TTW Structural Civil Traffic Façade

Transport and Accessibility Impact Assessment

Campbelltown Arts Centre Expansion SSDA

State Significant Development No. 74509208

Prepared for Campbelltown City Council

30 April 2026

241913

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Revision Register

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Executive Summary

This Transport and Accessibility Impact Assessment (TAIA) has been prepared to support the State Significant Development Application (SSDA) for the expansion of the Campbelltown Arts Centre (CAC). The assessment reviews the existing transport, access, and parking conditions surrounding the site at 1 Art Gallery Road, Campbelltown and evaluates how the proposed redevelopment will operate within the local road network. The TAIA responds directly to the Secretary's Environmental Assessment Requirements (SEARs) and has been informed by consultation with Campbelltown City Council (CCC) and Transport for NSW (TfNSW). The CAC is located approximately 1 km from both Campbelltown and Macarthur Train Stations and is well connected via existing pedestrian paths, bus services and a range of public parking facilities within 400 metres of the site. To understand how the existing centre operates and how visitors currently travel, a suite of data collection tasks was undertaken. This included interview-based visitor travel mode surveys and visitor parking location surveys, undertaken on Tuesday 24 September 2024 (busiest weekday) and Saturday 28 September 2024 (busiest weekend day). These surveys captured how visitors accessed the site, where they parked, vehicle occupancies, and trip purposes. In addition, parking occupancy surveys were completed of public and CAC-associated car parks within 400 m of the site across the same dates and between 10:00 am and 7:00 pm, covering both daytime and evening peak conditions.

The existing parking surveys show that the overall demand is moderate and that public car parks in proximity to the site generally operate with spare capacity. Across the surveyed weekday period, the peak demand in public car parks occurred between 12 pm – 1 pm, with 108 parked vehicles, representing 60% occupancy. During the weekday evening period, occupancy reduced to 42 vehicles (23%). Weekend occupancies were even lower, with a peak of 81 vehicles (45%) during the Saturday daytime and 11 vehicles (6%) during the Saturday evening. Within the CAC's own car parks, the highest observed demand was 73 vehicles (77% occupancy) during the weekday daytime period.

The proposed expansion introduces an increase in gallery, theatre, workshop, conference and community spaces, resulting in a corresponding increase in visitors and staff. To quantify the future parking demands associated with the expanded centre, a first-principles parking assessment was undertaken. This methodology considers: (i) the maximum number of visitors on-site at any one time, based on detailed facility-by-facility visitation forecasts; (ii) observed travel mode splits from the September 2024 visitor surveys; (iii) staff travel behaviour derived from ABS Journey to Work census data; and (iv) operational profiles for each use (gallery, theatre, workshops, events).

The assessment calculates parking demand by applying the car-driver mode share to the number of visitors and staff expected to be present on-site during the peak hour. This approach is considered more accurate than applying generic parking rates due to the unique and multi-use nature of the CAC. Using this method, peak parking demand is forecast to range from 184 to 228 vehicles, depending on the operating scenario (weekday daytime, weekday evening, weekend daytime, weekend evening). The proposal includes the reconfiguration of existing CAC car parks, resulting in an additional 45 on-site parking spaces, and the introduction of 20 new on-street parking spaces along Art Gallery Road – 65 additional spaces in total.

When combined with the existing public supply within 400 m, this expanded provision satisfies the forecast parking demand under all but one scenario. A small shortfall of 7 spaces is identified during the conservative weekend daytime scenario, which assumes concurrent operation of both the theatre and gallery – an uncommon occurrence. Visitors in this scenario are expected to utilise nearby public parking located within a 10-minute walking distance, which typically operates with substantial available capacity.

During events, a Traffic Management Plan (TMP) will be prepared (generally for events exceeding 300 patrons) to manage traffic movements. The TMP will prioritise public transport use and facilitate coach and bus access with designated drop-off areas to minimise impacts on the surrounding road network.

The additional traffic generated by the expansion is modest relative to the capacity of surrounding arterial roads. The proposal is estimated to generate up to 84 additional vehicle movements during weekday peak hours and 116 vehicles during the Saturday peak. Trip distribution has been based on travel patterns derived from ABS data, and assigned to the road network accordingly. SIDRA intersection modelling has been completed for the 2025, 2029 and 2039 scenarios, incorporating background traffic growth and cumulative traffic from the approved Macarthur Health Precinct Stage 2 development. The modelling confirms that the

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proposed development does not materially impact the performance of any key intersections, with future delays and congestion primarily driven by existing conditions and regional background growth rather than site-generated traffic.

Servicing arrangements will be improved through the introduction of a new loading dock capable of accommodating 12.5 m Heavy Rigid Vehicles in accordance with AS2890.2. Artwork deliveries will be separated from general servicing to allow safer and more efficient operations. Existing food and beverage servicing arrangements will continue unchanged.

Given the low projected mode share for active and public transport, no upgrades to pedestrian, cyclist or public transport infrastructure have been identified as necessary, and the existing network is considered adequate to support both current and future operations. Future mode shift initiatives will be progressed through the Green Travel Plan submitted with this SSDA.

Overall, the assessment concludes that the transport, parking and accessibility outcomes of the proposed expansion can be supported. The surrounding transport network has sufficient capacity to accommodate forecast demand, the proposal provides appropriate on-site improvements, and any residual impacts can be effectively managed. The development is therefore considered suitable for approval on traffic and accessibility grounds.

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Section 1 Introduction

1.1 Project Overview

This Transport and Accessibility Impact Assessment (TAIA) prepared by TTW on behalf of Campbelltown City Council is submitted to the Department of Planning, Housing and Infrastructure (DPHI) in support of a State Significant Development Application (SSDA) for the expansion of the existing Campbelltown Arts Centre (CAC) on land at 1 Art Gallery Road, Campbelltown (the site).

This SSDA seeks approval for:

- Demolition of parts of the existing buildings and structures on site.
- Expansion and redesign of the existing CAC, including the following elements:
  - Reorientation of the building towards Queen Street in the north to create a more substantial, welcoming and visible connection to the City Centre.
  - Addition of a new 350 seat theatre with back of house facilities.
  - Providing rehearsal spaces, creative and educational workshop areas, and community facilities.
  - Provision of ancillary artists' residences.
  - Provision of commercial spaces including a café / restaurant, retail, and conference facilities.
  - Provision of expanded gallery spaces for the exhibition of artists' collections and dedicated storage for loaned artworks and collections.
- Landscaping works including provision of feature planting and paving.
- Expansion and reconfiguration of at-grade car parking.
- Extension and augmentation of services and infrastructure as required.

For a further detailed project description, please refer to the Environmental Impact Statement prepared by Colliers Urban Planning, the Architectural Drawings prepared by fjcstudio, and the other accompanying technical documents that form part of the SSDA.

A Construction Traffic Management Plan and a Green Travel Plan have been prepared separately to this TAIA and be included as part of this SSDA. These plans satisfy item 10 of the SEARs requirements for the SSDA however are considered preliminary in nature, and would be finalised post-approval as a condition of consent.

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1.2 Strategic Planning Context

Table 1 outlines the relevant strategic plans related to the traffic and transport assessment of this project.

Table 1: Relevant Strategic Context

Strategy / Plan	Comment
Future Transport Strategy (TfNSW)	This document outlines the vision for transport in NSW for future years, that is centred around utilising technological advancements to create and maintain a world-class, safe, efficient, and reliable transport system.
Greater Sydney Region Plan	This document has been prepared concurrently with Future Transport to align land use, transport, and infrastructure outcomes for Greater Sydney.
Campbelltown (Sustainable City) Development Control Plan 2015	This document contains general controls for all developments within the Campbelltown LGA and is referred to within this report as the 'Campbelltown DCP'.
Campbelltown Local Environmental Plan 2015	This document contains local environmental planning provisions for all land in Campbelltown.
Campbelltown LGA Bicycle Plan	This document contains information about existing and proposed bicycle infrastructure within the Campbelltown LGA and is designed to promote cycling and increase the number of bike users.
Roads Act 1993	The Roads Act sets out procedures for opening and closing public roads and establishes the authorities responsible for roads.
Reimagining Campbelltown City Centre Master Plan 2020	The Master Plan aims to improve access to the City Centre by making public and active transport more attractive. It encourages walking, cycling, and better public transport while reducing car use and parking demand. The 'Connected Place' initiative supports this by helping people travel into the City Centre more easily and sustainably.
Campbelltown – Macarthur Collaboration Area Place Strategy	The Campbelltown – Macarthur Place Strategy sets out a vision to grow the area into a well-connected and sustainable centre. It supports better public transport, walking and cycling links, and encourages development near transport hubs to reduce car use and improve access.
Campbelltown Local Strategic Planning Statement	The Campbelltown Local Strategic Planning Statement outlines the city's 20-year long-term goals for growth and development. It supports better transport by encouraging public and active travel, reducing car use, and planning for more connected communities with easier access to services and infrastructure.

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1.3 Codes, Standards & References

The traffic and transport strategy for the project has been prepared in the context of a variety of relevant codes, standards, and references listed below.

- Australian Standards, including:
  - AS2890 – Parking facilities
  - AS1742 – Manual of uniform traffic control devices
  - AS1428 – Design for access and mobility
- Austroads Guidelines, including:
  - Guide to Traffic Management
  - Guide to Road Design
  - Guide to Road Safety
- TfNSW Guide to Transport Impact Assessment,2024
- NSW Planning Guidelines for Walking and Cycling
- State Environmental Planning Policy (Transport and Infrastructure) 2021

In addition to the above, the following reference documents relevant to the subject site have been reviewed, and have been referenced and adopted as appropriate throughout this report:

- *Car Parking Occupancy Surveys September 2024*
- *Macarthur Health Precinct Stage 2 Transport and Accessibility Impact Assessment* [v4.0], dated 23 November 2023, by SCT Consulting, prepared for the State Significant Development of the Macarthur Health Precinct Stage 2 (SSD-52066209) (hereinafter known as the **Macarthur SCT report**)
- *Campbelltown Catholic Club – Independent Living Units, Transport Assessment,* dated 26 January 2024, by JMT Consulting, prepared for the Development Application of the Campbelltown Catholic Club Independent Living Units (584/2024/DA-SL) (hereinafter known as the **JMT report**)

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1.4 Consultation

This report has been prepared following consultation between the design team and relevant stakeholders, including Campbelltown City Council (CCC) and Transport for New South Wales (TfNSW). Consultation events and outcomes are identified in Table 2, with details of the consultation available in Table 2.

Table 2: Consultation Summary

Date	Stakeholders	Discussions and Outcomes
15 October 2025	TTW TfNSW	TTW requested that TfNSW review the proposed SIDRA modelling scope, including nominated intersections, peak periods, and modelling scenarios. Preliminary traffic generation estimates were also provided. TfNSW subsequently requested detailed justification for these items, along with clarification on the project objectives, the rationale for using SIDRA, and the proposed data collection and modelling approach. TTW responded to address these comments and sought agreement to commence traffic surveys and modelling on 15 October 2025. To date, no response has been received from TfNSW. Email correspondence is provided in Appendix A.
17 November 2025	TTW fjcstudio CCC	fjcstudio requested for feedback from Campbelltown Council on behalf of TTW on the proposed traffic count survey locations (i.e., intersections to be monitored), dates and times. Campbelltown City Council responded and recommended that the Old Menangle Road / Art Gallery Road intersection be included as part of the traffic survey. Council had also noted that both Monday and Tuesday represent the most typical conditions in the vicinity of the development. TTW had since addressed the comment and added said intersection as part of the traffic analysis.

The development site access is within 90m of a classified road (Narellan Road and Oxley Street). Therefore, in accordance with the State Environmental Planning Policy (Transport & Infrastructure) 2021 any development with 50 or more motor vehicles per hour requires referral to TfNSW for concurrence as part of the development application process.

As part of this SSDA submission referral to TfNSW will be completed.

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1.5 Response to SEARs

This TAIA has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARs) for the proposed development dated 7 August 2024 for SSD-74509208. Specifically, this report has been prepared to respond to those SEARs outlined in Table 3 below.

Table 3: Response to SEARs

Issue and Assessment Requirements	Section Reference
10. Provide a transport and accessibility impact assessment, which includes:	
An analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	Road hierarchy – Section 2.3 Pedestrian infrastructure – Section 2.4 Cyclist infrastructure – Section 2.5 Public transport – Section 2.6 Existing vehicle movements – Section 2.11.2 Intersection performance – Section 11.4
Details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle, end-of-trip facilities and bus / coach facilities), drop-off / pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading / unloading.	Pedestrian access – Section 5 Cyclist access – Section 6 Vehicular access – Section 8.2 Parking facilities – Section 8 Drop-off and pick-up zones – Section 9 Bus bays – 6.3 Service vehicles – Section 10 Swept path analysis – Appendix D
Analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling) and peak movements during events (if relevant), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	Modal split – Section 4 Multi-modal trip generation – Section 4 Public transport – 6.3 Drop-off and pick-up zones – Section 9 Car parking – Section 8 Traffic impacts – Section 11 Cumulative impacts – Section 11.3 Road Safety impacts – Section 5.2
measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.	Mitigation measures - Section 12
measures to promote sustainable travel choices for employees, guests and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan.	Refer to the Preliminary Green Travel Plan, which has been lodged separately with this SSDA.

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Issue and Assessment Requirements	Section Reference
Provide a Construction Traffic Management Plan detailing predicted construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	Refer to the Preliminary Construction Traffic Management Plan, which has been lodged separately with this SSDA.

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Section 2 Existing Conditions

2.1 Site Overview

The site is located at 1 Art Gallery Road, Campbelltown and is legally identified as Lot 500 DP777387, Lot B DP157318, Lot 1 DP1038779, Lot 2 DP259807 and Lot 3 DP259807, as illustrated in the Site Aerial at Figure 1. It is situated within the Campbelltown local government area (LGA) immediately southwest of the Campbelltown City Centre and railway station. The existing development on site consists of the current Campbelltown Arts Centre, characterised by a double storey-built form with open space and an at-grade carpark.

The site is bounded by Art Gallery Road to the west, Narellan Road to the south, Oxley Street to the east and Camden Road to the north. The northern part of the site is separated from the southern portion by Art Gallery Road as shown in Figure 1. The site comprises a total site area of approximately 18,877 m^2.

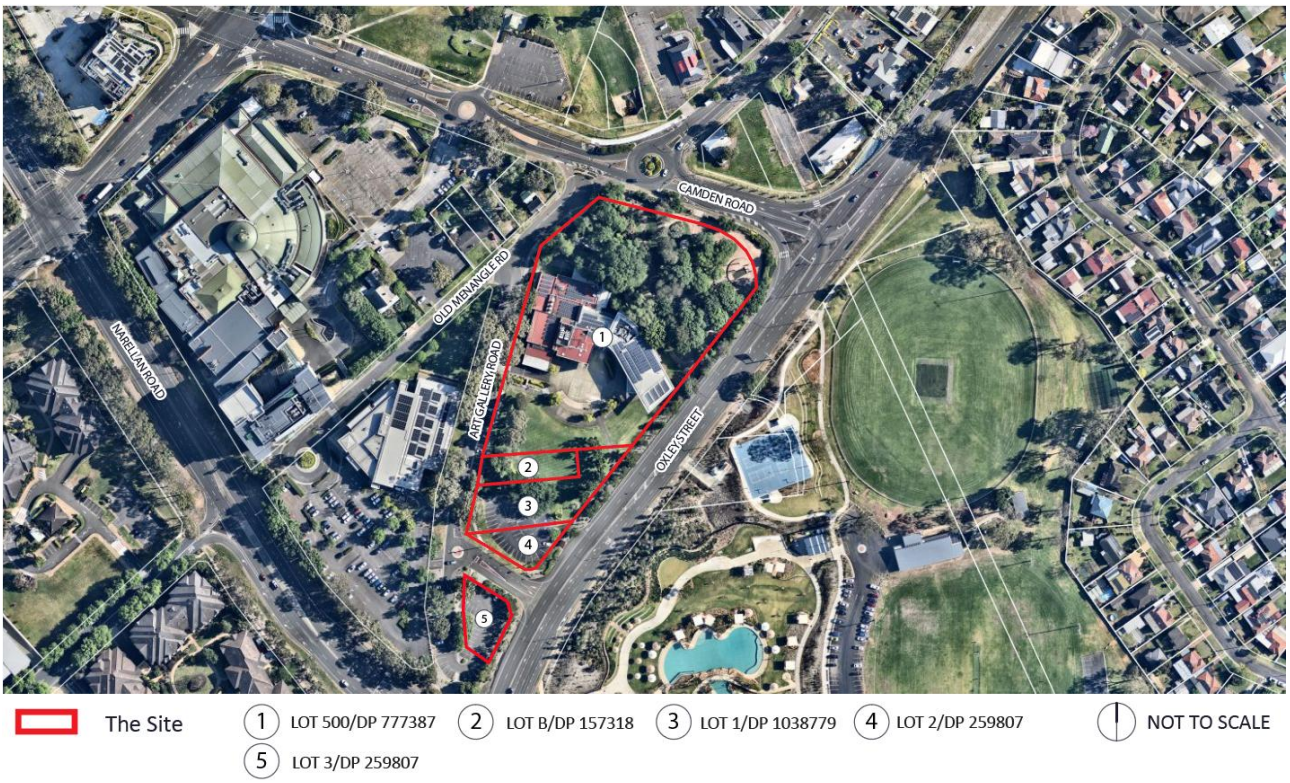


Figure 1: Site Location
Source: Nearmap / Colliers Urban Planning

The CAC is located approximately 1.5 km west of the Campbelltown CBD and is located within 1.0 km or a 20-minute walk to both the Campbelltown and Macarthur Train Station.

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2.2 Operational Details

The following breakdown provides an overview of the existing operational details of the CAC. Table 4 provides the operating hours and capacities of CAC's each facility.

CAC's core operating hours are 10:00 am – 4:00 pm, while theatre performances and special events typically occur between 7:30 pm – 10:00 pm. For the purposes of this assessment, these periods are defined as:

- Daytime: 10:00 am – 4:00 pm
- Evening: 5:00 pm – 10:00 pm

CAC accommodates a number of different uses, information provided by the Client, including operation hours and visitor capacity is detailed below in Table 4.

Table 4: CAC Operational Details
Source: CAC

Facility	Operating Hours	Capacity (Visitors)
PRIMARY USES		
Art Gallery	10:00 am to 4:00 pm Mon to Sun	350
Art Residency	As required	4
Theatre	5:00 pm to 10:00 pm Thurs to Sun	180
OTHER USES		
Café	6:00 am to 4:00 pm Mon to Sun	*100**
Café – Weddings / Functions*	7:00 am to 12:00 am Mon to Sun	*120**
Ceramics Room	9:00 am to 9:00 pm Mon to Sun	16
Outdoor Event Space	7:00 am to 10:00 pm Mon to Sun	500
Workshop Space	9:00 am to 9:00 pm Mon to Sun	60
Total		**1,230**

**The café has a maximum capacity of 120 patrons at any one time. Therefore, it can only be used for weddings if it is shut to visitors. A capacity of 120 visitors has been used to confirm the total capacity of the existing CAC.*

To understand the actual daily visitors, CAC have provided a breakdown of visitor numbers. For the following four scenarios:

- Weekday daytime (10:00 am – 4:00 pm)
- Weekday evening (7:30 pm – 10:00 pm)
- Weekend daytime (10:00 am – 4:00 pm)
- Weekend evening (7:30 pm – 10:00 pm)

The visitor and numbers are summarised in Table 5 and Table 6 respectively. It is noteworthy to mention, that the visitor numbers show the typical maximum demand. This allows for a robust assessment to be completed, and it is understood that CAC may operate at lower visitation numbers on a typical day.

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Table 5: Existing Daily Visitor Numbers
Source: CAC

Facility	Weekday		Weekend	
	Daytime	Evening	Daytime	Evening
PRIMARY USES				
Art Galleries	125	0	125	0
Art Residency	0	4	0	4
Theatre	30	120	30	120
OTHER USES				
Café*	100	0	120	0
Café – Weddings / Functions	0	0	0	120*
Ceramics Room	16	0	8	0
Outdoor Event Space	0	0	500**	0
Workshop Space	50	30	30	0
Total	**221**	**154**	**193**	**244**

**The café is ancillary to the CAC and is intended solely for CAC visitors; therefore, they are excluded from the total capacity. For weddings/ functions these patrons have been included as additional.*
***The outdoor event space will only be utilised during special events and is managed by Council, which is understood to not be a regular occurrence.*

Table 6: Existing Staff Numbers
Source: CAC

Period	Weekday	Weekend	Special Event	Total Staff Employed
Full Time	12	3	8	16
Part Time	3	1	2	6
Casual	2	2	8	12
Total*	**17**	**6**	**18**	

**Staff numbers for each period may not equate to the total number of staff employed, as some staff work across multiple periods.*

Table 7: Summary of Daily Visitors & Staff Numbers
Source: CAC

	Weekday	Weekend*
Visitors	221	693
Staff	17	18
Total	**238**	**711**

**The weekend scenario represents the maximum number of users on a weekend, which includes outdoor special events. However, special events are an irregular occurrence.*

It should be reiterated that the summaries reflect the typical maximum daily demand confirmed by CAC. Such information will be most valuable when comparing against the additional visitor and staff outlined in 3.4.

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2.3 Road Hierarchy

The key roads in the local network are detailed in Table 8, and illustrated in Figure 2.

Table 8: Road Classification

Road	Classification	Speed Limit	Road Geometry	Parking Restrictions
Art Gallery Road	Local Road	50 km/hr	1 lane in each direction within an 8m carriageway	1/2P* 90-degree parking along eastern side
Old Menangle Road	Local Road	50 km/hr	1 lane in each direction within a 7m carriageway	1/4P* kerbside parking & bus drop-off
Camden Road	Local Road	60 km/hr	1 lane in each direction within a 9m carriageway	2P* 90-degree parking
Oxley Street	State Road	60 km/hr	2 lanes in each direction within an 18m carriageway	No Stopping
Narellan Road	State Road	60 km/hr	2 – 3 lanes in each direction within a 19m carriageway	No Stopping
Kellicar Road	State/Regional Road	60 km/hr	3 lanes in each direction within a 30m carriageway	No Stopping
Hurley Street	Regional Road	60 km/hr	2 – 3 lanes in each direction within a 19m carriageway	No Stopping
Queen Street	Local Road	50 km/hr	1 lane in each direction within a 7m carriageway	1P* kerbside parking

**The number preceding the suffix 'P' indicates the maximum permitted parking time in hours.*

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Figure 2: Road Classification
Source: TfNSW Road Network Classifications

2.4 Pedestrian Network

Figure 3 illustrates the existing pedestrian infrastructure available around the site. A 400 m radius (approximately 5-minute walk) is shown to provide context and scale of these facilities. As shown, ample footpaths are currently provided along most streets in the surrounding area, with sufficient zebra and signalised crossings, and pedestrian refuges connecting these footpaths. For pedestrians accessing the CAC, footpaths are available along the northern and western frontage of the site, along Camden Road and Art Gallery Road.

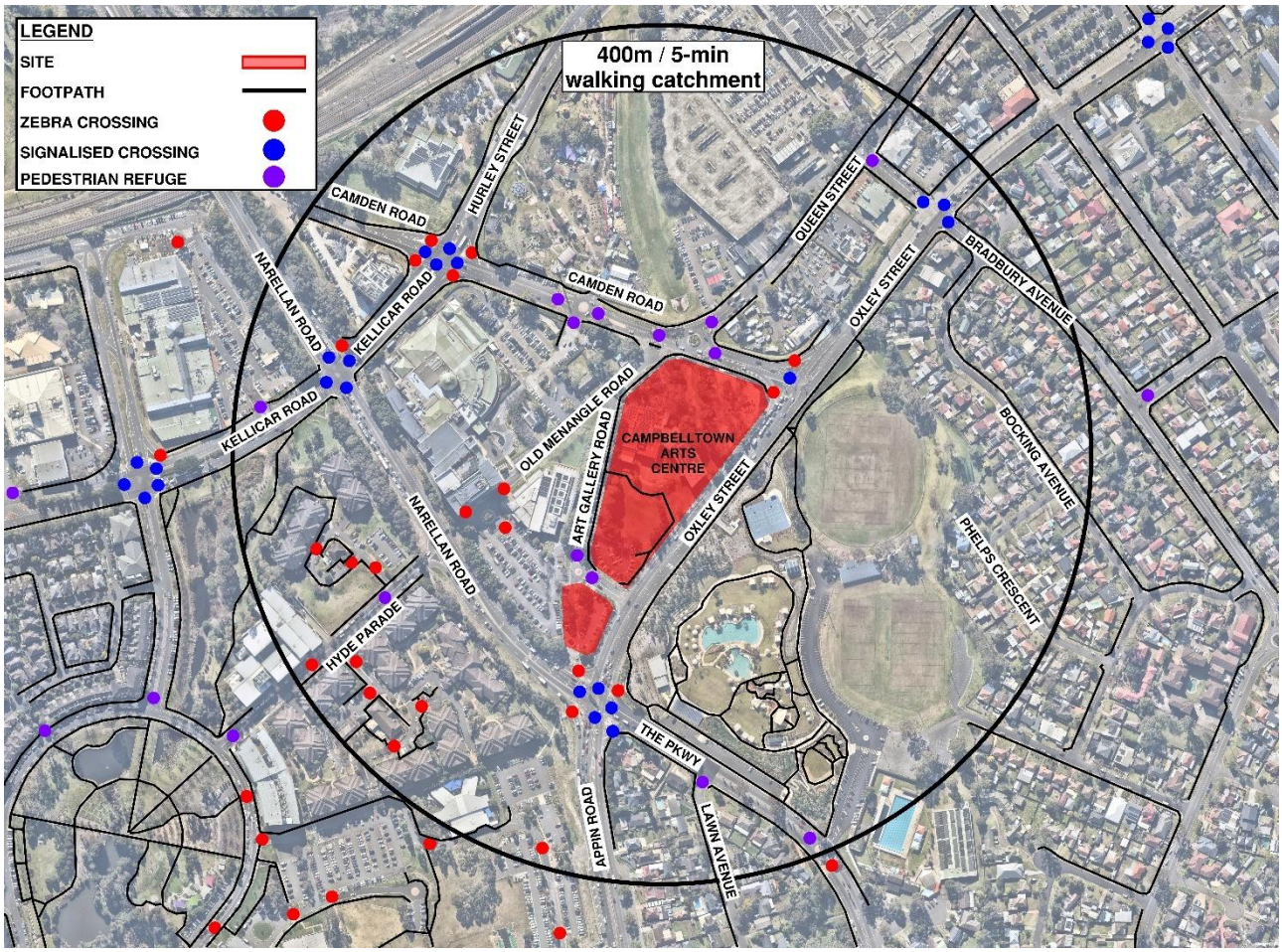


Figure 3: Local Pedestrian Infrastructure
Source: Nearmap (modified)

2.5 Cyclist Network

Figure 4 below presents an extract of the Campbelltown LGA Cycleway Plan (dated April 2019), which illustrates the existing and proposed cycling infrastructure around the site within a 1.2 km radius (approximately 5-minute bike ride). Note that desktop review of the latest satellite imagery indicates that the availability of cycling infrastructure has not changed since the cycleway plan was issued.

As shown, there are currently no dedicated bike lanes / paths surrounding the frontage of the site for bike access. Furthermore, the cycleway plan indicates that only limited bike routes are available in the vicinity of the site, existing bike paths are mainly available along major carriageways such as Oxley Street and Narellan Road.

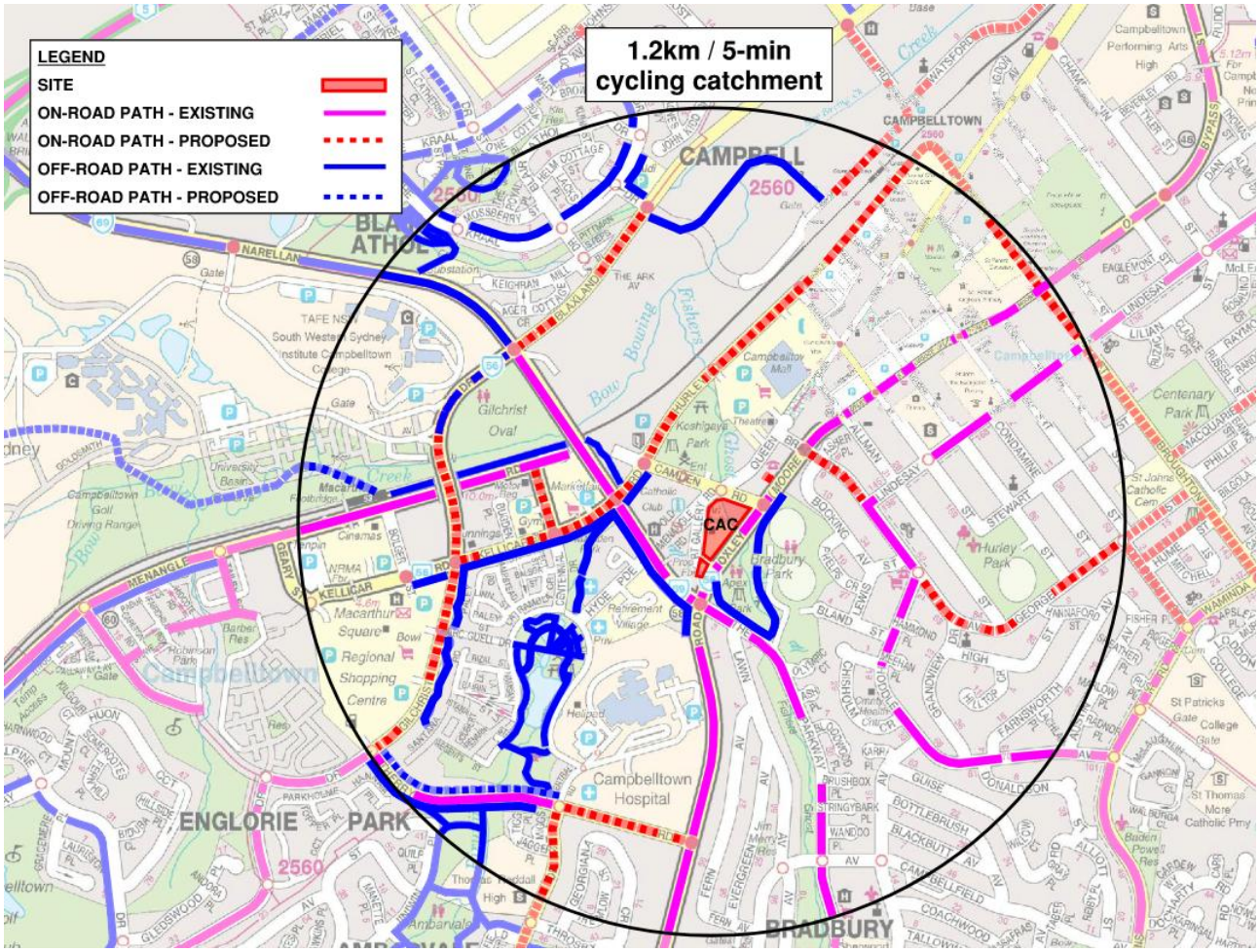


Figure 4: Local Cycling Infrastructure
Source: Campbelltown LGA Cycleway Plan (modified)

2.6 Public Transport

2.6.1 Bus

The CAC is in proximity to multiple bus stops. Figure 5 illustrates the location of the nearest bus stops and relevant bus routes in the vicinity of the site, while Table 9 outlines the servicing details of each bus route.

As shown in Figure 5, the nearest bus stops in the area are all located within a 15-minute walk. These services provide connections between Campbelltown to other parts of Sydney's southwest – Liverpool, in particular. As part of a multi-modal journey, bus services could also be used to access the nearby Campbelltown Train Station (see Section 2.6.2 below for details of train services).



Figure 5: Local Bus Services Availability
Source: Transport for NSW (modified)

Travel access routes for public transport to and from the site are also provided in Appendix B.

Table 9: Bus Services Frequency

Source: Transport for NSW

Bus Service	Bus Route	Frequency		
		Monday to Friday	Saturday	Sunday and Public Holidays
870	Liverpool to Campbelltown / Campbelltown to Liverpool via Glenfield	20 mins	60 mins	60 – 120 mins
871	Campbelltown to Liverpool / Liverpool to Campbelltown	60 mins	60 mins	120 mins
872	Campbelltown to Liverpool / Liverpool to Campbelltown via Macquarie Fields	20 – 30 mins	20 – 30 mins	60 mins
885	Campbelltown to Bradbury & St Helens Park North (Loop Service)	30 mins	60 mins	60 mins
885A	Campbelltown to Bradbury via Airds (Loop Service)	Limited service*	Limited service*	Limited service*
886	Campbelltown to Glen Alpine (Loop Service)	20 – 30 mins	60 mins	60 mins
887	Campbelltown to Wollongong / Wollongong to Campbelltown via Appin	20 – 60 mins	60 – 120 mins	120 mins
888	Campbelltown to St Helens Park via Ambarvale & Rosemeadow (Loop Service)	20 – 30 mins	15 – 30 mins	10 – 30 mins
889	Campbelltown to Menangle / Menangle to Campbelltown via Menangle Park	Limited service*	Limited service*	Limited service*

**These services operate on a limited basis and with irregular frequencies. For exact schedules, please refer to https://transportnsw.info/routes/bus. As this information is not critical to the assessment outcomes of this TAIA, it has not been included in the report.*

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2.6.2 Train

The nearest train stations to the CAC are Campbelltown and Macarthur, both of which are part of the T8 South Line. The stations are approximately a 20-minute walk from the CAC. In relation to the previous section, the stations can also be accessed via bus routes 870, 872, 885, 886 and 887.

Figure 6 illustrates the indicative walking routes from the CAC to said stations, while Figure 7 shows an extract of the Sydney Trains map with the nearest train stations highlighted.

Table 10 summarises the frequency of trains to and from Campbelltown and Macarthur stations.

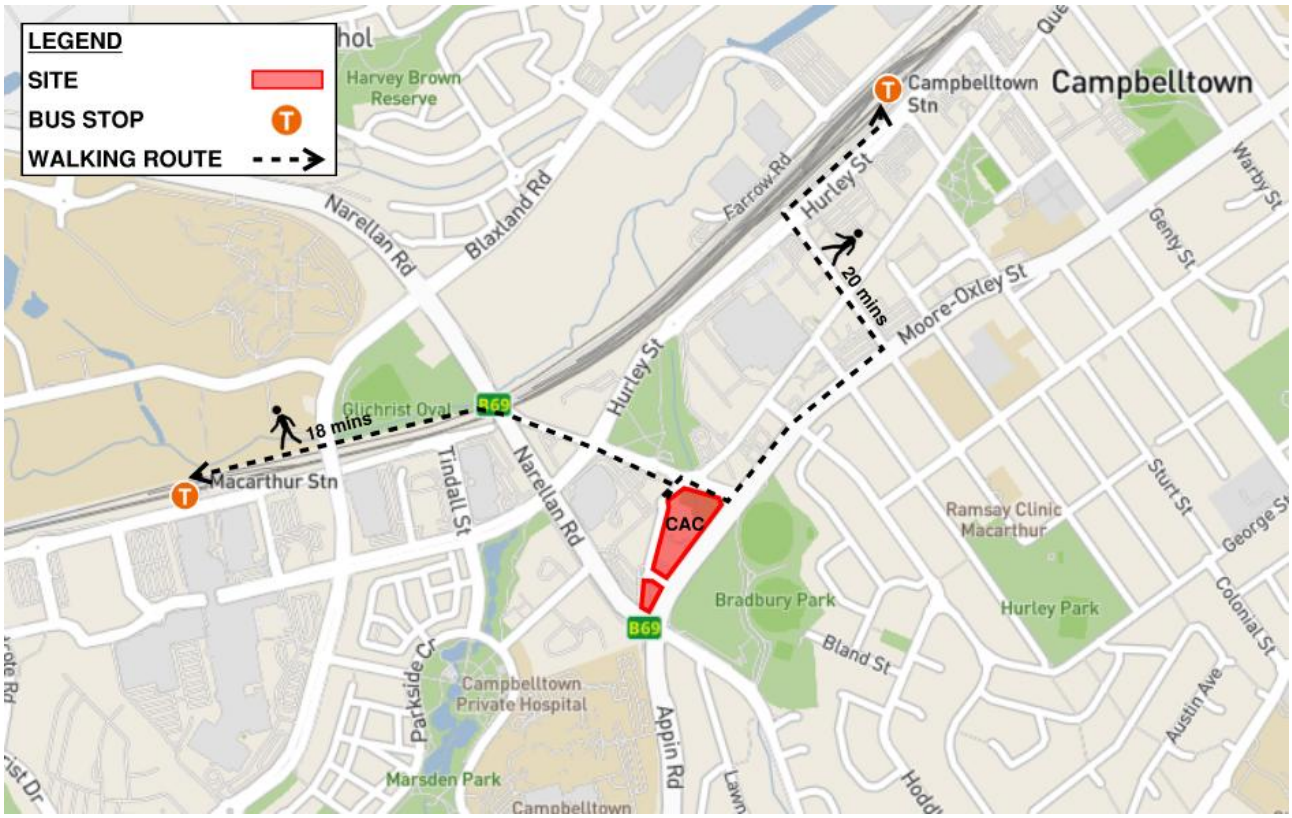


Figure 6: Local Train Stations
Source: Transport for NSW (modified)

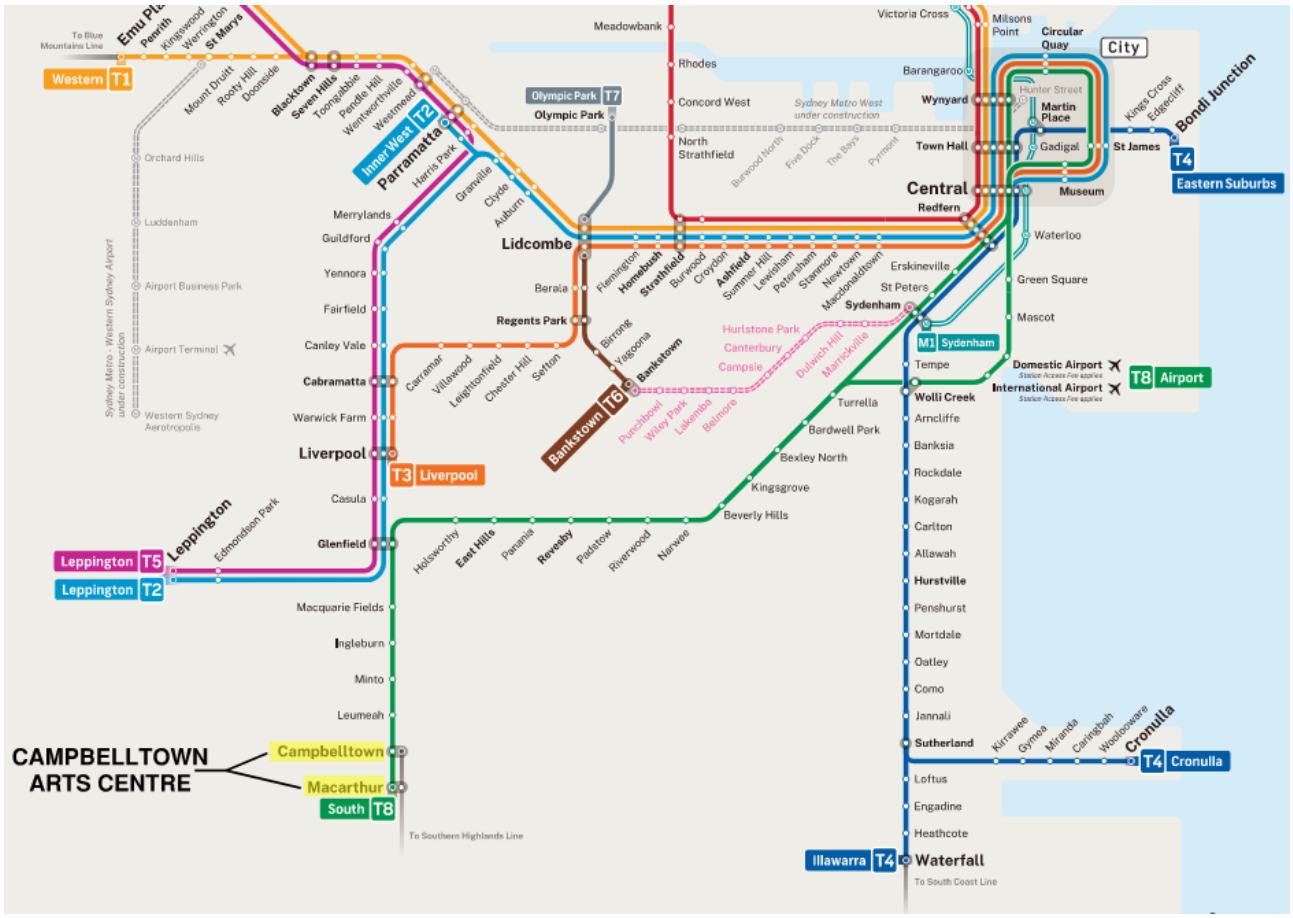


Figure 7: Sydney Trains Network Map
Source: Sydney Trains

Table 10: Train Services Frequency
Source: Sydney Trains

Train Station	Campbelltown Station			Macarthur Station		
T8 South Line / Frequency	**Monday to Friday**	**Saturday**	**Sunday and Public Holidays**	**Monday to Friday**	**Saturday**	**Sunday and Public Holidays**
Macarthur to City via Airport or Sydenham	15 mins, 4 – 6 mins between 6:00 am – 8:00 am	15 mins	15 mins	15 mins, 5 – 10 mins between 7:00 am – 8:00 am	15 mins	15 mins
City to Macarthur via Airport or Sydenham	15 mins	15 mins	15 mins	15 mins	15 mins	15 mins

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2.7 Parking Facilities

A variety of parking facilities are available in the vicinity of the site. In total, 10 parking facilities were identified within 400 m of the CAC. Parking capacity counts have been completed of these carparks by TTW during a site inspection. These have been summarised in Table 11.

2.7.1 Existing Parking Facilities (within 400 metres)

As shown in Figure 8 below, the site is well-served by a substantial supply of parking in the vicinity of CAC. However, carparks 8, 9 and 10 are private carparks, and are primarily catered to the adjacent Rydges Hotel, Aquafit Gym, and the Campbelltown Catholic Club. Note that all parking, including private carparks, are free of charge.

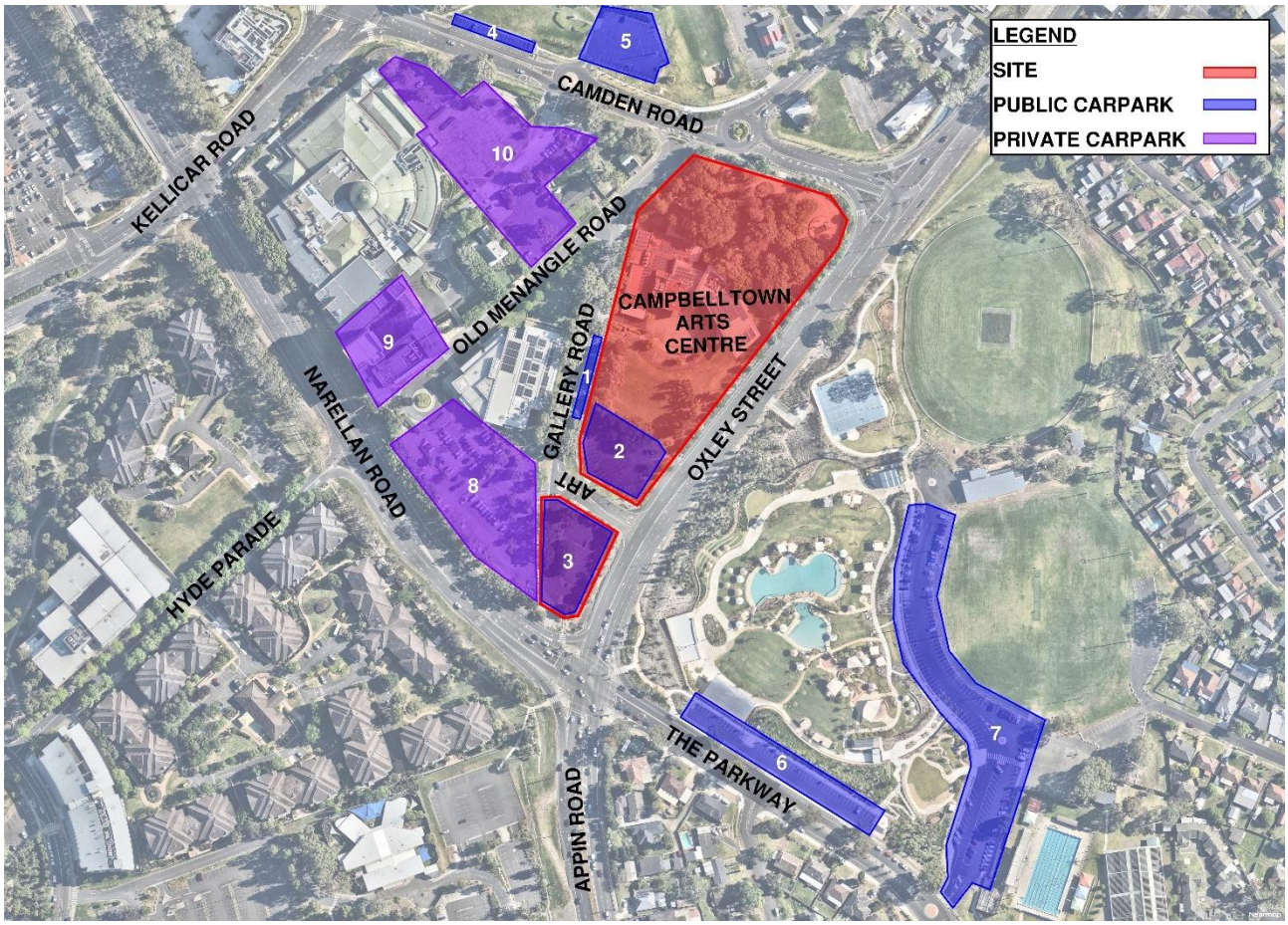


Figure 8: Parking Facilities within 400 m of CAC
Source: Nearmap (modified)

Table 11 provides an overview of the parking facilities, including time restriction and capacity.

Table 11: Existing Parking Facilities within 400m of CAC

Source: TTW

Identifier	Location	Time Restrictions	Capacity	Fees
PUBLIC CARPARKS				
1	1 Art Gallery Road, frontage of CAC	part 2P* 8:00 am – 6:00 pm part 1/2P 10:00 am – 4:00 pm Monday to Sunday Accessible spaces with no time restrictions	17 spaces (including 4 accessible spaces)	Free
2	CAC Carpark (entry via Art Gallery Road)	4P* 8:00 am – 6:00 pm Monday to Sunday	40 spaces	
3	CAC Carpark – corner of Oxley Street and Narellan Road (entry via Art Gallery Road)	4P* 8:00 am – 6:00 pm Monday to Sunday	55 spaces	
4	Camden Road Reserve (entry via Camden Road)	2P* 9:00 am – 5:30 pm Monday to Friday 9:00 am – 12:00 pm Saturday	20 spaces	
5	Koshigaya Park (entry via Camden Road)	No timed restrictions	47 spaces (including 3 accessible spaces)	
6	Bradbury Oval Carpark (entry via The Parkway)	4P* 8:00 am – 6:00 pm Special Events	180 spaces (including 4 accessible spaces)	
7	Campbelltown Billabong Parklands Carpark (entry via The Parkway)	4P* 8:00 am – 6:00 pm Special Events	49 spaces (including 1 accessible space)	
PRIVATE CARPARKS				
8	Rydges Hotel / Aquafit Carpark	No timed restrictions	175 spaces (including 2 accessible spaces)	Free
9	Rydges Hotel Basement Carpark	No timed restrictions	Unknown	
10	Campbelltown Catholic Club Carpark	No timed restrictions	163 spaces (including 1 accessible space)	

**The number preceding the suffix 'P' indicates the maximum permitted parking time in hours.*

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2.8 Existing Car Parking Occupancy Surveys

To understand the existing parking demands within the vicinity of the site, car parking occupancy surveys were undertaken on Tuesday 24th September 2024 and Saturday 28th September 2024 between 10:00 am and 7:00 pm. These days were selected by CAC to be typically the busiest weekday and weekend for CAC visitors and staff. As outlined in Figure 9, the surveyed carparks include carparks 1 – 5 noted above, carparks 6 – 7 have been excluded from the study as it was identified that these car parks are a 10-minute walk from CAC and is unlikely these car parks would be heavily utilised by CAC visitors.

It is understood that approximately 99 and 186 patrons took part in the surveys on Tuesday and Saturday respectively.

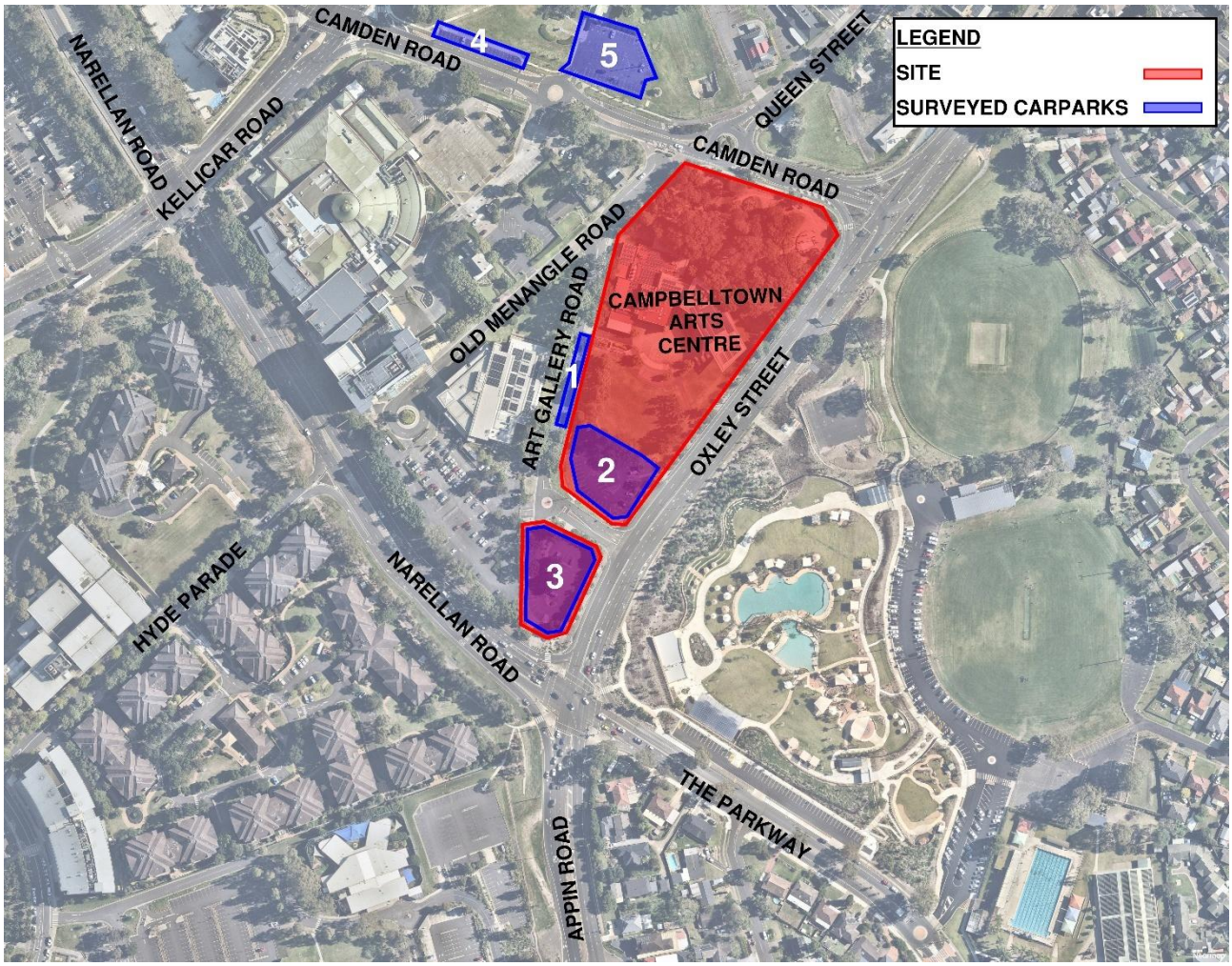


Figure 9: Scope of Parking Occupancy Study
Source: TTW

Below Table 12 provides a breakdown of the total car parking capacity within each of the surveyed car parks. Within car parks 1-5 there are a of 178 car spaces, including 47 accessible spaces.

Table 12: Car Parking Survey Capacity
Source: TTW

Identifier	Location	Capacity
1	1 Art Gallery Road, frontage of CAC	17 spaces (including 4 accessible spaces)
2	CAC Carpark (entry via Art Gallery Road)	40 spaces
3	CAC Carpark – corner of Oxley Street and Narellan Road (entry via Art Gallery Road)	55 spaces
4	Camden Road Reserve (entry via Camden Road)	20 spaces
5	Koshigaya Park (entry via Camden Road)	47 spaces (including 3 accessible spaces)
TOTAL		**179 spaces (Including 7 accessible spaces)**

A summary of the parking occupancy study is detailed below in Table 13 to Table 17. The occupancy study has been divided into Daytime (i.e., 10:00 am – 4:00 pm), and Evening (i.e., 7:30 pm – 10:00 pm) periods to align with the CAC operating hours. Note that the occupancies between 5:00 pm – 6:00 pm and 6:00 pm – 7:00 pm have been applied to the “evening” period as all visitors are expected to arrive before 7:30 pm to attend their corresponding events.

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Table 13: Parking Occupancy Study (Weekday)

Source: Car Parking Occupancy Survey (September 2024)

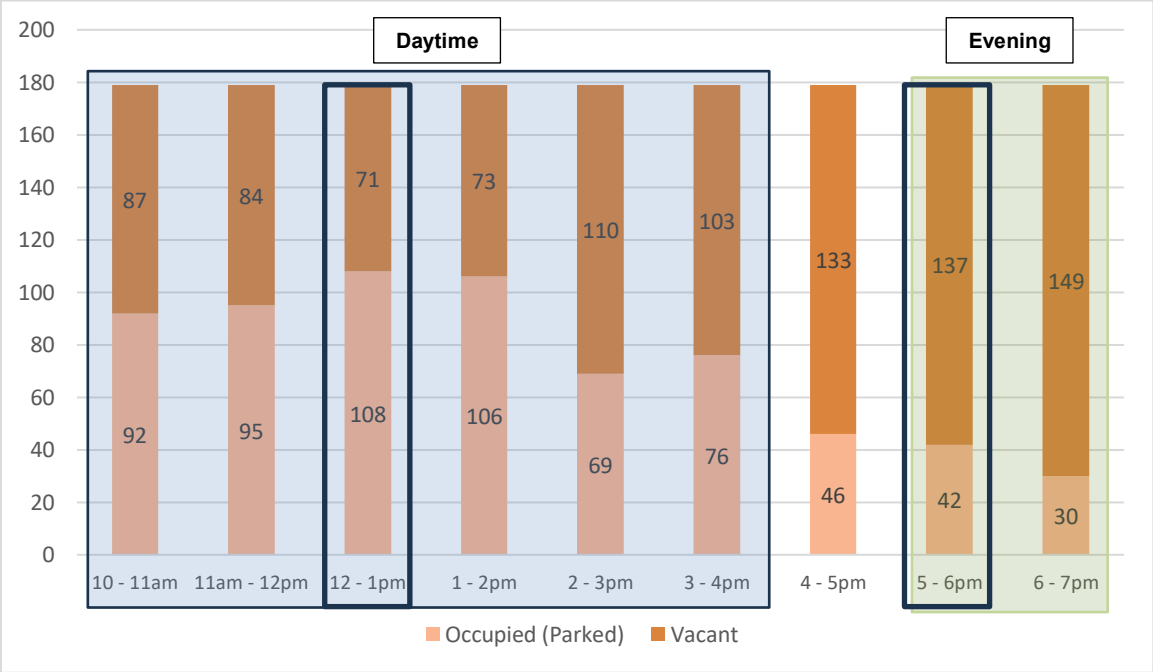


Table 13 above illustrates the study results for Tuesday. During the peak parking period between 12:00 pm – 1:00 pm (daytime) and 5:00 pm – 6:00 pm (evening), a total of 108 and 42 vehicles were recorded across the surveyed carparks respectively, representing 60% and 23% of the combined capacity.

Table 14: Parking Occupancy Study (Weekend)

Source: Car Parking Occupancy Survey (September 2024)

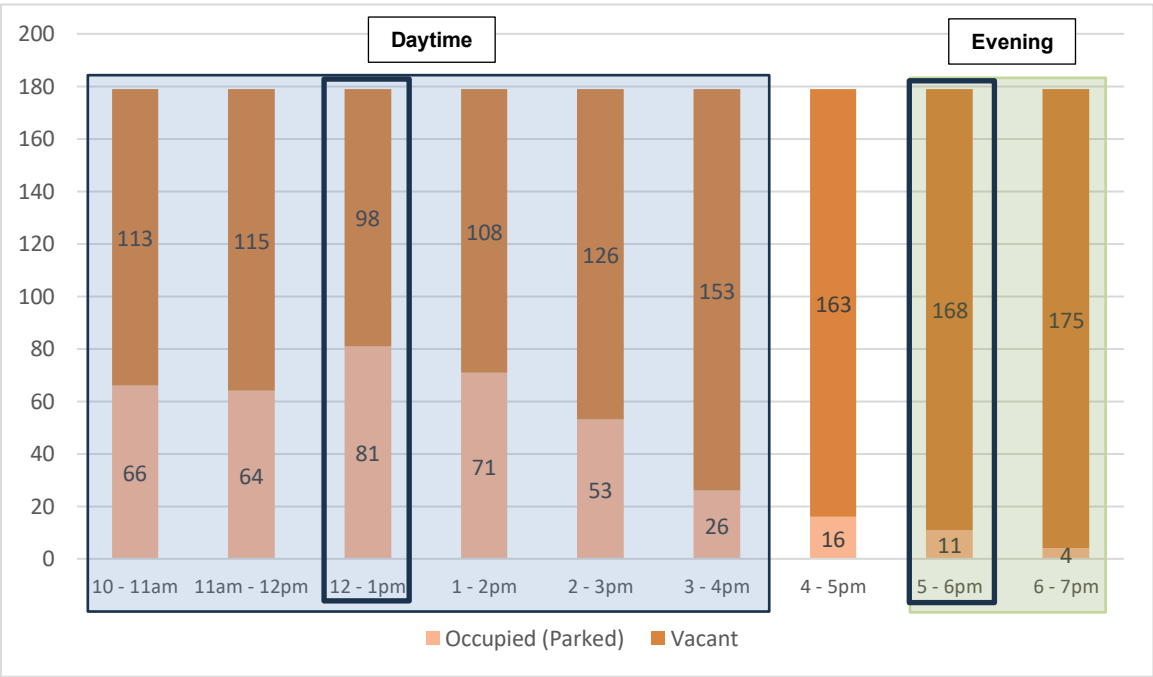


Table 14 above illustrates the study results for Saturday. During the peak parking period between 12:00 pm – 1:00 pm (daytime) and 5:00 pm – 6:00 pm (evening), a total of 81 and 11 vehicles were recorded across the surveyed carparks respectively, representing 45% and 6% of the combined capacity.

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2.8.1 CAC Car Parking Occupancy Study (Car Parks 2-3)

As previously mentioned, whilst Car Park 2 & 3 are open to the public, they are generally utilised by CAC staff and visitors which provides a total of 95 parking spaces. Therefore, a specific parking occupancy study of the CAC car parks is detailed below in Table 15 and Table 16.

Table 15: CAC Parking Occupancy Study (Weekday)

Source: Car Parking Occupancy Survey (September 2024)

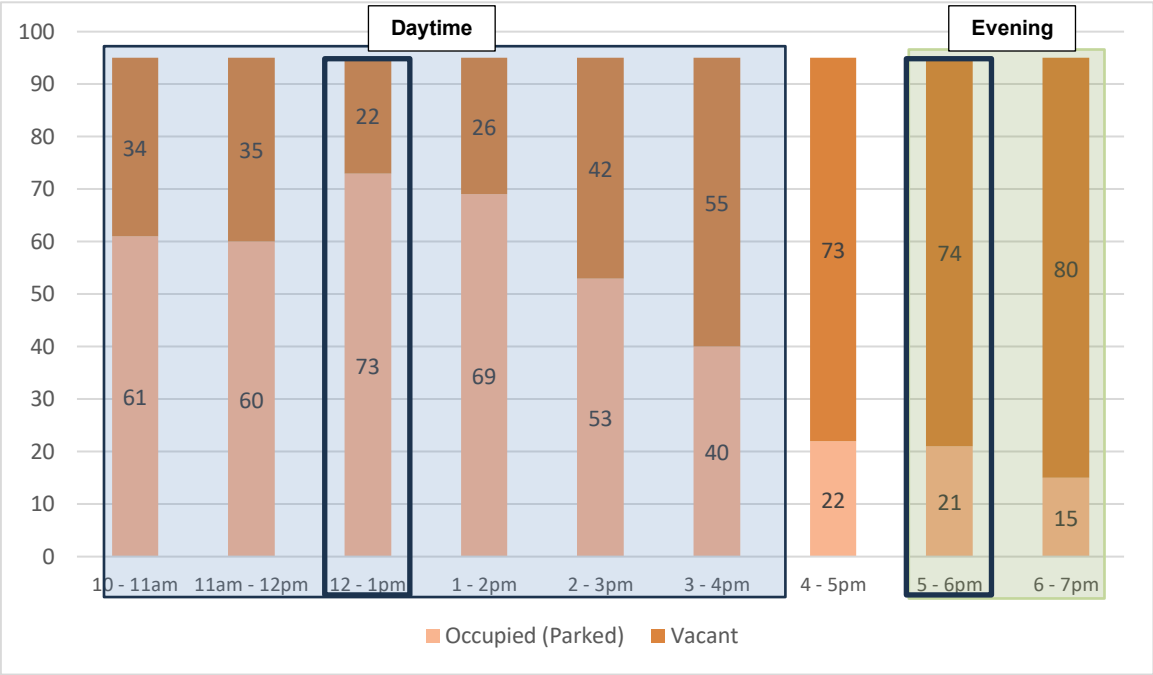


Table 15 above illustrates the results for Tuesday. During the peak parking period between 12:00 pm – 1:00 pm (daytime) and 5:00 pm – 6:00 pm (evening), a total of 73 and 21 vehicles were recorded across the surveyed carparks respectively, representing 77% and 22% of the combined capacity.

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Table 16: CAC Parking Occupancy Study (Weekend)

Source: Car Parking Occupancy Survey (September 2024)

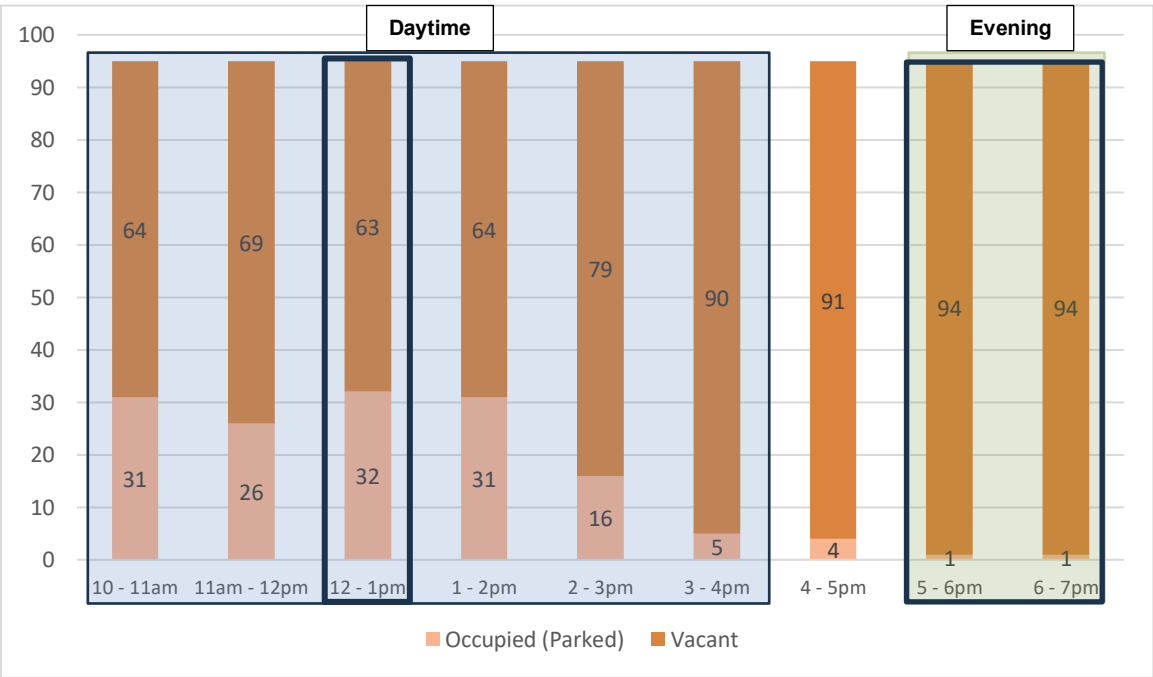


Table 16 above illustrates the study results for Saturday. During the peak parking period between 12:00 pm – 1:00 pm (daytime) and 5:00 pm – 7:00 pm (evening), a total of 32 and 1 vehicle(s) were recorded across the surveyed carparks respectively, representing 34% and 1% of the combined capacity.

As CP2 & 3 are public car parks it is difficult to determine if 100% occupancy was associated with CAC. However, it is recommended implementing additional parking management strategies such as signage or security access could help reserve more spaces specifically for CAC visitors.

2.8.2 Peak Car Parking Occupancy Study Summary

Table 17: Peak Parking Occupancy Study Summary

	Parking Facilities within 400m of CAC (Car Parks 1 – 5)				CAC Car Parks (Car Parks 2 – 3)			
	Weekday		Weekend		Weekday		Weekend	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
	12 – 1 pm	5 – 6 pm	12 – 1 pm	5 – 6 pm	12 – 1 pm	5 – 6 pm	12 – 1 pm	5 – 6 pm
Occupancy (%)	60%	23%	45%	6%	77%	22%	34%	1%
Occupancy (#)	108	42	81	11	73	21	32	1
Total	179 spaces				95 spaces			

Table 17 above indicates that the parking facilities within 400m of CAC are currently sufficient to accommodate CAC's existing operational demand, as the surveyed carparks had never reached capacity at any point throughout the surveyed period. The peak occupancy observed was CAC carparks during daytime on a weekday (between 12 pm – 1 pm), reaching an occupancy rate of 77%.

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2.9 Car Pick-up and Drop-off / Coach Parking

2.9.1 Car Pick-up and Drop-off

There are currently no designated “Car Pick-up and Drop-off” zones in the vicinity of CAC. However, a number of locations immediately adjacent to CAC provide such opportunities. It is understood that the “No Parking” zone (which would legally allow for a 2-minute pick-up and drop-off) along CAC’s Old Menangle Road frontage, and the CAC carparks have been regularly utilised by visitors for pick-ups and drop-offs. Figure 10 identifies the existing pick-up and drop-off locations.

2.9.2 Coach Parking

Currently, an on-street indented parking zone have been designated for coach use, which would allow coaches to set-down with no time restriction. However, it is understood that the use of coaches are infrequent as they are only utilised during one-off visits or special events. Figure 10 illustrates the location of the indented coach bay.

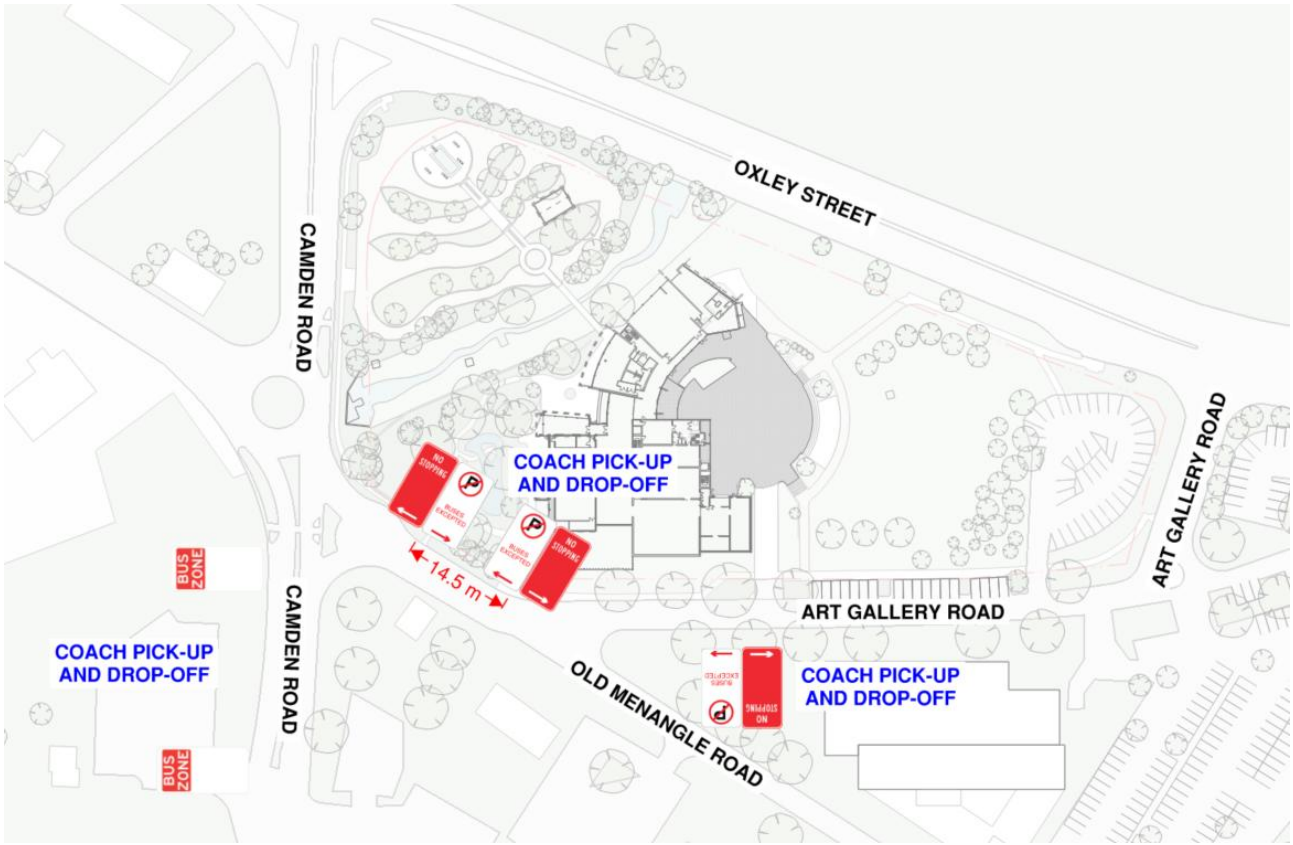


Figure 10: Coach Pick-up and Drop-off Locations
Source: fjcstudio

Travel access routes for pick-up and drop-off are also provided in Appendix B.

2.10 Service Vehicles

It is understood that existing loading activities occur at the plaza, which is served by a driveway immediately adjacent to the area, as shown in Figure 11. For food and beverage deliveries, trucks currently utilise the “No Parking” zone along the Old Menangle Road frontage of CAC for unloading. Goods are then transported to the café via the Japanese Garden.

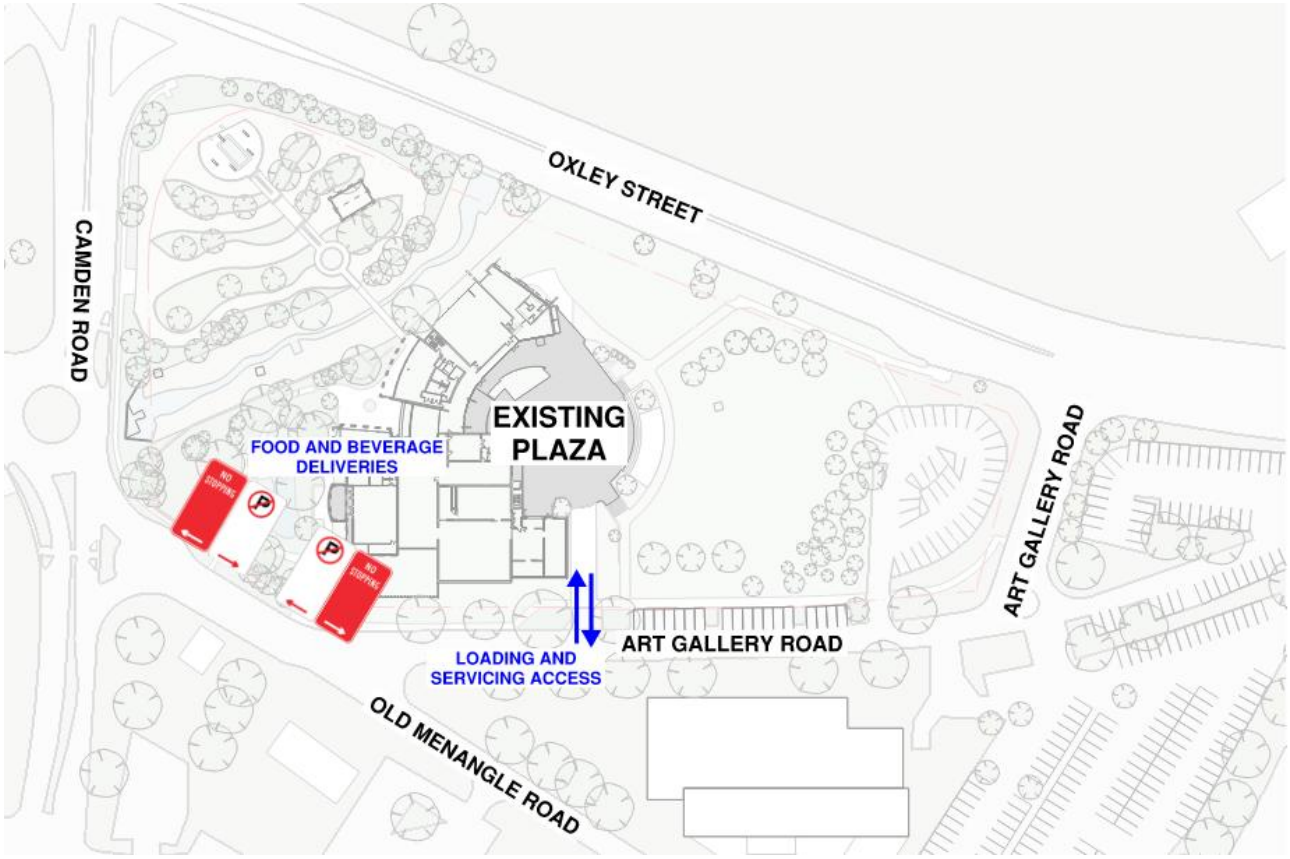


Figure 11: Existing Servicing Arrangements
Source: fjcstudio

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2.11 Traffic Conditions

2.11.1 Traffic Data Collection

To analyse the existing traffic conditions around the site, intersection movement counts were conducted at various locations in the vicinity of the site, as shown in Figure 12. The data collection took place on 2nd December 2025, Tuesday, from 6:30 am to 10:30 am, and 3:00 pm to 7:00 pm, and 6th December 2025, Saturday, from 10:00 am to 2:00 pm. The traffic counts included light vehicles, heavy vehicles, buses and cars. The intersection movement counts have been conducted at the following intersections:

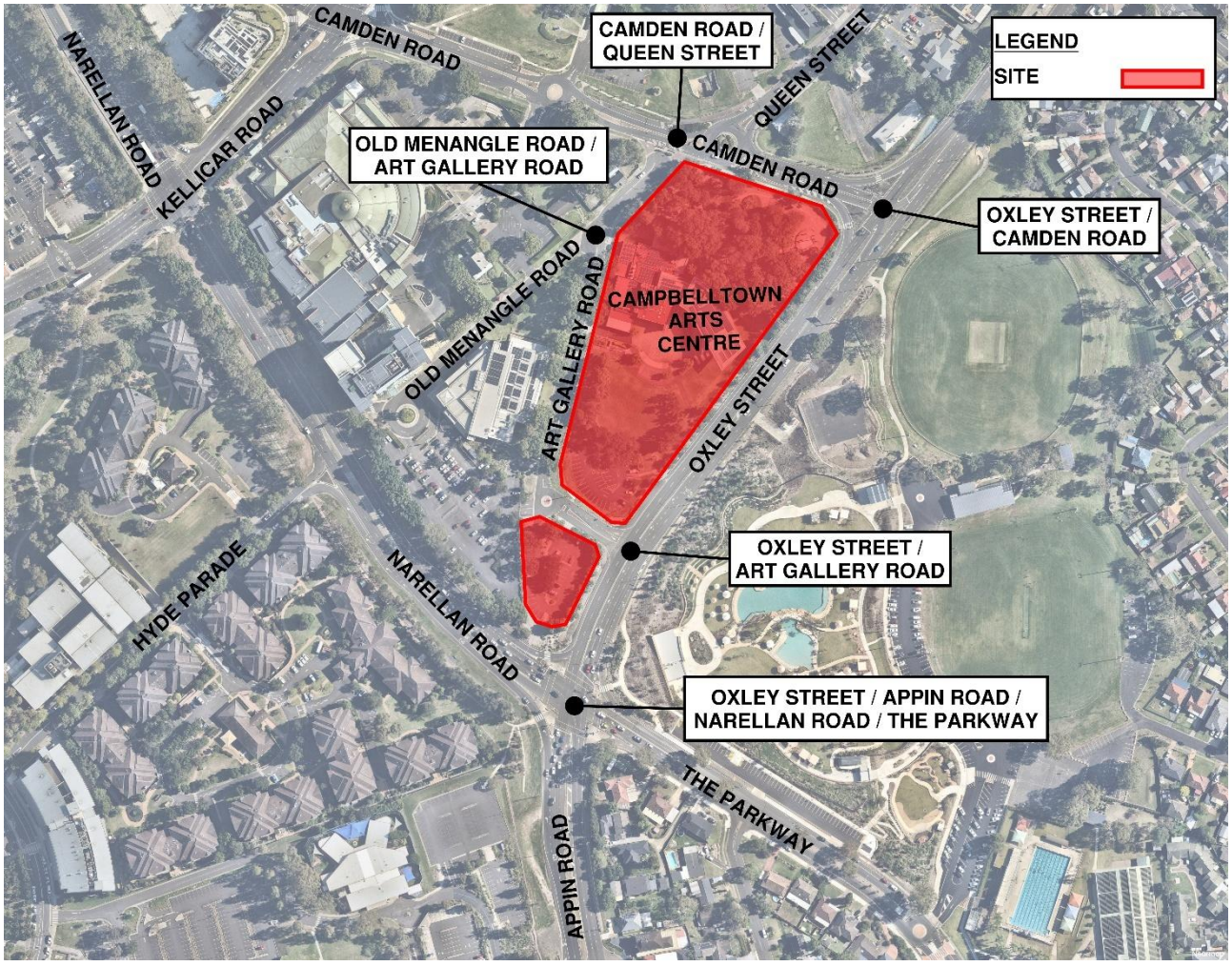


Figure 12: Scope of Traffic Data Collection
Source: Nearmap (modified)

Refer to Section 11 for the detailed methodology and modelling results at each of the above intersections.

2.11.2 Traffic Volumes

The survey data was analysed to determine the average peak hour periods for the surveyed network. The traffic volumes for each hour are presented below in Figure 13 to Figure 15.

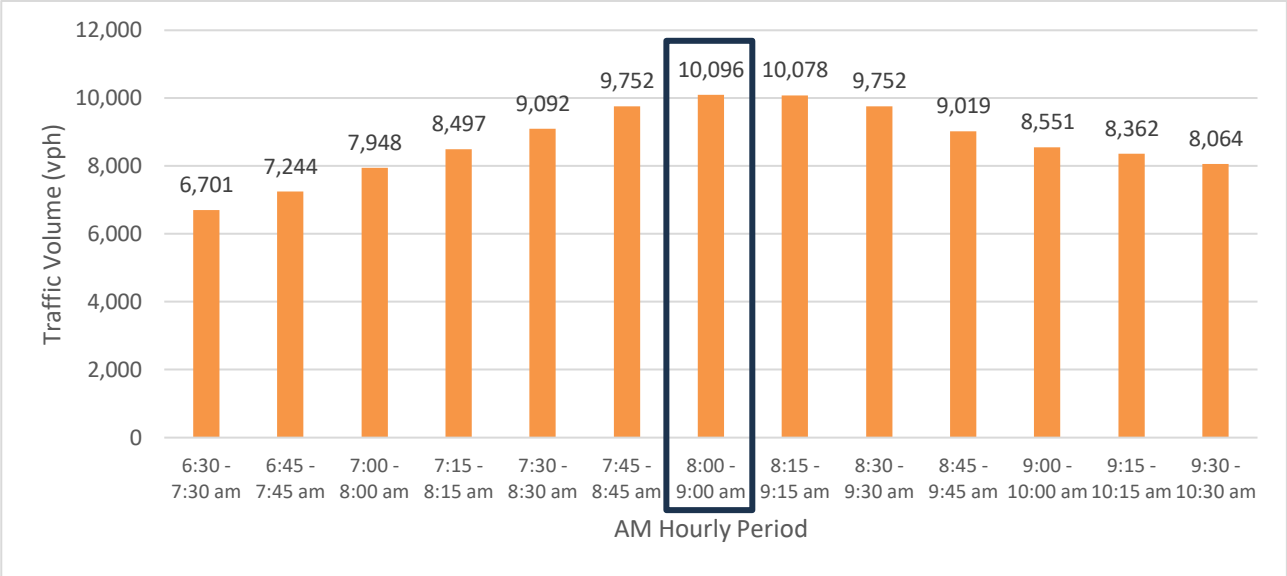


Figure 13: Weekday AM Traffic Volumes

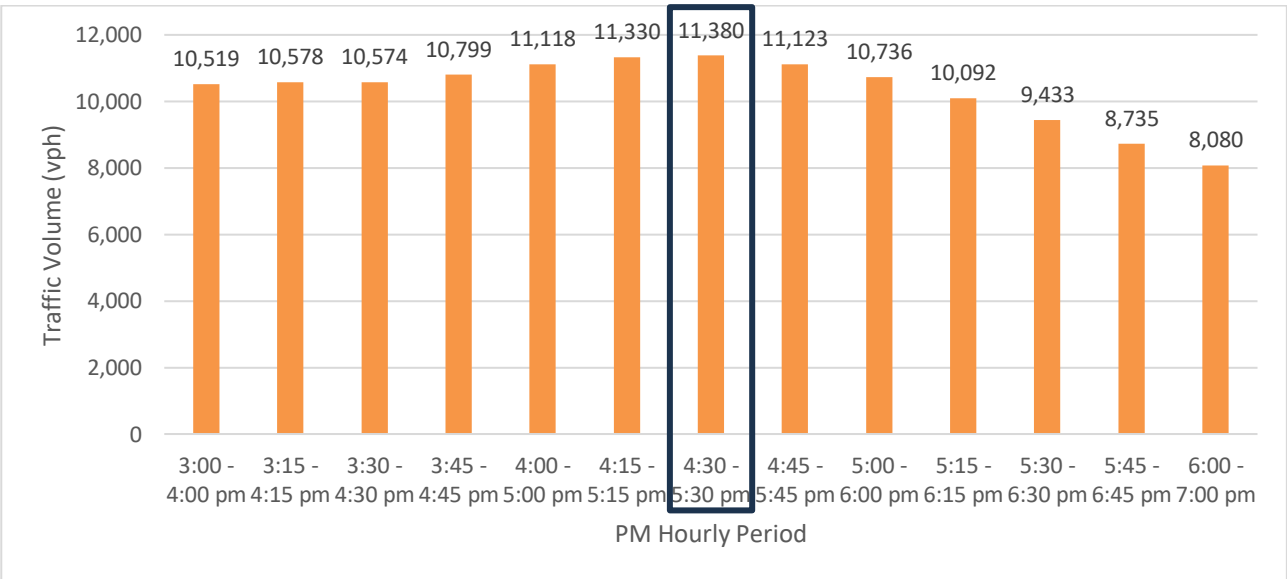


Figure 14: Weekday PM Traffic Volumes

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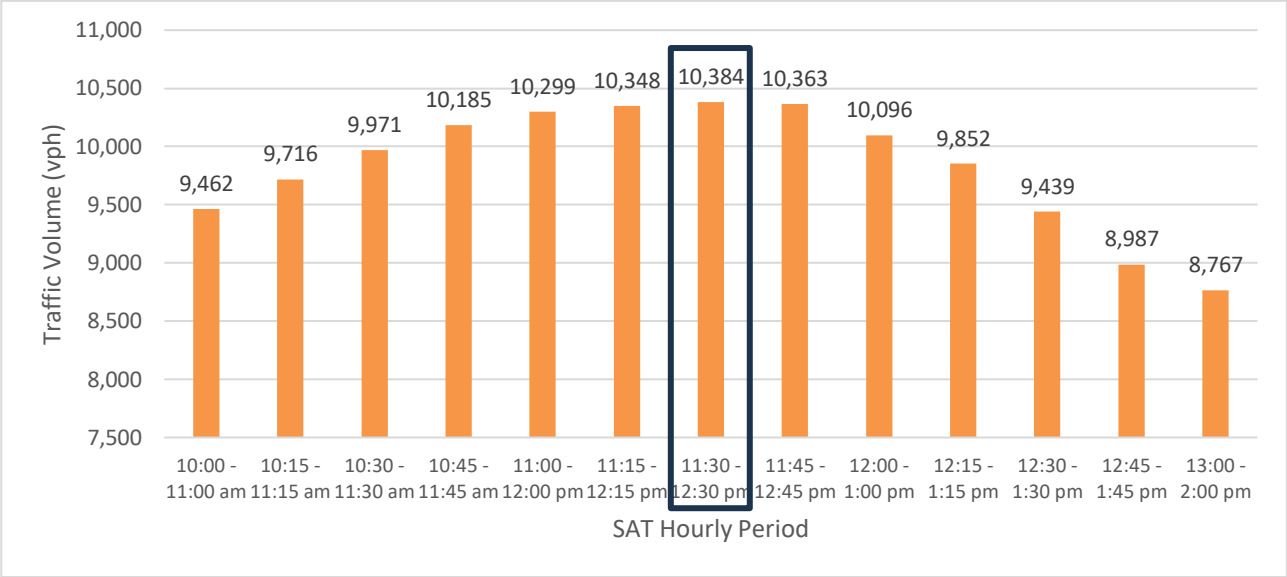


Figure 15: Saturday Traffic Volumes

As shown above, it is evident that the highest overall traffic volumes occur during the morning peak period between 8 – 9 am. When compared to the morning traffic volumes, the afternoon traffic volumes are approximately 1,284 vehicles higher, with an average peak hour of 4:30 – 5:30 pm. The peak hours are summarised below in Table 18.

Table 18: Peak Hours

Peak Period	Peak Hour	Total Vehicles per Hour (vph)
AM	8:00 – 9:00 am	10,096
PM	4:30 – 5:30 pm	11,380
SAT	11:30 am – 12:30 pm	10,384

The full set of traffic data collected at each intersection is attached to Appendix C.

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2.11.3 Existing Network Performance

SIDRA modelling outputs provide a range of performance measures, in particular:

- Degree of saturation (DOS) – The DOS is used to measure the performance of intersections, where a value of 1.0 represents an intersection at theoretical capacity. As the performance of an intersection approaches DOS of 1.0, queue lengths and delays increase rapidly. It is usual to attempt to keep DOS to less than 0.9, with satisfactory intersection operation generally achieved with a DOS below 0.8.
- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority intersections, the AVD reported relates to the worst performing vehicle movement at the intersection.
- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance, based on AVD.

Table 19: Intersection Performance Criteria

LOS	AVD (Seconds)	Traffic Signals	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause delays	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2.11.4 Modelling Calibration

The intersection shown above have been modelled in SIDRA (version 10) and set up in a network model as indicated in Figure 16 for the existing conditions.

The SIDRA base models have been validated by reviewing the modelled queue lengths against on-site queue length observations. Site observations of the morning and afternoon peak periods were undertaken on the same day as the intersection movement counts for consistency. Interrogation of the SIDRA outputs indicates that the model accurately reflects the observed on-site queues for the same day and peak period.

SCATS signal information has been obtained from TfNSW to assist with calibration of Oxley Street/ Camden Road and Narellan Road/Appin Road intersection. SIDRA calculated cycle time/ phase times were calibrated to align with the SCATS cycle time/ phase times.

The SIDRA intersection modelling has been completed for the intersections during the weekday AM and PM peak, and Saturday midday peak. A summary of the modelling results for the existing (base case) models is provided in Table 20 below.

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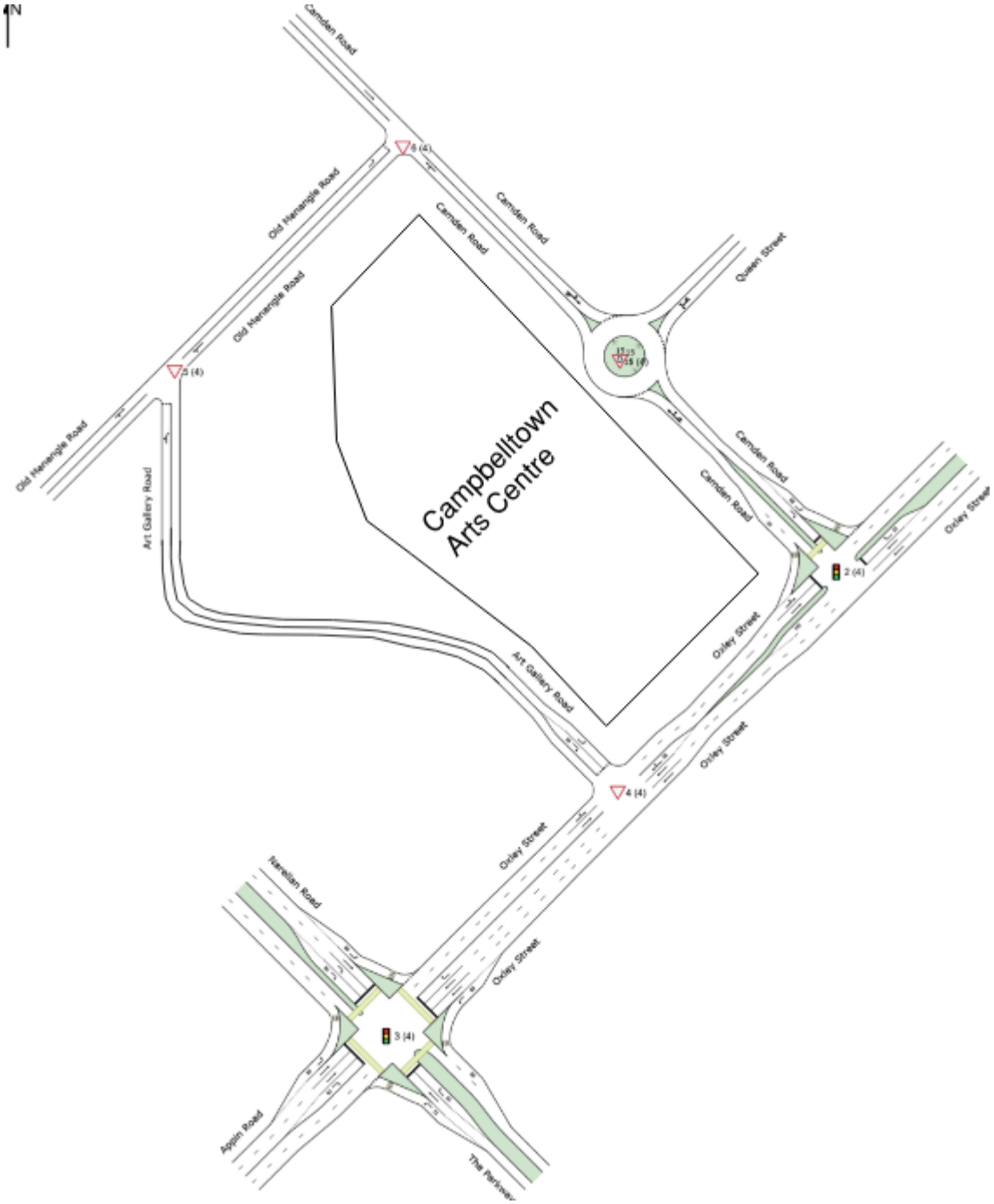


Figure 16: SIDRA Network Model

Table 20 presents a summary of the modelling results for existing conditions.

Table 20: Summary of SIDRA Modelling Results- 2025 Existing Condition

Intersection	Period	DoS	AVD (seconds)	LOS	Queue Length (m)
Camden Road/ Queen Street	AM	0.25	11.1	A	4
	PM	0.60	12.1	A	12
	Saturday	0.55	11.8	A	11
Old Menangle Road/ Art Gallery Road	AM	0.03	5.8	A	-
	PM	0.04	5.6	A	-
	Saturday	0.02	5.4	A	-
Oxley Street/ Camden Road	AM	0.66	6.0	A	80
	PM	0.89	13.1	A	87
	Saturday	0.74	11.7	A	76
Oxley Street/ Art Gallery Road	AM	0.97	>100	F	30
	PM	0.99	>100	F	119
	Saturday	0.98	>100	F	41
Appin Road/ Narellan Road	AM	0.93	56.4	D	220
	PM	0.91	56.0	D	174
	Saturday	0.78	42.0	C	105

The existing traffic modelling key findings are detailed below:

- **Camden Road / Queen Street** – The intersection operates well during the AM, PM and Saturday peak periods, achieving LOS A with low DoS and minimal delays. Queue lengths are short across all periods, indicating the intersection operates well within capacity.
- **Old Menangle Road / Art Gallery Road** – The intersection operates satisfactorily in all modelled periods, with LOS A, very low delays and negligible queues. The results indicate minimal traffic demand and spare capacity.
- **Oxley Street / Camden Road** – The intersection generally operates at an acceptable level with LOS A in all periods, with minimal delays, indicating satisfactory performance under existing traffic conditions.
- **Oxley Street / Art Gallery Road** – The intersection operates at LOS F with high delays in all modelled periods. This is primarily due to the right-turn movement from Art Gallery Road, which experiences long wait times (exceeding around 4 minutes) to enter Oxley Street. Notwithstanding this, the traffic demand for this right-turn movement is very low, with fewer than 15 vehicles in any peak period and only 5–6 vehicles during the weekday peak. Correspondingly, the modelled queue lengths on the Art Gallery Road approach are minimal (less than 5 m), indicating that typically no more than one vehicle is waiting to make the turn. The 119 m queues shown in the table correspond to the eastern approach on Oxley Street, which operates at a satisfactory LOS, and not to the right-turn movement from Art Gallery Road.
    - As such, despite the LOS F, the intersection continues to function as a localised side-street access, with no material impact on the surrounding arterial road network. This is consistent with on-site observations, which confirmed that vehicular demand and queues on Art Gallery Road are short, infrequent, and confined to the immediate approach. The maximum queue lengths are observed on the Oxley Street approach and are influenced by queue spillback from the

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downstream Appin Road / Narellan Road intersection, rather than at the Oxley Street / Art Gallery Road intersection itself.

- **Appin Road / Narellan Road –** The intersection operates near capacity during the weekday AM and PM peak periods, with LOS D and moderate delays. Long queues are predicted on the Appin Road approach during the weekday peaks. The Saturday peak operates satisfactorily at LOS C, with spare capacity available. Given that Appin Road and Narellan Road are both key arterial routes connecting Campbelltown to the wider region, this level of performance at a key signalised intersection during peak periods is expected.

2.12 Travel Mode

2.12.1 Travel Mode Survey

To understand the unique travel patterns and parking behaviours of CAC existing visitors, interview travel mode surveys were completed on Tuesday 24th September 2024 and Saturday 28th September 2024.

The existing travel mode splits have been determined based on travel mode surveys completed, to understand the travel behaviour of existing visitors. Table 21 contains the mode share results of the surveys of visitors.

Table 21: Existing Travel Mode Survey Results (Visitors)
Source: Travel Mode Surveys (dated September 2024)
Note: Values may not add to totals shown due to rounding

Travel Mode	Weekday	Weekend
Walk	2%	1%
Bicycle	0%	0%
Train	0%	0%
Bus	0%	0%
Car, as driver	55%	37%
Car, as passenger (Carpool)	22%	57%
Car, as passenger (Pick-up and Drop-off)	21%	2%
Motorbike / Scooter	0%	0%
Taxi	0%	0%
Other	0%	3%
Total	**100%**	**100%**

Survey results shown above indicate significant car usage, with a mode split of 98% on a weekday (55% car driver, 22% carpool and 21% car passenger). The weekend car travel was also very high with a mode split of 96% on a weekday (37% car driver, 57% carpool and 2% car passenger). Minimal uptake in active or public transport was recorded.

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2.12.2 Census Travel Data

To provide a comparison, The Method of Travel to Work (MTWP) data from the Australian Bureau of Statistics (ABS) was also reviewed. This data provides an estimate of travel modes to and from the local area as defined by Statistical Area Level 2 (SA2) zones. The site is located within SA2 zone 'Campbelltown – Woodbine' as illustrated in Figure 17.

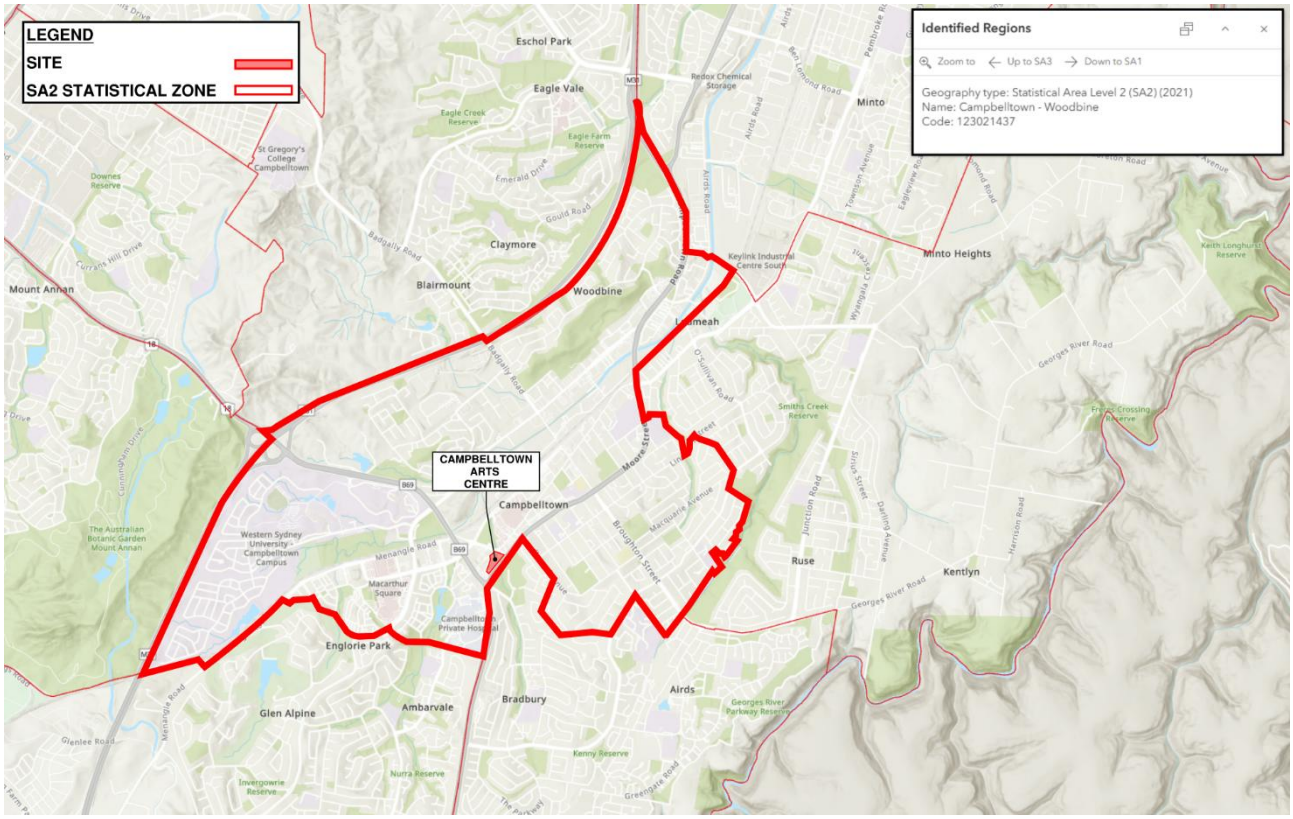


Figure 17: Statistical Area of Site
Source: ABS

Responses for 'worked at home', 'did not go to work' and 'mode not stated' have been excluded from this analysis. The travel data is summarised in Table 22 and Table 23, for the SA2 statistical zone as both a place of work (i.e., travelling to Campbelltown), and as a place of usual residence (i.e., travelling from Campbelltown). Data of the 2021 census travel data was collected during the height of the COVID-19 pandemic and is unrepresentative of the future travel behaviours. Hence, data collected from 2016 has also been included.

The most relevant data for this study is the Place of Work data, which represents the travel modes used by peoples accessing Campbelltown due to work (e.g., employees).

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Table 22: Journey to Work Data
Source: ABS
Note: Values may not add to totals shown due to rounding

Travel Mode	Mode Share (%)			
	2016		2021	
	Place of Work	Place of Usual Residence	Place of Work	Place of Usual Residence
Walk	2%	3%	2%	3%
Bicycle	0%	0%	0%	0%
Train	4%	20%	3%	8%
Bus	3%	1%	2%	1%
Car, as driver	82%	67%	83%	77%
Car, as passenger	8%	7%	8%	8%
Taxi	0%	0%	0%	1%
Truck	0%	1%	1%	1%
Motorbike / Scooter	0%	1%	0%	1%
Others	0%	0%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**

Table 23: Journey to Work Data Summary
Source: ABS
Note: Values may not add to totals shown due to rounding

Travel Mode Summary	Mode Share (%)			
	2016		2021	
	Place of Work	Place of Usual Residence	Place of Work	Place of Usual Residence
Private Vehicle (car, taxi, truck, motorbike)	90%	76%	92%	87%
Public Transport (train, bus, ferry, tram)	7%	21%	5%	9%
Active Transport (bicycle, walking)	2%	3%	2%	3%
Other	0%	0%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**

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The above Journey to Work (JTW) data shows that:

- The majority of the population commute via private vehicle, which is the most popular mode of travel for both workers and residents.
- In all cases, train remains the most popular mode of public transport, followed by the use of bus.
- Active transport, including cycling and walking, remains minimal.
- The use of public transport had evidently decreased from 2016 to 2021. However, it is acknowledged that the data in 2021 was collected during the COVID-19 pandemic, when travelling via public transport was minimal, and the results may had been tampered with as a result.

2.12.3 Baseline Mode Splits

Using a combination of the travel mode survey and journey to work data, the following mode splits have been determined as the baseline level of travel behaviour, as presented in Table 24.

For the purposes of the subject traffic assessment, travel behaviours of visitors are assessed separately for weekdays and weekends, as weekday travels are typically more structured and time-sensitive, while weekend travels are typically more flexible and discretionary, both of which lead to differences in travel patterns. Staff travel, however, is expected to remain consistent across the week, as their trips to the CAC are primarily work-related, and generally follow fixed schedules.

For visitors, only the travel mode surveys presented in Section 2.12.1 have been applied, as Journey to Work (JTW) data captures travel patterns solely between places of residence and employment. Consequently, it is reasonable to assume that JTW data does not accurately reflect travel behaviour associated with leisure or discretionary trips.

For staff, JTW data has been used directly to establish the baseline mode share, as it reflects commuting patterns to places of work. This provides a reasonable representation of typical staff travel behaviour. To account for potential anomalies in travel patterns during the COVID-19 pandemic, the average of the 2016 and 2021 datasets has been used for this initial assessment.

While it is acknowledged that the baseline assumptions may not be entirely precise, they are considered adequate for this preliminary assessment. This is because the proposed expansion involves an increase in the size and capacity of the development, without altering the nature or function of the existing CAC. As such, any minor discrepancies in the baseline values are unlikely to result in a material change to potential traffic impacts. Any discrepancies in the mode share assumptions can be addressed and refined in the operational Green Travel Plan in the future as the new CAC comes into operation.

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Table 24: Baseline Travel Demand

Source: TTW

Travel Mode	Visitors		Staff	
	Weekday	Weekend	Weekday	Weekend
Walk	2%	1%	2%	2%
Bicycle	0%	0%	0%	0%
Bus	0%	0%	2%	2%
Train	0%	0%	4%	4%
Car, as driver	55%	37%	83%	83%
Car, as passenger (Carpool)	22%	60%	0%	0%
Car, as passenger (Pick-up and Drop-off)	21%	2%	8%	8%
Truck	0%	0%	1%	1%
Motorbike / Scooter	0%	0%	0%	0%
Taxi	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

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Section 3 Proposed Works

3.1 Description of Works

This SSDA seeks development consent for the expansion of the current CAC, which enhances the existing art gallery to address increasing community demand for arts and cultural services. The development includes a flexible theatre, additional gallery spaces, community and workshop areas, artist studios, and upgraded dining facilities, supporting educational outcomes and long-term financial sustainability.

Specifically, the SSDA seeks approval for:

- Demolition of parts of the existing buildings and structures on site.
- Expansion and redesign of the existing CAC, including the following elements:
  - Reorientation of the building towards Queen Street in the north to create a more substantial, welcoming and visible connection to the City Centre.
  - Addition of a new 350 seat theatre with back of house facilities.
  - Providing rehearsal spaces, creative and educational workshop areas, and community facilities.
  - Provision of ancillary serviced apartments in the form of artists' residences.
  - Provision of large commercial spaces including a café/restaurant, retail shop, and conference facilities.
  - Provision of expanded gallery spaces for the exhibition of artists' collections and dedicated storage for loaned artworks and collections.
- Landscaping works including provision of feature planting and paving.
- Extension and augmentation of services and infrastructure as required.

The proposed site is depicted in Figure 18 below.

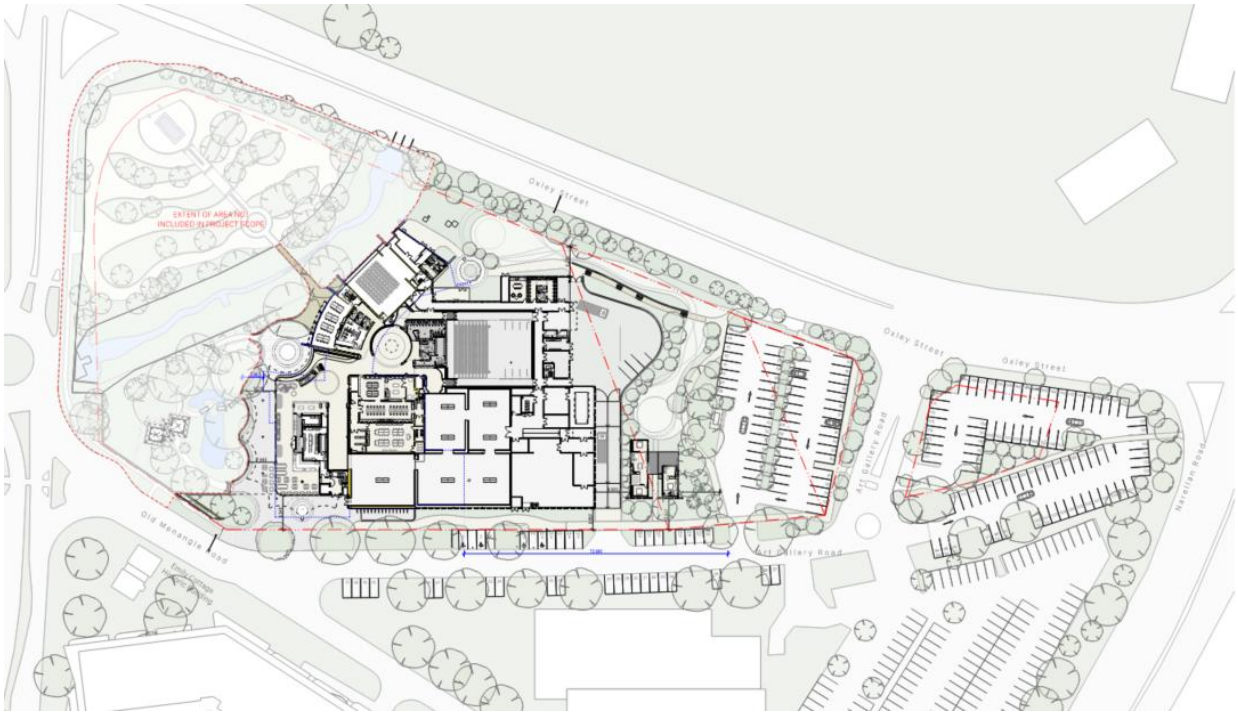


Figure 18: Proposed Site Plan
Source: fjcstudio

3.2 Site Access

Similar to existing arrangements, the primary access points to the site are located along Art Gallery Road. The site does not have a specific pedestrian access point; however, there are several designated pedestrian entry locations along the Art Gallery Road frontage, and one at the Oxley Street frontage.

The loading area will also be accessed via Art Gallery Road. In addition, there are three parking facilities immediately adjacent to the CAC, complemented by street parking along the Art Gallery Road frontage. Two additional car parks are located to the south of CAC. Figure 19 illustrates the access points for these car parks.

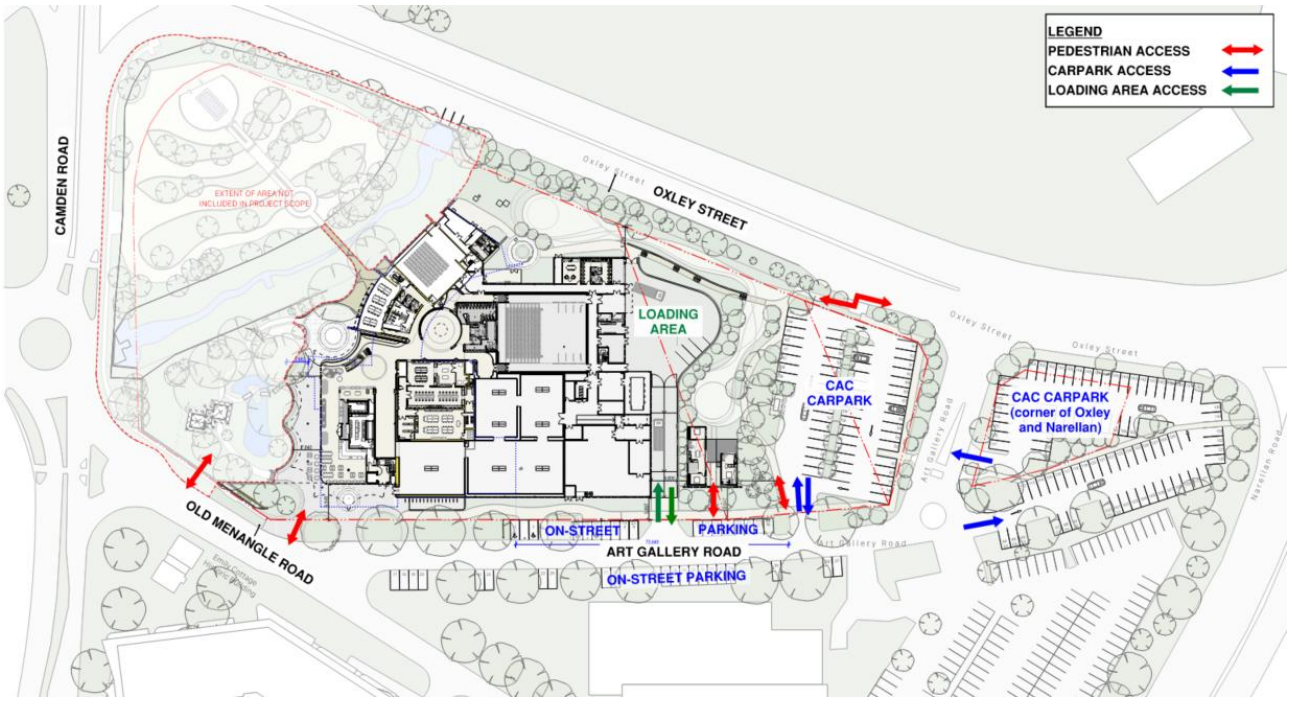


Figure 19: Site Access
Source: fjcstudio

To understand how staff and visitors travel to / from CAC transport access route maps for public transport, coach, car parking and drop-off have been prepared and are included in Appendix B.

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3.3 Operational Details

Table 25 below provides a comparison between the existing and proposed patron capacity for each facility.

Table 25: Proposed CAC Operational Details
Source: Campbelltown Arts Centre

Facility	Operating Hours / Days	Existing Capacity	Proposed Capacity	*Net Increase*
PRIMARY USES				
Art Galleries	10:00 am to 4:00 pm Mon to Sun	350	350	*0*
New Art Galleries		0	350	*+350*
Art Residency	As required	0	0	*0*
New Art Residency		0	2	*+2*
Theatre	Day-to-day operations: 5:00 pm to 10:00 pm Thurs to Sun	160	160	*0*
New Theatre	Events: 7:00 am to 10:00 pm Mon to Wed 9:00 am to 12:00 am Thurs to Sun	0	351	*+351*
OTHER USES				
Café*	6:00 am to 4:00 pm Mon to Sun	*100*	*140*	+40
Café – Weddings / Functions*	7:00am to 12:00 am Mon to Sun	120	120	0
Ceramics Room	9:00 am to 9:00 pm Mon to Sun	16	16	*0*
New Ceramics Room		0	25	*+25*
New Conference Room	7:00 am to 12:00 am Mon to Sun	0	200	*+200*
Outdoor Event Space (External Events)**	7:00 am to 10:00 pm Mon to Sun	500	500	*0*
Workshop Space	9:00 am to 9:00 pm Mon to Sun	60	60	*0*
New Workshop Space		0	60	*+60*
New Art Studio Spaces	6:00 am to 10:00 pm Mon to Sun	0	2	*+2*
Total		**1,206**	**2,236**	***+1,030***

**The café is ancillary to the CAC and is intended solely for CAC visitors; therefore, they are excluded from the total capacity. For weddings / functions these patrons have been included as additions.*
***External Events refer to events to be held at the Japanese Garden and Sculpture Garden*

As shown in Table 25 the proposal is intended to provide an increased capacity of +1,030 visitors.

To understand the number of daily visitors during CAC busiest weekday (Tuesday) and weekend (Saturday) CAC have provided a detailed breakdown of existing and anticipated visitor numbers for each facility on site. These are summarised below in Table 26.

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Table 26: Existing and Proposed Visitor Numbers – Typical Week

Source: Campbelltown Arts Centre

Facility	Visitors Weekday						Visitors Weekend					
	Daytime			Evening			Daytime			Evening		
	Existing	Proposed	*Net Increase*	Existing	Proposed	*Net Increase*	Existing	Proposed	*Net Increase*	Existing	Proposed	*Net Increase*
PRIMARY USES												
Art Galleries	125	125	*0*	0	0	*0*	125	125	*0*	0	0	*0*
New Art Galleries	0	125	*+125*	0	0	*0*	0	125	*+125*	0	0	*0*
Art Residency	0	0	*0*	4	4	*0*	0	0	*0*	4	4	*0*
New Art Residency	0	0	*0*	0	2	*+2*	0	0	*0*	0	2	*+2*
Theatre	30	30	*0*	120	120	*0*	30	30	*0*	120	120	*0*
New Theatre	0	30	*+30*	0	210	*+210*	0	351	*+351*	0	210	*+210*
OTHER USES												
Café*	*100*	*120*	*+20*	*0*	*0*	*0*	*100*	*120*	*+20*	*0*	*0*	*0*
Café – Weddings / Functions	0	0	0	0	0	0	0	0	0	120	120	0
Ceramics Room	16	16	*0*	0	0	*0*	8	8	*0*	0	0	*0*
New Ceramics Room	0	16	*+16*	0	0	*0*	0	8	*+8*	0	0	*0*
New Conference Room	0	160	*+160*	0	30	*+30*	0	80	*+80*	0	120	*+120*
Outdoor Event Space	0	0	*0*	0	0	*0*	0**	0**	*0*	0	0	*0*
Workshop Space	50	50	*0*	30	30	*0*	30	30	*0*	0	0	*0*
New Workshop Space	0	30	*+30*	0	20	*+20*	0	20	*+20*	0	0	*0*
New Studio Spaces	0	2	*+2*	0	0	*0*	0	2	*+2*	0	0	*0*
Total	**221**	**584**	***+363***	**154**	**416**	***+262***	**193**	**779**	***+586***	**244**	**576**	***+332***

**The café is ancillary to the CAC and is intended solely for CAC visitors; therefore, they are excluded from the total capacity. For weddings / functions, these patrons have been included as additions.*

***It is understood that the outdoor event space is rarely used and is managed by Council. Hence, the facility has been excluded in this instance.*

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Table 27: Proposed Summary Total Visitors

Source: Campbelltown Arts Centre

	Weekday		Weekend	
Facility	**Daytime Occupants**	**Evening Occupants**	**Daytime Occupants**	**Evening Occupants**
Gallery	250	0	250	0
Theatre	60	330	381	330
Other	274	86	148	126
Café	N/A	N/A	N/A	N/A
Outdoor Event	N/A	N/A	N/A	N/A
Total	**584**	**416**	**779**	**576**

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CAC have also provided details of their existing and proposed staff numbers for busiest weekday (Tuesday) and weekend (Saturday). These are detailed below in Table 28.

Table 28: Proposed Staff Numbers

Source: Campbelltown Arts Centre

Shift	Period	Weekday	Weekend	Special Event	Total Staff Employed*
Full Time	**Existing**	12	3	8	16
	Proposed	19	6	13	24
	Net Increase	*+7*	*+3*	*+5*	*+8*
Part Time	**Existing**	3	1	2	6
	Proposed	5	2	3	10
	Net Increase	*+2*	*+1*	*+1*	*+4*
Casual	**Existing**	2	2	8	12
	Proposed	3	3	14	18
	Net Increase	*+1*	*+1*	*+6*	*+6*
Total	**Existing**	**17**	**6**	**18**	**34**
	Proposed	**27**	**11**	**30**	**52**
	Net Increase	***+10***	***+5***	***+12***	***+18***

**Staff numbers for each period may not equate to the total number of staff employed, as some staff work across multiple periods.*

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3.4 Events

In addition to standard operating activities, the facility will host a range of events that may occur outside normal operational hours. A summary of the anticipated event types, frequency and expected patron numbers is provided in Table 30 below.

Table 29: Events Type and Frequency
Source: Campbelltown Arts Centre

Event Type	Expected Patron Numbers	Frequency
Weddings	Up to 200 patrons	Fortnightly
Conferences	Up to 200 patrons	Weekly
Exhibitions	Approximately 150 patrons	Monthly
Theatre Performances	Up to 200 patrons	Monthly
Major Conferences	Up to 500 patrons	Bi-annually (2 per year)
Major Awards/Festival Fishers Kids Art Festival	Up to 800 patrons	Annually
Major Exhibition Fishers Ghost Art Exhibition	Up to 500 patrons	Annually
Large Theatre Performances	Approximately 350 patrons	Monthly

For events (generally exceeding 300 patrons), a Traffic Management Plan (TMP) will be prepared by Campbelltown Arts Centre. The traffic management plan will ensure parking and traffic are properly managed during events. The event management strategy will prioritise sustainable transport options, encouraging the use of public transport where feasible. The strategy will also promote coach and bus travel to reduce the number of private vehicle trips associated with larger events. Designated drop-off and pick-up areas will be provided to facilitate efficient passenger movements and minimise congestion.

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Section 4 Travel Scenarios and Demand

As detailed in Section 2.12.3 baseline travel mode splits have been derived through the existing visitor travel mode surveys and census data to confirm how existing visitors and staff travel to and from CAC.

For the purposes of a conservative assessment, and given CAC is an existing facility, it is anticipated that travel behaviour associated with the proposed centre will be generally consistent with existing travel patterns. Table 30 outlines the travel mode splits which will be applied to the proposed visitor and staff numbers.

Table 30: Baseline Travel Mode Split

Travel Mode	Visitors		Staff	
	Weekday	Weekend	Weekday	Weekend
Walk	2%	1%	2%	2%
Bicycle	0%	0%	0%	0%
Bus	0%	0%	2%	2%
Train	0%	0%	4%	4%
Car, as driver	55%	37%	83%	83%
Car, as passenger (Carpool)	22%	60%	0%	0%
Car, as passenger (Pick-up and Drop-off)	21%	2%	8%	8%
Truck	0%	0%	1%	1%
Motorbike / Scooter	0%	0%	0%	0%
Taxi	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

It is noteworthy to mention, whilst utilising the baseline travel mode splits ensures a conservative assessment is completed. As part of the proposal, a Green Travel Plan will be implemented to set achievable mode share targets that promote reduced reliance on private vehicles and increased use of active and public transport modes.

The following sections outline the proposed impact on each travel mode and provide detailed analysis to ensure there is a negligible impact as a result of the proposal. It is also noteworthy to mention the total on-site visitor and staff demand has been assessed. Although the proposal relates to an extension of the existing CAC and only the additional demand requires assessment, the overall demand has been considered as part of this analysis to provide a robust and holistic planning assessment.

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Section 5 Pedestrians

5.1 Demands

The expected pedestrian volume has been projected by applying the baseline travel mode splits outlined in Table 30. As shown in Table 26, both weekday and weekend scenarios result in the most visitors and staff during daytime (584 visitors and 27 staff), these numbers have thus been applied to the assumed travel mode splits.

Table 31: Projected Pedestrian Demand

Users	Total Proposed Numbers		Pedestrian Mode Split		Pedestrian Travel Demand	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Visitors	584	779	2%	1%	12	8
Staff	27	11	2%	2%	1	0

5.2 Proposal

Based on the projected demand, visitors travelling to the CAC on foot are expected to be minimal. The existing infrastructure is deemed appropriate, and no works associated with pedestrian facilities have been proposed, as it is expected that the existing pedestrian infrastructure in the vicinity of the site is sufficient to cater for the demand.

As shown in Section 2.4 and 2.7, footpath availability provides satisfactory connectivity between the CAC and the surrounding area, as off-site carparks and bus stops could be reached within a 10-minute walk. Figure 20 illustrates the pedestrian access points along the Art Gallery Road frontage.

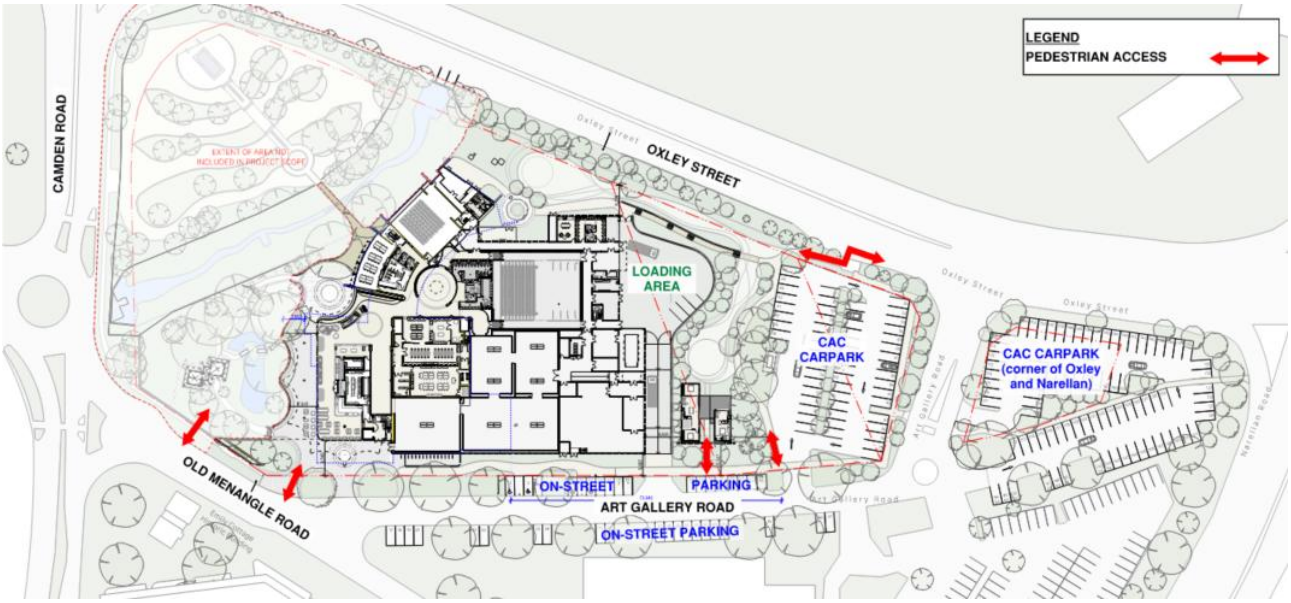


Figure 20: Pedestrian Access
Source: fjcstudio

Pedestrian and vehicle access are separated, which reduces the potential for conflicts between transport modes. The existing pedestrian infrastructure is therefore considered satisfactory to accommodate the demands of the proposal.

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Section 6 Cyclists

6.1 Demands

As shown in Table 30, both weekday and weekend scenarios yield a 0% bicycle mode split, resulting in nil bicycle usage in the immediate term. That said, a Green Travel Plan (GTP) will be implemented post-development to align travel behaviour with state-wide active transport strategies and promote sustainable modes such as cycling. Consequently, future demand for bicycle parking is anticipated. Refer to the preliminary GTP which has been development in parallel for the subject SSDA, for details of said active transport strategies.

Table 32, reproduced from the preliminary GTP, shows the projected bicycle demand. In the GTP, short-term targets refer to actions within 1 – 3 years, while long-term targets apply to periods beyond 5 years.

Table 32: Projected Bicycle Parking Demand
Source: Preliminary Green Travel Plan S2.2, by TTW (dated 16 April 2026)

Users	Total Proposed Numbers		Bicycle Mode Split						Bicycle Parking Demand					
	Weekday	Weekend	Weekday			Weekend			Weekday			Weekend		
			E*	S*	L*	E	S	L	E	S	L	E	S	L
Visitors	584	779	0%	1%	3%	0%	1%	3%	0	6	18	0	8	23
Staff	27	11	0%	1%	3%	0%	1%	3%	0	1	1	0	1	1

**E = existing mode split, S = short-term targets, L = long-term targets*

6.2 Analysis

6.2.1 Bicycle Facilities – Planning Assessment

The Campbelltown DCP does not specify a bicycle parking rate for the subject development type. Hence, references to the NSW Planning Guidelines for Walking and Cycling have been made. Said guideline stipulates the following bicycle parking rates for a "Theatres" / "Reception and conference centres" development:

Table 33: Bicycle Parking Requirement
Source: NSW Planning Guidelines for Walking and Cycling S7.6

Rate	No.	Planning Requirement	Proposed Provision
Short-term Use (Visitors)	Weekday: 584 Weekend: 1279	3 – 5%* of (seating) capacity: ▪ Weekday: 24 spaces ▪ Weekend: 52 spaces	30 spaces
Long-term Use (Staff)	Weekday: 27 Weekend: 11	3 – 5%* of staff: ▪ Weekday: 1 space ▪ Weekend: 0 space	
Total		**Weekday: 25 spaces** **Weekend: 52 spaces**	**30 spaces**

**An average of 4% of has been adopted to determine the number of spaces required.*

The development will require a total of 52 spaces to satisfy the planning requirement, as required by the worst-case weekend daytime scenario. In response, the development proposes a provision of 30 spaces, as detailed in the following section.

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6.2.2 End-of-trip Facilities – Planning Assessment

In addition to bicycle parking, the NSW Planning Guidelines also requires the associated end-of-trip facilities to be provided for staff. The required quantity for end-of-trip facilities are as follows:

Table 34: End-of-trip Facilities Requirement
Source: NSW Planning Guidelines for Walking and Cycling S7.6

Rate	No.	Planning Requirement	Proposed Provision
13 – 49 Staff	Weekday: 27 staff (= 1 bicycle spaces)	**Lockers:** 1 per 3 racks ▪ 1 locker **Showers:** 1 per 3 racks ▪ 1 shower	3 showers & changerooms (1 male, 1 female and 1 accessible)
Total		**1 locker** **1 shower**	**3 showers / changerooms**

As shown below, the proposed provision is considered adequate as the provision complies with the planning requirement.

6.2.3 Design Requirements

The bicycle spaces have been designed in accordance with the following parameters as stipulated in AS2890.3:

- Security Level: B
- Bicycle Space Envelope: 1.8 m L x 1 m W (for two bikes) (bicycle racks to be spaced 1 m)
- Aisle Width: 1.5 m
- Gradient: 1:20 (5%) maximum
- Height Clearance: 2.2 m minimum

6.3 Proposal

As noted above, the proposal includes bicycle parking and end-of-trip facilities shown below in Figure 21, including the following:

- Bicycle Parking – 30 parking spaces (i.e., 15 bicycle racks), located adjacent to the pedestrian footpath at Art Gallery Road frontage.
- End-of-trip Facilities – 3 changerooms / showers, located on ground floor, adjacent to Flexible Arts Workshop 2.

It is acknowledged that the proposed provision may not satisfy the requirements as identified by the planning assessments above. That said, the planning instruments serve only as a guideline and do not accurately reflect the demand of the subject assessment.

The proposed provision would be sufficient to accommodate the projected demand of all scenarios as detailed in Table 32, therefore, it is considered sufficient. Any additional bicycle facilities will be further investigated to ensure sufficient parking is in place should the real-time demand exceeds the supply in the future.

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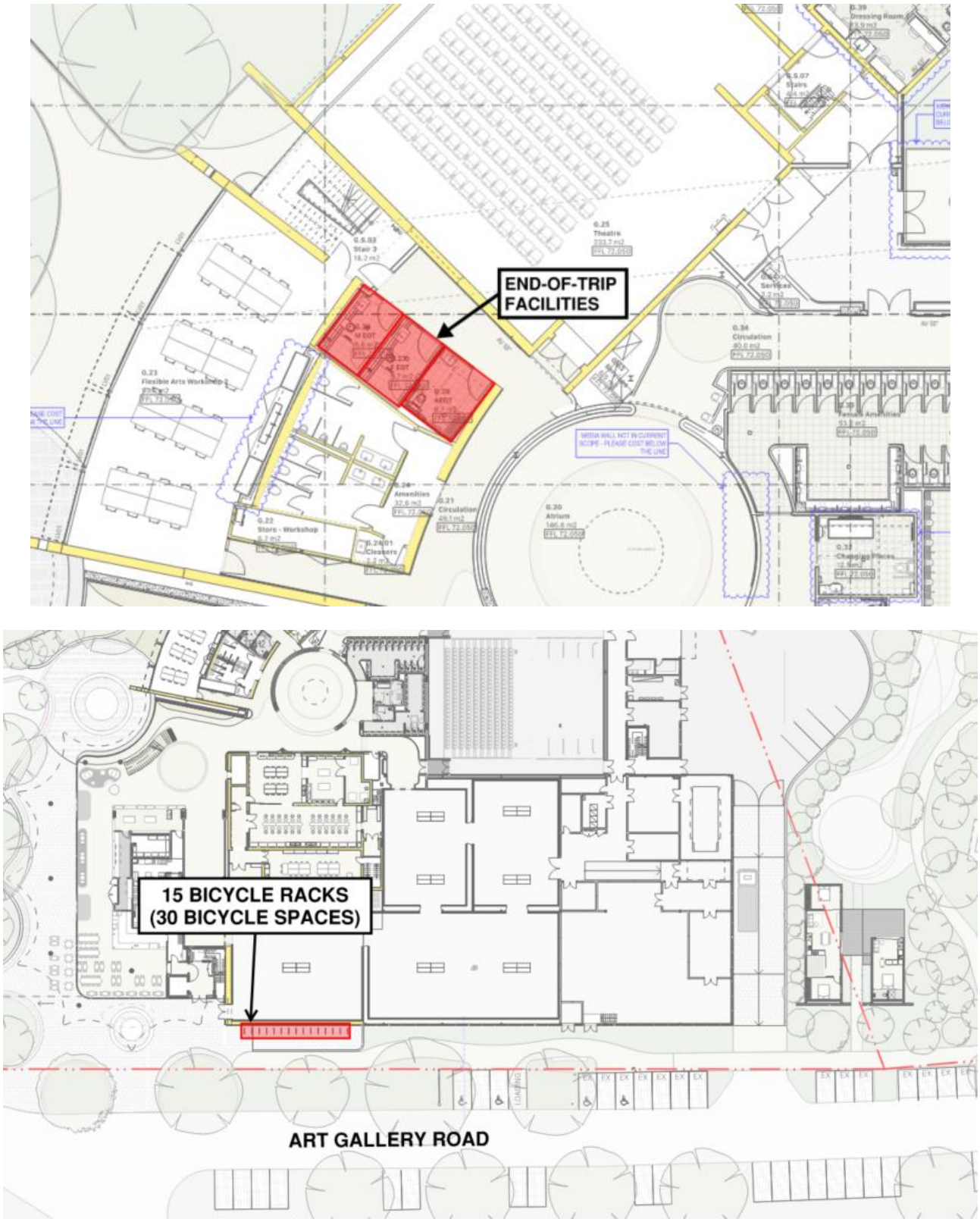


Figure 21: Proposed Bicycle Parking and End-of-trip Facilities
Source: fjcstudio

Section 7 Public Transport

7.1 Demands

The expected public transport usage has been projected by adopting the scenarios which result in the largest travel demand. As shown in Table 26, both weekday and weekend scenarios result in the most visitors during daytime, these numbers have thus been applied to the assumed travel mode splits.

Table 35: Projected Public Transport Demand

Users	Total Proposed Numbers		Mode Split (Train and Bus)		Public Transport Demand	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Visitors	584	779	0%	0%	0	0
Staff	27	11	6%	6%	2	1

7.2 Proposal

Based on the projected demand, public transport usage is expected to be negligible on a typical week. Hence, no works associated with public transport services adjacent to the site have been proposed. As shown in Section 2.6, the existing public transport services are all located within reasonable reach, with both bus stops and train stations located within a 10-minute and 20-minute walk respectively.

It is noteworthy to mention however, during events CAC will rely heavily on buses and coaches for school groups and community groups. Further details are provided in Section 9.4.

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Section 8 Car Parking

8.1 Demands

To reiterate, while the proposal relates to an extension of the existing CAC and only the additional demand requires assessment, the overall parking demand has been considered to ensure a robust and holistic planning assessment.

Both daytime and evening scenarios for a weekday and weekend have been assessed. The following parameters / assumptions have been adopted to complete the below assessments:

8.1.1 Total Visitors On-site at One Time

- **Art Gallery –** will operate between 10:00 am and 4:00 pm during standard operating hours. It has been advised by CAC that as a result of the proposal, the art gallery will accommodate 250 persons per day. As a worst-case scenario, half of the daytime visitors (**125) are on-site during the peak hour period**.
- **Theatre –** typically the theatre will operate between 5:00 pm to 10:00 pm. It has been advised by CAC that as a result of the proposal, the theatre will accommodate 250 persons per day. As a worst-case scenario, half of the daily visitors **(125) are on-site during the peak hour period**. During the daytime there will be some visitors associated with the theatre for rehearsals etc., which has already been accounted for.
- **Other uses** – the centre provides numerous community facilities. As shown in Table 27, this will typically equate to a maximum of 274 visitors on a weekday daytime. It has been advised by CAC that many of these uses will not occur at the same time and therefore a 60% occupancy at any one time has been applied equating to **(164) are on-site during the peak hour period.**

Table 36: Weekday Visitors On-site at One Time

Facility	Weekday					
	Daytime Users	% on site	On-site at one-time	Evening Users	% on site	On-site at one-time
Gallery	250	50%	125	**0**	0%	**0**
Theatre	60	80%	48	**330**	100%	**330**
Other	274	60%	164	**86**	80%	**69**
Total	**584**		**337**	**416**		**399**

As shown above in Table 36, the maximum number of visitors on-site during a weekday is 337 during the day and 339 visitors during the evening.

Table 37: Weekend Visitors On-site at One Time

Facility	Weekend					
	Daytime Users	% on site	On-site at one-time	Evening Users	% on site	On-site at one-time
Gallery	250	50%	125	**0**	0%	**0**
Theatre	381	80%	305	**330**	100%	**330**
Other	148	60%	89	**126**	80%	**101**
Total	**779**		**519**	**576**		**431**

As shown above in Table 37, the maximum number of visitors on-site during a weekend is 519 during the day and 431 visitors during the evening.

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8.1.2 Other Assumptions

- Baseline Mode Splits: for car (drivers) as listed in Table 30, to be applied to the respective scenarios as shown below, this reflects the car demand.
- The below 4 scenarios represent anticipated parking demands during a typical week. CAC have confirmed that any infrequent events i.e. exhibitions, outdoor events or major conferences will be managed through an operational management plan and be accompanied by a traffic management plan to ensure traffic and parking are adequately managed.

8.1.3 Scenario 1: Weekday Daytime

Table 38 below demonstrates the existing, additional and total demand of the weekday daytime scenario as a result of the proposal.

Table 38: Typical Weekday Daytime Projected Parking Demand
Source: TTW

Facility	On-site at one time	Mode Split (Car Driver)	Total Parking Demand
Gallery	125	55%	69
Theatre	48		26
Other	164		90
Staff	27	83%	22
		Total	**208**

As shown, the weekday daytime scenario results in a parking demand of 208 vehicles.

8.1.4 Scenario 2: Weekday Nighttime

Table 39 below demonstrates the existing, additional and total demand of the weekday evening scenario as a result of the proposal.

Table 39: Typical Weekday Evening Projected Parking Demand
Source: TTW

Facility	On-site at one time	Mode Split (Car Driver)	Total Parking Demand
Gallery	0	55%	0
Theatre	330		182
Other	69		38
Staff	11	83%	9
		Total	**228**

As shown, the weekday evening scenario results in in a parking demand of 228 vehicles.

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8.1.5 Scenario 3: Typical Weekend Daytime

Table 40 below demonstrates the existing, additional and total demand of the weekend daytime scenario as a result of the proposal.

Table 40: Weekend Daytime Projected Parking Demand
Source: TTW

Facility	On-site at one time	Mode Split (Car Driver)	Total Parking Demand
Gallery	125	37%	46
Theatre	305		113
Other	89		33
Staff	30	83%	25
		Total	**217**

As shown, the weekend daytime scenario results in in a parking demand of 217 vehicles.

8.1.6 Scenario 4: Typical Weekend Nighttime

Table 41 below demonstrates the existing, additional and total demand of the weekend evening scenario as a result of the proposal.

Table 41: Weekend Evening Projected Parking Demand
Source: TTW

Facility	On-site at one time	Mode Split (Car Driver)	Total Parking Demand
Gallery	0	37%	0
Theatre	330		122
Other	101		37
Staff	30	83%	25
		Total	**184**

As shown, the weekend daytime scenario results in in a parking demand of 184 vehicles.

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8.2 Proposal

The proposal will provide an additional **65 parking spaces**. This comprises an additional 45 parking spaces within the CAC car parks and an additional 20 parking spaces along Art Gallery Road. This includes 4 accessible car parking spaces and a time-restricted loading bay.

The reconfigured parking areas is provided in Figure 22 below.

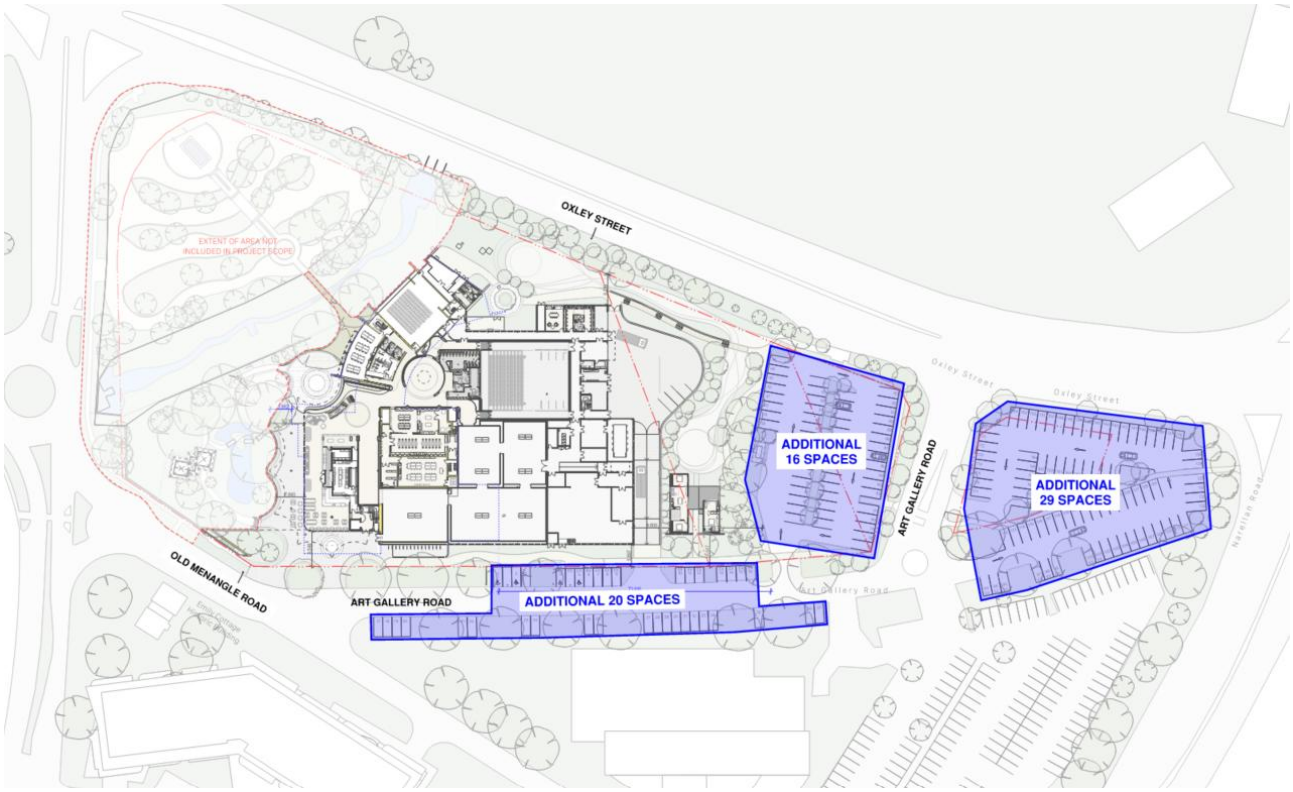


Figure 22: Proposed Car Parking Facilities
Source: fjcstudio

Furthermore, through stakeholder consultation with Accessible Arts, First Nations Working Group and CAC Staff & Friends, it was determined that there is currently not sufficient car parking adjacent to the building entry. There is a large community of elderly and mobility-impaired people who regularly visit the CAC, so these new parking spaces will be well used. Based on the consultation, the proposal includes 4 accessible parking spaces located as close to the entry as possible.

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8.3 Analysis

8.3.1 Parking Demand – Planning Assessment (Campbelltown DCP)

Part 2 of the Campbelltown DCP 2015 identifies a minimum parking requirement for entertainment facilities as follows:

- 1 space per 25 m^2 for indoor facilities; or
- 1 space per 50 m^2 for outdoor facilities

While the DCP provides minimum parking rates for entertainment facilities, the Campbelltown Arts Centre primarily functions as an information and education facility, for which the DCP does not specify a dedicated parking rate. In addition, the centre incorporates a range of ancillary components and operates differently from a typical entertainment facility.

Given the unique mix of land uses and operational characteristics of the site, it is considered more appropriate to assess parking demand based on a first-principles approach. This assessment considers the specific functions of the facility, the existing operational patterns, and the site-specific characteristics to determine an appropriate car parking provision for the development.

8.3.2 Parking Demand – Planning Assessment (First Principles Assessment)

As previously mentioned, due to the specific nature of CAC, a 'first principles' assessment has been completed to determine if the proposed parking provision is adequate. Table 42 below summarises the total parking demand across the 4 scenarios.

Table 42: Summary of Total Car Parking Demand

	Weekday		Weekend	
	Daytime	**Evening**	**Daytime**	**Evening**
CAC Parking Demand	208	228	217	184

As previously mentioned, Occupancy surveys were completed in Car Parks 1-5 as these are readily utilised by existing visitors and within a 400m radius of the site. These are shown below in Figure 23.

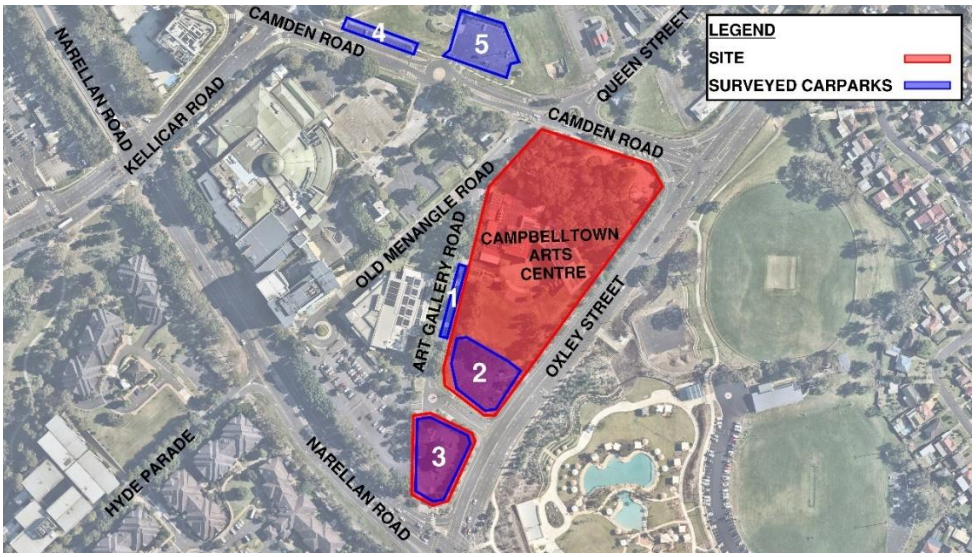


Figure 23: Car Parks 1-5

Existing Car Parking Availability

As previously discussed in Section 2.8 existing car parking occupancy surveys were undertaken on Tuesday 24th September 2024 and Saturday 28th September 2024. These surveys accounted for existing visitors who were associated with CAC. To avoid double counting and noting that the proposal intends to implement additional parking management measures to restrict CAC car parks (CP2 & 3) to CAC staff and visitors only, the existing 95 car spaces have been considered as available to accommodate CAC parking demand.

Proposed Total Parking Demand

Table 43 below provides a first principles assessment to evaluate the adequacy of parking provision in relation to the forecast demands of the 4 scenarios detailed in Section 8.1.

Table 43: First Principles Assessment

	Weekday		Weekend	
	Daytime	**Evening**	**Daytime**	**Evening**
CAC Proposed Parking Demand	208	228	217	184
Available Parking in Facilities 1 – 5 (Existing Parking)*	148	163	145	171
Deficient Parking	-60	-65	-72	-13
Proposed Additional Parking	**+65**			
Surplus / Deficiency	+5	0	-7	+52

**Existing vacancy figures comprise the observed vacancies in CP1 and CP4–CP5 from the 2024 parking demand surveys, plus an assumed 100% vacancy for CP2–CP3.*

As shown above, with the provision additional +65 car parking spaces provided by the project, generally all parking demands can be accommodated within a 400m radius of the site. The only exception may be on a weekend during the day, where there is a deficiency of 7 car spaces. This would mean visitors would need to park in other car parks more than a 5-minute walk from the site. However, it is noteworthy to reiterate the parking demand for a daytime weekend is very conservative by assuming the theatre and gallery are operating at the same time, and in practice this is unlikely to occur often.

Car Park 1 – Car Park 7

While Car Park 6 (180 car spaces) & Car Park 7 (49 car spaces) were not surveyed it is worth highlighting they are only a 10-minute walk from CAC and are likely to be utilised by visitors on busy days. Also, it is to be noted that the route is marked by signalised crossing opportunities along Oxley Street, providing good accessibility. Therefore, based on *Nearmap* aerial footage it has been assumed these car parks are typically 50% occupied.

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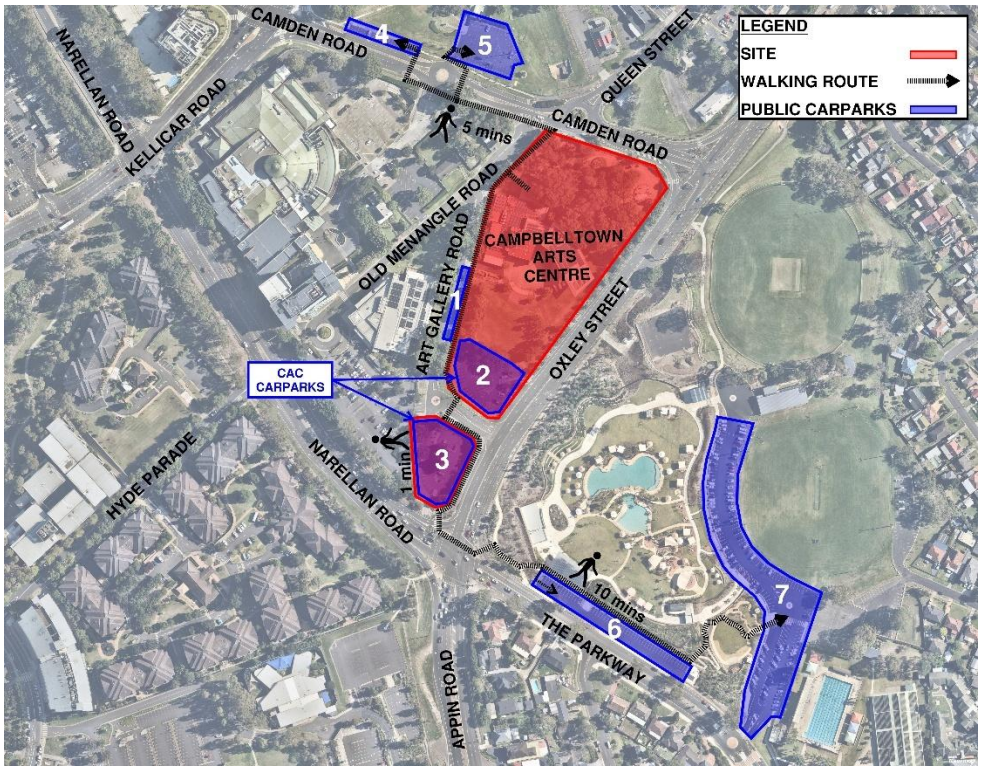


Figure 24: Car Parks 1-7

Table 44 below provides a first principles assessment also relying on the assumed available parking in Car Park 6 (90 car spaces) and Car Park 7 (24 car spaces) to evaluate the adequacy of parking provision in relation to the forecast demands of the 4 scenarios detailed in Section 8.1.

Table 44: First Principles Assessment

	Weekday		Weekend	
	Daytime	**Evening**	**Daytime**	**Evening**
CAC Parking Demand	208	228	217	184
Available Parking in Facilities 1 – 7 (Existing Parking)	263	278	260	286
Deficient Parking	+55	+49	+43	+101
Proposed Additional Parking	+65			
Surplus / Deficiency	+120	+114	+108	+166

As shown above, also utilising Car Parks 6 & Car Park 7 show there is sufficient parking within a 10-minute walk of the site to meet the forecast demand. To reiterate the CAC parking demand assumptions are very conservative and it is likely daily typical conditions may operate with lower visitor numbers.

In summary, based on the first principles assessment the proposal will have sufficient parking within 400m of the site once the additional 65 car parking spaces are provided during most typical operations. On occasion when CAC is busy, i.e., has more than one activity on at the same time, visitors and staff may be required to use parking within the Billabong Parkland car parks, which is approximately a 10-minute walk from the site. The proposed parking provision is considered acceptable and can be supported.

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8.4 Design Requirements

Car Parking Spaces (within Carpark)

The proposed car parking spaces with parking facilities 2 and 3 have been designed in accordance with AS2890.1:2002. Key design parameters for these spaces include:

- Classification: User Class 1 (employee and commuter parking)
- Space Dimension: 5.4 m L x 2.4 m W (design includes 5.6 m L x 2.4 W spaces)
- Aisle Width: 6.2 m
- Gradient: 1:20 (5%) maximum

Car Parking Spaces (On-Street)

The proposed on-street parking spaces have been designed in accordance with AS2890.5. Key design parameters for these spaces include:

- Classification: Medium (Generally more than 2 hr parking but less than full day)
- Speed Limit: 50 km / hr (along Art Gallery Road)
- Required Width of Space: 2.5 m
- Required Dimension: 10.6 m minimum
  (from back of space to opposite line of parked vehicle)

Accessible Spaces

The accessible parking spaces have been designed in accordance with the following parameters as stipulated in AS 2890.6:

- Space Dimension: 5.4 m L x 2.4 m W (design includes 5.6 m L x 2.4 m W)
- Shared Area Dimension: 5.4 m L x 2.4 m W (design includes 5.6 m L x 2.4 m W)
- Gradient: 1:40 (2.5%) maximum
- Delineation: Yellow diagonal strips and bollard in shared areas

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Section 9 Car Pick-up and Drop-off / Coach

9.1 Car Pick-up and Drop-off

9.1.1 Demands

The pick-up/drop-off volume has been projected by applying the baseline travel mode splits outlined in Table 30. As shown in Table 26, both weekday and weekend scenarios result in the most visitors during daytime, these numbers have thus been applied to the assumed travel mode splits.

Table 45: Projected Car Pick Up Drop Off Demand

Users	Total Proposed Numbers		Mode Split		Travel Demand	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Visitors	584	779	21%	2%	123	16

9.2 Analysis

The resulting weekday and weekend car pick-up and drop-off volumes are summarised in Table 45. On a typical weekday, a total of 584 visitors is expected, of which 21% are assumed to arrive or depart via car pick-up/drop-off. This equates to approximately 123 visitors being dropped off or picked up.

On weekends, while total visitation increases to 779 visitors, the proportion of visitors using car pick-up and drop-off is significantly lower at 2%, resulting in approximately 16 visitors being dropped off or picked up.

The detailed vehicular traffic impacts associated with the proposed development, including both visitor and staff trips, are assessed in Section 11, which provides a comprehensive analysis of peak hour traffic generation and intersection performance.

9.3 Proposal

On-site provisions, including designated pick-up/drop-off zones and CAC car parks, are sufficient to accommodate the anticipated demand which are short in duration. Consistent with existing operations, several locations in close proximity to the site provide opportunities for pick-up and drop-off activity.

These include:

- The existing No Parking zone along the Old Menangle Road frontage
- CAC car parks can be used for pick-up and drop-off.

Figure 25 identifies the pick-up and drop-off locations along Old Menangle Road.

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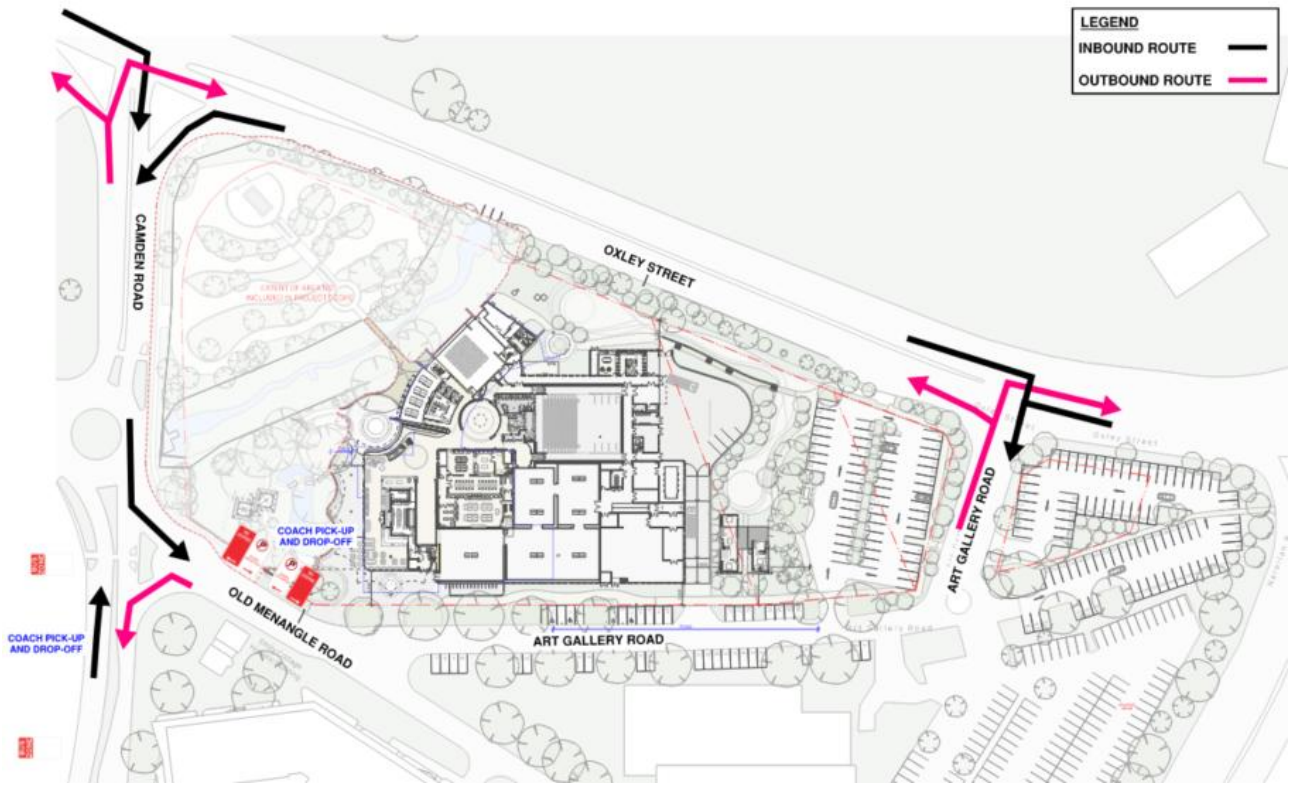


Figure 25: Pick-up and Drop-off Locations
Source: fjcstudio

9.4 Coach

9.4.1 Demands

At this stage, coach usage cannot be reliably forecast prior to the facility's opening, as demand is highly dependent on the type and frequency of events held at the site.

Notwithstanding this, it is understood that coach use will remain infrequent and typically utilised for one-off visits or occasional special events only. Accordingly, no additional coach demand is anticipated as a result of the proposed expansion

9.4.2 Proposal

The existing coach parking facilities, as detailed in Section 2.9.2 and shown in Figure 25 will be sufficient to accommodate coaches. Thus, no works associated with coach use have been proposed.

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Section 10 Service Vehicles

10.1 Proposal

10.1.1 Loading Dock

As shown in Figure 26, the proposal includes the provision of a new loading area, which includes two loading bays, two contractor parking spaces, and a turning area. All services vehicles are to access the loading area via Art Gallery Road. It should be noted that 4 parking spaces will be removed to accommodate service vehicle access through the proposed driveway.

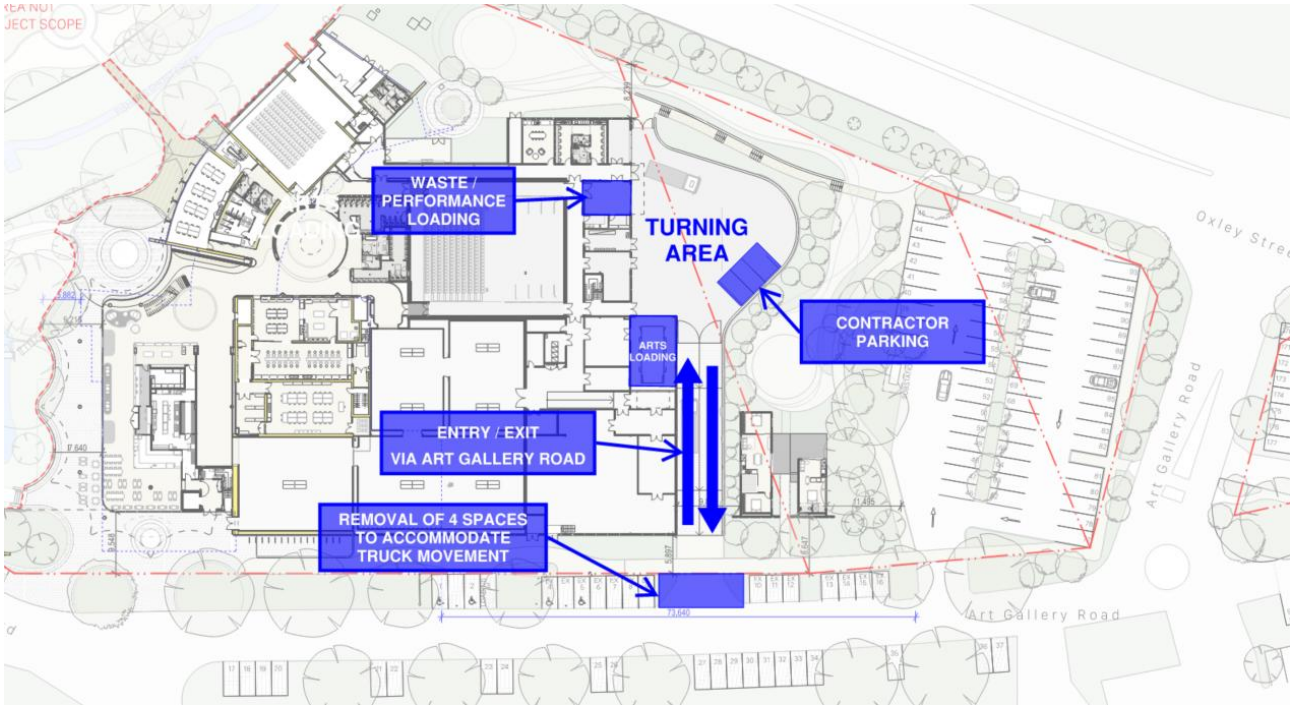


Figure 26: Proposed Loading Dock
Source: fjcstudio

The loading bay adjacent to the access driveway will be dedicated for artwork loading only, as the design provides connection between the loading bay and the artwork storage areas. The layout and configuration of the loading bay would accommodate trucks up to 12.5 m long (i.e., a Heavy Rigid Vehicle HRV), Appendix D demonstrates a HRV accessing the artwork loading bay in a reverse-in-forward-out arrangement. As advised by the art logistics consultant, it is understood that the bay will be regularly serviced by a 12.2 m art delivery truck only.

The alternate loading bay, located to the north of the artwork loading bay, will be utilised by other general loading activities (except food and beverage) throughout the art centre. It is understood that the bay will be primarily utilised by theatre performance loading and waste loading, as the bay is connected to the backstage of the theatre and the waste storage room. The layout and configuration of the loading bay would accommodate trucks up to 12.5 m long (i.e., a Heavy Rigid Vehicle HRV). Refer to Appendix D which demonstrates a HRV accessing the loading area in a forward-in-reverse-out arrangement.

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10.1.2 Food and Beverage Delivery

There are no changes to food and beverage loading as a result of the proposal, they are to occur as per the existing arrangements as detailed in Section 2.10.

10.1.3 Emergency Vehicles

As part of the proposal, there are no dedicated parking areas for emergency vehicles. Emergency vehicles are expected to set-down where possible, depending on the nature of the emergency and real-time traffic conditions.

10.2 Analysis

10.2.1 Loading Dock

The Campbelltown DCP does not stipulate a service vehicle parking rate. However, Part 6 of the Campbelltown DCP stipulates the following design vehicle based on the Gross Floor Area (GFA) of a "Commercial Development".

Table 46: Loading Dock Design Requirement
Source: Campbelltown DCP 2015 P6, S6.4.2.2

GFA	Proposal	Planning Requirement	Proposed Provision
More than 1,500 m^2	6,932.7 m^2	Heavy Rigid Vehicle (12.5 m long)	Heavy Rigid Vehicle (12.5 m long)

It can thus be confirmed that the proposal is adequate as it complies with the relevant planning instrument.

As noted above, information provided by the client confirmed that no loading activities involved will require trucks larger than a 12.5 m HRV. Activities will also be scheduled such that there will be no overlap between service vehicles.

10.2.2 Food and Beverage Delivery

As noted above, there will be no changes to food and beverage loading activities. Hence, no impacts are expected as a result of the proposal.

10.3 Design Requirement

The loading bays and the associated areas have been designed in accordance with the following specifications as stipulated in AS 2890.2:

- Loading Dock Dimension: 12.5 m L x 3.5 m W minimum
- Loading Platform Height: 1.1 m to 1.4 m
- Loading Dock Gradient: 1:8 (12.5%) maximum
- Roadway and Ramp Grades: 1:6.5 (15.4%) maximum
- Height Clearance: 4.5 m minimum

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Section 11 Traffic Impacts

11.1 Traffic Generation

The *NSW Guide to Transport Impact Assessment (GTIA, 2024)* provides traffic generation rates based on surveyed data for a range of land uses. However, the GTIA does not include specific traffic generation rates for arts centres or theatres. As a result, a first-principles approach has been adopted to estimate traffic generation for the proposed development.

This assessment derives peak hour traffic generation based on the number of visitors present on-site at any one time.

This section outlines the anticipated increase in traffic generation associated with the proposed development, with consideration given to both visitor and staff vehicle movements. Existing staff and visitor traffic are already captured within the baseline traffic surveys; therefore, this assessment focuses on the uplift in traffic generation attributable to the proposed development.

To estimate the site's peak hour traffic generation, the following assumptions have been adopted:

- A high proportion of visitors are assumed to travel by private vehicle, with a car mode share of 98% on weekdays and 99% on weekends, reflecting the site's operational characteristics.
- Average visitor vehicle occupancy rates of 1.4 persons per vehicle on weekdays and 2.5 persons per vehicle on weekends have been applied this has been derived from the visitor surveys completed in 2024.
- To provide a worst-case assessment, it is assumed that 100% of visitors present on-site at any one time arrive within the same peak hour.
- A vehicle occupancy of 1 person per vehicle has been assumed for staff.
- It is assumed that 90% of staff travel during the weekday AM and PM peak periods, and 50% of staff travel during the Saturday daytime peak period.

Table 47: Additional Traffic Generation

Scenario	Existing	Proposed	Additional Increase	
	Visitor No.	Visitor No.	Visitor No.	Visitor Vehicles
Weekday AM	126	337	+211	+148
Weekday PM	148	400	+251	+147
Saturday Day	109	519	+409	+162
	Staff No	Staff No	Staff No	Staff Vehicles
Weekday AM	17	27	+10	+8
Weekday PM	6	11	+5	+4
Saturday Day	18	30	+12	+5

Note: refer to Appendix E for existing & proposed visitor numbers and staff on-site at one time.

The worst-case increase in peak hour traffic generation occurs during the weekend peak scenario, with 162 additional vehicles generated by the development.

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11.2 Trip Distribution and Assignment

The trips generated by visitors are assumed to be distributed across the road network. The inbound and outbound trip distribution assumption for each peak period is summarised in Table 48.

Table 48: Inbound and Outbound Distribution

AM Peak		PM Peak		SAT Peak	
Inbound	**Outbound**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
100%	0%	20%	80%	50%	50%

Note: For the PM peak, a proportion of inbound movements (20%) has been assumed to account for arrivals associated with evening theatre events.

Table 49 shows the estimated visitor and staff vehicle volumes based on inbound and outbound trip distribution.

Table 49: Inbound and Outbound Volume

	AM Peak		PM Peak		SAT Peak	
	Inbound	**Outbound**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Visitor Vehicle Volume	148	0	30	118	81	81
Staff Vehicle Volume	8	0	1	3	2	2
Total Vehicle Volume	156	0	30	121	84	84

The 2021 Journey to Work data was used to determine the likely origin of vehicles travelling to the development. The top LGA of the workers travelling to Campbelltown LGA were reviewed and assigned into the following directions, as shown in Table 50.

Table 50: Trip Distribution and Assignment

Direction	Proportion
North	40%
West	35%
South	25%

Figure 27 and Figure 28 illustrates the overview of assumed inbound and outbound routes for accessing the development. The detailed trip distribution is included in Appendix E.

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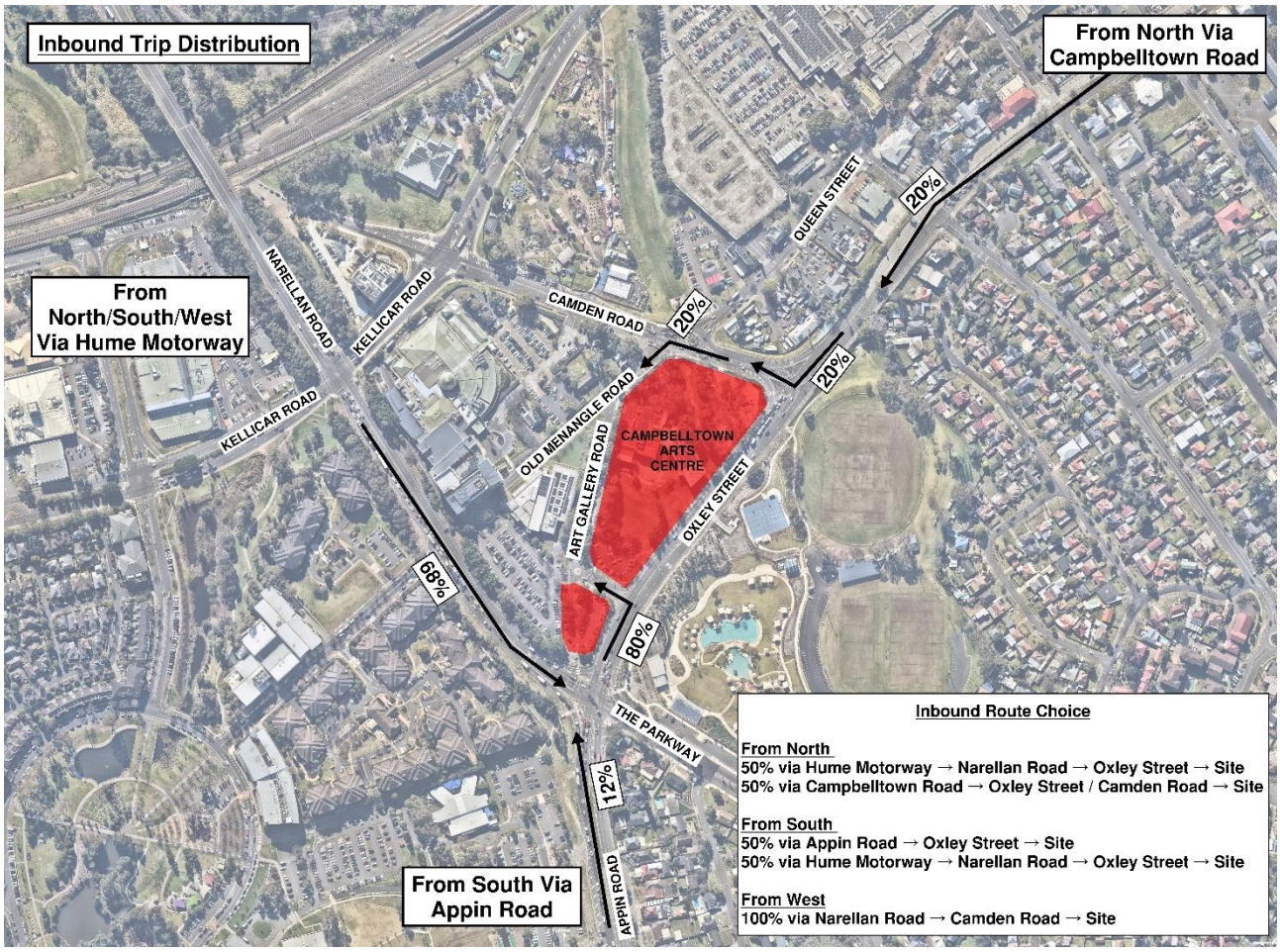


Figure 27: Inbound Distribution Routes

Source: Nearmap (modified)

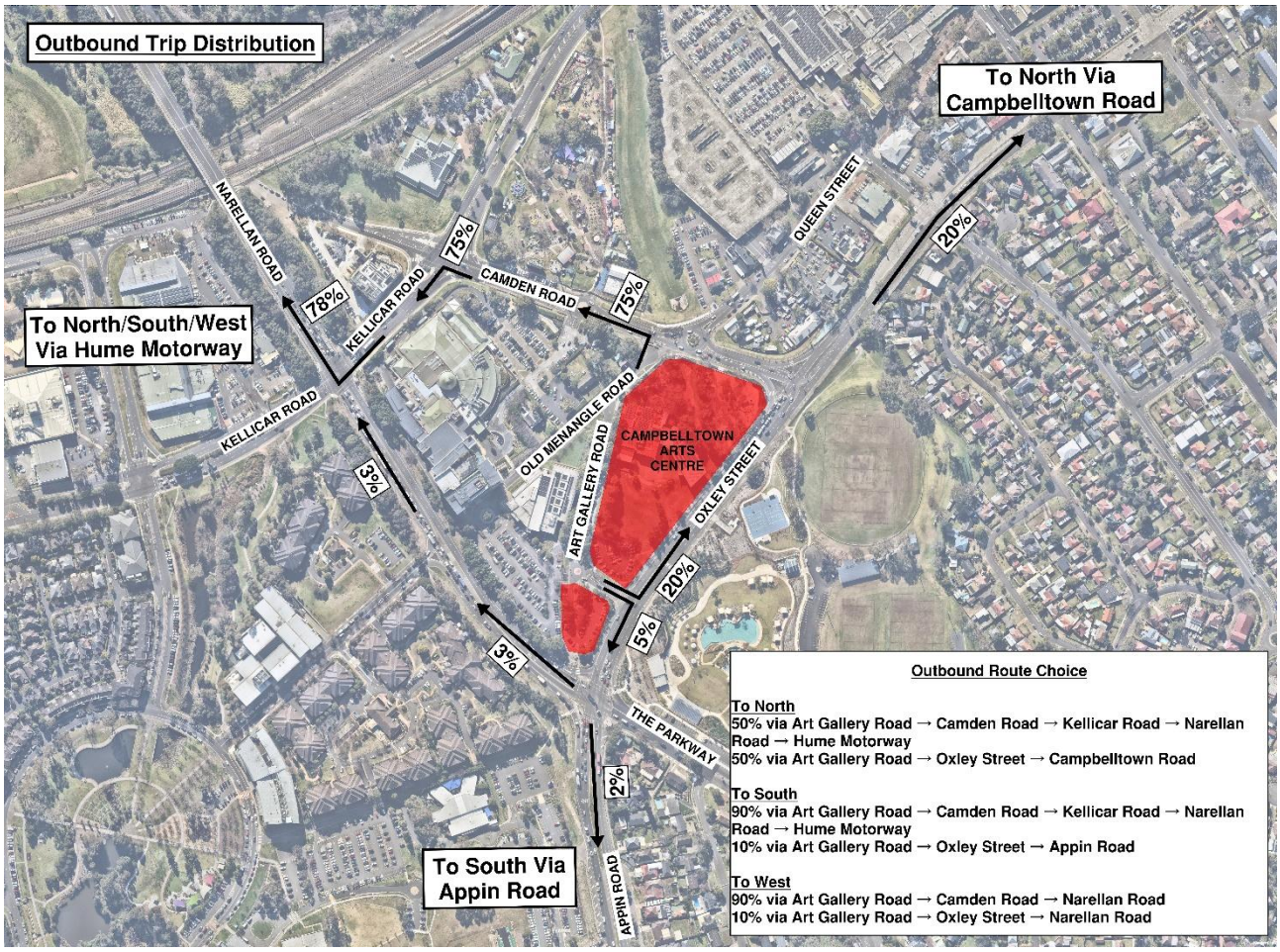


Figure 28: Outbound Distribution Routes
Source: Nearmap (modified)

11.3 Cumulative Impacts

A review of recently approved neighbouring developments has also been completed to ensure a holistic planning approach has been considered for the project. Neighbouring developments are shown below in Figure 29.



Figure 29: Nearby External Development
Source: TTW

11.3.1 Macarthur Health Precinct Stage 2

A traffic and transport assessment for the Macarthur Health Precinct Stage 2 was prepared by SCT Consultants in June 2024. The proposed development (SSD-52066209) was approved in April 2025 and is anticipated to be operational by 2027. To ensure a comprehensive analysis, the additional traffic volumes generated by this development have been incorporated into the current assessment, based on the traffic generation and distribution findings of the SCT report.

Table 51 summarises the additional traffic volumes included in this assessment, obtained from the SCT report.

Table 51: Cumulative Assessment

Peak Period	Inbound Vehicles (Oxley Street right onto Camden Road)	Outbound Vehicles (Camden Road left turn onto Oxley Street)
AM Peak	48	17
PM Peak	17	48
SAT Peak	33	33

Note: The SAT peak was not separately modelled in the SCT assessment; however, it has been considered in this assessment by applying an even split evenly between inbound and outbound movements (50% in / 50% out), to provide a conservative estimate of cumulative impacts.

11.3.2 Campbelltown Catholic Club – Independent Living Units

The approved development includes the demolition of existing structures and the construction and operation of a seniors housing development. Reference has been made to the Transport Statement prepared by JMT Consulting.

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The JMT report indicates that the development is expected to generate approximately one vehicle every four to six minutes and concludes that the resulting traffic impact would be minimal and would not adversely affect the surrounding road network. Given the very low traffic impacts, no traffic distribution or intersection modelling was undertaken as part of the DA assessment.

As discussed in Section 11.4, the adopted 2.9% annual background traffic growth rate sufficiently provides a conservative buffer for cumulative development in the area and therefore would absorb any minor traffic contribution of the Independent Living Units.

11.4 Traffic Modelling

11.4.1 Traffic Volumes

As previously mentioned in Section 2.11.1, traffic surveys were commissioned on 2nd December 2025, Tuesday, from 6:30 am to 10:30 am, and 3:00 pm to 7:00 pm, and 6th December 2025, Saturday, from 10:00 am to 2:00 pm. The adopted peak hours are as follows:

- AM Peak: 8:00 – 9:00 am
- PM Peak: 16:30 – 17:30 pm
- Saturday Peak: 11:30 am – 12:30 pm

11.4.2 Traffic Signal Data

SCATS history files for Tuesday, 2 December 2025, and Saturday, 6 December 2025 was obtained from TfNSW to assist with the calibration of the Oxley Street / Camden Road and Narellan Road/Appin Road signalised intersection.

11.4.3 Assessment Years

The SIDRA Models were prepared for the base year 2025, the opening year 2029, and a 10-year horizon year 2039.

11.4.4 Background Traffic Growth

The background traffic volume growth of future years has been calculated using the compound annual growth rate formula:

$$P(t) = P_o \times (1 + r)^t$$

Where:

- $P(t)$ = the projected number of vehicles after t years;
- P_o = the current number of vehicles (i.e., in year 2025)
- r = annual growth rate
- t = the number of years into the future (i.e., calculated from the year 2025)

The annual growth rate (r) has been adopted from the approved Macarthur SCT report, which stipulates that an annual growth rate of 2.9%, having been prescribed by the CCC, represents a conservative, worst-case projection of the future population and development across the broader Campbelltown – Macarthur region. Although there are strategic plans (as mentioned in Section 1.2) to reduce traffic volumes within the Campbelltown City Centre, these measures have not been incorporated into the traffic modelling for this assessment. This exclusion ensures a cautious approach that accounts for potential growth without relying on future interventions.

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11.4.5 Modelling Scenarios

The following modelling scenarios were developed for the assessment and are listed in Table 52.

Table 52: Intersection Modelling Scenarios

No	Scenario	Description
2025 Baseline		
1	2025 Baseline	Existing configuration and existing 2025 traffic surveys
2029 Opening Year		
2	2029 Opening Year Baseline	Existing road configuration, with background traffic growth and Macarthur Health Precinct Stage 2 without development traffic
3	2029 Opening year Baseline + Development	Existing road configuration, with background traffic growth, and development traffic
2039 (10-Year Horizon)		
4	2039 Horizon Year Baseline	Existing road configuration, with background traffic growth and Macarthur Health Precinct Stage 2 without development traffic
5	2039 Horizon Year Baseline + Development	Existing road configuration, with background traffic growth, and development traffic

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11.4.6 Network Performance Summary

Traffic impacts as a result of the proposed development through the key intersections were analysed using SIDRA. A summary of the modelling results is presented below, with the SIDRA outputs provided in Appendix F.

11.4.6.1 2025 Baseline Scenarios

The modelling results for the 2025 baseline year are summarised in Table 53.

Table 53: Summary of SIDRA Modelling Results – 2025 Existing Condition

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
Camden Road / Queen Street	AM	0.25	11.1	A	4
	PM	0.60	12.1	A	12
	Saturday	0.55	11.8	A	11
Old Menangle Road / Art Gallery Road	AM	0.03	5.8	A	-
	PM	0.04	5.6	A	-
	Saturday	0.02	5.4	A	-
Oxley Street / Camden Road	AM	0.66	6.0	A	80
	PM	0.89	13.1	A	87
	Saturday	0.74	11.7	A	76
Oxley Street / Art Gallery Road	AM	0.97	> 100	F	30
	PM	0.99	> 100	F	119
	Saturday	0.98	> 100	F	41
Appin Road / Narellan Road	AM	0.93	56.4	D	220
	PM	0.91	56.0	D	174
	Saturday	0.78	42.0	C	105

- As discussed earlier in Section 2, most intersections operate well within capacity under existing conditions, achieving LOS A with minimal delays. Localised delays occur at the Oxley Street / Art Gallery Road intersection, which are primarily attributable to a low-volume right-turn movement from the side street rather than any capacity constraint on the broader road network. Appin Road / Narellan Road intersection operates near capacity during weekday peaks (LOS D), given that it is a key arterial route.

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11.4.6.2 2029 Opening Year

The modelling results for the 2029 opening year are summarised in Table 54.

Table 54: Summary of SIDRA Modelling Results – 2029 Opening Year

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
2029 Opening Year Baseline					
Camden Road / Queen Street	AM	0.31	11.4	A	6
	PM	0.69	13.9	A	17
	Saturday	0.66	12.4	A	16
Old Menangle Road / Art Gallery Road	AM	0.04	5.8	A	-
	PM	0.05	5.6	A	-
	Saturday	0.03	5.4	A	-
Oxley Street / Camden Road	AM	0.62	8.4	A	124
	PM	0.67	13.5	A	135
	Saturday	0.62	13.6	A	120
Oxley Street / Art Gallery Road	AM	> 1	> 100	F	30
	PM	> 1	> 100	F	235
	Saturday	> 1	> 100	F	61
Appin Road / Narellan Road	AM	0.99	68.0	E	190
	PM	1.08	96.0	F	210
	Saturday	0.89	48.0	D	149
2029 Opening Year Baseline + Development					
Camden Road / Queen Street	AM	0.34	11.4	A	6
	PM	0.70	14.0	A	17
	Saturday	0.66	12.5	A	16
Old Menangle Road / Art Gallery Road	AM	0.05	5.0	A	-
	PM	0.11	5.6	A	1
	Saturday	0.08	5.5	A	1
Oxley Street / Camden Road	AM	0.64	9.5	A	135
	PM	0.68	13.8	A	140
	Saturday	0.66	14.3	A	125

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Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
Oxley Street / Art Gallery Road	AM	> 1	> 100	F	30
	PM	> 1	> 100	F	235
	Saturday	> 1	> 100	F	61
Appin Road / Narellan Road	AM	0.99	68.0	E	190
	PM	1.08	97.0	F	211
	Saturday	0.89	49.8	D	150

The opening year 2029 traffic modelling key findings are detailed below:

- **Camden Road / Queen Street –** The intersection operates well during all peak periods, achieving LOS A with low DOS and minimal delays. Intersection performance remains effectively unchanged with the addition of development traffic.
- **Old Menangle Road / Art Gallery Road –**The intersection operates very efficiently in all peak periods with LOS A, very low delays and negligible queues. The addition of development traffic results in no material change to intersection performance.
- **Oxley Street / Camden Road –** In the 2029 Baseline scenario, the intersection operates at an acceptable level during all peak periods, achieving LOS A with low delays. Moderate queue lengths are predicted on the Oxley Street approaches (up to 135 m), consistent with existing demand patterns. Following the addition of development traffic, the intersection continues to operate at LOS A in all periods, with small increases in queue lengths that can be readily accommodated within the available approach storage. Overall, minimal impact is observed.
- **Oxley Street / Art Gallery Road –** Consistent with the existing condition, the intersection operates in saturated condition under both the Baseline and Baseline + Development scenarios, with LOS F in all peak periods. This is primarily due to constrained right-turn movements from Art Gallery Road onto Oxley Street and is exacerbated by queue spillback from the downstream Appin Road / Narellan Road intersection. Other movements at the intersection continue to operate well, indicating that the intersection deficiency is movement-specific to the right-turning volumes only.
    - The introduction of development traffic does not materially worsen performance on the major road network between the Baseline and Baseline + Development scenarios. This outcome is consistent with the adopted trip distribution, which assumes that not more than 5% of development-generated trips would undertake the right-turn movement from Art Gallery Road toward Oxley Street, equating to no more than around 5-6 vehicles in the peak hour, which will not cause any material impact beyond the baseline conditions.
    - Furthermore, the forecast right-turn demand remains comfortably within the available right-turn lane storage capacity of approximately 5–6 vehicles, with no exceedance identified in any peak period. Accordingly, the development is not expected to contribute to additional queuing, spillback, or broader operational deterioration of the main road network.
- **Appin Road / Narellan Road –** In the Baseline scenario, the intersection operates at capacity during the weekday peaks, with LOS E in the AM peak and LOS F in the PM peak. Saturday peak conditions improve to LOS D. The intersection's constrained performance is primarily attributable to high background traffic volumes, consistent with its existing operation near capacity. This is due to the strategic function of Appin Road and Narellan Road as key arterial routes connecting Campbelltown to the wider regional network, carrying substantial through-traffic demand
    - With the inclusion of development traffic, intersection performance remains effectively unchanged, with only negligible increases in delays and queue lengths. This is largely because most of the development traffic is accommodated via the left-turn slip lane, which operates independently of the signalised movements and does not contribute additional delay to the

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intersection. These findings confirm that the intersection's capacity constraints are driven by background traffic growth, and that the proposed development does not materially exacerbate operational conditions.

- Overall, the modelling demonstrates that the development has no material or measurable impact on network performance, with future conditions dominated by background traffic and existing conditions rather than site-generated traffic.

11.4.6.3 2039 Horizon Year

The modelling results for the 2039 horizon year are summarised in Table 55.

Table 55: Summary of SIDRA Modelling Results – 2039 Horizon Year

Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
2039 Horizon Year Baseline					
Camden Road/ Queen Street	AM	0.40	12.0	A	8
	PM	1.06	83.2	F	132
	Saturday	0.77	14.7	B	30
Old Menangle Road/ Art Gallery Road	AM	0.04	5.8	A	-
	PM	0.06	5.6	A	-
	Saturday	0.04	5.5	A	-
Oxley Street/ Camden Road	AM	0.69	9.8	A	156
	PM	0.90	20.8	B	377
	Saturday	0.87	10.5	A	90
Oxley Street/ Art Gallery Road	AM	>1	>100	F	210
	PM	>1	>100	F	235
	Saturday	>1	>100	F	235
Appin Road/ Narellan Road	AM	1.32	214.0	F	488
	PM	1.44	283.3	F	395
	Saturday	1.19	147.6	F	363
2039 Horizon Year Baseline + Development					
Camden Road/ Queen Street	AM	0.41	12.1	A	9
	PM	1.06	83.3	F	132
	Saturday	0.78	15.0	B	31
Old Menangle Road/ Art Gallery Road	AM	0.06	5.8	A	-
	PM	0.13	5.7	A	1

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Intersection	Period	DOS	AVD (seconds)	LOS	Queue Length (m)
	Saturday	0.09	5.5	A	1
Oxley Street/ Camden Road	AM	0.72	11.5	A	169
	PM	0.89	20.9	B	377
	Saturday	0.85	10.6	A	94
Oxley Street/ Art Gallery Road	AM	>1	>100	F	210
	PM	>1	>100	F	235
	Saturday	>1	>100	F	235
Appin Road/ Narellan Road	AM	1.32	212.0	F	488
	PM	1.44	283.5	F	395
	Saturday	1.20	148.5	F	366

Horizon year 2039 traffic modelling key findings are detailed below:

- **Camden Road / Queen Street –** The intersection operates satisfactorily during the AM and Saturday peak periods, achieving LOS A and B; however, it operates in an oversaturated condition during the PM peak, with LOS F. This performance is driven by the Queen Street approach, where vehicles are unable to exit onto Camden Road due to queuing along the Camden Road approach at the Camden Road / Oxley Street intersection. Intersection performance remains effectively unchanged with the addition of development traffic.
- **Old Menangle Road / Art Gallery Road –** The intersection operates very efficiently in all peak periods, achieving LOS A with minimal delays and negligible queues. The addition of development traffic results in no material change to intersection performance.
- **Oxley Street / Camden Road –** Under the 2039 baseline scenario, the intersection operates at an acceptable level during all peak periods. Following the addition of development traffic, intersection performance remains largely unchanged, with minor increases in queue lengths that can be readily accommodated. Overall, minimal impact is observed due to the development.
- **Oxley Street / Art Gallery Road –** The intersection operates in an oversaturated condition under both the 2039 baseline and baseline + development scenarios, with LOS F and very high delays in all peak periods. This performance is consistent with earlier scenarios, including the 2025 Baseline, Opening Year 2029 projections. The constrained operation is primarily due to right-turn capacity from Art Gallery Road, which is further exacerbated by queue spillback from the downstream Appin Road / Narellan Road intersection. Other movements at the intersection are expected to continue operating efficiently, indicating that the operational limitation is movement-specific to the right-turning movement.
    - As observed in earlier scenarios, the inclusion of development-generated traffic in 2039 is not expected to materially alter the main road network performance. The adopted trip distribution indicates that only a very small proportion of development traffic-no more than approximately 5-6 vehicles in the peak hour—is expected to undertake the right-turn movement from Art Gallery Road, representing an insignificant contribution to the intersection volumes. Furthermore, the forecast right-turn queue demand remains well within the available right-turn lane storage of approximately 5-6 vehicles. As such, the proposed development is not expected to contribute to broader operational deterioration of the main road network beyond the baseline constraints
- **Appin Road / Narellan Road –** The intersection is forecast to operate over capacity in all assessed peak periods, with LOS F. The inclusion of development-generated traffic results in negligible changes to intersection performance, confirming that congestion is driven primarily by background traffic growth

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rather than the proposed development. Consistent with the 2025 Baseline and Opening Year 2029 scenarios, the intersection's constrained performance is largely attributable to high background traffic volumes, reflecting its existing operation near capacity. This is due to the strategic function of Appin Road and Narellan Road as key arterial routes connecting Campbelltown to the wider regional network, carrying substantial through-traffic demand.

  - With development traffic included, intersection operation is expected to remain effectively unchanged, with only minor increases in delays and queue lengths. This is largely because most development trips are accommodated via the left-turn slip lane, which operates independently of the signalised movements and does not contribute additional delay to the intersection. These findings confirm that the intersection's operational constraints are driven by background traffic growth and that the proposed development does not materially exacerbate congestion or operational deficiencies.

- Overall, the modelling demonstrates that the development has no material or measurable impact on network performance, with future conditions dominated by existing conditions and background traffic growth rather than site-generated traffic.

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11.4.6.4 Intersection Performance Summary

The intersection performance is summarised in Table 56.

Table 56: Summary of Intersection Performance

Scenario	Period	Camden Road / Queen Street	Old Menangle Road / Art Gallery Road	Oxley Street / Camden Road	Oxley Street / Art Gallery Road	Appin Road / Narellan Road
2029 Opening Year Baseline	AM	A	A	A	F	E
	PM	A	A	A	F	F
	Saturday	A	A	A	F	D
2029 Opening Year Baseline + Development	AM	A	A	A	F	E
	PM	A	A	A	F	F
	Saturday	A	A	A	F	D
2039 Horizon Year Baseline	AM	A	A	A	F	F
	PM	F	A	B	F	F
	Saturday	B	A	A	F	F
2039 Horizon Year Baseline + Development	AM	A	A	A	F	F
	PM	F	A	B	F	F
	Saturday	B	A	A	F	F

- **Opening Year 2029 + Development** – The development traffic does not change the LOS at any intersection, indicating that the proposal will have a negligible impact on the surrounding network.
    - Oxley Street / Art Gallery Road remains constrained at LOS F, reflecting existing capacity limitations of the right-turning movement from Art Gallery Road onto Oxley Street. The addition of development traffic does not materially worsen the operational performance of the main road network compared to the baseline scenario. This is consistent with the adopted development trip distribution, which indicates that no more than approximately 5-6 vehicles in the peak hour make the right turn due to the development. Furthermore, the forecast right-turn queue length remains within the available right-turn lane storage of 5-6 vehicles.
    - Appin Road / Narellan Road operates at LOS E–F during weekday peak periods, consistent with baseline conditions. The intersection's constrained performance is largely attributable to high background traffic volumes, reflecting its operation near capacity. This is due to the strategic function of Appin Road and Narellan Road as key arterial routes. With development traffic included, intersection operation is expected to remain effectively unchanged, with only minor increases in delays and queue lengths. This is largely because most development-generated trips

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are accommodated via the left-turn slip lane, which operates independently of the signalised movements and does not contribute additional delay to the intersection.

- **Horizon Year 2039 + Development** – Background traffic growth results in continued poor performance at Oxley Street / Art Gallery Road (LOS F) and Appin Road / Narellan Road (LOS F) intersection. These outcomes are similar to opening year 2029 and are primarily driven by long-term traffic growth and baseline conditions rather than the proposed development. Development traffic does not materially affect intersection LoS performance.
- **Summary** – The proposed development is not expected to cause adverse traffic impacts at any intersection. Oxley Street / Art Gallery Road and Appin Road / Narellan Road will operate near or over capacity due to existing network limitations and future background traffic demand, and not due to the development traffic.

The development scenarios show negligible LOS changes and additional impacts to the major road network, and the proposal can be supported from a traffic perspective.

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Section 12 Mitigation Measures

Table 57 provides a summary of the measures necessary for this project to achieve acceptable performance and safety.

Table 57: Operation and Management Measures

Item	Timing	Responsibility	Description
Pedestrian and Cyclist Provisions	Operation	CAC	On-site bicycle parking and end-of-trip facilities will be provided to support active transport.
Public Transport and Coach Access	Operation	CAC	Existing public transport services are sufficient to support the development. Coach operations will be accommodated using existing off-site facilities to manage group travel and minimise on-street impacts.
Parking Management	Operation	CAC	Signage will be implemented within CAC car parks to clearly identify parking areas dedicated to CAC visitors and staff. An operational management plan will also be prepared and implemented to parking does not have an adverse impact.
Travel Access Guide (TAG)	Operation	CAC	A Travel Access Guide will be prepared outlining available travel options and surrounding parking locations to inform visitors and staff travelling to and from the site.
Loading and Servicing Management	Operation	CAC	All servicing activities will be accommodated within a dedicated on-site loading area. A Loading Dock Management Plan (LDMP) will be prepared to manage delivery operations.
Traffic Impacts	Operation	CAC	The implementation of the Green Travel Plan (GTP) encourages the further uptake in Active Transport modes (i.e., walking, cycling etc.), and in turn reduces the parking demand of the CAC. Prepare an Operational Traffic Management Plan (TMP) to manage traffic, parking and pedestrian movements during special events.
Construction Traffic Management Plan	Construction	Appointed Contractor	Prepare a Construction Traffic Management Plan (CTMP). The CTMP must include strategies and measures to manage construction impacts.

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Section 13 Conclusion

The overall transport strategies for the proposed development are as follows:

- Prioritise safe and efficient access for all users by maintaining existing pedestrian connections along Art Gallery Road and Camden Road, supported by adequate footpath networks and crossing opportunities within the surrounding street grid.
- Provide sufficient on-site and nearby parking capacity through the reconfiguration of CAC car parks and the addition of 20 new on-street parking spaces, delivering a total uplift of 65 spaces to accommodate the anticipated demand during typical weekday and weekend operations.
- Manage parking demand through a first-principles approach, applying observed travel behaviour, visitor presence profiles, and mode share data to ensure parking supply is matched to realistic operational needs rather than generic planning rates.
- Leverage nearby public parking facilities within a 400 m / 10-minute walking catchment during periods of unusually high visitation, supported by clear wayfinding and pedestrian access routes.
- During events, a Traffic Management Plan (TMP) will be prepared (generally for events exceeding 300 patrons) to manage traffic movements. The TMP will prioritise public transport use, facilitate coach and bus access with designated drop-off areas to minimise impacts on the surrounding road network.
- Support efficient servicing operations through the introduction of a new loading dock designed to accommodate 12.5 m HRVs, with separate artwork and general service loading areas to improve safety and reduce operational conflicts.
- Promote sustainable and active travel choices through implementation of a Green Travel Plan, including travel behaviour initiatives, end-of-trip facilities, and long-term mode shift targets.

Overall, the assessment demonstrates that the proposed expansion of the Campbelltown Arts Centre can be supported on transport and accessibility grounds. The surrounding transport network has sufficient capacity to accommodate the forecast uplift in visitor and staff activity, and the proposed parking, access, and servicing arrangements are appropriate for the scale and nature of the development. Importantly, SIDRA modelling confirms that the additional traffic generated by the development does not materially alter the performance of nearby intersections, with future constraints driven by background growth rather than site activity. The proposal provides a balanced and well-integrated transport strategy – one that enhances on-site efficiency, maintains safe access for all transport modes, and ensures that any residual impacts are effectively managed. As such, the development is considered suitable for approval from a traffic and transport perspective.

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Appendix A Authority Consultation

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Sabal Sharma

From: Sabal Sharma
Sent: Wednesday, 15 October 2025 4:49 PM
To: 'James Douglas'
Cc: Zhaleh Najari alamouti; Pahee Rathan; Maria Mulholland; Ivan Ip; Michael Babbage
Subject: RE: TfNSW Response SYD25/00978/01 - SSD-74509208- Campbelltown Arts Centre Expansion-Traffic Modelling
Attachments: Campbelltown Arts Centre .jpg

Hi James,

Thank you for your detailed email and feedback. We have provided a response below:

---

1. Nominated Intersections and Project Description

a. Project Description:

The proposed development includes an expansion of the existing Campbelltown Art Centre (CAC) facilities. Key components of the proposed upgrade include:

- A new flexible 350-seat theatre, additional rehearsal spaces, and expanded gallery areas.
- Expanded facilities including new workshop spaces, permanent gallery areas, and dedicated artwork storage.
- Additional artist accommodation and studios, including self-contained studio apartments for visiting artists and guests.
- A new conference room and enhanced visitor amenities such as a café and retail shop.
- Additional gallery spaces and expansion of the kitchen and café.

b. Site Location and Proposed Intersections:

Please see the attached site figure, which includes the site location and nominated intersections.

c. Primary Objectives:

The primary objectives of the traffic modelling are to:

- Assess transport impacts of the expansion, including increased staff and visitor movements.
- Evaluate performance of key intersections during weekday and weekend peak periods.
- Identify potential mitigation measures if intersection performance falls below acceptable standards.

2. Data Collection

a. Intersection Traffic Counts:

Traffic surveys will be conducted at four surrounding intersections, capturing turning movements by light vehicles, heavy vehicles, cyclists, and pedestrians. Counts will be undertaken simultaneously during the following periods:

- Weekday AM Peak: 6:30am – 10:30am
- Weekday PM Peak: 3:00pm – 7:00pm
- Saturday Peak: 10:00am – 2:00pm

Survey Locations:

- Camden Road / Queen Street
- Oxley Street / Camden Road

- Oxley Street / Appin Road
- Oxley Street / Art Gallery Road

(See attached figure for the intersection locations)

b. SCATS Data:

There is a total of two intersections controlled by the SCATS system within the study area. To ensure an accurate replication of traffic signal operation, TTW will obtain traffic signal information in the form of SCATS Intersection History data information from the same day as the traffic surveys.

3. Traffic Modelling Scenarios

The following scenarios will be modelled as part of the traffic modelling assessment:

No	Scenario	Assessed Peak Periods
1	Existing Condition (Base Model)	AM/PM/SAT
2	Opening Year Baseline	AM/PM/SAT
3	Opening year plus Development	AM/PM/SAT
4	10-Year Horizon Baseline	AM/PM/SAT
5	10-Year Horizon plus Development	AM/PM/SAT

4. Development Traffic Generation

a) Trip generations

The Art Centre's core operating hours are 10:00 am–4:00 pm (Monday to Sunday), with theatre activity occurring between 7:30 pm and 10:00 pm. These core hours generally fall outside commuter peak periods. Conservative estimates (assuming 30–50% of daily trips occur during peak hours) suggest the development would generate in the order of 70–109 additional trips during the peak hour.

Additional Traffic Generation	Weekday AM	Weekday PM	SAT
Visitor	63	63	107
Staff	8	8	2
Total	**71**	**71**	**109**

5. Choice of Modelling Tool, Calibration / Validation & Peer Review

a) SIDRA Modelling Tool:

The primary objectives of the modelling are to understand the transport impacts of the CAC expansion, quantify intersection performance during key peak periods, and identify any need for mitigation measures. To achieve this, SIDRA Network (Version 10) has been selected as the preferred modelling tool. SIDRA is suitable for both signalised and unsignalised intersections, enabling assessment of capacity, queues, and level of service under current and future conditions. The detailed tasks are summarised below:

- Commission traffic surveys and calculate the peak hour for model input
- Collate and process SCATS data
- Conduct site visits
- Develop, calibrate and validate the 2025 Base network Models to replicate existing conditions in the AM, PM SAT peak hours in accordance with TfNSW Traffic Modelling Guidelines and Chapter 2.6 of the SIDRA User Guide
- Create opening year and 10-year horizon with and without development demands to add to the calibrated and validated base demand
- Extract modelling outputs and summarise results

b) Calibration / Validation:

Generally, the default SIDRA parameters will be adopted in the Base Network Model. However, at certain locations, it may be necessary to make slight alterations to the modelling parameters to calibrate local traffic behaviours. Some or all of the following parameters may need to be altered to better reflect the existing condition of the network:

- Lane Utilisation
- Basic Saturation Flow
- Gap Acceptance
- Environmental Factor
- Entry/Circ Flow Adjustment

The 2025 base Models will be calibrated to replicate existing conditions in the AM, PM, SAT peak hours in accordance with TfNSW Traffic Modelling Guidelines and Chapter 2.6 of the SIDRA User Guide.

A comparison between the observed queue lengths and the base model will be undertaken for the peak period base model.

c) Peer Review:

TTW's independent peer review process will be undertaken in accordance with the company's QA procedures to ensure the quality of the traffic modelling prior to submission.

We trust this scope addresses TfNSW's comments and provides the clarity needed for in-principle agreement. We kindly request TfNSW's agreement to proceed with traffic surveys after the week commencing 20 October.

Please let me know if you require any further information.

Best regards,

Sabal

From: James Douglas <James.Douglas@transport.nsw.gov.au>
Sent: Tuesday, 26 August 2025 3:06 PM
To: Sabal Sharma <sabal.sharma@ttw.com.au>
Cc: Zhaleh Najari alamouti <Zhaleh.ALAMOUTI@transport.nsw.gov.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>
Subject: TfNSW Response SYD25/00978/01 - SSD-74509208- Campbelltown Arts Centre Expansion-Traffic Modelling

You don't often get email from james.douglas@transport.nsw.gov.au. Learn why this is important

[External Email]: Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Afternoon Sabal,

TfNSW have reviewed the proposed modelling methodology for data collection on the network for the proposed Campbelltown Arts Centre expansion (State significant Development) and provides the following commentary to assist:

- SIDRA and a few nominated intersections have been chosen, but there is no discussion of local area context used to inform either the tool or the size of the study area. It's unclear why SIDRA was chosen, why these 4 intersections have been selected, what the project objectives are, and how sidra will be used to assess/validate them.

- Weekday AM/PM, weekend midday, and evening event peak periods have been selected for modelling scenarios. This sounds sensible, however, no information on data collection has been provided. This information includes survey types, locations, dates, and durations.
- Modelling scenarios have been mentioned with no information on what they entail.
- Development traffic generation assumptions have not been provided.
- Significant information necessary for a modelling methodology document as outlined in Operational modelling reporting structure - Transport Standards Portal has not been provided.

As such, given the initial nature of the review as requested, TfNSW would recommend that the following information be provided:

- Appreciate the local study are context and objectives of this project (supported by a map).
- Explain the choice of the modelling tool and how it will be used to assess the project objectives.
- Outline the proposed data collection, calibration, validation, and peer review approach.

The above information would help TfNSW to review and provide in-principle agreement to the approach, and allowing applicant to commence their survey data collection. While the survey data collection is occurring, TTW can then write the full modelling methodology report in line with Operational modelling reporting structure - Transport Standards Portal for formal TfNSW endorsement. If you have any further questions regarding the above matter, James Douglas, Land Use Planner, would be pleased to take your call on (02) 9983 3987 or via email at development.sydney@transport.nsw.gov.au.

Note: It is emphasised that the comments provided above are informal and of a Pre-DA nature, they are not to be interpreted as binding upon TfNSW and may change following formal assessment of a submitted development application from the appropriate consent authority.

Kind Regards,

James Douglas
Land Use Planner
Transport Planning
Planning, Integration and Passenger Division
Transport for NSW

M 0457242974 T (02)9983 3987 E james.douglas@transport.nsw.gov.au

transport.nsw.gov.au

Level 4, 4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150.

Transport for NSW

I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

Please consider the environment before printing this email.

OFFICIAL

From: Sabal Sharma <sabal.sharma@ttw.com.au>
Sent: Thursday, 7 August 2025 11:46 AM
To: Development Sydney <Development.Sydney@transport.nsw.gov.au>
Cc: Maria Mulholland <maria.mulholland@ttw.com.au>; Ivan Ip <ivan.ip@ttw.com.au>
Subject: SSD-74509208- Campbelltown Arts Centre Expansion-Traffic Modelling

You don't often get email from sabal.sharma@ttw.com.au. Learn why this is important

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi TfNSW team,

I am reaching out in relation to the state significant development application for the Campbelltown Arts Centre Expansion, under SSD-74509208.

We propose to undertake SIDRA modelling and assess the following intersections:

- Camden Road / Queen Street
- Oxley Street / Camden Road
- Oxley Street / Appin Road
- Oxley Street / Art Gallery Road



Peak Periods for Assessment: Based on the anticipated site, we propose to assess the following peak periods to capture the Arts Centre and Theatre event peak:

- Weekday (AM/PM)
- Weekend day
- Evening Event Peak

Modelled Scenarios:

- Existing Conditions (Base Model)
- Opening Year:
  - Baseline
  - Baseline + Development
- Horizon Year:
  - Baseline
  - Baseline + Development

Preliminary Traffic Generation Estimates: At this stage, we are working through the traffic generation analysis. However, preliminary estimates suggest that traffic generation is likely to double compared to the existing.

We would appreciate your confirmation or feedback on the proposed methodology by Thursday, 21 August 2025. Please let us know if you have any comments or require further information.

Regards,

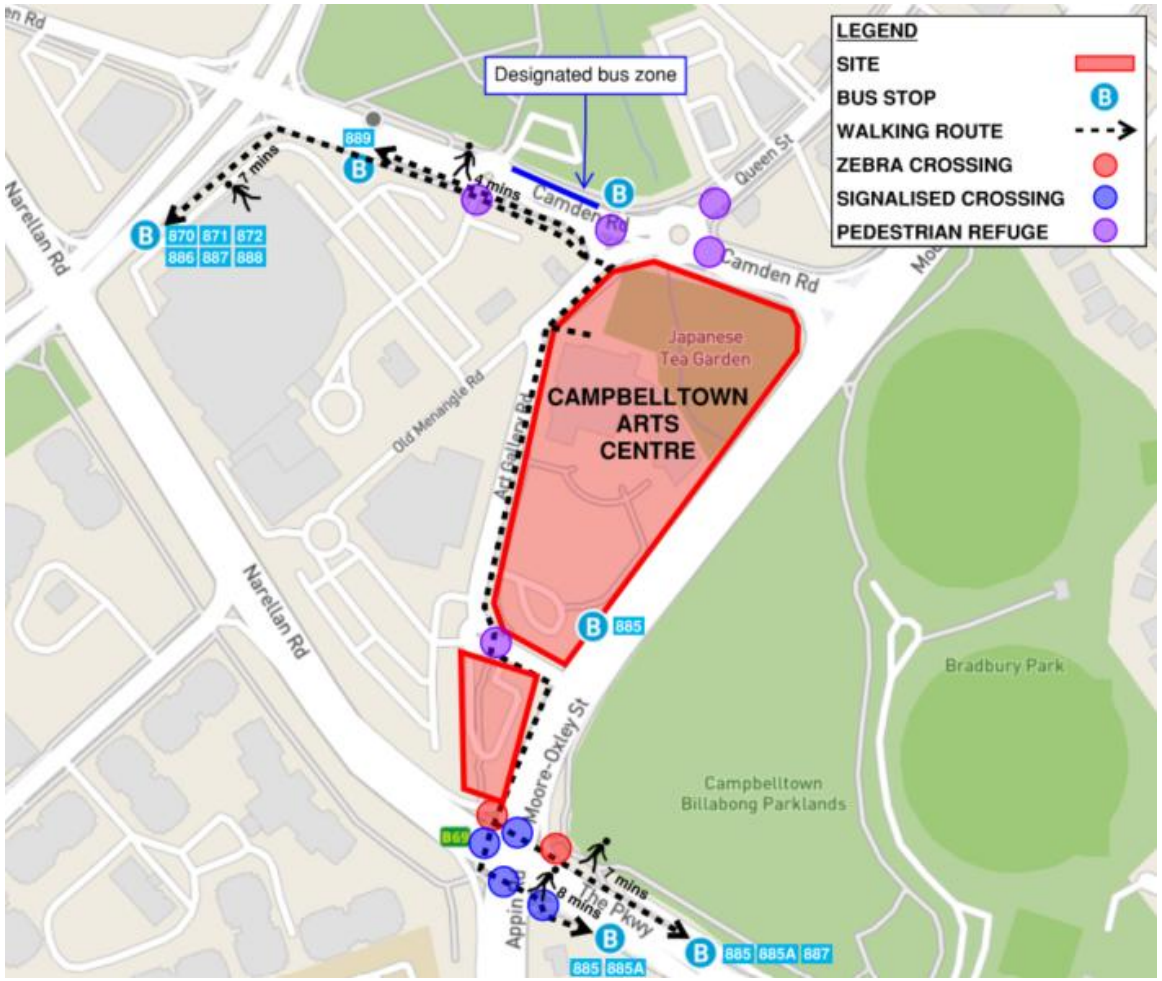
Sabal

Appendix B Access Routes

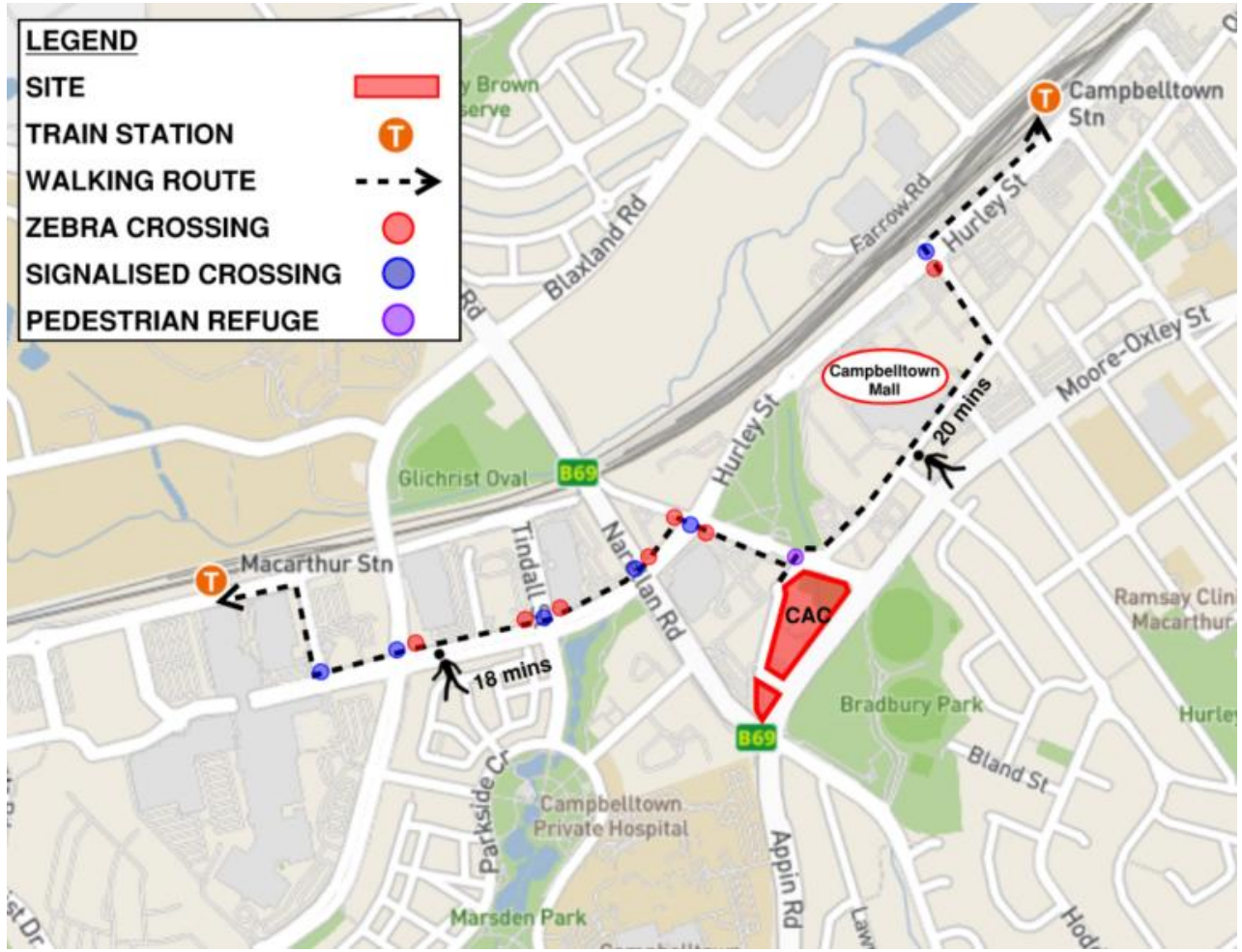
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Public Transport Access Routes

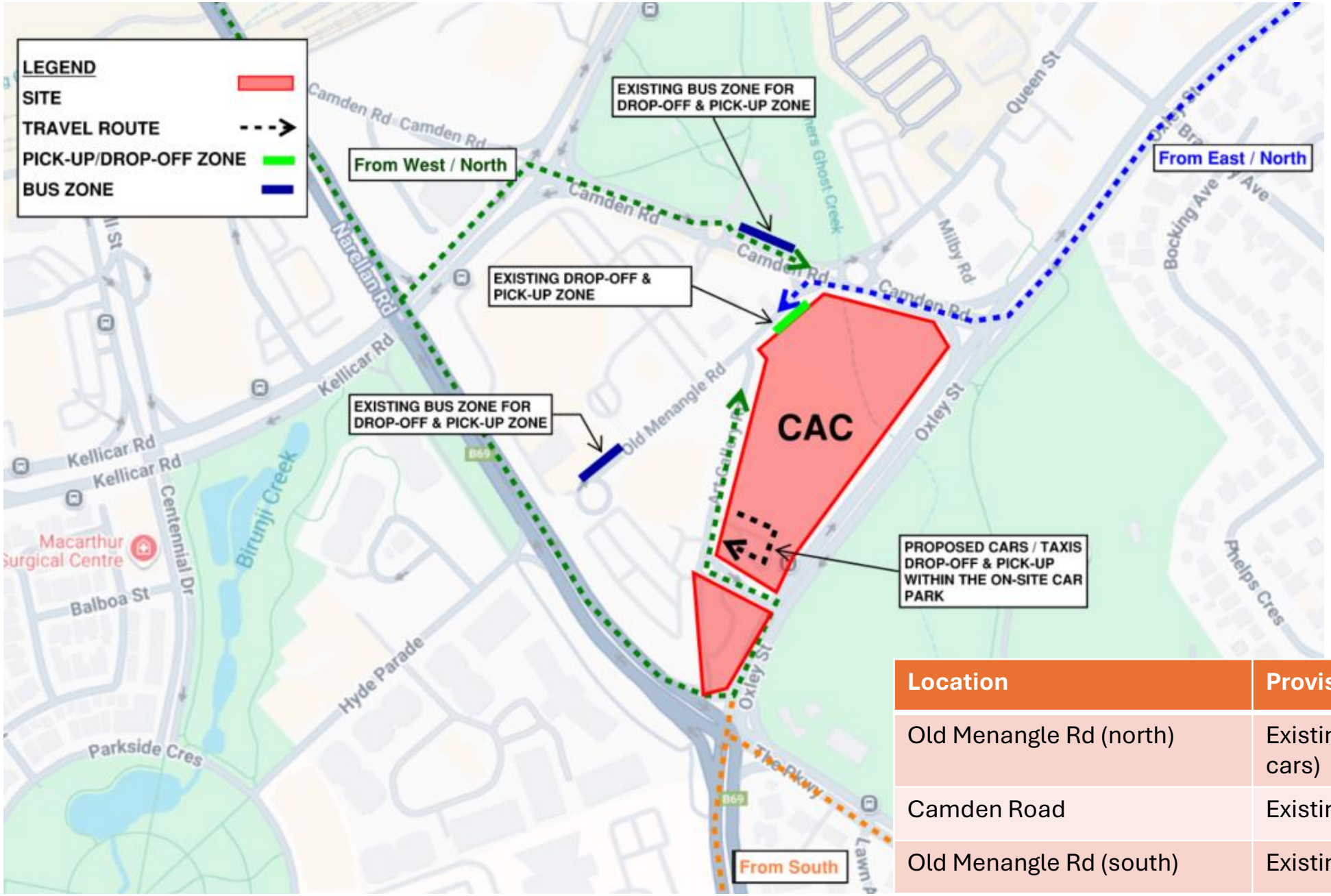
Bus Stops



Train Stations



Cars / Coaches Access Routes

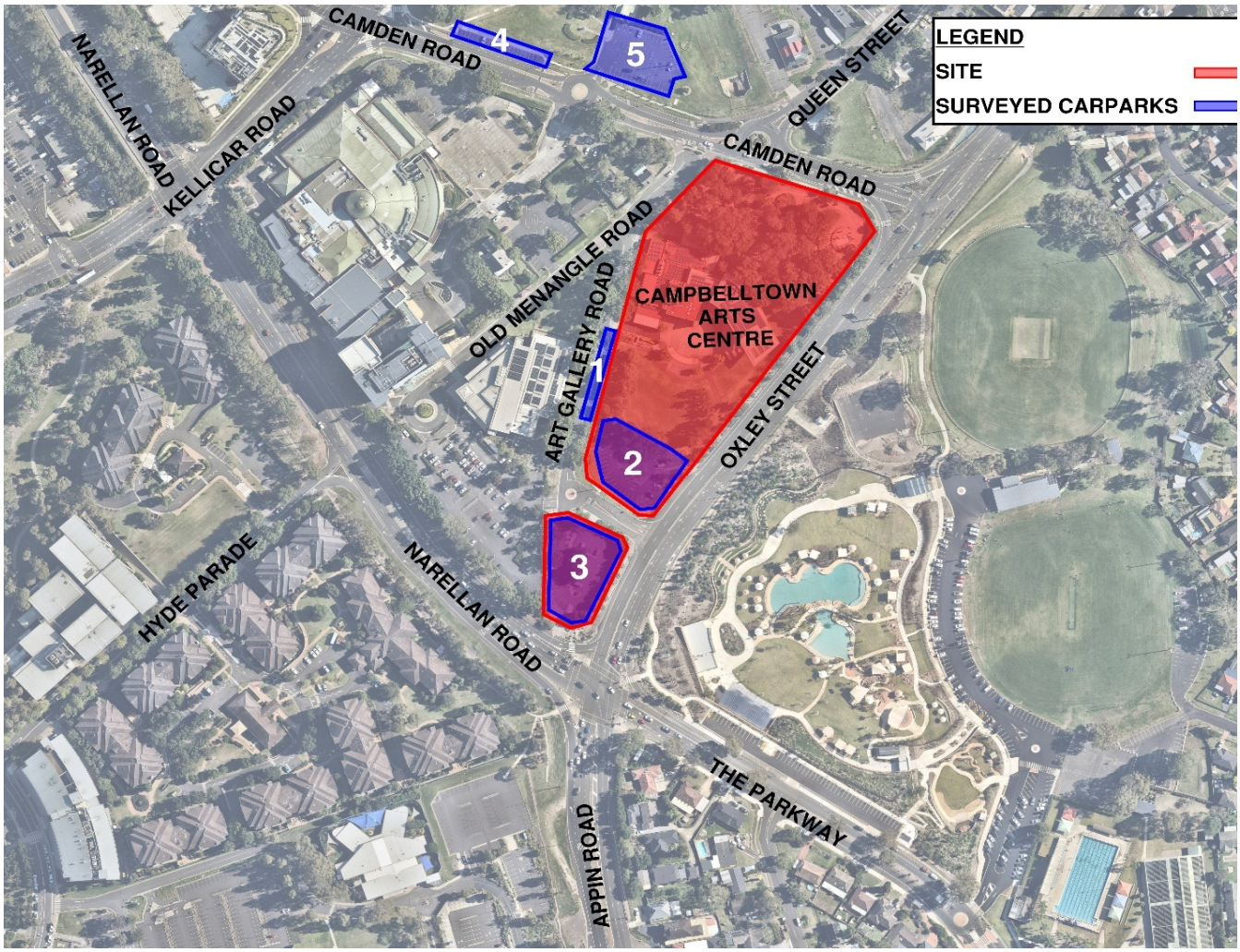


Location	Provision
Old Menangle Rd (north)	Existing 23m drop-off area (1 bus, 2 cars)
Camden Road	Existing 37m Bus Zone (~3 buses)
Old Menangle Rd (south)	Existing 35m Bus Zone (~3 buses)

Appendix C Traffic Count Surveys

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Day / Date: Tuesday 24th September & Saturday 28th September 2024
Survey Period: 10:00-19:00



Identifier	Location	Capacity
1	1 Art Gallery Road, frontage of CAC	17 spaces (including 4 accessible spaces)
2	CAC Carpark (entry via Art Gallery Road)	40 spaces
3	CAC Carpark – corner of Oxley Street and Narellan Road (entry via Art Gallery Road)	55 spaces
4	Camden Road Reserve (entry via Camden Road)	20 spaces
5	Koshigaya Park (entry via Camden Road)	47 spaces (including 3 accessible spaces)
	TOTAL	**179 spaces (Including 7 accessible spaces)**

Car Parks 1-5 **Tuesday 24th Sep 2024**

Time	Parked	Vacant	Occupancy
10:00-11:00	92	87	51%
11:00-12:00	95	84	53%
12:00-13:00	108	71	60%
13:00-14:00	106	73	59%
14:00-15:00	69	110	39%
15:00-16:00	76	103	42%
16:00-17:00	46	133	26%
17:00-18:00	42	137	23%
18:00-19:00	30	149	17%
TOTAL			**179**

Car Parks 1-5 **Saturday 28th Sep 2024**

Time	Parked	Vacant	Occupancy
10:00-11:00	66	113	37%
11:00-12:00	64	115	36%
12:00-13:00	81	98	45%
13:00-14:00	71	108	40%
14:00-15:00	53	126	30%
15:00-16:00	26	153	15%
16:00-17:00	16	163	9%
17:00-18:00	11	168	6%
18:00-19:00	4	175	2%
TOTAL			**179**

Car Parks 2-3 (CAC) **Tuesday 24th Sep 2024**

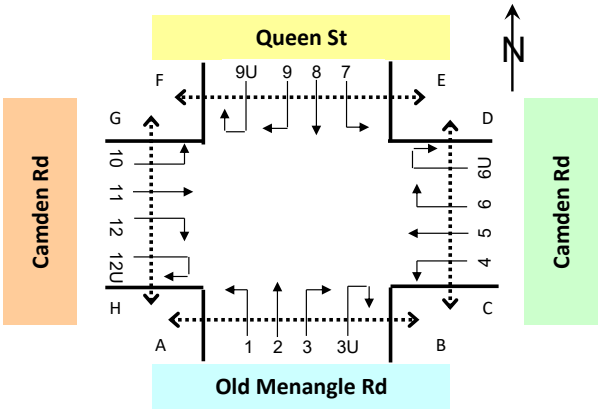
Time	Parked	Vacant	Occupancy
10:00-11:00	61	34	64%
11:00-12:00	60	35	63%
12:00-13:00	73	22	77%
13:00-14:00	69	26	73%
14:00-15:00	53	42	56%
15:00-16:00	40	55	42%
16:00-17:00	22	73	23%
17:00-18:00	21	74	22%
18:00-19:00	15	80	16%
TOTAL			**95**

Car Parks 2-3 (CAC) **Saturday 28th Sep 2024**

Time	Parked	Vacant	Occupancy
10:00-11:00	31	64	33%
11:00-12:00	26	69	27%
12:00-13:00	32	63	34%
13:00-14:00	31	64	33%
14:00-15:00	16	79	17%
15:00-16:00	5	90	5%
16:00-17:00	4	91	4%
17:00-18:00	1	94	1%
18:00-19:00	1	94	1%
TOTAL			**95**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 1. Old Menangle Rd & Camden Rd & Queen St

Day/Date : Tuesday, 2 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

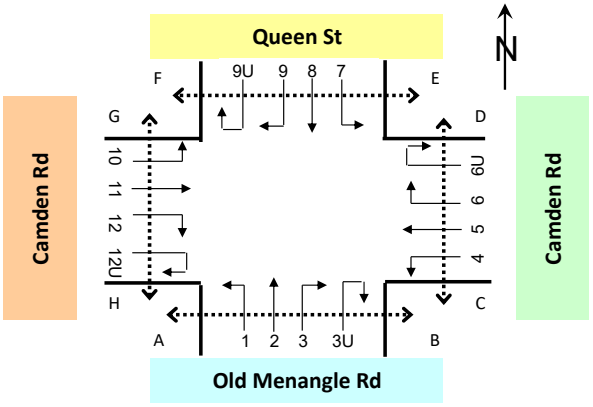


Approach	Old Menangle Rd				Camden Rd				Queen St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
9:30 to 10:30	61	2	0	**63**	296	4	0	**300**	357	4	0	**361**	293	14	0	**307**	**1,031**
16:30 to 17:30	59	1	0	**60**	274	0	0	**274**	462	1	1	**463**	363	0	0	**363**	**1,160**

Approach	Old Menangle Rd				Camden Rd				Queen St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
6:30 to 7:30	43	1	0	**44**	128	3	0	**131**	145	4	0	**149**	114	5	0	**119**	**443**
6:45 to 7:45	40	1	0	**41**	157	4	0	**161**	144	5	1	**149**	129	4	0	**133**	**484**
7:00 to 8:00	34	1	0	**35**	152	5	0	**157**	160	4	1	**164**	165	5	0	**170**	**526**
7:15 to 8:15	40	0	0	**40**	153	4	0	**157**	161	4	1	**165**	205	7	0	**212**	**574**
7:30 to 8:30	44	0	0	**44**	166	4	0	**170**	170	4	1	**174**	250	5	0	**255**	**643**
7:45 to 8:45	47	1	0	**48**	195	2	0	**197**	217	2	0	**219**	270	6	0	**276**	**740**
8:00 to 9:00	53	1	0	**54**	248	1	0	**249**	233	3	0	**236**	271	5	0	**276**	**815**
8:15 to 9:15	46	1	0	**47**	299	1	0	**300**	270	4	1	**274**	266	5	0	**271**	**892**
8:30 to 9:30	59	1	0	**60**	317	0	0	**317**	275	2	2	**277**	267	4	0	**271**	**925**
8:45 to 9:45	63	1	0	**64**	321	1	0	**322**	274	3	2	**277**	280	5	0	**285**	**948**
9:00 to 10:00	63	1	0	**64**	322	1	0	**323**	312	4	2	**316**	289	7	0	**296**	**999**
9:15 to 10:15	69	2	0	**71**	308	3	0	**311**	320	3	1	**323**	298	9	0	**307**	**1,012**
9:30 to 10:30	61	2	0	**63**	296	4	0	**300**	357	4	0	**361**	293	14	0	**307**	**1,031**
AM Totals	**207**	**4**	**0**	**211**	**907**	**11**	**0**	**918**	**947**	**14**	**3**	**961**	**924**	**28**	**0**	**952**	**3,042**
15:00 to 16:00	63	0	0	**63**	250	5	0	**255**	385	2	0	**387**	343	3	0	**346**	**1,051**
15:15 to 16:15	69	0	0	**69**	254	6	0	**260**	392	3	0	**395**	349	4	1	**353**	**1,077**
15:30 to 16:30	63	0	0	**63**	249	2	0	**251**	416	2	0	**418**	347	5	1	**352**	**1,084**
15:45 to 16:45	74	1	0	**75**	238	1	0	**239**	402	1	0	**403**	374	3	1	**377**	**1,094**
16:00 to 17:00	67	1	0	**68**	239	1	0	**240**	441	1	0	**442**	375	2	1	**377**	**1,127**
16:15 to 17:15	62	1	0	**63**	240	0	0	**240**	450	0	1	**450**	371	1	0	**372**	**1,125**
16:30 to 17:30	59	1	0	**60**	274	0	0	**274**	462	1	1	**463**	363	0	0	**363**	**1,160**
16:45 to 17:45	48	0	0	**48**	272	0	0	**272**	490	3	1	**493**	343	1	0	**344**	**1,157**
17:00 to 18:00	57	0	0	**57**	268	0	0	**268**	470	4	1	**474**	324	3	0	**327**	**1,126**
17:15 to 18:15	64	0	0	**64**	247	0	0	**247**	467	4	0	**471**	307	3	0	**310**	**1,092**
17:30 to 18:30	76	0	0	**76**	223	0	0	**223**	446	3	0	**449**	305	3	0	**308**	**1,056**
17:45 to 18:45	73	0	0	**73**	217	0	0	**217**	417	1	0	**418**	295	3	0	**298**	**1,006**
18:00 to 19:00	67	0	0	**67**	185	0	0	**185**	410	0	0	**410**	273	3	0	**276**	**938**
PM Totals	**254**	**1**	**0**	**255**	**942**	**6**	**0**	**948**	**1,706**	**7**	**1**	**1,713**	**1,315**	**11**	**1**	**1,326**	**4,242**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 1. Old Menangle Rd & Camden Rd & Queen St

Day/Date : Saturday, 6 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

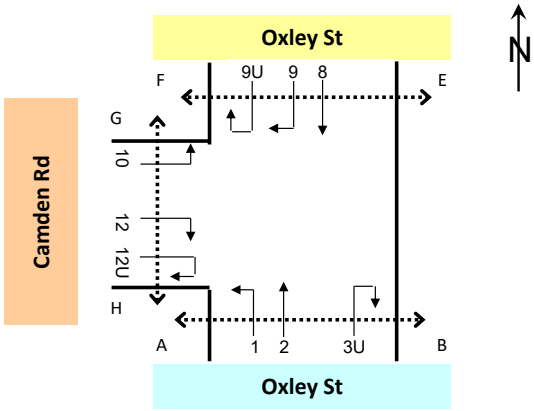


Approach	Old Menangle Rd				Camden Rd				Queen St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
11:45 to 12:45	46	0	0	**46**	308	2	0	**310**	527	2	0	**529**	340	5	0	**345**	**1,230**

Approach	Old Menangle Rd				Camden Rd				Queen St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
10:00 to 11:00	77	0	0	**77**	287	3	0	**290**	398	3	0	**401**	330	5	0	**335**	**1,103**
10:15 to 11:15	73	0	0	**73**	281	3	0	**284**	415	3	0	**418**	317	7	0	**324**	**1,099**
10:30 to 11:30	77	0	0	**77**	311	1	0	**312**	432	2	0	**434**	333	5	0	**338**	**1,161**
10:45 to 11:45	56	0	0	**56**	311	1	0	**312**	455	2	1	**457**	327	3	0	**330**	**1,155**
11:00 to 12:00	53	0	0	**53**	304	0	0	**304**	471	1	1	**472**	324	4	0	**328**	**1,157**
11:15 to 12:15	49	0	0	**49**	308	0	0	**308**	479	1	1	**480**	323	2	0	**325**	**1,162**
11:30 to 12:30	39	0	0	**39**	298	2	0	**300**	514	1	1	**515**	324	2	0	**326**	**1,180**
11:45 to 12:45	46	0	0	**46**	308	2	0	**310**	527	2	0	**529**	340	5	0	**345**	**1,230**
12:00 to 13:00	52	0	0	**52**	290	2	0	**292**	527	2	0	**529**	352	4	0	**356**	**1,229**
12:15 to 13:15	51	0	0	**51**	289	3	0	**292**	516	1	0	**517**	357	4	0	**361**	**1,221**
12:30 to 13:30	51	0	0	**51**	263	1	0	**264**	500	2	0	**502**	355	5	0	**360**	**1,177**
12:45 to 13:45	45	0	0	**45**	239	1	0	**240**	467	2	0	**469**	337	3	0	**340**	**1,094**
13:00 to 14:00	35	0	0	**35**	237	1	0	**238**	452	4	0	**456**	334	4	0	**338**	**1,067**
Totals	**217**	**0**	**0**	**217**	**1,118**	**6**	**0**	**1,124**	**1,848**	**10**	**1**	**1,858**	**1,340**	**17**	**0**	**1,357**	**4,556**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 2. Oxley St & Camden Rd

Day/Date : Tuesday, 2 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

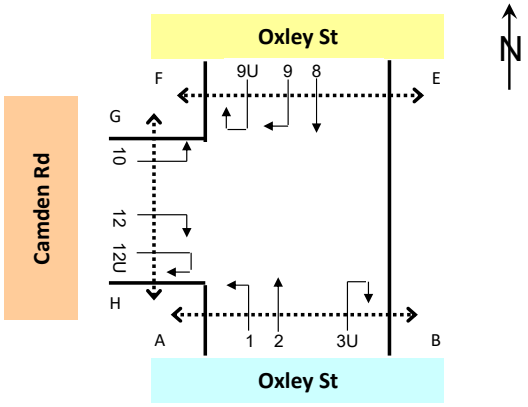


	Approach	Oxley St					Oxley St				Camden Rd			
	Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
AM	8:15 to 9:15	1,377	26	0	**1,403**		941	34	0	**975**	143	3	0	**146**
PM	16:30 to 17:30	1,101	25	0	**1,126**		1,379	28	0	**1,407**	343	0	0	**343**

Approach	Oxley St					Oxley St				Camden Rd			
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
6:30 to 7:30	926	30	0	**956**		510	48	0	**558**	65	1	0	**66**
6:45 to 7:45	1,018	28	0	**1,046**		565	49	0	**614**	71	1	0	**72**
7:00 to 8:00	1,125	27	0	**1,152**		635	45	0	**680**	83	2	0	**85**
7:15 to 8:15	1,191	35	0	**1,226**		692	40	0	**732**	90	5	0	**95**
7:30 to 8:30	1,267	36	0	**1,303**		792	36	0	**828**	101	5	0	**106**
7:45 to 8:45	1,357	36	0	**1,393**		865	37	0	**902**	121	5	0	**126**
8:00 to 9:00	1,402	33	0	**1,435**		917	38	0	**955**	125	5	0	**130**
8:15 to 9:15	1,377	26	0	**1,403**		941	34	0	**975**	143	3	0	**146**
8:30 to 9:30	1,249	27	0	**1,276**		949	40	0	**989**	158	3	0	**161**
8:45 to 9:45	1,088	27	0	**1,115**		900	42	0	**942**	175	2	0	**177**
9:00 to 10:00	979	29	0	**1,008**		842	42	0	**884**	199	3	0	**202**
9:15 to 10:15	933	30	0	**963**		833	47	0	**880**	200	3	0	**203**
9:30 to 10:30	875	33	0	**908**		784	49	0	**833**	213	4	0	**217**
AM Totals	**4,317**	**126**	**0**	**4,443**		**3,035**	**173**	**0**	**3,208**	**537**	**13**	**0**	**550**
15:00 to 16:00	1,067	41	0	**1,108**		1,197	28	0	**1,225**	275	2	0	**277**
15:15 to 16:15	1,008	33	0	**1,041**		1,275	25	0	**1,300**	283	4	1	**287**
15:30 to 16:30	1,005	30	0	**1,035**		1,229	19	0	**1,248**	312	4	1	**316**
15:45 to 16:45	1,030	25	0	**1,055**		1,290	19	0	**1,309**	299	2	1	**301**
16:00 to 17:00	1,055	27	0	**1,082**		1,330	19	0	**1,349**	322	2	1	**324**
16:15 to 17:15	1,090	30	0	**1,120**		1,352	23	0	**1,375**	332	0	0	**332**
16:30 to 17:30	1,101	25	0	**1,126**		1,379	28	0	**1,407**	343	0	0	**343**
16:45 to 17:45	1,078	24	0	**1,102**		1,328	32	0	**1,360**	353	2	0	**355**
17:00 to 18:00	1,020	21	0	**1,041**		1,284	30	0	**1,314**	344	3	0	**347**
17:15 to 18:15	934	20	0	**954**		1,194	29	0	**1,223**	343	3	0	**346**
17:30 to 18:30	875	19	0	**894**		1,087	25	0	**1,112**	322	3	0	**325**
17:45 to 18:45	805	13	0	**818**		1,006	20	0	**1,026**	305	2	0	**307**
18:00 to 19:00	749	11	0	**760**		938	19	0	**957**	289	2	0	**291**
PM Totals	**3,891**	**100**	**0**	**3,991**		**4,749**	**96**	**0**	**4,845**	**1,230**	**9**	**1**	**1,239**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 2. Oxley St & Camden Rd

Day/Date : Saturday, 6 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

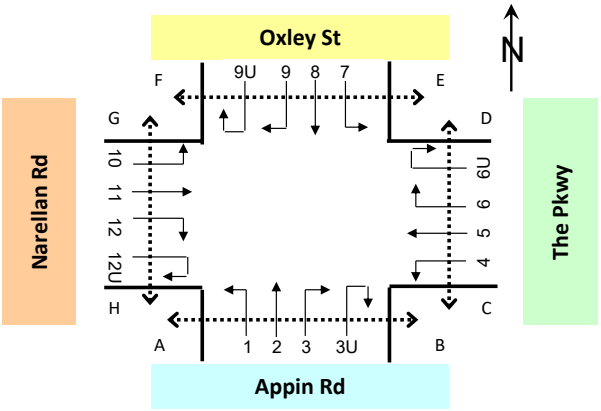


Approach	Oxley St					Oxley St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
11:45 to 12:45	1,012	17	0	**1,029**		1,193	18	0	**1,211**	339	5	0	**344**	**2,584**

Approach	Oxley St					Oxley St				Camden Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
10:00 to 11:00	952	15	0	**967**		1,069	21	0	**1,090**	252	3	0	**255**	**2,312**
10:15 to 11:15	1,001	17	0	**1,018**		1,080	21	0	**1,101**	278	6	0	**284**	**2,403**
10:30 to 11:30	1,059	15	0	**1,074**		1,068	18	0	**1,086**	292	4	0	**296**	**2,456**
10:45 to 11:45	1,073	11	0	**1,084**		1,130	19	0	**1,149**	314	3	0	**317**	**2,550**
11:00 to 12:00	1,077	12	0	**1,089**		1,142	19	0	**1,161**	325	3	0	**328**	**2,578**
11:15 to 12:15	1,043	12	0	**1,055**		1,155	18	0	**1,173**	329	1	0	**330**	**2,558**
11:30 to 12:30	1,008	17	0	**1,025**		1,183	20	0	**1,203**	349	1	0	**350**	**2,578**
11:45 to 12:45	1,012	17	0	**1,029**		1,193	18	0	**1,211**	339	5	0	**344**	**2,584**
12:00 to 13:00	947	17	0	**964**		1,161	17	0	**1,178**	335	5	0	**340**	**2,482**
12:15 to 13:15	949	16	0	**965**		1,133	16	0	**1,149**	323	5	0	**328**	**2,442**
12:30 to 13:30	880	10	0	**890**		1,114	12	0	**1,126**	324	7	0	**331**	**2,347**
12:45 to 13:45	822	9	0	**831**		1,037	11	0	**1,048**	308	4	0	**312**	**2,191**
13:00 to 14:00	823	8	0	**831**		1,000	11	0	**1,011**	310	5	0	**315**	**2,157**
Totals	**3,799**	**52**	**0**	**3,851**		**4,372**	**68**	**0**	**4,440**	**1,222**	**16**	**0**	**1,238**	**9,529**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 3. Appin Rd & The Pkwy & Oxley St & Narellan Rd

Day/Date : Tuesday, 2 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

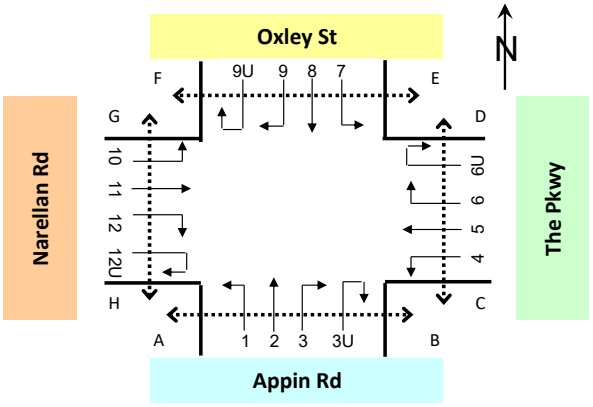


Approach			Appin Rd				The Pkwy				Oxley St				Narellan Rd			
	Time Period		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
AM	8:00	to 9:00	1,743	63	0	**1,806**	469	18	1	**487**	941	44	0	**985**	843	44	0	**887**
PM	16:15	to 17:15	1,367	55	0	**1,422**	365	4	0	**369**	1,547	25	0	**1,572**	1,120	22	0	**1,142**

Approach			Appin Rd				The Pkwy				Oxley St				Narellan Rd			
	Time Period		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
	6:30	to 7:30	1,471	41	0	**1,512**	297	11	0	**308**	543	47	0	**590**	528	75	0	**603**
	6:45	to 7:45	1,583	39	0	**1,622**	304	12	0	**316**	576	47	0	**623**	594	64	0	**658**
	7:00	to 8:00	1,688	44	0	**1,732**	337	12	1	**349**	651	46	0	**697**	673	65	0	**738**
	7:15	to 8:15	1,751	50	0	**1,801**	347	14	2	**361**	709	44	0	**753**	770	57	0	**827**
	7:30	to 8:30	1,738	63	0	**1,801**	381	19	2	**400**	779	37	0	**816**	838	54	0	**892**
	7:45	to 8:45	1,757	66	0	**1,823**	416	19	2	**435**	893	42	0	**935**	854	54	0	**908**
	8:00	to 9:00	1,743	63	0	**1,806**	469	18	1	**487**	941	44	0	**985**	843	44	0	**887**
	8:15	to 9:15	1,650	57	0	**1,707**	470	16	0	**486**	957	34	0	**991**	828	44	0	**872**
	8:30	to 9:30	1,508	59	0	**1,567**	431	9	0	**440**	993	45	0	**1,038**	786	50	0	**836**
	8:45	to 9:45	1,306	60	0	**1,366**	395	11	0	**406**	931	43	0	**974**	711	58	0	**769**
	9:00	to 10:00	1,190	60	0	**1,250**	350	12	0	**362**	878	41	0	**919**	682	62	0	**744**
	9:15	to 10:15	1,149	66	0	**1,215**	328	16	0	**344**	897	47	0	**944**	617	62	0	**679**
	9:30	to 10:30	1,086	65	0	**1,151**	327	17	1	**344**	868	47	0	**915**	595	58	0	**653**
AM Totals			**5,803**	**228**	**0**	**6,031**	**1,436**	**56**	**3**	**1,492**	**3,183**	**176**	**0**	**3,359**	**2,747**	**237**	**0**	**2,984**
	15:00	to 16:00	1,377	72	0	**1,449**	415	8	0	**423**	1,316	26	0	**1,342**	1,000	44	0	**1,044**
	15:15	to 16:15	1,356	64	0	**1,420**	359	7	0	**366**	1,373	22	0	**1,395**	1,050	47	0	**1,097**
	15:30	to 16:30	1,331	56	0	**1,387**	360	6	0	**366**	1,374	20	0	**1,394**	1,115	44	0	**1,159**
	15:45	to 16:45	1,337	49	0	**1,386**	361	6	0	**367**	1,426	18	0	**1,444**	1,125	37	0	**1,162**
	16:00	to 17:00	1,350	54	0	**1,404**	359	5	0	**364**	1,473	19	0	**1,492**	1,183	27	0	**1,210**
	16:15	to 17:15	1,367	55	0	**1,422**	365	4	0	**369**	1,547	25	0	**1,572**	1,120	22	0	**1,142**
	16:30	to 17:30	1,308	46	0	**1,354**	368	2	0	**370**	1,536	29	0	**1,565**	1,103	23	0	**1,126**
	16:45	to 17:45	1,258	40	0	**1,298**	341	3	0	**344**	1,525	32	0	**1,557**	1,080	22	0	**1,102**
	17:00	to 18:00	1,227	31	0	**1,258**	321	5	0	**326**	1,497	30	0	**1,527**	993	21	0	**1,014**
	17:15	to 18:15	1,124	22	0	**1,146**	313	5	0	**318**	1,395	28	0	**1,423**	979	19	0	**998**
	17:30	to 18:30	1,096	19	0	**1,115**	302	8	0	**310**	1,296	25	0	**1,321**	897	17	0	**914**
	17:45	to 18:45	1,040	17	0	**1,057**	292	6	0	**298**	1,169	20	0	**1,189**	827	16	0	**843**
	18:00	to 19:00	949	13	0	**962**	274	5	0	**279**	1,091	19	0	**1,110**	753	14	0	**767**
PM Totals			**4,903**	**170**	**0**	**5,073**	**1,369**	**23**	**0**	**1,392**	**5,377**	**94**	**0**	**5,471**	**3,929**	**106**	**0**	**4,035**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 3. Appin Rd & The Pkwy & Oxley St & Narellan Rd

Day/Date : Saturday, 6 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

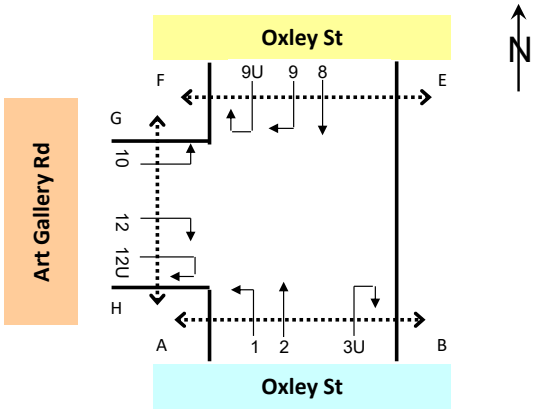


Approach	Appin Rd				The Pkwy				Oxley St				Narellan Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
11:15 to 12:15	1,290	31	0	**1,321**	422	8	0	**430**	1,311	18	0	**1,329**	990	20	0	**1,010**	**4,090**

Approach	Appin Rd				The Pkwy				Oxley St				Narellan Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
10:00 to 11:00	1,207	25	0	**1,232**	433	7	0	**440**	1,137	18	0	**1,155**	902	20	0	**922**	**3,749**
10:15 to 11:15	1,255	27	0	**1,282**	420	7	0	**427**	1,189	20	0	**1,209**	881	21	0	**902**	**3,820**
10:30 to 11:30	1,262	32	0	**1,294**	427	5	0	**432**	1,200	19	0	**1,219**	935	20	0	**955**	**3,900**
10:45 to 11:45	1,266	29	0	**1,295**	398	8	0	**406**	1,256	19	0	**1,275**	973	20	0	**993**	**3,969**
11:00 to 12:00	1,272	29	0	**1,301**	399	8	0	**407**	1,302	19	0	**1,321**	978	19	0	**997**	**4,026**
11:15 to 12:15	1,290	31	0	**1,321**	422	8	0	**430**	1,311	18	0	**1,329**	990	20	0	**1,010**	**4,090**
11:30 to 12:30	1,313	26	0	**1,339**	396	9	0	**405**	1,364	19	0	**1,383**	930	20	0	**950**	**4,077**
11:45 to 12:45	1,280	28	0	**1,308**	406	6	0	**412**	1,346	20	0	**1,366**	909	17	0	**926**	**4,012**
12:00 to 13:00	1,233	26	0	**1,259**	408	5	0	**413**	1,338	19	0	**1,357**	883	16	0	**899**	**3,928**
12:15 to 13:15	1,183	25	0	**1,208**	399	4	0	**403**	1,298	18	0	**1,316**	872	12	0	**884**	**3,811**
12:30 to 13:30	1,085	23	0	**1,108**	383	3	0	**386**	1,253	18	0	**1,271**	885	10	0	**895**	**3,660**
12:45 to 13:45	1,055	19	0	**1,074**	365	4	0	**369**	1,201	14	0	**1,215**	890	7	0	**897**	**3,555**
13:00 to 14:00	1,075	24	0	**1,099**	352	6	0	**358**	1,107	16	0	**1,123**	879	7	0	**886**	**3,466**
Totals	**4,787**	**104**	**0**	**4,891**	**1,592**	**26**	**0**	**1,618**	**4,884**	**72**	**0**	**4,956**	**3,642**	**62**	**0**	**3,704**	**15,169**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 4. Oxley St & Art Gallery Rd

Day/Date : Tuesday, 2 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

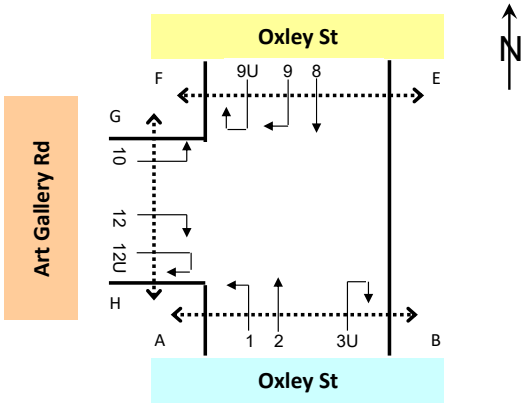


	Approach	Oxley St					Oxley St				Art Gallery Rd			
	Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
AM	8:15 to 9:15	1,439	28	0	**1,467**		970	34	0	**1,004**	23	1	0	**24**
PM	16:30 to 17:30	1,135	25	0	**1,160**		1,562	28	0	**1,590**	32	0	0	**32**

Approach	Oxley St					Oxley St				Art Gallery Rd			
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
6:30 to 7:30	955	27	0	**982**		535	46	0	**581**	25	2	0	**27**
6:45 to 7:45	1,056	28	0	**1,084**		589	48	0	**637**	15	0	0	**15**
7:00 to 8:00	1,165	27	0	**1,192**		667	46	0	**713**	15	0	0	**15**
7:15 to 8:15	1,233	34	0	**1,267**		715	44	0	**759**	12	0	0	**12**
7:30 to 8:30	1,310	36	0	**1,346**		804	38	0	**842**	11	0	0	**11**
7:45 to 8:45	1,400	36	0	**1,436**		888	40	0	**928**	18	0	0	**18**
8:00 to 9:00	1,452	35	0	**1,487**		928	41	0	**969**	22	1	0	**23**
8:15 to 9:15	1,439	28	0	**1,467**		970	34	0	**1,004**	23	1	0	**24**
8:30 to 9:30	1,314	29	0	**1,343**		985	42	0	**1,027**	29	1	0	**30**
8:45 to 9:45	1,150	29	0	**1,179**		932	42	0	**974**	31	1	0	**32**
9:00 to 10:00	1,042	29	0	**1,071**		894	42	0	**936**	30	0	0	**30**
9:15 to 10:15	980	30	0	**1,010**		881	46	0	**927**	36	0	0	**36**
9:30 to 10:30	892	33	0	**925**		862	49	0	**911**	37	0	0	**37**
AM Totals	**4,471**	**125**	**0**	4,596		**3,186**	**175**	**0**	3,361	**102**	**3**	**0**	**105**
15:00 to 16:00	1,071	41	0	**1,112**		1,321	26	0	**1,347**	24	0	0	**24**
15:15 to 16:15	1,020	32	0	**1,052**		1,372	23	0	**1,395**	23	0	0	**23**
15:30 to 16:30	1,011	30	0	**1,041**		1,376	20	0	**1,396**	21	0	0	**21**
15:45 to 16:45	1,044	26	0	**1,070**		1,428	19	0	**1,447**	19	0	0	**19**
16:00 to 17:00	1,067	27	0	**1,094**		1,490	19	0	**1,509**	22	0	0	**22**
16:15 to 17:15	1,113	30	0	**1,143**		1,540	23	0	**1,563**	26	0	0	**26**
16:30 to 17:30	1,135	25	0	**1,160**		1,562	28	0	**1,590**	32	0	0	**32**
16:45 to 17:45	1,109	23	0	**1,132**		1,521	31	0	**1,552**	29	0	0	**29**
17:00 to 18:00	1,082	23	0	**1,105**		1,482	30	0	**1,512**	26	0	0	**26**
17:15 to 18:15	976	20	0	**996**		1,401	29	0	**1,430**	23	0	0	**23**
17:30 to 18:30	892	19	0	**911**		1,271	25	0	**1,296**	27	0	0	**27**
17:45 to 18:45	814	13	0	**827**		1,165	20	0	**1,185**	33	0	0	**33**
18:00 to 19:00	743	9	0	**752**		1,087	19	0	**1,106**	29	0	0	**29**
PM Totals	**3,963**	**100**	**0**	4,063		**5,380**	**94**	**0**	5,474	**101**	**0**	**0**	**101**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 4. Oxley St & Art Gallery Rd

Day/Date : Saturday, 6 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

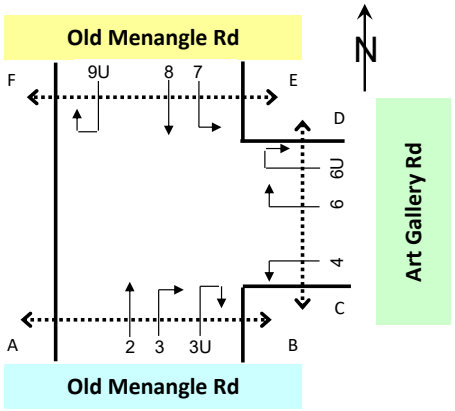


Approach	Oxley St					Oxley St				Art Gallery Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
11:30 to 12:30	1,045	16	0	**1,061**		1,347	20	0	**1,367**	25	0	0	**25**	**2,453**

Approach	Oxley St					Oxley St				Art Gallery Rd				Grand Total
Time Period	Lights	Heavies	Cyclists	Total		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
10:00 to 11:00	952	16	0	**968**		1,159	19	0	**1,178**	27	0	0	**27**	**2,173**
10:15 to 11:15	1,012	17	0	**1,029**		1,194	20	0	**1,214**	25	0	0	**25**	**2,268**
10:30 to 11:30	1,067	16	0	**1,083**		1,196	18	0	**1,214**	29	0	0	**29**	**2,326**
10:45 to 11:45	1,079	11	0	**1,090**		1,271	19	0	**1,290**	24	0	0	**24**	**2,404**
11:00 to 12:00	1,087	12	0	**1,099**		1,291	18	0	**1,309**	26	0	0	**26**	**2,434**
11:15 to 12:15	1,059	12	0	**1,071**		1,311	18	0	**1,329**	29	0	0	**29**	**2,429**
11:30 to 12:30	1,045	16	0	**1,061**		1,347	20	0	**1,367**	25	0	0	**25**	**2,453**
11:45 to 12:45	1,035	17	0	**1,052**		1,343	20	0	**1,363**	28	0	0	**28**	**2,443**
12:00 to 13:00	970	17	0	**987**		1,316	20	0	**1,336**	30	0	0	**30**	**2,353**
12:15 to 13:15	960	16	0	**976**		1,274	18	0	**1,292**	23	0	0	**23**	**2,291**
12:30 to 13:30	869	10	0	**879**		1,254	16	0	**1,270**	21	0	0	**21**	**2,170**
12:45 to 13:45	837	9	0	**846**		1,185	14	0	**1,199**	17	0	0	**17**	**2,062**
13:00 to 14:00	830	8	0	**838**		1,129	15	0	**1,144**	15	0	0	**15**	**1,997**
Totals	**3,839**	**53**	**0**	**3,892**		**4,895**	**72**	**0**	**4,967**	**98**	**0**	**0**	**98**	**8,957**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 5. Old Menangle Rd & Art Gallery Rd

Day/Date : Tuesday, 2 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

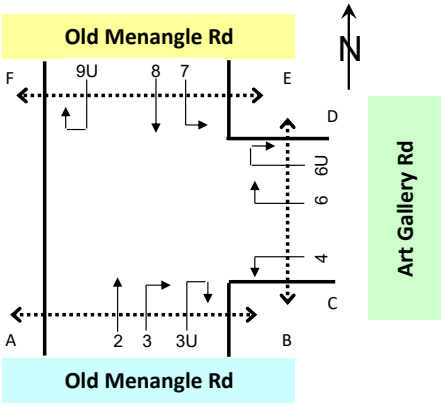


	Approach	Old Menangle Rd				Art Gallery Rd				Old Menangle Rd			
	Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
AM	9:15 to 10:15	58	2	0	**60**	47	0	0	**47**	40	2	1	**42**
PM	17:30 to 18:30	53	0	0	**53**	34	0	0	**34**	64	1	0	**65**

Approach	Old Menangle Rd				Art Gallery Rd				Old Menangle Rd			
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
6:30 to 7:30	37	2	0	**39**	6	0	0	**6**	29	1	0	**30**
6:45 to 7:45	34	1	0	**35**	7	0	0	**7**	30	1	0	**31**
7:00 to 8:00	29	1	0	**30**	6	0	0	**6**	32	1	0	**33**
7:15 to 8:15	37	0	0	**37**	7	0	0	**7**	45	1	0	**46**
7:30 to 8:30	40	0	0	**40**	7	1	0	**8**	55	1	0	**56**
7:45 to 8:45	41	1	0	**42**	8	1	0	**9**	56	1	0	**57**
8:00 to 9:00	47	1	0	**48**	12	1	0	**13**	55	1	0	**56**
8:15 to 9:15	38	1	0	**39**	16	1	0	**17**	54	1	0	**55**
8:30 to 9:30	46	1	0	**47**	24	0	0	**24**	49	0	1	**49**
8:45 to 9:45	50	1	0	**51**	34	0	0	**34**	51	1	1	**52**
9:00 to 10:00	51	1	0	**52**	47	0	0	**47**	45	2	1	**47**
9:15 to 10:15	58	2	0	**60**	47	0	0	**47**	40	2	1	**42**
9:30 to 10:30	52	2	0	**54**	44	0	0	**44**	39	2	0	**41**
AM Totals	**175**	**5**	**0**	**180**	**81**	**1**	**0**	**82**	**172**	**4**	**1**	**176**
15:00 to 16:00	44	0	0	**44**	23	0	0	**23**	49	1	0	**50**
15:15 to 16:15	53	0	0	**53**	22	0	0	**22**	49	1	0	**50**
15:30 to 16:30	53	0	0	**53**	19	0	0	**19**	54	1	0	**55**
15:45 to 16:45	56	1	0	**57**	30	0	0	**30**	58	0	0	**58**
16:00 to 17:00	47	1	0	**48**	31	0	0	**31**	62	0	0	**62**
16:15 to 17:15	40	1	0	**41**	31	0	0	**31**	69	0	0	**69**
16:30 to 17:30	35	1	0	**36**	34	0	0	**34**	77	0	0	**77**
16:45 to 17:45	31	0	0	**31**	28	0	0	**28**	76	0	0	**76**
17:00 to 18:00	39	0	0	**39**	31	0	0	**31**	69	1	0	**70**
17:15 to 18:15	44	0	0	**44**	35	0	0	**35**	63	1	0	**64**
17:30 to 18:30	53	0	0	**53**	34	0	0	**34**	64	1	0	**65**
17:45 to 18:45	51	0	0	**51**	34	0	0	**34**	60	1	0	**61**
18:00 to 19:00	48	0	0	**48**	27	0	0	**27**	53	1	0	**54**
PM Totals	**178**	**1**	**0**	**179**	**112**	**0**	**0**	**112**	**233**	**3**	**0**	**236**

Job No. : AUNSW13232
Client : TTW (Taylor Thomson Whitting) (NSW) Pty Ltd
Suburb : Campbelltown
Location : 5. Old Menangle Rd & Art Gallery Rd

Day/Date : Saturday, 6 December 2025
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



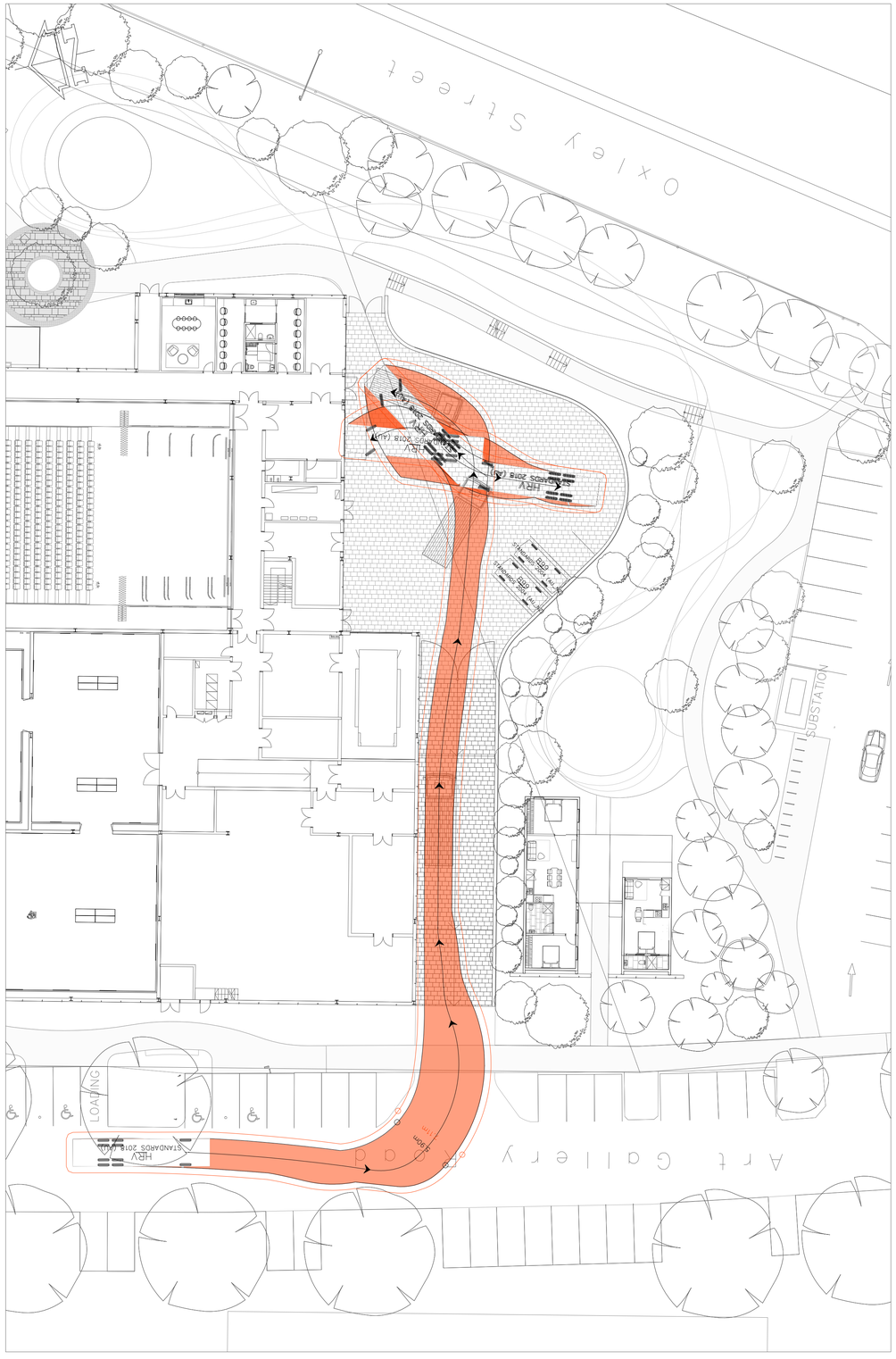
Approach	Old Menangle Rd				Art Gallery Rd				Old Menangle Rd					Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total		
10:30 to 11:30	50	0	0	**50**	39	0	0	**39**	38	1	0	**39**		**128**

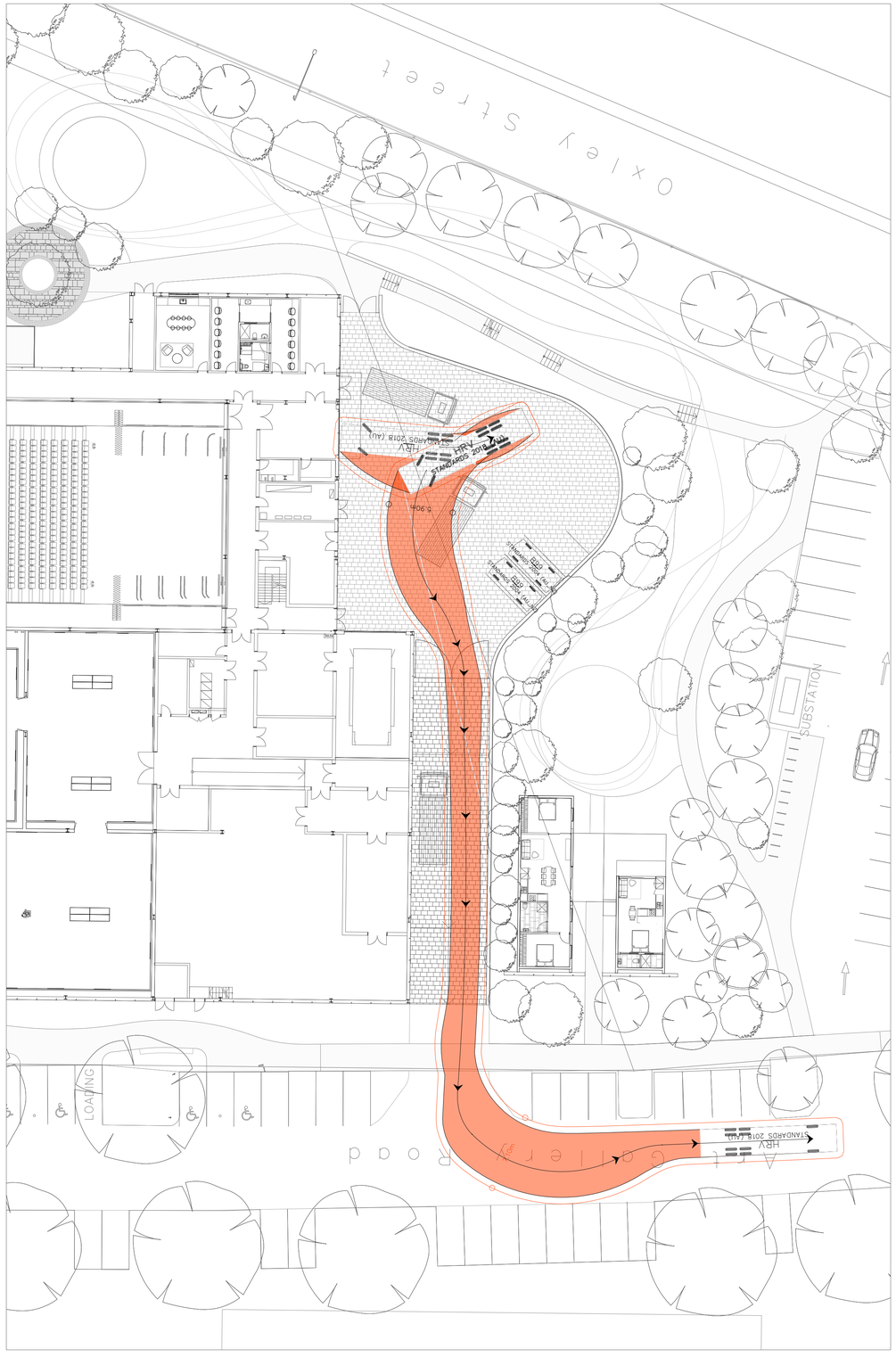
Approach	Old Menangle Rd				Art Gallery Rd				Old Menangle Rd					Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total		
10:00 to 11:00	51	0	0	**51**	36	1	0	**37**	37	0	0	**37**		**125**
10:15 to 11:15	51	0	0	**51**	33	0	0	**33**	41	1	0	**42**		**126**
10:30 to 11:30	50	0	0	**50**	39	0	0	**39**	38	1	0	**39**		**128**
10:45 to 11:45	36	0	0	**36**	35	0	0	**35**	35	1	1	**36**		**107**
11:00 to 12:00	30	0	0	**30**	38	0	0	**38**	35	1	1	**36**		**104**
11:15 to 12:15	34	0	0	**34**	41	0	0	**41**	34	0	1	**34**		**109**
11:30 to 12:30	28	0	0	**28**	34	0	0	**34**	34	0	1	**34**		**96**
11:45 to 12:45	30	0	0	**30**	34	0	0	**34**	30	0	0	**30**		**94**
12:00 to 13:00	31	0	0	**31**	40	0	0	**40**	33	0	0	**33**		**104**
12:15 to 13:15	23	0	0	**23**	36	0	0	**36**	28	0	0	**28**		**87**
12:30 to 13:30	24	0	0	**24**	35	0	0	**35**	26	0	0	**26**		**85**
12:45 to 13:45	22	0	0	**22**	33	0	0	**33**	30	0	0	**30**		**85**
13:00 to 14:00	20	0	0	**20**	26	0	0	**26**	34	0	0	**34**		**80**
Totals	**132**	**0**	**0**	**132**	**140**	**1**	**0**	**141**	**139**	**1**	**1**	**140**		**413**

Appendix D Swept Path Analysis

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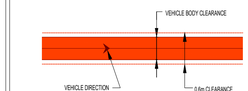




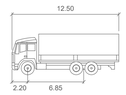
0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

THIS DRAWING HAS BEEN PREPARED USING COLOUR

Rev	Description	Eng	Draft	Date
1	ISSUED FOR SSDA	CI	CI	13/03/26
P3	REVISED ISSUE	CI	CI	17/12/25
P2	REVISED ISSUE	CI	CI	28/09/25
P1	PRELIMINARY ISSUE	CI	CI	09/09/25

Architect
FJC STUDIO
LEVEL 6, AUSTRALIA SQUARE
264 GEORGE STREET
SYDNEY NSW 2000

Engineer
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project
CAMPBELLTOWN ARTS CENTRE

Sheet Subject
SWEPT PATH ANALYSIS
WASTE AND LOADING ACCESS
HRV (FRONT-IN)

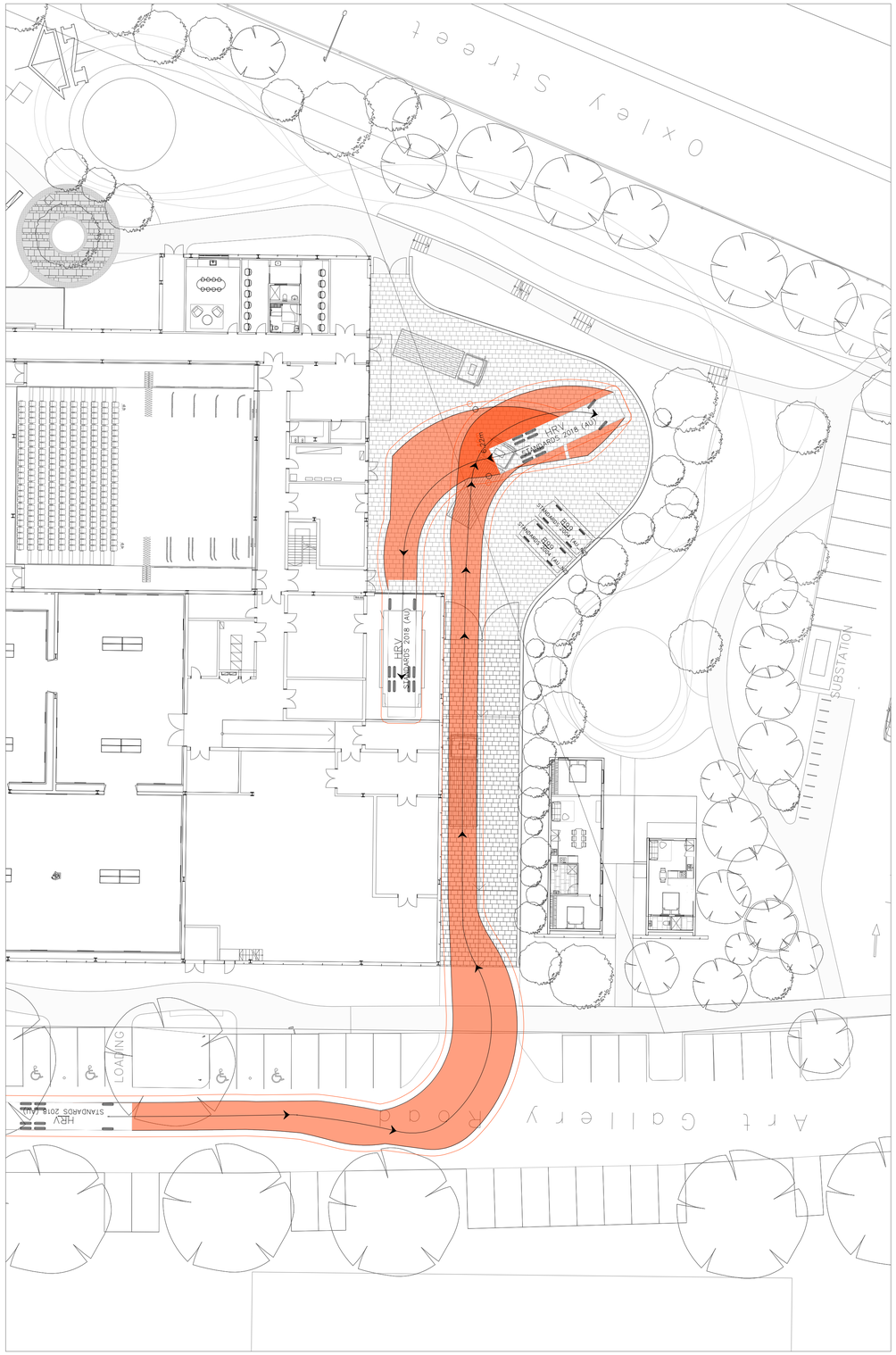
Scale : A1 1:250 | Drawn CI | Authorised MM

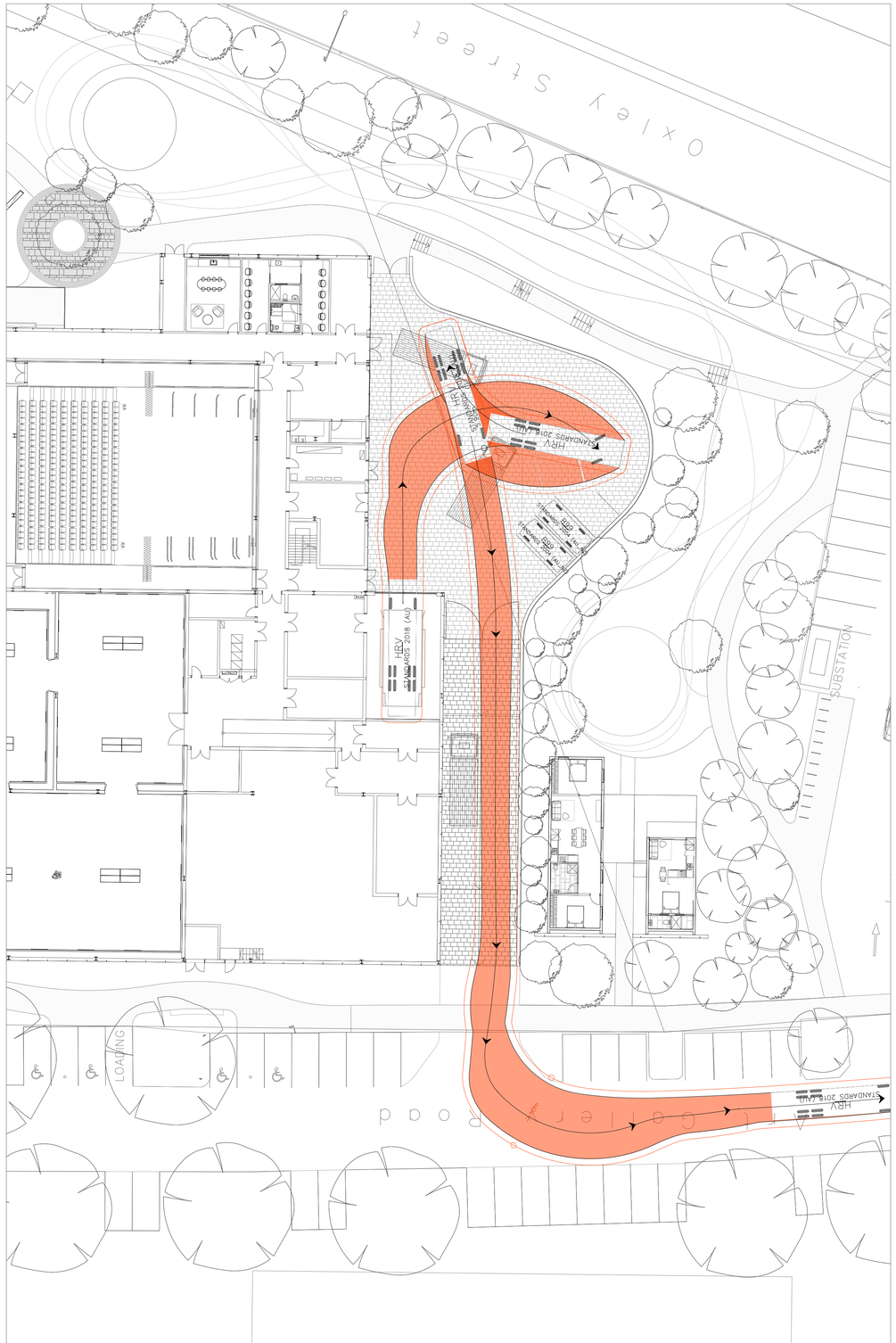
Job No 241913 | Drawing No SKTR00001 | Revision 1

Plot File Created: Mar 10, 2026 - 5:26pm

FileName: 241913-TTW-00-SK-TR-00001-[P1] - SWEPT PATH ANALYSIS - WASTE AND LOADING ACCESS - HRV (FRONT-IN).dwg - USER: ivan - Plot File Created: Mar 10, 2026 - 5:26pm

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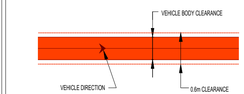




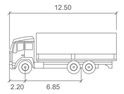
0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

THIS DRAWING HAS BEEN PREPARED USING COLOUR

Rev	Description	Eng	Draft	Date
1	ISSUED FOR SSDA	CI	CI	13/03/26
P2	REVISED ISSUE	CI	CI	17/12/25
P1	PRELIMINARY ISSUE	CI	CI	26/09/25

Architect
FJC STUDIO
LEVEL 6, AUSTRALIA SQUARE
264 GEORGE STREET
SYDNEY NSW 2000

Engineer
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

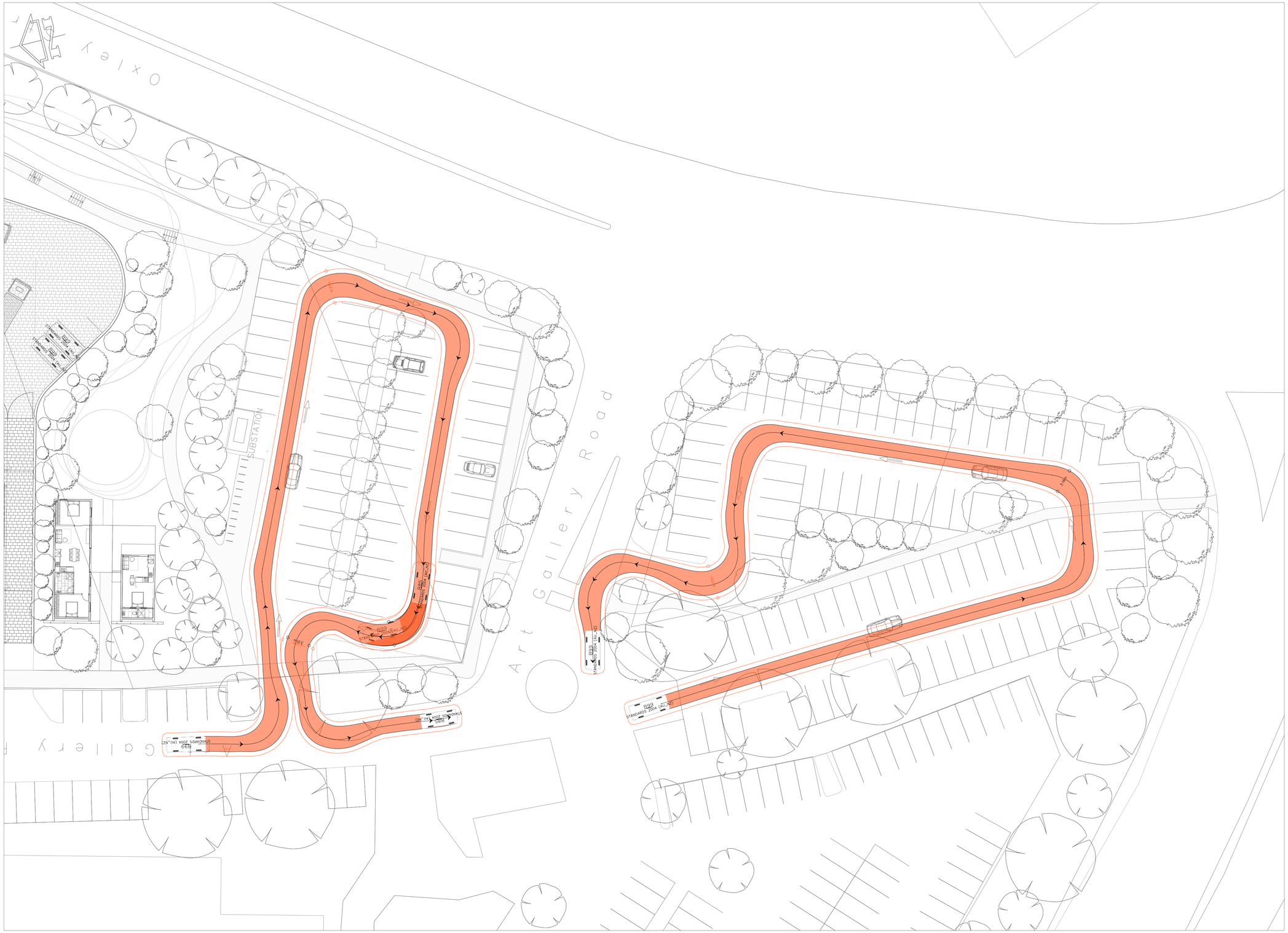
Project
CAMPBELLTOWN ARTS CENTRE

Sheet Subject
SWEPT PATH ANALYSIS
ARTS LOADING
HRV

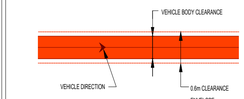
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Drawn CI
Authorised MM
Job No 241913
Drawing No SKTR00004
Revision 1
Plot File Created: Mar 10, 2026 - 5:29pm

FileName: 241913-TTW-00-SK-TR-0000#-[P1] - SWEPT PATH ANALYSIS - ARTS LOADING - HRV.dwg - USER: ivanr - Plot File Created: Mar 10, 2026 - 5:29pm

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SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: 241913-TTW-00-SK-TR-00005-[1] - SWEPT PATH ANALYSIS - CARPARKS CIRCULATIONS - B99 & B85.dwg - USER: ivanl - Plot File Created: Mar 10, 2026 - 5:49pm

Rev	Description	Eng	Draft	Date
1	ISSUED FOR SSDA	CI	CI	13/03/26

Rev Description Eng Draft Date

Rev Description Eng Draft Date

Architect
FJC STUDIO
LEVEL 6, AUSTRALIA SQUARE
264 GEORGE STREET
SYDNEY NSW 2000

Engineer
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project
CAMPBELLTOWN ARTS CENTRE

Sheet Subject
SWEPT PATH ANALYSIS
CARPARKS CIRCULATION
B99 & B85

Scale : A1	Drawn	Authorised
1:250	CI	MM

Job No	Drawing No	Revision
241913	SKTR00005	1

Plot File Created: Mar 10, 2026 - 5:49pm

Appendix E Trip Generation and Distribution

© 2026 Taylor Thomson Whitting

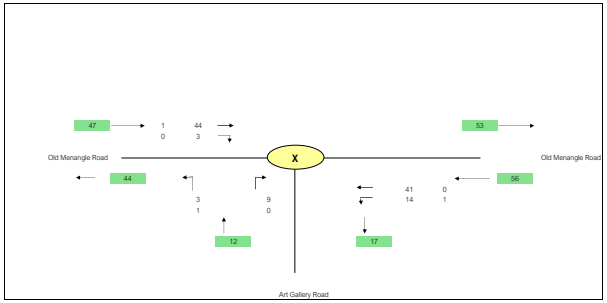
SUMMARY VISITORS ON-SITE AT ONE TIME

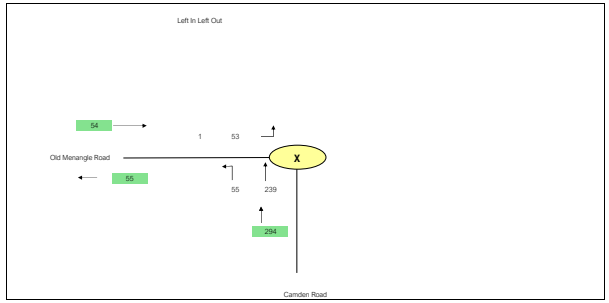
	EXISTING				*PROPOSED ADDITIONAL*				TOTAL VISITORS ON-SITE			
	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Gallery	63	0	63	0	*63*	*0*	*63*	*0*	**125**	**0**	**125**	**0**
Theatre	24	120	24	120	*24*	*210*	*281*	*210*	**48**	**330**	**305**	**330**
Other	40	28	23	4	*125*	*42*	*66*	*98*	**164**	**70**	**89**	**102**
Total	**126**	**148**	**109**	**124**	***211***	***252***	***409***	***308***	**337**	**400**	**519**	**432**

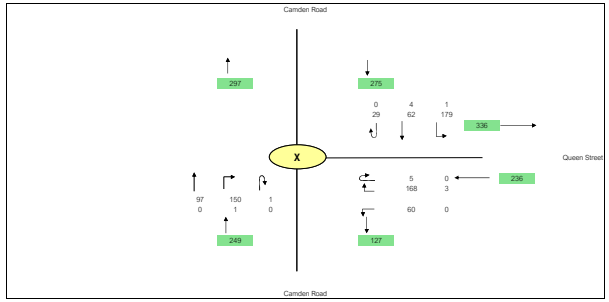
SUMMARY STAFF ON-SITE AT ONE TIME

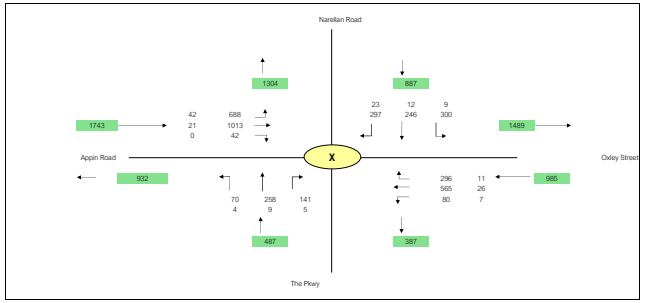
	EXISTING				*PROPOSED ADDITIONAL*				TOTAL VISITORS ON-SITE			
	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Staff	17	6	18	18	*10*	*5*	*12*	*12*	**27**	**11**	**30**	**30**

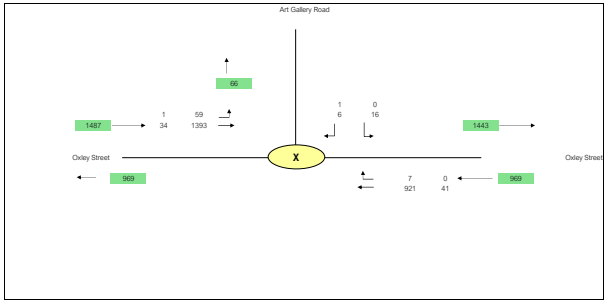
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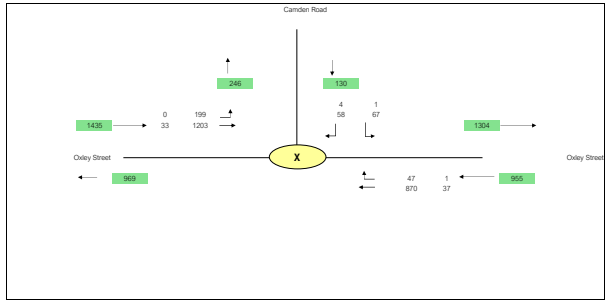

47
1
0
44
3
53
Old Menangle Road
X
Old Menangle Road
44
56
3
1
9
0
41
14
0
1
12
17
Art Gallery Road


Left In Left Out
54
1
53
Old Menangle Road
X
55
55
239
294
Camden Road

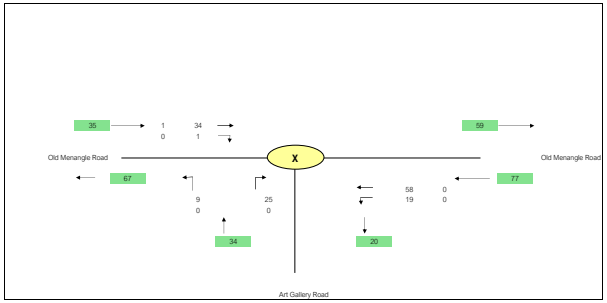

Camden Road
297
275
0
29
4
62
1
179
336
X
Queen Street
236
5
168
0
3
97
0
150
1
1
0
60
0
249
127
Camden Road

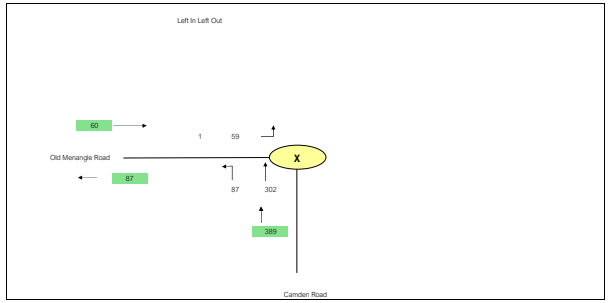

Narellan Road
1304
887
1743
42
21
0
688
1013
42
23
297
12
246
9
300
1489
Appin Road
X
Oxley Street
932
70
4
258
9
141
5
296
565
80
11
26
7
985
487
387
The Pkwy

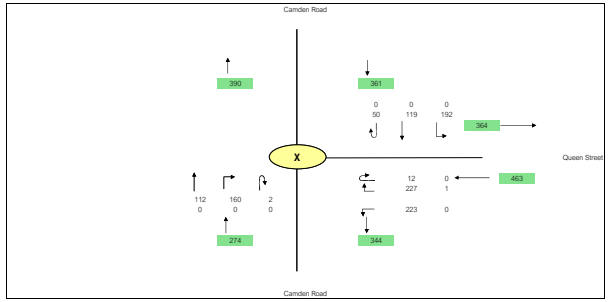

Art Gallery Road
66
1487
1
34
59
1393
1
6
0
16
1443
Oxley Street
X
Oxley Street
969
7
921
0
41
969

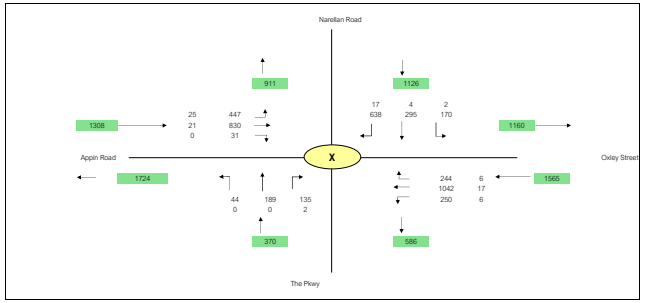

Camden Road
246
130
1435
0
33
199
1203
4
58
1
67
1304
Oxley Street
X
Oxley Street
969
47
870
1
37
955

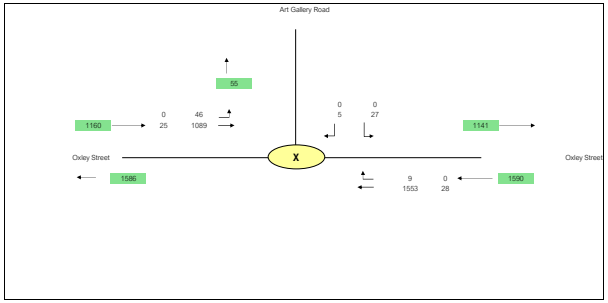
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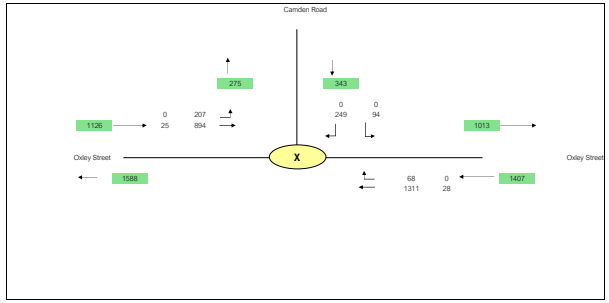

35
1
0
34
1
59
Old Menangle Road
X
Old Menangle Road
67
77
9
0
25
0
58
19
0
0
34
20
Art Gallery Road


Left In Left Out
60
1
59
Old Menangle Road
X
87
87
302
389
Camden Road

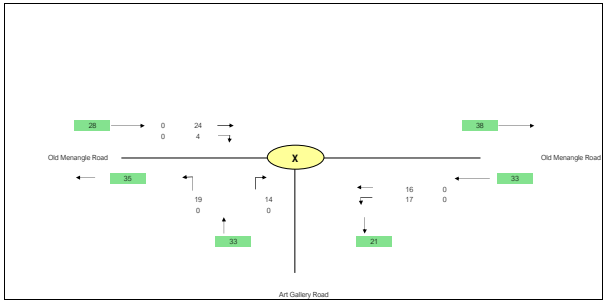

Camden Road
390
361
0
50
0
119
0
192
364
X
Queen Street
463
12
227
0
1
112
0
160
0
2
0
223
0
274
344
Camden Road

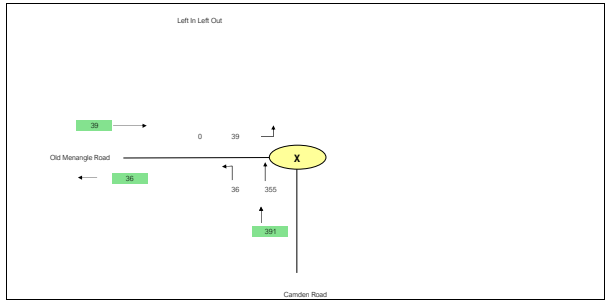

Narellan Road
911
1126
1308
25
21
0
447
830
31
17
638
4
295
2
170
1160
1160
Appin Road
X
Oxley Street
1724
1565
44
0
189
0
135
2
244
1042
250
6
17
6
370
586
The Pkwy

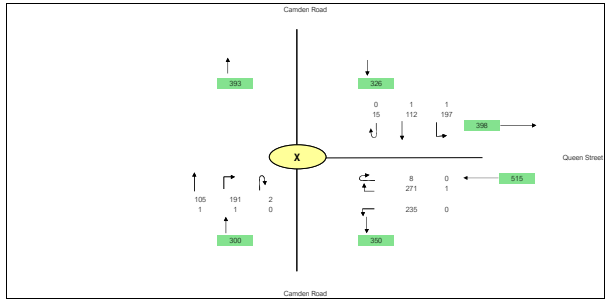

Art Gallery Road
55
1160
0
25
46
1089
0
5
0
27
1141
Oxley Street
X
Oxley Street
1586
9
1553
0
28
1590

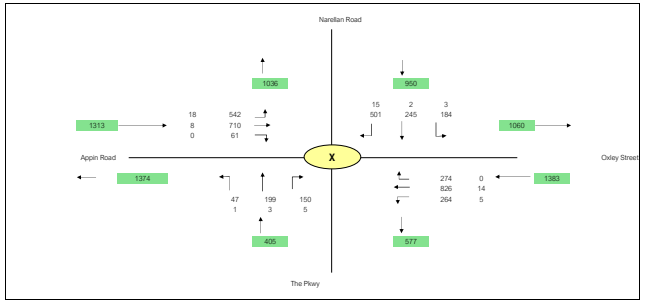

Camden Road
275
343
1126
0
25
207
894
0
249
0
94
1013
Oxley Street
X
Oxley Street
1588
68
1311
0
28
1407

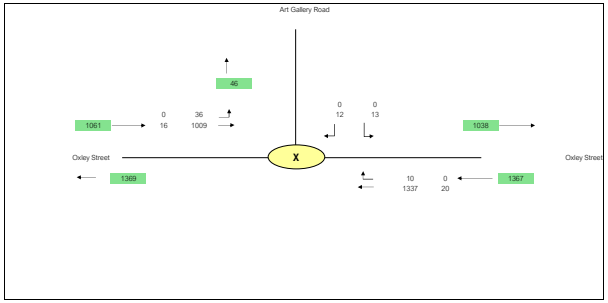
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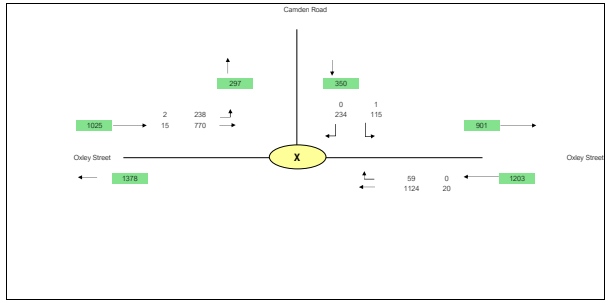

28
0
0
24
4
38
Old Menangle Road
X
Old Menangle Road
35
33
19
0
14
0
16
17
0
0
33
21
Art Gallery Road


Left In Left Out
39
0
39
Old Menangle Road
X
36
36
355
391
Camden Road


Camden Road
393
326
0
15
1
112
1
197
398
X
Queen Street
515
8
271
0
1
105
1
191
1
2
0
235
0
300
350
Camden Road

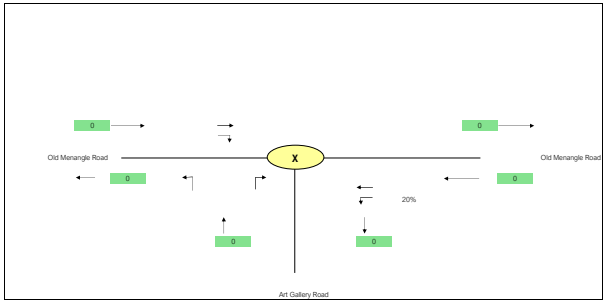

Narellan Road
1036
950
1313
18
8
0
542
710
61
15
501
2
245
3
184
1060
Appin Road
X
Oxley Street
1374
47
1
199
3
150
5
274
826
264
0
14
5
1383
405
577
The Pkwy

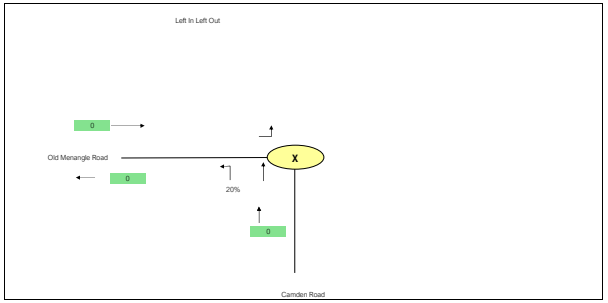

Art Gallery Road
46
1061
0
16
36
1009
0
12
0
13
1038
Oxley Street
X
Oxley Street
1369
10
1337
0
20
1367

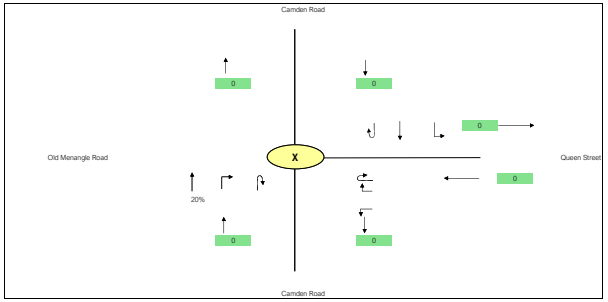

Camden Road
297
350
1025
2
15
238
770
0
234
1
115
901
Oxley Street
X
Oxley Street
1378
59
1124
0
20
1203

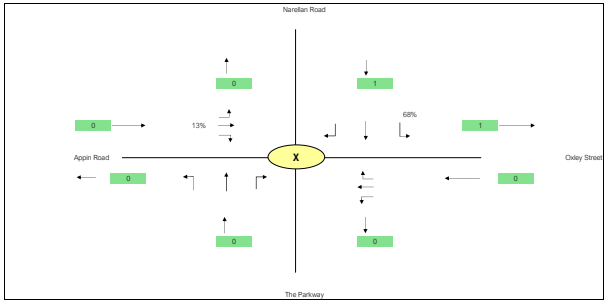
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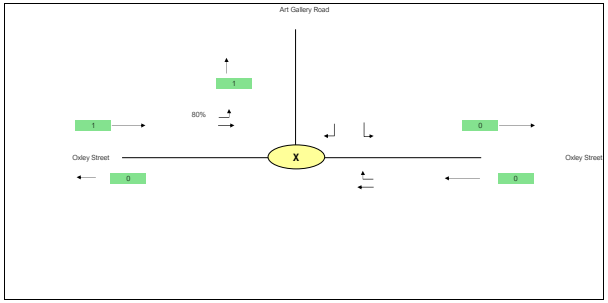
North/ East	40%
South	25%
West	35%

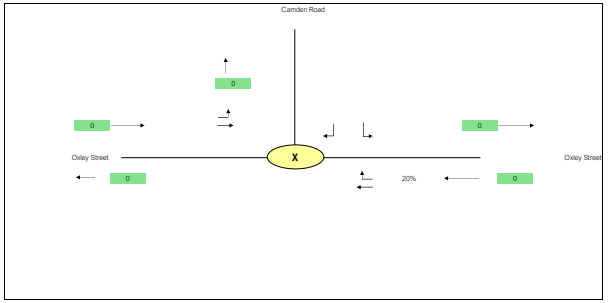






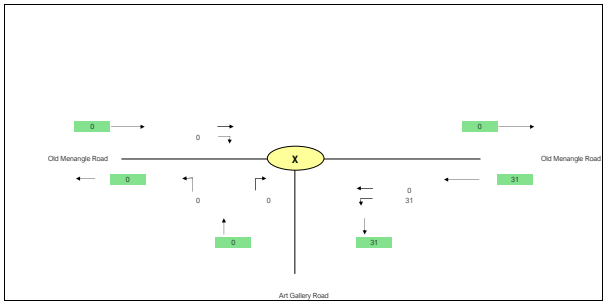


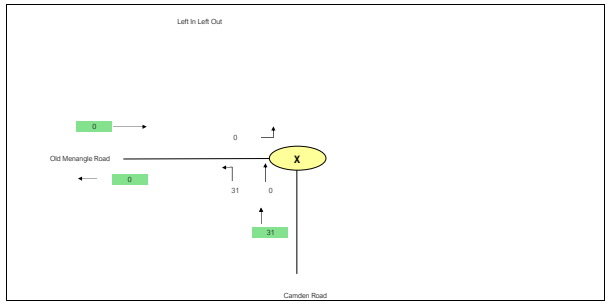


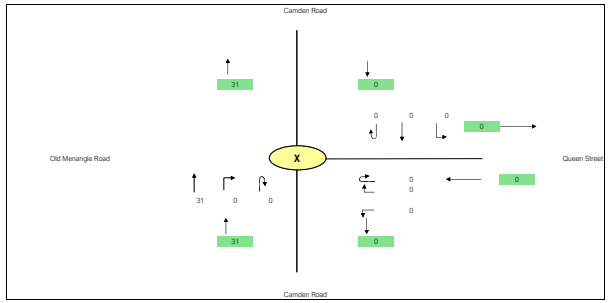


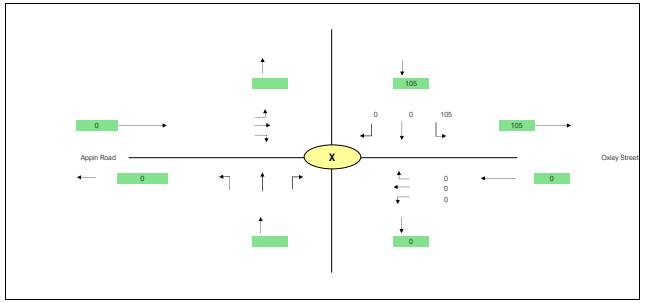
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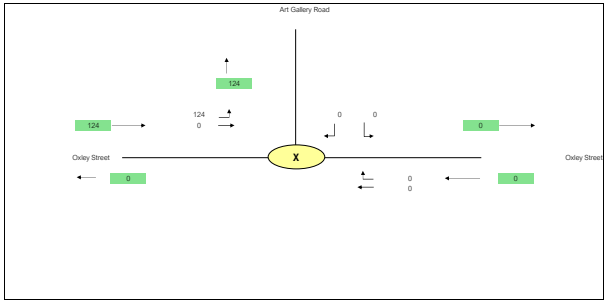
	AM Peak
	In
Visitor	148
Staff	8
Total	**156**

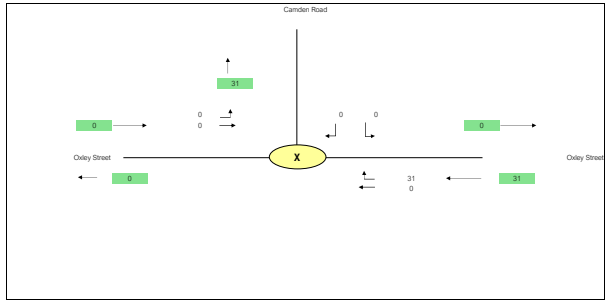






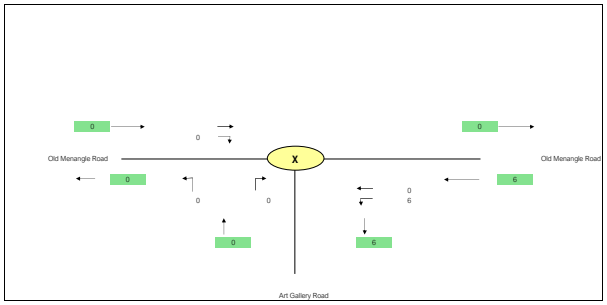


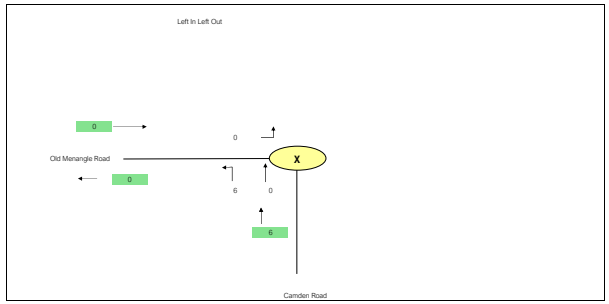


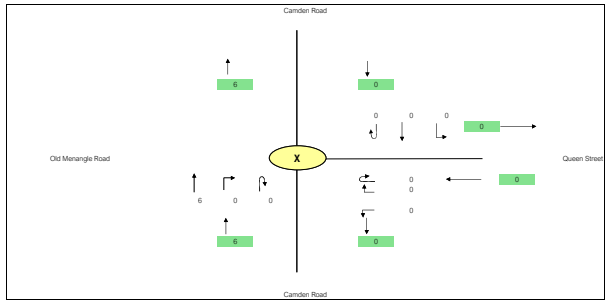


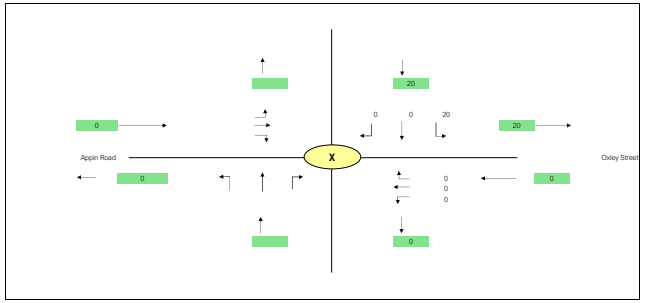
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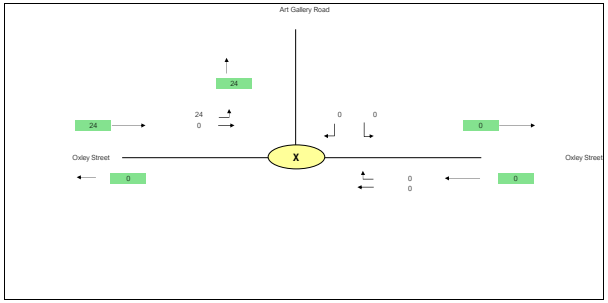
	PM
	In
Vistor	30
Staff	1
Total	30

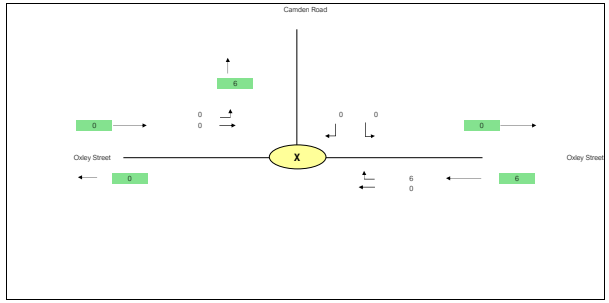






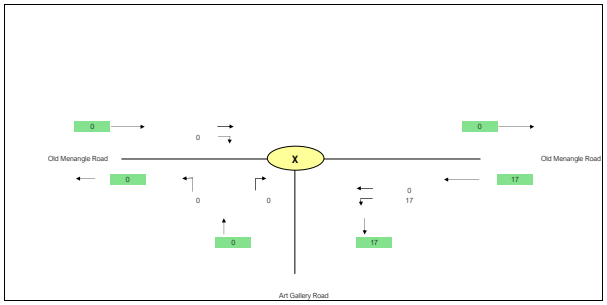


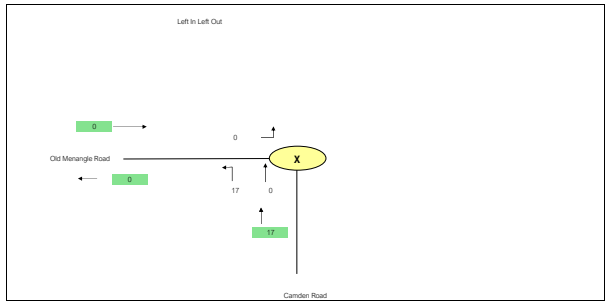


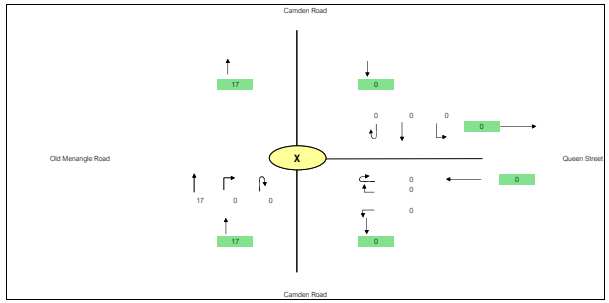


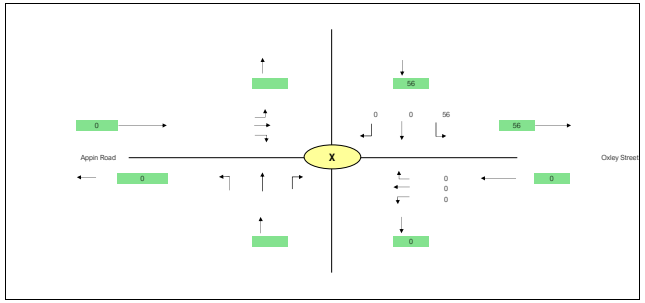
#In (SAT)

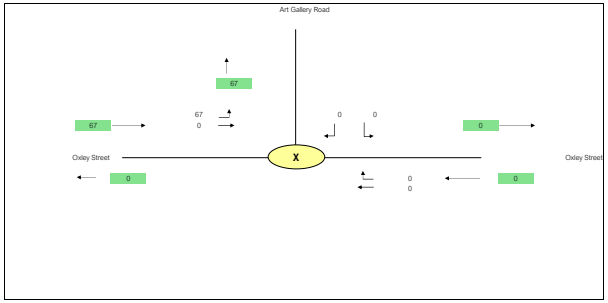
	SAT
	In
Visitor	81
Staff	2
Total	**84**

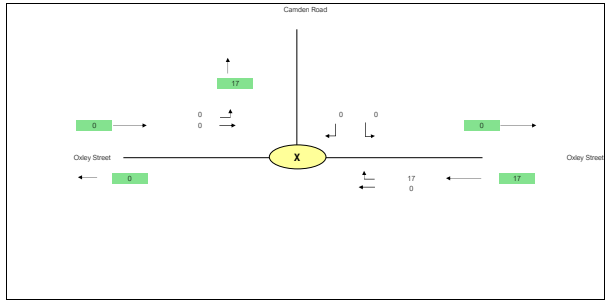






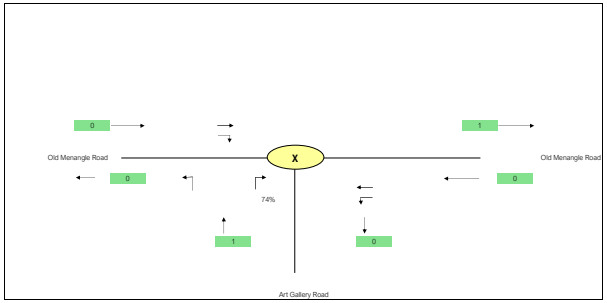


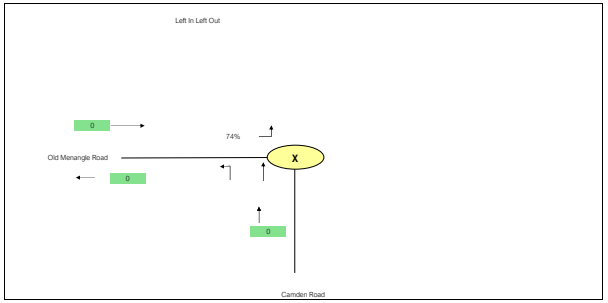


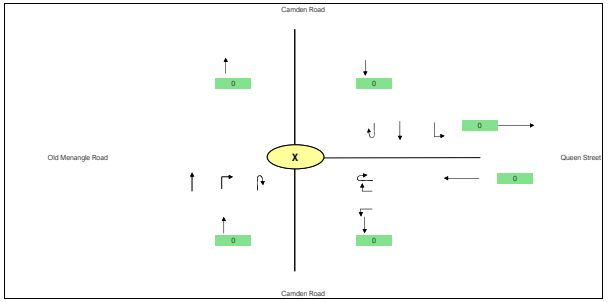


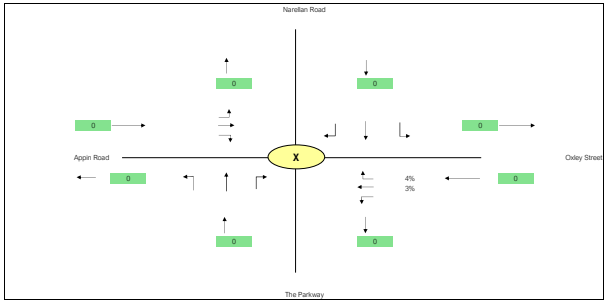
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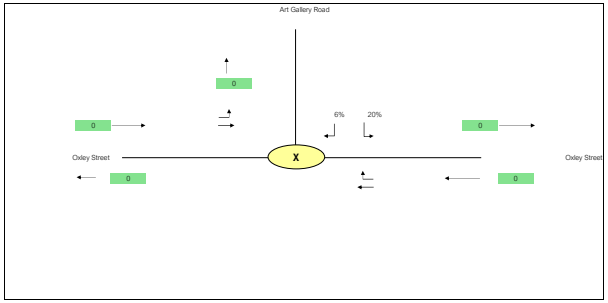
North/ East	40%
South	25%
West	35%

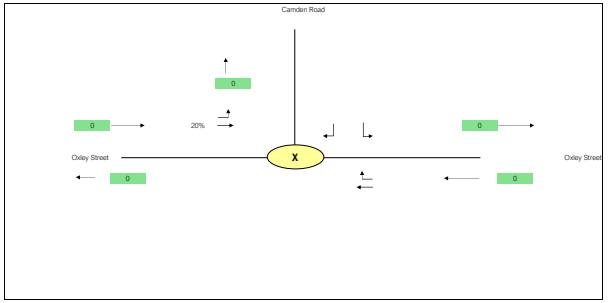






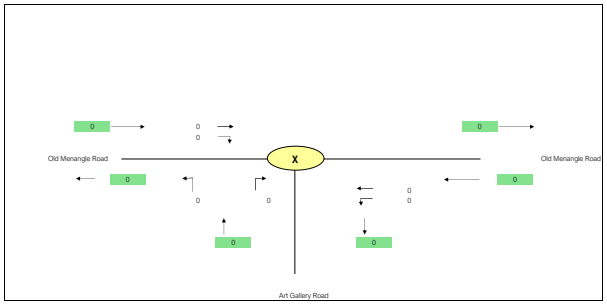


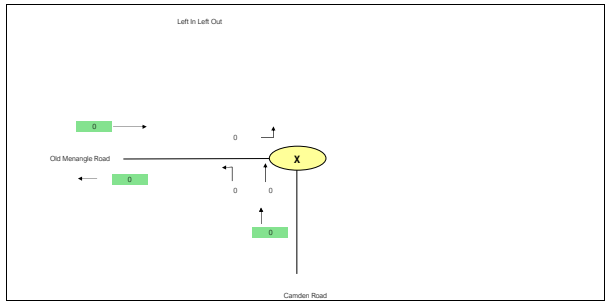


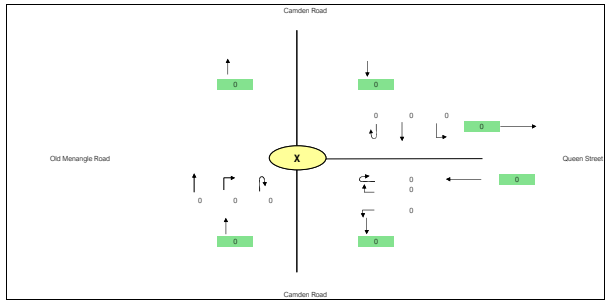


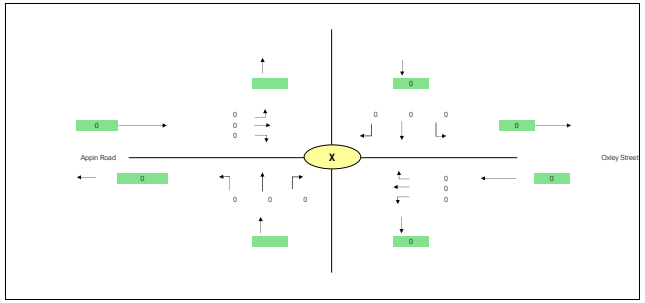
#OUT (AM)

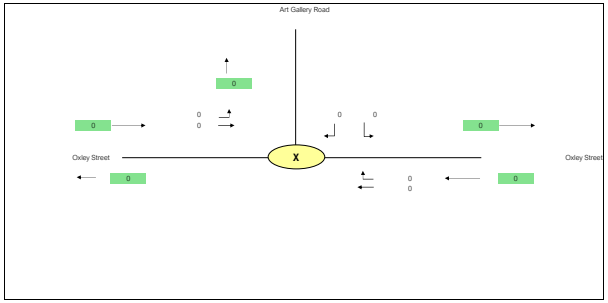
	AM Peak
	OUT
Visitor	0
Staff	0
Total	**0**

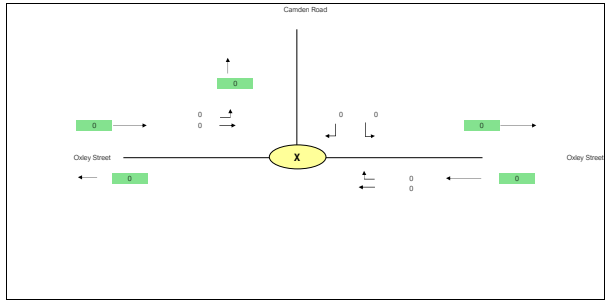






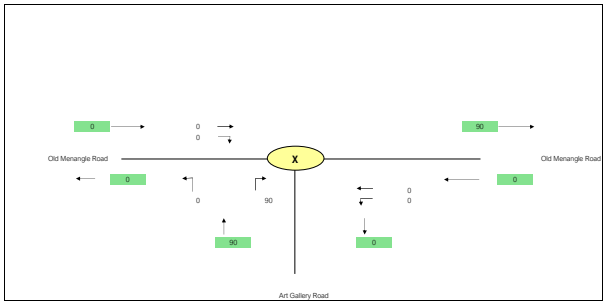


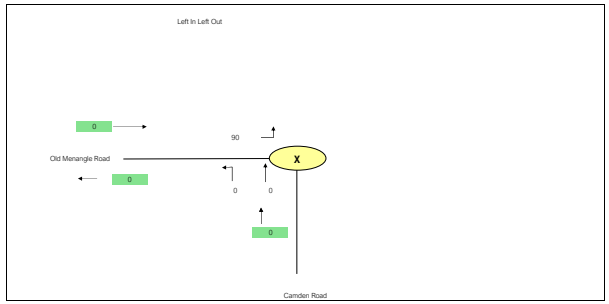


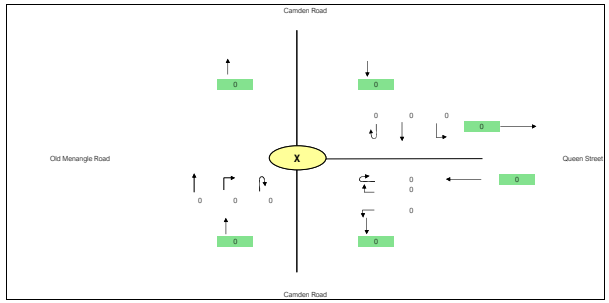


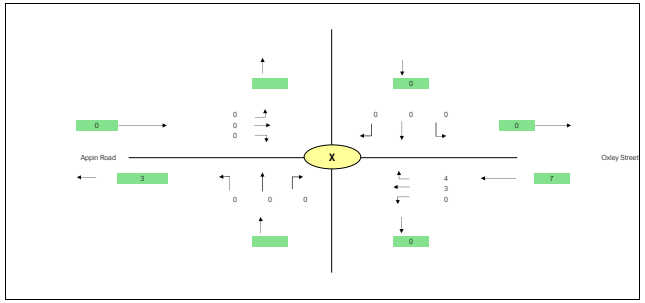
#OUT (PM)

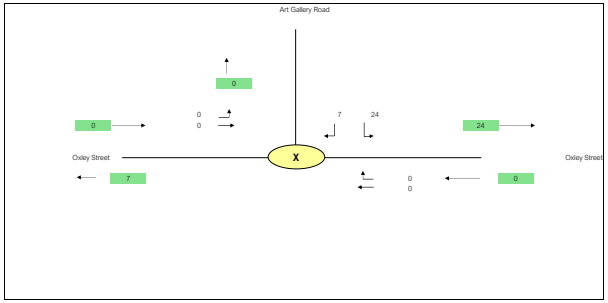
	PM Peak
	OUT
Vistor	118
Staff	3
Total	121

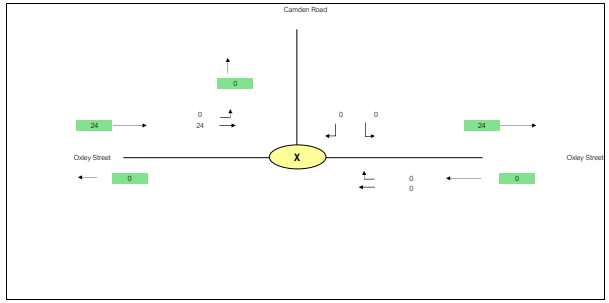






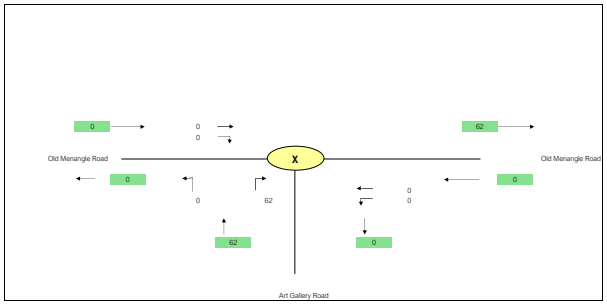


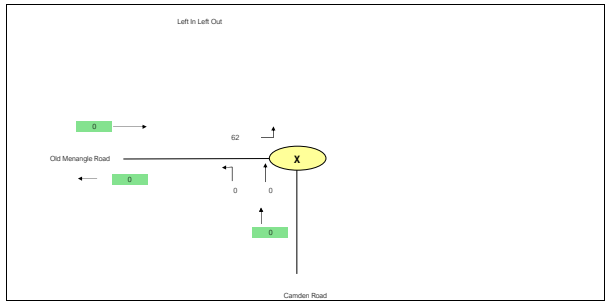


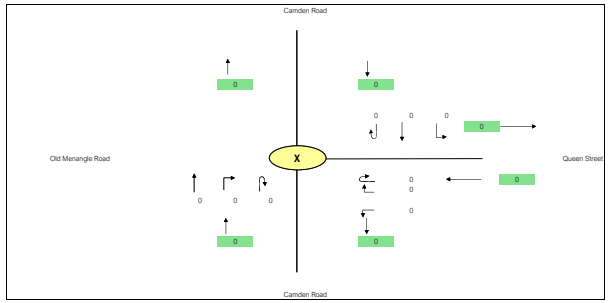


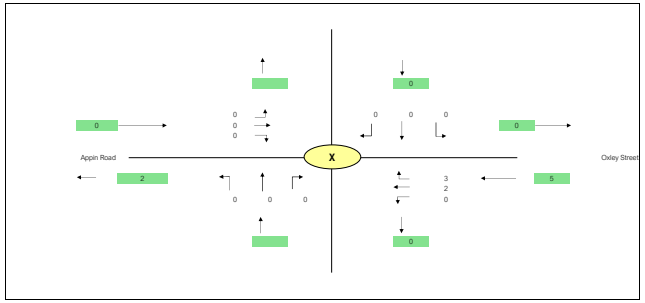
#OUT (SAT)

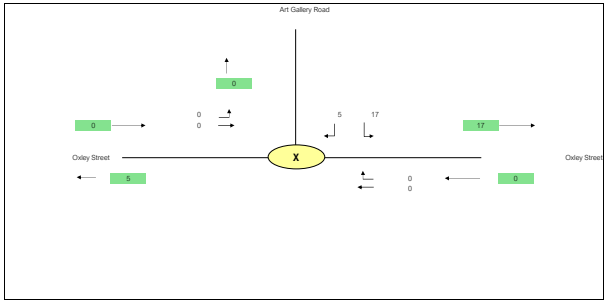
	SAT Peak
	OUT
Visitor	81
Staff	2
Total	84

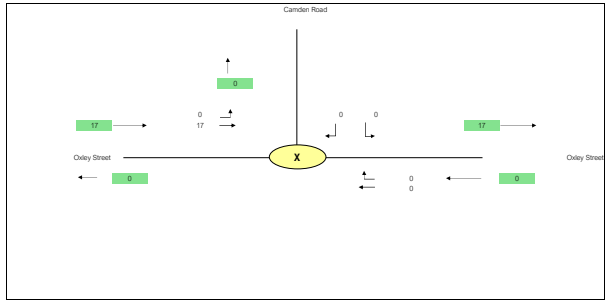




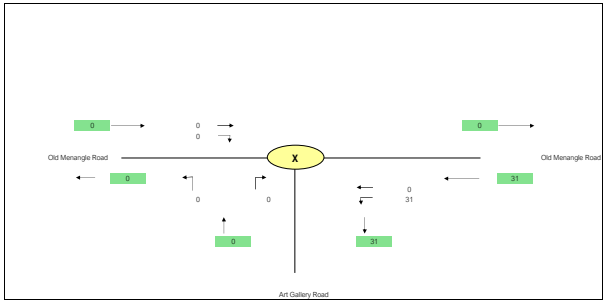


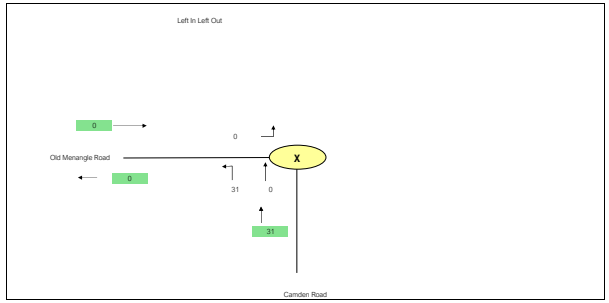


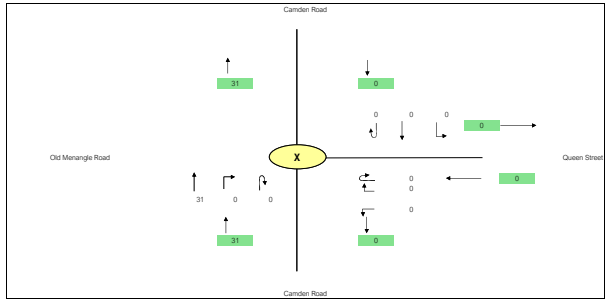


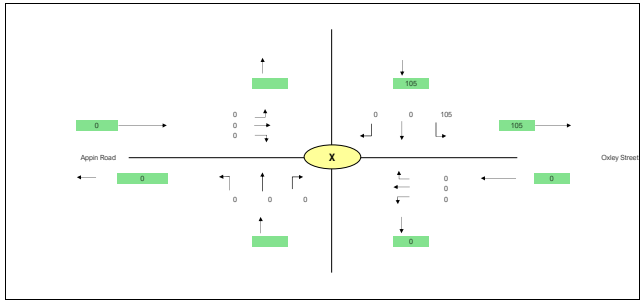


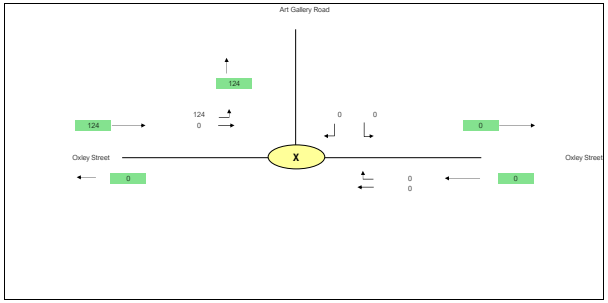
#TOTAL (AM)

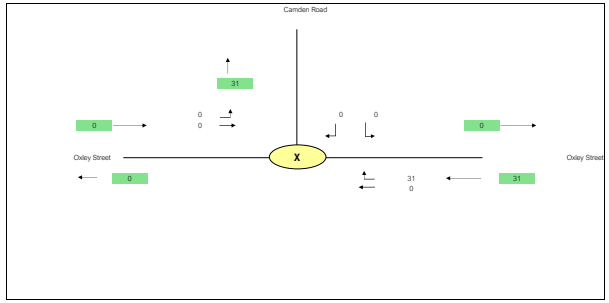

Old Menangle Road
Old Menangle Road
Art Gallery Road


Left In Left Out
Old Menangle Road
Camden Road

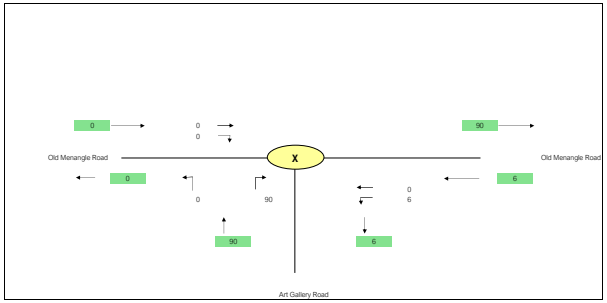

Camden Road
Old Menangle Road
Queen Street
Camden Road

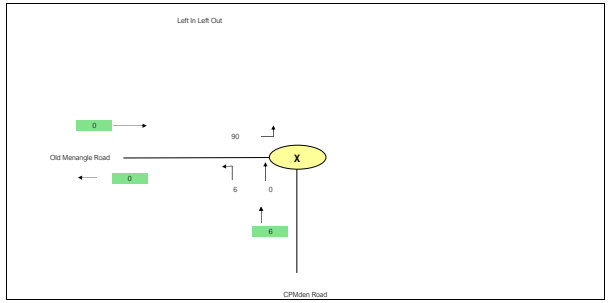

Appin Road
Oxley Street

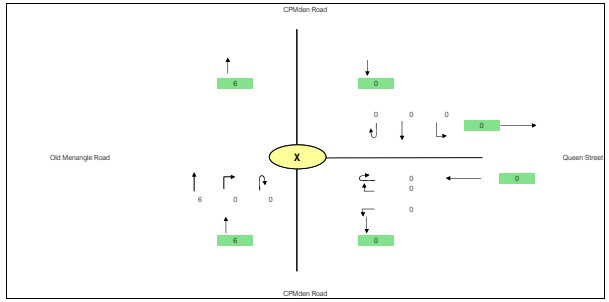

Art Gallery Road
Oxley Street
Oxley Street

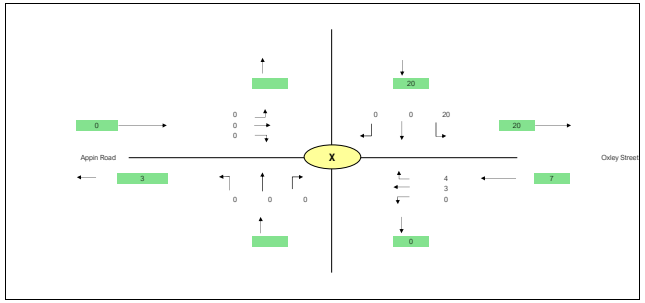

Camden Road
Oxley Street
Oxley Street

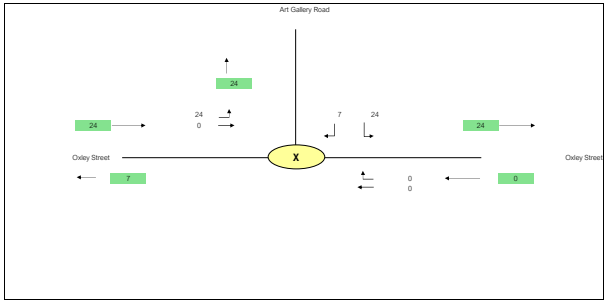
#TOTAL (PM)

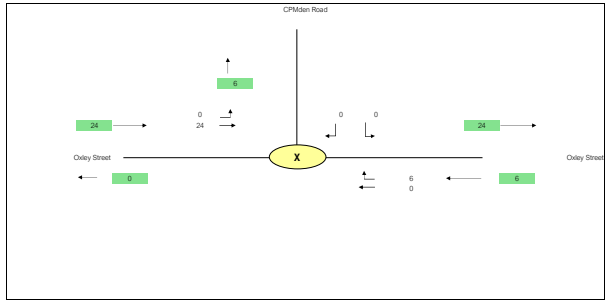

Old Menangle Road
Old Menangle Road
Art Gallery Road


Left In Left Out
Old Menangle Road
CPMden Road

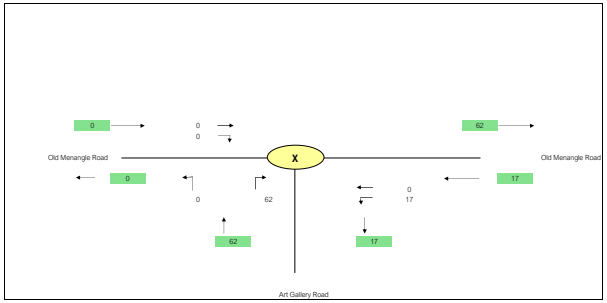

CPMden Road
Old Menangle Road
Queen Street
CPMden Road

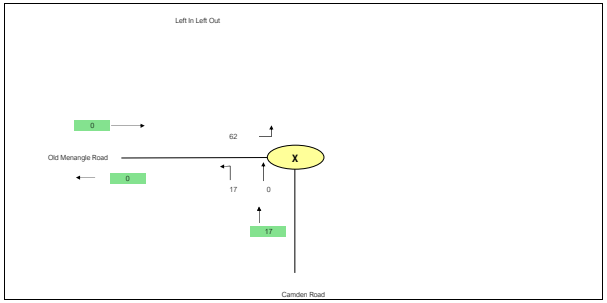

Appin Road
Oxley Street

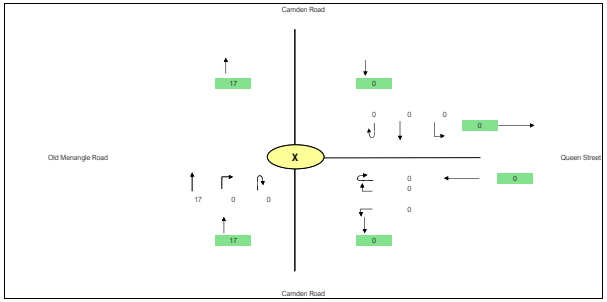

Art Gallery Road
Oxley Street
Oxley Street

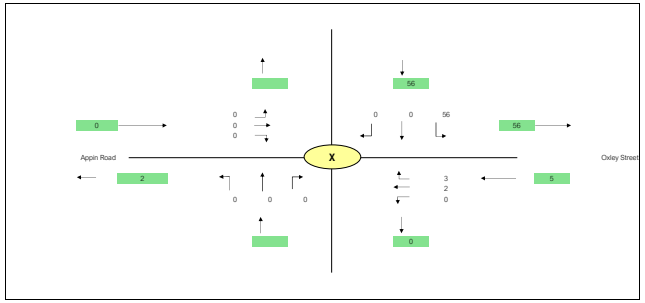

CPMden Road
Oxley Street
Oxley Street

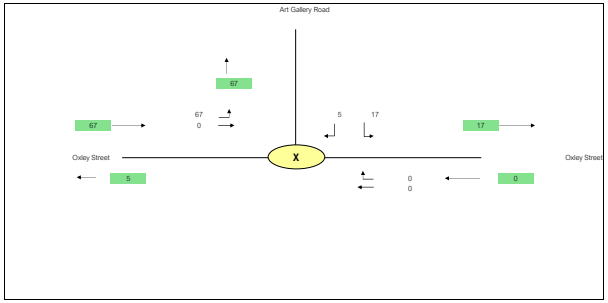
#TOTAL (SAT)

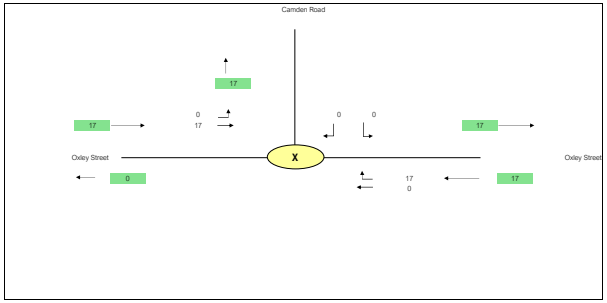

Old Menangle Road
Old Menangle Road
Art Gallery Road


Left In Left Out
Old Menangle Road
Camden Road


Camden Road
Old Menangle Road
Queen Street
Camden Road

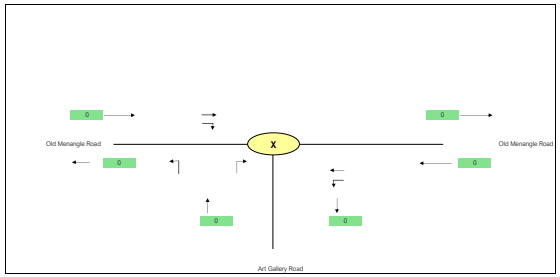

Appin Road
Oxley Street

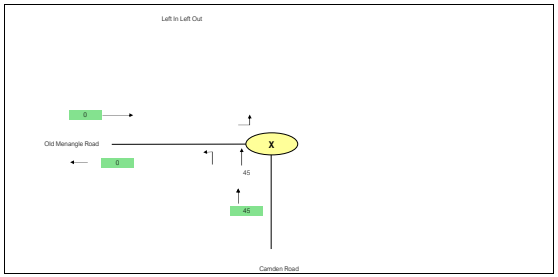

Art Gallery Road
Oxley Street
Oxley Street

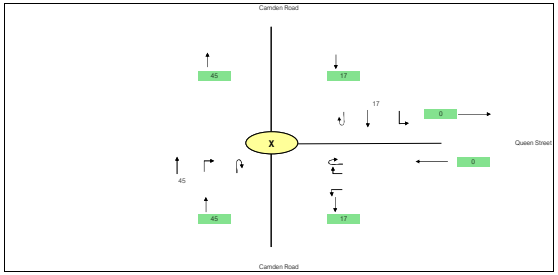

Camden Road
Oxley Street
Oxley Street

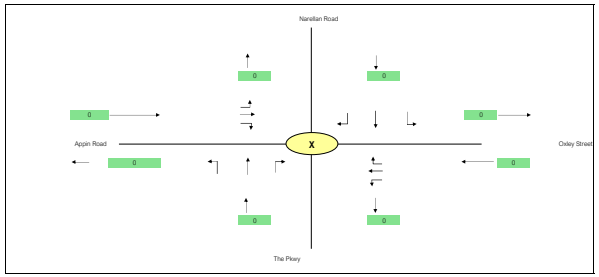
lac Health Precinct Al

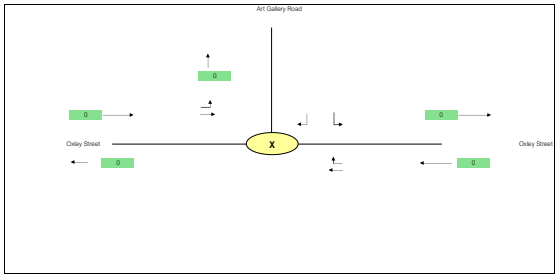
Note: Stage 2 Trips for Macarthur Helath Precinct Obtained from SIDRA output difference from MACARTHUR HEALTH PRECINCT STAGE 2 (SCT Consultant, 202

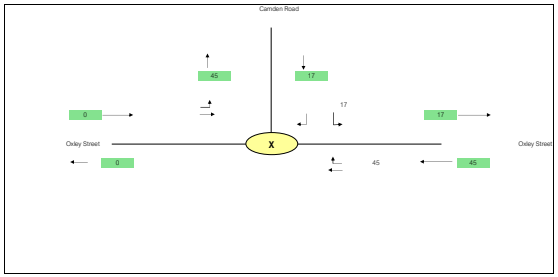






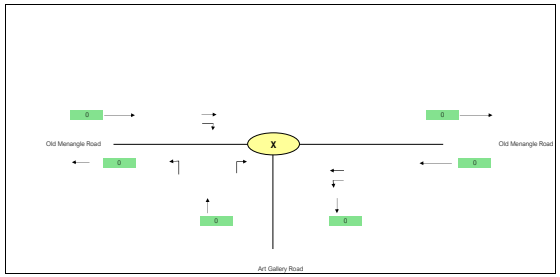


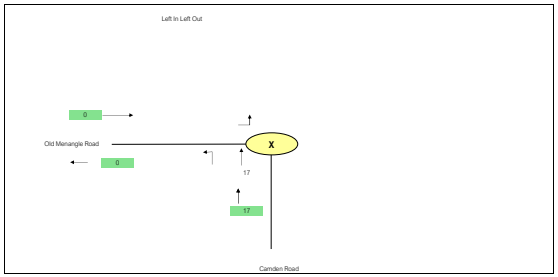


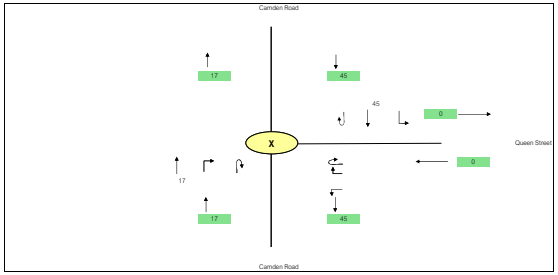


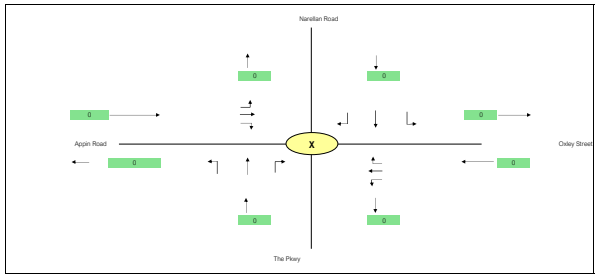
lac Health Precinct Pl

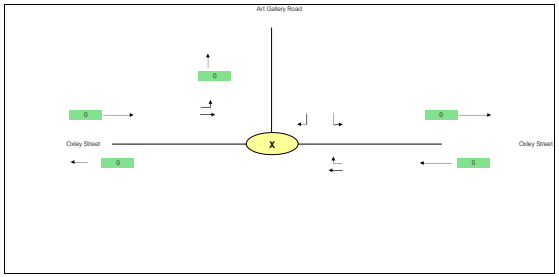
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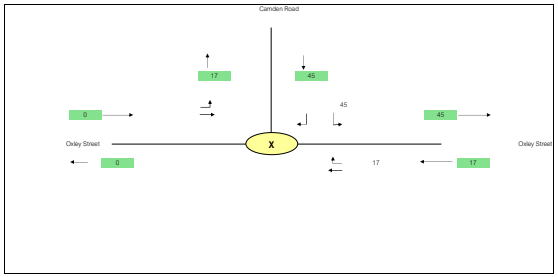






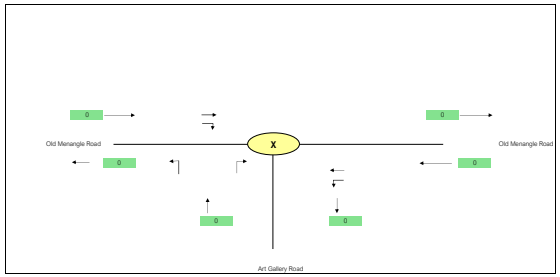


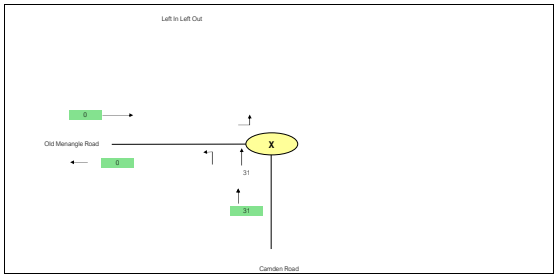


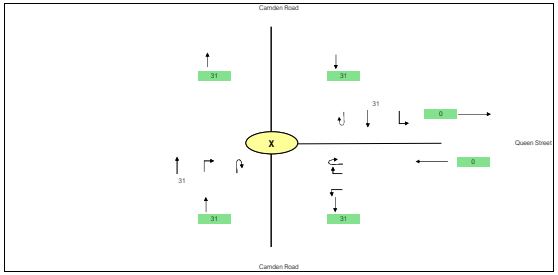


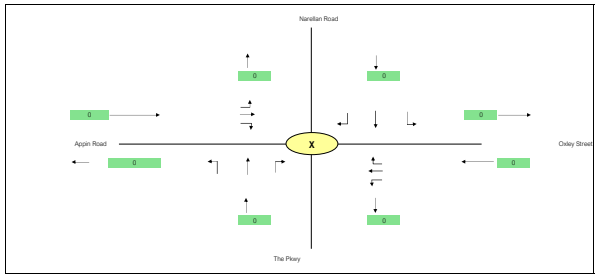
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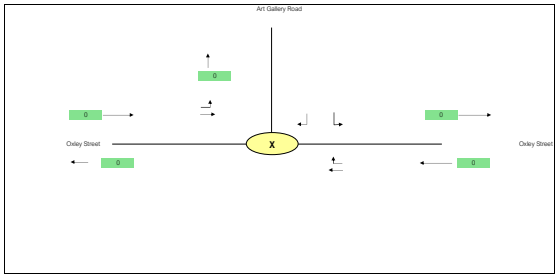
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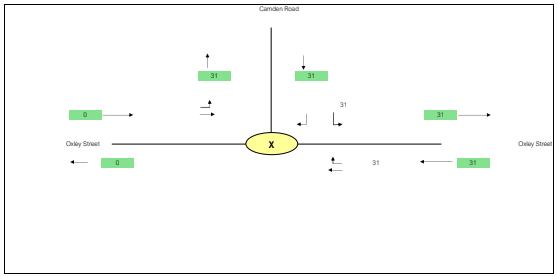






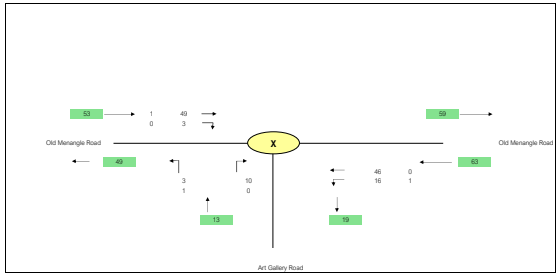


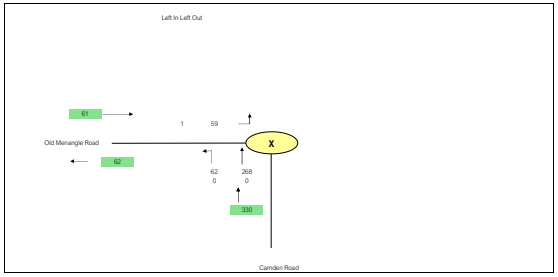


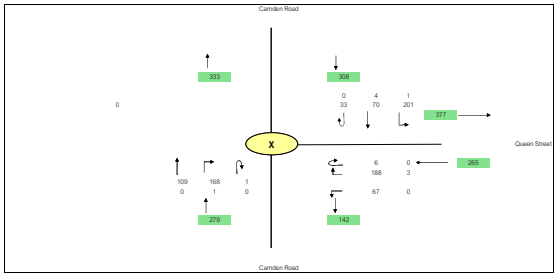


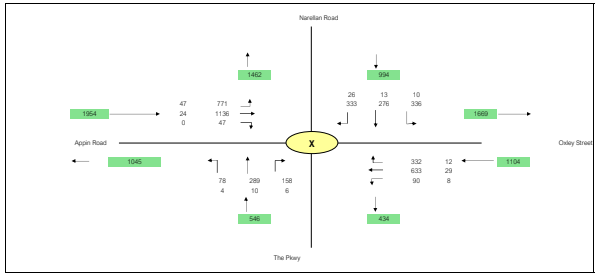
2029 Base AM

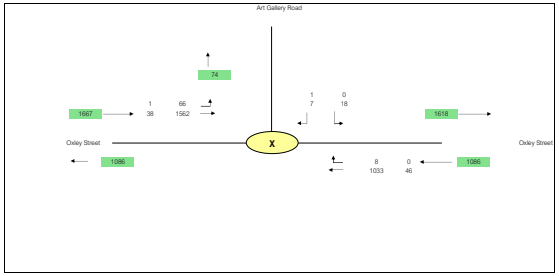
Opening Ye	2029
Surveyed Year	2025
Difference	4
Growth %	2.90%
Factor	1.12

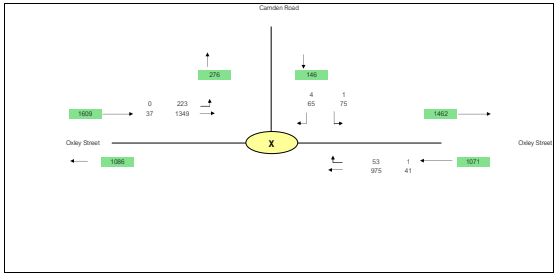






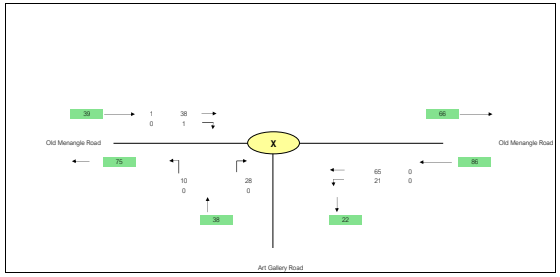


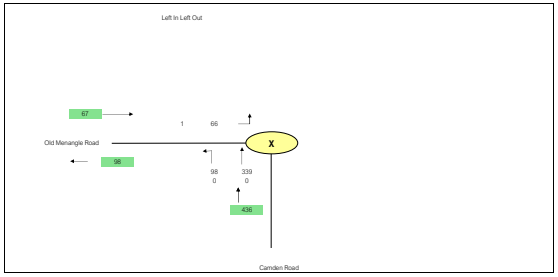


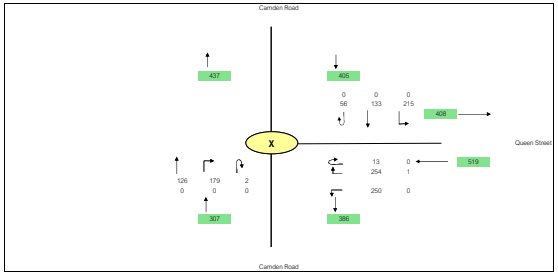


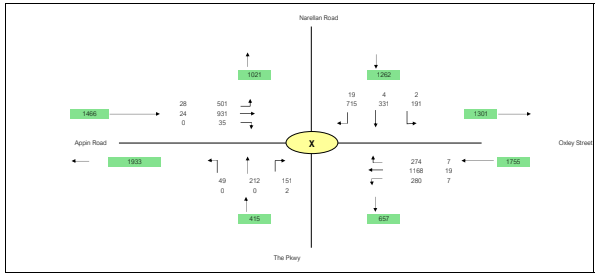
2029 Base PM

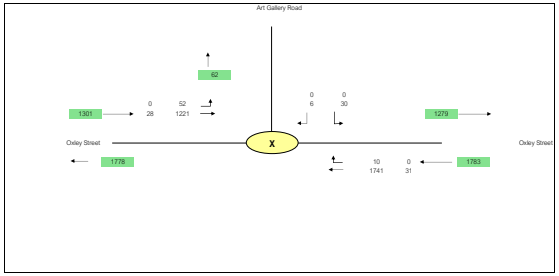
Opening Ye	2029
Surveyed Year	2025
Difference	4
Growth %	2.90%
Factor	1.12

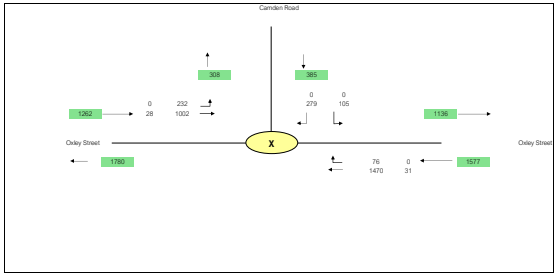






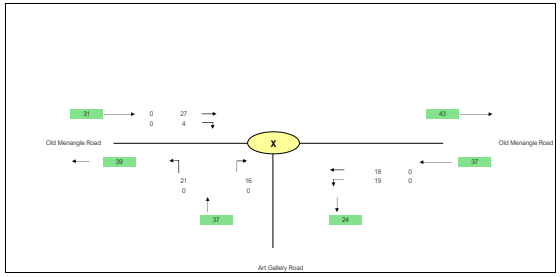


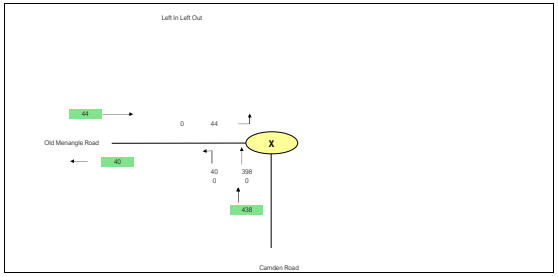


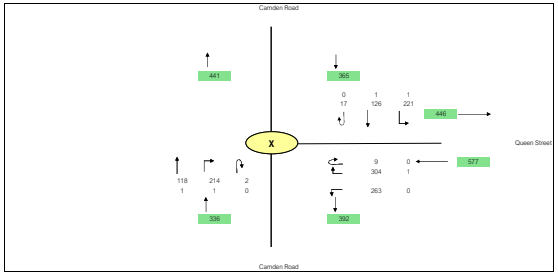


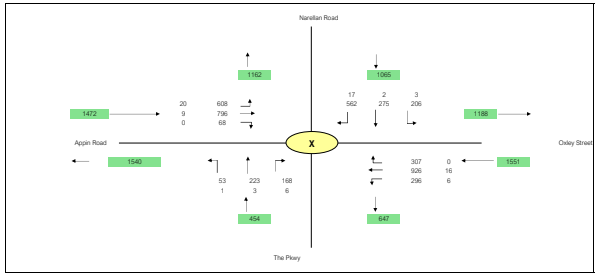
2029 Base SAT

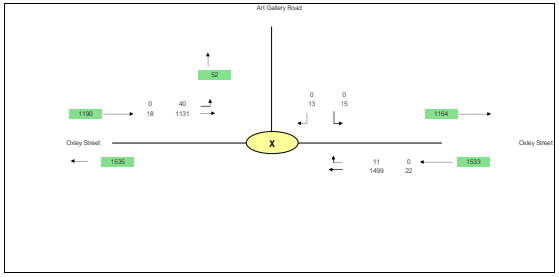
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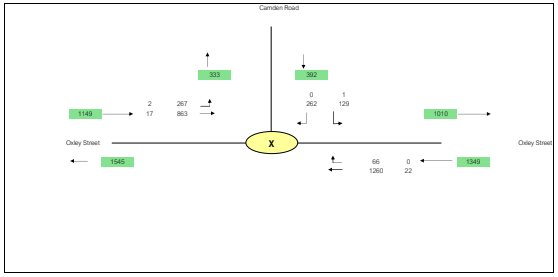






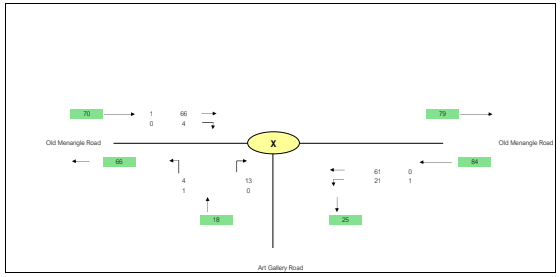


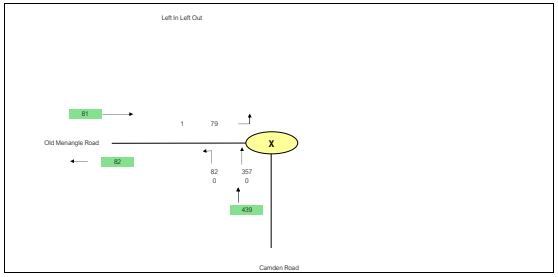


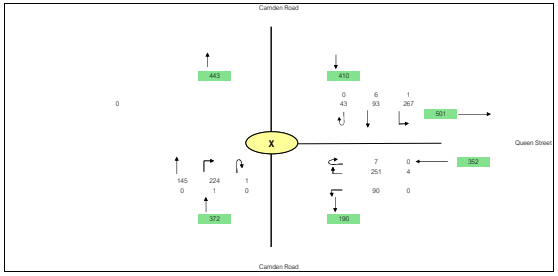


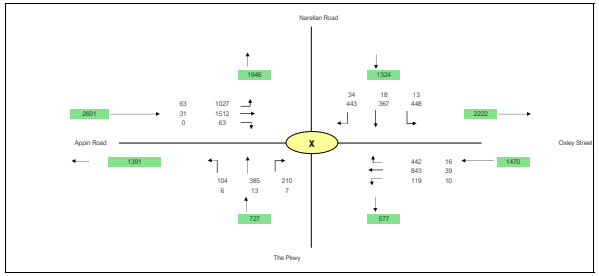
2039 Base AM

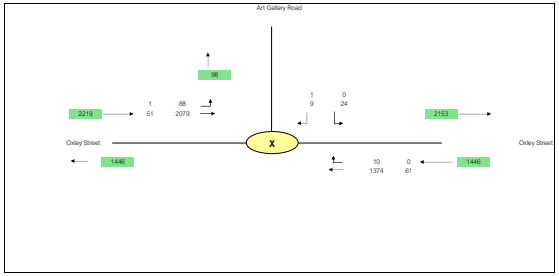
Opening Ye	2039
Surveyed Year	2025
Difference	14
Growth %	2.90%
Factor	1.49

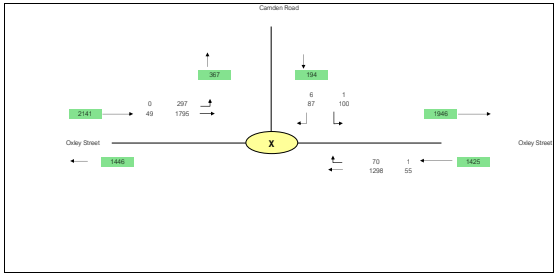






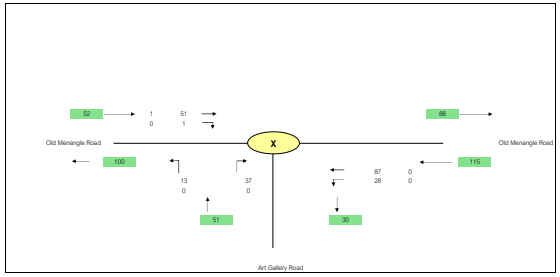


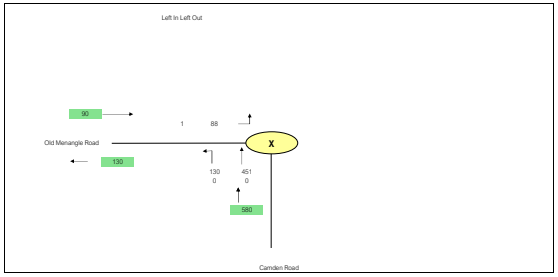


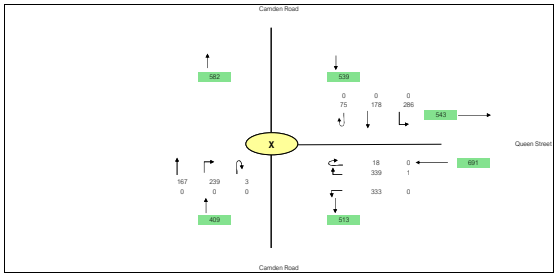


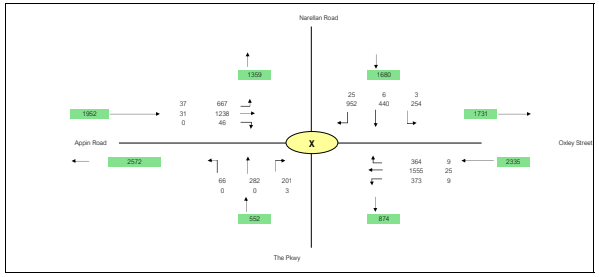
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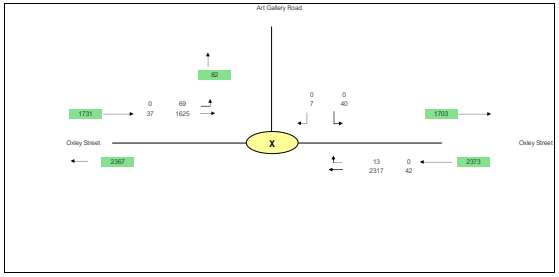
Opening Ye	2039
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Difference	14
Growth %	2.90%
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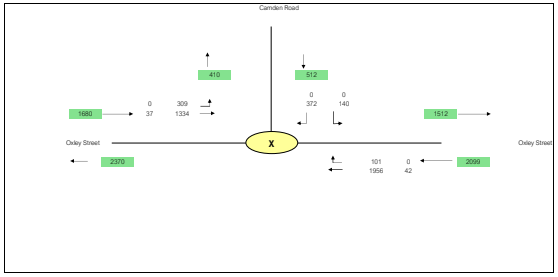






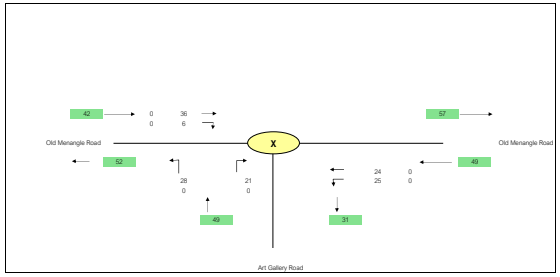


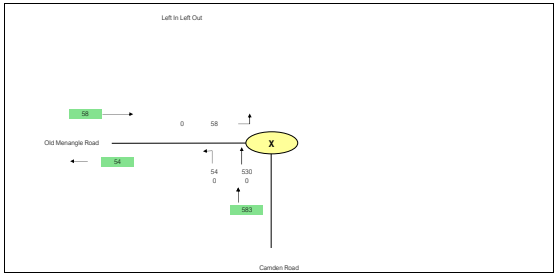


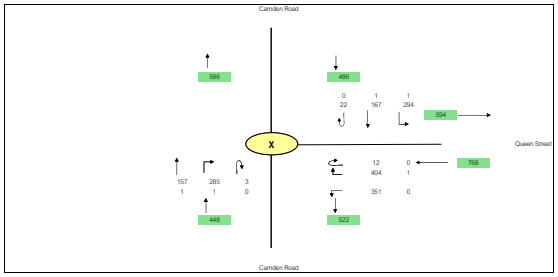


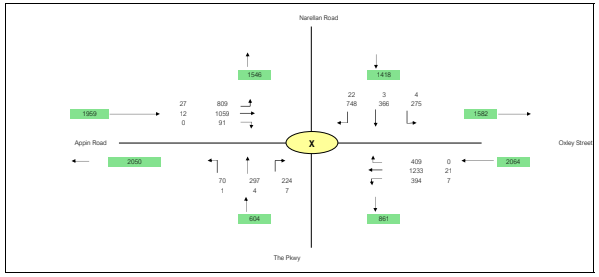
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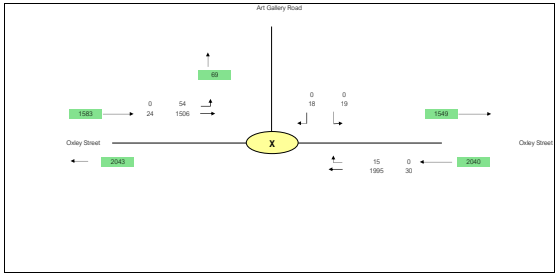
Opening Ye	2039
Surveyed Year	2025
Difference	14
Growth %	2.90%
Factor	1.49

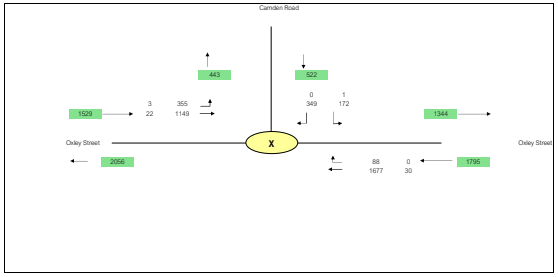




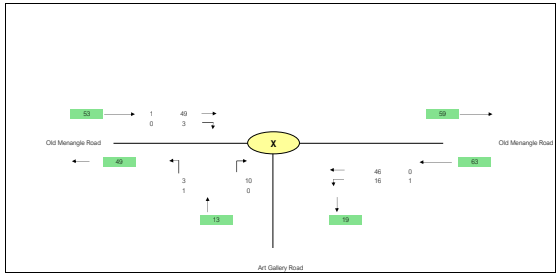


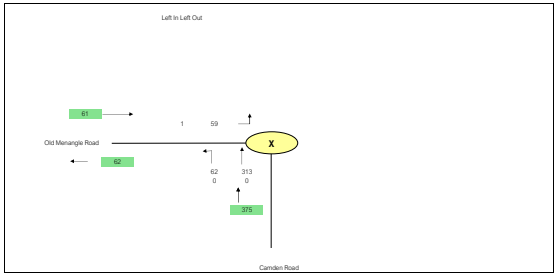


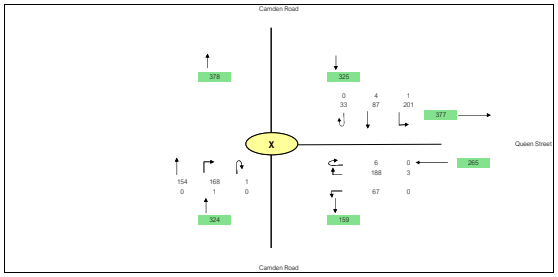


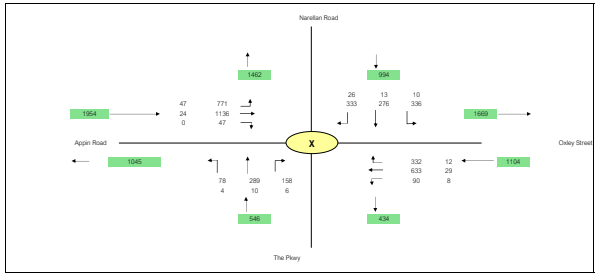


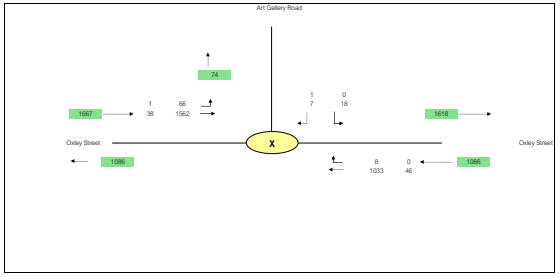
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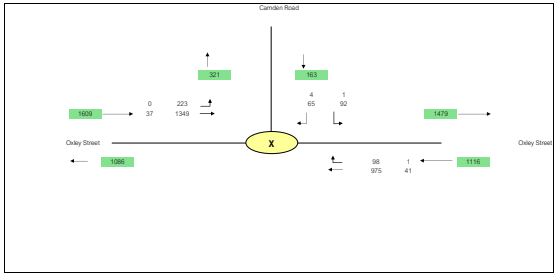




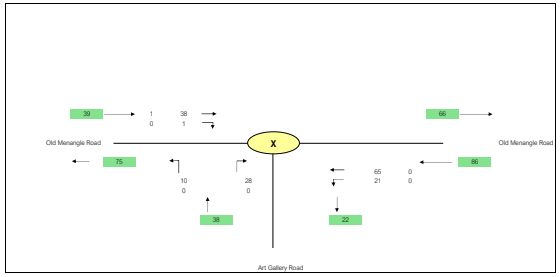


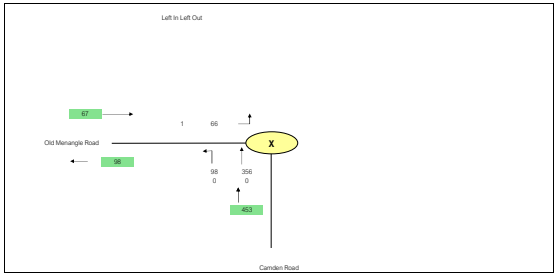


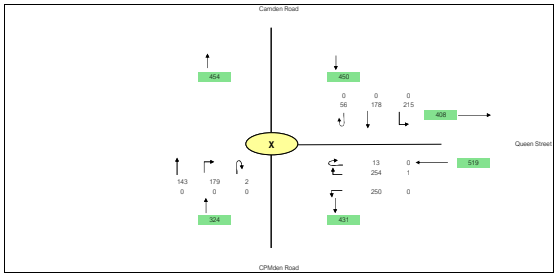


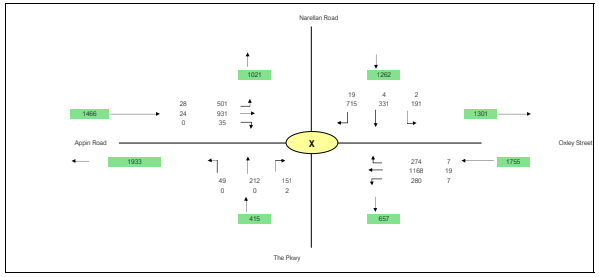


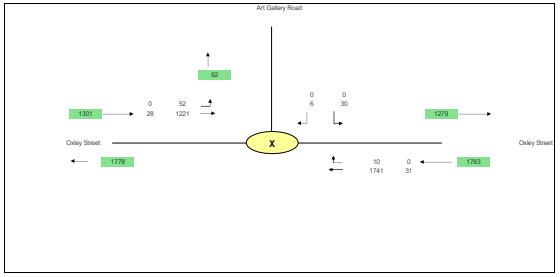
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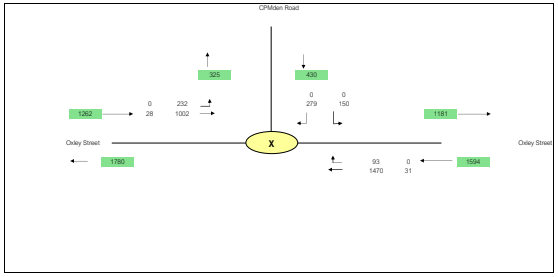




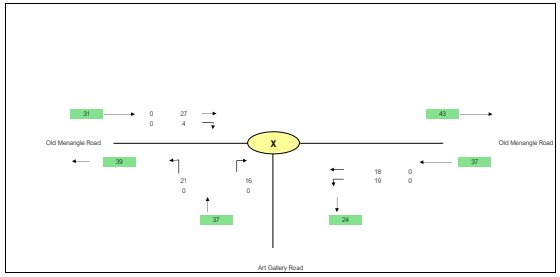


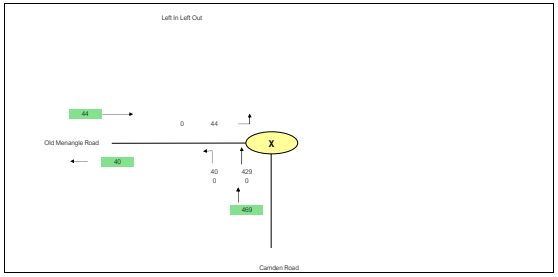


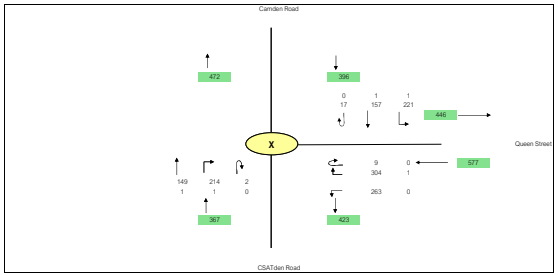


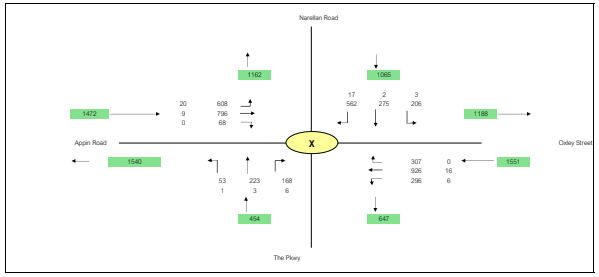


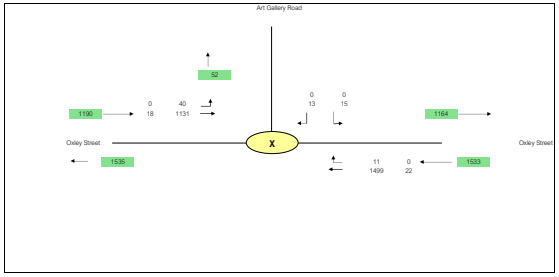
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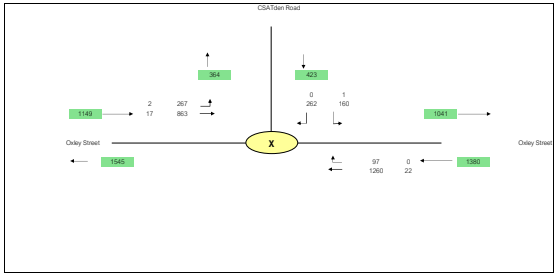




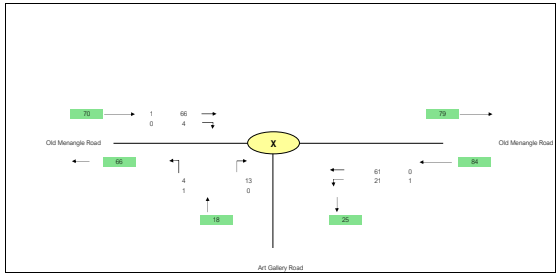


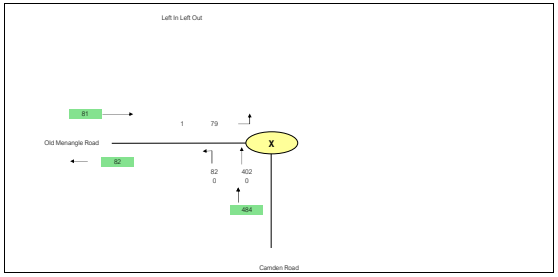


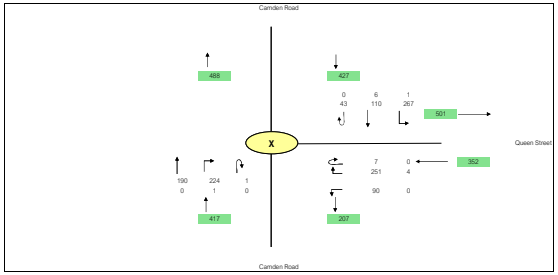


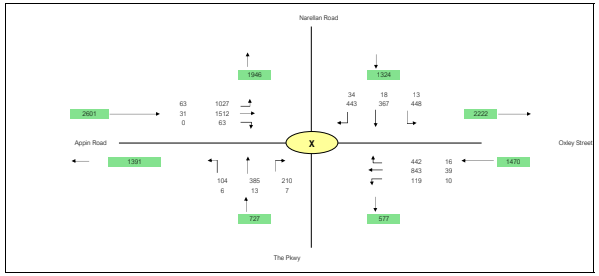


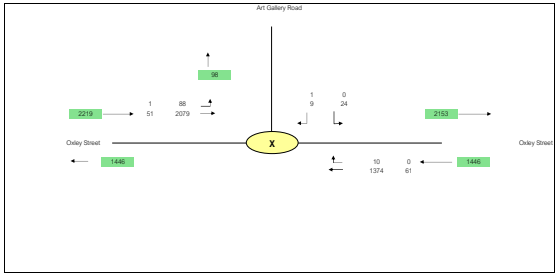
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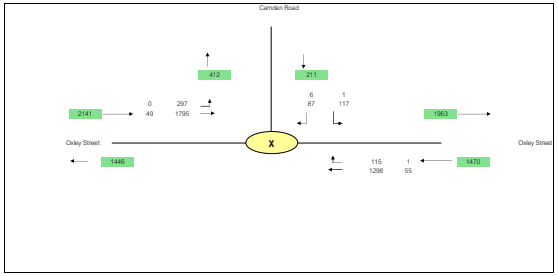




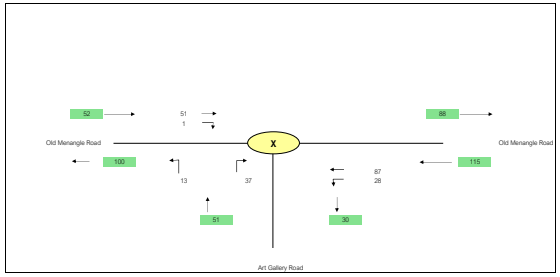


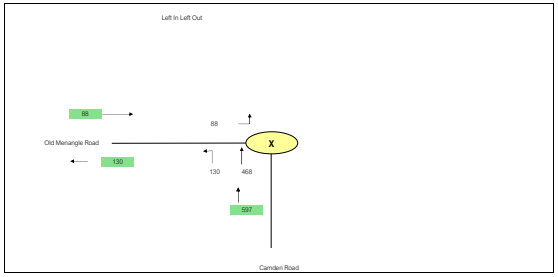


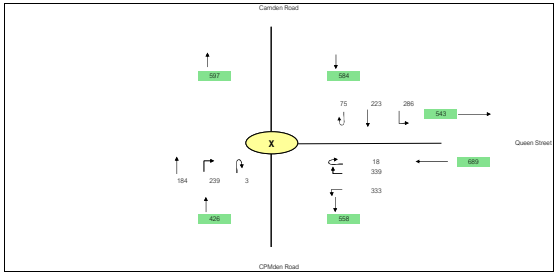


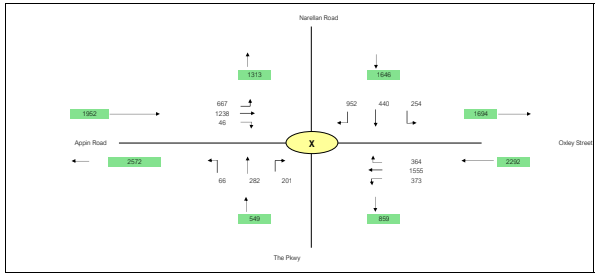


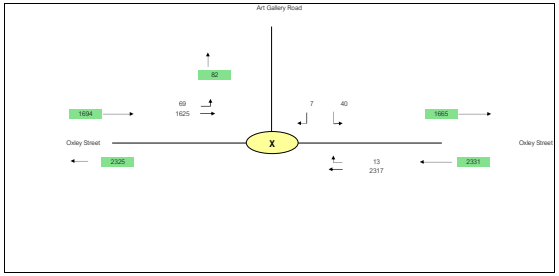
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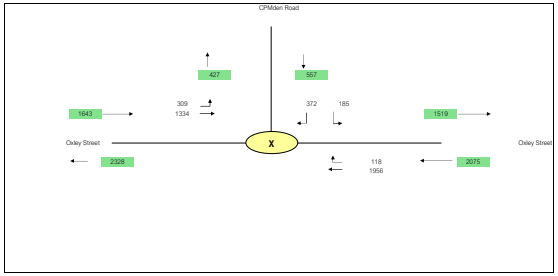




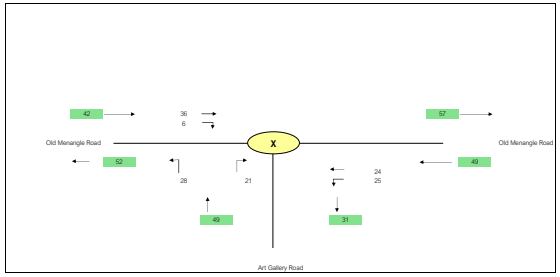


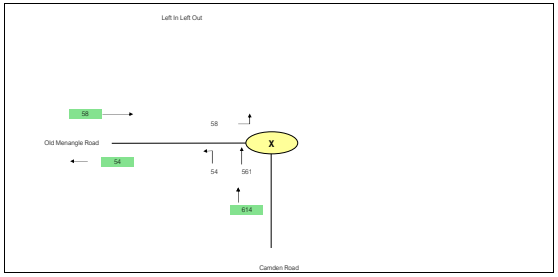


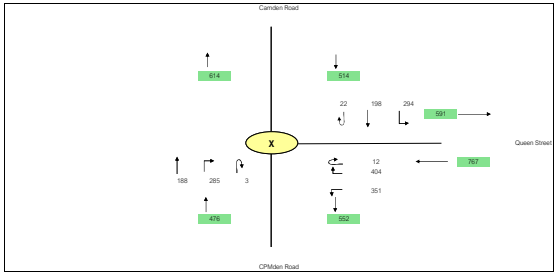


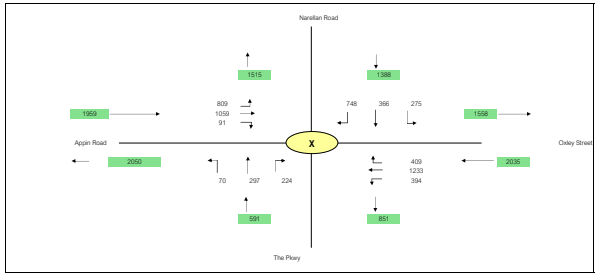


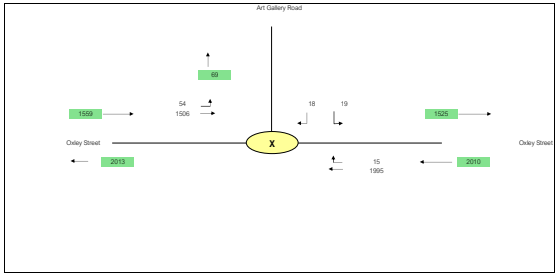
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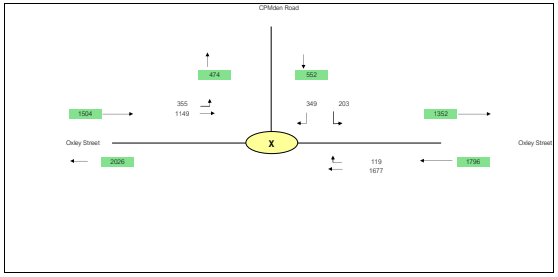




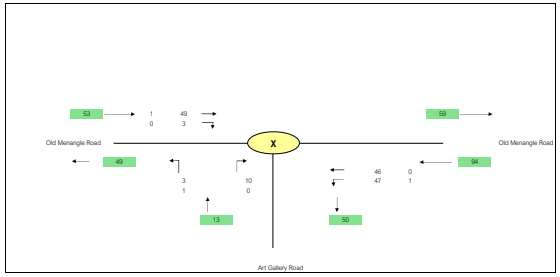


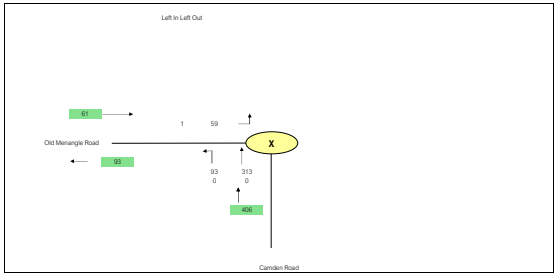


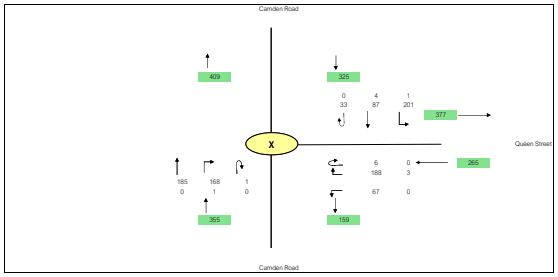


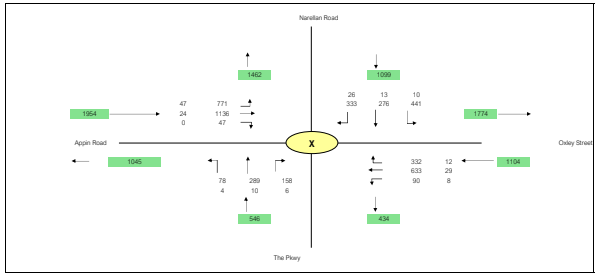


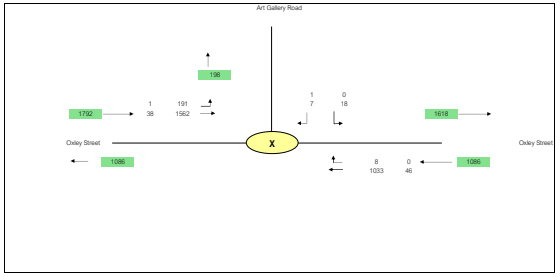
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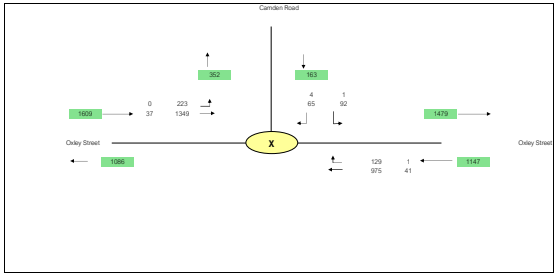




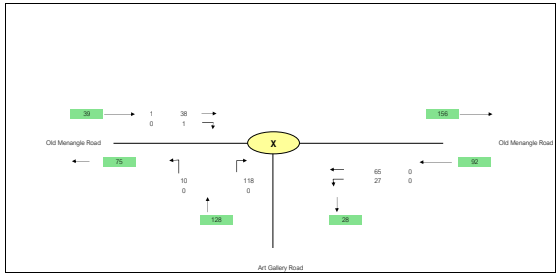


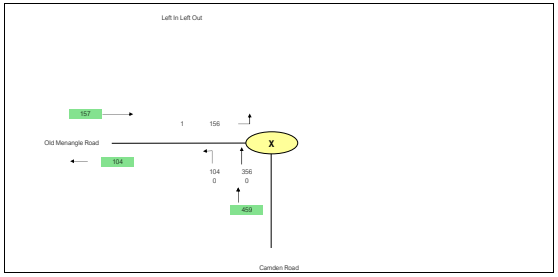


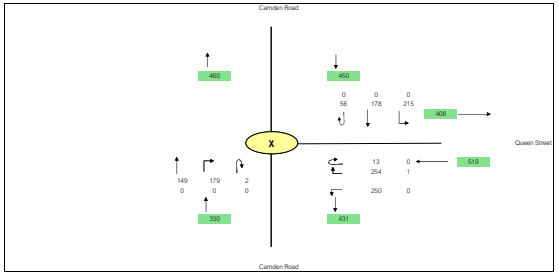


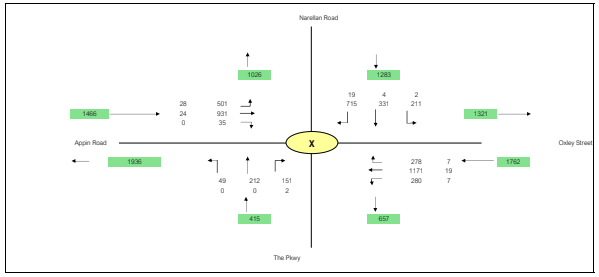


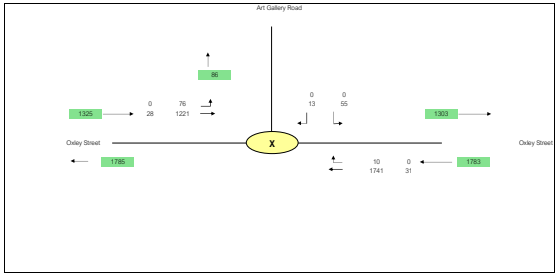
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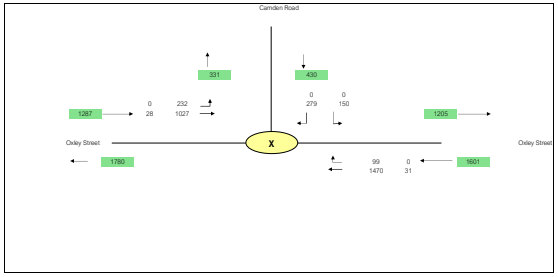




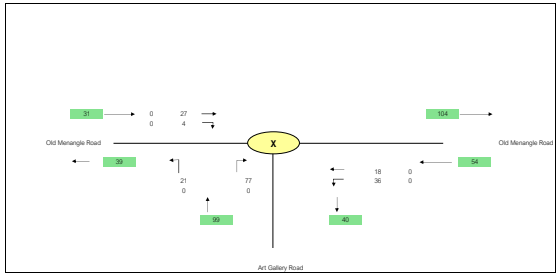


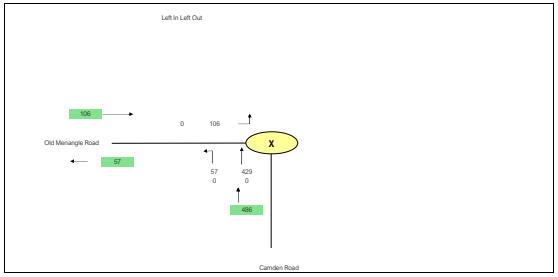


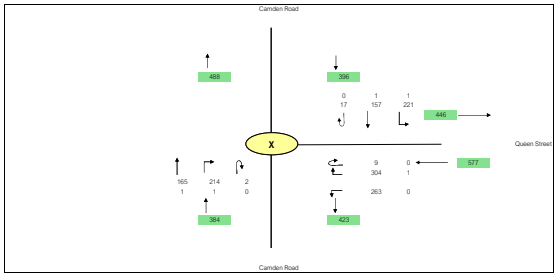


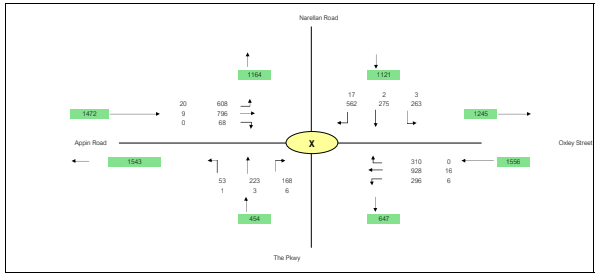


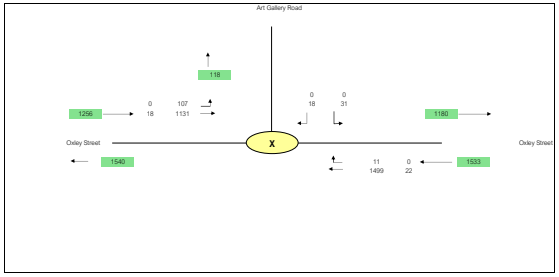
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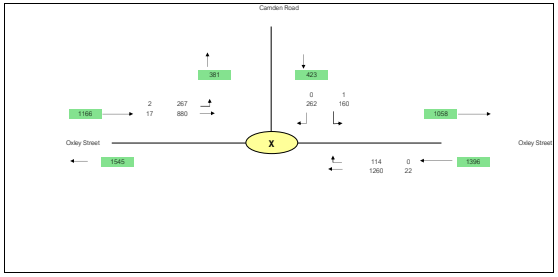




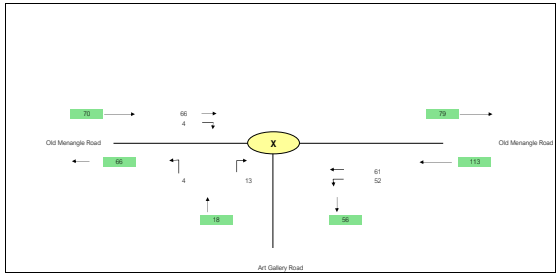


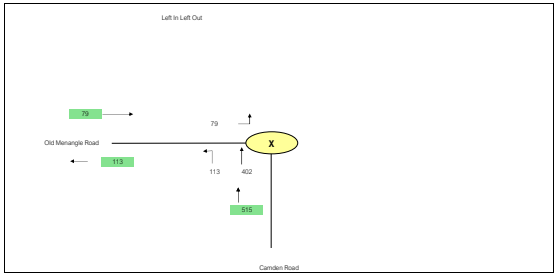


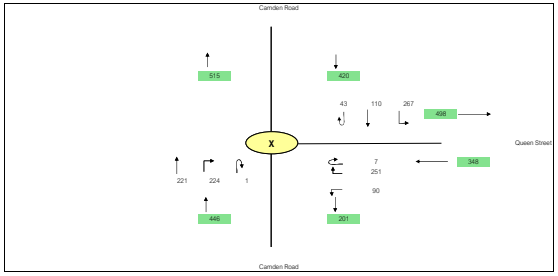


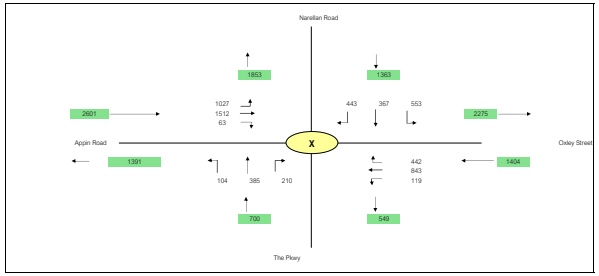


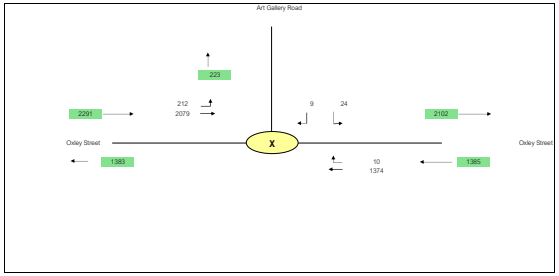
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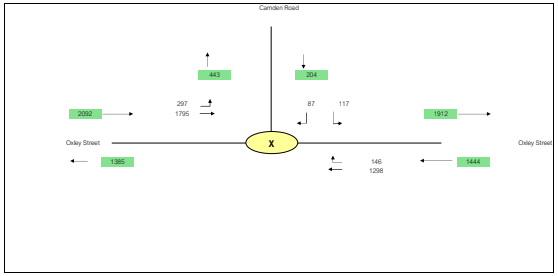




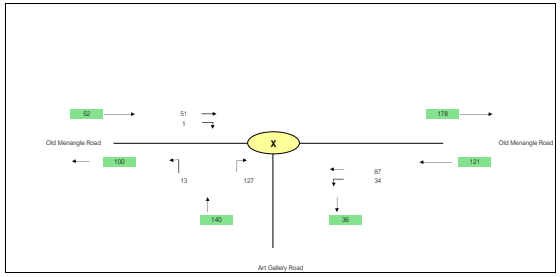


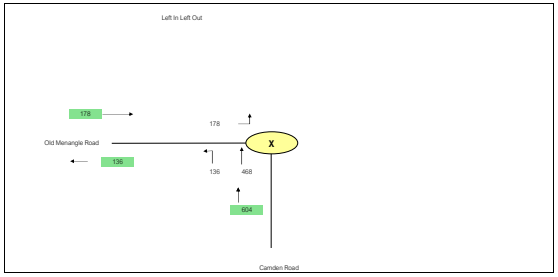


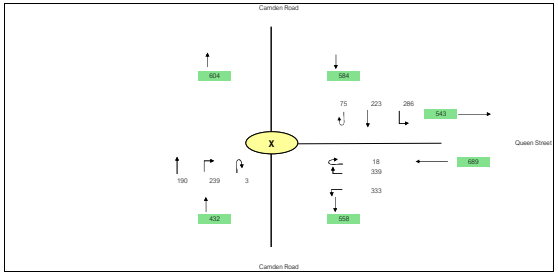


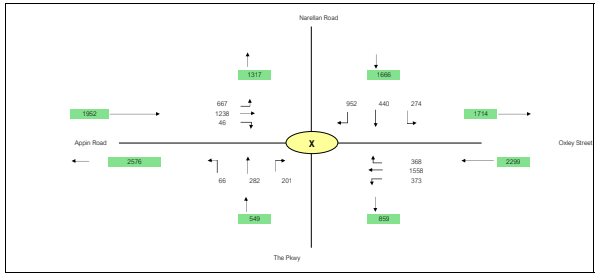


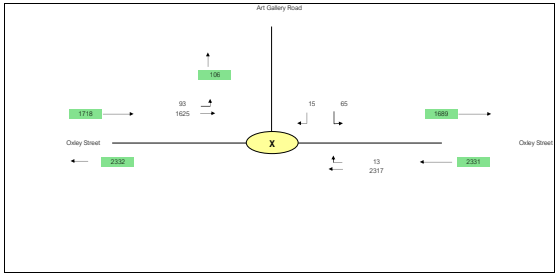
2039 Base PM w. CAC

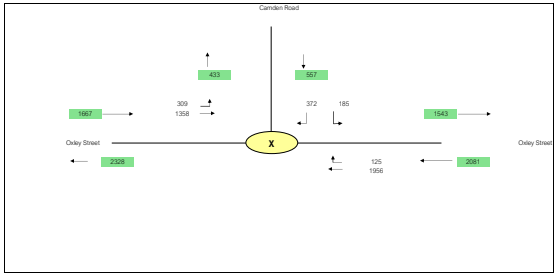




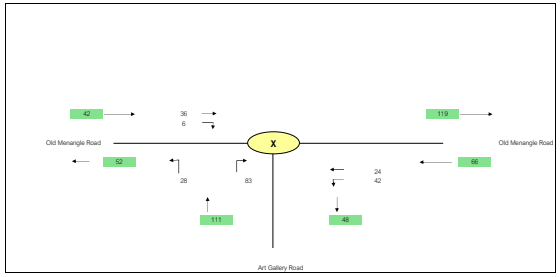


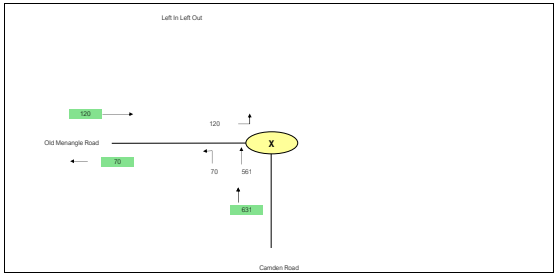


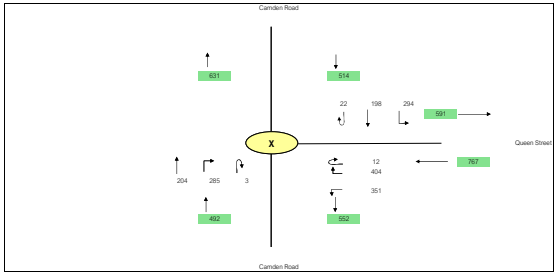


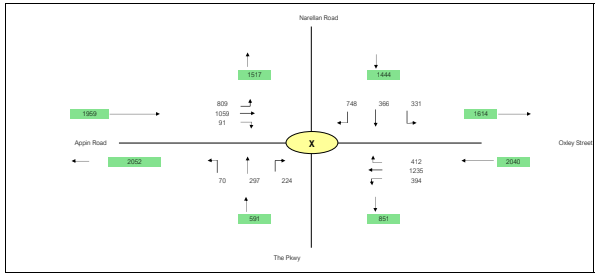


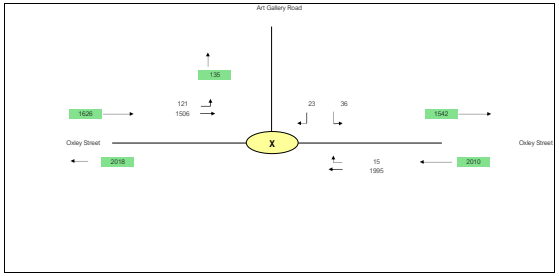
2039 Base SAT w. CAC

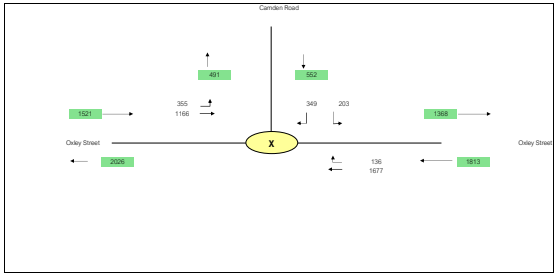












Appendix F SIDRA Traffic Modelling

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MOVEMENT SUMMARY

Site: [1] Camden Road/ Queen Street (Existing AM)
Network: [1] Existing AM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	102	0.0	102	0.0	0.237	5.2	LOS A	0.5	3.7	0.41	0.61	0.41	27.8
3	R2	All MCs	159	0.7	159	0.7	0.237	9.3	LOS A	0.5	3.7	0.41	0.61	0.41	46.6
3u	U	All MCs	1	0.0	1	0.0	0.237	11.1	LOS A	0.5	3.7	0.41	0.61	0.41	27.8
Approach			262	0.4	262	0.4	0.237	7.7	LOS A	0.5	3.7	0.41	0.61	0.41	43.4
East: Queen Street															
4	L2	All MCs	63	0.0	63	0.0	0.197	4.7	LOS A	0.5	3.3	0.30	0.59	0.30	47.5
6	R2	All MCs	180	1.8	180	1.8	0.197	8.9	LOS A	0.5	3.3	0.30	0.59	0.30	47.5
6u	U	All MCs	5	0.0	5	0.0	0.197	10.8	LOS A	0.5	3.3	0.30	0.59	0.30	50.9
Approach			248	1.3	248	1.3	0.197	7.9	LOS A	0.5	3.3	0.30	0.59	0.30	47.6
North: Camden Road															
7	L2	All MCs	189	0.6	189	0.6	0.248	2.4	LOS A	0.6	4.4	0.40	0.49	0.40	51.5
8	T1	All MCs	69	6.1	69	6.1	0.248	3.0	LOS A	0.6	4.4	0.40	0.49	0.40	23.6
9u	U	All MCs	31	0.0	31	0.0	0.248	8.2	LOS A	0.6	4.4	0.40	0.49	0.40	23.6
Approach			289	1.8	289	1.8	0.248	3.1	LOS A	0.6	4.4	0.40	0.49	0.40	49.6
All Vehicles			800	1.2	800	1.2	0.248	6.1	LOS A	0.6	4.4	0.37	0.56	0.37	46.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6] Old Menangle Road/ Camden Road (LILO) (Existing AM)

Network: [1] Existing AM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	58	0.0	58	0.0	0.160	2.5	LOS A	0.0	0.0	0.00	0.10	0.00	46.2
2	T1	All MCs	252	0.0	252	0.0	0.160	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	59.1
Approach			309	0.0	309	0.0	0.160	0.5	NA	0.0	0.0	0.00	0.10	0.00	58.9
North: Camden Road															
8	T1	All MCs	289	1.8	289	1.8	0.151	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			289	1.8	289	1.8	0.151	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Menangle Road															
10	L2	All MCs	57	1.9	57	1.9	0.044	5.3	LOS A	0.1	0.5	0.33	0.57	0.33	48.3
Approach			57	1.9	57	1.9	0.044	5.3	LOS A	0.1	0.5	0.33	0.57	0.33	48.3
All Vehicles			656	1.0	656	1.0	0.160	0.7	NA	0.1	0.5	0.03	0.10	0.03	58.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5] Old Menangle Road/ Art Gallery Road (Existing AM)
Network: [1] Existing AM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	16	6.7	16	6.7	0.031	4.4	LOS A	0.0	0.0	0.00	0.15	0.00	46.1
5	T1	All MCs	43	0.0	43	0.0	0.031	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	48.7
Approach			59	1.8	59	1.8	0.031	1.2	NA	0.0	0.0	0.00	0.15	0.00	48.0
West: Old Menangle Road															
11	T1	All MCs	47	2.2	47	2.2	0.027	0.0	LOS A	0.0	0.1	0.02	0.04	0.02	49.4
12b	R3	All MCs	3	0.0	3	0.0	0.027	5.2	LOS A	0.0	0.1	0.02	0.04	0.02	48.1
Approach			51	2.1	51	2.1	0.027	0.3	NA	0.0	0.1	0.02	0.04	0.02	49.3
SouthWest: Art Gallery Road															
30b	L3	All MCs	4	25.0	4	25.0	0.011	5.8	LOS A	0.0	0.1	0.15	0.50	0.15	45.4
32a	R1	All MCs	9	0.0	9	0.0	0.011	4.4	LOS A	0.0	0.1	0.15	0.50	0.15	44.1
Approach			14	7.7	14	7.7	0.011	4.8	LOS A	0.0	0.1	0.15	0.50	0.15	44.7
All Vehicles			123	2.6	123	2.6	0.031	1.2	NA	0.0	0.1	0.03	0.14	0.03	48.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2] Oxley Street/Camden Road (Existing AM)
Network: [1] Existing AM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	955	4.1	955	4.1	0.255	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	51	2.1	51	2.1	* 0.649	82.9	LOS F	2.3	16.1	1.00	0.80	1.11	16.4
Approach			1005	4.0	1005	4.0	0.649	4.2	LOS A	2.3	16.1	0.05	0.04	0.06	52.8
North: Camden Road															
1	L2	All MCs	72	1.5	72	1.5	0.137	7.9	LOS A	0.7	4.6	0.23	0.66	0.23	46.2
2	R2	All MCs	65	6.5	65	6.5	* 0.658	81.2	LOS F	2.9	21.3	1.00	0.82	1.10	4.1
Approach			137	3.8	137	3.8	0.658	42.8	LOS D	2.9	21.3	0.60	0.74	0.64	19.9
West: Oxley Street															
3	L2	All MCs	209	0.0	209	0.0	0.507	5.6	LOS A	0.2	1.3	0.00	0.15	0.00	54.5
4	T1	All MCs	1301	2.7	1301	2.7	* 0.507	3.7	LOS A	11.4	81.3	0.23	0.28	0.23	54.8
Approach			1511	2.3	1511	2.3	0.507	3.9	LOS A	11.4	81.3	0.20	0.26	0.20	54.8
All Vehicles			2653	3.0	2653	3.0	0.658	6.0	LOS A	11.4	81.3	0.16	0.20	0.17	51.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	5.1	LOS A	0.0	0.0	0.27	0.27	159.0	200.0	1.26
All Pedestrians		5	5.1	LOS A	0.0	0.0	0.27	0.27	159.0	200.0	1.26

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4] Oxley Street/ Art Gallery Road (Existing AM)
Network: [1] Existing AM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1013	4.3	1013	4.3	0.244	0.4	LOS A	4.3	30.8	0.03	0.03	0.03	57.9
6	R2	All MCs	7	0.0	7	0.0	0.147	18.8	LOS B	4.3	30.8	0.13	0.14	0.13	49.0
Approach			1020	4.2	1020	4.2	0.244	0.5	NA	4.3	30.8	0.03	0.03	0.03	57.7
North: Art Gallery Road															
7	L2	All MCs	17	0.0	17	0.0	0.026	8.6	LOS A	0.0	0.3	0.57	0.67	0.57	40.6
9	R2	All MCs	7	14.3	7	14.3	0.972	252.0	LOS F	0.5	3.7	1.00	1.08	1.31	6.4
Approach			24	4.3	24	4.3	0.972	82.7	LOS F	0.5	3.7	0.70	0.79	0.79	15.5
West: Oxley Street															
10	L2	All MCs	63	1.7	63	1.7	0.412	5.2	LOS A	0.0	0.0	0.00	0.05	0.00	54.9
11	T1	All MCs	1502	2.4	1502	2.4	0.412	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.7
Approach			1565	2.4	1565	2.4	0.412	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.1
All Vehicles			2609	3.1	2609	3.1	0.972	1.1	NA	4.3	30.8	0.02	0.03	0.02	53.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3] Appin Road/ Narellan Road (Existing AM)
Network: [1] Existing AM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	78	5.4	78	5.4	0.087	7.2	LOS A	0.3	2.5	0.24	1.12	0.24	35.5
2	T1	All MCs	281	3.4	281	3.4	* 0.932	86.4	LOS F	13.5	97.1	1.00	1.10	1.34	26.1
3	R2	All MCs	154	3.4	154	3.4	0.819	83.3	LOS F	6.6	47.8	1.00	0.93	1.20	17.5
Approach			513	3.7	513	3.7	0.932	73.4	LOS F	13.5	97.1	0.88	1.05	1.13	24.0
East: Oxley Street															
4	L2	All MCs	92	8.0	92	8.0	0.055	5.3	LOS A	0.1	0.6	0.00	0.52	0.00	49.8
5	T1	All MCs	622	4.4	622	4.4	0.334	22.0	LOS B	7.5	54.4	0.65	0.56	0.65	37.4
6	R2	All MCs	323	3.6	323	3.6	* 0.932	83.0	LOS F	11.1	80.0	1.00	1.05	1.32	17.9
Approach			1037	4.5	1037	4.5	0.932	39.5	LOS C	11.1	80.0	0.70	0.71	0.80	28.4
North: Narellan Road															
7	L2	All MCs	325	2.9	325	2.9	0.395	51.6	LOS D	6.8	49.0	0.72	1.34	0.72	16.1
8	T1	All MCs	272	4.7	272	4.7	0.856	82.6	LOS F	11.4	83.0	1.00	0.96	1.15	30.1
9	R2	All MCs	337	7.2	337	7.2	* 0.932	89.9	LOS F	8.1	60.1	1.00	1.05	1.42	24.0
Approach			934	5.0	934	5.0	0.932	74.4	LOS F	11.4	83.0	0.90	1.12	1.10	21.0
West: Appin Road															
10	L2	All MCs	768	5.8	768	5.8	0.459	8.7	LOS A	1.1	7.9	0.00	0.69	0.00	53.3
11	T1	All MCs	1088	2.0	1088	2.0	* 0.934	81.0	LOS F	31.3	222.7	1.00	1.14	1.24	19.6
12	R2	All MCs	44	0.0	44	0.0	0.334	97.1	LOS F	1.8	12.4	0.99	0.74	0.99	27.0
Approach			1901	3.5	1901	3.5	0.934	52.2	LOS D	31.3	222.7	0.60	0.95	0.73	27.4
All Vehicles			4384	4.1	4384	4.1	0.934	56.4	LOS D	31.3	222.7	0.72	0.94	0.87	25.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	24.0	LOS C	0.0	0.0	0.60	0.60	177.8	200.0	1.12
East: Oxley Street										
P2 Full	5	58.3	LOS E	0.0	0.0	0.93	0.93	212.2	200.0	0.94
North: Narellan Road										
P3 Full	26	33.1	LOS D	0.1	0.1	0.70	0.70	186.9	200.0	1.07
West: Appin Road										
P4 Full	11	58.4	LOS E	0.0	0.0	0.93	0.93	212.2	200.0	0.94
All Pedestrians	47	40.5	LOS E	0.1	0.1	0.77	0.77	194.3	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (2)] Camden Road/ Queen Street (Existing PM)
Network: [1 (2)] Existing PM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	118	0.0	118	0.0	0.286	5.8	LOS A	0.7	4.8	0.51	0.65	0.51	26.9
3	R2	All MCs	168	0.0	168	0.0	0.286	9.9	LOS A	0.7	4.8	0.51	0.65	0.51	46.1
3u	U	All MCs	2	0.0	2	0.0	0.286	11.7	LOS A	0.7	4.8	0.51	0.65	0.51	26.9
Approach			288	0.0	288	0.0	0.286	8.2	LOS A	0.7	4.8	0.51	0.65	0.51	42.5
East: Queen Street															
4	L2	All MCs	235	0.0	235	0.0	0.608	6.0	LOS A	1.7	11.8	0.64	0.58	0.66	46.7
6	R2	All MCs	240	0.4	240	0.4	0.608	10.3	LOS A	1.7	11.8	0.64	0.58	0.66	46.7
6u	U	All MCs	13	0.0	13	0.0	0.608	12.1	LOS A	1.7	11.8	0.64	0.58	0.66	50.5
Approach			487	0.2	487	0.2	0.608	8.3	LOS A	1.7	11.8	0.64	0.58	0.66	46.8
North: Camden Road															
7	L2	All MCs	202	0.0	202	0.0	0.432	2.7	LOS A	1.0	7.0	0.51	0.51	0.51	50.8
8	T1	All MCs	125	0.0	125	0.0	0.432	3.3	LOS A	1.0	7.0	0.51	0.51	0.51	22.3
9u	U	All MCs	53	0.0	53	0.0	0.432	8.5	LOS A	1.0	7.0	0.51	0.51	0.51	22.3
Approach			380	0.0	380	0.0	0.432	3.7	LOS A	1.0	7.0	0.51	0.51	0.51	47.3
All Vehicles			1156	0.1	1156	0.1	0.608	6.7	LOS A	1.7	11.8	0.57	0.58	0.58	45.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (2)] Old Menangle Road/ Camden Road (LILO)

(Existing PM)

Network: [1 (2)] Existing PM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	92	0.0	92	0.0	0.212	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.3
2	T1	All MCs	318	0.0	318	0.0	0.212	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.9
Approach			409	0.0	409	0.0	0.212	0.6	NA	0.0	0.0	0.00	0.12	0.00	58.6
North: Camden Road															
8	T1	All MCs	380	0.0	380	0.0	0.212	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			380	0.0	380	0.0	0.212	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Menangle Road															
10	L2	All MCs	63	1.7	63	1.7	0.052	5.6	LOS A	0.1	0.6	0.37	0.59	0.37	48.1
Approach			63	1.7	63	1.7	0.052	5.6	LOS A	0.1	0.6	0.37	0.59	0.37	48.1
All Vehicles			853	0.1	853	0.1	0.212	0.7	NA	0.1	0.6	0.03	0.10	0.03	58.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (2)] Old Menangle Road/ Art Gallery Road (Existing PM)

Network: [1 (2)] Existing PM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	20	0.0	20	0.0	0.042	4.4	LOS A	0.0	0.0	0.00	0.14	0.00	46.4
5	T1	All MCs	61	0.0	61	0.0	0.042	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	48.7
Approach			81	0.0	81	0.0	0.042	1.1	NA	0.0	0.0	0.00	0.14	0.00	48.1
West: Old Menangle Road															
11	T1	All MCs	37	2.9	37	2.9	0.020	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	49.7
12b	R3	All MCs	1	0.0	1	0.0	0.020	5.2	LOS A	0.0	0.0	0.01	0.02	0.01	48.3
Approach			38	2.8	38	2.8	0.020	0.1	NA	0.0	0.0	0.01	0.02	0.01	49.7
SouthWest: Art Gallery Road															
30b	L3	All MCs	9	0.0	9	0.0	0.029	5.6	LOS A	0.0	0.3	0.17	0.51	0.17	45.7
32a	R1	All MCs	26	0.0	26	0.0	0.029	4.4	LOS A	0.0	0.3	0.17	0.51	0.17	44.0
Approach			36	0.0	36	0.0	0.029	4.7	LOS A	0.0	0.3	0.17	0.51	0.17	44.7
All Vehicles			155	0.7	155	0.7	0.042	1.7	NA	0.0	0.3	0.04	0.19	0.04	47.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (2)] Oxley Street/Camden Road (Existing PM)
Network: [1 (2)] Existing PM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1409	2.1	1409	2.1	0.369	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	72	0.0	72	0.0	* 0.884	89.8	LOS F	3.4	23.8	1.00	0.94	1.42	15.4
Approach			1481	2.0	1481	2.0	0.884	4.5	LOS A	3.4	23.8	0.05	0.05	0.07	52.5
North: Camden Road															
1	L2	All MCs	99	0.0	99	0.0	0.103	13.2	LOS A	0.7	5.2	0.20	0.68	0.20	46.4
2	R2	All MCs	262	0.0	262	0.0	* 0.885	85.7	LOS F	11.4	80.0	1.00	0.98	1.24	4.2
Approach			361	0.0	361	0.0	0.885	65.8	LOS E	11.4	80.0	0.78	0.90	0.96	10.7
West: Oxley Street															
3	L2	All MCs	218	0.0	218	0.0	0.476	5.6	LOS A	0.2	1.3	0.00	0.20	0.00	53.0
4	T1	All MCs	967	2.7	967	2.7	* 0.476	8.4	LOS A	12.3	87.8	0.33	0.38	0.33	49.9
Approach			1185	2.2	1185	2.2	0.476	7.9	LOS A	12.3	87.8	0.27	0.35	0.27	50.1
All Vehicles			3027	1.8	3027	1.8	0.885	13.1	LOS A	12.3	87.8	0.22	0.27	0.25	42.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	11.5	LOS B	0.0	0.0	0.41	0.41	165.4	200.0	1.21
All Pedestrians		5	11.5	LOS B	0.0	0.0	0.41	0.41	165.4	200.0	1.21

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (2)] Oxley Street/ Art Gallery Road (Existing PM)
Network: [1 (2)] Existing PM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1664	1.8	1664	1.8	0.370	0.2	LOS A	16.9	119.9	0.02	0.02	0.02	59.0
6	R2	All MCs	9	0.0	9	0.0	0.148	13.4	LOS A	1.4	9.7	0.11	0.12	0.11	49.8
Approach			1674	1.8	1674	1.8	0.370	0.3	NA	16.9	119.9	0.02	0.02	0.02	58.8
North: Art Gallery Road															
7	L2	All MCs	28	0.0	28	0.0	0.036	7.4	LOS A	0.1	0.4	0.50	0.63	0.50	41.7
9	R2	All MCs	5	0.0	5	0.0	0.995	537.9	LOS F	0.6	4.0	1.00	1.07	1.31	3.2
Approach			34	0.0	34	0.0	0.995	90.3	LOS F	0.6	4.0	0.58	0.70	0.63	14.6
West: Oxley Street															
10	L2	All MCs	48	0.0	48	0.0	0.320	5.2	LOS A	0.0	0.0	0.00	0.05	0.00	55.1
11	T1	All MCs	1173	2.2	1173	2.2	0.320	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.7
Approach			1221	2.2	1221	2.2	0.320	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.2
All Vehicles			2928	1.9	2928	1.9	0.995	1.3	NA	16.9	119.9	0.02	0.03	0.02	53.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (2)] Appin Road/ Narellan Road (Existing PM)
Network: [1 (2)] Existing PM (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	46	0.0	46	0.0	0.082	18.7	LOS B	0.8	5.5	0.67	1.18	0.67	28.9
2	T1	All MCs	199	0.0	199	0.0	0.568	57.2	LOS E	7.7	53.8	0.97	0.80	0.97	31.1
3	R2	All MCs	144	1.5	144	1.5	0.363	56.1	LOS D	5.2	36.5	0.90	0.79	0.90	21.6
Approach			389	0.5	389	0.5	0.568	52.2	LOS D	7.7	53.8	0.91	0.84	0.91	27.9
East: Oxley Street															
4	L2	All MCs	269	2.3	269	2.3	0.158	14.9	LOS B	0.3	1.8	0.00	0.52	0.00	50.1
5	T1	All MCs	1115	1.6	1115	1.6	0.863	44.7	LOS D	11.3	80.0	0.94	0.88	0.98	28.2
6	R2	All MCs	263	2.4	263	2.4	* 0.911	83.1	LOS F	11.2	80.0	1.00	1.01	1.29	17.9
Approach			1647	1.9	1647	1.9	0.911	46.0	LOS D	11.3	80.0	0.80	0.84	0.87	26.3
North: Narellan Road															
7	L2	All MCs	181	1.2	181	1.2	0.191	18.1	LOS B	2.7	19.0	0.51	1.32	0.51	21.6
8	T1	All MCs	315	1.3	315	1.3	* 0.911	68.1	LOS E	14.4	102.3	1.00	1.03	1.21	28.5
9	R2	All MCs	689	2.6	689	2.6	* 0.913	81.4	LOS F	16.5	118.1	1.00	1.01	1.25	25.7
Approach			1185	2.0	1185	2.0	0.913	68.2	LOS E	16.5	118.1	0.93	1.06	1.13	25.8
West: Appin Road															
10	L2	All MCs	497	5.3	497	5.3	0.298	10.5	LOS A	0.6	4.1	0.00	0.61	0.00	53.3
11	T1	All MCs	896	2.5	896	2.5	* 0.913	83.5	LOS F	24.4	174.4	1.00	1.10	1.21	19.2
12	R2	All MCs	33	0.0	33	0.0	0.580	109.8	LOS F	1.5	10.4	1.00	0.76	1.08	24.8
Approach			1425	3.4	1425	3.4	0.913	58.7	LOS E	24.4	174.4	0.65	0.92	0.79	25.1
All Vehicles			4647	2.3	4647	2.3	0.913	56.0	LOS D	24.4	174.4	0.80	0.92	0.91	25.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	6	31.1	LOS D	0.0	0.0	0.67	0.67	185.0	200.0	1.08
East: Oxley Street										
P2 Full	5	58.9	LOS E	0.0	0.0	0.92	0.92	212.7	200.0	0.94
North: Narellan Road										
P3 Full	26	42.4	LOS E	0.1	0.1	0.78	0.78	196.2	200.0	1.02
West: Appin Road										
P4 Full	16	58.9	LOS E	0.1	0.1	0.92	0.92	212.7	200.0	0.94
All Pedestrians	54	47.5	LOS E	0.1	0.1	0.82	0.82	201.4	200.0	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (3)] Camden Road/ Queen Street (Existing SAT)
Network: [1 (3)] Existing SAT (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	112	0.9	112	0.9	0.315	5.9	LOS A	0.8	5.4	0.54	0.65	0.54	26.4
3	R2	All MCs	202	0.5	202	0.5	0.315	10.0	LOS A	0.8	5.4	0.54	0.65	0.54	45.8
3u	U	All MCs	2	0.0	2	0.0	0.315	11.8	LOS A	0.8	5.4	0.54	0.65	0.54	26.4
Approach			316	0.7	316	0.7	0.315	8.5	LOS A	0.8	5.4	0.54	0.65	0.54	42.8
East: Queen Street															
4	L2	All MCs	247	0.0	247	0.0	0.549	5.2	LOS A	1.6	11.0	0.52	0.56	0.52	47.4
6	R2	All MCs	286	0.4	286	0.4	0.549	9.5	LOS A	1.6	11.0	0.52	0.56	0.52	47.4
6u	U	All MCs	8	0.0	8	0.0	0.549	11.4	LOS A	1.6	11.0	0.52	0.56	0.52	50.9
Approach			542	0.2	542	0.2	0.549	7.6	LOS A	1.6	11.0	0.52	0.56	0.52	47.5
North: Camden Road															
7	L2	All MCs	208	0.5	208	0.5	0.372	2.8	LOS A	0.9	6.2	0.52	0.51	0.52	51.3
8	T1	All MCs	119	0.9	119	0.9	0.372	3.4	LOS A	0.9	6.2	0.52	0.51	0.52	22.4
9u	U	All MCs	16	0.0	16	0.0	0.372	8.6	LOS A	0.9	6.2	0.52	0.51	0.52	22.4
Approach			343	0.6	343	0.6	0.372	3.3	LOS A	0.9	6.2	0.52	0.51	0.52	48.8
All Vehicles			1201	0.4	1201	0.4	0.549	6.6	LOS A	1.6	11.0	0.52	0.57	0.52	46.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (3)] Old Menangle Road/ Camden Road (LILO)

(Existing SAT)

Network: [1 (3)] Existing SAT (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	38	0.0	38	0.0	0.212	2.5	LOS A	0.0	0.0	0.00	0.05	0.00	52.1
2	T1	All MCs	374	0.0	374	0.0	0.212	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			412	0.0	412	0.0	0.212	0.2	NA	0.0	0.0	0.00	0.05	0.00	59.4
North: Camden Road															
8	T1	All MCs	343	0.6	343	0.6	0.186	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			343	0.6	343	0.6	0.186	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Menangle Road															
10	L2	All MCs	41	0.0	41	0.0	0.036	5.8	LOS A	0.1	0.4	0.40	0.60	0.40	48.1
Approach			41	0.0	41	0.0	0.036	5.8	LOS A	0.1	0.4	0.40	0.60	0.40	48.1
All Vehicles			796	0.3	796	0.3	0.212	0.4	NA	0.1	0.4	0.02	0.06	0.02	58.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [5 (3)] Old Menangle Road/ Art Gallery Road (Existing SAT)

Network: [1 (3)] Existing SAT (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	18	0.0	18	0.0	0.018	4.4	LOS A	0.0	0.0	0.00	0.28	0.00	45.2
5	T1	All MCs	17	0.0	17	0.0	0.018	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	47.4
Approach			35	0.0	35	0.0	0.018	2.3	NA	0.0	0.0	0.00	0.28	0.00	46.2
West: Old Menangle Road															
11	T1	All MCs	25	0.0	25	0.0	0.016	0.0	LOS A	0.0	0.1	0.03	0.09	0.03	48.8
12b	R3	All MCs	4	0.0	4	0.0	0.016	5.2	LOS A	0.0	0.1	0.03	0.09	0.03	47.8
Approach			29	0.0	29	0.0	0.016	0.8	NA	0.0	0.1	0.03	0.09	0.03	48.6
SouthWest: Art Gallery Road															
30b	L3	All MCs	20	0.0	20	0.0	0.024	5.4	LOS A	0.0	0.2	0.08	0.52	0.08	45.6
32a	R1	All MCs	15	0.0	15	0.0	0.024	4.2	LOS A	0.0	0.2	0.08	0.52	0.08	43.9
Approach			35	0.0	35	0.0	0.024	4.9	LOS A	0.0	0.2	0.08	0.52	0.08	45.2
All Vehicles			99	0.0	99	0.0	0.024	2.8	NA	0.0	0.2	0.04	0.31	0.04	46.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (3)] Oxley Street/Camden Road (Existing SAT)
Network: [1 (3)] Existing SAT (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1204	1.7	1204	1.7	0.314	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	62	0.0	62	0.0	* 0.735	83.6	LOS F	2.8	19.6	1.00	0.84	1.19	16.3
Approach			1266	1.7	1266	1.7	0.735	4.2	LOS A	2.8	19.6	0.05	0.04	0.06	52.9
North: Camden Road															
1	L2	All MCs	122	0.9	122	0.9	0.121	8.6	LOS A	0.8	5.8	0.17	0.67	0.17	46.9
2	R2	All MCs	246	0.0	246	0.0	* 0.736	67.5	LOS E	10.0	70.1	1.00	0.86	1.04	5.1
Approach			368	0.3	368	0.3	0.736	48.0	LOS D	10.0	70.1	0.72	0.80	0.75	15.0
West: Oxley Street															
3	L2	All MCs	253	0.8	253	0.8	0.430	5.6	LOS A	0.2	1.6	0.00	0.25	0.00	51.6
4	T1	All MCs	826	1.9	826	1.9	* 0.430	8.8	LOS A	10.8	76.5	0.34	0.40	0.34	49.5
Approach			1079	1.7	1079	1.7	0.430	8.0	LOS A	10.8	76.5	0.26	0.37	0.26	49.7
All Vehicles			2714	1.5	2714	1.5	0.736	11.7	LOS A	10.8	76.5	0.23	0.27	0.23	44.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	11.9	LOS B	0.0	0.0	0.41	0.41	165.8	200.0	1.21
All Pedestrians		5	11.9	LOS B	0.0	0.0	0.41	0.41	165.8	200.0	1.21

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (3)] Oxley Street/ Art Gallery Road (Existing SAT)
Network: [1 (3)] Existing SAT (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1428	1.5	1428	1.5	0.315	0.2	LOS A	5.8	41.0	0.02	0.02	0.02	59.0
6	R2	All MCs	11	0.0	11	0.0	0.252	12.5	LOS A	0.1	0.9	0.13	0.14	0.13	49.7
Approach			1439	1.5	1439	1.5	0.315	0.3	NA	5.8	41.0	0.02	0.02	0.02	58.7
North: Art Gallery Road															
7	L2	All MCs	14	0.0	14	0.0	0.017	7.0	LOS A	0.0	0.2	0.48	0.59	0.48	42.1
9	R2	All MCs	13	0.0	13	0.0	0.976	280.0	LOS F	0.7	4.7	1.00	1.13	1.53	5.8
Approach			26	0.0	26	0.0	0.976	138.1	LOS F	0.7	4.7	0.73	0.85	0.99	10.6
West: Oxley Street															
10	L2	All MCs	38	0.0	38	0.0	0.291	5.2	LOS A	0.0	0.0	0.00	0.04	0.00	55.2
11	T1	All MCs	1079	1.6	1079	1.6	0.291	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	58.1
Approach			1117	1.5	1117	1.5	0.291	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.5
All Vehicles			2582	1.5	2582	1.5	0.976	1.6	NA	5.8	41.0	0.02	0.03	0.02	52.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (3)] Appin Road/ Narellan Road (Existing SAT)
Network: [1 (3)] Existing SAT (Existing)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	51	2.1	51	2.1	0.071	11.1	LOS A	0.5	3.6	0.43	1.31	0.43	34.4
2	T1	All MCs	213	1.5	213	1.5	0.613	55.7	LOS D	8.0	56.8	0.98	0.81	0.98	31.5
3	R2	All MCs	163	3.2	163	3.2	0.449	57.1	LOS E	5.8	42.0	0.93	0.80	0.93	21.4
Approach			426	2.2	426	2.2	0.613	50.9	LOS D	8.0	56.8	0.89	0.87	0.89	28.6
East: Oxley Street															
4	L2	All MCs	283	1.9	283	1.9	0.165	9.8	LOS A	0.3	1.9	0.00	0.52	0.00	50.1
5	T1	All MCs	884	1.7	884	1.7	0.667	36.3	LOS C	11.3	80.0	0.86	0.76	0.86	30.8
6	R2	All MCs	288	0.0	288	0.0	* 0.745	61.1	LOS E	11.2	78.7	1.00	0.87	1.04	21.8
Approach			1456	1.4	1456	1.4	0.745	36.1	LOS C	11.3	80.0	0.72	0.74	0.73	29.8
North: Narellan Road															
7	L2	All MCs	197	1.6	197	1.6	0.196	16.0	LOS B	2.7	19.1	0.49	1.32	0.49	20.8
8	T1	All MCs	260	0.8	260	0.8	* 0.745	54.2	LOS D	10.0	70.5	0.98	0.85	1.02	31.9
9	R2	All MCs	543	2.9	543	2.9	* 0.745	62.4	LOS E	10.7	76.4	1.00	0.87	1.05	29.2
Approach			1000	2.1	1000	2.1	0.745	51.1	LOS D	10.7	76.4	0.89	0.95	0.93	28.6
West: Appin Road															
10	L2	All MCs	589	3.2	589	3.2	0.347	5.8	LOS A	0.7	5.0	0.00	0.53	0.00	53.3
11	T1	All MCs	756	1.1	756	1.1	* 0.784	60.0	LOS E	15.0	105.9	0.98	0.89	1.03	22.9
12	R2	All MCs	64	0.0	64	0.0	0.667	96.3	LOS F	2.7	19.2	1.00	0.81	1.11	25.9
Approach			1409	1.9	1409	1.9	0.784	39.0	LOS C	15.0	105.9	0.57	0.73	0.60	32.0
All Vehicles			4292	1.8	4292	1.8	0.784	42.0	LOS C	15.0	105.9	0.73	0.80	0.75	30.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	31.6	LOS D	0.0	0.0	0.68	0.68	185.4	200.0	1.08
East: Oxley Street										
P2 Full	5	57.1	LOS E	0.0	0.0	0.92	0.92	210.9	200.0	0.95
North: Narellan Road										
P3 Full	5	45.5	LOS E	0.0	0.0	0.82	0.82	199.4	200.0	1.00
West: Appin Road										
P4 Full	5	57.1	LOS E	0.0	0.0	0.92	0.92	210.9	200.0	0.95
All Pedestrians	21	47.8	LOS E	0.0	0.0	0.84	0.84	201.7	200.0	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (7)] Camden Road/ Queen Street (2029 Base AM)
Network: [1 (7)] 2029 Base AM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	162	0.0	162	0.0	0.313	5.5	LOS A	0.7	5.1	0.45	0.62	0.45	27.8
3	R2	All MCs	178	0.6	178	0.6	0.313	9.5	LOS A	0.7	5.1	0.45	0.62	0.45	46.6
3u	U	All MCs	1	0.0	1	0.0	0.313	11.4	LOS A	0.7	5.1	0.45	0.62	0.45	27.8
Approach			341	0.3	341	0.3	0.313	7.6	LOS A	0.7	5.1	0.45	0.62	0.45	42.4
East: Queen Street															
4	L2	All MCs	71	0.0	71	0.0	0.229	4.9	LOS A	0.6	3.9	0.35	0.59	0.35	47.2
6	R2	All MCs	201	1.6	201	1.6	0.229	9.1	LOS A	0.6	3.9	0.35	0.59	0.35	47.2
6u	U	All MCs	6	0.0	6	0.0	0.229	11.0	LOS A	0.6	3.9	0.35	0.59	0.35	50.8
Approach			278	1.1	278	1.1	0.229	8.1	LOS A	0.6	3.9	0.35	0.59	0.35	47.3
North: Camden Road															
7	L2	All MCs	213	0.5	213	0.5	0.298	2.6	LOS A	0.8	5.6	0.44	0.50	0.44	51.3
8	T1	All MCs	96	4.4	96	4.4	0.298	3.2	LOS A	0.8	5.6	0.44	0.50	0.44	23.0
9u	U	All MCs	35	0.0	35	0.0	0.298	8.3	LOS A	0.8	5.6	0.44	0.50	0.44	23.0
Approach			343	1.5	343	1.5	0.298	3.3	LOS A	0.8	5.6	0.44	0.50	0.44	49.0
All Vehicles			962	1.0	962	1.0	0.313	6.2	LOS A	0.8	5.6	0.42	0.57	0.42	46.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (8)] Old Menangle Road/ Camden Road (LILO) (2029 Base AM)

Network: [1 (7)] 2029 Base AM (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	65	0.0	65	0.0	0.204	2.5	LOS A	0.0	0.0	0.00	0.09	0.00	47.4
2	T1	All MCs	329	0.0	329	0.0	0.204	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	59.1
Approach			395	0.0	395	0.0	0.204	0.4	NA	0.0	0.0	0.00	0.09	0.00	59.0
North: Camden Road															
8	T1	All MCs	342	1.5	342	1.5	0.183	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			342	1.5	342	1.5	0.183	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Menangle Road															
10	L2	All MCs	63	1.7	63	1.7	0.053	5.7	LOS A	0.1	0.6	0.38	0.60	0.38	48.1
Approach			63	1.7	63	1.7	0.053	5.7	LOS A	0.1	0.6	0.38	0.60	0.38	48.1
All Vehicles			800	0.8	800	0.8	0.204	0.7	NA	0.1	0.6	0.03	0.09	0.03	58.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (8)] Old Menangle Road/ Art Gallery Road (2029 Base AM)

Network: [1 (7)] 2029 Base AM (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	18	5.9	18	5.9	0.035	4.4	LOS A	0.0	0.0	0.00	0.15	0.00	46.1
5	T1	All MCs	48	0.0	48	0.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	48.6
Approach			66	1.6	66	1.6	0.035	1.2	NA	0.0	0.0	0.00	0.15	0.00	47.9
West: Old Menangle Road															
11	T1	All MCs	53	2.0	53	2.0	0.030	0.0	LOS A	0.0	0.1	0.02	0.04	0.02	49.5
12b	R3	All MCs	3	0.0	3	0.0	0.030	5.2	LOS A	0.0	0.1	0.02	0.04	0.02	48.2
Approach			56	1.9	56	1.9	0.030	0.3	NA	0.0	0.1	0.02	0.04	0.02	49.3
SouthWest: Art Gallery Road															
30b	L3	All MCs	4	25.0	4	25.0	0.012	5.8	LOS A	0.0	0.1	0.16	0.50	0.16	45.4
32a	R1	All MCs	11	0.0	11	0.0	0.012	4.4	LOS A	0.0	0.1	0.16	0.50	0.16	44.1
Approach			15	7.1	15	7.1	0.012	4.8	LOS A	0.0	0.1	0.16	0.50	0.16	44.6
All Vehicles			137	2.3	137	2.3	0.035	1.2	NA	0.0	0.1	0.03	0.14	0.03	48.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (8)] Oxley Street/Camden Road (2029 Base AM)
Network: [1 (7)] 2029 Base AM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1069	4.0	1069	4.0	0.285	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	104	1.0	104	1.0	*0.615	74.2	LOS F	4.4	30.9	1.00	0.80	1.02	17.7
Approach			1174	3.8	1174	3.8	0.615	6.7	LOS A	4.4	30.9	0.09	0.07	0.09	49.4
North: Camden Road															
1	L2	All MCs	98	1.1	98	1.1	0.178	13.9	LOS A	2.0	13.9	0.51	0.87	0.51	40.0
2	R2	All MCs	73	5.8	73	5.8	*0.615	78.9	LOS F	3.1	23.1	1.00	0.80	1.05	4.2
Approach			171	3.1	171	3.1	0.615	41.6	LOS C	3.1	23.1	0.72	0.84	0.74	20.9
West: Oxley Street															
3	L2	All MCs	235	0.0	235	0.0	0.615	5.6	LOS A	0.2	1.5	0.00	0.15	0.00	54.5
4	T1	All MCs	1459	2.7	1459	2.7	*0.615	6.3	LOS A	17.4	124.7	0.32	0.36	0.32	52.1
Approach			1694	2.3	1694	2.3	0.615	6.2	LOS A	17.4	124.7	0.27	0.33	0.27	52.2
All Vehicles			3038	2.9	3038	2.9	0.615	8.4	LOS A	17.4	124.7	0.23	0.26	0.23	48.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	7.6	LOS A	0.0	0.0	0.33	0.33	161.5	200.0	1.24
All Pedestrians		5	7.6	LOS A	0.0	0.0	0.33	0.33	161.5	200.0	1.24

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (7)] Oxley Street/ Art Gallery Road (2029 Base AM)
Network: [1 (7)] 2029 Base AM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1136	4.3	1136	4.3	0.247	0.7	LOS A	4.0	29.3	0.04	0.04	0.04	56.9
6	R2	All MCs	8	0.0	8	0.0	0.148	23.6	LOS B	4.0	29.3	0.19	0.21	0.19	47.3
Approach			1144	4.2	1144	4.2	0.247	0.8	NA	4.0	29.3	0.04	0.04	0.04	56.7
North: Art Gallery Road															
7	L2	All MCs	19	0.0	19	0.0	0.032	9.6	LOS A	0.1	0.4	0.60	0.71	0.60	39.8
9	R2	All MCs	8	12.5	8	12.5	1.667	907.0	LOS F	1.4	10.9	1.00	1.28	2.12	2.8
Approach			27	3.8	27	3.8	1.667	285.7	LOS F	1.4	10.9	0.72	0.89	1.07	7.9
West: Oxley Street															
10	L2	All MCs	71	1.5	71	1.5	0.461	5.2	LOS A	0.0	0.0	0.00	0.05	0.00	54.9
11	T1	All MCs	1684	2.4	1684	2.4	0.461	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.6
Approach			1755	2.3	1755	2.3	0.461	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.0
All Vehicles			2926	3.1	2926	3.1	1.667	3.1	NA	4.0	29.3	0.02	0.04	0.02	48.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (7)] Appin Road/ Narellan Road (2029 Base AM)
Network: [1 (7)] 2029 Base AM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	86	4.9	86	4.9	0.085	14.5	LOS B	0.7	5.4	0.38	1.34	0.38	29.7
2	T1	All MCs	315	3.3	315	3.3	* 0.990	111.6	LOS F	17.1	123.5	1.00	1.23	1.50	22.9
3	R2	All MCs	173	3.7	173	3.7	0.873	91.9	LOS F	7.7	55.7	1.00	0.98	1.28	17.0
Approach			574	3.7	574	3.7	0.990	91.0	LOS F	17.1	123.5	0.91	1.17	1.26	20.8
East: Oxley Street															
4	L2	All MCs	103	8.2	103	8.1	0.062	15.6	LOS B	0.1	0.7	0.00	0.52	0.00	49.8
5	T1	All MCs	697	4.4	**695**	4.4	0.718	53.0	LOS D	11.0	80.0	0.97	0.84	0.97	25.8
6	R2	All MCs	362	3.5	**361**	3.5	* 0.991	88.8	LOS F	11.1	80.0	1.00	1.32	1.48	15.7
Approach			1162	4.4	**1159**	4.4	0.991	60.9	LOS E	11.1	80.0	0.89	0.96	1.04	21.4
North: Narellan Road															
7	L2	All MCs	364	2.9	364	2.9	0.397	26.4	LOS B	4.6	32.9	0.67	1.29	0.67	11.8
8	T1	All MCs	304	4.5	304	4.5	0.863	69.3	LOS E	12.8	92.8	1.00	0.96	1.14	30.5
9	R2	All MCs	378	7.2	378	7.2	* 0.991	109.0	LOS F	10.1	75.4	1.00	1.13	1.58	21.3
Approach			1046	4.9	1046	4.9	0.991	68.7	LOS E	12.8	92.8	0.88	1.14	1.14	19.2
West: Appin Road															
10	L2	All MCs	861	5.7	861	5.7	0.515	21.1	LOS B	1.3	9.7	0.00	0.53	0.00	53.3
11	T1	All MCs	1221	2.1	1221	2.1	* 0.994	99.2	LOS F	26.6	189.7	1.00	1.40	1.39	13.1
12	R2	All MCs	49	0.0	49	0.0	0.090	62.0	LOS E	1.4	10.0	0.76	0.72	0.76	34.8
Approach			2132	3.5	2132	3.5	0.994	66.8	LOS E	26.6	189.7	0.59	1.03	0.82	20.5
All Vehicles			4914	4.0	**4910**	4.1	0.994	68.6	LOS E	26.6	189.7	0.76	1.05	0.99	20.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	45.1	LOS E	0.0	0.0	0.82	0.82	198.9	200.0	1.01
East: Oxley Street										
P2 Full	5	56.1	LOS E	0.0	0.0	0.91	0.91	209.9	200.0	0.95
North: Narellan Road										
P3 Full	26	31.4	LOS D	0.1	0.1	0.85	0.85	185.2	200.0	1.08
West: Appin Road										
P4 Full	11	56.1	LOS E	0.0	0.0	0.91	0.91	209.9	200.0	0.95
All Pedestrians	47	41.1	LOS E	0.1	0.1	0.87	0.87	195.0	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (8)] Camden Road/ Queen Street (2029 Base PM)
Network: [1 (8)] 2029 Base PM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	151	0.0	**149**	0.0	0.348	6.2	LOS A	0.9	6.2	0.57	0.67	0.57	26.4
3	R2	All MCs	188	0.0	**187**	0.0	0.348	10.2	LOS A	0.9	6.2	0.57	0.67	0.57	45.9
3u	U	All MCs	2	0.0	2	0.0	0.348	12.1	LOS A	0.9	6.2	0.57	0.67	0.57	26.4
Approach			341	0.0	**338**	0.0	0.348	8.4	LOS A	0.9	6.2	0.57	0.67	0.57	41.8
East: Queen Street															
4	L2	All MCs	263	0.0	263	0.0	0.697	7.9	LOS A	2.5	17.5	0.82	0.67	0.91	44.8
6	R2	All MCs	268	0.4	268	0.4	0.697	12.2	LOS A	2.5	17.5	0.82	0.67	0.91	44.8
6u	U	All MCs	14	0.0	14	0.0	0.697	14.0	LOS A	2.5	17.5	0.82	0.67	0.91	49.3
Approach			545	0.2	545	0.2	0.697	10.2	LOS A	2.5	17.5	0.82	0.67	0.91	45.0
North: Camden Road															
7	L2	All MCs	226	0.0	226	0.0	0.544	3.1	LOS A	1.5	10.2	0.61	0.53	0.61	50.4
8	T1	All MCs	187	0.0	187	0.0	0.544	3.6	LOS A	1.5	10.2	0.61	0.53	0.61	21.3
9u	U	All MCs	59	0.0	59	0.0	0.544	8.8	LOS A	1.5	10.2	0.61	0.53	0.61	21.3
Approach			473	0.0	473	0.0	0.544	4.0	LOS A	1.5	10.2	0.61	0.53	0.61	45.9
All Vehicles			1359	0.1	**1356**	0.1	0.697	7.6	LOS A	2.5	17.5	0.69	0.62	0.72	44.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (9)] Old Menangle Road/ Camden Road (LILO) (2029 Base PM)

Network: [1 (8)] 2029 Base PM (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	103	0.0	103	0.0	0.247	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.7
2	T1	All MCs	375	0.0	**374**	0.0	0.247	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.9
Approach			478	0.0	**477**	0.0	0.247	0.5	NA	0.0	0.0	0.00	0.12	0.00	58.6
North: Camden Road															
8	T1	All MCs	474	0.0	474	0.0	0.317	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			474	0.0	474	0.0	0.317	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	71	1.5	71	1.5	0.062	5.9	LOS A	0.1	0.7	0.41	0.62	0.41	48.0
Approach			71	1.5	71	1.5	0.062	5.9	LOS A	0.1	0.7	0.41	0.62	0.41	48.0
All Vehicles			1022	0.1	**1021**	0.1	0.317	0.7	NA	0.1	0.7	0.03	0.10	0.03	58.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (9)] Old Menangle Road/ Art Gallery Road (2029 Base PM)

Network: [1 (8)] 2029 Base PM (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	22	0.0	22	0.0	0.047	4.4	LOS A	0.0	0.0	0.00	0.13	0.00	46.4
5	T1	All MCs	68	0.0	68	0.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	48.7
Approach			91	0.0	**90**	0.0	0.047	1.1	NA	0.0	0.0	0.00	0.13	0.00	48.1
West: Old Menangle Road															
11	T1	All MCs	41	2.6	41	2.6	0.022	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	49.8
12b	R3	All MCs	1	0.0	1	0.0	0.022	5.2	LOS A	0.0	0.0	0.01	0.02	0.01	48.3
Approach			42	2.5	42	2.5	0.022	0.1	NA	0.0	0.0	0.01	0.02	0.01	49.7
SouthWest: Art Gallery Road															
30b	L3	All MCs	11	0.0	11	0.0	0.032	5.6	LOS A	0.0	0.3	0.18	0.51	0.18	45.7
32a	R1	All MCs	29	0.0	29	0.0	0.032	4.5	LOS A	0.0	0.3	0.18	0.51	0.18	43.9
Approach			40	0.0	40	0.0	0.032	4.8	LOS A	0.0	0.3	0.18	0.51	0.18	44.6
All Vehicles			173	0.6	**172**	0.6	0.047	1.7	NA	0.0	0.3	0.04	0.19	0.04	47.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (9)] Oxley Street/Camden Road (2029 Base PM)
Network: [1 (8)] 2029 Base PM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1580	2.1	1580	2.1	0.413	0.2	LOS A	3.9	28.0	0.00	0.00	0.00	59.7
6	R2	All MCs	98	0.0	98	0.0	*0.671	77.1	LOS F	4.2	29.5	1.00	0.83	1.07	17.3
Approach			1678	1.9	1678	1.9	0.671	4.6	LOS A	4.2	29.5	0.06	0.05	0.06	52.2
North: Camden Road															
1	L2	All MCs	158	0.0	158	0.0	0.158	16.3	LOS B	2.4	16.8	0.40	0.97	0.40	39.9
2	R2	All MCs	294	0.0	294	0.0	*0.686	58.9	LOS E	10.9	76.4	0.94	0.84	0.94	6.1
Approach			452	0.0	452	0.0	0.686	44.0	LOS D	10.9	76.4	0.75	0.89	0.75	16.3
West: Oxley Street															
3	L2	All MCs	244	0.0	**241**	0.0	0.672	5.6	LOS A	0.2	1.5	0.00	0.20	0.00	53.1
4	T1	All MCs	1084	2.7	**1070**	2.7	*0.672	16.8	LOS B	19.6	140.6	0.48	0.52	0.48	43.2
Approach			1328	2.2	**1311**	2.2	0.672	14.8	LOS B	19.6	140.6	0.39	0.46	0.39	43.8
All Vehicles			3458	1.8	**3441**	1.8	0.686	13.7	LOS A	19.6	140.6	0.28	0.31	0.28	42.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	21.1	LOS C	0.0	0.0	0.55	0.55	174.9	200.0	1.14
All Pedestrians		5	21.1	LOS C	0.0	0.0	0.55	0.55	174.9	200.0	1.14

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (8)] Oxley Street/ Art Gallery Road (2029 Base PM)
Network: [1 (8)] 2029 Base PM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1865	1.7	1865	1.7	0.416	0.2	LOS A	33.1	235.0	0.02	0.02	0.02	58.7
6	R2	All MCs	11	0.0	11	0.0	0.167	15.3	LOS B	3.4	24.2	0.12	0.14	0.12	49.4
Approach			1876	1.7	1876	1.7	0.416	0.3	NA	33.1	235.0	0.02	0.02	0.02	58.6
North: Art Gallery Road															
7	L2	All MCs	32	0.0	32	0.0	0.043	7.9	LOS A	0.1	0.5	0.54	0.66	0.54	41.2
9	R2	All MCs	6	0.0	6	0.0	2.105	1264.4	LOS F	1.3	9.0	1.00	1.24	2.03	2.5
Approach			38	0.0	38	0.0	2.105	217.4	LOS F	1.3	9.0	0.61	0.76	0.79	11.5
West: Oxley Street															
10	L2	All MCs	55	0.0	**54**	0.0	0.360	5.2	LOS A	0.0	0.0	0.00	0.05	0.00	55.1
11	T1	All MCs	1315	2.2	**1297**	2.2	0.360	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.7
Approach			1369	2.2	**1351**	2.1	0.360	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.1
All Vehicles			3283	1.9	**3265**	1.9	2.105	2.8	NA	33.1	235.0	0.02	0.03	0.02	51.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (8)] Appin Road/ Narellan Road (2029 Base PM)
Network: [1 (8)] 2029 Base PM (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	52	0.0	52	0.0	0.086	33.0	LOS C	1.1	7.7	0.73	1.23	0.73	25.3
2	T1	All MCs	223	0.0	223	0.0	0.664	57.1	LOS E	8.5	59.7	0.99	0.82	0.99	31.1
3	R2	All MCs	161	1.3	161	1.3	0.419	55.9	LOS D	5.7	40.2	0.92	0.80	0.92	21.7
Approach			436	0.5	436	0.5	0.664	53.8	LOS D	8.5	59.7	0.93	0.86	0.93	27.4
East: Oxley Street															
4	L2	All MCs	302	2.4	302	2.4	0.177	19.0	LOS B	0.3	2.1	0.00	0.52	0.00	50.1
5	T1	All MCs	1249	1.6	**1247**	1.6	* 1.064	104.6	LOS F	11.3	80.0	0.99	1.29	1.44	16.0
6	R2	All MCs	296	2.5	**295**	2.5	* 1.021	118.9	LOS F	11.2	80.0	1.00	1.44	1.61	6.5
Approach			1847	1.9	**1844**	1.9	1.064	92.9	LOS F	11.3	80.0	0.83	1.19	1.23	13.8
North: Narellan Road															
7	L2	All MCs	203	1.0	203	1.0	0.210	19.4	LOS B	3.2	22.8	0.51	1.31	0.51	16.2
8	T1	All MCs	353	1.2	353	1.2	* 1.061	134.1	LOS F	21.1	149.0	1.00	1.36	1.68	19.1
9	R2	All MCs	773	2.6	773	2.6	* 1.082	167.8	LOS F	24.9	178.5	1.00	1.30	1.81	16.6
Approach			1328	2.0	1328	2.0	1.082	136.1	LOS F	24.9	178.5	0.93	1.31	1.58	16.7
West: Appin Road															
10	L2	All MCs	557	5.3	557	5.3	0.333	9.7	LOS A	0.7	4.8	0.00	0.56	0.00	53.3
11	T1	All MCs	1005	2.5	1005	2.5	* 1.018	116.8	LOS F	29.5	210.7	1.00	1.43	1.52	5.3
12	R2	All MCs	37	0.0	37	0.0	0.215	86.4	LOS F	1.4	9.9	0.96	0.73	0.96	27.9
Approach			1599	3.4	1599	3.4	1.018	78.8	LOS F	29.5	210.7	0.65	1.11	0.98	9.8
All Vehicles			5211	2.3	**5207**	2.3	1.082	96.3	LOS F	29.5	210.7	0.81	1.17	1.22	13.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	6	33.1	LOS D	0.0	0.0	0.70	0.70	187.0	200.0	1.07
East: Oxley Street										
P2 Full	5	58.1	LOS E	0.0	0.0	0.93	0.93	211.9	200.0	0.94
North: Narellan Road										
P3 Full	26	24.7	LOS C	0.1	0.1	0.79	0.79	178.6	200.0	1.12
West: Appin Road										
P4 Full	16	58.1	LOS E	0.1	0.1	0.93	0.93	211.9	200.0	0.94
All Pedestrians	54	38.8	LOS D	0.1	0.1	0.83	0.83	192.6	200.0	1.04

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (9)] Camden Road/ Queen Street (2029 Base SAT)
Network: [1 (9)] 2029 Base SAT (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	158	0.7	158	0.7	0.402	6.3	LOS A	1.1	7.5	0.60	0.68	0.60	26.0
3	R2	All MCs	226	0.5	226	0.5	0.402	10.4	LOS A	1.1	7.5	0.60	0.68	0.60	45.6
3u	U	All MCs	2	0.0	2	0.0	0.402	12.3	LOS A	1.1	7.5	0.60	0.68	0.60	26.0
Approach			386	0.5	386	0.5	0.402	8.7	LOS A	1.1	7.5	0.60	0.68	0.60	41.9
East: Queen Street															
4	L2	All MCs	277	0.0	277	0.0	0.657	6.3	LOS A	2.3	16.1	0.70	0.60	0.73	46.2
6	R2	All MCs	321	0.3	321	0.3	0.657	10.6	LOS A	2.3	16.1	0.70	0.60	0.73	46.2
6u	U	All MCs	9	0.0	9	0.0	0.657	12.4	LOS A	2.3	16.1	0.70	0.60	0.73	50.2
Approach			607	0.2	607	0.2	0.657	8.6	LOS A	2.3	16.1	0.70	0.60	0.73	46.3
North: Camden Road															
7	L2	All MCs	234	0.5	234	0.5	0.477	3.2	LOS A	1.2	8.6	0.61	0.53	0.61	50.8
8	T1	All MCs	166	0.6	166	0.6	0.477	3.8	LOS A	1.2	8.6	0.61	0.53	0.61	21.3
9u	U	All MCs	18	0.0	18	0.0	0.477	9.0	LOS A	1.2	8.6	0.61	0.53	0.61	21.3
Approach			418	0.5	418	0.5	0.477	3.7	LOS A	1.2	8.6	0.61	0.53	0.61	47.6
All Vehicles			1412	0.4	1412	0.4	0.657	7.2	LOS A	2.3	16.1	0.65	0.60	0.66	45.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (10)] Old Menangle Road/ Camden Road (LILO)

(2029 Base SAT)

Network: [1 (9)] 2029 Base SAT (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	42	0.0	42	0.0	0.254	2.5	LOS A	0.0	0.0	0.00	0.05	0.00	52.6
2	T1	All MCs	452	0.0	452	0.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			494	0.0	494	0.0	0.254	0.2	NA	0.0	0.0	0.00	0.05	0.00	59.4
North: Camden Road															
8	T1	All MCs	417	0.5	417	0.5	0.258	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			417	0.5	417	0.5	0.258	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	46	0.0	46	0.0	0.044	6.2	LOS A	0.1	0.5	0.45	0.64	0.45	47.9
Approach			46	0.0	46	0.0	0.044	6.2	LOS A	0.1	0.5	0.45	0.64	0.45	47.9
All Vehicles			957	0.2	957	0.2	0.258	0.4	NA	0.1	0.5	0.02	0.05	0.02	58.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [5 (10)] Old Menangle Road/ Art Gallery Road (2029 Base SAT)

Network: [1 (9)] 2029 Base SAT (2029 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	20	0.0	20	0.0	0.020	4.4	LOS A	0.0	0.0	0.00	0.28	0.00	45.2
5	T1	All MCs	19	0.0	19	0.0	0.020	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	47.4
Approach			39	0.0	39	0.0	0.020	2.3	NA	0.0	0.0	0.00	0.28	0.00	46.2
West: Old Menangle Road															
11	T1	All MCs	28	0.0	28	0.0	0.017	0.0	LOS A	0.0	0.1	0.03	0.09	0.03	48.9
12b	R3	All MCs	4	0.0	4	0.0	0.017	5.2	LOS A	0.0	0.1	0.03	0.09	0.03	47.9
Approach			33	0.0	33	0.0	0.017	0.7	NA	0.0	0.1	0.03	0.09	0.03	48.7
SouthWest: Art Gallery Road															
30b	L3	All MCs	22	0.0	22	0.0	0.027	5.4	LOS A	0.0	0.3	0.08	0.52	0.08	45.6
32a	R1	All MCs	17	0.0	17	0.0	0.027	4.3	LOS A	0.0	0.3	0.08	0.52	0.08	43.9
Approach			39	0.0	39	0.0	0.027	4.9	LOS A	0.0	0.3	0.08	0.52	0.08	45.1
All Vehicles			111	0.0	111	0.0	0.027	2.7	NA	0.0	0.3	0.04	0.31	0.04	46.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (10)] Oxley Street/Camden Road (2029 Base SAT)
Network: [1 (9)] 2029 Base SAT (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1349	1.7	1349	1.7	0.352	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	102	0.0	102	0.0	* 0.599	73.9	LOS F	4.3	29.9	1.00	0.79	1.01	17.8
Approach			1452	1.6	1452	1.6	0.599	5.3	LOS A	4.3	29.9	0.07	0.06	0.07	51.3
North: Camden Road															
1	L2	All MCs	169	0.6	169	0.6	0.164	12.3	LOS A	2.1	14.8	0.32	0.89	0.32	42.1
2	R2	All MCs	276	0.0	276	0.0	* 0.623	56.9	LOS E	10.1	70.7	0.93	0.83	0.93	6.1
Approach			445	0.2	445	0.2	0.623	39.9	LOS C	10.1	70.7	0.70	0.85	0.70	18.0
West: Oxley Street															
3	L2	All MCs	283	0.7	283	0.7	0.600	5.7	LOS A	0.3	1.8	0.00	0.25	0.00	51.7
4	T1	All MCs	926	1.9	926	1.9	* 0.600	16.5	LOS B	16.8	119.8	0.48	0.52	0.48	43.4
Approach			1209	1.7	1209	1.7	0.600	13.9	LOS A	16.8	119.8	0.37	0.46	0.37	44.1
All Vehicles			3106	1.4	3106	1.4	0.623	13.6	LOS A	16.8	119.8	0.28	0.33	0.28	42.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	20.6	LOS C	0.0	0.0	0.54	0.54	174.5	200.0	1.15
All Pedestrians		5	20.6	LOS C	0.0	0.0	0.54	0.54	174.5	200.0	1.15

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (9)] Oxley Street/ Art Gallery (2029 Base SAT)
Network: [1 (9)] 2029 Base SAT (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1601	1.4	1601	1.4	0.307	0.2	LOS A	8.6	61.2	0.02	0.03	0.02	58.8
6	R2	All MCs	12	0.0	12	0.0	0.245	14.1	LOS A	2.9	20.4	0.08	0.10	0.08	50.0
Approach			1613	1.4	1613	1.4	0.307	0.3	NA	8.6	61.2	0.02	0.03	0.02	58.5
North: Art Gallery Road															
7	L2	All MCs	16	0.0	16	0.0	0.020	7.5	LOS A	0.0	0.2	0.51	0.62	0.51	41.6
9	R2	All MCs	14	0.0	14	0.0	2.194	1373.9	LOS F	2.4	16.5	1.00	1.50	3.08	2.4
Approach			29	0.0	29	0.0	2.194	641.9	LOS F	2.4	16.5	0.74	1.03	1.70	4.8
West: Oxley Street															
10	L2	All MCs	42	0.0	42	0.0	0.326	5.2	LOS A	0.0	0.0	0.00	0.04	0.00	55.2
11	T1	All MCs	1209	1.6	1209	1.6	0.326	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	58.0
Approach			1252	1.5	1252	1.5	0.326	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.5
All Vehicles			2894	1.5	2894	1.5	2.194	6.8	NA	8.6	61.2	0.02	0.03	0.03	44.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (9)] Appin Road/ Narellan Road (2029 Base SAT)
Network: [1 (9)] 2029 Base SAT (2029 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	57	1.9	57	1.9	0.088	13.5	LOS A	0.7	5.0	0.52	1.26	0.52	31.5
2	T1	All MCs	238	1.3	238	1.3	0.730	59.5	LOS E	9.4	66.6	1.00	0.87	1.05	30.5
3	R2	All MCs	183	3.4	183	3.4	0.537	59.5	LOS E	6.8	48.7	0.95	0.81	0.95	20.8
Approach			478	2.2	478	2.2	0.730	54.0	LOS D	9.4	66.6	0.93	0.89	0.95	27.5
East: Oxley Street															
4	L2	All MCs	318	2.0	**316**	2.0	0.185	11.0	LOS A	0.3	2.2	0.00	0.52	0.00	50.1
5	T1	All MCs	992	1.7	**987**	1.7	0.726	35.9	LOS C	11.3	80.0	0.88	0.78	0.88	31.1
6	R2	All MCs	323	0.0	**322**	0.0	* 0.889	74.1	LOS F	11.4	80.0	1.00	0.99	1.22	19.3
Approach			1633	1.4	**1625**	1.4	0.889	38.6	LOS C	11.4	80.0	0.73	0.77	0.78	28.8
North: Narellan Road															
7	L2	All MCs	220	1.4	220	1.4	0.240	20.2	LOS B	3.9	27.7	0.59	1.27	0.59	18.5
8	T1	All MCs	292	0.7	292	0.7	* 0.889	64.3	LOS E	12.6	88.9	1.00	0.99	1.19	29.4
9	R2	All MCs	609	2.9	609	2.9	* 0.889	75.3	LOS F	13.7	98.0	1.00	0.99	1.23	26.5
Approach			1121	2.1	1121	2.1	0.889	61.6	LOS E	13.7	98.0	0.92	1.05	1.10	26.0
West: Appin Road															
10	L2	All MCs	661	3.2	661	3.2	0.389	6.6	LOS A	0.8	5.9	0.00	0.65	0.00	53.3
11	T1	All MCs	847	1.1	847	1.1	* 0.883	72.4	LOS F	21.1	149.4	1.00	1.07	1.17	20.6
12	R2	All MCs	72	0.0	72	0.0	0.729	100.1	LOS F	3.1	21.7	1.00	0.85	1.17	25.7
Approach			1580	1.9	1580	1.9	0.883	46.1	LOS D	21.1	149.4	0.58	0.88	0.68	29.5
All Vehicles			4812	1.8	**4804**	1.8	0.889	48.0	LOS D	21.1	149.4	0.75	0.89	0.84	28.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	29.6	LOS C	0.0	0.0	0.66	0.66	183.4	200.0	1.09
East: Oxley Street										
P2 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
North: Narellan Road										
P3 Full	5	41.5	LOS E	0.0	0.0	0.78	0.78	195.4	200.0	1.02
West: Appin Road										
P4 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
All Pedestrians	21	47.0	LOS E	0.0	0.0	0.83	0.83	200.8	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (4)] Camden Road/ Queen Street (2039 Base AM)
Network: [1 (4)] 2039 Base AM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	200	0.0	**175**	0.0	0.379	6.1	LOS A	0.9	6.5	0.54	0.67	0.54	26.7
3	R2	All MCs	237	0.4	**207**	0.5	0.379	10.2	LOS A	0.9	6.5	0.54	0.67	0.54	46.0
3u	U	All MCs	1	0.0	1	0.0	0.379	12.1	LOS A	0.9	6.5	0.54	0.67	0.54	26.7
Approach			438	0.2	**382**	0.3	0.379	8.3	LOS A	0.9	6.5	0.54	0.67	0.54	41.9
East: Queen Street															
4	L2	All MCs	95	0.0	95	0.0	0.316	5.2	LOS A	0.8	6.0	0.44	0.60	0.44	46.8
6	R2	All MCs	268	1.6	268	1.6	0.316	9.5	LOS A	0.8	6.0	0.44	0.60	0.44	46.8
6u	U	All MCs	7	0.0	7	0.0	0.316	11.3	LOS A	0.8	6.0	0.44	0.60	0.44	50.5
Approach			371	1.1	371	1.1	0.316	8.4	LOS A	0.8	6.0	0.44	0.60	0.44	47.0
North: Camden Road															
7	L2	All MCs	282	0.4	282	0.4	0.399	2.9	LOS A	1.2	8.4	0.53	0.53	0.53	50.9
8	T1	All MCs	122	5.2	122	5.2	0.399	3.5	LOS A	1.2	8.4	0.53	0.53	0.53	21.7
9u	U	All MCs	45	0.0	45	0.0	0.399	8.7	LOS A	1.2	8.4	0.53	0.53	0.53	21.7
Approach			449	1.6	449	1.6	0.399	3.6	LOS A	1.2	8.4	0.53	0.53	0.53	48.4
All Vehicles			1258	1.0	**1202**	1.1	0.399	6.6	LOS A	1.2	8.4	0.50	0.59	0.50	45.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (4)] Old Menangle Road/ Camden Road (LILO) (2039 Base AM)

Network: [1 (4)] 2039 Base AM (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	86	0.0	**82**	0.0	0.250	2.5	LOS A	0.0	0.0	0.00	0.09	0.00	47.2
2	T1	All MCs	423	0.0	**402**	0.0	0.250	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	59.1
Approach			509	0.0	**484**	0.0	0.250	0.4	NA	0.0	0.0	0.00	0.09	0.00	58.9
North: Camden Road															
8	T1	All MCs	449	1.6	449	1.6	0.278	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			449	1.6	449	1.6	0.278	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	84	1.2	84	1.2	0.076	6.0	LOS A	0.1	0.8	0.43	0.64	0.43	47.9
Approach			84	1.2	84	1.2	0.076	6.0	LOS A	0.1	0.8	0.43	0.64	0.43	47.9
All Vehicles			1043	0.8	**1018**	0.8	0.278	0.7	NA	0.1	0.8	0.04	0.10	0.04	58.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (4)] Old Menangle Road/ Art Gallery Road (2039 Base AM)

Network: [1 (4)] 2039 Base AM (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	23	4.5	**22**	4.8	0.043	4.4	LOS A	0.0	0.0	0.00	0.15	0.00	46.2
5	T1	All MCs	64	0.0	**61**	0.0	0.043	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	48.7
Approach			87	1.2	**83**	1.3	0.043	1.2	NA	0.0	0.0	0.00	0.15	0.00	48.0
West: Old Menangle Road															
11	T1	All MCs	71	1.5	71	1.5	0.040	0.0	LOS A	0.0	0.1	0.02	0.04	0.02	49.5
12b	R3	All MCs	4	0.0	4	0.0	0.040	5.3	LOS A	0.0	0.1	0.02	0.04	0.02	48.1
Approach			75	1.4	75	1.4	0.040	0.3	NA	0.0	0.1	0.02	0.04	0.02	49.3
SouthWest: Art Gallery Road															
30b	L3	All MCs	5	20.0	5	20.0	0.016	5.8	LOS A	0.0	0.2	0.18	0.50	0.18	45.4
32a	R1	All MCs	14	0.0	14	0.0	0.016	4.5	LOS A	0.0	0.2	0.18	0.50	0.18	44.0
Approach			19	5.6	19	5.6	0.016	4.9	LOS A	0.0	0.2	0.18	0.50	0.18	44.6
All Vehicles			181	1.7	**177**	1.8	0.043	1.2	NA	0.0	0.2	0.03	0.14	0.03	48.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (4)] Oxley Street/Camden Road (2039 Base AM)
Network: [1 (4)] 2039 Base AM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1424	4.1	1424	4.1	0.474	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
6	R2	All MCs	122	0.9	122	0.9	* 0.690	75.0	LOS F	5.2	36.7	1.00	0.84	1.07	17.6
Approach			1546	3.8	1546	3.8	0.690	6.2	LOS A	5.2	36.7	0.08	0.07	0.08	50.1
North: Camden Road															
1	L2	All MCs	124	0.8	124	0.8	0.227	34.8	LOS C	3.8	26.9	0.80	1.19	0.80	30.5
2	R2	All MCs	98	6.5	98	6.5	* 0.690	83.3	LOS F	4.2	31.3	1.00	0.84	1.09	4.3
Approach			222	3.3	222	3.3	0.690	56.2	LOS D	4.2	31.3	0.89	1.03	0.93	16.8
West: Oxley Street															
3	L2	All MCs	313	0.0	**257**	0.0	0.690	5.7	LOS A	0.2	1.6	0.00	0.15	0.00	54.5
4	T1	All MCs	1941	2.7	**1597**	2.7	* 0.690	7.6	LOS A	21.9	156.6	0.36	0.40	0.36	50.8
Approach			2254	2.3	**1854**	2.3	0.690	7.4	LOS A	21.9	156.6	0.31	0.37	0.31	51.0
All Vehicles			4022	2.9	**3622**	3.3	0.690	9.8	LOS A	21.9	156.6	0.25	0.28	0.25	46.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	8.5	LOS A	0.0	0.0	0.35	0.35	162.3	200.0	1.23
All Pedestrians		5	8.5	LOS A	0.0	0.0	0.35	0.35	162.3	200.0	1.23

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (4)] Oxley Street/ Art Gallery Road (2039 Base AM)
Network: [1 (4)] 2039 Base AM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1511	4.3	1510	4.3	0.333	1.1	LOS A	29.1	210.6	0.04	0.04	0.04	55.4
6	R2	All MCs	11	0.0	11	0.0	0.200	30.9	LOS C	29.1	210.6	0.24	0.25	0.24	45.2
Approach			1521	4.2	1521	4.2	0.333	1.3	NA	29.1	210.6	0.04	0.05	0.04	55.1
North: Art Gallery Road															
7	L2	All MCs	25	0.0	25	0.0	0.052	11.5	LOS A	0.1	0.6	0.65	0.79	0.65	38.2
9	R2	All MCs	11	10.0	11	10.0	3.509	2497.1	LOS F	2.3	17.7	1.00	1.35	2.44	2.1
Approach			36	2.9	36	2.9	3.509	742.5	LOS F	2.3	17.7	0.75	0.95	1.18	6.3
West: Oxley Street															
10	L2	All MCs	94	1.1	**77**	1.1	0.538	5.2	LOS A	0.0	0.0	0.00	0.04	0.00	54.8
11	T1	All MCs	2242	2.4	**1840**	2.4	0.538	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.4
Approach			2336	2.3	**1916**	2.4	0.538	0.3	NA	0.0	0.0	0.00	0.02	0.00	56.9
All Vehicles			3893	3.1	**3473**	3.5	3.509	8.4	NA	29.1	210.6	0.03	0.04	0.03	45.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (4)] Appin Road/ Narellan Road (2039 Base AM)
Network: [1 (4)] 2039 Base AM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	116	5.5	116	5.5	0.120	38.0	LOS C	1.6	12.0	0.52	1.34	0.52	26.6
2	T1	All MCs	419	3.3	419	3.3	* 1.323	383.2	LOS F	39.6	284.8	1.00	2.06	2.74	10.4
3	R2	All MCs	228	3.2	228	3.2	1.152	245.8	LOS F	16.7	120.0	1.00	1.42	2.15	8.0
Approach			763	3.6	763	3.6	1.323	289.7	LOS F	39.6	284.8	0.93	1.76	2.23	10.1
East: Oxley Street															
4	L2	All MCs	136	7.8	**135**	7.7	0.081	27.1	LOS B	0.1	0.9	0.00	0.52	0.00	49.9
5	T1	All MCs	928	4.4	**924**	4.4	0.977	97.9	LOS F	11.0	80.0	1.00	1.23	1.39	17.6
6	R2	All MCs	482	3.5	**480**	3.5	* 1.318	342.9	LOS F	11.1	80.0	1.00	1.88	2.71	5.8
Approach			1546	4.4	**1539**	4.4	1.318	168.1	LOS F	11.1	80.0	0.91	1.37	1.68	10.7
North: Narellan Road															
7	L2	All MCs	485	2.8	485	2.8	0.559	30.8	LOS C	7.5	53.5	0.77	1.24	0.77	10.8
8	T1	All MCs	405	4.7	405	4.7	1.216	269.8	LOS F	32.8	238.7	1.00	1.81	2.31	12.7
9	R2	All MCs	502	7.1	502	7.1	* 1.318	365.0	LOS F	23.6	175.0	1.00	1.68	2.75	10.1
Approach			1393	4.9	1393	4.9	1.318	220.8	LOS F	32.8	238.7	0.92	1.57	1.93	10.8
West: Appin Road															
10	L2	All MCs	1147	5.8	1147	5.8	0.686	28.2	LOS B	2.5	18.4	0.00	0.53	0.00	53.3
11	T1	All MCs	1624	2.0	1624	2.0	* 1.316	355.2	LOS F	68.5	487.5	1.00	2.19	2.67	5.1
12	R2	All MCs	66	0.0	66	0.0	0.130	70.1	LOS E	2.0	14.0	0.79	0.73	0.79	33.9
Approach			2838	3.5	2838	3.5	1.316	216.4	LOS F	68.5	487.5	0.59	1.48	1.55	10.1
All Vehicles			6540	4.0	**6532**	4.0	1.323	214.5	LOS F	68.5	487.5	0.78	1.51	1.74	10.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	45.2	LOS E	0.0	0.0	0.82	0.82	199.0	200.0	1.00
East: Oxley Street										
P2 Full	5	55.8	LOS E	0.0	0.0	0.91	0.91	209.7	200.0	0.95
North: Narellan Road										
P3 Full	26	30.2	LOS D	0.1	0.1	0.86	0.86	184.1	200.0	1.09
West: Appin Road										
P4 Full	11	55.9	LOS E	0.0	0.0	0.91	0.91	209.7	200.0	0.95
All Pedestrians	47	40.4	LOS E	0.1	0.1	0.87	0.87	194.3	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (5)] Camden Road/ Queen Street (2039 Base PM)
Network: [1 (5)] 2039 Base PM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	194	0.0	**175**	0.0	0.469	7.2	LOS A	1.3	9.3	0.69	0.74	0.70	25.0
3	R2	All MCs	252	0.0	**227**	0.0	0.469	11.2	LOS A	1.3	9.3	0.69	0.74	0.70	45.0
3u	U	All MCs	3	0.0	3	0.0	0.469	13.1	LOS A	1.3	9.3	0.69	0.74	0.70	25.0
Approach			448	0.0	**404**	0.0	0.469	9.5	LOS A	1.3	9.3	0.69	0.74	0.70	40.8
East: Queen Street															
4	L2	All MCs	351	0.0	351	0.0	1.063	77.1	LOS F	18.9	132.1	1.00	2.42	4.12	17.1
6	R2	All MCs	358	0.3	358	0.3	1.063	81.3	LOS F	18.9	132.1	1.00	2.42	4.12	17.1
6u	U	All MCs	19	0.0	19	0.0	1.063	83.2	LOS F	18.9	132.1	1.00	2.42	4.12	25.8
Approach			727	0.1	727	0.1	1.063	79.3	LOS F	18.9	132.1	1.00	2.42	4.12	17.4
North: Camden Road															
7	L2	All MCs	301	0.0	301	0.0	0.767	6.3	LOS A	2.1	15.0	0.92	0.68	1.06	46.4
8	T1	All MCs	235	0.0	235	0.0	0.767	6.9	LOS A	2.1	15.0	0.92	0.68	1.06	14.2
9u	U	All MCs	79	0.0	79	0.0	0.767	12.1	LOS A	2.1	15.0	0.92	0.68	1.06	14.2
Approach			615	0.0	615	0.0	0.767	7.3	LOS A	2.1	15.0	0.92	0.68	1.06	40.2
All Vehicles			1791	0.1	**1747**	0.1	1.063	37.8	LOS C	18.9	132.1	0.90	1.42	2.25	23.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (5)] Old Menangle Road/ Camden Road (LILO) (2039 Base PM)

Network: [1 (5)] 2039 Base PM (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	137	0.0	**128**	0.0	0.306	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
2	T1	All MCs	493	0.0	**461**	0.0	0.306	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach			629	0.0	**589**	0.0	0.306	0.5	NA	0.0	0.0	0.00	0.12	0.00	58.6
North: Camden Road															
8	T1	All MCs	615	0.0	615	0.0	0.630	0.7	LOS A	0.0	0.0	0.00	0.00	0.00	58.7
Approach			615	0.0	615	0.0	0.630	0.7	NA	0.0	0.0	0.00	0.00	0.00	58.7
West: Old Menangle Road															
10	L2	All MCs	94	1.1	94	1.1	0.091	6.4	LOS A	0.1	1.0	0.47	0.67	0.47	47.6
Approach			94	1.1	94	1.1	0.091	6.4	LOS A	0.1	1.0	0.47	0.67	0.47	47.6
All Vehicles			1338	0.1	**1298**	0.1	0.630	1.0	NA	0.1	1.0	0.03	0.10	0.03	57.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (5)] Old Menangle Road/ Art Gallery Road (2039 Base PM)

Network: [1 (5)] 2039 Base PM (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	29	0.0	**28**	0.0	0.058	4.4	LOS A	0.0	0.0	0.00	0.13	0.00	46.4
5	T1	All MCs	92	0.0	**86**	0.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	48.7
Approach			121	0.0	**113**	0.0	0.058	1.1	NA	0.0	0.0	0.00	0.13	0.00	48.1
West: Old Menangle Road															
11	T1	All MCs	55	1.9	55	1.9	0.029	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.8
12b	R3	All MCs	1	0.0	1	0.0	0.029	5.2	LOS A	0.0	0.0	0.01	0.01	0.01	48.3
Approach			56	1.9	56	1.9	0.029	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.8
SouthWest: Art Gallery Road															
30b	L3	All MCs	14	0.0	14	0.0	0.044	5.6	LOS A	0.1	0.4	0.21	0.52	0.21	45.6
32a	R1	All MCs	39	0.0	39	0.0	0.044	4.6	LOS A	0.1	0.4	0.21	0.52	0.21	43.8
Approach			53	0.0	53	0.0	0.044	4.9	LOS A	0.1	0.4	0.21	0.52	0.21	44.5
All Vehicles			229	0.5	**222**	0.5	0.058	1.7	NA	0.1	0.4	0.05	0.20	0.05	47.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (5)] Oxley Street/Camden Road (2039 Base PM)
Network: [1 (5)] 2039 Base PM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2103	2.1	2103	2.1	0.724	0.7	LOS A	52.9	377.3	0.00	0.00	0.00	58.6
6	R2	All MCs	124	0.0	124	0.0	* 0.725	40.8	LOS C	2.6	18.5	1.00	0.88	1.23	26.0
Approach			2227	2.0	2227	2.0	0.725	3.0	LOS A	52.9	377.3	0.06	0.05	0.07	54.8
North: Camden Road															
1	L2	All MCs	195	0.0	**188**	0.0	0.198	24.3	LOS B	1.8	12.7	0.58	1.28	0.58	37.1
2	R2	All MCs	392	0.0	**378**	0.0	* 0.897	146.2	LOS F	11.4	80.0	1.00	1.07	1.44	7.2
Approach			586	0.0	**565**	0.0	0.897	105.7	LOS F	11.4	80.0	0.86	1.14	1.15	15.3
West: Oxley Street															
3	L2	All MCs	325	0.0	**281**	0.0	0.897	5.7	LOS A	0.3	1.8	0.00	0.19	0.00	53.4
4	T1	All MCs	1443	2.7	**1247**	2.6	* 0.897	17.7	LOS B	16.3	116.7	0.55	0.70	0.72	42.6
Approach			1768	2.2	**1528**	2.1	0.897	15.5	LOS B	16.3	116.7	0.45	0.61	0.59	43.3
All Vehicles			4582	1.8	**4321**	1.9	0.897	20.8	LOS B	52.9	377.3	0.30	0.39	0.40	42.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	15.3	LOS B	0.0	0.0	0.69	0.69	169.1	200.0	1.18
All Pedestrians		5	15.3	LOS B	0.0	0.0	0.69	0.69	169.1	200.0	1.18

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (5)] Oxley Street/ Art Gallery Road (2039 Base PM)
Network: [1 (5)] 2039 Base PM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2483	1.8	**2469**	1.8	0.555	0.4	LOS A	33.1	235.0	0.02	0.02	0.02	58.0
6	R2	All MCs	14	0.0	14	0.0	0.222	19.3	LOS B	26.9	191.4	0.16	0.18	0.16	48.5
Approach			2497	1.8	**2483**	1.8	0.555	0.5	NA	33.1	235.0	0.02	0.03	0.02	57.9
North: Art Gallery Road															
7	L2	All MCs	42	0.0	42	0.0	0.064	8.8	LOS A	0.1	0.7	0.58	0.72	0.58	40.4
9	R2	All MCs	7	0.0	7	0.0	2.456	1519.7	LOS F	1.5	10.5	1.00	1.29	2.30	2.4
Approach			49	0.0	49	0.0	2.456	233.9	LOS F	1.5	10.5	0.64	0.80	0.84	12.2
West: Oxley Street															
10	L2	All MCs	73	0.0	**63**	0.0	0.411	5.2	LOS A	0.0	0.0	0.00	0.05	0.00	55.0
11	T1	All MCs	1749	2.2	**1506**	2.2	0.411	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	57.7
Approach			1822	2.1	**1568**	2.1	0.411	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.1
All Vehicles			4368	1.9	**4101**	2.0	2.456	3.2	NA	33.1	235.0	0.02	0.03	0.02	51.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [3 (5)] Appin Road/ Narellan Road (2039 Base PM)
Network: [1 (5)] 2039 Base PM (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	69	0.0	69	0.0	0.118	39.0	LOS C	1.7	11.7	0.75	1.25	0.75	24.6
2	T1	All MCs	297	0.0	297	0.0	0.968	102.4	LOS F	15.8	110.6	1.00	1.17	1.42	23.9
3	R2	All MCs	215	1.5	215	1.5	0.542	68.0	LOS E	8.0	56.9	0.94	0.82	0.94	21.0
Approach			581	0.5	581	0.5	0.968	82.1	LOS F	15.8	110.6	0.95	1.05	1.16	21.8
East: Oxley Street															
4	L2	All MCs	402	2.4	**399**	2.4	0.234	30.1	LOS C	0.4	2.9	0.00	0.52	0.00	50.1
5	T1	All MCs	1663	1.6	**1651**	1.6	* 1.416	350.7	LOS F	11.3	80.0	1.00	2.24	2.58	6.9
6	R2	All MCs	393	2.4	**390**	2.4	* 1.397	431.4	LOS F	11.2	80.0	1.00	1.94	2.92	3.9
Approach			2458	1.8	**2440**	1.9	1.416	311.2	LOS F	11.3	80.0	0.84	1.91	2.21	6.8
North: Narellan Road															
7	L2	All MCs	271	1.2	271	1.2	0.293	42.8	LOS D	5.8	41.0	0.62	1.27	0.62	15.4
8	T1	All MCs	469	1.3	469	1.3	* 1.419	460.2	LOS F	49.3	349.0	1.00	2.24	2.96	9.3
9	R2	All MCs	1028	2.6	1028	2.6	* 1.438	489.2	LOS F	55.2	395.0	1.00	1.87	3.03	8.8
Approach			1768	2.0	1768	2.0	1.438	413.2	LOS F	55.2	395.0	0.94	1.88	2.64	8.8
West: Appin Road															
10	L2	All MCs	741	5.3	741	5.3	0.444	27.0	LOS B	1.0	7.4	0.00	0.53	0.00	53.3
11	T1	All MCs	1336	2.4	1336	2.4	* 1.234	296.6	LOS F	54.9	392.6	1.00	1.84	2.33	3.0
12	R2	All MCs	48	0.0	48	0.0	0.318	98.1	LOS F	2.0	13.9	0.98	0.75	0.98	26.9
Approach			2125	3.4	2125	3.4	1.234	198.1	LOS F	54.9	392.6	0.65	1.35	1.48	5.8
All Vehicles			6933	2.2	**6915**	2.3	1.438	283.3	LOS F	55.2	395.0	0.82	1.66	2.01	7.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	6	34.2	LOS D	0.0	0.0	0.70	0.70	188.0	200.0	1.06
East: Oxley Street										
P2 Full	5	58.6	LOS E	0.0	0.0	0.91	0.91	212.4	200.0	0.94
North: Narellan Road										
P3 Full	26	25.5	LOS C	0.1	0.1	0.78	0.78	179.4	200.0	1.11
West: Appin Road										
P4 Full	16	58.6	LOS E	0.1	0.1	0.92	0.92	212.4	200.0	0.94
All Pedestrians	54	39.5	LOS D	0.1	0.1	0.83	0.83	193.4	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (6)] Camden Road/ Queen Street (2039 Base SAT)
Network: [1 (6)] 2039 Base SAT (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	199	0.5	**183**	0.5	0.548	8.4	LOS A	1.8	12.9	0.76	0.79	0.84	23.2
3	R2	All MCs	301	0.3	**277**	0.4	0.548	12.4	LOS A	1.8	12.9	0.76	0.79	0.84	43.9
3u	U	All MCs	3	0.0	3	0.0	0.548	14.3	LOS A	1.8	12.9	0.76	0.79	0.84	23.2
Approach			503	0.4	**463**	0.4	0.548	10.8	LOS A	1.8	12.9	0.76	0.79	0.84	39.9
East: Queen Street															
4	L2	All MCs	369	0.0	369	0.0	0.771	8.6	LOS A	4.3	29.8	0.88	0.69	1.00	43.9
6	R2	All MCs	426	0.2	426	0.2	0.771	12.8	LOS A	4.3	29.8	0.88	0.69	1.00	43.9
6u	U	All MCs	13	0.0	13	0.0	0.771	14.7	LOS B	4.3	29.8	0.88	0.69	1.00	48.8
Approach			808	0.1	808	0.1	0.771	10.9	LOS A	4.3	29.8	0.88	0.69	1.00	44.0
North: Camden Road															
7	L2	All MCs	311	0.3	311	0.3	0.559	4.0	LOS A	1.9	13.2	0.72	0.60	0.74	49.9
8	T1	All MCs	209	0.5	209	0.5	0.559	4.6	LOS A	1.9	13.2	0.72	0.60	0.74	19.0
9u	U	All MCs	23	0.0	23	0.0	0.559	9.7	LOS A	1.9	13.2	0.72	0.60	0.74	19.0
Approach			543	0.4	543	0.4	0.559	4.4	LOS A	1.9	13.2	0.72	0.60	0.74	46.4
All Vehicles			1855	0.3	**1815**	0.3	0.771	9.0	LOS A	4.3	29.8	0.80	0.69	0.88	43.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (6)] Old Menangle Road/ Camden Road (LILO) (2039 Base SAT)

Network: [1 (6)] 2039 Base SAT (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	57	0.0	**55**	0.0	0.325	2.5	LOS A	0.0	0.0	0.00	0.05	0.00	52.4
2	T1	All MCs	591	0.0	**576**	0.0	0.325	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			647	0.0	**632**	0.0	0.325	0.2	NA	0.0	0.0	0.00	0.05	0.00	59.4
North: Camden Road															
8	T1	All MCs	543	0.4	543	0.4	0.448	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
Approach			543	0.4	543	0.4	0.448	0.3	NA	0.0	0.0	0.00	0.00	0.00	59.5
West: Old Menangle Road															
10	L2	All MCs	61	0.0	61	0.0	0.067	7.0	LOS A	0.1	0.7	0.51	0.71	0.51	47.0
Approach			61	0.0	61	0.0	0.067	7.0	LOS A	0.1	0.7	0.51	0.71	0.51	47.0
All Vehicles			1252	0.2	**1236**	0.2	0.448	0.6	NA	0.1	0.7	0.03	0.06	0.03	58.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (6)] Old Menangle Road/ Art Gallery Road (2039 Base SAT)

Network: [1 (6)] 2039 Base SAT (2039 Base)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	26	0.0	26	0.0	0.026	4.4	LOS A	0.0	0.0	0.00	0.28	0.00	45.2
5	T1	All MCs	25	0.0	25	0.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	47.4
Approach			52	0.0	**50**	0.0	0.026	2.3	NA	0.0	0.0	0.00	0.28	0.00	46.2
West: Old Menangle Road															
11	T1	All MCs	38	0.0	38	0.0	0.024	0.0	LOS A	0.0	0.1	0.04	0.10	0.04	48.8
12b	R3	All MCs	6	0.0	6	0.0	0.024	5.3	LOS A	0.0	0.1	0.04	0.10	0.04	47.8
Approach			44	0.0	44	0.0	0.024	0.8	NA	0.0	0.1	0.04	0.10	0.04	48.5
SouthWest: Art Gallery Road															
30b	L3	All MCs	29	0.0	29	0.0	0.037	5.5	LOS A	0.1	0.4	0.10	0.52	0.10	45.6
32a	R1	All MCs	22	0.0	22	0.0	0.037	4.3	LOS A	0.1	0.4	0.10	0.52	0.10	43.9
Approach			52	0.0	52	0.0	0.037	5.0	LOS A	0.1	0.4	0.10	0.52	0.10	45.1
All Vehicles			147	0.0	**146**	0.0	0.037	2.8	NA	0.1	0.4	0.05	0.31	0.05	46.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (6)] Oxley Street/Camden Road (2039 Base SAT)
Network: [1 (6)] 2039 Base SAT (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1797	1.8	1797	1.8	0.469	0.2	LOS A	1.4	10.3	0.00	0.00	0.00	59.6
6	R2	All MCs	125	0.0	125	0.0	* 0.674	37.1	LOS C	2.4	16.9	1.00	0.85	1.16	27.4
Approach			1922	1.6	1922	1.6	0.674	2.6	LOS A	2.4	16.9	0.07	0.06	0.08	55.4
North: Camden Road															
1	L2	All MCs	215	0.5	215	0.5	0.203	10.2	LOS A	1.8	12.8	0.51	1.22	0.51	39.8
2	R2	All MCs	367	0.0	367	0.0	* 0.865	41.6	LOS C	7.8	54.5	1.00	1.03	1.37	8.1
Approach			582	0.2	582	0.2	0.865	30.0	LOS C	7.8	54.5	0.82	1.10	1.05	21.5
West: Oxley Street															
3	L2	All MCs	377	0.8	**337**	0.9	0.865	5.7	LOS A	0.3	2.2	0.00	0.23	0.00	52.2
4	T1	All MCs	1233	1.9	**1102**	1.9	* 0.865	15.3	LOS B	12.6	90.0	0.55	0.69	0.70	44.2
Approach			1609	1.6	**1438**	1.7	0.865	13.0	LOS A	12.6	90.0	0.42	0.58	0.54	44.9
All Vehicles			4114	1.4	**3942**	1.5	0.865	10.5	LOS A	12.6	90.0	0.31	0.40	0.39	45.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	15.8	LOS B	0.0	0.0	0.73	0.73	169.7	200.0	1.18
All Pedestrians		5	15.8	LOS B	0.0	0.0	0.73	0.73	169.7	200.0	1.18

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (6)] Oxley Street/ Art Gallery Road (2039 Base SAT)
Network: [1 (6)] 2039 Base SAT (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2132	1.5	**2131**	1.5	0.413	0.4	LOS A	33.2	235.0	0.03	0.03	0.03	58.0
6	R2	All MCs	16	0.0	16	0.0	0.330	18.1	LOS B	21.7	153.6	0.11	0.13	0.11	49.4
Approach			2147	1.5	2147	1.5	0.413	0.5	NA	33.2	235.0	0.03	0.03	0.03	57.8
North: Art Gallery Road															
7	L2	All MCs	20	0.0	20	0.0	0.029	8.4	LOS A	0.0	0.3	0.56	0.67	0.56	40.8
9	R2	All MCs	19	0.0	19	0.0	6.316	5008.4	LOS F	4.4	31.0	1.00	1.40	2.73	1.9
Approach			39	0.0	39	0.0	6.316	2440.8	LOS F	4.4	31.0	0.77	1.02	1.61	3.7
West: Oxley Street															
10	L2	All MCs	57	0.0	**51**	0.0	0.388	5.2	LOS A	0.0	0.0	0.00	0.04	0.00	55.1
11	T1	All MCs	1611	1.6	**1437**	1.6	0.388	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	58.0
Approach			1667	1.5	**1488**	1.6	0.388	0.2	NA	0.0	0.0	0.00	0.02	0.00	57.4
All Vehicles			3854	1.5	**3674**	1.5	6.316	26.3	NA	33.2	235.0	0.03	0.04	0.03	41.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (6)] Appin Road/ Narellan Road (2039 Base SAT)
Network: [1 (6)] 2039 Base SAT (2039 Base)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	75	1.4	75	1.4	0.133	43.8	LOS D	1.8	12.9	0.76	1.25	0.76	24.6
2	T1	All MCs	317	1.3	317	1.3	1.096	180.0	LOS F	20.9	148.2	1.00	1.46	1.89	16.4
3	R2	All MCs	243	3.0	243	3.0	0.699	74.2	LOS F	9.4	67.2	0.99	0.85	1.01	20.3
Approach			635	2.0	635	2.0	1.096	123.5	LOS F	20.9	148.2	0.97	1.20	1.42	16.9
East: Oxley Street															
4	L2	All MCs	422	1.7	**419**	1.8	0.245	19.1	LOS B	0.4	3.1	0.00	0.53	0.00	50.2
5	T1	All MCs	1320	1.7	**1310**	1.7	1.008	83.1	LOS F	11.3	80.0	1.00	1.21	1.32	19.1
6	R2	All MCs	431	0.0	**427**	0.0	* 1.187	244.6	LOS F	11.4	80.0	1.00	1.49	2.22	8.3
Approach			2173	1.4	**2157**	1.4	1.187	102.7	LOS F	11.4	80.0	0.81	1.13	1.25	16.1
North: Narellan Road															
7	L2	All MCs	294	1.4	294	1.4	0.348	47.0	LOS D	6.5	46.0	0.69	1.32	0.69	16.6
8	T1	All MCs	388	0.8	388	0.8	* 1.187	252.6	LOS F	29.8	210.1	1.00	1.70	2.19	13.5
9	R2	All MCs	811	2.9	811	2.9	* 1.186	256.3	LOS F	31.5	226.2	1.00	1.49	2.23	12.9
Approach			1493	2.0	1493	2.0	1.187	214.1	LOS F	31.5	226.2	0.94	1.51	1.92	12.6
West: Appin Road															
10	L2	All MCs	880	3.2	880	3.2	0.518	19.9	LOS B	1.3	9.6	0.00	0.62	0.00	53.3
11	T1	All MCs	1127	1.1	1127	1.1	* 1.189	259.1	LOS F	51.4	363.3	1.00	1.90	2.21	7.7
12	R2	All MCs	96	0.0	96	0.0	1.008	147.0	LOS F	5.2	36.3	1.00	1.09	1.73	20.4
Approach			2103	2.0	2103	2.0	1.189	153.9	LOS F	51.4	363.3	0.58	1.33	1.26	14.5
All Vehicles			6403	1.8	**6387**	1.8	1.189	147.6	LOS F	51.4	363.3	0.78	1.29	1.43	14.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	29.7	LOS C	0.0	0.0	0.66	0.66	183.5	200.0	1.09
East: Oxley Street										
P2 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
North: Narellan Road										
P3 Full	5	41.3	LOS E	0.0	0.0	0.78	0.78	195.1	200.0	1.02
West: Appin Road										
P4 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
All Pedestrians	21	47.0	LOS E	0.0	0.0	0.83	0.83	200.8	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (10)] Camden Road/ Queen Street (2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	195	0.0	195	0.0	0.341	5.5	LOS A	0.8	5.6	0.45	0.63	0.45	28.0
3	R2	All MCs	178	0.6	178	0.6	0.341	9.6	LOS A	0.8	5.6	0.45	0.63	0.45	46.7
3u	U	All MCs	1	0.0	1	0.0	0.341	11.4	LOS A	0.8	5.6	0.45	0.63	0.45	28.0
Approach			374	0.3	374	0.3	0.341	7.4	LOS A	0.8	5.6	0.45	0.63	0.45	42.0
East: Queen Street															
4	L2	All MCs	71	0.0	71	0.0	0.229	4.9	LOS A	0.6	3.9	0.35	0.59	0.35	47.2
6	R2	All MCs	201	1.6	201	1.6	0.229	9.1	LOS A	0.6	3.9	0.35	0.59	0.35	47.2
6u	U	All MCs	6	0.0	6	0.0	0.229	11.0	LOS A	0.6	3.9	0.35	0.59	0.35	50.8
Approach			278	1.1	278	1.1	0.229	8.1	LOS A	0.6	3.9	0.35	0.59	0.35	47.3
North: Camden Road															
7	L2	All MCs	213	0.5	213	0.5	0.297	2.6	LOS A	0.8	5.6	0.44	0.50	0.44	51.3
8	T1	All MCs	96	4.4	96	4.4	0.297	3.2	LOS A	0.8	5.6	0.44	0.50	0.44	23.0
9u	U	All MCs	35	0.0	35	0.0	0.297	8.3	LOS A	0.8	5.6	0.44	0.50	0.44	23.0
Approach			343	1.5	343	1.5	0.297	3.3	LOS A	0.8	5.6	0.44	0.50	0.44	49.0
All Vehicles			995	1.0	995	1.0	0.341	6.2	LOS A	0.8	5.6	0.42	0.57	0.42	45.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (11)] Old Menangle Road/ Camden Road (LILO)

(2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	98	0.0	98	0.0	0.222	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.1
2	T1	All MCs	329	0.0	329	0.0	0.222	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach			427	0.0	427	0.0	0.222	0.6	NA	0.0	0.0	0.00	0.12	0.00	58.5
North: Camden Road															
8	T1	All MCs	342	1.5	342	1.5	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			342	1.5	342	1.5	0.184	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Menangle Road															
10	L2	All MCs	63	1.7	63	1.7	0.053	5.7	LOS A	0.1	0.6	0.38	0.60	0.38	48.1
Approach			63	1.7	63	1.7	0.053	5.7	LOS A	0.1	0.6	0.38	0.60	0.38	48.1
All Vehicles			833	0.8	833	0.8	0.222	0.7	NA	0.1	0.6	0.03	0.11	0.03	57.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (11)] Old Menangle Road/ Art Gallery Road (2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	51	2.1	51	2.1	0.052	4.4	LOS A	0.0	0.0	0.00	0.28	0.00	45.1
5	T1	All MCs	48	0.0	48	0.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	47.4
Approach			99	1.1	99	1.1	0.052	2.3	NA	0.0	0.0	0.00	0.28	0.00	46.2
West: Old Menangle Road															
11	T1	All MCs	53	2.0	53	2.0	0.030	0.0	LOS A	0.0	0.1	0.03	0.04	0.03	49.4
12b	R3	All MCs	3	0.0	3	0.0	0.030	5.3	LOS A	0.0	0.1	0.03	0.04	0.03	48.1
Approach			56	1.9	56	1.9	0.030	0.3	NA	0.0	0.1	0.03	0.04	0.03	49.3
SouthWest: Art Gallery Road															
30b	L3	All MCs	4	25.0	4	25.0	0.012	5.8	LOS A	0.0	0.1	0.17	0.50	0.17	45.4
32a	R1	All MCs	11	0.0	11	0.0	0.012	4.5	LOS A	0.0	0.1	0.17	0.50	0.17	44.0
Approach			15	7.1	15	7.1	0.012	4.8	LOS A	0.0	0.1	0.17	0.50	0.17	44.6
All Vehicles			169	1.9	169	1.9	0.052	1.8	NA	0.0	0.1	0.02	0.22	0.02	47.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (11)] Oxley Street/Camden Road (2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1069	4.0	1069	4.0	0.285	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	137	0.8	137	0.8	* 0.635	71.1	LOS F	5.6	39.7	1.00	0.81	1.01	18.3
Approach			1206	3.7	1206	3.7	0.635	8.1	LOS A	5.6	39.7	0.11	0.09	0.12	47.6
North: Camden Road															
1	L2	All MCs	98	1.1	98	1.1	0.168	15.5	LOS B	2.2	15.4	0.57	0.93	0.57	38.5
2	R2	All MCs	73	5.8	73	5.8	* 0.635	79.5	LOS F	3.2	23.2	1.00	0.81	1.07	4.2
Approach			171	3.1	171	3.1	0.635	42.8	LOS D	3.2	23.2	0.75	0.88	0.78	20.5
West: Oxley Street															
3	L2	All MCs	235	0.0	235	0.0	0.635	5.7	LOS A	0.2	1.5	0.00	0.15	0.00	54.5
4	T1	All MCs	1459	2.7	1459	2.7	* 0.635	7.3	LOS A	18.8	134.5	0.34	0.38	0.34	51.1
Approach			1694	2.3	1694	2.3	0.635	7.1	LOS A	18.8	134.5	0.29	0.35	0.29	51.3
All Vehicles			3071	2.9	3071	2.9	0.635	9.5	LOS A	18.8	134.5	0.25	0.28	0.25	47.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	8.7	LOS A	0.0	0.0	0.35	0.35	162.6	200.0	1.23
All Pedestrians		5	8.7	LOS A	0.0	0.0	0.35	0.35	162.6	200.0	1.23

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (10)] Oxley Street/ Art Gallery Road (2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1136	4.3	1136	4.3	0.251	0.9	LOS A	4.0	29.3	0.04	0.04	0.04	55.9
6	R2	All MCs	8	0.0	8	0.0	0.151	28.3	LOS B	4.0	29.3	0.23	0.25	0.23	45.7
Approach			1144	4.2	1144	4.2	0.251	1.1	NA	4.0	29.3	0.04	0.05	0.04	55.6
North: Art Gallery Road															
7	L2	All MCs	19	0.0	19	0.0	0.030	8.9	LOS A	0.0	0.3	0.58	0.68	0.58	40.4
9	R2	All MCs	8	12.5	8	12.5	1.956	1216.9	LOS F	1.6	12.6	1.00	1.27	2.09	2.4
Approach			27	3.8	27	3.8	1.956	380.5	LOS F	1.6	12.6	0.71	0.86	1.04	6.8
West: Oxley Street															
10	L2	All MCs	202	0.5	202	0.5	0.497	5.2	LOS A	0.0	0.0	0.00	0.13	0.00	53.9
11	T1	All MCs	1684	2.4	1684	2.4	0.497	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	54.8
Approach			1886	2.2	1886	2.2	0.497	0.6	NA	0.0	0.0	0.00	0.06	0.00	54.4
All Vehicles			3058	3.0	3058	3.0	1.956	4.2	NA	4.0	29.3	0.02	0.06	0.03	47.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (10)] Appin Road/ Narellan Road (2029 Base Plus Dev AM)

Network: [1 (10)] 2029 Base W Dev AM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	86	4.9	86	4.9	0.085	14.5	LOS B	0.7	5.4	0.38	1.34	0.38	29.7
2	T1	All MCs	315	3.3	315	3.3	* 0.990	111.5	LOS F	17.1	123.4	1.00	1.23	1.50	22.9
3	R2	All MCs	173	3.7	173	3.7	0.873	91.9	LOS F	7.7	55.7	1.00	0.98	1.28	17.0
Approach			574	3.7	574	3.7	0.990	91.0	LOS F	17.1	123.4	0.91	1.17	1.26	20.8
East: Oxley Street															
4	L2	All MCs	103	8.2	103	8.1	0.062	15.6	LOS B	0.1	0.7	0.00	0.52	0.00	49.8
5	T1	All MCs	697	4.4	**694**	4.4	0.718	53.0	LOS D	11.0	80.0	0.97	0.84	0.97	25.8
6	R2	All MCs	362	3.5	**361**	3.5	* 0.991	88.8	LOS F	11.1	80.0	1.00	1.32	1.48	15.7
Approach			1162	4.4	**1158**	4.4	0.991	60.8	LOS E	11.1	80.0	0.89	0.96	1.04	21.5
North: Narellan Road															
7	L2	All MCs	475	2.2	475	2.2	0.514	27.6	LOS B	6.4	45.5	0.72	1.27	0.72	11.1
8	T1	All MCs	304	4.5	304	4.5	0.863	69.3	LOS E	12.8	92.8	1.00	0.96	1.14	30.5
9	R2	All MCs	378	7.2	378	7.2	* 0.991	108.9	LOS F	10.1	75.4	1.00	1.13	1.58	21.3
Approach			1157	4.5	1157	4.5	0.991	65.1	LOS E	12.8	92.8	0.89	1.14	1.11	17.9
West: Appin Road															
10	L2	All MCs	861	5.7	861	5.7	0.515	21.1	LOS B	1.3	9.7	0.00	0.53	0.00	53.3
11	T1	All MCs	1221	2.1	1221	2.1	* 0.993	99.2	LOS F	26.6	189.6	1.00	1.40	1.39	13.1
12	R2	All MCs	49	0.0	49	0.0	0.090	62.0	LOS E	1.4	10.0	0.76	0.72	0.76	34.8
Approach			2132	3.5	2132	3.5	0.993	66.7	LOS E	26.6	189.6	0.59	1.03	0.82	20.5
All Vehicles			5024	4.0	**5020**	4.0	0.993	67.8	LOS E	26.6	189.6	0.76	1.06	0.99	20.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: The Parkway										
P1 Full	5	45.1	LOS E	0.0	0.0	0.82	0.82	198.9	200.0	1.01
East: Oxley Street										
P2 Full	5	56.1	LOS E	0.0	0.0	0.91	0.91	209.9	200.0	0.95
North: Narellan Road										
P3 Full	26	31.4	LOS D	0.1	0.1	0.85	0.85	185.2	200.0	1.08
West: Appin Road										
P4 Full	11	56.1	LOS E	0.0	0.0	0.91	0.91	209.9	200.0	0.95
All Pedestrians	47	41.1	LOS E	0.1	0.1	0.87	0.87	195.0	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [1 (11)] Camden Road/ Queen Street (2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	157	0.0	**155**	0.0	0.355	6.2	LOS A	0.9	6.3	0.57	0.68	0.57	26.5
3	R2	All MCs	188	0.0	**187**	0.0	0.355	10.2	LOS A	0.9	6.3	0.57	0.68	0.57	45.9
3u	U	All MCs	2	0.0	2	0.0	0.355	12.1	LOS A	0.9	6.3	0.57	0.68	0.57	26.5
Approach			347	0.0	**344**	0.0	0.355	8.4	LOS A	0.9	6.3	0.57	0.68	0.57	41.7
East: Queen Street															
4	L2	All MCs	263	0.0	263	0.0	0.703	8.0	LOS A	2.5	17.8	0.83	0.67	0.93	44.7
6	R2	All MCs	268	0.4	268	0.4	0.703	12.2	LOS A	2.5	17.8	0.83	0.67	0.93	44.7
6u	U	All MCs	14	0.0	14	0.0	0.703	14.1	LOS A	2.5	17.8	0.83	0.67	0.93	49.3
Approach			545	0.2	545	0.2	0.703	10.2	LOS A	2.5	17.8	0.83	0.67	0.93	44.9
North: Camden Road															
7	L2	All MCs	226	0.0	226	0.0	0.548	3.1	LOS A	1.5	10.3	0.62	0.53	0.62	50.3
8	T1	All MCs	187	0.0	187	0.0	0.548	3.7	LOS A	1.5	10.3	0.62	0.53	0.62	21.3
9u	U	All MCs	59	0.0	59	0.0	0.548	8.9	LOS A	1.5	10.3	0.62	0.53	0.62	21.3
Approach			473	0.0	473	0.0	0.548	4.0	LOS A	1.5	10.3	0.62	0.53	0.62	45.8
All Vehicles			1365	0.1	**1362**	0.1	0.703	7.6	LOS A	2.5	17.8	0.69	0.62	0.73	44.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (12)] Old Menangle Road/ Camden Road (LILO)

(2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	109	0.0	109	0.0	0.250	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.2
2	T1	All MCs	375	0.0	**374**	0.0	0.250	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach			484	0.0	**483**	0.0	0.250	0.6	NA	0.0	0.0	0.00	0.12	0.00	58.5
North: Camden Road															
8	T1	All MCs	474	0.0	474	0.0	0.319	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			474	0.0	474	0.0	0.319	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	165	0.6	165	0.6	0.144	6.0	LOS A	0.2	1.7	0.43	0.65	0.43	48.0
Approach			165	0.6	165	0.6	0.144	6.0	LOS A	0.2	1.7	0.43	0.65	0.43	48.0
All Vehicles			1123	0.1	**1122**	0.1	0.319	1.2	NA	0.2	1.7	0.06	0.15	0.06	56.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (12)] Old Menangle Road/ Art Gallery Road (2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	28	0.0	28	0.0	0.050	4.4	LOS A	0.0	0.0	0.00	0.16	0.00	46.1
5	T1	All MCs	68	0.0	68	0.0	0.050	0.0	LOS A	0.0	0.0	0.00	0.16	0.00	48.5
Approach			97	0.0	97	0.0	0.050	1.3	NA	0.0	0.0	0.00	0.16	0.00	47.8
West: Old Menangle Road															
11	T1	All MCs	41	2.6	41	2.6	0.022	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	49.8
12b	R3	All MCs	1	0.0	1	0.0	0.022	5.2	LOS A	0.0	0.0	0.01	0.02	0.01	48.3
Approach			42	2.5	42	2.5	0.022	0.1	NA	0.0	0.0	0.01	0.02	0.01	49.7
SouthWest: Art Gallery Road															
30b	L3	All MCs	11	0.0	11	0.0	0.114	5.6	LOS A	0.2	1.1	0.20	0.52	0.20	45.7
32a	R1	All MCs	124	0.0	124	0.0	0.114	4.5	LOS A	0.2	1.1	0.20	0.52	0.20	44.1
Approach			135	0.0	135	0.0	0.114	4.6	LOS A	0.2	1.1	0.20	0.52	0.20	44.3
All Vehicles			274	0.4	**273**	0.4	0.114	2.8	NA	0.2	1.1	0.10	0.32	0.10	46.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (12)] Oxley Street/Camden Road (2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1580	2.1	1580	2.1	0.413	0.2	LOS A	3.9	27.9	0.00	0.00	0.00	59.7
6	R2	All MCs	104	0.0	104	0.0	* 0.687	76.9	LOS F	4.5	31.4	1.00	0.83	1.08	17.3
Approach			1684	1.9	1684	1.9	0.687	4.9	LOS A	4.5	31.4	0.06	0.05	0.07	51.8
North: Camden Road															
1	L2	All MCs	158	0.0	158	0.0	0.159	17.0	LOS B	2.5	17.7	0.42	1.00	0.42	39.3
2	R2	All MCs	294	0.0	294	0.0	* 0.700	59.5	LOS E	11.0	77.0	0.95	0.84	0.95	6.1
Approach			452	0.0	452	0.0	0.700	44.6	LOS D	11.0	77.0	0.76	0.90	0.76	16.1
West: Oxley Street															
3	L2	All MCs	244	0.0	**241**	0.0	0.687	5.6	LOS A	0.2	1.5	0.00	0.19	0.00	53.2
4	T1	All MCs	1111	2.7	**1095**	2.6	* 0.687	17.0	LOS B	20.3	145.3	0.49	0.52	0.49	43.1
Approach			1355	2.2	**1336**	2.2	0.687	15.0	LOS B	20.3	145.3	0.40	0.46	0.40	43.7
All Vehicles			3491	1.8	**3472**	1.8	0.700	13.9	LOS A	20.3	145.3	0.28	0.32	0.28	42.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	21.2	LOS C	0.0	0.0	0.55	0.55	175.0	200.0	1.14
All Pedestrians		5	21.2	LOS C	0.0	0.0	0.55	0.55	175.0	200.0	1.14

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (11)] Oxley Street/ Art Gallery Road (2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1865	1.7	1865	1.7	0.417	0.3	LOS A	33.1	235.0	0.02	0.02	0.02	58.7
6	R2	All MCs	11	0.0	11	0.0	0.167	15.8	LOS B	3.7	26.1	0.13	0.15	0.13	49.3
Approach			1876	1.7	1876	1.7	0.417	0.3	NA	33.1	235.0	0.02	0.02	0.02	58.5
North: Art Gallery Road															
7	L2	All MCs	58	0.0	58	0.0	0.079	8.1	LOS A	0.1	0.9	0.55	0.69	0.55	41.1
9	R2	All MCs	14	0.0	14	0.0	4.561	3447.6	LOS F	3.1	21.9	1.00	1.36	2.52	2.0
Approach			72	0.0	72	0.0	4.561	665.6	LOS F	3.1	21.9	0.63	0.82	0.92	8.6
West: Oxley Street															
10	L2	All MCs	80	0.0	**79**	0.0	0.372	5.2	LOS A	0.0	0.0	0.00	0.07	0.00	54.8
11	T1	All MCs	1315	2.2	**1296**	2.2	0.372	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	56.9
Approach			1395	2.1	**1375**	2.1	0.372	0.3	NA	0.0	0.0	0.00	0.03	0.00	56.3
All Vehicles			3342	1.9	**3322**	1.9	4.561	14.7	NA	33.1	235.0	0.02	0.04	0.03	44.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (11)] Appin Road/ Narellan Road (2029 Base Plus Dev PM)

Network: [1 (11)] 2029 Base W Dev PM (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	52	0.0	52	0.0	0.086	32.8	LOS C	1.1	7.7	0.73	1.23	0.73	25.4
2	T1	All MCs	223	0.0	223	0.0	0.664	57.1	LOS E	8.5	59.8	0.99	0.82	0.99	31.1
3	R2	All MCs	161	1.3	161	1.3	0.420	55.9	LOS D	5.7	40.2	0.92	0.80	0.92	21.7
Approach			436	0.5	436	0.5	0.664	53.8	LOS D	8.5	59.8	0.93	0.86	0.93	27.4
East: Oxley Street															
4	L2	All MCs	302	2.4	**300**	2.5	0.176	19.0	LOS B	0.3	2.1	0.00	0.52	0.00	50.1
5	T1	All MCs	1253	1.6	**1245**	1.6	* 1.065	105.0	LOS F	11.3	80.0	0.99	1.30	1.44	16.0
6	R2	All MCs	300	2.5	**298**	2.5	* 1.025	120.9	LOS F	11.2	80.0	1.00	1.45	1.62	6.6
Approach			1855	1.9	**1844**	1.9	1.065	93.5	LOS F	11.3	80.0	0.83	1.20	1.24	13.8
North: Narellan Road															
7	L2	All MCs	224	0.9	224	0.9	0.232	23.4	LOS B	3.7	26.2	0.53	1.30	0.53	15.8
8	T1	All MCs	353	1.2	353	1.2	* 1.062	138.5	LOS F	21.1	149.4	1.00	1.36	1.68	19.0
9	R2	All MCs	773	2.6	773	2.6	* 1.082	168.2	LOS F	25.0	178.7	1.00	1.30	1.81	16.6
Approach			1349	2.0	1349	2.0	1.082	136.4	LOS F	25.0	178.7	0.92	1.31	1.56	16.5
West: Appin Road															
10	L2	All MCs	557	5.3	557	5.3	0.333	9.8	LOS A	0.7	4.8	0.00	0.56	0.00	53.3
11	T1	All MCs	1005	2.5	1005	2.5	* 1.020	117.8	LOS F	29.5	211.2	1.00	1.44	1.52	5.3
12	R2	All MCs	37	0.0	37	0.0	0.212	86.2	LOS F	1.4	9.9	0.96	0.73	0.96	27.9
Approach			1599	3.4	1599	3.4	1.020	79.4	LOS F	29.5	211.2	0.65	1.12	0.98	9.8
All Vehicles			5239	2.3	**5228**	2.3	1.082	97.0	LOS F	29.5	211.2	0.81	1.17	1.22	13.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: The Parkway										
P1 Full	6	33.2	LOS D	0.0	0.0	0.70	0.70	187.1	200.0	1.07
East: Oxley Street										
P2 Full	5	58.1	LOS E	0.0	0.0	0.93	0.93	211.9	200.0	0.94
North: Narellan Road										
P3 Full	26	24.8	LOS C	0.1	0.1	0.79	0.79	178.6	200.0	1.12
West: Appin Road										
P4 Full	16	58.1	LOS E	0.1	0.1	0.93	0.93	212.0	200.0	0.94
All Pedestrians	54	38.8	LOS D	0.1	0.1	0.83	0.83	192.7	200.0	1.04

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (12)] Camden Road/ Queen Street (2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	175	0.6	175	0.6	0.419	6.4	LOS A	1.1	7.9	0.60	0.69	0.60	26.1
3	R2	All MCs	226	0.5	226	0.5	0.419	10.4	LOS A	1.1	7.9	0.60	0.69	0.60	45.6
3u	U	All MCs	2	0.0	2	0.0	0.419	12.3	LOS A	1.1	7.9	0.60	0.69	0.60	26.1
Approach			403	0.5	403	0.5	0.419	8.7	LOS A	1.1	7.9	0.60	0.69	0.60	41.7
East: Queen Street															
4	L2	All MCs	277	0.0	277	0.0	0.664	6.4	LOS A	2.3	16.4	0.71	0.60	0.74	46.1
6	R2	All MCs	321	0.3	321	0.3	0.664	10.6	LOS A	2.3	16.4	0.71	0.60	0.74	46.1
6u	U	All MCs	9	0.0	9	0.0	0.664	12.5	LOS A	2.3	16.4	0.71	0.60	0.74	50.1
Approach			607	0.2	607	0.2	0.664	8.7	LOS A	2.3	16.4	0.71	0.60	0.74	46.2
North: Camden Road															
7	L2	All MCs	234	0.5	234	0.5	0.481	3.2	LOS A	1.2	8.7	0.61	0.53	0.61	50.8
8	T1	All MCs	166	0.6	166	0.6	0.481	3.8	LOS A	1.2	8.7	0.61	0.53	0.61	21.2
9u	U	All MCs	18	0.0	18	0.0	0.481	9.0	LOS A	1.2	8.7	0.61	0.53	0.61	21.2
Approach			418	0.5	418	0.5	0.481	3.7	LOS A	1.2	8.7	0.61	0.53	0.61	47.6
All Vehicles			1428	0.4	1428	0.4	0.664	7.2	LOS A	2.3	16.4	0.65	0.60	0.66	45.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (13)] Old Menangle Road/ Camden Road (LILO)

(2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	60	0.0	60	0.0	0.264	2.5	LOS A	0.0	0.0	0.00	0.06	0.00	50.4
2	T1	All MCs	452	0.0	452	0.0	0.264	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.3
Approach			512	0.0	512	0.0	0.264	0.3	NA	0.0	0.0	0.00	0.06	0.00	59.2
North: Camden Road															
8	T1	All MCs	417	0.5	417	0.5	0.259	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			417	0.5	417	0.5	0.259	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	112	0.0	112	0.0	0.106	6.3	LOS A	0.2	1.2	0.46	0.67	0.46	47.7
Approach			112	0.0	112	0.0	0.106	6.3	LOS A	0.2	1.2	0.46	0.67	0.46	47.7
All Vehicles			1040	0.2	1040	0.2	0.264	0.9	NA	0.2	1.2	0.05	0.10	0.05	57.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (13)] Old Menangle Road/ Art Gallery Road (2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	38	0.0	38	0.0	0.030	4.4	LOS A	0.0	0.0	0.00	0.37	0.00	44.5
5	T1	All MCs	19	0.0	19	0.0	0.030	0.0	LOS A	0.0	0.0	0.00	0.37	0.00	46.7
Approach			57	0.0	57	0.0	0.030	3.0	NA	0.0	0.0	0.00	0.37	0.00	45.2
West: Old Menangle Road															
11	T1	All MCs	28	0.0	28	0.0	0.017	0.0	LOS A	0.0	0.1	0.04	0.09	0.04	48.9
12b	R3	All MCs	4	0.0	4	0.0	0.017	5.3	LOS A	0.0	0.1	0.04	0.09	0.04	47.9
Approach			33	0.0	33	0.0	0.017	0.7	NA	0.0	0.1	0.04	0.09	0.04	48.7
SouthWest: Art Gallery Road															
30b	L3	All MCs	22	0.0	22	0.0	0.081	5.5	LOS A	0.1	0.8	0.11	0.51	0.11	45.8
32a	R1	All MCs	81	0.0	81	0.0	0.081	4.3	LOS A	0.1	0.8	0.11	0.51	0.11	44.3
Approach			103	0.0	103	0.0	0.081	4.5	LOS A	0.1	0.8	0.11	0.51	0.11	44.8
All Vehicles			193	0.0	193	0.0	0.081	3.4	NA	0.1	0.8	0.07	0.39	0.07	45.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (13)] Oxley Street/Camden Road (2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1349	1.7	1349	1.7	0.352	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	120	0.0	120	0.0	*0.619	72.5	LOS F	5.0	34.8	1.00	0.80	1.01	18.0
Approach			1469	1.6	1469	1.6	0.619	6.0	LOS A	5.0	34.8	0.08	0.07	0.08	50.3
North: Camden Road															
1	L2	All MCs	169	0.6	169	0.6	0.164	13.1	LOS A	2.2	15.6	0.34	0.92	0.34	41.5
2	R2	All MCs	276	0.0	276	0.0	*0.644	57.9	LOS E	10.2	71.5	0.94	0.83	0.94	6.0
Approach			445	0.2	445	0.2	0.644	40.9	LOS C	10.2	71.5	0.71	0.87	0.71	17.7
West: Oxley Street															
3	L2	All MCs	283	0.7	283	0.7	0.619	5.7	LOS A	0.3	1.8	0.00	0.24	0.00	51.8
4	T1	All MCs	944	1.9	944	1.9	*0.619	17.1	LOS B	17.5	124.6	0.49	0.53	0.49	43.0
Approach			1227	1.6	1227	1.6	0.619	14.5	LOS A	17.5	124.6	0.37	0.46	0.37	43.7
All Vehicles			3142	1.4	3142	1.4	0.644	14.3	LOS A	17.5	124.6	0.29	0.33	0.29	41.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	21.3	LOS C	0.0	0.0	0.55	0.55	175.1	200.0	1.14
All Pedestrians		5	21.3	LOS C	0.0	0.0	0.55	0.55	175.1	200.0	1.14

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (12)] Oxley Street/ Art Gallery (2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1601	1.4	1601	1.4	0.308	0.3	LOS A	8.6	60.6	0.02	0.03	0.02	58.6
6	R2	All MCs	12	0.0	12	0.0	0.246	15.1	LOS B	3.0	21.2	0.09	0.10	0.09	49.9
Approach			1613	1.4	1613	1.4	0.308	0.4	NA	8.6	60.6	0.02	0.03	0.02	58.4
North: Art Gallery Road															
7	L2	All MCs	33	0.0	33	0.0	0.041	7.3	LOS A	0.1	0.5	0.50	0.63	0.50	41.8
9	R2	All MCs	19	0.0	19	0.0	3.472	2539.6	LOS F	3.9	27.1	1.00	1.58	3.39	1.9
Approach			52	0.0	52	0.0	3.472	937.5	LOS F	3.9	27.1	0.68	0.98	1.56	4.9
West: Oxley Street															
10	L2	All MCs	113	0.0	113	0.0	0.345	5.2	LOS A	0.0	0.0	0.00	0.10	0.00	54.4
11	T1	All MCs	1209	1.6	1209	1.6	0.345	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	55.8
Approach			1322	1.4	1322	1.4	0.345	0.5	NA	0.0	0.0	0.00	0.05	0.00	55.3
All Vehicles			2986	1.4	2986	1.4	3.472	16.6	NA	8.6	60.6	0.02	0.05	0.04	39.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (12)] Appin Road/ Narellan Road (2029 Base Plus Dev SAT)

Network: [1 (12)] 2029 Base W Dev SAT (2029 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	57	1.9	57	1.9	0.088	13.5	LOS A	0.7	4.9	0.52	1.26	0.52	31.6
2	T1	All MCs	238	1.3	238	1.3	0.731	59.5	LOS E	9.4	66.6	1.00	0.87	1.05	30.5
3	R2	All MCs	183	3.4	183	3.4	0.538	59.6	LOS E	6.8	48.7	0.95	0.81	0.95	20.8
Approach			478	2.2	478	2.2	0.731	54.1	LOS D	9.4	66.6	0.93	0.89	0.95	27.5
East: Oxley Street															
4	L2	All MCs	318	2.0	**315**	2.0	0.184	10.9	LOS A	0.3	2.2	0.00	0.52	0.00	50.1
5	T1	All MCs	994	1.7	**986**	1.7	0.724	35.8	LOS C	11.3	80.0	0.88	0.78	0.88	31.2
6	R2	All MCs	326	0.0	**324**	0.0	* 0.890	74.2	LOS F	11.4	80.0	1.00	0.99	1.22	19.3
Approach			1638	1.4	**1624**	1.4	0.890	38.6	LOS C	11.4	80.0	0.73	0.77	0.78	28.8
North: Narellan Road															
7	L2	All MCs	280	1.1	280	1.1	0.304	38.5	LOS C	5.5	39.0	0.64	1.29	0.64	17.9
8	T1	All MCs	292	0.7	292	0.7	* 0.890	80.7	LOS F	12.6	89.1	1.00	1.00	1.19	29.3
9	R2	All MCs	609	2.9	609	2.9	* 0.890	75.5	LOS F	13.7	98.1	1.00	0.99	1.23	26.5
Approach			1181	2.0	1181	2.0	0.890	68.0	LOS E	13.7	98.1	0.91	1.06	1.08	24.0
West: Appin Road															
10	L2	All MCs	661	3.2	661	3.2	0.389	6.7	LOS A	0.8	5.9	0.00	0.65	0.00	53.3
11	T1	All MCs	847	1.1	847	1.1	* 0.885	72.7	LOS F	21.2	149.7	1.00	1.07	1.17	20.6
12	R2	All MCs	72	0.0	72	0.0	0.727	100.1	LOS F	3.1	21.6	1.00	0.85	1.17	25.7
Approach			1580	1.9	1580	1.9	0.885	46.3	LOS D	21.2	149.7	0.58	0.88	0.68	29.5
All Vehicles			4877	1.8	**4863**	1.8	0.890	49.8	LOS D	21.2	149.7	0.75	0.89	0.84	27.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: The Parkway										
P1 Full	5	29.5	LOS C	0.0	0.0	0.66	0.66	183.4	200.0	1.09
East: Oxley Street										
P2 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
North: Narellan Road										
P3 Full	5	41.6	LOS E	0.0	0.0	0.78	0.78	195.4	200.0	1.02
West: Appin Road										
P4 Full	5	58.5	LOS E	0.0	0.0	0.93	0.93	212.3	200.0	0.94
All Pedestrians	21	47.0	LOS E	0.0	0.0	0.83	0.83	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (13)] Camden Road/ Queen Street (2039 Base w Dev AM)

Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	233	0.0	**207**	0.0	0.413	6.2	LOS A	1.0	7.2	0.54	0.68	0.54	26.8
3	R2	All MCs	237	0.4	**210**	0.5	0.413	10.2	LOS A	1.0	7.2	0.54	0.68	0.54	46.1
3u	U	All MCs	1	0.0	1	0.0	0.413	12.1	LOS A	1.0	7.2	0.54	0.68	0.54	26.8
Approach			471	0.2	**418**	0.3	0.413	8.2	LOS A	1.0	7.2	0.54	0.68	0.54	41.5
East: Queen Street															
4	L2	All MCs	95	0.0	95	0.0	0.316	5.2	LOS A	0.8	6.0	0.44	0.60	0.44	46.8
6	R2	All MCs	268	1.6	268	1.6	0.316	9.5	LOS A	0.8	6.0	0.44	0.60	0.44	46.8
6u	U	All MCs	7	0.0	7	0.0	0.316	11.3	LOS A	0.8	6.0	0.44	0.60	0.44	50.5
Approach			371	1.1	371	1.1	0.316	8.4	LOS A	0.8	6.0	0.44	0.60	0.44	47.0
North: Camden Road															
7	L2	All MCs	282	0.4	282	0.4	0.401	2.9	LOS A	1.2	8.5	0.53	0.53	0.53	50.8
8	T1	All MCs	122	5.2	122	5.2	0.401	3.6	LOS A	1.2	8.5	0.53	0.53	0.53	21.6
9u	U	All MCs	45	0.0	45	0.0	0.401	8.7	LOS A	1.2	8.5	0.53	0.53	0.53	21.6
Approach			449	1.6	449	1.6	0.401	3.7	LOS A	1.2	8.5	0.53	0.53	0.53	48.4
All Vehicles			1291	1.0	**1238**	1.0	0.413	6.6	LOS A	1.2	8.5	0.51	0.60	0.51	45.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [6 (14)] Old Menangle Road/ Camden Road (LILO) (2039 Base w Dev AM)

Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	119	0.0	**113**	0.0	0.268	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.5
2	T1	All MCs	423	0.0	**403**	0.0	0.268	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach			542	0.0	**516**	0.0	0.268	0.5	NA	0.0	0.0	0.00	0.12	0.00	58.6
North: Camden Road															
8	T1	All MCs	449	1.6	449	1.6	0.279	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			449	1.6	449	1.6	0.279	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Old Menangle Road															
10	L2	All MCs	84	1.2	84	1.2	0.076	6.0	LOS A	0.1	0.8	0.43	0.64	0.43	47.9
Approach			84	1.2	84	1.2	0.076	6.0	LOS A	0.1	0.8	0.43	0.64	0.43	47.9
All Vehicles			1076	0.8	**1050**	0.8	0.279	0.8	NA	0.1	0.8	0.03	0.11	0.03	57.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (14)] Old Menangle Road/ Art Gallery Road (2039 Base w Dev AM)

Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	56	1.9	**53**	2.0	0.060	4.4	LOS A	0.0	0.0	0.00	0.26	0.00	45.3
5	T1	All MCs	64	0.0	**61**	0.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	47.6
Approach			120	0.9	**114**	0.9	0.060	2.1	NA	0.0	0.0	0.00	0.26	0.00	46.5
West: Old Menangle Road															
11	T1	All MCs	71	1.5	71	1.5	0.040	0.0	LOS A	0.0	0.1	0.03	0.04	0.03	49.4
12b	R3	All MCs	4	0.0	4	0.0	0.040	5.4	LOS A	0.0	0.1	0.03	0.04	0.03	48.1
Approach			75	1.4	75	1.4	0.040	0.3	NA	0.0	0.1	0.03	0.04	0.03	49.3
SouthWest: Art Gallery Road															
30b	L3	All MCs	5	20.0	5	20.0	0.016	5.8	LOS A	0.0	0.2	0.19	0.51	0.19	45.4
32a	R1	All MCs	14	0.0	14	0.0	0.016	4.6	LOS A	0.0	0.2	0.19	0.51	0.19	43.9
Approach			19	5.6	19	5.6	0.016	4.9	LOS A	0.0	0.2	0.19	0.51	0.19	44.5
All Vehicles			214	1.5	**208**	1.5	0.060	1.7	NA	0.0	0.2	0.03	0.20	0.03	47.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (14)] Oxley Street/Camden Road (2039 Base w Dev AM)
Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1424	4.1	1424	4.1	0.474	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
6	R2	All MCs	155	0.7	155	0.7	*0.716	73.0	LOS F	6.5	46.0	1.00	0.85	1.07	18.0
Approach			1579	3.7	1579	3.7	0.716	7.4	LOS A	6.5	46.0	0.10	0.08	0.11	48.5
North: Camden Road															
1	L2	All MCs	124	0.8	124	0.8	0.218	47.0	LOS D	3.7	26.2	0.79	1.21	0.79	29.5
2	R2	All MCs	98	6.5	98	6.5	*0.716	94.5	LOS F	4.3	31.6	1.00	0.85	1.12	4.2
Approach			222	3.3	222	3.3	0.716	67.9	LOS E	4.3	31.6	0.88	1.05	0.93	14.7
West: Oxley Street															
3	L2	All MCs	313	0.0	**260**	0.0	0.716	5.7	LOS A	0.2	1.6	0.00	0.15	0.00	54.5
4	T1	All MCs	1941	2.7	**1614**	2.7	*0.716	8.6	LOS A	23.6	169.3	0.39	0.42	0.39	49.9
Approach			2254	2.3	**1874**	2.3	0.716	8.2	LOS A	23.6	169.3	0.34	0.39	0.34	50.1
All Vehicles			4055	2.9	**3675**	3.2	0.716	11.5	LOS A	23.6	169.3	0.27	0.30	0.27	45.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	9.4	LOS A	0.0	0.0	0.37	0.37	163.2	200.0	1.23
All Pedestrians		5	9.4	LOS A	0.0	0.0	0.37	0.37	163.2	200.0	1.23

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: [4 (13)] Oxley Street/ Art Gallery Road (2039 Base w Dev AM)

Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1511	4.3	1510	4.3	0.339	1.6	LOS A	29.0	210.3	0.05	0.05	0.05	53.4
6	R2	All MCs	11	0.0	11	0.0	0.203	38.8	LOS C	29.0	210.3	0.30	0.32	0.30	42.2
Approach			1521	4.2	1521	4.2	0.339	1.9	NA	29.0	210.3	0.05	0.05	0.05	53.1
North: Art Gallery Road															
7	L2	All MCs	25	0.0	25	0.0	0.053	11.5	LOS A	0.1	0.6	0.65	0.79	0.65	38.2
9	R2	All MCs	11	10.0	11	10.0	3.509	2493.7	LOS F	2.3	17.7	1.00	1.35	2.46	2.1
Approach			36	2.9	36	2.9	3.509	741.6	LOS F	2.3	17.7	0.75	0.95	1.18	6.3
West: Oxley Street															
10	L2	All MCs	224	0.5	**186**	0.5	0.598	5.2	LOS A	0.0	0.0	0.00	0.10	0.00	54.2
11	T1	All MCs	2242	2.4	**1860**	2.4	0.598	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	55.1
Approach			2466	2.2	**2046**	2.2	0.598	0.5	NA	0.0	0.0	0.00	0.05	0.00	54.7
All Vehicles			4023	3.0	**3603**	3.3	3.509	8.5	NA	29.0	210.3	0.03	0.06	0.03	44.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (13)] Appin Road/ Narellan Road (2039 Base w Dev AM)
Network: [1 (13)] 2039 Base w Dev AM (2039 Base W Dev)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	116	5.5	116	5.5	0.120	38.0	LOS C	1.6	12.0	0.52	1.34	0.52	26.6
2	T1	All MCs	419	3.3	419	3.3	* 1.323	383.2	LOS F	39.6	284.8	1.00	2.06	2.74	10.4
3	R2	All MCs	228	3.2	228	3.2	1.152	245.8	LOS F	16.7	120.0	1.00	1.42	2.15	8.0
Approach			763	3.6	763	3.6	1.323	289.7	LOS F	39.6	284.8	0.93	1.76	2.23	10.1
East: Oxley Street															
4	L2	All MCs	136	7.8	**135**	7.7	0.081	27.1	LOS B	0.1	0.9	0.00	0.52	0.00	49.9
5	T1	All MCs	928	4.4	**924**	4.4	0.977	97.9	LOS F	11.0	80.0	1.00	1.23	1.39	17.6
6	R2	All MCs	482	3.5	**480**	3.5	* 1.318	342.9	LOS F	11.1	80.0	1.00	1.88	2.71	5.8
Approach			1546	4.4	**1539**	4.4	1.318	168.1	LOS F	11.1	80.0	0.91	1.37	1.68	10.7
North: Narellan Road															
7	L2	All MCs	596	2.3	596	2.3	0.683	32.3	LOS C	10.5	74.7	0.84	1.20	0.84	10.1
8	T1	All MCs	405	4.7	405	4.7	1.219	271.6	LOS F	32.9	239.5	1.00	1.82	2.32	12.6
9	R2	All MCs	502	7.1	502	7.1	* 1.318	365.0	LOS F	23.6	175.0	1.00	1.68	2.75	10.1
Approach			1503	4.6	1503	4.6	1.318	207.9	LOS F	32.9	239.5	0.94	1.53	1.88	10.6
West: Appin Road															
10	L2	All MCs	1147	5.8	1147	5.8	0.686	28.2	LOS B	2.5	18.4	0.00	0.53	0.00	53.3
11	T1	All MCs	1624	2.0	1624	2.0	* 1.316	355.2	LOS F	68.5	487.5	1.00	2.19	2.67	5.1
12	R2	All MCs	66	0.0	66	0.0	0.130	70.1	LOS E	2.0	14.0	0.79	0.73	0.79	33.9
Approach			2838	3.5	2838	3.5	1.316	216.4	LOS F	68.5	487.5	0.59	1.48	1.55	10.1
All Vehicles			6651	4.0	**6643**	4.0	1.323	211.7	LOS F	68.5	487.5	0.78	1.50	1.73	10.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

South: The Parkway										
P1 Full	5	45.2	LOS E	0.0	0.0	0.82	0.82	199.0	200.0	1.00
East: Oxley Street										
P2 Full	5	55.8	LOS E	0.0	0.0	0.91	0.91	209.7	200.0	0.95
North: Narellan Road										
P3 Full	26	30.2	LOS D	0.1	0.1	0.86	0.86	184.1	200.0	1.09
West: Appin Road										
P4 Full	11	55.9	LOS E	0.0	0.0	0.91	0.91	209.7	200.0	0.95
All Pedestrians	47	40.4	LOS E	0.1	0.1	0.87	0.87	194.3	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (14)] Camden Road/ Queen Street (2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	200	0.0	**181**	0.0	0.478	7.3	LOS A	1.4	9.5	0.69	0.75	0.71	24.9
3	R2	All MCs	252	0.0	**228**	0.0	0.478	11.3	LOS A	1.4	9.5	0.69	0.75	0.71	45.0
3u	U	All MCs	3	0.0	3	0.0	0.478	13.2	LOS A	1.4	9.5	0.69	0.75	0.71	24.9
Approach			455	0.0	**412**	0.0	0.478	9.6	LOS A	1.4	9.5	0.69	0.75	0.71	40.7
East: Queen Street															
4	L2	All MCs	351	0.0	351	0.0	1.063	77.2	LOS F	18.9	132.3	1.00	2.42	4.12	17.1
6	R2	All MCs	358	0.3	358	0.3	1.063	81.5	LOS F	18.9	132.3	1.00	2.42	4.12	17.1
6u	U	All MCs	19	0.0	19	0.0	1.063	83.3	LOS F	18.9	132.3	1.00	2.42	4.12	25.7
Approach			727	0.1	727	0.1	1.063	79.5	LOS F	18.9	132.3	1.00	2.42	4.12	17.4
North: Camden Road															
7	L2	All MCs	301	0.0	301	0.0	0.768	6.4	LOS A	2.1	15.0	0.93	0.69	1.07	46.4
8	T1	All MCs	235	0.0	235	0.0	0.768	7.0	LOS A	2.1	15.0	0.93	0.69	1.07	14.1
9u	U	All MCs	79	0.0	79	0.0	0.768	12.2	LOS A	2.1	15.0	0.93	0.69	1.07	14.1
Approach			615	0.0	615	0.0	0.768	7.3	LOS A	2.1	15.0	0.93	0.69	1.07	40.1
All Vehicles			1797	0.1	**1754**	0.1	1.063	37.8	LOS C	18.9	132.3	0.90	1.42	2.25	23.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [6 (15)] Old Menangle Road/ Camden Road (LILO)

(2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	143	0.0	**134**	0.0	0.309	2.5	LOS A	0.0	0.0	0.00	0.12	0.00	44.2
2	T1	All MCs	493	0.0	**462**	0.0	0.309	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach			636	0.0	**596**	0.0	0.309	0.6	NA	0.0	0.0	0.00	0.12	0.00	58.5
North: Camden Road															
8	T1	All MCs	615	0.0	615	0.0	0.630	0.7	LOS A	0.0	0.0	0.00	0.00	0.00	58.7
Approach			615	0.0	615	0.0	0.630	0.7	NA	0.0	0.0	0.00	0.00	0.00	58.7
West: Old Menangle Road															
10	L2	All MCs	188	0.6	188	0.6	0.181	6.5	LOS A	0.3	2.1	0.49	0.70	0.49	47.5
Approach			188	0.6	188	0.6	0.181	6.5	LOS A	0.3	2.1	0.49	0.70	0.49	47.5
All Vehicles			1439	0.1	**1399**	0.1	0.630	1.4	NA	0.3	2.1	0.07	0.15	0.07	56.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (15)] Old Menangle Road/ Art Gallery Road (2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	36	0.0	**34**	0.0	0.062	4.4	LOS A	0.0	0.0	0.00	0.16	0.00	46.2
5	T1	All MCs	92	0.0	**86**	0.0	0.062	0.0	LOS A	0.0	0.0	0.00	0.16	0.00	48.5
Approach			127	0.0	**119**	0.0	0.062	1.2	NA	0.0	0.0	0.00	0.16	0.00	47.8
West: Old Menangle Road															
11	T1	All MCs	55	1.9	55	1.9	0.029	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.8
12b	R3	All MCs	1	0.0	1	0.0	0.029	5.3	LOS A	0.0	0.0	0.01	0.01	0.01	48.3
Approach			56	1.9	56	1.9	0.029	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.8
SouthWest: Art Gallery Road															
30b	L3	All MCs	14	0.0	14	0.0	0.128	5.7	LOS A	0.2	1.3	0.24	0.53	0.24	45.7
32a	R1	All MCs	134	0.0	134	0.0	0.128	4.7	LOS A	0.2	1.3	0.24	0.53	0.24	43.9
Approach			147	0.0	147	0.0	0.128	4.8	LOS A	0.2	1.3	0.24	0.53	0.24	44.2
All Vehicles			331	0.3	**323**	0.3	0.128	2.7	NA	0.2	1.3	0.11	0.30	0.11	46.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [2 (15)] Oxley Street/Camden Road (2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2103	2.1	2103	2.1	0.725	0.7	LOS A	52.8	376.5	0.00	0.00	0.00	58.6
6	R2	All MCs	132	0.0	132	0.0	* 0.827	46.3	LOS D	3.2	22.1	1.00	0.96	1.41	24.1
Approach			2235	2.0	2235	2.0	0.827	3.4	LOS A	52.8	376.5	0.06	0.06	0.08	54.1
North: Camden Road															
1	L2	All MCs	195	0.0	**188**	0.0	0.203	26.4	LOS B	2.0	14.1	0.59	1.28	0.59	36.4
2	R2	All MCs	392	0.0	**378**	0.0	* 0.878	146.9	LOS F	11.4	80.0	1.00	1.03	1.35	7.2
Approach			586	0.0	**565**	0.0	0.878	106.9	LOS F	11.4	80.0	0.86	1.11	1.10	15.1
West: Oxley Street															
3	L2	All MCs	325	0.0	**282**	0.0	0.878	5.7	LOS A	0.3	1.8	0.00	0.19	0.00	53.4
4	T1	All MCs	1468	2.7	**1273**	2.6	* 0.878	16.6	LOS B	16.8	120.5	0.55	0.67	0.68	43.4
Approach			1794	2.2	**1555**	2.1	0.878	14.6	LOS B	16.8	120.5	0.45	0.58	0.55	44.0
All Vehicles			4615	1.8	**4355**	1.9	0.878	20.9	LOS B	52.8	376.5	0.30	0.38	0.38	42.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	15.1	LOS B	0.0	0.0	0.66	0.66	169.0	200.0	1.18
All Pedestrians		5	15.1	LOS B	0.0	0.0	0.66	0.66	169.0	200.0	1.18

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (14)] Oxley Street/ Art Gallery Road (2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2483	1.8	**2469**	1.8	0.556	0.4	LOS A	33.1	235.0	0.02	0.03	0.02	58.0
6	R2	All MCs	14	0.0	14	0.0	0.222	19.9	LOS B	27.4	194.5	0.16	0.18	0.16	48.3
Approach			2497	1.8	**2483**	1.8	0.556	0.5	NA	33.1	235.0	0.02	0.03	0.02	57.8
North: Art Gallery Road															
7	L2	All MCs	68	0.0	68	0.0	0.103	8.9	LOS A	0.2	1.2	0.58	0.74	0.58	40.4
9	R2	All MCs	16	0.0	16	0.0	5.263	4045.0	LOS F	3.6	25.2	1.00	1.40	2.78	2.0
Approach			84	0.0	84	0.0	5.263	765.6	LOS F	3.6	25.2	0.66	0.86	1.00	8.7
West: Oxley Street															
10	L2	All MCs	98	0.0	**84**	0.0	0.418	5.2	LOS A	0.0	0.0	0.00	0.06	0.00	54.8
11	T1	All MCs	1749	2.2	**1508**	2.2	0.418	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	57.0
Approach			1847	2.1	**1592**	2.1	0.418	0.3	NA	0.0	0.0	0.00	0.03	0.00	56.4
All Vehicles			4428	1.9	**4159**	2.0	5.263	15.9	NA	33.1	235.0	0.03	0.04	0.03	44.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (14)] Appin Road/ Narellan Road (2039 Base w Dev PM)

Network: [1 (14)] 2039 Base W Dev PM (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	69	0.0	69	0.0	0.117	38.9	LOS C	1.7	11.7	0.75	1.25	0.75	24.6
2	T1	All MCs	297	0.0	297	0.0	0.968	102.5	LOS F	15.8	110.7	1.00	1.17	1.42	23.9
3	R2	All MCs	215	1.5	215	1.5	0.542	68.0	LOS E	8.0	57.0	0.94	0.82	0.94	21.0
Approach			581	0.5	581	0.5	0.968	82.1	LOS F	15.8	110.7	0.95	1.05	1.16	21.8
East: Oxley Street															
4	L2	All MCs	402	2.4	**398**	2.4	0.233	30.2	LOS C	0.4	2.9	0.00	0.52	0.00	50.1
5	T1	All MCs	1666	1.6	**1648**	1.6	* 1.417	351.4	LOS F	11.3	80.0	1.00	2.24	2.58	6.9
6	R2	All MCs	397	2.4	**393**	2.4	* 1.401	434.9	LOS F	11.2	80.0	1.00	1.95	2.93	4.0
Approach			2465	1.8	**2439**	1.9	1.417	312.4	LOS F	11.3	80.0	0.84	1.91	2.22	6.8
North: Narellan Road															
7	L2	All MCs	292	1.1	292	1.1	0.315	43.4	LOS D	6.3	44.4	0.63	1.28	0.63	15.2
8	T1	All MCs	469	1.3	469	1.3	* 1.420	461.1	LOS F	49.3	349.3	1.00	2.24	2.96	9.3
9	R2	All MCs	1028	2.6	1028	2.6	* 1.439	489.8	LOS F	55.3	395.2	1.00	1.87	3.03	8.8
Approach			1789	2.0	1789	2.0	1.439	409.6	LOS F	55.3	395.2	0.94	1.87	2.62	8.8
West: Appin Road															
10	L2	All MCs	741	5.3	741	5.3	0.444	27.0	LOS B	1.0	7.4	0.00	0.53	0.00	53.3
11	T1	All MCs	1336	2.4	1336	2.4	* 1.236	298.3	LOS F	55.1	393.6	1.00	1.84	2.33	3.0
12	R2	All MCs	48	0.0	48	0.0	0.314	97.9	LOS F	2.0	13.8	0.98	0.75	0.98	27.0
Approach			2125	3.4	2125	3.4	1.236	199.1	LOS F	55.1	393.6	0.65	1.36	1.49	5.8
All Vehicles			6961	2.2	**6935**	2.2	1.439	283.5	LOS F	55.3	395.2	0.82	1.66	2.01	7.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: The Parkway										
P1 Full	6	34.3	LOS D	0.0	0.0	0.70	0.70	188.1	200.0	1.06
East: Oxley Street										
P2 Full	5	58.6	LOS E	0.0	0.0	0.91	0.91	212.4	200.0	0.94
North: Narellan Road										
P3 Full	26	25.6	LOS C	0.1	0.1	0.78	0.78	179.4	200.0	1.11
West: Appin Road										
P4 Full	16	58.6	LOS E	0.1	0.1	0.92	0.92	212.4	200.0	0.94
All Pedestrians	54	39.6	LOS D	0.1	0.1	0.83	0.83	193.4	200.0	1.03

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\2024\2419\241913\Reports\TTW\Traffic\1 - TAIA\traffic modelling\260115_Campbelltown Arts Centre_v01.sipx

MOVEMENT SUMMARY

Site: [1 (15)] Camden Road/ Queen Street (2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
2	T1	All MCs	216	0.5	**200**	0.5	0.570	8.7	LOS A	2.0	13.9	0.77	0.81	0.86	22.9
3	R2	All MCs	301	0.3	**279**	0.3	0.570	12.7	LOS A	2.0	13.9	0.77	0.81	0.86	43.7
3u	U	All MCs	3	0.0	3	0.0	0.570	14.6	LOS B	2.0	13.9	0.77	0.81	0.86	22.9
Approach			520	0.4	**481**	0.4	0.570	11.0	LOS A	2.0	13.9	0.77	0.81	0.86	39.4
East: Queen Street															
4	L2	All MCs	369	0.0	369	0.0	0.784	8.9	LOS A	4.5	31.3	0.91	0.70	1.04	43.6
6	R2	All MCs	426	0.2	426	0.2	0.784	13.2	LOS A	4.5	31.3	0.91	0.70	1.04	43.6
6u	U	All MCs	13	0.0	13	0.0	0.784	15.0	LOS B	4.5	31.3	0.91	0.70	1.04	48.5
Approach			808	0.1	808	0.1	0.784	11.3	LOS A	4.5	31.3	0.91	0.70	1.04	43.7
North: Camden Road															
7	L2	All MCs	311	0.3	311	0.3	0.568	4.1	LOS A	1.9	13.6	0.73	0.61	0.75	49.7
8	T1	All MCs	209	0.5	209	0.5	0.568	4.7	LOS A	1.9	13.6	0.73	0.61	0.75	18.6
9u	U	All MCs	23	0.0	23	0.0	0.568	9.9	LOS A	1.9	13.6	0.73	0.61	0.75	18.6
Approach			543	0.4	543	0.4	0.568	4.6	LOS A	1.9	13.6	0.73	0.61	0.75	46.2
All Vehicles			1872	0.3	**1833**	0.3	0.784	9.2	LOS A	4.5	31.3	0.82	0.70	0.91	43.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [6 (16)] Old Menangle Road/ Camden Road (LILO)

(2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Camden Road															
1	L2	All MCs	74	0.0	**72**	0.0	0.334	2.5	LOS A	0.0	0.0	0.00	0.06	0.00	50.8
2	T1	All MCs	591	0.0	**576**	0.0	0.334	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.3
Approach			664	0.0	**648**	0.0	0.334	0.3	NA	0.0	0.0	0.00	0.06	0.00	59.2
North: Camden Road															
8	T1	All MCs	543	0.4	543	0.4	0.464	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	59.4
Approach			543	0.4	543	0.4	0.464	0.3	NA	0.0	0.0	0.00	0.00	0.00	59.4
West: Old Menangle Road															
10	L2	All MCs	126	0.0	126	0.0	0.139	7.1	LOS A	0.2	1.5	0.53	0.75	0.53	46.9
Approach			126	0.0	126	0.0	0.139	7.1	LOS A	0.2	1.5	0.53	0.75	0.53	46.9
All Vehicles			1334	0.2	**1318**	0.2	0.464	0.9	NA	0.2	1.5	0.05	0.10	0.05	57.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5 (16)] Old Menangle Road/ Art Gallery Road (2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Old Menangle Road															
4a	L1	All MCs	44	0.0	**43**	0.0	0.035	4.4	LOS A	0.0	0.0	0.00	0.35	0.00	44.6
5	T1	All MCs	25	0.0	25	0.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	46.8
Approach			69	0.0	**68**	0.0	0.035	2.8	NA	0.0	0.0	0.00	0.35	0.00	45.4
West: Old Menangle Road															
11	T1	All MCs	38	0.0	38	0.0	0.024	0.0	LOS A	0.0	0.1	0.05	0.10	0.05	48.7
12b	R3	All MCs	6	0.0	6	0.0	0.024	5.3	LOS A	0.0	0.1	0.05	0.10	0.05	47.8
Approach			44	0.0	44	0.0	0.024	0.8	NA	0.0	0.1	0.05	0.10	0.05	48.5
SouthWest: Art Gallery Road															
30b	L3	All MCs	29	0.0	29	0.0	0.092	5.5	LOS A	0.1	0.9	0.13	0.51	0.13	45.8
32a	R1	All MCs	87	0.0	87	0.0	0.092	4.4	LOS A	0.1	0.9	0.13	0.51	0.13	44.1
Approach			117	0.0	117	0.0	0.092	4.7	LOS A	0.1	0.9	0.13	0.51	0.13	44.8
All Vehicles			231	0.0	**229**	0.0	0.092	3.4	NA	0.1	0.9	0.08	0.38	0.08	45.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [2 (16)] Oxley Street/Camden Road (2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	1797	1.8	1797	1.8	0.469	0.2	LOS A	1.1	7.9	0.00	0.00	0.00	59.6
6	R2	All MCs	143	0.0	143	0.0	* 0.835	43.8	LOS D	3.2	22.5	1.00	0.98	1.44	24.9
Approach			1940	1.6	1940	1.6	0.835	3.4	LOS A	3.2	22.5	0.07	0.07	0.11	54.1
North: Camden Road															
1	L2	All MCs	215	0.5	215	0.5	0.208	10.9	LOS A	2.0	14.3	0.53	1.22	0.53	39.5
2	R2	All MCs	367	0.0	367	0.0	* 0.840	41.4	LOS C	8.0	56.2	1.00	0.98	1.28	8.2
Approach			582	0.2	582	0.2	0.840	30.2	LOS C	8.0	56.2	0.83	1.07	1.00	21.5
West: Oxley Street															
3	L2	All MCs	377	0.8	**338**	0.9	0.840	5.7	LOS A	0.3	2.2	0.00	0.23	0.00	52.2
4	T1	All MCs	1251	1.9	**1121**	1.9	* 0.840	14.5	LOS B	13.2	93.7	0.55	0.66	0.65	44.8
Approach			1627	1.6	**1459**	1.7	0.840	12.5	LOS A	13.2	93.7	0.42	0.56	0.50	45.4
All Vehicles			4149	1.4	**3981**	1.5	0.840	10.6	LOS A	13.2	93.7	0.31	0.40	0.38	44.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Camden Road											
P1	Full	5	15.7	LOS B	0.0	0.0	0.69	0.69	169.5	200.0	1.18
All Pedestrians		5	15.7	LOS B	0.0	0.0	0.69	0.69	169.5	200.0	1.18

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [4 (15)] Oxley Street/ Art Gallery Road (2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Oxley Street															
5	T1	All MCs	2132	1.5	**2131**	1.5	0.414	0.5	LOS A	33.2	235.0	0.03	0.03	0.03	57.7
6	R2	All MCs	16	0.0	16	0.0	0.331	19.5	LOS B	22.2	157.0	0.12	0.14	0.12	49.1
Approach			2147	1.5	2147	1.5	0.414	0.6	NA	33.2	235.0	0.03	0.03	0.03	57.5
North: Art Gallery Road															
7	L2	All MCs	38	0.0	38	0.0	0.054	8.2	LOS A	0.1	0.6	0.55	0.68	0.55	40.9
9	R2	All MCs	24	0.0	24	0.0	8.070	6586.3	LOS F	5.7	40.2	1.00	1.41	2.80	1.8
Approach			62	0.0	62	0.0	8.070	2572.6	LOS F	5.7	40.2	0.73	0.97	1.43	4.4
West: Oxley Street															
10	L2	All MCs	127	0.0	**114**	0.0	0.406	5.2	LOS A	0.0	0.0	0.00	0.09	0.00	54.6
11	T1	All MCs	1611	1.6	**1440**	1.6	0.406	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	56.2
Approach			1738	1.5	**1554**	1.5	0.406	0.4	NA	0.0	0.0	0.00	0.04	0.00	55.6
All Vehicles			3947	1.4	**3763**	1.5	8.070	43.0	NA	33.2	235.0	0.03	0.05	0.04	38.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3 (15)] Appin Road/ Narellan Road (2039 Base w Dev SAT)

Network: [1 (15)] 2039 Base w Dev SAT (2039 Base W Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: The Parkway															
1	L2	All MCs	75	1.4	75	1.4	0.133	43.9	LOS D	1.8	13.0	0.76	1.25	0.76	24.6
2	T1	All MCs	317	1.3	317	1.3	1.099	182.7	LOS F	21.1	149.1	1.00	1.47	1.90	16.3
3	R2	All MCs	243	3.0	243	3.0	0.705	74.7	LOS F	9.4	67.5	0.99	0.85	1.02	20.2
Approach			635	2.0	635	2.0	1.099	125.0	LOS F	21.1	149.1	0.97	1.21	1.43	16.8
East: Oxley Street															
4	L2	All MCs	422	1.7	**418**	1.8	0.244	18.9	LOS B	0.4	3.1	0.00	0.53	0.00	50.2
5	T1	All MCs	1322	1.7	**1309**	1.7	1.003	80.4	LOS F	11.3	80.0	1.00	1.20	1.31	19.5
6	R2	All MCs	434	0.0	**429**	0.0	* 1.193	249.7	LOS F	11.4	80.0	1.00	1.50	2.25	8.1
Approach			2178	1.4	**2157**	1.4	1.193	102.2	LOS F	11.4	80.0	0.81	1.13	1.24	16.2
North: Narellan Road															
7	L2	All MCs	353	1.2	353	1.2	0.414	48.0	LOS D	7.8	55.3	0.72	1.33	0.72	16.2
8	T1	All MCs	388	0.8	388	0.8	* 1.193	257.8	LOS F	30.1	212.3	1.00	1.71	2.22	13.3
9	R2	All MCs	811	2.9	811	2.9	* 1.191	260.8	LOS F	31.8	228.0	1.00	1.50	2.25	12.7
Approach			1552	2.0	1552	2.0	1.193	211.7	LOS F	31.8	228.0	0.94	1.51	1.89	12.5
West: Appin Road															
10	L2	All MCs	880	3.2	880	3.2	0.518	20.1	LOS B	1.3	9.6	0.00	0.62	0.00	53.3
11	T1	All MCs	1127	1.1	1127	1.1	* 1.195	264.0	LOS F	51.8	366.1	1.00	1.92	2.24	7.6
12	R2	All MCs	96	0.0	96	0.0	1.002	144.4	LOS F	5.1	36.0	1.00	1.09	1.71	20.7
Approach			2103	2.0	2103	2.0	1.195	156.5	LOS F	51.8	366.1	0.58	1.34	1.28	14.3
All Vehicles			6467	1.8	**6446**	1.8	1.195	148.5	LOS F	51.8	366.1	0.78	1.30	1.43	14.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		ped	m			sec	m	m/sec
South: The Parkway										
P1 Full	5	29.5	LOS C	0.0	0.0	0.66	0.66	183.3	200.0	1.09
East: Oxley Street										
P2 Full	5	58.6	LOS E	0.0	0.0	0.93	0.93	212.4	200.0	0.94
North: Narellan Road										
P3 Full	5	41.5	LOS E	0.0	0.0	0.78	0.78	195.3	200.0	1.02
West: Appin Road										
P4 Full	5	58.6	LOS E	0.0	0.0	0.93	0.93	212.4	200.0	0.94
All Pedestrians	21	47.0	LOS E	0.0	0.0	0.83	0.83	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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