



PROPOSED MIXED-USE DEVELOPMENT BLOCKS 2, 7 & 8, SECTION 5, CANBERRA

TRAFFIC IMPACT ASSESSMENT

PROPOSED MIXED-USE DEVELOPMENT BLOCKS 2, 7 & 8, SECTION 5, CANBERRA

Client: Syzygy

Report Reference: 22304REP001

File Path: Y:\2022\22304T - University Avenue Residential\08 Reports\Traffic\22304TREP001F06.docx

Friday, September 12, 2025

Document Control

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1 INTRODUCTION

SALT has been retained by Syzygy to update the ensuing Traffic Impact Assessment for a proposed mixed-use development on land at Block 2 (17–21 University Ave), Block 7 (3 Farrell Place / 24 Marcus Clarke St) and Block 8, Section 5 in Canberra.

Together, these three blocks form a consolidated subject site of 2,423m² that is located on the southern corner of the University Avenue and Marcus Clarke Street intersection in Canberra.

It is proposed to demolish the existing office buildings upon Blocks 2 and 7 at the north and south of the site, to allow for the construction of two new residential apartment buildings with activated land uses at ground level.

A five level basement car park is proposed to be constructed across the wider site beneath the three land parcels, and a new landscaped area provided between the two buildings to maintain a pedestrian link between Marcus Clarke Street and Darwin Place.

SALT has had previous involvement in the project, having initially prepared the Traffic Impact Assessment that was lodged alongside the planning documentation for the initial Development Application (DA-202241098) in October 2023.

A revised Traffic Impact Assessment (SALT Ref#22304REP001F04, dated 23.05.2024) was prepared in response to a Request for Further Information (RFI) letter provided by the *Environment, Planning and Sustainable Development Directorate (EPSDD)* and submitted alongside revised DA documentation in mid-2024.

Following the 2024 submission, the EPSDD issue a Notice of Decision (NOD) to refuse the Development Application citing several reasons for its decision.

With regard to traffic matters, the NOD stated the following:

TRAFFIC AND PARKING:

Based on review of the updated traffic report prepared by SALT dated 23/05/24, all previous traffic and parking comments have been adequately addressed. Following is a condition:

Queuing analysis shows minimal queuing at the entrance to the site. However, this is based on existing arrangements and does not account for future light rail. Hence, the proponent shall implement keep clear road marking along University Avenue, at the Darwin Place entrance/exit, to minimise queuing, particularly onto the light rail tracks.

Given the above, it is understood that EPSDD considered the mid-2024 submission to be acceptable from a Traffic Engineering perspective.

Revised architectural plans have since been prepared to address the outstanding matters relating to other disciplines in order to support a reconsideration of the Development Application.

These changes do not have any adverse traffic engineering impacts on the development scheme that was previously assessed in 2024.

Notwithstanding, the following report has been updated to reflect the revised architectural plans and supersedes all previous revisions of the Traffic Impact Assessment.

This includes a revised waste management strategy that was verbally agreed upon in a meeting with the City and Environment Directorate (CED) on 17th July, 2025.

The responses to the previous RFI matters, which EPSDD considered to have been adequately addressed, have been retained in this report at Section 7.

2 EXISTING CONDITIONS

2.1 SITE LOCATION

The subject site is located on the southern corner of University Avenue and Marcus Clarke Street in Canberra, as shown in the locality plan at Figure 1, below.

Figure 1 Site Locality Plan



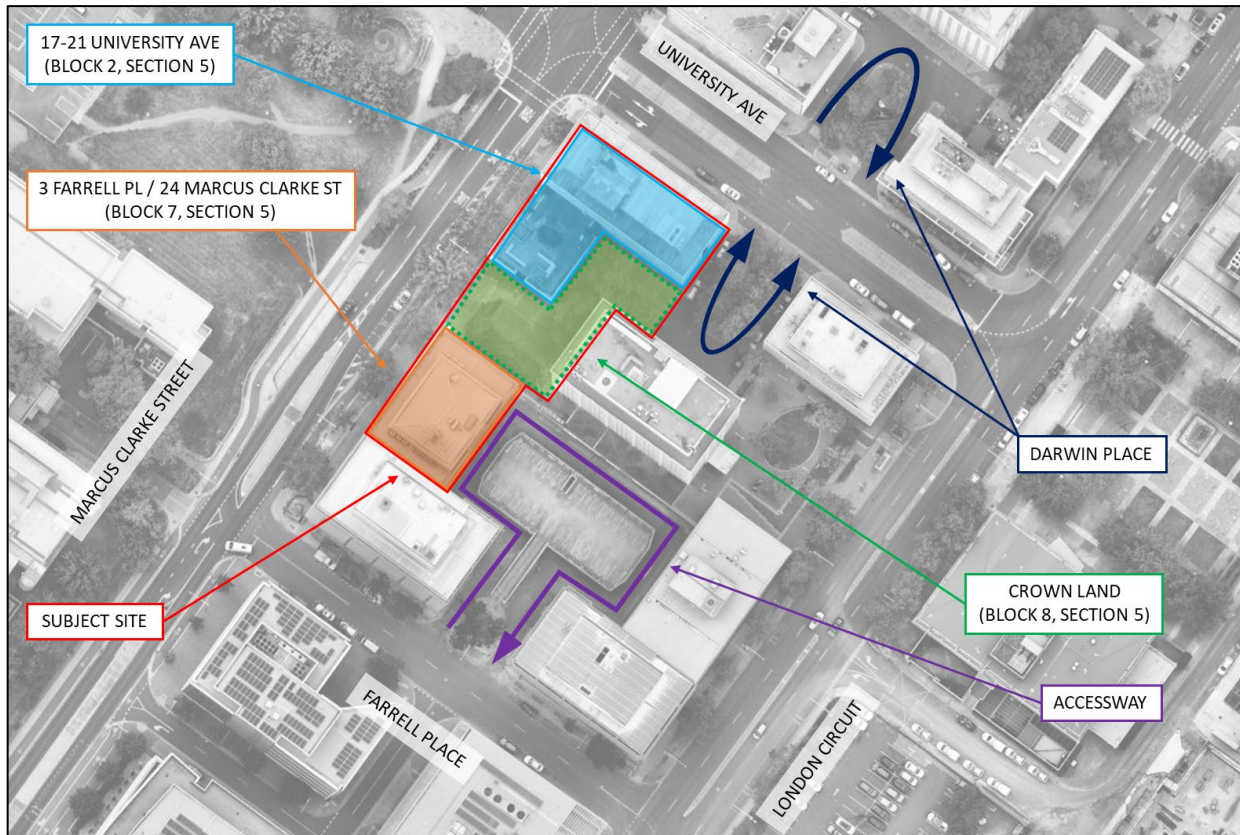
The site comprises three (3) blocks of land as follows:

- The northern block (17-21 University Avenue – City Block 2, Section 5) is located on the south-eastern corner of University Avenue and Marcus Clarke Street and currently accommodates a multi-storey office building with ground level retail. No on-site car parking is provided. The rear of the northern block abuts Darwin Place, which provides a 'loop' connection to/from University Parade. The loop on the northern side of University Parade is signed and line-marked to allow one-way (clockwise) flow to/from University Parade. The loop on the southern side of University Parade, which abuts the rear of the northern parcel, is not signed or line-marked however observations at the site indicate that the loop operates in a one-way (clockwise) arrangement only.
- The southern block (3 Farrell Place / 24 Marcus Clarke Street – City Block 7, Section 5) is located on the south-eastern side of Marcus Clarke Street and currently accommodates a multi-storey office building. The rear of the southern block abuts an accessway that provides a 'loop' connection to/from Farrell Place. The accessway circulates around a double-storey car parking structure and is signed and line-marked to allow one-way (clockwise) flow to/from Farrell Place. Four (4) double width garages are provided beneath the building, which are accessed from the above accessway; and
- The central block (City Block 8, Section 5) is currently crown land that accommodates landscaped areas and a pedestrian thoroughfare from Marcus Clarke Street to Darwin Place, London Circuit and the accessway to/from Farrell Place.

It is understood that this block has been approved in principle for purchase from the territory

The existing layout of the site is shown in the aerial photograph at Figure 2.

Figure 2 Existing Site Layout



The site is located in the Canberra City Centre and is surrounded by a mixture of commercial, retail, educational, legal and residential land uses.

Notable land uses in the vicinity of the site include the Australian National University to the immediate west of the site, Canberra City Police Station and Courts approximately 100 metres east of the site, and Lake Burley Griffin approximately 600 metres south of the site.

2.2 PLANNING ZONES

Figure 3 shows the location of the site as defined by the ACT Territory Plan zoning maps.

Figure 3 ACT Territory Plan Zoning Map

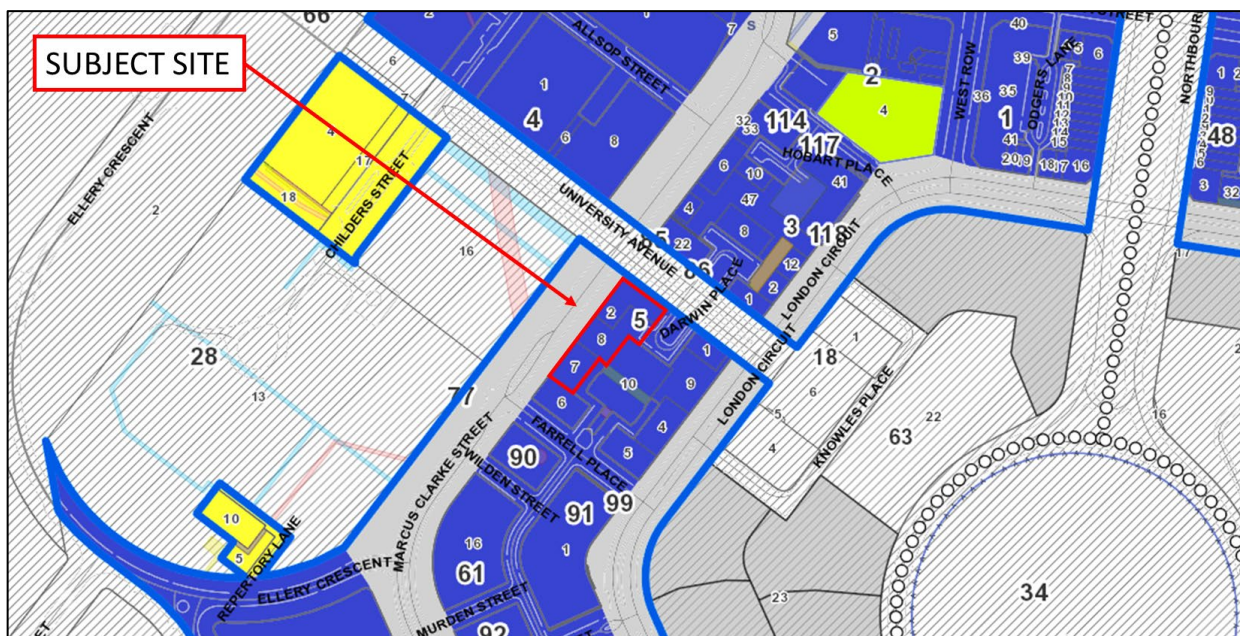


Figure 3 identifies the site as being zoned for commercial (CZ1: Core Zone) use.

The *City Centre Development Code* states that:

"This Zone is the main business core of higher order commercial centres and is the primary location of shops, non-retail commercial uses, restaurants, commercial accommodation, and indoor entertainment facilities. Residential and community uses are also permissible, subject to design and siting to minimise incompatibility with primary uses."

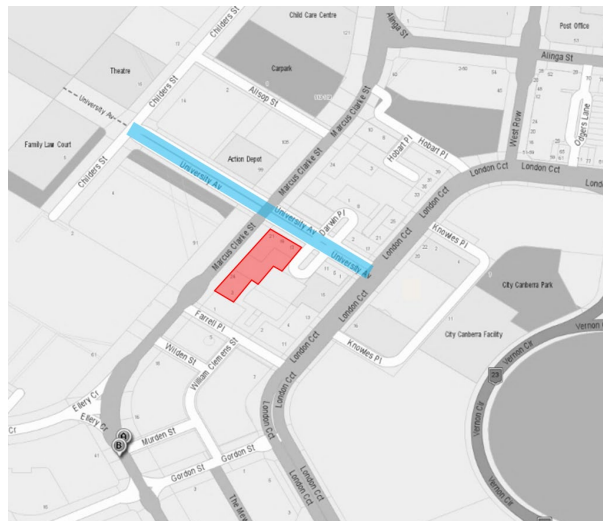
2.3 SURROUNDING ROAD NETWORK

2.3.1 UNIVERSITY AVENUE

University Avenue is classified as a 'main avenue' in the ACT Road Hierarchy. It forms the north-eastern boundary of the northern land parcel and extends in a southeast-northwest alignment from London Circuit at its eastern end to Childers Street within the ANU University Grounds at its western end.

University Avenue at the site frontage has a reservation width of approximately 30 metres which accommodates dual carriageways separated by a central median of 3.5 metres width.

Each carriageway typically accommodates a central travel lane and a parallel kerbside parking lane. A break in the median to the immediate east of the site allows for turning movements to/from Darwin Place in all directions.



Pedestrian footpaths are provided along both sides of the reservation and an area wide 40km/h speed limit applies.

Figure 4 shows the existing configuration of University Avenue along the site frontage.

Figure 4 University Avenue, looking southeast towards break in median opposite Darwin Place



2.3.2 MARCUS CLARKE STREET

Marcus Clarke Street is classified as a 'major collector road' in the ACT Road Hierarchy. It forms the north-western boundary of the subject site and generally extends in a north to south alignment from Barry Drive at its northern end to Edinburgh Avenue at its southern end.

Marcus Clarke Street at the site frontage has a reservation width of approximately 40 metres, which at the south of the site accommodates dual carriageways separated by a central median of 3.5 metres width.

The central median is removed at the north of the site to provide a right-turn lane into University Avenue.

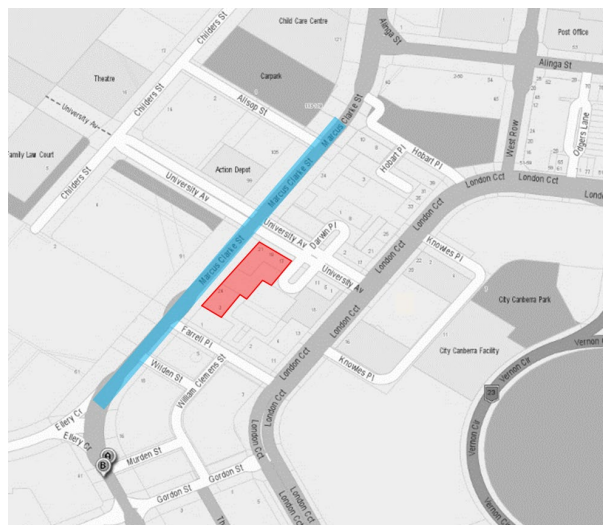
Each carriageway provides a single vehicular travel lane in each direction, with parallel kerbside parking provided along the south-westbound (site frontage) carriageway and indented parallel car parking spaces provided in locations along the north-eastbound carriageway.

Dedicated and/or raised bicycle lanes are provided on both sides of the carriageway adjacent to the footpaths, which form part of the 'C8' bicycle route through central Canberra.

An area wide 40km/h speed limit applies.

Figure 5 shows the existing configuration of Marcus Clarke Place along the site frontage.

Figure 5 Marcus Clarke Place, looking southwest along site frontage from the corner of University Avenue



2.3.3 FARRELL PLACE

Farrell Place extends in a southeast-northwest alignment from London Circuit at its eastern end to Marcus Clarke Street at its western end.

Farrell Place has a reservation width of approximately 20 metres which accommodates a single two-way carriageway of approximately 11.5 metres width.

Each side of the carriageway comprises a central travel lane and kerbside parking lane.

Footpaths are provided on both sides of the reservation and an area wide speed limit of 40km/h applies.

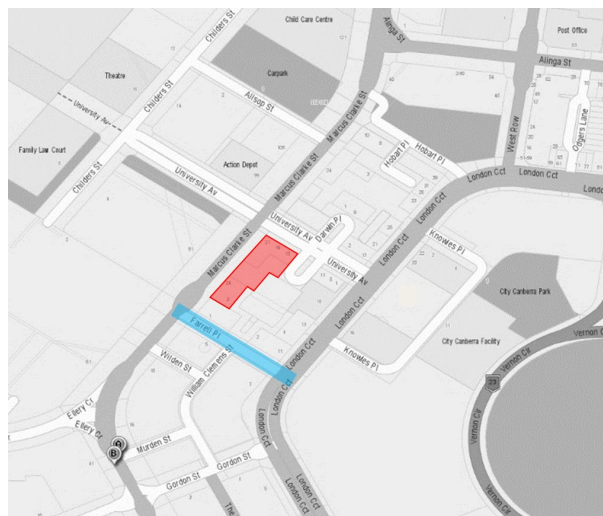


Figure 6 Farrell Place, looking northwest from accessway at rear of site



2.3.4 FARRELL PLACE ACCESSWAY

The rear of the southern block abuts an accessway that provides a 'loop' connection to/from Farrell Place as shown at Figure 2. The accessway circulates around a double-storey car parking structure and is signed and line-marked to allow one-way (clockwise) flow to/from Farrell Place.

Vehicular access to the upper level of the car park is provided from a vehicular ramp to/from Farrell Place, which is flanked to north and south by the respective ingress and egress to the accessway.

Each of the abutting properties, including the subject site and lower level of the central car park, is provided with various points of vehicular and pedestrian access from the laneway.

The photographs at Figure 7 and Figure 8 show the existing configuration of the Farrell Place accessway and the existing vehicular access points to the garages on the site.

Figure 7 Accessway near intersection with Farrell Place

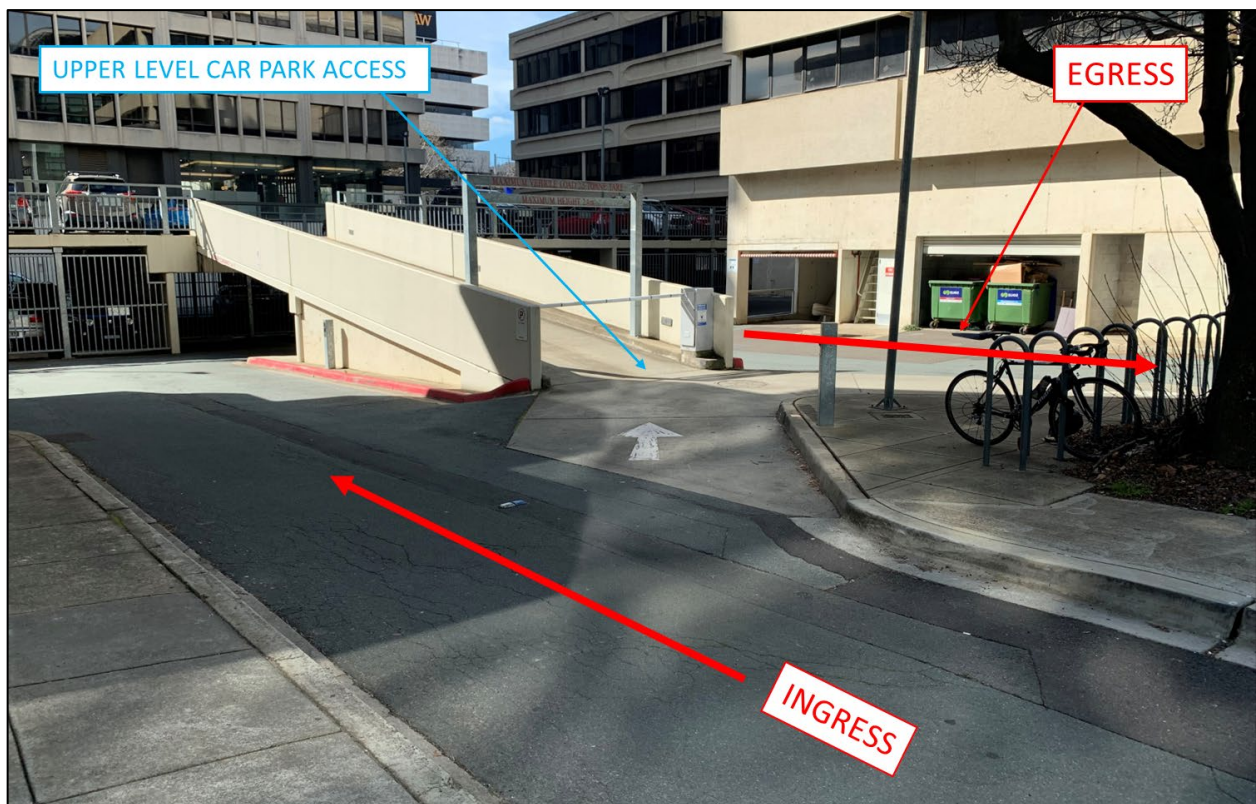
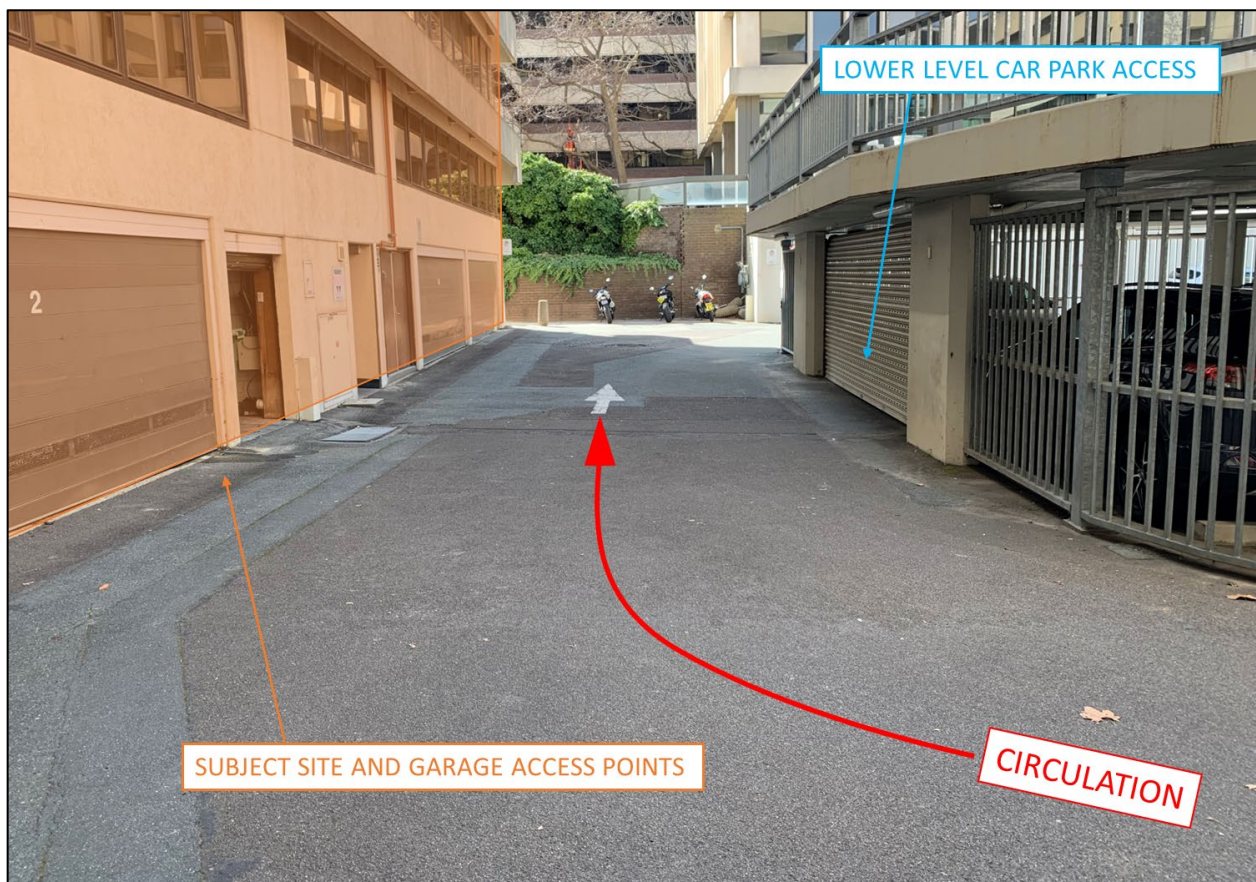


Figure 8 Vehicular Access to site from Farrell Place Accessway



2.3.5 DARWIN PLACE

Darwin Place forms a 'loop' connection on either side of University Parade. The loop on the northern side of University Parade is signed and line-marked to allow one-way (clockwise) flow to/from University Parade. The loop on the southern side of University Parade, which abuts the rear of the northern parcel, is not signed or line-marked, however observations at the site indicate that the loop operates in a one-way (clockwise) arrangement only.

The Darwin Place loop at the rear of the site provides a carriageway width of approximately 4.8 metres and permits parallel kerbside parking on the outer side of the carriageway only. The parking is subject to 'Loading Zone' parking controls between 7:30am and 6:00pm, Monday to Friday.

A further two (2) DDA Accessible spaces are located in a 90-degree parking arrangement at the southwest of the loop opposite the landscaped area.

The aerial image at Figure 9 shows the existing configuration of Darwin Place relative to the subject site and the photograph at Figure 10 shows Darwin Place as viewed from University Avenue.

Figure 9 Darwin Place Configuration adjacent to Subject Site

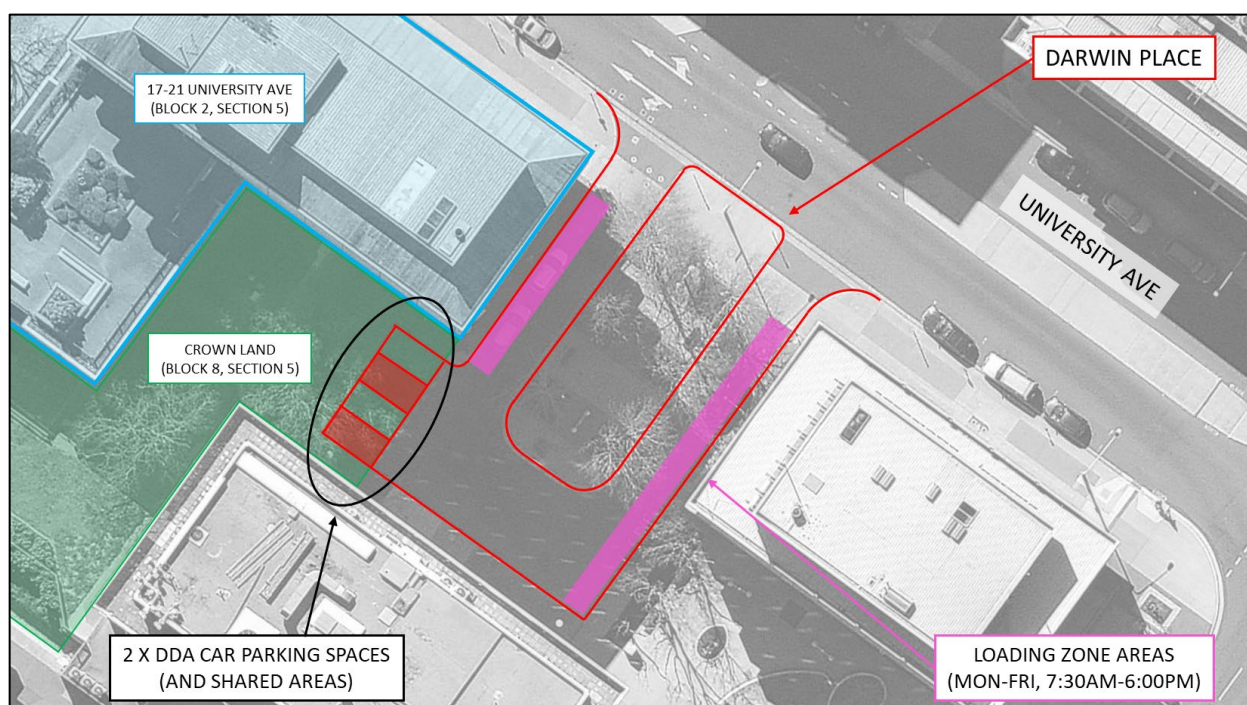


Figure 10 Darwin Place, as viewed from University Avenue



2.4 INTERSECTIONS

The following intersections are located within close proximity of the site:

- **University Avenue intersects Marcus Clarke Street** at a four leg signalised intersection. Each leg provides a shared left/through and shared through/right approach lane.
- **University Avenue intersects London Circuit** at a stop-controlled T-intersection at which London Circuit forms the priority route.

University Avenue provides a single approach and departure lane which are separated by a central median. London Circuit provides two lanes in each direction that are separated by a central median, with turning movements accommodated from shared turning/through lanes.

- **Farrell Place intersects Marcus Clarke Street** at a stop controlled T-intersection at which Marcus Clarke Street forms the priority route.

Farrell Place provides a single approach and departure lane. Marcus Clarke Street provides a single travel lane in each direction and a break in the central median that accommodates a short right turn treatment. The break is of insufficient width to accommodate a stored right-turning vehicle from Farrell Place, which needs to undertake this movement in one manoeuvre.

- **Farrell Place intersects London Circuit** at a stop controlled T-intersection at which London Circuit forms the priority route.

Farrell Place provides a single approach and departure lane. London Circuit provides two lanes in each direction that are separated by a central median, with turning movements accommodated from shared turning/through lanes.

The layout of the above intersections are shown in the aerial photographs at Figure 11 and Figure 12, below

Figure 11 University Ave / Marcus Clarke St (L) and University Ave / London Cct (R)

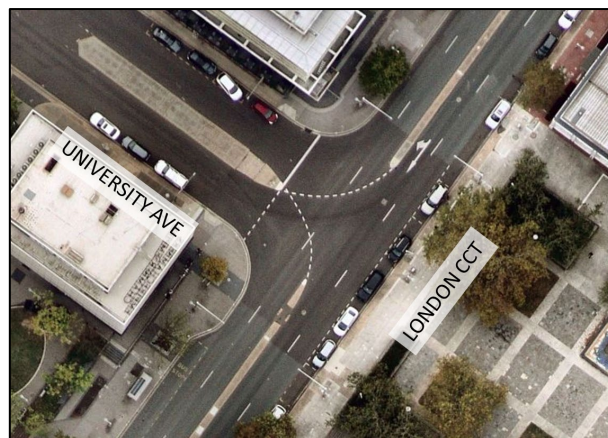
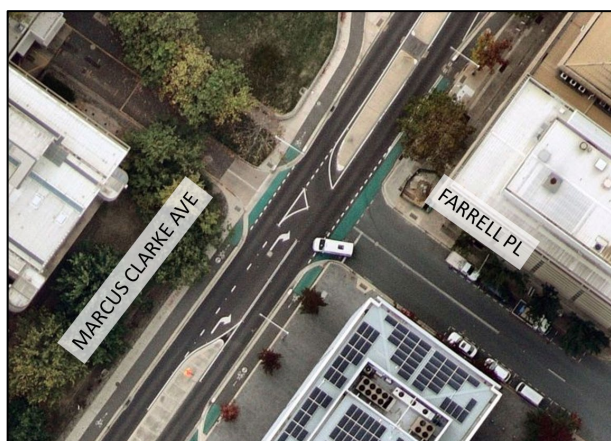


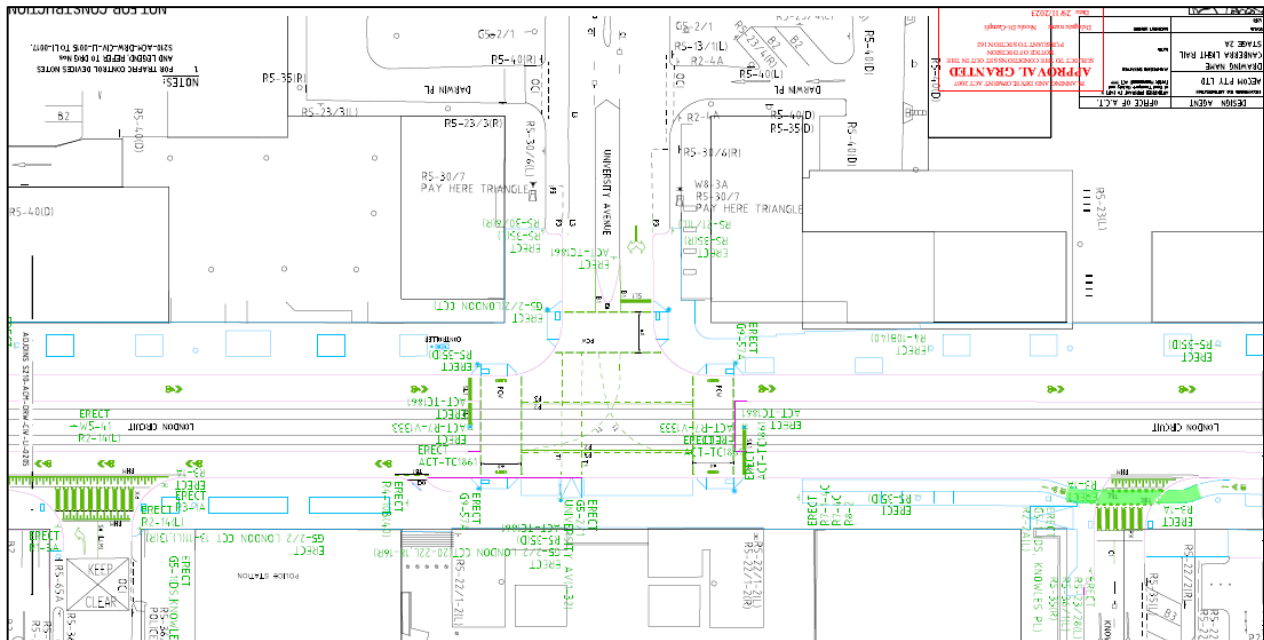
Figure 12 Marcus Clarke St / Farrell Pl (L) and Farrell Place / London Cct (R)



It is understood that major works are currently being undertaken at the intersection of London Circuit and University Avenue to accommodate Light Rail Stage 2B along London Circuit.

An excerpt from the approved signage and line-marking plan prepared for the intersection works (which was provided to SALT by TCCS in April 2024) is presented at Figure 13, below.

Figure 13 Proposed London Circuit / University Avenue Intersection Works



The above works seek to introduce dedicated central tram lanes in both directions on London Circuit, effectively reducing vehicular movement on London Circuit from four lanes to two lanes (one lane in each direction).

To maintain a fully directional access, this lane reduction will require both London Circuit approach lanes to operate as 'shared lanes' that accommodate both through and turning movements.

The plan also indicates that the intersection will be signalised and pedestrian crossings will be provided on all three approach legs.

TCCS advised that no signal phasing had been determined for the intersection at the time of it being provided to SALT.

2.5 SUSTAINABLE TRANSPORT

2.5.1 WALKABILITY

The location of the site within central Canberra is well located to take advantage of the public transport, commercial, retail and recreational uses that are located within convenient walking distance, such as the light rail service and subsequent connections provided from Northbourne Avenue; the retail, food & beverage, services and facilities located along Lonsdale Street; and the recreational facilities at Haig Park.

In the area surrounding the subject site, pedestrians are primarily accommodated by standard concrete or asphalt footpaths within the road reserve.

The location of the site has been assessed using the 'Walkscore' performance tool, which is a web based assessment tool developed in 2007 using Google maps tools. The tool takes into account the number of facilities within close proximity and provides a numerical score between 0 and 100, with a score near 100 indicating that numerous services and amenities are easily accessible to the site.

The 'Walkscore' for the subject site of 97 out of 100 indicates that the subject site is a 'walkers paradise', where 'daily errands do not require a car'.

2.5.2 CYCLING FACILITIES

The subject site is well located to the walking and cycling facilities provided throughout the city centre and the connections that they provided to the wider Canberra area.

The City Centre Walking and Cycling Map in the immediate vicinity of the site is presented at Figure 14, below.

Figure 14 Proximate Cycling Facilities



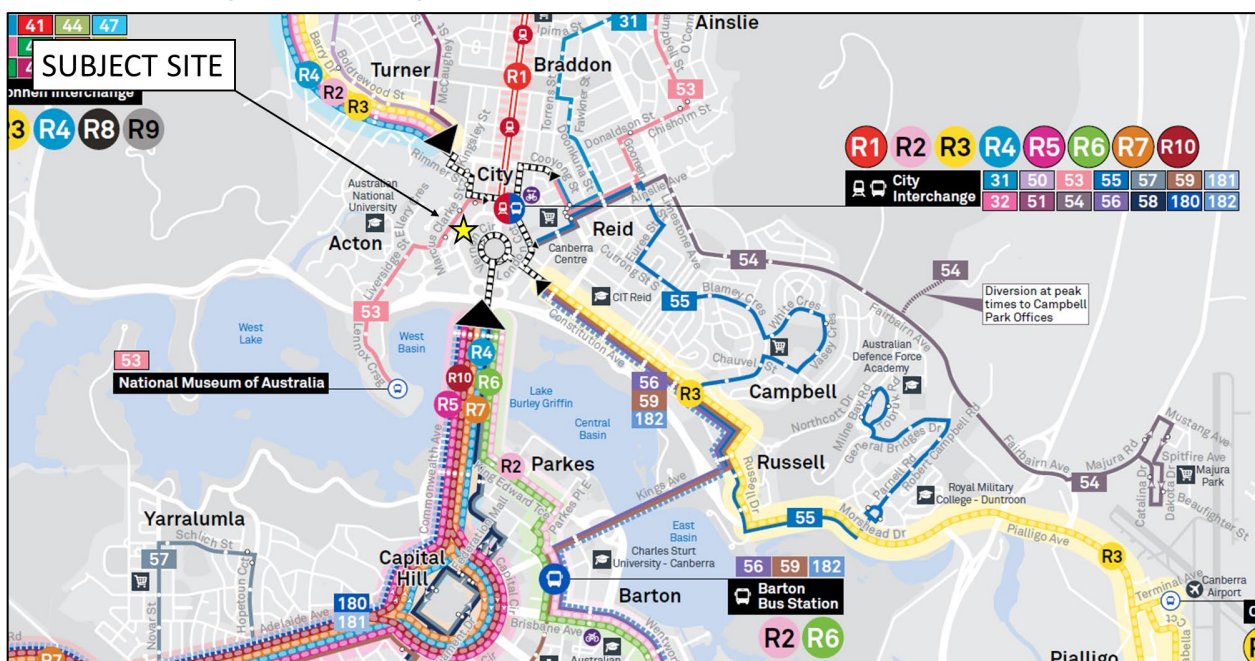
The C8 (City Loop) bike route passes along the Marcus Clarke Street frontage of the site, providing a connection to the C1 (City - Gungahlin) bike route to the north of the site and the Lake Burnley Griffin Circuit to the south of the site.

Several bicycle rails were observed at or along the site frontages on University Avenue, Marcus Clarke Street and Farrell Place in the immediate vicinity of the site which appeared to be underutilised at the time of our inspection.

2.5.3 PUBLIC TRANSPORT

The site has excellent public transport accessibility, with the services identified at Figure 15 located within close proximity of the site.

Figure 15 Public Transport Provision (Map)



The 'City West' bus stop (ID 1821) is located on the northern corner of University Avenue and Marcus Clarke Street opposite the site which services the #53 route. The Marcus Clarke Street / Rimmer Street bus stop is located approximately 170 metres north of the site and caters to a further fourteen (14) bus routes.

The site is also located within a convenient walking distance of the Canberra Light Rail (R1) service at the intersection of Northbourne Avenue and Elouera Street approximately 550 metres northeast of the site, and the City Interchange from where all citybound bus services throughout the Canberra can be accessed.

The full public transport services proximate to the site are summarised at Table 1.

Table 1 Proximate Public Transport Services

Service	Route	Route Description	Nearest Stop	Approx. Distance (Walking Time)
Light Rail	R1	Gungahlin Place – Alinga Street (City)	N'bourne Ave	550 metres (8 mins)
Bus	R2	Fraser, Dunlop, Macgregor, Kippax, Holt, Florey, Belconnen Interchange, Bruce, Australian National University (ANU), City Interchange, Barton Interchange, Parkes, Kingston, Canberra Railway Station, Fyshwick	Marcus Clarke Street	170 metres (2 mins)
	R3	Spence, via Copland Drive, Florey, Belconnen Interchange, Bruce, Australian National University (ANU), City Interchange, Russell, Airport, Brindabella Park		
	R4	Belconnen Interchange, Bruce, Australian National University (ANU), City Interchange, Woden Interchange, Greenway, Tuggeranong Interchange		
	R5	Australian National University (ANU), City Interchange, Woden Interchange, Wanniasa, Erindale Interchange, Calwell, Lanyon Marketplace		
	R6	Australian National University (ANU), City Interchange, Parkes, Barton, Kingston, Griffith, Narrabundah, Garran, Woden, Canberra Hospital		
	R7	Australian National University (ANU), City Interchange, Weston Creek, Cooleman Court, Duffy		
	R10	Denman Prospect, Coombs, Wright, City Interchange, Australian National University (ANU)		
	32	City Interchange, Aranda, Cook, Weetangera, Macquarie, Jamison Centre, Belconnen, Belconnen Interchange		
	50	Watson, Downer, Dickson, Dickson Interchange, Lyneham, O'Connor, Australian National University (ANU), City Interchange		
	51	Dickson, Dickson Interchange, North Lyneham, Lyneham, Turner, O'Connor, Australian National University (ANU), City Interchange		
	59	oden Interchange, Forrest, Barton Interchange, Russell, City Interchange, ANU Rimmer St		
	180	City Interchange, Australian National University (ANU), Lanyon Market Place, Greenway, Conder, Banks		
	181	City Interchange, Australian National University (ANU), Greenway, Gordon, Banks, Conder, Lanyon Market Place		
	182	Australian National University (ANU), City Interchange, Reid, Russell, Barton, Kingston, Chisholm, Calwell, Conder, Lanyon Market Place		
	53	Dickson, Dickson Interchange, Hackett, Ainslie, City Interchange, Australian National University (ANU), Acton	Marcus Clarke Street	20 metres (<1 mins)
All other Rapid Bus Services & citybound bus services			City Interchange	350–700 metres (4 to 9 mins)

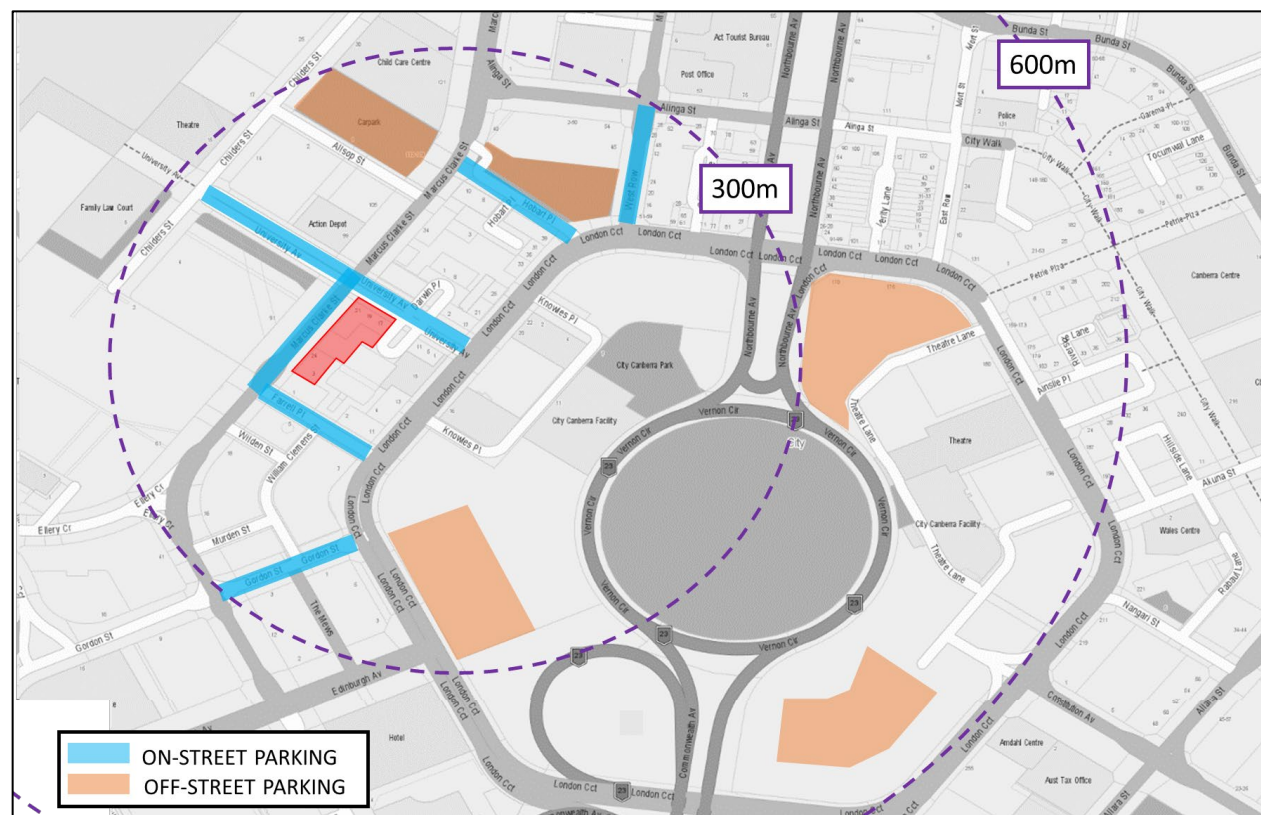
2.6 EXISTING TRAFFIC AND CAR PARKING CONDITIONS

2.6.1 SURVEYED CAR PARKING DEMANDS

In 2024, SALT commissioned Trans Traffic Surveys to undertake updated car parking occupancy surveys within close proximity of the site to determine the existing availability for public car parking spaces.

The on-street and off-street car parking areas captured in the surveys are illustrated at Figure 16.

Figure 16 Surveyed Car Parking Areas



The surveys were undertaken at hourly intervals across the following times:

- Thursday 9th May, 2024 11:00am–7:00pm
- Saturday 11th May, 2024 11:00am–7:00pm

The surveys identified a total of 2,133 car parking spaces within the survey area, most of which are located in publicly available off-street car parks to the north and east of the site.

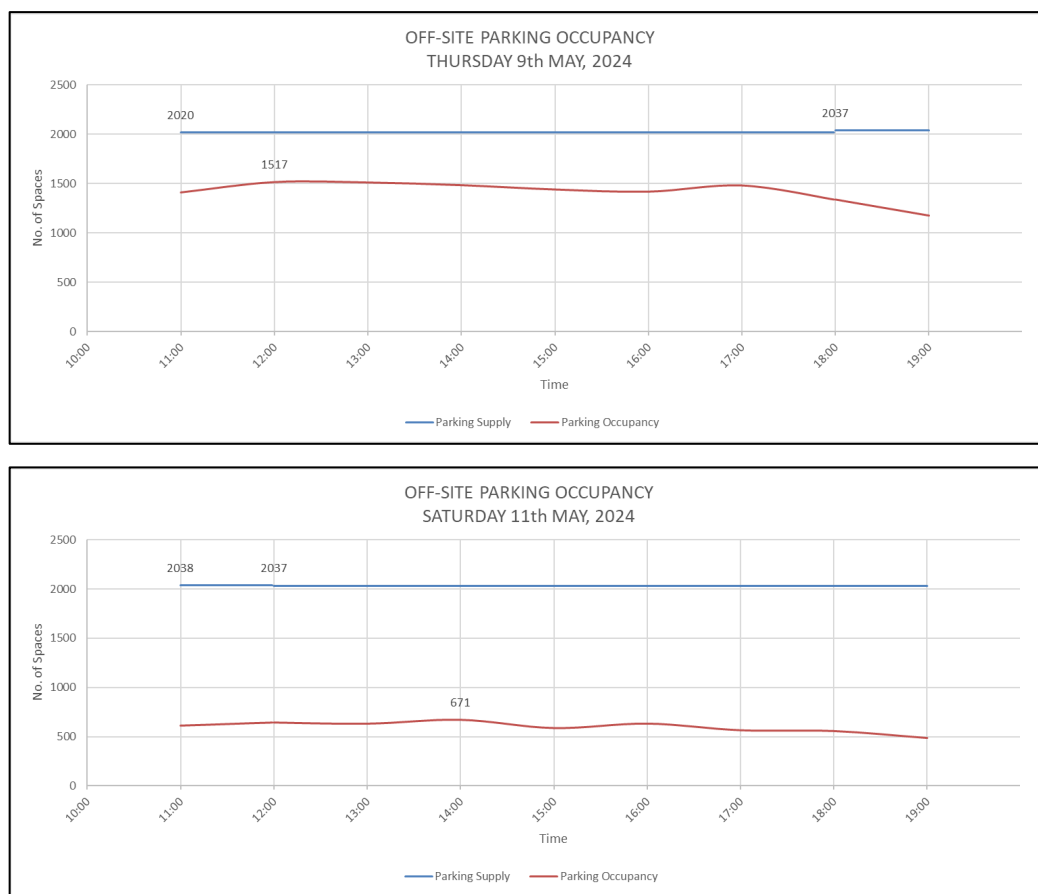
In total, there were between 2,020 and 2,038 publicly available car parking spaces that allowed a stay of half an hour or more depending on the time of day and week (due to loading and time based parking controls).

- The Thursday survey identified a peak car parking demand for 1,517 spaces at 12:00pm midday. This equates to an occupancy of 75% of the surveyed car parking supply, and at which time there were 503 car parking spaces available; and
- The Saturday survey identified a peak car parking demand for 671 spaces at 2:00pm in the afternoon. This equates to an occupancy of 33% and at which time there were 1,366 car parking spaces available.

The utilisation of surveyed car parking spaces across the two survey periods are illustrated in the graphs at Figure 17.

The full car parking survey data is attached at APPENDIX 1.

Figure 17 Utilisation of Surveyed Car Parking Spaces – Thursday 9th and Saturday 11th May, 2024



2.6.2 EXISTING TRAFFIC CONDITIONS

SALT commissioned Trans Traffic Surveys to undertake turning volume counts at the following intersections:

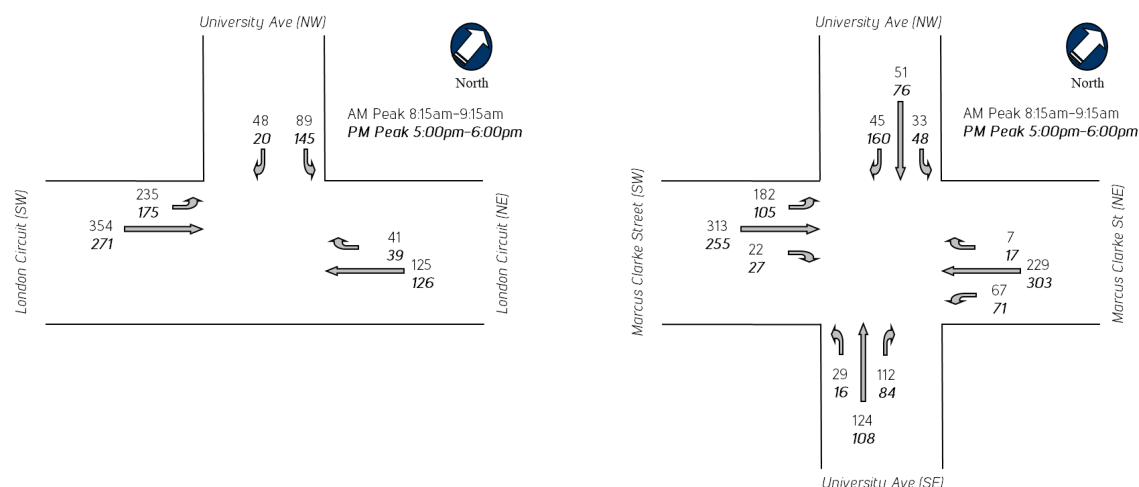
- University Avenue / Marcus Clarke Street; and
- University Avenue / London Circuit.

The surveys were undertaken on Tuesday 13th September, 2022 across the following time periods:

- 6:30am-9:30am; and
- 3:30pm-6:30pm

The peak hours of vehicular activity at both intersections were recorded between 8:15am and 9:15am in the morning, and between 5:00pm and 6:00pm in the evening. These traffic volumes are presented at Figure 18.

Figure 18 Surveyed Peak Hour Turning Volumes



2.6.3 SIDRA ANALYSIS

SALT has reviewed the operation of the intersections under 'base case' conditions using SIDRA9 Intersection software. This computer package measures the performance of an intersection using a range of parameters, as described below:

Degree of Saturation (D.O.S.) is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement. Where an intersection is oversaturated, this indicates that not all traffic can pass through the control mechanism. Under such conditions, the degree of saturation would be greater than 1.0 (100%).

AustRoads "Guide to Traffic Management Part 3: Transport Study and Analysis Methods (AGTM3)" states that

"In practice the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to.

These are usually called 'practical degrees of saturation'."

The *95th Percentile [95%ile] Queue* represents the maximum queue length, in metres, that could be expected to be observed on 95% of occasions during the analysis period. (i.e. it is the queue length that only has a 5% chance of being exceeded during the analysis time period).

Level of Service (L.O.S.) is a qualitative measure which can be based on various traffic factors such as speed, volume of traffic, degree of saturation, delays and freedom to manoeuvre.

AustRoads "Guide to Traffic Management Part 3: Transport Study and Analysis Methods (AGTM3)" states that the performance measure for defining LOS at sign controlled and signalised intersections is delay.

The TCCS document "Guidelines for Transport Impact Assessment (2020)" states that the 'Delay RTA NSW method' is to be used when defining levels of service, which are reproduced at Table 2.

Table 2 Level of Service Ratings (RTA Method)

L.O.S.	Average Delay per Vehicle (secs/veh)
A	$d \leq 14$
B	$15 < d \leq 28$
C	$29 < d \leq 42$
D	$43 < d \leq 56$
E	$57 < d \leq 70$
F	$70 < d$

SIDRA does note however that 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. This is due to zero delays associated with major road movements.

For the signalised intersection at University Avenue and Marcus Clarke Street, SALT has sourced the phasing diagram and timing history from Transport Canberra and City Services (TCCS) for the peak commuter periods on the day of the survey.

The data indicates that the intersection operated with an average cycle time of approximately 100 seconds during both peak periods.

Based on the above, the key outputs from the SIDRA analysis for the two (2) intersections are produced at Table 3.

Table 3 SIDRA Intersection Summary – Existing Farrer Street / Fawknor Street Intersection Operation

Approach	AM Peak Period				PM Peak Period			
	D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S	D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S
London Circuit (NE)	0.063	1.9	2.4	-	0.058	1.8	2.1	-
University Avenue (NW)	0.205	5.3	11.0	A	0.175	4.6	8.9	A
London Circuit (SW)	0.168	0.0	2.3	-	0.126	0.0	2.2	-
Intersection	0.205	5.3	3.6	-	0.175	4.6	3.6	-
University Avenue (SE)	0.406	65.9	31.9	C	0.508	58.3	42.0	C
Marcus Clarke Street (NE)	0.376	64.4	26.1	B	0.511	91.4	27.3	B
University Avenue (NW)	0.409	36.4	47.1	D	0.524	74.7	39.0	C
Marcus Clarke Street (SW)	0.418	73.2	28.2	B	0.332	57.4	27.7	B
Intersection	0.418	73.2	30.5	C	0.524	91.4	32.5	C

The analysis indicates that the University Avenue / London Circuit intersection currently operates below capacity with minimal delay and queue lengths on all approaches.

The University Avenue / Marcus Clarke Street intersection operates below capacity with a Level of Service 'C'.

The full SIDRA Movement Summaries are attached at APPENDIX 2.

2.6.4 IMPACT OF PROPOSED UNIVERSITY AVE / LONDON CCT INTERSECTION WORKS

The intersection of University Avenue and London Circuit is proposed to be modified to accommodate the Stage 2B Light Rail project.

The signage and line-marking plan at Figure 13 shows the layout of the intersection, which will reduce the number of trafficable lanes on London Circuit to establish tram lanes in both directions.

At the time of the previous submission, TCCS instructed SALT (in an online meeting with TCCS and the project team) to apply an arbitrary phasing for the purposes of assessment.

In determining a phasing, it was identified that the signage and line-marking plan indicated a single shared lane would be provided on all approaches:

- The southwest London Circuit approach would provide a shared through / left-turn lane;
- The northeast London Circuit approach would provide a shared through/right-turn lane; and
- The University Avenue approach would provide a shared left-turn / right-turn lane.

Given the above, each approach leg has the potential for a particular movement to block the remaining approach traffic if movements are to be controlled with arrow lanterns.

Notwithstanding, it was not the purpose of the assessment to design the intersection or its signal phasing, which are independent of the development application.

Accordingly, the phasing at Figure 19 was adopted to assess the operation of the intersection.

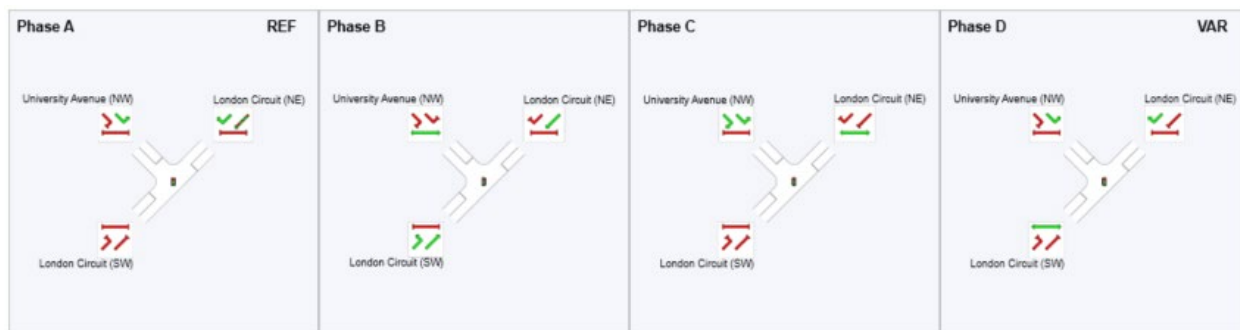
This phasing sequence:

- Has three fixed phases (A, B & C):
 - Phase A stops the southwest London Circuit approach to allow protected right-turn movements from London Circuit into University Avenue;
 - Phase B allows all London Circuit approach movements except the above right-turn movement; and
 - Phase C allows all turning movements from University Avenue; and
- Has one variable phase (D) for turning movements between the NW University Avenue and NE London Circuit leg, which has largely been introduced to allow the pedestrian signals on the SW University Avenue approach to operate.

Light rail movements operate unopposed in both directions during Phase B.

As a result of the above phasing, there would be no right-turn filtering of vehicle movements (across other vehicles, trams or pedestrians) and only left-turn movements will be required to yield to pedestrians.

Figure 19 Arbitrary London Circuit / University Avenue Intersection Phasing



SALT undertook an assessment of the existing peak hour traffic volumes through the altered intersection arrangement with the above phasing.

In doing so, a cycle time of 100 seconds (as per the Marcus Clarke / University Avenue intersection) and allowance for 12 light rail units in each direction during the AM peak hour and 10 light rail units in each direction during the PM peak hour (as per the existing light rail frequency along Northbourne Avenue) was adopted.

The key outputs of that SIDRA analysis are presented against the existing unsignalised outputs from Table 3 for comparison at Table 4.

Table 4 Comparison of Existing Layout & Proposed Signalisation of London Cct / University Ave Intersection

Peak	Approach	Existing Layout				Signalised Layout			
		D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S	D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S
AM Peak	London Circuit (NE)	0.063	1.9	2.4	-	0.718	62.8	47.0	D
	University Avenue (NW)	0.205	5.3	11.0	A	0.487	48.5	48.0	D
	London Circuit (SW)	0.168	0.0	2.3	-	0.721	176.4	26.1	C
	Intersection	0.205	5.3	3.6	-	0.721	176.4	33.4	C
PM Peak	London Circuit (NE)	0.058	1.8	2.1	-	0.563	57.5	42.6	D
	University Avenue (NW)	0.175	4.6	8.9	A	0.366	50.0	39.2	D
	London Circuit (SW)	0.126	0.0	2.2	-	0.577	123.5	25.8	C
	Intersection	0.175	4.6	3.6	-	0.577	123.5	32.3	C

The outputs indicate the proposed signalisation works would increase saturation levels, queue lengths and delays on all approaches.

This is generally due to the reduction in approach lanes / vehicle throughput on both London Circuit approaches and the introduction of signals which introduce stop line delays to all approaches.

Notwithstanding, the above outputs will serve as a benchmark against which the impacts of traffic generated by the development application can be assessed (See Section 6.4) as per the previous submission.

3 PROPOSED DEVELOPMENT

3.1 GENERAL

Syzygy proposes to demolish the two existing office buildings to allow for the development of two (2) distinct buildings at the north and south of the consolidated site.

- The building at the north of the site (Building A) is proposed to provide four (4) commercial tenancies at ground level fronting University Avenue and Marcus Clarke Street, with apartment levels constructed above.
- The building at the south of the site (Building B) is proposed to provide three (3) commercial tenancies at ground level fronting Marcus Clarke Street, with apartment levels constructed above.

A common basement is proposed to be constructed beneath the consolidated site, which will be 5 levels deep beneath Building A at the north of the site and 3 levels deep beneath Building B at the south of the site.

New landscaping is proposed to be reinstated at ground level between the two buildings, to maintain a pedestrian connection between Marcus Clarke Street and Darwin Place.

The Development Schedule for the subject proposal is provided at Table 5, below.

Table 5 Development Schedule

Land Use	Yield.
<i>Building A (North)</i>	
Commercial	436m ² (4 tenancies)
Apartments	<i>(89 no.)</i>
- 1 bedroom	40 no.
- 2 bedroom	35 no.
- 3 bedroom	14 no.
<i>Building B (South)</i>	
Commercial	278m ² (3 tenancies)
Apartments	<i>(66 no.)</i>
- 1 bedroom	33 no.
- 2 bedroom	27 no.
- 3 bedroom	6 no.
<i>Common Basement Levels</i>	
Car Parking Spaces	<i>(226 no.)</i>
- B1 Level	20 no. (including 2 DDA spaces and 2 'EV' spaces)
- B2 Level	57 no. (including 2 Adaptable Spaces and 11 'tandem pairs')
- B3 Level	68 no. (including 6 Adaptable Spaces and 11 'tandem pairs')
- B4 Level	68 no. (including 6 Adaptable Spaces and 11 'tandem pairs')
- B5 Level	13 no. 68 no. (including 2 Adaptable Spaces)
<i>Bicycle Parking Spaces</i>	<i>(217 no.)</i>
	155 residential storage lockers (B1 Lower – B5 Levels)
	28 secured resident spaces (B1 Lower – B5 Levels)
	10 secured commercial spaces (B1 Upper Level)
	24 at-grade spaces (verge)
Motorcycle Parking Spaces	<i>6 no.</i>

3.2 CAR PARKING

A total of 226 car parking spaces are proposed across the five (5) basement levels as outlined in the table above. Of these spaces, it is proposed that:

- 6 spaces on the 'Upper B1' level (inclusive of 2 x DDA Accessible Spaces) will be allocated for public use, to negate the loss of car parking proposed on Darwin Place to support the waste collection arrangement (Section 5.5);
- 14 spaces across the 'Upper B1' & 'Lower B1' levels will be allocated to the commercial tenancies for staff use (at a rate of 2 spaces per tenancy); and
- The remaining 206 spaces (inclusive of the 16 Adaptable spaces) will be allocated to residents.

The proposed allocation of car parking spaces is discussed at Section 4.1.

3.3 SITE ACCESS

Vehicular access to the site is proposed via the construction of a new two-way vehicle crossing to the Darwin Place frontage of Building A (northern building), which will require the removal of the two (2) existing spaces provided along the Darwin Place frontage.

The access will service a two-way vehicular ramp that will descend to the Upper B1 basement level. Vehicular movement between the basement levels is then proposed via inter-level vehicular ramps.

Pedestrian access to the residential lobbies of both Building A and Building B is proposed from Marcus Clarke Street.

Each of the commercial tenancies will front onto University Avenue or Marcus Clarke Street and will be provided pedestrian access directly from the abutting street network.

3.4 BICYCLE PARKING

Each of the residential apartments is proposed to be provided with a storage locker that will have suitable dimensions to accommodate a bicycle.

A further 28 bicycle spaces are located in gated compounds throughout the secured basement levels for the use of residents.

A secured bicycle compound comprising 10 bicycle parking spaces is proposed in the Upper B1 basement level for the use of commercial staff members, and a further 24 at-grade bicycle parking spaces are proposed to be provided in the Marcus Clarke Street verge for the use of the commercial and resident visitors.

3.5 WASTE COLLECTION

Waste and recycling storage rooms are proposed in the Building A ground level fronting the landscaped area between the two buildings.

Refuse collection is proposed to occur from an at-grade area to the immediate south of Building A, which will provide adequate room for a Medium Rigid Rear Lift Collection Vehicle (nom. 8.8m length) to prop within 4 metres of the waste enclosure roller doors.

Vehicular access to the collection point is proposed via the construction of a layback along the western edge of Darwin Place, which will allow the area to be constructed at grade with the bin storage room and surrounding environment, albeit enclosed by landscaping to prevent vehicle intrusion into other areas.

3.6 RELOCATION OF DARWIN PLACE CAR PARKING

To support the provision of a compliant waste collection access arrangement, the four (4) spaces on the eastern side of Darwin Place and the two (2) existing indented DDA spaces on the western side of Darwin Place are to be removed and provided in the publicly accessible Upper B1 level of the basement car park.

The DDA spaces are proposed to be upgraded to comply with the latest Australian Standard for Parking Spaces for People with Disabilities (AS2890.6:2022).

4 PARKING CONSIDERATIONS

4.1 PROPOSED ALLOCATION OF CAR PARKING SPACES

The 'Upper B1' Level of the basement car park is proposed to be publicly accessible.

This level will provide 10 spaces, comprising:

- 6 spaces (inclusive of 2 DDA Accessible spaces) that are to remain available to the public to offset the loss of car parking proposed on Darwin Place to support the waste collection arrangement; and
- 4 commercial spaces, which will be signed for the exclusive use of the tenancies to which they are assigned.

Access control is proposed at the bottom of the Upper B1 – Lower B1 ramp, beyond which the on-site car parking provision will be in a secured arrangement for the use of residents and employees only.

Of these spaces:

- 10 spaces in the Lower B1 level are proposed to be allocated and signed for the exclusive use of the commercial tenancies.
This will result in an overall commercial parking supply of 14 spaces across the Upper and Lower B1 levels, which will allow them to be assigned at a rate of 2 spaces per tenancy; and
- The remaining 206 spaces are proposed to be allocated to the apartments for residential use. This provision includes:
 - The 33 'tandem pairs', which will be allocated in pairs to individual apartments; and
 - The sixteen (16) adaptable parking spaces (3 of which are provided in the above tandem pairs with a conventional space).

On this basis, all 155 apartments and each tenancy will be provided with an on-site car parking provision, and each adaptable apartment will be provided with an adaptable parking space.

4.2 CAR PARKING REQUIREMENT

The reconsideration application is subject to the car parking requirement rates outlined in the ACT *Parking and Vehicular Access General Code*.

The subject site is located within the City Centre Core Zone (CZ1) as defined by the ACT Territory Plan map at Figure 3. Therefore:

- There is no minimum car parking requirement for residential land use; and
- The commercial tenancies are subject to minimum car parking requirement rates.

For assessment purposes:

- The commercial tenancies in Building A (northern building) will be assessed as 'shop' land uses, which have a car parking requirement for 4 spaces to every 100m² gross floor area; and
- The commercial tenancies in Building B (southern building) will be assessed as 'office' land uses, which have a car parking requirement for 1 space to every 100m² gross floor area.

This is consistent with the assumptions made for the previous DA submission.

Based on the above, the minimum statutory car parking requirement rate for the subject proposal is summarised at Table 5 below.

Table 6 Minimum Car Parking Requirement

Apartment	No.	Car Parking Rate	Car Parking Spaces
Apartment	155 no.	nil.	0
Shop	436 m ²	4 spaces per 100m ² gross floor area	18 spaces
Office	278 m ²	1 space per 100m ² gross floor area	3 spaces
Total			21 spaces

4.3 SUITABILITY OF PROPOSED CAR PARKING PROVISION

The *Parking and Vehicular Access General Code* outlines a statutory car parking requirement for 21 spaces, which is intended to accommodate both staff and customer car parking requirements.

The subject proposal includes provision for 14 staff car parking spaces at a rate of 2 per tenancy for staff use. This is (21-14) 7 spaces less than the commercial car parking requirements at Table 6.

Notwithstanding the above, the *Parking and Vehicular Access Code* outlines the following locational requirements for the provision of long-stay, short-stay, operational and visitor parking for all developments in the CZ1: Core Zone.

Table 7 Locational Requirements for Car Parking Spaces

Development	Long stay parking	Short stay parking	Operational parking	Visitor parking
All development in the CZ1: City Core Zone	On-site or in publicly available car parks up to 1km distant	On-site or within 400m	On-site or immediately adjacent	On-site or within 400m

Based on the above, the remaining requirement for 7 car parking spaces can be accommodated within 1 kilometre for staff and 400 metres for customers.

A review of the parking survey data at Section 2.6.1 indicates there were a minimum 503 and 1,366 car parking spaces available in the surveyed areas during the respective Thursday and Saturday survey periods.

This availability is more than suitable to offset the 7 further spaces associated with the commercial land use.

Based on the above, the subject proposal satisfies the statutory car parking requirement.

4.3.1 POTENTIAL IMPACTS ON PROXIMATE CAR PARKING CONDITIONS

The previous section indicates that the statutory car parking requirement for the proposal is met through the combination of on-site and publicly available car parking spaces proximate to the site as is permitted by the Estate Development Code.

Notwithstanding the above, it is important to note that the existing use of the site would generate a car parking requirement that is currently being accommodated off-site, and is likely to offset the estimated demand for 7 off-site car parking spaces associated with the subject proposal.

Based on a review of the subject site:

- The northern block accommodates an office building with a footprint of approximately 850 metres. The northern section of the building (approximately 550m²) has eight levels and the southern section of the building (300m²) has three levels; and
- The southern block accommodates a four level office building with a footprint of approximately 580m².

On the rough basis that around 60% of the building floor area is tenable, then the existing use of the site provides in the order of (0.6 x 7,620) 4,572m² of office floor area.

If the office car parking requirement rate outlined in the *Parking and Vehicular Access General Code* (1 space per 100m² of GFA) were used to estimate the car parking demand generated by this approximate floor area, the existing use of the site would generate a car parking demand for (45.72 x 1) 46 car parking spaces.

Eight (8) car parking spaces are currently provided beneath the southern block which are accessed from the Farrell Place accessway. On this basis, the existing use of the site would generate a demand for in the order of (46-8) 38 off-site car parking spaces, noting that this does not account for the higher car parking requirement rates that would be applicable to the existing retail land use at ground level of the northern block.

Therefore, the proposed car parking provision at the site is considered to both satisfy the requirements of the *Parking and Vehicular Access Code* and have a lesser impact on surrounding proximate parking conditions than the existing use of the site.

4.4 BICYCLE PARKING

4.4.1 BICYCLE PARKING REQUIREMENT

The *End-of-Trip Facilities General Code* requires that bicycle spaces be provided in mixed-use developments as per the rates at Table 8, below.

Table 8 Bicycle Parking Requirement

Land Use	No.	Employees and Residents		Visitors and Shoppers	
		Rate	No.	Rate	No.
Shop	436 m ²	1 per 250m ² GFA	2 no.	1 per 100m ² GFA	5 no.
Office*	278 m ²	1 space per 200m ² NLA	2 no.	1 space per 400m ² NLA	1 no.
Apartment	(155 no)	1 space per one or two bedroom dwelling, 2 spaces per three or more bedroom dwelling with a car parking space AND 1 space per bedroom for dwellings not allocated a car parking space	73 no. 62 no. 40 no.	1 space per 10 dwellings	16 no.
- 1 Bedroom	73 no.				
- 2 Bedroom	62 no.				
- 3 Bedroom	20 no.				
Total			179 no.		22 no.

* Assessed as non-retail commercial use

4.4.2 BICYCLE PARKING LAYOUTS

Application of the above rates suggests there is a requirement to provide 175 bicycle parking spaces for residents, 4 spaces for staff members and 22 spaces for the combined use of visitors and shop customers.

In addition to the above, the requirement for 4 staff bicycle parking spaces triggers a further requirement for a shower to be provided.

- Syzygy has advised SALT that the Environment, Planning and Sustainable Development Directorate (EPSDD) has accepted the use of storage lockers to accommodate the resident bicycle parking requirement.

The subject proposal will provide each of the 155 apartments with a residential storage locker in the secured parking levels. Each locker is proposed to have suitable internal dimensions for bicycle storage as per the Australian Standard (i.e. 1.8m long x 0.7m wide x 1.1m high), thereby providing a secured option for residents to store a bicycle in the basement level should they choose to do so.

In addition, a further 28 bicycle parking spaces are proposed in compounds throughout the secured parking levels.

Based on the above, the overall provision of resident bicycle parking will be (155+28) 183 spaces, which exceeds the resident bicycle parking requirement.

- A secured bicycle parking compound is proposed on the publicly accessible Upper B1 Level for commercial staff. The compound will provide 10 spaces which exceeds the staff bicycle parking requirement.

Accessible bathrooms / showers are proposed in the ground levels of both Buildings A and B to meet the End-of-Trip shower requirement.

- Twenty-four (24) publicly accessible bicycle parking spaces are proposed via the installation of double sided horizontal bicycle rails in the Marcus Clarke Street verge.

These spaces will be easily accessible from the shared path along the site frontage and will exceed the resident visitor and shop customer bicycle parking requirements.

The compounds in the basement provide vertical spaces at 500mm centres and allow 1.2m depth for storage and 1.5m width for access, in accordance with the vertical bicycle parking space dimensions outlined in the *Australian Standard for Bicycle Parking (AS2890.5:2015)*.

Cyclist access to the basement can be provided via the ramp from Darwin Place or alternatively via the lifts, which have been provided with an internal length of 2 metres to allow a cyclist travel between levels alongside a bicycle.

For the publicly available horizontal spaces, there is adequate verge width to allow rails to be installed at 1 metre centres and allow the storage of 1.8 metre long bicycles, whilst maintaining at least 5 metres offset from the building form to allow both cyclist access and the unimpeded movement of pedestrians along the site frontage.

Based on the above, the provision of bicycle parking spaces exceeds the minimum statutory requirements and have been designed appropriately.

5 DESIGN CONSIDERATIONS

5.1 CAR PARKING LAYOUT

The car parking levels have been assessed against the design criteria outlined in the Australian Standards for Off-Street Car Parking (AS2890.1:2004), Off-Street Car Parking for People with Disabilities (AS2890.6:2022), Adaptable Housing (AS4299:1995) and the ACT *Parking and Vehicular Access Code* where applicable.

The proposal comprises 226 car parking spaces, comprising:

- 145 spaces in a conventional 90-degree arrangement;
- 30 tandem pairs of conventional spaces (i.e. 60 spaces total);
- 13 spaces designed as 'adaptable' car parking spaces;
- 3 tandem pairs comprising a conventional space and adaptable space (i.e. 6 spaces total); and
- 2 spaces are proposed to be constructed in a 90-degree 'DDA Accessible' arrangement.

In consideration of the above:

- Each conventional and conventional tandem 90-degree space is 2.4 metres wide by 5.4 metres long and accessed from a parking aisle of at least 5.8 metres width as required for 'residential, domestic and employee parking in the Australian Standard for Off-Street Car Parking (AS2890.1:2004).

It is recognised that 4 conventional spaces in the Upper B1 level will be for public use, however these spaces are not anticipated to turn over frequently and the use of 2.4m wide spaces to allow the use of a continuous column grid throughout the development is considered reasonable;

- Each adaptable space and tandem adaptable space is 3.8 metres wide by 5.4 metres long and accessed from a parking aisle of at least 5.8 metres width as required for spaces assigned to adaptable apartments in the Australian Standard for Adaptable Housing (AS4299:1995).

With regard to the provision of 3 adaptable spaces in tandem with a conventional space, it is recognised that there is no statutory car parking requirement for residential use in this location. The provision of an ancillary conventional space in tandem behind an adaptable space is considered acceptable given that it is surplus to requirements and could be used by a second resident of an adaptable apartment that does not have the same mobility needs; and

- Each DDA Accessible space is 2.4 metres wide by 5.4 metres long and accessed from a parking aisle of at least 5.8 metres width, and is located adjacent to a shared zone with the same dimensions to accord with the design criteria outlined in the Australian Standard for Off-Street Car Parking for People with Disabilities (AS2890.6:2022).

Spaces provided adjacent to walls have been provided with an additional 300mm clearance and columns have been located to maintain the door opening zones around the spaces as per the clearance envelope in the Australian Standard.

Similarly, the parking aisle has been increased by 300mm width where vertical obstructions are located opposite spaces.

A number of blind aisles are provided throughout the car park.

- In the publicly available Upper B1 Level, a turnaround bay has been provided to allow vehicles turn around and depart the site in a forward direction in the event that all car parking spaces are occupied; and
- No turn around bays are required in the secured basement levels as all car parking spaces will be allocated to a particular dwelling or tenancy.

A floor to floor height of 3.0 metres is provided throughout the basement levels, which should allow a minimum overhead clearance of 2.2 metres to be achieved in accordance with the Australian Standard once overhead structure has been considered.

Based on the above, each of the car parking arrangements have been set out in accordance with the relevant design criteria outlined in the Australian Standards.

5.2 SITE ACCESS ARRANGEMENTS

Vehicular access to the site is proposed via the construction of a new two-way vehicle crossing to the Darwin Place frontage of Building A (northern building).

The crossing will provide vehicular access to the basement level via a 6.1 metre wide two-way vehicle ramp, which will have a carriageway width of 5.5 metres between optional 300mm kerbs in accordance with the Australian Standard.

The proposed site access arrangements will allow concurrent opposing vehicle movements to/from Darwin Place, as shown in the swept path diagrams attached at APPENDIX 3.

A pedestrian sight triangle measuring 2.0 metres along the property frontage and 2.5 metres along the accessway is provided on the departure side of the site access to ensure motorist-pedestrian sightlines are provided across the footpath in accordance with the standard.

5.3 RAMP GRADES

The G-B1 ramp provides a grade no steeper than 1:20 for the first 6 metres inside the property boundary in accordance with the Australian Standard.

Internally, all ramps provide a grade no steeper than 1:5 (20%) with adequate transitions at the top and bottom to avoid vehicular scraping or bottoming out.

The overhead height clearances above the ramps should be reviewed at the detailed design stage to ensure that a minimum 2.2 metres height clearance is maintained above all ramps and trafficable areas once structure has been determined in accordance with AS2890.1:2004.

5.4 INTERNAL CIRCULATION

5.4.1 ACCESS CONTROLS

A roller door is proposed at the base of the Upper B1 – Lower B1 level ramp to separate the publicly available and secured areas of the basement car park. Residents and commercial staff with access to the secured area of the car park will be provided with remote access to the roller door.

To support passing movements at the access controls, hold lines are proposed for inbound and outbound vehicles on the respective Upper B1 and Lower B1 levels. This will allow all propped vehicles at the access controls to queue on a grade no steeper than 1:20 as is required by the Australian Standard.

Swept path diagrams are attached at APPENDIX 3 demonstrating that inbound and outbound movements will be able to pass the anticipated inbound and outbound queued vehicles either side of the access controls as discussed at Section 6.5.1.

Convex mirrors are recommended on both levels to provide motorist sightlines along the ramp.

5.4.2 SECURED BASEMENT LEVELS

Vehicular circulation throughout the car parking levels is generally accommodated by two-way parking or circulation aisles that have a width no less than 5.8 metres. This is appropriate for two-way vehicular flow as outlined by the Australian Standard.

At 90-degree bends in alignment, it may be required for one vehicle to yield to allow another vehicle to pass, which is typical for a residential basement car park arrangement. Convex mirrors are recommended at bends in alignment to assist motorist sightlines.

Swept path diagrams are attached at APPENDIX 3 which demonstrate passing opportunities are available for vehicles circulating throughout the car park, confirming that the proposed car parking layout is suitable for a development of this nature.

5.5 WASTE COLLECTION ARRANGEMENT

A new loading area is proposed to be provided at-grade to the immediate south of Building A.

The use of this area will allow an appropriate waste collection service to be provided at the site, as both University Avenue and Marcus Clarke Street are intended to provide activated ground level uses and are not suitable to provide vehicular access to/from the abutting road network. The only other frontages provided by the consolidated site are to Darwin Place (from which the basement site access is proposed) and to the Farrell Place accessway, which does not support refuse collection vehicle access.

Given the above, and to retain a usable floorplate in the northern block that would be unachievable if used for both vehicular and loading access, it is proposed to construct a layback along the western edge of Darwin Place to provide vehicular access to an at-grade area south of Building A that can be utilised by waste collection vehicles.

The area is to be constructed at grade with the surrounding pedestrian environment, albeit enclosed by landscaping to prevent vehicle intrusion into those areas.

A hopper pad is proposed at the eastern (rear) end of the area no further than 4 metres from the waste room roller doors that will allow for rear-lift bin collection. The bin pad has been located to allow both the waste collection vehicle and bins being collection sit within the site clear of the Darwin Place reservation.

Swept path diagrams have been prepared to demonstrate Medium Rigid Vehicle (nom. 8.8m length) access to and from the area via Darwin Place and are attached at APPENDIX 3.

To support the waste collection arrangement, the existing car parking spaces along the eastern side of Darwin Place and DDA Accessible spaces on the western side of Darwin Place are proposed to be removed and relocated to the publicly accessible level of the basement car park.

The sought waste collection arrangement is very similar to that which has been approved and constructed for the multi-storey residential development at Blocks 3, 5 and 13, Section 13, City, located approximately 120 metres northeast of the site. This development also caters for waste collection in an at-grade area to the immediate south of the building, that is accessed via layback from an abutting 'place' carriageway and is separated from pedestrianised areas with bollards and landscaping.

Accordingly, the arrangement is considered reasonable given the building envelope applicable to a development upon the site, and the impracticality of accommodating on-site waste collection.

It is understood that the revised waste management strategy was verbally agreed upon in a meeting between the client and City and Environment Directorate (CED) on 17th July, 2025.

6 TRAFFIC CONSIDERATIONS

6.1 TRAFFIC GENERATION

The ACT Estate Development Code suggests that a trip generation rate of 6 vehicle movements per dwelling per day be used to assess multi-unit developments. However, Transport Canberra and City Services (TCCS) and the Environment Planning and Sustainable Development Directorate (EPSDD) reviewed the application of this trip generation rate in 2019 and found it not to be appropriate.

Accordingly, for High Density Residential Development (HDRD) in Town Centres and adjacent to Northbourne Avenue, it was determined that a single traffic generation rate of 3.37 trips per dwelling per day should be applied.

It is commonly accepted that residential peak hour traffic generation accounts for around 10% of the daily traffic stream, with residential traffic generally split 80% outbound / 20% inbound during the morning commuter peak and 40% outbound / 60% inbound during the afternoon commuter peak.

For the commercial component of the development each tenancy will be allocated two spaces each. Conservatively it has been assumed that each space will turn over twice a day and generate an inbound movement during the AM peak period and an outbound movement during the PM peak period.

The public car parking spaces in the Upper B1 Level serve to relocate existing spaces, and whilst they will generate additional movements into the basement they will not generate additional vehicle movements to the road network.

Based on the above, the increase in daily and peak hour traffic volumes anticipated to be generated by the proposal are estimated at Table 8, below.

Table 9 Site-Generated Traffic Volume Estimate

Land Use	No.	Daily	AM Peak			PM Peak		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Apartments	155 no.	522 vpd	10 vph	42 vph	52 vph	31 vph	21 vph	52 vph
Commercial	14 spaces	56 vpd	14 vph	0 vph	14 vph	0 vph	14 vph	14 vph
Total		578 vpd	24 vph	42 vph	66 vph	31 vph	35 vph	66 vph

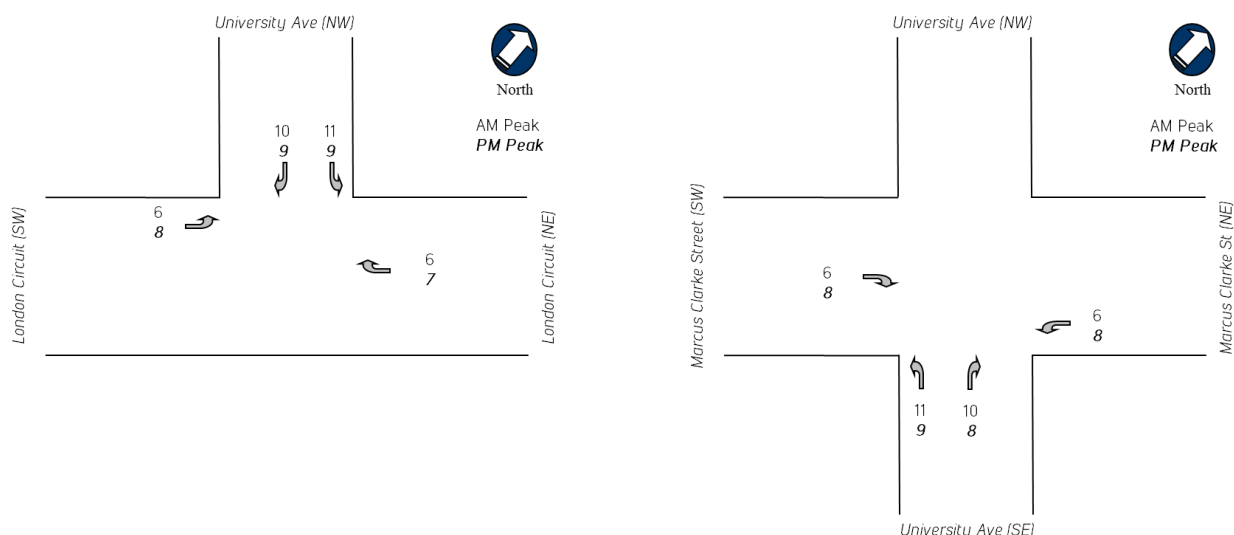
Based on the above, the subject proposal is anticipated to generate in the order of 578 vehicle movements per day, inclusive of 66 vehicular movements during each of the AM and PM peak periods.

6.2 TRAFFIC DISTRIBUTION

For assessment purposes it has been assumed that site-generated traffic will be distributed evenly to/from both Marcus Clarke Street and London Circuit, where traffic will also be distributed evenly to/from the northeast and southwest.

On this basis, the additional traffic generated by the site is illustrated at Figure 20, below.

Figure 20 Site Generated Traffic Estimate



6.3 NET CHANGE TO INTERSECTION APPROACH VOLUMES

The additional traffic generated by development of the subject site to the abovementioned intersections is presented against the existing peak hour traffic volumes at Table 9, below.

Table 10 Net Increase in Approach Volumes

Traffic Volumes	University Avenue / London Circuit		University Avenue / Marcus Clarke Street	
	AM Peak	PM Peak	AM Peak	PM Peak
Existing Volumes	892 vph	776 vph	1,214 vph	1,270 vph
Additional Site Traffic (% increase)	33 vph (+3.7%)	33 vph (+4.3%)	33 vph (+2.7%)	33 vph (+2.6%)

The additional traffic generated by the site represents around a 2.6–4.3% increase in approach traffic volumes at the University Avenue intersections with London Circuit and Marcus Clarke Street.

This is equivalent to a little over 1 additional vehicle movement through either intersection every 2 minutes (on average), which is considered relatively low in traffic engineering terms.

When compared to the previous DA submission (which was estimated to generate in the order of 29–30 vehicle movements to each intersection during the peak periods) this is equivalent to around 3 to 4 additional vehicle movements to each intersection per hour, or around 1 additional vehicle movement every 15–20 movements).

6.4 POST-DEVELOPMENT SIDRA ANALYSIS

6.4.1 EXISTING INTERSECTION LAYOUTS

SALT has reviewed the operation of the two (2) existing intersection layouts previously assessed at Section 2.6.3 under post-development conditions using SIDRA9 Intersection software.

The key outputs are presented against the base case outputs at Table 11.

Table 11 SIDRA Intersection Summary: Post-Development Operation

Approach		Existing Conditions				Post-Development			
		D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S	D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S
AM Peak	London Circuit (NE)	0.063	1.9	2.4	–	0.067	1.9	2.5	–
	University Ave (NW)	0.205	5.3	11.0	A	0.241	6.4	11.3	A
	London Circuit (SW)	0.168	0.0	2.3	–	0.170	0.0	2.3	–
	Intersection	0.205	5.3	3.6	–	0.241	6.4	3.9	–
	University Ave (SE)	0.406	65.9	31.9	C	0.437	71.9	32.3	C
	Marcus Clarke St (NE)	0.376	64.4	26.1	B	0.378	64.5	26.2	B
	University Ave (NW)	0.409	36.4	47.1	D	0.409	36.4	47.1	D
	Marcus Clarke St (SW)	0.418	73.2	28.2	B	0.429	75.6	28.7	C
	Intersection	0.418	73.2	30.5	C	0.437	75.6	30.8	C
PM Peak	London Circuit (NE)	0.058	1.8	2.1	–	0.061	1.9	2.3	–
	University Ave (NW)	0.175	4.6	8.9	A	0.202	5.4	9.2	A
	London Circuit (SW)	0.126	0.0	2.2	–	0.128	0.0	2.3	–
	Intersection	0.175	4.6	3.6	–	0.202	5.4	3.8	–
	University Ave (SE)	0.508	58.3	42.0	C	0.522	62.8	41.5	C
	Marcus Clarke St (NE)	0.511	91.4	27.3	B	0.534	93.3	28.3	B
	University Ave (NW)	0.524	74.7	39.0	C	0.524	74.7	39.0	C
	Marcus Clarke St (SW)	0.332	57.4	27.7	B	0.363	62.8	29.4	C
	Intersection	0.524	91.4	32.5	C	0.534	93.3	33.2	C

The analysis indicates that the additional traffic generated by the site will cause incremental increases to degree of saturation, queue lengths and average delay that will have no perceptible impacts on the operation of either intersection.

6.4.2 ALTERNATE LONDON CCT / UNIVERSITY AVE INTERSECTION LAYOUT

SALT has also assessed the impact of additional site-generated on the reconfigured layout of the University Avenue and London Circuit intersection (Figure 13).

The arbitrary phasing and cycle times outlined at Section 2.6.4 have been adopted for consistency.

Table 12 SIDRA Intersection Summary: Alternate London Cct / University Ave Intersection Layout

Peak	Approach	Existing Volumes				Post-Development Volumes			
		D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S	D.O.S	95 th ile Queue Length (m)	Average Delay (s)	L.O.S
AM Peak	London Circuit (NE)	0.718	62.8	47.0	D	0.729	65.4	47.6	D
	University Avenue (NW)	0.487	48.5	48.0	D	0.568	56.5	48.7	D
	London Circuit (SW)	0.721	176.4	26.1	C	0.745	182.4	27.1	C
	Intersection	0.721	176.4	33.4	C	0.745	182.4	34.7	C
PM Peak	London Circuit (NE)	0.563	57.5	42.6	D	0.584	60.2	43.0	D
	University Avenue (NW)	0.366	50.0	39.2	D	0.457	58.5	42.5	D
	London Circuit (SW)	0.577	123.5	25.8	C	0.602	128.8	26.9	C
	Intersection	0.577	123.5	32.3	C	0.602	128.8	33.9	C

The analysis indicates the additional traffic generated by the site will cause similar incremental increases to degree of saturation, queue lengths and average delay at the intersection to those which would be expected if the intersection were not modified from its existing configuration. There is no change to the Level of Service at the intersection.

Although the eventual phasing at the intersection may differ to that presented in this report, it is recognised that it is not the responsibility of this Development Application to design the signal phasing for the intersection works, and the use of an arbitrary phasing as suggested by TCCS for both the existing and post-development conditions presents an 'apples with apples' comparison of the two scenarios.

It is also consistent with the methodology used for the previous submission, which was considered acceptable in a traffic engineering context by TCCS.

Accordingly, the subject proposal will generate a traffic volume that can be accommodated on the existing and modified road network immediately surrounding the site.

6.4.3 SENSITIVITY ANALYSIS (DEVELOPMENT + 10-YEARS GROWTH)

SALT has also undertaken SIDRA analyses of the two intersections (including both London Circuit / University Avenue layouts) under a 10-year growth scenario.

In doing so, SALT initially sourced Canberra Strategic Transport Model (CSTM) data from TCCS to inform the analysis. This data suggested the 2031 turning volumes for most movements at both intersections would reduce significantly and the overall approach volumes at the intersection would be lower.

It is understood the model may project these volumes due to a factor of reasons, including potential changes to the surrounding road network, land use changes, new public transport facilities (such as the light rail extension) and a mode shift away from private vehicle use).

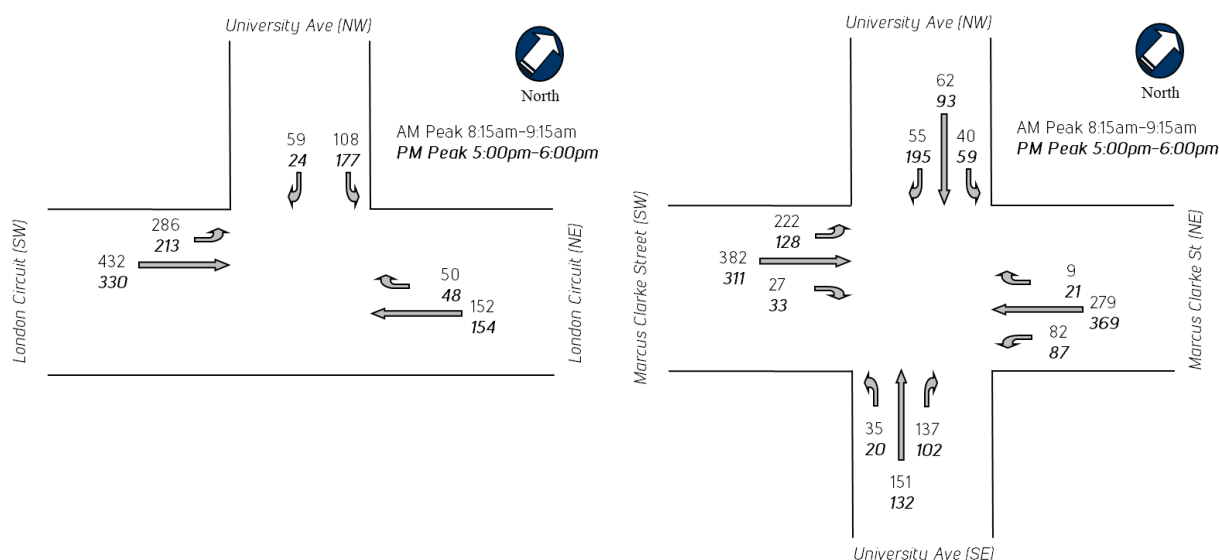
Further discussion on the 2026 and 2031 CSTM data is provided at Section 7.

Notwithstanding the above, to provide a conservative assessment of both intersections under a 10-years post-development growth scenario, SALT has adopted a compounding growth rate of 2% per annum and applied it to the surveyed traffic volumes at Figure 18 for 10-years.

This yields the 'Projected 10-Year Turning Volumes' at Figure 21.

This is a very conservative approach, which yields total approach volumes that are much greater than those presented in the 2031 CSTM model.

Figure 21 Projected 10-Year Turning Volumes (No Development)



SALT has assessed the operation of the two intersections in their existing configurations under the following scenarios:

- A '10-years growth only' scenario (Figure 21); and
- A '10-years growth with development' scenario (Figure 21, plus the projected site-generated traffic volumes at Figure 20).

The key outputs of these analyses are presented for comparison at Table 13 below.

Table 13 SIDRA Intersection Summary: 10-Year Growth Scenario (Existing Intersection Layouts)

Approach		10 Years Growth Only				10-Years Growth – With Development			
		D.O.S	95% Queue (m)	Avg. Delay (s)	LOS	D.O.S	95% Queue (m)	Avg. Delay (s)	LOS
AM Peak	London Circuit (NE)	0.082	2.3	2.6	-	0.093	2.4	2.7	-
	University Ave (NW)	0.287	7.5	12.3	A	0.332	9.5	12.8	A
	London Circuit (SW)	0.205	0.0	2.3	-	0.207	0.0	2.3	-
	Intersection	0.287	7.5	3.9	-	0.332	9.5	4.1	-
	University Ave (SE)	0.509	84.0	33.6	C	0.527	89.3	33.2	C
	M-Clarke St (NE)	0.456	80.6	26.2	B	0.458	80.7	26.3	B
	University Ave (NW)	0.498	45.0	47.7	D	0.536	45.7	49.0	D
	M-Clarke St (SW)	0.504	93.4	28.9	C	0.516	96.4	29.4	C
	Intersection	0.504	93.4	31.2	C	0.536	96.4	31.5	C
PM Peak	London Circuit (NE)	0.073	2.3	2.3	-	0.077	2.4	2.4	-
	University Ave (NW)	0.223	6.1	9.3	A	0.255	7.0	9.5	A
	London Circuit (SW)	0.153	0.0	2.2	-	0.155	0.0	2.3	-
	Intersection	0.223	6.1	3.7	-	0.255	7.0	3.9	-
	University Ave (SE)	0.654	74.5	44.3	D	0.662	79.2	43.7	D
	M-Clarke St (NE)	0.651	119.9	29.3	C	0.677	123.1	30.7	C
	University Ave (NW)	0.640	94.5	40.1	C	0.667	96.0	41.2	C
	M-Clarke St (SW)	0.430	79.1	29.6	C	0.473	89.1	30.7	C
	Intersection	0.654	119.9	34.3	C	0.677	123.1	35.2	C

The sensitivity analysis indicates that both intersections would continue to operate below capacity under the '10-year growth' scenario with or without development traffic.

SALT has also assessed the operation of the altered London Circuit / University Avenue intersection under the following scenarios:

- A '10-years growth only' scenario (Figure 21 left); and
- A '10-years growth with development' scenario (Figure 21 left, plus the projected site-generated traffic volumes at Figure 20 left).

The key outputs of these analyses are presented for comparison at Table 14, below.

Table 14 SIDRA Intersection Summary: 10-Year Growth Scenario (Alternate Intersection Layout)

Peak	Approach	10 Years Growth Only				10-Years Growth – With Development			
		DOS	95% Queue (m)	Avg. Delay (s)	LOS	DOS	95% Queue (m)	Avg. Delay (s)	LOS
AM Peak	London Circuit (NE)	0.851	77.1	52.6	D	0.849	79.7	52.7	D
	University Ave (NW)	0.593	60.0	48.9	D	0.676	69.6	50.3	D
	London Circuit (SW)	0.861	263.6	35.5	D	0.889	286.2	40.5	D
	Intersection	0.861	263.6	40.7	D	0.889	286.2	44.4	D
PM Peak	London Circuit (NE)	0.670	68.2	44.0	D	0.683	71.4	44.5	D
	University Ave (NW)	0.443	62.2	40.0	D	0.535	71.4	43.2	D
	London Circuit (SW)	0.687	156.9	27.4	C	0.715	163.2	28.5	C
	Intersection	0.687	156.9	33.6	C	0.715	163.2	35.2	D

The analysis indicates that the intersection would still operate below target capacity (i.e. ≤ 0.9) and with Level of Service E or better under the '10-years growth + development' scenario, as is required for new signal installations by the TCCS Guidelines for SIDRA Analysis.

Importantly however, it should be noted that the increase in these key outputs from the '10-years growth only' scenario are very minor. The higher values for the key outputs are largely due to the conservative growth volumes and the reduction in capacity due to the proposed signalisation of the intersection; not the 33 peak hour vehicle movements expected to be generated through the intersection by the subject proposal.

Accordingly, the subject proposal will generate a traffic volume that can be accommodated on the existing and modified road network immediately surrounding the site under a 10-years post-development scenario.

6.5 POTENTIAL FOR QUEUEING IMPACTS

6.5.1 QUEUEING AT SITE ACCESS

Based on the previous section, the peak inbound traffic volume to the secured section of the car park is estimated at 31 vehicle movements during the afternoon peak, and the peak outbound traffic volumes is estimated at 42 vehicle movements during the morning peak.

Based on a typical roller door being installed at the based of the Upper B1-Lower B1 ramp, which requires in the order of 15 seconds to raise and for an inbound vehicle to pass beneath, the inbound capacity at the access would be 240 vehicles per hour (noting that this is likely to be an underestimate as a second inbound vehicle would typically pass beneath the door without requiring it to reopen).

Based on standard queueing theory, the 98th percentile queue (that is, a queue that would only be expected to be exceeded on less than 2% of occasions during the peak periods) would be 1 inbound vehicle or 2 outbound vehicles.

Swept path diagrams are attached at APPENDIX 3, which demonstrate inbound and outbound B99 vehicles can circulate to the hold points either side of the roller door. In the event that concurrent opposing movements meet at the roller door, it will be possible for either the inbound vehicle or outbound vehicle to circulate through the roller door and beyond two propped vehicles on the opposing side, confirming that the access controls can function appropriately.

6.5.2 RIGHT-TURN QUEUEING INTO DARWIN PLACE

SALT has also reviewed the potential for right-turn queuing movements from University Avenue into Darwin Place (northwest to southwest) to impact on the south-eastbound through movements on University Avenue.

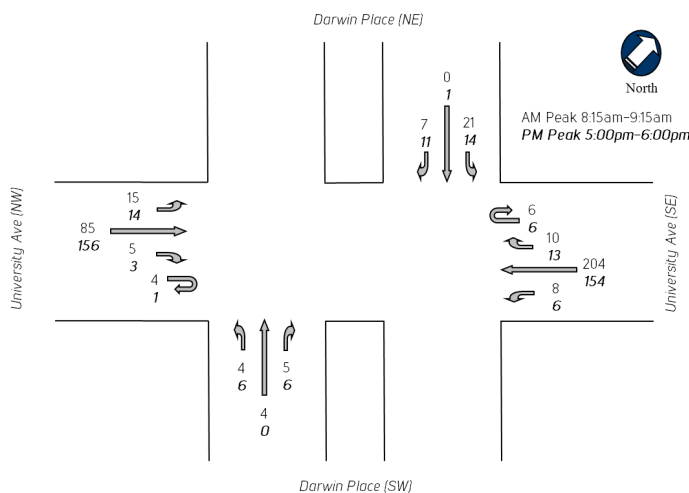
This item was raised verbally by TCCS in a consultant meeting and not in its RFI comments prepared by the *Environment, Planning and Sustainable Development Directorate (EPSDD)*.

In order to address the potential for queueing impacts, SALT commissioned Trans Traffic Surveys to undertake additional turning movement counts at the intersection on Thursday 9th May, 2024 during the following times:

- 8:00am to 9:30am; and
- 4:45pm to 6:15pm.

The peak 1-hour periods of vehicular activity occurred between 8:15am–9:15am and 5:00pm–6:00pm, which aligns with the timing of the peak 1-hour periods recorded during the previous intersection surveys at Section 2.6.2.

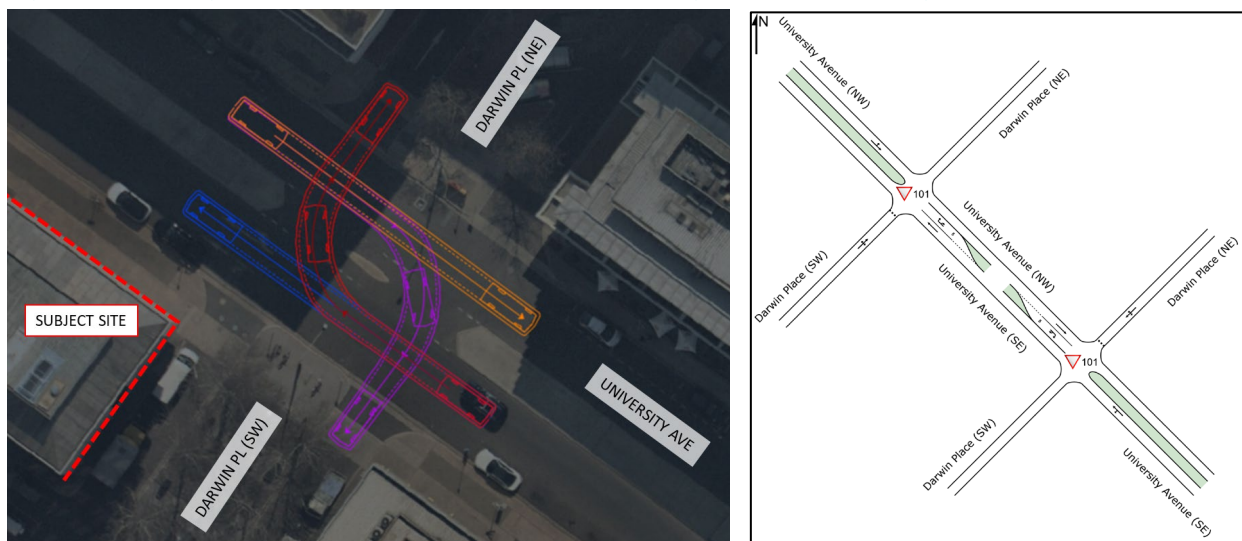
Figure 22 Darwin Place Peak Hour Turning Volumes (May 2024)



To assess the potential for queued right-turning vehicles to block through traffic on University Avenue under a post-development scenario, SALT has combined the forecast site-generated traffic volumes from Section 6.2 with the above turning volumes and modelled the intersection as a network of two closely spaced intersections using SIDRA.

A review of the existing intersection layout indicates that both breaks in the University Avenue median can accommodate a right / u-turning vehicle clear of through traffic as shown in the swept path excerpt at Figure 23 (left). Accordingly, both intersections have been modelled with a short (7m) right / u-turn lane as shown in the SIDRA network layout at Figure 23 (right).

Figure 23 University Avenue / Darwin Place Intersection Aerial Layout (L) and SIDRA Layout (R)



The key outputs from the SIDRA analysis are presented at Table 15, below.

Table 15 Sidra Intersection Summary: University Avenue / Darwin Place

Approach	AM Peak Period				PM Peak Period			
	D.O.S	95% Queue (m)	Avg. Delay (s)	LOS	D.O.S	95% Queue (m)	Avg. Delay (s)	LOS
University Ave (SE)	0.116	0.4	0.2	-	0.089	0.5	0.3	-
University Ave (NW)	0.067	0.0	0.7	-	0.103	0.0	0.4	-
Darwin Place (SW)	0.069	1.9	7.5	A	0.058	1.6	7.3	A
Intersection	0.116	1.9	1.3	-	0.103	1.6	1.2	-
University Ave (SE)	0.131	0.0	0.5	-	0.105	0.0	0.6	-
Darwin Place (NE)	0.031	0.9	7.0	A	0.030	0.8	7.2	A
University Ave (NW)	0.061	0.5	0.5	-	0.098	0.4	0.3	-
Intersection	0.131	0.9	1.0	-	0.105	0.8	0.9	-

Further review of the detailed SIDRA outputs at APPENDIX 2 indicates that the 95th percentile queue lengths for the right / u-turning movements on University Avenue under a post-development scenario are as follows:

Table 16 95th Percentile Right-Turn Queue Lengths (University Ave into Darwin Place)

Right / U-Turn Movement	AM Peak Period	PM Peak Period
University Avenue into Darwin Place Opposite Site (Figure 23 – Red Swept Path)	0.4m (<1 vehicle)	0.5m (<1 vehicle)
University Avenue into Darwin Place Site Access (Figure 23 – Purple Swept Path)	0.5m (<1 vehicle)	0.4m (<1 vehicle)

The analysis indicates that the 95th percentile queue length (that is, the queue length that could be expected to be exceeded on less than 5% of observed queue lengths) is less than 1 vehicle in both median breaks.

These queues can therefore be accommodated clear of through traffic and will have no adverse impacts on existing traffic conditions.

Notwithstanding, 'Keep Clear' stencilling can be provided on University Avenue at the Darwin Place entrance/exit as was requested by EPSDD in its review of the previous submission.

7 RESPONSE TO RFI ITEMS

The following responses were provided to the items raised by *Transport Canberra & City Services (TCCS) Traffic & Waste Departments* in its Request for Further Information (RFI) prepared by the *Environment, Planning and Sustainable Development Directorate (EPSDD)* received via e-mail on March 24th, 2024.

These matters are all considered to have been satisfactorily addressed, as acknowledged by TCCS in the Notice of Decision issued for the previous submission, however have been updated and retained in this report for completeness only.

TRAFFIC:

- ***Section 2.6.1, pg. 12 – It should be noted that parking at Block 40, Section 100 City should not be relied upon as the site is proposed for future development.***
- ***Section 4.3, pg. 18 – Given the development of Block 40, Section 100 City, please outline the availability of other parking in the area to accommodate the 13 required spaces.***

The subject proposal now generates a commercial car parking requirement for 21 spaces.

It is proposed to provide 14 on-site car parking spaces for these uses, and the remaining requirement for 7 spaces is permitted to be accommodated on-street within 400 metres (short stay) to 1,000 metres (long stay) of the site.

This reliance on off-site parking will be less than that which is currently generated by the existing use of the site, which is estimated at 38 spaces (Section 4.3.1) based on statutory car parking requirement rates.

Therefore, the subject proposal is likely to result in additional off-site car parking opportunities being created, rather than occupying any spare capacity.

Notwithstanding, SALT has commissioned wider car parking occupancy surveys that do not capture the availability of car parking at Block 40, Section 100.

Those surveys are presented at Section 2.6.1 and demonstrate a minimum availability of 503 spaces on weekdays and 1,366 spaces on Saturdays.

These availabilities exceed the offset of 7 spaces sought under the Development Application.

- ***Section 4.4.1, pg. 20 – It should be noted that the ACT Bicycle Parking General Code has been superseded by the End-of-Trip Facilities General Code. Hence, analysis of bicycle parking requirements should be revised base on the End-of-Trip Facilities General Code.***

The introductory wording in Section 4.4.1 has been updated to refer to the *End-of-Trip Facilities General Code*.

There has been no change to the bicycle parking requirement rates used for the analysis and the provision of bicycle parking and end-of-trip facilities at the site meets / exceeds the statutory requirement as previously accepted by the Environment, Planning and Sustainable Development Directorate (EPSDD).

- ***Section 6, pg. 24–26 – The traffic considerations don't analyse future impacts with respect to Light Rail Stage 2B along London Circuit. Please see attached drawing (DEMO-202341467-SET-01) outlining the intersection arrangement for University Avenue/London Circuit with respect to light rail to include in the SIDRA analysis. Please note that future signal phasing information is currently not available.***

The alternate intersection arrangement is presented at Figure 13.

SALT undertook SIDRA analysis of the alternate intersection arrangement under existing traffic volumes (Section 2.6.4) using an arbitrary phasing as requested by TCCS, which demonstrates the proposed signalisation works will increase saturation levels, queue lengths and delays on all approaches.

This is generally due to the reduction in approach lanes / vehicle throughput on both London Circuit approaches and the introduction of signals which introduce stop line delays to all approaches.

Notwithstanding, these outputs serve as a benchmark against which the impacts of traffic generated by the development application can be assessed.

The analysis of the intersection under post-development traffic volumes (Section 6.4.2) demonstrates there will be similar incremental increases to degree of saturation, queue lengths and average delay at the intersection to those which would be expected if the intersection were to retain its existing configuration.

- Section 6.3, pg. 25 – Future traffic impact analysis don't outline assumptions on traffic growth based on the Canberra Strategic Transport Model (CSTM). Please email tccs.dcdevelopmentcoordination@act.gov.au to obtain CSTM data to calculate traffic growth rates in the area to apply to the analysis.

SALT has undertaken SIDRA analysis for both intersections under a 10-year growth scenario which is presented at Section 6.4.3.

Prior to undertaking the assessment, SALT sourced 2031 CSTM data for both intersections from TCCS. This data suggested that movement volumes on most approaches would drop significantly, and that the overall approach volumes at the intersections would be lower than the surveyed 2022 volumes.

It is understood the model may project these volumes due to a factor of reasons, including potential changes to the surrounding road network, land use changes, new public transport facilities (such as the light rail extension) and a mode shift away from private vehicle use).

In raising this with TCCS, it was suggested that SALT also source 2026 CSTM data from TCCS and consider applying the forecast growth rate between 2026 and 2031 to the surveyed 2022 volumes.

Table 17 summarises the total approach volumes recorded during the 2022 surveys and forecast by the 2026 and 2031 CSTM models.

Table 17 Comparison of 2022 Surveyed, 2026 CSTM and 2031 CSTM Total Approach Volumes

	London Cct / University Ave		Marcus Clarke St / University Ave	
	AM Peak	PM Peak	AM Peak	PM Peak
2022 Surveyed Volumes	892 vph	776 vph	1214 vph	1270 vph
2026 CSTM Data	214 vph	282 vph	656 vph	878 vph
2031 CSTM Data	424 vph	392 vph	1,054 vph	1,140 vph

In all instances the 2026 and 2031 CSTM volumes are lower than the 2022 surveyed volumes, and the substantially lower 2026 volumes contribute to a significant growth rate estimate between the 2026 and 2031 CSTM forecasts.

For instance, the total approach volumes at London Circuit / University Avenue during the 2026 AM peak is 214 vph and during the 2031 AM Peak is 424vph, which equates to a compounding annual growth rate of around 15% over the 5-year period. If this rate were applied to the 2022 surveyed volumes (892vph) for a 10-year period, the forecast total approach volumes would be around 3,501vph, which is unrealistic and far beyond the total approach volumes at the intersection forecast in the 2031 CSTM volumes.

Accordingly, to allow for analysis of a growth scenario as requested by TCCS, SALT applied a compounding annual growth rate of 2% to the 2022 surveyed traffic volumes for 10-years as outlined at Section 6.4.3. This rate aligns with industry standards and yields the total approach volumes outlined at below.

Table 18 10-Year Growth Total Approach Volumes (Figure 21)

	London Cct / University Ave		Marcus Clarke St / University Ave	
	AM Peak	PM Peak	AM Peak	PM Peak
10-Year Growth Volumes	1,087 vph	946 vph	1,481 vph	1,550 vph

These volumes are greater the 2031 CSTM volumes provided to SALT and allow for a very conservative assessment of the intersections as provided at Section 6.4.3.

The analysis indicates that the subject proposal will generate a traffic volume that can be accommodated on the existing and potentially modified road network immediately surrounding the site under a 10-years post-development scenario.

8 CONCLUSION

Syzygy is proposing to construct a mixed-use development on land at Block 2 (17–21 University Avenue), Block 7 (3 Farrell Place / 24 Marcus Clarke Street) and Block 8, Section 5 in Canberra.

It is proposed to demolish the existing office buildings at the north and south of the site to allow for the construction of new residential apartment buildings with activated land uses at ground level. A multi-storey basement car park is proposed to be constructed across the wider site beneath the three land parcels, and landscaping reinstated between the two buildings at ground level to maintain a pedestrian link between Marcus Clarke Street and Darwin Place.

Based on the foregoing analysis, it is concluded that:

- From a traffic engineering perspective, the proposal presents minor changes from the previous scheme that was assessed by TCCS and considered acceptable subject to conditions in 2024;
- The *Parking and Vehicular Access General Code* outlines a statutory car parking requirement for 21 spaces, which is intended to accommodate the staff and customer car parking demands generated by the commercial land use:
 - Fourteen (14) on-site car parking spaces will be allocated to the commercial tenancies (at a rate of 2 spaces per tenancy) which are intended for employee use;
 - The remaining requirement for 7 spaces can be accommodated in publicly accessible car parking spaces within 1 kilometres of the site (additional staff demands) or 400 metres of the site (customer demands) as outlined by the *Parking and Vehicular Access General Code*;
 - Based on the above the statutory car parking requirement is satisfied; and
 - In practice, the existing use of the site as office buildings with some ground level retail is estimated to generate a higher off-site car parking demand than the proposed use of the site, therefore the subject proposal is expected to have a lesser impact on surrounding proximate traffic conditions than the existing use of the site.
- The design of the car parking areas satisfies the design criteria outlined in the Australian Standard for Off-Street Car Parking (AS2890.1:2004);
- The site access and internal vehicular ramping arrangements accord with the Australian Standard for Off-Street Car Parking (AS2890.1:2004);
- The proposed loading zone arrangement at the south-western end of Darwin Place is considered an appropriate design outcome given the building envelope applicable to a development upon the site; and
- The additional traffic generated by the site is considered low in the context of existing peak hour traffic volumes, and will have no significant impacts on saturation levels, queue lengths and delays when compared to the existing weekday peak hour volumes.

APPENDIX 1 PARKING SURVEYS

Parking Canberra ACT 2024 EDIT

Car Parking Occupancy Surveys - Thursday 9th & Saturday 11th May, 2024



Street	Section	Side	Restriction	Capacity	Thursday 9th May										Saturday 11th May									
					11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00		
W Row	Alinga St to London Cct		Loading Zone 30Minutes 7:30am-6pm Mon-Fri, Public Holidays Excepted	2	2	2	1	2	1	0	2	1	0	1	2	2	2	2	2	2	2			
			1/2P Pay Parking 8:30am-5:30pm Mon-Fri, 8:30am-12pm Sat Public Holidays Excepted	2	2	2	2	2	2	2	2	1	1	2	1	2	2	1	2	1	0			
			P5Minutes 7:30am-6pm Mon-Fri Public Holidays Excepted	2	0	1	2	1	2	1	1	0	2	1	2	2	1	2	2	1	0	0		
			1/2P Pay Parking 8:30am-5:30pm Mon-Fri, 8:30am-12pm Sat Public Holidays Excepted	4	2	3	4	4	4	4	4	2	1	2	2	2	4	3	3	4	4	4		
			BusZone	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Hobart Pl	London Cct to Hobart Pl		Loading Zone 30Minutes 7:30am-6pm Mon-Fri Public Holidays Excepted	3	2	2	1	2	1	2	3	3	2	1	1	2	2	2	1	1	0	1		
			4P Pay Parking 8:30am-5:30pm Mon-Fri	5	2	3	5	4	5	5	4	4	5	5	5	4	5	2	4	3	4	3		
			Loading Zone 30Minutes 7:30am-6pm Mon-Fri Public Holidays Excepted	5	2	3	5	4	5	5	4	5	2	3	3	3	4	5	5	5	4	3		
University Ave	Childers St to Unnamed St		1P Pay Parking 8:30am-5:30pm Mon-Fri Public Holidays Excepted	8	5	7	8	8	8	8	8	7	8	8	8	7	5	5	6	5	4	4		
			BusZone	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			1/2P Pay Parking 8:30am-5:30pm Mon-Thu, 8:30am-9pm Fri, 8:30am-12noon Sat Public Holidays Excepted	5	5	4	5	5	4	5	5	4	5	5	4	2	3	3	4	5	4	5		
	Darwin Pl to Darwin Pl	N	P5Minutes 7:30am-6pm Mon-Fri Public Holidays Excepted	1	0	1	1	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1		
		N	1/2P Pay Parking 8:30am-5:30pm Mon-Thu, 8:30am-9pm Fri, 8:30am-12noon Sat Public Holidays Excepted, Taxi Zone Other Times	3	1	2	2	3	3	2	1	1	1	2	1	2	2	2	1	1	0	1		
			1/2P Pay Parking 8:30am-5:30pm Mon-Thu, 8:30am-9pm Fri, 8:30am-12noon Sat Public Holidays Excepted	4	2	4	4	4	2	2	4	1	2	2	3	2	4	4	4	2	2	3		
		S	1/2P 7:30am-6pm Mon-Fri, 7:30am-12pm Sat Public Holidays Excepted	2	2	2	2	2	2	2	2	1	2	2	2	1	2	2	1	2	2	2		
			1P Pay Parking 8:30am-5:30pm Mon-Fri Public Holidays Excepted	18	14	17	18	17	16	18	17	15	16	16	14	17	18	12	13	10	7	5		
Marcus Clarke St	University Ave to Farrell Pl		1/2P 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	3	2	2	3	3	2	2	1	3	3	3	2	1	2	3	3	3	1	2		
			Loading Zone 30Minutes	2	0	0	1	2	2	1	2	2	1	0	1	2	2	1	0	0	1	0		
			1/2P 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	5	3	4	5	5	4	5	5	4	5	4	3	3	5	4	5	3	3	4	2	
Gordon St	Opp Farrell Pl to University Ave	W	1/2P 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	5	3	4	5	5	4	5	5	4	3	3	5	4	5	3	3	3	4	2		
			Marcus Clarke St to William Clemens St	1	1	1	0	1	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	
			2P Pay Parking 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	11	9	10	10	10	11	11	11	10	9	8	8	10	11	11	10	10	9	9		
	London Cct to The Mews		Disabled	3	0	1	2	2	2	1	2	2	2	2	1	2	2	3	2	1	2	2		
			2P Pay Parking 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	8	8	7	6	7	5	5	6	6	7	4	5	5	6	6	7	4	5	6		
		S	2P Pay Parking 8:30am-5:30pm Mon-Fri, Public Holidays Excepted	12	10	12	12	10	11	12	10	11	10	8	9	10	12	12	10	8	7	9		
			Disabled	1	0	1	0	0	0	1	1	1	0	0	1	1	0	0	1	0	0	0		
			1/2P 30 Minutes Pay Parking 8:30am-5:30pm Mon-Fri,Public Holidays Excepted	4	2	3	4	3	2	1	2	2	3	4	2	2	1	4	2	2	3	2		
Farrell Pl	Marcus Clarke St to Unnamed St	N	Loading Zone 30 Minutes 7:30am-6pm Mon-Fri	2	0	1	2	1	1	1	2	1	0	0	1	2	2	1	0	2	1	0		
			P5 Minutes	2	0	0	1	2	1	1	2	2	2	1	0	0	1	0	0	0	0	0		
		S	1P Pay Parking 8:30am-5:30pm Mon-Thu, Public Holidays Excepted	4	3	3	4	2	3	3	4	2	3	3	4	1	2	3	4	2	2	1		
		S	1P Pay Parking 8:30am-5:30pm Mon-Thu, Public Holidays Excepted	4	4	4	2	3	4	2	2	3	4	2	3	3	4	2	3	4	2	2		
			Secure Parking - Allstop St	6	0	1	2	2	3	3	0	1	2	2	2	1	0	0	0	0	0	0	0	
Car Park 01	Secure Parking - Allstop St		Ground Level-Reserve Parking	139	130	128	120	128	125	129	128	114	98	87	67	68	69	64	63	63	64	67		
			Level 1	9	2	3	5	5	5	6	6	4	3	0	0	0	0	0	0	0	0	0		
			Level 2	203	201	202	200	201	203	198	199	152	113	49	67	58	63	67	74	39	13	10		
			Level 3	203	168	174	184	183	155	167	166	149	184	0	0	0	0	0	0	0	0	0		
			Level 4	203	65	96	94	93	84	85	86	67	59	0	0	0	0	0	0	0	0	0	0	
Car Park 02	Hobert Place Car Park		Level 5	211	6	7	4	8	9	5	4	6	5	0	0	0	0	0	0	0	0	0		
			4P Pay Parking 8:30am-5:30pm Mon-Fri	63	63	63	63	61	60	57	61	60	54	45	63	57	63	63	60	61	59	60		
			Disabled	6	2	4	5	4	5	6	6	5	4	5	5	4	5	6	6	5	5	4		
			Loading Zone 30 Minutes 7:30am-6pm Mon-Fri	2	2	1	2	2	2	1	2	2	2	2	2	2	2	1	2	2	1	2		
			1/4P 7:30am-6pm Mon-Fri, 7:30am-12 noon Sat	2	2	2	1	2	2	2	2	1	2	2	2	1	2	2	2	1	2	2		
Car Park 03	London Cct Car Park		Motorbike Parking	18	8	9	7	5	6	7	5	5	5	7	5	5	5	5	5	5	3	2		
			Secure Parking	218	187	199	187	179	165	185	186	154	149	5	4	6	6	6	8	7	5	6		
			4P Pay Parking 8:30am-10:30pm Mon-Sun	282	225	256	254	255	264	231	274	246	158	226	227	234	254	201	224	234	264	199		
Car Park 04	Theatre Lane Parking		Permit Zone Category L 7:30am-6pm	17	11	12	12	16	17	17	15	14	14	12	12	10	12	17	17	17	14	14		
			Permit Zone Govt. Vehicles 8:30am-5pm Mon-Fri	4	2	4	3	3	3	4	2	3	3	4	2	3	3	3	4	2	2	3		
			Permit Zone Car Share Vehicles Only	8	5	6	7	8	8	8	7	5	4	5	6	7	4	5	8	7	4	5		
			Permit Zone Medical Practitioners Vehicles Only	8	5	4	6	6	7	4	5	5	5	6	2	3	3	3	2	1	2	2		
			Disabled	10	5	4	6	6	6	8	7	4	5	6	4	7	5	3	3	4	2	2		
	Motorbike Parking		Motorbike Parking	23	5	7	8	5	9	9	6	6	6	6	2	2	1	2	2	1	2	2		
			Play Parking 8:30am-5:30pm Mon-Fri	359	279	287	288	264	265	246	266	278	241	97	112	102	101	78	98	66	72	70		
			Disabled	8	2	3	5	4	5	5	2	3	5	4	2	3	3	3	2	2	0	0		

No. Parking Spaces Available (>30mins) at Time of Survey	2133	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
No. Occupied Car Parking Spaces		1411	1517	1513	1485	1441	1419	1482	1338	1173	613	644	632	671	589	633	567	559	490				
No. Availabi Car Parking Spaces		699	503	507	535	579	601	538	699	864	1425	1393	1405	1366	1448	1404	1470	1478	1547				
Utilisation		70%	75%	76%	74%	71%	70%	73%	66%	58%	30%	32%	31%	33%	29%	31%	28%	27%	24%				

APPENDIX 2 SIDRA MOVEMENT SUMMARIES

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – AM PEAK

 Site: 101 [UnLo AM Ex (Site Folder: Existing (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deq. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV veh/h	[Total veh/h	HV %				[Veh. veh	Dist m				
NorthEast: London Circuit (NE)														
8	T1	125	2	132	1.6	0.063	0.3	LOS A	0.3	1.9	0.04	0.05	0.04	59.4
9	R2	41	5	43	12.2	0.063	8.9	LOS A	0.3	1.9	0.47	0.55	0.47	46.6
Approach		166	7	175	4.2	0.063	2.4	NA	0.3	1.9	0.15	0.17	0.15	56.8
NorthWest: University Avenue (NW)														
10	L2	89	8	94	9.0	0.205	8.6	LOS A	0.7	5.3	0.13	0.96	0.13	44.6
12	R2	48	0	51	0.0	0.205	15.5	LOS B	0.7	5.3	0.13	0.96	0.13	44.9
Approach		137	8	144	5.8	0.205	11.0	LOS A	0.7	5.3	0.13	0.96	0.13	44.7
SouthWest: London Circuit (SW)														
1	L2	235	9	247	3.8	0.168	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.8
2	T1	354	9	373	2.5	0.168	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		589	18	620	3.1	0.168	2.3	NA	0.0	0.0	0.00	0.23	0.00	46.2
All Vehicles		892	33	939	3.7	0.205	3.6	NA	0.7	5.3	0.05	0.33	0.05	47.8

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

Vehicle movement LOS values are based on average delay per movement.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – PM PEAK

 Site: 101 [UnLo PM Ex (Site Folder: Existing (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deq. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV veh/h	[Total veh/h	HV %				[Veh. veh	Dist m				
NorthEast: London Circuit (NE)														
8	T1	126	1	133	0.8	0.058	0.3	LOS A	0.2	1.8	0.06	0.07	0.06	59.1
9	R2	39	4	41	10.3	0.058	7.8	LOS A	0.2	1.8	0.38	0.41	0.38	48.6
Approach		165	5	174	3.0	0.058	2.1	NA	0.2	1.8	0.14	0.15	0.14	57.1
NorthWest: University Avenue (NW)														
10	L2	145	2	153	1.4	0.175	8.3	LOS A	0.7	4.6	0.10	0.95	0.10	46.7
12	R2	20	0	21	0.0	0.175	13.6	LOS A	0.7	4.6	0.10	0.95	0.10	46.7
Approach		165	2	174	1.2	0.175	8.9	LOS A	0.7	4.6	0.10	0.95	0.10	46.7
SouthWest: London Circuit (SW)														
1	L2	175	1	184	0.6	0.126	5.6	LOS A	0.0	0.0	0.00	0.47	0.00	29.9
2	T1	271	4	285	1.5	0.126	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
Approach		446	5	469	1.1	0.126	2.2	NA	0.0	0.0	0.00	0.23	0.00	46.4
All Vehicles		776	12	817	1.5	0.175	3.6	NA	0.7	4.6	0.05	0.36	0.05	48.6

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

Vehicle movement LOS values are based on average delay per movement.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – AM PEAK

Site: 101 [MCUn AM Ex (Site Folder: Existing (Existing Layouts))]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: University Avenue (SE)														
4	L2	29	1	31	3.4	0.081	31.7	LOS C	1.6	11.6	0.74	0.66	0.74	32.4
5	T1	124	0	131	0.0	* 0.406	29.1	LOS C	9.0	65.9	0.82	0.74	0.82	19.3
6	R2	112	13	118	11.6	0.406	35.0	LOS C	9.0	65.9	0.84	0.75	0.84	31.0
Approach		265	14	279	5.3	0.406	31.9	LOS C	9.0	65.9	0.82	0.74	0.82	26.9
NorthEast: Marcus Clarke Street (NE)														
7	L2	67	1	71	1.5	0.105	27.7	LOS B	2.2	15.9	0.69	0.72	0.69	33.0
8	T1	229	7	241	3.1	0.376	25.5	LOS B	9.0	64.4	0.79	0.67	0.79	42.2
9	R2	7	0	7	0.0	0.376	31.0	LOS C	9.0	64.4	0.79	0.67	0.79	35.3
Approach		303	8	319	2.6	0.376	26.1	LOS B	9.0	64.4	0.76	0.68	0.76	40.4
NorthWest: University Avenue (NW)														
10	L2	33	25	35	75.8	0.204	49.4	LOS D	1.6	18.2	0.92	0.74	0.92	25.1
11	T1	51	9	54	17.6	* 0.409	43.7	LOS D	4.7	36.4	0.96	0.77	0.96	14.7
12	R2	45	4	47	8.9	0.409	49.4	LOS D	4.7	36.4	0.96	0.77	0.96	26.8
Approach		129	38	136	29.5	0.409	47.1	LOS D	4.7	36.4	0.95	0.76	0.95	22.5
SouthWest: Marcus Clarke Street (SW)														
1	L2	182	2	192	1.1	0.418	31.0	LOS C	10.3	73.2	0.79	0.76	0.79	33.6
2	T1	313	6	329	1.9	0.418	26.3	LOS B	10.3	73.2	0.80	0.71	0.80	41.3
3	R2	22	0	23	0.0	* 0.418	32.3	LOS C	9.7	68.8	0.81	0.70	0.81	33.3
Approach		517	8	544	1.5	0.418	28.2	LOS B	10.3	73.2	0.80	0.73	0.80	38.6
All Vehicles		1214	68	1278	5.6	0.418	30.5	LOS C	10.3	73.2	0.81	0.72	0.81	35.4

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – PM PEAK

Site: 101 [MCUn PM Ex (Site Folder: Existing (Existing Layouts))]

MCUn AM Ex

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: University Avenue (SE)														
4	L2	16	0	17	0.0	0.102	41.8	LOS C	1.5	10.6	0.86	0.68	0.86	28.6
5	T1	108	0	114	0.0	* 0.508	39.3	LOS C	8.1	58.3	0.93	0.77	0.93	15.8
6	R2	84	5	88	6.0	0.508	45.5	LOS D	8.1	58.3	0.95	0.79	0.95	27.2
Approach		208	5	219	2.4	0.508	42.0	LOS C	8.1	58.3	0.93	0.77	0.93	22.4
NorthEast: Marcus Clarke Street (NE)														
7	L2	71	1	75	1.4	0.109	27.1	LOS B	2.3	16.6	0.68	0.72	0.68	33.3
8	T1	303	4	319	1.3	0.511	27.1	LOS B	12.9	91.4	0.84	0.73	0.84	41.4
9	R2	17	0	18	0.0	* 0.511	32.6	LOS C	12.9	91.4	0.84	0.73	0.84	34.4
Approach		391	5	412	1.3	0.511	27.3	LOS B	12.9	91.4	0.81	0.73	0.81	40.0
NorthWest: University Avenue (NW)														
10	L2	48	36	51	75.0	0.165	38.7	LOS C	2.0	22.7	0.82	0.74	0.82	28.3
11	T1	76	1	80	1.3	* 0.524	35.3	LOS C	10.6	74.7	0.92	0.80	0.92	16.7
12	R2	160	1	168	0.6	0.524	40.9	LOS C	10.6	74.7	0.92	0.80	0.92	29.4
Approach		284	38	299	13.4	0.524	39.0	LOS C	10.6	74.7	0.90	0.79	0.90	26.7
SouthWest: Marcus Clarke Street (SW)														
1	L2	105	0	111	0.0	0.332	29.3	LOS C	8.1	57.4	0.75	0.70	0.75	35.0
2	T1	255	8	268	3.1	0.332	26.4	LOS B	8.1	57.4	0.79	0.70	0.79	41.1
3	R2	27	0	28	0.0	0.332	34.3	LOS C	6.5	46.8	0.81	0.69	0.81	32.1
Approach		387	8	407	2.1	0.332	27.7	LOS B	8.1	57.4	0.78	0.70	0.78	39.2
All Vehicles		1270	56	1337	4.4	0.524	32.5	LOS C	12.9	91.4	0.84	0.74	0.84	34.4

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – AM PEAK

Site: 101 [UnLo AM Ex (Alt Layout) (Site Folder: Existing (Alt Layout))]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	137	14	144	10.2	* 0.718	45.1	LOS D	8.7	62.8	0.96	0.83	1.06	34.4
6	R2	41	5	43	12.2	0.718	53.5	LOS D	8.7	62.8	1.00	0.87	1.11	32.5
Approach		178	19	187	10.7	0.718	47.0	LOS D	8.7	62.8	0.97	0.84	1.07	33.7
NorthWest: University Avenue (NW)														
7	L2	89	8	94	9.0	0.487	48.0	LOS D	6.6	48.5	0.96	0.80	0.96	32.9
9	R2	48	0	51	0.0	* 0.487	47.9	LOS D	6.6	48.5	0.96	0.80	0.96	33.1
Approach		137	8	144	5.8	0.487	48.0	LOS D	6.6	48.5	0.96	0.80	0.96	33.0
SouthWest: London Circuit (SW)														
10	L2	235	9	247	3.8	0.721	29.6	LOS C	24.6	176.4	0.88	0.81	0.88	41.0
11	T1	366	21	385	5.7	0.721	23.8	LOS C	24.6	176.4	0.87	0.80	0.87	42.1
Approach		601	30	633	5.0	0.721	26.1	LOS C	24.6	176.4	0.87	0.81	0.87	41.7
All Vehicles		916	57	964	6.2	0.721	33.4	LOS C	24.6	176.4	0.90	0.81	0.92	38.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

EXISTING TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – PM PEAK

Site: 101 [UnLo PM Ex (Alt Layout) (Site Folder: Existing (Alt Layout))]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	136	11	143	8.1	* 0.563	40.9	LOS D	8.0	57.5	0.94	0.77	0.94	35.7
6	R2	39	4	41	10.3	0.563	48.4	LOS D	8.0	57.5	0.97	0.79	0.97	34.1
Approach		175	15	184	8.6	0.563	42.6	LOS D	8.0	57.5	0.95	0.77	0.95	35.2
NorthWest: University Avenue (NW)														
7	L2	145	2	153	1.4	0.366	39.2	LOS D	7.1	50.0	0.87	0.79	0.87	35.9
9	R2	20	0	21	0.0	* 0.366	39.2	LOS D	7.1	50.0	0.87	0.79	0.87	35.9
Approach		165	2	174	1.2	0.366	39.2	LOS D	7.1	50.0	0.87	0.79	0.87	35.9
SouthWest: London Circuit (SW)														
10	L2	175	1	184	0.6	0.577	29.4	LOS C	17.5	123.5	0.82	0.76	0.82	41.2
11	T1	281	14	296	5.0	0.577	23.6	LOS C	17.5	123.5	0.81	0.75	0.81	42.2
Approach		456	15	480	3.3	0.577	25.8	LOS C	17.5	123.5	0.82	0.76	0.82	41.8
All Vehicles		796	32	838	4.0	0.577	32.3	LOS C	17.5	123.5	0.86	0.77	0.86	38.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – AM PEAK

Site: 101 [UnLo AM Post (Site Folder: Post Dev (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
8	T1	125	2	132	1.6	0.067	0.1	LOS A	0.3	1.9	0.02	0.02	0.02	59.7
9	R2	47	5	49	10.6	0.067	8.8	LOS A	0.3	1.9	0.48	0.64	0.48	45.9
Approach		172	7	181	4.1	0.067	2.5	NA	0.3	1.9	0.14	0.19	0.14	56.6
NorthWest: University Avenue (NW)														
10	L2	100	8	105	8.0	0.241	8.6	LOS A	0.9	6.4	0.13	0.96	0.13	44.4
12	R2	58	0	61	0.0	0.241	15.9	LOS B	0.9	6.4	0.13	0.96	0.13	44.7
Approach		158	8	166	5.1	0.241	11.3	LOS A	0.9	6.4	0.13	0.96	0.13	44.5
SouthWest: London Circuit (SW)														
1	L2	241	9	254	3.7	0.170	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.8
2	T1	354	9	373	2.5	0.170	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		595	18	626	3.0	0.170	2.3	NA	0.0	0.0	0.00	0.24	0.00	46.0
All Vehicles		925	33	974	3.6	0.241	3.9	NA	0.9	6.4	0.05	0.35	0.05	47.6

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

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – PM PEAK

Site: 101 [UnLo PM Post (Site Folder: Post Dev (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
8	T1	126	1	133	0.8	0.061	0.3	LOS A	0.3	1.9	0.05	0.06	0.05	59.3
9	R2	46	4	48	8.7	0.061	7.8	LOS A	0.3	1.9	0.39	0.49	0.39	47.9
Approach		172	5	181	2.9	0.061	2.3	NA	0.3	1.9	0.14	0.17	0.14	56.8
NorthWest: University Avenue (NW)														
10	L2	154	2	162	1.3	0.202	8.3	LOS A	0.8	5.4	0.09	0.95	0.09	46.5
12	R2	29	0	31	0.0	0.202	13.9	LOS A	0.8	5.4	0.09	0.95	0.09	46.4
Approach		183	2	193	1.1	0.202	9.2	LOS A	0.8	5.4	0.09	0.95	0.09	46.5
SouthWest: London Circuit (SW)														
1	L2	183	1	193	0.5	0.128	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.9
2	T1	271	4	285	1.5	0.128	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		454	5	478	1.1	0.128	2.3	NA	0.0	0.0	0.00	0.23	0.00	46.1
All Vehicles		809	12	852	1.5	0.202	3.8	NA	0.8	5.4	0.05	0.38	0.05	48.3

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

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – AM PEAK

Site: 101 [MCUn AM Post (Site Folder: Post Dev (Existing Layouts))]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
SouthEast: University Avenue (SE)														
4	L2	40	1	42	2.5	0.087	31.7	LOS C	1.7	12.4	0.74	0.69	0.74	31.9
5	T1	124	0	131	0.0	* 0.437	29.6	LOS C	9.8	71.9	0.84	0.76	0.84	19.0
6	R2	122	13	128	10.7	0.437	35.4	LOS C	9.8	71.9	0.85	0.76	0.85	30.9
Approach		286	14	301	4.9	0.437	32.3	LOS C	9.8	71.9	0.83	0.75	0.83	27.0
NorthEast: Marcus Clarke Street (NE)														
7	L2	73	1	77	1.4	0.115	27.8	LOS B	2.4	17.3	0.69	0.72	0.69	32.9
8	T1	229	7	241	3.1	0.378	25.5	LOS B	9.0	64.5	0.79	0.67	0.79	42.2
9	R2	7	0	7	0.0	0.378	31.1	LOS C	9.0	64.5	0.79	0.67	0.79	35.3
Approach		309	8	325	2.6	0.378	26.2	LOS B	9.0	64.5	0.76	0.68	0.76	40.3
NorthWest: University Avenue (NW)														
10	L2	33	25	35	75.8	0.204	49.4	LOS D	1.6	18.2	0.92	0.74	0.92	25.1
11	T1	51	9	54	17.6	* 0.409	43.7	LOS D	4.7	36.4	0.96	0.77	0.96	14.7
12	R2	45	4	47	8.9	0.409	49.4	LOS D	4.7	36.4	0.96	0.77	0.96	26.8
Approach		129	38	136	29.5	0.409	47.1	LOS D	4.7	36.4	0.95	0.76	0.95	22.5
SouthWest: Marcus Clarke Street (SW)														
1	L2	182	2	192	1.1	0.429	31.2	LOS C	10.7	75.6	0.80	0.76	0.80	33.5
2	T1	313	6	329	1.9	0.429	26.9	LOS B	10.7	75.6	0.81	0.72	0.81	40.9
3	R2	28	0	29	0.0	* 0.429	33.1	LOS C	9.8	69.5	0.82	0.71	0.82	32.8
Approach		523	8	551	1.5	0.429	28.7	LOS C	10.7	75.6	0.81	0.74	0.81	38.4
All Vehicles		1247	68	1313	5.5	0.437	30.8	LOS C	10.7	75.6	0.82	0.73	0.82	35.1

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – PM PEAK

Site: 101 [MCUn PM Post (Site Folder: Post Dev (Existing Layouts))]

MCUn AM Ex

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
SouthEast: University Avenue (SE)														
4	L2	25	0	26	0.0	0.104	41.0	LOS C	1.6	11.2	0.85	0.69	0.85	28.5
5	T1	108	0	114	0.0	* 0.522	38.8	LOS C	8.8	62.8	0.93	0.78	0.93	15.9
6	R2	92	5	97	5.4	0.522	44.8	LOS D	8.8	62.8	0.94	0.79	0.94	27.4
Approach		225	5	237	2.2	0.522	41.5	LOS C	8.8	62.8	0.93	0.78	0.93	23.0
NorthEast: Marcus Clarke Street (NE)														
7	L2	79	1	83	1.3	0.124	28.0	LOS B	2.7	18.8	0.69	0.73	0.69	32.9
8	T1	303	4	319	1.3	0.534	28.1	LOS B	13.2	93.3	0.85	0.74	0.85	41.0
9	R2	17	0	18	0.0	* 0.534	33.6	LOS C	13.2	93.3	0.85	0.74	0.85	33.9
Approach		399	5	420	1.3	0.534	28.3	LOS B	13.2	93.3	0.82	0.74	0.82	39.4
NorthWest: University Avenue (NW)														
10	L2	48	36	51	75.0	0.165	38.7	LOS C	2.0	22.7	0.82	0.74	0.82	28.3
11	T1	76	1	80	1.3	* 0.524	35.3	LOS C	10.6	74.7	0.92	0.80	0.92	16.7
12	R2	160	1	168	0.6	0.524	40.9	LOS C	10.6	74.7	0.92	0.80	0.92	29.4
Approach		284	38	299	13.4	0.524	39.0	LOS C	10.6	74.7	0.90	0.79	0.90	26.7
SouthWest: Marcus Clarke Street (SW)														
1	L2	105	0	111	0.0	0.363	30.4	LOS C	8.8	62.8	0.77	0.71	0.77	34.5
2	T1	255	8	268	3.1	0.363	27.9	LOS B	8.8	62.8	0.81	0.72	0.81	40.3
3	R2	35	0	37	0.0	0.363	37.0	LOS C	6.6	47.1	0.85	0.72	0.85	30.7
Approach		395	8	416	2.0	0.363	29.4	LOS C	8.8	62.8	0.80	0.72	0.80	38.3
All Vehicles		1303	56	1372	4.3	0.534	33.2	LOS C	13.2	93.3	0.85	0.75	0.85	34.0

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – AM PEAK

📍Site: 101 [UnLo AM Post (Alt Layout) (Site Folder: Post Dev (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF [Veh. veh	QUEUE [Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %									
NorthEast: London Circuit (NE)														
5	T1	137	14	144	10.2	* 0.729	45.5	LOS D	9.0	65.4	0.96	0.84	1.07	34.2
6	R2	47	5	49	10.6	0.729	53.8	LOS D	9.0	65.4	1.00	0.87	1.12	32.4
Approach		184	19	194	10.3	0.729	47.6	LOS D	9.0	65.4	0.97	0.85	1.08	33.5
NorthWest: University Avenue (NW)														
7	L2	100	8	105	8.0	0.568	48.7	LOS D	7.7	56.5	0.97	0.81	0.97	32.7
9	R2	58	0	61	0.0	* 0.568	48.6	LOS D	7.7	56.5	0.97	0.81	0.97	32.9
Approach		158	8	166	5.1	0.568	48.7	LOS D	7.7	56.5	0.97	0.81	0.97	32.8
SouthWest: London Circuit (SW)														
10	L2	241	9	254	3.7	0.745	30.6	LOS C	25.4	182.4	0.90	0.83	0.90	40.5
11	T1	366	21	385	5.7	0.745	24.8	LOS C	25.4	182.4	0.89	0.82	0.89	41.6
Approach		607	30	639	4.9	0.745	27.1	LOS C	25.4	182.4	0.89	0.82	0.89	41.2
All Vehicles		949	57	999	6.0	0.745	34.7	LOS C	25.4	182.4	0.92	0.82	0.94	37.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – PM PEAK

📍Site: 101 [UnLo PM Post (Alt Layout) (Site Folder: Post Dev (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF [Veh. veh	QUEUE [Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %									
NorthEast: London Circuit (NE)														
5	T1	136	11	143	8.1	* 0.584	41.2	LOS D	8.4	60.2	0.95	0.77	0.95	35.5
6	R2	46	4	48	8.7	0.584	48.6	LOS D	8.4	60.2	0.97	0.80	0.97	34.0
Approach		182	15	192	8.2	0.584	43.0	LOS D	8.4	60.2	0.95	0.78	0.95	35.0
NorthWest: University Avenue (NW)														
7	L2	154	2	162	1.3	0.457	42.5	LOS D	8.3	58.5	0.92	0.80	0.92	34.8
9	R2	29	0	31	0.0	* 0.457	42.5	LOS D	8.3	58.5	0.92	0.80	0.92	34.8
Approach		183	2	193	1.1	0.457	42.5	LOS D	8.3	58.5	0.92	0.80	0.92	34.8
SouthWest: London Circuit (SW)														
10	L2	183	1	193	0.5	0.602	30.4	LOS C	18.2	128.8	0.84	0.78	0.84	40.7
11	T1	281	14	296	5.0	0.602	24.6	LOS C	18.2	128.8	0.83	0.77	0.83	41.7
Approach		464	15	488	3.2	0.602	26.9	LOS C	18.2	128.8	0.83	0.77	0.83	41.3
All Vehicles		829	32	873	3.9	0.602	33.9	LOS C	18.2	128.8	0.88	0.78	0.88	38.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – AM PEAK

 Site: 101 [UnLo AM Growth Only (Site Folder: Growth Only (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
8	T1	152	1.6	160	1.6	0.082	0.1	LOS A	0.3	2.3	0.01	0.02	0.01	59.7
9	R2	50	11.1	53	11.1	0.082	10.0	LOS A	0.3	2.3	0.56	0.71	0.56	44.8
Approach		202	4.0	213	4.0	0.082	2.6	NA	0.3	2.3	0.15	0.19	0.15	56.6
NorthWest: University Avenue (NW)														
10	L2	108	8.0	114	8.0	0.287	8.7	LOS A	1.0	7.5	0.17	0.95	0.17	43.6
12	R2	59	0.0	62	0.0	0.287	19.0	LOS B	1.0	7.5	0.17	0.95	0.17	43.8
Approach		167	5.2	176	5.2	0.287	12.3	LOS A	1.0	7.5	0.17	0.95	0.17	43.7
SouthWest: London Circuit (SW)														
1	L2	286	3.8	301	3.8	0.205	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.8
2	T1	432	2.5	455	2.5	0.205	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.2
Approach		718	3.0	756	3.0	0.205	2.3	NA	0.0	0.0	0.00	0.23	0.00	46.2
All Vehicles		1087	3.5	1144	3.5	0.287	3.9	NA	1.0	7.5	0.05	0.33	0.05	47.7

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

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – PM PEAK

 Site: 101 [UnLo PM Growth Only (Site Folder: Growth Only (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
8	T1	154	0.8	162	0.8	0.073	0.4	LOS A	0.3	2.3	0.06	0.07	0.06	59.1
9	R2	48	8.5	51	8.5	0.073	8.4	LOS A	0.3	2.3	0.43	0.47	0.43	47.7
Approach		202	2.6	213	2.6	0.073	2.3	NA	0.3	2.3	0.15	0.16	0.15	57.0
NorthWest: University Avenue (NW)														
10	L2	177	1.3	186	1.3	0.223	8.4	LOS A	0.9	6.1	0.12	0.94	0.12	46.5
12	R2	24	0.0	25	0.0	0.223	15.9	LOS B	0.9	6.1	0.12	0.94	0.12	46.4
Approach		201	1.2	212	1.2	0.223	9.3	LOS A	0.9	6.1	0.12	0.94	0.12	46.5
SouthWest: London Circuit (SW)														
1	L2	213	0.5	224	0.5	0.153	5.6	LOS A	0.0	0.0	0.00	0.47	0.00	29.9
2	T1	330	1.5	347	1.5	0.153	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
Approach		543	1.1	572	1.1	0.153	2.2	NA	0.0	0.0	0.00	0.23	0.00	46.4
All Vehicles		946	1.4	996	1.4	0.223	3.7	NA	0.9	6.1	0.06	0.37	0.06	48.6

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

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – AM PEAK

📍Site: 101 [MCUn AM Growth Only (Site Folder: Growth Only (Existing Layouts))]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h	
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m					
SouthEast: University Avenue (SE)															
4	L2	35	2.6	37	2.6	0.102	32.6	LOS C	2.0	14.3	0.76	0.67	0.76	32.0	
5	T1	151	0.0	159	0.0	* 0.509	30.8	LOS C	11.5	84.0	0.86	0.77	0.86	18.5	
6	R2	137	10.6	144	10.6	0.509	36.9	LOS C	11.5	84.0	0.88	0.78	0.88	30.2	
Approach		323	4.8	340	4.8	0.509	33.6	LOS C	11.5	84.0	0.86	0.76	0.86	26.1	
NorthEast: Marcus Clarke Street (NE)															
7	L2	82	1.4	86	1.4	0.125	27.3	LOS B	2.7	19.3	0.68	0.73	0.68	33.2	
8	T1	279	3.1	294	3.1	0.456	25.7	LOS B	11.2	80.6	0.81	0.70	0.81	42.1	
9	R2	9	0.0	9	0.0	0.456	31.3	LOS C	11.2	80.6	0.81	0.70	0.81	35.2	
Approach		370	2.6	389	2.6	0.456	26.2	LOS B	11.2	80.6	0.78	0.70	0.78	40.4	
NorthWest: University Avenue (NW)															
10	L2	40	75.8	42	75.8	0.247	49.7	LOS D	1.9	22.2	0.93	0.74	0.93	25.0	
11	T1	62	17.6	65	17.6	* 0.498	44.4	LOS D	5.8	45.0	0.97	0.78	0.97	14.5	
12	R2	55	8.9	58	8.9	0.498	50.1	LOS D	5.8	45.0	0.97	0.78	0.97	26.6	
Approach		157	29.4	165	29.4	0.498	47.7	LOS D	5.8	45.0	0.96	0.77	0.96	22.4	
SouthWest: Marcus Clarke Street (SW)															
1	L2	222	1.1	234	1.1	0.504	31.4	LOS C	13.2	93.4	0.82	0.78	0.82	33.4	
2	T1	382	1.9	402	1.9	0.504	27.1	LOS B	13.2	93.4	0.83	0.74	0.83	40.9	
3	R2	27	0.0	28	0.0	* 0.504	33.3	LOS C	12.1	85.7	0.84	0.73	0.84	32.8	
Approach		631	1.5	664	1.5	0.504	28.9	LOS C	13.2	93.4	0.83	0.76	0.83	38.3	
All Vehicles		1481	5.5	1559	5.5	0.509	31.2	LOS C	13.2	93.4	0.84	0.75	0.84	35.0	

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

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
MARCUS CLARKE ST / UNIVERSITY AVE – PM PEAK

📍Site: 101 [MCUn PM Growth Only (Site Folder: Growth Only (Existing Layouts))]

MCUn AM Ex
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance																
Mov ID	Turn	INPUT VOLUMES		DEMAND		FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	[Veh. veh	Dist] m									
SouthEast: University Avenue (SE)																
4	L2	20	0.0	21	0.0	0.131	43.0	LOS D	1.9	13.1	0.87	0.69	0.87	28.2		
5	T1	132	0.0	139	0.0	* 0.654	41.6	LOS C	10.4	74.5	0.96	0.81	0.98	15.2		
6	R2	102	5.5	107	5.5	0.654	48.0	LOS D	10.4	74.5	0.98	0.83	1.00	26.4		
Approach		254	2.2	267	2.2	0.654	44.3	LOS D	10.4	74.5	0.96	0.81	0.98	21.7		
NorthEast: Marcus Clarke Street (NE)																
7	L2	87	1.3	92	1.3	0.130	26.7	LOS B	2.9	20.2	0.68	0.73	0.68	33.6		
8	T1	369	1.3	388	1.3	0.651	29.6	LOS C	16.9	119.9	0.90	0.79	0.90	40.3		
9	R2	21	0.0	22	0.0	* 0.651	35.2	LOS C	16.9	119.9	0.90	0.79	0.90	33.2		
Approach		477	1.3	502	1.3	0.651	29.3	LOS C	16.9	119.9	0.86	0.78	0.86	39.1		
NorthWest: University Avenue (NW)																
10	L2	59	75.0	62	75.0	0.203	39.1	LOS C	2.5	28.2	0.83	0.75	0.83	28.2		
11	T1	93	1.3	98	1.3	* 0.640	36.6	LOS C	13.4	94.5	0.95	0.83	0.95	16.3		
12	R2	195	0.6	205	0.6	0.640	42.1	LOS C	13.4	94.5	0.95	0.83	0.95	29.0		
Approach		347	13.5	365	13.5	0.640	40.1	LOS C	13.4	94.5	0.93	0.81	0.93	26.3		
SouthWest: Marcus Clarke Street (SW)																
1	L2	128	0.0	135	0.0	0.430	29.8	LOS C	11.1	79.1	0.78	0.73	0.78	34.9		
2	T1	311	3.1	327	3.1	0.430	28.5	LOS B	11.1	79.1	0.83	0.73	0.83	40.1		
3	R2	33	0.0	35	0.0	0.430	39.3	LOS C	7.6	54.6	0.88	0.74	0.88	29.9		
Approach		472	2.1	497	2.1	0.430	29.6	LOS C	11.1	79.1	0.82	0.73	0.82	38.3		
All Vehicles		1550	4.4	1632	4.4	0.654	34.3	LOS C	16.9	119.9	0.88	0.78	0.88	33.7		

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

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – AM PEAK

Site: 101 [UnLo AM Growth Only (Alt Layout) (Site Folder: Growth Only (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	152	10.2	160	10.2	* 0.851	50.4	LOS D	10.6	77.1	0.96	0.94	1.26	32.9
6	R2	50	11.1	53	11.1	0.851	59.3	LOS E	10.6	77.1	1.00	0.98	1.32	30.9
Approach		202	10.4	213	10.4	0.851	52.6	LOS D	10.6	77.1	0.97	0.95	1.27	32.1
NorthWest: University Avenue (NW)														
7	L2	108	8.0	114	8.0	0.593	48.9	LOS D	8.2	60.0	0.98	0.81	0.98	32.7
9	R2	59	0.0	62	0.0	* 0.593	48.8	LOS D	8.2	60.0	0.98	0.81	0.98	32.8
Approach		167	5.2	176	5.2	0.593	48.9	LOS D	8.2	60.0	0.98	0.81	0.98	32.7
SouthWest: London Circuit (SW)														
10	L2	286	3.8	301	3.8	0.861	39.2	LOS D	36.7	263.6	0.97	0.96	1.09	37.0
11	T1	432	5.7	455	5.7	0.861	33.0	LOS C	36.7	263.6	0.96	0.94	1.07	38.1
Approach		718	5.0	756	5.0	0.861	35.5	LOS D	36.7	263.6	0.96	0.95	1.08	37.6
All Vehicles		1087	6.0	1144	6.0	0.861	40.7	LOS D	36.7	263.6	0.97	0.93	1.10	35.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH ONLY TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – PM PEAK

Site: 101 [UnLo PM Growth Only (Alt Layout) (Site Folder: Growth Only (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	154	8.1	162	8.1	* 0.670	42.2	LOS D	9.5	68.2	0.96	0.81	1.00	35.2
6	R2	48	8.5	51	8.5	0.670	49.7	LOS D	9.5	68.2	0.99	0.84	1.03	33.7
Approach		202	8.2	213	8.2	0.670	44.0	LOS D	9.5	68.2	0.96	0.81	1.01	34.7
NorthWest: University Avenue (NW)														
7	L2	177	1.3	186	1.3	0.443	40.0	LOS D	8.8	62.2	0.89	0.80	0.89	35.6
9	R2	24	0.0	25	0.0	* 0.443	40.0	LOS D	8.8	62.2	0.89	0.80	0.89	35.6
Approach		201	1.2	212	1.2	0.443	40.0	LOS D	8.8	62.2	0.89	0.80	0.89	35.6
SouthWest: London Circuit (SW)														
10	L2	213	0.5	224	0.5	0.687	31.0	LOS C	22.2	156.9	0.88	0.81	0.88	40.5
11	T1	330	5.0	347	5.0	0.687	25.2	LOS C	22.2	156.9	0.87	0.80	0.87	41.4
Approach		543	3.2	572	3.2	0.687	27.4	LOS C	22.2	156.9	0.87	0.80	0.87	41.0
All Vehicles		946	3.9	996	3.9	0.687	33.6	LOS C	22.2	156.9	0.90	0.80	0.90	38.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – AM PEAK

 Site: 101 [UnLo AM Post + Growth (Site Folder: Post Dev + Growth (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
NorthEast: London Circuit (NE)														
8	T1	152	1.6	160	1.6	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	56	11.1	59	11.1	0.093	10.0	LOS A	0.3	2.4	0.56	0.78	0.56	44.3
Approach		208	4.2	219	4.2	0.093	2.7	NA	0.3	2.4	0.15	0.21	0.15	56.3
NorthWest: University Avenue (NW)														
10	L2	119	8.0	125	8.0	0.332	8.8	LOS A	1.3	9.5	0.17	0.95	0.18	43.1
12	R2	69	0.0	73	0.0	0.332	19.7	LOS B	1.3	9.5	0.17	0.95	0.18	43.3
Approach		188	5.1	198	5.1	0.332	12.8	LOS A	1.3	9.5	0.17	0.95	0.18	43.2
SouthWest: London Circuit (SW)														
1	L2	292	3.8	307	3.8	0.207	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.8
2	T1	432	2.5	455	2.5	0.207	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		724	3.0	762	3.0	0.207	2.3	NA	0.0	0.0	0.00	0.23	0.00	46.0
All Vehicles		1120	3.6	1179	3.6	0.332	4.1	NA	1.3	9.5	0.06	0.35	0.06	47.4

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

Vehicle movement LOS values are based on average delay per movement.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (EXISTING LAYOUT) – PM PEAK

 Site: 101 [UnLo PM Post + Growth (Site Folder: Post Dev + Growth (Existing Layouts))]

Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
NorthEast: London Circuit (NE)														
8	T1	154	0.8	162	0.8	0.077	0.3	LOS A	0.3	2.4	0.04	0.05	0.04	59.4
9	R2	55	8.5	58	8.5	0.077	8.4	LOS A	0.3	2.4	0.44	0.55	0.44	47.0
Approach		209	2.8	220	2.8	0.077	2.4	NA	0.3	2.4	0.15	0.18	0.15	56.7
NorthWest: University Avenue (NW)														
10	L2	186	1.3	196	1.3	0.255	8.3	LOS A	1.0	7.0	0.11	0.94	0.11	46.2
12	R2	33	0.0	35	0.0	0.255	16.3	LOS B	1.0	7.0	0.11	0.94	0.11	46.1
Approach		219	1.1	231	1.1	0.255	9.5	LOS A	1.0	7.0	0.11	0.94	0.11	46.2
SouthWest: London Circuit (SW)														
1	L2	221	0.5	233	0.5	0.155	5.6	LOS A	0.0	0.0	0.00	0.48	0.00	29.9
2	T1	330	1.5	347	1.5	0.155	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		551	1.1	580	1.1	0.155	2.3	NA	0.0	0.0	0.00	0.23	0.00	46.1
All Vehicles		979	1.5	1031	1.5	0.255	3.9	NA	1.0	7.0	0.06	0.38	0.06	48.3

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

Vehicle movement LOS values are based on average delay per movement.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES

MOVEMENT SUMMARY

MARCUS CLARKE ST / UNIVERSITY AVE – AM PEAK

Site: 101 [MCUn AM Post + Growth (Site Folder: Post Dev + Growth (Existing Layouts))]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF [Veh.	QUEUE [Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		veh	m				km/h
SouthEast: University Avenue (SE)														
4	L2	46	2.6	48	2.6	0.105	31.9	LOS C	2.1	15.0	0.75	0.70	0.75	31.9
5	T1	151	0.0	159	0.0	* 0.527	30.5	LOS C	12.2	89.3	0.87	0.78	0.87	18.7
6	R2	147	10.6	155	10.6	0.527	36.4	LOS C	12.2	89.3	0.88	0.79	0.88	30.4
Approach		344	4.9	362	4.9	0.527	33.2	LOS C	12.2	89.3	0.86	0.77	0.86	26.6
NorthEast: Marcus Clarke Street (NE)														
7	L2	88	1.4	93	1.4	0.135	27.4	LOS B	2.9	20.8	0.69	0.73	0.69	33.2
8	T1	279	3.1	294	3.1	0.458	25.8	LOS B	11.2	80.7	0.81	0.70	0.81	42.1
9	R2	9	0.0	9	0.0	0.458	31.3	LOS C	11.2	80.7	0.81	0.70	0.81	35.1
Approach		376	2.6	396	2.6	0.458	26.3	LOS B	11.2	80.7	0.78	0.70	0.78	40.3
NorthWest: University Avenue (NW)														
10	L2	40	75.8	42	75.8	0.266	51.0	LOS D	2.0	22.6	0.94	0.75	0.94	24.7
11	T1	62	17.6	65	17.6	* 0.536	45.6	LOS D	5.9	45.7	0.98	0.79	0.98	14.3
12	R2	55	8.9	58	8.9	0.536	51.3	LOS D	5.9	45.7	0.98	0.79	0.98	26.2
Approach		157	29.4	165	29.4	0.536	49.0	LOS D	5.9	45.7	0.97	0.78	0.97	22.0
SouthWest: Marcus Clarke Street (SW)														
1	L2	222	1.1	234	1.1	0.516	31.6	LOS C	13.6	96.4	0.82	0.78	0.82	33.4
2	T1	382	1.9	402	1.9	0.516	27.7	LOS B	13.6	96.4	0.84	0.75	0.84	40.5
3	R2	33	0.0	35	0.0	* 0.516	34.2	LOS C	12.1	86.2	0.85	0.74	0.85	32.3
Approach		637	1.5	671	1.5	0.516	29.4	LOS C	13.6	96.4	0.84	0.76	0.84	38.1
All Vehicles		1514	5.4	1594	5.4	0.536	31.5	LOS C	13.6	96.4	0.84	0.75	0.84	34.8

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES

MOVEMENT SUMMARY

MARCUS CLARKE ST / UNIVERSITY AVE – PM PEAK

Site: 101 [MCUn PM Post + Growth (Site Folder: Post Dev + Growth (Existing Layouts))]

MCUn AM Ex

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF [Veh.	QUEUE [Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		veh	m				km/h
SouthEast: University Avenue (SE)														
4	L2	29	0.0	31	0.0	0.132	42.1	LOS C	2.0	13.8	0.87	0.70	0.87	28.1
5	T1	132	0.0	139	0.0	* 0.662	41.1	LOS C	11.1	79.2	0.97	0.82	0.98	15.3
6	R2	110	5.5	116	5.5	0.662	47.3	LOS D	11.1	79.2	0.98	0.83	1.00	26.6
Approach		271	2.2	285	2.2	0.662	43.7	LOS D	11.1	79.2	0.96	0.81	0.98	22.2
NorthEast: Marcus Clarke Street (NE)														
7	L2	95	1.3	100	1.3	0.142	26.8	LOS B	3.1	22.1	0.68	0.73	0.68	33.5
8	T1	369	1.3	388	1.3	0.677	31.3	LOS C	17.4	123.1	0.92	0.81	0.92	39.5
9	R2	21	0.0	22	0.0	* 0.677	36.9	LOS C	17.4	123.1	0.92	0.81	0.92	32.4
Approach		485	1.3	511	1.3	0.677	30.7	LOS C	17.4	123.1	0.87	0.79	0.87	38.4
NorthWest: University Avenue (NW)														
10	L2	59	75.0	62	75.0	0.212	40.0	LOS C	2.5	28.6	0.84	0.75	0.84	27.9
11	T1	93	1.3	98	1.3	* 0.667	37.6	LOS C	13.6	96.0	0.96	0.83	0.96	16.0
12	R2	195	0.6	205	0.6	0.667	43.2	LOS D	13.6	96.0	0.96	0.83	0.96	28.6
Approach		347	13.5	365	13.5	0.667	41.2	LOS C	13.6	96.0	0.94	0.82	0.94	25.9
SouthWest: Marcus Clarke Street (SW)														
1	L2	128	0.0	135	0.0	0.473	30.3	LOS C	12.5	89.1	0.80	0.74	0.80	34.7
2	T1	311	3.1	327	3.1	0.473	29.2	LOS C	12.5	89.1	0.84	0.75	0.84	39.7
3	R2	41	0.0	43	0.0	0.473	43.0	LOS D	7.0	50.3	0.92	0.77	0.92	28.3
Approach		480	2.0	505	2.0	0.473	30.7	LOS C	12.5	89.1	0.84	0.75	0.84	37.7
All Vehicles		1583	4.3	1666	4.3	0.677	35.2	LOS C	17.4	123.1	0.89	0.79	0.90	33.2

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – AM PEAK

📍Site: 101 [UnLo AM Post + Growth (Alt Layout) (Site Folder: Post Dev + Growth (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	152	10.2	160	10.2	0.849	50.3	LOS D	11.0	79.7	0.96	0.93	1.25	32.8
6	R2	56	11.1	59	11.1	* 0.849	59.2	LOS E	11.0	79.7	1.00	0.98	1.31	30.9
Approach		208	10.5	219	10.5	0.849	52.7	LOS D	11.0	79.7	0.97	0.95	1.26	32.0
NorthWest: University Avenue (NW)														
7	L2	119	8.0	125	8.0	0.676	50.4	LOS D	9.5	69.6	0.99	0.84	1.04	32.3
9	R2	69	0.0	73	0.0	* 0.676	50.3	LOS D	9.5	69.6	0.99	0.84	1.04	32.4
Approach		188	5.1	198	5.1	0.676	50.3	LOS D	9.5	69.6	0.99	0.84	1.04	32.3
SouthWest: London Circuit (SW)														
10	L2	292	3.8	307	3.8	0.889	44.2	LOS D	39.9	286.2	0.99	1.01	1.16	35.2
11	T1	432	5.7	455	5.7	* 0.889	37.9	LOS D	39.9	286.2	0.98	0.99	1.14	36.2
Approach		724	4.9	762	4.9	0.889	40.5	LOS D	39.9	286.2	0.98	1.00	1.15	35.8
All Vehicles		1120	6.0	1179	6.0	0.889	44.4	LOS D	39.9	286.2	0.98	0.96	1.16	34.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

10-YEAR GROWTH + DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
LONDON CCT / UNIVERSITY AVE (ALTERNATE LAYOUT) – PM PEAK

📍Site: 101 [UnLo PM Post + Growth (Alt Layout) (Site Folder: Post Dev + Growth (Alt Layout))]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
NorthEast: London Circuit (NE)														
5	T1	154	8.1	162	8.1	* 0.683	42.5	LOS D	9.9	71.4	0.96	0.82	1.01	35.0
6	R2	55	8.5	58	8.5	0.683	50.0	LOS D	9.9	71.4	0.99	0.85	1.04	33.5
Approach		209	8.2	220	8.2	0.683	44.5	LOS D	9.9	71.4	0.97	0.82	1.02	34.5
NorthWest: University Avenue (NW)														
7	L2	186	1.3	196	1.3	0.535	43.2	LOS D	10.1	71.4	0.94	0.82	0.94	34.5
9	R2	33	0.0	35	0.0	* 0.535	43.2	LOS D	10.1	71.4	0.94	0.82	0.94	34.5
Approach		219	1.1	231	1.1	0.535	43.2	LOS D	10.1	71.4	0.94	0.82	0.94	34.5
SouthWest: London Circuit (SW)														
10	L2	221	0.5	233	0.5	0.715	32.0	LOS C	23.1	163.2	0.90	0.82	0.90	40.0
11	T1	330	5.0	347	5.0	0.715	26.2	LOS C	23.1	163.2	0.89	0.81	0.89	40.9
Approach		551	3.2	580	3.2	0.715	28.5	LOS C	23.1	163.2	0.89	0.82	0.89	40.5
All Vehicles		979	3.8	1031	3.8	0.715	35.2	LOS D	23.1	163.2	0.92	0.82	0.93	37.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

DARWIN PLACE POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
WESTERN INTERSECTION – AM PEAK

Site: 101 [UnDa NE AM Post - NET (Site Folder: Darwin Place Post - NET)]

UnDa NE AM Post Site Category: (None) Give-Way (Two-Way)														
Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed	
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			km/h	
SouthEast: University Avenue (SE)														
5	T1	222	2.8	222	2.8	0.116	0.0	LOS A	0.0	0.0	0.00	0.00	59.9	
6	R2	11	10.0	11	10.0	0.013	2.4	LOS A	0.1	0.4	0.24	0.52	0.24	50.2
6u	U	6	0.0	6	0.0	0.013	3.6	LOS A	0.1	0.4	0.24	0.52	0.24	17.2
Approach		239	3.1	239	3.1	0.116	0.2	NA	0.1	0.4	0.02	0.04	0.02	59.3
NorthWest: University Avenue (NW)														
10	L2	16	13.3	16	13.3	0.067	5.7	LOS A	0.0	0.0	0.00	0.07	0.00	57.1
11	T1	112	3.8	112	3.8	0.067	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	58.8
Approach		127	5.0	127	5.0	0.067	0.7	NA	0.0	0.0	0.00	0.07	0.00	58.4
SouthWest: Darwin Place (SW)														
1	L2	26	0.0	26	0.0	0.069	6.3	LOS A	0.3	1.9	0.40	0.62	0.40	52.2
2	T1	4	25.0	4	25.0	0.069	7.9	LOS A	0.3	1.9	0.40	0.62	0.40	51.6
3	R2	27	3.8	27	3.8	0.069	8.6	LOS A	0.3	1.9	0.40	0.62	0.40	48.3
Approach		58	3.6	58	3.6	0.069	7.5	LOS A	0.3	1.9	0.40	0.62	0.40	50.9
All Vehicles		424	3.7	424	3.7	0.116	1.3	NA	0.3	1.9	0.06	0.13	0.06	57.2

Site Level of Service (LOS) Method: Delay (SIDRA). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

DARWIN PLACE POST-DEVELOPMENT TRAFFIC VOLUMES
MOVEMENT SUMMARY
EASTERN INTERSECTION – AM PEAK

Site: 101 [UnDa SW AM Post - NET (Site Folder: Darwin Place Post - NET)]

UnDa SW AM Post Site Category: (None) Give-Way (Two-Way)														
Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed	
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			km/h	
SouthEast: University Avenue (SE)														
4	L2	21	5.0	21	5.0	0.131	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.6
5	T1	232	2.3	232	2.3	0.131	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.1
Approach		253	2.5	253	2.5	0.131	0.5	NA	0.0	0.0	0.00	0.05	0.00	58.8
NorthEast: Darwin Place (NE)														
7	L2	22	9.5	22	9.5	0.031	6.0	LOS A	0.1	0.9	0.26	0.56	0.26	52.2
8	T1	1	0.0	1	0.0	0.031	7.1	LOS A	0.1	0.9	0.26	0.56	0.26	53.0
9	R2	7	28.6	7	28.6	0.031	9.9	LOS A	0.1	0.9	0.26	0.56	0.26	49.2
Approach		31	13.8	31	13.8	0.031	7.0	LOS A	0.1	0.9	0.26	0.56	0.26	51.8
NorthWest: University Avenue (NW)														
11	T1	117	3.6	117	3.6	0.061	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
12	R2	18	5.9	18	5.9	0.018	2.8	LOS A	0.1	0.5	0.35	0.53	0.35	50.3
12u	U	4	0.0	4	0.0	0.018	4.4	LOS A	0.1	0.5	0.35	0.53	0.35	15.6
Approach		139	3.8	139	3.8	0.061	0.5	NA	0.1	0.5	0.06	0.08	0.06	58.3
All Vehicles		422	3.7	422	3.7	0.131	1.0	NA	0.1	0.9	0.04	0.10	0.04	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

DARWIN PLACE POST-DEVELOPMENT TRAFFIC VOLUMES

MOVEMENT SUMMARY

WESTERN INTERSECTION – PM PEAK

Site: 101 [UnDa NE PM Post - NET (Site Folder: Darwin Place Post - NET)]

UnDa NE AM Post Site Category: (None) Give-Way (Two-Way)													
Vehicle Movement Performance													
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			km/h
SouthEast: University Avenue (SE)													
5	T1	174	1.2	174	1.2	0.089	0.0	LOS A	0.0	0.00	0.00	0.00	60.0
6	R2	14	0.0	14	0.0	0.015	2.6	LOS A	0.1	0.5	0.31	0.53	50.8
6u	U	6	0.0	6	0.0	0.015	4.1	LOS A	0.1	0.5	0.31	0.53	16.2
Approach		194	1.1	194	1.1	0.089	0.3	NA	0.1	0.5	0.03	0.05	59.0
NorthWest: University Avenue (NW)													
10	L2	15	0.0	15	0.0	0.103	5.6	LOS A	0.0	0.0	0.00	0.04	57.9
11	T1	185	1.7	185	1.7	0.103	0.0	LOS A	0.0	0.0	0.00	0.04	59.2
Approach		200	1.6	200	1.6	0.103	0.4	NA	0.0	0.0	0.00	0.04	59.0
SouthWest: Darwin Place (SW)													
1	L2	24	0.0	24	0.0	0.058	6.1	LOS A	0.2	1.6	0.36	0.61	52.2
2	T1	1	0.0	1	0.0	0.058	7.1	LOS A	0.2	1.6	0.36	0.61	52.5
3	R2	25	0.0	25	0.0	0.058	8.6	LOS A	0.2	1.6	0.36	0.61	48.5
Approach		51	0.0	51	0.0	0.058	7.3	LOS A	0.2	1.6	0.36	0.61	50.9
All Vehicles		444	1.2	444	1.2	0.103	1.2	NA	0.2	1.6	0.05	0.11	57.5

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

DARWIN PLACE POST-DEVELOPMENT TRAFFIC VOLUMES

MOVEMENT SUMMARY

EASTERN INTERSECTION – PM PEAK

Site: 101 [UnDa SW PM Post - NET (Site Folder: Darwin Place Post - NET)]

UnDa SW AM Post Site Category: (None) Give-Way (Two-Way)													
Vehicle Movement Performance													
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			km/h
SouthEast: University Avenue (SE)													
4	L2	22	0.0	22	0.0	0.105	5.6	LOS A	0.0	0.0	0.00	0.06	57.8
5	T1	182	1.2	182	1.2	0.105	0.0	LOS A	0.0	0.0	0.00	0.06	58.8
Approach		204	1.0	204	1.0	0.105	0.6	NA	0.0	0.0	0.00	0.06	58.6
NorthEast: Darwin Place (NE)													
7	L2	15	0.0	15	0.0	0.030	6.1	LOS A	0.1	0.8	0.36	0.59	52.3
8	T1	1	0.0	1	0.0	0.030	7.2	LOS A	0.1	0.8	0.36	0.59	52.7
9	R2	12	0.0	12	0.0	0.030	8.6	LOS A	0.1	0.8	0.36	0.59	48.6
Approach		27	0.0	27	0.0	0.030	7.2	LOS A	0.1	0.8	0.36	0.59	51.3
NorthWest: University Avenue (NW)													
11	T1	189	1.7	189	1.7	0.098	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	20	0.0	20	0.0	0.014	2.6	LOS A	0.1	0.4	0.30	0.50	51.4
12u	U	1	0.0	1	0.0	0.014	4.1	LOS A	0.1	0.4	0.30	0.50	17.0
Approach		211	1.5	211	1.5	0.098	0.3	NA	0.1	0.4	0.03	0.05	59.0
All Vehicles		442	1.2	442	1.2	0.105	0.9	NA	0.1	0.8	0.04	0.09	58.0

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

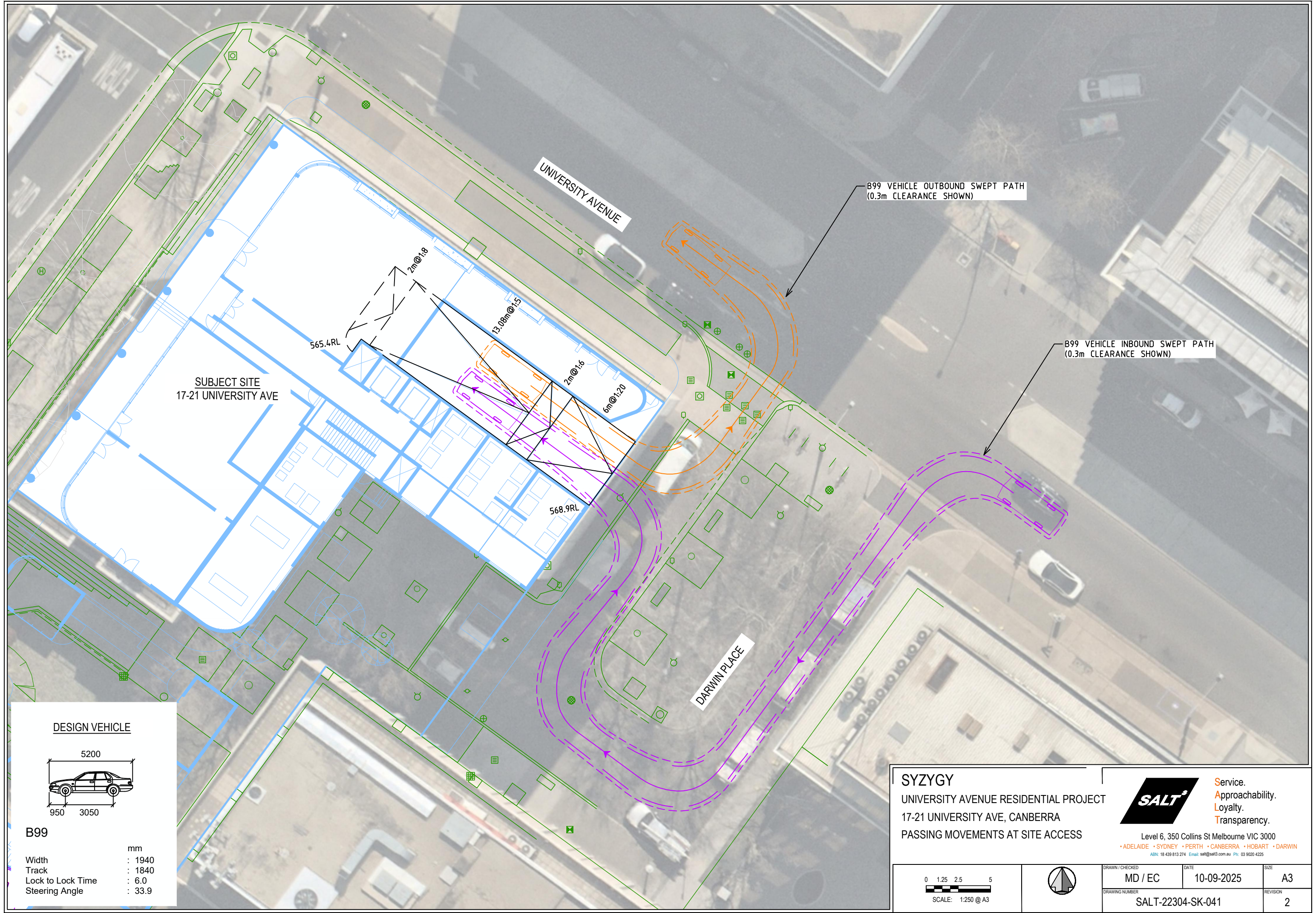
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

APPENDIX 3 SWEPT PATH DIAGRAMS



SUBJECT SITE
17-21 UNIVERSITY AVE

UNIVERSITY AVENUE

DARWIN PLACE

B99 VEHICLE OUTBOUND SWEEP PATH
(0.3m CLEARANCE SHOWN)

B99 VEHICLE INBOUND SWEEP PATH
(0.3m CLEARANCE SHOWN)

2m @ 1:8

13.08m @ 1:5

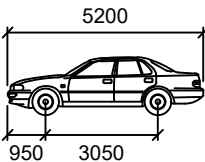
2m @ 1:6

6m @ 1:20

565.4RL

568.9RL

DESIGN VEHICLE



B99

Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

mm

SYZGY
UNIVERSITY AVENUE RESIDENTIAL PROJECT
17-21 UNIVERSITY AVE, CANBERRA
PASSING MOVEMENTS AT SITE ACCESS

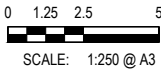


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SALT-22304-SK-041	2	



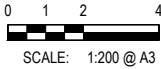
SYZGY
UNIVERSITY AVENUE RESIDENTIAL PROJECT
17-21 UNIVERSITY AVE, CANBERRA
B1 LEVEL ACCESS CONTROLS



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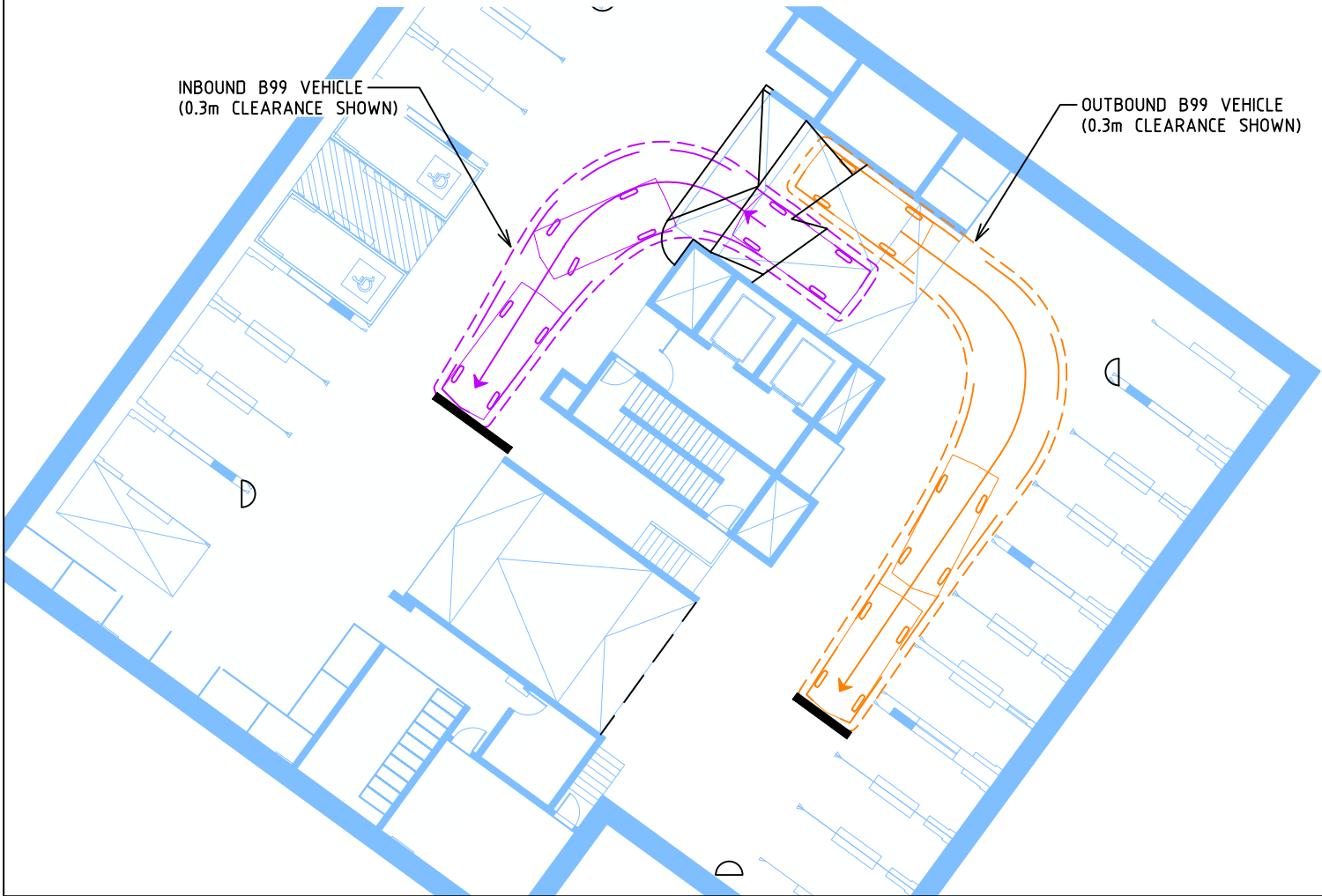
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DRAWING NUMBER SALT-22304-SK-042	REVISION 2	

OPPOSING INBOUND AND OUTBOUND MOVEMENTS APPROACHING ACCESS CONTROL



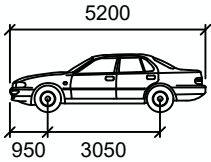
OUTBOUND MOVEMENT PASSING QUEUED INBOUND VEHICLES



INBOUND MOVEMENT PASSING QUEUED OUTBOUND VEHICLES



DESIGN VEHICLE



B99

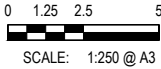
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

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UNIVERSITY AVENUE RESIDENTIAL PROJECT
17-21 UNIVERSITY AVE, CANBERRA
PASSING MOVEMENTS AT
B1 ACCESS CONTROL

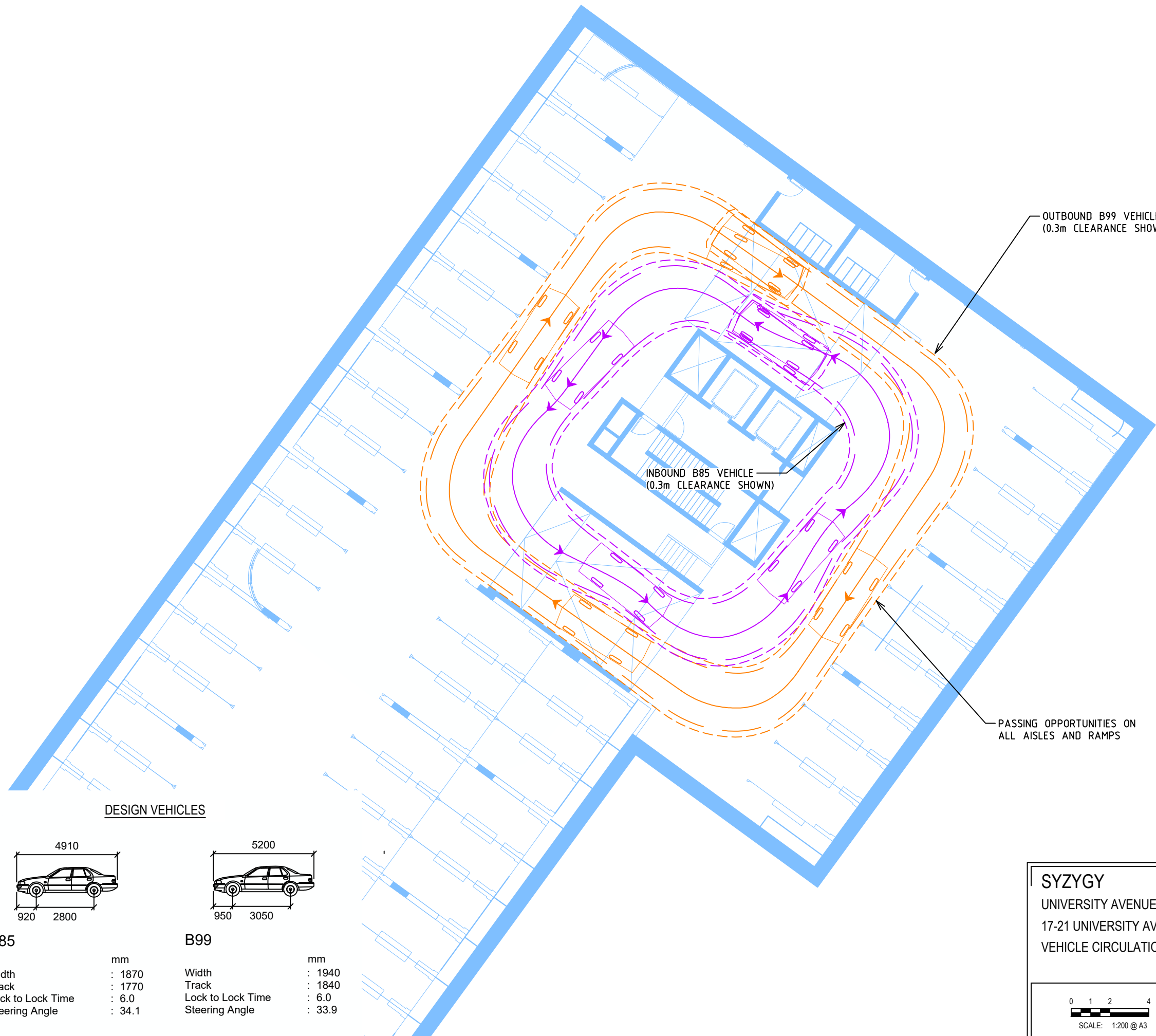


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DRAWN / CHECKED MD / EC	DATE 10-09-2025	SIZE A3
DRAWING NUMBER SALT-22304-SK-043		REVISION 2



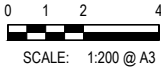
DESIGN VEHICLES

B85		B99	
	mm		mm
Width	: 1870	Width	: 1940
Track	: 1770	Track	: 1840
Lock to Lock Time	: 6.0	Lock to Lock Time	: 6.0
Steering Angle	: 34.1	Steering Angle	: 33.9

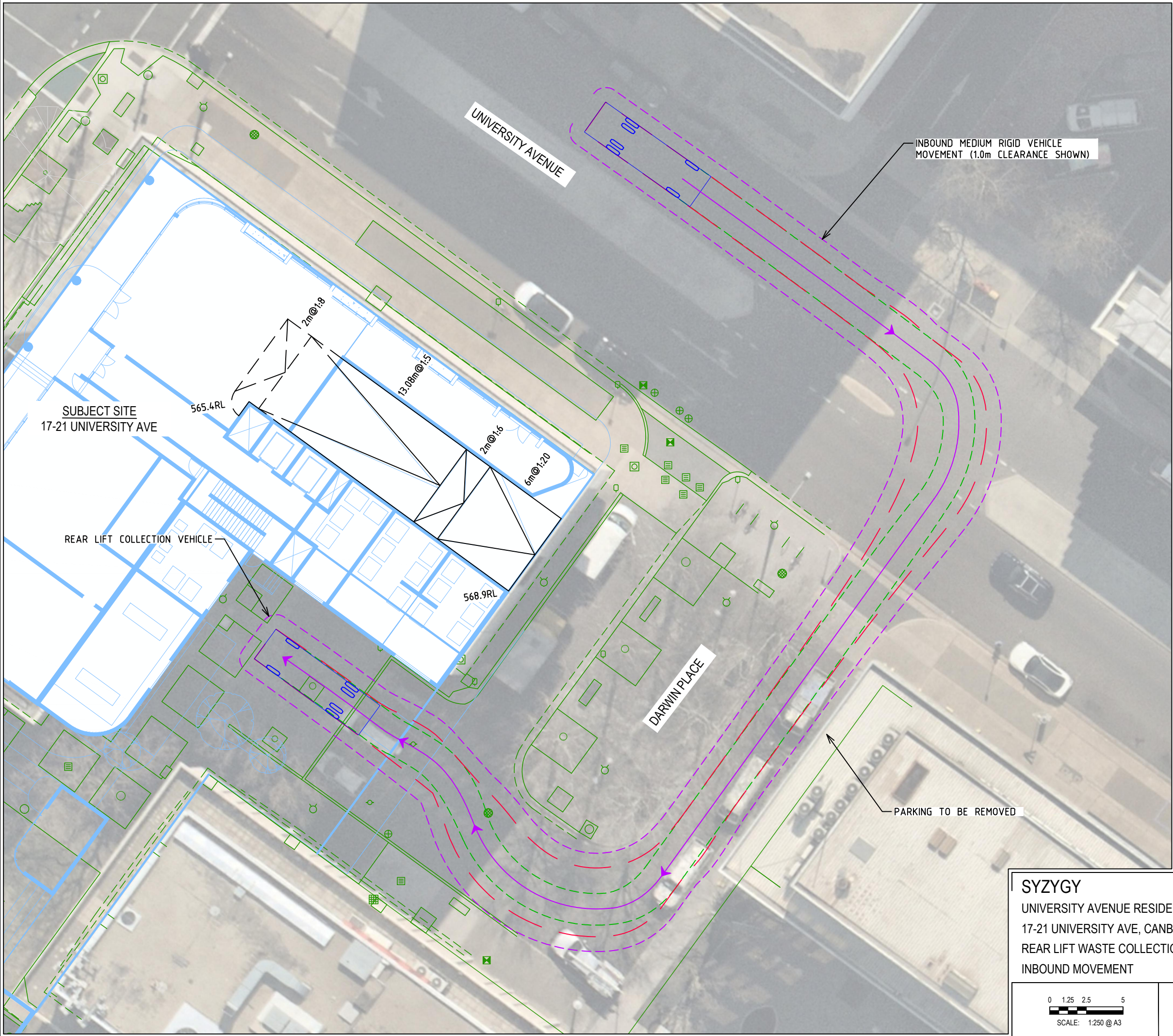
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17-21 UNIVERSITY AVE, CANBERRA
VEHICLE CIRCULATION (B1-B4 LEVELS)

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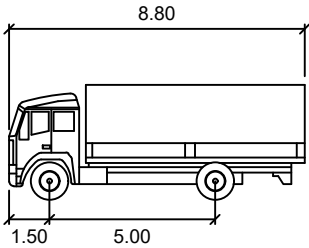
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DRAWN / CHECKED MD / EC	DATE 10-09-2025	SIZE A3
DRAWING NUMBER SALT-22304-SK-044		REVISION 2

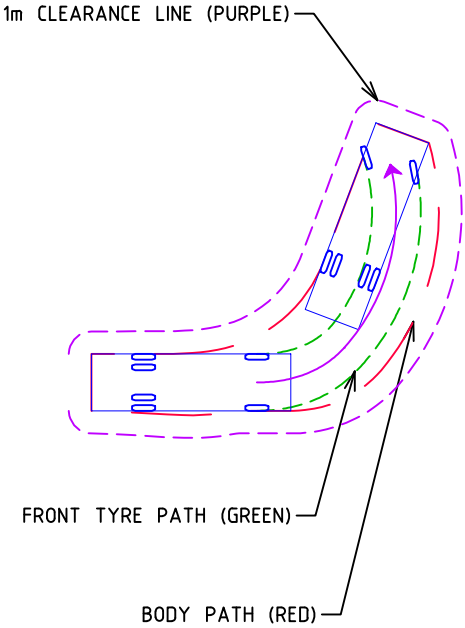


CHECKING VEHICLE



MRV

	metres
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0



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REAR LIFT WASTE COLLECTION
INBOUND MOVEMENT

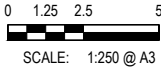


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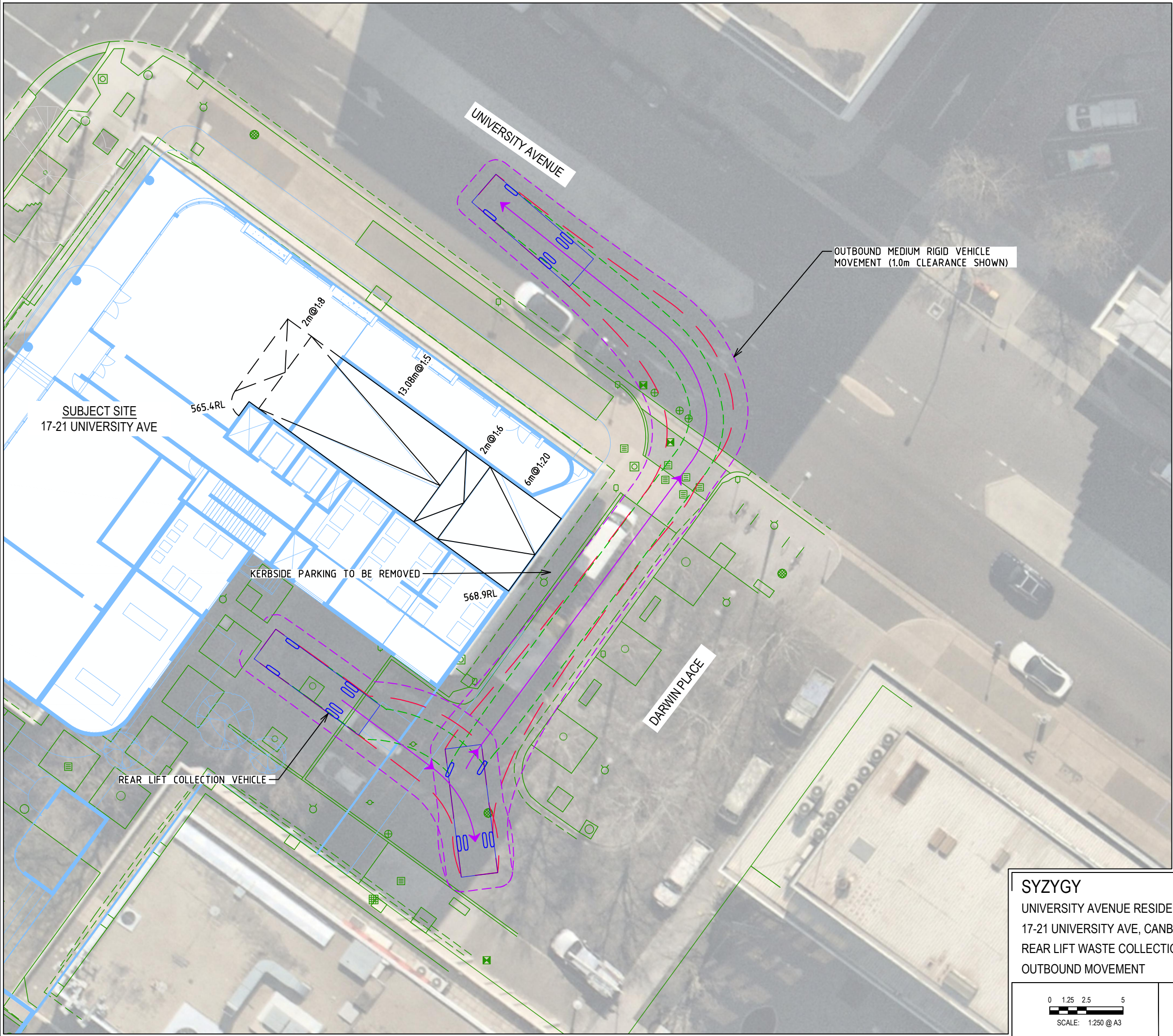
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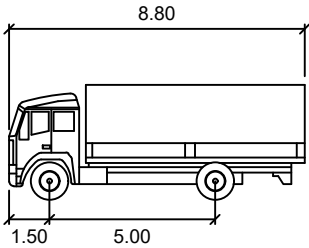
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DRAWN / CHECKED MD / CS	DATE 10-09-2025	SIZE A3
DRAWING NUMBER SALT-22304-SK-039		REVISION 2

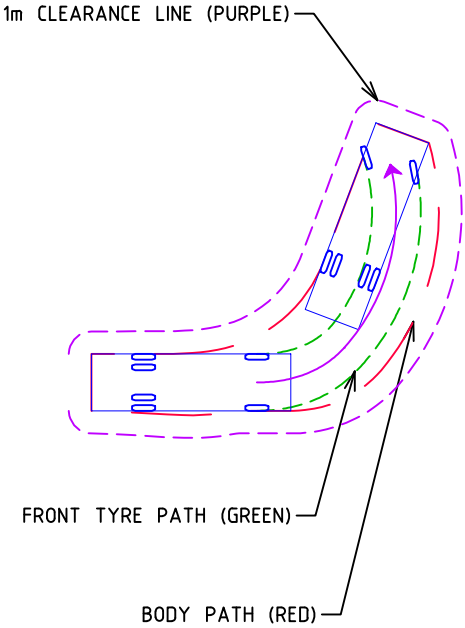


CHECKING VEHICLE



MRV

	metres
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

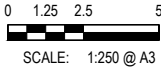


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17-21 UNIVERSITY AVE, CANBERRA
REAR LIFT WASTE COLLECTION
OUTBOUND MOVEMENT



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DRAWING NUMBER SALT-22304-SK-040		REVISION 2

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