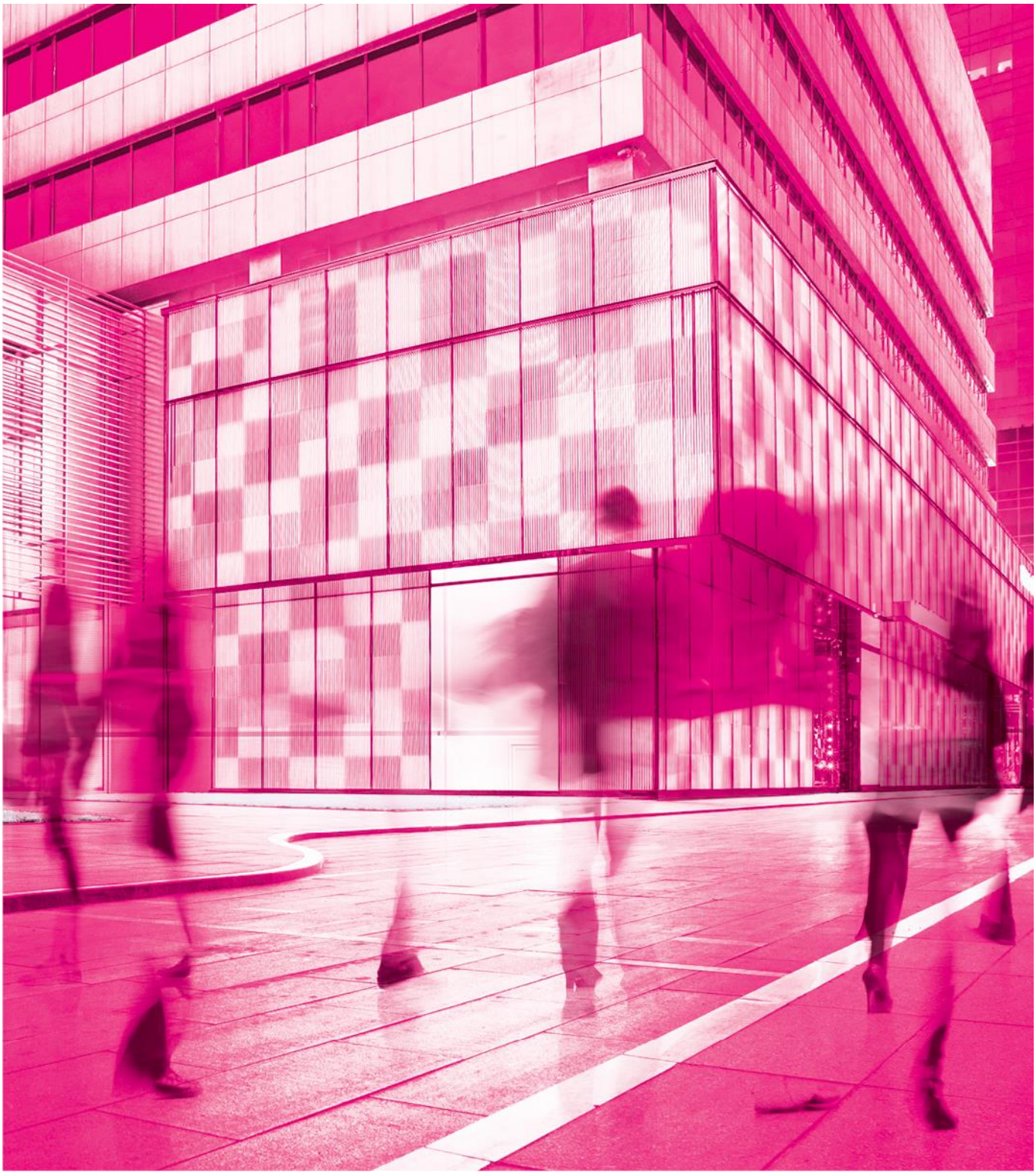

Traffic Impact Assessment;

29-57 Christie Street, St Leonards

For Arrow Capital Partners

09 September 2020

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

29-57 Christie Street, St Leonards, Traffic Impact Assessment

Issue	Date	Issue Details	Author	Reviewed	For the attention of
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Contents

1. Introduction

1.1 Project Summary

ptc. has been engaged by Arrow Capital Partners to prepare a Traffic Impact Assessment (TIA) to accompany a Development Application (DA) to Lane Cove Municipal Council for the construction of two buildings to replace an existing building on the southern side of a property known as 29-57 Christie Street in St Leonards (the site). The building on the northern side of the site will remain unchanged as part of this DA. The proposed development is to primarily accommodate commercial office uses.

The location of the site is outlined in Figure 1.

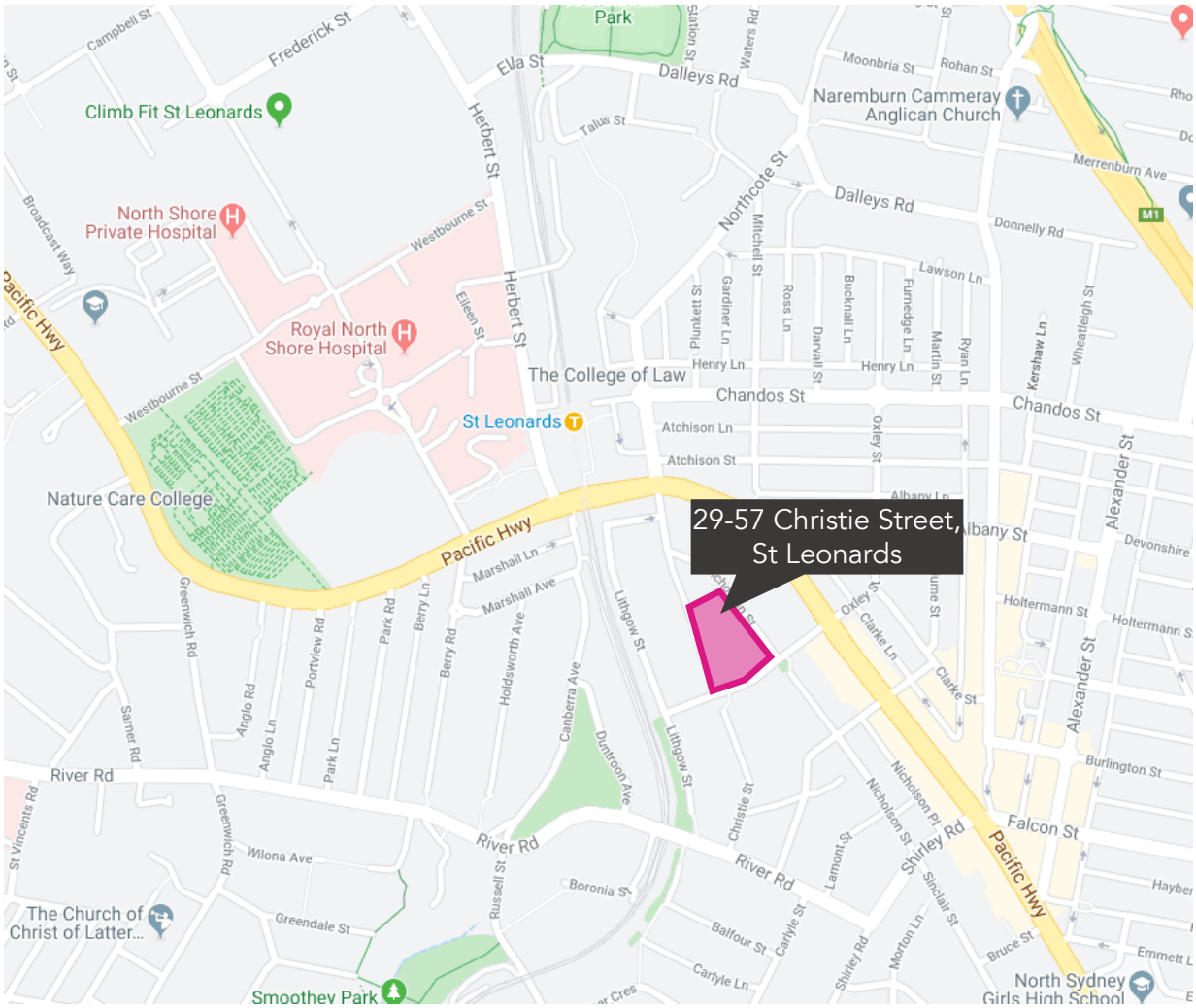


Figure 1 - Site Location

1.2 Purpose of this Report

This report presents the following considerations in relation to the Traffic and Parking assessment of the proposed development:

Section 2	A description of the existing site;
Section 3	A description of the project;
Section 4	A description of the road network serving the development property, and the public and active transport facilities within the vicinity of the site;
Section 5	Assessment of the proposed parking provision in the context of the relevant planning control requirements;
Section 6	Determination of the traffic activity associated with the development proposal, and the adequacy of the surrounding road network;
Section 7	Assessment of the proposed car park, vehicular access and internal circulation arrangements in relation to compliance with relevant standards, and Council policies; and
Section 8	Conclusion including comment on whether the proposed development will have an acceptable impact on the surrounding road network and whether the development provides adequate parking

1.3 Reference Documents

The documents referenced in the preparation of this report are as follows:

- Guide to Traffic Generating Developments (RMS, 2002)
- Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04) (RMS, 2013)
- Building Code of Australia 2016 (BCA)
- Lane Cove Development Control Plan (DCP) (Lane Cove Council, 2010)
- St Leonards and Crows Nest Planning Package (Transport for New South Wales, 2020)

2. Background Information

2.1 Site Location

The development is located in St Leonards, which is approximately 5km north of the Sydney CBD, with a listed street address of 29-57 Christie Street, St Leonards and comprises Lot No. 1, DP773862.

The site fronts Christie Street in the west, Nicholson Street in the east and Oxley Street in the south, as shown in Figure 2.

Figure 2 - Aerial view of the site & surrounds (Source: Nearmap)

2.2 Surrounding Land Use

The site lies within a Commercial Core (B3) zone and is surrounded by the following key features:

- Mixed Use zone (B4);
- Low Density Residential zone (R2);
- Medium Density Residential zone (R3);
- High Density Residential zone (R4);
- Infrastructure zone (SP2); and
- Public Recreation zone (RE1).

Figure 3 - Local Land Use Map (Source: NSW Planning Viewer)

2.3 Current Site Use

The existing site consists of a one storey Fitness First Platinum Gym with an adjoining café.

3. Development Proposal

The proposed development will replace the existing building on the south portion of the site and provide a 7 storey building (Building A) and an 11 storey building (Building B), the existing northern building (Building C) is to be retained and does not form part of this application. The development proposal consists of the following:

- Building A
    - Commercial Office
- Building B
    - Commercial Office
- Building A and B Shared Lower Ground and Ground Floor
    - Commercial Office
    - Gymnasium
    - Café
    - Commercial Tenancy
    - End of Trip Facilities (EOTF)

Furthermore, Building A, Building B and the existing northern building will have a shared carpark that will service all three buildings.

Figure 4 - Development Proposal

4. Existing Transport Facilities

4.1 Road Hierarchy

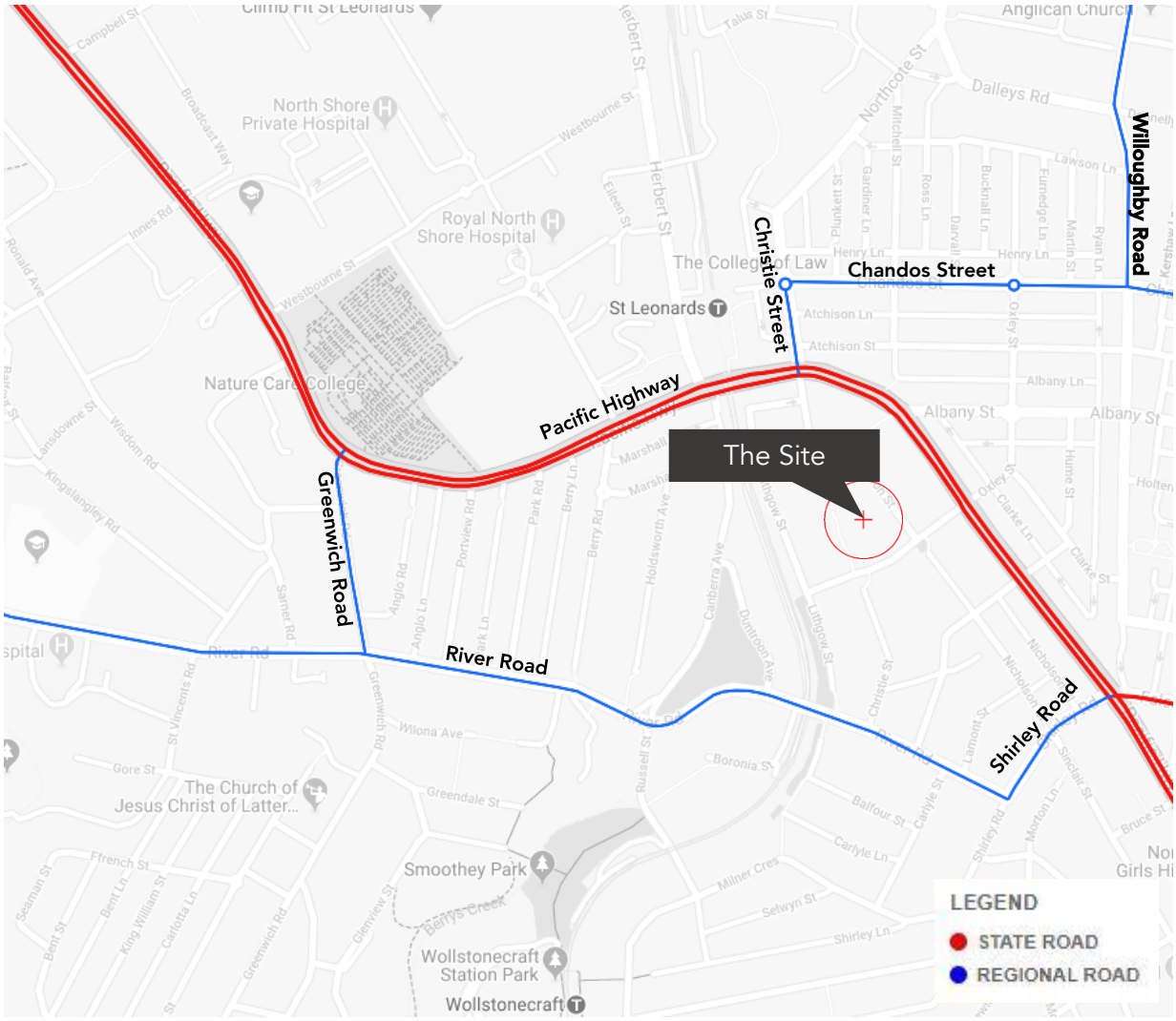


Figure 5 - Road Hierarchy (Source: RMS Road Hierarchy Review)

The NSW administrative road hierarchy comprises the following road classifications:

- State Roads – Under the care and maintenance of Roads and Maritime Services
- Regional Roads – Under the care and maintenance of Council partially funded by the State
- Local Roads – Under the care and maintenance of Council

4.1.1 Existing Road Network

Table 1 - Existing Road Network - Pacific Highway

Pacific Highway	
Road Classification	State Road
Alignment	East - West
Number of Lanes	3 lanes in each direction (2 lanes westbound between Oxley St & Albany St)
Carriageway Type	Divided
Carriageway Width	25 metres
Speed Limit	60 kph
School Zone	No
Parking Controls	No Parking
Forms Site Frontage	No

Figure 6 - Pacific Highway eastbound

Table 2 - Existing Road Network - Christie Street

Christie Street	
Road Classification	Local Road & Regional Road
Alignment	North - South
Number of Lanes	2 lanes in each direction north of Christie Ln 1 lane in southbound direction south of Christie Ln
Carriageway Type	Undivided
Carriageway Width	13 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	2P ticket parking on either side in the vicinity of the site
Forms Site Frontage	Yes

Figure 7 - Christie Street southbound

Table 3 - Existing Road Network - Oxley Street

Oxley Street	
Road Classification	Local Road
Alignment	East - West
Number of Lanes	3 lanes eastbound & 1 lane westbound between Pacific Highway & Nicholson St
Carriageway Type	Undivided
Carriageway Width	14 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	1P & 2P ticket parking on either side in the vicinity of the site
Forms Site Frontage	Yes

Figure 8 - Oxley Street eastbound

Nicholson Street	
Road Classification	Local Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Undivided
Carriageway Width	9 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	2P ticket parking on either side in the vicinity of the site
Forms Site Frontage	Yes

Figure 9 - Nicholson Street northbound

4.2 Public Transport

The locality has been assessed in the context of available forms of public transport that may be utilised by prospective staff and patrons. When defining accessibility, reference is made to the NSW Planning Guidelines for Walking and Cycling (2004) where a distance of 400-800m is recommended as a comfortable walkable catchment to access public transport and local amenities. The document also suggests a distance of 1500m as a suitable catchment for cycling.

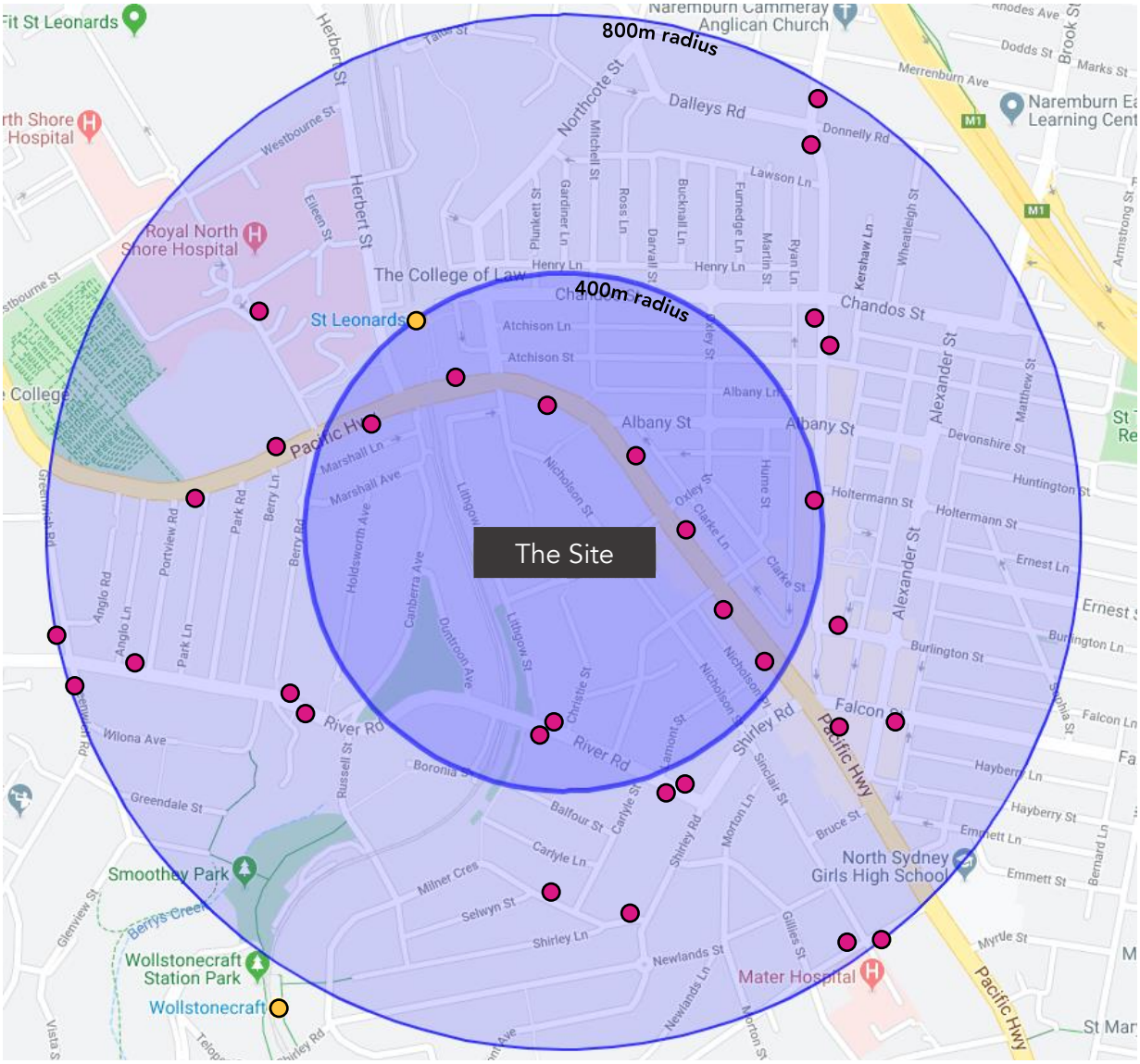


Figure 10 - Public transport accessibility (bus stops in pink, train stations in yellow)

4.2.1 Bus Services

The site is well serviced with multiple bus stops within a comfortable walking distance. A summary of the available bus routes is presented in Table 4 which services the site.

Table 4 - Bus Route Summary

Bus Route	Coverage (to and from)	Service Frequency
143	Chatswood to Manly via Balgowlah & St Leonards	Mon-Fri: Every 15-30 min Sat: No services available Sun & Public Holidays: No services available
144	Chatswood to Manly via Royal North Shore Hospital	Mon-Fri: Every 15-30 min Sat: Every 30 min Sun & Public Holidays: Every 30 min
200	Bondi Junction to Chatswood	Mon-Fri: Every 20-30 min Sat: No services available Sun & Public Holidays: No services available
252	City King Street Wharf to Gladesville via North Sydney	Mon-Fri: Every 20-45 min Sat: Every 30 min Sun & Public Holidays: Every 30 min
254	McMahons Point to Riverview	Mon-Fri: Every 45-60 min Sat: Every 60 min Sun & Public Holidays: Every 60 min
257	Chatswood to Balmoral via Crows Nest	Mon-Fri: Every 15-30 min Sat: Every 30 min Sun & Public Holidays: Every 15-30 min
261	Lane Cove to City King St Wharf via Longueville	Mon-Fri: Every 20-60 min Sat: Every 60 min Sun & Public Holidays: No services available
265	North Sydney to Lane Cove via Greenwich	Mon-Fri: Every 30-60 min Sat: Every 60 min Sun & Public Holidays: No services available
286	Denistone East to Milsons Point via St Leonards & North Sydney	Mon-Fri: Every 20-30 min Sat: No services available Sun & Public Holiday: No services available
287	Ryde to Milsons Point via St Leonards & North Sydney	Mon-Fri: Every 20 min Sat: No services available Sun & Public Holidays: No services available
290	City Erskine St to Epping via North Sydney & Macquarie University	Mon-Fri: Every 20-30 min Sat: Every 60 min Sun & Public Holidays: Every 60 min
291	Epping to McMahons Point	Mon-Fri: Every 15-45 min Sat: Every 60 min Sun & Public Holidays: Every 60 min
343	Chatswood to Kingsford	Mon-Fri: Every 20-30 min Sat: Every 30 min Sun & Public Holidays: Every 30 min
602X	Bella Vista Station to North Sydney	Mon-Fri: Every 10-20 min Sat: No services available Sun & Public Holidays: No services available
612X	Castle Hill to North Sydney	Mon-Fri: Every 10-20 min Sat: Every 10-20 min Sun & Public Holidays: Every 20-30 min

Bus Route	Coverage (to and from)	Service Frequency
622	Dural to Milsons Point via Cherrybrook	Mon-Fri: Every 15-30 min Sat: No services available Sun & Public Holidays: No services available
M20	Gore Hill to Botany	Mon-Fri: Every 10-15 min Sat: Every 15-20 min Sun & Public Holidays: Every 15-20 min
N90	Hornsby to City Town Hall via Chatswood	Mon-Fri: Every 60 min (Late night services only) Sat: Every 60 min (Late night services only) Sun & Public Holidays: Every 60 min (Late night services only)
N91	Macquarie Park to Bondi Junction via City Town Hall	Mon-Fri: Every 60 min (Late night services only) Sat: Every 60 min (Late night services only) Sun & Public Holidays: Every 60 min (Late night services only)

4.2.2 Train Services

St Leonards Station lies approximately 200m from the proposed development, which is within the comfortable walking distance.

The Station serves the T1 North Shore & Western Line and T9 Northern Line. The T1 Line provides frequent services with trains arriving approximately 5-10 minutes throughout the peak and 10-15 minutes throughout the off-peak periods. The service is provided every 15 minutes during the weekends. The T9 line provides services every 15 minutes during weekdays and weekends.

It is anticipated that the close proximity of the station and the provision of frequent services will be an attractive alternate mode of transport for the prospective tenants.

4.3 Active Transport

The site is provided with limited cycling infrastructure towards the St Leonards CBD as illustrated in Figure 11. A substantial portion of the infrastructure is also provided on-road, which makes cycling a viable option only for experienced cyclists. However, the site is well served with sufficient pedestrian amenities provided in the vicinity of the site. Hence, due to the close proximity of the development to St Leonards Station, it is envisaged that walking and the use of public transport will be a viable means of alternative transport.

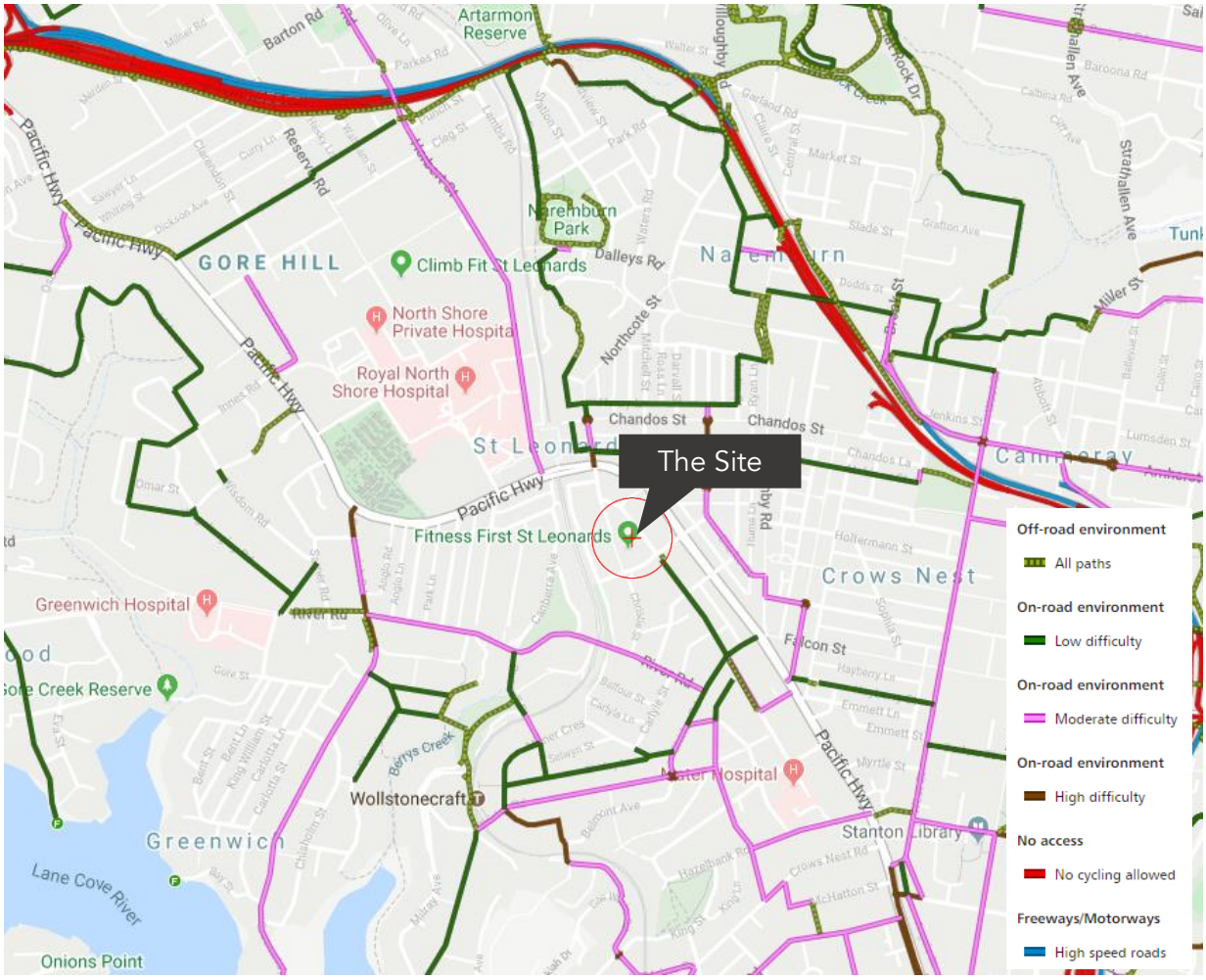


Figure 11 - Cycling Network (Source: RMS Cycleway Finder)

A Bike Plan 2019 has been prepared by **ptc.** for Lane Cove Council showing new shared paths in the vicinity of the site. These new bicycle paths will provide better connectivity for the site to the rest of the cycle network and reduce the reliance on personal vehicles. Figure 12 shows the future shared paths in St Leonards proposed in the 2019 Bike Plan 2019.

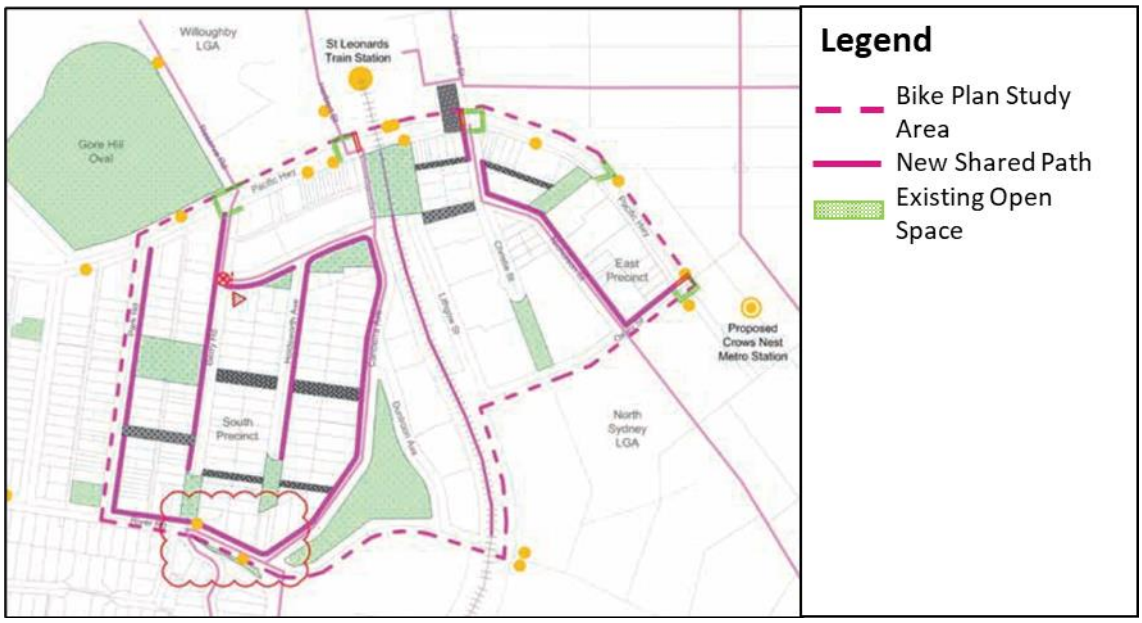


Figure 12 - Future Shared Paths in St Leonards

5. Parking Assessment

5.1 Planning Policy

The proposed development is subject to the parking provision rates stipulated in the following planning documents:

- Building Code of Australia 2016 (BCA)
- Lane Cove DCP: Part R – Traffic, Transport and Parking
- Lane Cove DCP: Part Q – Waste Management & Minimisation
- RMS Guide to Traffic Generating Developments 2002 (RMS Guide)

5.2 Proposed Parking Provision

5.2.1 Car Parking Provision

The car parking requirements for the proposed development have been calculated with reference to the relevant parking rates stipulated in the Council DCP. It is noted that the "Car Parking rates near St Leonards Railway Station" was used to calculate the requirements as the proposed development lies within the 400m catchment area of St Leonards Railway Station. The proposed car parking provision and the requirements are summarised in Table 5.

Table 5 - Car Parking Provision

Land Use	Public or Private use	GFA (m^2)	Parking Rate	Parking Provision Requirement	Proposed Parking Provision
Office	Private	22,747	1 space / 100m^2 GFA	228 (227.47)	236
Cafeteria	Public	553	1 space / 110m^2 GFA	6 (5.03)	2
Gymnasium	Public	2,073	2 space / 100m^2 GFA	42 (41.46)	42
	Private	8 staff	1 space / 8 staff	1	1
			TOTAL	277	281

The proposal involves the provision of 281 car parking spaces inclusive of the accessible parking provision. These parking spaces are divided into two areas, the 44 'public' spaces and 237 'private' spaces which are only accessible via roller doors with secure access. It is noted that the café does not meet the required 6 spaces according to the DCP, however, the café is expected to serve as ancillary use for those who will utilise the office space above. Furthermore, consideration needs to be given to the recently published 'St Leonards and Crows Nest 2036 Plan' prepared by Transport for NSW (TfNSW) in August 2020. The following has been extracted from the report:

"It is recommended that each Councils review their existing car parking rates and promote car share facilities and end of trip facilities to support active transport."

The proposal takes into consideration the vision of TfNSW portrayed within the 2036 Plan which involves the overall reduction in reliance of private vehicles and encourage the use of active and public transport. The

introduction of the Crows Nest Metro Station will provide additional transport capacity which is anticipated to compensate for the reduction in the car parking provision. Therefore, taking these factors into consideration, it is anticipated that the proposed 281 car parking provision is sufficient to accommodate the parking demand of the proposed development.

5.2.2 Accessible Parking Provision

The Lane Cove DCP stipulates that for a typical office or business premises type development, the accessible car parking rate is 10% of the car parking provision. The St Leonards precinct is currently governed by Lane Cove Council, North Sydney Council and Willoughby City Council. Therefore, to gain a better understanding of the practical parking requirement for these types of development, a comparison analysis has been undertaken with the parking rates extracted from the DCPs for the neighbouring Councils.

The following are parking rates in relation to accessible parking which have been extracted from the DCPs of neighbouring Councils:

North Sydney Council — *Provided at the rates specified in Table D3.5 to the BCA*

Willoughby City Council — *3% of total car parking spaces*

The North Sydney DCP states that reference is to be made to the BCA. Therefore, the following has been extracted from the BCA in relation to accessible parking provision for an office type development:

Building Code of Australia — *1 space for every 100 car parking spaces or part thereof*

The above-mentioned parking rates have been used to calculate the accessible parking provision requirement for the proposed development. The accessible parking requirements are summarised in Table 6.

Table 6 - Accessible Parking Requirement – Varying Planning Documents

Planning Documents	No. Car Parking Spaces	Parking Rate	Parking Provision Requirement
Lane Cove DCP	227	1 space / 10 car spaces	23 (22.7)
North Sydney DCP	227	Refer to BCA	-
Willoughby DCP	227	3% of total car parking spaces	7 (6.81)
BCA	227	1 space for every 100 car parking spaces or part thereof	3 (2.27)

It is noted that the St Leonards precinct is governed by Lane Cove Council, North Sydney Council and Willoughby City Council. The rates and accessible parking requirements summarised in Table 6 are requirements stipulated by the neighbouring Councils for the St Leonards precinct. Therefore, taking into consideration the requirements of the neighbouring Councils, the proposal involves the provision of seven (7) accessible spaces for the office and business components of the proposed development.

The proposed accessible parking provision and the requirements for the proposed development are summarised in Table 7.

Table 7 - Accessible Car Parking Provision

Land Use	No. Car Parking Spaces	Parking Rate	Parking Provision Requirement	Proposed Parking Provision
Office	217	3% of total car parking	7 (6.51)	8
Cafeteria	5	1 space / 20 car spaces	1 (0.25)	4
Gymnasium	42	1 space / 20 car spaces	2 (2.1)	
Retail	10	3% of total car parking	1 (0.3)	
		TOTAL	11	12

5.2.3 Bicycle Parking Provision

The bicycle parking rates stipulated in the DCP has been used to calculate the bicycle parking requirement for the proposed development. The requirements and proposed parking provision are summarised in Table 8.

Table 8 - Bicycle Parking Provision

Component	No. Employees / GFA (m^2)	DCP Parking Rate (min)	DCP Parking Provision Requirement	Proposed Parking Provision
Office				
Employees	22,747	1 space / 300m^2 GFA	76 (75.82) spaces	
Visitors		1 rack + 1 rack / 800m^2 GFA	30 (29.43) racks	
		Total Office Parking Spaces	**76 spaces 30 racks**	
Cafeteria				
Employees	553	1 space per 50m^2 GFA	12 (11.06) spaces	
Customers		2 racks + 1 rack / 200m^2 over 200m^2 GFA	4 (3.77) racks	
		Total Cafeteria Parking Spaces	**12 spaces 4 racks**	
Gymnasium				
Employees	8	1 space per 10 staff	1 (0.8) space	
Customers	2,073	1 rack + 1 rack / 200m^2 of gymnasium area	12 (11.37) racks	

Component	No. Employees / GFA (m^2)	DCP Parking Rate (min)	DCP Parking Provision Requirement	Proposed Parking Provision
		Total Gymnasium Parking Spaces	**1 space** **12 racks**	
		TOTAL:	**89 spaces** **46 racks**	**124 spaces** **50 racks**

5.2.4 Motorcycle Parking Provision

The motorcycle parking provision has been calculated as per the rates provided in the DCP. The requirements and provisions are summarised in Table 9.

Table 9 - Motorcycle Parking Provision

No. Car Parking Spaces	Parking Rate	Parking Provision Requirement	Proposed Parking Provision
281	1 space per 15 car spaces	19 (18.27)	20

5.2.5 Service Vehicle Parking Provision

The requirement in relation to the provision of service vehicle parking has been extracted from the DCP:

"The development must be designed to allow access by collection vehicles used by the nominated waste contractor. Wherever possible, the site must be configured to allow collection vehicles to enter and exit the site in a forward direction and so collection vehicles do not impede general access to, from and within the site."

The proposed development will provide a dedicated loading dock area for the purpose of waste collection. A swept path assessment has been undertaken to assess whether the waste collection vehicle is able to enter and exit in a forward direction. The assessment indicates that the proposed loading dock area is able to accommodate the manoeuvres of the waste collection vehicle such that the vehicle is able to enter and exit in a forward direction and perform its duties without impeding access to the proposed car park.

6. Traffic Impact Assessment

The potential traffic generation of the proposed development has been estimated with reference to the following:

- RMS Guide to Traffic Generating Developments 2002 (RMS Guide)
- RMS Technical Direction: Guide to Traffic Generating Developments Updated Traffic Surveys (TDT2013/04a)
- Intersection survey data collected on Wednesday, 5th February 2020 & Thursday, 20th February 2020
- A Report of Traffic Impacts of Large-Scale Developments on Pacific Highway (TEF Consulting, 2017)

Council has requested that the future scenario be assessed based on the traffic data from the traffic model prepared by TEF Consulting for the St Leonards South precinct. The model contains the projected traffic volumes in the year 2021 which also includes the traffic generated by the approved neighbouring developments.

The developments that are included in the traffic volume extracted from the model prepared by TEF Consulting are:

- 84-90 Christie Street / 74-79 Lithgow Street, St Leonards; and
- 472-520 Pacific Highway, St Leonards.

A cumulative assessment will provide a more accurate representation of the impacts of the neighbouring and proposed development on the local road network.

6.1 Existing Traffic Volumes

Intersection surveys were undertaken on Wednesday, 5th February 2020 & Thursday, 20th February 2020 at the following intersections between 7:00am-9:00am and 4:00pm-6:00pm at the following intersections:

- Albany Street / Pacific Highway;
- Albany Street / Oxley Street;
- Christie Street / Nicholson Street;
- Christie Street / Pacific Highway;
- Clarke Street / Oxley Street;
- Nicholson Street / Oxley Street; and
- Oxley Street / Pacific Highway.

The locations of the intersections are shown in Figure 13.

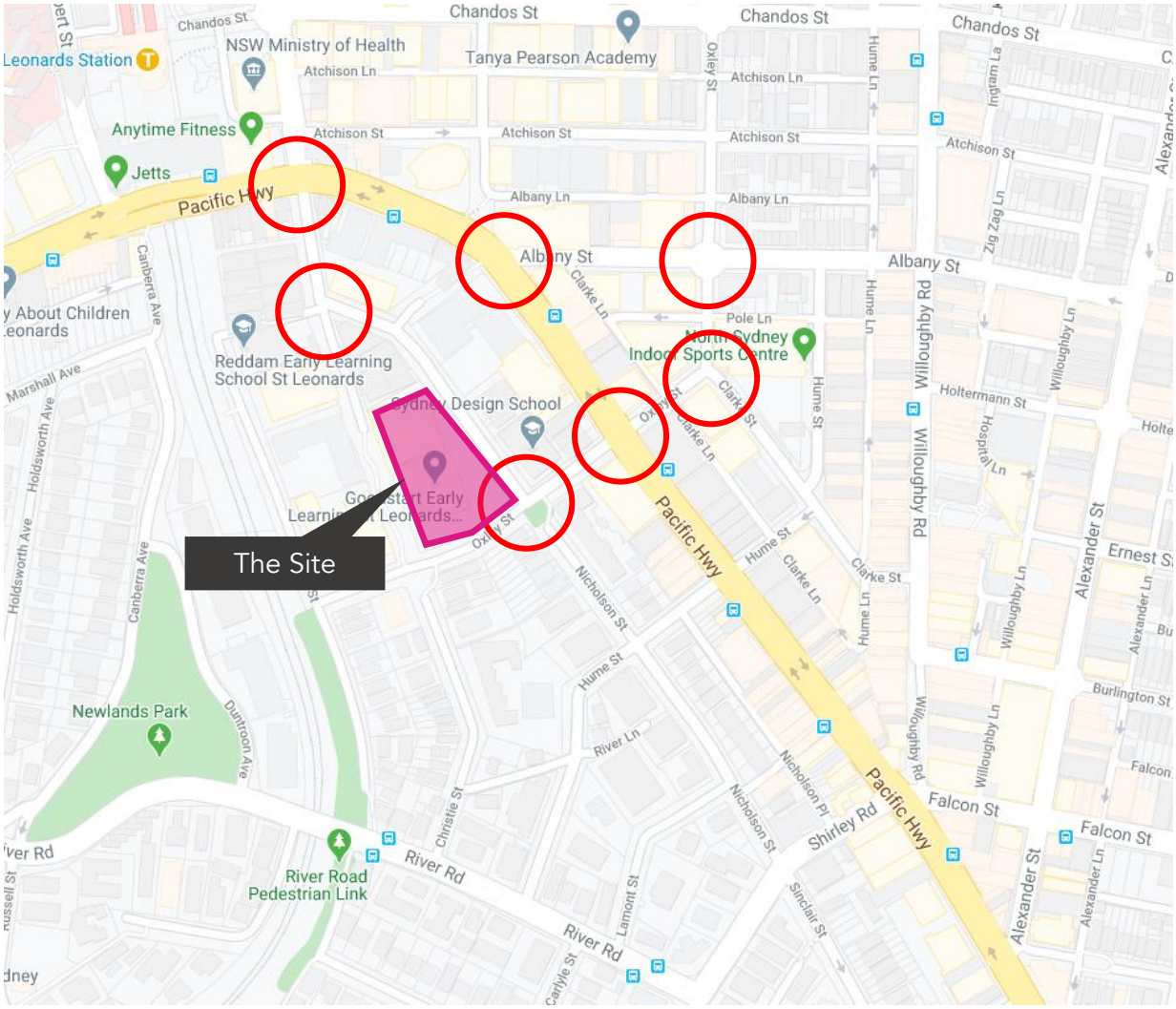


Figure 13 - Locations of Intersection Survey

The morning and afternoon peak hours for the local road network have been determined as follows:

- Morning Peak Period: 8:00am – 9:00am
- Afternoon Peak Period: 5:00pm – 6:00pm

6.2 Development Traffic Generation

The proposed development consists of cafeteria, commercial, gymnasium and office components. For the purposes of this assessment, it is assumed that commercial and office have the same traffic generation rate. The traffic generation rates for each components of the development were extracted from the RMS Guide and Technical Direction guidelines.

The TDT provides the latest data for ten different office block developments. These developments range from Urban centres with easy access to public transport and rural centres like Newcastle and Wollongong. Since the offices that were surveyed range significantly, the most appropriate traffic surveys data from the TDT was extracted. For this development, the most similar office block was the traffic surveys undertaken for an office block in North Sydney. These surveys are most aligned with the development proposal in St

Leonards. The following rates have been extracted from the RMS data for the office component of the proposed development:

Morning Peak: 0.17 trips per 100m^2 GFA

Evening Peak: 0.14 trips per 100m^2 GFA

Based on the parking provision and the and to ensure a conservative and robust assessment, a trip generation rate of 0.4 trips per 100m² GFA has been applied to the AM and PM peak periods which equates to 40% of the parking spaces allocated to the office land use being utilised to travel during the one hour AM and PM peak period.

The RMS Guide provides the trip generation rate of a restaurant which, according to the guideline, includes cafes. However, the traffic generation rate for restaurant only applies to the evening peak period, which would typically not be the case for a cafe therefore, it has been assumed the PM peak traffic generation rate for the café will apply to the AM peak period instead and that this represents a robust assessment give that the café will be an ancillary use to the office and has 2 parking spaces for staff..

As the existing development is that of a Fitness First and the traffic generated by this gym has already been accounted for in the traffic surveys and the traffic model volumes. The gymnasium land use is assumed to generate an equivalent number of trips hence, the traffic generation of the gymnasium land use has been excluded in this assessment on the account of a like for like replacement of the existing gym.

The rates and development trip generations are summarised in Table 10.

Table 10 - Development Traffic Generation

Land Use	Peak Hour	GFA (m^2)	Trip Generation Rate	Generated Trips / Hour
Office	AM	22,747	0.4 trips / 100m^2 GFA	90.99
	PM		0.4 trips / 100m^2 GFA	90.99
Cafeteria	AM	553	5 trips / 100m^2 GFA	27.65
	PM		-	-
Gymnasium	AM	2,073	-	-
	PM		-	-

The above calculations indicate that the proposed development will likely generate a total of 119 (118.64) trips and 91 (90.98) trips in the morning and evening peak periods respectively.

6.3 Development Traffic Distribution

6.3.1 Inbound/Outbound Distribution

The development proposal consists of a majority of Commercial space with some retail, café and gymnasium. These are typically traffic generating land uses hence, it is assumed that in the AM peak, the majority will arrive at the site and in the PM peak, the majority will leave the site. To account for this

behaviour, it is assumed that the inbound/outbound split during the AM peak period will be 80%/20% and the inbound/outbound split during the PM peak period will be 20%/80%.

6.3.2 Directional Distribution

The Australian Bureau of Statistics (ABS) 2016 Census – Method of Travel to Work data was used to determine the directional split of the development traffic generation. The directional split was established by assessing the quickest routes for all Sydney regions which have significant vehicular trips (greater than 10 trips) to the St Leonards – Naremburn region. The inbound and outbound directional split for the traffic generated by the development proposal is shown in Figure 14 and Figure 15 respectively.

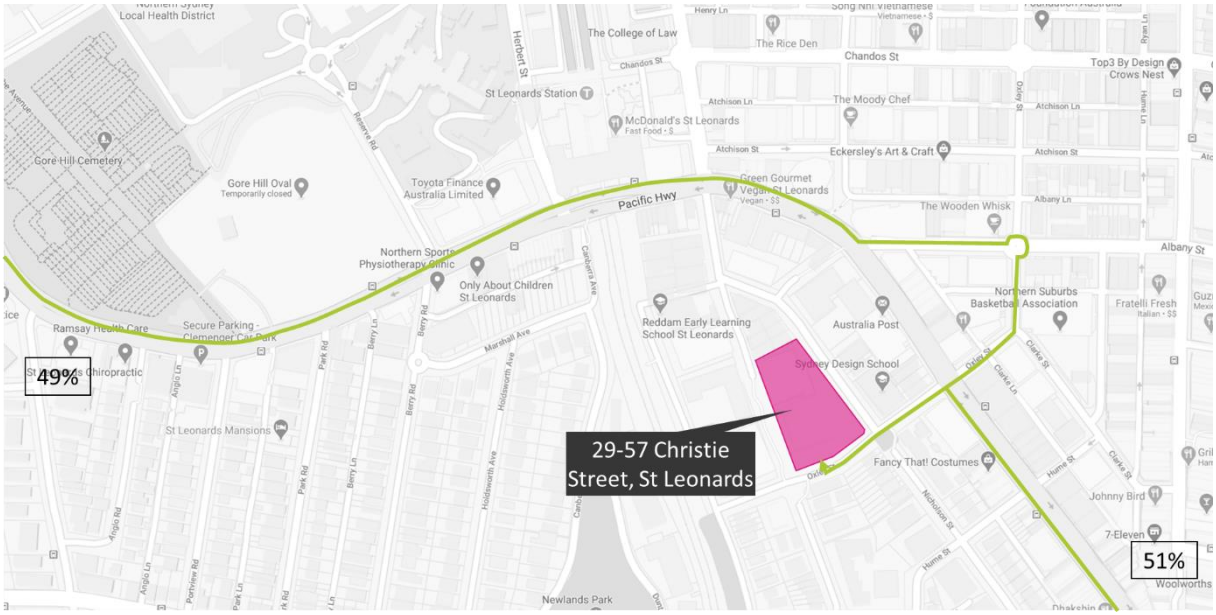


Figure 14 - Inbound Directional Split

Figure 15 - Outbound Directional Split

6.4 Modelling Scenarios

The following scenarios have been assessed in this report:

- Existing (2020) – The existing road network with the existing traffic volumes as observed in the traffic survey.
- Future (2021) – The future road network with the traffic volumes extracted from the AIMSUN model prepared by TEF Consulting. The traffic volumes include the traffic generation from the neighbouring developments. There are:
    - St Leonards South Mater Plan Precinct
    - Loftex Development
    - New Hope Development
    - Winten Development
    - Mirvac Development
- Development (2021) – The future road network with traffic generation from neighbouring developments and the traffic generated by the proposed development.

6.5 SIDRA Analysis

A volume analysis was performed using the SIDRA Intersection 8 software, a micro-analytical tool for individual intersection and whole-network modelling. The models are based on the collected traffic survey data. SIDRA provides a number of performance indicators outlined below:

- Degree of Saturation – The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation. (e.g. 0.8=80% saturation)
- Average Delay – The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- 95% Queue Lengths (Q95) – is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units.
- Level of Service (LoS) – This is a categorization of average delay, intended for simple reference. It is a good indicator of overall performance for individual intersections. The RMS adopts the following bands:

Table 11 – Intersection Performance - Levels of Service

Level of Service	Average Delay (secs/vehicle)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	**<14**	**Good operation**	
B	**15 to 28**	**Good with acceptable delays & spare capacity**	**Acceptable delays & spare capacity**
C	**29 to 42**	**Satisfactory**	**Satisfactory, but accident study required**
D	**43 to 56**	**Operating near capacity**	**Near capacity & accident study required**

E	**57 to 70**	**At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode**	**At capacity, requires other control mode**
F	**>70**	**Extra capacity required**	**Extreme delay, major treatment required**

The summary of the existing and post development performance of the local road network is summarised in Table 12. A detailed breakdown of the SIDRA movement summaries is provided in Attachment 1.

Table 12 - Summary of Intersection Performance

Intersection	Time	Period	Level of Service	Degree of Saturation (v/c)	Average Delay (s)	95% Queue Length (m)
Christie Street / Pacific Highway	AM Peak	Existing	B	0.624	15.9	101.4
		Future	F	1.091	92.2	985.8
		Development	F	1.102	97.2	1018.1
	PM Peak	Existing	B	0.686	14.6	79.8
		Future	C	0.832	33.2	297.9
		Development	C	0.837	33.3	303.0
Albany Street / Pacific Highway	AM Peak	Existing	C	0.602	23.0	78.4
		Future	C	1.014	41.6	241.2
		Development	C	1.015	41.5	241.7
	PM Peak	Existing	C	0.601	29.7	110.8
		Future	B	0.733	26.8	202.4
		Development	B	0.773	25.7	206.3
Oxley Street / Pacific Highway	AM Peak	Existing	B	0.436	12.9	73.5
		Future	B	0.879	14.7	173.1
		Development	B	0.898	17.5	208.5
	PM Peak	Existing	B	0.491	14.1	43.6
		Future	A	0.733	8.3	54.9
		Development	A	0.619	9.9	55.5
	AM Peak	Existing	A	0.136	7.0	1.8

Intersection	Time	Period	Level of Service	Degree of Saturation (v/c)	Average Delay (s)	95% Queue Length (m)
Nicholson Street / Oxley Street*		Future	A	0.270	8.2	7.0
		Development	A	0.349	9.4	7.4
	PM Peak	Existing	A	0.209	7.4	2.5
		Future	A	0.181	6.5	5.2
		Development	A	0.199	7.2	5.7
Christie Street / Nicholson Street*	AM Peak	Existing	A	0.110	6.2	1.0
		Future	A	0.115	6.0	4.4
		Development	A	0.115	4.2	4.4
	PM Peak	Existing	A	0.086	5.9	1.3
		Future	A	0.094	5.1	3.3
		Development	A	0.094	5.1	3.3
Albany Street / Oxley Street*	AM Peak	Existing	B	0.540	13.4	12.8
		Future	C	0.951	39.5	89.9
		Development	D	0.988	55.6	122.2
	PM Peak	Existing	B	0.617	16.1	16.9
		Future	B	0.617	15.0	41.8
		Development	B	0.627	15.3	42.7
Clarke Street / Oxley Street*	AM Peak	Existing	A	0.165	6.8	2.6
		Future	A	0.151	6.7	3.0
		Development	A	0.174	7.0	3.0
	PM Peak	Existing	A	0.232	7.5	3.7
		Future	A	0.219	6.7	4.2
		Development	A	0.225	6.8	4.2

*For priority and roundabout intersections, the average delay of the worst movement is used to determine the LoS

6.5.1 Christie Street / Pacific Highway

Christie Street / Pacific Highway is a signalised intersection that currently operates at LoS B in the existing scenario. When considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS F in the AM peak period and LoS C in the PM peak period. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.2 Albany Street / Pacific Highway

Albany Street / Pacific Highway is a signalised intersection that currently operates at LoS C in the existing AM and PM peak periods. When considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS C in the AM peak period and LoS B in the PM peak period. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.3 Oxley Street / Pacific Highway

Oxley Street / Pacific Highway is a signalised intersection that currently operates at LoS B in the existing AM and PM peak periods. When considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS B in the AM peak period and LoS A in the PM peak period. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.4 Nicholson Street / Oxley Street

Nicholson Street / Oxley Street is a priority intersection that currently operates at LoS A in the existing AM and PM peak periods. However, when considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS A in the AM and PM peak periods. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.5 Christie Street / Nicholson Street

Christie Street / Nicholson Street is a priority intersection that currently operates at LoS A in the existing AM and PM peak periods. However, when considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS A in the AM and PM peak periods. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.6 Albany Street / Oxley Street

Albany Street / Oxley Street is a roundabout intersection that currently operates at LoS B in the existing AM and PM peak periods. When considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS C in the AM peak period and LoS B in the PM peak period. The inclusion of the traffic generation from the development proposal deteriorates the intersection from LoS C to LoS D, however, it is noted that the impacts are relatively minor and the impact on the PM peak period is considered insignificant.

6.5.7 Clarke Street / Oxley Street

Clarke Street / Oxley Street is a priority intersection that currently operates at LoS A in the existing AM and PM peak periods. However, when considering the traffic volumes provided in the TEF report, it is noted that the intersection operates at a LoS A in the AM and PM peak periods. The inclusion of the traffic generation from the development proposal does not significantly impact the intersection performance in both the AM and PM peak periods.

6.5.8 Traffic Impact Summary

Overall, the impact of the traffic generated by the development proposal on the surrounding road network is fairly minor with the only significant impact on the roundabout at Albany Street / Oxley Street. Though the intersection does deteriorate from LoS C to LoS D, it is observed that the roundabout was nearing LoS D without the development proposal and the small number of vehicle movements added to the intersection caused the LoS to breach the LoS D category. Notwithstanding, the other intersections do not deteriorate any further with the inclusion of the development proposal hence, the development is not observed to cause significant impact on the road network and is supported from the traffic analysis.

7. Access and Car Park Assessment

The following section presents an assessment of the proposed development with reference to the requirements of AS2890.1:2004 (Off-street Car Parking), AS2890.2:2018 (Off-street Commercial Vehicle Facilities), AS2890.3:2015 (Bicycle Parking) and AS2890.6:2009 (Off-street Parking for People with Disabilities). This section is to be read in conjunction with the following architectural plans provided by Fitzpatrick & Partners Architects (see Attachment 2) and the car park assessment undertaken by **ptc.** (see Attachment 3):

- Basement 03 (Drawing No. DA-06, Issue No. B, Dated 31 July 2020)
- Basement 02 (Drawing No. DA-07, Issue No. B, Dated 31 July 2020)
- Basement 01 (Drawing No. DA-08, Issue No. B, Dated 31 July 2020)
- Lower Ground Christie St Plan (Drawing No. DA-09, Issue No. B, Dated 31 July 2020)
- Ground Oxley St Plan (Drawing No. DA-10, Issue No. B, Dated 31 July 2020)

7.1 Vehicular Access

The proposed access driveway has been assessed in accordance with Table 3.1 and 3.2 of AS2890.1. The proposed car park facility predominantly represents a typical Class 1A facility for 'residential, domestic and employee parking' and the proposed car park is to accommodate 281 car parking spaces. The proposed access is to be provided on Oxley Street which is classified as a local road.

Therefore, taking the above factors into consideration, AS2890.1 indicates that the proposed development needs to provide a Category 2 access driveway to accommodate the ingress and egress of vehicles associated with the development. The proposal involves the provision of approximately 7.5m wide access driveway which is within the 6.0m-9.0m range provided in AS2890.1.

It is noted that the access driveway is to be used by the waste collection vehicle which requires access to the proposed development. A swept path assessment has been undertaken using a 9.24m long refuse vehicle which indicates that the vehicle is able to enter/exit the site using the proposed access driveway. Therefore, the proposed access driveway is deemed compliant in accordance with AS2890.1.

The proposed access ramps within the proposed car park has been assessed in accordance with AS2890.1 in relation to its width and relevant grades. The inner and outer radius of the curved ramp have been measured to be 4.3m and 12.2m respectively which exceeds the minimum requirement stipulated in AS2890.1. The ramp widths have also been measured to be 3.9m and 3.4m for ingress and egress roadways respectively. A vertical clearance assessment has been undertaken along the inside edge of the curved ramp using a typical B99 vehicle which indicates that no underbody scraping occurs. The proposed access ramp is to maintain a minimum 2.2m height clearance (additional clearance may be required at crests/sags along the ramp subject to further assessment in the detailed design stage).

The internal ramps have also been assessed in accordance with AS2890.1. The ramps are to be maximum 1 in 6 grade with 1 in 8 transition grades provided for 2.0m in length. A vertical clearance assessment has been undertaken using a typical B99 vehicle which indicates that no underbody scraping occurs. The ramps are to maintain a minimum 2.2m height clearance (additional clearance may be required at crests/sags along the ramp subject to further assessment in detailed design stage). The ramps are 3.0m wide with

300mm kerb extensions provided on either side. Therefore, the internal ramps are deemed to comply with AS2890.1.

A swept path assessment has been undertaken using a B99 vehicle which indicates the proposed access and internal ramps are able to accommodate two-way traffic flow.

7.2 Sight Distance

The sight distance requirements are outlined in Section 3.2 of AS2890.1 and are prescribed on the basis of the posted speed limit or 85th percentile vehicle speeds along the frontage road.

Oxley Street has a posted speed limit of 50km/h, which requires a desirable visibility distance of 69 metres and a minimum stopping sight distance of 45 metres. The proposed driveway is located on a straight/flat section of the road where sufficient sight distance is provided.

The proposed car park also allows for all vehicles to enter and exit in a forward direction, therefore minimising potential conflict points and maintaining the overall safety of the road network.

7.3 Car Park Arrangement

7.3.1 Typical Requirements

The car parking requirements have been assessed against the requirements of AS2890.1:2004, with reference to Class 1A (residential/employees) and Class 2 (medium term parking) facilities:

Class 1A (residential/employee) facilities:

- Car Space Dimensions: 2.4m x 5.4m
- Aisle Width: 5.8m (double-sided aisles)

Class 2 (medium term parking) facilities:

- Car Space Dimensions: 2.5m x 5.4m
- Aisle Width: 5.8m (double-sided aisles)

All parking spaces have been individually assessed and found to be compliant with the minimum requirements of AS2890.1. All spaces are to meet the clearance requirements (door opening, entry flanges, column locations) of the parking space envelope requirements provided in Figure 5.2 of AS2890.1.

7.3.2 Accessible Parking

All accessible parking spaces have been individually assessed against the requirements of AS2890.6. The parking spaces have been designed based on the following dimensions:

- Accessible Space Dimensions: 2.4m x 5.4m
- Adjacent Shared Bay: 2.4m x 5.4m

All accessible spaces and shared bays have been individually assessed and found to be compliant with the minimum requirements of AS2890.6, with relevant pavement markings and bollards. A minimum height clearance of 2.5m is to be maintained above all accessible and shared bays.

7.3.3 Headroom Clearance

The following are the requirements stipulated in the Australian Standards:

- Minimum 2.2m above all general spaces;
- Minimum 2.5m above all accessible spaces and adjacent shared bays;

The proposed car park is to provide the minimum height clearance as per the requirements stipulated in the Australian Standards.

7.3.4 Bicycle Parking

Approved bicycle parking devices (BPD's) shall be installed as per the following requirements of AS2890.3:2015:

Horizontal Bicycle Parking

- Space Dimensions: 1800mm x 500mm
- Access Aisle 1500mm

Multi-Tier Bicycle Parking

- Space Dimensions: 1800mm x 500mm
- Access Aisle: 2000mm

The AS2890.3 does not provide a minimum requirement in terms of headroom clearance for multi-tier bicycle parking devices. Therefore, reference has been made to various multi-tier bicycle parking devices in order to determine the appropriate headroom clearance required to ensure the safe use of these parking devices. The specifications indicate that a headroom clearance of 2.7m is sufficient to install and use the parking devices, hence a minimum 2.7m headroom clearance has been provided within the proposed bicycle storage area.

7.3.5 Loading Dock

A swept path assessment has been undertaken using a 9.24m refuse collection vehicle to assess the manoeuvrability of the heavy vehicle within the proposed loading dock area. The assessment indicates that the vehicle is able to enter the site in a forward direction, manoeuvre within the proposed loading dock area, perform its duties and exit the proposed development in a forward direction.

8. Conclusion

ptc. has been commissioned by Arrow Capital Partners to prepare a TIA to assess the proposed development at 29/57 Christie Street, St Leonards. This development will be submitted as a DA to demolish the existing building located on the southern portion of the lot to provide two multistorey buildings with the primary use for offices. The DA does not propose any changes made to the building on the northern side of the site and therefore, excluded from this assessment.

The findings of this report can be summarised as follows:

- The development consists of two multistorey buildings. Both buildings primarily provide commercial office space with a shared lower ground and ground floor with cafés, gymnasiums and EOTF.
- The development is located within the St Leonards Railway Station area as noted in the Council's DCP. The site is located within walking distance of St Leonards station and is well serviced by various bus routes that mainly operate around Pacific Highway.
- The development proposes to provide 281 carparking spaces which adequately accommodate the parking demand of the development. Furthermore, the site is located within close proximity of the future Crows Nest Metro Station, which further emphasises the use of active and public transportation in this area and a decrease in reliance on private vehicular travel for offices in the St Leonards area.
- The development is anticipated to generate approximately 119 vehicular trips in the morning peak period and 91 trips in the evening peak period. The generated traffic is not anticipated to cause significant negative impact to the overall road network.
- The car park layout and access arrangement comply with the Australian Standards.
- The loading dock allows for a 9.24m refuse truck to enter and exit the site in a forward direction and is able to manoeuvre within the proposed loading dock area.

In light of the above, the proposed development is endorsed in context of parking and traffic.

Attachment 1 SIDRA Movement Summaries

MOVEMENT SUMMARY

Site: 769 [1a. Existing AM - Christie St / Pacific Highway]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	89	1.2	89	1.2	0.443	18.2	LOS B	15.8	115.4	0.45	0.46	0.45	26.7
5	T1	1526	5.4	1526	5.4	0.443	13.0	LOS A	19.1	139.5	0.48	0.45	0.48	45.3
Approach		1616	5.1	1616	5.1	0.443	13.3	LOS A	19.1	139.5	0.48	0.45	0.48	44.8
North: Christie Street North														
7	L2	36	0.0	36	0.0	0.516	58.7	LOS E	14.3	104.6	0.92	0.79	0.92	7.5
8	T1	154	7.5	154	7.5	0.516	53.2	LOS D	14.3	104.6	0.92	0.79	0.92	7.5
9	R2	268	2.0	268	2.0	0.516	58.1	LOS E	14.7	104.7	0.92	0.82	0.92	23.4
Approach		458	3.7	458	3.7	0.516	56.5	LOS E	14.7	104.7	0.92	0.81	0.92	18.4
West: Pacific Highway West														
10	L2	485	4.8	485	4.8	0.619	21.7	LOS B	27.6	202.0	0.68	0.75	0.68	37.8
11	T1	1695	6.4	1695	6.4	0.619	16.4	LOS B	31.6	233.2	0.64	0.61	0.64	38.9
Approach		2180	6.0	2180	6.0	0.619	17.6	LOS B	31.6	233.2	0.65	0.64	0.65	38.6
All Vehicles		4254	5.4	4254	5.4	0.619	20.1	LOS B	31.6	233.2	0.61	0.58	0.61	37.6

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 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
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.

MOVEMENT SUMMARY

Site: 768 [2a. Existing AM - Albany Street / Pacific Highway] Network: N101 [Existing AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1178	7.1	1178	7.1	0.474	11.6	LOS A	20.3	150.5	0.46	0.42	0.46	26.6
6	R2	157	2.7	157	2.7	0.679	83.2	LOS F	11.7	83.9	1.00	0.82	1.02	6.1
Approach		1335	6.5	1335	6.5	0.679	20.0	LOS B	20.3	150.5	0.53	0.47	0.53	19.0
North: Albany Street														
7	L2	28	22.2	28	22.2	0.629	59.9	LOS E	15.8	114.6	0.94	0.83	0.94	7.9
9	R2	472	2.2	472	2.2	0.629	59.2	LOS E	16.4	116.9	0.93	0.83	0.93	8.0
Approach		500	3.4	500	3.4	0.629	59.2	LOS E	16.4	116.9	0.93	0.83	0.93	8.0
West: Pacific Highway West														
10	L2	397	1.9	397	1.9	0.574	18.4	LOS B	15.8	113.9	0.45	0.64	0.45	23.3
11	T1	1198	7.8	1198	7.8	0.574	9.7	LOS A	15.8	113.9	0.36	0.35	0.36	30.8
Approach		1595	6.3	1595	6.3	0.574	11.8	LOS A	15.8	113.9	0.38	0.42	0.38	28.5
All Vehicles		3429	6.0	3429	6.0	0.679	21.9	LOS B	20.3	150.5	0.52	0.50	0.52	18.7

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.

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
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
All Pedestrians		105	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: 767 [3a. Existing AM - Oxley Street / Pacific Highway]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	104	11.1	104	11.1	0.293	58.9	LOS E	6.5	49.5	0.89	0.78	0.89	4.8
2	T1	102	2.1	102	2.1	0.257	53.5	LOS D	6.2	44.5	0.88	0.70	0.88	5.7
3	R2	65	1.6	65	1.6	0.350	69.3	LOS E	4.4	31.5	0.95	0.77	0.95	19.9
Approach		272	5.4	272	5.4	0.350	59.4	LOS E	6.5	49.5	0.90	0.75	0.90	10.4
East: Pacific Highway East														
4	L2	68	4.6	68	4.6	0.092	14.1	LOS A	2.8	20.1	0.36	0.52	0.36	43.4
5	T1	1201	5.3	1201	5.3	0.461	10.0	LOS A	19.0	139.3	0.47	0.43	0.47	45.2
Approach		1269	5.2	1269	5.2	0.461	10.2	LOS A	19.0	139.3	0.46	0.44	0.46	45.1
North: Oxley Street North														
7	L2	62	5.1	62	5.1	0.208	62.9	LOS E	3.9	28.8	0.90	0.75	0.90	21.0
8	T1	122	3.4	122	3.4	0.310	54.2	LOS D	7.6	54.5	0.89	0.72	0.89	5.3
Approach		184	4.0	184	4.0	0.310	57.1	LOS E	7.6	54.5	0.90	0.73	0.90	12.5
West: Pacific Highway West														
10	L2	109	1.9	109	1.9	0.350	8.4	LOS A	3.7	27.1	0.12	0.24	0.12	41.2
11	T1	1258	7.4	1258	7.4	0.350	1.6	LOS A	3.7	27.1	0.07	0.10	0.07	57.2
Approach		1367	7.0	1367	7.0	0.350	2.1	LOS A	3.7	27.1	0.07	0.11	0.07	56.7
All Vehicles		3093	6.0	3093	6.0	0.461	13.7	LOS A	19.0	139.3	0.35	0.34	0.35	41.5

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 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
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.

MOVEMENT SUMMARY

Site: 101 [4a. Existing AM - Nicholson Street / Oxley Street]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	7	0.0	7	0.0	0.004	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	50.9
2	T1	74	2.9	74	2.9	0.038	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		81	2.6	81	2.6	0.038	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.0
North: Oxley Street North														
8	T1	53	8.0	53	8.0	0.121	0.3	LOS A	0.5	3.4	0.14	0.39	0.14	54.0
9	R2	122	1.7	122	1.7	0.121	5.0	LOS A	0.5	3.4	0.14	0.39	0.14	33.7
Approach		175	3.6	175	3.6	0.121	3.6	NA	0.5	3.4	0.14	0.39	0.14	47.0
West: Nicholson Street														
10	L2	179	7.6	179	7.6	0.133	5.8	LOS A	0.6	4.4	0.14	0.55	0.14	41.6
12	R2	14	0.0	14	0.0	0.133	7.0	LOS A	0.6	4.4	0.14	0.55	0.14	50.6
Approach		193	7.1	193	7.1	0.133	5.9	LOS A	0.6	4.4	0.14	0.55	0.14	43.1
All Vehicles		448	4.9	448	4.9	0.133	4.0	NA	0.6	4.4	0.12	0.40	0.12	48.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5a. Existing AM - Christie Street / Nicholson Street]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	97	3.3	97	3.3	0.065	6.2	LOS A	0.3	2.5	0.32	0.56	0.32	49.4
Approach		97	3.3	97	3.3	0.065	6.2	NA	0.3	2.5	0.32	0.56	0.32	49.4
East: Nicholson Street														
4	L2	66	1.6	66	1.6	0.046	6.1	LOS A	0.2	1.6	0.25	0.54	0.25	50.4
Approach		66	1.6	66	1.6	0.046	6.1	LOS A	0.2	1.6	0.25	0.54	0.25	50.4
North: Christie Street North														
7	L2	46	25.0	46	25.0	0.110	5.1	LOS A	0.0	0.0	0.00	0.13	0.00	51.1
8	T1	156	0.7	156	0.7	0.110	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	58.4
Approach		202	6.3	202	6.3	0.110	1.2	NA	0.0	0.0	0.00	0.13	0.00	58.1
All Vehicles		365	4.6	365	4.6	0.110	3.4	NA	0.3	2.5	0.13	0.32	0.13	53.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6a. Existing AM - Albany Street / Oxley Street]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	133	3.2	133	3.2	0.515	6.6	LOS A	3.7	26.4	0.43	0.60	0.43	48.2
2	T1	321	3.0	321	3.0	0.515	6.4	LOS A	3.7	26.4	0.43	0.60	0.43	49.3
3	R2	89	0.0	89	0.0	0.515	9.1	LOS A	3.7	26.4	0.43	0.60	0.43	33.4
3u	U	9	0.0	9	0.0	0.515	10.6	LOS A	3.7	26.4	0.43	0.60	0.43	33.4
Approach		553	2.5	553	2.5	0.515	6.9	LOS A	3.7	26.4	0.43	0.60	0.43	47.9
East: Oxley Street East														
4	L2	24	17.4	24	17.4	0.201	8.5	LOS A	1.1	8.3	0.67	0.77	0.67	22.4
5	T1	65	1.6	65	1.6	0.201	7.8	LOS A	1.1	8.3	0.67	0.77	0.67	46.6
6	R2	41	0.0	41	0.0	0.201	10.6	LOS A	1.1	8.3	0.67	0.77	0.67	46.1
6u	U	5	0.0	5	0.0	0.201	12.1	LOS A	1.1	8.3	0.67	0.77	0.67	22.4
Approach		136	3.9	136	3.9	0.201	8.9	LOS A	1.1	8.3	0.67	0.77	0.67	44.5
North: Albany Street North														
7	L2	48	4.3	48	4.3	0.540	9.5	LOS A	4.4	31.9	0.74	0.80	0.80	45.9
8	T1	332	3.5	332	3.5	0.540	9.3	LOS A	4.4	31.9	0.74	0.80	0.80	45.9
9	R2	39	0.0	39	0.0	0.540	12.0	LOS A	4.4	31.9	0.74	0.80	0.80	50.7
9u	U	4	0.0	4	0.0	0.540	13.5	LOS A	4.4	31.9	0.74	0.80	0.80	51.1
Approach		423	3.2	423	3.2	0.540	9.6	LOS A	4.4	31.9	0.74	0.80	0.80	46.7
West: Oxley Street West														
10	L2	41	2.6	41	2.6	0.382	9.4	LOS A	2.7	18.9	0.73	0.78	0.73	49.8
11	T1	131	1.6	131	1.6	0.382	9.2	LOS A	2.7	18.9	0.73	0.78	0.73	45.1
12	R2	108	1.0	108	1.0	0.382	12.0	LOS A	2.7	18.9	0.73	0.78	0.73	45.1
12u	U	1	0.0	1	0.0	0.382	13.4	LOS A	2.7	18.9	0.73	0.78	0.73	50.6
Approach		281	1.5	281	1.5	0.382	10.3	LOS A	2.7	18.9	0.73	0.78	0.73	46.2
All Vehicles		1393	2.6	1393	2.6	0.540	8.6	LOS A	4.4	31.9	0.61	0.72	0.63	46.9

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.

MOVEMENT SUMMARY

Site: 101 [7a. Existing AM - Clarke Street / Oxley Street]

Network: N101 [Existing AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	94	3.4	94	3.4	0.113	4.8	LOS A	0.4	3.2	0.18	0.50	0.18	29.4
3a	R1	100	1.1	100	1.1	0.113	4.4	LOS A	0.4	3.2	0.18	0.50	0.18	49.9
Approach		194	2.2	194	2.2	0.113	4.6	NA	0.4	3.2	0.18	0.50	0.18	46.3
NorthEast: Clarke Street														
24a	L1	37	2.9	37	2.9	0.069	5.9	LOS A	0.2	1.8	0.30	0.60	0.30	49.8
26a	R1	37	5.7	37	5.7	0.069	6.8	LOS A	0.2	1.8	0.30	0.60	0.30	49.8
Approach		74	4.3	74	4.3	0.069	6.3	LOS A	0.2	1.8	0.30	0.60	0.30	49.8
West: Oxley Street West														
10a	L1	124	1.7	124	1.7	0.154	4.5	LOS A	0.0	0.0	0.00	0.58	0.00	49.9
12	R2	162	1.3	162	1.3	0.154	4.7	LOS A	0.0	0.0	0.00	0.58	0.00	30.7
Approach		286	1.5	286	1.5	0.154	4.6	NA	0.0	0.0	0.00	0.58	0.00	45.5
All Vehicles		554	2.1	554	2.1	0.154	4.8	NA	0.4	3.2	0.10	0.56	0.10	46.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 769 [1b. Existing PM - Christie St / Pacific Highway]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	31	0.0	31	0.0	0.663	39.2	LOS C	27.3	197.0	0.77	0.70	0.77	14.5
5	T1	1561	3.6	1561	3.6	0.663	35.3	LOS C	32.3	233.2	0.82	0.73	0.82	32.2
Approach		1592	3.6	1592	3.6	0.663	35.4	LOS C	32.3	233.2	0.82	0.73	0.82	32.0
North: Christie Street North														
7	L2	44	0.0	44	0.0	0.281	31.4	LOS C	10.7	74.8	0.65	0.71	0.65	12.3
8	T1	62	0.0	62	0.0	0.281	25.9	LOS B	10.7	74.8	0.65	0.71	0.65	12.3
9	R2	383	0.0	383	0.0	0.281	31.1	LOS C	10.7	75.2	0.65	0.74	0.65	32.5
Approach		489	0.0	489	0.0	0.281	30.4	LOS C	10.7	75.2	0.65	0.73	0.65	29.8
West: Pacific Highway West														
10	L2	425	0.0	425	0.0	0.857	49.7	LOS D	39.7	279.5	0.97	0.92	1.04	25.8
11	T1	1563	2.2	1563	2.2	0.857	40.2	LOS C	44.2	315.3	0.92	0.87	0.96	26.0
Approach		1988	1.7	1988	1.7	0.857	42.2	LOS C	44.2	315.3	0.93	0.88	0.98	25.9
All Vehicles		4069	2.3	4069	2.3	0.857	38.1	LOS C	44.2	315.3	0.85	0.80	0.87	28.7

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.

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
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.

MOVEMENT SUMMARY

Site: 768 [2b. Existing PM - Albany Street / Pacific Highway]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1022	6.2	1022	6.2	0.694	20.9	LOS B	28.1	206.9	0.64	0.59	0.64	18.3
6	R2	137	0.0	137	0.0	0.650	69.1	LOS E	9.5	66.3	0.97	0.80	0.98	7.2
Approach		1159	5.4	1159	5.4	0.694	26.6	LOS B	28.1	206.9	0.68	0.61	0.68	15.4
North: Albany Street														
7	L2	42	10.0	42	10.0	0.693	47.7	LOS D	17.3	123.7	0.86	0.83	0.86	9.6
9	R2	517	1.2	517	1.2	0.693	48.1	LOS D	17.3	123.7	0.88	0.83	0.88	9.5
Approach		559	1.9	559	1.9	0.693	48.1	LOS D	17.3	123.7	0.87	0.83	0.87	9.5
West: Pacific Highway West														
10	L2	438	0.7	438	0.7	0.665	22.6	LOS B	19.9	140.7	0.56	0.72	0.56	20.0
11	T1	1102	3.5	1102	3.5	0.665	21.3	LOS B	21.9	157.7	0.64	0.58	0.64	19.9
Approach		1540	2.7	1540	2.7	0.665	21.6	LOS B	21.9	157.7	0.62	0.62	0.62	19.9
All Vehicles		3258	3.6	3258	3.6	0.694	28.0	LOS B	28.1	206.9	0.68	0.65	0.68	15.7

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.

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
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
All Pedestrians		105	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: 767 [3b. Existing PM - Oxley Street / Pacific Highway]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	174	0.6	174	0.6	0.427	59.0	LOS E	10.9	77.0	0.91	0.80	0.91	4.8
2	T1	147	0.0	147	0.0	0.344	53.0	LOS D	9.1	63.5	0.89	0.73	0.89	5.7
3	R2	103	1.0	103	1.0	0.514	70.1	LOS E	7.2	50.6	0.97	0.80	0.97	19.7
Approach		424	0.5	424	0.5	0.514	59.6	LOS E	10.9	77.0	0.92	0.78	0.92	10.4
East: Pacific Highway East														
4	L2	103	0.0	103	0.0	0.193	11.6	LOS A	4.0	28.5	0.25	0.40	0.25	47.1
5	T1	1069	4.4	1069	4.4	0.421	3.4	LOS A	4.9	35.5	0.15	0.16	0.15	53.6
Approach		1173	4.0	1173	4.0	0.421	4.1	LOS A	4.9	35.5	0.16	0.18	0.16	53.0
North: Oxley Street North														
7	L2	75	2.8	75	2.8	0.222	61.0	LOS E	5.6	39.5	0.89	0.76	0.89	21.4
8	T1	93	0.0	93	0.0	0.222	51.3	LOS D	5.6	39.5	0.86	0.69	0.86	5.6
Approach		167	1.3	167	1.3	0.222	55.7	LOS D	5.6	39.5	0.88	0.72	0.88	14.8
West: Pacific Highway West														
10	L2	77	2.7	77	2.7	0.307	11.0	LOS A	5.6	40.3	0.22	0.28	0.22	35.5
11	T1	1129	3.2	1129	3.2	0.307	2.0	LOS A	5.6	40.3	0.08	0.10	0.08	56.7
Approach		1206	3.1	1206	3.1	0.307	2.6	LOS A	5.6	40.3	0.09	0.11	0.09	56.1
All Vehicles		2971	3.0	2971	3.0	0.514	14.3	LOS A	10.9	77.0	0.28	0.27	0.28	40.6

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 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
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.

MOVEMENT SUMMARY

Site: 101 [4b. Existing PM - Nicholson Street / Oxley Street]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	6	0.0	6	0.0	0.003	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	50.9
2	T1	125	0.0	125	0.0	0.073	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		132	0.0	132	0.0	0.073	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.5
North: Oxley Street North														
8	T1	87	0.0	87	0.0	0.110	0.4	LOS A	0.4	2.9	0.18	0.28	0.18	55.4
9	R2	81	0.0	81	0.0	0.110	5.2	LOS A	0.4	2.9	0.18	0.28	0.18	37.8
Approach		168	0.0	168	0.0	0.110	2.7	NA	0.4	2.9	0.18	0.28	0.18	52.6
West: Nicholson Street														
10	L2	277	0.4	277	0.4	0.221	6.0	LOS A	0.9	6.3	0.25	0.56	0.25	40.7
12	R2	6	0.0	6	0.0	0.221	7.4	LOS A	0.9	6.3	0.25	0.56	0.25	50.2
Approach		283	0.4	283	0.4	0.221	6.0	LOS A	0.9	6.3	0.25	0.56	0.25	41.2
All Vehicles		583	0.2	583	0.2	0.221	3.8	NA	0.9	6.3	0.17	0.36	0.17	49.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5b. Existing PM - Christie Street / Nicholson Street]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	137	0.8	137	0.8	0.086	5.9	LOS A	0.4	3.1	0.26	0.56	0.26	49.7
Approach		137	0.8	137	0.8	0.086	5.9	NA	0.4	3.1	0.26	0.56	0.26	49.7
East: Nicholson Street														
4	L2	34	0.0	34	0.0	0.022	5.7	LOS A	0.1	0.7	0.15	0.53	0.15	50.9
Approach		34	0.0	34	0.0	0.022	5.7	LOS A	0.1	0.7	0.15	0.53	0.15	50.9
North: Christie Street North														
7	L2	72	1.5	72	1.5	0.075	5.1	LOS A	0.0	0.0	0.00	0.30	0.00	41.0
8	T1	71	0.0	71	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	55.9
Approach		142	0.7	142	0.7	0.075	2.6	NA	0.0	0.0	0.00	0.30	0.00	53.3
All Vehicles		313	0.7	313	0.7	0.086	4.4	NA	0.4	3.1	0.13	0.44	0.13	51.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6b. Existing PM - Albany Street / Oxley Street]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	122	0.0	122	0.0	0.617	7.4	LOS A	5.2	36.6	0.59	0.70	0.63	42.0
2	T1	346	0.6	346	0.6	0.617	7.1	LOS A	5.2	36.6	0.59	0.70	0.63	42.8
3	R2	97	1.1	97	1.1	0.617	10.0	LOS A	5.2	36.6	0.59	0.70	0.63	29.3
3u	U	8	0.0	8	0.0	0.617	11.3	LOS A	5.2	36.6	0.59	0.70	0.63	29.3
Approach		574	0.6	574	0.6	0.617	7.7	LOS A	5.2	36.6	0.59	0.70	0.63	41.7
East: Oxley Street East														
4	L2	71	0.0	71	0.0	0.427	8.7	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
5	T1	143	0.0	143	0.0	0.427	8.4	LOS A	2.9	20.5	0.77	0.84	0.79	40.9
6	R2	75	0.0	75	0.0	0.427	11.2	LOS A	2.9	20.5	0.77	0.84	0.79	40.6
6u	U	5	0.0	5	0.0	0.427	12.6	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
Approach		294	0.0	294	0.0	0.427	9.3	LOS A	2.9	20.5	0.77	0.84	0.79	38.9
North: Albany Street North														
7	L2	54	0.0	54	0.0	0.612	11.1	LOS A	5.8	41.9	0.85	0.95	1.03	38.4
8	T1	337	3.4	337	3.4	0.612	11.0	LOS A	5.8	41.9	0.85	0.95	1.03	38.4
9	R2	34	0.0	34	0.0	0.612	13.6	LOS A	5.8	41.9	0.85	0.95	1.03	43.1
9u	U	5	0.0	5	0.0	0.612	15.0	LOS B	5.8	41.9	0.85	0.95	1.03	43.4
Approach		429	2.7	429	2.7	0.612	11.3	LOS A	5.8	41.9	0.85	0.95	1.03	39.1
West: Oxley Street West														
10	L2	39	0.0	39	0.0	0.534	11.1	LOS A	4.7	33.2	0.85	0.92	0.97	42.5
11	T1	221	0.5	221	0.5	0.534	10.8	LOS A	4.7	33.2	0.85	0.92	0.97	38.1
12	R2	104	1.0	104	1.0	0.534	13.6	LOS A	4.7	33.2	0.85	0.92	0.97	38.1
12u	U	1	0.0	1	0.0	0.534	15.0	LOS B	4.7	33.2	0.85	0.92	0.97	43.2
Approach		365	0.6	365	0.6	0.534	11.6	LOS A	4.7	33.2	0.85	0.92	0.97	38.9
All Vehicles		1662	1.0	1662	1.0	0.617	9.8	LOS A	5.8	41.9	0.75	0.84	0.84	39.9

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.

MOVEMENT SUMMARY

Site: 101 [7b. Existing PM - Clarke Street / Oxley Street]

Network: N101 [Existing PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	172	0.0	172	0.0	0.155	4.9	LOS A	0.5	3.7	0.20	0.46	0.20	26.3
3a	R1	92	2.3	92	2.3	0.155	4.8	LOS A	0.5	3.7	0.20	0.46	0.20	43.4
Approach		263	0.8	263	0.8	0.155	4.9	NA	0.5	3.7	0.20	0.46	0.20	38.3
NorthEast: Clarke Street														
24a	L1	34	0.0	34	0.0	0.096	5.1	LOS A	0.3	2.4	0.36	0.61	0.36	43.0
26a	R1	56	0.0	56	0.0	0.096	6.6	LOS A	0.3	2.4	0.36	0.61	0.36	43.0
Approach		89	0.0	89	0.0	0.096	6.0	LOS A	0.3	2.4	0.36	0.61	0.36	43.0
West: Oxley Street West														
10a	L1	217	0.5	217	0.5	0.219	4.4	LOS A	0.0	0.0	0.00	0.55	0.00	43.8
12	R2	195	0.5	195	0.5	0.219	4.6	LOS A	0.0	0.0	0.00	0.55	0.00	28.1
Approach		412	0.5	412	0.5	0.219	4.5	NA	0.0	0.0	0.00	0.55	0.00	41.2
All Vehicles		764	0.6	764	0.6	0.219	4.8	NA	0.5	3.7	0.11	0.53	0.11	40.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 769 [1c. Future AM - Christie St / Pacific Highway]

Network: N101 [Future AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	25	0.0	25	0.0	0.502	16.9	LOS B	20.0	146.1	0.46	0.44	0.46	29.1
5	T1	1948	5.4	1941	5.4	0.502	11.6	LOS A	24.4	178.4	0.50	0.46	0.50	46.7
Approach		1974	5.3	1966[N1]	5.3	0.502	11.7	LOS A	24.4	178.4	0.50	0.46	0.50	46.6
North: Christie Street North														
7	L2	100	0.0	100	0.0	1.083	174.3	LOS F	36.1	261.2	1.00	1.41	1.88	2.5
8	T1	135	7.8	135	7.8	1.083	169.7	LOS F	36.1	261.2	1.00	1.41	1.88	2.5
9	R2	454	1.9	454	1.9	1.083	170.7	LOS F	48.7	346.4	1.00	1.29	1.83	10.5
Approach		688	2.8	688	2.8	1.083	171.0	LOS F	48.7	346.4	1.00	1.33	1.85	8.0
West: Pacific Highway West														
10	L2	828	4.2	828	4.2	1.091	129.2	LOS F	135.3	985.8	1.00	1.28	1.67	13.2
11	T1	2053	6.4	2053	6.4	1.091	128.0	LOS F	135.3	985.8	1.00	1.48	1.70	11.6
Approach		2881	5.8	2881	5.8	1.091	128.3	LOS F	135.3	985.8	1.00	1.42	1.70	12.1
All Vehicles		5543	5.2	5536[N1]	5.2	1.091	92.2	LOS F	135.3	985.8	0.82	1.07	1.29	16.2

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
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.

MOVEMENT SUMMARY

Site: 768 [2c. Future AM - Albany Street / Pacific Highway] Network: N101 [Future AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1429	7.1	1429	7.0	0.617	14.4	LOS A	30.8	228.5	0.60	0.55	0.60	23.4
6	R2	166	2.5	166	2.5	0.719	84.1	LOS F	12.5	89.2	1.00	0.83	1.03	6.1
Approach		1596	6.6	1595 N1	6.6	0.719	21.6	LOS B	30.8	228.5	0.64	0.58	0.64	17.9
North: Albany Street														
7	L2	63	21.7	63	21.7	1.014	131.1	LOS F	29.8	220.3	1.00	1.11	1.62	3.9
9	R2	548	2.3	548	2.3	1.014	131.0	LOS F	30.9	220.3	1.00	1.11	1.62	3.9
Approach		612	4.3	611 N1	4.3	1.014	131.0	LOS F	30.9	220.3	1.00	1.11	1.62	3.9
West: Pacific Highway West														
10	L2	476	1.8	422	1.8	0.692	35.9	LOS C	33.4	241.2	0.80	0.80	0.80	14.4
11	T1	1680	7.8	1491	7.9	0.692	27.9	LOS B	33.4	241.2	0.74	0.69	0.74	16.4
Approach		2156	6.5	1913 N1	6.5	0.692	29.7	LOS C	33.4	241.2	0.76	0.71	0.76	15.9
All Vehicles		4363	6.2	4119 N1	6.6	1.014	41.6	LOS C	33.4	241.2	0.75	0.72	0.84	11.5

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
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
All Pedestrians		105	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: 767 [3c. Future AM - Oxley Street / Pacific Highway] Network: N101 [Future AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	189	11.1	188	10.9	0.568	62.1	LOS E	12.4	94.6	0.94	0.82	0.94	4.6
2	T1	95	2.2	94	2.2	0.237	53.2	LOS D	5.7	40.9	0.88	0.70	0.88	5.7
3	R2	113	1.9	112	1.8	0.514	69.1	LOS E	7.7	55.0	0.97	0.80	0.97	19.9
Approach		397	6.4	395 N1	6.2	0.568	62.0	LOS E	12.4	94.6	0.93	0.78	0.93	10.8
East: Pacific Highway East														
4	L2	186	4.5	186	4.5	0.176	9.0	LOS A	1.8	13.4	0.13	0.55	0.13	47.3
5	T1	1404	5.2	1404	5.2	0.879	13.1	LOS A	23.7	173.1	0.36	0.40	0.43	42.1
Approach		1591	5.2	1591	5.2	0.879	12.6	LOS A	23.7	173.1	0.34	0.42	0.39	42.6
North: Oxley Street North														
7	L2	57	5.6	57	5.6	0.159	61.5	LOS E	3.5	25.6	0.89	0.73	0.89	21.4
8	T1	49	4.3	49	4.3	0.159	53.2	LOS D	3.5	25.6	0.86	0.68	0.86	5.3
Approach		106	5.0	106	5.0	0.159	57.6	LOS E	3.5	25.6	0.88	0.71	0.88	15.9
West: Pacific Highway West														
10	L2	123	1.7	112	1.7	0.403	9.2	LOS A	5.5	40.9	0.16	0.25	0.16	39.3
11	T1	1618	7.4	1466	7.5	0.403	1.6	LOS A	5.5	40.9	0.07	0.09	0.07	57.2
Approach		1741	7.0	1577 N1	7.1	0.403	2.1	LOS A	5.5	40.9	0.08	0.11	0.08	56.8
All Vehicles		3835	6.1	3669 N1	6.4	0.879	14.7	LOS B	23.7	173.1	0.31	0.33	0.33	40.8

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.

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
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.

MOVEMENT SUMMARY

Site: 101 [4c. Future AM - Nicholson Street / Oxley Street] Network: N101 [Future AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	7	0.0	7	0.0	0.004	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	50.9
2	T1	120	2.6	120	2.6	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		127	2.5	127	2.5	0.084	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.4
North: Oxley Street North														
8	T1	67	7.8	67	7.8	0.170	0.5	LOS A	0.8	5.5	0.24	0.41	0.24	53.5
9	R2	168	1.9	168	1.9	0.170	5.3	LOS A	0.8	5.5	0.24	0.41	0.24	32.3
Approach		236	3.6	236	3.6	0.170	3.9	NA	0.8	5.5	0.24	0.41	0.24	45.7
West: Nicholson Street														
10	L2	277	7.6	275	7.4	0.270	5.9	LOS A	0.9	7.0	0.20	0.55	0.20	41.1
12	R2	14	0.0	14	0.0	0.270	8.2	LOS A	0.9	7.0	0.20	0.55	0.20	50.4
Approach		291	7.2	288[N1]	7.1	0.270	6.1	LOS A	0.9	7.0	0.20	0.55	0.20	42.2
All Vehicles		654	5.0	651[N1]	5.0	0.270	4.2	NA	0.9	7.0	0.17	0.40	0.17	47.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5c. Future AM - Christie Street / Nicholson Street] Network: N101 [Future AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	97	3.3	97	3.3	0.062	6.0	LOS A	0.3	2.5	0.27	0.55	0.27	49.6
Approach		97	3.3	97	3.3	0.062	6.0	NA	0.3	2.5	0.27	0.55	0.27	49.6
East: Nicholson Street														
4	L2	171	1.9	171	1.9	0.115	6.0	LOS A	0.6	4.4	0.23	0.54	0.23	50.5
Approach		171	1.9	171	1.9	0.115	6.0	LOS A	0.6	4.4	0.23	0.54	0.23	50.5
North: Christie Street North														
7	L2	29	25.0	27	24.7	0.079	5.1	LOS A	0.0	0.0	0.00	0.11	0.00	52.7
8	T1	131	0.8	121	0.8	0.079	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	58.7
Approach		160	5.3	148[N1]	5.2	0.079	0.9	NA	0.0	0.0	0.00	0.11	0.00	58.5
All Vehicles		427	3.4	415[N1]	3.6	0.115	4.2	NA	0.6	4.4	0.16	0.39	0.16	52.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6a. Existing AM - Albany Street / Oxley Street] Network: N101 [Future AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	133	3.2	123	3.2	0.488	6.5	LOS A	3.3	23.4	0.37	0.59	0.37	48.4
2	T1	321	3.0	298	3.0	0.488	6.3	LOS A	3.3	23.4	0.37	0.59	0.37	49.6
3	R2	89	0.0	83	0.0	0.488	9.0	LOS A	3.3	23.4	0.37	0.59	0.37	33.9
3u	U	9	0.0	9	0.0	0.488	10.5	LOS A	3.3	23.4	0.37	0.59	0.37	33.9
Approach		553	2.5	512[N1]	2.5	0.488	6.9	LOS A	3.3	23.4	0.37	0.59	0.37	48.2
East: Oxley Street East														
4	L2	24	17.4	24	17.4	0.234	8.5	LOS A	1.1	8.2	0.67	0.78	0.67	22.4
5	T1	65	1.6	64	1.6	0.234	7.8	LOS A	1.1	8.2	0.67	0.78	0.67	46.6
6	R2	41	0.0	41	0.0	0.234	10.6	LOS A	1.1	8.2	0.67	0.78	0.67	46.2
6u	U	5	0.0	5	0.0	0.234	12.1	LOS A	1.1	8.2	0.67	0.78	0.67	22.4
Approach		136	3.9	134[N1]	3.9	0.234	8.9	LOS A	1.1	8.2	0.67	0.78	0.67	44.5
North: Albany Street North														
7	L2	48	4.3	48	4.3	0.951	35.6	LOS C	12.5	89.9	0.74	1.37	1.98	27.9
8	T1	332	3.5	332	3.5	0.951	35.4	LOS C	12.5	89.9	0.74	1.37	1.98	27.9
9	R2	39	0.0	39	0.0	0.951	38.0	LOS C	12.5	89.9	0.74	1.37	1.98	37.3
9u	U	4	0.0	4	0.0	0.951	39.5	LOS C	12.5	89.9	0.74	1.37	1.98	37.5
Approach		423	3.2	423	3.2	0.951	35.7	LOS C	12.5	89.9	0.74	1.37	1.98	29.3
West: Oxley Street West														
10	L2	41	2.6	41	2.6	0.501	9.3	LOS A	2.7	19.3	0.70	0.76	0.71	49.8
11	T1	131	1.6	131	1.6	0.501	9.1	LOS A	2.7	19.3	0.70	0.76	0.71	45.2
12	R2	108	1.0	108	1.0	0.501	11.9	LOS A	2.7	19.3	0.70	0.76	0.71	45.2
12u	U	1	0.0	1	0.0	0.501	13.3	LOS A	2.7	19.3	0.70	0.76	0.71	50.7
Approach		281	1.5	281	1.5	0.501	10.2	LOS A	2.7	19.3	0.70	0.76	0.71	46.3
All Vehicles		1393	2.6	1351[N1]	2.7	0.951	16.8	LOS B	12.5	89.9	0.58	0.89	0.97	39.5

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.

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

MOVEMENT SUMMARY

Site: 101 [7a. Existing AM - Clarke Street / Oxley Street]

Network: N101 [Future AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	94	3.4	90	3.4	0.108	4.8	LOS A	0.4	3.0	0.18	0.50	0.18	29.4
3a	R1	100	1.1	96	1.1	0.108	4.4	LOS A	0.4	3.0	0.18	0.50	0.18	49.9
Approach		194	2.2	186[N1]	2.2	0.108	4.6	NA	0.4	3.0	0.18	0.50	0.18	46.3
NorthEast: Clarke Street														
24a	L1	37	2.9	37	2.9	0.069	5.9	LOS A	0.2	1.8	0.29	0.60	0.29	49.8
26a	R1	37	5.7	37	5.7	0.069	6.7	LOS A	0.2	1.8	0.29	0.60	0.29	49.8
Approach		74	4.3	74	4.3	0.069	6.3	LOS A	0.2	1.8	0.29	0.60	0.29	49.8
West: Oxley Street West														
10a	L1	124	1.7	122	1.7	0.151	4.5	LOS A	0.0	0.0	0.00	0.58	0.00	49.9
12	R2	162	1.3	160	1.3	0.151	4.7	LOS A	0.0	0.0	0.00	0.58	0.00	30.7
Approach		286	1.5	282[N1]	1.5	0.151	4.6	NA	0.0	0.0	0.00	0.58	0.00	45.5
All Vehicles		554	2.1	542[N1]	2.1	0.151	4.8	NA	0.4	3.0	0.10	0.56	0.10	46.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 769 [1d. Future PM - Christie St / Pacific Highway] Network: N101 [Future PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	40	0.0	40	0.0	0.646	38.4	LOS C	28.0	201.8	0.76	0.70	0.76	14.8
5	T1	1608	3.7	1608	3.7	0.646	33.3	LOS C	31.4	227.0	0.80	0.72	0.80	33.0
Approach		1648	3.6	1648	3.6	0.646	33.4	LOS C	31.4	227.0	0.79	0.72	0.79	32.7
North: Christie Street North														
7	L2	42	0.0	42	0.0	0.287	33.0	LOS C	10.9	76.2	0.68	0.67	0.68	11.7
8	T1	117	0.0	117	0.0	0.287	28.4	LOS B	10.9	76.2	0.68	0.67	0.68	11.7
9	R2	316	0.0	316	0.0	0.287	32.5	LOS C	10.9	76.2	0.68	0.73	0.68	31.2
Approach		475	0.0	475	0.0	0.287	31.5	LOS C	10.9	76.2	0.68	0.71	0.68	26.9
West: Pacific Highway West														
10	L2	597	0.0	597	0.0	0.832	34.2	LOS C	37.8	265.1	0.86	0.85	0.87	30.8
11	T1	1525	2.2	1525	2.2	0.832	33.0	LOS C	41.8	297.9	0.87	0.80	0.88	28.9
Approach		2122	1.6	2122	1.6	0.832	33.4	LOS C	41.8	297.9	0.86	0.82	0.87	29.5
All Vehicles		4245	2.2	4245	2.2	0.832	33.2	LOS C	41.8	297.9	0.82	0.76	0.82	30.6

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 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
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.

MOVEMENT SUMMARY

Site: 768 [2d. Future PM - Albany Street / Pacific Highway] Network: N101 [Future PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1127	6.2	1127	6.2	0.733	20.3	LOS B	27.5	202.4	0.66	0.61	0.66	18.7
6	R2	116	0.0	116	0.0	0.668	79.3	LOS F	8.4	59.0	1.00	0.81	1.04	6.4
Approach		1243	5.6	1243	5.6	0.733	25.8	LOS B	27.5	202.4	0.70	0.63	0.70	15.8
North: Albany Street														
7	L2	42	10.0	42	10.0	0.724	49.3	LOS D	17.7	126.6	0.88	0.83	0.90	9.1
9	R2	521	1.2	521	1.2	0.724	49.7	LOS D	17.7	126.6	0.89	0.84	0.91	9.0
Approach		563	1.9	563	1.9	0.724	49.7	LOS D	17.7	126.6	0.89	0.84	0.91	9.0
West: Pacific Highway West														
10	L2	322	0.7	322	0.7	0.641	25.1	LOS B	20.4	145.0	0.60	0.69	0.60	19.1
11	T1	1242	3.6	1242	3.6	0.641	17.8	LOS B	20.4	145.0	0.57	0.53	0.57	22.2
Approach		1564	3.0	1564	3.0	0.641	19.3	LOS B	20.4	145.0	0.57	0.56	0.57	21.4
All Vehicles		3371	3.7	3371	3.7	0.733	26.8	LOS B	27.5	202.4	0.67	0.63	0.68	16.1

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 ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
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
All Pedestrians		105	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: 767 [3d. Future PM - Oxley Street / Pacific Highway] Network: N101 [Future PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	24	0.0	24	0.0	0.098	66.2	LOS E	1.6	10.9	0.91	0.71	0.91	4.3
2	T1	4	0.0	4	0.0	0.016	60.2	LOS E	0.3	1.9	0.89	0.58	0.89	5.0
3	R2	72	1.5	72	1.5	0.733	85.9	LOS F	5.6	39.6	1.00	0.85	1.18	17.1
Approach		100	1.1	100	1.1	0.733	80.0	LOS F	5.6	39.6	0.97	0.81	1.10	14.7
East: Pacific Highway East														
4	L2	178	0.0	178	0.0	0.215	6.1	LOS A	0.5	3.9	0.03	0.36	0.03	53.3
5	T1	1217	4.4	1217	4.4	0.468	0.6	LOS A	1.5	11.2	0.04	0.07	0.04	58.2
Approach		1395	3.8	1395	3.8	0.468	1.3	LOS A	1.5	11.2	0.04	0.11	0.04	57.5
North: Oxley Street North														
7	L2	66	3.2	66	3.2	0.391	75.4	LOS F	4.7	33.8	0.98	0.76	0.98	18.5
8	T1	115	0.0	115	0.0	0.441	65.3	LOS E	7.8	54.9	0.97	0.77	0.97	4.4
Approach		181	1.2	181	1.2	0.441	69.0	LOS E	7.8	54.9	0.97	0.77	0.97	11.1
West: Pacific Highway West														
10	L2	173	2.4	173	2.4	0.292	7.8	LOS A	3.2	22.9	0.12	0.32	0.12	40.4
11	T1	1112	3.1	1112	3.1	0.292	0.9	LOS A	3.2	22.9	0.05	0.09	0.05	58.0
Approach		1284	3.0	1284	3.0	0.292	1.8	LOS A	3.2	22.9	0.06	0.12	0.06	57.1
All Vehicles		2960	3.2	2960	3.2	0.733	8.3	LOS A	7.8	54.9	0.14	0.18	0.14	47.3

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	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
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.

MOVEMENT SUMMARY

Site: 101 [4d. Future PM - Nicholson Street / Oxley Street] Network: N101 [Future PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	6	0.0	6	0.0	0.003	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	44.5
2	T1	32	0.0	32	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach		38	0.0	38	0.0	0.016	0.8	NA	0.0	0.0	0.00	0.09	0.00	49.0
North: Oxley Street North														
8	T1	152	0.0	152	0.0	0.181	0.1	LOS A	0.7	5.2	0.10	0.26	0.10	47.1
9	R2	141	0.0	141	0.0	0.181	4.7	LOS A	0.7	5.2	0.10	0.26	0.10	34.7
Approach		293	0.0	293	0.0	0.181	2.3	NA	0.7	5.2	0.10	0.26	0.10	45.2
West: Nicholson Street														
10	L2	68	0.0	68	0.0	0.050	4.7	LOS A	0.2	1.4	0.09	0.51	0.09	38.6
12	R2	6	0.0	6	0.0	0.050	6.5	LOS A	0.2	1.4	0.09	0.51	0.09	44.9
Approach		75	0.0	75	0.0	0.050	4.8	LOS A	0.2	1.4	0.09	0.51	0.09	39.9
All Vehicles		405	0.0	405	0.0	0.181	2.6	NA	0.7	5.2	0.09	0.29	0.09	44.8

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5d. Future PM - Christie Street / Nicholson Street] Network: N101 [Future PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	137	0.8	137	0.8	0.087	5.1	LOS A	0.5	3.3	0.28	0.53	0.28	43.4
Approach		137	0.8	137	0.8	0.087	5.1	NA	0.5	3.3	0.28	0.53	0.28	43.4
East: Nicholson Street														
4	L2	144	0.0	144	0.0	0.094	4.8	LOS A	0.5	3.3	0.17	0.50	0.17	44.9
Approach		144	0.0	144	0.0	0.094	4.8	LOS A	0.5	3.3	0.17	0.50	0.17	44.9
North: Christie Street North														
7	L2	78	1.4	78	1.4	0.083	4.6	LOS A	0.0	0.0	0.00	0.27	0.00	37.4
8	T1	79	0.0	79	0.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	47.5
Approach		157	0.7	157	0.7	0.083	2.3	NA	0.0	0.0	0.00	0.27	0.00	45.8
All Vehicles		438	0.5	438	0.5	0.094	4.0	NA	0.5	3.3	0.14	0.42	0.14	44.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6b. Existing PM - Albany Street / Oxley Street] Network: N101 [Future PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	122	0.0	122	0.0	0.617	7.5	LOS A	5.2	36.7	0.61	0.70	0.66	42.0
2	T1	346	0.6	346	0.6	0.617	7.2	LOS A	5.2	36.7	0.61	0.70	0.66	42.8
3	R2	97	1.1	97	1.1	0.617	10.0	LOS A	5.2	36.7	0.61	0.70	0.66	29.3
3u	U	8	0.0	8	0.0	0.617	11.3	LOS A	5.2	36.7	0.61	0.70	0.66	29.3
Approach		574	0.6	574	0.6	0.617	7.8	LOS A	5.2	36.7	0.61	0.70	0.66	41.6
East: Oxley Street East														
4	L2	71	0.0	71	0.0	0.427	8.7	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
5	T1	143	0.0	143	0.0	0.427	8.4	LOS A	2.9	20.5	0.77	0.84	0.79	40.9
6	R2	75	0.0	75	0.0	0.427	11.2	LOS A	2.9	20.5	0.77	0.84	0.79	40.6
6u	U	5	0.0	5	0.0	0.427	12.6	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
Approach		294	0.0	294	0.0	0.427	9.3	LOS A	2.9	20.5	0.77	0.84	0.79	38.9
North: Albany Street North														
7	L2	54	0.0	54	0.0	0.613	11.1	LOS A	5.8	41.8	0.85	0.95	1.03	38.4
8	T1	337	3.4	337	3.4	0.613	11.0	LOS A	5.8	41.8	0.85	0.95	1.03	38.4
9	R2	34	0.0	34	0.0	0.613	13.7	LOS A	5.8	41.8	0.85	0.95	1.03	43.1
9u	U	5	0.0	5	0.0	0.613	15.0	LOS B	5.8	41.8	0.85	0.95	1.03	43.4
Approach		429	2.7	429	2.7	0.613	11.3	LOS A	5.8	41.8	0.85	0.95	1.03	39.1
West: Oxley Street West														
10	L2	39	0.0	39	0.0	0.539	11.2	LOS A	4.7	33.2	0.85	0.93	0.98	42.5
11	T1	221	0.5	221	0.5	0.539	10.9	LOS A	4.7	33.2	0.85	0.93	0.98	38.1
12	R2	104	1.0	104	1.0	0.539	13.7	LOS A	4.7	33.2	0.85	0.93	0.98	38.1
12u	U	1	0.0	1	0.0	0.539	15.0	LOS B	4.7	33.2	0.85	0.93	0.98	43.2
Approach		365	0.6	365	0.6	0.539	11.7	LOS A	4.7	33.2	0.85	0.93	0.98	38.9
All Vehicles		1662	1.0	1662	1.0	0.617	9.8	LOS A	5.8	41.8	0.75	0.84	0.85	39.9

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.

MOVEMENT SUMMARY

Site: 101 [7b. Existing PM - Clarke Street / Oxley Street]

Network: N101 [Future PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	172	0.0	172	0.0	0.155	4.9	LOS A	0.6	4.2	0.24	0.45	0.24	25.9
3a	R1	92	2.3	92	2.3	0.155	4.8	LOS A	0.6	4.2	0.24	0.45	0.24	43.2
Approach		263	0.8	263	0.8	0.155	4.9	NA	0.6	4.2	0.24	0.45	0.24	38.0
NorthEast: Clarke Street														
24a	L1	34	0.0	34	0.0	0.098	5.1	LOS A	0.3	2.4	0.36	0.62	0.36	42.9
26a	R1	56	0.0	56	0.0	0.098	6.7	LOS A	0.3	2.4	0.36	0.62	0.36	42.9
Approach		89	0.0	89	0.0	0.098	6.1	LOS A	0.3	2.4	0.36	0.62	0.36	42.9
West: Oxley Street West														
10a	L1	217	0.5	217	0.5	0.219	4.4	LOS A	0.0	0.0	0.00	0.55	0.00	43.8
12	R2	195	0.5	195	0.5	0.219	4.6	LOS A	0.0	0.0	0.00	0.55	0.00	28.1
Approach		412	0.5	412	0.5	0.219	4.5	NA	0.0	0.0	0.00	0.55	0.00	41.2
All Vehicles		764	0.6	764	0.6	0.219	4.8	NA	0.6	4.2	0.12	0.52	0.12	40.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 769 [1e. Future Base + Dev AM - Christie St / Pacific Highway]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	25	0.0	25	0.0	0.505	16.9	LOS B	20.1	146.7	0.46	0.44	0.46	29.0
5	T1	1961	5.4	1953	5.4	0.505	11.6	LOS A	24.5	179.4	0.50	0.46	0.50	46.7
Approach		1986	5.3	1978[N1]	5.3	0.505	11.7	LOS A	24.5	179.4	0.50	0.46	0.50	46.6
North: Christie Street North														
7	L2	100	0.0	100	0.0	1.084	174.9	LOS F	36.1	261.5	1.00	1.41	1.88	2.5
8	T1	135	7.8	135	7.8	1.084	170.3	LOS F	36.1	261.5	1.00	1.41	1.88	2.5
9	R2	454	1.9	454	1.9	1.084	171.3	LOS F	48.8	347.4	1.00	1.29	1.83	10.4
Approach		688	2.8	688	2.8	1.084	171.6	LOS F	48.8	347.4	1.00	1.33	1.85	8.0
West: Pacific Highway West														
10	L2	828	4.2	828	4.2	1.102	138.4	LOS F	139.8	1018.1	1.00	1.31	1.72	12.5
11	T1	2102	6.3	2102	6.3	1.102	137.1	LOS F	139.8	1018.1	1.00	1.52	1.75	11.0
Approach		2931	5.7	2931	5.7	1.102	137.5	LOS F	139.8	1018.1	1.00	1.46	1.74	11.4
All Vehicles		5605	5.2	5597[N1]	5.2	1.102	97.2	LOS F	139.8	1018.1	0.82	1.09	1.32	15.6

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.

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	Average Back of Queue 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
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.

MOVEMENT SUMMARY

Site: 768 [2e. Future Base + Dev AM - Albany Street / Pacific Highway]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1442	7.0	1441	7.0	0.622	14.5	LOS A	30.8	228.5	0.60	0.56	0.60	23.3
6	R2	166	2.5	166	2.5	0.719	84.1	LOS F	12.5	89.2	1.00	0.83	1.03	6.1
Approach		1608	6.5	1607[N1]	6.5	0.719	21.7	LOS B	30.8	228.5	0.64	0.58	0.65	17.9
North: Albany Street														
7	L2	63	21.7	63	21.7	1.015	131.8	LOS F	29.9	220.3	1.00	1.11	1.63	3.8
9	R2	548	2.3	548	2.3	1.015	131.8	LOS F	30.9	220.3	1.00	1.11	1.63	3.8
Approach		612	4.3	611[N1]	4.3	1.015	131.8	LOS F	30.9	220.3	1.00	1.11	1.63	3.8
West: Pacific Highway West														
10	L2	525	1.6	457	1.6	0.692	35.3	LOS C	33.6	241.7	0.79	0.81	0.79	14.5
11	T1	1680	7.8	1462	7.9	0.692	27.7	LOS B	33.6	241.7	0.74	0.68	0.74	16.5
Approach		2205	6.3	1919[N1]	6.4	0.692	29.5	LOS C	33.6	241.7	0.75	0.71	0.75	16.0
All Vehicles		4425	6.1	4137[N1]	6.6	1.015	41.5	LOS C	33.6	241.7	0.75	0.72	0.84	11.5

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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
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
All Pedestrians		105	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: 767 [3e. Future Base + Dev AM - Oxley Street / Pacific Highway]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	202	10.4	201	10.2	0.615	62.6	LOS E	13.3	101.2	0.95	0.82	0.95	4.6
2	T1	95	2.2	94	2.2	0.237	53.2	LOS D	5.7	40.9	0.88	0.70	0.88	5.7
3	R2	126	1.7	126	1.6	0.646	72.9	LOS F	9.0	64.2	1.00	0.82	1.02	19.2
Approach		423	6.0	421 N1	5.9	0.646	63.6	LOS E	13.3	101.2	0.95	0.79	0.96	10.9
East: Pacific Highway East														
4	L2	238	3.5	238	3.5	0.197	10.8	LOS A	3.2	23.1	0.20	0.63	0.20	44.5
5	T1	1404	5.2	1404	5.2	0.898	17.3	LOS B	28.5	208.5	0.41	0.46	0.50	38.5
Approach		1642	5.0	1642	5.0	0.898	16.3	LOS B	28.5	208.5	0.38	0.48	0.46	39.3
North: Oxley Street North														
7	L2	57	5.6	56	5.6	0.189	62.6	LOS E	3.5	26.0	0.90	0.75	0.90	21.0
8	T1	99	2.1	95	2.2	0.239	53.3	LOS D	5.8	41.2	0.88	0.70	0.88	5.4
Approach		156	3.4	151 N1	3.5	0.239	56.7	LOS E	5.8	41.2	0.89	0.72	0.89	13.2
West: Pacific Highway West														
10	L2	123	1.7	108	1.7	0.392	9.7	LOS A	5.9	43.8	0.18	0.27	0.18	38.2
11	T1	1618	7.4	1426	7.5	0.392	1.7	LOS A	5.9	43.8	0.07	0.10	0.07	57.1
Approach		1741	7.0	1534 N1	7.1	0.392	2.2	LOS A	5.9	43.8	0.08	0.11	0.08	56.6
All Vehicles		3962	5.9	3749 N1	6.3	0.898	17.5	LOS B	28.5	208.5	0.34	0.37	0.38	38.3

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.

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
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.

MOVEMENT SUMMARY

Site: 101 [4e. Future Base + Dev AM - Nicholson Street / Oxley Street]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	7	0.0	7	0.0	0.004	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	50.9
2	T1	145	2.2	145	2.2	0.123	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		153	2.1	153	2.1	0.123	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.4
North: Oxley Street North														
8	T1	167	3.1	166	3.2	0.226	0.6	LOS A	1.0	7.2	0.24	0.30	0.24	55.0
9	R2	168	1.9	168	1.9	0.226	5.5	LOS A	1.0	7.2	0.24	0.30	0.24	36.3
Approach		336	2.5	334[N1]	2.5	0.226	3.0	NA	1.0	7.2	0.24	0.30	0.24	51.7
West: Nicholson Street														
10	L2	277	7.6	275	7.4	0.349	6.2	LOS A	1.0	7.4	0.28	0.58	0.28	40.4
12	R2	14	0.0	14	0.0	0.349	9.4	LOS A	1.0	7.4	0.28	0.58	0.28	50.1
Approach		291	7.2	288[N1]	7.1	0.349	6.4	LOS A	1.0	7.4	0.28	0.58	0.28	41.5
All Vehicles		779	4.2	775[N1]	4.2	0.349	3.7	NA	1.0	7.4	0.21	0.35	0.21	50.2

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5e. Future Base + Dev AM - Christie Street / Nicholson Street]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	97	3.3	97	3.3	0.062	6.0	LOS A	0.3	2.5	0.27	0.55	0.27	49.6
Approach		97	3.3	97	3.3	0.062	6.0	NA	0.3	2.5	0.27	0.55	0.27	49.6
East: Nicholson Street														
4	L2	171	1.9	171	1.9	0.115	6.0	LOS A	0.6	4.4	0.23	0.54	0.23	50.5
Approach		171	1.9	171	1.9	0.115	6.0	LOS A	0.6	4.4	0.23	0.54	0.23	50.5
North: Christie Street North														
7	L2	29	25.0	27	24.7	0.079	5.1	LOS A	0.0	0.0	0.00	0.11	0.00	52.7
8	T1	131	0.8	121	0.8	0.079	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	58.7
Approach		160	5.3	148[N1]	5.2	0.079	0.9	NA	0.0	0.0	0.00	0.11	0.00	58.5
All Vehicles		427	3.4	415[N1]	3.5	0.115	4.2	NA	0.6	4.4	0.16	0.39	0.16	52.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6e. Future Base + Dev AM - Albany Street / Oxley Street]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	133	3.2	120	3.2	0.514	6.5	LOS A	3.6	25.6	0.38	0.60	0.38	48.2
2	T1	321	3.0	292	3.0	0.514	6.3	LOS A	3.6	25.6	0.38	0.60	0.38	49.3
3	R2	139	0.0	124	0.0	0.514	9.1	LOS A	3.6	25.6	0.38	0.60	0.38	33.5
3u	U	9	0.0	9	0.0	0.514	10.6	LOS A	3.6	25.6	0.38	0.60	0.38	33.5
Approach		602	2.3	545[N1]	2.3	0.514	7.1	LOS A	3.6	25.6	0.38	0.60	0.38	47.5
East: Oxley Street East														
4	L2	24	17.4	24	17.4	0.231	8.5	LOS A	1.1	8.1	0.67	0.78	0.67	22.4
5	T1	65	1.6	64	1.6	0.231	7.8	LOS A	1.1	8.1	0.67	0.78	0.67	46.6
6	R2	41	0.0	40	0.0	0.231	10.6	LOS A	1.1	8.1	0.67	0.78	0.67	46.2
6u	U	5	0.0	5	0.0	0.231	12.1	LOS A	1.1	8.1	0.67	0.78	0.67	22.4
Approach		136	3.9	132[N1]	3.9	0.231	8.9	LOS A	1.1	8.1	0.67	0.78	0.67	44.5
North: Albany Street North														
7	L2	48	4.3	48	4.3	0.988	51.7	LOS D	17.0	122.2	0.77	1.71	2.71	22.5
8	T1	332	3.5	332	3.5	0.988	51.5	LOS D	17.0	122.2	0.77	1.71	2.71	22.5
9	R2	39	0.0	39	0.0	0.988	54.1	LOS D	17.0	122.2	0.77	1.71	2.71	32.0
9u	U	4	0.0	4	0.0	0.988	55.6	LOS D	17.0	122.2	0.77	1.71	2.71	32.2
Approach		423	3.2	423	3.2	0.988	51.8	LOS D	17.0	122.2	0.77	1.71	2.71	23.8
West: Oxley Street West														
10	L2	41	2.6	41	2.6	0.516	10.1	LOS A	3.0	21.1	0.73	0.79	0.77	49.3
11	T1	131	1.6	131	1.6	0.516	9.9	LOS A	3.0	21.1	0.73	0.79	0.77	44.3
12	R2	108	1.0	108	1.0	0.516	12.7	LOS A	3.0	21.1	0.73	0.79	0.77	44.3
12u	U	1	0.0	1	0.0	0.516	14.2	LOS A	3.0	21.1	0.73	0.79	0.77	50.1
Approach		281	1.5	281	1.5	0.516	11.1	LOS A	3.0	21.1	0.73	0.79	0.77	45.5
All Vehicles		1442	2.6	1381[N1]	2.7	0.988	21.7	LOS B	17.0	122.2	0.60	1.00	1.20	35.7

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.
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.

MOVEMENT SUMMARY

Site: 101 [7e. Future Base + Dev AM - Clarke Street / Oxley Street]

Network: N101 [Future Base + Dev AM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	94	3.4	88	3.4	0.106	4.8	LOS A	0.4	3.0	0.18	0.50	0.18	29.5
3a	R1	100	1.1	94	1.1	0.106	4.3	LOS A	0.4	3.0	0.18	0.50	0.18	49.9
Approach		194	2.2	183[N1]	2.2	0.106	4.6	NA	0.4	3.0	0.18	0.50	0.18	46.3
NorthEast: Clarke Street														
24a	L1	37	2.9	37	2.9	0.072	6.0	LOS A	0.3	1.9	0.33	0.61	0.33	49.6
26a	R1	37	5.7	37	5.7	0.072	7.0	LOS A	0.3	1.9	0.33	0.61	0.33	49.6
Approach		74	4.3	74	4.3	0.072	6.5	LOS A	0.3	1.9	0.33	0.61	0.33	49.6
West: Oxley Street West														
10a	L1	124	1.7	121	1.7	0.174	4.5	LOS A	0.0	0.0	0.00	0.59	0.00	49.9
12	R2	212	1.0	203	1.0	0.174	4.7	LOS A	0.0	0.0	0.00	0.59	0.00	30.6
Approach		336	1.3	324[N1]	1.3	0.174	4.6	NA	0.0	0.0	0.00	0.59	0.00	44.6
All Vehicles		603	1.9	580[N1]	2.0	0.174	4.8	NA	0.4	3.0	0.10	0.56	0.10	46.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 769 [1f. Future Base + Dev PM - Christie St / Pacific Highway]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
4	L2	40	0.0	40	0.0	0.666	38.4	LOS C	29.2	210.2	0.77	0.70	0.77	14.8
5	T1	1661	3.5	1661	3.5	0.666	33.1	LOS C	31.8	229.1	0.79	0.72	0.79	33.1
Approach		1701	3.5	1701	3.5	0.666	33.2	LOS C	31.8	229.1	0.79	0.72	0.79	32.8
North: Christie Street North														
7	L2	42	0.0	42	0.0	0.287	33.0	LOS C	10.9	76.2	0.68	0.67	0.68	11.7
8	T1	117	0.0	117	0.0	0.287	28.4	LOS B	10.9	76.2	0.68	0.67	0.68	11.7
9	R2	316	0.0	316	0.0	0.287	32.5	LOS C	10.9	76.2	0.68	0.73	0.68	31.2
Approach		475	0.0	475	0.0	0.287	31.5	LOS C	10.9	76.2	0.68	0.71	0.68	26.9
West: Pacific Highway West														
10	L2	597	0.0	597	0.0	0.837	34.6	LOS C	38.3	268.5	0.86	0.86	0.88	30.7
11	T1	1536	2.2	1536	2.2	0.837	33.5	LOS C	42.5	303.0	0.87	0.81	0.88	28.7
Approach		2133	1.6	2133	1.6	0.837	33.8	LOS C	42.5	303.0	0.87	0.82	0.88	29.3
All Vehicles		4308	2.2	4308	2.2	0.837	33.3	LOS C	42.5	303.0	0.82	0.77	0.83	30.6

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 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
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.

MOVEMENT SUMMARY

Site: 768 [2f. Future Base + Dev PM - Albany Street / Pacific Highway]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Pacific Highway East														
5	T1	1167	6.0	1167	6.0	0.773	17.0	LOS B	28.0	206.3	0.63	0.58	0.63	21.0
6	R2	116	0.0	116	0.0	0.623	71.6	LOS F	8.1	56.7	0.97	0.79	0.98	7.0
Approach		1283	5.4	1283	5.4	0.773	22.0	LOS B	28.0	206.3	0.66	0.60	0.66	17.7
North: Albany Street														
7	L2	42	10.0	42	10.0	0.771	53.6	LOS D	18.7	133.4	0.90	0.86	0.96	8.5
9	R2	521	1.2	521	1.2	0.771	53.9	LOS D	18.7	133.4	0.91	0.87	0.97	8.4
Approach		563	1.9	563	1.9	0.771	53.9	LOS D	18.7	133.4	0.90	0.87	0.97	8.4
West: Pacific Highway West														
10	L2	333	0.6	333	0.6	0.644	24.5	LOS B	20.2	143.3	0.59	0.68	0.59	19.4
11	T1	1242	3.6	1242	3.6	0.644	17.0	LOS B	20.2	143.3	0.55	0.52	0.55	22.7
Approach		1575	2.9	1575	2.9	0.644	18.6	LOS B	20.2	143.3	0.56	0.55	0.56	21.9
All Vehicles		3421	3.7	3421	3.7	0.773	25.7	LOS B	28.0	206.3	0.65	0.62	0.67	16.5

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 ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
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
All Pedestrians		105	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: 767 [3f. Future Base + Dev PM - Oxley Street / Pacific Highway]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	64	0.0	64	0.0	0.173	58.1	LOS E	3.9	27.2	0.87	0.75	0.87	4.9
2	T1	4	0.0	4	0.0	0.011	50.7	LOS D	0.2	1.7	0.82	0.54	0.82	5.8
3	R2	109	1.0	109	1.0	0.619	73.4	LOS F	7.9	55.5	0.99	0.81	1.01	19.0
Approach		178	0.6	178	0.6	0.619	67.4	LOS E	7.9	55.5	0.94	0.78	0.95	15.3
East: Pacific Highway East														
4	L2	187	0.0	187	0.0	0.239	8.6	LOS A	2.5	18.0	0.13	0.43	0.13	49.6
5	T1	1217	4.4	1217	4.4	0.521	2.1	LOS A	4.5	32.6	0.11	0.13	0.11	55.6
Approach		1404	3.8	1404	3.8	0.521	3.0	LOS A	4.5	32.6	0.11	0.17	0.11	54.7
North: Oxley Street North														
7	L2	66	3.2	66	3.2	0.228	64.0	LOS E	4.3	30.6	0.91	0.75	0.91	20.6
8	T1	125	0.0	125	0.0	0.321	55.2	LOS D	7.8	54.8	0.90	0.73	0.90	5.2
Approach		192	1.1	192	1.1	0.321	58.2	LOS E	7.8	54.8	0.90	0.74	0.90	12.4
West: Pacific Highway West														
10	L2	173	2.4	173	2.4	0.320	9.3	LOS A	4.3	30.6	0.16	0.35	0.16	36.5
11	T1	1112	3.1	1112	3.1	0.320	1.3	LOS A	4.3	30.6	0.06	0.10	0.06	57.3
Approach		1284	3.0	1284	3.0	0.320	2.4	LOS A	4.3	30.6	0.07	0.13	0.07	56.2
All Vehicles		3058	3.1	3058	3.1	0.619	9.9	LOS A	7.9	55.5	0.19	0.22	0.19	45.4

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 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
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.

MOVEMENT SUMMARY

Site: 101 [4f. Future Base + Dev PM - Nicholson Street / Oxley Street]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	6	0.0	6	0.0	0.003	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	44.5
2	T1	108	0.0	108	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	57.1
Approach		115	0.0	115	0.0	0.056	0.3	NA	0.0	0.0	0.00	0.03	0.00	56.2
North: Oxley Street North														
8	T1	172	0.0	172	0.0	0.199	0.4	LOS A	0.8	5.7	0.18	0.25	0.18	47.8
9	R2	141	0.0	141	0.0	0.199	5.1	LOS A	0.8	5.7	0.18	0.25	0.18	34.2
Approach		313	0.0	313	0.0	0.199	2.5	NA	0.8	5.7	0.18	0.25	0.18	46.0
West: Nicholson Street														
10	L2	68	0.0	68	0.0	0.054	4.9	LOS A	0.2	1.5	0.20	0.51	0.20	37.7
12	R2	6	0.0	6	0.0	0.054	7.2	LOS A	0.2	1.5	0.20	0.51	0.20	44.5
Approach		75	0.0	75	0.0	0.054	5.1	LOS A	0.2	1.5	0.20	0.51	0.20	39.1
All Vehicles		502	0.0	502	0.0	0.199	2.4	NA	0.8	5.7	0.14	0.24	0.14	47.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [5f. Future Base + Dev PM - Christie Street / Nicholson Street]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Christie Street South														
3	R2	137	0.8	137	0.8	0.087	5.1	LOS A	0.5	3.3	0.28	0.53	0.28	43.4
Approach		137	0.8	137	0.8	0.087	5.1	NA	0.5	3.3	0.28	0.53	0.28	43.4
East: Nicholson Street														
4	L2	144	0.0	144	0.0	0.094	4.8	LOS A	0.5	3.3	0.17	0.50	0.17	44.9
Approach		144	0.0	144	0.0	0.094	4.8	LOS A	0.5	3.3	0.17	0.50	0.17	44.9
North: Christie Street North														
7	L2	78	1.4	78	1.4	0.083	4.6	LOS A	0.0	0.0	0.00	0.27	0.00	37.4
8	T1	79	0.0	79	0.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	47.5
Approach		157	0.7	157	0.7	0.083	2.3	NA	0.0	0.0	0.00	0.27	0.00	45.8
All Vehicles		438	0.5	438	0.5	0.094	4.0	NA	0.5	3.3	0.14	0.42	0.14	44.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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 SUMMARY

Site: 101 [6f. Future Base + Dev PM - Albany Street / Oxley Street]

Network: N101 [Future Base + Dev PM]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Albany Street South														
1	L2	122	0.0	122	0.0	0.627	7.6	LOS A	5.4	38.3	0.62	0.71	0.67	41.9
2	T1	346	0.6	346	0.6	0.627	7.3	LOS A	5.4	38.3	0.62	0.71	0.67	42.7
3	R2	107	1.0	107	1.0	0.627	10.2	LOS A	5.4	38.3	0.62	0.71	0.67	29.1
3u	U	8	0.0	8	0.0	0.627	11.5	LOS A	5.4	38.3	0.62	0.71	0.67	29.1
Approach		584	0.5	584	0.5	0.627	7.9	LOS A	5.4	38.3	0.62	0.71	0.67	41.4
East: Oxley Street East														
4	L2	71	0.0	71	0.0	0.427	8.7	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
5	T1	143	0.0	143	0.0	0.427	8.4	LOS A	2.9	20.5	0.77	0.84	0.79	40.9
6	R2	75	0.0	75	0.0	0.427	11.2	LOS A	2.9	20.5	0.77	0.84	0.79	40.6
6u	U	5	0.0	5	0.0	0.427	12.6	LOS A	2.9	20.5	0.77	0.84	0.79	20.2
Approach		294	0.0	294	0.0	0.427	9.3	LOS A	2.9	20.5	0.77	0.84	0.79	38.9
North: Albany Street North														
7	L2	54	0.0	54	0.0	0.619	11.4	LOS A	6.0	42.7	0.86	0.97	1.06	38.2
8	T1	337	3.4	337	3.4	0.619	11.3	LOS A	6.0	42.7	0.86	0.97	1.06	38.2
9	R2	34	0.0	34	0.0	0.619	14.0	LOS A	6.0	42.7	0.86	0.97	1.06	42.9
9u	U	5	0.0	5	0.0	0.619	15.3	LOS B	6.0	42.7	0.86	0.97	1.06	43.3
Approach		429	2.7	429	2.7	0.619	11.6	LOS A	6.0	42.7	0.86	0.97	1.06	38.9
West: Oxley Street West														
10	L2	39	0.0	39	0.0	0.546	11.5	LOS A	4.8	34.1	0.86	0.95	1.01	42.3
11	T1	221	0.5	221	0.5	0.546	11.2	LOS A	4.8	34.1	0.86	0.95	1.01	37.8
12	R2	104	1.0	104	1.0	0.546	14.0	LOS A	4.8	34.1	0.86	0.95	1.01	37.8
12u	U	1	0.0	1	0.0	0.546	15.3	LOS B	4.8	34.1	0.86	0.95	1.01	43.0
Approach		365	0.6	365	0.6	0.546	12.0	LOS A	4.8	34.1	0.86	0.95	1.01	38.6
All Vehicles		1673	1.0	1673	1.0	0.627	10.0	LOS A	6.0	42.7	0.76	0.85	0.86	39.7

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.
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.

MOVEMENT SUMMARY

Site: 101 [7f. Future Base + Dev PM - Clarke Street / Oxley Street]

Network: N101 [Future Base + Dev PM]

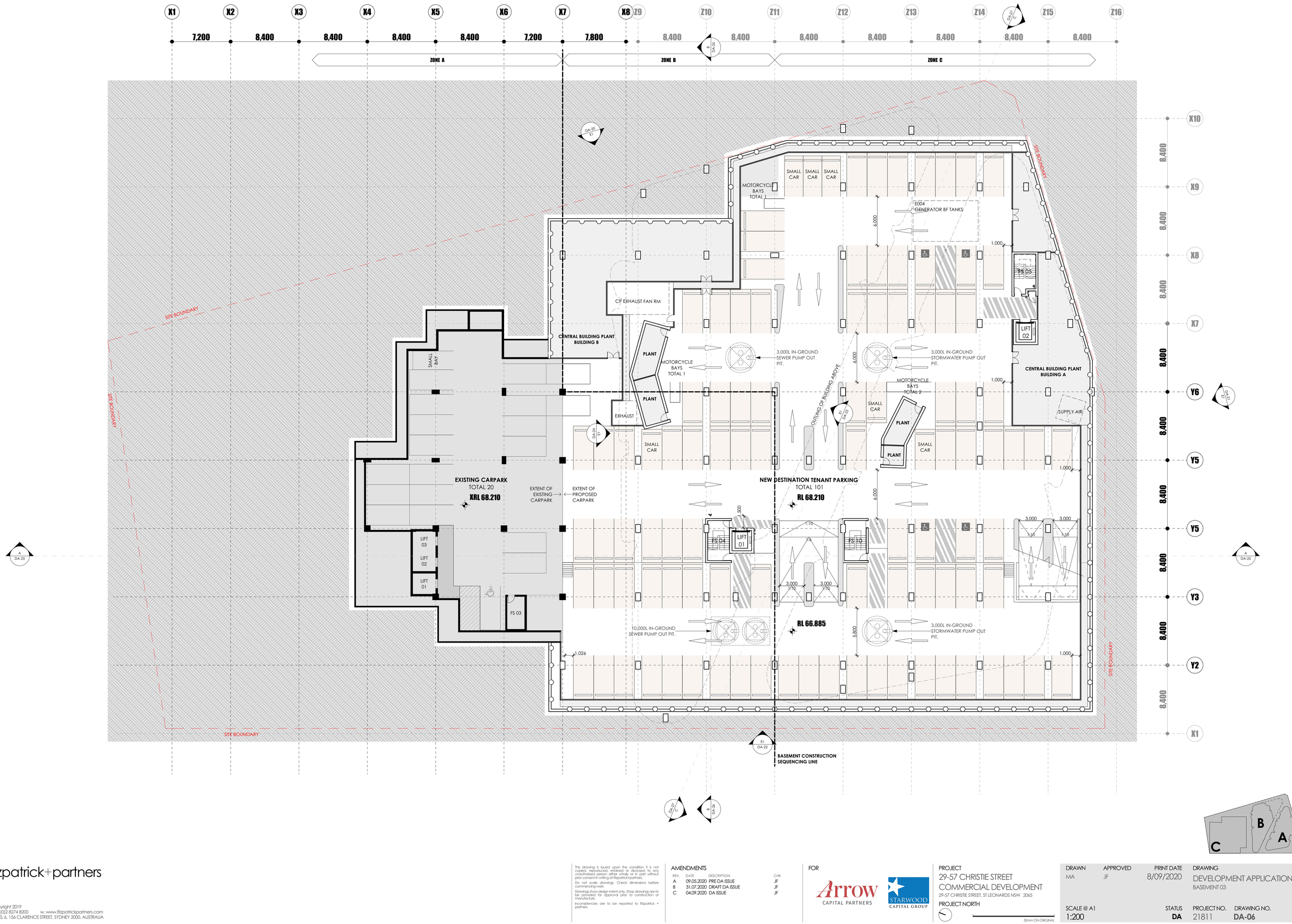
New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oxley Street South														
1	L2	172	0.0	172	0.0	0.155	4.9	LOS A	0.6	4.2	0.24	0.45	0.24	25.9
3a	R1	92	2.3	92	2.3	0.155	4.8	LOS A	0.6	4.2	0.24	0.45	0.24	43.2
Approach		263	0.8	263	0.8	0.155	4.9	NA	0.6	4.2	0.24	0.45	0.24	38.1
NorthEast: Clarke Street														
24a	L1	34	0.0	34	0.0	0.099	5.1	LOS A	0.3	2.4	0.37	0.63	0.37	42.8
26a	R1	56	0.0	56	0.0	0.099	6.8	LOS A	0.3	2.4	0.37	0.63	0.37	42.8
Approach		89	0.0	89	0.0	0.099	6.1	LOS A	0.3	2.4	0.37	0.63	0.37	42.8
West: Oxley Street West														
10a	L1	217	0.5	217	0.5	0.225	4.5	LOS A	0.0	0.0	0.00	0.55	0.00	43.9
12	R2	205	0.5	205	0.5	0.225	4.6	LOS A	0.0	0.0	0.00	0.55	0.00	28.1
Approach		422	0.5	422	0.5	0.225	4.5	NA	0.0	0.0	0.00	0.55	0.00	41.2
All Vehicles		775	0.5	775	0.5	0.225	4.8	NA	0.6	4.2	0.12	0.53	0.12	40.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Attachment 2 Architectural Plan



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AMENDMENTS

REV.	DATE	DESCRIPTION	CHK
A	09.05.2020	PRE DA ISSUE	JF
B	31.07.2020	DRAFT DA ISSUE	JF
C	04.09.2020	DA ISSUE	JF

FOR

Arrow CAPITAL PARTNERS

STARWOOD CAPITAL GROUP

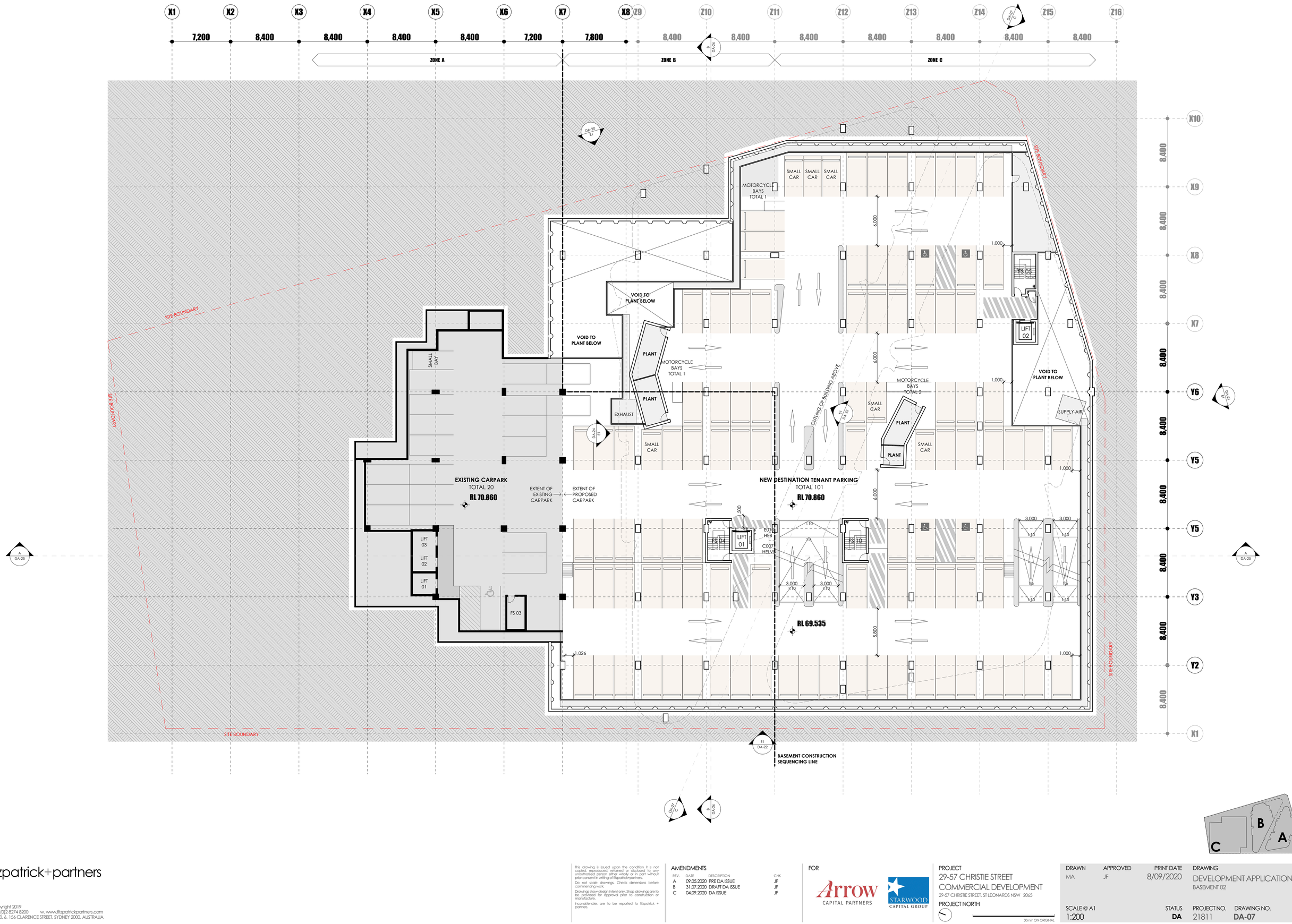
PROJECT
29-57 CHRISTIE STREET
COMMERCIAL DEVELOPMENT
29-57 CHRISTIE STREET, ST LEONARDS NSW 2065

PROJECT NORTH

50mm ON ORIGINAL

DRAWN	APPROVED	PRINT DATE	DRAWING
MA	JF	8/09/2020	DEVELOPMENT APPLICATION
			BASEMENT 03

SCALE @ A1	STATUS	PROJECT NO.	DRAWING NO.	ISSUE
1:200	DA	21811	DA-06	C



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AMENDMENTS

REV.	DATE	DESCRIPTION	CHK
A	09.05.2020	PRE DA ISSUE	JF
B	31.07.2020	DRAFT DA ISSUE	JF
C	04.09.2020	DA ISSUE	JF

FOR

Arrow CAPITAL PARTNERS

STARWOOD CAPITAL GROUP

PROJECT
29-57 CHRISTIE STREET
COMMERCIAL DEVELOPMENT
29-57 CHRISTIE STREET, ST LEONARDS NSW 2065

PROJECT NORTH

50mm ON ORIGINAL

DRAWN	APPROVED	PRINT DATE
MA	JF	8/09/2020

DRAWING
DEVELOPMENT APPLICATION
BASEMENT 02

SCALE @ A1	STATUS	PROJECT NO.	DRAWING NO.	ISSUE
1:200	DA	21811	DA-07	C

X1 X2 X3 X4 X5 X6 X7 X8 Z9 Z10 Z11 Z12 Z13 Z14 Z15 Z16

7,200 | 8,400 | 8,400 | 8,400 | 8,400 | 7,200 | 7,800 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400

ZONE A | ZONE B | ZONE C

DA-26 45

DA-25 C

DA-20 E1

SITE BOUNDARY

WATER&GAS MAINS LOCATED ALONG NICHOLSON ST

HYDRAULIC METER ROOM
MASTER COLD WATER
MASTER GAS METER
SYDNEY WATER AUTHORITY CONFIRMATION

SMALL CAR

6,000

1,000

TURNING BAY

FS 05

LIFT 02

CP EXHAUST FAN RM

HYDRAULIC PLANTROOM
POTABLE COLD WATER TANK
POTABLE COLD WATER PUMPS

GREASE ARRESTOR ROOM

MOTORCYCLE BAYS TOTAL 8

NEW CASUAL TENANT PARKING
TOTAL 44

1:10

OUTLINE OF BUILDING ABOVE

MOTORCYCLE BAYS TOTAL 4

DA-24 E1

LIFT PIT

SUPPLY AIR

EXHAUST

SMALL CAR

CAR SHARE

PLANT

TURNING BAY

1,000

C

EXISTING LOADING DOCK

EXISTING CARPARK
TOTAL 17

RL 73.510

EXTENT OF EXISTING CARPARK

EXTENT OF PROPOSED CARPARK

RL 73.510
REMOTE CONTROL OPERATED ROLLER DOORS

500

6,000

FS 04

LIFT 01

FS 10

3,000 | 3,000 | 3,000 | 3,000

1:6 | 1:10

FS 01

LIFT 03

LIFT 02

LIFT 01

FS 02

FS 03

EXISITNG SWITCHROOM
XRL 72.310

EXISITNG SUBSTATION
XRL 72.310

EXISTING HYDRANT SPRINKLE ROOM

1,026

RL 72.185
NEW DESTINATION TENANT PARKING
TOTAL 35

5,800

OSD TANK ABOVE
(1.0M DEEP)

40,00L RAINWATER TANK ABOVE
(ACCESS FROM OUTSIDE - 1.5M DEEP)

RAINWATER PUMP & FILTRATION EQUIPMENT ROOM

ENTRY | EXIT

SITE BOUNDARY

EXISTING DOCK ENTRY

EXISTING ENTRY CONDITIONS

XRL 76.460 | XRL 76.460

E1 DA-22

BASEMENT CONSTRUCTION SEQUENCING LINE

A DA-25

CHRISTIE STREET

X10 | X9 | X8 | X7 | Y6 | Y5 | Y5 | Y3 | Y2 | X1

8,400 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400

DA-21 E1

DA-27 C

DA-28 45

A | B | C

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AMENDMENTS

REV.	DATE	DESCRIPTION	CHK
A	09.05.2020	PRE DA ISSUE	JF
B	31.07.2020	DRAFT DA ISSUE	JF
C	04.09.2020	DA ISSUE	JF

FOR

Arrow CAPITAL PARTNERS

STARWOOD CAPITAL GROUP

PROJECT
29-57 CHRISTIE STREET
COMMERCIAL DEVELOPMENT
29-57 CHRISTIE STREET, ST LEONARDS NSW 2065

PROJECT NORTH

50mm ON ORIGINAL

DRAWN	APPROVED	PRINT DATE	DRAWING
MA	JF	8/09/2020	DEVELOPMENT APPLICATION
			BASEMENT 01

SCALE @ A1	STATUS	PROJECT NO.	DRAWING NO.	ISSUE
1:200	DA	21811	DA-08	C

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X1 7,200 X2 8,400 X3 8,400 X4 8,400 X5 8,400 X6 7,200 X7 7,800 X8 Z9 8,400 Z10 8,400 Z11 8,400 Z12 8,400 Z13 8,400 Z14 8,400 Z15 8,400 Z16

X10 8,400 X9 8,400 X8 8,400 X7 8,400 Y6 8,400 Y5 8,400 Y5 8,400 Y3 8,400 Y2 8,400 X1

DA-20 E1 · DA-26 · DA-27 C · DA-24 E1 · DA-22 E1 · DA-21 E1 · DA-25 A

SITE BOUNDARY

C
EXISTING BUILDING
COMMERCIAL OFFICE SPACE

GROUND

EXISTING PLANT · EXISTING MALE WC · EXISTING FEMALE WC · FS 01 · FS 02 · LIFT 3 · LIFT 2 · LIFT 1

PROPOSED BUILDING ENVELOPE

COMBINED WATER STORAGE TANK

PLANT · LIFT PIT · EXHAUST

SPRINKLER/ HYDRANT PUMPS

PUBLIC WC

THE ARCADE

BIKE RACK x10

CAFE
RL 76.300

REFER TO LANDSCAPE ARCHITECTS DRAWINGS

RL 76.30

RL 76.300

REFER TO LANDSCAPE ARCHITECTS DRAWINGS

RL 73.00

RL 74.00

RL 75.000

LOWER PLAZA

CHRISTIE STREET

PLANT · LIFT PIT · LIFT 1 · LIFT 2 · LIFT 3 · FS 01 · FS 02 · FS 03 · FS 04 · FS 10

POTENTIAL LOCATION FOR TENANCY BATHROOM AND CHANGING FACILITIES

GYM
RL 76.300

VOID TO BASEMENT BELOW

E006 FR

LIFT 02

OUTLINE OF BUILDING ABOVE

WASTE/ RECYLING ROOM

LIFT 03 · LIFT 04 · PLANT

DOCK OFFICE

LOADING DOCK

ROLLER SHUTTER TO CARPARK

ROLLER SHUTTER TO LOADING DOCK

VOID TO PLANT BELOW

SAR BELOW

SAR · SAR

RL 76.30

BELOW GROUND 40,000L RAINWATER TANK (ACCESS FROM OUTSIDE - 1.5M DEEP)

RL 77.44

RL 77.00

COMMERCIAL TENANCY
RL 76.300

OSD TANK 120m³
(1.0M DEEP)

SITE BOUNDARY

XRL 76.000

RL 76.000

CIVIC GREEN

OXLEY STREET

B · A · C

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AMENDMENTS

REV.	DATE	DESCRIPTION	CHK
A	09.05.2020	PRE DA ISSUE	JF
B	31.07.2020	DRAFT DA ISSUE	JF

FOR
Arrow CAPITAL PARTNERS
STARWOOD CAPITAL GROUP

PROJECT
29-57 CHRISTIE STREET
COMMERCIAL DEVELOPMENT
29-57 CHRISTIE STREET, ST LEONARDS NSW 2065

PROJECT NORTH

50mm ON ORIGINAL

DRAWN	APPROVED	PRINT DATE
	JF	25/08/2020

SCALE @ A1 1:200

STATUS DA

PROJECT NO. 21811

DRAWING NO. DA-09

ISSUE B

DRAWING
DEVELOPMENT APPLICATION
LOWER GROUND CHRISTIE ST PLAN
DRAFT

Attachment 3 Compliance Assessment

GYM
RL 76.300
FS 05
LIFT 02
X8
X7
8,400
VOID TO PLANT BELOW
SAR BELOW
Y6
Y5
Y3
Y2
E1 DA-23
1100L
WASTE/ RECYLING ROOM
LIFT 03
LIFT 04
DOCK OFFICE
3865
3325
PLANT
LOADING DOCK
SAR
SAR
6400
ROLLER SHUTTER TO CARPARK
7200
FS 06
BELOW GROUND 40,000L RAINWATER TANK (ACCESS FROM OUTSIDE - 1.5M DEEP)
RL 76.30
RL 77.44
RL 77.08
7550
ROLLER SHUTTER TO LOADING DOCK
CoS 9.24m Refuse Vehicle
FS 10
1200
7558
A DA-25
E1 DA-21
CoS 9.24m Refuse Vehicle
OXLEY STREET
BOUNDARY
COMMERCIAL TENANCY
RL 76.300

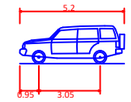
comments

A3

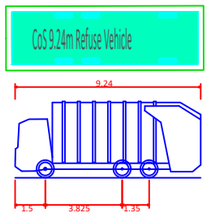
VEHICLE SPECIFICATIONS

IN

OUT



B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



CoS 9.24m Refuse Vehicle	
Overall Length	9.240m
Overall Width	2.600m
Overall Body Height	3.800m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.500m

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rev	date	comment / description	drawn	reviewed
3	08/09/20	for review	AP/JJ	SW
2	15/04/20	For Review	JJ	SW
1	26/03/20	For Review	JJ	AP

project
29-57 Christie Street, St Leonards

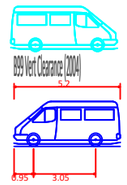
drawing title
Swept Path Assessment - Typical B99 vehicle & City of Sydney Council Refuse Vehicle

client	Arrow Capital Partners
drawing #	ptc-001
project #	AP-2745
scale	1 : 200

rev 3

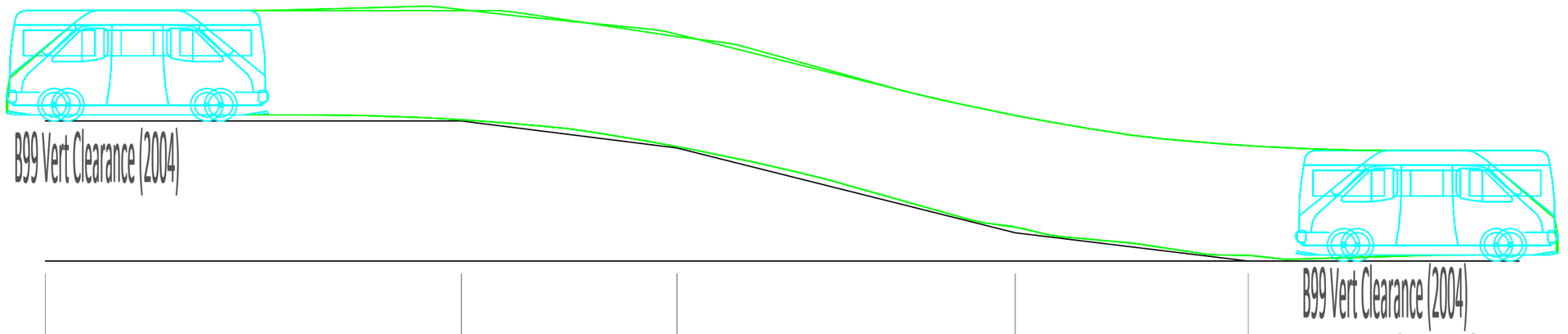
comments | A3

VEHICLE SPECIFICATIONS

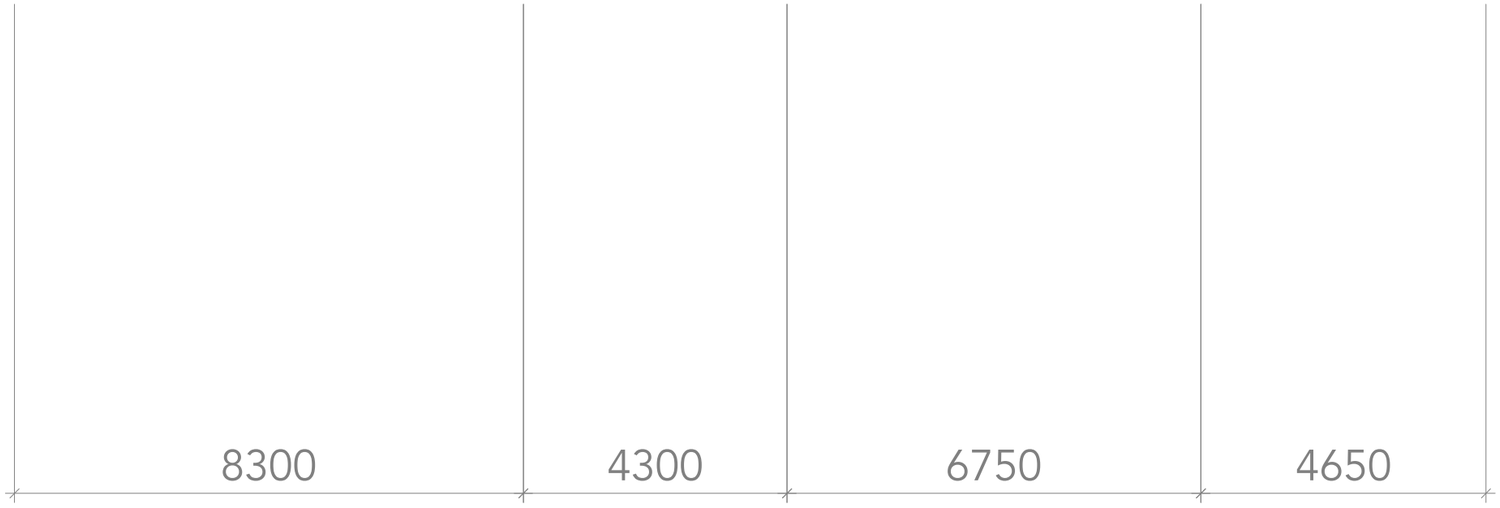


B99 Vert Clearance (2004)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.120m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	8.000m

RL 76.3



RL 73.510



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rev	date	comment / description	drawn	reviewed
3	08/09/20	for review	AP/JJ	SW
2	15/04/20	For Review	JJ	SW
1	26/03/20	For Review	JJ	AP

project
29-57 Christie Street, St Leonards

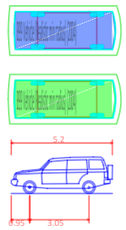
drawing title
Vertical Clearance Assessment - Access Ramp Grade - Typical B99 Vehicle

client	Arrow Capital Partners
drawing #	ptc-002
project #	AP-2745
scale	1 : 100

rev 3

comments | A3

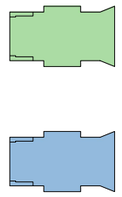
VEHICLE SPECIFICATIONS



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

PARKING SPECIFICATIONS



CLASS 2 FACILITY

WIDTH: 2.5M
LENGTH: 5.4M

ACCESSIBLE PARKING SPACE

WIDTH: 2.5M
LENGTH: 5.4M

SHARED BAY

WIDTH: 2.5M
LENGTH: 5.4M

SMALL CAR SPACE

WIDTH: 2.3M
LENGTH: 5.0M

MOTORCYCLE BAY

WIDTH: 1.2M
LENGTH: 2.5M

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3	08/09/20	for review	AP/JJ	SW
2	15/04/20	For Review	JJ	SW
1	26/03/20	For Review	JJ	AP

project
29-57 Christie Street, St Leonards

drawing title
Compliance Assessment - Basement Level 1

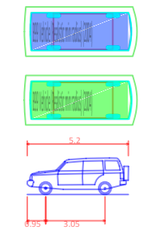
client	Arrow Capital Partners
drawing #	ptc-003
project #	AP-2745
scale	1 : 400

rev 3

comments

A3

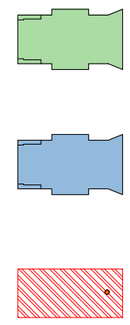
VEHICLE SPECIFICATIONS



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

PARKING SPECIFICATIONS



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rev	date	comment / description	drawn	reviewed
3	08/09/20	for review	AP/JJ	SW
2	15/04/20	For Review	JJ	SW
1	26/03/20	For Review	JJ	AP

project

29-57 Christie Street, St Leonards

drawing title

Compliance Assessment - Basement Level 2

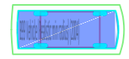
client	Arrow Capital Partners
drawing #	ptc-004
project #	AP-2745
scale	1 : 400

rev 3

comments

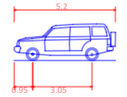
A3

VEHICLE SPECIFICATIONS



IN

OUT



B99 Vehicle (Realistic min radius) (2004)

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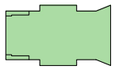
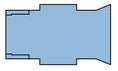
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

PARKING SPECIFICATIONS



CLASS 2 FACILITY

WIDTH: 2.5M
LENGTH: 5.4M

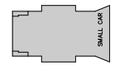


ACCESSIBLE PARKING SPACE

WIDTH: 2.5M
LENGTH: 5.4M

SHARED BAY

WIDTH: 2.5M
LENGTH: 5.4M



SMALL CAR SPACE

WIDTH: 2.3M
LENGTH: 5.0M

MOTORCYCLE BAY

WIDTH: 1.2M
LENGTH: 2.5M

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ptcconsultants.co

rev	date	comment / description	drawn	reviewed
3	08/09/20	for review	AP/JJ	SW
2	15/04/20	For Review	JJ	SW
1	26/03/20	For Review	JJ	AP

project
29-57 Christie Street, St Leonards

drawing title
Compliance Assessment - Basement Level 3

client	Arrow Capital Partners
drawing #	ptc-005
project #	AP-2745
scale	1 : 400

rev 3