



ptc.

13 June 2024

**Royal Randwick
Racecourse Non-
Race Day Events
Australian Turf Club
Transport Impact
Assessment**

For: **Australian Turf Club**

Site Address: **Alison Rd, Randwick NSW 2031**

Issue:	Date	Issue details	Author	Reviewed
1	13/06/24	Final	SM	AM

For the attention of:

Sam Wolff-Gillings
Mostyn Copper Group

Contact:

Andrew Morse
+61 2 8920 0800
+61 414 618 002
andrew.morse@ptcconsultants.co

COMMERCIAL IN CONFIDENCE
The information contained in this document, including any intellectual property rights arising from designs developed and documents created, is confidential and proprietary to **ptc.** This document may only be used by the person/organisation to whom it is addressed for the stated purpose for which it is provided and must not be imparted to or reproduced, in whole or in part, by any third person without the prior written approval of a **ptc.** authorised representative. **ptc.** reserves all legal rights and remedies in relation to any infringement of its rights in respect of its intellectual property and/or confidential information.
© 2024

ptc.
Suite 502, 1 James Place, North Sydney NSW 2060
info@ptcconsultants.co | (+61) 2 8920 0800 | ptcconsultants.co
ABN 85 114 561 223

contents;

1.Executive Summary	7
2.Introduction	8
2.1. Overview	8
2.2. Event Location	1
2.3. Temporary Structures	1
2.4. Site Access and Parking	2
2.5. Event Classifications	2
2.6. Event Management	3
2.7. Scope of this Report	3
2.8. Compliance with SEARs	4
3.Proposal Context	5
3.1. Randwick Locality	5
3.2. Royal Randwick Racecourse	5
3.3. Moore Park Event Operations Group (MEOG)	5
4.Racecourse Access and Transport Facilities	6
5.Existing Transport Facilities	8
5.1. Road Hierarchy	8
5.1.1. Anzac Parade	9
5.1.2. Alison Road	9
5.1.3. Doncaster Avenue	10
5.1.4. Wansey Road	10
5.1.5. High Street	11
5.2. Public Transport	12
5.2.1. Regular Bus Service	13
5.2.2. Event Bus Service	14
5.2.3. Light Rail	14
5.3. Active Transport	16
5.3.1. Walking	16
5.3.2. Cycling	17
6.Existing Traffic Conditions	19
6.1. Traffic Surveys	19
6.2. Existing Traffic Volumes	20

contents;

6.3.	Existing Traffic Signal Data	21
6.4.	Racecourse Event Private Vehicle Trips	22
7.	Pedestrian, Transport & Traffic Assessment	23
7.1.	Travel Catchment	23
7.2.	Travel Mode Share	24
7.2.1.	ATC Data	24
7.2.2.	ptc. Surveys	24
7.2.3.	Existing Mode Share Comparison	25
7.3.	Projected Mode Share and Trip Generation	25
7.4.	Peak Traffic Assessment	27
7.4.1.	Trip Distribution	28
7.5.	Off-peak Trips	30
7.5.1.	Heavy Vehicle & Service Vehicle Trips	30
7.6.	Assessment Scenarios	30
7.7.	Traffic Network Modelling	30
7.7.1.	SIDRA Intersection Modelling Tool	30
7.7.2.	Network Performance Modelling Results	33
7.7.3.	Impacts to Road Users	34
7.7.4.	Mitigation Measures for Road Management	34
7.8.	Public Transport Assessment	35
7.9.	Pedestrian and Cyclist Assessment	36
8.	Parking and Servicing Assessment	37
8.1.	Private Parking	37
8.1.1.	Parking Capacity and Demand	37
8.1.2.	Parking Management	37
8.2.	Drop-Off Provisions	38
8.2.1.	Bus Provisions	38
8.2.2.	Taxi Rank	38
8.2.3.	Limousine, Shuttle and Coach Drop-off	38
8.3.	Horse Float Provisions	39
8.4.	Service Vehicle Provisions	39
9.	Transport Management Plan	40
9.1.	Transport Management Plan Objectives	40
9.2.	Work Health and Safety	40
9.3.	Consultation and Method of Communicating Traffic Changes	40
9.4.	Hazard and Risk Identification	41

contents;

9.5.	Risk Mitigation Measures	42
9.6.	Traffic Management Planning Process	43
9.7.	Traffic Management Strategy	43
9.8.	Decision of TTM Method	44
9.9.	Traffic Control Measures	44
9.10.	Access to Adjoining Properties	44
9.11.	TTM Mitigation Measures	44
9.11.1.	Access For Local Residents, Businesses, Hospitals and Emergency Vehicles	44
9.11.2.	Advertising Traffic and Transport Arrangements	44
9.11.3.	Permanent Variable Message Signs	45
9.11.4.	Portable Variable Message Signs	45
9.12.	Pedestrian Management	45
9.12.1.	Risks	45
9.12.2.	Wayfinding Signage	46
9.12.3.	Crowd Management	46
9.13.	Public Transport Management	47
9.13.1.	Bus Service	47
9.13.2.	Light Rail Service	47
9.14.	Parking Management	47
9.15.	Bump-In/Bump-Out Transport Management	47
10.	Impact and Mitigation Summary	49

Appendix 1.	Full SIDRA Results	
-------------	--------------------	--

contents;

Table 1 - Proposed scope	8
Table 2: Event Classifications	2
Table 3: SEARs	4
Table 4: Regular bus services	13
Table 5: Additional Bus Services during Current Events	14
Table 6: Traffic Survey Results	20
Table 7: Average Mode Share Over Autumn 2017 Season	25
Table 8: Projected Mode Share	26
Table 9: Peak Hour Arrival Trip Summary	27
Table 10: Intersection Performance - Levels of Service	31
Table 11: Road Network Performance Analysis Summary	33
Table 12: Parking Provisions	37
Table 13: Risk Assessment Matrix	42
Figure 1: Royal Randwick Racecourse	1
Figure 2: Overview of Internal Site Arrangements	7
Figure 3: Road hierarchy (Source: NSW Road Network Classifications)	8
Figure 4: Street View – Anzac Parade southbound towards Alison Road	9
Figure 5: Street View - Alison Road westbound towards Doncaster Avenue	9
Figure 6: Recent Aerial View – Doncaster Avenue	10
Figure 7: Street View - Wansey Road northbound towards Alison Road	10

contents;

Figure 8: Street View – Hight Street westbound towards Anzac Parade	11
Figure 9: 800m Walking Catchment	12
Figure 10: Sydney Bus Network Map	13
Figure 11: CBD and South East Light Rail Route Map	15
Figure 12: Walking Catchment 400m & 800m	16
Figure 13: Existing Cycling Paths (Source: TfNSW Cycleway Finder)	17
Figure 14: Randwick Bicycle Route Construction Priority 2015	18
Figure 15: Surveyed Intersection Locations	19
Figure 16: Existing Weekend Critical Peak Period Traffic Volume	21
Figure 17: Infield Traffic Count Survey at Everest (14th October, 2017)	22
Figure 18: Direction of Approach	23
Figure 19: Anticipated Mode Split, Multiple Events	25
Figure 20: Anticipated Mode Split, Class 2 Event	25
Figure 21: Traffic Distribution for Class 3 Event	28
Figure 22: Traffic Distribution for Class 2 Event	29
Figure 23: Traffic Modelling Network Layout	32
Figure 24: Traffic Management Planning Process	43
Figure 25: Royal Randwick Racecourse Wayfinding Map	46

1. Executive Summary

ptc. has been engaged by The Australian Turf Club (ATC) to provide a traffic impact assessment to accompany a State Significant Development Application (SSDA) for the proposal to permit non-race day events at Royal Randwick Racecourse (the Racecourse).

In particular, this assessment addresses the Secretary's Environmental Assessment Requirements (SEARs) in relation to the transport and accessibility matters associated with the proposal. A summary of the SEARs identified by the NSW Department of Planning is included in Section 0.

The application seeks approval for non-race day events during 10 times per year to be held up to 10:30pm at the Racecourse. These events will predominantly attract 5,000 - 15,000 patrons and these have been assessed in the context of the road and transport networks during a weekday evening.

Traffic modelling undertaken for this assessment demonstrates that the existing network is typically operating satisfactorily, with the exception of the intersection of Alison Road / Doncaster Avenue and Alison Road / Racecourse Entrance.

The future scenario model forecasts the likely road network performance of the additional traffic generation associated with the proposal. The results indicate that the road network will generally accommodate the additional traffic activity, although some intersections may reach capacity and will require specific traffic control/management and/or the management of the mode share through the provision of additional transport options. This is consistent with the management measures put in place by the ATC during racing events.

A review of the existing public transport infrastructure indicates that the Racecourse is readily accessible in terms of public transport with regular bus services and the CBD and South East Light Rail (CSELR) providing a regular connection between the CBD and the Racecourse.

An assessment of the parking provisions indicates that there is a parking demand of 1,900 spaces based on mode share surveys. This demand is adequately accommodated by the combined on-site parking provision of circa 4,000 spaces.

In summary, the proposal to host non-race day events at the Racecourse has been assessed against the SEARs requirements in relation to parking and traffic matters. Based on our assessment, the proposal for events of up to 15,000 patrons is able to be accommodated by the road and transport networks.

2. Introduction

2.1. Overview

This application seeks approval for the use of land and buildings within the Spectator Precinct of the Royal Randwick Racecourse for various non-race day events.

The accommodation of non-race day events on the site is consistent with the historical use of the site as a *recreation facility (major)* and the broader event character of the site. The site has accommodated a number of non-race day events under previous approvals, and this application seeks to continue the ongoing use of the site for this purpose.

Table 1 - Proposed scope

Parameter	Proposal
Location	Events will be held in the Spectator Precinct with the infield providing parking to support the events.
Number of events	10 per annum
Patronage	5,000 – 15,000 Non-race day events of a patronage capacity of less than 5,000 patrons are permitted via Schedule 2 of the <i>Randwick Local Environmental Plan 2012</i> and development consent MP10_0097 MOD 2.
Hours of operation	Event hours: Monday – Thursday: 10am – 8pm Friday, Saturday, Sunday or public holiday: 10am – 10:30pm Bump in and bump out may occur between 6am – 1am the following day for a maximum of 10 days prior to and following the event. Works will only be undertaken outside of these hours if required in an emergency to avoid the loss of life, damage to property, prevent traffic conflicts and / or prevent environmental harm.
Type of events	Non-race day events may include a range of community events, private and corporate events/functions, festivals, cultural / art events, markets, and consumer roadshows.
Event duration	The duration of events will be between 1 – 3 days (consecutive days). No event will continue for more than a consecutive 3-day period (excluding bump-in and bump-out procedures).

2.2. Event Location

Events will be accommodated within the land and buildings of the Spectator Precinct. The nominated event locations are illustrated in the Site Activation Plans prepared by MI Consultants.

The detailed layout and site design within these precincts will vary depending upon the type of event and the individual event operator.

Events will not be permitted within the Stables Precinct on the south-eastern corner of the site adjacent to High Street and Wansey Road. However, pedestrian and vehicular access routes to activated areas may be provided through this precinct from High Street.



Figure 1: Royal Randwick Racecourse

2.3. Temporary Structures

The proposal involves the erection of ancillary temporary structures including stages, marquees, screens, amenities, and lighting to support the non-race day events. The proposed temporary structures will be:

- erected in the days preceding the events and dismantled and removed from the site within 10 days following the event,
- positioned on a level stable surface and sufficiently weighted to ensure stability at all times of use,
- monitored throughout the duration of the event to ensure any potential safety concerns (such as during adverse weather conditions) are mitigated by the applicant,
- erected in accordance with the relevant provision of the Building Code of Australia (BCA) and Australian Standards to ensure the structures can adequately support the proposed loads,
- managed to ensure the number and width of exits and maximum number of people permitted in the temporary structures is in accordance with the provisions of the BCA,
- wholly located within the Spectator Precinct, and
- carried out to ensure that there is no damage to the site, including existing structures and landscaping elements.

A potential layout of temporary structures to support a non-race day event on the site is illustrated in the Technical Layout Plan prepared by MI Event Consultants. This is for information purposes only and represents a 'worst case' scenario. The specific layout and type of temporary structures will be determined by the event type and operator.

Temporary structures that could be erected on the site to support a non-race day event includes:

- Stages located in the Spectator Precinct, in addition to the main spectator zone adjacent to the QE II Stand and Winx Stand.
- Market tents within the ground floor of the multi-deck car park building.
- Food, bar, amenities and supporting merchandise and administration stalls within the Spectator Precinct.
- Artist back of house in the Spectator Precinct.
- Staff, security and safety marshalling areas within the Spectator Precinct.

2.4. Site Access and Parking

Existing drop-off facilities will be utilised for events, in accordance with a standard race-day operation. This includes:

- Taxi Rank via Ascot Street, Gate 18
- Public Bus layby via Alison Road
- Shuttle drop-off via Alison Road, Gate 1
- Limousine, and large shuttle/coach drop off
- A managed pedestrian exit will be provided from Gate 18 (Ascot Street) after 8pm

On-site parking will be available within the multi-deck car park and the infield car park. Patrons will be encouraged to utilise public transport and active transport for access to and from events.

2.5. Event Classifications

For better assessing the traffic, transport and parking implications of the proposal, the events are classified by the expected patronage and consideration into potential impacts to the traffic & transport systems and the non-event community with reference to Guide to Traffic and Transport Management for Special Events, as shown in Table 2.

Table 2: Event Classifications

Expected Patronage of Proposed Non-Race Day Events	Event Classification
10,000 - 15,000	Class 2 Event
5,000 - 10,000	Class 3 Event

2.6. Event Management

A draft Operational Management Plan (OMP) has been prepared to outline the intended management and operation of the non-race day events on the site. The draft OMP will be supplemented by the following:

- Traffic Management Plan,
- Waste Management Plan,
- Noise Management Plan;
- Alcohol Management Plan,
- Security Management Plan,
- Consultation Plan, and
- Draft Emergency Evacuation Plan.

These management plans have been appended to the Environmental Impact Statement.

2.7. Scope of this Report

Pursuant to the application process, a Traffic Impact Assessment (TIA) report is required. This traffic impact assessment has been prepared to support the State Significant Development (SSD) application SSD-63536466 for non-race day events at the Royal Randwick Racecourse (the Racecourse).

This assessment takes into account the following relevant Policies and Guidelines:

- Guide to Traffic and Transport Management for Special Events (Transport for NSW)
- Guide to Traffic Generating Developments (Transport for NSW)
- Traffic Modelling Guidelines (Transport for NSW)
- Environmental Impact Statement Guidelines - Road and Related Facilities (Department of Planning);
- Cycling Aspects of Austroads Guides;
- NSW Planning Guidelines for Walking and Cycling; and
- Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Methods
- Austroads Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments.

2.8. Compliance with SEARs

The Planning Secretary's Environmental Assessment Requirements (SEARs) issued for this application stipulates detailed traffic and parking matters are to be addressed in this report. Table 3 provides the location where this report has addressed the relevant SEARs items.

Table 3: SEARs

SEARs requirements	Locations in the report
- include a Transport, Traffic and Parking Assessment, which provides:	Section 7.3
the predicted transport mode share split for the proposed development	
vehicle movements, point to point transport, existing and future public transport, pedestrian access and cycle infrastructure within the vicinity of the site, and the adequacy of these transport modes to cater for the proposal	Sections 5 and 6
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), 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 and active consents for events	Section 7.5.1
an assessment of road closure management and traffic diversions on local traffic	Not applicable, as no road closures are proposed as part of the proposal.
an assessment of the impact on local/non-event footpath and bicycle path users including details of crowd control management on adjacent paths to ensure local access is not notably impacted	Section 7.9
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.	Section 7.7.4
measures to promote sustainable travel choices for employees and visitors such as public transport use, pedestrian and bicycle linkages, and secure bicycle parking, in addition to establishing and implementing a Green Travel Plan.	Section 7.7.4
- include 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 for any enabling works or bump-In/bump-out works	Section 7.7.4

3. Proposal Context

3.1. Randwick Locality

Randwick is located 4 kilometres south-east of Sydney CBD and is bounded by Kensington to the west and Clovelly and Coogee to the east. Major landmarks within the vicinity include the Royal Randwick Racecourse, Centennial Park, Moore Park, the Prince of Wales Hospital and the University of New South Wales Kensington Campus.

Major redevelopment occurred in the 1960s and 1970s with the construction of blocks of residential apartments, which greatly influenced the character of the suburb. Randwick is unusual in its housing mix, with a significant proportion of multi-storey apartment and unit buildings and high levels of private rentals. Approximately 60 per cent of all private dwellings in Randwick are units or apartments.

When compared with all other suburbs within Randwick City Council, Randwick has greater numbers of people aged between 25 and 34 years, fewer children and higher proportions of university students (Source: Randwick City Council).

Bus and light rail services operate on the major roads in Randwick, providing good links to Sydney CBD. Approximately 38% of people commuting from Randwick use public transport, while approximately 13% use cars (Source: 2019 Journey to Work Data, Australian Bureau of Statistics). However, this data is before the light rail was fully operational, and therefore, it is likely that the completion of L2 CBD and South East Light Rail (CSELR) project in 2019 has provided a better public transport environment in the area to improve public travel uptake.

3.2. Royal Randwick Racecourse

The Racecourse occupies an area of 80Ha and is located with frontages to Alison Road, Wansey Road and High Street, and is also bounded by properties fronting Doncaster Avenue.

The Racecourse has been operated and managed by ATC (formerly Australian Jockey Club) since 1863. Today, the Racecourse is a major event venue, hosting over 40 race events a year, in addition to various other non-race related events including university examinations, festivals, and various other functions.

A typical major event may attract between 10,000 to 15,000 patrons.

3.3. Moore Park Event Operations Group (MEOG)

The Moore Park Event Operations Group (MEOG) is a body of representatives of key stakeholders within the Moore Park Precinct. The group meets monthly to discuss various considerations relating to local development and large events, including the coordination of traffic and transport associated with major events. Stakeholders that are represented in this coordination effort include:

- City of Sydney;
- Randwick City Council;
- NSW Police;
- Transport Management Centre, STA, Light Rail, Sydney Trains;
- ATC;
- Sydney Cricket Ground Trust;
- Centennial Parklands; and
- Fox Studios.

4. Racecourse Access and Transport Facilities

The Racecourse accommodates a wide range of internal transport facilities. The facilities that will be available for the purposes of non-race day are summarised below and highlighted in Figure 2. The key features of the Racecourse include:

- The in-field car park situated in the centre of the site for private vehicle and hire car parking;
- Multi deck car park accessible via Gate 18 on the western site frontage, comprising approximately 574 spaces for member parking;
- Taxi drop-off/pick-up area and back-of-house servicing;

The Racecourse currently has the following access gates for various uses:

- **Gate 1, Alison Road:** Gate 1 is a prominent access into the Racecourse. This Gate is the primary entrance/exit point for pedestrians moving between the Racecourse and the Alison Road Light Rail station. All taxis and ubers are also using this gate to access the taxi drop-off / pick-up area.
- **Bus Layby, Alison Road:** Access to this layby is integrated into the signalised intersection of Alison Road and Darley Road. This layby is a drive-through arrangement (one-way) accommodating 11 bus stands and is the major drop-off hub and pick-up for public transport users.
- **Gate 10, Wansey Road** is primarily used for access to race-day stables, and rarely used during events. If required, it may serve as a secondary infield car park exit.
- **Gate 13, High Street:** Gate 13 is integrated into the signalised intersection between High Street and UNSW. This gate provides direct visitor (general admission and members) access to the infield car park located in the centre of the Racecourse. This parking area accommodates approximately 3,500 spaces.
- **Gate 18, Ascot Street:** Gate 18 may be accessed via the intersection of Ascot Street and Doncaster Avenue, located towards the western side of the Racecourse. A multi-deck Members Car Park accommodating 574 spaces can also be accessed via this Gate. A managed pedestrian exit will also be provided from Gate 18 after 8pm.

As part of this proposal, the existing drop-off facilities will be utilised for events, in accordance with a standard race-day operation. While on-site parking will be available within the multi-deck car park and the infield car park, patrons will be encouraged to utilise public transport and active transport for access to and from events.

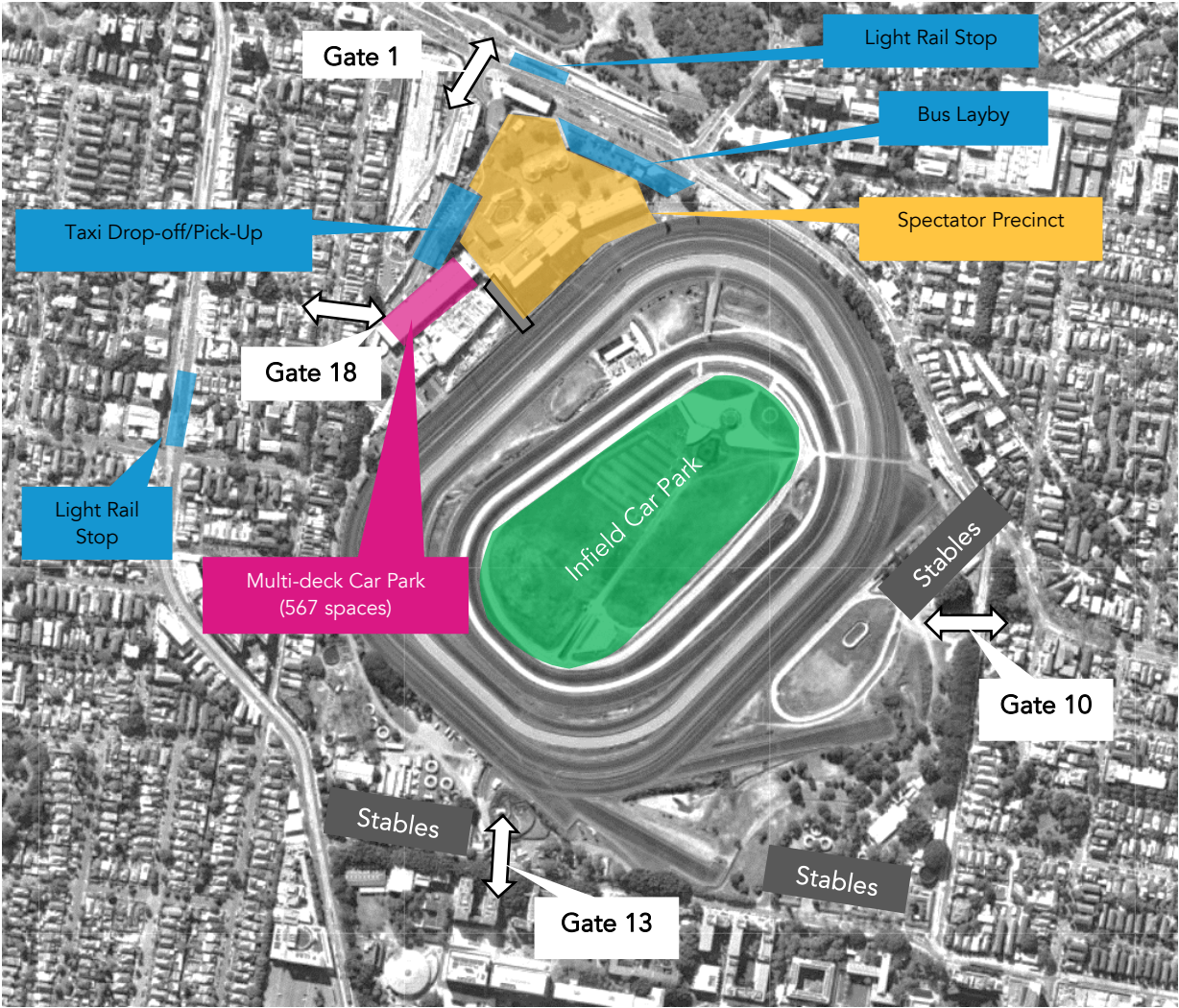


Figure 2: Overview of Internal Site Arrangements

5. Existing Transport Facilities

5.1. Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- State Roads - Freeways and Primary Arterials (RMS Managed)
- Regional Roads - Secondary or sub arterials (Council Managed, Part funded by the State)
- Local Roads - Collector and local access roads (Council Managed)

Royal Randwick Racecourse is situated amongst a number of state and regional-controlled roads, providing excellent accessibility within the Greater Sydney Region. The surrounding road network is presented in Figure 3.

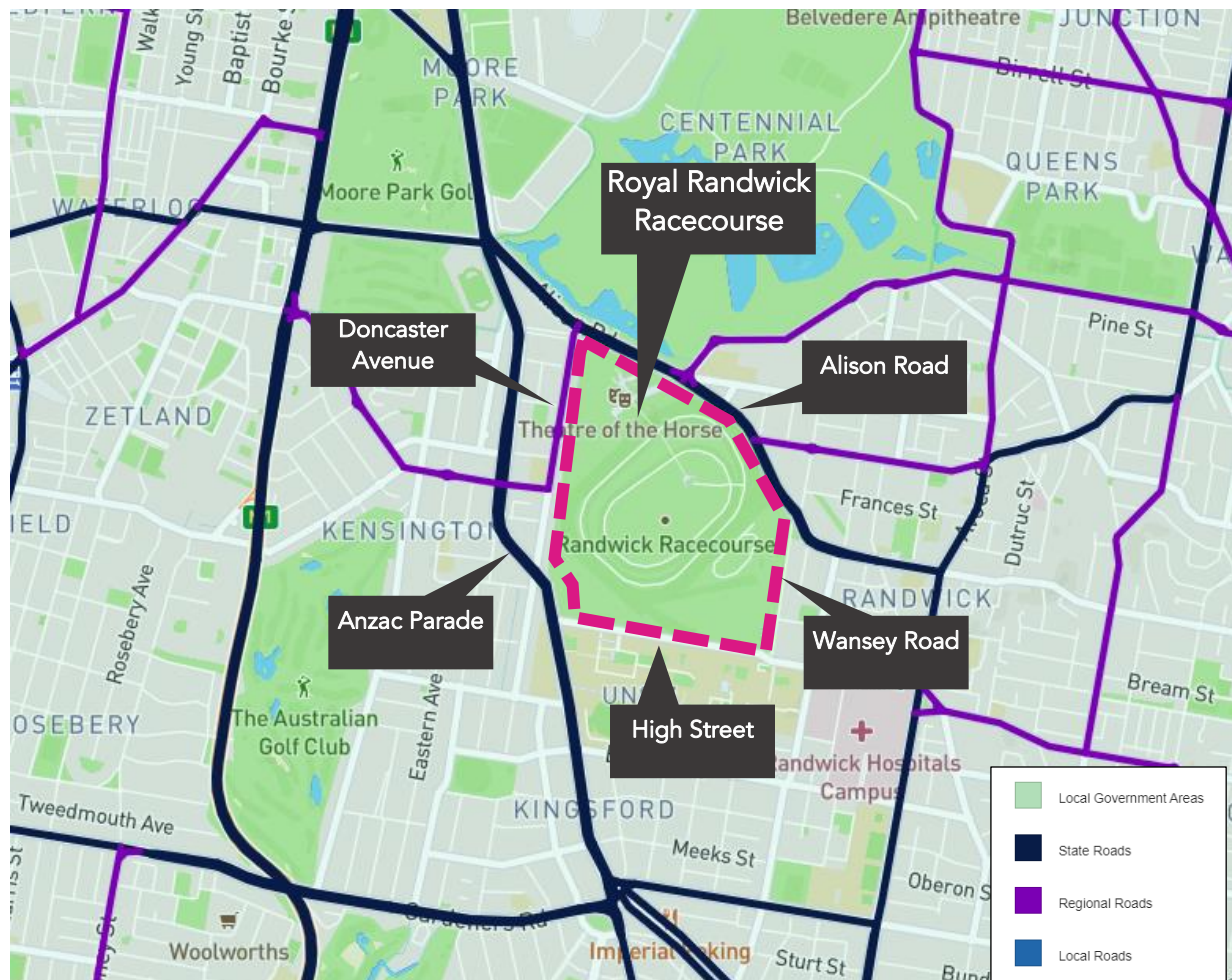


Figure 3: Road hierarchy (Source: NSW Road Network Classifications)

5.1.1. Anzac Parade

A State Road running north-south along the extent of the Randwick local Government Area (LGA). It possesses a divided carriageway. Within the vicinity of the site, Anzac Parade generally comprises three (3) lanes in either direction, with additional left and right turning lanes at/near the intersections. The CSELR aligns with Anzac Parade between Moore Park and Rainbow Street and off-road cycle routes are provided in parallel to Anzac Parade. The outermost lanes generally have time-dependant conditions, varying between on-street parking, bus lanes and clearway.

Speed restrictions vary between 50km/h and 60km/h within the vicinity of the site. Anzac Parade provides signalised access onto Alison Road for southbound travel and Dacey Avenue for both northbound and southbound travel.



Figure 4: Street View – Anzac Parade southbound towards Alison Road

5.1.2. Alison Road

A State Road providing an east-west link between Anzac Parade and Avoca Street and forms the northern frontage of The Racecourse. The road possesses a divided carriageway with three (3) lanes in each direction. On-street parking is provided along sections of the outermost lanes, typically limited to outside the hours of 10am – 6pm. The CSELR aligns with Alison Road between Anzac Parade and Wansey Road. A dedicated off-road cycleway is provided along Alison Road. Dedicated bus lanes are provided along some sections of the road.

Speed limits vary between 50km/h and 60km/h. Alison Road provides direct site access (shown in Figure 5) as well as signalised access onto Doncaster Avenue for westbound travellers.



Figure 5: Street View - Alison Road westbound towards Doncaster Avenue

5.1.3. Doncaster Avenue

A Regional Road aligned north-south between Alison Road and Anzac Parade. This road runs parallel to the western border of the Racecourse. The road is an undivided two-way carriageway, offering a mix of unrestricted, and restricted parking. The road is largely subject to school zone restrictions (40kph 8-9:30AM, 2:30-4PM, MON-FRI), and provides an on-street cyclist lane, as well as a number of pedestrian crossings and associated traffic controls. A posted speed limit of 50kph applies. Doncaster Road provides the most direct access and egress point for the Members Car Park and taxi rank, via Gate 18 off Ascot Street, as shown in Figure 6 below.



Figure 6: Recent Aerial View – Doncaster Avenue

5.1.4. Wansey Road

A Local Road aligned north-south between Alison Road and High Street. It forms a major eastern frontage of the Racecourse, with access via Gate 10. Wansey Road allows one-way, southbound traffic between Alison Road and Arthur Street, and two-way traffic between Arthur Street and High Street. A northbound contra-flow lane is provided from the Gate 10 to Alison Road to allow vehicles to exit the and access Alison Road (west-bound only). Time restricted parking lanes are provided along Wansey Road between Alison Road and Arthur Street.

Off-road cycle routes and CSELR routes are provided along the western side of Wansey Road. The CSELR aligns with Wansey Road between Alison Road and High Street. A light rail station is provided at the intersection of Wansey Road and Alison Road. Wansey Road is a high pedestrian activity zone with 40km/h speed limit.



Figure 7: Street View - Wansey Road northbound towards Alison Road

5.1.5. High Street

A Local Road aligned east-west between Anzac Parade and Avoca Street. It forms a major southern frontage of the Racecourse, and provides access via Gate 13. High Street generally comprises one (1) traffic lane in either direction. Additional kerbside lanes on either side offer parking outside of bus zones. The street is subject to a speed limit of 50km/h.



Figure 8: Street View – High Street westbound towards Anzac Parade

5.2. Public Transport

The NSW Planning Guidelines for Walking and Cycling (2004) suggests that an 800m (a 10-minute walk) catchment is an acceptable walkable distance if the development is within an area with public transport links. Furthermore, the document also suggests a distance of 1500m is a suitable catchment for cycling for accessibility to public transport facilities and local amenities. The immediate surrounds were reviewed with the above guides in consideration.

Figure 9 illustrates the 800m catchments from Royal Randwick Racecourse. Details of public transport options available are outlined in the following sections.

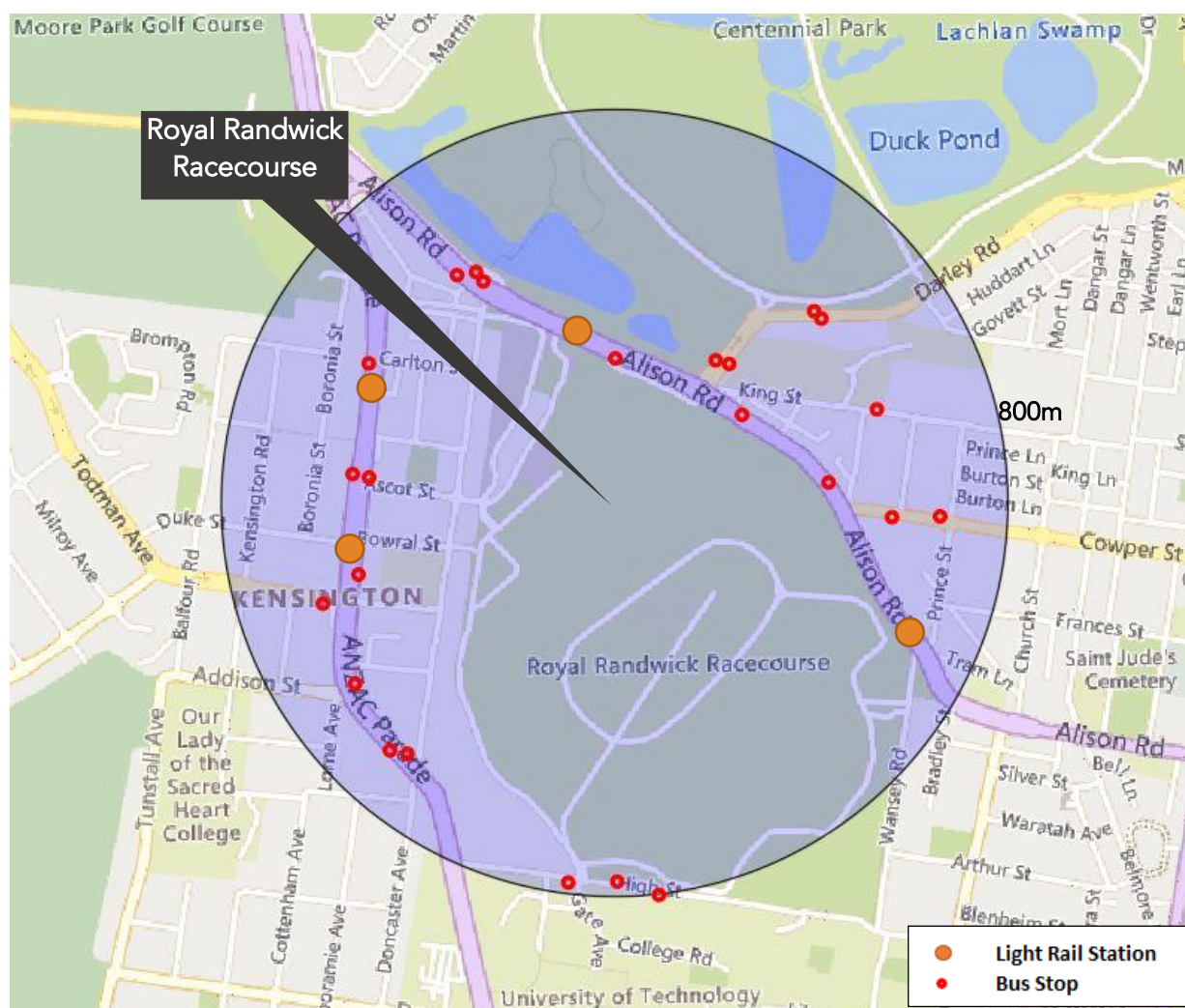


Figure 9: 800m Walking Catchment

5.2.1. Regular Bus Service

A high number of bus routes are identified operating along roads making up the Racecourse frontages, they are summarised in Table 4.

Table 4: Regular bus services

Street	Bus Routes
Alison Road (Moore Park Busway)	338, 339, 372, 373, 374, 376, 377
Anzac Parade	391, 392, 393, 394, 395, 396, 397, 399, X92, L94, X94, X96, X97, X99
High Street	370 & 400

Notably, the major bus corridor along Anzac Parade provides visitors to the Spectator Precinct with access to much of the greater Sydney region via bus travel. This is located within a 1km radius of the site or a 15-25minute walk, which although lying outside the 800 metre 'comfortable' walking catchment, will still be considered a viable walking distance for a proportion of the demographic population.

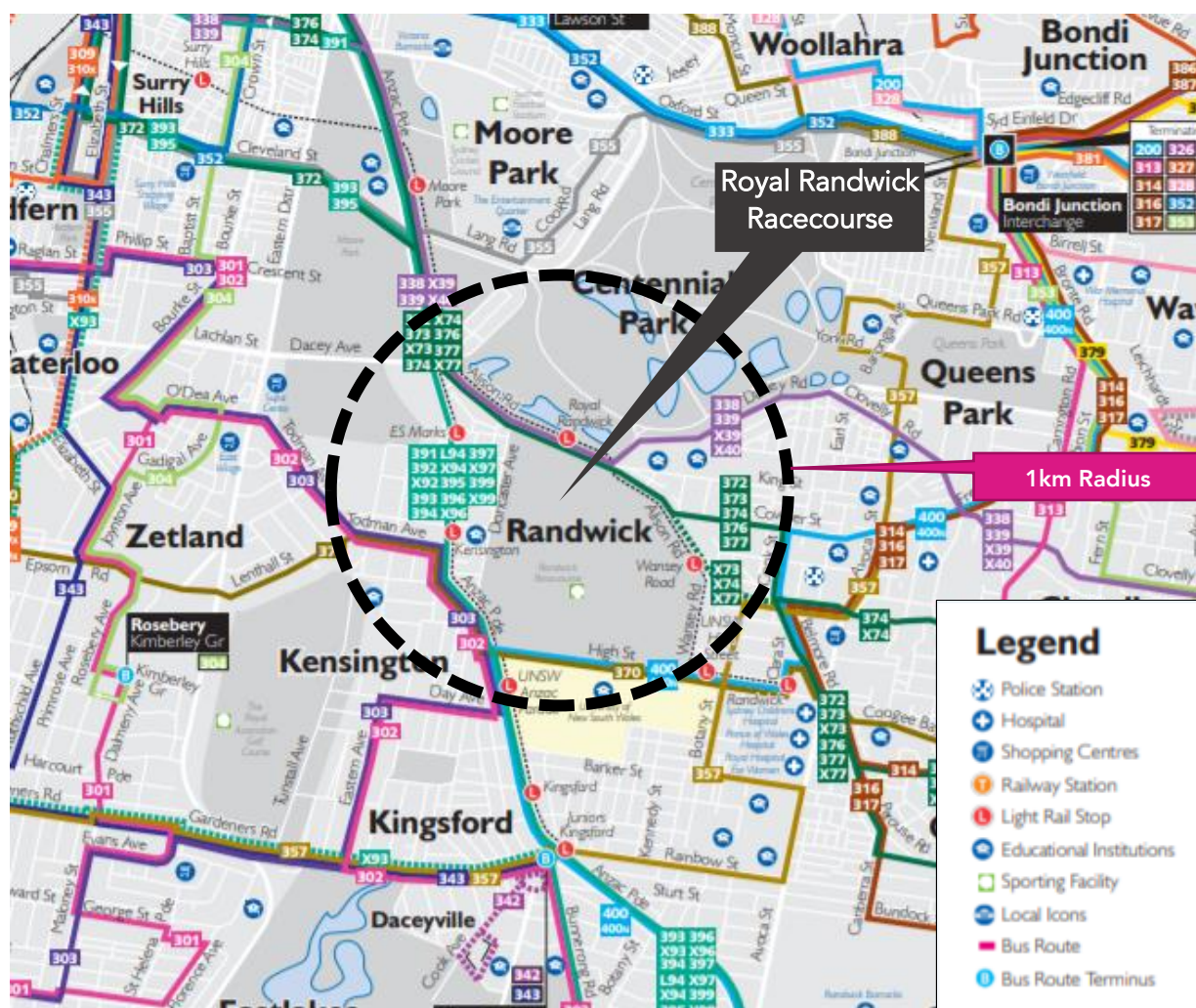


Figure 10: Sydney Bus Network Map

5.2.2. Event Bus Service

Through the MEOG, ATC and STA are able to plan additional special event bus services. These services provide direct connections between Central and Bondi, the details of which are outlined in Table 5.

As part of the aim to promote the use of public transport, it is proposed that special event buses will be arranged for the non-race day events, as per those currently arranged for daytime events. The number of buses is determined based on the expected crowd size (on the basis of ticket sales). Buses have the ability to transport 1,300 patrons to and from the venue, using the internal busway.

Table 5: Additional Bus Services during Current Events

Route	Bus Capacity	Maximum Crowd	Bus / Crowd Ratio	Additional Buses	Additional Capacity (People)
Royal Randwick – Central	65	15,000	1 per 1000	15	975
Royal Randwick – Bondi	65	15,000	1 per 3000	5	325
Total:				20	1,300

5.2.3. Light Rail

The CBD & South East Light Rail Project (CSELR) provides a major light-rail link between Sydney's CBD and Randwick. The L2 Randwick line CSELR project was completed in 2019 and L3 Kingsford line CSELR project was completed in early 2020 (source: Wikipedia). The L2 service predominantly services the Racecourse and offers high frequency services (8-12 minutes) in both directions between 5:30am-1:40am. The L3 also provides high frequency services (8-12 minutes) in both directions between 5:30am-1:30am. Each light-rail vehicle is capable of transporting up to 450 patrons, leading to an hourly capacity of approximately 2,700 to 3,375 patrons in each direction under standard operation.

Through a consultation process between Sydney Light Rail and the ATC, it is noted that during events at Royal Randwick, additional light rail services (northbound and southbound) may be arranged, meeting frequencies of up to every two minutes. This would amount to a total capacity of 13,500 persons, or, an additional capacity of 10,125 patrons in each direction.

The route map is presented in Figure 11. It is noted that the Racecourse is well integrated within the light rail route, which links a number of major destinations and transport hubs, including Sydney's CBD, Central Station, Moore Park, UNSW, and Prince of Wales Hospital among others.

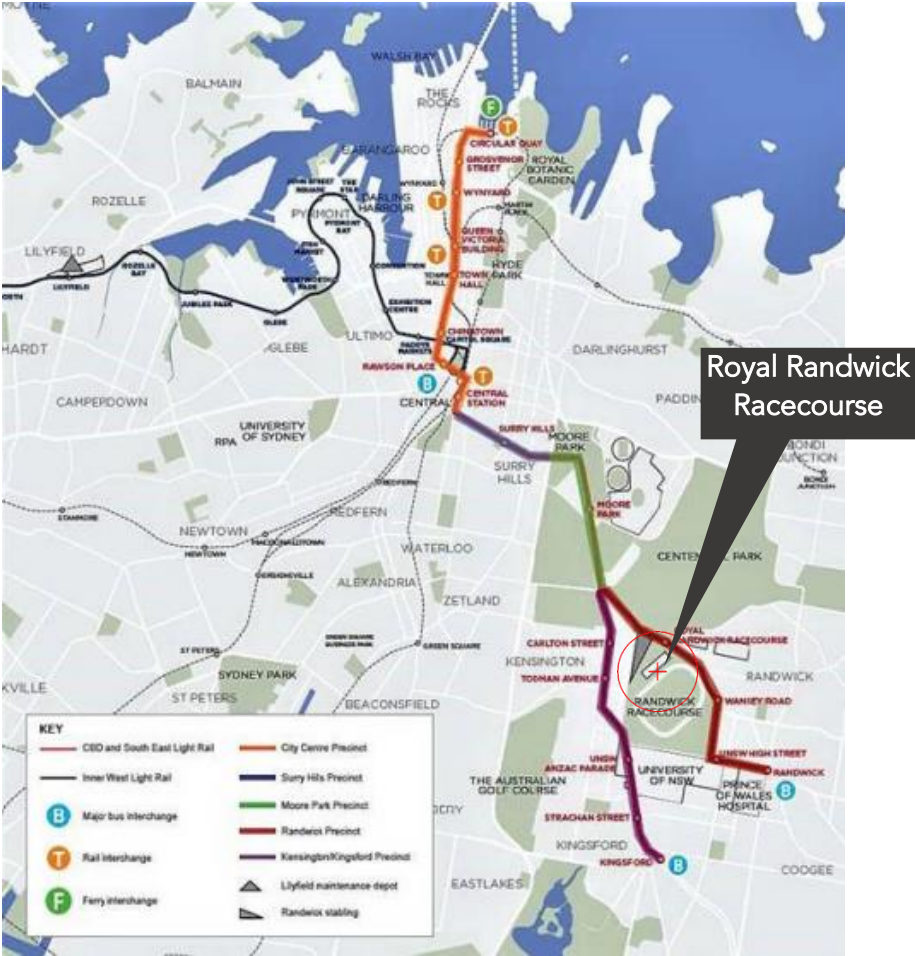


Figure 11: CBD and South East Light Rail Route Map

5.3. Active Transport

5.3.1. Walking

It is noted that the immediate locality of the Racecourse is well established in regard to pedestrian infrastructure. All local roads provide paved footpaths, lighting, and ancillary signage, as well as various crossings at key decision points, in the form of refuge islands, 'Zebra' crossings and signalised crossings. This is due to the large volume of existing pedestrian movements already in the area, generally associated with UNSW and the Racecourse. As such, walking trips between the Racecourse and the local residential precinct or nearby public transport facilities are readily achievable.

The key pedestrian desire lines (including along Anzac Parade, Alison Road and Wansey Road) have been upgraded in 2019 with improved footpaths, crossings, lighting, and connections to the light rail stations. Of particular note, is the bi-directional pedestrian crossing at the signalised intersection of Gate 1 and Alison Road. This is a key link across Alison Road and provides direct pedestrian connection between the Racecourse and the new light rail station along Alison Road.

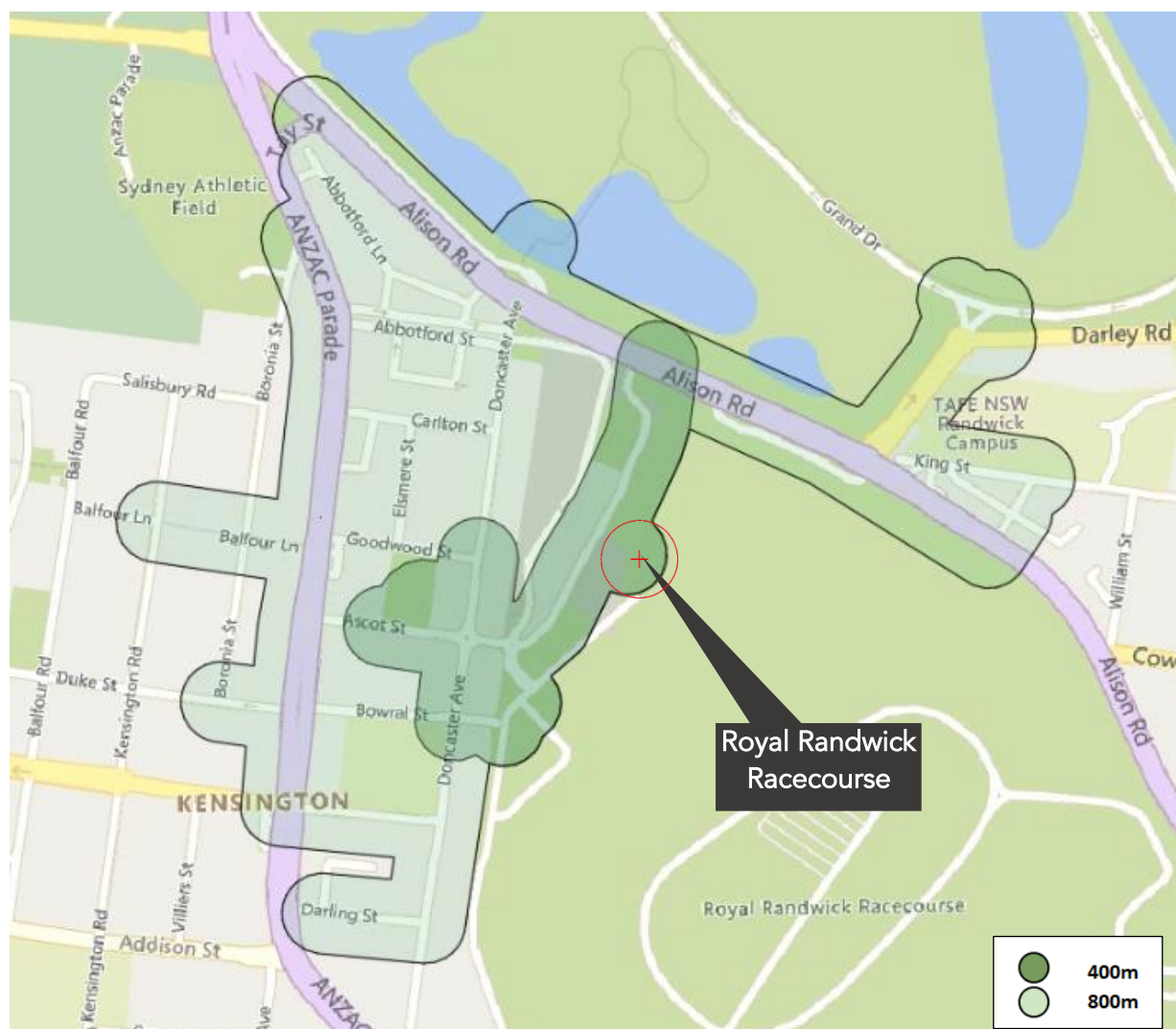


Figure 12: Walking Catchment 400m & 800m

5.3.2. Cycling

As shown in Figure 13, a number of existing off-road cycle routes are also provided in the area, including along Anzac Parade, Alison Road, Wansey Road, Doncaster Avenue, and Darley Road, many of which were upgraded in 2019 as part of the CSELR works package. These routes provide connectivity to the Greater Randwick cycling network, and those of adjoining Councils, providing direct linkages between the Racecourse and the Greater Randwick area.

It is understood that Randwick is currently engaging with the community in regard to the future of cycling in Randwick, and has identified a number of priority bicycle routes, outlined in Figure 14.

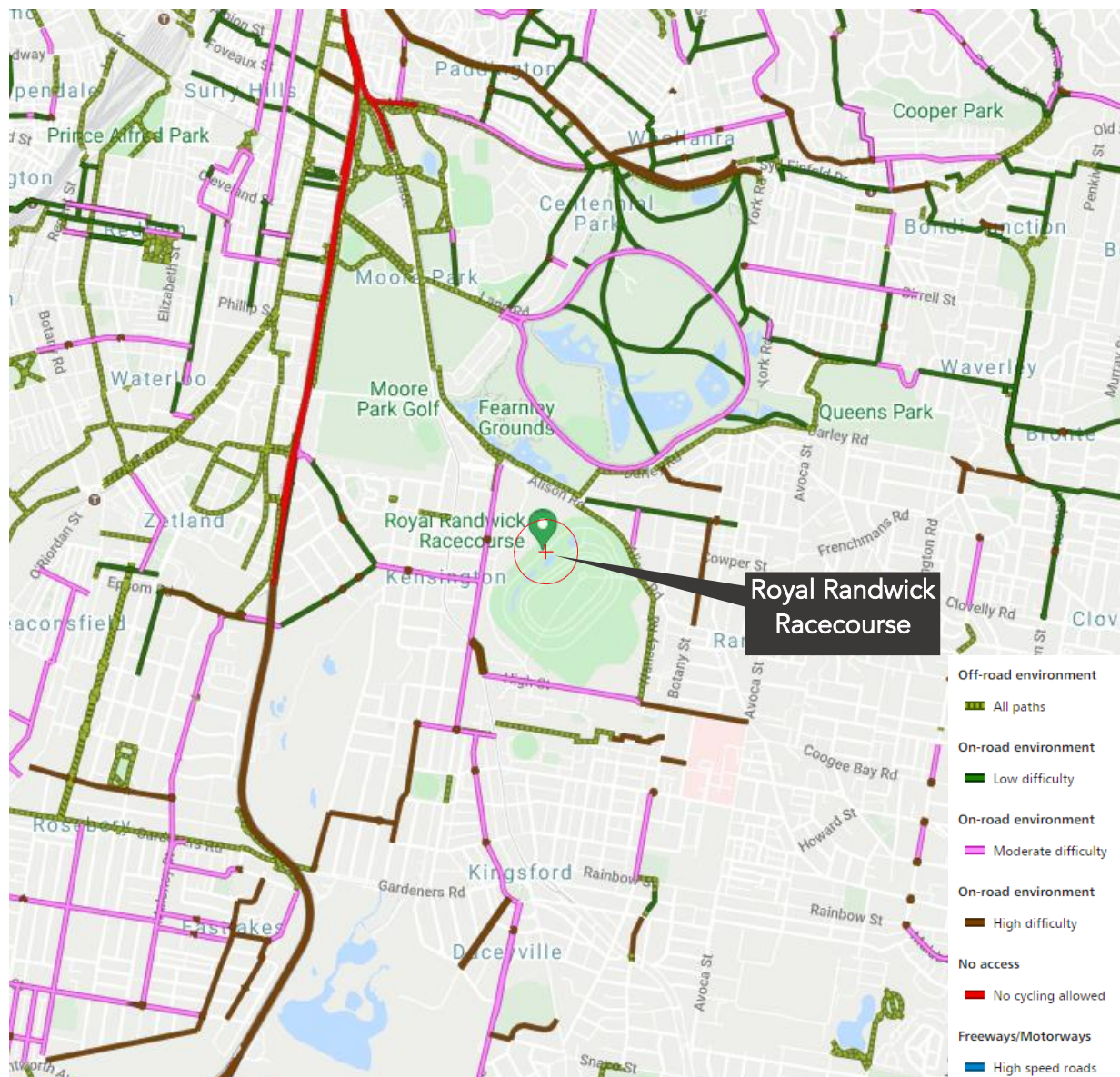


Figure 13: Existing Cycling Paths (Source: TfNSW Cycleway Finder)



Figure 14: Randwick Bicycle Route Construction Priority 2015

6. Existing Traffic Conditions

ptc. has undertaken site observations, traffic surveys, patron surveys and participated in community engagement to understand the current travel conditions in the vicinity of the Racecourse during the periods proposed for non-race day events.

It has been identified that the critical period for traffic assessment is between 11am and 12pm on a Saturday, when the arrival traffic associated with a non-race day event will most likely arrive in a grouped manner.

6.1. Traffic Surveys

A comprehensive series of traffic surveys were undertaken at key intersections surrounding the Racecourse on Saturday 6th November 2021, to capture the existing local traffic volumes. The details of surveyed intersections are illustrated in Figure 15.

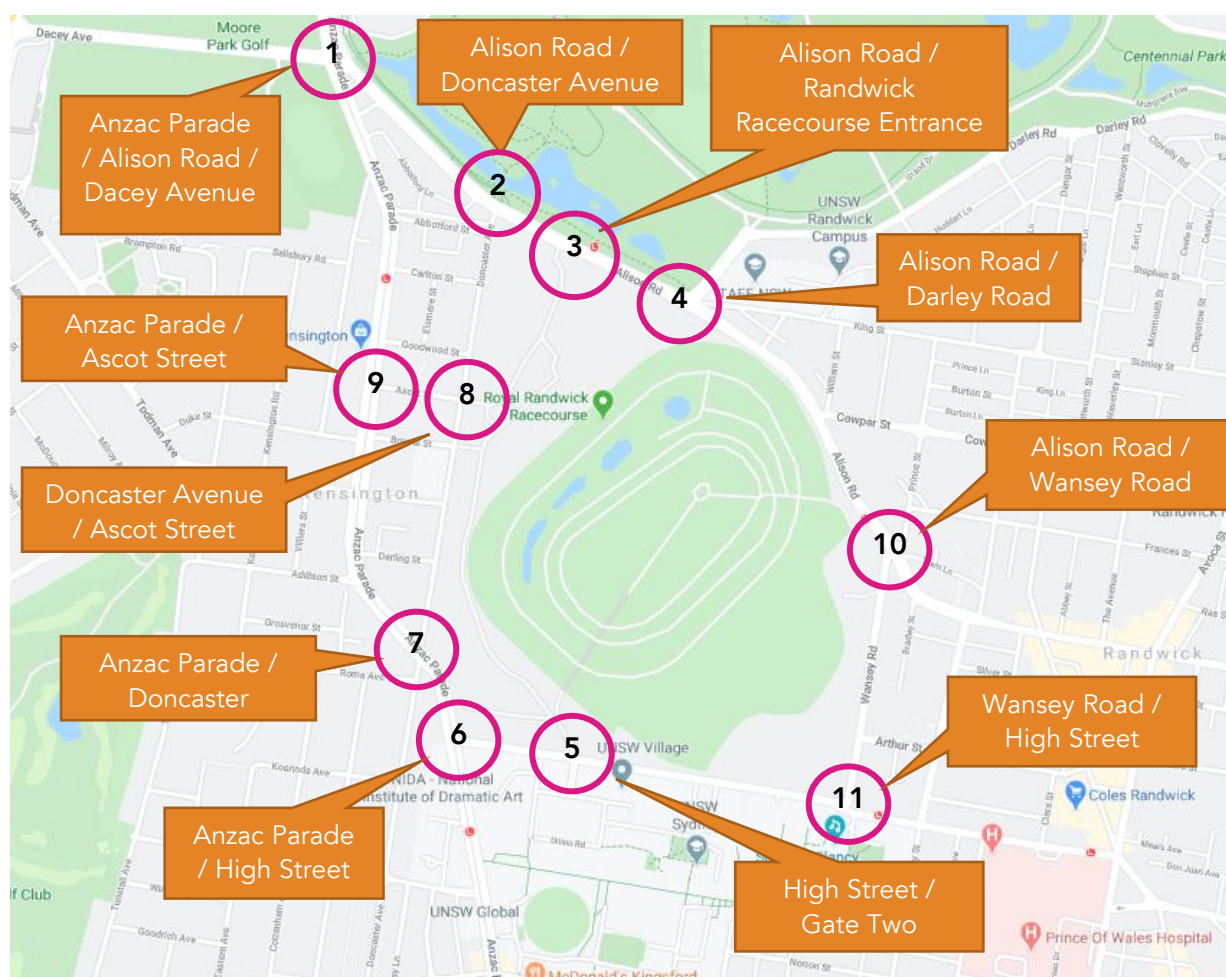


Figure 15: Surveyed Intersection Locations

6.2. Existing Traffic Volumes

The key findings of each intersection's traffic survey data on a Saturday are summarised in Table 6. Figure 16 shows the traffic volumes for the respective movements at each intersection during the Saturday critical peak period between 11am and 12pm.

Table 6: Traffic Survey Results

No.	Intersection Location	Peak Period for Intersection	Dominant Movement in Intersection	Travel Direction of Dominant Movement	Peak Traffic Volume for Dominant Movement ¹
1	Anzac Parade / Alison Road / Dacey Avenue	12pm-1pm	Anzac Parade (South) to Anzac Parade (North)	Northbound	1,025
2	Alison Road / Doncaster Avenue	11:30am-12:30pm	Alison Rd (East) to Alison Road (West)	Westbound	1,441
3	Alison Road / Racecourse, Gate 1	11:30am-12:30pm	Alison Rd (East) to Alison Road (West)	Westbound	1,858
4	Alison Road / Darley Road	11:30am-12:30pm	Alison Rd (West) to Alison Road (East)	Eastbound	1,064
5	High Street / Gate Two Ave	12pm-1pm	High Street (West) to High Street (East)	Eastbound	175
6	Anzac Parade / High Street	12pm-1pm	Anzac Parade (South) to Anzac Parade (North)	Northbound	923
7	Anzac Parade / Doncaster Avenue	12pm-1pm	Anzac Parade (East) to Anzac Parade (West)	Westbound	995
8	Doncaster Avenue / Ascot Street	11am-12pm	Doncaster Avenue (South) to Doncaster Avenue (North)	Northbound	551
9	Anzac Parade / Ascot Street	12pm-1pm	Anzac Parade (South) to Anzac Parade (North)	Northbound	981
10	Alison Road / Wansey Road / Prince Street	11:45am-12:45pm	Alison Road (West) to Alison Road (East)	Eastbound	752

¹ Peak traffic volume includes both light and heavy vehicles

11	High Street / Wansey Road	12pm-1pm	High Street (West) to Wansey Road (North)	Eastbound	177
----	---------------------------	----------	---	-----------	-----

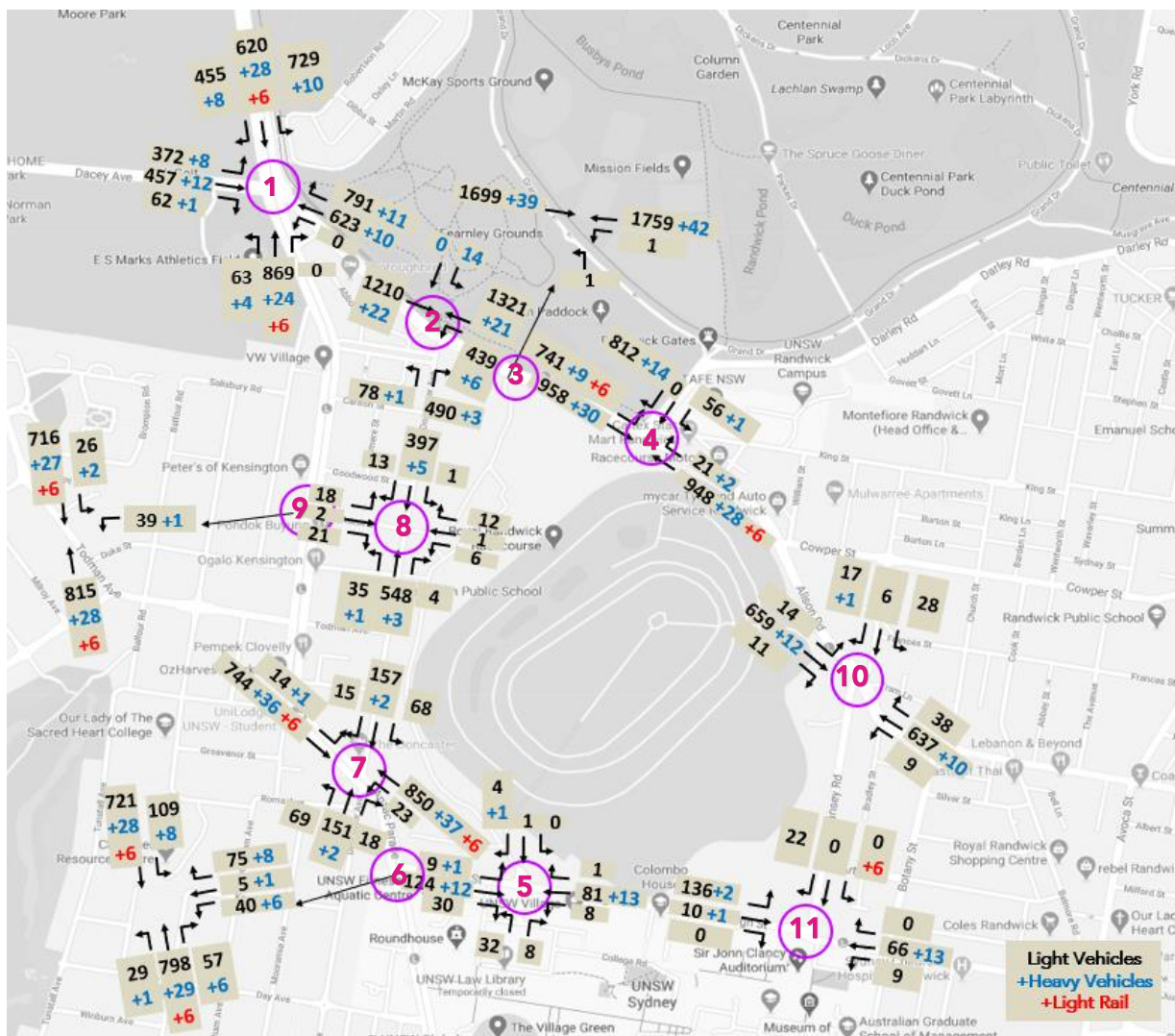


Figure 16: Existing Weekend Critical Peak Period Traffic Volume

6.3. Existing Traffic Signal Data

All signalised intersections are connected to Sydney Coordinated Adaptive Traffic System (SCATS). Historical SCATS traffic signal data on the traffic survey dates is also obtained for the signalised intersections. The obtained SCATS data shows the following existing traffic signal operational insights for the surveyed intersections during the critical peak period:

- Signalised intersections on the Alison Road frontage are coordinated at the cycle time of approximately 120 seconds;
- Signalised intersections on ANZAC Parade are coordinated at the cycle time of approximately 110 seconds;
- Anzac Parade / Alison Road / Dacey Avenue is not coordinated with other intersections on Alison Road or ANZAC Parade, operating at approximately 145 seconds.

6.4. Racecourse Event Private Vehicle Trips

To capture an accurate understanding of private travel patterns for a major event (previous Class 2 with up to 35,000 patrons), **ptc.** undertook a traffic count and car occupancy survey at the infield car park during the Everest event held on Saturday 14th October 2017, between 10am and 5pm. The first race began at 12pm.

This was one of the largest annual race events held at the ATC, and on this occasion, crowds were approaching 35,000 people, while the new proposal is to accommodate a maximum of 15,000 people during Class 2 event.

This data revealed the travel pattern shown in Figure 17. In summary, the traffic patterns are largely tidal in flow, with a distinct arrival peak and a departure peak. The greatest volume of traffic reached 700 (615 arriving/85 exiting) vehicles over the hour leading up to the first race (11am-12pm). However, this volume is not sustained for long, with each hour on either of peaking at around 400-450 vehicles and continuing to decrease sharply.

Regarding car occupancy, **ptc.** surveyed an average of 2.0 people per vehicle based on 500 samples.

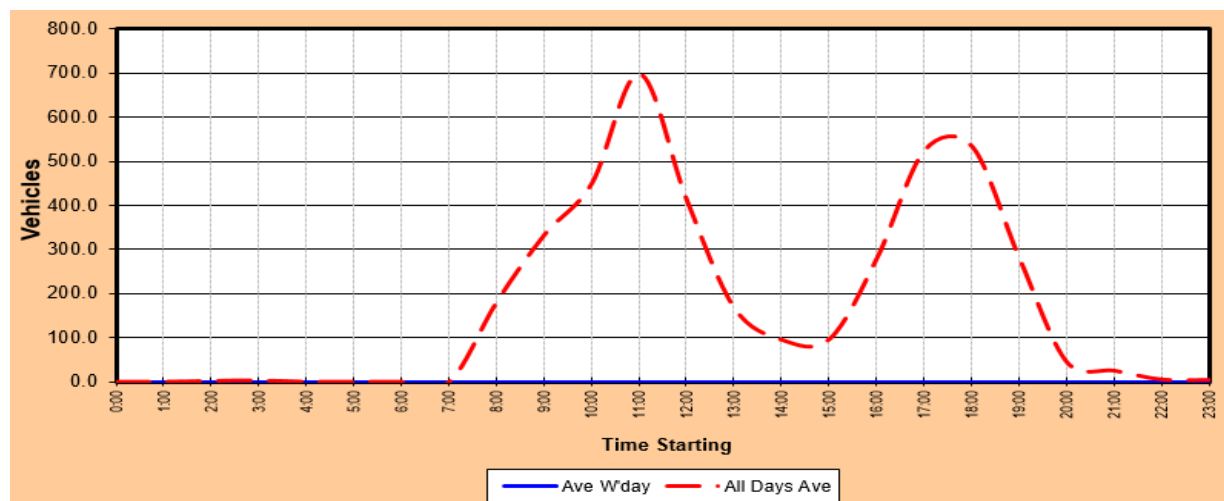


Figure 17: Infield Traffic Count Survey at Everest (14th October, 2017)

7. Pedestrian, Transport & Traffic Assessment

This section outlines the approach taken to determine the potential pedestrian and traffic volumes and patterns associated with the proposed non-race day events, and subsequently identifies any possible impacts arising from these changes, and appropriate mitigation measures.

7.1. Travel Catchment

ATC have collected patron postcode data for each of the major racing events held at the Racecourse which assists in understanding the likely patron catchment area for the proposed non-race day events.

From this data, it was determined that key origins include the local Randwick and Eastern Suburbs area (14%), North Shore (12%), City and Inner West (11%), Sutherland (7%) and Liverpool (7%). Notably however, the remaining majority percentage of patrons are widely distributed throughout the outer extents of the Greater Sydney's northern, western and southern regions as well as regional NSW (Newcastle, Wollongong, Hunter Valley, Central Coast, South Coast, etc.)

The travel catchment in terms of the general direction of approach is illustrated in Figure 18. It is noted that a higher proportion of patrons will be travelling directly from work due to the timing of the non-race day events, and as such, employment hubs are likely to become more notable origins for patrons of the events. Notwithstanding, this general approach split remains appropriate.

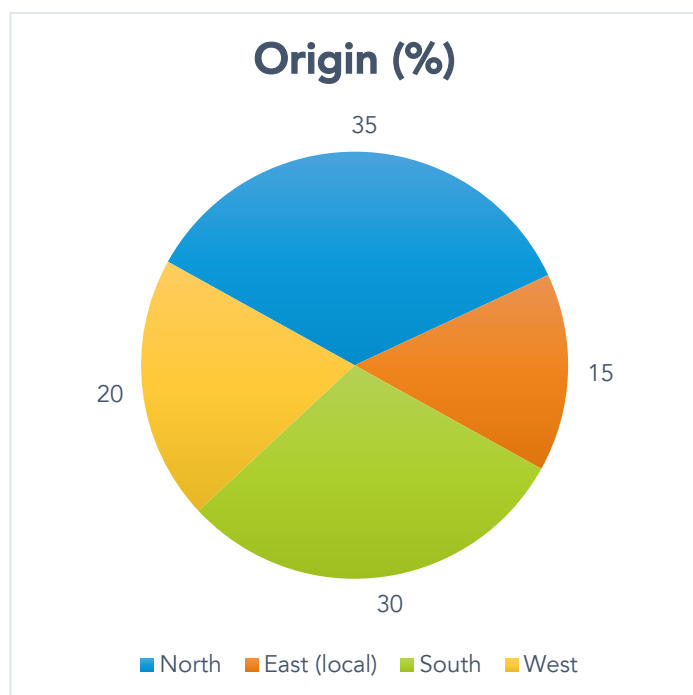


Figure 18: Direction of Approach

7.2. Travel Mode Share

7.2.1. ATC Data

ATC have collected travel mode share through patron surveys undertaken at racing events. This share is derived from an average over multiple events throughout the 2017 Autumn racing season. It is noted that these events, as an average, are smaller in scale than the Everest event on 14th October 2017.

The survey captured 1,500 responses, the results of which are summarised in Figure 19 and Table 7. This data is an average between arrival mode and departure mode, which were noted as being similar to one another.

7.2.2. ptc. Surveys

When reviewing the relevancy of this data to non-race day events, the following considerations were made:

- **ptc.** has undertaken traffic counts and car occupancy surveys at the infield car park during the Everest event held on Saturday 14th November 2017, between 10am and 5pm. The purpose of this survey was to capture more precise information relating to large events than could be obtained from the patron surveys gathered over the full autumn season. The Everest is the largest annual race event held at the Racecourse, and on this occasion, crowds were approaching 35,000 people. The survey revealed that the mode of private travel was approximately 25% during the Everest, including passengers, compared to 32% taken over the whole Autumn season;
- This difference is primarily attributed to the patron data capturing information over a whole season, including various Class 3 events that draw a crowd with different characteristics than Class 2 events. Often, these events are held mid-week and smaller in scale, and as such, there is more available parking. Therefore, driving is typically more popular for these smaller events;
- Private trips are anticipated to be slightly lower in general for night events, as there is a greater association with alcohol consumption at night, and a night event is more likely to be the final activity of the day, as opposed to a day event in which patrons may have other plans post-event;
- Weekday night events are anticipated to have a notable reduction in private trips and an uptake in public transport, car sharing, car occupancy and private shuttles. This is attributed to a higher percentage of people travelling to the night event directly from their place of work:
 - Whilst private travel is always an option from home (for car owners), travelling from their place of work will generally restrict private travel to employees who drive to work;
 - Employment areas generally have good access to public transport hubs. This is especially so for employees proximate to the CSELR;
- For all race events, regardless of timing, the completion of the CSELR is anticipated to result in an increased uptake of public transport to and from the Racecourse.

In light of the above, the modal share has been presented to reflect the private car share mode indicated in the traffic surveys (25%), with the difference being distributed amongst other modes that are likely to be more popular for a Class 2-night event scenario. This modal share is outlined in Figure 20 and Table 7.

7.2.3. Existing Mode Share Comparison

Mode Share – ATC Data

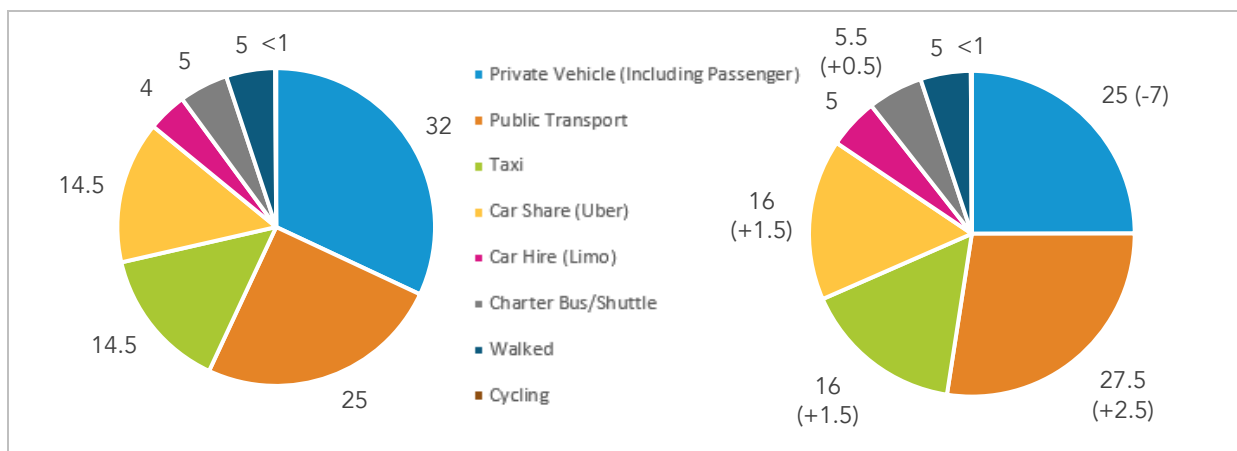


Figure 19: Anticipated Mode Split, Multiple Events

Mode Share – ptc. Survey

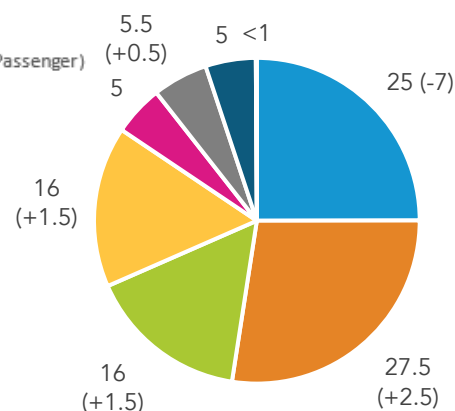


Figure 20: Anticipated Mode Split, Class 2 Event

Table 7: Average Mode Share Over Autumn 2017 Season

Mode	Mode Share (ATC Data)	Mode Share (ptc. Survey)
Private Trips	32%	25%
Hired Car (i.e. limo)	4%	5%
Taxi	14.5%	16%
Car Share (i.e. Uber)	14.5%	16%
Public Buses	25%	27.5%
Shuttle/Charter Bus/Coach	5%	5.5%
Walked	5%	5%
Cycling	<1%	<1%

The data sets indicated a fairly consistent mode share distribution.

7.3. Projected Mode Share and Trip Generation

The tables below summarise the hourly peak arrival trips for each transport mode. This data is founded upon a significant collection of relevant data, including patron travel surveys, patron post-code data and traffic surveys.

It is noted however, that in order to predict likely traffic characteristics for a proposed non-race day event, some additional assumptions have been made:

- An occupancy of 2.0 passengers has also been adopted for taxis and car share (excluding driver) based on the survey data of private vehicles;

- Public transport assumes 14.5m long buses with capacity of 80 patrons. Shuttles have been taken as small 12 seaters (Toyota HiAce). However, larger shuttles (21) and coaches (50) are also present during events;
- Car Hire vehicle occupancy is assumed to be high on average;
- Peak hour will occur between 5:00pm-6:00pm;
- Light rail has been assumed in this model;
- Taxis, Car Share and Bus arrive and depart the site within the same hour;
- Around 50% of hired cars park in the infield car park for the event duration, whilst the remaining 50% leave the site;
- Post event trips (10:00pm-11:30pm) have not been assessed, as it is not the critical period for the road network operations.

A significant change in the transport network has occurred since the data collection in that the CSELR project is now complete and operating on both the Randwick and Kensington lines. It is considered that there will be a notable shift in the mode share towards the new light rail services, which offer an alternative transport option for travelling between the City and the Racecourse. The transfer of mode share assumptions is present in the following table:

Table 8: Projected Mode Share

Mode	Mode Share (ptc. Survey)	Projected Mode Share
Private Trips	25%	25% ²
Taxi/Car Share (i.e Uber)	32%	16%
Light Rail	NA	23.5%
Public Buses	27.5%	20%
Shuttle/Charter Bus/Coach	5.5%	5.5%
Hire Car (i.e limo)	5%	5%
Walked	5%	5%

The trips for different events are summarised in Table 9.

² Car mode share has been retained at 25% in order to provide a robust traffic assessment, although the light rail services will likely reduce the use of private vehicles.

Table 9: Peak Hour Arrival Trip Summary

	Private Car	Taxi / Uber	Light Rail	Public Bus ³	Shuttles/ Coach	Hire Car	Walk	
Projected Mode Share	25%	16%	23.5%	20%	5.5%	5%	5%	
Ave. Vehicle Occupancy	2	2	450	80	12	4	1	
Maximum Hourly Arrival as a Percentage of Total Arrivals⁴	50%	50%	50%	50%	50%	50%	50%	
Class 3 Event (5,000 - 10,000 people)								Total
People	2,500	1,600	2,350	2,000	550	500	500	10,000
Arriving	625 (veh)	400 (veh)	5 (veh)	17 (veh)	23 (veh)	63 (veh)	250 (pedestrian)	1,133 (veh)
Departing	0 (veh)	400 (veh)	5 (veh)	17 (veh)	12 (veh)	32 (veh)	0 (pedestrian)	466 (veh)
Class 2 Event (10,000 - 15,000 people)								Total
People	3,750	2,400	3,525	3,000	825	750	750	15,000
Arriving	938 (veh)	600 (veh)	8 (veh)	26 (veh)	34 (veh)	94 (veh)	375 (pedestrian)	1,700 (veh)
Departing	0 (veh)	600 (veh)	8 (veh)	26 (veh)	17 (veh)	47 (veh)	0 (pedestrian)	698 (veh)

7.4. Peak Traffic Assessment

The following sections outline the predicted movement volumes for each of the key forms of travel to and from the Racecourse for a non-race day event during the critical peak period. As described in Section 2, the non-race day events may include a range of community events, private and corporate events/functions, festivals, cultural / art events, markets, and consumer roadshows. The events will be held during the following hours:

- Monday – Thursday: 10am – 8pm
- Friday, Saturday, Sunday or public holiday: 10am – 10:30pm

Based on the event characteristics, the event-related traffic is expected to generally travel outside of network peak hours. For a worst-case scenario assessment, the event related traffic volumes are estimated on a weekend between 11am and 12pm as congregated arrival traffic, this is considered as a robust and conservative assessment as the following:

- These events are likely to draw significantly more attention during the weekend than weekdays, as their primary event operations hours coincide with the weekday business hours;

³ It is assumed that the buses are not at fully capacity

⁴ This figure assumes a 2-hour arrival period

- These events are likely to draw traffic and pedestrian activity in a staggered manner after the event starts rather than congregated arrivals before the events start;

With consideration to the event characteristics, the departure of the event traffic and pedestrians are likely to be spread across multiple hours rather than a mass egress, thus the departure traffic condition has not been modelled. Should the event traffic and pedestrians depart in a congregated manner, it will only result in queuing on the side roads of Alison Road and Anzac Parade into the Racecourse precinct, which is unlikely to adversely impact the major route transport operation.

7.4.1. Trip Distribution

For the purpose of trip distribution, 40% private vehicles (including 35% private cars and 5% hired cars) are estimated to be parked in multi-deck car park and 60% private cars are estimated to be parked in infield car park.

The trip distribution for Class 3 and Class 2 events are illustrated in Figure 21 and Figure 22 respectively.

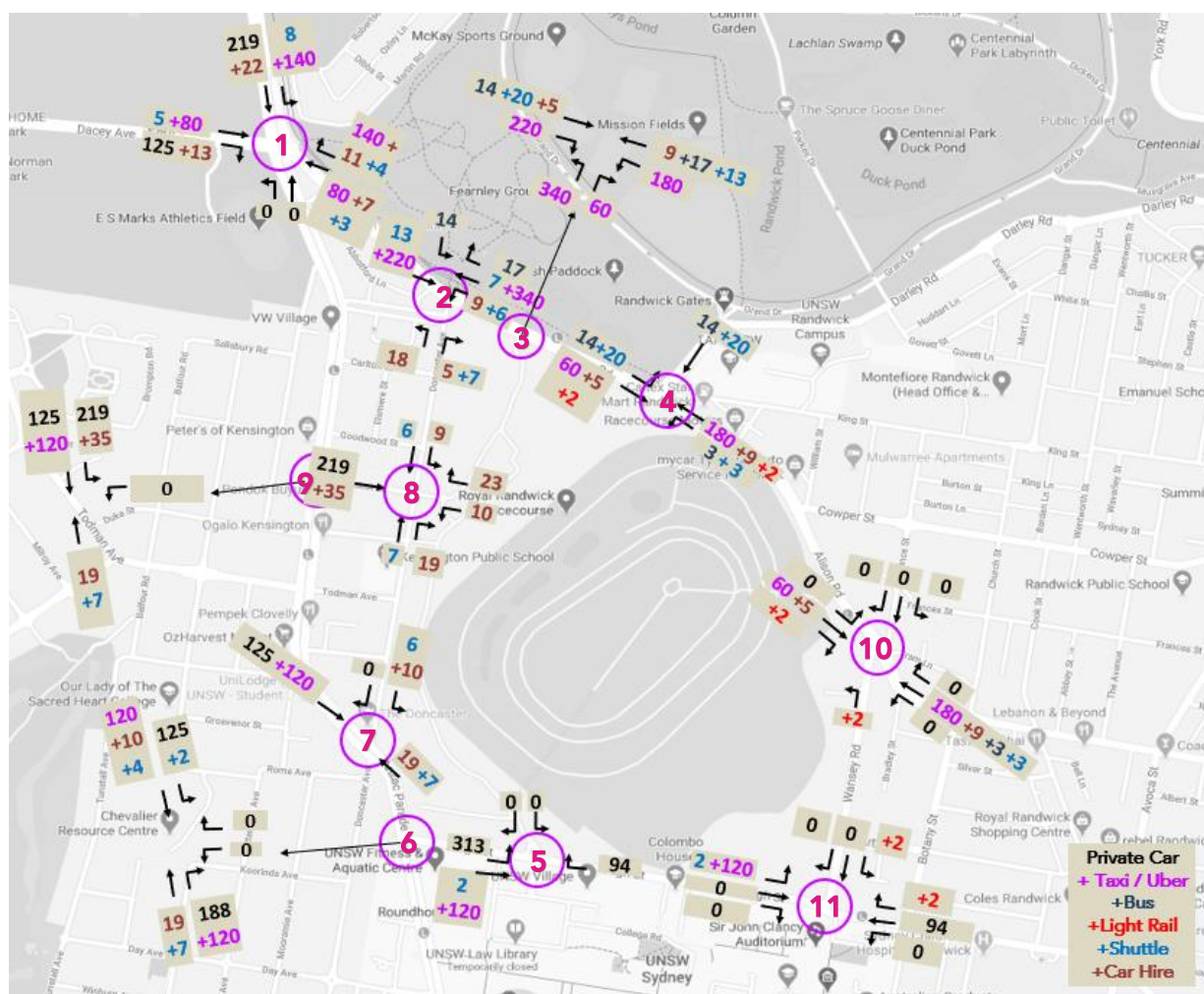


Figure 21: Traffic Distribution for Class 3 Event

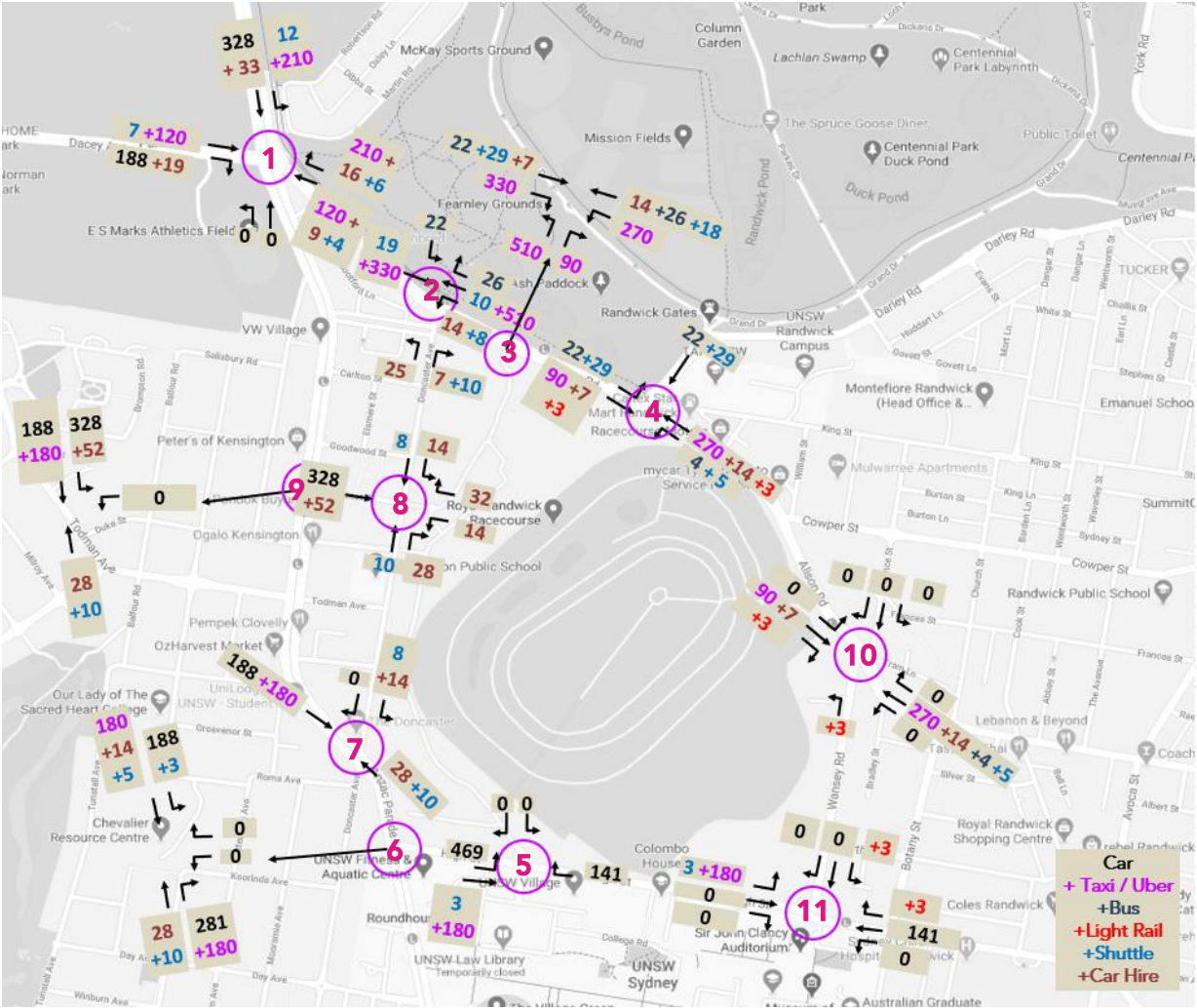


Figure 22: Traffic Distribution for Class 2 Event

7.5. Off-peak Trips

7.5.1. Heavy Vehicle & Service Vehicle Trips

In terms of volumes and access arrangements, the proposal will not result in any notable difference in service vehicles and heavy vehicle movements to existing day events, as operation requirements and scale are similar. The key difference is the timing of these vehicles.

In regard to service vehicles (food and beverage, catering, media crews, etc.), these shall be arranged prior to event commencement and the general commuter peak period. Post event clean-up is proposed to occur the following morning, and similarly will not create cumulative traffic impacts with other racecourse activities or the commuter peak period.

The SEARs require the provision of a Construction Traffic Management Plan (CTMP), however the events will involve the installation and erection of temporary structures (marquees, stages etc.) within the racecourse property and well away from the road network / public domain.

The bump-in and out of the event infrastructure will occur within the racecourse property and involve the movement of trucks to and from the entry gates, but no construction vehicles. This activity does not constitute construction activity in the traditional manner, as no physical works are occurring on or near a road and no construction vehicles are involved. In this context the activity does not require a CTMP or TGS layouts.

7.6. Assessment Scenarios

In assessing the potential traffic impacts, the following scenarios have been considered for traffic modelling:

- **Existing Saturday Traffic:** contains the existing surveyed weekend traffic volumes and obtained traffic signal data as outlined in Section 6.
- **Class 3 Event Traffic:** Existing Saturday traffic + the traffic generation of a class 3 event at 10,000 patrons.
- **Class 2 Event Traffic:** Existing Saturday traffic + the traffic generation of a class 2 event at 15,000 patrons.

7.7. Traffic Network Modelling

7.7.1. SIDRA Intersection Modelling Tool

The surveyed intersections have been modelled with SIDRA Intersection 9.1 software, a micro-analytical tool for individual intersections and whole-network modelling. The all sites are connected in a network model environment, as shown in Figure 23, based on the traffic survey and traffic signal data outlined in Section 6.

Typically, SIDRA provides a number of performance indicators, outlined below:

- **Degree of Saturation (DoS)** - The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation (e.g. 0.8 = 80% saturation);
- **Average Delay** - The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major road traffic will provide an overall low average delay;

- Level of Service (LoS) - This is a categorisation of average delay, intended for simple reference. RMS adopts the bands
- 95% Queue lengths (Q95) - is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units; and

Level of Service is a good indicator of overall performance for individual intersections, with each level summarised in Table 10 below.

Table 10: Intersection Performance - Levels of Service

Level of Service	Average Delay (secs/vehicle)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Extra capacity required	Extreme delay, major treatment required

Australian Turf Club, Royal Randwick Racecourse Non-Race Day Events, 13 June 2024 32

7.7.2. Network Performance Modelling Results

To predict likely road network performance during the critical arrival period (11am - 12pm Saturday) of a proposed non-race day event, the existing road network model has been updated with the anticipated bus, taxi/car share, and private vehicle trips determined in the previous section, in accordance with the likely approach distribution.

An overview of the model results is tabulated in Table 11 which indicates the level of service, worst delay, degree of saturation and vehicle queue for the surveyed intersections. Detailed model results are provided in Appendix 1.

Table 11: Road Network Performance Analysis Summary

Location	Event Scenarios	LoS	Delay (secs) ⁵	Highest DoS	Highest Q95% (Veh) ⁶
Anzac Parade / Alison Road / Dacey Avenue	Existing Saturday	E	56.7	0.933	272.6
	Class 3 Event	E	59.5	0.974	296.6
	Class 2 Event	E	57.5	0.974	295.4
Alison Road / Doncaster Avenue	Existing Saturday	B	22.0	0.805	156.4
	Class 3 Event	C	33.4	0.916	311.6
	Class 2 Event	F	74.6	1.060	402.1
Alison Road / Racecourse Entrance	Existing Saturday	B	27.3	0.627	195.1
	Class 3 Event	F	86.9	1.112	424.3
	Class 2 Event	F	173.7	1.298	424.3
Alison Road / Darley Road	Existing Saturday	B	20.4	0.660	145.8
	Class 3 Event	C	36.9	0.900	340.5
	Class 2 Event	C	40.5	0.946	349.9
High Street / Gate 2 Avenue	Existing Saturday	A	2.5	0.186	18.8
	Class 3 Event	B	14.6	0.474	50.4
	Class 2 Event	B	16.3	0.584	62.6
Anzac Parade / High Street	Existing Saturday	A	7.6	0.326	36.8
	Class 3 Event	B	18.8	0.627	118.2
	Class 2 Event	C	32.9	0.941	207.6
Anzac Parade / Doncaster Avenue	Existing Saturday	A	13.8	0.423	71.8
	Class 3 Event	A	12.9	0.433	69.7
	Class 2 Event	A	11.5	0.528	72.1
Doncaster Avenue / Ascot Street	Existing Saturday	A	3.0	0.458	24.8
	Class 3 Event	A	7.2	0.543	31.3
	Class 2 Event	A	11.9	0.796	76.1
	Existing Saturday	A	6.5	0.232	1.2

⁵ For signalised intersections, the average performance indicators have been reported. It is noted that for priority-controlled intersections, the minor road usually experiences the highest delay whereas the major road experiences zero delay. In light of this, the average performance indicators may not be a suitable method of assessing the performance of an intersection. Therefore, the performance indicators for the worst movement have been reported for priority-controlled intersections.

⁶ Resulting 95th percentile queue reported for the approach exhibiting the greatest vehicle queuing.

Location	Event Scenarios	LoS	Delay (secs) ⁵	Highest DoS	Highest Q95% (Veh) ⁶
Anzac Parade / Ascot Street	Class 3 Event	A	7.0	0.244	1.2
	Class 2 Event	A	7.9	0.305	1.4
Alison Road / Wansey Road / Prince Street	Existing Saturday	A	11.9	0.314	57.7
	Class 3 Event	B	18.5	0.400	105.1
	Class 2 Event	B	19.1	0.442	110.6
High Street / Wansey Road	Existing Saturday	B	28.1	0.300	45.9
	Class 3 Event	C	32.5	0.602	95.6
	Class 2 Event	C	38.5	0.741	125.5

7.7.3. Impacts to Road Users

As shown in Table 11, most of the surveyed intersections are currently operating at good levels of service during the Saturday critical peak hour. This correlates with the observed traffic survey data in the surrounding area. The traffic modelling results indicate that the road network currently has spare capacity, as the critical peak arrival period is outside of the network peak hour.

The SIDRA model indicates that during the critical peak hour in a worst-case (Class 2, 10,000 - 15,000 people) event, some delays are expected in the road network. As shown in Table 11 and Appendix 1, the additional traffic activity generated by the proposed non-race day events will result in some extension to delays on the network and some intersection reach their capacity. In particular, queues and delays are seen at the Alison Road / Doncaster Avenue and Alison Road / Racecourse Entrance intersections.

These associated impacts particularly relate to Class 2 events, which is anticipated to be sustained for 1-2 hours. Less impacts are expected for Class 3 events (5,000 - 10,000 people), where Alison Road / Racecourse Entrance experiences the highest traffic demand.

In order to mitigate congestion within the road network, it is recommended that the available public transport options be promoted and encouraged as a means of reducing the number of patrons opting to drive to these events.

This issue is recognised, and ATC currently implement transport management plans associated with large events, they will be applied to the non-race day events as outlined in Section 7.7.4 of this report.

7.7.4. Mitigation Measures for Road Management

A number of mitigation measures are proposed to reduce or eliminate traffic impacts associated with the proposed non-race day events. Some of the measures are already implemented for day-racing events and are therefore readily adopted. Other measures may be introduced as part of this proposal and can be adopted for general events as well. Moreover, given the scale of these events, some of these measures will require the cooperation of other stakeholders, such as STA and Sydney buses, and this must be coordinated through the MEOG.

Measures to address increased traffic and transport demands:

- Preparation of a Transport Management Plan for Non-Race Day Events (TMP). This plan will provide a basic framework which may be adopted for event specific TMP's.

- Preparation of Traffic Guide Schemes (TGS's) to be submitted with each TMP prior to events, deploy traffic controllers at key entrances and exits to guide and manage traffic flow where necessarily as part of the TGS's.
- Regular consultation with the MEOG to coordinate events with other development or major events in the local area, thereby mitigating/preventing cumulative impacts to the Moore Park Precinct.
- Provide notification to local residents prior to events, with details of the events, and contact details for enquiries.
- Promote non-race day events as public transport events and facilitate this with Travel Access Guide information available on appropriate websites.

Measures to reduce private vehicle trip generations include:

- Establish event-specific sustainable travel plans in the lead up to events;
- Staggered arrivals by promoting discounted parking should patrons arrive an hour before event start times. Incentives may include premium parking, discounts on drinks, food or future tickets, etc.
- Promote car-pooling, with Premium parking for vehicles with 3+ passengers;
- Integrate free public transport services with pre-purchased tickets;
- Seek to increase mode share of cyclists, providing improved on-site cyclist parking facilities, including bike-share facilities;
- Support increased shuttle services between hotels;
- Continued patron surveys, to track travel trends and identify barriers and opportunities in public and active travel access;
- Regularly update the website and wayfinding to incorporate changes in local travel infrastructure and timetables, and seek opportunities to promote them;
- Continue organising additional event bus services and light rails services, to be coordinated within the MEOG.

7.8. Public Transport Assessment

It is recognised that without additional public transport services for events, regular public transport services would be notably impacted by events due to insufficient capacity. Consultation between ATC and Sydney Light Rail and STA has been on-going. However, and as a major event venue, these public transport providers recognise the need to design and provide for large crowds on occasions.

As mentioned in Section 5.2, it is understood that Light Rail will be able to provide increased service frequency for non-race day events, providing capacity for up to 10,000 patrons per hour per direction, in addition to regular light rail users. Similarly, STA are able to provide additional bus services to access the Racecourse bus layby, capable of accommodating approximately 1,000 additional patrons between the Racecourse, Bondi and Central.

Based on an anticipated maximum crowd of 15,000 patrons and taking the adopted public transport mode split of 43.5% (23.5% by light rail and 20% by public buses) amounts to 6,525 patrons travelling to and from the site via public transport. Based on the travel direction split in Figure 18, it is estimated that 75-85% of patrons using public transport will head towards Central.

Noting that additional light rail and bus services can accommodate approximately 11,000 additional people during events, this suggests that there is sufficient capacity to transport patrons between key origins (Bondi, Central) and the site. It will be important to discuss with Sydney Trains the flow-on implications, as patrons filter out along the train network. Sydney Trains should be represented within the MEOG for large events, if not already.

Measures to mitigate impacts to public transport include:

- Notify Sydney Trains of upcoming events, and arrange for necessary interfacing signage and management between light rail, bus and train interfacing.
- ATC staff / traffic controllers to be positioned at the pedestrian crossing between Gate 1 and Alison Road. For Class 2 events, Police presence may also be required.
- Additional light rail staff management around light rail stations anticipated to receive significant increases in patrons.
- If required, temporary control devices around stations may be installed, including queue cordons, advisory signage, etc.
- Close monitoring of key light rail stations during events, to understand their performance, and identify and take action on any issues.

7.9. Pedestrian and Cyclist Assessment

Pedestrians and Cyclists, whether associated with the event or not, are likely to originate from the immediate locality, and be familiar with the locality. The locality provides well-lit footpaths around the site, along with signalised crossings along major junctions at State roads.

Moreover, no road closures are proposed for the non-race day events, all footpaths and cycle paths will remain accessible throughout the event. As such, no significant impacts to pedestrians in the locality are anticipated to result from non-race day events.

Notwithstanding, during the lead-up to and wind-down of each event, vehicle and pedestrian movements in the area will increase, inherently increasing risks of conflict and delay to some extent.

Measures to improve pedestrian accessibility and reduce impacts include:

- Maintain a comprehensive site wayfinding approach, including maps, signage, and staff guidance;
- Preparation of Traffic Guide Schemes (TGS's) to be submitted with each TMP prior to each event, deploy traffic controllers at pedestrian crossings to guide and manage pedestrian flow where necessarily as part of the TGS's.
- As part of ATC's Event Operations Plan, the movement of pedestrians through and around the site will be monitored, to ensure that pedestrians are provided with safe passage to their respective destinations, and that residential streets are not adversely impacted.

8. Parking and Servicing Assessment

8.1. Private Parking

8.1.1. Parking Capacity and Demand

The Racecourse has a large supply of on-site parking with the ability to use off-site parking at Moore Park when available.

Table 12: Parking Provisions

	Members Car Park	Infield Car Park	On-Site Total	Off-site Parking (Moore Park)	Combined Total
<i>Capacity (Spaces)</i>	574	3,500	4,074	700	4,774

The mode share surveys indicate a parking demand of 1,876 spaces, which has been adopted as part of the traffic impact analysis. The infield traffic survey undertaken for the Everest event on Saturday 14th November, 2017, noted that the number of parked vehicles on-site peaked at 1,649 vehicles, before vehicles began to be redirected to the Moore Park car park off-site. It is understood that by 1pm, 100 vehicles had been redirected, and it is assumed that this number would not significantly increase over time as the event draws closer to conclusion. However, the Everest event included 35,000 patrons and since the new proposal is to include a maximum of 15,000 patrons, it is apparent that 1,876 cars will be easily accommodated within the infield and the Members car park.

When considering the site capacity on the day of the surveyed event, the following is noted:

- A large portion of infield was occupied by material storage (soil) related to works, reducing the total capacity of the infield car park;
- The Members multi-deck car park (574 spaces) was not completed at the time of this event;
- Parking arrangements of vehicles was not optimised.

Upon resolving the above points, the peak parking demand of 1,876 spaces will readily be accommodated by the available parking provision on-site, being 4,074 spaces. As such, with appropriate promotion and management of on-site and off-site parking, local on-street parking impacts can be minimised.

8.1.2. Parking Management

It is noted that the bulk of on-site parking is provided within the infield area, as informal parking. Being informal parking, the capacity of this area is highly dependent on the arrangement of vehicles. To ensure a balance between parking efficiency and manoeuvrability, **ptc.** advise that the following measures be adopted by ATC parking management staff:

- Encourage reverse parking, which notably reduces the required width of parking;
- Limit aisle widths to between 6.2 - 6.6 metres;
- Ensure that vehicles park in the correct alignment, as far as is practicable.

To encourage uptake of ATC-provided parking and discourage on-street parking, the following additional measures are proposed:

- Variable Message Signage (VMS) established around the local road network to guide patrons directly towards the car park, and advise of capacity;
- Advise patrons that on-street parking is discouraged, and sufficient on-site parking is available. This may be done through the website, Traffic Marshals, VMS and as part of the email ticket purchase;
- As part of the overall event monitoring process, ATC staff will undertake observations of the local streets, and parking location data may be included in the patron survey. Any identifying issues should be raised to management for review and action.
- A feedback forum should be provided for residents to communicate with ATC regarding any parking issues.

8.2. Drop-Off Provisions

The Racecourse will operate all drop-off facilities as it would for existing day-events. These facilities include:

- Taxi Rank via Ascot Street, Gate 18;
- Public Bus layby via Alison Road; and
- Shuttle drop-off via Alison Road, Gate 1, and infield car park (subject to the infield tunnel height clearance);
- Limousine, and large shuttle/coach drop off, via the Bus layby.

8.2.1. Bus Provisions

The Racecourse Bus rank accommodates 11 independent bus stops. According to NSW Bus Infrastructure Guide lines, 6 bus stops can accommodate between 120-180 buses per hour, based on a 30 second dwell time. In the case of the Racecourse, each bus would require longer dwell times due to larger intake of passengers. Notwithstanding, 11 bus stops is considered readily able to accommodate the additional 20 public bus serves (occurring over more than a single hour) with capacity to accommodate private coaches on demand.

8.2.2. Taxi Rank

The taxi rank (also used for car share drop off) and on-site queue is able to accommodate up to 48 vehicles at any one time, before queue builds up.

The measures listed in Section 7.7.4 to encourage public transport will help reduce demand at Gate 1, with a particular emphasis on the using the CSELR for travel.

8.2.3. Limousine, Shuttle and Coach Drop-off

Shuttles are able to access the site via Gate 1 from Alison Road, however as there is limited capacity, this is only permitted by prior arrangement.

Coaches may drop off via the bus layby off Alison Road.

Moreover, area is set aside within the Infield car park to drop off patrons from Hire Cars and Shuttles as required.

8.3. Horse Float Provisions

No change in the demand of horse-floats is anticipated as this proposal seeks to hold various non-race related events. As such, float parking provision is proposed to remain as per the existing arrangement. Vehicles may range from light-vehicles towing a trailer, up to 19m long semi-trailers.

8.4. Service Vehicle Provisions

No notable change in servicing demands is anticipated between day events and the proposed non-race day events. As such, servicing facilities on-site are proposed to remain as per the existing arrangements. Service vehicles will range from light commercial vans and utes, to a range of rigid trucks and articulated trucks. No deviation from existing permitted service vehicle conditions is proposed.

9. Transport Management Plan

9.1. Transport Management Plan Objectives

The pedestrian, traffic and transport management measures presented within this report have been prepared in accordance with the requirements of the Guide to Traffic and Transport Management for Special Events. The guide presents the following four primary objectives:

- Ensure the safe separation of event patrons, participants and volunteers from traffic, and
- Manage the reduced capacity of the road system, and
- Minimise the traffic impact on the non-event community & the emergency services, and
- Minimise costs.

To achieve the above objectives, the Transport Management Plan will:

- Ensure that delays and traffic congestion are kept to a minimum and within acceptable levels
- Encourage the use of public transport to the precinct and major events
- Deliver a better customer experience
- Ensure that all needs of road users, motorists, pedestrians, cyclists, public transport passengers and people with disabilities are accommodated.

9.2. Work Health and Safety

A risk management approach is an integral part of the planning for any pedestrian and traffic management planning activity. The risk identification, assessment and control processes are a legal obligation (as per the WHS Act and Regulations 2011) and should be aligned with AS/NZS ISO 31000 – Risk Management and the Code of Practice ‘How to Manage Work Health & Safety Risks’.

The Australian Turf Club are the event organisers (as per TfNSW Guide to Traffic & Transport management for Special Events) and the risk managers for event operations. They shall ensure that the risk management methodology and culture are applied throughout all stages and aspects of the event activities. ptc. accepts the TTMP and associated Traffic Guidance Schemes (TGSs) as traffic risk control measures but notes that TGSs and the TTMP alone cannot entirely substitute a thorough AS/NZS ISO 31000-based event/activity risk assessment.

The Australian Turf Club and ptc. will undertake pro-active consultation with key stakeholders in order to assess traffic risk and develop this plan further if required.

Throughout the risk management process, the document will link activities to the Australian Standard (AS/NZS 31000:2009). The standard provides a systematic approach to the risk management.

9.3. Consultation and Method of Communicating Traffic Changes

Traffic Guidance Schemes (TGSs, previously known as ‘Traffic Control Plans’ or TCPs) in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and TfNSW Traffic Control at Work Sites Manual will advise motorists of upcoming changes in the road network.

Any variation to the layout of the TGSs on site is to be recorded and certified by authorised TfNSW accredited personnel. The associated TGS road signage will inform drivers of works activities in the

area including truck movements in operation. Any modifications to the TGSs must also be approved by Council and/or TfNSW prior to implementing any changes.

Prior to commencement of the traffic controls, the traffic control contractor is to inform neighbouring properties of proposed changes and provide contact information.

9.4. Hazard and Risk Identification

All special events entail a set of risks—from a transport perspective—that may need to be mitigated. Some of these hazards and risks are related to:

- Moving traffic (Risk Matrix Reference: R1)
- Queued traffic (Risk Matrix Reference: R2)
- Highly vulnerable road user activity (Risk Matrix Reference: R3)
- Other construction activity or roadworks in close proximity to the proposed work site (Risk Matrix Reference: R4)

These are appropriate for the site because of the following:

- Moving traffic on the surrounding road network could be held up by traffic entering/exiting the gates, potentially creating changed conditions and conflicts.
- Queued traffic could pose safety and manoeuvrability issue for vehicles turning into and out of the site, prolong and delay the bump in/out processes and impact on surrounding on-street parking.
- The existing cycleway on Doncaster Avenue could pose a safety risk to vulnerable road users (cyclists) due to proximity to the site and increased traffic.
- Traffic Management for the events in combination with other activity in close proximity to the site may result in potential conflicts.

As there is no guarantee that the contractor responsible for implementing the TGSs are fully aligned with the intention of this traffic report, this remains a risk to be assessed. As such, a risk matrix has been prepared as shown in Table 13 using the following definitions:

Risk Rating

- Very High (VH)
- High (H)
- Medium (M)
- Low (L)

Likelihood

- Insignificant: Illness, first aid or injury not requiring medical treatment. No lost time.
- Minor: Minor injury or illness requiring medical treatment. No lost time post medical treatment.
- Moderate: Minor injuries or illnesses resulting in lost time.
- Major: 1 to 10 serious injuries or illnesses resulting in lost time or potential permanent impairment.

- Severe: single fatality and/or 11 to 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment.
- Catastrophic: multiple fatalities and/or more than 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment.

Consequence

- Almost certain: expected to occur multiple times (10 or more times) during any given year.
- Very likely: expected to occur occasionally (1 to 10 times) during any given year.
- Likely: expected to occur once during any given year.
- Unlikely: expected to occur once every 1 to 10 years.
- Very unlikely: expected to occur once every 10 to 100 years.
- Almost unprecedented: not expected to occur in the next 100 years.

Table 13: Risk Assessment Matrix

Likelihood of Traffic Impacts	Consequence of Traffic Impacts						
		Insignificant	Minor	Moderate	Major	Severe	Catastrophic
	Almost certain						
	Very likely						
	Likely		R2	R1, R2	R1		
	Unlikely						
	Very unlikely						
	Almost unprecedented						

9.5. Risk Mitigation Measures

Some recommended risk mitigation measures include:

R1

- Regular checks of surrounding roadways on event day by Traffic Manager.
- Adequate signs, devices and staff are available to implement contingency actions (if required).
- Preparation of TGSs to communicate to road users within the vicinity of the work site of the changed traffic conditions.
- Transdev and TfNSW incident response plan actions.

R2

- Consistent patron messaging by the Australian Turf Club within Randwick Racecourse precinct.
- Event Police to facilitate traffic flow at gates.

R3

- Ensure adequate signage, including VMS to advise road users of changed conditions.
- Transdev, Police and TfNSW Event Commanders to monitor for unsafe behaviour.

R4

- Coordination with Site Managers of neighbouring sites to ensure that there is no clash of their construction vehicles, cranes etc with event traffic.
- Consult with the local residents, businesses and tenancies to notify them of the potential impact on their access driveways.

9.6. Traffic Management Planning Process

Temporary Traffic Management (TTM) for the project has been planned in accordance with Transport for NSW, Traffic control at work sites – Technical Manual, Issue No.6.0, 14 September 2020 (TCAWS). The process is shown in Figure 24.

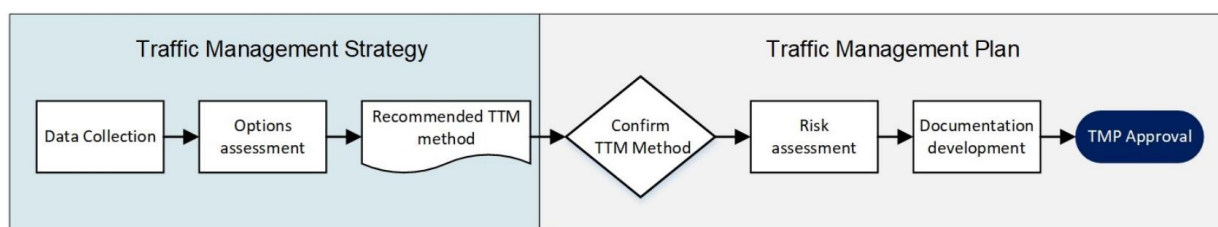


Figure 24: Traffic Management Planning Process

An iterative process is being adopted in collaboration with relevant stakeholders to adopt the most appropriate traffic management approach and develop the associated documents for the work.

9.7. Traffic Management Strategy

A traffic management strategy has been chosen to support the appropriate allocation of time, funds and resources for the project, and allow for consultation in determining the safest and most efficient way for road users to interact with the work site. The following have been considered in determining the TTM method:

- **Detour Options:** No detours are necessary or proposed by the client and therefore, disproportionate amount of disruption to the road users will NOT be introduced.
- **Site Location:** The site and surrounding road network of the events contains some vegetation, existing signage and infrastructure that may obstruct signs and devices needed for certain strategies.
- **Event Area:** The site does not require any road closures to facilitate operations.
- **Vulnerable Road Users:** Desire lines of pedestrians, cyclists, motorcyclists and users of scooters do impact on events or create undesired interaction between these road users and traffic. In particular, the existing cycleway on Doncaster Avenue presents a potential conflict point between cyclists and other road users.
- **Community Facilities and Needs:** Additional services will be added for Light Rail as required and agreed between TfNSW and ATC, subject to monitoring of patronage.

9.8. Decision of TTM Method

After considering the factors in Section 9.7 and the recommendation of the client, the TTM method chosen comprises a combination of “Around (elimination)” and “Past (isolating or engineering)” methods. This method will provide the lowest overall net risk option.

9.9. Traffic Control Measures

Traffic Guidance Schemes (TGSs), previously known as ‘Traffic Control Plans’ or TCPs, outline the proposed traffic management measures to inform road users of the changed traffic conditions in the vicinity of the site.

Traffic Controllers will be required at key intersections to facilitate traffic flow, if necessary, and to prevent potential queued vehicles from clocking intersections and pedestrian desire lines. This role can also be fulfilled by point duty police, depending on the cause and severity.

It is noted that detailed TGSs are to be prepared by the appointed traffic management contractor prior to commencement of works and submitted to Council and TfNSW for approval. All TGSs associated with the TTMP must comply with the Australian Standards and the *TfNSW Traffic Control at Work Sites Technical Manual* (TCAWS). Any traffic controllers shall be appropriately qualified and TfNSW accredited.

Traffic control shall be established in accordance with the requirements of the TCAWS and gate controllers are to be stationed at site access gates to manage access and egress to the site.

9.10. Access to Adjoining Properties

Access to all adjoining properties will be maintained throughout the events. The adjacent landowners will be notified of events via letter box distribution and/or road signage to advise of anticipated changed conditions with access to adjoining properties being maintained at all times.

9.11. TTM Mitigation Measures

9.11.1. Access For Local Residents, Businesses, Hospitals and Emergency Vehicles

Access for local residents and businesses will not be restricted and access via Ascot Street will be closed after 8pm. Access to the precinct will be available for emergency service vehicles at all times.

9.11.2. Advertising Traffic and Transport Arrangements

The ATC and TfNSW collaborate to prepare communication material for all RRR events. TfNSW has a ‘Getting to events’ webpage (www.transportnsw.info/events). This website provides information on traffic and transport for events across NSW. Key information includes:

- Day, date, location and time of event
- Promotion and benefits of public transport
- Promotion of park and ride, if operating
- A link to plan your trip to the event via public transport
- Various transport options including Metro, Train, Light Rail, Bus, Ferry
- Opal ticketing information
- A link to ‘Live Traffic NSW’, if you choose to drive

The ATC also publishes transport options on their official website, which is available for patron viewing and planning. Webpage <https://www.australianurfclub.com.au/royal-randwick/royal-randwick-transport/>

9.11.3. Permanent Variable Message Signs

TfNSW uses the general-purpose variable message signs (VMS) on the road network that are located in permanent positions above or adjacent to the roadway for traffic management and/or drivers' information applications. Advertising special event information for the events will be prioritised in accordance with their policy as standby messages whilst there are no unplanned incidents to manage and in the lead-up to event dates.

The use of permanent VMS is supported, subject to TfNSW endorsement and approval.

9.11.4. Portable Variable Message Signs

Variable Message Signs are critical for the flawless operation of traffic and pedestrian management. The VMS allocation is proposed and is subject to change as operational requirements change. The following figures summarise the VMS schedule for each location. Each frame is displayed for 3 seconds.

9.12. Pedestrian Management

The TTMP should prioritise the safe and efficient movement of pedestrians between the site and their means of transport. This should consider movement within and surrounding the site, with respect to:

- Royal Randwick Racecourse Car Parks
- Taxi, Bus and Car Share ranks (pick-up/drop-off)
- Public bus stops and light rail stations
- Private shuttle/coach/limousine drop-off/pick-up points
- Cycling facilities and external cycle routes
- Pedestrian facilities (footpaths, crossings, signage, lighting, etc) in the immediate local road network

Allowing pedestrians to efficiently enter and exit the site reduces noise and safety issues from lingering persons on-site and improves both the customer experience and the local residential amenity. Closure of the Ascot Street entrance to vehicles and pedestrians after 8pm will facilitate this.

9.12.1. Risks

Various risks and impacts are associated with moving people in any context. Regarding the non-race day events, some general risks and impacts are listed that should be assessed by management during events:

- Overcrowding near roads and crossings
- Pedestrian-vehicle conflicts (public and internal)
- Pedestrian-pedestrian conflicts (trampling)
- Anti-social behaviour (yelling, fighting, urinating, vomiting, etc)
- Confusion (i.e. lost) leading to excessive time occupying pedestrian facilities

- Unauthorised access breaches (i.e. patrons entering equestrian areas)
- Residential amenity impacts

9.12.2.Wayfinding Signage

Wayfinding signage is installed throughout the Royal Randwick Racecourse where pedestrians are expected to congregate or travel. Any signage for this purpose should be concise and clear, as designed so that it may be visible to large crowds, and not merely for a nearby pedestrian. This involves consideration of size, height, and positioning.

It is noted that ATC already have wayfinding maps and direction signage installed throughout the facility to accomplish this, with an example provided in Figure 25. It is noted that pedestrian wayfinding is an ongoing process, where regular review should identify constraints and opportunities in the existing wayfinding system and identify measures to be implemented.

Possible updates to the wayfinding system include directions to light rail stations, directions to the member car park, directions to a designated car share pick-up points, directions to cycling facilities, and access to the external cycling network.



Figure 25: Royal Randwick Racecourse Wayfinding Map

9.12.3.Crowd Management

ATC Staff, traffic controllers and in certain cases, the Police, will be a necessary element in crowd control. These personnel should be strategically located around the site at key congregation points, points of vehicle interaction, and points of security interest, and pedestrian decision points to act as a guide to improve wayfinding. The traffic management guide plans in Appendix B to Appendix D outline recommended locations for police and ATC staff presence.

9.13. Public Transport Management

9.13.1. Bus Service

Public transport will be relied on heavily as a means of reducing the reliance of private vehicles. In this regard the Bus-way, located within the Alison Road frontage is available for the exclusive use by buses, which also allows for event charter services. The access and operation of the Bus-way is controlled by traffic controllers and NSW Police and will manage the interfacing of vehicles and pedestrians in accordance with standard Police crown management practice, and relevant TfNSW traffic control requirements.

To avoid risking a shortfall in the required number of buses, consultation with Sydney Buses should be undertaken early in the event preparation, to determine expected demand and ensure availability.

9.13.2. Light Rail Service

The CSELR includes a light-rail station on the northern edge of Alison Road, opposite Gate 1 and a light rail stabling yard immediately adjacent to Gate 1. As such, a number of light rail carriage movements will be introduced around the Gate 1 area, which will inherently attract a large volume of pedestrians seeking to utilise light rail.

The light rail station has been designed to manage large crowds due to its proximity to the Royal Randwick Racecourse. Notwithstanding, the station should be closely monitored during events, to identify any risks or underperformance early on. To manage the risk of pedestrians overcrowding on the light rail station or around Alison Road and crossing point outside Gate 1, it is advised that Police presence and ATC staff be stationed on both sides of the crossing. Although, it may be sufficient to only post ATC staff around the light rail.

To avoid risking a shortfall in the required number of light rail services during events, consultation with Sydney Light Rail should be undertaken early in the event preparation, to determine expected demand and ensure availability.

9.14. Parking Management

The management of the parking should be constantly carried out throughout each event. The detailed management measures have been prepared in Section 8.

9.15. Bump-In/Bump-Out Transport Management

During the set-up and removal stages (bump-in and bump-out) of the proposed events, various types of vehicles and associated staff are expected to access Racecourse.

The erection of ancillary temporary structures supporting the events will be carried out in the days preceding the events and dismantled and removed from the site within 10 days after the event. Therefore, these vehicular and pedestrian movements are not expected to coincide with event day transport activities.

To ensure bump-in/bump-out activities are carried out in an organised manner with minimal transport impact, the following management measures are recommended:

- Vehicular deliveries and loading activities to be coordinated between the Racecourse and event operators at the planning stages of each event;
- The access points and parking location for vehicles and staff to be identified suitably for each event;

- Large vehicular deliveries and loading to be scheduled outside of road network peak hours;
- Staff associated with each event to be encouraged travel by public transport and active transport;
- Chartered bus, mini-bus transport to be provided where significant number of staff is required and alternative transport options may be limited during the expected staff arrival and departure times.

10. Impact and Mitigation Summary

Identified Impact	Mitigation Measures
General increase in traffic congestion on State roads around the Moore Park Precinct during evening commuter period during Class 2 events (~15,000 people).	Establish event-specific sustainable travel plans in the lead up to events; Stagger arrivals by promoting early-bird parking prior to 5:00pm. Incentives may include premium parking, discounts on drinks, food or future tickets, etc.; Promote car-pooling, with Premium parking for vehicles with 3+ passengers; Integrate free public transport services with pre-purchased tickets; Seek to increase mode share of cyclists, providing improved on-site cyclist parking facilities, including bike-share facilities; Support increased shuttle services between hotels;
Congestion along Doncaster Avenue during event commencement and conclusion, attributed to large taxi volumes accessing Taxi Rank via Gate 18, Ascot Street.	Post Police at intersection during Class 3 and Class 2 events; Undertake taxi rank relocation and management assessment;
Demand on regular public transport services (buses, trains, and light rail) may exceed capacity during non-race day events.	Consultation with public transport providers via MEOG; Arrange additional public transport service (bus and light rail) on event days, as per existing arrangements through MEOG.
Potential overcrowding around Alison Road Light Rail Station, adjacent signalised crossing.	ATC staff / traffic controllers to be positioned at the pedestrian crossing between Gate 1 and Alison Road. For Class 2 events, Police presence may also be required. If required, temporary control devices around stations may be installed, including queue cordons, advisory signage, etc.
Large crowds at key public transport hubs, including Central Station, and CSELR stations.	Notify Sydney Trains of upcoming events, and arrange for necessary interfacing signage and management between light rail, bus and train interfacing; ATC staff to be positioned at the future pedestrian crossing between Gate 1 and Alison Road. For Class 2 events, Police presence may also be required. Additional light rail staff management around light rail stations anticipated to receive significant increases in patrons; If required, temporary control devices around stations may be installed, including queue cordons, advisory signage, etc.

Identified Impact	Mitigation Measures
	Close monitoring of key light rail stations during events, to understand their performance, and identify and take action on any issues.
High demand on local on-street parking is residential streets	Ensure sufficient on-site and off-site parking and discourage on-street parking: Maintain off-site parking arrangement with Moore Park Car Park for 700 additional spaces if required, and provision of shuttle services between the two sites; Improve informal parking efficiency to optimise capacity and flow; Variable Message Signage (VMS) established around the local road network to guide patrons directly towards the car park, and advise of capacity; Advise patrons that on-street parking is discouraged, and sufficient on-site parking is available. This may be done through the website, Traffic Marshals, VMS and as part of the email ticket purchase; As part of the overall event monitoring process, ATC staff will undertake observations of the local streets, and parking location data may be included in the patron survey. Any identifying issues should be raised to management for review and action. A feedback forum should be provided for residents to communicate with ATC regarding any parking issues.
Crowding on surrounding streets post event.	Adopt and maintain Pedestrian, Transport and Traffic Management Plan, which will consider internal wayfinding and pedestrian management, as well as transport management to optimise moving crowds from the Spectator precinct to the car park, bus/taxi rank, light rail etc, providing clearly defined travel paths and minimising loitering.

Appendix 1. Full SIDRA Results

MOVEMENT SUMMARY

 Site: TCS4739 [11. High Street / Wansey Road - Existing
Wednesday - AM Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM
(Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
East: High Street (E)														
5	T1	140	18.8	140	18.8	0.156	15.4	LOS B	2.5	20.6	0.54	0.45	0.54	30.0
6	R2	11	90.0	11	90.0	* 0.159	60.2	LOS E	2.5	20.6	0.92	0.67	0.92	18.0
Approach		151	23.8	151	23.8	0.159	18.5	LOS B	2.5	20.6	0.57	0.47	0.57	28.6
North: Wansey Road (N)														
7	L2	8	100.0	8	100.0	0.141	64.5	LOS E	0.3	8.3	0.96	0.69	0.96	23.4
9	R2	55	3.8	55	3.8	* 0.158	47.6	LOS D	1.8	12.8	0.93	0.75	0.93	19.7
Approach		63	16.7	63	16.7	0.158	49.9	LOS D	1.8	12.8	0.94	0.74	0.94	20.5
West: High Street (W)														
10	L2	262	2.8	262	2.8	0.384	34.3	LOS C	7.5	53.4	0.85	0.79	0.85	23.0
11	T1	25	100.0	25	100.0	* 0.160	51.5	LOS D	0.8	10.8	0.92	0.68	0.92	25.6
Approach		287	11.4	287	11.4	0.384	35.8	LOS C	7.5	53.4	0.86	0.78	0.86	23.4
All Vehicles		501	15.8	501	15.8	0.384	32.4	LOS C	7.5	53.4	0.78	0.68	0.78	24.2

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.8	213.9	0.98
North: Wansey Road (N)											
P31	Stage 1	53	25.0	LOS C	0.1	0.1	0.90	0.90	184.7	207.6	1.12
P32	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
West: High Street (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
All Pedestrians		211	47.0	LOS E	0.2	0.2	0.94	0.94	208.9	210.5	1.01

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -
WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0396 [01. Anzac Parade / Alison Road / Dacey Avenue]  Network: N101 [Existing AM - Existing Wednesday - AM Peak (Site Folder: Existing AM)] (Network Folder: General)]

Existing Wednesday AM Peak
8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Anzac Parade (S)														
1	L2	31	6.9	31	6.9	0.038	16.7	LOS B	0.4	2.9	0.70	0.69	0.70	45.4
2	T1	1205	7.2	1205	7.3	* 0.929	59.8	LOS E	25.3	182.0	0.99	1.09	1.26	33.3
Approach		1236	7.2	1235 ^N ₁	7.2	0.929	58.7	LOS E	25.3	182.0	0.98	1.08	1.24	33.4
East: Alison Road (E)														
5	T1	583	4.7	481	4.7	0.663	59.3	LOS E	8.6	62.8	1.00	0.84	1.00	28.5
6	R2	1154	2.1	951	2.1	* 0.904	73.2	LOS F	12.5	89.4	1.00	0.95	1.19	26.7
Approach		1737	3.0	1432 ^N ₁	3.0	0.904	68.5	LOS E	12.5	89.4	1.00	0.91	1.12	27.3
North: Anzac Parade (N)														
7	L2	813	6.1	813	6.1	0.295	6.1	LOS A	0.4	2.9	0.03	0.54	0.03	50.5
8	T1	838	8.5	838	8.5	0.418	12.7	LOS A	6.0	44.8	0.44	0.39	0.44	42.9
9	R2	494	4.5	494	4.5	* 0.914	73.1	LOS F	10.1	73.4	1.00	0.99	1.32	26.4
Approach		2144	6.7	2144	6.7	0.914	24.1	LOS B	10.1	73.4	0.41	0.58	0.49	36.3
West: Dacey Avenue (W)														
10	L2	475	6.9	475	6.9	0.825	47.2	LOS D	16.0	118.4	0.95	0.90	1.02	31.4
11	T1	429	5.1	429	5.1	* 0.910	68.0	LOS E	8.7	63.7	1.00	1.04	1.33	18.2
12	R2	46	2.3	46	2.3	0.101	55.4	LOS D	0.7	5.1	0.88	0.69	0.88	20.3
Approach		951	5.9	951	5.9	0.910	57.0	LOS E	16.0	118.4	0.97	0.95	1.15	25.2
All Vehicles		6067	5.6	5762 ^N ₁	5.9	0.929	48.0	LOS D	25.3	182.0	0.77	0.83	0.92	30.7

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

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

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

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

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

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

* Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: Anzac Parade (S)											
P11	Stage 1	53	25.2	LOS C	0.1	0.1	0.90	0.90	190.0	214.2	1.13
P12	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.0	214.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.7	229.4	0.99

North: Anzac Parade (N)										
P3B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
West: Dacey Avenue (W)										
P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
All Pedestrians	263	48.5	LOS E	0.2	0.2	0.94	0.94	216.2	218.1	1.01

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

Site: TCS0900 [02. Alison Road / Doncaster Avenue - Existing Wednesday - AM Peak (Site Folder: Existing AM)] Network: N101 [Existing AM (Network Folder: General)]

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
North: Bus Lane (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	211.4	204.3	0.97
West: Alison Road (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.4	223.8	0.99
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	216.8	211.3	0.97

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

**Site: TCS4736 [03. Alison Road / Randwick Racecourse
Access - Existing Wednesday - AM Peak (Site Folder: Existing
AM)]**

■ ■ Network: N101 [Existing AM
(Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed	
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m					
South: Randwick Racecourse Access (S)															
1	L2	9	22.2	9	22.2	0.079	54.3	LOS D	0.3	2.4	0.84	0.68	0.84	20.4	
1a	L1	1	100.0	1	100.0	* 0.028	67.9	LOS E	0.0	1.1	0.95	0.60	0.95	26.7	
3	R2	1	100.0	1	100.0	0.019	67.7	LOS E	0.0	0.5	0.95	0.60	0.95	17.8	
Approach		12	36.4	12	36.4	0.079	56.7	LOS E	0.3	2.4	0.86	0.66	0.86	20.9	
East: Alison Road (E)															
4	L2	9	0.0	9	0.0	* 1.344	360.2	LOS F	35.4	260.0	1.00	2.33	3.09	6.6	
5	T1	2228	5.8	2080	5.8	* 1.344	355.6	LOS F	35.4	260.0	1.00	2.48	3.09	2.6	
Approach		2238	5.7	2089 ^N ₁	5.7	1.344	355.6	LOS F	35.4	260.0	1.00	2.48	3.09	2.7	
NorthEast: Light Rail															
24a	L1	1	100.0	1	100.0	* 0.028	64.8	LOS E	0.0	1.0	0.90	0.60	0.90	24.2	
Approach		1	100.0	1	100.0	0.028	64.8	LOS E	0.0	1.0	0.90	0.60	0.90	24.2	
West: Alison Road (W)															
11	T1	1800	5.6	1800	5.6	0.511	4.3	LOS A	5.8	42.2	0.22	0.20	0.22	38.0	
12	R2	19	11.1	19	11.1	* 0.220	68.6	LOS E	0.7	5.4	1.00	0.70	1.00	20.0	
Approach		1819	5.7	1819	5.7	0.511	5.0	LOS A	5.8	42.2	0.23	0.20	0.23	36.4	
All Vehicles		4069	5.8	3920 ^N ₁	6.0	1.344	192.0	LOS F	35.4	260.0	0.64	1.42	1.76	3.6	

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Randwick Racecourse Access (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	225.7	222.8	0.99
NorthEast: Light Rail											

P6 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
NorthWest: Light Rail										
P7 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.1	213.0	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0357 [04. Alison Road / Darley Road - Existing Wednesday - AM Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM (Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
East: Alison Road (E)														
4	L2	1	0.0	1	0.0	1.334	378.5	LOS F	5.1	37.9	1.00	2.25	3.17	9.4
5	T1	1366	6.2	1366	6.2	* 1.334	368.1	LOS F	8.1	59.9	1.00	2.32	3.15	6.0
6a	R1	8	100.0	8	100.0	* 0.113	36.7	LOS C	0.2	5.1	0.91	0.67	0.91	32.0
6	R2	8	12.5	8	12.5	* 0.046	34.8	LOS C	0.2	1.4	0.95	0.66	0.95	38.3
Approach		1384	6.8	1384	6.8	1.334	364.1	LOS F	8.1	59.9	1.00	2.30	3.12	6.1
North: Darley Road (N)														
7	L2	40	0.0	40	0.0	0.048	20.9	LOS B	0.6	4.0	0.43	0.63	0.43	32.0
8	T1	1	0.0	1	0.0	* 1.317	344.7	LOS F	3.7	26.7	1.00	1.89	3.05	8.6
9	R2	873	5.1	873	5.1	1.317	349.1	LOS F	5.3	38.7	1.00	1.89	3.05	4.7
Approach		914	4.8	914	4.8	1.317	334.7	LOS F	5.3	38.7	0.98	1.84	2.94	4.9
NorthWest: Light Rail														
27a	L1	1	100.0	1	100.0	0.014	35.6	LOS C	0.0	0.6	0.92	0.60	0.92	19.5
Approach		1	100.0	1	100.0	0.014	35.6	LOS C	0.0	0.6	0.92	0.60	0.92	19.5
West: Alison Road (W)														
10	L2	728	2.9	728	2.9	0.890	37.6	LOS C	24.5	176.0	0.90	0.92	1.00	30.7
11	T1	1074	7.5	1074	7.5	0.642	19.9	LOS B	11.9	88.4	0.65	0.58	0.65	27.8
Approach		1802	5.7	1802	5.7	0.890	27.1	LOS B	24.5	176.0	0.75	0.71	0.79	29.6
All Vehicles		4101	5.9	4101	5.9	1.334	209.4	LOS F	24.5	176.0	0.88	1.50	2.06	8.1

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped	Dist] m					
South: ATC Access											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	231.5	230.4	1.00
North: Darley Road (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	225.7	222.8	0.99

NorthWest: Light Rail										
P71 Stage 1	53	25.6	LOS C	0.1	0.1	0.90	0.90	182.7	204.3	1.12
P72 Stage 2	53	25.6	LOS C	0.1	0.1	0.90	0.90	182.7	204.3	1.12
All Pedestrians	263	42.8	LOS E	0.2	0.2	0.93	0.93	207.0	213.4	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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

Site: TCS3713 [05. High Street / Gate Two Avenue - Existing Wednesday - AM Peak (Site Folder: Existing AM)]

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Gate Two Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
North: Randwick Racecourse (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: High Street (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.7	213.8	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS1169 [06. Anzac Parade / High Street - Existing Wednesday - AM Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM (Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Anzac Parade (S)														
2	T1	949	9.4	949	9.4	0.352	1.1	LOS A	0.8	6.3	0.06	0.05	0.06	48.7
3	R2	127	12.4	127	12.4	* 0.339	28.7	LOS C	2.3	17.9	0.83	0.74	0.83	28.3
Approach		1077	9.8	1077	9.8	0.352	4.3	LOS A	2.3	17.9	0.15	0.13	0.15	44.8
East: High Street (E)														
4	L2	79	17.3	79	17.3	0.374	41.0	LOS C	3.5	28.1	0.80	0.74	0.80	29.4
6	R2	159	13.9	159	13.9	* 0.374	44.6	LOS D	3.5	28.1	0.84	0.75	0.84	20.5
Approach		238	15.0	238	15.0	0.374	43.4	LOS D	3.5	28.1	0.83	0.74	0.83	24.1
North: Anzac Parade (N)														
7	L2	199	10.6	198	10.6	0.378	12.1	LOS A	3.1	23.4	0.28	0.48	0.28	29.1
8	T1	811	8.7	805	8.7	* 0.378	7.4	LOS A	3.3	24.4	0.28	0.29	0.28	43.3
Approach		1009	9.1	1003 ^N ₁	9.1	0.378	8.3	LOS A	3.3	24.6	0.28	0.32	0.28	41.9
All Vehicles		2324	10.0	2318 ^N ₁	10.0	0.378	10.1	LOS A	3.5	28.1	0.28	0.28	0.28	39.4

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

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

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

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

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

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

* Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Anzac Parade (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	223.6	220.2	0.98

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: TCS0557 [07. Anzac Parade / Doncaster Avenue - Existing]  Network: N101 [Existing AM Wednesday - AM Peak (Site Folder: Existing AM)] (Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	126	0.0	126	0.0	0.711	37.8	LOS C	11.9	84.0	0.82	0.75	0.82	26.1
2	T1	307	1.7	307	1.7	* 0.711	33.2	LOS C	11.9	84.0	0.82	0.75	0.82	26.1
3	R2	40	5.3	40	5.3	0.118	39.9	LOS C	1.0	7.0	0.69	0.69	0.69	24.2
Approach		474	1.6	474	1.6	0.711	35.0	LOS C	11.9	84.0	0.81	0.74	0.81	25.9
East: Anzac Parade (E)														
4	L2	35	3.0	35	3.0	0.035	17.6	LOS B	0.6	4.0	0.48	0.64	0.48	36.6
5	T1	1067	10.3	1067	10.3	* 0.530	18.4	LOS B	13.0	98.4	0.71	0.63	0.71	21.6
Approach		1102	10.0	1102	10.0	0.530	18.4	LOS B	13.0	98.4	0.70	0.63	0.70	22.5
North: Doncaster Avenue (N)														
7	L2	56	1.9	49	1.9	0.310	34.8	LOS C	5.2	36.8	0.77	0.67	0.77	27.8
8	T1	175	1.2	152	1.2	0.310	30.3	LOS C	5.2	36.8	0.77	0.67	0.77	35.3
9	R2	12	9.1	10	9.0	0.054	49.1	LOS D	0.3	2.3	0.85	0.68	0.85	22.0
Approach		242	1.7	211 ^{N1}	1.7	0.310	32.2	LOS C	5.2	36.8	0.77	0.67	0.77	33.5
West: Anzac Parade (W)														
10	L2	84	93.8	84	93.8	0.453	23.6	LOS B	9.8	79.8	0.71	0.66	0.71	35.6
11	T1	835	1.1	833	1.1	0.453	17.5	LOS B	10.8	75.5	0.69	0.62	0.69	36.0
Approach		919	9.6	917 ^{N1}	9.6	0.453	18.1	LOS B	10.8	79.8	0.69	0.63	0.69	36.0
All Vehicles		2737	7.7	2704 ^{N1}	7.8	0.711	22.3	LOS B	13.0	98.4	0.72	0.65	0.72	30.0

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

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

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

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

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

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

* Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
East: Anzac Parade (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
North: Doncaster Avenue (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98

West: Anzac Parade (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
All Pedestrians		211	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 **Site: 108 [08. Doncaster Avenue / Ascot Street - Existing Wednesday - AM Peak (Site Folder: Existing AM)]**

 **Network: N101 [Existing AM (Network Folder: General)]**

Existing Wednesday AM Peak
8am - 9am
Site Category: Existing
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	35	3.0	35	3.0	0.509	2.9	LOS A	1.7	12.2	0.19	0.35	0.19	37.3
2	T1	613	0.9	613	0.9	0.509	2.5	LOS A	1.7	12.2	0.19	0.35	0.19	37.3
3	R2	24	0.0	24	0.0	0.509	5.7	LOS A	1.7	12.2	0.19	0.35	0.19	39.1
3u	U	48	0.0	48	0.0	0.509	6.9	LOS A	1.7	12.2	0.19	0.35	0.19	37.3
Approach		720	0.9	720	0.9	0.509	2.9	LOS A	1.7	12.2	0.19	0.35	0.19	37.4
East: Ascot Street (E)														
4	L2	8	12.5	8	12.5	0.036	6.8	LOS A	0.1	0.6	0.59	0.61	0.59	34.2
5	T1	4	25.0	4	25.0	0.036	6.9	LOS A	0.1	0.6	0.59	0.61	0.59	34.2
6	R2	6	33.3	6	33.3	0.036	10.5	LOS A	0.1	0.6	0.59	0.61	0.59	34.2
6u	U	1	0.0	1	0.0	0.036	10.4	LOS A	0.1	0.6	0.59	0.61	0.59	37.7
Approach		20	21.1	20	21.1	0.036	8.2	LOS A	0.1	0.6	0.59	0.61	0.59	34.5
North: Doncaster Avenue (N)														
7	L2	2	50.0	2	50.1	0.415	5.1	LOS A	1.0	7.2	0.35	0.43	0.35	38.1
8	T1	437	2.2	357	2.2	0.415	3.8	LOS A	1.0	7.2	0.35	0.43	0.35	36.8
9	R2	15	0.0	12	0.0	0.415	6.9	LOS A	1.0	7.2	0.35	0.43	0.35	36.8
9u	U	2	0.0	2	0.0	0.415	8.2	LOS A	1.0	7.2	0.35	0.43	0.35	36.8
Approach		456	2.3	372 ^{N1}	2.3	0.415	3.9	LOS A	1.0	7.2	0.35	0.43	0.35	36.8
West: Ascot Street (W)														
10	L2	29	0.0	29	0.0	0.139	8.8	LOS A	0.3	2.3	0.71	0.75	0.71	25.6
11	T1	21	10.0	21	10.0	0.139	8.9	LOS A	0.3	2.3	0.71	0.75	0.71	35.2
12	R2	27	0.0	27	0.0	0.139	11.6	LOS A	0.3	2.3	0.71	0.75	0.71	25.6
12u	U	1	0.0	1	0.0	0.139	12.9	LOS A	0.3	2.3	0.71	0.75	0.71	25.6
Approach		79	2.7	79	2.7	0.139	9.8	LOS A	0.3	2.3	0.71	0.75	0.71	30.2
All Vehicles		1275	1.8	1191 ^{N1}	1.9	0.509	3.8	LOS A	1.7	12.2	0.28	0.41	0.28	36.8

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM
Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

Site: 109 [09. Anzac Parade / Ascot Street - Existing
Wednesday - AM Peak (Site Folder: Existing AM)]

Network: N101 [Existing AM
(Network Folder: General)]

Existing Wednesday AM Peak
8am - 9am
Site Category: Existing
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
South: Anzac Parade (S)														
2	T1	1066	8.8	1065	8.8	0.267	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1066	8.8	1065 ^N ₁	8.8	0.267	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: Ascot Street (E)														
4	L2	49	0.0	47	0.0	0.057	6.7	LOS A	0.1	0.6	0.45	0.65	0.45	33.5
Approach		49	0.0	47 ^N ₁	0.0	0.057	6.7	LOS A	0.1	0.6	0.45	0.65	0.45	33.5
North: Anzac Parade (N)														
7	L2	66	0.0	66	0.0	0.036	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	45.9
8	T1	880	7.8	880	7.8	0.233	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		946	7.2	946	7.2	0.233	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.6
All Vehicles		2062	7.9	2059 ^N ₁	7.9	0.267	0.4	NA	0.1	0.6	0.01	0.03	0.01	49.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS4709 [10. Alison Road / Prince Street / Wansey Road -  Network: N101 [Existing AM Existing Wednesday - AM Peak (Site Folder: Existing AM)] (Network Folder: General)]

Existing Wednesday AM Peak

8am - 9am

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Wansey Road (S)														
1	L2	1	0.0	1	0.0	0.006	53.1	LOS D	0.0	0.1	0.81	0.54	0.81	18.7
Approach		1	0.0	1	0.0	0.006	53.1	LOS D	0.0	0.1	0.81	0.54	0.81	18.7
East: Alison Road (E)														
4	L2	7	0.0	7	0.0	0.362	11.4	LOS A	3.6	26.2	0.26	0.24	0.26	50.3
5	T1	852	4.3	852	4.3	* 0.362	5.9	LOS A	3.6	26.2	0.26	0.23	0.26	50.4
6	R2	28	11.1	28	11.1	0.330	69.4	LOS E	1.0	8.0	0.99	0.72	0.99	26.7
Approach		887	4.5	887	4.5	0.362	8.0	LOS A	3.6	26.2	0.28	0.25	0.28	47.8
North: Prince Street (N)														
7	L2	33	0.0	33	0.0	* 0.351	68.0	LOS E	1.2	8.4	0.99	0.72	0.99	26.7
8	T1	22	0.0	22	0.0	* 0.209	47.3	LOS D	1.8	12.6	0.84	0.71	0.84	21.6
9	R2	40	0.0	40	0.0	0.209	50.4	LOS D	1.8	12.6	0.84	0.71	0.84	21.6
Approach		95	0.0	95	0.0	0.351	55.7	LOS D	1.8	12.6	0.89	0.71	0.89	23.9
West: Alison Road (W)														
10	L2	22	0.0	22	0.0	0.317	12.2	LOS A	3.5	25.0	0.28	0.27	0.28	50.3
11	T1	726	3.5	726	3.5	0.317	6.6	LOS A	3.5	25.0	0.28	0.26	0.28	54.8
12	R2	14	7.7	14	7.7	0.078	69.3	LOS E	0.3	1.9	1.00	0.66	1.00	22.4
Approach		762	3.5	762	3.5	0.317	7.9	LOS A	3.5	25.0	0.29	0.27	0.29	53.8
All Vehicles		1745	3.8	1745	3.8	0.362	10.6	LOS A	3.6	26.2	0.32	0.28	0.32	49.0

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Wansey Road (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.7	220.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.9	220.5	0.98
North: Prince Street (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: Alison Road (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	229.0	227.1	0.99

All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	223.4	219.9	0.98
-----------------	-----	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 11:16:02 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS4739 [11. High Street / Wansey Road - Existing
Wednesday - PM Peak (Site Folder: Existing PM)]

 Network: N101 [Existing PM
(Network Folder: General)]

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
East: High Street (E)														
5	T1	219	10.1	219	10.1	0.181	7.9	LOS A	2.9	22.0	0.40	0.34	0.40	34.2
6	R2	9	88.9	9	88.9	* 0.181	61.7	LOS E	2.9	22.0	0.91	0.65	0.91	18.2
Approach		228	13.4	228	13.4	0.181	10.1	LOS A	2.9	22.0	0.42	0.36	0.42	32.9
North: Wansey Road (N)														
7	L2	7	100.0	7	100.0	0.154	67.6	LOS E	0.3	7.5	0.97	0.68	0.97	22.9
9	R2	38	0.0	38	0.0	* 0.175	43.8	LOS D	1.0	7.0	0.75	0.67	0.75	20.6
Approach		45	16.3	45	16.3	0.175	47.6	LOS D	1.0	7.5	0.78	0.67	0.78	21.2
West: High Street (W)														
10	L2	181	2.9	181	2.9	0.426	45.9	LOS D	5.6	40.0	0.90	0.79	0.90	20.1
11	T1	15	100.0	15	100.0	* 0.187	61.4	LOS E	0.5	7.0	0.98	0.69	0.98	23.9
Approach		196	10.2	196	10.2	0.426	47.1	LOS D	5.6	40.0	0.91	0.78	0.91	20.6
All Vehicles		469	12.3	469	12.3	0.426	29.1	LOS C	5.6	40.0	0.66	0.56	0.66	25.0

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.8	213.9	0.98
North: Wansey Road (N)											
P31	Stage 1	53	30.0	LOS C	0.1	0.1	0.90	0.90	189.7	207.6	1.09
P32	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
West: High Street (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
All Pedestrians		211	48.2	LOS E	0.2	0.2	0.94	0.94	210.1	210.5	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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -
WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0396 [01. Anzac Parade / Alison Road / Dacey Avenue]  Network: N101 [Existing PM - Existing Wednesday - PM Peak (Site Folder: Existing PM)] (Network Folder: General)]

Existing Wednesday PM Peak
5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Anzac Parade (S)														
1	L2	53	0.0	53	0.0	0.065	17.7	LOS B	0.7	5.0	0.73	0.72	0.73	44.9
2	T1	892	4.0	892	4.0	* 0.876	54.1	LOS D	17.9	128.9	0.99	1.01	1.19	34.6
Approach		944	3.8	944	3.8	0.876	52.1	LOS D	17.9	128.9	0.98	1.00	1.16	35.1
East: Alison Road (E)														
5	T1	618	1.7	618	1.7	* 0.905	69.7	LOS E	12.3	87.0	1.00	0.97	1.19	26.3
6	R2	918	2.5	918	2.5	0.805	68.9	LOS E	11.4	81.8	1.00	0.88	1.07	27.6
Approach		1536	2.2	1536	2.2	0.905	69.2	LOS E	12.3	87.0	1.00	0.92	1.12	27.1
North: Anzac Parade (N)														
7	L2	1094	1.7	1094	1.7	0.402	6.2	LOS A	0.6	4.5	0.04	0.54	0.04	50.3
8	T1	940	6.4	940	6.4	0.512	17.9	LOS B	8.8	64.2	0.57	0.50	0.57	38.4
9	R2	527	1.4	527	1.4	* 0.906	71.0	LOS F	10.6	75.3	1.00	0.98	1.29	26.8
Approach		2561	3.4	2561	3.4	0.906	23.8	LOS B	10.6	75.3	0.43	0.62	0.49	36.3
West: Dacey Avenue (W)														
10	L2	380	0.8	380	0.8	0.561	34.7	LOS C	9.6	67.4	0.75	0.79	0.75	35.3
11	T1	546	1.9	546	1.9	* 0.896	63.6	LOS E	10.8	76.9	1.00	1.02	1.26	19.0
12	R2	51	0.0	51	0.0	0.086	51.2	LOS D	0.7	5.1	0.83	0.69	0.83	21.2
Approach		977	1.4	977	1.4	0.896	51.7	LOS D	10.8	76.9	0.90	0.91	1.04	25.5
All Vehicles		6018	2.8	6018	2.8	0.906	44.4	LOS D	17.9	128.9	0.74	0.80	0.84	31.0

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Anzac Parade (S)											
P11	Stage 1	53	24.5	LOS C	0.1	0.1	0.90	0.90	189.3	214.2	1.13
P12	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.0	214.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.7	229.4	0.99
North: Anzac Parade (N)											
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97

West: Dacey Avenue (W)											
P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99	
All Pedestrians	263	48.3	LOS E	0.2	0.2	0.94	0.94	216.1	218.1	1.01	

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 **Site: TCS0900 [02. Alison Road / Doncaster Avenue - Existing Wednesday - PM Peak (Site Folder: Existing PM)]**  **Network: N101 [Existing PM (Network Folder: General)]**

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	79	0.0	79	0.0	0.325	24.7	LOS B	6.2	43.6	0.65	0.74	0.65	30.1
3	R2	475	0.9	475	0.9	0.325	24.7	LOS B	6.2	43.6	0.65	0.74	0.65	30.1
Approach		554	0.8	554	0.8	0.325	24.7	LOS B	6.2	43.6	0.65	0.74	0.65	30.1
East: Alison Road (E)														
4	L2	543	1.0	543	1.0	* 0.823	15.1	LOS B	12.5	88.3	0.57	0.72	0.59	20.5
5	T1	1446	2.2	1446	2.2	0.823	12.1	LOS A	14.7	105.0	0.59	0.57	0.62	21.7
6	R2	26	100.0	26	100.0	0.248	61.3	LOS E	0.9	12.1	0.96	0.71	0.96	22.1
Approach		2016	3.1	2016	3.1	0.823	13.6	LOS A	14.7	105.0	0.59	0.61	0.61	21.4
North: Bus Lane (N)														
7	L2	49	100.0	49	100.0	* 0.443	62.5	LOS E	1.7	22.6	0.96	0.73	0.96	20.0
Approach		49	100.0	49	100.0	0.443	62.5	LOS E	1.7	22.6	0.96	0.73	0.96	20.0
West: Alison Road (W)														
11	T1	1656	1.8	1656	1.8	* 0.928	52.9	LOS D	23.8	168.8	0.97	1.04	1.20	20.5
Approach		1656	1.8	1656	1.8	0.928	52.9	LOS D	23.8	168.8	0.97	1.04	1.20	20.5
All Vehicles		4275	3.4	4275	3.4	0.928	30.8	LOS C	23.8	168.8	0.75	0.80	0.85	22.2

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
North: Bus Lane (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	211.4	204.3	0.97
West: Alison Road (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.4	223.8	0.99
All Pedestrians		211	54.3	LOS E	0.2	0.2	0.95	0.95	216.8	211.3	0.97

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM
Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -
WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0357 [04. Alison Road / Darley Road - Existing Wednesday - PM Peak (Site Folder: Existing PM)]

 Network: N101 [Existing PM (Network Folder: General)]

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV veh/h	%				[Veh. veh	Dist] m				
East: Alison Road (E)														
4	L2	1	0.0	1	0.0	0.397	19.8	LOS B	5.9	42.5	0.46	0.41	0.46	49.1
5	T1	1141	4.1	1141	4.1	0.397	16.2	LOS B	8.9	64.8	0.55	0.48	0.55	43.3
6a	R1	8	100.0	8	100.0	* 0.113	39.0	LOS C	0.2	5.9	0.96	0.68	0.96	31.1
6	R2	7	28.6	7	28.6	* 0.044	37.0	LOS C	0.2	1.5	0.93	0.65	0.93	37.4
Approach		1158	4.9	1158	4.9	0.397	16.5	LOS B	8.9	64.8	0.55	0.48	0.55	43.1
North: Darley Road (N)														
7	L2	79	2.7	79	2.7	0.111	26.8	LOS B	1.4	10.1	0.53	0.67	0.53	29.0
8	T1	1	0.0	1	0.0	* 0.863	57.2	LOS E	9.2	65.3	0.97	0.93	1.18	28.8
9	R2	856	2.0	856	2.0	0.863	62.3	LOS E	11.5	81.7	0.99	0.94	1.18	18.7
Approach		936	2.0	936	2.0	0.863	59.3	LOS E	11.5	81.7	0.95	0.91	1.12	19.3
NorthWest: Light Rail														
27a	L1	7	100.0	7	100.0	0.099	39.1	LOS C	0.2	5.0	0.93	0.67	0.93	18.2
Approach		7	100.0	7	100.0	0.099	39.1	LOS C	0.2	5.0	0.93	0.67	0.93	18.2
West: Alison Road (W)														
10	L2	803	2.2	803	2.2	* 0.864	14.0	LOS A	13.7	97.9	0.47	0.75	0.51	41.5
11	T1	1381	4.7	1381	4.7	0.718	15.8	LOS B	14.5	105.4	0.62	0.57	0.62	31.3
Approach		2184	3.8	2184	3.8	0.864	15.1	LOS B	14.5	105.4	0.57	0.63	0.58	36.8
All Vehicles		4285	3.9	4285	3.9	0.864	25.2	LOS B	14.5	105.4	0.65	0.65	0.69	32.3

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: ATC Access											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	231.5	230.4	1.00
North: Darley Road (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	225.7	222.8	0.99

NorthWest: Light Rail										
P71 Stage 1	53	27.4	LOS C	0.1	0.1	0.90	0.90	184.5	204.3	1.11
P72 Stage 2	53	27.4	LOS C	0.1	0.1	0.90	0.90	184.5	204.3	1.11
All Pedestrians	263	43.5	LOS E	0.2	0.2	0.93	0.93	207.7	213.4	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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

P7 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.1	213.0	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

 Site: TCS3713 [05. High Street / Gate Two Avenue - Existing Wednesday - PM Peak (Site Folder: Existing PM)]
 Network: N101 [Existing PM (Network Folder: General)]

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Gate Two Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
North: Randwick Racecourse (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: High Street (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.7	213.8	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 **Site: TCS1169 [06. Anzac Parade / High Street - Existing Wednesday - PM Peak (Site Folder: Existing PM)]**

 **Network: N101 [Existing PM (Network Folder: General)]**

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Anzac Parade (S)														
2	T1	780	5.8	780	5.8	0.295	2.4	LOS A	1.4	10.6	0.12	0.10	0.12	47.1
3	R2	76	15.3	76	15.3	* 0.336	34.0	LOS C	1.6	12.4	0.92	0.74	0.92	26.2
Approach		856	6.6	856	6.6	0.336	5.2	LOS A	1.6	12.4	0.19	0.16	0.19	43.9
East: High Street (E)														
4	L2	97	12.0	97	12.0	0.381	44.7	LOS D	4.4	33.3	0.82	0.75	0.82	28.6
6	R2	200	6.8	200	6.8	* 0.381	42.6	LOS D	4.4	33.3	0.82	0.75	0.82	20.9
Approach		297	8.5	297	8.5	0.381	43.3	LOS D	4.4	33.3	0.82	0.75	0.82	24.0
North: Anzac Parade (N)														
7	L2	158	6.0	158	6.0	0.378	9.9	LOS A	2.8	20.6	0.23	0.37	0.23	33.1
8	T1	969	7.2	969	7.2	* 0.378	3.8	LOS A	2.8	20.6	0.17	0.19	0.17	46.1
Approach		1127	7.0	1127	7.0	0.378	4.7	LOS A	2.8	20.6	0.18	0.21	0.18	45.3
All Vehicles		2280	7.1	2280	7.1	0.381	9.9	LOS A	4.4	33.3	0.27	0.26	0.27	39.6

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Anzac Parade (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	223.6	220.2	0.98

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: 108 [08. Doncaster Avenue / Ascot Street - Existing Wednesday - PM Peak (Site Folder: Existing PM)]**

 **Network: N101 [Existing PM (Network Folder: General)]**

Existing Wednesday PM Peak
5pm - 6pm
Site Category: Existing
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	18	0.0	18	0.0	0.461	3.0	LOS A	1.5	10.2	0.24	0.34	0.24	37.3
2	T1	580	0.0	580	0.0	0.461	2.6	LOS A	1.5	10.2	0.24	0.34	0.24	37.3
3	R2	4	0.0	4	0.0	0.461	5.8	LOS A	1.5	10.2	0.24	0.34	0.24	39.1
3u	U	15	0.0	15	0.0	0.461	7.1	LOS A	1.5	10.2	0.24	0.34	0.24	37.3
Approach		617	0.0	617	0.0	0.461	2.8	LOS A	1.5	10.2	0.24	0.34	0.24	37.3
East: Ascot Street (E)														
4	L2	32	3.3	32	3.3	0.096	8.1	LOS A	0.2	1.4	0.65	0.72	0.65	33.5
5	T1	1	0.0	1	0.0	0.096	7.5	LOS A	0.2	1.4	0.65	0.72	0.65	33.5
6	R2	18	0.0	18	0.0	0.096	10.7	LOS A	0.2	1.4	0.65	0.72	0.65	33.5
6u	U	1	0.0	1	0.0	0.096	12.0	LOS A	0.2	1.4	0.65	0.72	0.65	37.3
Approach		52	2.0	52	2.0	0.096	9.0	LOS A	0.2	1.4	0.65	0.72	0.65	33.6
North: Doncaster Avenue (N)														
7	L2	2	0.0	2	0.0	0.473	3.2	LOS A	1.5	10.5	0.29	0.36	0.29	38.4
8	T1	504	0.2	504	0.2	0.473	2.8	LOS A	1.5	10.5	0.29	0.36	0.29	37.0
9	R2	19	0.0	19	0.0	0.473	6.0	LOS A	1.5	10.5	0.29	0.36	0.29	37.0
9u	U	3	0.0	3	0.0	0.473	7.3	LOS A	1.5	10.5	0.29	0.36	0.29	37.0
Approach		528	0.2	528	0.2	0.473	3.0	LOS A	1.5	10.5	0.29	0.36	0.29	37.0
West: Ascot Street (W)														
10	L2	15	0.0	15	0.0	0.077	7.5	LOS A	0.2	1.1	0.65	0.72	0.65	26.3
11	T1	3	0.0	3	0.0	0.077	7.2	LOS A	0.2	1.1	0.65	0.72	0.65	35.5
12	R2	27	0.0	27	0.0	0.077	10.3	LOS A	0.2	1.1	0.65	0.72	0.65	26.3
12u	U	1	0.0	1	0.0	0.077	11.6	LOS A	0.2	1.1	0.65	0.72	0.65	26.3
Approach		46	0.0	46	0.0	0.077	9.2	LOS A	0.2	1.1	0.65	0.72	0.65	27.8
All Vehicles		1243	0.2	1243	0.2	0.473	3.4	LOS A	1.5	10.5	0.29	0.38	0.29	36.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0557 [07. Anzac Parade / Doncaster Avenue - Existing]  Network: N101 [Existing PM Wednesday - PM Peak (Site Folder: Existing PM)] (Network Folder: General)]

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Doncaster Avenue (S)														
1	L2	78	0.0	78	0.0	0.393	37.7	LOS C	5.6	39.0	0.73	0.66	0.73	26.0
2	T1	149	0.0	149	0.0	0.393	33.1	LOS C	5.6	39.0	0.73	0.66	0.73	26.0
3	R2	28	0.0	28	0.0	0.110	46.6	LOS D	0.8	5.4	0.78	0.70	0.78	22.3
Approach		256	0.0	256	0.0	0.393	36.0	LOS C	5.6	39.0	0.73	0.67	0.73	25.5
East: Anzac Parade (E)														
4	L2	35	0.0	35	0.0	0.032	15.3	LOS B	0.5	3.5	0.43	0.63	0.43	37.9
5	T1	922	6.4	922	6.4	0.416	14.9	LOS B	10.0	73.3	0.62	0.55	0.62	24.2
Approach		957	6.2	957	6.2	0.416	14.9	LOS B	10.0	73.3	0.61	0.55	0.61	25.2
North: Doncaster Avenue (N)														
7	L2	80	1.3	80	1.3	0.462	39.5	LOS C	7.6	53.6	0.85	0.74	0.85	25.9
8	T1	187	0.6	187	0.6	* 0.462	35.0	LOS C	7.6	53.6	0.85	0.74	0.85	33.7
9	R2	16	0.0	16	0.0	0.053	42.4	LOS C	0.4	3.1	0.80	0.68	0.80	23.8
Approach		283	0.7	283	0.7	0.462	36.7	LOS C	7.6	53.6	0.84	0.74	0.84	31.6
West: Anzac Parade (W)														
10	L2	14	0.0	14	0.0	0.470	23.7	LOS B	12.8	94.8	0.76	0.69	0.76	35.1
11	T1	1019	7.6	1019	7.6	* 0.470	18.3	LOS B	12.8	94.8	0.74	0.67	0.74	35.5
Approach		1033	7.5	1033	7.5	0.470	18.4	LOS B	12.8	94.8	0.74	0.67	0.74	35.5
All Vehicles		2528	5.5	2528	5.5	0.470	20.9	LOS B	12.8	94.8	0.70	0.63	0.70	31.3

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
East: Anzac Parade (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
North: Doncaster Avenue (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: Anzac Parade (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99

All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
-----------------	-----	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

Site: 109 [09. Anzac Parade / Ascot Street - Existing
Wednesday - PM Peak (Site Folder: Existing PM)]

Network: N101 [Existing PM
(Network Folder: General)]

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Anzac Parade (S)														
2	T1	847	4.5	847	4.5	0.220	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		847	4.5	847	4.5	0.220	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: Ascot Street (E)														
4	L2	44	2.4	44	2.4	0.059	7.3	LOS A	0.1	0.6	0.49	0.68	0.49	32.6
Approach		44	2.4	44	2.4	0.059	7.3	LOS A	0.1	0.6	0.49	0.68	0.49	32.6
North: Anzac Parade (N)														
7	L2	37	0.0	37	0.0	0.020	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	45.9
8	T1	1021	6.8	1021	6.8	0.270	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1058	6.6	1058	6.6	0.270	0.3	NA	0.0	0.0	0.00	0.02	0.00	49.7
All Vehicles		1949	5.6	1949	5.6	0.270	0.4	NA	0.1	0.6	0.01	0.03	0.01	49.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents -

WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS4709 [10. Alison Road / Prince Street / Wansey Road -  Network: N101 [Existing PM Existing Wednesday - PM Peak (Site Folder: Existing PM)] (Network Folder: General)]

Existing Wednesday PM Peak

5pm - 6pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Wansey Road (S)														
1	L2	1	0.0	1	0.0	0.005	63.9	LOS E	0.0	0.1	0.99	0.57	0.99	16.8
Approach		1	0.0	1	0.0	0.005	63.9	LOS E	0.0	0.1	0.99	0.57	0.99	16.8
East: Alison Road (E)														
4	L2	5	0.0	5	0.0	0.324	11.7	LOS A	3.3	23.3	0.26	0.23	0.26	49.9
5	T1	760	2.6	760	2.6	0.324	6.2	LOS A	3.3	23.3	0.26	0.23	0.26	49.9
6	R2	47	4.4	47	4.4	* 0.451	68.4	LOS E	1.7	12.6	0.99	0.74	0.99	26.9
Approach		813	2.7	813	2.7	0.451	9.9	LOS A	3.3	23.3	0.30	0.26	0.30	45.7
North: Prince Street (N)														
7	L2	35	0.0	35	0.0	0.321	66.4	LOS E	1.3	8.8	0.98	0.72	0.98	27.0
8	T1	14	0.0	14	0.0	* 0.092	46.3	LOS D	0.9	6.0	0.81	0.67	0.81	22.0
9	R2	17	0.0	17	0.0	0.092	49.3	LOS D	0.9	6.0	0.81	0.67	0.81	22.0
Approach		65	0.0	65	0.0	0.321	57.8	LOS E	1.3	8.8	0.90	0.70	0.90	25.2
West: Alison Road (W)														
10	L2	19	0.0	19	0.0	0.433	33.4	LOS C	16.2	116.5	0.97	0.87	0.97	40.3
11	T1	997	3.3	997	3.3	* 0.433	29.2	LOS C	17.0	122.3	0.99	0.88	0.99	42.5
12	R2	11	0.0	11	0.0	0.049	60.0	LOS E	0.2	1.2	0.89	0.64	0.89	24.5
Approach		1026	3.2	1026	3.2	0.433	29.6	LOS C	17.0	122.3	0.99	0.88	0.99	42.3
All Vehicles		1905	2.9	1905	2.9	0.451	22.2	LOS B	17.0	122.3	0.69	0.61	0.69	42.2

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Wansey Road (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.7	220.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.9	220.5	0.98
North: Prince Street (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: Alison Road (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	229.0	227.1	0.99

All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	223.4	219.9	0.98
-----------------	-----	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 10:37:10 AM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\211213 - NRDEvents - WEDNESDAY - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS4739 [11. High Street / Wansey Road - Existing Saturday Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM (Network Folder: General)]

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
East: High Street (E)														
5	T1	107	12.7	107	12.7	0.076	2.7	LOS A	0.8	6.2	0.23	0.19	0.23	37.8
6	R2	6	83.3	6	83.3	* 0.076	51.9	LOS D	0.8	6.2	0.81	0.59	0.81	20.7
Approach		114	16.7	114	16.7	0.076	5.4	LOS A	0.8	6.2	0.26	0.21	0.26	35.8
North: Wansey Road (N)														
7	L2	5	100.0	5	100.0	0.074	60.9	LOS E	0.2	5.0	0.93	0.67	0.93	23.9
9	R2	14	0.0	14	0.0	* 0.074	61.6	LOS E	0.5	3.4	1.00	0.70	1.00	17.2
Approach		19	27.8	19	27.8	0.074	61.4	LOS E	0.5	5.0	0.98	0.69	0.98	19.6
West: High Street (W)														
10	L2	186	1.1	186	1.1	0.126	6.0	LOS A	1.3	9.4	0.22	0.54	0.22	35.4
11	T1	1	100.0	1	100.0	0.001	7.6	LOS A	0.0	0.2	0.36	0.23	0.36	36.9
Approach		187	1.7	187	1.7	0.126	6.0	LOS A	1.3	9.4	0.22	0.54	0.22	35.4
All Vehicles		320	8.6	320	8.6	0.126	9.1	LOS A	1.3	9.4	0.28	0.43	0.28	33.6

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.8	213.9	0.98
North: Wansey Road (N)											
P31	Stage 1	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
P32	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
West: High Street (W)											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
All Pedestrians		211	54.3	LOS E	0.2	0.2	0.95	0.95	216.2	210.5	0.97

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM
Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform
cycle time.sip9

MOVEMENT SUMMARY

 **Site:** TCS0396 [01. Anzac Parade / Alison Road / Dacey Avenue - Existing Saturday Peak (Site Folder: Existing AM)]  **Network:** N101 [Existing AM (Network Folder: General)]

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Anzac Parade (S)														
1	L2	72	4.4	72	4.4	0.088	16.6	LOS B	0.9	6.6	0.68	0.72	0.68	45.5
2	T1	1084	3.9	1084	3.9	* 0.940	65.7	LOS E	25.2	181.2	1.00	1.14	1.33	31.7
Approach		1156	3.9	1156	3.9	0.940	62.7	LOS E	25.2	181.2	0.98	1.11	1.29	32.3
East: Alison Road (E)														
5	T1	682	2.6	624	2.6	* 0.972	84.5	LOS F	13.8	98.9	1.00	1.08	1.37	23.7
6	R2	893	1.7	817	1.7	0.742	66.9	LOS E	10.0	71.0	1.00	0.86	1.03	28.0
Approach		1575	2.1	1441 ^N ₁	2.1	0.972	74.5	LOS F	13.8	98.9	1.00	0.96	1.18	26.0
North: Anzac Parade (N)														
7	L2	896	1.5	896	1.5	0.318	6.1	LOS A	0.5	3.2	0.03	0.54	0.03	50.4
8	T1	786	3.3	786	3.3	0.395	13.8	LOS A	5.9	42.3	0.46	0.40	0.46	41.8
9	R2	538	2.3	538	2.3	* 0.982	91.5	LOS F	12.6	90.2	1.00	1.10	1.53	23.4
Approach		2220	2.4	2220	2.4	0.982	29.5	LOS C	12.6	90.2	0.42	0.63	0.55	33.6
West: Dacey Avenue (W)														
10	L2	427	0.2	427	0.2	0.692	40.3	LOS C	12.3	86.3	0.86	0.83	0.86	33.5
11	T1	485	1.5	485	1.5	* 0.942	73.1	LOS F	10.3	73.3	1.00	1.10	1.40	17.4
12	R2	53	0.0	53	0.0	0.106	54.4	LOS D	0.8	5.6	0.87	0.70	0.87	20.5
Approach		965	0.9	965	0.9	0.942	57.6	LOS E	12.3	86.3	0.93	0.96	1.13	24.6
All Vehicles		5916	2.3	5782 ^N ₁	2.4	0.982	52.0	LOS D	25.2	181.2	0.76	0.86	0.95	29.3

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Anzac Parade (S)											
P11	Stage 1	53	24.9	LOS C	0.1	0.1	0.90	0.90	189.7	214.2	1.13
P12	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.0	214.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.7	229.4	0.99
North: Anzac Parade (N)											

P3B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	214.0	207.6	0.97
West: Dacey Avenue (W)										
P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
All Pedestrians	263	48.4	LOS E	0.2	0.2	0.94	0.94	216.2	218.1	1.01

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

Site: TCS0900 [02. Alison Road / Doncaster Avenue - Existing Saturday Peak (Site Folder: Existing AM)] Network: N101 [Existing AM (Network Folder: General)]

12pm - 1pm

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

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

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

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

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
North: Bus Lane (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	211.4	204.3	0.97
West: Alison Road (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.4	223.8	0.99
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	216.8	211.3	0.97

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS4736 [03. Alison Road / Randwick Racecourse Access - Existing Saturday Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM (Network Folder: General)]

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Randwick Racecourse Access (S)														
1	L2	2	0.0	2	0.0	0.011	51.6	LOS D	0.1	0.4	0.82	0.62	0.82	20.9
1a	L1	1	100.0	1	100.0	* 0.028	67.9	LOS E	0.0	1.1	0.95	0.60	0.95	26.7
3	R2	1	0.0	1	0.0	0.011	64.6	LOS E	0.0	0.3	0.95	0.58	0.95	18.3
Approach		4	25.0	4	25.0	0.028	58.9	LOS E	0.1	1.1	0.89	0.60	0.89	22.2
East: Alison Road (E)														
4	L2	3	0.0	3	0.0	* 1.046	100.7	LOS F	36.3	260.0	1.00	1.39	1.67	17.7
5	T1	1948	2.7	1948	2.7	* 1.046	100.7	LOS F	36.3	260.0	1.00	1.45	1.70	8.3
Approach		1952	2.7	1952	2.7	1.046	100.7	LOS F	36.3	260.0	1.00	1.45	1.70	8.3
NorthEast: Light Rail														
24a	L1	1	100.0	1	100.0	* 0.028	64.8	LOS E	0.0	1.0	0.90	0.60	0.90	24.2
Approach		1	100.0	1	100.0	0.028	64.8	LOS E	0.0	1.0	0.90	0.60	0.90	24.2
West: Alison Road (W)														
11	T1	1901	2.2	1899	2.2	0.591	4.1	LOS A	7.3	52.3	0.23	0.21	0.23	38.6
12	R2	6	0.0	6	0.0	* 0.068	66.9	LOS E	0.2	1.5	0.95	0.65	0.95	20.4
Approach		1907	2.2	1905 ^N ₁	2.2	0.591	4.4	LOS A	7.3	52.3	0.23	0.21	0.23	38.1
All Vehicles		3864	2.5	3862 ^N ₁	2.5	1.046	53.1	LOS D	36.3	260.0	0.62	0.84	0.97	10.9

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

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

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

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

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

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

* Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Randwick Racecourse Access (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	225.7	222.8	0.99
NorthEast: Light Rail											
P6	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97

NorthWest: Light Rail											
P7 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97	
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.1	213.0	0.98	

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

MOVEMENT SUMMARY

 Site: TCS0357 [04. Alison Road / Darley Road - Existing Saturday Peak (Site Folder: Existing AM)]

 Network: N101 [Existing AM (Network Folder: General)]

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Alison Road (E)														
4	L2	1	0.0	1	0.0	1.084	154.6	LOS F	19.8	144.0	0.95	1.45	1.97	19.1
5	T1	997	4.3	997	4.3	1.084	150.0	LOS F	27.2	197.3	0.97	1.49	1.97	12.9
6a	R1	3	100.0	3	100.0	0.043	34.8	LOS C	0.1	1.7	0.95	0.64	0.95	32.8
6	R2	28	0.0	28	0.0	* 0.147	34.1	LOS C	0.5	3.8	0.95	0.71	0.95	38.5
Approach		1029	4.5	1029	4.5	1.084	146.4	LOS F	27.2	197.3	0.97	1.46	1.94	13.3
North: Darley Road (N)														
7	L2	59	3.6	59	3.6	0.064	16.5	LOS B	0.7	5.0	0.35	0.62	0.35	34.7
8	T1	1	0.0	1	0.0	* 1.144	199.1	LOS F	23.7	167.2	1.00	1.52	2.30	13.3
9	R2	955	1.0	955	1.0	1.144	203.1	LOS F	25.4	179.1	1.00	1.52	2.29	7.6
Approach		1015	1.1	1015	1.1	1.144	192.3	LOS F	25.4	179.1	0.96	1.47	2.18	7.9
NorthWest: Light Rail														
27a	L1	4	100.0	4	100.0	* 0.057	35.2	LOS C	0.1	2.3	0.93	0.65	0.93	19.6
Approach		4	100.0	4	100.0	0.057	35.2	LOS C	0.1	2.3	0.93	0.65	0.93	19.6
West: Alison Road (W)														
10	L2	812	1.0	811	1.0	* 1.123	134.6	LOS F	36.8	260.0	1.00	1.28	1.90	14.8
11	T1	1089	3.0	1088	3.0	0.726	19.7	LOS B	13.5	96.7	0.72	0.64	0.72	28.0
Approach		1901	2.2	1899 ^N ₁	2.2	1.123	68.8	LOS E	36.8	260.0	0.84	0.92	1.23	17.5
All Vehicles		3949	2.6	3947 ^N ₁	2.6	1.144	120.8	LOS F	36.8	260.0	0.91	1.20	1.66	12.6

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

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

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

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

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

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

* Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: ATC Access											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	212.2	205.3	0.97
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	231.5	230.4	1.00

North: Darley Road (N)											
P3 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	225.7	222.8	0.99	
NorthWest: Light Rail											
P71 Stage 1	53	24.6	LOS C	0.1	0.1	0.90	0.90	181.7	204.3	1.12	
P72 Stage 2	53	24.6	LOS C	0.1	0.1	0.90	0.90	181.7	204.3	1.12	
All Pedestrians	263	42.4	LOS E	0.2	0.2	0.93	0.93	206.6	213.4	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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

 Site: TCS3713 [05. High Street / Gate Two Avenue - Existing Saturday Peak (Site Folder: Existing AM)]
 Network: N101 [Existing AM (Network Folder: General)]

12pm - 1pm

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Gate Two Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	218.0	212.9	0.98
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
North: Randwick Racecourse (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: High Street (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	218.7	213.8	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

MOVEMENT SUMMARY

 **Site: TCS1169 [06. Anzac Parade / High Street - Existing Saturday Peak (Site Folder: Existing AM)]**

 **Network: N101 [Existing AM (Network Folder: General)]**

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Anzac Parade (S)														
2	T1	1002	4.4	1002	4.4	0.354	0.6	LOS A	0.5	3.9	0.03	0.03	0.03	49.3
3	R2	60	10.5	60	10.5	* 0.259	35.2	LOS C	1.3	10.1	0.91	0.73	0.91	25.8
Approach		1062	4.8	1062	4.8	0.354	2.5	LOS A	1.3	10.1	0.08	0.07	0.08	46.8
East: High Street (E)														
4	L2	52	12.2	52	12.2	0.246	48.3	LOS D	2.4	18.6	0.88	0.74	0.88	27.8
6	R2	98	6.5	98	6.5	* 0.246	54.0	LOS D	2.4	18.6	0.95	0.76	0.95	18.5
Approach		149	8.5	149	8.5	0.246	52.0	LOS D	2.4	18.6	0.93	0.76	0.93	22.3
North: Anzac Parade (N)														
7	L2	168	5.0	168	5.0	0.310	10.6	LOS A	2.6	18.9	0.23	0.41	0.23	31.7
8	T1	866	3.3	866	3.3	* 0.310	3.4	LOS A	2.6	18.9	0.14	0.16	0.14	46.5
Approach		1035	3.6	1035	3.6	0.310	4.6	LOS A	2.6	18.9	0.16	0.20	0.16	45.4
All Vehicles		2246	4.5	2246	4.5	0.354	6.8	LOS A	2.6	18.9	0.17	0.18	0.17	42.4

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Anzac Parade (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
East: High Street (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	219.8	215.2	0.98
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	223.6	220.2	0.98

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: TCS0557 [07. Anzac Parade / Doncaster Avenue - Existing] ■■ Network: N101 [Existing AM Saturday Peak (Site Folder: Existing AM)] (Network Folder: General)

Existing Saturday Peak

12pm - 1pm

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	86	0.0	86	0.0	0.443	41.4	LOS C	6.4	44.8	0.78	0.70	0.78	24.7
2	T1	156	0.7	156	0.7	* 0.443	36.8	LOS C	6.4	44.8	0.78	0.70	0.78	24.7
3	R2	9	0.0	9	0.0	0.036	46.4	LOS D	0.3	1.8	0.76	0.65	0.76	22.3
Approach		252	0.4	252	0.4	0.443	38.7	LOS C	6.4	44.8	0.78	0.70	0.78	24.6
East: Anzac Parade (E)														
4	L2	22	0.0	22	0.0	0.020	13.9	LOS A	0.3	2.0	0.40	0.61	0.40	38.7
5	T1	1052	4.8	1052	4.8	* 0.455	13.2	LOS A	10.0	72.7	0.57	0.51	0.57	25.7
Approach		1074	4.7	1074	4.7	0.455	13.2	LOS A	10.0	72.7	0.57	0.52	0.57	26.3
North: Doncaster Avenue (N)														
7	L2	84	0.0	83	0.0	0.417	41.2	LOS C	6.3	44.5	0.85	0.74	0.85	25.2
8	T1	138	1.5	137	1.5	0.417	36.6	LOS C	6.3	44.5	0.85	0.74	0.85	33.1
9	R2	19	0.0	19	0.0	0.073	47.0	LOS D	0.6	3.9	0.84	0.70	0.84	22.5
Approach		241	0.9	239 ^{N1}	0.9	0.417	39.0	LOS C	6.3	44.5	0.85	0.74	0.85	30.2
West: Anzac Parade (W)														
10	L2	16	0.0	16	0.0	0.411	20.8	LOS B	11.0	79.2	0.71	0.63	0.71	36.7
11	T1	941	3.9	941	3.9	0.411	15.6	LOS B	11.0	79.2	0.68	0.61	0.68	37.1
Approach		957	3.9	957	3.9	0.411	15.7	LOS B	11.0	79.2	0.68	0.61	0.68	37.1
All Vehicles		2523	3.6	2521 ^{N1}	3.6	0.455	19.1	LOS B	11.0	79.2	0.66	0.59	0.66	31.6

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

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

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

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

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

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

- * Critical Movement (Signal Timing)

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Doncaster Avenue (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
East: Anzac Parade (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
North: Doncaster Avenue (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: Anzac Parade (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	222.3	218.5	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

MOVEMENT SUMMARY

 **Site: 108 [08. Doncaster Avenue / Ascot Street - Existing Saturday Peak (Site Folder: Existing AM)]**

 **Network: N101 [Existing AM (Network Folder: General)]**

Existing Saturday Peak
12pm - 1pm
Site Category: Existing
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV veh/h	%				[Veh. veh	Dist] m				
South: Doncaster Avenue (S)														
1	L2	39	0.0	39	0.0	0.427	2.8	LOS A	1.3	9.3	0.19	0.34	0.19	37.4
2	T1	528	1.0	528	1.0	0.427	2.5	LOS A	1.3	9.3	0.19	0.34	0.19	37.4
3	R2	8	0.0	8	0.0	0.427	5.7	LOS A	1.3	9.3	0.19	0.34	0.19	39.2
3u	U	14	0.0	14	0.0	0.427	6.9	LOS A	1.3	9.3	0.19	0.34	0.19	37.4
Approach		589	0.9	589	0.9	0.427	2.7	LOS A	1.3	9.3	0.19	0.34	0.19	37.5
East: Ascot Street (E)														
4	L2	13	8.3	13	8.3	0.047	6.2	LOS A	0.1	0.7	0.55	0.61	0.55	34.4
5	T1	3	33.3	3	33.3	0.047	6.7	LOS A	0.1	0.7	0.55	0.61	0.55	34.4
6	R2	13	8.3	13	8.3	0.047	9.0	LOS A	0.1	0.7	0.55	0.61	0.55	34.4
6u	U	1	0.0	1	0.0	0.047	10.0	LOS A	0.1	0.7	0.55	0.61	0.55	37.9
Approach		29	10.7	29	10.7	0.047	7.6	LOS A	0.1	0.7	0.55	0.61	0.55	34.6
North: Doncaster Avenue (N)														
7	L2	1	0.0	1	0.0	0.334	3.0	LOS A	0.8	5.5	0.20	0.34	0.20	38.6
8	T1	386	1.6	352	1.6	0.334	2.7	LOS A	0.8	5.5	0.20	0.34	0.20	37.3
9	R2	11	0.0	10	0.0	0.334	5.9	LOS A	0.8	5.5	0.20	0.34	0.20	37.3
9u	U	2	0.0	2	0.0	0.334	7.1	LOS A	0.8	5.5	0.20	0.34	0.20	37.3
Approach		400	1.6	364 ^{N1}	1.6	0.334	2.8	LOS A	0.8	5.5	0.20	0.34	0.20	37.3
West: Ascot Street (W)														
10	L2	17	0.0	17	0.0	0.062	6.9	LOS A	0.1	0.9	0.62	0.68	0.62	27.1
11	T1	4	25.0	4	25.0	0.062	7.6	LOS A	0.1	0.9	0.62	0.68	0.62	35.9
12	R2	17	0.0	17	0.0	0.062	9.7	LOS A	0.1	0.9	0.62	0.68	0.62	27.1
12u	U	1	0.0	1	0.0	0.062	11.0	LOS A	0.1	0.9	0.62	0.68	0.62	27.1
Approach		39	2.7	39	2.7	0.062	8.3	LOS A	0.1	0.9	0.62	0.68	0.62	29.3
All Vehicles		1058	1.5	1022 ^{N1}	1.5	0.427	3.1	LOS A	1.3	9.3	0.22	0.36	0.22	37.1

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM
Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

MOVEMENT SUMMARY

▼ Site: 109 [09. Anzac Parade / Ascot Street - Existing Saturday] ■■ Network: N101 [Existing AM Peak (Site Folder: Existing AM)] (Network Folder: General)]

Existing Saturday Peak
12pm - 1pm
Site Category: Existing
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Anzac Parade (S)														
2	T1	1039	4.4	1039	4.4	0.271	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1039	4.4	1039	4.4	0.271	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: Ascot Street (E)														
4	L2	56	1.9	56	1.9	0.066	6.7	LOS A	0.1	0.7	0.44	0.64	0.44	33.7
Approach		56	1.9	56	1.9	0.066	6.7	LOS A	0.1	0.7	0.44	0.64	0.44	33.7
North: Anzac Parade (N)														
7	L2	37	2.9	37	2.9	0.020	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	45.9
8	T1	843	3.1	843	3.1	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		880	3.1	880	3.1	0.219	0.3	NA	0.0	0.0	0.00	0.02	0.00	49.7
All Vehicles		1975	3.7	1975	3.7	0.271	0.4	NA	0.1	0.7	0.01	0.03	0.01	49.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9

Site: TCS4709 [10. Alison Road / Prince Street / Wansey Road - Existing Saturday Peak (Site Folder: Existing AM)] **Network: N101 [Existing AM (Network Folder: General)]**

12pm - 1pm

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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

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

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Wansey Road (S)											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.7	220.2	0.98
East: Alison Road (E)											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.9	220.5	0.98
North: Prince Street (N)											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	217.3	211.9	0.98
West: Alison Road (W)											

P4 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	229.0	227.1	0.99
All Pedestrians	211	54.3	LOS E	0.2	0.2	0.95	0.95	223.4	219.9	0.98

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.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: PARKING AND TRAFFIC CONSULTANTS | Licence: NETWORK / 1PC | Processed: Tuesday, 14 December 2021 2:37:22 PM

Project: Z:\PCI - PROJECT WORK FILES\2021 PROJECTS\3170_MOCO_RRRNRDEVENTS\03 WIP\07 SIDRA\SATURDAY TEST - uniform cycle time.sip9