TRAFFIC & ACCESSIBILITY IMPACT ASSESSMENT

Wentworthville Northside West Clinic Extension (SSD-17899480)
23-27 Lytton Street, Wentworthville

Reference: 15.061r03v05
Date: December 2021

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DOCUMENT VERIFICATION

Job Number	15.061			
Project	Wentworthville Northside West Clinic Extension			
Address	23-27 Lytton Street, Wentworthville			
SSD No.	17899480			
Client	Ramsay Health Care			
Revision	Date	Prepared By	Checked By	Signed
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Appendix A: Photographic Record

Appendix B: Site Traffic Surveys

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Appendix D: Swept Path Analysis

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1. INTRODUCTION

TRAFFIX has been commissioned by the Ramsay Health Care to undertake a Traffic & Accessibility Impact Assessment in support of a State Significant Development Application (SSD-17899480) for the proposed extension of the Wentworthville Northside West Clinic at 23-27 Lytton Street, Wentworthville. As part of the State Significant Development Application process, the Secretary's Environmental Assessment Requirements (SEARs) have been issued for the proposal.

This Transport and Accessibility Impact Assessment has been prepared to assess the traffic and access impacts of the proposal and respond to the relevant SEARs and the findings of our investigations and should be read in the context of the Environmental Impact Statement. The proposal is subject to assessment with reference to the Secretary's Environmental Assessment Requirements (SEARs) and takes into consideration the planning controls for the Cumberland City Council Local Government Area.

The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Outlines the SEARs requirements
- Section 4: Discusses strategic context
- Section 5: Documents existing traffic conditions
- Section 6: Describes the alternative transport available
- Section 7: Describes the proposed development
- Section 8: Assesses the parking requirements
- Section 9: Assesses traffic impacts
- Section 10: Discusses Sustainable travel plans
- Section 11: Outlines preliminary construction traffic management measures
- Section 12: Discusses access and internal design aspects
- Section 13: Presents the overall study conclusions

2. SEARS RESPONSES

A response to each relevant requirement of the Secretary's Environmental Assessment Requirements (SEARs) is provided below, including references to sections of this report where applicable. Reference should also be made to the SEARs and the below matters relate specifically to Item 5:

SEARS Requirements	Reference
5. Transport and Accessibility Provide a transport and accessibility impact assessment, which includes, but is not limited to the following:	
Analysis of the existing transport network including: o Road hierarchy. o Pedestrian, cycle and public transport infrastructure. o Details of current daily and peak hour vehicle movements based on traffic surveys and / or existing traffic studies relevant to the locality. o Existing performance levels of nearby intersections utilising appropriate traffic modelling methods (such as SIDRA network modelling).	**Refer to Section 5, 6 and 9**
Details of the proposed development, including: o A map of the proposed access which identifies public roads, bus routes, footpaths and cycleways. o Pedestrian site access and vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes. o Car and motorcycle parking, bicycle parking and end-of-trip facilities. o pedestrian, public transport or road infrastructure improvements or safety measures.	**Refer to Sections 5, 8 and 9**
Analysis of the impacts due to the operation of the proposed development, including: o Proposed modal split for all users of the development including vehicle, pedestrian, bicycle riders, public transport and other sustainable travel modes. o Estimated total daily and peak hour vehicular trip generation. o A clear explanation and justification of the: ▪ Assumed growth rate applied. ▪ Volume and distribution of proposed trips to be generated. ▪ Type and frequency of design vehicles accessing the site. o Details of performance of nearby intersections with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling). o Cumulative traffic impacts from any surrounding approved development(s). o Adequacy of pedestrian, bicycle and public transport infrastructure and operations to accommodate the development. o Adequacy of car and motorcycle parking and bicycle parking provisions when assessed against the relevant car / bicycle parking codes and standards. o Adequacy of the existing / proposed pedestrian infrastructure to enable convenient and safe access to and from the site for all users.	**Refer to Section 9**

SEARS Requirements	Reference
Measures to ameliorate any adverse traffic and transport impacts due to the development based on the above analysis, including: o Travel demand management programs to increase sustainable transport (such as a Green Travel Plan). o Arrangements for the Travel Coordinator roles. o Governance arrangements or relationships with state and local government transport providers to update roads safety. o Infrastructure improvements or protection measures, including details of timing and method of delivery.	**Refer to Section 10**
Analysis of the impacts of the traffic generated during construction of the proposed development, including: o Construction vehicle routes, types and volumes. o Construction program (duration and milestones). o On-site car parking and access arrangements for construction, emergency and construction worker vehicles. o Cumulative impacts associated with other construction activities in the locality (if any). o Road safety at identified intersections near the site due to conflicts between construction vehicles and existing traffic in the locality. o Measures to mitigate impacts, including to ensure the safety of pedestrian and cyclists during construction.	**Refer to Sections 11**
A preliminary Construction Traffic and Pedestrian Management Plan	**Refer to Sections 11**
<u>Relevant Policies and Guidelines:</u> o Guide to Traffic Generating Developments (Roads and Maritime Services, 2002). o EIS Guidelines – Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996). o Cycling Aspects of Austroads Guides. o NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004). o Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments (Austroads, 2020). o Australian Standard 2890.3 Parking facilities, Part 3: Bicycle parking (AS 2890.3).	**The relevant policies and guidelines are referenced as applicable throughout this assessment.**

3. LOCATION AND SITE

The subject site at 23-27 Lytton Street, Wentworthville is located on the western side of Lytton Street and lies within the sector bounded by the main western rail corridor to the north, Cumberland Highway to the west and the Great Western Highway to the south. It is also south-east of Wentworthville Railway Station (approximately 400 metres) and approximately 29 kilometres west of the Sydney Central Business District.

The site has a total area of approximately 6,500m^2 with an eastern frontage of approximately 107 metres to Lytton Street, a northern boundary to an adjacent residential property and a southern boundary to a recreation reserve. The western boundary at the rear of the site varies in alignment and adjoins an open space corridor.

There are four (4) driveway crossings serving the existing facility, including:

- At the southern boundary; a 6 metre wide two-way driveway to southern car park
- 30 metres north of southern boundary; a 5.5 metre wide driveway to loading dock
- 80 metres north of southern boundary; a 6 metre wide entry driveway to northern car park
- 94 metres north of southern boundary; a 6 metre wide exit driveway to northern car park

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented in **Appendix A** which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

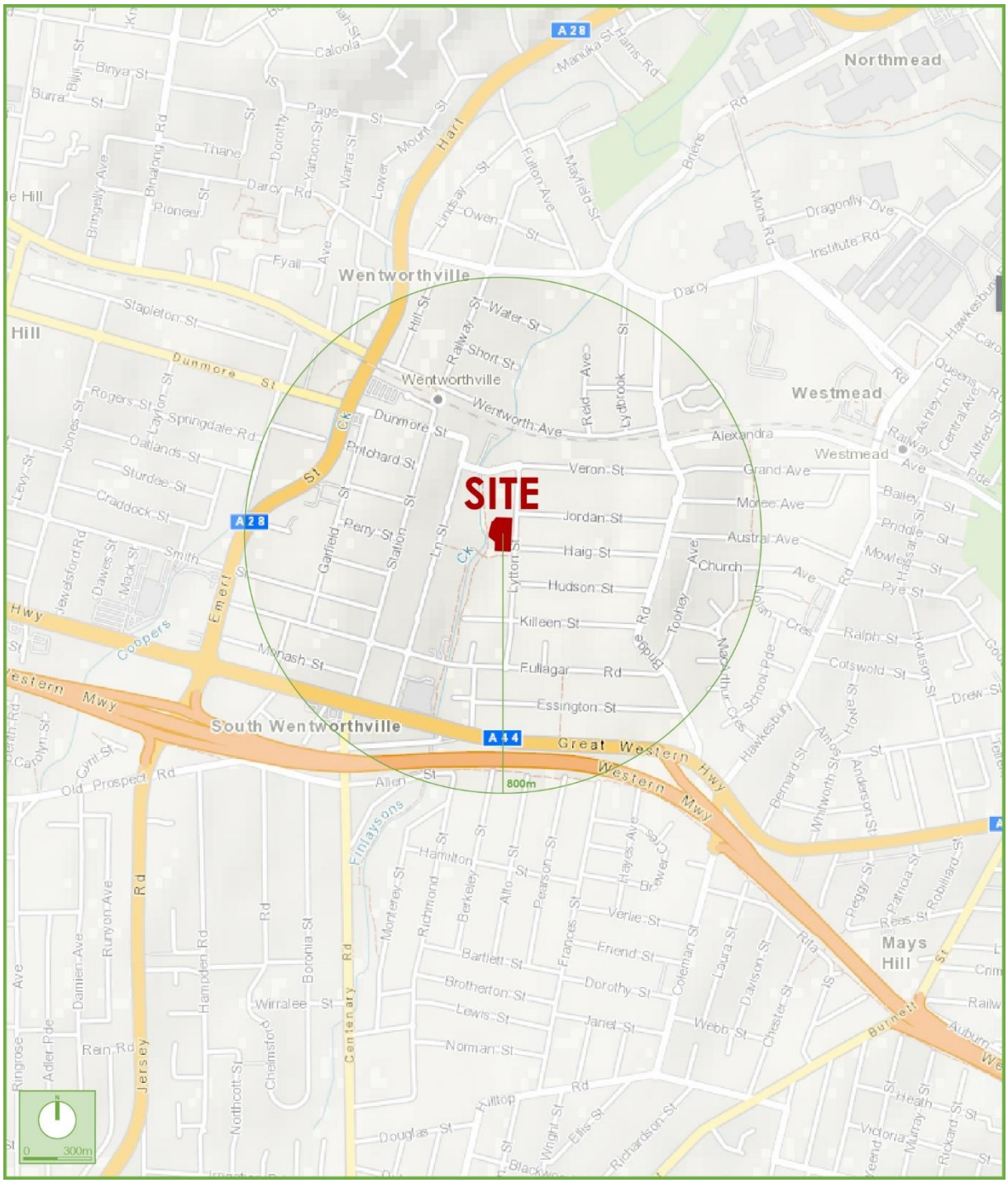


Figure 1: Location Plan

Figure 2: Site Plan

4. STRATEGIC CONTEXT

4.1 Local Transport Plans/Reports

4.1.1 Cumberland 2030 Local Strategic Planning Statement

This strategic document was prepared in collaboration with the Greater Sydney Commission provides a coordinated strategy to manage growth and development in the Cumberland area, with the main objectives summarised below:

- Communicate the land use planning vision for the region;
- Enhance and maintain shared values and characteristics;
- Guide and manage future growth;
- Implement the Greater Sydney Region Plan and Central City District Plan; and
- Determine additional strategic planning.

In particular, Wentworthville has been identified as a principal local centre that is currently undergoing renewal via the Wentworthville Centre Revitalisation Project, which aims to improve urban amenity/accessibility, enhance safety and expand retail/commercial premises to support the increasing population.

4.2 State Transport or Infrastructure Plans

4.2.1 The Greater Sydney Regional Plan, A metropolis of three cities

This transport strategy presents a vision and innovative actions for managing Greater Sydney's growth. It is prepared concurrently with *Future Transport 2056* and the State Infrastructure Strategy and aims to re-shape Greater Sydney as three unique and connected cities. These three cities are described as follows:

- The Western Parkland City.
- The Central River City.
- The Eastern Harbour City.

The transport initiatives within this Plan are sourced from the Future Transport Strategy 2056. The subject site falls within the bounds of the Central River City.

Generally, this strategy encourages a city supported by infrastructure with an indicator being access to metropolitan centres/clusters within 30 minutes and a collaborative city that would involve an increased use of public resources such as open spaces and community facilities.

4.2.2 Future Transport Strategy 2056

This transport strategy document presents a vision for the transport system that revolves around growing Sydney as a metropolis driven by major placed-based planning and investment around the new Western Sydney Airport and Badgerys Creek Aerotropolis. Planning for Greater Sydney will focus on the concept of three cities, that being the Western Parkland City, the Central River City and the Eastern Harbour City. The future transport strategy for Greater Sydney aims to enable most customers to travel to their nearest strategic centre within 30 minutes of their residence by public or active transport.

This aim will ultimately be achieved through a focus into an integrated network of corridors which will facilitate these movements. These corridors are summarised below:

- City-shaping corridors – major trunk road and public transport corridors providing higher speed and volume connections between our cities and centres that shape locational decisions of residents and businesses.
- City-serving corridors – higher density corridors within 10km of metropolitan centres providing high frequency access to metropolitan cities/centres with more frequent stopping patterns.
- Centre-serving corridors – local corridors that support buses, walking and cycling, to connect people with their nearest centre and transport interchange.

4.2.3 State Infrastructure Strategy 2018 – 2038 Building the Momentum

The State Infrastructure Strategy is a 20-year infrastructure plan for the NSW Government which provides recommendations to best grow the State's economy, enhance productivity and improve living standards.

Specifically, in relation to integrating land use and infrastructure planning the strategy identifies that aligning decisions about the provision and use of infrastructure with the Greater Sydney Commission's three cities vision and the 10 Regional Plans is critical to maximising the effectiveness, efficiency and endurance of both new and existing infrastructure. A summary of the key recommendations is presented below:

- Link integrated strategic land use and infrastructure planning.
- Support efficient development through shared-use corridors.
- Identify and protect corridors.
- Strengthen government planning processes.

In summary this document serves to support the three cities vision that is envisaged by the Future Transport Strategy 2056, looking beyond current projects and identifies policies and strategies that are required to provide infrastructure that will meet the demands of a growing population and economy.

4.3 Local Land Use Planning

4.3.1 Local Environmental Plans (LEPs)

The LEPs that are relevant to the site are as follows:

- Cumberland Local Environmental Plan 2021.

4.3.2 Development Control Plans (DCPs)

The applicable DCPs for the subject site are a s follows:

- Cumberland Development Control Plan 2021.

5. EXISTING TRAFFIC CONDITIONS

5.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3**, with the following roads of particular interest.

- Great Western Highway: an RMS highway (HW5) that traverses east-west between Broadway in the Sydney CBD in the east and Stewart Street in Bathurst in the west. Within the vicinity of the site, it is subject to 80km/h speed zoning and accommodates three (3) lanes of traffic in each direction. Great Western Highway does not permit on-street parking on either side of the road.
- Cumberland Highway: an RMS highway (HW13) that traverses north-south between the Pacific Highway (HW10) in the north and Hume Highway (HW2) Stewart Street in Bathurst in the south. Within the vicinity of the site, it is subject to 70km/h speed zoning and accommodates three (3) lanes of traffic in each direction. Cumberland Highway does not permit on-street parking on either side of the road.
- Bridge Road: a local collector road that traverses north-south between Darcy Road in the north and Great Western Highway (HW5) in the south. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Bridge Road permits unrestricted on-street parking along both sides of the road.
- Veron Street: a local collector road that traverses east-west between Bridge Road in the east and Lane Street in the west. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Veron Street permits unrestricted on-street parking along both sides of the road.

- Lytton Street: a local road that traverses north-south between Veron Street in the north and Fullagar Road in the south. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Lytton Street permits unrestricted on-street parking along both sides of the road.
- Fullagar Road: a local road that traverses east-west between Bridge Road in the east and a cul-de-sac after Garfield Street in the west. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Fullagar Road permits unrestricted on-street parking along both sides of the road.
- Jordan Street: a local road that traverses east-west between Bridge Road in the east and Lytton Street in the west. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Jordan Street permits unrestricted on-street parking along both sides of the road.
- Haig Street: a local road that traverses east-west between Bridge Road in the east and Lytton Street in the west. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Haig Street permits unrestricted on-street parking along both sides of the road.

It can be seen from **Figure 3** that the site is conveniently located with respect to the main arterial roads serving the regions, being Great Western Highway and Cumberland Highway, with connections via the various local and collector roads in the area. As such, traffic is able to be distributed onto the wider road network, minimising traffic impacts.

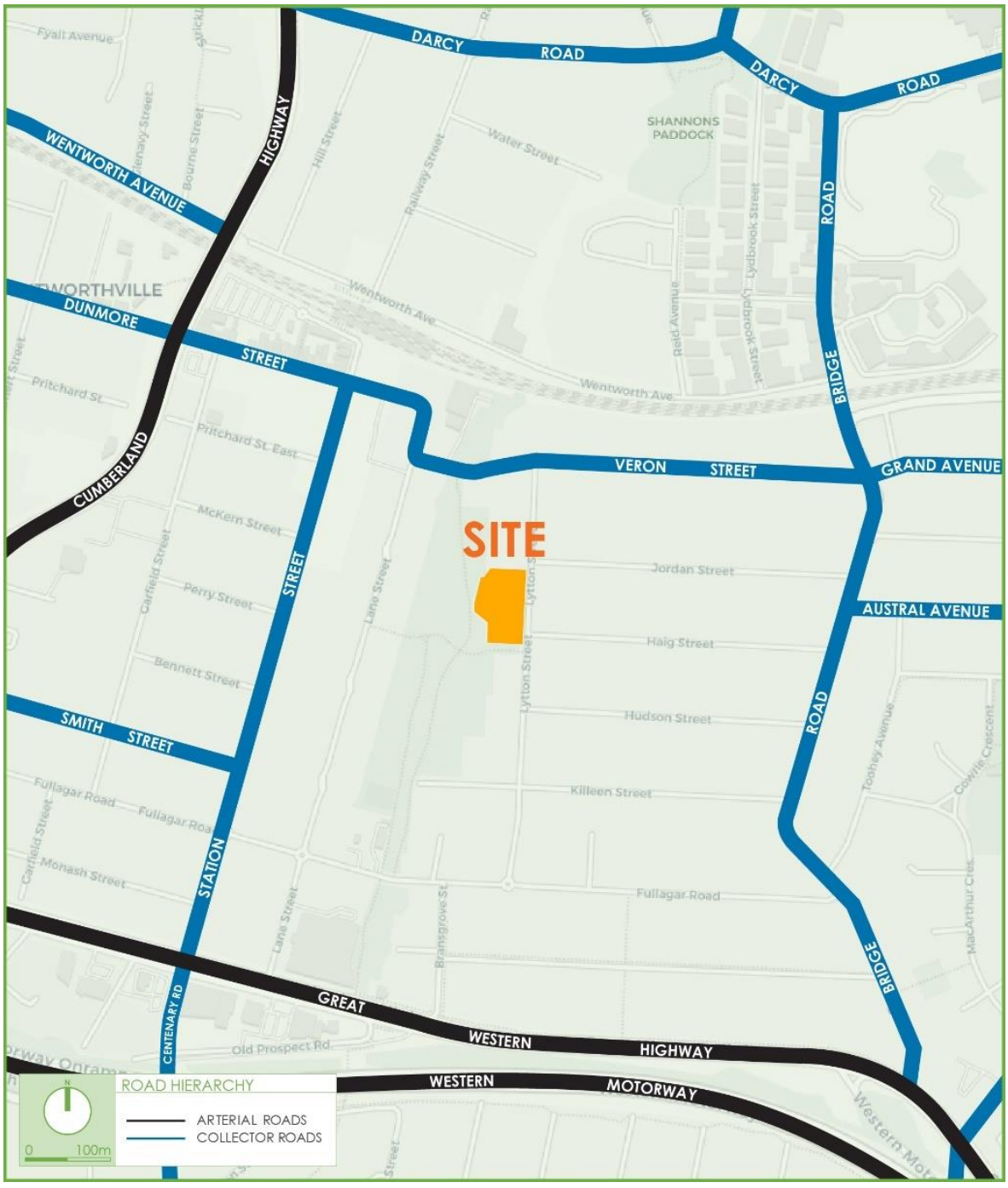


Figure 3: Road Hierarchy

5.2 Key Intersections

The key intersections in the vicinity of the site are shown below and provide an understanding of the existing road geometry and alignment.

5.2.1 Lytton Street and Veron Street Intersection

It can be seen from **Figure 4** that the intersection of Lytton Street and Veron Street is a three-legged roundabout intersection, with pedestrian refuge islands provided on all legs.

Figure 4: Intersection of Lytton Street and Veron Street

The main attributes of each approach outlined as follows

- Veron Street (east-west)
  - The eastern approach provides a single lane from which all movements can be made.
  - The western approach provides a single lane from which all movements can be made.
- Lytton Street (south)
  - The southern approach provides a single lane from which all movements can be made.

5.2.2 Lytton Street and Fullagar Road Intersection

It can be seen from **Figure 5** that the intersection of Lytton Street and Fullagar Road is a three-legged roundabout intersection, with pedestrian refuge islands provided on all legs.

Figure 5: Intersection of Lytton Street and Fullagar Road

The main attributes of each approach outlined as follows:

- Lytton Street (north)
  - The northern approach provides a single lane from which all movements can be made.
- Fullagar Street (east-west)
  - The eastern approach provides a single lane from which all movements can be made.
  - The western approach provides a single lane from which all movements can be made.

5.3 Existing Traffic Volumes

5.3.1 Peak Hour Volumes

In order to determine the peak hour vehicle movements within the vicinity of the site, traffic survey counts were undertaken at the following intersections:

- The intersection of Lytton Street and Veron Street; and
- The intersection of Lytton Street and Fullagar Road.

These surveys were performed during the network peak periods between 7:00am to 10:00am and 3:00pm to 6:00pm on Wednesday, 24 March 2021, with the results outlined in **Figure 6** to **Figure 9** below.

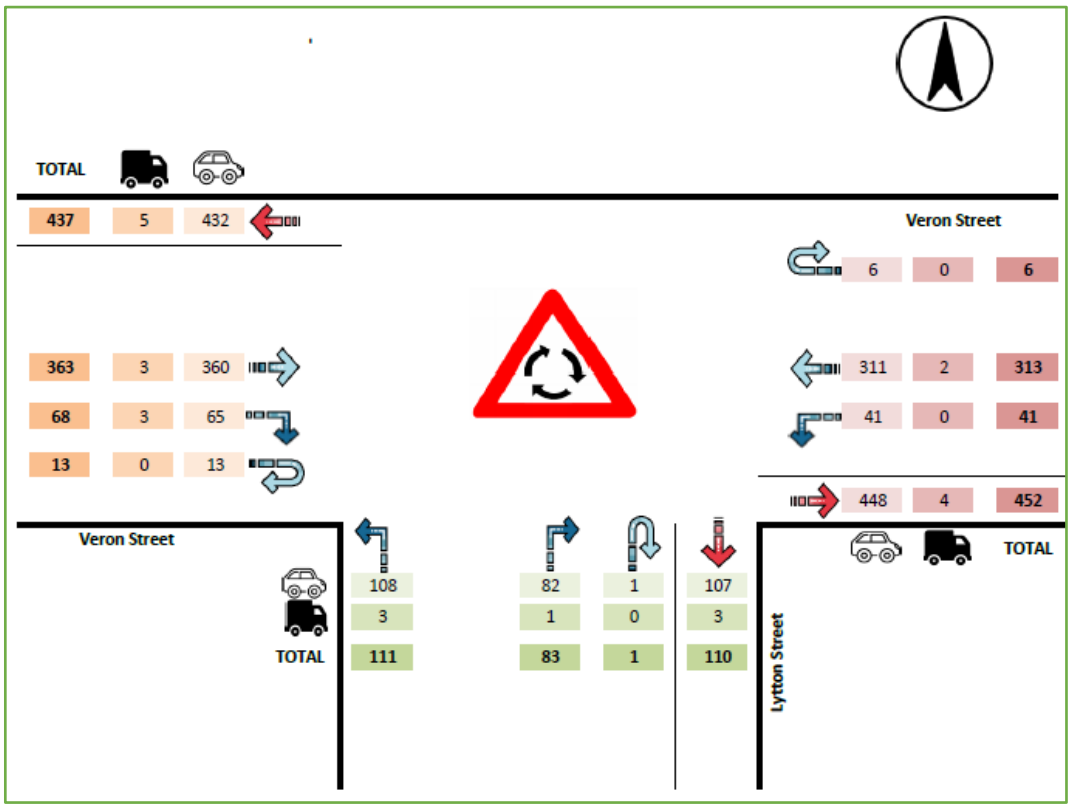


Figure 6: Lytton Street and Veron Street AM Traffic Counts

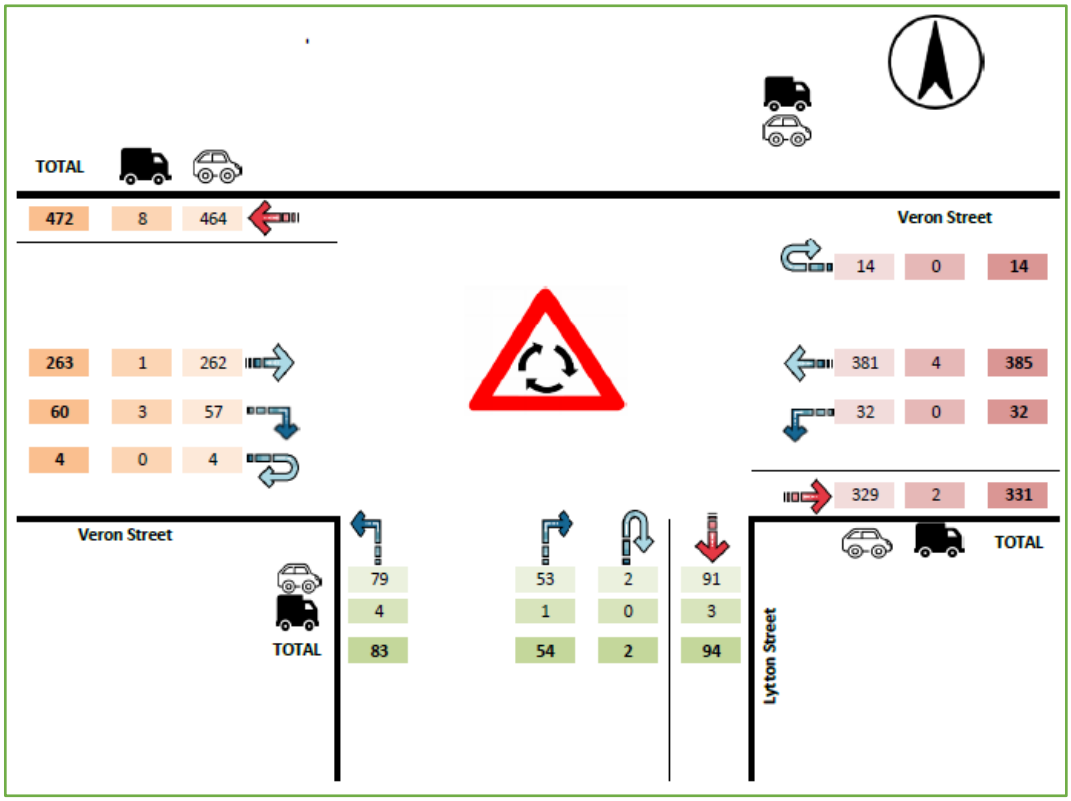


Figure 7: Lytton Street and Veron Street PM Traffic Counts

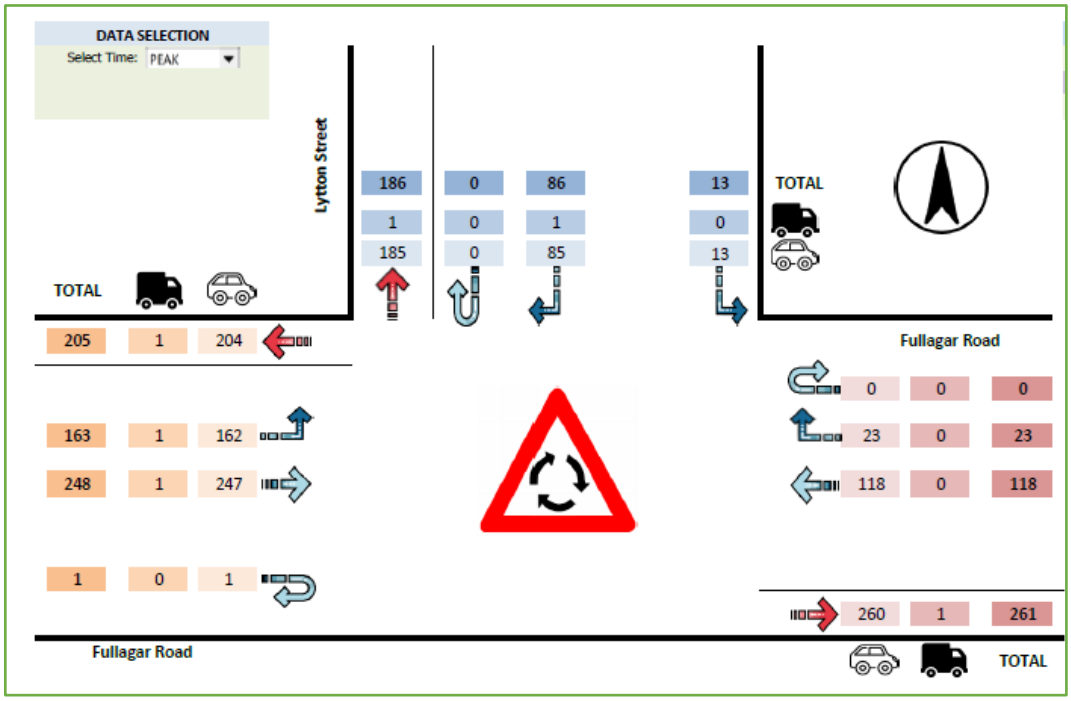


Figure 8: Lytton Street and Fullagar Road AM Traffic Counts

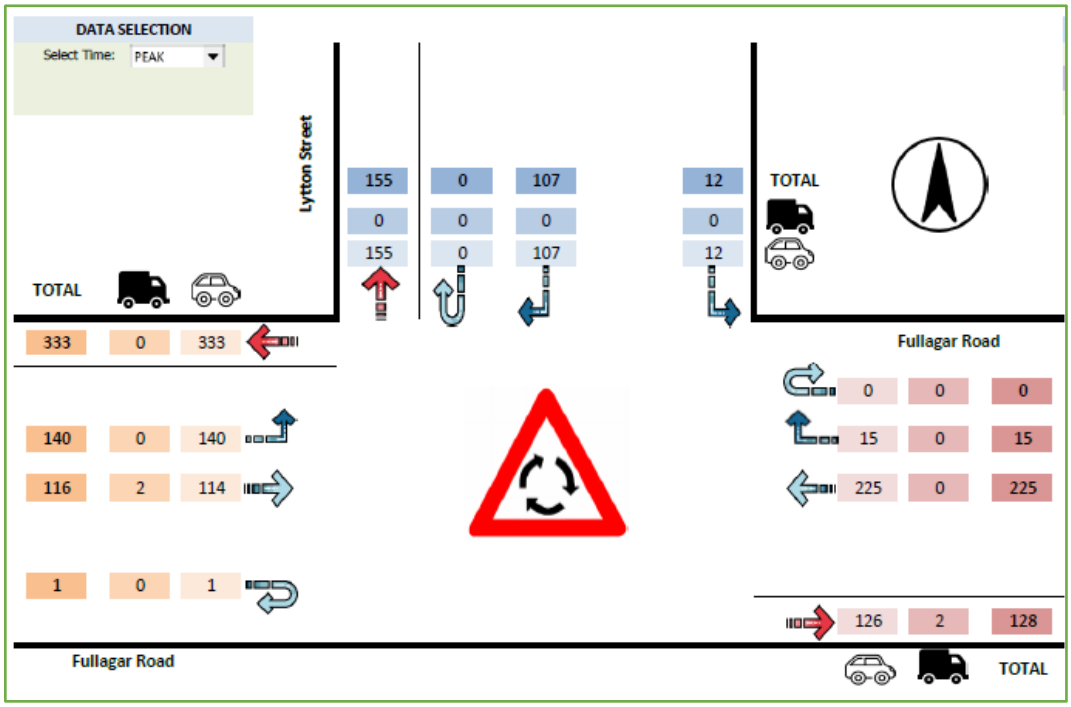


Figure 9: Lytton Street and Fullagar Road PM Traffic Counts

5.3.2 Daily Volumes

It should be noted that in accordance with *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management*, peak hour volumes are approximately 8 to 10% of the Average Annual Daily Traffic (AADT) for urban situations. Therefore, the following daily volumes (bi-directional) can be derived from the peak hour (greater of AM and PM volumes) surveys:

- Lytton Street, north of site: 3,050 to 3,813 vehicles/day
- Lytton Street, south of site: 2,850 to 3,563 vehicles/day

5.4 Existing Site Traffic Generation

The existing development on the site is the Wentworthville Northside West Clinic which is a 70-bed private hospital owned by Ramsay Health Care. In order to understand the existing site traffic generation, surveys were undertaken at the site accesses between 7:00am to 9:00am and 3:00pm to 6:00pm on Wednesday, 24 March 2021. The surveys recorded the generation at all access driveways on a typical weekday and the results are provided in **Appendix B**.

The surveys demonstrated the following volumes:

- 14 vehicles during the morning network peak period of 8:00am to 9:00am. This also coincides with the morning site peak generation; and
- 35 vehicles during the afternoon period of 3:00pm to 4:00pm. This coincides with the staff change over period and is outside of the afternoon network peak (5:00pm to 6:00pm).

The above generation is associated with an existing facility that accommodates 110 staff in total, with this staff rostered over a 24-hour period and across all days of the week.

6. ALTERNATIVE TRANSPORT

6.1 Existing Public Transport

6.1.1 Existing Bus Services

The existing bus services that operate in the locality are shown in **Figure 10**. Standard transport planning guidelines state that a development is advantageously located to benefit bus services if it is within 400 metres walking distance of a bus stop. It is evident that the site benefits from good bus services with 16 bus stops located within 400 metres of the site. These services provide connections to Parramatta, Blacktown, Constitution Hill, Westmead Hospital and Merrylands. These bus services and service frequencies are summarised in the **Table 1** below.

Table 1: Bus Routes and Service Frequencies

Bus No.	Bus Route	Service Frequency	
		AM Peak	PM Peak
705	Blacktown to Parramatta via Seven Hills	Every 30 minutes	Every 30 minutes
708	Constitution Hill to Parramatta via Pendle Hill	Between 9am-10am	Between 2pm-3pm
709	Constitution Hill to Wentworthville	Every 60 minutes	Every 60 minutes
818	Westmead Hospitals to Merrylands	Every 60 minutes	Every 60 minutes
824	Westmead Hospitals to Parramatta via Wentworthville	Every 30 minutes	Every 30 minutes

6.1.2 Existing Rail Services

In addition, the subject site is also located within 650 metres (8-minute walk) of the Wentworthville Railway Station. Wentworthville Railway Station services the T5 Richmond and T1 Richmond/Western Lines providing staff connections to major centres such as Central Station, Parramatta, Blacktown, Penrith, Lidcombe, and Liverpool. Services are relatively frequent, arriving/departing every 10-30 minutes during peak periods.

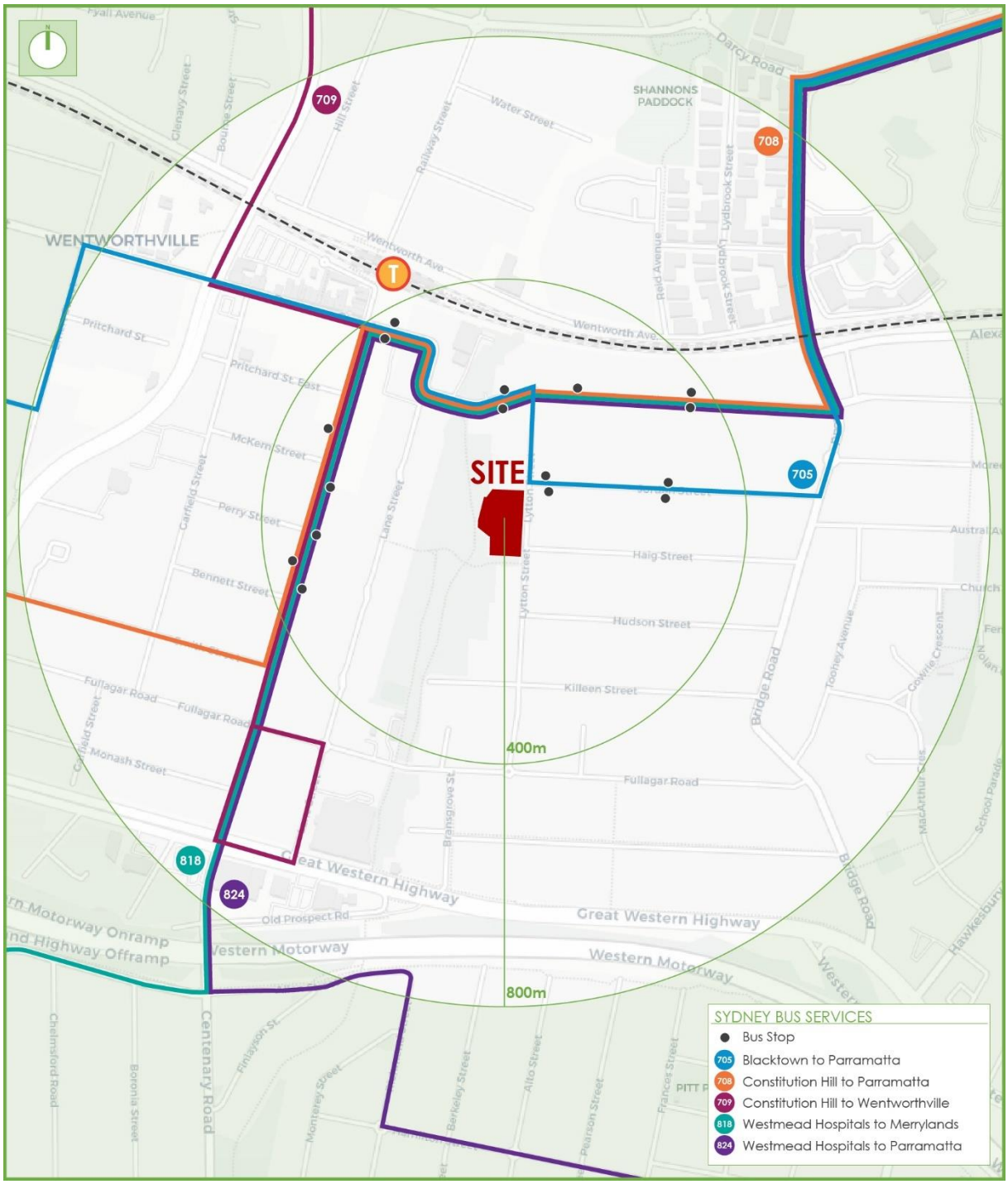


Figure 10: Existing Public Transport

6.2 Pedestrian and Cycling Facilities

The subject site is presently accessible by pedestrian and cycling facilities. The main pedestrian facilities within the locality include paved footpath footpaths along the western side of Lytton Street, both sides of Veron Street and both sides of Fullagar Road. Key intersections north and south of the site provide pedestrian refuge islands on each leg and traffic calming thresholds are provided at each intersection road with Lytton Street.

Bicycle facilities are also provided in the surrounding area, with several on-road and off-road bicycle routes available in the locality. These cycleways can be used in conjunction with one another in order to provide connections to the wider bicycle network throughout the Wentworthville region. Shared paths are provided adjacent to Finlaysons Creek that provide connections between Veron Street in the north, Lytton Street in the east, Lane Street in the west and the wider shard path network south of the Western Highway. Nearby cycleway paths are presented in **Figure 11** below:

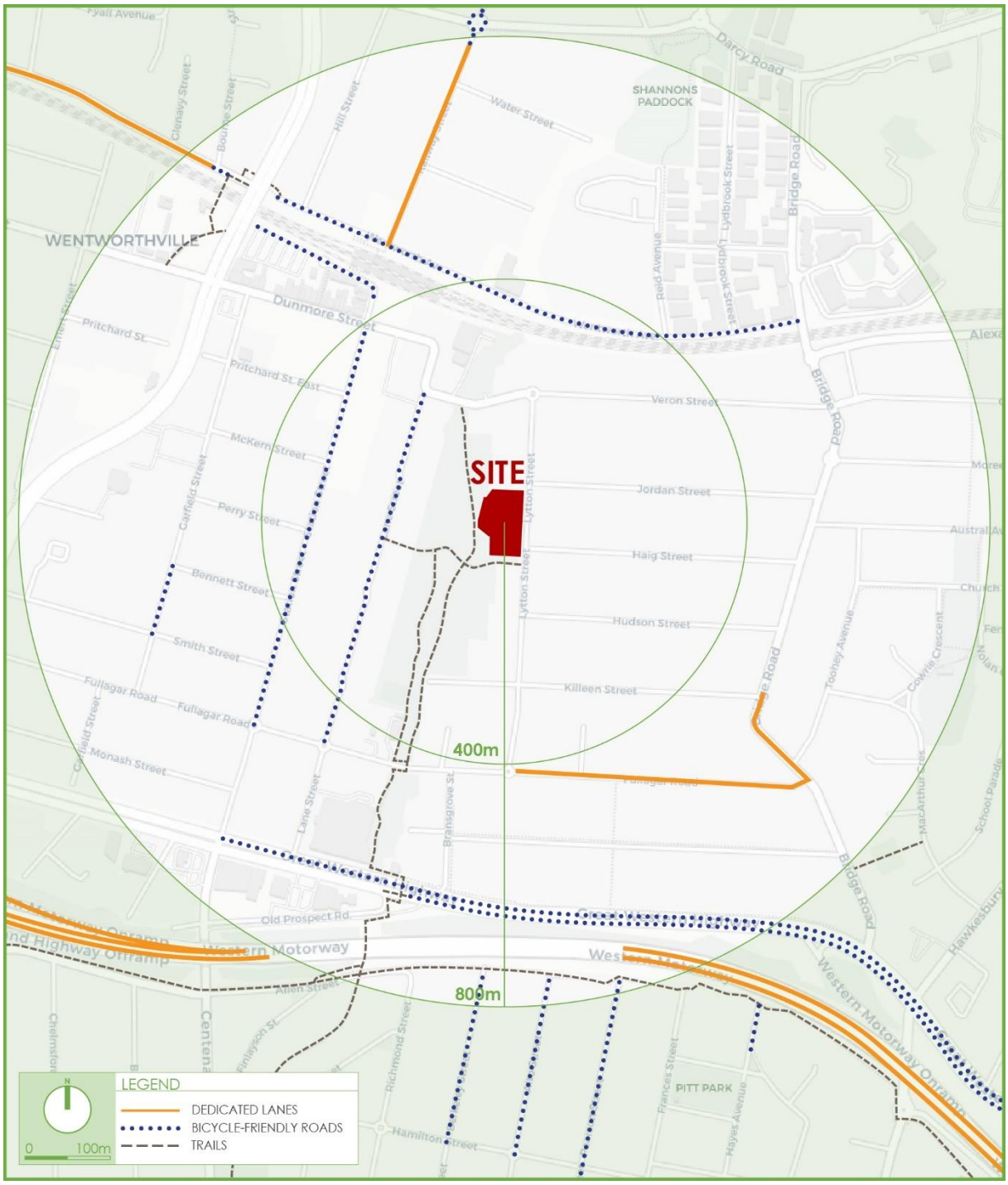


Figure 11: Existing Cycleways

7. DESCRIPTION OF PROPOSED DEVELOPMENT

A detailed description of the proposed development is provided in the EIS, prepared separately. In summary, the development for which approval is now sought comprises the construction a three-storey extension of the existing Wentworthville Northside West Clinic including:

- Removal of 40 existing inpatient rooms, resulting in a balance of 30 rooms;
- An additional 95 inpatient rooms including:
  - 41 rooms on Level 1;
  - 29 rooms on Level 2; and
  - 25 rooms on Level 3.
- An additional nine (9) consulting suites on Level 1;
- Construction of 33 car parking spaces within a new western carpark;
- Improvements to the southern car park providing a total of 13 car parking spaces;
- Retention of 31 at-grade parking spaces in the northern car park;
- Alterations and additions to the existing Stage 1 Building comprising:
  - A new gym, loading bay, and ancillary office on the Lower Ground Floor; and
  - A new lobby, art room and amenities on the Ground Level.
- Retention of existing driveway crossings to Lytton Street.

The parking and traffic impacts arising from the development are discussed in **Section 8** and **Section 9**, respectively. Reference should be made to the plans submitted separately to the Department of Planning, Industry and Environment which are presented at reduced scale in **Appendix C**.

8. PARKING REQUIREMENTS

8.1 Car Parking

The Cumberland Development Control Plan (2021) came into effect on 5 November 2021, and superseded the former Auburn DCP 2010, Holroyd DCP 2013 and Parramatta DCP 2011. Part G3 – Traffic, Parking, Transport and Access (vehicle) of the Cumberland DCP provides minimum car parking rates for a number of land uses. It is noted that the Cumberland DCP does not provide car parking rates for rehabilitation centres or private hospitals. The DCP states that *"where a parking rate has not been specified in the table, the Guide to Traffic Generating Developments shall be used to calculate the parking requirements for the proposed development. Alternatively, a parking study may be used to determine the parking, subject to prior approval by Council."*

Reference is made to the TfNSW (former RMS) Guide to Traffic Generating Developments which provides car parking rates for private hospitals and prescribes the following equation:

Peak Parking Accumulation = -19.56 + (0.85 ×Beds) + (0.27 ×Average Staff weekday shift)

Application of the above equation to 125 beds and 58 staff equates to 102 parking spaces. It is noted that the above TfNSW parking rate is considered a generic state-wide rate that does not consider local conditions or the implementation of any sustainable travel initiatives, such as a green travel plan. As such, reference is made to the former Holroyd Development Control Plan DCP (2013), which historically provided parking rates for hospitals (rehabilitation centre) within the Wentworthville area. The Holroyd DCP parking requirements are outlined in **Table 2** below:

Table 2: Holroyd DCP Minimum Car Parking Rate and Provisions

Type	Number[1]	Minimum Car Parking Rate	Minimum Requirements	Provided
Beds	125	1 space per 3 beds	42	77
Employee	58	1 space per 2 employees	29	
Resident Matron	0	1 space per resident matron	0	
		TOTAL	**71**	**77**

[1] Total numbers post Stage 2 works.

[2] Maximum number of staff on-site at all times.

It can be seen from Table 2 that the proposed development is required to provide a minimum of 71 car parking spaces, including 42 spaces for patients/visitors and 29 spaces for staff under the former DCP.

In response, the proposed development provides a total of 77 parking spaces, which is considered an acceptable provision noting the following:

i. The Cumberland DCP 2021 does not provide parking rates for hospitals or rehabilitation centres;

ii. The TfNSW Guide to Traffic Generating Development provides a 'generic' state-wide rate based on surveys undertaken in 1994, which do not take into account local conditions in the Wentworthville area.

iii. The former Holroyd DCP 2013 hospital parking rate is considered the most appropriate rate to adopt in the circumstance, noting it relates to the former Holroyd Council LGA, including the Wentworthville suburb.

iv. The proposal provides six (6) spaces above the minimum Holroyd DCP requirement;

v. The development is ideally located with regard to alternative modes of transport as discussed above, in relation to active and public transport. It is therefore recommended that a 'Green Travel Plan' be prepared in response to a suitable condition of consent. There is a unique opportunity to contribute to the increase in the number of trips by public transport which is considered an important relevant State target regarding the subject development. It is recommended that a 'Travel Access Guide' be prepared and provided to staff and visitors via appropriate communication channels. The plan would include community information such as local bus network maps and timetables, rail network maps and timetables, cycle route maps, location of critical services within walking distances, and taxi contact numbers. By providing this information to staff and visitors and ensuring that they are aware of the public transport options and frequencies available to them as well as the location of relevant services, a reduction in car-oriented trips to/from the site would be expected. The implementation of a 'Green Travel Plan' is therefore strongly supported and would encourage the use of alternative transport options and would assist in meeting the relevant targets set out by the NSW State Government.

vi. The site received a transit score of 63/100 providing a good level of public transport with many nearby available public transport options within the locality, including the Wentworthville Railway Station, thereby encouraging journeys to and from the subject site via more sustainable modes of transport, in line with NSW State Government objectives.

In summary, the subject development is considered supportable in the circumstances for the reasons outlined above with public transport and active travel providing the most important and efficient means of moving people.

8.2 Accessible Parking

The Building Code of Australia (BCA) requires Class 9a buildings to provide 1 accessible space for every 50 car parking spaces or part thereof. In response, the proposed development provides a total of four (4) accessible spaces, exceeding the minimum requirements of the BCA.

8.3 Bicycle Parking

The Cumberland Development Control Plan DCP (2021) does not provide bicycle parking rates for the hospitals developments. In the absence of a specific DCP bicycle parking rate, the bicycle parking provision for the hospital component has been assessed in accordance with the Cycling Aspects of Austroads Guides (2017) at the rates outlined below:

- 1 space per 15 hospital beds (Staff); and
- 1 space per 30 hospital beds (Visitor).

Application of the above rates to the proposed 125 inpatient rooms, results in a total requirement for 12 bicycle spaces, comprising eight (8) staff spaces and four (4) visitor spaces. A suitable condition requiring a total provision of 12 bicycle parking spaces could be included in any Notice of Determination.

8.4 Motorcycle Parking

The Cumberland Development Control Plan DCP (2021) does not provide motorcycle parking rates for any land uses, and as such, the proposed development does not provide any additional motorcycle parking spaces.

8.5 Loading and Servicing

The existing development currently provides a servicing area on the Lower Ground Floor which is accessed via the internal roadway off Lytton Street (driveway immediately north of Haig Street). The application does not propose significant amendments to the existing (approved) servicing arrangements which have been operating sufficiently for the existing development and shall continue to be sufficient for the proposed extension. Nevertheless, swept path analysis of a 6.4m long small rigid vehicle (SRV) entering and exiting the site is presented in **Appendix D**, demonstrating satisfactory movements.

8.6 Emergency Vehicle Access

This application does not propose amendments to the emergency vehicle access arrangements of the existing development which are considered to be sufficient for the existing and proposed development. Ambulance and Police typically enter via the Lytton Street driveway entrance which leads to the reception/waiting area (driveway opposite No. 20 Lytton Street). Swept path analysis of a 6.4m long SRV (comparable to size of NSW ambulance) entering and exiting the site is presented in **Appendix D**, demonstrating satisfactory movements.

9. TRAFFIC AND TRANSPORT IMPACTS

9.1 Existing Site Generation

As discussed in **Section 5.4**, the existing 70 bed facility generates a maximum of 14 vehicles per hour during the critical morning peak hour of 8:00am to 9:00am and 35 vehicles per hour during the afternoon peak hour of 3:00pm to 4:00pm. This equates to the following trip rates:

- 0.2 vehicle trips/bed/hour during the morning peak period; and
- 0.5 vehicle trips/bed/hour during the afternoon peak period.

Application of the above rates to the net increase of 55 beds (125 minus 70) results in the following:

- +11 vehicle trips between 8:00am and 9:00am; and
- +28 vehicle trips between 3:00pm and 4:00pm.

The above traffic volumes were distributed onto the surrounding network. It should be noted that the afternoon site peak period (3:00pm-4:00pm) does not coincide with evening network peak period (5:00pm-6:00pm), and therefore the following evening assessment is considered a highly conservative assessment and worse-case scenario.

The operator has confirmed that ambulance arrivals currently occur 1-2 times per month on average. Noting the low arrival frequency currently experienced, it is not expected that arrivals would significantly increase as a result of the proposed development.

The operator has confirmed that the number of service vehicles accessing the development will not increase as a result of the proposed development. As such, continual use of the existing and approved loading area is proposed.

9.2 Intersection Performance

9.2.1 Trip Distribution

In order to estimate the traffic distribution to and from the subject development, available and convenient traffic routes to and from nearby collector roads were assessed. In this regard, traffic has been distributed at the following percentage splits:

- 25% of vehicles arrive to the site from the western leg of the Lytton Street and Veron Street intersection, equating to:
  - +3 vehicles per hour during the morning peak period; and
  - +7 vehicles per hour during the afternoon peak period.
- 25% of vehicles arrive to the site from the eastern leg of the Lytton Street and Veron Street intersection, equating to:
  - +3 vehicles per hour during the morning peak period; and
  - +7 vehicles per hour during the afternoon peak period.
- 25% of vehicles arrive to the site from the western leg of the Lytton Street and Fullagar Road intersection, equating to:
  - +3 vehicles per hour during the morning peak period; and
  - +7 vehicles per hour during the afternoon peak period.
- 25% of vehicles arrive to the site from the eastern leg of the Lytton Street and Fullagar Road intersection, equating to:
  - +3 vehicles per hour during the morning peak period; and
  - +7 vehicles per hour during the afternoon peak period.

9.2.2 Scenarios

In order to assess the potential traffic impacts of a proposed development, the following scenarios were identified:

- 2021 Scenario
  - 2021 Base Case
  - 2021 Base Case + Development
- 2031 Future Scenario
  - 2031 Future Base Case
  - 2031 Future Base Case + Development

It is noted that the 2031 future scenario incorporated a two percent (2%) annual growth of traffic to the existing surveys, resulting in significant input flow (cumulative 22% increase) onto the surrounding road network. This is considered a conservative assumption, noting the land zoning located in the vicinity of the site.

9.2.3 SIDRA Intersection Analysis

The surveys were analysed using the SIDRA Intersection 9 computer program to determine their performance characteristics under existing traffic conditions. The SIDRA model produces a range of outputs, the most useful of which are the Degree of Saturation (DoS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LoS) criteria. These performance measures can be interpreted using the following explanations:

DoS the DoS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DoS approaches 1, it is usual to attempt to keep DoS to less than 0.9. When DoS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way / stop control, satisfactory intersection operation is generally indicated by a DoS of 0.8 or less.

AVD the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LoS this is a comparative measure which provides an indication of the operating performance of an intersection as shown in **Table 3**.

Table 3: Intersection Performance Indicators (RMS)

Level of Service (LoS)	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

A summary of the modelled results is provided in **Table 4** and **Table 5** for the 2021 and 2031 scenarios, respectively. Reference should also be made to the SIDRA outputs provided in **Appendix E** which provide detailed results for each movement.

Table 4: Intersection Performance for 2021 Scenario

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Intersection Delay	Level of Service
Lytton Street and Veron Street	Roundabout	2021 Base	AM	0.367	10.9	A
			PM	0.339	11.3	A
		2021 Base + Development	AM	0.370	10.9	A
			PM	0.349	11.3	A
Lytton Street and Fullagar Road	Roundabout	2021 Base	AM	0.296	9.8	A
			PM	0.216	8.9	A
		2021 Base + Development	AM	0.301	9.8	A
			PM	0.222	8.9	A

Table 5: Intersection Performance for 2031 Scenario

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Intersection Delay	Level of Service
Lytton Street and Veron Street	Roundabout	2031 Base	AM	0.460	11.7	A
			PM	0.421	12.2	A
		2031 Base + Development	AM	0.463	11.7	A
			PM	0.435	12.2	A
Lytton Street and Fullagar Road	Roundabout	2031 Base	AM	0.363	10.3	A
			PM	0.271	9.1	A
		2031 Base + Development	AM	0.370	10.3	A
			PM	0.278	9.1	A

9.2.4 2021 Base Case + Development Performance

It can be seen from **Table 4** that the Lytton Street and Veron Street intersection experiences no reduction in LoS or intersection delay as a result of the proposed development in both peak periods. This is largely due to the minor increase in traffic during both peak hour periods, noting the evening assessment is a worse-case scenario. The Lytton Street and Fullagar Road intersection also experiences no reduction in LoS or intersection delay during both peak periods. This is considered acceptable from a traffic planning perspective, with both intersections operating good with acceptable delays and spare capacity. Therefore, no external improvements are required to support the proposed development.

9.2.5 Sensitivity Testing 2031 Scenario

The '2031 Base Case' scenario reflects traffic conditions arising from 10 years of 'background' traffic growth at a rate of 2% per annum, which is a cumulative increase of 22% on all movements at all intersections. It is noted that the '2031 Base Case' scenario will arise even if the proposed development is not considered and does not occur. It was modelled to provide an indication of the traffic flows within proximity of the site in 10 years' time, which is a scenario that Council and TfNSW will be required to address in any event (without the development), in terms of road network performance and required associated infrastructure.

With this in mind, it can be seen from **Table 5** that both intersections continue to experience a LoS 'A', with the proposed development resulting in no reduction to the LoS, noting minor increases in the degree of saturation. Accordingly, both intersections in the 2031 scenario will

continue to operate good with acceptable delays and no external improvements required to support the proposed development.

9.3 Cumulative Impacts

Whilst TRAFFIX can appreciate the request to ensure nearby intersections continue to operate satisfactorily, the request for the applicant to undertake a cumulative traffic impact of approved developments in the surrounding locality is an abrogation of Council's and TfNSW's responsibilities to undertake these strategic planning functions. This obligation is considered unnecessary in the circumstances for the following reasons:

i. The '2031 Base Case' development provides an assessment that takes into consideration a level of background growth that results in a cumulative increase of 22% on all vehicle movements. This is well above the increase associated with nearby developments.

ii. It is noted that the Environmental Planning and Assessment Act 1979 and RMS Guidelines require a nexus to be established between a development's impacts and any infrastructure improvements that may be required. The subject development generates minor impacts on the road network and proportionally would contribute negligibly to external network improvements. Hence, any impacts associated with the suggested cumulative impact assessment would not, with respect, advance the assessment process and this aspect has been tested in previous Court proceedings.

   Even if this requirement were to be undertaken, though this is strongly opposed for the above reasons, it would require a detailed Peer Review of traffic impact assessment reports undertaken for all candidate sites and these would need to be specifically nominated by TfNSW or Council. These reports will all need to include trip generations, traffic generations, trip distributions and proposed improvements for the same time-periods. TfNSW would presumably also provide this same information to all developments that qualify for a 'cumulative assessment', noting that there appears to be no criteria that identifies the 'threshold level' of traffic generation or development intensity that triggers this requirement.

9.4 Development Person Trip Generation

The anticipated person trip generation for the proposed development have been assessed under the RTA Land Use Traffic Generation Data and Analysis 28 – Private Hospitals (1994). This guideline provides various formulas for calculating the anticipated person trip of the development. The following formula has been utilised to estimate the number of person trips associated with the proposal:

- Peak Person Trips = -13.34 + (0.72 x No. Beds) + (0.7 x Average number of staff per weekday day shift)

Application of the above rate to the existing and proposed development, results in the following anticipated peak person trips:

Existing Person Trips

- 58 person trips during the peak periods

Proposed Person Trips

- 117 person trips during the peak periods

Net Person Trips

- +59 person trips during the peak periods

9.5 Travel Modal Splits

In order to identify the existing travel model splits for persons working within the Wentworthville area, 2016 Census Data from the Australian Bureau of Statistics was scrutinised. It should be noted that the travel mode splits of patients is more difficult to determine as they will be drawn from the wider community. Nevertheless, all staff and visitors will be encouraged to utilise alternative and sustainable modes of transport to/from the site as appropriate. Staff travel mode splits have been summarised in **Table 6** below.

Table 6: Wentworthville Travel Modal Splits 2016

Travel Mode	Percentage
Train	9.1%
Bus	2.4%
Tram	0.0%
Ferry	0.0%
Car Driver	60.7%
Car Passenger	5.8%
Motorbike	0.3%
Bicycle	0.1%
Walk	4.2%
Other [1]	1.4%
Worked at Home	6.0%
Did Not Work	9.0%
Not Stated	1.0%

1 – Includes truck and taxi travel modes.

Application of these travel mode splits to the additional person trip generation of the proposed development, results in the person trips for alternative transport as summarised in **Table 7** below:

Table 7: Non-Car Person Trips during the Peak Period

Travel Mode	Percentage	No. of Persons
Train	9.1%	11
Bus	2.4%	3
Bicycle	0.1%	0
Walked Only	4.2%	5
TOTAL	**15.8%**	**19**

It can be seen from Table 7 that approximately 15.8% of trips within Wentworthville are completed using alternative means of travel, of which, a large percentage (73.7% of alternative trips) utilise public transport options.

A Workplace Travel Plan could be implemented for staff of the development to encourage the use of bicycle trips to and from the proposed development, with on-site bicycle parking and end of trip facilities proposed to be provided. It is anticipated that the above person trip generations can be used for infrastructure planning with regards to alternative modes of transportation during the development peak periods, such as extended bus services during

staff shift changes and improved bicycle facilities in the locality. Again, this matter would be revisited at a subsequent stage(s).

9.6 Pedestrian Safety and Connectivity

The Lytton Street frontage provides a pedestrian footpath that traverses the length of the street. Pedestrian footpaths and pedestrian refuges are provided at key pedestrian desire lines between the subject site and Wentworthville Railway Station. It is noted that the 705 bus service (Blacktown to Parramatta) operates along Jordan Street with two (2) bus stops located approximately 50 metres north-east of the site. The following pedestrian infrastructure is missing between the two (2) Jordan Street stops and the subject site:

- Pedestrian footpath between Lytton Street and bus stop on northern side.
- Kerb ramp on western side of Lytton Street providing connection to the southern side of Jordan Street.

The above missing links may already be scheduled on Council's capital works program and further discussions with Council will be required to determine the need for any infrastructure improvements in the vicinity of the site.

9.7 Adequacy of Public Transport

As discussed in **Section 6.1**, Veron Street and Jordan Street are serviced by numerous bus routes that typically operate Monday to Saturday and provide connections to Parramatta, Blacktown, Constitution Hill, Westmead Hospital and Merrylands. In addition, the Wentworthville Railway Station is located only 650 metres (8-minute walk) from the site. Whilst the 2016 Census Data suggests that an additional three (3) staff will utilise bus services and an additional 11 staff will utilise rail services, the implementation of a Workplace Travel Plan will likely increase this number. Overall, no concerns are raised over the additional bus or train trips, with existing services expected to easily accommodate the additional demand.

10. SUSTAINABLE TRAVEL PLAN

10.1 Green Travel Plan

A comprehensive Green Travel Plan (GTP) can be developed for patients and staff of the development. This GTP is intended to encourage the use of public transport and alternative modes of transportation, with the primary objectives outlined as follows:

- Promote the use of sustainable transport methods, thus reducing congestion and pollution in the local area;
- Promote the private hospital as an innovative and environmentally aware organisation; and
- Provide an active environment by encouraging healthier travel options for patients and staff, such as walking and cycling.

A comprehensive GTP is considered to be an important part of managing the transport demand generated by the development. These plans would provide relevant transport and access information, including:

- Local bus facilities and network maps;
- Local railway and light rail stations; and
- Local walking and cycling routes.

Accordingly, the preparation of a GTP is encouraged to promote alternative modes of transport, noting that these plans are generally more effective for new developments, prior to the establishment of regular travel habits. Whilst the main objective of these plans is to reduce private vehicle usage, it is acknowledged that the development proposes adequate on-site car parking facilities. Consequently, the travel targets in this case must be uniquely tailored to encourage alternative modes of transport and car-pool schemes.

In this regard, a formal carpool scheme for staff could be considered to reduce the impact of private vehicle usage. As an added incentive, on-site staff parking can be prioritised to vehicles transporting two (2) or more staff members to and from work. As such, the development of such a scheme would assist in actively reducing the reliance on private vehicle usage for staff of the development.

10.2 Travel Demand Management

It is envisaged that the reductions in car based travel modes to achieve any future nominated targets could be facilitated by the following travel demand management measures, which are additional to the restricted parking supply policy that has been adopted:

- A Transport Access Guide (TAG) is considered to be a useful travel tool to encourage travel by alternative means other than private cars. This TAG would illustrate the public transport routes operating in the locality and is envisaged to be distributed for visitors and staff of the development; and
- Car sharing schemes can be encouraged for staff of the development. Initiatives could be implemented for staff whereby on-site parking spaces are prioritised for vehicles with two (2) or more staff members.

10.3 Travel Coordinator

This GTP would require the nomination of an individual or a team to maintain and oversee its implementation for visitors and staff of the development. The Travel Plan Coordinator will monitor and review the GTP, with the main roles outlined as follows:

- A monitoring and review process for the GTP;
- Updating the GTP to reflect the site operation and any changes to the public transport network;
- Re-examine the proposed targets to refine and update the proposed modal-split for visitors and staff travelling to and from the development.
- Undertake intermittent review of the success measures outlined in the plan to determine whether alternative or supplementary measures are necessary.

This evaluation will provide a reliable overview of the areas in which the GTP is operating effectively, and which areas require more attention in order to achieve the proposed long-term targets of the GTP.

11. PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN

11.1 Context

A detailed Construction Pedestrian and Traffic Management Plan (CPTMP) will be prepared and submitted to Council, in response to any Conditions of Consent stipulated following approval of the SSD. The below commentary addresses the overall management principles for the site during the construction process. It is noted that the preparation of a detailed CTMP requires significant input from the appointed builder and would heavily rely upon the construction methodology, which at this point cannot be confirmed.

The proposed development would however adhere to the general CPTMP aspects as outlined below, which have been provided for information purposes.

11.2 Construction Program

A detailed construction program will be developed by the appointed builder prior to the commencement of any works. The schedule is expected to detail all scheduled start and finish dates of each stage of the construction process.

11.3 Times of Operation

Construction work hours are subject to the approval of the SSD. A detailed CPTMP would be prepared in response to a condition of consent once a builder is contracted, however following preliminary construction hours are proposed and summarised as follows:

- Monday to Friday 7:00am to 6:00pm;
- Saturday 8:00am to 1:00pm;
- Sunday Subject to Out of Hours Permit Approval; and
- Shift/Night Works Subject to Out of Hours Permit Approval.

11.4 Overview of Works

Whilst the SEARs require detailed information regarding peak hour and daily truck movements, limited information is able to be provided at this preliminary stage prior to a builder being

appointed. Nevertheless, the following stages are expected to be addressed by the comprehensive CPTMP report in response to a suitable condition of consent:

- Site establishment;
- Demolition;
- Excavation;
- Structure; and
- Fit out and Finishes.

11.5 Cumulative Construction Assessment

A review of Council's online DA tracker has revealed there are no major developments currently under assessment east of Lytton Street. In any case, the appointed builder would be encouraged to liaise with nearby developers to ensure critical construction activities (large concrete pours etc.) would not overlap to minimise construction impacts.

11.6 Construction Vehicle Volumes

Preliminary construction truck volumes have been outlined in **Table 8** below:

Table 8: Preliminary Truck Volumes

Phase	Vehicle Types	Movements Per Day (approx.)
Site Establishment & Preparatory Works	Small Rigid Vehicles Medium Rigid Vehicles	20 12
Construction	Small Rigid Vehicles Medium Rigid Vehicles Heavy Rigid Vehicles	10 10 20

Truck movements are expected to be scheduled outside of peak network periods, where practical. In addition, workers typically arrive and depart the site (6am-4pm) outside of the network peaks, further reducing impacts.

11.7 Road Safety at Key intersections

As outlined in the preliminary truck volumes above, there will be a maximum of 20 vehicle arrivals per day. This equates to approximately 1-2 truck arrivals every 30 minutes and this level of construction vehicle activity raises no concerns with regards to conflicts between

construction vehicles and the existing traffic on surrounding streets/intersections. With regards to construction vehicles entering or exiting the site/works zone, these movements would be appropriately managed through the implementation of Traffic Control Plans.

11.8 Vehicular Access

Construction vehicles are expected to access the site via the Lytton Street frontage/southern car park driveway. Preliminary truck routes have also been developed for potential works zones along the Lytton Street frontage. All trucks shall enter and exit the site and works zone/s in a forward direction and a TfNSW certified traffic controller will be located at the access gate to supervise vehicle movements to/from Lytton Street.

11.9 Trucks Arriving to Site

All trucks will be linked via CB radio and/or hands-free mobile and will only be called to the site when required and when there is capacity within the site to accommodate the truck. Truck movements will also be staged to mitigate the potential for on-street queuing. This management arrangement of loading / unloading / deliveries will help minimise on-street queuing and will result in minimal disruptions to the surrounding road network. As such, there is no requirement for a layover area under the proposal.

Furthermore, the construction activities of neighbouring developments are not expected to conflict with those of the proposed development. However, the contracted builder will liaise with any neighbouring developments under construction to stagger large deliveries and concrete pours, if required.

11.10 Truck Routes

The proposed truck routes will be refined with the appointed builder prior to issue of the comprehensive CPTMP. The final truck routes will be provided to all drivers prior to attending the site, making use of main roads where possible. The proposed truck routes are presented in **Figure 12**, with a copy of the routes provided to all drivers prior to attending the site.

11.10.1 Truck Routes to/From Site

The proposed truck routes to/from the site are summarised as follows:

- Routes to site from Great Western Highway (IN)
  1. Trucks will arrive on the Great Western Highway, eastbound/westbound
  2. Turn left/right onto Station Street, northbound
  3. Turn right onto Fullagar Road, eastbound
  4. Turn left onto Lytton Street, northbound
  5. Continue to site/works zone
- Routes from site towards Great Western Highway (OUT)
  1. Trucks will turn left out of site and depart onto Lytton Street, northbound
  2. Turn right onto Jordan Street, eastbound
  3. Turn right onto Bridge Road, southbound
  4. Turn left/right onto the Great Western Highway eastbound/westbound

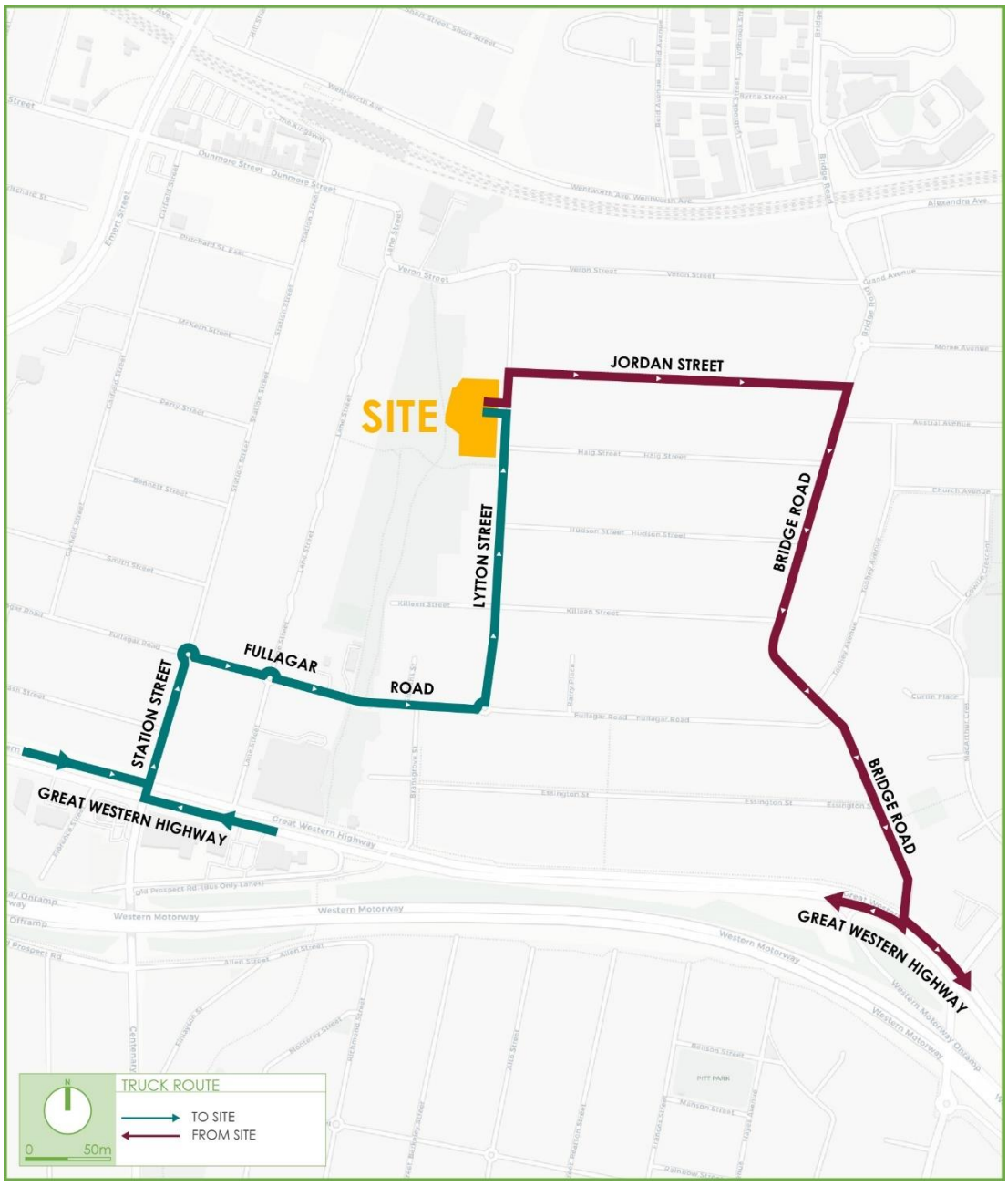


Figure 12: Proposed Truck Routes to/from the Site

11.11 Traffic Control Plans

Traffic Control Plans (TCP) will be prepared in accordance with the TfNSW Traffic Control at Worksites Manual and AS 1742.3 during all stage of construction, as necessary. The TCPs would generally relate to the following traffic related impacts:

- Vehicle access to/from the site;
- Footpath closures;
- Vehicle lane/cycle lane closures;
- Road closures and detours;
- Vehicle access to/from works zone/s; and
- Public domain works.

The development of these TCP will be undertaken in coordination with the appointed builder once the construction methodology is confirmed. The TCPs are included in the comprehensive CPTMP and would be approved by Council or the Private Certifying Authority.

11.12 Works Zone

A works zone may be required along the site's frontage during the construction process. This will be subject to approval of the Cumberland Local Traffic Committee. Details of any required Works Zone will be presented in a detailed CPTMP in response to a suitable condition of consent once a builder is appointed.

11.13 Pedestrian Control

Pedestrian access surrounding the site will be managed safely during all construction stages. It is expected that 'A Class' hoarding and associated access gate/s will be installed around the perimeter of the site to provide security to the site and pedestrians. Pedestrian footpaths will not be closed without appropriate pedestrian control measures, such as detours or traffic controller's assistance. No crane works will be permitted over pedestrian footpaths without footpath closures/detours or 'B Class' hoardings. Pedestrian access to neighbouring properties shall be maintained at all times and no building materials shall be placed, dumped or left on any Council road or footpath area. Footpaths are to remain in a safe condition for use by pedestrians. A TfNSW certified traffic controller will also be positioned at any vehicle access point to manage vehicle movements and to ensure pedestrian safety.

11.14 Worker Parking

Contractors will be encouraged to utilise public transport, noting the proximity of bus services and the Wentworthville Railway Station. Carpooling to and from site will be encouraged and

it is expected that limited off-street parking will be available. Any on-site parking would, however, be prioritised to construction employees who carpool, in order to minimise the impact on the surrounding streets. This would be further detailed subject to the detailed CPTMP when more information is available regarding employee numbers.

11.15 Bicycle Parking/End of Trip Facilities

Temporary bicycle parking and end of trip facilities are expected to be provided onsite with the site's compound. Details relating to these facilities will be detailed in the comprehensive CPTMP once a builder is appointed.

12. ACCESS AND INTERNAL DESIGN ASPECTS

12.1 Vehicular Access

The development proposes a total of 77 car parking spaces (User Class 3) access from Lytton Street, a local road. It will therefore require a Category 2 driveway in accordance with AS2890.1 (2004), being a combined entry and exit driveway with a width of 6.0-9.0 metres. In response, the development proposes to retain the existing arrangement which comprises the following:

- 13 spaces accessed via the 6 metre wide two-way driveway to southern car park;
- 64 spaces accessed via the 6 metre wide entry driveway to northern car park; and
- 64 spaces departing the site via the 6 metre wide exit driveway to northern car park.

These arrangements are considered superior to the minimum requirements of AS2890.1 (2004) and will continue to operate satisfactorily.

12.2 Servicing and Loading

As discussed above, the existing development currently provides a servicing area on the Lower Ground Floor which is accessed via the internal roadway off Lytton Street. The application does not propose to amend the existing servicing arrangements which have been operating sufficiently for the existing development and shall continue to be sufficient for the proposed extension.

12.3 Internal Design

The car park area complies with the requirements of AS2890.1 (2004) and AS2890.6 (2009), with the following characteristics noteworthy:

12.3.1 Parking Modules

- All car parking spaces have been designed in accordance with AS2890.1 (2004), User Class 3, being a minimum width of 2.6 metres and length of 5.4 metres.
- All accessible parking spaces are to be designed in accordance with AS2890.6 (2009), being a minimum width of 2.4 metres, length of 5.4 metres and provided an adjacent shared area with the same dimensions.

- All spaces located adjacent to obstructions of greater than 150mm in height are to be provided with an additional width of 300mm.
- Swept path analysis of critical vehicle movements are presented in **Appendix D**.

12.3.2 Clear Head Heights

- A minimum clear head height of 2.2 metres is to be provided for all trafficable areas within the basement car park, as required under AS2890.1 (2004).
- A minimum clear head height of 2.5 metres is to be provided above all accessible spaces, as required under AS2890.6 (2009).

12.3.3 Vehicle Ramps

- All internal ramps have been designed in accordance with AS2890.1 (2004).
- All internal ramps have been provided sag/summit transitions with a maximum gradient of 1 in 8 (12.5%), as required under AS2890.1 (2004).

12.3.4 Other Considerations

- All columns are to be located outside of the parking space design envelope, as required under AS2890.1 (2004), Figure 5.2.
- All dead-end aisles are provided with the required 1.0 metre aisle extension, as required under AS2890.1 (2004), Figure 2.3.
- All dead-end aisles have been provided with a turnaround bay.
- Appropriate visual sight splays have been provided at the access, as required under AS2890.1 (2004), Figure 3.3.

12.4 Summary

In summary, the internal configuration of the car park has been designed in accordance with AS2890.1 (2004) and AS2890.6 (2009). It is however envisaged that a standard condition of consent would be imposed requiring compliance with these standards and as such any minor amendments considered necessary (if any) can be dealt with prior to the release of any Construction Certificate.

13. CONCLUSIONS

The following is noteworthy:

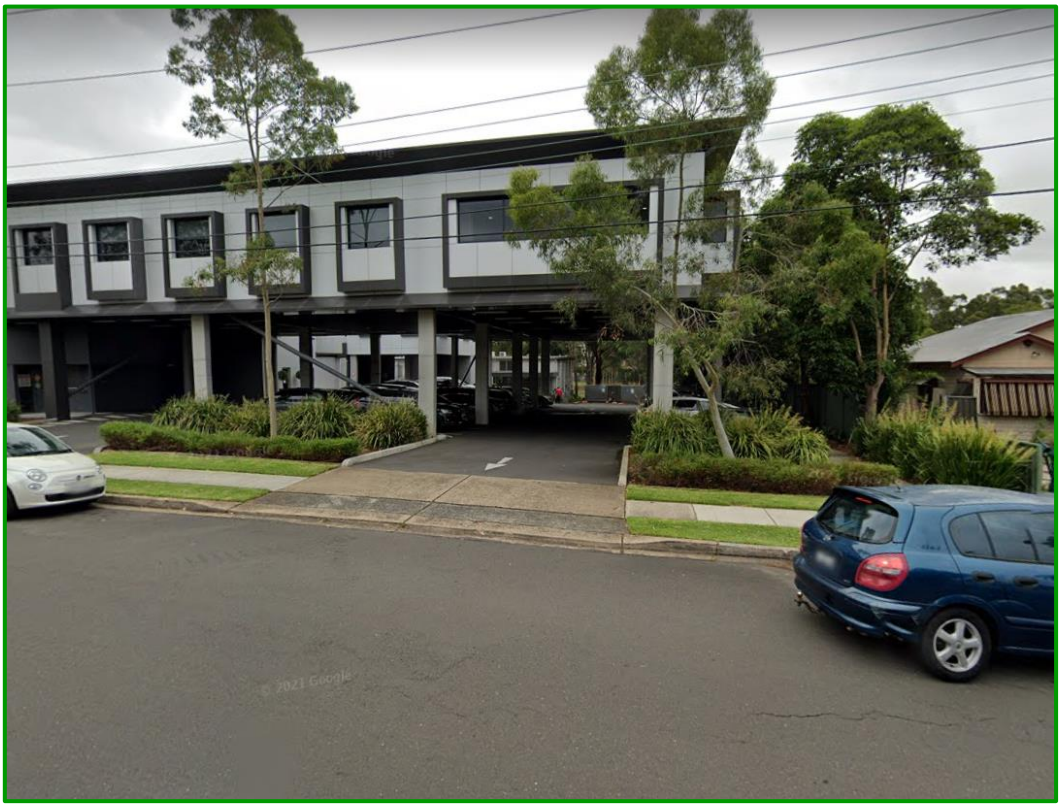
- The proposal seeks approval for a proposed extension to the Wentworthville Northside West Clinic at 23-27 Lytton Street, Wentworthville. The application seeks to remove 40 existing inpatient rooms, construct an additional 95 inpatient rooms, nine (9) consulting suites, ancillary amenities, 33 car parking spaces and improvements to the existing southern car park.
- The subject site has good connections to the public transport network with reliable access to regular bus and rail services. The site is located within 400 metres of 16 bus stops and 650 metres (8-min walk) of the Wentworthville Railway Station. These services provide staff, visitors and patients numerous transport modes to travel to and from the proposed development.
- The proposed development provides a total of 77 car parking spaces, meeting the minimum car parking requirements of the DCP. This will ensure all normal parking demands are accommodated within the site, reducing impacts to the surrounding on-street parking conditions.
- No changes are proposed to the existing servicing arrangements, which are expected to continue to operate satisfactory.
- Traffic generation arising from the proposal has been assessed using survey data of the existing development as discussed in **Section 5.4**. In terms of the overall network performance arising from the proposed development, all intersections operate satisfactorily (with LoS A) under both the 2021 Base Case and 2021 Base Case + Development scenarios. In addition, sensitivity testing was conducted to provide an indication of the traffic flows near the site in 10 years' time. The 2031 Base Case scenario demonstrated small increases in average delay at the key intersections during both peaks period.
- The person trips generated by the proposed development are outlined in **Section 9.4**. The additional train, bus, bicycle and walking trips generated by the proposed development can be accommodated by the existing public transport and pedestrian infrastructure.
- The car park areas are designed to comply with the requirements of AS2890.1 (2004) and AS2890.6 (2009) in order to ensure safe and efficient operation.

This traffic impact assessment therefore demonstrates that the subject application is supportable on traffic planning grounds. TRAFFIX anticipates an ongoing involvement during the development approval process.

APPENDIX A

Photographic Record

Existing Northern Car Park Entry



Existing Northern Car Park Exit

Existing Service Area Driveway

Existing Southern Car Park Entry/Exit

APPENDIX B

Site Traffic Surveys

Traffic Information Specialist

Location	-	Duration	7:00 - 10:00
	Veron Street		15:00 - 18:00
	Lytton Street		-
	Veron Street	Day/Date	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	Weather	Dry

All Vehicles Time Per 15 Mins	NORTH -													EAST *Veron Street*														
	L			T			R			U				L			T			R			U				TOTAL	
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15														5	0	5	21	1	22				0	0	0	27	84	5	89
7:15 - 7:30														1	0	1	26	1	27				0	0	0	28	91	3	94
7:30 - 7:45														3	0	3	34	1	35				1	0	1	39	138	4	142
7:45 - 8:00														4	0	4	39	1	40				2	0	2	46	196	8	204
8:00 - 8:15														14	0	14	30	0	30				1	0	1	45	229	3	232
8:15 - 8:30														10	0	10	82	0	82				2	0	2	94	225	4	229
8:30 - 8:45														9	0	9	120	1	121				2	0	2	132	282	3	285
8:45 - 9:00														8	0	8	79	1	80				1	0	1	89	251	2	253
Period End														54	0	54	431	6	437				9	0	9	500	1496	32	1528
15:00 - 15:15														4	0	4	86	1	87				2	0	2	93	235	3	238
15:15 - 15:30														7	0	7	74	3	77				1	0	1	85	190	8	198
15:30 - 15:45														5	0	5	99	2	101				1	0	1	107	206	3	209
15:45 - 16:00														8	0	8	75	1	76				2	0	2	86	165	3	168
16:00 - 16:15														16	0	16	86	1	87				0	0	0	103	186	2	188
16:15 - 16:30														5	0	5	83	1	84				4	0	4	93	197	2	199
16:30 - 16:45														10	0	10	82	1	83				1	0	1	94	195	2	197
16:45 - 17:00														12	0	12	92	0	92				0	0	0	104	199	2	201
17:00 - 17:15														10	0	10	92	0	92				4	0	4	106	221	1	222
17:15 - 17:30														8	0	8	89	2	91				4	0	4	103	234	5	239
17:30 - 17:45														8	0	8	102	2	104				4	0	4	116	214	6	220
17:45 - 18:00														6	0	6	98	0	98				2	0	2	106	215	1	216
Period End														99	0	99	1058	14	1072				25	0	25	1196	2457	38	2495

All Vehicles Time Per 15 Mins	SOUTH *Lytton Street*													WEST *Veron Street*														
	L			T			R			U				L			T			R			U				TOTAL	
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15	10	2	12				7	0	7	0	0	0	19				31	1	32	10	1	11	0	0	0	43	84	5	89
7:15 - 7:30	8	1	9				14	0	14	0	0	0	23				36	0	36	5	1	6	1	0	1	43	91	3	94
7:30 - 7:45	10	2	12				11	1	12	0	0	0	24				65	0	65	13	0	13	1	0	1	79	138	4	142
7:45 - 8:00	15	1	16				26	1	27	0	0	0	43				100	4	104	10	1	11	0	0	0	115	196	8	204
8:00 - 8:15	21	0	21				31	1	32	0	0	0	53				108	1	109	23	1	24	1	0	1	134	229	3	232
8:15 - 8:30	28	2	30				13	0	13	1	0	1	44				70	2	72	17	0	17	2	0	2	91	225	4	229
8:30 - 8:45	33	0	33				18	0	18	0	0	0	51				83	0	83	13	2	15	4	0	4	102	282	3	285
8:45 - 9:00	26	1	27				20	0	20	0	0	0	47				99	0	99	12	0	12	6	0	6	117	251	2	253
Period End	151	9	160				140	3	143	1	0	1	304				592	8	600	103	6	109	15	0	15	724	1496	32	1528
15:00 - 15:15	28	0	28				24	0	24	0	0	0	52				78	2	80	12	0	12	1	0	1	93	235	3	238
15:15 - 15:30	12	2	14				11	0	11	0	0	0	25				73	2	75	9	1	10	3	0	3	88	190	8	198
15:30 - 15:45	14	0	14				11	0	11	1	0	1	26				62	0	62	12	1	13	1	0	1	76	206	3	209
15:45 - 16:00	15	1	16				8	0	8	0	0	0	24				44	0	44	13	1	14	0	0	0	58	165	3	168
16:00 - 16:15	18	0	18				10	0	10	0	0	0	28				41	1	42	13	0	13	2	0	2	57	186	2	188
16:15 - 16:30	24	0	24				11	0	11	1	0	1	36				56	0	56	12	1	13	1	0	1	70	197	2	199
16:30 - 16:45	20	1	21				11	0	11	1	0	1	33				49	0	49	17	0	17	4	0	4	70	195	2	197
16:45 - 17:00	23	1	24				8	0	8	0	0	0	32				49	0	49	14	1	15	1	0	1	65	199	2	201
17:00 - 17:15	17	0	17				11	0	11	0	0	0	28				74	1	75	13	0	13	0	0	0	88	221	1	222
17:15 - 17:30	28	2	30				15	0	15	1	0	1	46				74	0	74	14	1	15	1	0	1	90	234	5	239
17:30 - 17:45	16	2	18				10	1	11	0	0	0	29				53	0	53	19	1	20	2	0	2	75	214	6	220
17:45 - 18:00	18	0	18				17	0	17	1	0	1	36				61	0	61	11	1	12	1	0	1	74	215	1	216
Period End	233	9	242				147	1	148	5	0	5	395				714	6	720	159	8	167	17	0	17	904	2457	38	2495

Location	-		Duration	7:00 - 10:00	
	Veron Street			15:00 - 18:00	
	Lytton Street			-	
	Veron Street		Day/Date	Wednesday, 24 March 2021	
Suburb	WENTWORTHVILLE		Weather	Dry	

All Vehicles Time Per Hour	NORTH -													EAST Veron Street													TOTAL	TOTAL
	L			T			R			U				L			T			R			U				TOTAL	
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00														13	0	**13**	120	4	**124**				3	0	**3**	**140**	509	20	**529**
7:15 - 8:15														22	0	**22**	129	3	**132**				4	0	**4**	**158**	654	18	**672**
7:30 - 8:30														31	0	**31**	185	2	**187**				6	0	**6**	**224**	788	19	**807**
7:45 - 8:45														37	0	**37**	271	2	**273**				7	0	**7**	**317**	932	18	**950**
8:00 - 9:00														41	0	**41**	311	2	**313**				6	0	**6**	**360**	987	12	**999**
Period End																													
15:00 - 16:00														24	0	**24**	334	7	**341**				6	0	**6**	**371**	796	17	**813**
15:15 - 16:15														36	0	**36**	334	7	**341**				4	0	**4**	**381**	747	16	**763**
15:30 - 16:30														34	0	**34**	343	5	**348**				7	0	**7**	**389**	754	10	**764**
15:45 - 16:45														39	0	**39**	326	4	**330**				7	0	**7**	**376**	743	9	**752**
16:00 - 17:00														43	0	**43**	343	3	**346**				5	0	**5**	**394**	777	8	**785**
16:15 - 17:15														37	0	**37**	349	2	**351**				9	0	**9**	**397**	812	7	**819**
16:30 - 17:30														40	0	**40**	355	3	**358**				9	0	**9**	**407**	849	10	**859**
16:45 - 17:45														38	0	**38**	375	4	**379**				12	0	**12**	**429**	868	14	**882**
17:00 - 18:00														32	0	**32**	381	4	**385**				14	0	**14**	**431**	884	13	**897**
Period End																													

All Vehicles Time Per Hour	SOUTH Lytton Street													WEST Veron Street													TOTAL	TOTAL
	L			T			R			U				L			T			R			U				TOTAL	
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00	43	6	**49**				58	2	**60**	0	0	**0**	**109**				232	5	**237**	38	3	**41**	2	0	**2**	**280**	509	20	**529**
7:15 - 8:15	54	4	**58**				82	3	**85**	0	0	**0**	**143**				309	5	**314**	51	3	**54**	3	0	**3**	**371**	654	18	**672**
7:30 - 8:30	74	5	**79**				81	3	**84**	1	0	**1**	**164**				343	7	**350**	63	2	**65**	4	0	**4**	**419**	788	19	**807**
7:45 - 8:45	97	3	**100**				88	2	**90**	1	0	**1**	**191**				361	7	**368**	63	4	**67**	7	0	**7**	**442**	932	18	**950**
8:00 - 9:00	108	3	**111**				82	1	**83**	1	0	**1**	**195**				360	3	**363**	65	3	**68**	13	0	**13**	**444**	987	12	**999**
Period End																													
15:00 - 16:00	69	3	**72**				54	0	**54**	1	0	**1**	**127**				257	4	**261**	46	3	**49**	5	0	**5**	**315**	796	17	**813**
15:15 - 16:15	59	3	**62**				40	0	**40**	1	0	**1**	**103**				220	3	**223**	47	3	**50**	6	0	**6**	**279**	747	16	**763**
15:30 - 16:30	71	1	**72**				40	0	**40**	2	0	**2**	**114**				203	1	**204**	50	3	**53**	4	0	**4**	**261**	754	10	**764**
15:45 - 16:45	77	2	**79**				40	0	**40**	2	0	**2**	**121**				190	1	**191**	55	2	**57**	7	0	**7**	**255**	743	9	**752**
16:00 - 17:00	85	2	**87**				40	0	**40**	2	0	**2**	**129**				195	1	**196**	56	2	**58**	8	0	**8**	**262**	777	8	**785**
16:15 - 17:15	84	2	**86**				41	0	**41**	2	0	**2**	**129**				228	1	**229**	56	2	**58**	6	0	**6**	**293**	812	7	**819**
16:30 - 17:30	88	4	**92**				45	0	**45**	2	0	**2**	**139**				246	1	**247**	58	2	**60**	6	0	**6**	**313**	849	10	**859**
16:45 - 17:45	84	5	**89**				44	1	**45**	1	0	**1**	**135**				250	1	**251**	60	3	**63**	4	0	**4**	**318**	868	14	**882**
17:00 - 18:00	79	4	**83**				53	1	**54**	2	0	**2**	**139**				262	1	**263**	57	3	**60**	4	0	**4**	**327**	884	13	**897**
Period End																													

Location	-	**Duration**	7:00 - 10:00
	Veron Street		15:00 - 18:00
	Lytton Street		-
	Veron Street	**Day/Date**	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	**Weather**	Dry

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	AM
PEAK		
8:00	-	9:00

TOTAL			
437	5	432	
363	3	360	
68	3	65	
13	0	13	

Veron Street

	6	0	6
	311	2	313
	41	0	41
	448	4	452

Veron Street					
	108	82	1	107	
	3	1	0	3	
TOTAL	111	83	1	110	

			TOTAL
Lytton Street			

Traffic Information Specialist

ABN: 42 613 389 923

Email info@tistraffic.com.au

Location	-	**Duration**	7:00 - 10:00
	Veron Street		15:00 - 18:00
	Lytton Street		-
	Veron Street	**Day/Date**	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	**Weather**	Dry

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	PM
PEAK		
17:00	-	18:00

TOTAL			
472	8	464	

Veron Street

14	0	14	
381	4	385	
32	0	32	
329	2	331	

263	1	262	
60	3	57	
4	0	4	

Veron Street

	79	53	2	91
	4	1	0	3
TOTAL	83	54	2	94

Lytton Street

TOTAL

Traffic Information Specialist

ABN: 42 613 389 923

Email info@tistraffic.com.au

Location	Lytton Street	Duration	7:00 - 9:00
	Fullagar Road		15:00 - 18:00
	-		-
	Fullagar Road	Day/Date	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	Weather	Dry

All Vehicles Time Per 15 Mins	NORTH *Lytton Street*												EAST *Fullagar Road*											
	L			T			R			U				L			T			R			U				TOTAL		
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15	3	0	3				8	1	9	0	0	0	12				10	0	10	0	1	1	0	0	0	11	62	4	66
7:15 - 7:30	0	0	0				9	2	11	0	0	0	11				13	0	13	1	0	1	0	0	0	14	69	2	71
7:30 - 7:45	5	0	5				17	0	17	0	0	0	22				9	0	9	2	0	2	0	0	0	11	82	0	82
7:45 - 8:00	0	0	0				13	0	13	0	0	0	13				29	1	30	3	1	4	1	0	1	35	143	4	147
8:00 - 8:15	7	0	7				22	0	22	0	0	0	29				24	0	24	7	0	7	0	0	0	31	155	0	155
8:15 - 8:30	3	0	3				19	1	20	0	0	0	23				30	0	30	7	0	7	0	0	0	37	168	1	169
8:30 - 8:45	0	0	0				27	0	27	0	0	0	27				32	0	32	5	0	5	0	0	0	37	164	1	165
8:45 - 9:00	3	0	3				17	0	17	0	0	0	20				32	0	32	4	0	4	0	0	0	36	162	1	163
Period End	21	0	21				132	4	136	0	0	0	157				179	1	180	29	2	31	1	0	1	212	1005	13	1018
15:00 - 15:15	4	0	4				18	0	18	0	0	0	22				50	1	51	7	0	7	0	0	0	58	129	1	130
15:15 - 15:30	2	0	2				24	0	24	0	0	0	26				50	1	51	1	0	1	0	0	0	52	118	2	120
15:30 - 15:45	1	0	1				14	0	14	0	0	0	15				39	1	40	3	0	3	0	0	0	43	101	3	104
15:45 - 16:00	3	0	3				22	0	22	1	0	1	26				39	0	39	3	0	3	0	0	0	42	105	0	105
16:00 - 16:15	7	0	7				31	0	31	0	0	0	38				45	1	46	3	0	3	0	0	0	49	125	1	126
16:15 - 16:30	4	0	4				23	0	23	0	0	0	27				48	0	48	3	0	3	0	1	1	52	118	1	119
16:30 - 16:45	2	0	2				18	0	18	1	0	1	21				59	1	60	3	0	3	0	0	0	63	118	2	120
16:45 - 17:00	5	0	5				28	0	28	0	0	0	33				62	0	62	3	0	3	0	0	0	65	141	0	141
17:00 - 17:15	1	0	1				32	0	32	0	0	0	33				62	0	62	6	0	6	0	0	0	68	153	0	153
17:15 - 17:30	4	0	4				25	0	25	0	0	0	29				45	0	45	6	0	6	0	0	0	51	150	1	151
17:30 - 17:45	5	0	5				20	0	20	0	0	0	25				52	0	52	1	0	1	0	0	0	53	141	1	142
17:45 - 18:00	2	0	2				30	0	30	0	0	0	32				66	0	66	2	0	2	0	0	0	68	170	0	170
Period End	40	0	40				285	0	285	2	0	2	327				617	5	622	41	0	41	0	1	1	664	1569	12	1581

All Vehicles Time Per 15 Mins	SOUTH -												WEST *Fullagar Road*											
	L			T			R			U				L			T			R			U				TOTAL		
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15														22	1	23	19	1	20				0	0	0	43	62	4	66
7:15 - 7:30														25	0	25	21	0	21				0	0	0	46	69	2	71
7:30 - 7:45														27	0	27	22	0	22				0	0	0	49	82	0	82
7:45 - 8:00														47	2	49	50	0	50				0	0	0	99	143	4	147
8:00 - 8:15														43	0	43	52	0	52				0	0	0	95	155	0	155
8:15 - 8:30														36	0	36	73	0	73				0	0	0	109	168	1	169
8:30 - 8:45														37	0	37	62	1	63				1	0	1	101	164	1	165
8:45 - 9:00														46	1	47	60	0	60				0	0	0	107	162	1	163
Period End														283	4	287	359	2	361				1	0	1	649	1005	13	1018
15:00 - 15:15														38	0	38	12	0	12				0	0	0	50	129	1	130
15:15 - 15:30														21	0	21	20	1	21				0	0	0	42	118	2	120
15:30 - 15:45														25	0	25	19	2	21				0	0	0	46	101	3	104
15:45 - 16:00														23	0	23	14	0	14				0	0	0	37	105	0	105
16:00 - 16:15														14	0	14	25	0	25				0	0	0	39	125	1	126
16:15 - 16:30														24	0	24	16	0	16				0	0	0	40	118	1	119
16:30 - 16:45														14	1	15	20	0	20				1	0	1	36	118	2	120
16:45 - 17:00														23	0	23	19	0	19				1	0	1	43	141	0	141
17:00 - 17:15														25	0	25	26	0	26				1	0	1	52	153	0	153
17:15 - 17:30														43	0	43	27	1	28				0	0	0	71	150	1	151
17:30 - 17:45														31	0	31	32	1	33				0	0	0	64	141	1	142
17:45 - 18:00														41	0	41	29	0	29				0	0	0	70	170	0	170
Period End														322	1	323	259	5	264				3	0	3	590	1569	12	1581

Location	Lytton Street	Duration	7:00 - 9:00
	Fullagar Road		15:00 - 18:00
	-		-
	Fullagar Road	Day/Date	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	Weather	Dry

All Vehicles Time Per Hour	NORTH Lytton Street												EAST Fullagar Road												TOTAL		TOTAL
	L			T			R			U				L			T			R			U					
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00	8	0	**8**				47	3	**50**	0	0	**0**	58				61	1	**62**	6	2	**8**	1	0	**1**	71	356	10	**366**
7:15 - 8:15	12	0	**12**				61	2	**63**	0	0	**0**	75				75	1	**76**	13	1	**14**	1	0	**1**	91	449	6	**455**
7:30 - 8:30	15	0	**15**				71	1	**72**	0	0	**0**	87				92	1	**93**	19	1	**20**	1	0	**1**	114	548	5	**553**
7:45 - 8:45	10	0	**10**				81	1	**82**	0	0	**0**	92				115	1	**116**	22	1	**23**	1	0	**1**	140	630	6	**636**
8:00 - 9:00	13	0	**13**				85	1	**86**	0	0	**0**	99				118	0	**118**	23	0	**23**	0	0	**0**	141	649	3	**652**
Period End																													
15:00 - 16:00	10	0	**10**				78	0	**78**	1	0	**1**	89				178	3	**181**	14	0	**14**	0	0	**0**	195	453	6	**459**
15:15 - 16:15	13	0	**13**				91	0	**91**	1	0	**1**	105				173	3	**176**	10	0	**10**	0	0	**0**	186	449	6	**455**
15:30 - 16:30	15	0	**15**				90	0	**90**	1	0	**1**	106				171	2	**173**	12	0	**12**	0	1	**1**	186	449	5	**454**
15:45 - 16:45	16	0	**16**				94	0	**94**	2	0	**2**	112				191	2	**193**	12	0	**12**	0	1	**1**	206	466	4	**470**
16:00 - 17:00	18	0	**18**				100	0	**100**	1	0	**1**	119				214	2	**216**	12	0	**12**	0	1	**1**	229	502	4	**506**
16:15 - 17:15	12	0	**12**				101	0	**101**	1	0	**1**	114				231	1	**232**	15	0	**15**	0	1	**1**	248	530	3	**533**
16:30 - 17:30	12	0	**12**				103	0	**103**	1	0	**1**	116				228	1	**229**	18	0	**18**	0	0	**0**	247	562	3	**565**
16:45 - 17:45	15	0	**15**				105	0	**105**	0	0	**0**	120				221	0	**221**	16	0	**16**	0	0	**0**	237	585	2	**587**
17:00 - 18:00	12	0	**12**				107	0	**107**	0	0	**0**	119				225	0	**225**	15	0	**15**	0	0	**0**	240	614	2	**616**
Period End																													

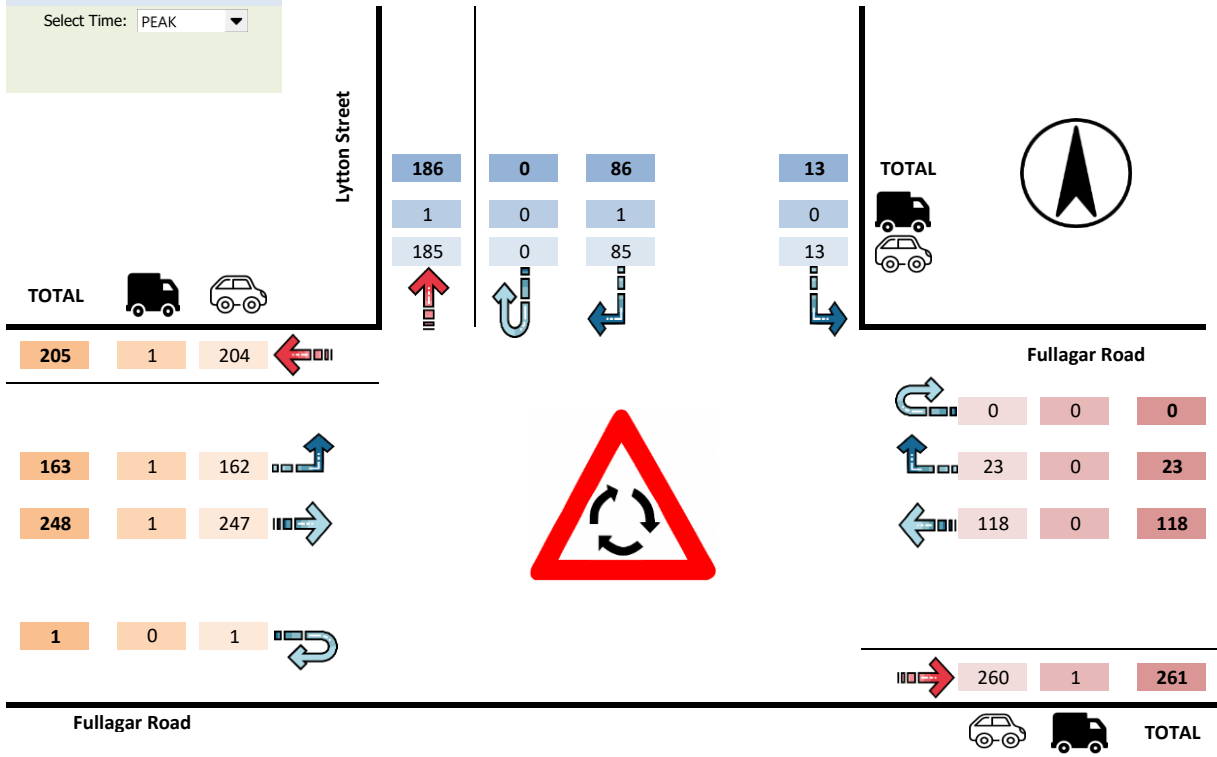
All Vehicles Time Per Hour	SOUTH -												WEST Fullagar Road												TOTAL		TOTAL
	L			T			R			U				L			T			R			U					
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00														121	3	**124**	112	1	**113**				0	0	**0**	237	356	10	**366**
7:15 - 8:15														142	2	**144**	145	0	**145**				0	0	**0**	289	449	6	**455**
7:30 - 8:30														153	2	**155**	197	0	**197**				0	0	**0**	352	548	5	**553**
7:45 - 8:45														163	2	**165**	237	1	**238**				1	0	**1**	404	630	6	**636**
8:00 - 9:00														162	1	**163**	247	1	**248**				1	0	**1**	412	649	3	**652**
Period End																													
15:00 - 16:00														107	0	**107**	65	3	**68**				0	0	**0**	175	453	6	**459**
15:15 - 16:15														83	0	**83**	78	3	**81**				0	0	**0**	164	449	6	**455**
15:30 - 16:30														86	0	**86**	74	2	**76**				0	0	**0**	162	449	5	**454**
15:45 - 16:45														75	1	**76**	75	0	**75**				1	0	**1**	152	466	4	**470**
16:00 - 17:00														75	1	**76**	80	0	**80**				2	0	**2**	158	502	4	**506**
16:15 - 17:15														86	1	**87**	81	0	**81**				3	0	**3**	171	530	3	**533**
16:30 - 17:30														105	1	**106**	92	1	**93**				3	0	**3**	202	562	3	**565**
16:45 - 17:45														122	0	**122**	104	2	**106**				2	0	**2**	230	585	2	**587**
17:00 - 18:00														140	0	**140**	114	2	**116**				1	0	**1**	257	614	2	**616**
Period End																													

Location	Lytton Street	**Duration**	7:00 - 9:00
	Fullagar Road		15:00 - 18:00
	-		-
	Fullagar Road	**Day/Date**	Wednesday, 24 March 2021
Suburb	WENTWORTHVILLE	**Weather**	Dry

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	AM
PEAK		
8:00	-	9:00



Traffic Information Specialist

ABN: 42 613 389 923

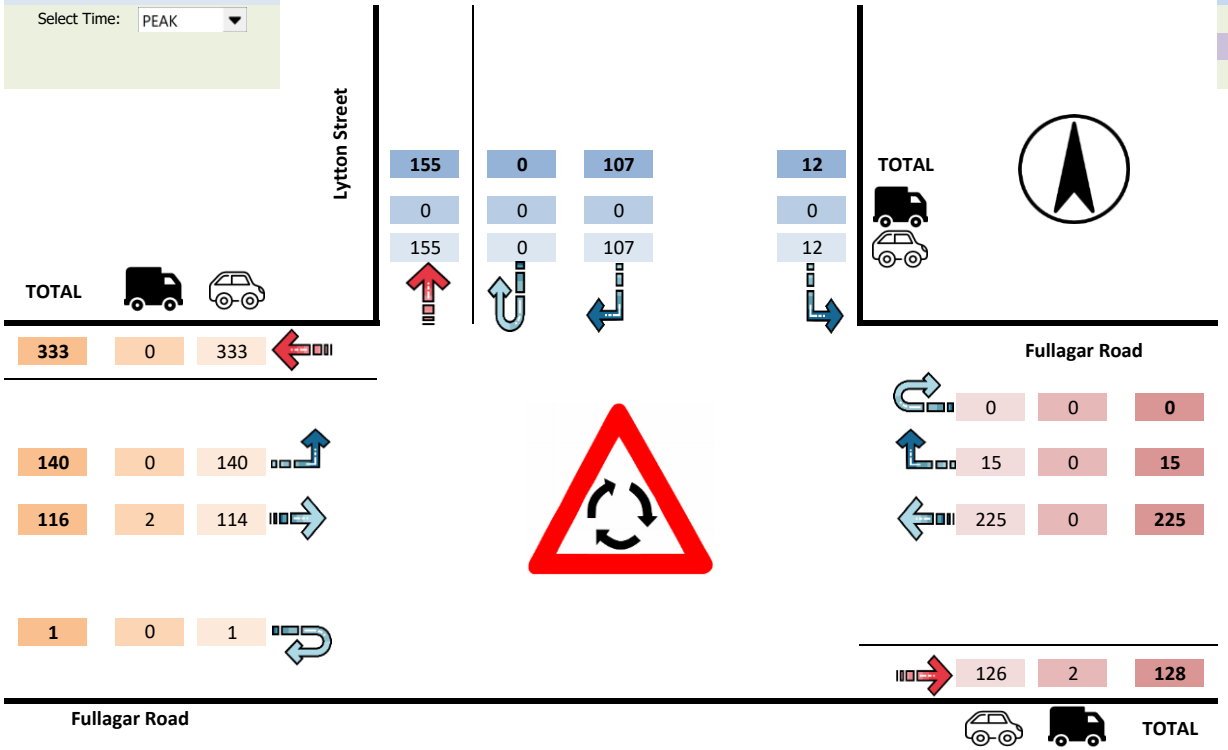
Email info@tistraffic.com.au

Location	**Lytton Street**	**Duration**	**7:00 - 9:00**
	Fullagar Road		**15:00 - 18:00**
	-		**-**
	Fullagar Road	**Day/Date**	**Wednesday, 24 March 2021**
Suburb	**WENTWORTHVILLE**	**Weather**	**Dry**

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	**-**	**PM**
PEAK		
17:00	**-**	**18:00**



Traffic Information Specialist

ABN: 42 613 389 923

Email info@tistraffic.com.au

Location	23-27 Lytton Street
Suburb	WENTWORTHVILLE
Client	TRAFFIX
Job No/Name	21019
Survey Duration	5 Hours
Day/Date	Tuesday, 24 March 2020

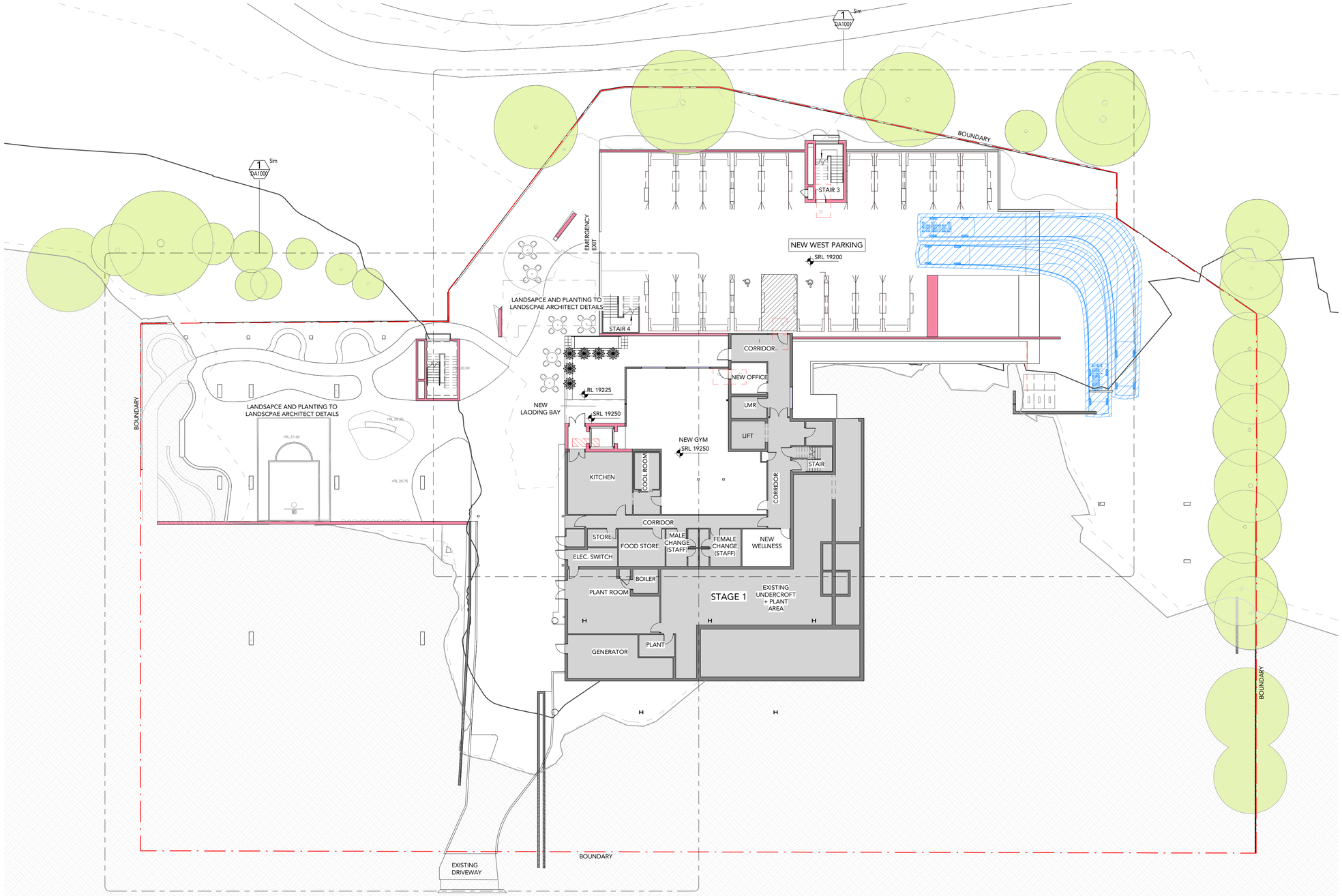
Time Per 15 Mins	Carpark Access					Building Access				
	ENTRY		EXIT		Total	ENTRY		EXIT		Total
	L	H	L	H		L	H	L	H	
7:00 - 7:15	0	0	0	0	**0**	0	1	0	0	**1**
7:15 - 7:30	2	0	0	0	**2**	1	0	0	0	**1**
7:30 - 7:45	0	0	0	0	**0**	0	0	1	1	**2**
7:45 - 8:00	0	0	1	0	**1**	2	0	3	0	**5**
8:00 - 8:15	1	0	1	0	**2**	1	0	0	0	**1**
8:15 - 8:30	0	0	0	0	**0**	0	0	1	0	**1**
8:30 - 8:45	1	0	0	0	**1**	2	0	1	0	**3**
8:45 - 9:00	1	0	0	0	**1**	2	0	3	0	**5**
Period End	**5**	**0**	**2**	**0**	**7**	**8**	**1**	**9**	**1**	**19**

Time Per 15 Mins	Carpark Access					Building Access				
	ENTRY		EXIT		Total	ENTRY		EXIT		Total
	L	H	L	H		L	H	L	H	
15:00 - 15:15	0	0	6	0	**6**	3	0	7	0	**10**
15:15 - 15:30	1	0	3	0	**4**	1	0	6	0	**7**
15:30 - 15:45	0	0	2	0	**2**	1	0	2	0	**3**
15:45 - 16:00	0	0	0	0	**0**	2	0	1	0	**3**
16:00 - 16:15	0	0	1	0	**1**	1	0	1	0	**2**
16:15 - 16:30	0	0	2	0	**2**	2	0	0	0	**2**
16:30 - 16:45	0	0	1	0	**1**	2	0	3	0	**5**
16:45 - 17:00	0	0	1	0	**1**	4	0	1	0	**5**
17:00 - 17:15	0	0	1	0	**1**	1	0	4	0	**5**
17:15 - 17:30	0	0	0	0	**0**	1	0	2	0	**3**
17:30 - 17:45	0	0	0	0	**0**	3	0	0	0	**3**
17:45 - 18:00	0	0	0	0	**0**	5	0	2	0	**7**
Period End	**1**	**0**	**17**	**0**	**18**	**26**	**0**	**29**	**0**	**55**

Traffic Information Specialist
ABN: 42 613 389 923
Email info@tistraffic.com.au

APPENDIX C

Reduced Plans



1 DA Overall - Lower Ground
Scale: 1 : 200

DRAWING STATUS:

DEVELOPMENT APPLICATION

Rev	Revision Description	Date
1	Preliminary Issue	28.07.21
2	Preliminary Issue	05.08.21
3	ISSUE FOR DEVELOPMENT APPLICATION	27.10.21

DRAWING LEGEND:

1. Architectural drawings shall be read in conjunction with other consultant drawings and specifications. Any discrepancies shall be referred to team 2 architects before proceeding with work.
2. All dimensions and levels are in millimeters unless noted otherwise. No dimension shall be obtained by scaling the drawing.
3. All dimensions to be checked on site with any discrepancies referred to team 2 architects before proceeding with work.
4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & australian standards.

LEGEND

- NOT IN SCOPE
- EXISTING WALL
- NEW WALL

ERILYAN

0 1 2 3 4 5
SCALE 1:100

TEAM 2 ARCHITECTS
SYDNEY
701/1 Chandos Street,
St Leonards NSW 2065
T: + 61 2 9437 3166
E: info@team2.com.au
Reg NSW: 9940

MELBOURNE
Suite 204/9-11 Claremont Street,
South Yarra, VIC 3141
ABN: 72 104 833 507
Reg Vic: 19340

Project:
Northside West Stage 2

Wentworthville. NSW 2145

Title:
OVERALL SITE PLAN - LOWER GROUND

Job	Scale	Dwn	Chd
903	As indicated @A1	IK	VM

Drawing #: DA0100
Rev: 3

1 DA Overall - Ground Floor
Scale: 1 : 200

DRAWING STATUS:

DEVELOPMENT APPLICATION

Rev	Revision Description	Date
1	Preliminary Issue	28.07.21
2	Preliminary Issue	05.08.21
3	Preliminary Issue - Landscaping	13.10.21
4	ISSUE FOR DEVELOPMENT APPLICATION	27.10.21

DRAWING LEGEND:

1. Architectural drawings shall be read in conjunction with other consultant drawings and specifications. Any discrepancies shall be referred to team 2 architects before proceeding with work.
2. All dimensions and levels are in millimeters unless noted otherwise. No dimension shall be obtained by scaling the drawing.
3. All dimensions to be checked on site with any discrepancies referred to team 2 architects before proceeding with work.
4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & australian standards.

LEGEND

- NOT IN SCOPE
- EXISTING WALL
- NEW WALL

ERILYAN

SCALE 1:100

TEAM2 ARCHITECTS
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MELBOURNE
Suite 204/9-11 Claremont Street,
South Yarra, VIC 3141
ABN: 72 104 833 507
Reg Vic: 19340

Project:
Northside West Stage 2

Wentworthville. NSW 2145

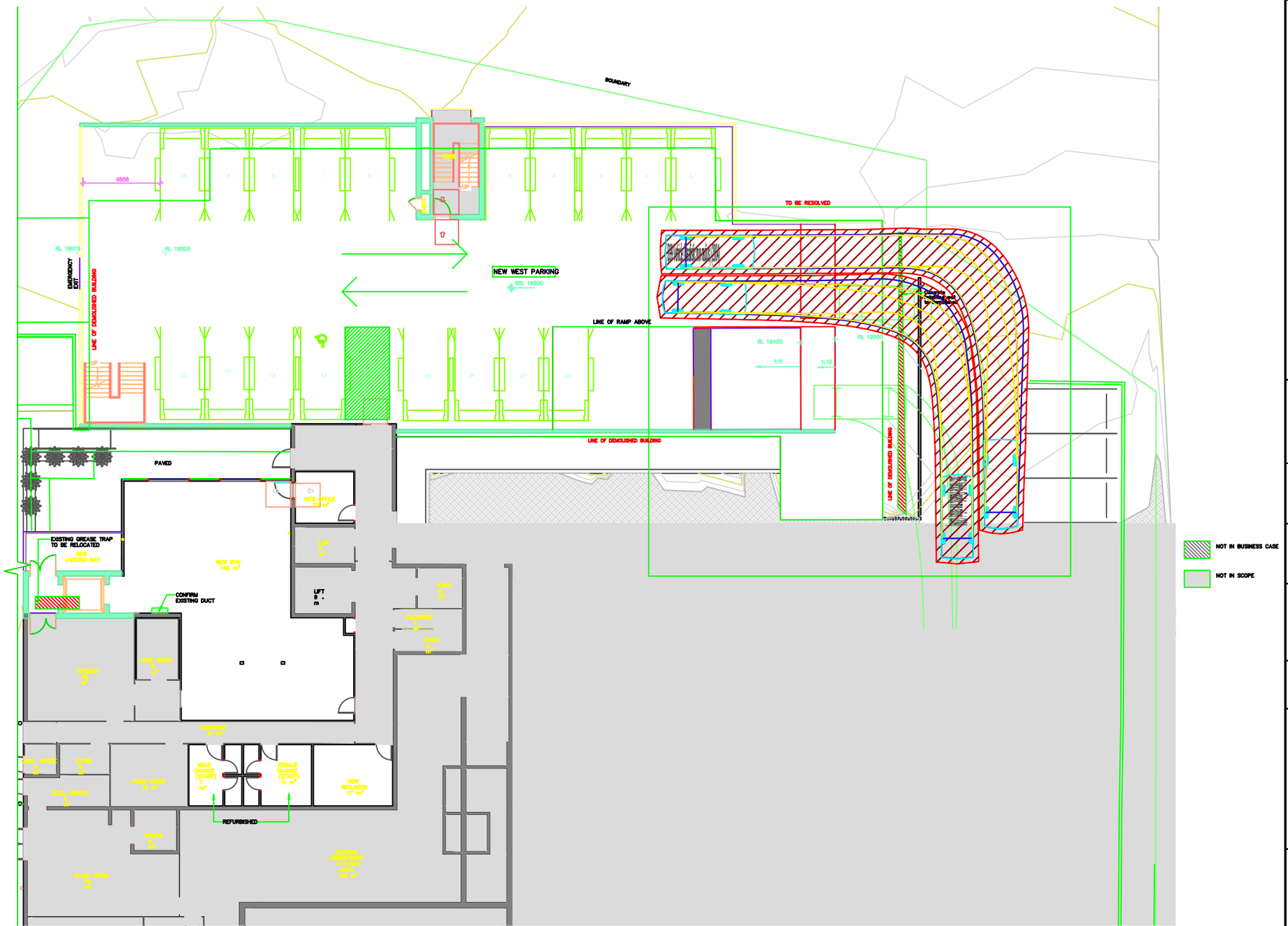
Title:
OVERALL SITE PLAN - GROUND FLOOR

Job #	Scale		Drw	Chd
903	As indicated	@A1	IK	IK

Drawing #: DA0101
Rev: 4

APPENDIX D

Swept Path Analysis



Notes:

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1:2004 Parking facilities - Off-street car parking*, and/or *AS2890.2:2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Rev.	Revision Note	By.	Date
A	Swept Path Analysis	BL	29-10-21

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect
Team 2 Architects

Client
Erilyan

Scale / Plan Orientation

0 2.5 5 7.5 10m

1:250 @ A3

Project Description
Northside Clinic

Drawing Prepared By

TRAFFIX
TRAFFIC & TRANSPORT PLANNERS

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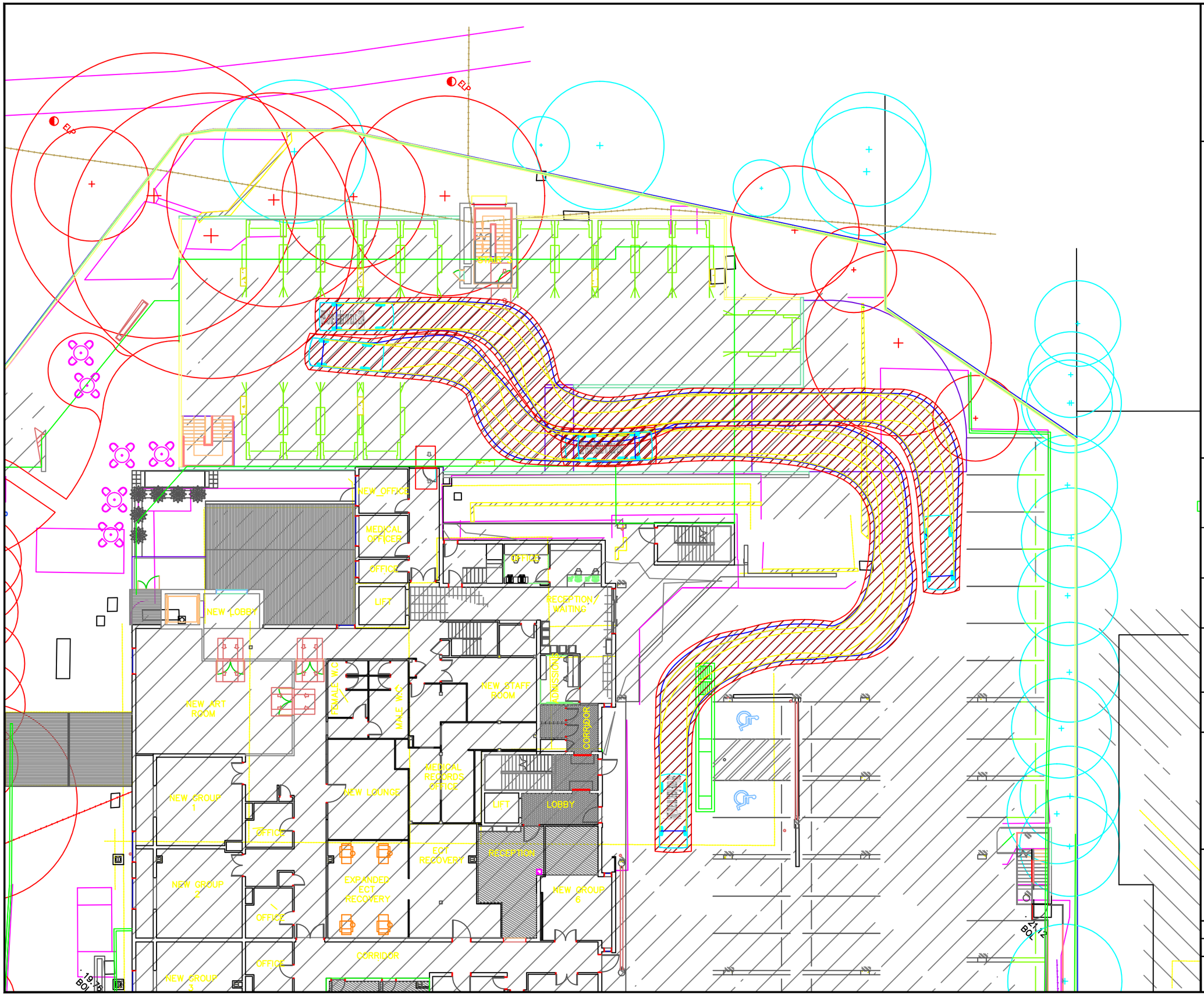
Drawing Title
Swept Path Analysis
Lower Floor

Drawn:	Checked:	Date:
BL	-	29-10-21

15.061d06v01 TRAFFIX [211210 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
15.061	SSDA	TX.01	A



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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	BL	29-10-21

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect
Team 2 Architects

Client
Erilyan

Scale / Plan Orientation

0 2.5 5 7.5 10m
1:250 @ A3

Project Description
Northside Clinic

Drawing Prepared By

TRAFFIX
TRAFFIC & TRANSPORT PLANNERS

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Strawberry Hills, NSW 2012

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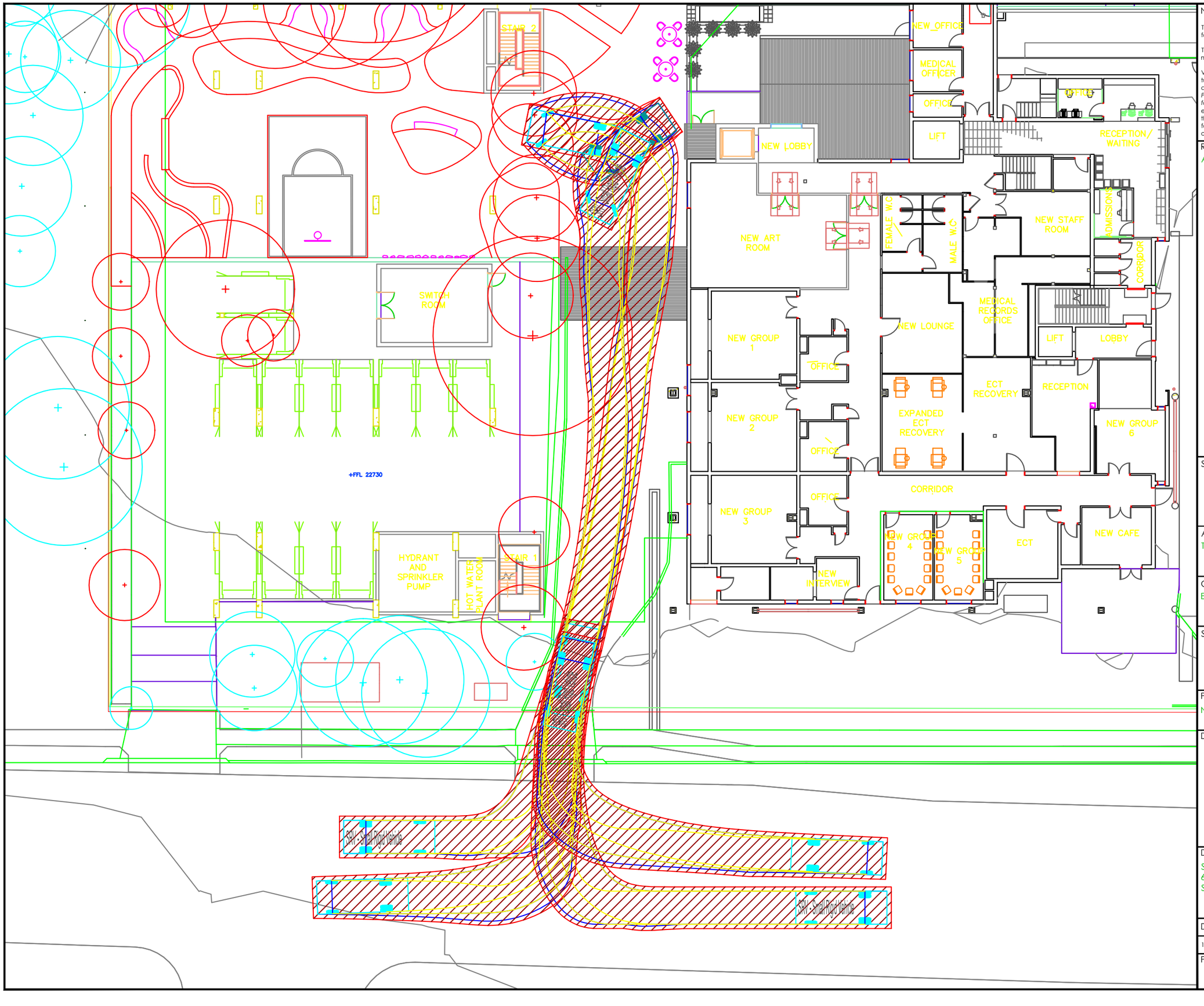
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor

Drawn:	Checked:	Date:
BL	-	29-10-21

15.061d06v01 TRAFFIX [211210 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
15.061	SSDA	TX.02	A



Notes:

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1:2004 Parking facilities - Off-street car parking*, and/or *AS2890.2:2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Rev.	Revision Note	By.	Date
A	Swept Path Analysis	BL	29-10-21

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect
Team 2 Architects

Client
Erilyan

Scale / Plan Orientation

0 2.5 5 7.5 10m
1:250 @ A3

Project Description
Northside Clinic

Drawing Prepared By

TRAFFIX
TRAFFIC & TRANSPORT PLANNERS

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Surry Hills, NSW 2010
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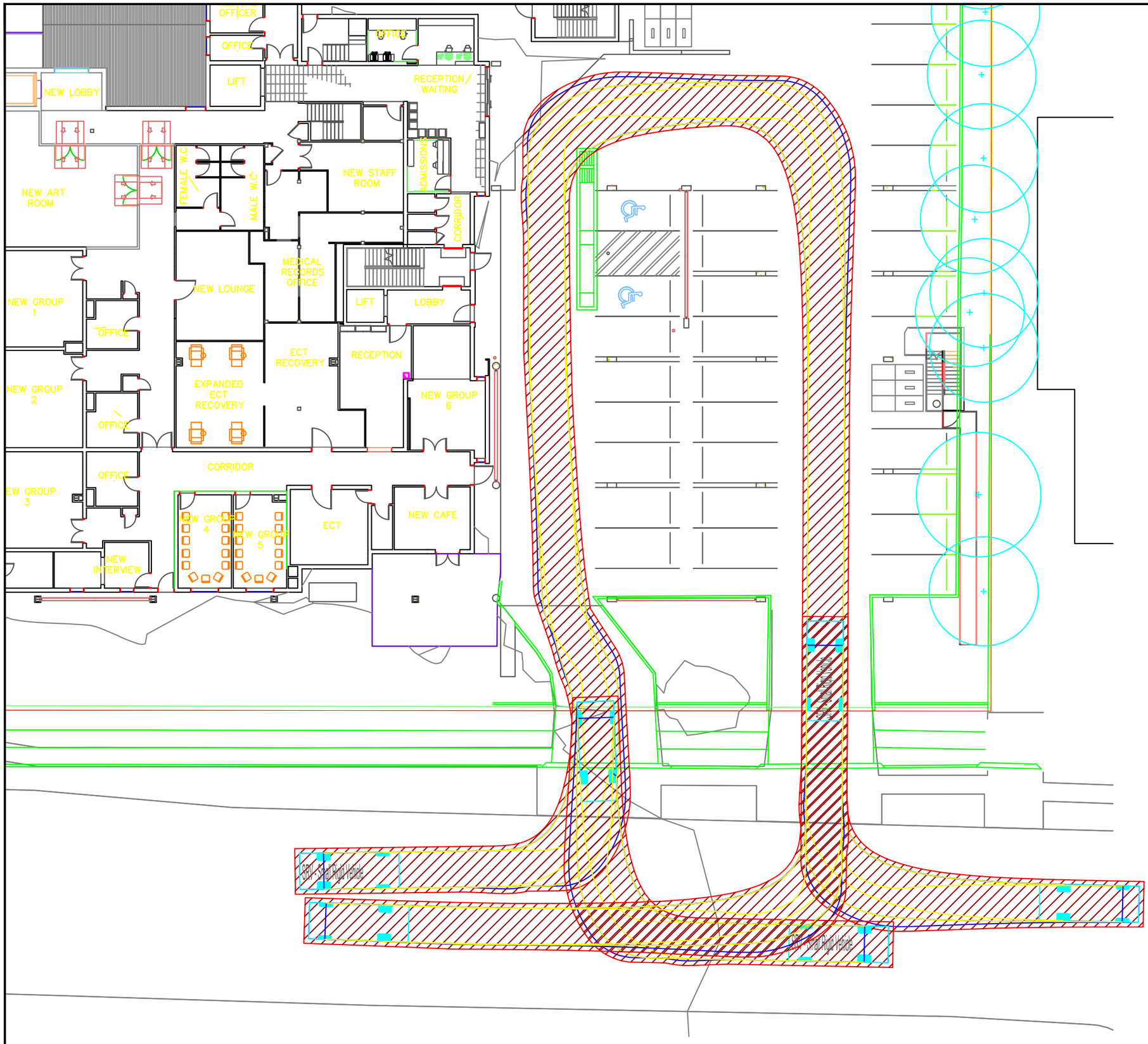
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
6.4m Small Rigid Vehicle
Service Area

Drawn:	Checked:	Date:
BL	-	29-10-21

15.061d06v01 TRAFFIX [211210 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
15.061	SSDA	TX.03	A



Notes:

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1:2004 Parking facilities - Off-street car parking*, and/or *AS2890.2:2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Rev.	Revision Note	By.	Date
A	Swept Path Analysis	BL	29-10-21

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect
Team 2 Architects

Client
Erilyan

Scale / Plan Orientation

0 2.5 5 7.5 10m

1:250 @ A3

Project Description
Northside Clinic

Drawing Prepared By

TRAFFIX
TRAFFIC & TRANSPORT PLANNERS

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PO Box 1124
Strawberry Hills, NSW 2012

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f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
6.4m Small Rigid Vehicle (Ambulance)
Ambulance Area

Drawn:	Checked:	Date:
BL	-	29-10-21

15.061d06v01 TRAFFIX [211210 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
15.061	SSDA	TX.04	A

APPENDIX E

SIDRA Intersection Outputs

USER REPORT FOR SITE

All Movement Classes

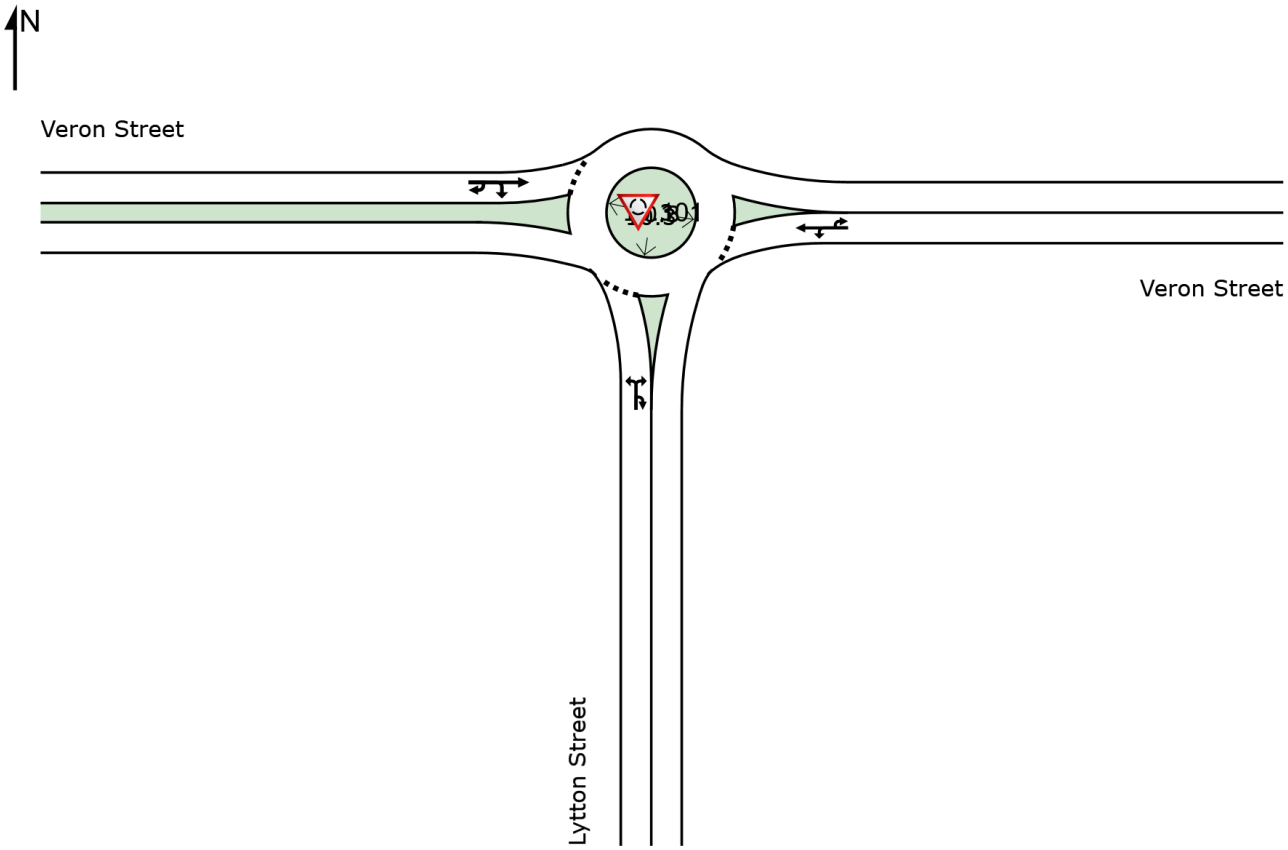
Project: 15.061m01v01 **Template: Layouts**

Site: 101 [Lytton Street / Veron Street Intersection EX AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



USER REPORT FOR SITE

All Movement Classes

Project: 15.061m01v01

Template: Movement Summaries

Site: 101 [Lytton Street / Veron Street Intersection EX AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	111	3	117	2.7	0.225	6.1	LOS A	1.4	9.9	0.58	0.68	0.58	44.6
3	R2	83	1	87	1.2	0.225	9.4	LOS A	1.4	9.9	0.58	0.68	0.58	45.7
3u	U	1	0	1	0.0	0.225	10.9	LOS A	1.4	9.9	0.58	0.68	0.58	46.6
Approach		195	4	205	2.1	0.225	7.5	LOS A	1.4	9.9	0.58	0.68	0.58	45.1
East: Veron Street														
4	L2	41	0	43	0.0	0.296	4.2	LOS A	2.1	14.7	0.33	0.45	0.33	46.4
5	T1	313	2	329	0.6	0.296	4.2	LOS A	2.1	14.7	0.33	0.45	0.33	46.3
6u	U	6	0	6	0.0	0.296	9.0	LOS A	2.1	14.7	0.33	0.45	0.33	47.1
Approach		360	2	379	0.6	0.296	4.3	LOS A	2.1	14.7	0.33	0.45	0.33	46.3
West: Veron Street														
11	T1	363	3	382	0.8	0.367	4.3	LOS A	2.9	20.7	0.38	0.48	0.38	45.8
12	R2	68	3	72	4.4	0.367	7.6	LOS A	2.9	20.7	0.38	0.48	0.38	46.1
12u	U	13	0	14	0.0	0.367	9.1	LOS A	2.9	20.7	0.38	0.48	0.38	45.7
Approach		444	6	467	1.4	0.367	4.9	LOS A	2.9	20.7	0.38	0.48	0.38	45.9
All Vehicles		999	12	1052	1.2	0.367	5.2	LOS A	2.9	20.7	0.40	0.51	0.40	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX PM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	83	4	87	4.8	0.173	6.7	LOS A	1.0	7.4	0.61	0.70	0.61	44.3
3	R2	54	1	57	1.9	0.173	9.9	LOS A	1.0	7.4	0.61	0.70	0.61	45.4
3u	U	2	0	2	0.0	0.173	11.3	LOS A	1.0	7.4	0.61	0.70	0.61	46.3
Approach		139	5	146	3.6	0.173	8.0	LOS A	1.0	7.4	0.61	0.70	0.61	44.8
East: Veron Street														
4	L2	32	0	34	0.0	0.339	4.0	LOS A	2.5	17.6	0.30	0.44	0.30	46.4
5	T1	385	4	405	1.0	0.339	4.1	LOS A	2.5	17.6	0.30	0.44	0.30	46.4
6u	U	14	0	15	0.0	0.339	8.9	LOS A	2.5	17.6	0.30	0.44	0.30	47.2
Approach		431	4	454	0.9	0.339	4.2	LOS A	2.5	17.6	0.30	0.44	0.30	46.4
West: Veron Street														
11	T1	263	1	277	0.4	0.265	4.1	LOS A	1.9	13.3	0.30	0.46	0.30	46.1
12	R2	60	3	63	5.0	0.265	7.4	LOS A	1.9	13.3	0.30	0.46	0.30	46.3
12u	U	4	0	4	0.0	0.265	8.9	LOS A	1.9	13.3	0.30	0.46	0.30	46.0
Approach		327	4	344	1.2	0.265	4.7	LOS A	1.9	13.3	0.30	0.46	0.30	46.1
All Vehicles		897	13	944	1.4	0.339	5.0	LOS A	2.5	17.6	0.35	0.49	0.35	46.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX+DEV AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	111	3	117	2.7	0.225	6.1	LOS A	1.4	9.9	0.59	0.68	0.59	44.6
3	R2	83	1	87	1.2	0.225	9.4	LOS A	1.4	9.9	0.59	0.68	0.59	45.7
3u	U	1	0	1	0.0	0.225	10.9	LOS A	1.4	9.9	0.59	0.68	0.59	46.6
Approach		195	4	205	2.1	0.225	7.5	LOS A	1.4	9.9	0.59	0.68	0.59	45.1
East: Veron Street														
4	L2	44	0	46	0.0	0.300	4.2	LOS A	2.1	15.0	0.33	0.45	0.33	46.4
5	T1	313	2	329	0.6	0.300	4.2	LOS A	2.1	15.0	0.33	0.45	0.33	46.3
6u	U	6	0	6	0.0	0.300	9.0	LOS A	2.1	15.0	0.33	0.45	0.33	47.1
Approach		363	2	382	0.6	0.300	4.3	LOS A	2.1	15.0	0.33	0.45	0.33	46.3
West: Veron Street														
11	T1	363	3	382	0.8	0.370	4.3	LOS A	2.9	20.9	0.38	0.48	0.38	45.8
12	R2	71	3	75	4.2	0.370	7.6	LOS A	2.9	20.9	0.38	0.48	0.38	46.1
12u	U	13	0	14	0.0	0.370	9.1	LOS A	2.9	20.9	0.38	0.48	0.38	45.7
Approach		447	6	471	1.3	0.370	5.0	LOS A	2.9	20.9	0.38	0.48	0.38	45.8
All Vehicles		1005	12	1058	1.2	0.370	5.2	LOS A	2.9	20.9	0.40	0.51	0.40	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX+DEV PM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	83	4	87	4.8	0.173	6.7	LOS A	1.0	7.4	0.61	0.70	0.61	44.3
3	R2	54	1	57	1.9	0.173	9.9	LOS A	1.0	7.4	0.61	0.70	0.61	45.4
3u	U	2	0	2	0.0	0.173	11.3	LOS A	1.0	7.4	0.61	0.70	0.61	46.3
Approach		139	5	146	3.6	0.173	8.0	LOS A	1.0	7.4	0.61	0.70	0.61	44.8
East: Veron Street														
4	L2	39	0	41	0.0	0.349	4.1	LOS A	2.6	18.3	0.32	0.44	0.32	46.4
5	T1	385	4	405	1.0	0.349	4.1	LOS A	2.6	18.3	0.32	0.44	0.32	46.3
6u	U	14	0	15	0.0	0.349	8.9	LOS A	2.6	18.3	0.32	0.44	0.32	47.1
Approach		438	4	461	0.9	0.349	4.3	LOS A	2.6	18.3	0.32	0.44	0.32	46.3
West: Veron Street														
11	T1	263	1	277	0.4	0.270	4.1	LOS A	1.9	13.6	0.30	0.47	0.30	46.0
12	R2	67	3	71	4.5	0.270	7.4	LOS A	1.9	13.6	0.30	0.47	0.30	46.3
12u	U	4	0	4	0.0	0.270	8.9	LOS A	1.9	13.6	0.30	0.47	0.30	45.9
Approach		334	4	352	1.2	0.270	4.8	LOS A	1.9	13.6	0.30	0.47	0.30	46.1
All Vehicles		911	13	959	1.4	0.349	5.0	LOS A	2.6	18.3	0.36	0.49	0.36	46.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX AM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	111	3	142	2.7	0.297	6.9	LOS A	1.9	13.8	0.67	0.74	0.67	44.1
3	R2	83	1	107	1.2	0.297	10.2	LOS A	1.9	13.8	0.67	0.74	0.67	45.3
3u	U	1	0	1	0.0	0.297	11.7	LOS A	1.9	13.8	0.67	0.74	0.67	46.2
Approach		195	4	250	2.1	0.297	8.3	LOS A	1.9	13.8	0.67	0.74	0.67	44.7
East: Veron Street														
4	L2	41	0	53	0.0	0.369	4.4	LOS A	2.9	20.1	0.40	0.47	0.40	46.2
5	T1	313	2	402	0.6	0.369	4.4	LOS A	2.9	20.1	0.40	0.47	0.40	46.1
6u	U	6	0	8	0.0	0.369	9.2	LOS A	2.9	20.1	0.40	0.47	0.40	46.9
Approach		360	2	462	0.6	0.369	4.5	LOS A	2.9	20.1	0.40	0.47	0.40	46.1
West: Veron Street														
11	T1	363	3	466	0.8	0.460	4.6	LOS A	4.1	28.9	0.47	0.51	0.47	45.5
12	R2	68	3	87	4.4	0.460	7.9	LOS A	4.1	28.9	0.47	0.51	0.47	45.8
12u	U	13	0	17	0.0	0.460	9.4	LOS A	4.1	28.9	0.47	0.51	0.47	45.3
Approach		444	6	570	1.4	0.460	5.2	LOS A	4.1	28.9	0.47	0.51	0.47	45.6
All Vehicles		999	12	1282	1.2	0.460	5.6	LOS A	4.1	28.9	0.48	0.54	0.48	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX PM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	83	4	107	4.8	0.233	7.6	LOS A	1.4	10.5	0.69	0.76	0.69	43.8
3	R2	54	1	69	1.9	0.233	10.8	LOS A	1.4	10.5	0.69	0.76	0.69	45.0
3u	U	2	0	3	0.0	0.233	12.2	LOS A	1.4	10.5	0.69	0.76	0.69	45.9
Approach		139	5	178	3.6	0.233	8.9	LOS A	1.4	10.5	0.69	0.76	0.69	44.3
East: Veron Street														
4	L2	32	0	41	0.0	0.421	4.2	LOS A	3.4	24.3	0.37	0.45	0.37	46.2
5	T1	385	4	494	1.0	0.421	4.3	LOS A	3.4	24.3	0.37	0.45	0.37	46.1
6u	U	14	0	18	0.0	0.421	9.1	LOS A	3.4	24.3	0.37	0.45	0.37	47.0
Approach		431	4	553	0.9	0.421	4.4	LOS A	3.4	24.3	0.37	0.45	0.37	46.2
West: Veron Street														
11	T1	263	1	337	0.4	0.330	4.2	LOS A	2.5	17.8	0.36	0.48	0.36	45.9
12	R2	60	3	77	5.0	0.330	7.6	LOS A	2.5	17.8	0.36	0.48	0.36	46.2
12u	U	4	0	5	0.0	0.330	9.0	LOS A	2.5	17.8	0.36	0.48	0.36	45.8
Approach		327	4	420	1.2	0.330	4.9	LOS A	2.5	17.8	0.36	0.48	0.36	45.9
All Vehicles		897	13	1151	1.4	0.421	5.3	LOS A	3.4	24.3	0.41	0.51	0.41	45.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX+DEV AM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	111	3	142	2.7	0.297	6.9	LOS A	1.9	13.8	0.67	0.74	0.67	44.1
3	R2	83	1	107	1.2	0.297	10.2	LOS A	1.9	13.8	0.67	0.74	0.67	45.3
3u	U	1	0	1	0.0	0.297	11.7	LOS A	1.9	13.8	0.67	0.74	0.67	46.2
Approach		195	4	250	2.1	0.297	8.3	LOS A	1.9	13.8	0.67	0.74	0.67	44.7
East: Veron Street														
4	L2	44	0	56	0.0	0.374	4.4	LOS A	2.9	20.5	0.41	0.47	0.41	46.2
5	T1	313	2	402	0.6	0.374	4.4	LOS A	2.9	20.5	0.41	0.47	0.41	46.0
6u	U	6	0	8	0.0	0.374	9.2	LOS A	2.9	20.5	0.41	0.47	0.41	46.9
Approach		363	2	466	0.6	0.374	4.5	LOS A	2.9	20.5	0.41	0.47	0.41	46.1
West: Veron Street														
11	T1	363	3	466	0.8	0.463	4.6	LOS A	4.1	29.2	0.47	0.51	0.47	45.5
12	R2	71	3	91	4.2	0.463	7.9	LOS A	4.1	29.2	0.47	0.51	0.47	45.8
12u	U	13	0	17	0.0	0.463	9.4	LOS A	4.1	29.2	0.47	0.51	0.47	45.3
Approach		447	6	574	1.3	0.463	5.2	LOS A	4.1	29.2	0.47	0.51	0.47	45.6
All Vehicles		1005	12	1290	1.2	0.463	5.6	LOS A	4.1	29.2	0.49	0.54	0.49	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Veron Street Intersection EX+DEV PM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lytton Street														
1	L2	83	4	107	4.8	0.233	7.6	LOS A	1.5	10.5	0.70	0.76	0.70	43.8
3	R2	54	1	69	1.9	0.233	10.8	LOS A	1.5	10.5	0.70	0.76	0.70	45.0
3u	U	2	0	3	0.0	0.233	12.2	LOS A	1.5	10.5	0.70	0.76	0.70	45.9
Approach		139	5	178	3.6	0.233	8.9	LOS A	1.5	10.5	0.70	0.76	0.70	44.3
East: Veron Street														
4	L2	39	0	50	0.0	0.435	4.3	LOS A	3.6	25.3	0.39	0.46	0.39	46.2
5	T1	385	4	494	1.0	0.435	4.4	LOS A	3.6	25.3	0.39	0.46	0.39	46.0
6u	U	14	0	18	0.0	0.435	9.2	LOS A	3.6	25.3	0.39	0.46	0.39	46.9
Approach		438	4	562	0.9	0.435	4.5	LOS A	3.6	25.3	0.39	0.46	0.39	46.1
West: Veron Street														
11	T1	263	1	337	0.4	0.336	4.2	LOS A	2.6	18.3	0.36	0.48	0.36	45.9
12	R2	67	3	86	4.5	0.336	7.6	LOS A	2.6	18.3	0.36	0.48	0.36	46.1
12u	U	4	0	5	0.0	0.336	9.0	LOS A	2.6	18.3	0.36	0.48	0.36	45.7
Approach		334	4	429	1.2	0.336	5.0	LOS A	2.6	18.3	0.36	0.48	0.36	45.9
All Vehicles		911	13	1169	1.4	0.435	5.3	LOS A	3.6	25.3	0.43	0.52	0.43	45.7

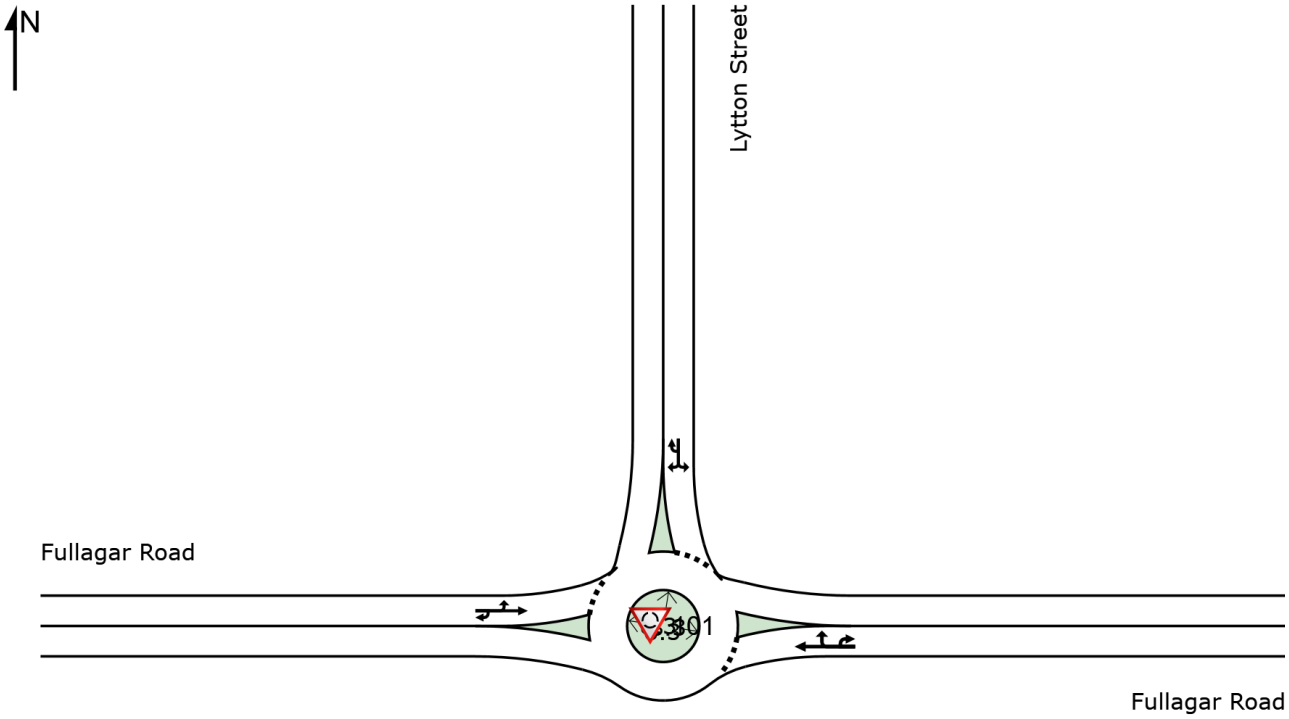
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Site: 101 [Lytton Street / Fullagar Road Intersection EX AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	118	0	124	0.0	0.128	4.3	LOS A	0.8	5.4	0.30	0.48	0.30	45.5
12	R2	23	0	24	0.0	0.128	7.3	LOS A	0.8	5.4	0.30	0.48	0.30	46.5
12u	U	1	0	1	0.0	0.128	8.7	LOS A	0.8	5.4	0.30	0.48	0.30	46.5
Approach		142	0	149	0.0	0.128	4.8	LOS A	0.8	5.4	0.30	0.48	0.30	45.7
North: Lytton Street														
1	L2	13	0	14	0.0	0.108	5.7	LOS A	0.6	4.2	0.47	0.65	0.47	44.8
3	R2	86	1	91	1.2	0.108	8.4	LOS A	0.6	4.2	0.47	0.65	0.47	44.3
3u	U	1	0	1	0.0	0.108	9.8	LOS A	0.6	4.2	0.47	0.65	0.47	45.9
Approach		100	1	105	1.0	0.108	8.1	LOS A	0.6	4.2	0.47	0.65	0.47	44.4
West: Fullagar Road														
4	L2	163	1	172	0.6	0.296	4.1	LOS A	2.1	14.8	0.16	0.44	0.16	46.0
5	T1	248	1	261	0.4	0.296	3.9	LOS A	2.1	14.8	0.16	0.44	0.16	46.3
6u	U	1	0	1	0.0	0.296	8.2	LOS A	2.1	14.8	0.16	0.44	0.16	45.6
Approach		412	2	434	0.5	0.296	4.0	LOS A	2.1	14.8	0.16	0.44	0.16	46.2
All Vehicles		654	3	688	0.5	0.296	4.8	LOS A	2.1	14.8	0.24	0.48	0.24	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX PM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	225	0	237	0.0	0.216	4.5	LOS A	1.4	9.6	0.35	0.48	0.35	45.5
12	R2	15	0	16	0.0	0.216	7.5	LOS A	1.4	9.6	0.35	0.48	0.35	46.5
12u	U	1	0	1	0.0	0.216	8.9	LOS A	1.4	9.6	0.35	0.48	0.35	46.6
Approach		241	0	254	0.0	0.216	4.7	LOS A	1.4	9.6	0.35	0.48	0.35	45.6
North: Lytton Street														
1	L2	12	0	13	0.0	0.113	4.7	LOS A	0.6	4.3	0.33	0.60	0.33	45.1
3	R2	107	0	113	0.0	0.113	7.5	LOS A	0.6	4.3	0.33	0.60	0.33	44.6
3u	U	1	0	1	0.0	0.113	8.9	LOS A	0.6	4.3	0.33	0.60	0.33	46.2
Approach		120	0	126	0.0	0.113	7.2	LOS A	0.6	4.3	0.33	0.60	0.33	44.7
West: Fullagar Road														
4	L2	140	0	147	0.0	0.184	4.0	LOS A	1.2	8.3	0.12	0.45	0.12	46.2
5	T1	116	2	122	1.7	0.184	3.8	LOS A	1.2	8.3	0.12	0.45	0.12	46.4
6u	U	1	0	1	0.0	0.184	8.2	LOS A	1.2	8.3	0.12	0.45	0.12	45.7
Approach		257	2	271	0.8	0.184	3.9	LOS A	1.2	8.3	0.12	0.45	0.12	46.3
All Vehicles		618	2	651	0.3	0.216	4.9	LOS A	1.4	9.6	0.25	0.49	0.25	45.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX+DEV AM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	118	0	124	0.0	0.130	4.3	LOS A	0.8	5.5	0.30	0.49	0.30	45.5
12	R2	26	0	27	0.0	0.130	7.3	LOS A	0.8	5.5	0.30	0.49	0.30	46.5
12u	U	1	0	1	0.0	0.130	8.7	LOS A	0.8	5.5	0.30	0.49	0.30	46.5
Approach		145	0	153	0.0	0.130	4.9	LOS A	0.8	5.5	0.30	0.49	0.30	45.7
North: Lytton Street														
1	L2	13	0	14	0.0	0.109	5.7	LOS A	0.6	4.2	0.47	0.65	0.47	44.8
3	R2	86	1	91	1.2	0.109	8.4	LOS A	0.6	4.2	0.47	0.65	0.47	44.3
3u	U	1	0	1	0.0	0.109	9.8	LOS A	0.6	4.2	0.47	0.65	0.47	45.9
Approach		100	1	105	1.0	0.109	8.1	LOS A	0.6	4.2	0.47	0.65	0.47	44.4
West: Fullagar Road														
4	L2	166	1	175	0.6	0.301	4.1	LOS A	2.2	15.1	0.17	0.44	0.17	46.0
5	T1	248	1	261	0.4	0.301	3.9	LOS A	2.2	15.1	0.17	0.44	0.17	46.2
6u	U	1	0	1	0.0	0.301	8.3	LOS A	2.2	15.1	0.17	0.44	0.17	45.5
Approach		415	2	437	0.5	0.301	4.0	LOS A	2.2	15.1	0.17	0.44	0.17	46.1
All Vehicles		660	3	695	0.5	0.301	4.8	LOS A	2.2	15.1	0.25	0.48	0.25	45.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX+DEV PM (Site Folder: 2021)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	225	0	237	0.0	0.222	4.5	LOS A	1.4	9.9	0.35	0.49	0.35	45.5
12	R2	22	0	23	0.0	0.222	7.5	LOS A	1.4	9.9	0.35	0.49	0.35	46.5
12u	U	1	0	1	0.0	0.222	8.9	LOS A	1.4	9.9	0.35	0.49	0.35	46.5
Approach		248	0	261	0.0	0.222	4.8	LOS A	1.4	9.9	0.35	0.49	0.35	45.6
North: Lytton Street														
1	L2	12	0	13	0.0	0.113	4.7	LOS A	0.6	4.4	0.33	0.60	0.33	45.1
3	R2	107	0	113	0.0	0.113	7.5	LOS A	0.6	4.4	0.33	0.60	0.33	44.6
3u	U	1	0	1	0.0	0.113	8.9	LOS A	0.6	4.4	0.33	0.60	0.33	46.2
Approach		120	0	126	0.0	0.113	7.2	LOS A	0.6	4.4	0.33	0.60	0.33	44.7
West: Fullagar Road														
4	L2	147	0	155	0.0	0.195	4.1	LOS A	1.3	8.8	0.14	0.45	0.14	46.1
5	T1	116	2	122	1.7	0.195	3.9	LOS A	1.3	8.8	0.14	0.45	0.14	46.3
6u	U	1	0	1	0.0	0.195	8.2	LOS A	1.3	8.8	0.14	0.45	0.14	45.6
Approach		264	2	278	0.8	0.195	4.0	LOS A	1.3	8.8	0.14	0.45	0.14	46.2
All Vehicles		632	2	665	0.3	0.222	4.9	LOS A	1.4	9.9	0.26	0.49	0.26	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX AM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	118	0	151	0.0	0.159	4.5	LOS A	1.0	7.0	0.35	0.50	0.35	45.4
12	R2	23	0	30	0.0	0.159	7.4	LOS A	1.0	7.0	0.35	0.50	0.35	46.4
12u	U	1	0	1	0.0	0.159	8.8	LOS A	1.0	7.0	0.35	0.50	0.35	46.4
Approach		142	0	182	0.0	0.159	5.0	LOS A	1.0	7.0	0.35	0.50	0.35	45.6
North: Lytton Street														
1	L2	13	0	17	0.0	0.139	6.1	LOS A	0.8	5.5	0.52	0.68	0.52	44.6
3	R2	86	1	110	1.2	0.139	8.9	LOS A	0.8	5.5	0.52	0.68	0.52	44.0
3u	U	1	0	1	0.0	0.139	10.3	LOS A	0.8	5.5	0.52	0.68	0.52	45.7
Approach		100	1	128	1.0	0.139	8.6	LOS A	0.8	5.5	0.52	0.68	0.52	44.1
West: Fullagar Road														
4	L2	163	1	209	0.6	0.363	4.1	LOS A	2.8	19.9	0.20	0.44	0.20	45.9
5	T1	248	1	318	0.4	0.363	3.9	LOS A	2.8	19.9	0.20	0.44	0.20	46.2
6u	U	1	0	1	0.0	0.363	8.3	LOS A	2.8	19.9	0.20	0.44	0.20	45.4
Approach		412	2	529	0.5	0.363	4.0	LOS A	2.8	19.9	0.20	0.44	0.20	46.1
All Vehicles		654	3	839	0.5	0.363	4.9	LOS A	2.8	19.9	0.28	0.49	0.28	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX PM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	225	0	289	0.0	0.271	4.8	LOS A	1.8	12.7	0.41	0.51	0.41	45.3
12	R2	15	0	19	0.0	0.271	7.7	LOS A	1.8	12.7	0.41	0.51	0.41	46.4
12u	U	1	0	1	0.0	0.271	9.1	LOS A	1.8	12.7	0.41	0.51	0.41	46.4
Approach		241	0	309	0.0	0.271	5.0	LOS A	1.8	12.7	0.41	0.51	0.41	45.4
North: Lytton Street														
1	L2	12	0	15	0.0	0.142	5.0	LOS A	0.8	5.6	0.37	0.61	0.37	45.0
3	R2	107	0	137	0.0	0.142	7.7	LOS A	0.8	5.6	0.37	0.61	0.37	44.5
3u	U	1	0	1	0.0	0.142	9.1	LOS A	0.8	5.6	0.37	0.61	0.37	46.1
Approach		120	0	154	0.0	0.142	7.4	LOS A	0.8	5.6	0.37	0.61	0.37	44.6
West: Fullagar Road														
4	L2	140	0	180	0.0	0.226	4.0	LOS A	1.5	10.8	0.14	0.45	0.14	46.1
5	T1	116	2	149	1.7	0.226	3.9	LOS A	1.5	10.8	0.14	0.45	0.14	46.3
6u	U	1	0	1	0.0	0.226	8.2	LOS A	1.5	10.8	0.14	0.45	0.14	45.6
Approach		257	2	330	0.8	0.226	4.0	LOS A	1.5	10.8	0.14	0.45	0.14	46.2
All Vehicles		618	2	793	0.3	0.271	5.0	LOS A	1.8	12.7	0.29	0.50	0.29	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX+DEV AM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	118	0	151	0.0	0.162	4.5	LOS A	1.0	7.1	0.35	0.50	0.35	45.4
12	R2	26	0	33	0.0	0.162	7.4	LOS A	1.0	7.1	0.35	0.50	0.35	46.4
12u	U	1	0	1	0.0	0.162	8.8	LOS A	1.0	7.1	0.35	0.50	0.35	46.4
Approach		145	0	186	0.0	0.162	5.0	LOS A	1.0	7.1	0.35	0.50	0.35	45.6
North: Lytton Street														
1	L2	13	0	17	0.0	0.139	6.1	LOS A	0.8	5.6	0.52	0.68	0.52	44.6
3	R2	86	1	110	1.2	0.139	8.9	LOS A	0.8	5.6	0.52	0.68	0.52	44.0
3u	U	1	0	1	0.0	0.139	10.3	LOS A	0.8	5.6	0.52	0.68	0.52	45.7
Approach		100	1	128	1.0	0.139	8.6	LOS A	0.8	5.6	0.52	0.68	0.52	44.1
West: Fullagar Road														
4	L2	166	1	213	0.6	0.370	4.2	LOS A	2.9	20.4	0.21	0.44	0.21	45.9
5	T1	248	1	318	0.4	0.370	4.0	LOS A	2.9	20.4	0.21	0.44	0.21	46.1
6u	U	1	0	1	0.0	0.370	8.3	LOS A	2.9	20.4	0.21	0.44	0.21	45.3
Approach		415	2	533	0.5	0.370	4.1	LOS A	2.9	20.4	0.21	0.44	0.21	46.0
All Vehicles		660	3	847	0.5	0.370	5.0	LOS A	2.9	20.4	0.29	0.49	0.29	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Lytton Street / Fullagar Road Intersection EX+DEV PM (Site Folder: 2031)]

Wentworthville Northside West Clinic
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Fullagar Road														
11	T1	225	0	289	0.0	0.278	4.8	LOS A	1.9	13.1	0.41	0.51	0.41	45.3
12	R2	22	0	28	0.0	0.278	7.7	LOS A	1.9	13.1	0.41	0.51	0.41	46.3
12u	U	1	0	1	0.0	0.278	9.1	LOS A	1.9	13.1	0.41	0.51	0.41	46.4
Approach		248	0	318	0.0	0.278	5.0	LOS A	1.9	13.1	0.41	0.51	0.41	45.4
North: Lytton Street														
1	L2	12	0	15	0.0	0.142	5.0	LOS A	0.8	5.6	0.37	0.61	0.37	45.0
3	R2	107	0	137	0.0	0.142	7.7	LOS A	0.8	5.6	0.37	0.61	0.37	44.5
3u	U	1	0	1	0.0	0.142	9.1	LOS A	0.8	5.6	0.37	0.61	0.37	46.1
Approach		120	0	154	0.0	0.142	7.4	LOS A	0.8	5.6	0.37	0.61	0.37	44.6
West: Fullagar Road														
4	L2	147	0	189	0.0	0.239	4.1	LOS A	1.6	11.5	0.17	0.45	0.17	46.0
5	T1	116	2	149	1.7	0.239	3.9	LOS A	1.6	11.5	0.17	0.45	0.17	46.2
6u	U	1	0	1	0.0	0.239	8.3	LOS A	1.6	11.5	0.17	0.45	0.17	45.5
Approach		264	2	339	0.8	0.239	4.0	LOS A	1.6	11.5	0.17	0.45	0.17	46.1
All Vehicles		632	2	811	0.3	0.278	5.1	LOS A	1.9	13.1	0.30	0.51	0.30	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.