropolitan area such as Sydney CBD, Parramatta, Strathfield, Bankstown, Campbelltown and Blacktown.

Both Warwick Farm and Liverpool Train Stations have a high patronage with over 4,000, and 17,500 passengers daily, respectively. The frequency of services along these stations is relatively high with minimum of 30 stops daily. Kiss and Ride facilities are also provided at both stations.

A new additional carparking facility is about to be constructed adjacent to Warwick Farm Station.

A major Bus Interchange with capacity of 12 separate bus stands including that for the Liverpool – Parramatta t-way, is also available at Liverpool Train Station. Bus routes provide services to the site and the Hospital Campus. The site is directly accessible by bus routes such as 900 and 849.

The Transport Access Guide for Liverpool Hospital provides a detailed public transport guide for the users of the site and the Hospital Campus. The Guide clearly indicates all opportunities for public transport interchange and access to the site.

The Transport Access Guide also includes pedestrian paths and cycle routes. Goulburn Street is a designated bike route.

Please see a copy of the Guide in Appendix A.

3 PROPOSAL

3.1 Hospital Transport Management Strategy

The Hospital Master Plan includes strategies for managing transport in light of overarching NSW Government policies such as the Integrated Land Use and Transport Policy and Sub-Regional Planning Strategies which incorporate elements of the wider Metropolitan Strategy and State Planning Targets.

The guiding objective of the strategy was to reduce the car dependency substantially among staff from 80% to similar levels at other hospitals (say 50 to 65%).

Therefore, the Master Plan for the Liverpool Hospital Redevelopment puts forward a number of strategies in order to encourage a higher use of public and active transport among its users particularly staff. These initiatives include:

- Implementation of restrictive car parking policies.
- Collaboration with transport operators/agencies to improve services to the Hospital Campus.
- Provision of financial incentives to staff to use bike or public transport instead of driving a car.
- Provision of better information on availability of travel choices.

The proposal is but one small component of the overall hospital redevelopment and it puts into place elements of the overall strategy as far as they have been developed.

Given its proximity to high levels of public transport accessibility, the greatest contribution to sustainable transport targets is in the form of restrictive parking policy where no additional parking is proposed for the individual proposal. Parking demand instead is met within the broader hospital campus provision, reducing over time the effective rate to achieve the mode split targets.

Other elements of sustainable transport planning are introduced by on-site bicycle provision (a rate of provision of 1 per 20 staff member of 15 bicycle parking spaces in the form of a collective enclosure is suggested).

3.2 Workforce

The planned development for the new Research Facility will supplement facilities that currently are available at Liverpool Hospital.

It is intended that the site will accommodate about 297 researchers with some 150 of these being new staff. It is expected that most of staff will be on site during normal hours (say 9.00 am to 5.00pm) while a proportion of them will work outside the normal hours due to the nature of their works.

The Master Plan for the redevelopment of the Hospital has provided a detailed study on travel patterns of the Hospital population including its staff and visitors. The Traffic and Parking Report for the Hospital Redevelopment (2006/07) indicates that currently some 80% of staff use car as their mode of travel.

It is noted this is much higher than other hospitals (e.g. St George Hospital has a car driver mode of 50% among its staff) suggesting there is considerable scope for sustainable transport modes to be utilised.

3.2 Car and Bicycle Parking

As mentioned earlier all parking requirements have been assessed as part of the Master Plan for the Hospital Redevelopment and appropriate level of parking has been accommodated as part of the Hospital Master Plan. The multilevel car parking facility with capacity of some 800 spaces which is located to the south east corner of the development site will provide parking facility for the site.

It is envisaged that the site will have minimal level of visitors while any visitors' parking demand will be accommodated as part of the Hospital's current arrangement.

From the information supplied for the proposed development and considering other similar type of facilities within the existing Hospitals, an effective parking demand of some additional 75-95 spaces has been assessed. This is based on

- About 150 new staff will join the Hospital Campus as the result of IHRI while the remainder of staff (some 147 out 297) will continue to use similar arrangement per existing situation.
- It is expected that some 90% of staff will be at site during a day on normal hours (as generally staff attend seminars or have holidays or work after or before hours).
- Use of 60-70% car driver as travel mode by considering a) the new "Work Travel" initiatives by the Hospital and b) taking into account that generally researchers are more public and active transport oriented (e.g. very high use of bike and public transport among researchers in St Vincent Bio-Technology Institute – URaP-TTW, 2006).

Therefore an upper limit car parking demand of some 95 spaces would notionally result ($150 \times 90\% = 135$ persons $\times 70\% = 95$ car drivers).

Other elements of sustainable transport planning are introduced by on-site bicycle provision (a rate of provision of 1 per 20 staff member of 15 bicycle parking spaces in the form of a collective enclosure is suggested). These will be located along Campbell Street and the basement of the IHRI building.

3.3 Pedestrian Access

The development will be designed on the basis of best practice and current guidelines such as Australian Standards, catering for disabled access and people with disability. The proposed access arrangements should meet the required pedestrian access situation to the proposed IHRI site and serve the Hospital's needs adequately. Access ramps will be provided at entry/exit point to/from the site.

In the circumstances of this application, the magnitude of pedestrian demand does not warrant particular pedestrian treatment. As redevelopment of the Hospital Campus evolves, there will be a need to evaluate the pedestrian demand at particular locations and examine warrants for facilities such as marked foot crossings and traffic lights.

A pedestrian bridge connecting the IHRI to the existing Cancer Services site on the southern side of Campbell Street is also proposed in the future but does not form part of this application.

Bus stops in the vicinity of the IHRI site provide public transport facilities to and from the site.

A construction plan for the proposal is yet to be developed. At the appropriate stage, a construction management plan will need to be prepared including planning of suitable arrangements for passing pedestrians and cyclists to maintain accessibility and safety. It is premature to prepare such plan at this "in-principle approval" stage

3.4 Traffic Impact of the Development

The vehicular access to the site will be via a one-way access road off Goulburn and Forbes Streets at north of Campbell Street along northern boundary of the existing HSB and the proposed IHRI site.

This access road will be controlled by a boom gate and will mainly be used for truck access for loading and unloading at the back of the proposed development. All movements to and from the site will be in forward direction from Forbes Street and exit onto Goulburn Street

The traffic generation attributable to the development will be some 45 vehicles per hour (during peak periods) has been estimated for the proposed facility – considering that not all staff arrive or depart at the same time; say 60% of additional 95 car drivers less 15 vehicles associated with the existing uses of the site child care and Drug and Alcohol Unit.

Considering this level of vehicular traffic (i.e. about less than 1 car per minute) and the fact that many of the carpark traffic generation will already be on the road network, the road system will continue to operate at a good level of service.

Further parking management measures are expected to be introduced into the hospital precinct over time as part of the sustainable transport strategy for the entire Hospital.

Vehicular access and pick-up and set-down facilities are included to provide amenity for the site's users. A pick up and drop off area along Campbell Street (north side) provides kiss and ride facility for users of IHRI and its adjacent HSB site.

Directional signs should be placed as part of the concept master plan to improve the accessibility for the site and the Hospital and to encourage a higher use of the Hospital's Entrance at designated location.

3.5 Director General's Requirements

The Director-General's Requirements for the proposed development have addressed by the 2007 Concept Approval for the Liverpool Hospital Precinct, and have been as effectively incorporated into the proposed component as addressed in this report.

This section highlights those requirements and provides further information as relevant. The relevant Director-General's Requirements include:

5. **Transport and Accessibility**, including a *Transport & Accessibility Impact Assessment prepared in accordance with the RTA's Guide to Traffic Generating Developments and making reference to the Metropolitan Transport Plan – Connecting the City of Cities, NSW Planning Guidelines for Walking and Cycling and the Integrating Land Use and Transport policy package, considering the following issues:*
 - **sustainable transport:**
 - *demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets;*
 - *detail the existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased public transport and pedestrian and cycle access;*
 - *identify measures to mitigate potential impacts for pedestrians and cyclists during the construction stage of the project;*
 - *describe the measures to be implemented to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan; and*

- provide an assessment of the implications of the proposed development for non-car travel modes (including public transport, walking and cycling);
- traffic:
- an estimate of the trips generated by the proposed development and including daily and peak traffic movements likely to be generated by the project;
- the impact on the safety and capacity of the surrounding road network and nearby intersections; and
- the need and provision of upgrade, road improvement works, or funding (if required).

6. Car Parking, Access and Loading Dock arrangements, including minimal levels of on-site car parking for the proposed development having regard to the high public transport accessibility of the site, local planning controls and RTA guidelines (note: the Department supports reduced parking provision, if adequate public transport is available to access the site).

The Liverpool Hospital as part of its redevelopment program has initiated appropriate measures to improve active and public transport among the Hospital's users and also reducing car parking dependency. The Traffic and Parking Report (Transport and Planning Associates, 2006) identifies a number of measures to promote sustainable transport among the Hospital's users. These include:

- Promotion of car pooling among staff and visitors
- Improving access and links to the railway and bus stations
- Provides financial incentives to staff
- Preparation of Transport Plan for the Hospital Campus

The report also discusses *Metropolitan Transport Plan – Connecting the City of Cities*, *NSW Planning Guidelines for Walking and Cycling* and the Council's relevant policies. All traffic and parking requirements for the Hospital campus (including IHRI site) are also fully assessed and detailed as part of the Hospital's redevelopment master plan (Transport and Planning Associates, 2006).

Accordingly, all the above has been applied as part of the IHRI proposal considering its location within the Liverpool Hospital campus. These are supported by the following points:

- Pedestrian and bicycles networks are already established for the area including the development site.
- Pedestrian and bicycle links are provided to bus stops and train stations in the vicinity of the site.
- The Transport Access Guide for Liverpool Hospital (including IHRI site) provides a clear and user friendly plan for all the users of the Hospital including IHRI (please see Appendix A).
- A pick up and drop off area along Campbell Street (north side) provides kiss and ride facility for users of IHRI and its adjacent HSB site.
- A pedestrian bridge connecting the IHRI to the existing Cancer Services site on the southern side of Campbell Street is also proposed in the future but does not form part of this application.

- Access ramps are included as part of the IHRI proposal at entry/exit point to/from the site.
- A Traffic Management Plan (TMP) will be developed prior to the construction of the site and will address appropriate measures.
- Traffic generation for the site has been included as part of the master plan report while this report also details its minimal impact on the road network (Section 3.4).
- Liverpool Hospital is planning the development of a large new multideck carpark on the eastern side of the hospital campus programmed for completion in August 2011 to align with the large hospital development currently underway.
- This new multideck carpark was included in the Part 3A Concept Plan and the carparking needs for the complete site were considered at that time inclusive of the proposed IHRI facility. The proposed IHRI development is targeted for completion in August 2012 *by which time the new multideck will be operational.*
- Liverpool Hospital will be providing a number of local short term parking spaces for the small number of IHRI visitors in an existing parking area immediately adjacent the IHRI development (to the rear of the Health Services Building) and the necessary parking for research staff will be arranged to be accommodated within the existing multi-deck carpark accessed from Campbell Street immediately opposite the new development site. Once the large new multi-deck carpark is operational, the management of staff parking will be reorganized across the entire campus.
- The provision of additional car parking for commuters adjacent to Warwick Farm Train Station is also underway as part of NSW Government transport initiatives.
- It is ensured that all vehicle movements associated with site including deliveries and services vehicles will take place in safe and efficient manner.

4 CONCLUSION

The parking demand for the proposed IHRI development will be provided as part of the Hospital's Redevelopment Master Plan.

It has been estimated that an additional 45 vehicles during a peak hour could be generated by the proposed facility. This level of vehicular traffic would have a minimal impact on the road system.

The access routes to the site will be via Forbes and Campbell Streets while Hume Highway, Cumberland Highway and Elizabeth Drive will continue to provide a direct approach routes to the site. These roads have a satisfactory level of service and will continue to have a similar level of service once the development is completed.

The level of additional vehicular traffic will be low and the road network will continue to have good operational characteristics.

The access layout should be in accordance with the RTA's Guidelines, the Australian Standard and Council's Code.

The proposed plan are aimed to improve the safety and efficiency for vehicular traffic, pedestrian and bicycle movements within the Study Area.

Appendix A



Liverpool Hospital

Liverpool Hospital

Transport Access Guide

Accessing our facilities



Liverpool Hospital is a 5 to 10 minute walk from Liverpool Train Station or Bus Interchange and a 15 to 20 minute walk from Warwick Farm Train Station.



Trains to Liverpool Station run approximately every 10 to 20 minutes on the South and Inner West lines (9am to 5pm weekdays) and approximately every 30 minutes on the Bankstown line. Trains also run 2 to 3 times per day on the Cumberland line (weekdays only).



Good cycling options include the Parramatta to Liverpool RailTrail or shared paths adjacent to the Parramatta to Liverpool T-Way. Bicycle maps are available from the RTA on 13 17 82.



Bicycle Parking is available in the Hospital's Multi Storey carpark (entrance off Campbell St), the underground carpark (entrance off Elizabeth St) and the Hugh Jardine parking compound (on Eastern Campus).



View the map over leaf for details of where services operate.



The following bus services stop at **Liverpool Hospital**:

- Buses 841, 842, 844, 845, 864 & 867 (operating approximately every 30 minutes)
- Buses 843, 847, 849, 850, 851, 852, 853, 854, 855 & 866 (operating approximately every 60 minutes between 9am and 5pm)

These services run more frequently during peak times on weekdays.

The following bus services only stop at the **Liverpool Bus Interchange**:

- T80, 800, 835, 836, 900, 901, 902, 903 & 904

From the Interchange you can get the 849 bus service to the Hospital or walk the short distance.



Wheelchair accessible buses operate on all T80 services and some other routes. Liverpool Train Station is wheelchair accessible. Warwick Farm Train Station is wheelchair accessible on the west side only. Call the Transport Infoline on 13 15 00 for further details.

Limited mobility parking is available at the hospital for people displaying their current Mobility Parking Scheme card in their car. Carpark fees apply.



Liverpool Hospital is easy to get to by walking, cycling and public transport.

Short walks to the bus stop or train station contribute to the 30 minutes of daily physical activity recommended for good health.

Our volunteer Hospital Guides can help you find your way around the hospital.

Liverpool Hospital
Elizabeth St,
Liverpool
Phone:
9828 3000



SYDNEY SOUTH WEST
AREA HEALTH SERVICE
NSW HEALTH



Getting To Liverpool Hospital

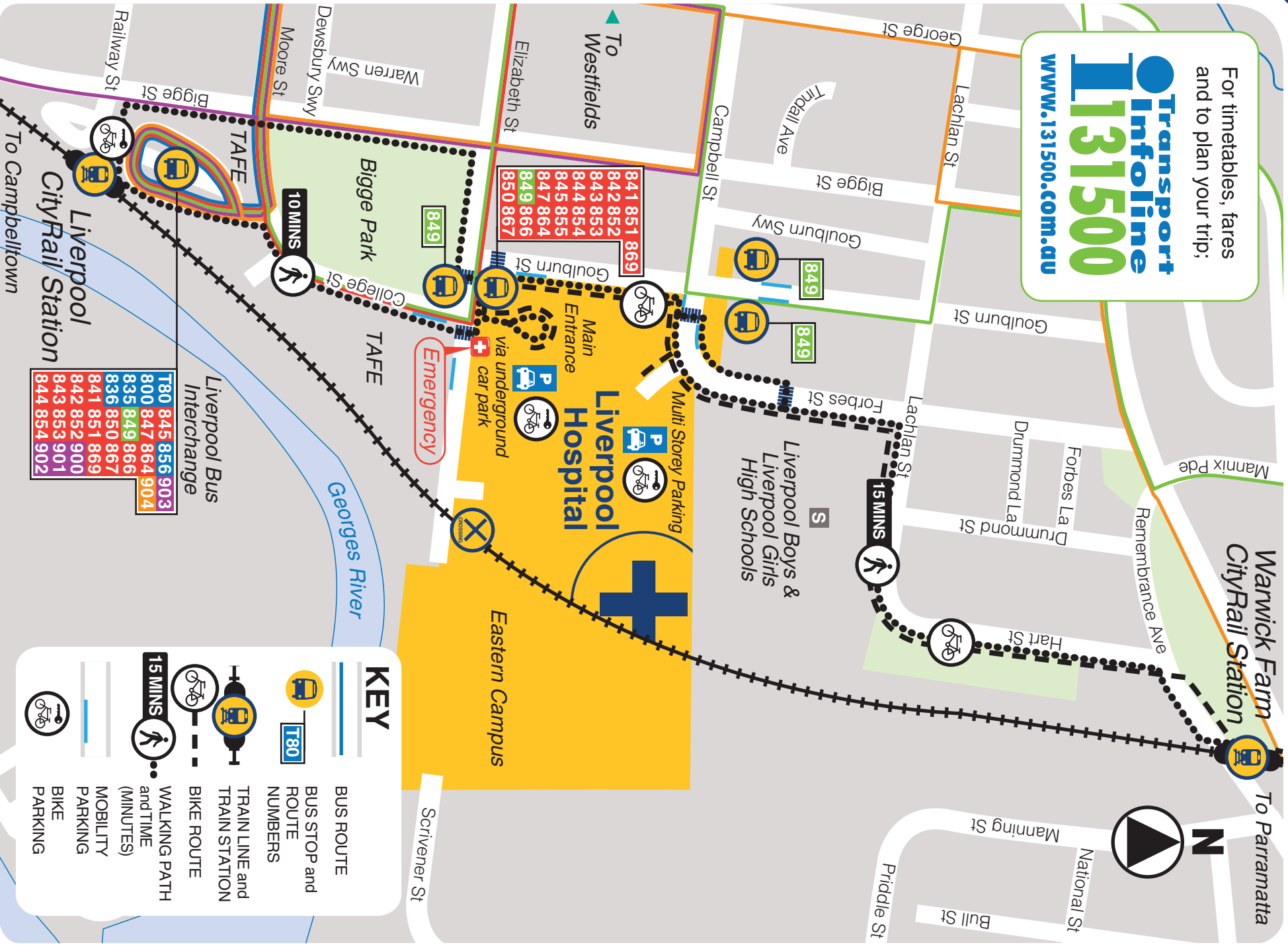
Liverpool Hospital

Transport Access Guide



For timetables, fares and to plan your trip;

Transport
InfoLine
131500
www.131500.com.au



841 851 869
842 852
843 853
844 854
845 855
847 864
849 866
850 867

Liverpool Bus Interchange

800 847 864 904
835 849 866
836 850 867
841 851 869
842 852 900
843 853 901
844 854 902

KEY

- BUS ROUTE
- BUS STOP and TRAIN STATION
- WALKING PATH and TIME (MINUTES)
- BIKE ROUTE
- T80 BUS STOP and ROUTE NUMBERS
- BIKE PARKING