



Deicorp Projects (Ashfield) Pty Ltd

Traffic Impact Assessment Report

Proposed Residential Development and Polish Club

73-75 Norton Street, Ashfield

November 2020

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List of Abbreviations

Abbreviations

DCP	Inner West Council Development Control Plan
LEP	Inner West Council Local Environmental Plan
GFA	Gross Floor Area
AS/NZS2890.1	Australian Standards, 'AS/NZS 2890.1:2004 Off-Street Car Parking'
AS2890.2.....	Australian Standards, 'AS 2890.2:2018 Off-Street Commercial Vehicle Facilities'
AS/NZS2890.6.....	Australian Standards, 'AS/NZS 2890.6:2002 Off-Street Parking for People with Disabilities'
RMS.....	Roads and Maritime Services
RMS Guide	RMS Guide to Traffic Generating Developments, Version 2.2, October 2002
RMS Guide Update	RMS Guide to Traffic Generating Developments, Updated Traffic Surveys

1 Introduction

Barker Ryan Stewart have been engaged by Deicorp Projects (Ashfield) Pty Ltd to prepare a Traffic and Parking Impact Assessment in accordance with Inner West Council's DCP and LEP and the Roads and Maritime Services (RMS) '*Guide to Traffic Generating Developments*' to accompany a proposal for a mixed-use development comprised of residential units and social club use at 73-75 Norton Street, Ashfield.

The purpose of this report is to assess and address traffic, access, car parking and pedestrian and cycling impacts generated by the proposed development and recommend any mitigation measures where required. This can be briefly outlined as follows:

- The expected traffic generation to/from the proposed development.
- The impact of the proposed development on the road network.
- Intersection analysis based on traffic counts.
- Vehicle parking provisions.
- Access design requirements.
- Vehicular requirements for delivery and waste collection.
- Safety of pedestrians and cyclists and the impact on existing pedestrian and cycling networks.
- Availability of public transport.

This Traffic and Parking Impact Assessment concludes that the subject site is suitable for the proposed development in relation to traffic impact, car parking provision, safety of and provision for pedestrians and cyclists.

2 Existing Conditions

2.1 Site Location

The site is located at 73-75 Norton Street, Ashfield (Lots A and B, DP 336541 Lot 1 DP 180145, Lot 1 DP 170305 and Lot 12, DP 592302) and is currently occupied by the Polish Club.

It is bounded by Liverpool Road and commercial developments to the north, Holden Street to the west, Queen Street to the east and Norton Street to the south. Access is via an existing two-way vehicle crossing off Norton Street.



Figure 1: Site Location (source: NearMap April 2020)

2.2 Existing Road Conditions

Liverpool Road

Liverpool Road (A22) is the major road through Ashfield. It is a state road running in an east-west direction, north of the site. It connects Parramatta Road to the east with Copeland Street and Orange Grove Road to the west. It has an undivided 12.2 metre wide carriageway generally with two traffic lanes in each direction except for 1 hour parking through the Ashfield town centre outside of the morning and afternoon peak periods. The posted speed limit is 60km/hr with speed reduced to 40km/hr around schools.

Queen Street

Queen Street is a local road that provides a connection between Liverpool Road at the northern end and Old Canterbury road at the southern end. It generally has one traffic lane, and a parking lane in each direction, with a total carriageway width of 12 metres. Pedestrian footpaths are provided along both sides of the road. The posted speed limit on Queen Street is 50km/hr and it forms a roundabout intersection with Norton Street and a signalised intersection with Liverpool Road.

Holden Street

Holden Street is a local road that runs parallel to Queen Street and provides a connection between Liverpool Road at the northern end to Princess Street at the southern end of the road. It has a 12 metre wide carriage way with one traffic lane and one parking lane on each direction. Pedestrian footpaths are provided on each side of the road and the posted speed limit is 50km/hr. The Liverpool Road / Holden Street intersection and the Holden Street / Norton Street intersection are both under traffic signal control.

Norton Street

Norton Street is a local road that operates in a one-way direction in a westerly direction to the west of Victoria Street. It has a 6 metre wide pavement that generally consists of a single traffic lane with No Stopping restrictions along the southern side from Queen Street to Holden Street. A 50 metre long section of 2-hour parking (Monday-Friday 8am-6pm) is available along the northern side at the Queen Street end of the street and the remainder of the northern side is signposted as "No Parking" including across the frontage of the subject site. Pedestrian footpaths are provided on each side of the road and the posted speed limit is 50km/hr.

2.3 Existing Traffic Volumes

Traffic counts were undertaken during the morning and afternoon peak periods to gauge the performance of the current road network. The traffic counts were undertaken between the hours of 7am – 9am and 3:30pm – 5:30pm on Tuesday 5th May 2020 at the following intersections:

- Liverpool Road / Queen Street signalised intersection
- Queen Street / Norton Street roundabout

The location of the intersections where the traffic counts were undertaken are highlighted by red circles in Figure 1 (Page 5), Section 2.1 of this report.

It should be noted that the traffic counts were undertaken during the Coronavirus (COVID-19) pandemic lockdown and therefore the external traffic conditions are not that of a typical mid-week day. Consequently, the SCATS detector counts for the Liverpool Road / Queen Street signalised intersection were obtained from Transport for NSW for a typical mid-week day in February 2020 and compared to the physical counts conducted at this intersection. Accordingly, the AM and PM counts recorded at the surveyed intersections were factored by 1.58 and 1.22 (respectively) to obtain the external traffic conditions of a typical mid-week day. The traffic volumes for the intersections of Holden Street with Liverpool Road and Norton Street were obtained through SCATS data.

The peak hour periods, calibrated traffic volumes and layouts for each of these intersections are summarised below in Figures 2.2 to 2.5. The common peak periods adopted for these intersections are 8.00am to 9.00am and 4.30pm to 5.30pm.

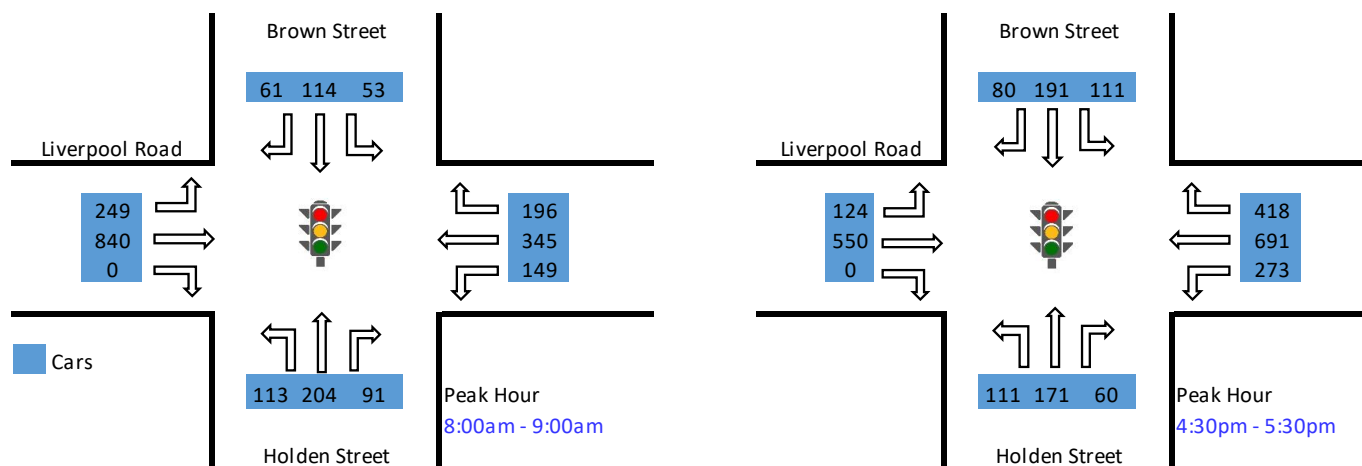


Figure 2.2: Liverpool Road / Brown Street / Holden Street Intersection Survey

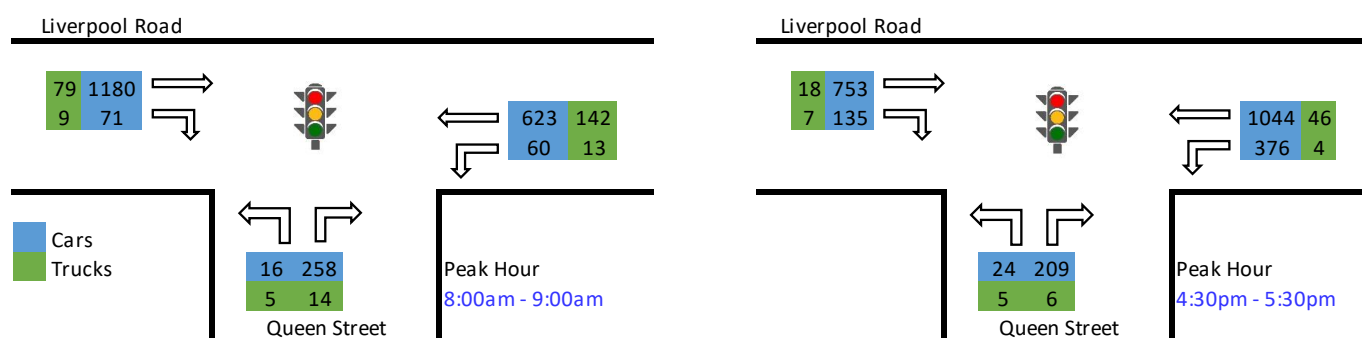


Figure 2.3: Liverpool Road / Queen Street Intersection Survey

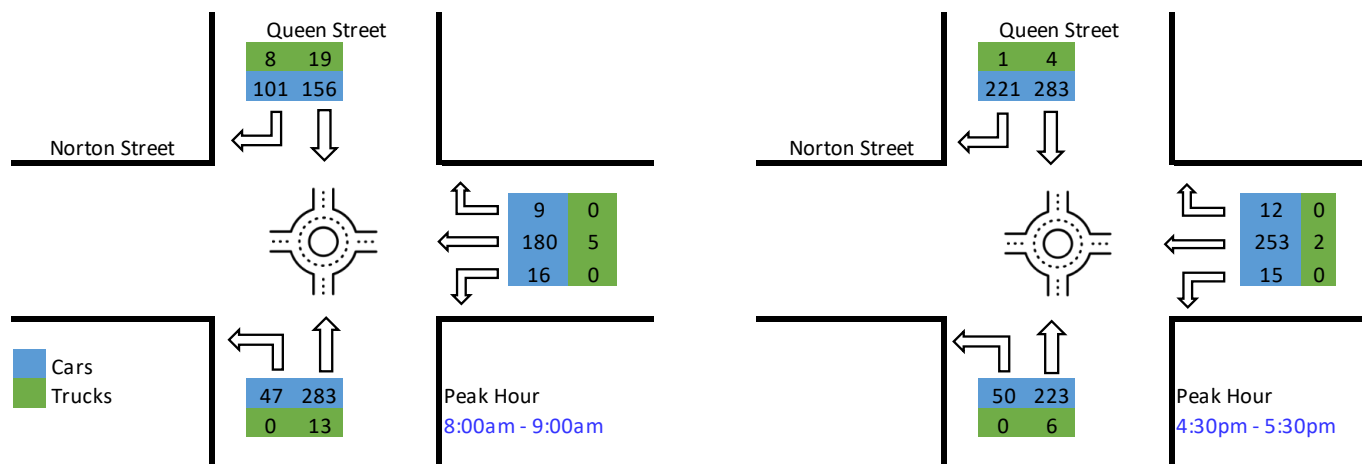


Figure 2.4: Queen Street / Norton Street Intersection Survey

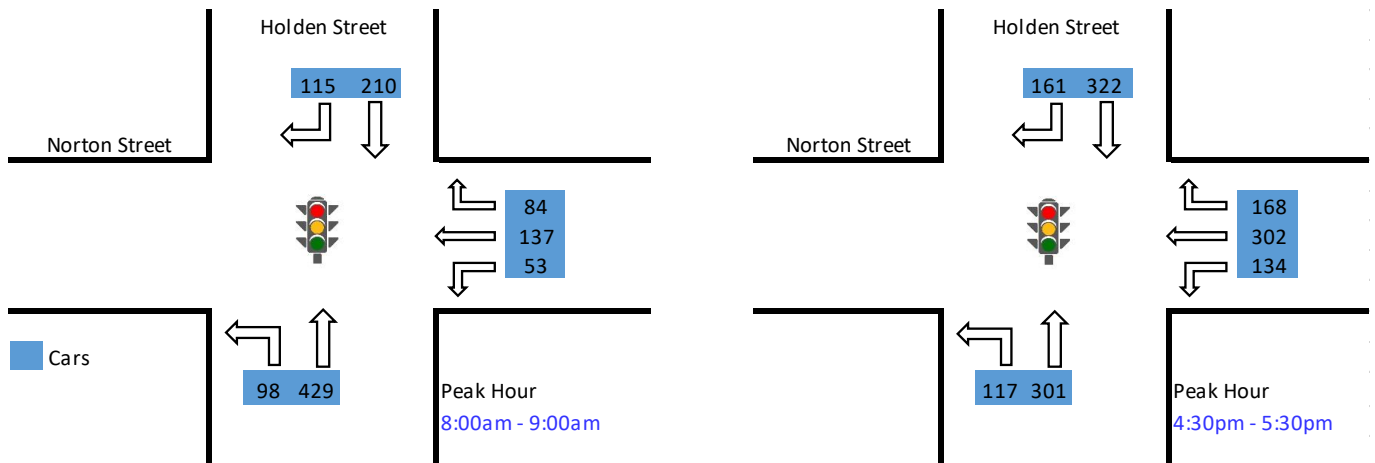


Figure 2.3: Norton Street / Holden Street Intersection Survey

2.3.1 Peak Hour Traffic Volumes

The calibrated traffic counts and SCATS data for the 4 intersections for this assessment provide data on the current hourly volumes and an indication of the existing peak hour operational performance of each of the roads in the area surrounding the site.

Below is an overview of the hourly traffic volumes and the current operational performance of the surrounding network, based on the 'Guide to Traffic Generating Developments' that states:

'typical one-way mid-block lane capacities on urban arterial roads under interrupted flow conditions are 900-1000 veh/hr/lane. This calculation assumes Clearway conditions. The capacity falls to 600 veh/hr/lane for a kerbside lane with occasional parked vehicles. These capacities at times may increase under ideal conditions to 1200-1400 veh/hr.'

Liverpool Road

AM – 2,369 vehicles per hour two-way (1,530 eastbound and 838 westbound). The eastbound carriageway (2 lanes) averaged 765 vehicles per lane (LoS C). The westbound carriageway (2 lanes) averaged 419 vehicles per lane (LoS A).

PM – 2,456 vehicles per hour, two-way (986 eastbound and 1,470 westbound). The eastbound carriageway (2 lanes) averaged 493 vehicles per lane (LoS B). The westbound carriageway (2 lanes) averaged 735 vehicles per lane (LoS B).

Queen Street

AM – 627 vehicles per hour, two-way (343 northbound and 284 southbound). (LoS A

PM - 788 vehicles per hour, two-way (279 northbound and 509 southbound) (LoS C).

Holden Street

AM - 670 vehicles per hour, two-way (408 northbound and 262 southbound) (LoS C).

PM - 806 vehicles per hour, two-way (342 northbound and 464 southbound) (LoS C).

Norton Street

AM - 350 vehicles per hour, one-way (LoS B).

PM - 580 vehicles per hour, one-way (LoS C).

These hourly volumes indicate that the road network surrounding the site is operating at a high level of service with ample spare capacity to cater for the additional traffic that will be generated by developments in the area.

2.3.2 Daily Traffic Volumes

An indication of daily traffic volumes on Liverpool Road and the growth trends in recent years has been obtained from a permanent counting station (Stn ID: 28022) on Liverpool road at Strathfield South. The traffic volumes recorded at this counting station show that daily volumes increased from 51,373 vehicles per day in 2009 to 57,133 vehicles per day in 2019, an increase of 11.2% over 10 years - an average of 1.1% per annum.

2.4 Public Transport, Pedestrian and Cycling Facilities

The area is well serviced by public transport with numerous bus stops located within 400 metres of the site on Liverpool Road, Holden Street, Queen Street and Victoria Street. These bus stops provide the following services:

- Route 43T2 Strathfield, then all stations to Ashfield
- Route 406 Five Dock to Hurlstone Park
- Route 418 Kingsford to Burwood via Mascot, Sydenham & Dulwich Hill
- Route 464 Ashfield to Mortlake
- Route 466 Ashfield to Cabarita Park
- Route 480 Strathfield to Central Pitt Street via Homebush Road
- Route 483 Strathfield to Central Pitt Street via South Strathfield
- Route 491 Hurstville to Five Dock

The full bus network map is attached at **Appendix B**. The Ashfield Train Station is located approximately 300m to the north west of the site which services the T2 – Inner West and Leppington Line. This rail service connects the site to Parramatta, Leppington and the Sydney CBD with trains arriving approximately every seven minutes during peak hours. It ultimately connects to the greater Sydney Train Network providing access to areas such as Blacktown, Strathfield and Sydney Airport. **Appendix C** provides a context of the location of Ashfield Train station within the entire Sydney train network. **Figure 2.6** identifies existing public bus and transport options in close proximity to the site.



Bus Stop Locations



Train Station Location

Figure 2.6: Location of Bus Stops and Ashfield Train Station to the site

The cycling network extends within the road corridors of Holden Street and Queen Street as shown in **Appendix D**. Generally, all roads within the vicinity of the site consist of pedestrian footpaths on both sides of the road.

Signalised pedestrian crossings are also available at the Liverpool Road / Holden Street, Liverpool Road / Queen Street and Norton Street / Holden Street signalised intersections. These facilities provide safe and convenient pedestrian access between the site and public transport services.

3 Proposed Development

3.1 Development Yield

The proposed development is comprised of residential and non-residential components as stipulated in the following table.

Table 1: Proposed Development Yield

Land Use		Yield
Residential	1 Bedroom	18 units
	2 Bedroom	64 units
	3 Bedroom	6 units
	Total	88 units
Polish Club		1,800m²

The Club facilities will consist of a private dining area (41m²), a restaurant (160m²), a lounge area (162m²), bar (103m²) and an auditorium with capacity for 300 seats. It is proposed that the Club will provide employment for 30 staff.

The basement level parking is spread over three levels and comprises of 192 spaces (75 Polish Club spaces in Basement 1 and 117 residential spaces in Basements 2 and 3), including 12 accessible spaces.

It is proposed to provide 14 bicycle spaces, consisting of 4 spaces the Basement 2 carpark and 10 spaces at ground level.

It is also proposed to provide 8 motorcycle spaces; 3 in Basement 1 and 5 in Basement 3.

3.2 Vehicular Access

Access to the site will be provided via the 7.6 metre wide vehicle crossing on Norton Street which provides access for both passenger vehicles and service vehicles (trucks). This width driveway is consistent with the requirements for a Category 2 driveway in accordance AS 2890.1: 2004 that specifies a driveway width of 6 to 9 metres.

The access will operate safely and efficiently as the full width of Norton Street (6 metres) will be available to provide for vehicles turning into the site without hindering westbound through vehicles. In addition, as Norton Street has a one-way traffic flow there will be no opposing traffic to delay vehicles turning into the site.

The access has been designed in accordance with Figure 3.3 of AS 2890.1: 2004 to provide minimum sight lines for pedestrian safety.

Car and heavy vehicle swept turning path plans have been provided in **Appendix E** in accordance with AS/NZS 2890.1-2004 *Parking Facilities – Off-Street Car Parking* and AS 2890.2-2018 *Off-Street Commercial Vehicle Facilities*. The swept path analysis indicates that the 9.4 waste collection vehicle used by Inner West Council will be able to enter the site in a forward direction from Norton Street, manoeuvre within the site and exit onto Norton Street in a forward direction.

Any potential conflicts between heavy and light vehicles using the same access to and from the site will be managed by ensuring that deliveries and waste collection are conducted outside the times of peak traffic flow. Details of how these potential conflicts will be managed are included in a separate Loading Dock Management Plan prepared by Barker Ryan Stewart dated 30 October 2020.

3.3 Internal Circulation

Access to and from the three basement carpark is via a ramp adjacent to the western boundary of the site. On arrival at Basement 1 level entry to the Polish Club parking is to the right via a boom gate. Two-way circulation through the Basement 1 is generally available by the provision of 5.8 metre wide aisles, except for a short one-way aisle 4.7 metres wide located towards the south-western corner of the site.

Access to and from Basements 2 and 3 is via ramps adjacent to the northern boundary of the site. Basements 2 and 3 are for resident parking only and will be identified by a sign at the top of the ramp to Basement 2. Entry and exit to Basements 2 and 3 will operate under free flow conditions.

The Basement 2 aisles vary in width from 5.1 metres to 6.67 metres wide and are able to cater for two-way traffic flow circulation. However, it is recommended that the narrowest aisle along the western side of the building (5.1 metres wide) be delineated as one-way in a clockwise direction. This arrangement also provides good sight distance between opposing vehicles at the base of the ramp up to Basement 1.

The operating conditions and circulation in Basement 3 are identical to those in Basement 2.

Swept path diagrams for passenger vehicles entering, exiting and circulating through the basement parking areas are provided at **Appendix E**.

The only potential vehicle conflict point is at the north-western corner of the building in Basement 1 between vehicles exiting the Club parking and vehicles entering and exiting Basement 2. However, as vehicles exiting the Club parking are controlled by boom gates all vehicles will be travelling at minimum speeds, thus reducing any potential conflicts to a low level of risk.

To improve sight lines between vehicles entering and exiting the Basement 2 ramp and Basement 3 ramp, it is recommended that convex mirrors be installed at the north-west corner of the building at the top of the ramps in Basement 1 and Basement 2.

Appendix D of AS/NZS 2890.1 states that boom gates have a capacity of 300 vehicles per hour per lane which equates to an average of 1 vehicle every 12 seconds.

The Polish Club parking area in Basement 1 has a capacity of 75 vehicles. The worst-case scenario is all Polish Club visitors arriving within a half-hour period, which equates to 150 vehicles per hour or 1 vehicle every 24 seconds; well within the capacity of the boom gates. The longest expected queue in Basement 1 will therefore be one vehicle.

The same conditions will apply to vehicles exiting the basement carpark. Therefore, it is expected that any queuing will not impact on the operation of the carpark or on circulation within the basements.

3.4 Pedestrian Access

Pedestrian access to and from the Polish Club will be provided at the Liverpool Road frontage of the site with convenient access to and from nearby bus stops and Ashfield railway station. Pedestrian access to and from the Club will also be available from Norton Street via an existing right of way along the western boundary of the adjacent property at No.81 Norton Street.

Pedestrian access for residents will only be available to and from Norton Street.

The existing network of pedestrian footpaths around the site and the pedestrian crossing facilities at the signalised intersections on Liverpool Road provide safe and convenient pedestrian access and will encourage patrons, residents and staff to use public transport or to walk to and from the site.

4 Car Parking Assessment

4.1 Parking Requirements

The parking requirements for the development have been assessed based on rates provided by Inner West Council DCP 2016. The applicable parking rates for the development are provided below:

	Council DCP Rates	RMS Guide Rates
• Residential	A minimum of 1 space for all dwellings (residents), 1 space per 4 dwellings (visitors) plus 1 car wash bay	0.6 spaces per 1 bedroom unit 0.9 spaces per 2 bedroom unit 1.4 spaces per 3 bedroom unit 1 visitor space per 5 units
• Licensed Club	1 space per 6m ² bar, lounge and dining room floor area, plus 1 space per 6 seats in an auditorium plus 1 space per 3 employees	Not provided

A summary of these requirements in relation to the development yield is included in Table 2 below.

Table 2: Minimum car parking requirements

Land Use		Development Yield	RMS Guide	Council DCP Minimum	Proposed
Residential	1-Bedroom	18 units	11 spaces	18 spaces	18 spaces
	2-Bedroom	64 units	58 spaces	64 spaces	64 spaces
	3-Bedroom	6 units	9 spaces	6 spaces	12 spaces
	Visitors	Total units: 88	18 spaces	22 spaces	22 spaces
				1 car wash	1 car wash
	Total Residential		96 spaces	111 spaces	117 spaces
Polish Club (1,800m ²)		466m ² (Dining, Lounge, Bar)	Not available see Table 3	77 spaces	75 spaces
		300 seats (Auditorium)	Not available see Table 3	55 spaces	
		30 Staff	Not available see Table 3	10 spaces	
Total Club			75 spaces	142 spaces	75 spaces
Total for the Site			171 spaces	253 spaces	192 spaces

As shown in Table 2, the proposed development provides 117 parking spaces for residents / visitors which exceeds the 111 minimum number of spaces required by the Council DCP by 6 spaces.

The Polish Club Parking Requirements

As shown in Table 2 above, Council requires 142 spaces for the Polish Club. The RMS Guide does not have specific parking rates for registered clubs, the Guide states:

"Off-street car parking must be provided to satisfy the average maximum demand. Research has indicated that the demand for parking varies substantially depending on the type of club and cannot readily be related to building floor areas or to the membership. The determination of the number of parking spaces required is therefore based on the characteristics of the proposed development. Comparisons must be drawn with similar clubs."

In this regard, comparison was made with a number of other clubs. Table 3 below indicates for each club the number of car parking spaces available, the number of members, the number of staff and the rate of parking provided per staff and per member.

Table 3: RMS Guide – parking rate comparison to other clubs

	No. Parking spaces	Staff	Parking spaces per Staff	Members	Parking spaces per members
Canterbury Hurlstone Park RSL	500	210	2.4	30,000	1.7 spaces per 100
West's Ashfield	448	200	2.24	9,000	5 spaces per 100
Earlwood Bardwell Park RSL (4,200m ²)	228	90	2.53	13,100	1.7 spaces per 100
Canada Bay Club	225	60	3.75	20,000	1.1 spaces per 100
Total Average			2.73		2.4 spaces per 100
Proposed Polish Club (1,800m ²)	75	30	2.5	730	10.7 spaces per 100

From Table 3 above the proposed parking provision for the new Polish Club of 75 spaces at rate of 2.5 spaces per staff is slightly less than that provided at some of the other clubs. When looking at the membership, the 75 spaces represent 10.7 spaces per 100 members which is more than double the parking rate for West's Ashfield and 4.5 times the average of 2.4 spaces per 100 from the comparison table. If applying the average rate of parking to the number of members at other clubs compared to the proposed new Polish Club, the new Polish Club would require only 18 car parking spaces, which is 57 spaces less than the proposed 75 spaces.

Furthermore, when assessing the required number of parking spaces for the Polish Club it would be reasonable to consider the following factors that could reduce the parking requirement by up to 40%:

- Dual use of the site by residents; and
- The proximity of the site to local residents and public transport.

The residential apartments proposed for the site have the potential for reducing the Club parking requirement for the dual use of the site, as residents who attend the club will have their own parking space on the site. A generally accepted discount for developments with dual use of facilities is 20% which would reduce the parking requirement.

The proximity of the site to the local residential area and public transport (buses, trains) also has the potential to reduce the parking requirement. These factors combined with the wider use in the community of taxis and other ride-share options when visiting clubs and pubs is likely to reduce the parking requirement by a further 20%.

Although not required to satisfy the car parking demand for the use of the club, another factor that could be considered is the opportunity to promote sustainable travel by staff.

In summary, the proposed 75 spaces for the use of patrons and staff of the Polish Club, is more than that required when compared to the RMS required comparison rates of other clubs and the current 58 car parking spaces is operating effectively based on the existing club which has a GFA of 1,200m² and a parking rate of 4.8 spaces per 100 members.

The 75 spaces proposed also meets the practical parking demand when assessed against the cross over uses with residents and the proximity to public transport (in particular being located within 400m of the Ashfield train station).

Bicycle and motorcycle parking requirements

In addition to the car spaces, the Inner West Council DCP requires the development to provide bicycle parking at the following rates:

- 1 bicycle space per 10 flats for residents and visitors
- 1 bicycle space per 100m² lounge bar and beer garden

This results in a requirement for the development to provide 14 bicycle spaces consisting of 9 spaces for residents / visitors and 5 spaces for the Club.

It is proposed to provide 14 bicycle spaces, consisting of 4 spaces the Basement 2 carpark and 10 spaces at ground level.

It is also proposed to provide 8 motorcycle spaces; 3 in Basement 1 and 5 in Basement 3.

The Inner West DCP requires the provision of motorcycle parking spaces at a rate of 1 space per 25 car parking spaces. For a total of 195 car parking spaces this would equate to 8 motorcycle spaces.

The development is proposing to provide 8 motorcycle spaces; 3 in Basement 1 and 5 in Basement 3.

4.2 Parking Compliance Check

Barker Ryan Stewart has reviewed the Architectural plans prepared by Nordon Jago Architects. This review included the layout of car parking and internal roadways / ramps and overall, we are satisfied that the design is consistent with the requirements of Standards AS/NZS 2890.1, AS 2890.2-2002, AS 2890.3-2015 and AS/NZS 2890.6 and Inner West Council DCP. It is anticipated that the car park will function in a satisfactory manner and in accordance with the original design intent. A summary of critical parameters assessed a part of the car park design review is included below.

Table 4: Compliance Table

Control	Proposed	Compliance
AS2890.1-2004 (Off-street Car Parking), AS2890.2-2002 (Off-street commercial vehicle facilities) and Council DCP		
2.4.1 Car Space Dimensions: Class 2	2.5m x 5.4m with 5.8m aisle width	Yes
2.4.2 Blind Aisle Extension & Clearance	1 aisle extension provided for end of aisle parking spaces	Yes
2.5.2 Layout Roadways/Ramps	Passenger vehicle: Minimum 5.5m wide for two-way flow	Yes
2.5.3 Roadway/Ramp Grades	Passenger vehicle: Max 1:4 (25%) with 2m 1:8 (12.5%) transition ramp	Yes
3.2.2 Driveway Width	Category 2 driveway (6m-9m wide access) Vehicle access is confirmed via swept path analysis	Yes
5.2 Column Location/Spacing	Columns and other obstructions kept clear of parking envelope (as depicted in Figure 5.2 of AS2890.1)	Yes
5.3 Headroom	Passenger vehicles: Minimum 2.2m (2.5m for accessible spaces)	Yes

	Heavy vehicles: 4.5m	
Control	Proposed	Compliance
AS2890.6-2009 (Accessible Parking)		
2.2.1 Car Spaces Dimension	2.5m x 5.4m adjacent to 2.4m wide shared area.	Yes
2.4 Headroom	Minimum 2.5m	Yes

As shown in the table above, the development car park and access design comply with the relevant Australian Standards.

5 Traffic Assessment

The impact of the proposed development on the surrounding road network was assessed using SIDRA Intersection modelling software. The traffic counts outlined in Section 2.3 and traffic generation estimated below in Section 5.1 were used to determine an overall traffic level for the area post-development. Section 5.2 describes how these additional trips were distributed amongst the critical intersections chosen for study.

Ultimately Section 5.3 outlines the SIDRA analysis undertaken which found that the increased traffic resulting from the proposed development will not have a significant impact on the efficiency of the surrounding road network.

5.1 Trip Generation

Currently the site contains the existing Polish Club. Traffic generation rates for the proposal were determined using the RMS Guide to Traffic Generating Developments and the RMS Guide Update.

The proposed estimated traffic volumes generated by the proposed development are outlined in the Table 6 using the following trip rate shown in Table 5.

Table 5: Trip generation rates

Use	AM trip rates	PM trip rates
Residential	0.19 trips per unit	0.15 trips per unit
Club	-	*4 trips per 100m ²

**Note: The trip generation rate for the RSL club is based on a survey conducted in 2018 at Gosford RSL Club that generated 172 peak hour trips for a GFA of 4,690m². This trip rate is considered to be conservative for the current assessment as the trip rate for a regional area (Gosford) would be higher than an inner city location (Ashfield).*

Table 6: Existing development – trip generation

Land Use	Yield	AM Peak Hour Trips	In	Out	PM Peak Hour Trips	In	Out
Club	1,200 m ²	*48	24	24	*48	24	24

Table 7: Proposed development – trip generation

Land Use	Yield	AM Peak Hour Trips	In	Out	PM Peak Hour Trips	In	Out
Residential	88 units	17	3	14	14	11	3
Proposed Club	1,800 m ²	*73	37	36	*73	36	37
Sub Total	-	90	40	50	87	47	40
Existing Club	1,200m ²	48	24	24	48	24	24
Additional Trips		42	16	26	39	23	16

**Note: The peak traffic period for clubs generally is between 6.00pm and 7.00pm, however, the trip generation rate has been applied to the AM peak as well as the PM peak to ensure a robust and conservative assessment of traffic impacts.*

The table above shows the proposed development generates 90 trips during the AM peak hour and 87 trips during the PM peak hour, based on an assumed arrival / departure split of:

- Residential – 20% in, 80% out (AM) and 80% in, 20% out (PM)
- Polish Club - 50%in, 50% out (Am and PM).

The Polish Club has an existing operational GFA of 1,200m², therefore the trips currently generated by the Club are calculated as 1,200 / 100 x 4 = 48 trips.

The additional trips that will be generated by the proposed development are therefore:

AM: $17 + 73 - 48 = 42$ trips (16 in, 26 out). **PM:** $14 + 73 - 48 = 39$ trips (23 in, 16 out)

5.2 Trip Distribution

The trip distribution for the proposal has been assessed as follows:

Trips were assigned based on a distribution of 25% to the north, south, east and west, on the basis that the surrounding developments will likely generate / attract traffic from the development evenly in all directions. As such, the traffic travelling to and from the site will take the following routes between the site entry / exit in Norton Street and the surrounding road network:

- North Entry – Liverpool Road, Queen Street and Norton Street
Exit – Norton Street, Holden Street and Brown Street
- East Entry – Liverpool Road, Queen Street and Norton Street
Exit – Norton Street, Holden Street and Liverpool Road
- South Entry – Queen Street and Norton Street
Exit – Norton Street and Holden Street
- West Entry – Liverpool Road, Queen Street and Norton Street
Exit – Norton Street, Holden Street and Liverpool Road

The trip distribution is illustrated below in Figures 2.7 to 2.10. The movements with additional trips generated by the development are shown in red.

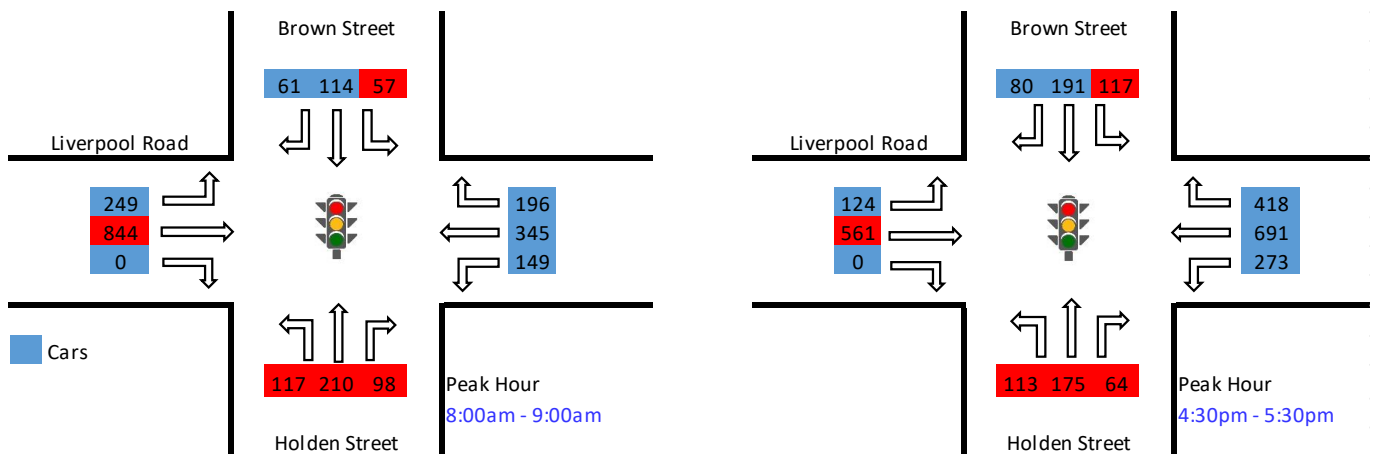


Figure 4.7: Liverpool Road / Brown Street / Holden Street Post-Development Volumes

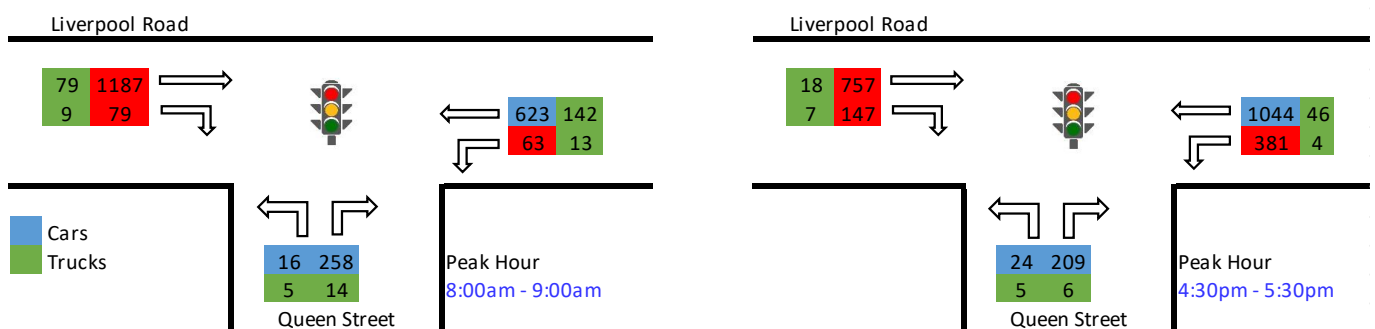


Figure 2.8: Liverpool Road / Queen Street Post-Development Volumes

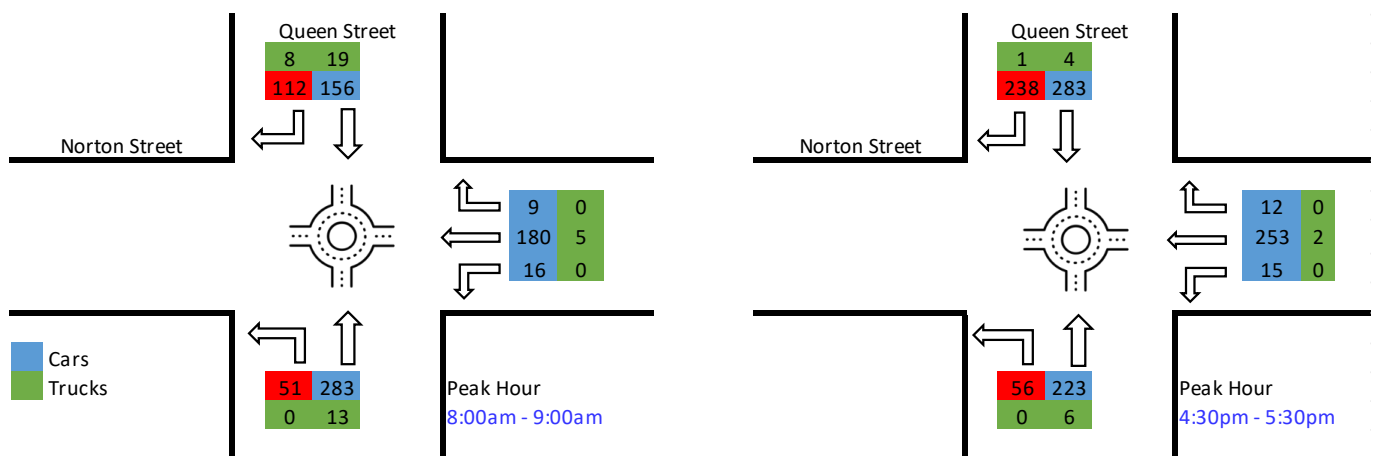


Figure 2.9: Queen Street / Norton Street Post-Development Volumes

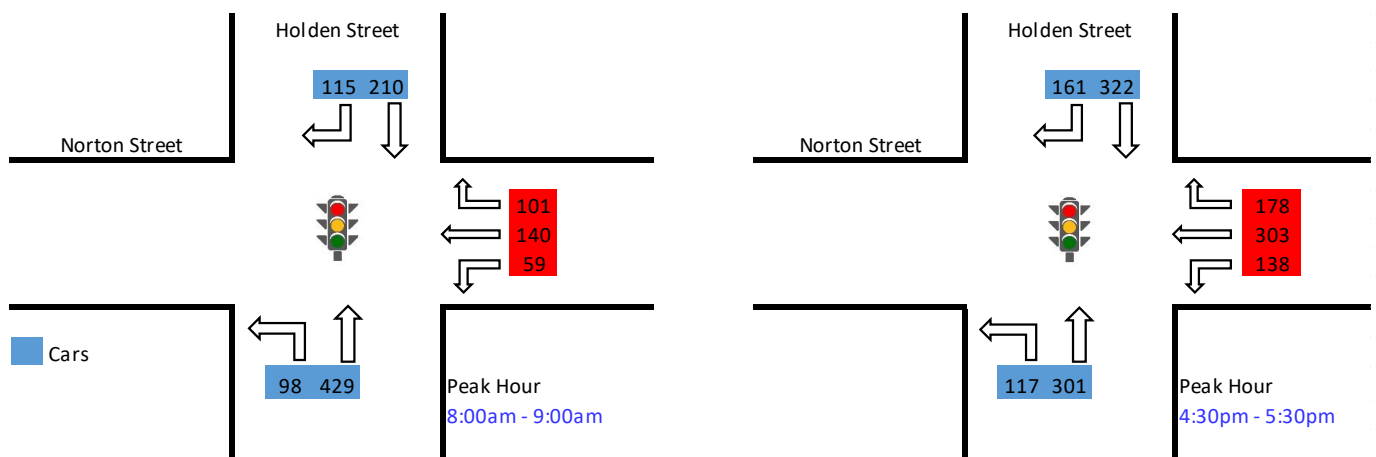


Figure 2.10: Norton Street / Holden Street Post-Development Volumes

5.3 SIDRA Analysis and Impact of Generated Traffic

Intersection performance has been assessed using the SIDRA modelling software which uses the level of service (delay) model adopted by Transport for NSW to assess intersection performance.

Average delay is used to determine the level of service (LOS), which ranges from 'A' (excellent level of service) to 'F', with a LOS of 'D' being the minimum acceptable performance. The intersections outlined at the start of Section 2.3 have been assessed as a network for the existing and 10-year growth traffic volumes for AM and PM peak periods.

A growth rate of 1.1% per annum was applied to the traffic volumes at the surveyed intersections to obtain the 10-year growth volumes, consistent with the historical growth in traffic volumes on Liverpool Road over the last 10 years. The differences in performance between these two scenarios are summarised in the tables below, with the full movement summaries attached at **Appendix F**.

Table 7: Liverpool Road / Holden Street / Brown Street SIDRA Modelling Summary

Liverpool Road / Holden Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	41.3	38.8	60.5	57.9
	LOS	C	C	E	E
PM	Delay (s)	202.1	263.5	289.9	297.3
	LOS	F	F	F	F

Table 8: Liverpool Road / Queen Street SIDRA Modelling Summary

Liverpool Road / Queen Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	19.0	29.2	33.7	35.9
	LOS	B	C	C	C
PM	Delay (s)	108.0	331.5	168.1	423.5
	LOS	F	F	F	F

Table 8: Queen Street / Norton Street SIDRA Modelling Summary

Queen Street / Norton Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	9.6	23.1	73.4	118.2
	LOS	A	B	F	F
PM	Delay (s)	41.2	65.0	85.0	120.5
	LOS	C	E	F	F

Table 10: Holden Street / Norton Street SIDRA Modelling Summary

Holden Street / Norton Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	20.4	30.5	35.7	37.1
	LOS	B	C	C	C
PM	Delay (s)	37.3	37.6	38.4	38.5
	LOS	C	C	C	C

As shown in the tables above, the existing road network is operating at an acceptable level of service during the AM peak but experiences poor levels of service (LoS F) with extensive delays along Liverpool Road during the PM peak. The degrees of saturation (volume / capacity ratio) at the Liverpool Road / Holden Street intersection (0.956) and the Liverpool Road / Queen Street intersection (0.812), shown in the movement summary reports in Appendix F, indicate that these intersections are currently operating at or close to oversaturated conditions with little or no spare capacity to cater for additional traffic volumes generated to the network.

One apparent anomaly in the results is observed during the AM peak at the Liverpool Road / Holden Street intersection for the 10-year growth scenarios. The results indicate that the average delays for the intersection will decrease by 2.6 seconds post development. However, a review of the full movement summary report (Appendix F) shows that the reason for this is that the eastbound approach on Liverpool Road, which carries 45% of the total traffic through this intersection, is given extended green time in the Sidra model in the post development scenario. Consequently, while the average delays at the other 3 approaches increase between 4 and 10 seconds, the average delays for Liverpool Road eastbound approach decreases by 13 seconds and, as this approach carries nearly half of the traffic at this location, the average delay for the whole intersection reduces as a result.

The additional traffic that will be generated by the proposed development will not have any significant impact on the overall performance of the network during the AM and PM peaks as the trips generated by the development equate to less than 1% of the total traffic volumes that are currently within the surrounding road network during the peak periods. Consequently, the traffic impact of the development is considered to be minimal and does not warrant any network improvements to be provided by the development.

Since the Club component of the development contributes the major part of the additional traffic volumes it is recommended that the Club consider strategies to reduce travel by private vehicle to and from the site by staff and patrons including walking (for those who reside a short distance from the site), car-pooling and greater use of public transport and taxis.

5.4 Recommended Works

The recommended works to improve safety and efficiency for vehicles entering and exiting the site are:

- Install convex mirrors at the north-west corner of the building at the top of the ramps in Basement 1 and Basement 2.
- Install "All Traffic Right" sign (R2-14R) at the exit driveway.
- Install A "Stop" sign (R1-1) and a "Give Way to Pedestrians" sign (R2-10) at the exit driveway.

It is also recommended that the existing pedestrian access between Liverpool Road and the proposed development be upgraded to increase safety and amenity for pedestrians. The upgrade should include suitable lighting for night time safety.

6 Conclusion

This Traffic and Parking Impact Assessment has been prepared in accordance with the Inner West Council's DCP and the Road and Maritime Services (RMS) 'Guide to Traffic Generating Developments' to accompany a Development Application to the Inner West Council for the development of a residential apartments and Polish Club at 73-75 Norton Street, Ashfield.

The proposed development provides 117 parking spaces for residents / visitors which exceeds the 111 minimum number of residential spaces required by the Council DCP by 6 spaces.

In summary, the proposed 75 spaces for the use of patrons and staff of the Polish Club is well in excess of that required, when compared to the RMS comparison rates of other clubs. In addition, the current 58 car parking spaces is operating effectively based on the existing club which has a GFA of 1,200m² and a parking rate of 4.8 spaces per 100 members.

The 75 spaces proposed also meets the practical parking demand when assessed against the cross over uses with residents and the proximity to public transport (in particular being located within 400 metres of the Ashfield train station).

The proposed parking and loading facilities have been designed in accordance with the requirements of AS/NZS 2890.1 – Off Street Car Parking, AS 2890.2 – Off-Street Commercial Vehicle Facilities and AS/NZS 2890.6 - Off-street Parking for People with Disabilities. These facilities are also considered practical and safe ensuring that all traffic generated by the development can enter and exit the site in a forward direction

Traffic surveys and modelling were undertaken at the relevant intersections as follows:

- Liverpool Road / Queen Street;
- Norton Street / Queen Street;
- Norton Street / Holden Street; and
- Liverpool Road / Holden Street.

The existing road network is operating at an acceptable level of service during the AM peak but experiences poor levels of service (LoS F) with extensive delays and queue lengths along Liverpool Road during the PM peak.

The additional traffic that will be generated by the proposed development will contribute to the poor performance of the network during the PM peak however, the additional 39 trips generated by the development equate to less than 1% of the total traffic volumes that are currently within the surrounding road network during the PM peak. Consequently, the traffic impact of the development is considered to be minimal and does not warrant any network improvements to be provided by the development.

The Traffic and Parking Impact Assessment concludes that the subject site is suitable for the proposed residential development and Polish Club in relation to traffic impact, car parking provision and the provision for pedestrian and bicycle facilities. The development is considered to have negligible effect on the safety and operating outcome of the surrounding transport network.

7 References

Australian Standards, '*AS/NZS 2890.1:2004 Off-Street Car Parking*'.

Australian Standards, '*AS 2890.2:2018 Off-Street Commercial Vehicle Facilities*'.

Australian Standards, '*AS/NZS 2890.6:2002 Off-Street Parking for People with Disabilities*'.

Inner West Council DCP 2016.

Roads and Maritime Services, '*Guide to Traffic Generating Developments*' Version 2.2 dated October 2002.

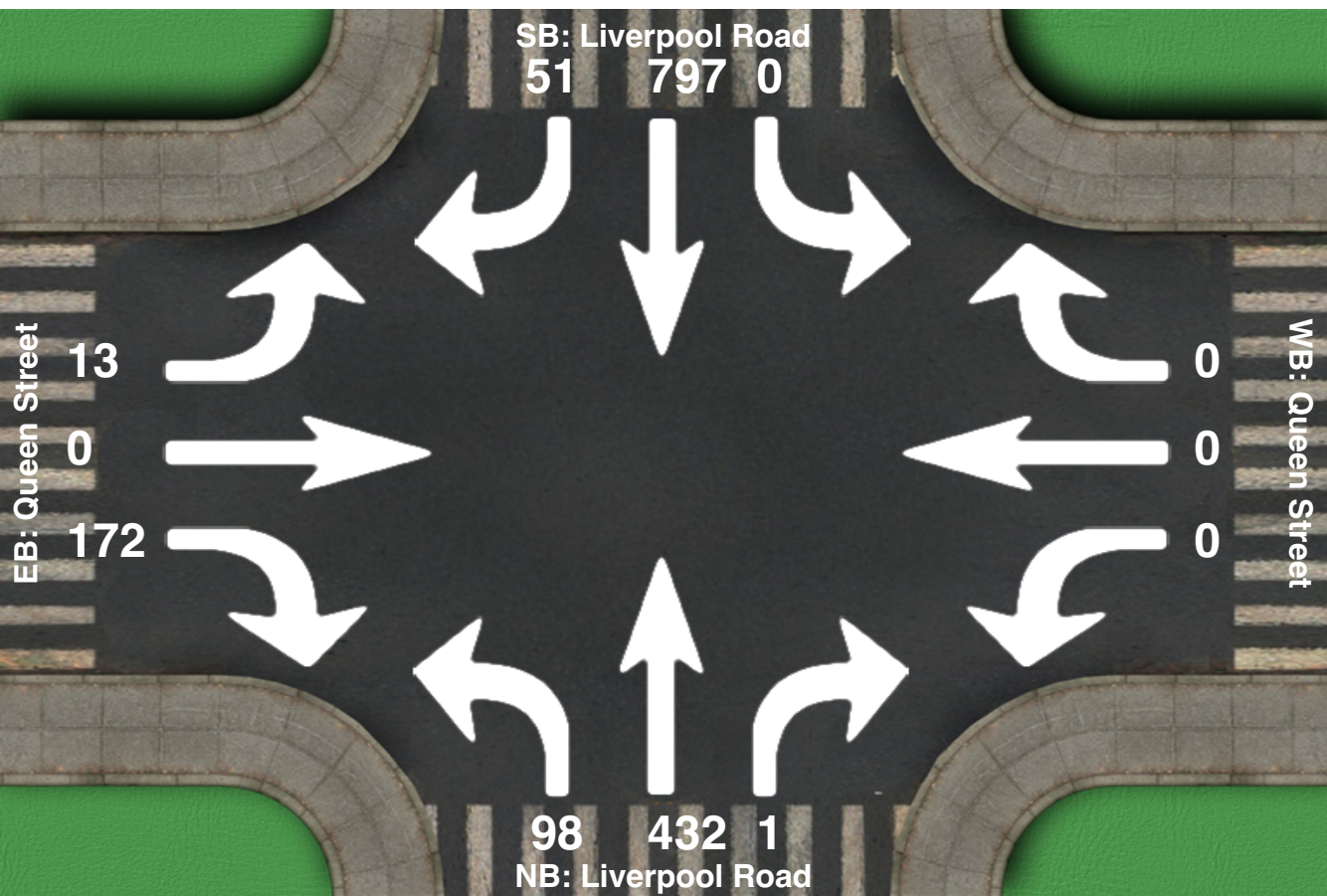
Roads and Maritime Services, '*Guide to Traffic Modelling*' Version 1.0 dated February 2013.

Appendix A

Traffic Counts

Intersection Peak Hour

Location: Liverpool Road at Queen Street, Sydney
GPS Coordinates:
Date: 2020-05-05
Day of week: Tuesday
Weather: Cloudy
Analyst: Lachlan Compton



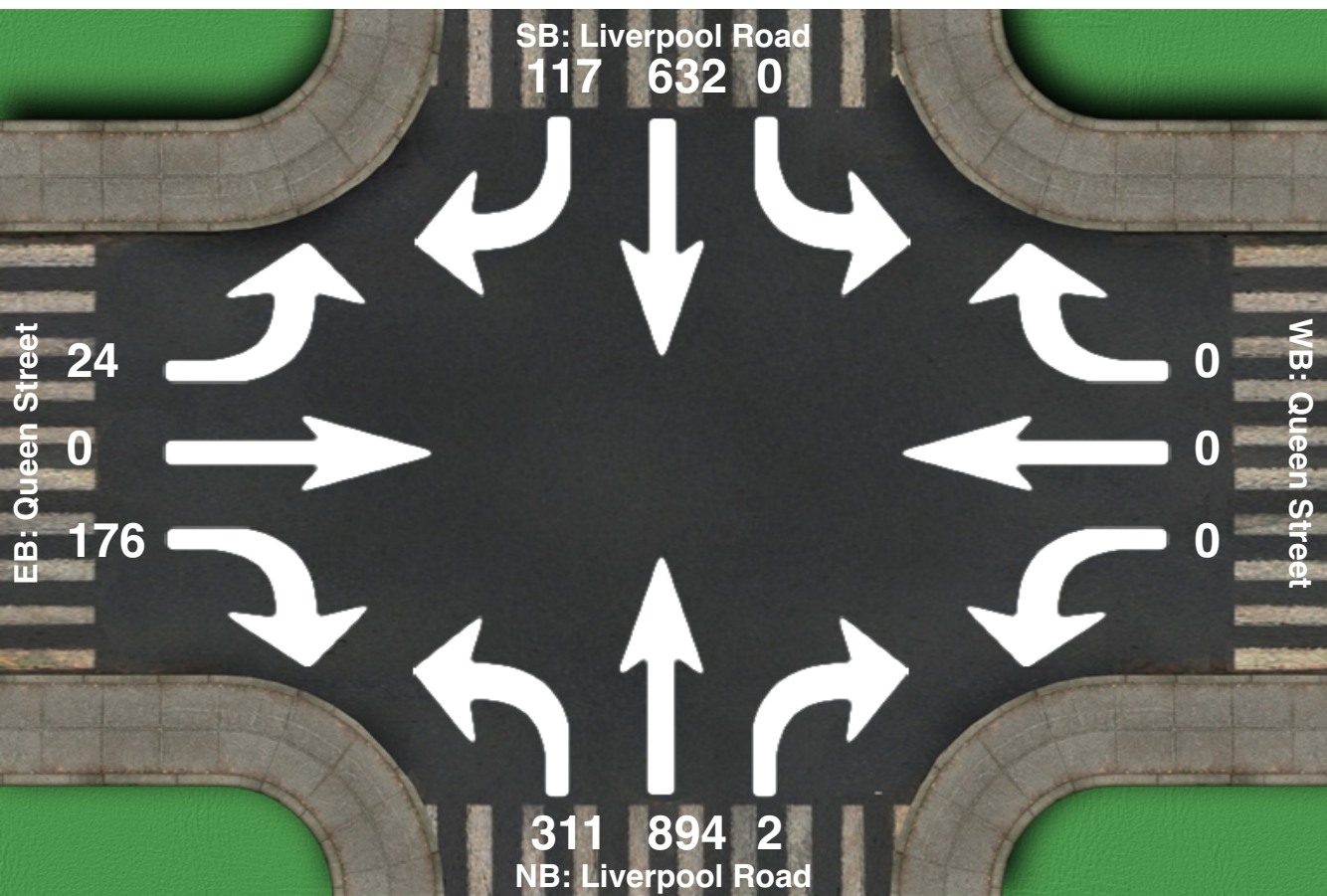
Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	797	51	0	0	0	98	432	1	13	0	172	1564
Factor	0.00	0.84	0.71	0.00	0.00	0.00	0.88	0.92	0.25	0.65	0.00	0.86	0.92
Approach Factor	0.85			0.00			0.94			0.91			

Intersection Peak Hour

Location: Liverpool Road at Queen Street, Sydney
GPS Coordinates:
Date: 2020-05-05
Day of week: Tuesday
Weather: Cloudy
Analyst: Lachlan Compton



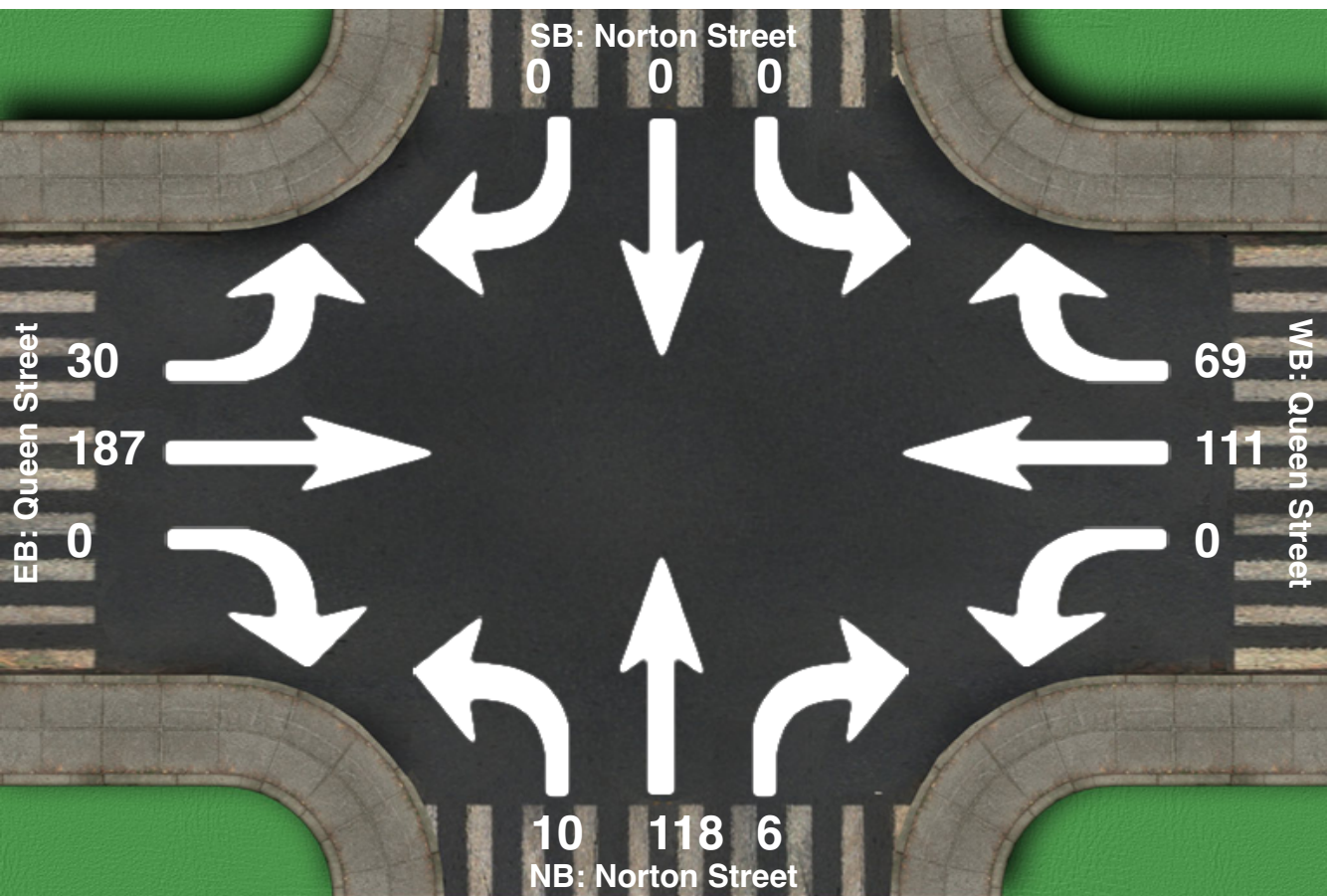
Intersection Peak Hour

16:15 - 17:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	632	117	0	0	0	311	894	2	24	0	176	2156
Factor	0.00	0.93	0.94	0.00	0.00	0.00	0.82	0.96	0.25	0.60	0.00	0.90	0.93
Approach Factor	0.93			0.00			0.91			0.94			

Intersection Peak Hour

Location: Norton Street at Queen Street, Ashfield
GPS Coordinates: Lat=-33.891208, Lon=151.127850
Date: 2020-05-05
Day of week: Tuesday
Weather:
Analyst: Chloe



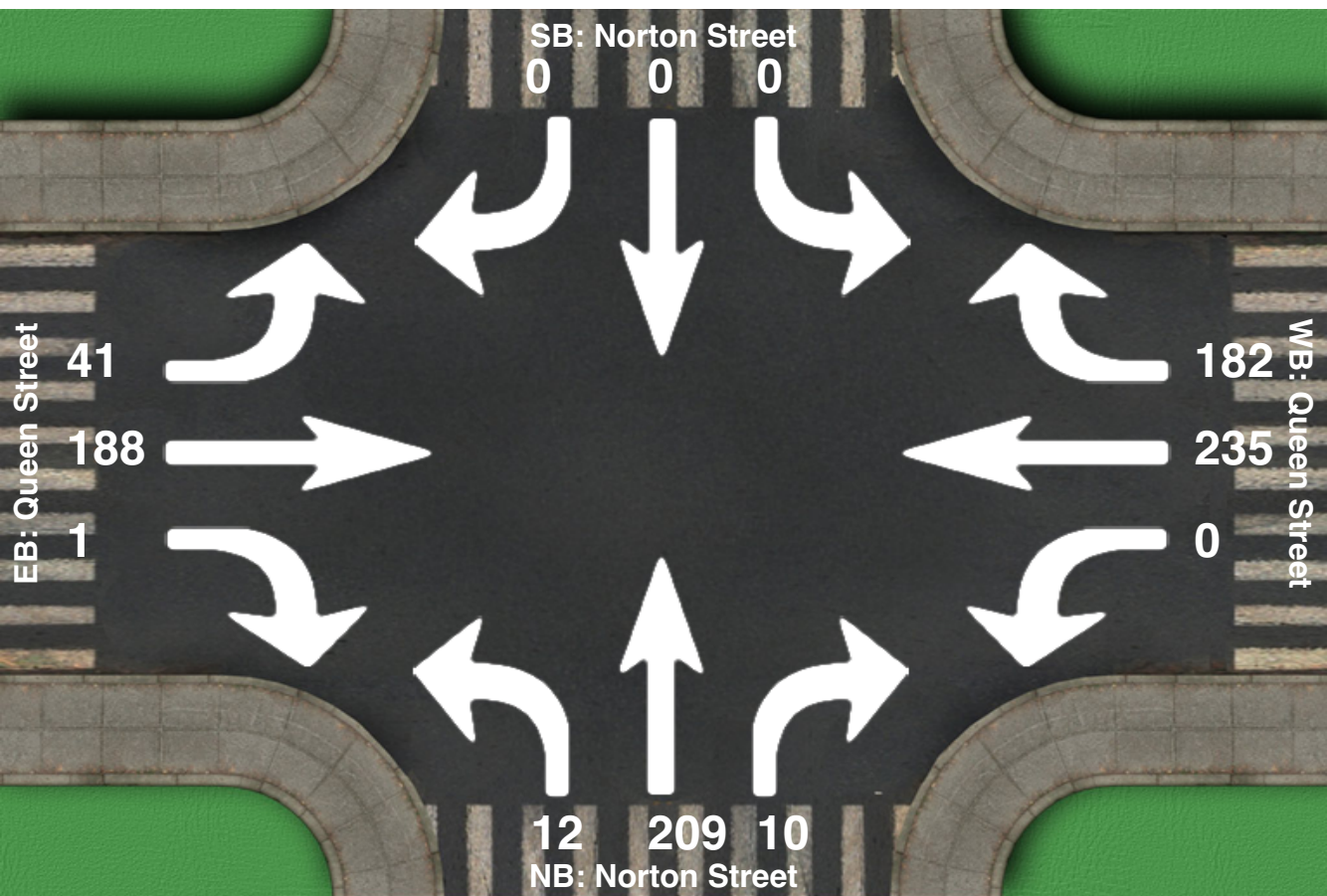
Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	0	111	69	10	118	6	30	187	0	531
Factor	0.00	0.00	0.00	0.00	0.84	0.78	0.62	0.92	0.50	0.75	0.88	0.00	0.97
Approach Factor	0.00			0.82			0.93			0.92			

Intersection Peak Hour

Location: Norton Street at Queen Street, Ashfield
GPS Coordinates: Lat=-33.891082, Lon=151.128038
Date: 2020-05-05
Day of week: Tuesday
Weather:
Analyst: Chloe



Intersection Peak Hour

16:30 - 17:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	0	235	182	12	209	10	41	188	1	878
Factor	0.00	0.00	0.00	0.00	0.90	0.80	0.50	0.89	0.62	0.73	0.89	0.25	0.88
Approach Factor	0.00			0.85			0.90			0.90			

TCS 1254

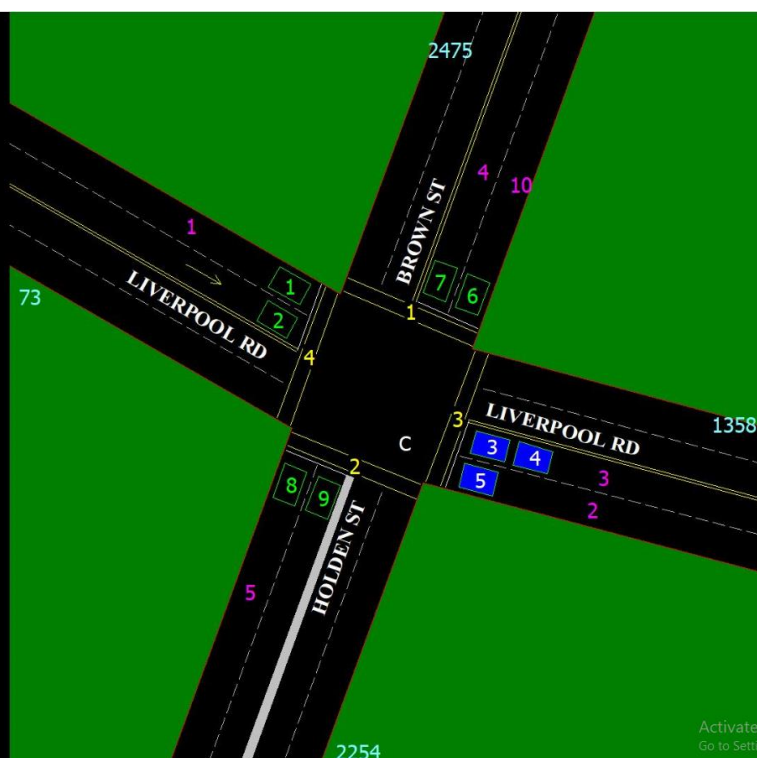
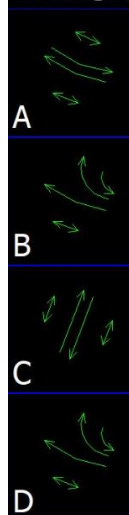
ASHFIELD

254D3

LEW

SS=2

4 PHASES



Site: 1254 Thursday, 13 February 2020

Traffic Flow filename: LEW_20200213.VS

Thursday, 13 February 2020

Approach		detector(s)...									
Approach	1	1	2	3	4	5	6	7	8	9	
01:00	Approach 1	16	66	169	168	20	11	21	14	18	503
02:00	Approach 1	11	59	99	100	13	6	9	9	7	313
03:00	Approach 1	18	70	71	69	6	4	9	3	8	258
04:00	Approach 1	22	69	88	82	9	2	7	2	7	288
05:00	Approach 1	25	154	72	72	11	3	8	7	11	363
06:00	Approach 1	150	376	110	111	27	20	30	28	53	905
07:00	Approach 1	422	634	158	179	150	41	50	72	118	1824
08:00	Approach 1	498	591	188	205	298	106	122	226	183	2417
09:00	Approach 1	425	519	200	231	415	208	146	316	146	2606
10:00	Approach 1	290	498	319	343	165	108	142	157	135	2157
11:00	Approach 1	53	551	366	400	146	69	119	131	119	1954
12:00	Approach 1	56	544	359	421	148	87	93	145	131	1984
13:00	Approach 1	45	508	416	501	153	112	129	155	137	2156
14:00	Approach 1	53	501	386	443	185	76	103	153	147	2047
15:00	Approach 1	82	538	455	579	229	129	130	180	137	2459
16:00	Approach 1	182	398	457	531	415	181	199	230	110	2703
17:00	Approach 1	248	426	387	449	546	222	160	223	121	2782
18:00	Approach 1	256	481	434	503	599	225	243	246	85	3072
19:00	Approach 1	89	544	369	445	558	184	138	213	116	2656
20:00	Approach 1	43	478	399	449	205	126	121	163	119	2103
21:00	Approach 1	32	388	428	470	125	72	114	114	125	1868
22:00	Approach 1	54	367	373	407	106	58	73	72	88	1598
23:00	Approach 1	40	243	374	407	68	33	45	45	56	1311
24:00	Approach 1	17	167	272	288	34	14	43	26	36	897

Approach 1 AM peak 2619 07:45 - 08:45 PM peak 3072 17:00 - 18:00 Daily Total 41224

TCS 1358

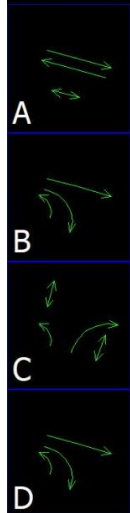
ASHFIELD

254E3

LEW

SS=9

4 PHASES



Site: 1358 Thursday, 13 February 2020

Traffic Flow filename:LEW_20200213.VS

Thursday, 13 February 2020

Approach		detector(s)...							
Approach	1	1	2	3	4	5	6	7	
01:00	Approach 1	41	153	83	83	8	7	16	391
02:00	Approach 1	16	100	68	68	6	1	9	268
03:00	Approach 1	13	76	76	76	8	0	8	257
04:00	Approach 1	16	85	82	81	8	2	4	278
05:00	Approach 1	22	75	152	152	23	3	15	442
06:00	Approach 1	47	122	347	376	150	5	54	1101
07:00	Approach 1	152	229	509	593	491	21	140	2135
08:00	Approach 1	234	340	374	472	685	31	253	2389
09:00	Approach 1	316	405	271	392	596	68	296	2344
10:00	Approach 1	260	388	317	400	496	44	157	2062
11:00	Approach 1	234	446	300	359	314	25	100	1778
12:00	Approach 1	280	477	257	309	372	37	96	1828
13:00	Approach 1	285	551	287	334	347	34	81	1919
14:00	Approach 1	297	507	239	284	344	31	118	1820
15:00	Approach 1	423	601	169	217	463	38	127	2038
16:00	Approach 1	585	631	104	174	551	40	104	2189
17:00	Approach 1	583	693	119	180	614	39	145	2373
18:00	Approach 1	661	737	130	201	663	43	161	2596
19:00	Approach 1	543	710	230	282	448	32	126	2371
20:00	Approach 1	303	536	289	334	326	24	85	1897
21:00	Approach 1	225	493	244	289	224	23	59	1557
22:00	Approach 1	190	425	288	322	174	26	52	1477
23:00	Approach 1	161	397	200	222	93	17	38	1128
24:00	Approach 1	93	275	173	174	43	9	22	789

Approach 1 AM peak 2467 06:30 - 07:30 PM peak 2619 16:50 - 17:50 Daily Total 37427

TCS 2254

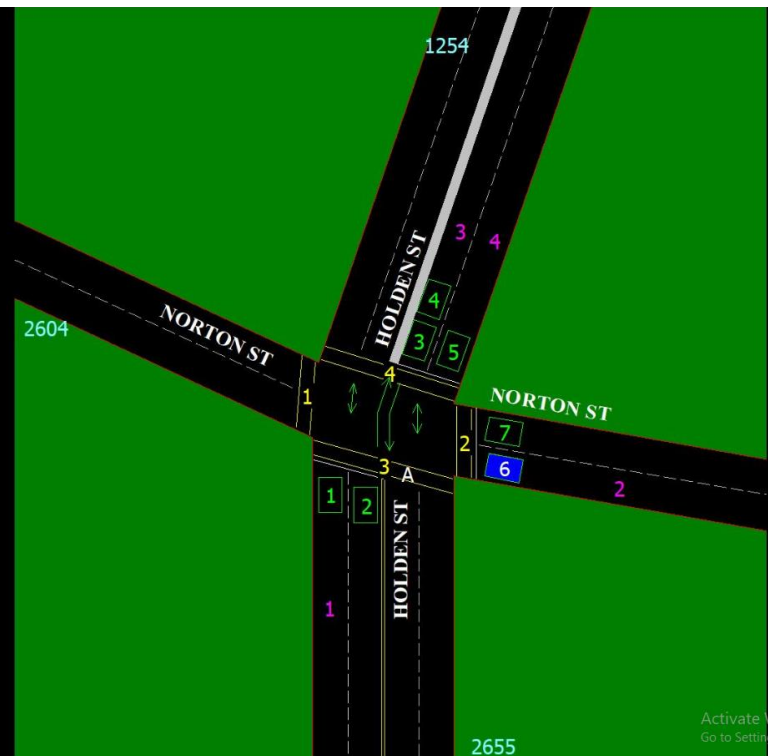
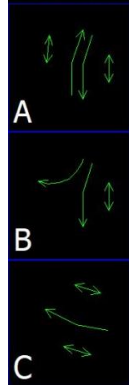
ASHFIELD

LEW

254D4

SS=5

3 PHASES



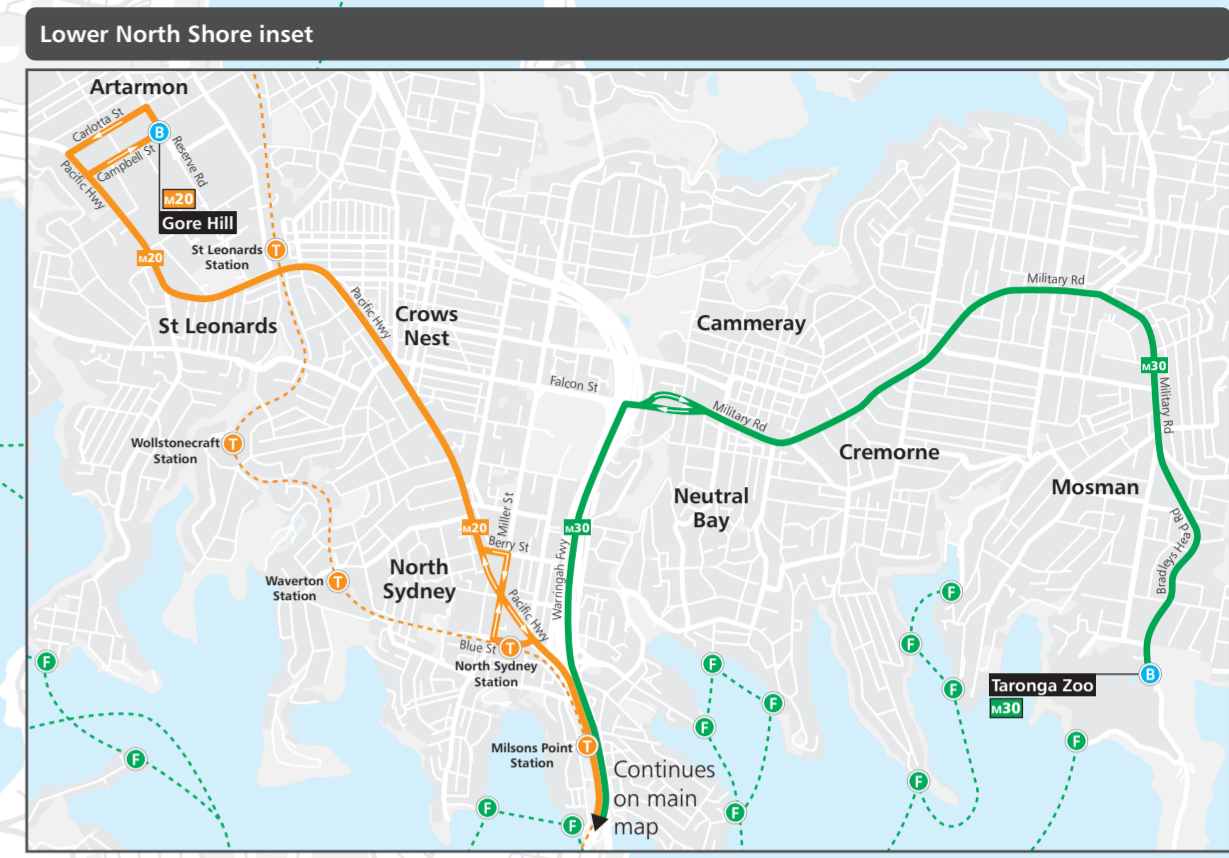
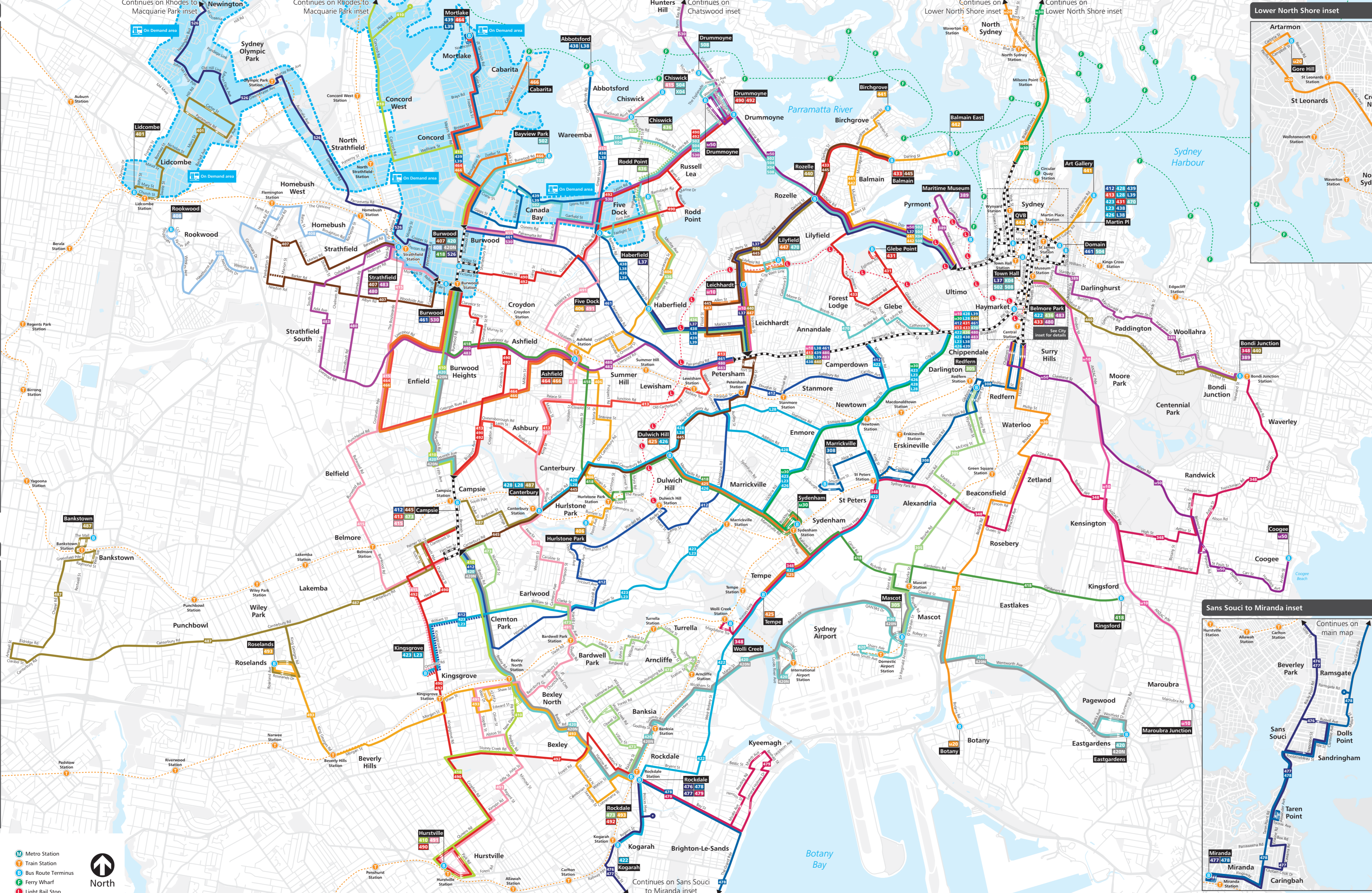
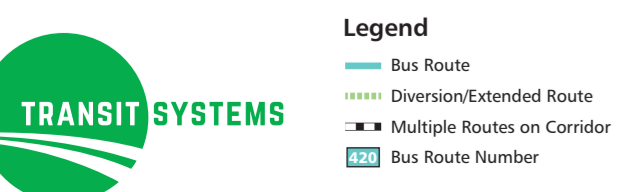
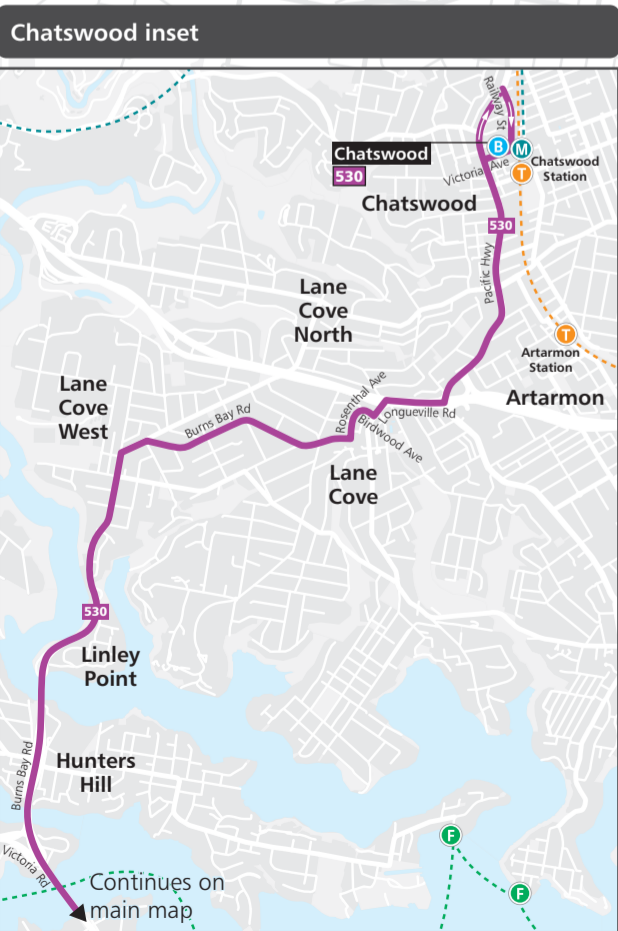
Thursday, 13 February 2020

		Approach detector(s)...							
		Approach 1	1	2	3	4	5	6	7
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02:00	Approach 1	6	15	9	8	2	4	6	50
03:00	Approach 1	5	8	9	8	3	1	4	38
04:00	Approach 1	3	4	10	5	2	6	7	37
05:00	Approach 1	5	13	16	8	5	2	11	60
06:00	Approach 1	45	77	36	24	14	8	25	229
07:00	Approach 1	72	170	72	47	20	36	85	502
08:00	Approach 1	195	331	131	100	95	107	168	1127
09:00	Approach 1	302	345	126	133	139	182	226	1453
10:00	Approach 1	257	237	145	127	78	123	215	1182
11:00	Approach 1	181	152	147	127	49	109	190	955
12:00	Approach 1	206	190	158	110	53	145	221	1083
13:00	Approach 1	195	151	159	146	62	137	228	1078
14:00	Approach 1	188	148	143	133	57	146	230	1045
15:00	Approach 1	203	191	142	160	84	208	264	1252
16:00	Approach 1	227	195	150	188	140	255	345	1500
17:00	Approach 1	234	184	145	178	161	269	337	1508
18:00	Approach 1	255	213	149	203	197	260	297	1574
19:00	Approach 1	224	177	161	167	122	209	297	1357
20:00	Approach 1	142	133	144	138	73	121	214	965
21:00	Approach 1	86	105	116	127	54	97	152	737
22:00	Approach 1	74	78	108	92	33	63	111	559
23:00	Approach 1	43	69	74	66	26	43	79	400
24:00	Approach 1	22	34	60	47	14	23	40	240

Approach 1 AM peak 1469 08:10 - 09:10 PM peak 1595 17:10 - 18:10 Daily Total 19022

Appendix B

Bus Network Map



Appendix C

Sydney Train Map

Sydney rail network

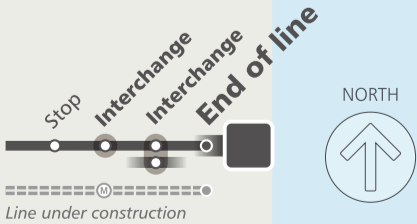


M Metro **T** Trains



Sydney metro and train lines

- M** Metro North West Line
Chatswood
Tallawong
- T1** North Shore & Western Line
North Shore
Western
Richmond
- T2** Inner West & Leppington Line
Inner West
Leppington
City
- T3** Bankstown Line
Liverpool
Lidcombe
City
- T4** Eastern Suburbs & Illawarra Line
Eastern Suburbs
Illawarra
Cronulla
- T5** Cumberland Line
Leppington
Richmond
- T6** Carlingford Line
Carlingford
Clyde
- T7** Olympic Park Line
Olympic Park
Lidcombe
- T8** Airport & South Line
Airport
South
City
- T9** Northern Line
Northern
Gordon

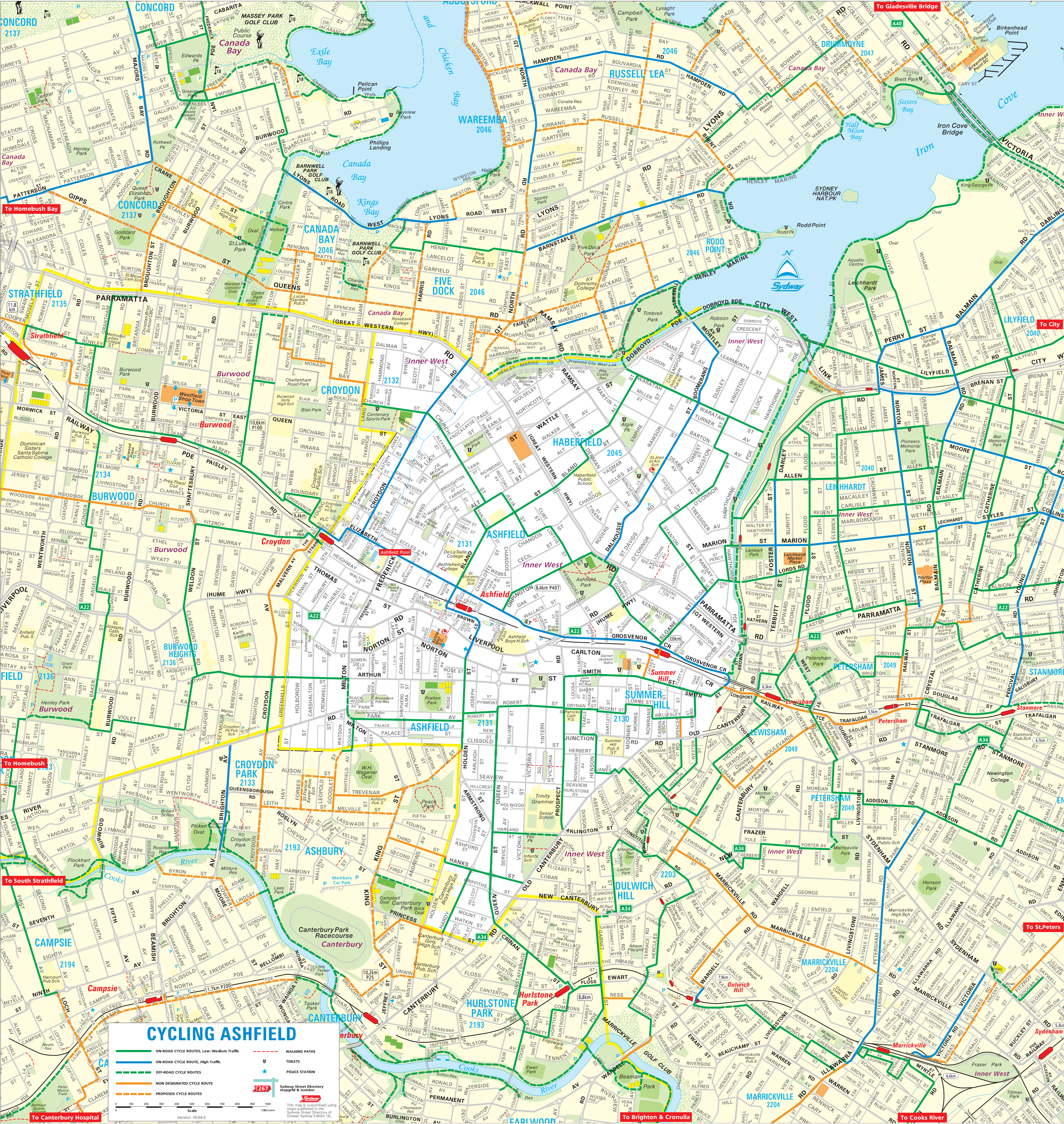


Check timetables and trip planners for train services and connections

Visit transportnsw.info

DRAFT

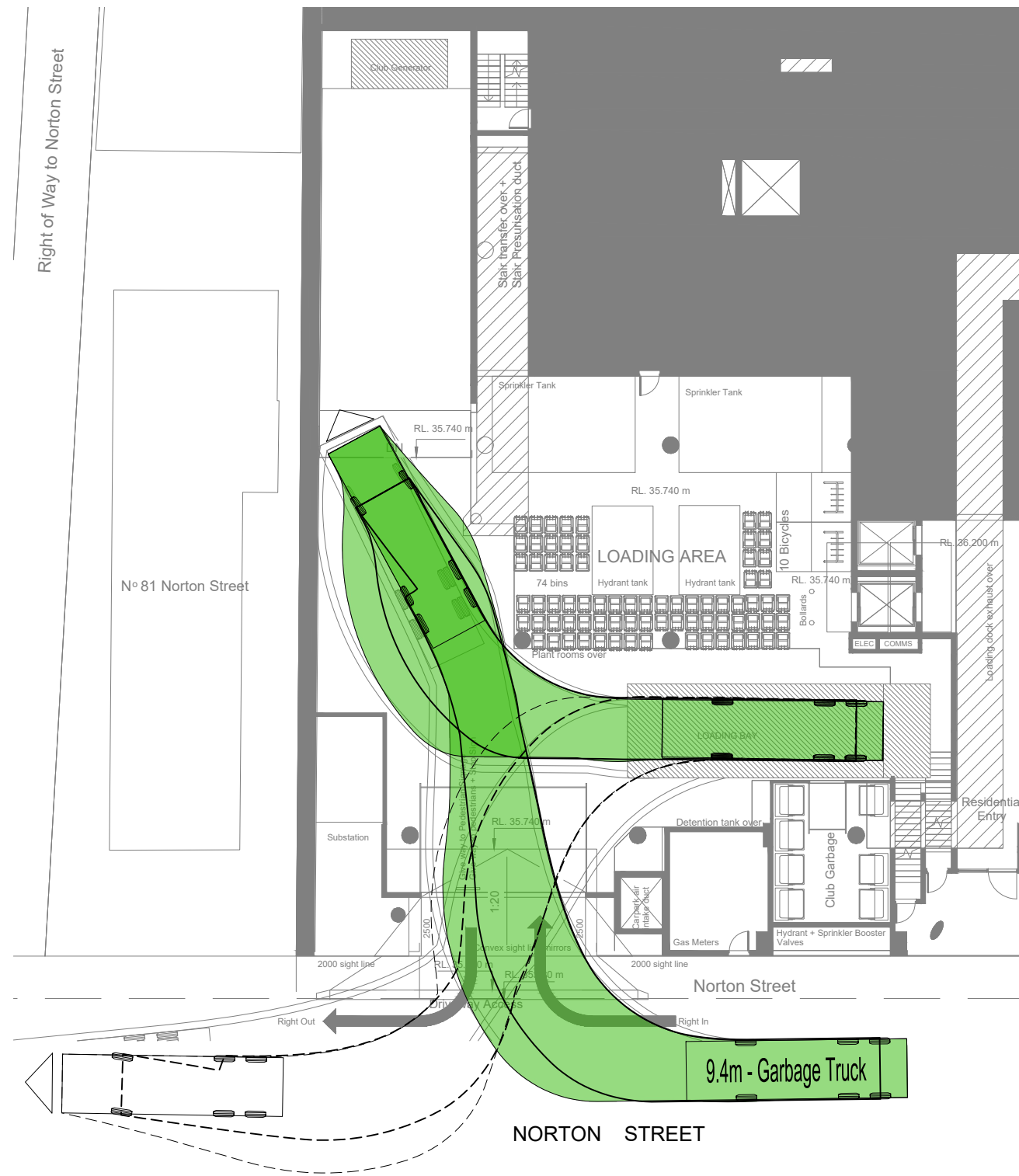
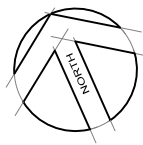
Appendix C
Cycle Network



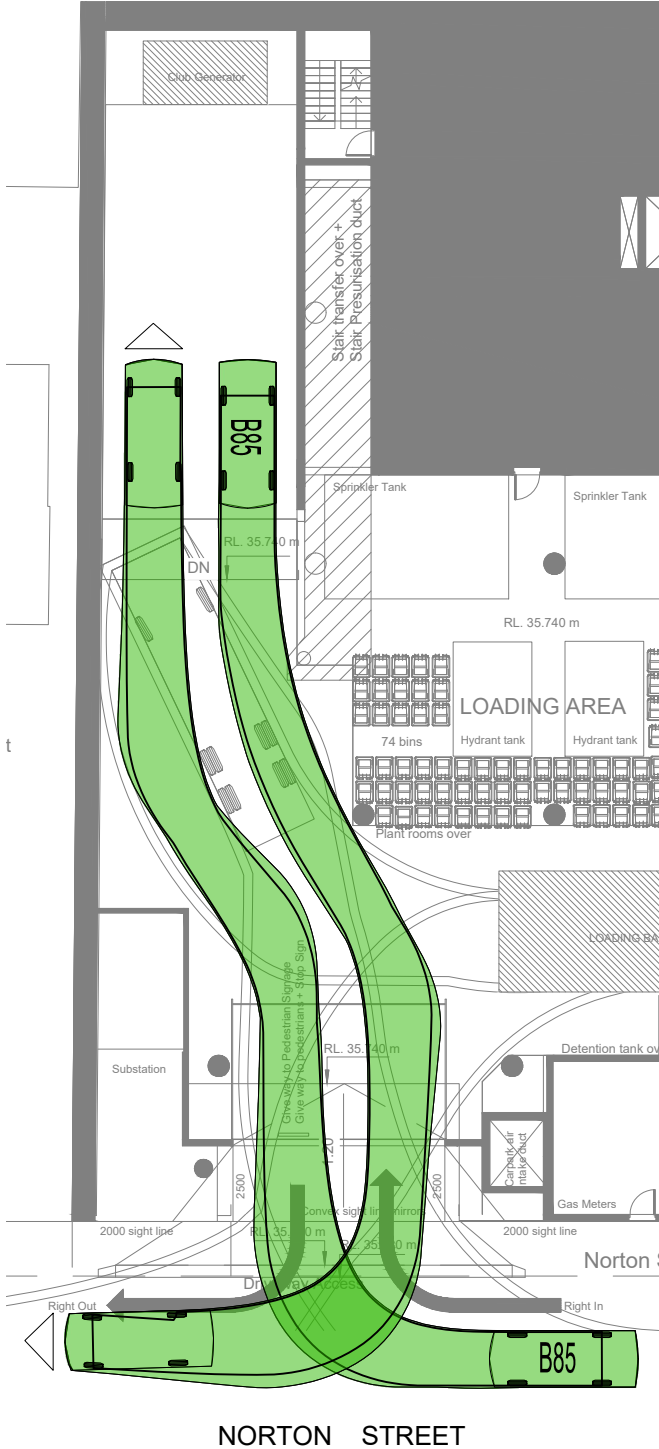
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Appendix D

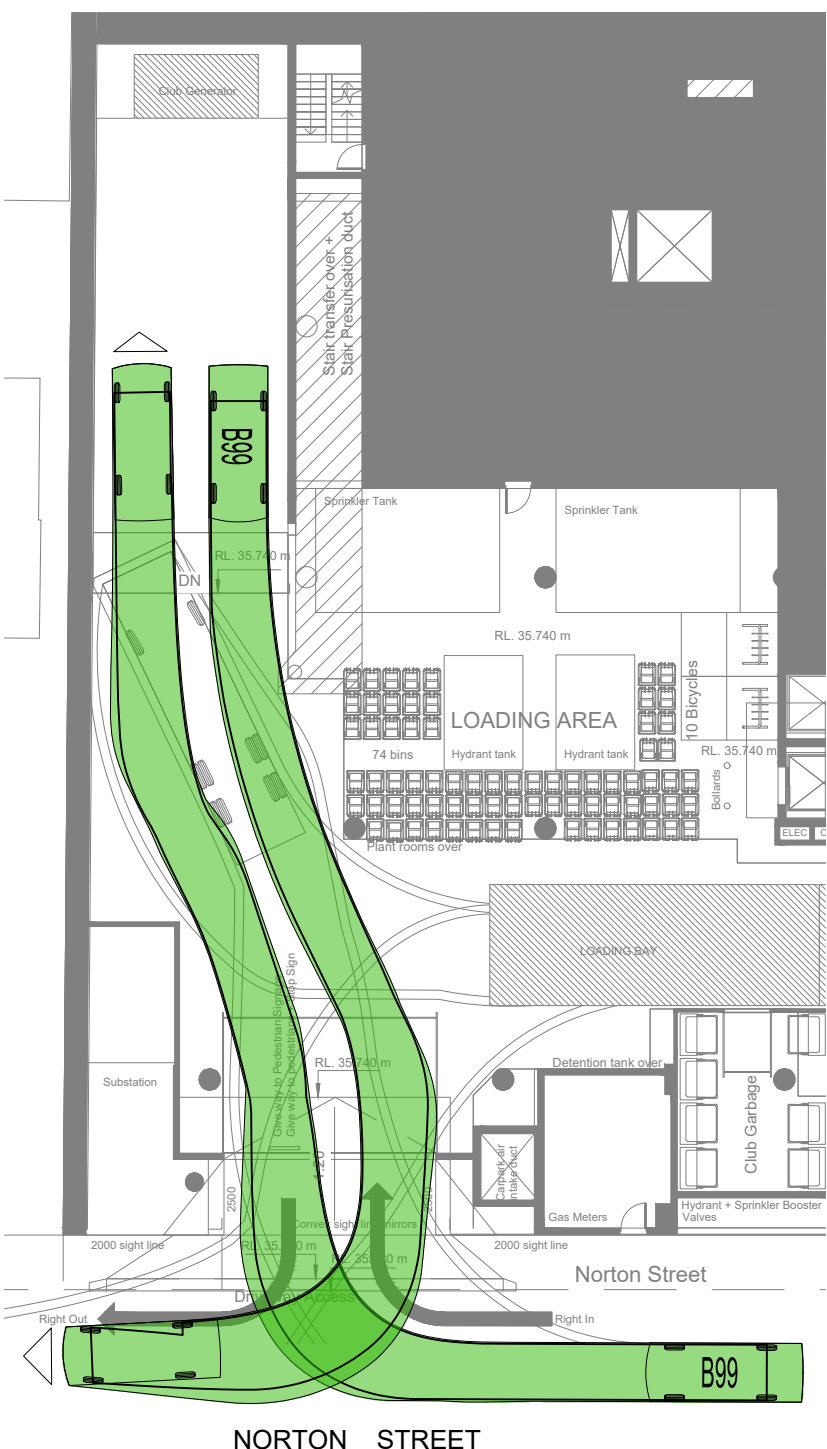
Swept Path Analysis



9.4m GARBAGE TRUCK
REVERSING TO LOADING DOCK
SCALE 1:250



B85 TURNING PATHS
SCALE 1:250



B99 TURNING PATHS
SCALE 1:250



REV	AMENDMENT	ISSUED	DATE
A	FIRST ISSUE	JB	27/10/2020
B	NEW ARCHITECTURALS	JB	3/11/2020



**BARKER
RYAN
STEWART**

TOTAL PROJECT SOLUTIONS
ENGINEERING | PLANNING | PROJECT MANAGEMENT | SURVEYING | CERTIFICATION

SYDNEY
P: 02 9559 0005
CENTRAL COAST
P: 02 4325 5255

HUNTER
P: 02 4956 8388
S.E. QLD
P: 07 5582 6555

www.brs.com.au
mail@brs.com.au
ABN: 25 134 067 842

Client:
DEICORP Pty Ltd

**73-75 NORTON STREET, ASHFIELD
PROPOSED DEVELOPMENT**

GROUND FLOOR TURNING PATHS

Designed: JB
Drawn: JB
Checked: RD

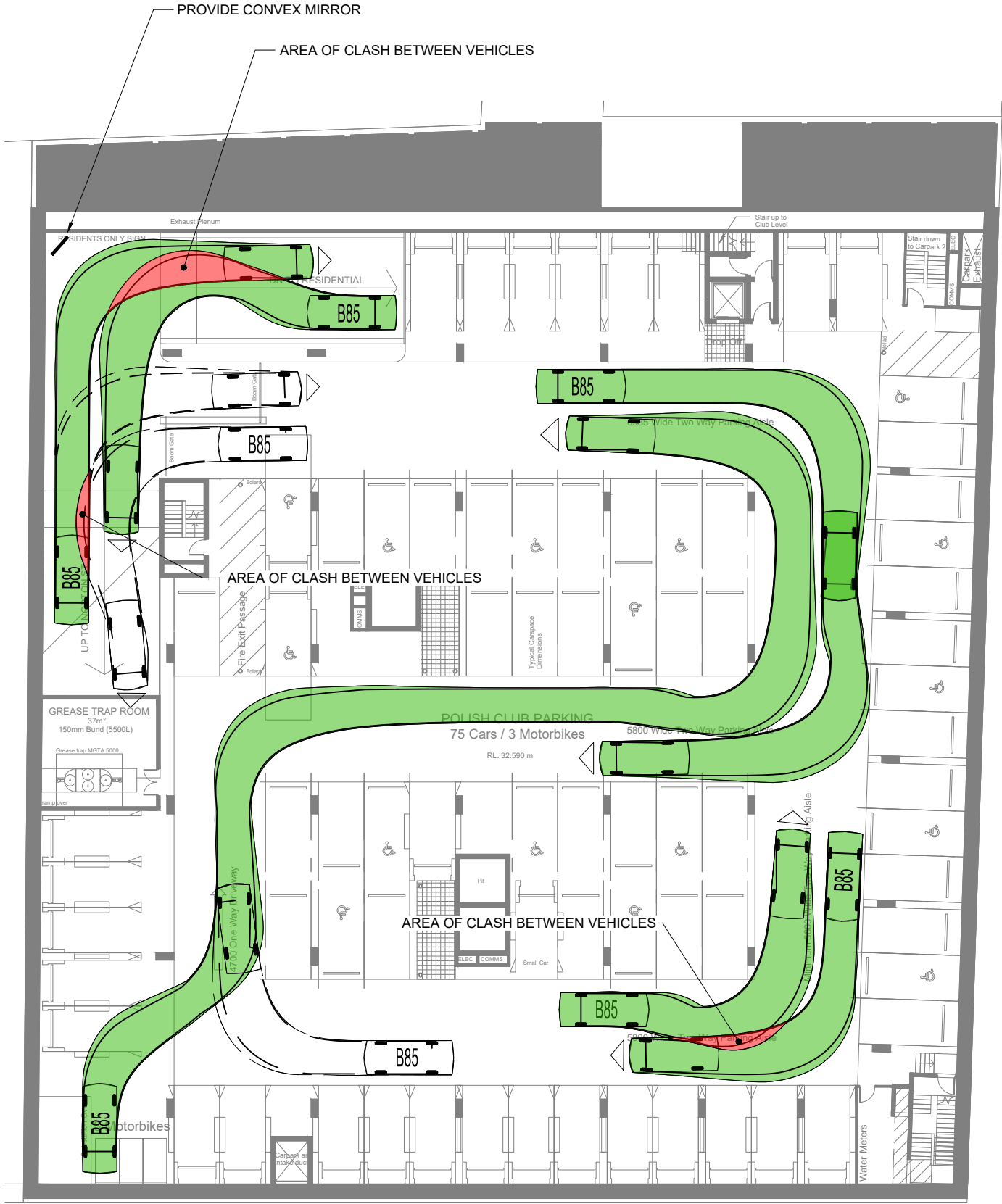
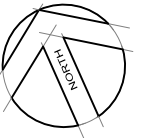
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Horiz. -
Vert. -
X-Sect. -

Datum: A.H.D.

Plan No.
SY20086-02-101

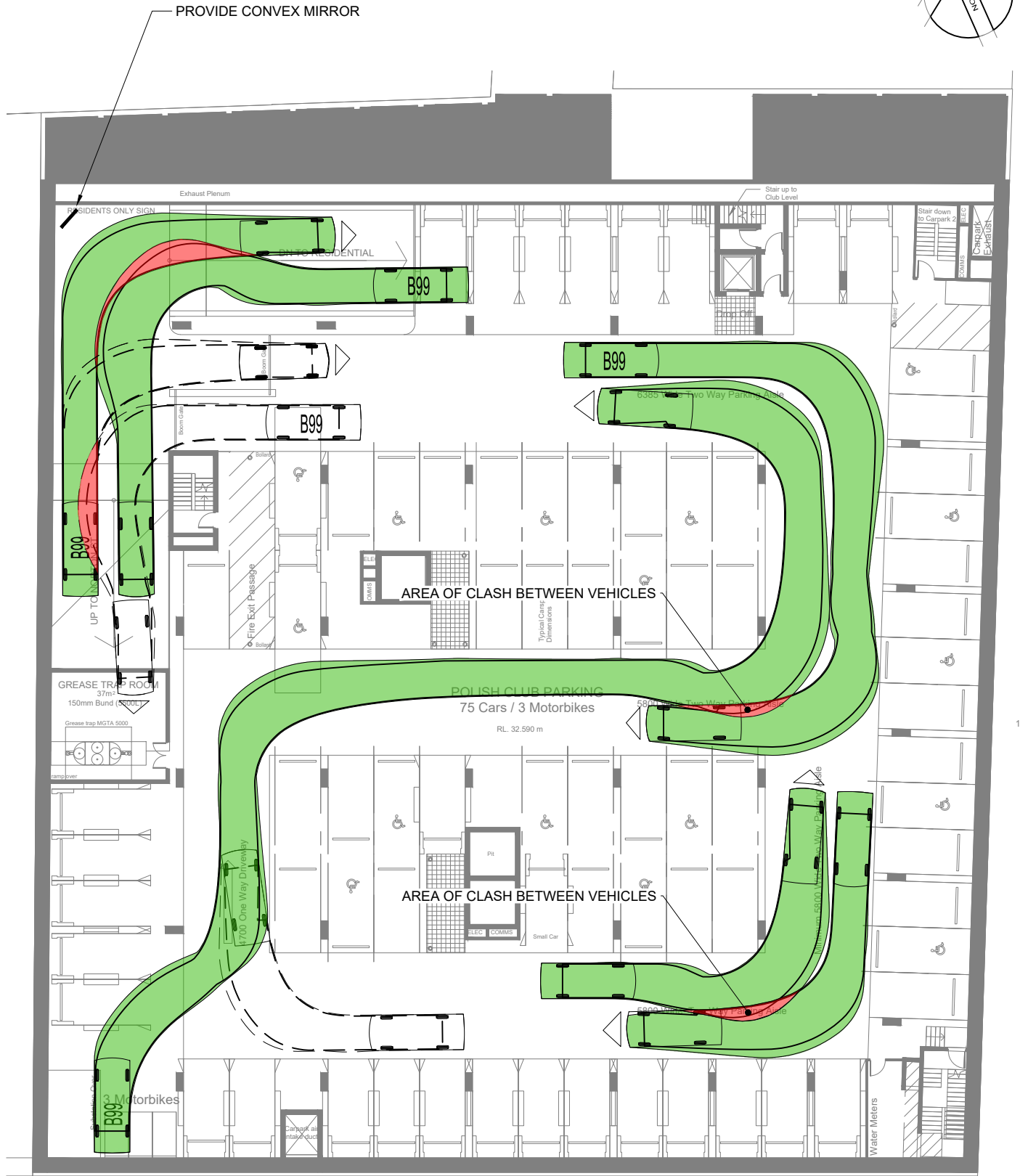
File Ref.
SY20086

REV.
B



Norton Street

B85 TURNING PATHS
SCALE 1:300



Norton Street

B99 TURNING PATHS
SCALE 1:300



REV	AMENDMENT	ISSUED	DATE
A	FIRST ISSUE	JB	27/10/2020
B	NEW ARCHITECTURALS	JB	3/11/2020



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**73-75 NORTON STREET, ASHFIELD
PROPOSED DEVELOPMENT**

BASEMENT B1 TURNING PATHS

Designed: JB
Drawn: JB
Checked: RD

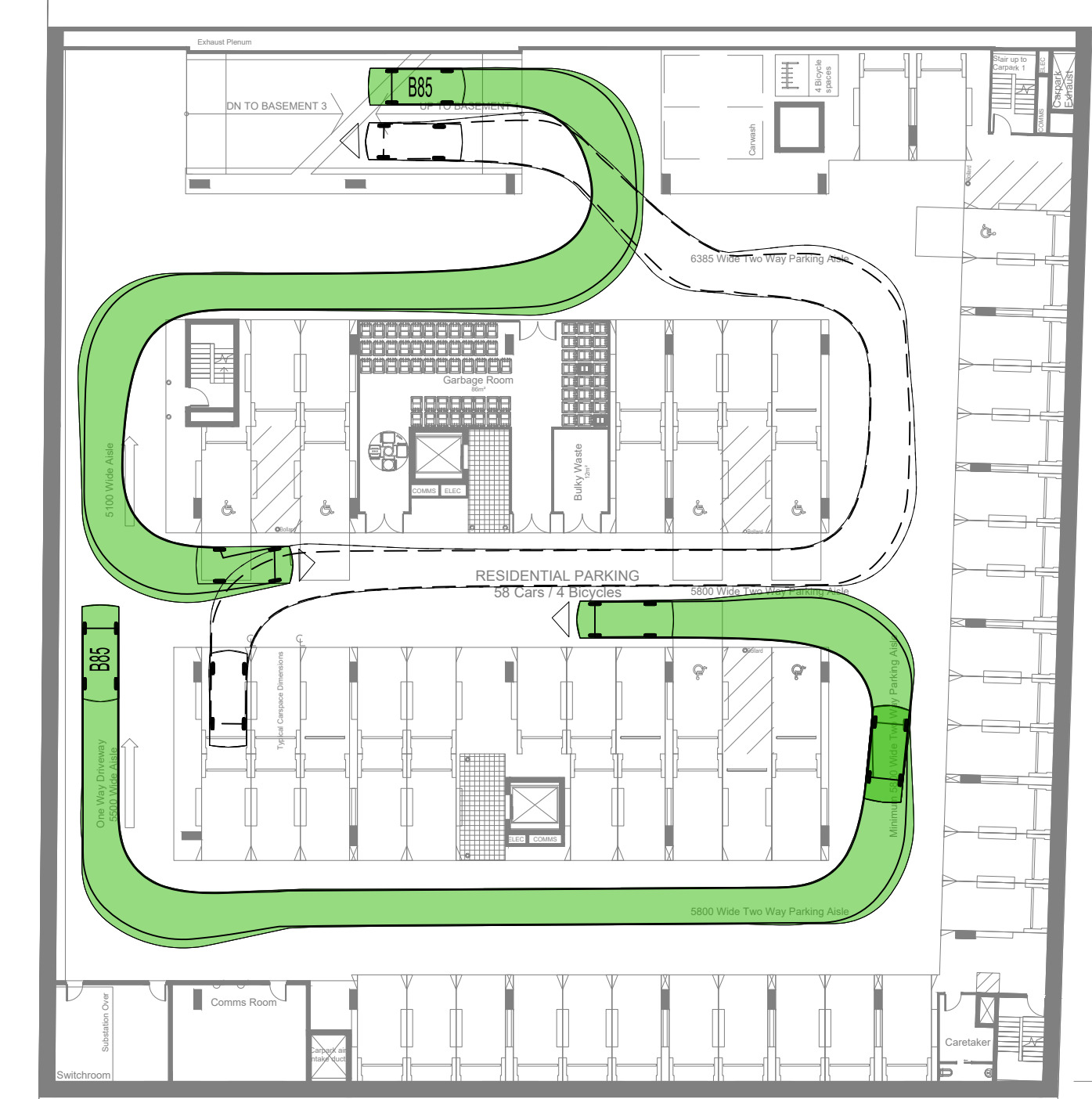
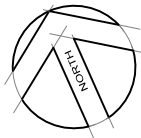
Scales: Plan -
Horiz. -
Vert. -
X-Sect. -

Datum: A.H.D.

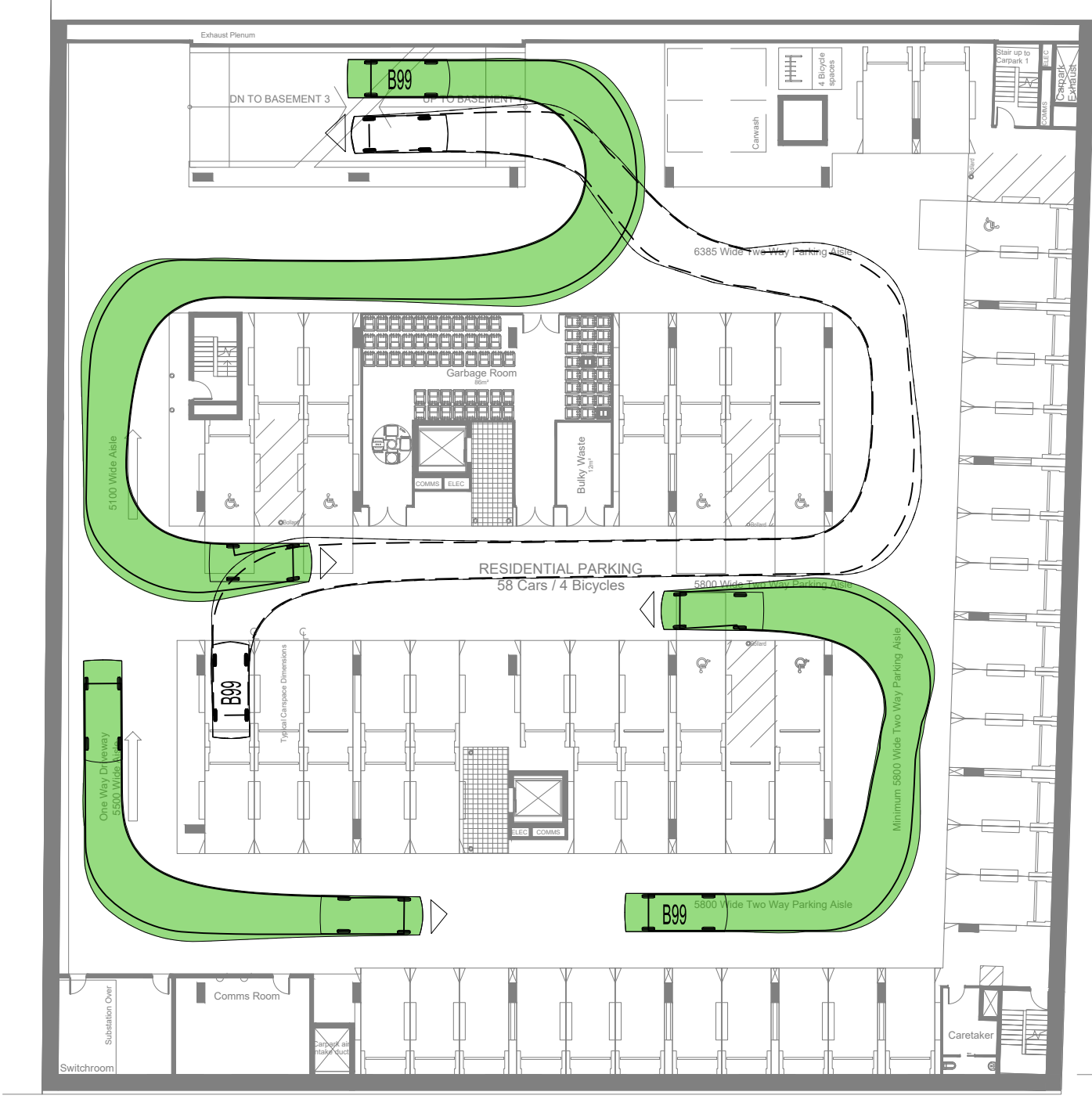
Plan No.
SY20086-02-102

File Ref.
SY20086

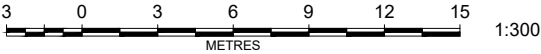
REV.
B



B85 TURNING PATHS
SCALE 1:300



B99 TURNING PATHS
SCALE 1:300



REV	AMENDMENT	ISSUED	DATE
A	FIRST ISSUE	JB	27/10/2020
B	NEW ARCHITECTURALS	JB	3/11/2020



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**73-75 NORTON STREET, ASHFIELD
PROPOSED DEVELOPMENT**

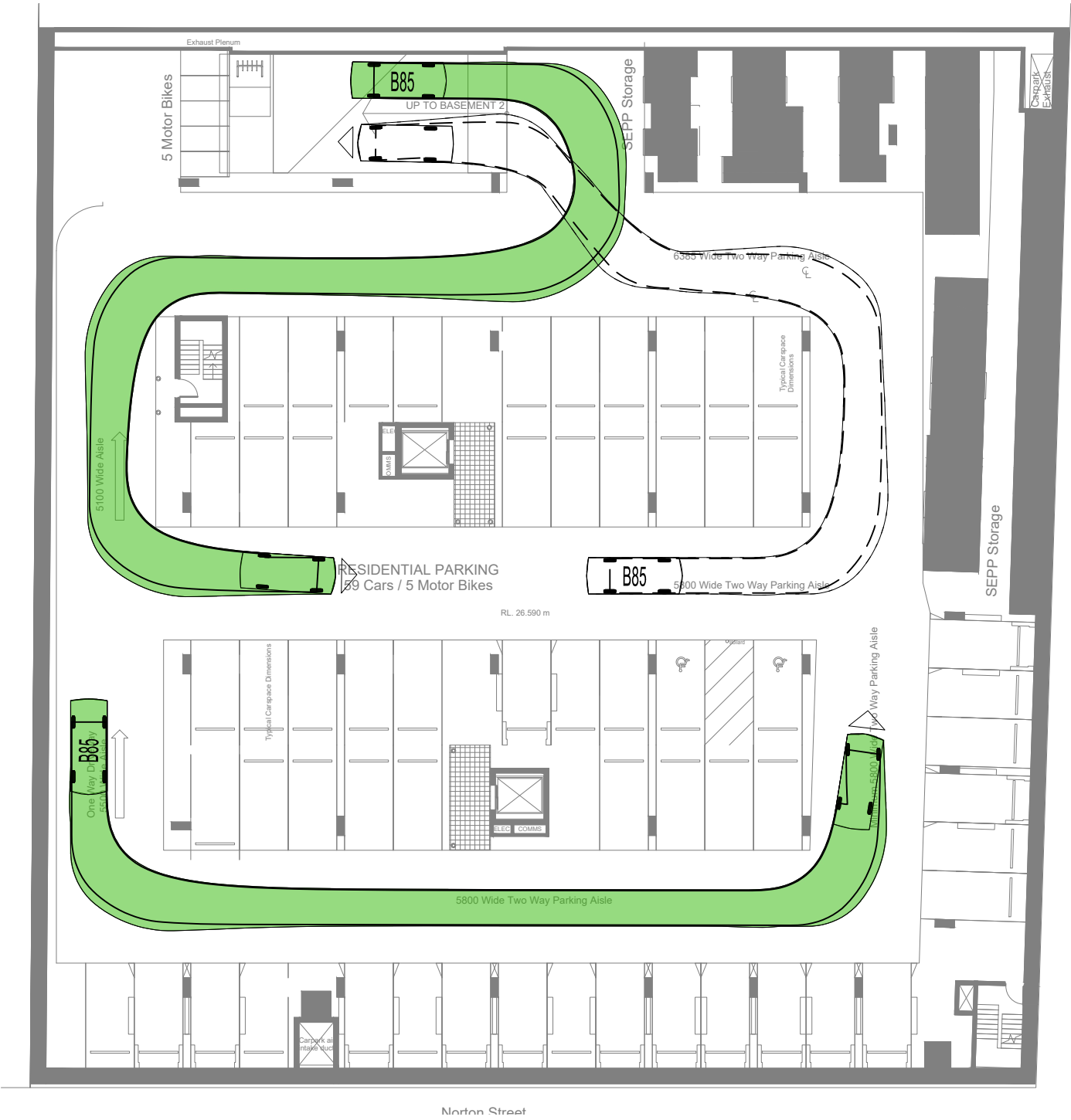
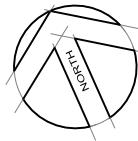
BASEMENT B2 TURNING PATHS

Designed: JB
Drawn: JB
Checked: RD

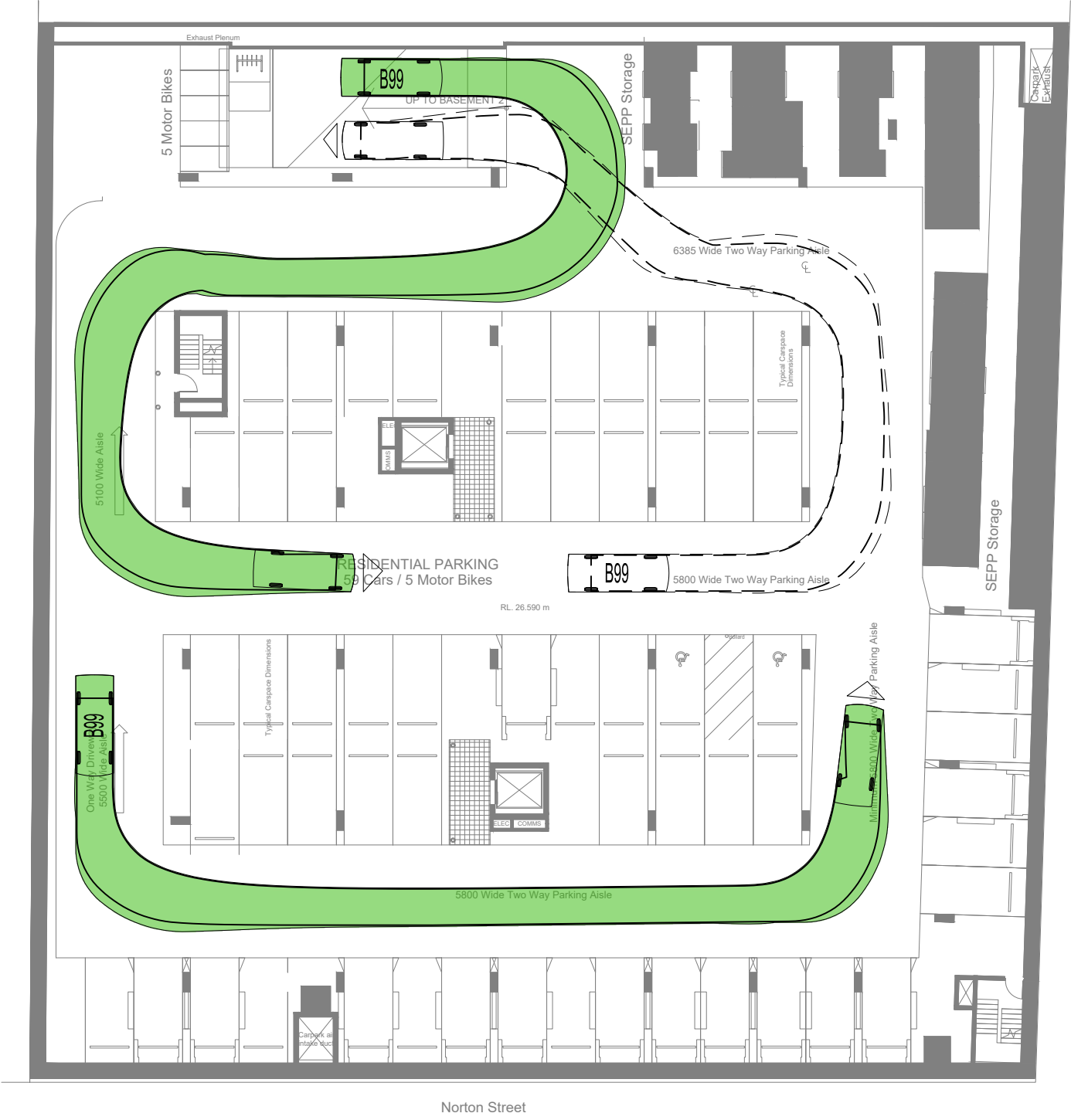
Scales: Plan 1:300
Horiz. -
Vert. -
X-Sect. -

Datum: A.H.D.

Plan No.
SY20086-02-103
File Ref.
SY20086
REV.
B



B85 TURNING PATHS
SCALE 1:300



B99 TURNING PATHS
SCALE 1:300



REV	AMENDMENT	ISSUED	DATE
A	FIRST ISSUE	JB	27/10/2020
B	NEW ARCHITECTURALS	JB	3/11/2020



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ABN: 25 134 067 842

Client:
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**73-75 NORTON STREET, ASHFIELD
PROPOSED DEVELOPMENT**

BASEMENT B3 TURNING PATHS

Designed: JB
Drawn: JB
Checked: RD

Scales: Plan -
Horiz. -
Vert. -
X-Sect. -

Datum: A.H.D.

Plan No.
SY20086-02-104
File Ref.
SY20086
REV.
B

Appendix E1
SIDRA Movement Summary

Existing

DRAFT

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	119	0.0	119	0.0	0.265	52.6	LOS D	3.9	27.1	1.00	0.80	1.00	24.3
2	T1	215	0.0	215	0.0	0.769	51.7	LOS D	10.3	72.3	1.00	0.88	1.05	24.5
3	R2	96	0.0	96	0.0	0.769	57.2	LOS E	10.3	72.3	1.00	0.88	1.05	6.9
Approach		429	0.0	429	0.0	0.769	53.2	LOS D	10.3	72.3	1.00	0.86	1.03	21.6
East: LIVERPOOL ROAD														
4	L2	157	0.0	157	0.0	0.638	23.6	LOS B	9.9	69.1	0.62	0.62	0.62	23.7
5	T1	363	0.0	363	0.0	0.638	18.1	LOS B	9.9	69.1	0.62	0.62	0.62	41.1
6	R2	206	0.0	206	0.0	0.772	35.3	LOS C	4.4	30.9	1.00	0.87	1.15	32.1
Approach		726	0.0	726	0.0	0.772	24.2	LOS B	9.9	69.1	0.73	0.69	0.77	35.7
North: BROWN STREET														
7	L2	56	0.0	56	0.0	0.702	37.8	LOS C	1.7	12.2	1.00	0.82	1.17	27.7
8	T1	120	0.0	120	0.0	0.702	47.5	LOS D	5.3	37.1	1.00	0.85	1.11	22.9
9	R2	64	0.0	64	0.0	0.702	57.1	LOS E	5.3	37.1	1.00	0.86	1.09	31.3
Approach		240	0.0	240	0.0	0.702	47.8	LOS D	5.3	37.1	1.00	0.85	1.12	26.8
West: LIVERPOOL ROAD														
10	L2	262	0.0	262	0.0	0.806	41.1	LOS C	16.8	117.3	0.96	0.91	1.02	36.2
11	T1	884	0.0	884	0.0	0.806	34.8	LOS C	18.6	130.1	0.96	0.90	1.01	27.9
Approach		1146	0.0	1146	0.0	0.806	36.3	LOS C	18.6	130.1	0.96	0.90	1.01	30.5
All Vehicles		2542	0.0	2542	0.0	0.806	36.8	LOS C	18.6	130.1	0.90	0.83	0.96	29.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	117	0.0	116	0.0	0.279	70.7	LOS F	5.1	35.7	1.00	0.81	1.00	20.3
2	T1	180	0.0	178	0.0	0.710	71.8	LOS F	10.7	75.2	1.00	0.85	1.01	20.1
3	R2	63	0.0	63	0.0	0.710	77.3	LOS F	10.7	75.2	1.00	0.85	1.01	5.2
Approach		360	0.0	356 ^{N1}	0.0	0.710	72.4	LOS F	10.7	75.2	1.00	0.84	1.01	18.2
East: LIVERPOOL ROAD														
4	L2	287	0.0	217	0.0	1.370	408.7	LOS F	28.6	200.0	1.00	1.89	2.84	1.8
5	T1	727	0.0	549	0.0	1.370	385.8	LOS F	28.6	200.0	1.00	1.86	2.80	5.6
6	R2	440	0.0	332	0.0	1.370	385.7	LOS F	28.6	200.0	1.00	1.85	2.79	5.6
Approach		1455	0.0	1098 ^{N1}	0.0	1.370	390.3	LOS F	28.6	200.0	1.00	1.86	2.80	4.9
North: BROWN STREET														
7	L2	117	0.0	117	0.0	1.229	256.1	LOS F	12.7	89.2	1.00	1.28	2.47	5.5
8	T1	201	0.0	201	0.0	1.229	277.9	LOS F	24.4	170.6	1.00	1.57	2.43	5.6
9	R2	84	0.0	84	0.0	1.229	289.8	LOS F	24.4	170.6	1.00	1.64	2.42	10.1
Approach		402	0.0	402	0.0	1.229	274.1	LOS F	24.4	170.6	1.00	1.50	2.44	6.6
West: LIVERPOOL ROAD														
10	L2	131	0.0	131	0.0	0.737	60.3	LOS E	14.9	104.4	0.98	0.85	0.98	30.6
11	T1	579	0.0	579	0.0	0.737	54.9	LOS D	14.9	104.4	0.98	0.85	0.98	21.4
Approach		709	0.0	709	0.0	0.737	55.9	LOS D	14.9	104.4	0.98	0.85	0.98	23.6
All Vehicles		2926	0.0	2566 ^{N1}	0.0	1.370	235.4	LOS F	28.6	200.0	0.99	1.38	1.99	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	22	23.8	22	23.8	0.035	26.1	LOS B	0.4	3.7	0.63	0.66	0.63	12.2
3	R2	286	5.1	286	5.1	0.877	62.4	LOS E	10.6	77.6	1.00	0.98	1.30	20.5
Approach		308	6.5	308	6.5	0.877	59.8	LOS E	10.6	77.6	0.97	0.96	1.25	20.3
East: LIVERPOOL ROAD														
4	L2	77	17.8	77	17.8	0.176	21.3	LOS B	2.6	21.0	0.59	0.61	0.59	33.1
5	T1	805	18.6	805	18.6	0.878	35.1	LOS C	25.3	204.9	0.94	0.96	1.06	25.6
Approach		882	18.5	882	18.5	0.878	33.9	LOS C	25.3	204.9	0.91	0.93	1.02	26.1
West: LIVERPOOL ROAD														
11	T1	1325	6.3	1325	6.3	0.846	16.1	LOS B	18.9	139.4	0.64	0.60	0.66	38.0
12	R2	84	11.3	84	11.3	0.846	60.2	LOS E	10.7	79.5	1.00	0.90	1.07	10.7
Approach		1409	6.6	1409	6.6	0.846	18.7	LOS B	18.9	139.4	0.66	0.62	0.68	36.3
All Vehicles		2600	10.6	2600	10.6	0.878	28.7	LOS C	25.3	204.9	0.78	0.76	0.86	30.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	31	17.2	30	17.3	0.104	60.1	LOS E	1.1	9.2	0.87	0.72	0.87	6.1
3	R2	226	2.8	225	2.8	1.476	497.5	LOS F	14.0	100.0	1.00	1.81	3.15	3.9
Approach		257	4.5	256 ^{N1}	4.5	1.476	445.5	LOS F	14.0	100.0	0.98	1.68	2.88	3.9
East: LIVERPOOL ROAD														
4	L2	400	1.1	400	1.1	0.322	11.5	LOS A	6.5	45.7	0.37	0.64	0.37	38.4
5	T1	1147	4.2	1147	4.2	1.611	597.6	LOS F	171.3	1242.2	0.98	2.81	3.32	2.9
Approach		1547	3.4	1547	3.4	1.611	446.1	LOS F	171.3	1242.2	0.82	2.25	2.55	3.8
West: LIVERPOOL ROAD														
11	T1	812	2.3	792	2.4	0.500	0.9	LOS A	2.4	17.0	0.08	0.07	0.08	49.1
12	R2	149	4.9	146	5.0	1.543	552.4	LOS F	20.0	145.9	1.00	1.82	3.23	1.3
Approach		961	2.7	938 ^{N1}	2.8	1.543	86.7	LOS F	20.0	145.9	0.22	0.34	0.57	16.7
All Vehicles		2765	3.3	2741 ^{N1}	3.3	1.611	323.1	LOS F	171.3	1242.2	0.63	1.54	1.90	5.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: QUEEN STREET														
1	L2	49	0.0	49	0.0	0.811	23.8	LOS B	3.7	26.8	0.88	1.17	1.48	30.6
2	T1	312	4.4	312	4.4	0.811	23.2	LOS B	3.7	26.8	0.88	1.17	1.48	30.6
Approach		361	3.8	361	3.8	0.811	23.3	LOS B	3.7	26.8	0.88	1.17	1.48	30.6
East: NORTON STREET														
4	L2	17	0.0	17	0.0	0.353	9.4	LOS A	1.0	7.0	0.67	0.70	0.67	43.7
5	T1	195	2.7	195	2.7	0.353	8.8	LOS A	1.0	7.0	0.67	0.70	0.67	40.2
6	R2	9	0.0	9	0.0	0.353	11.3	LOS A	1.0	7.0	0.67	0.70	0.67	40.2
Approach		221	2.4	221	2.4	0.353	8.9	LOS A	1.0	7.0	0.67	0.70	0.67	40.7
North: QUEEN STREET														
8	T1	184	10.9	184	10.9	0.213	3.9	LOS A	0.0	0.0	0.00	0.57	0.00	44.0
9	R2	115	7.3	115	7.3	0.213	6.5	LOS A	0.0	0.0	0.00	0.57	0.00	31.5
Approach		299	9.5	299	9.5	0.213	4.9	LOS A	0.0	0.0	0.00	0.57	0.00	42.3
All Vehicles		881	5.4	881	5.4	0.811	13.5	LOS A	3.7	26.8	0.53	0.85	0.77	36.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA EXISTING\SY200086\ NORTON STREET, ASHFIELD - EXISTING.sip8

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: QUEEN STREET														
1	L2	53	0.0	53	0.0	1.127	168.7	LOS F	13.3	95.1	1.00	3.30	6.00	8.9
2	T1	241	2.6	241	2.6	1.127	168.2	LOS F	13.3	95.1	1.00	3.30	6.00	8.9
Approach		294	2.2	294	2.2	1.127	168.3	LOS F	13.3	95.1	1.00	3.30	6.00	8.9
East: NORTON STREET														
4	L2	16	0.0	16	0.0	0.566	16.8	LOS B	2.2	15.4	0.88	0.96	1.08	40.2
5	T1	268	0.8	268	0.8	0.566	16.1	LOS B	2.2	15.4	0.88	0.96	1.08	34.7
6	R2	13	0.0	13	0.0	0.566	18.7	LOS B	2.2	15.4	0.88	0.96	1.08	34.7
Approach		297	0.7	297	0.7	0.566	16.3	LOS B	2.2	15.4	0.88	0.96	1.08	35.2
North: QUEEN STREET														
8	T1	302	1.4	279	1.2	0.337	3.8	LOS A	0.0	0.0	0.00	0.58	0.00	44.1
9	R2	234	0.5	216	0.4	0.337	6.4	LOS A	0.0	0.0	0.00	0.58	0.00	31.2
Approach		536	1.0	494 ^{N1}	0.9	0.337	5.0	LOS A	0.0	0.0	0.00	0.58	0.00	41.9
All Vehicles		1126	1.2	1085 ^{N1}	1.3	1.127	52.3	LOS D	13.3	95.1	0.51	1.42	1.92	19.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - AM EXSTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	103	0.0	103	0.0	0.377	28.5	LOS B	6.8	47.7	0.73	0.68	0.73	41.8
2	T1	452	0.0	452	0.0	0.377	23.0	LOS B	6.8	47.7	0.73	0.65	0.73	33.7
Approach		555	0.0	555	0.0	0.377	24.1	LOS B	6.8	47.7	0.73	0.66	0.73	35.9
East: NORTON STREET														
4	L2	56	0.0	56	0.0	0.371	44.5	LOS D	4.4	30.7	0.89	0.75	0.89	30.1
5	T1	144	0.0	144	0.0	0.371	39.1	LOS C	4.4	30.7	0.89	0.76	0.89	30.5
6	R2	88	0.0	88	0.0	0.371	44.7	LOS D	3.7	26.1	0.89	0.77	0.89	13.7
Approach		288	0.0	288	0.0	0.371	41.9	LOS C	4.4	30.7	0.89	0.76	0.89	26.6
North: HOLDEN STREET														
8	T1	221	0.0	221	0.0	0.175	3.1	LOS A	1.0	7.2	0.15	0.13	0.15	55.3
9	R2	121	0.0	121	0.0	0.368	55.9	LOS D	3.9	27.5	1.00	0.80	1.00	23.1
Approach		342	0.0	342	0.0	0.368	21.8	LOS B	3.9	27.5	0.45	0.37	0.45	37.1
All Vehicles		1185	0.0	1185	0.0	0.377	27.7	LOS B	6.8	47.7	0.69	0.60	0.69	33.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %				Vehicles veh	Distance m				km/h
South: HOLDEN STREET														
1	L2	123	0.0	123	0.0	0.423	49.7	LOS D	8.6	60.5	0.85	0.76	0.85	33.3
2	T1	317	0.0	317	0.0	0.423	44.4	LOS D	8.6	60.5	0.85	0.73	0.85	24.2
Approach		440	0.0	440	0.0	0.423	45.9	LOS D	8.6	60.5	0.85	0.74	0.85	27.5
East: NORTON STREET														
4	L2	141	0.0	137	0.0	0.423	37.4	LOS C	10.3	72.3	0.75	0.71	0.75	32.7
5	T1	318	0.0	309	0.0	0.423	31.9	LOS C	10.3	72.3	0.75	0.72	0.75	33.2
6	R2	177	0.0	172	0.0	0.423	37.5	LOS C	8.8	61.5	0.75	0.74	0.75	15.9
Approach		636	0.0	618 ^{N1}	0.0	0.423	34.7	LOS C	10.3	72.3	0.75	0.73	0.75	29.8
North: HOLDEN STREET														
8	T1	339	0.0	226	0.0	0.241	10.4	LOS A	2.8	19.5	0.30	0.26	0.30	46.7
9	R2	169	0.0	113	0.0	0.426	78.5	LOS F	5.1	35.5	1.00	0.80	1.00	18.7
Approach		508	0.0	339 ^{N1}	0.0	0.426	33.1	LOS C	5.1	35.5	0.53	0.44	0.53	31.1
All Vehicles		1584	0.0	1397 ^{N1}	0.0	0.426	37.8	LOS C	10.3	72.3	0.73	0.66	0.73	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Appendix E2
SIDRA Movement Summary
Existing + Development

DRAFT

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	141	0.0	139	0.0	0.299	68.5	LOS E	6.1	42.4	1.00	0.82	1.00	20.7
2	T1	180	0.0	177	0.0	0.927	83.0	LOS F	14.3	100.0	1.00	1.04	1.28	18.1
3	R2	112	0.0	110	0.0	0.927	88.6	LOS F	14.3	100.0	1.00	1.04	1.28	4.5
Approach		433	0.0	425 ^{N1}	0.0	0.927	79.7	LOS F	14.3	100.0	1.00	0.97	1.19	16.0
East: LIVERPOOL ROAD														
4	L2	287	0.0	216	0.0	1.432	461.0	LOS F	28.6	200.0	1.00	2.08	2.99	1.6
5	T1	727	0.0	548	0.0	1.432	453.2	LOS F	28.6	200.0	1.00	2.08	2.97	5.0
6	R2	440	0.0	331	0.0	1.432	457.3	LOS F	28.6	200.0	1.00	2.08	2.96	5.0
Approach		1455	0.0	1095 ^{N1}	0.0	1.432	456.0	LOS F	28.6	200.0	1.00	2.08	2.97	4.4
North: BROWN STREET														
7	L2	117	0.0	117	0.0	1.266	296.7	LOS F	12.9	90.6	1.00	1.32	2.58	4.9
8	T1	201	0.0	201	0.0	1.266	310.6	LOS F	26.4	184.7	1.00	1.65	2.55	5.1
9	R2	84	0.0	84	0.0	1.266	319.7	LOS F	26.4	184.7	1.00	1.71	2.54	9.3
Approach		402	0.0	402	0.0	1.266	308.5	LOS F	26.4	184.7	1.00	1.57	2.56	6.0
West: LIVERPOOL ROAD														
10	L2	131	0.0	131	0.0	0.804	62.0	LOS E	18.4	128.7	0.99	0.90	1.04	30.3
11	T1	605	0.0	605	0.0	0.804	58.0	LOS E	18.4	128.7	0.99	0.92	1.07	20.7
Approach		736	0.0	736	0.0	0.804	58.7	LOS E	18.4	128.7	0.99	0.92	1.06	22.8
All Vehicles		3025	0.0	2658 ^{N1}	0.0	1.432	263.5	LOS F	28.6	200.0	1.00	1.50	2.09	6.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - AM EXSTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %				Vehicles veh	Distance m				km/h
South: HOLDEN STREET														
1	L2	103	0.0	103	0.0	0.387	28.6	LOS C	7.0	49.1	0.73	0.68	0.73	41.7
2	T1	452	0.0	452	0.0	0.387	23.2	LOS B	7.0	49.1	0.73	0.65	0.73	33.6
Approach		555	0.0	555	0.0	0.387	24.2	LOS B	7.0	49.1	0.73	0.66	0.73	35.8
East: NORTON STREET														
4	L2	60	0.0	60	0.0	0.389	43.9	LOS D	4.8	33.3	0.89	0.75	0.89	30.3
5	T1	144	0.0	144	0.0	0.389	38.4	LOS C	4.8	33.3	0.89	0.76	0.89	30.7
6	R2	101	0.0	101	0.0	0.389	44.2	LOS D	3.8	26.6	0.89	0.78	0.89	13.7
Approach		305	0.0	305	0.0	0.389	41.4	LOS C	4.8	33.3	0.89	0.76	0.89	26.4
North: HOLDEN STREET														
8	T1	221	0.0	221	0.0	0.178	3.2	LOS A	1.0	7.2	0.16	0.13	0.16	55.2
9	R2	121	0.0	121	0.0	0.387	56.7	LOS E	4.0	27.7	1.00	0.80	1.00	22.9
Approach		342	0.0	342	0.0	0.387	22.1	LOS B	4.0	27.7	0.45	0.37	0.45	36.9
All Vehicles		1202	0.0	1202	0.0	0.389	28.0	LOS B	7.0	49.1	0.69	0.60	0.69	33.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: HOLDEN STREET														
1	L2	123	0.0	123	0.0	0.548	54.7	LOS D	11.0	77.0	0.91	0.80	0.91	32.0
2	T1	317	0.0	317	0.0	0.548	49.8	LOS D	11.0	77.0	0.90	0.78	0.90	22.5
Approach		440	0.0	440	0.0	0.548	51.2	LOS D	11.0	77.0	0.91	0.79	0.91	25.9
East: NORTON STREET														
4	L2	165	0.0	157	0.0	0.515	34.0	LOS C	14.0	97.7	0.74	0.71	0.74	34.3
5	T1	318	0.0	302	0.0	0.515	28.5	LOS B	14.0	97.7	0.74	0.71	0.74	35.1
6	R2	249	0.0	237	0.0	0.542	35.1	LOS C	7.5	52.5	0.75	0.81	0.75	15.8
Approach		733	0.0	696 ^{N1}	0.0	0.542	32.0	LOS C	14.0	97.7	0.75	0.75	0.75	30.1
North: HOLDEN STREET														
8	T1	339	0.0	243	0.0	0.291	8.0	LOS A	2.2	15.7	0.22	0.19	0.22	49.2
9	R2	169	0.0	122	0.0	0.560	81.8	LOS F	5.5	38.7	1.00	0.80	1.00	18.2
Approach		508	0.0	365 ^{N1}	0.0	0.560	32.6	LOS C	5.5	38.7	0.48	0.39	0.48	31.3
All Vehicles		1681	0.0	1501 ^{N1}	0.0	0.560	37.8	LOS C	14.0	97.7	0.73	0.67	0.73	28.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	22	23.8	22	23.8	0.035	26.1	LOS B	0.4	3.7	0.63	0.66	0.63	12.2
3	R2	286	5.1	286	5.1	0.877	62.4	LOS E	10.6	77.6	1.00	0.98	1.30	20.5
Approach		308	6.5	308	6.5	0.877	59.8	LOS E	10.6	77.6	0.97	0.96	1.25	20.3
East: LIVERPOOL ROAD														
4	L2	78	17.6	78	17.6	0.176	21.3	LOS B	2.6	21.0	0.59	0.61	0.59	33.0
5	T1	805	18.6	805	18.6	0.879	35.3	LOS C	25.3	205.7	0.94	0.96	1.06	25.6
Approach		883	18.5	883	18.5	0.879	34.0	LOS C	25.3	205.7	0.91	0.93	1.02	26.1
West: LIVERPOOL ROAD														
11	T1	1334	6.2	1334	6.2	0.852	16.8	LOS B	20.1	148.1	0.65	0.62	0.68	37.6
12	R2	85	11.1	85	11.1	0.852	60.6	LOS E	10.7	80.1	1.00	0.91	1.08	10.7
Approach		1419	6.5	1419	6.5	0.852	19.5	LOS B	20.1	148.1	0.67	0.64	0.70	35.9
All Vehicles		2611	10.6	2611	10.6	0.879	29.2	LOS C	25.3	205.7	0.79	0.77	0.87	30.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA \EXISTING + DEV\SY200086\ NORTON STREET, ASHFIELD - EXISTING + DEV.sip8

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	31	17.2	27	18.0	0.091	59.0	LOS E	1.0	8.2	0.86	0.71	0.86	6.2
3	R2	226	2.8	202	2.9	1.322	365.9	LOS F	13.9	100.0	1.00	1.61	2.74	5.1
Approach		257	4.5	229 ^{N1}	4.7	1.322	329.2	LOS F	13.9	100.0	0.98	1.50	2.51	5.2
East: LIVERPOOL ROAD														
4	L2	453	0.9	453	0.9	0.340	12.0	LOS A	7.0	49.5	0.38	0.67	0.38	37.8
5	T1	1147	4.2	1147	4.2	1.675	673.5	LOS F	182.9	1326.5	1.00	2.99	3.54	2.6
Approach		1600	3.3	1600	3.3	1.675	486.4	LOS F	182.9	1326.5	0.83	2.33	2.65	3.5
West: LIVERPOOL ROAD														
11	T1	860	2.2	847	2.2	0.535	2.6	LOS A	6.9	48.9	0.20	0.19	0.20	47.6
12	R2	176	4.2	173	4.3	1.619	618.4	LOS F	25.0	181.3	1.00	1.91	3.40	1.2
Approach		1036	2.5	1021 ^{N1}	2.6	1.619	107.1	LOS F	25.0	181.3	0.34	0.48	0.75	14.4
All Vehicles		2893	3.1	2850 ^{N1}	3.2	1.675	337.9	LOS F	182.9	1326.5	0.66	1.60	1.96	5.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: \\bbs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA EXISTING + DEV\SY200086\ NORTON STREET, ASHFIELD - EXISTING + DEV.sip8

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Averag e Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: QUEEN STREET														
1	L2	51	0.0	51	0.0	0.815	24.2	LOS B	3.8	27.3	0.89	1.18	1.50	30.4
2	T1	312	4.4	312	4.4	0.815	23.7	LOS B	3.8	27.3	0.89	1.18	1.50	30.4
Approach		362	3.8	362	3.8	0.815	23.8	LOS B	3.8	27.3	0.89	1.18	1.50	30.4
East: NORTON STREET														
4	L2	17	0.0	17	0.0	0.353	9.5	LOS A	1.0	7.0	0.67	0.71	0.67	43.7
5	T1	195	2.7	195	2.7	0.353	8.8	LOS A	1.0	7.0	0.67	0.71	0.67	40.2
6	R2	9	0.0	9	0.0	0.353	11.3	LOS A	1.0	7.0	0.67	0.71	0.67	40.2
Approach		221	2.4	221	2.4	0.353	9.0	LOS A	1.0	7.0	0.67	0.71	0.67	40.7
North: QUEEN STREET														
8	T1	184	10.9	184	10.9	0.214	3.9	LOS A	0.0	0.0	0.00	0.57	0.00	44.0
9	R2	117	7.2	117	7.2	0.214	6.5	LOS A	0.0	0.0	0.00	0.57	0.00	31.5
Approach		301	9.4	301	9.4	0.214	4.9	LOS A	0.0	0.0	0.00	0.57	0.00	42.3
All Vehicles		884	5.4	884	5.4	0.815	13.7	LOS A	3.8	27.3	0.53	0.85	0.78	35.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA
EXISTING + DEV\SY200086\ NORTON STREET, ASHFIELD - EXISTING + DEV.sip8

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - PM EXISTING]

 Network: N101 [PM NETWORK]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	79	0.0	79	0.0	1.258	276.7	LOS F	21.2	150.8	1.00	4.37	8.47	5.8
2	T1	241	2.6	241	2.6	1.258	276.2	LOS F	21.2	150.8	1.00	4.37	8.47	5.8
Approach		320	2.0	320	2.0	1.258	276.3	LOS F	21.2	150.8	1.00	4.37	8.47	5.8
East: NORTON STREET														
4	L2	16	0.0	16	0.0	0.595	20.0	LOS B	2.5	17.7	0.92	1.03	1.21	38.8
5	T1	268	0.8	268	0.8	0.595	19.3	LOS B	2.5	17.7	0.92	1.03	1.21	32.7
6	R2	13	0.0	13	0.0	0.595	21.9	LOS B	2.5	17.7	0.92	1.03	1.21	32.7
Approach		297	0.7	297	0.7	0.595	19.5	LOS B	2.5	17.7	0.92	1.03	1.21	33.2
North: QUEEN STREET														
8	T1	302	1.4	275	1.2	0.382	3.8	LOS A	0.0	0.0	0.00	0.60	0.00	44.0
9	R2	313	0.3	285	0.3	0.382	6.4	LOS A	0.0	0.0	0.00	0.60	0.00	30.9
Approach		615	0.9	560 ^{N1}	0.8	0.382	5.2	LOS A	0.0	0.0	0.00	0.60	0.00	41.1
All Vehicles		1232	1.1	1177 ^{N1}	1.2	1.258	82.5	LOS F	21.2	150.8	0.50	1.73	2.61	13.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - AM EXISTING]

 Network: N101 [AM NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	123	0.0	123	0.0	0.274	52.7	LOS D	4.0	28.1	1.00	0.81	1.00	24.3
2	T1	215	0.0	215	0.0	0.796	49.0	LOS D	10.8	75.9	1.00	0.92	1.09	25.2
3	R2	104	0.0	104	0.0	0.796	54.5	LOS D	10.8	75.9	1.00	0.92	1.09	7.2
Approach		442	0.0	442	0.0	0.796	51.3	LOS D	10.8	75.9	1.00	0.89	1.07	21.9
East: LIVERPOOL ROAD														
4	L2	157	0.0	157	0.0	0.638	23.6	LOS B	9.9	69.2	0.62	0.62	0.62	23.7
5	T1	363	0.0	363	0.0	0.638	18.1	LOS B	9.9	69.2	0.62	0.62	0.62	41.1
6	R2	206	0.0	206	0.0	0.772	35.3	LOS C	4.4	30.9	1.00	0.87	1.15	32.1
Approach		726	0.0	726	0.0	0.772	24.2	LOS B	9.9	69.2	0.73	0.69	0.77	35.7
North: BROWN STREET														
7	L2	56	0.0	56	0.0	0.706	38.0	LOS C	1.7	12.0	1.00	0.82	1.18	27.6
8	T1	120	0.0	120	0.0	0.706	47.9	LOS D	5.4	37.5	1.00	0.86	1.11	22.8
9	R2	64	0.0	64	0.0	0.706	57.2	LOS E	5.4	37.5	1.00	0.87	1.10	31.3
Approach		240	0.0	240	0.0	0.706	48.1	LOS D	5.4	37.5	1.00	0.85	1.13	26.7
West: LIVERPOOL ROAD														
10	L2	262	0.0	262	0.0	0.821	42.7	LOS D	16.9	118.6	0.96	0.93	1.05	35.6
11	T1	885	0.0	885	0.0	0.821	36.2	LOS C	19.4	135.6	0.96	0.92	1.04	27.3
Approach		1147	0.0	1147	0.0	0.821	37.7	LOS C	19.4	135.6	0.96	0.92	1.04	29.9
All Vehicles		2556	0.0	2556	0.0	0.821	37.2	LOS C	19.4	135.6	0.91	0.84	0.98	29.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Appendix E3
SIDRA Movement Summary

Existing + Growth

DRAFT

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - PM
EXISTING + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: HOLDEN STREET														
1	L2	150	0.0	150	0.0	0.533	49.4	LOS D ¹¹	11.9	83.3	0.87	0.79	0.87	33.5
2	T1	386	0.0	386	0.0	0.533	44.3	LOS D ¹¹	11.9	83.3	0.87	0.76	0.87	24.2
Approach		536	0.0	536	0.0	0.533	45.7	LOS D ¹¹	11.9	83.3	0.87	0.77	0.87	27.5
East: NORTON STREET														
4	L2	172	0.0	159	0.0	0.533	39.4	LOS C	13.8	96.8	0.80	0.75	0.80	32.0
5	T1	388	0.0	357	0.0	0.533	33.9	LOS C	13.8	96.8	0.80	0.76	0.80	32.4
6	R2	216	0.0	199	0.0	0.533	39.7	LOS C	9.7	68.0	0.79	0.78	0.79	15.1
Approach		775	0.0	715 ^{N1}	0.0	0.533	36.7	LOS C	13.8	96.8	0.80	0.76	0.80	28.9
North: HOLDEN STREET														
8	T1	413	0.0	243	0.0	0.259	10.8	LOS A	3.1	21.8	0.31	0.27	0.31	46.4
9	R2	207	0.0	121	0.0	0.530	81.1	LOS F ¹¹	5.5	38.5	1.00	0.80	1.00	18.3
Approach		620	0.0	364 ^{N1}	0.0	0.530	34.2	LOS C	5.5	38.5	0.54	0.45	0.54	30.7
All Vehicles		1931	0.0	1615 ^{N1}	0.0	0.533	39.2	LOS C	13.8	96.8	0.76	0.69	0.76	28.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - AM
EXISTING + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	126	0.0	126	0.0	0.491	33.6	LOS C	13.4	94.0	0.73	0.69	0.73	39.6
2	T1	550	0.0	550	0.0	0.491	28.3	LOS B	13.4	94.0	0.73	0.67	0.73	30.7
Approach		676	0.0	676	0.0	0.491	29.3	LOS C	13.4	94.0	0.73	0.68	0.73	33.0
East: NORTON STREET														
4	L2	68	0.0	65	0.0	0.495	58.4	LOS E ¹¹	8.6	59.9	0.92	0.78	0.92	26.0
5	T1	176	0.0	167	0.0	0.495	52.9	LOS D ¹¹	8.6	59.9	0.92	0.78	0.92	26.4
6	R2	108	0.0	102	0.0	0.495	59.8	LOS E ¹¹	4.5	31.3	0.91	0.80	0.91	10.5
Approach		352	0.0	334 ^{N1}	0.0	0.495	56.1	LOS D ¹¹	8.6	59.9	0.91	0.79	0.91	22.4
North: HOLDEN STREET														
8	T1	269	0.0	264	0.0	0.204	5.3	LOS A	2.2	15.4	0.20	0.18	0.20	52.4
9	R2	148	0.0	144	0.0	0.499	77.2	LOS F ¹¹	6.4	45.0	1.00	0.81	1.00	18.9
Approach		417	0.0	408 ^{N1}	0.0	0.499	30.7	LOS C	6.4	45.0	0.49	0.40	0.49	32.2
All Vehicles		1445	0.0	1418 ^{N1}	0.0	0.499	36.0	LOS C	13.4	94.0	0.70	0.62	0.70	29.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - AM
EXISTING + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: QUEEN STREET														
1	L2	27	23.8	20	25.7	0.043	43.5	LOS D ¹¹	0.6	5.3	0.73	0.68	0.73	8.1
3	R2	349	5.1	256	5.7	1.035	141.1	LOS F ¹¹	13.6	100.0	1.00	1.16	1.71	11.7
Approach		376	6.5	276 ^{N1}	7.1	1.035	133.9	LOS F ¹¹	13.6	100.0	0.98	1.13	1.64	11.6
East: LIVERPOOL ROAD														
4	L2	94	17.8	94	17.8	0.208	18.2	LOS B	4.1	33.6	0.47	0.53	0.47	35.3
5	T1	982	18.6	982	18.6	1.042	105.8	LOS F ¹¹	63.2	512.9	0.94	1.27	1.42	12.9
Approach		1075	18.5	1075	18.5	1.042	98.1	LOS F ¹¹	63.2	512.9	0.90	1.21	1.34	13.6
West: LIVERPOOL ROAD														
11	T1	1615	6.3	1540	6.6	0.974	42.8	LOS D ¹¹	27.0	200.0	0.94	1.02	1.11	27.3
12	R2	103	11.3	98	11.8	0.974	95.3	LOS F ¹¹	12.9	97.2	1.00	1.05	1.32	7.2
Approach		1718	6.6	1639 ^{N1}	6.9	0.974	46.0	LOS D ¹¹	27.0	200.0	0.94	1.02	1.12	25.9
All Vehicles		3169	10.6	2990 ^{N1}	11.2	1.042	72.8	LOS F ¹¹	63.2	512.9	0.93	1.10	1.25	18.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped	Distance m		
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		192	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - PM
EXISTING + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: QUEEN STREET													
1	L2	37	17.2	28	19.5	0.096	60.0	LOS E ¹¹	1.0	8.5	0.87	0.71	6.1
3	R2	276	2.8	201	3.2	1.238	295.8	LOS F ¹¹	13.9	100.0	1.00	1.49	6.2
Approach		313	4.5	229 ^{N1}	5.2	1.238	267.2	LOS F ¹¹	13.9	100.0	0.98	1.40	6.2
East: LIVERPOOL ROAD													
4	L2	488	1.1	488	1.1	0.393	12.1	LOS A	8.5	59.8	0.40	0.65	38.0
5	T1	1399	4.2	1399	4.2	1.964	910.2	LOS F ¹¹	245.4	1780.0	0.98	3.32	1.9
Approach		1886	3.4	1886	3.4	1.964	678.1	LOS F ¹¹	245.4	1780.0	0.83	2.63	2.6
West: LIVERPOOL ROAD													
11	T1	989	2.3	778	3.0	0.497	2.5	LOS A	5.7	41.0	0.18	0.17	47.7
12	R2	182	4.9	144	6.2	1.756	738.0	LOS F ¹¹	22.6	166.7	1.00	2.02	1.0
Approach		1172	2.7	922 ^{N1}	3.5	1.756	117.6	LOS F ¹¹	22.6	166.7	0.31	0.46	13.6
All Vehicles		3371	3.3	3037 ^{N1}	3.6	1.964	477.0	LOS F ¹¹	245.4	1780.0	0.68	1.88	3.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped			
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		192	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - AM
EXISTING + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: QUEEN STREET													
1	L2	60	0.0	60	0.0	1.557	526.0	LOS F ¹¹	44.4	321.1	1.00	6.94	13.35
2	T1	380	4.4	380	4.4	1.557	525.6	LOS F ¹¹	44.4	321.1	1.00	6.94	13.35
Approach		440	3.8	440	3.8	1.557	525.7	LOS F ¹¹	44.4	321.1	1.00	6.94	13.35
East: NORTON STREET													
4	L2	21	0.0	21	0.0	0.474	11.3	LOS A	1.4	10.0	0.77	0.80	42.7
5	T1	237	2.7	237	2.7	0.474	10.7	LOS A	1.4	10.0	0.77	0.80	38.6
6	R2	12	0.0	12	0.0	0.474	13.2	LOS A	1.4	10.0	0.77	0.80	38.6
Approach		269	2.4	269	2.4	0.474	10.9	LOS A	1.4	10.0	0.77	0.80	39.2
North: QUEEN STREET													
8	T1	225	10.9	218	11.2	0.252	3.9	LOS A	0.0	0.0	0.00	0.57	44.0
9	R2	140	7.3	135	7.6	0.252	6.5	LOS A	0.0	0.0	0.00	0.57	31.5
Approach		364	9.5	353 ^{N1}	9.8	0.252	4.9	LOS A	0.0	0.0	0.00	0.57	42.3
All Vehicles		1074	5.4	1063 ^{N1}	5.4	1.557	222.1	LOS F ¹¹	44.4	321.1	0.61	3.26	6.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA
EXISTING + GROWTH\SY200086\ NORTON STREET, ASHFIELD - EXISTING + GROWTH.sip8

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - PM
EXISTING + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	64	0.0	64	0.0	1.570	544.6	LOS F ¹¹	36.9	263.2	1.00	6.30	13.03	3.1
2	T1	294	2.6	294	2.6	1.570	544.1	LOS F ¹¹	36.9	263.2	1.00	6.30	13.03	3.1
Approach		358	2.2	358	2.2	1.570	544.2	LOS F ¹¹	36.9	263.2	1.00	6.30	13.03	3.1
East: NORTON STREET														
4	L2	19	0.0	19	0.0	0.735	28.0	LOS B	4.1	29.2	1.00	1.26	1.63	35.8
5	T1	327	0.8	327	0.8	0.735	27.4	LOS B	4.1	29.2	1.00	1.26	1.63	28.6
6	R2	15	0.0	15	0.0	0.735	29.9	LOS C	4.1	29.2	1.00	1.26	1.63	28.6
Approach		362	0.7	362	0.7	0.735	27.5	LOS B	4.1	29.2	1.00	1.26	1.63	29.2
North: QUEEN STREET														
8	T1	368	1.4	314	1.2	0.379	3.8	LOS A	0.0	0.0	0.00	0.58	0.00	44.1
9	R2	285	0.5	243	0.4	0.379	6.4	LOS A	0.0	0.0	0.00	0.58	0.00	31.2
Approach		653	1.0	556 ^{N1}	0.8	0.379	5.0	LOS A	0.0	0.0	0.00	0.58	0.00	42.0
All Vehicles		1373	1.2	1276 ^{N1}	1.3	1.570	162.6	LOS F ¹¹	36.9	263.2	0.56	2.38	4.12	8.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA
EXISTING + GROWTH\SY200086\ NORTON STREET, ASHFIELD - EXISTING + GROWTH.sip8

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - AM
EXISTING + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: HOLDEN STREET														
1	L2	145	0.0	144	0.0	0.281	66.4	LOS E ¹¹	6.3	43.9	1.00	0.82	1.00	21.1
2	T1	262	0.0	260	0.0	0.856	78.5	LOS F ¹¹	14.3	100.0	1.00	0.92	1.07	18.9
3	R2	117	0.0	116	0.0	0.856	84.1	LOS F ¹¹	14.3	100.0	1.00	0.92	1.07	4.8
Approach		524	0.0	520 ^{N1}	0.0	0.856	76.4	LOS F ¹¹	14.3	100.0	1.00	0.89	1.05	16.9
East: LIVERPOOL ROAD														
4	L2	191	0.0	180	0.0	0.770	44.8	LOS D ¹¹	21.0	146.7	0.88	0.81	0.88	14.4
5	T1	443	0.0	416	0.0	0.770	39.8	LOS C	21.0	146.7	0.88	0.81	0.89	30.5
6	R2	251	0.0	236	0.0	0.770	61.4	LOS E ¹¹	7.9	55.1	1.00	0.92	1.24	24.3
Approach		885	0.0	832 ^{N1}	0.0	0.770	47.0	LOS D ¹¹	21.0	146.7	0.91	0.84	0.99	26.0
North: BROWN STREET														
7	L2	68	0.0	68	0.0	1.051	123.2	LOS F ¹¹	4.5	31.5	1.00	1.06	1.98	9.3
8	T1	146	0.0	146	0.0	1.051	145.2	LOS F ¹¹	14.5	101.2	1.00	1.26	1.83	9.9
9	R2	78	0.0	78	0.0	1.051	154.4	LOS F ¹¹	14.5	101.2	1.00	1.29	1.81	16.8
Approach		293	0.0	293	0.0	1.051	142.5	LOS F ¹¹	14.5	101.2	1.00	1.22	1.86	11.8
West: LIVERPOOL ROAD														
10	L2	320	0.0	320	0.0	1.116	193.9	LOS F ¹¹	47.9	335.5	1.00	1.45	1.92	14.1
11	T1	1078	0.0	1078	0.0	1.116	182.1	LOS F ¹¹	68.5	479.6	1.00	1.56	1.87	8.5
Approach		1397	0.0	1397	0.0	1.116	184.8	LOS F ¹¹	68.5	479.6	1.00	1.54	1.88	9.9
All Vehicles		3099	0.0	3042 ^{N1}	0.0	1.116	124.5	LOS F ¹¹	68.5	479.6	0.98	1.21	1.49	13.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate		
					Pedestrian ped	Distance m			
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - PM
EXISTING + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	142	0.0	139	0.0	0.254	64.2	LOS E ¹¹	6.0	42.2	1.00	0.82	1.00	21.6
2	T1	219	0.0	214	0.0	0.753	59.2	LOS E ¹¹	12.6	88.5	1.00	0.88	1.03	22.7
3	R2	77	0.0	75	0.0	0.753	64.7	LOS E ¹¹	12.6	88.5	1.00	0.88	1.03	6.1
Approach		439	0.0	429 ^{N1}	0.0	0.753	61.8	LOS E ¹¹	12.6	88.5	1.00	0.86	1.02	20.2
East: LIVERPOOL ROAD														
4	L2	350	0.0	233	0.0	1.485	507.3	LOS F ¹¹	28.6	200.0	1.00	1.91	3.15	1.4
5	T1	887	0.0	591	0.0	1.485	500.0	LOS F ¹¹	28.6	200.0	1.00	2.23	3.11	4.6
6	R2	536	0.0	357	0.0	1.485	505.3	LOS F ¹¹	28.6	200.0	1.00	2.26	3.10	4.6
Approach		1773	0.0	1181 ^{N1}	0.0	1.485	503.0	LOS F ¹¹	28.6	200.0	1.00	2.17	3.11	4.0
North: BROWN STREET														
7	L2	142	0.0	142	0.0	1.358	376.7	LOS F ¹¹	16.8	117.8	1.00	1.43	2.86	4.0
8	T1	245	0.0	245	0.0	1.358	390.3	LOS F ¹¹	37.7	263.7	1.00	1.90	2.82	4.2
9	R2	103	0.0	103	0.0	1.358	398.1	LOS F ¹¹	37.7	263.7	1.00	1.95	2.81	7.7
Approach		490	0.0	490	0.0	1.358	388.0	LOS F ¹¹	37.7	263.7	1.00	1.77	2.83	4.9
West: LIVERPOOL ROAD														
10	L2	159	0.0	159	0.0	1.355	392.4	LOS F ¹¹	60.0	420.2	1.00	2.08	2.76	7.8
11	T1	706	0.0	706	0.0	1.355	388.9	LOS F ¹¹	60.0	420.2	1.00	2.04	2.78	4.2
Approach		865	0.0	865	0.0	1.355	389.6	LOS F ¹¹	60.0	420.2	1.00	2.05	2.78	4.9
All Vehicles		3567	0.0	2965 ^{N1}	0.0	1.485	387.1	LOS F ¹¹	60.0	420.2	1.00	1.88	2.67	4.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - AM
EXISTING + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	126	0.0	126	0.0	0.491	33.6	LOS C	13.4	94.0	0.73	0.69	0.73	39.6
2	T1	550	0.0	550	0.0	0.491	28.3	LOS B	13.4	94.0	0.73	0.67	0.73	30.7
Approach		676	0.0	676	0.0	0.491	29.3	LOS C	13.4	94.0	0.73	0.68	0.73	33.0
East: NORTON STREET														
4	L2	68	0.0	65	0.0	0.495	58.4	LOS E ¹¹	8.6	59.9	0.92	0.78	0.92	26.0
5	T1	176	0.0	167	0.0	0.495	52.9	LOS D ¹¹	8.6	59.9	0.92	0.78	0.92	26.4
6	R2	108	0.0	102	0.0	0.495	59.8	LOS E ¹¹	4.5	31.3	0.91	0.80	0.91	10.5
Approach		352	0.0	334 ^{N1}	0.0	0.495	56.1	LOS D ¹¹	8.6	59.9	0.91	0.79	0.91	22.4
North: HOLDEN STREET														
8	T1	269	0.0	264	0.0	0.204	5.3	LOS A	2.2	15.4	0.20	0.18	0.20	52.4
9	R2	148	0.0	144	0.0	0.499	77.2	LOS F ¹¹	6.4	45.0	1.00	0.81	1.00	18.9
Approach		417	0.0	408 ^{N1}	0.0	0.499	30.7	LOS C	6.4	45.0	0.49	0.40	0.49	32.2
All Vehicles		1445	0.0	1418 ^{N1}	0.0	0.499	36.0	LOS C	13.4	94.0	0.70	0.62	0.70	29.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

Appendix E4
SIDRA Movement Summary

Existing + Growth + Development

DRAFT

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - AM
EXSTING + DEV + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: HOLDEN STREET														
1	L2	126	0.0	126	0.0	0.505	35.0	LOS C	13.8	96.5	0.75	0.71	0.75	39.0
2	T1	550	0.0	550	0.0	0.505	29.8	LOS C	13.8	96.5	0.75	0.69	0.75	30.0
Approach		676	0.0	676	0.0	0.505	30.8	LOS C	13.8	96.5	0.75	0.69	0.75	32.3
East: NORTON STREET														
4	L2	73	0.0	69	0.0	0.488	56.0	LOS D ¹¹	8.9	62.6	0.90	0.78	0.90	26.6
5	T1	176	0.0	167	0.0	0.488	50.4	LOS D ¹¹	8.9	62.6	0.90	0.78	0.90	27.1
6	R2	123	0.0	117	0.0	0.500	57.6	LOS E ¹¹	4.6	32.0	0.90	0.81	0.90	10.8
Approach		372	0.0	353 ^{N1}	0.0	0.500	53.9	LOS D ¹¹	8.9	62.6	0.90	0.79	0.90	22.7
North: HOLDEN STREET														
8	T1	269	0.0	255	0.0	0.204	5.7	LOS A	2.1	15.0	0.21	0.18	0.21	51.9
9	R2	148	0.0	140	0.0	0.504	77.6	LOS F ¹¹	6.2	43.6	1.00	0.81	1.00	18.8
Approach		417	0.0	395 ^{N1}	0.0	0.504	31.1	LOS C	6.2	43.6	0.49	0.40	0.49	32.0
All Vehicles		1465	0.0	1424 ^{N1}	0.0	0.505	36.6	LOS C	13.8	96.5	0.71	0.63	0.71	29.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [NORTON STREET / HOLDEN STREET - PM
EXISTING + DEV GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: HOLDEN STREET														
1	L2	150	0.0	150	0.0	0.626	53.9	LOS D ¹¹	13.6	95.5	0.92	0.82	0.92	32.2
2	T1	386	0.0	386	0.0	0.626	49.0	LOS D ¹¹	13.6	95.5	0.92	0.80	0.92	22.7
Approach		536	0.0	536	0.0	0.626	50.4	LOS D ¹¹	13.6	95.5	0.92	0.81	0.92	26.1
East: NORTON STREET														
4	L2	201	0.0	181	0.0	0.595	35.6	LOS C	17.0	119.1	0.78	0.75	0.78	33.7
5	T1	388	0.0	349	0.0	0.595	30.0	LOS C	17.0	119.1	0.78	0.75	0.78	34.4
6	R2	304	0.0	274	0.0	0.634	37.1	LOS C	9.2	64.7	0.80	0.83	0.80	15.2
Approach		893	0.0	804 ^{N1}	0.0	0.634	33.7	LOS C	17.0	119.1	0.79	0.78	0.79	29.3
North: HOLDEN STREET														
8	T1	413	0.0	221	0.0	0.265	12.4	LOS A	3.0	21.0	0.33	0.28	0.33	44.8
9	R2	207	0.0	111	0.0	0.611	83.7	LOS F ¹¹	5.1	35.6	1.00	0.79	1.00	17.9
Approach		620	0.0	332 ^{N1}	0.0	0.611	36.2	LOS C	5.1	35.6	0.55	0.45	0.55	29.8
All Vehicles		2049	0.0	1672 ^{N1}	0.0	0.634	39.5	LOS C	17.0	119.1	0.78	0.72	0.79	28.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - AM
EXISTING + DEV + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %				Vehicles veh	Distance m				km/h
South: QUEEN STREET														
1	L2	27	23.8	20	25.8	0.063	56.0	LOS D ¹¹	0.7	6.2	0.83	0.70	0.83	6.5
3	R2	349	5.1	255	5.7	1.248	303.4	LOS F ¹¹	13.6	100.0	1.00	1.51	2.48	6.1
Approach		376	6.5	275 ^{N1}	7.2	1.248	285.4	LOS F ¹¹	13.6	100.0	0.99	1.45	2.36	6.1
East: LIVERPOOL ROAD														
4	L2	95	17.6	95	17.6	0.253	12.6	LOS A	4.6	37.6	0.38	0.43	0.38	40.0
5	T1	982	18.6	982	18.6	1.265	244.1	LOS F ¹¹	88.1	715.2	0.87	1.76	2.02	6.5
Approach		1077	18.5	1077	18.5	1.265	223.7	LOS F ¹¹	88.1	715.2	0.82	1.64	1.87	7.0
West: LIVERPOOL ROAD														
11	T1	1626	6.2	1473	6.9	0.997	50.7	LOS D ¹¹	27.0	200.0	1.00	1.14	1.23	25.2
12	R2	104	11.1	95	12.2	1.200	262.3	LOS F ¹¹	8.7	67.6	1.00	1.39	2.34	2.6
Approach		1730	6.5	1567 ^{N1}	7.2	1.200	63.5	LOS E ¹¹	27.0	200.0	1.00	1.16	1.30	21.7
All Vehicles		3182	10.6	2919 ^{N1}	11.5	1.265	143.5	LOS F ¹¹	88.1	715.2	0.93	1.36	1.61	11.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		192	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / QUEEN STREET - PM
EXISTING + DEV + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %		sec		Vehicles veh	Distance m			km/h	
South: QUEEN STREET														
1	L2	37	17.2	25	20.4	0.084	58.9	LOS E ¹¹	0.9	7.6	0.86	0.71	0.86	6.2
3	R2	276	2.8	179	3.4	1.107	190.8	LOS F ¹¹	13.9	100.0	1.00	1.28	2.02	9.1
Approach		313	4.5	204 ^{N1}	5.5	1.107	174.7	LOS F ¹¹	13.9	100.0	0.98	1.21	1.88	9.0
East: LIVERPOOL ROAD														
4	L2	552	0.9	552	0.9	0.414	12.6	LOS A	9.2	65.1	0.41	0.69	0.41	37.3
5	T1	1399	4.2	1399	4.2	2.042	1008.7	LOS F ¹¹	259.3	1880.9	1.00	3.49	4.16	1.8
Approach		1950	3.3	1950	3.3	2.042	726.9	LOS F ¹¹	259.3	1880.9	0.83	2.69	3.10	2.4
West: LIVERPOOL ROAD														
11	T1	1048	2.2	952	2.4	0.606	2.8	LOS A	8.2	58.7	0.22	0.20	0.22	47.4
12	R2	214	4.2	195	4.6	2.055	999.4	LOS F ¹¹	27.5	200.0	1.00	2.26	4.16	0.7
Approach		1263	2.5	1147 ^{N1}	2.8	2.055	172.2	LOS F ¹¹	27.5	200.0	0.35	0.55	0.89	10.1
All Vehicles		3526	3.1	3302 ^{N1}	3.3	2.055	500.0	LOS F ¹¹	259.3	1880.9	0.68	1.86	2.26	3.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate	
					Distance m			
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96
All Pedestrians		192	69.3	LOS F ¹²			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - AM
EXISTING + DEV + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: QUEEN STREET													
1	L2	62	0.0	62	0.0	1.566	534.6	LOS F ¹¹	45.0	325.1	1.00	6.98	13.46
2	T1	380	4.4	380	4.4	1.566	534.2	LOS F ¹¹	45.0	325.1	1.00	6.98	13.46
Approach		441	3.8	441	3.8	1.566	534.2	LOS F ¹¹	45.0	325.1	1.00	6.98	13.46
East: NORTON STREET													
4	L2	21	0.0	21	0.0	0.476	11.5	LOS A	1.4	10.2	0.77	0.80	42.6
5	T1	237	2.7	237	2.7	0.476	10.9	LOS A	1.4	10.2	0.77	0.80	38.5
6	R2	12	0.0	12	0.0	0.476	13.4	LOS A	1.4	10.2	0.77	0.80	38.5
Approach		269	2.4	269	2.4	0.476	11.1	LOS A	1.4	10.2	0.77	0.80	39.0
North: QUEEN STREET													
8	T1	225	10.9	221	11.0	0.258	3.9	LOS A	0.0	0.0	0.00	0.57	44.0
9	R2	142	7.2	140	7.3	0.258	6.5	LOS A	0.0	0.0	0.00	0.57	31.5
Approach		367	9.4	362 ^{N1}	9.6	0.258	4.9	LOS A	0.0	0.0	0.00	0.57	42.2
All Vehicles		1078	5.4	1073 ^{N1}	5.4	1.566	224.3	LOS F ¹¹	45.0	325.1	0.61	3.27	5.74

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Organisation: BARKER RYAN STEWART | Processed: Friday, 29 May 2020 2:45:58 PM

Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA
EXISTING + DEV + GROWTH\SY200086\ NORTON STREET, ASHFIELD - EXISTING + DEV + GROWTH.sip8

MOVEMENT SUMMARY

 Site: 101 [QUEEN STREET / NORTON STREET - PM
EXISTING + DEV + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: QUEEN STREET													
1	L2	96	0.0	96	0.0	1.766	720.6	LOS F ¹¹	47.2	336.1	1.00	6.90	2.4
2	T1	294	2.6	294	2.6	1.766	720.0	LOS F ¹¹	47.2	336.1	1.00	6.90	2.4
Approach		390	2.0	390	2.0	1.766	720.2	LOS F ¹¹	47.2	336.1	1.00	6.90	2.4
East: NORTON STREET													
4	L2	19	0.0	19	0.0	0.779	37.6	LOS C	5.3	37.2	1.00	1.39	32.7
5	T1	327	0.8	327	0.8	0.779	36.9	LOS C	5.3	37.2	1.00	1.39	24.9
6	R2	15	0.0	15	0.0	0.779	39.5	LOS C	5.3	37.2	1.00	1.39	24.9
Approach		362	0.7	362	0.7	0.779	37.1	LOS C	5.3	37.2	1.00	1.39	25.5
North: QUEEN STREET													
8	T1	368	1.4	317	1.2	0.441	3.8	LOS A	0.0	0.0	0.00	0.60	44.0
9	R2	381	0.3	328	0.3	0.441	6.4	LOS A	0.0	0.0	0.00	0.60	30.9
Approach		749	0.9	645 ^{N1}	0.7	0.441	5.2	LOS A	0.0	0.0	0.00	0.60	41.1
All Vehicles		1501	1.1	1397 ^{N1}	1.2	1.766	213.1	LOS F ¹¹	47.2	336.1	0.54	2.56	6.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Organisation: BARKER RYAN STEWART | Processed: Friday, 29 May 2020 2:47:34 PM

Project: \\brs.local\Data\Business\Norwest\Synergy\Projects\SY20\SY200086\PlanEngSurv\BRS Documentation\Reports\TRAFFIC\SIDRA
EXISTING + DEV + GROWTH\SY200086\ NORTON STREET, ASHFIELD - EXISTING + DEV + GROWTH.sip8

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - AM
EXISTING + DEV + GROWTH]

 Network: N101 [AM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: HOLDEN STREET													
1	L2	150	0.0	149	0.0	0.298	66.8	LOS E ¹¹	6.5	45.3	1.00	0.82	21.0
2	T1	262	0.0	260	0.0	0.903	85.0	LOS F ¹¹	14.3	100.0	1.00	0.96	17.9
3	R2	127	0.0	126	0.0	0.903	90.6	LOS F ¹¹	14.3	100.0	1.00	0.96	4.4
Approach		539	0.0	535 ^{N1}	0.0	0.903	81.3	LOS F ¹¹	14.3	100.0	1.00	0.92	16.1
East: LIVERPOOL ROAD													
4	L2	191	0.0	182	0.0	0.859	53.4	LOS D ¹¹	22.9	160.2	0.90	0.87	12.4
5	T1	443	0.0	421	0.0	0.859	48.7	LOS D ¹¹	22.9	160.2	0.90	0.88	27.5
6	R2	251	0.0	239	0.0	0.859	63.9	LOS E ¹¹	9.0	63.3	1.00	0.95	23.8
Approach		885	0.0	841 ^{N1}	0.0	0.859	54.0	LOS D ¹¹	22.9	160.2	0.93	0.90	24.0
North: BROWN STREET													
7	L2	68	0.0	68	0.0	1.068	134.9	LOS F ¹¹	4.8	33.6	1.00	1.07	8.7
8	T1	146	0.0	146	0.0	1.068	156.8	LOS F ¹¹	15.0	105.2	1.00	1.29	9.3
9	R2	78	0.0	78	0.0	1.068	166.1	LOS F ¹¹	15.0	105.2	1.00	1.32	15.9
Approach		293	0.0	293	0.0	1.068	154.2	LOS F ¹¹	15.0	105.2	1.00	1.25	11.1
West: LIVERPOOL ROAD													
10	L2	320	0.0	320	0.0	1.178	244.3	LOS F ¹¹	53.6	374.9	1.00	1.59	11.7
11	T1	1079	0.0	1079	0.0	1.178	233.4	LOS F ¹¹	77.2	540.1	1.00	1.75	6.8
Approach		1399	0.0	1399	0.0	1.178	235.9	LOS F ¹¹	77.2	540.1	1.00	1.71	8.0
All Vehicles		3115	0.0	3067 ^{N1}	0.0	1.178	151.3	LOS F ¹¹	77.2	540.1	0.98	1.31	11.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate		
		ped/h	sec		ped	Distance m			
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

MOVEMENT SUMMARY

 Site: 101 [LIVERPOOL ROAD / HOLDEN STREET - PM
EXISTING + DEV + GROWTH]

 Network: N101 [PM
NETWORK]

New Site

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: HOLDEN STREET													
1	L2	172	0.0	165	0.0	0.292	62.9	LOS E ¹¹	7.2	50.2	1.00	0.83	21.8
2	T1	219	0.0	211	0.0	1.034	135.8	LOS F ¹¹	14.3	100.0	1.00	1.31	12.5
3	R2	136	0.0	131	0.0	1.034	142.3	LOS F ¹¹	14.3	100.0	1.00	1.32	2.8
Approach		527	0.0	506 ^{N1}	0.0	1.034	113.7	LOS F ¹¹	14.3	100.0	1.00	1.15	12.1
East: LIVERPOOL ROAD													
4	L2	350	0.0	230	0.0	1.546	559.8	LOS F ¹¹	28.6	200.0	1.00	2.07	1.3
5	T1	887	0.0	583	0.0	1.546	553.9	LOS F ¹¹	28.6	200.0	1.00	2.29	4.2
6	R2	536	0.0	352	0.0	1.546	559.4	LOS F ¹¹	28.6	200.0	1.00	2.34	4.2
Approach		1773	0.0	1165 ^{N1}	0.0	1.546	556.8	LOS F ¹¹	28.6	200.0	1.00	2.26	3.6
North: BROWN STREET													
7	L2	142	0.0	142	0.0	1.532	536.3	LOS F ¹¹	19.7	137.6	1.00	1.59	3.0
8	T1	245	0.0	245	0.0	1.532	541.9	LOS F ¹¹	45.6	319.3	1.00	2.14	3.1
9	R2	103	0.0	103	0.0	1.532	548.2	LOS F ¹¹	45.6	319.3	1.00	2.18	5.8
Approach		490	0.0	490	0.0	1.532	541.6	LOS F ¹¹	45.6	319.3	1.00	1.99	3.7
West: LIVERPOOL ROAD													
10	L2	159	0.0	159	0.0	1.465	487.8	LOS F ¹¹	77.5	542.4	1.00	2.33	6.5
11	T1	738	0.0	738	0.0	1.465	485.3	LOS F ¹¹	77.5	542.4	1.00	2.23	3.5
Approach		897	0.0	897	0.0	1.465	485.8	LOS F ¹¹	77.5	542.4	1.00	2.25	4.0
All Vehicles		3688	0.0	3058 ^{N1}	0.0	1.546	460.2	LOS F ¹¹	77.5	542.4	1.00	2.03	4.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate		
		ped/h	sec		ped	Distance m			
P1	South Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P2	East Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P3	North Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
P4	West Full Crossing	64	69.3	LOS F ¹²	0.3	0.3	0.96	0.96	
All Pedestrians		257	69.3	LOS F ¹²			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

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