Netball NSW

Netball Centre for Excellence

Traffic Impact Assessment

REP-01

Issue | 15 June 2012

Job number 222450-60

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1 Introduction

Netball NSW is proposing to move their headquarters from Lidcombe to Sydney Olympic Park in a new facility called the Netball Centre of Excellence (Netball Central). The complex will include six indoor netball courts and provide amenities for players, officials and spectators. The complex also includes new administration offices for Netball NSW.

1.1 Scope of Report

The scope of this study includes:

- Description of existing transport conditions
- AM and PM surveys of the site to estimate the existing traffic generation from the site
- An estimation of the critical peak hour traffic volumes generated by the proposed development
- Calculation of the number and distribution of trips (on the surrounding road network) likely to be generated by the proposed development during the critical peak hour period/s
- An analysis of the impacts of the proposed development on the surrounding road network during the critical peak periods.
- Identification of any traffic related safety implications and treatments associated with the proposed development
- Identification of any external road works or contributions expected as a result of the proposed development

1.2 Key Issues and Objectives

The proposed development is to be situated adjacent to the existing Sports Centre, a Multi use facility constructed in 1984 with additions made in 2007. The Sports Centre is served by the P7 car park to the south of the site. The proposed development reduces the area of the car park which requires the entry/exit to be moved.

The development will encourage future users of Netball Central to make travel choices that support the state plan targets of increased public transport mode share and doubling the active transport mode share. The site is located within close proximity to heavy rail stations and bus stops with connections to western Sydney, making these targets achievable.

2 Existing Conditions

2.1 Site Location

The netball Centre of Excellence is proposed to be located on the site adjacent to the Sports Centre in Sydney Olympic Park. The site is bounded by Olympic Boulevard to the east, parking area P7 to the south, the Sports Centre to the West and Sarah Durack Avenue to the north. The Hockey Centre and P4 car park is located to the west of the sports centre. The large multistorey car park P3 is located to the east of the site on the opposite corner of Olympic Boulevard.

The site location is shown in Figure 1. The site is currently a large open area, with a walkway to the eastern entrance of the Sports Centre, which caters for pedestrians walking towards the site from Olympic Boulevard.

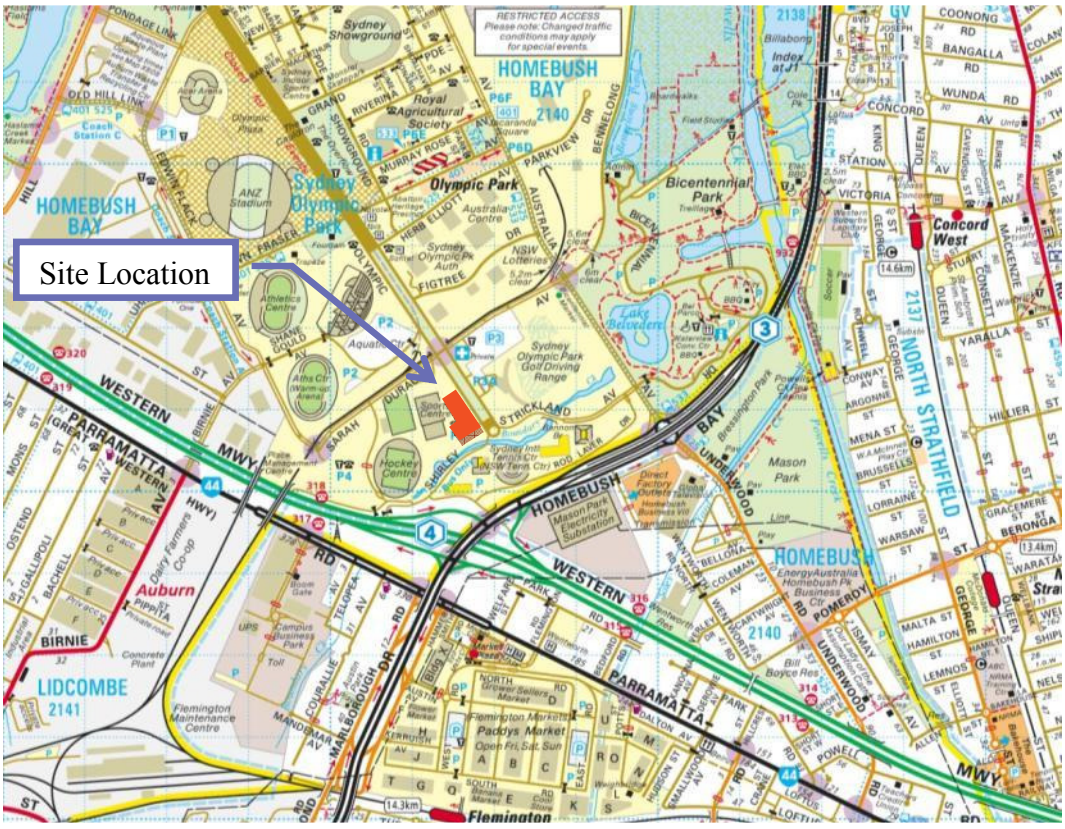

Figure 1: Site location

2.2 Regional and Local Context

Sydney Olympic Park is not included within a local government structure. The site has three immediate neighbouring councils, namely, Auburn Council, Canada Bay Council and Strathfield Council. The regional access to these areas encompasses all modes of transport connections. The regional transport network is shown in Figure 2.

The current local SOP transport network is designed to cater for major events. The wide internal roads, heavy rail train connection, footpath network and cycle infrastructure are considered world class facilities.

A4

Legend

- Bus Stops

Footpaths
- Natural Surface
- Bitumen and Concrete

Bikepaths
- Off Road
- On Road
- Sydney Olympic Park

Buses

Routes
- 401 - STA
- 525 - STA
- 526 - STA
- 533 - STA
- 450 - Punchbowl

- Rail Stations

Metres
0 375 750 1,500

Client
Netball NSW

Job Title
Netball Central

Figure Title
Regional and Local Transport Connection Map

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2.3 Site Access

Current site access is via the walkway from Olympic Boulevard and the parking area P7 to the south. The sports centre also has an entrance to the north in a bus turnaround area off Sarah Durack Avenue.

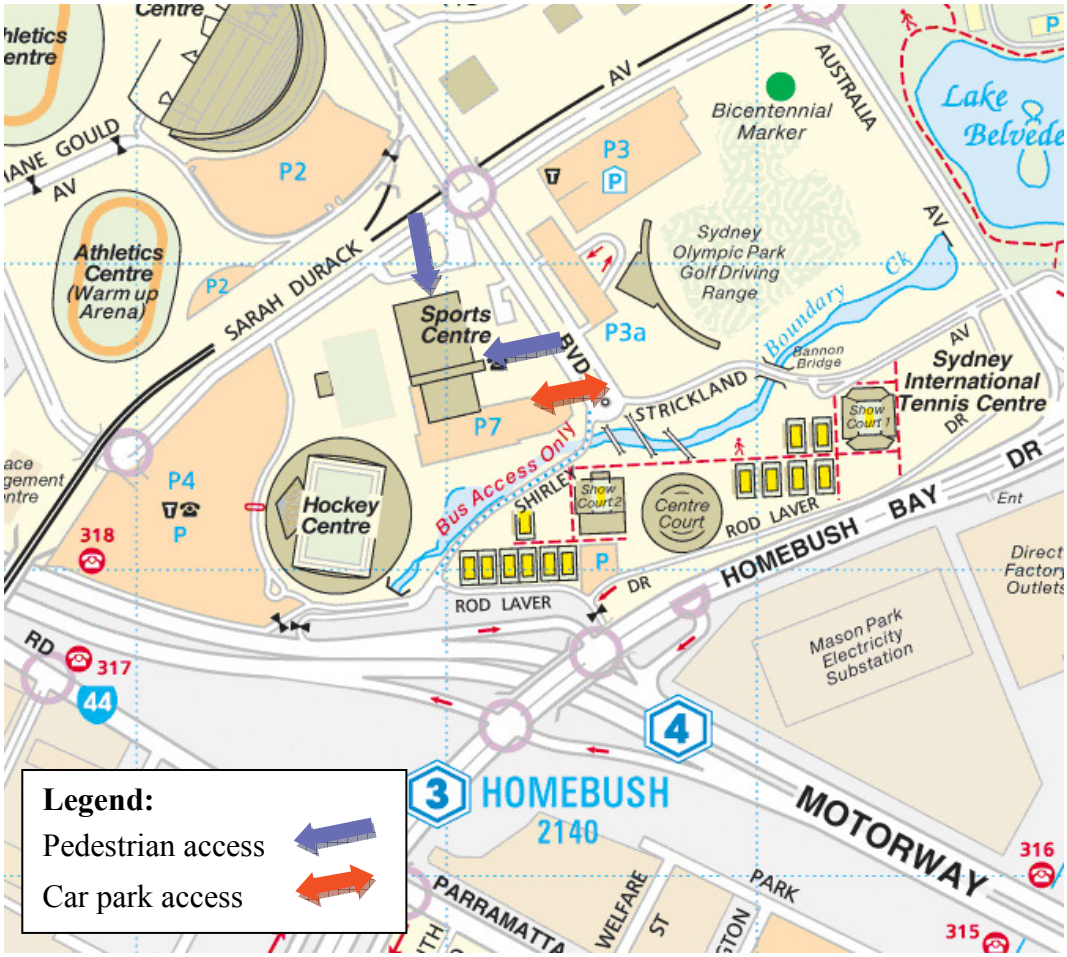

Figure 3: Site access

The Sports Centre has advised that 19m articulated vehicles enter the site and are used for bump in/bump out concert events at the centre. An example of this is shown in photo below.

Photograph 1: 19m articulated vehicle on bump out of Juan Luis Guerra concert on 24th April 2012

2.4 Road Network

Olympic Boulevard is the main north-south pedestrian access in Olympic Park, with wide footpaths, and generous road widths. Olympic Boulevard connects the site to the Aquatic centre, the business park, Olympic Park Station, ANZ Stadium, All Phones Arena and the showground area.

Sarah Durack Avenue is located to the north of the site and provides access to Australia Avenue and Homebush Bay Drive.

2.4.1 Traffic Flows

The major intersections in the vicinity of the site are Olympic Boulevard/Shirley Strickland Avenue and Olympic Boulevard/Sarah Durack Avenue. The intersection Olympic Boulevard /Shirley Strickland Avenue is a large roundabout with approaches angled at about 120 degrees giving a symmetrical, three-arm layout. Pedestrian refuge islands are provided on all approaches. Olympic Boulevard/Sarah Durack Avenue is a signalised intersection with pedestrian crossing facilities on all approaches.

The traffic and pedestrian volumes of Olympic Boulevard/Sarah Durack Avenue and Olympic Boulevard/Shirley Strickland Avenue have been surveyed by Arup appointed private contractor Sky High on Thursday, 3 May 2012 and Sunday 6 May in the following peak traffic periods:

- Thursday AM – 7am – 9am
- Thursday PM – 4pm – 6pm
- Sunday – 11am – 5pm

The traffic flows are presented in Figure 4. The Sunday survey was taken on an event day at the Sports Centre. NSW Swifts were playing a home game with an estimated crowd of 2000, the Sydney Dolls House Fair with an estimated crowd of 2000 and other general bookings.

The traffic count data has identified the peaks during the three surveyed periods to be:

- AM – 7:45am – 8:45pm
- PM – 4:30pm – 5:30pm
- Sunday – 1:30pm – 2:30pm

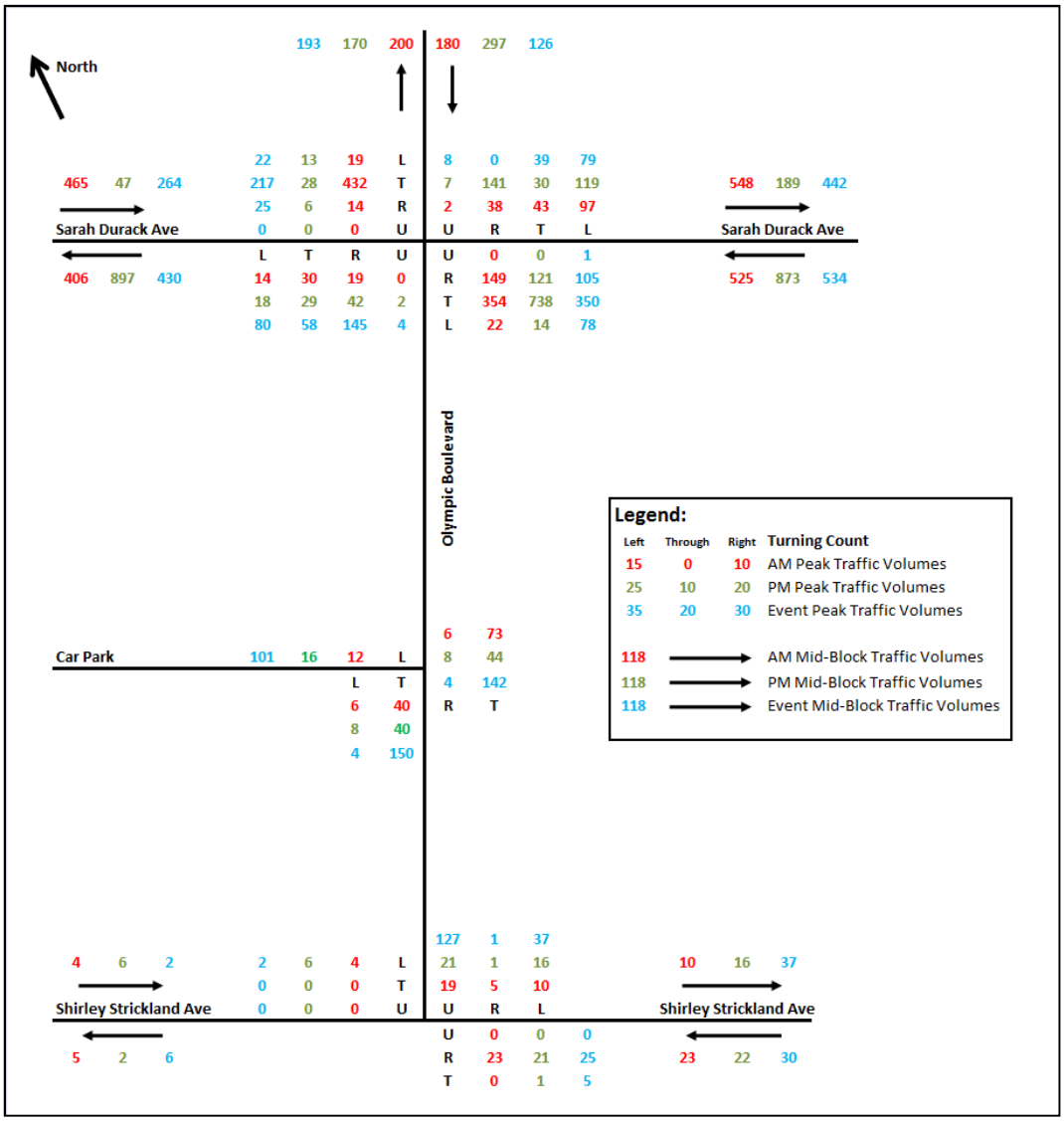

Figure 4: Existing traffic volumes

2.5 Parking Supply and Demand

2.5.1 On-street parking provision

There is minimal on-street parking available on Olympic Boulevard next to the sports centre. This consists of 12 spaces of one hour parking and two disabled parking bays. No on-street parking is available on Sarah Durack Avenue.

2.5.2 Off-street parking provision

There are several off-street parking areas in the vicinity of the Sports Centre, all are controlled by SOPA. See Figure 5 below for the locations of these parking areas. Table 1 summarises the number of spaces available in each of these car parks.

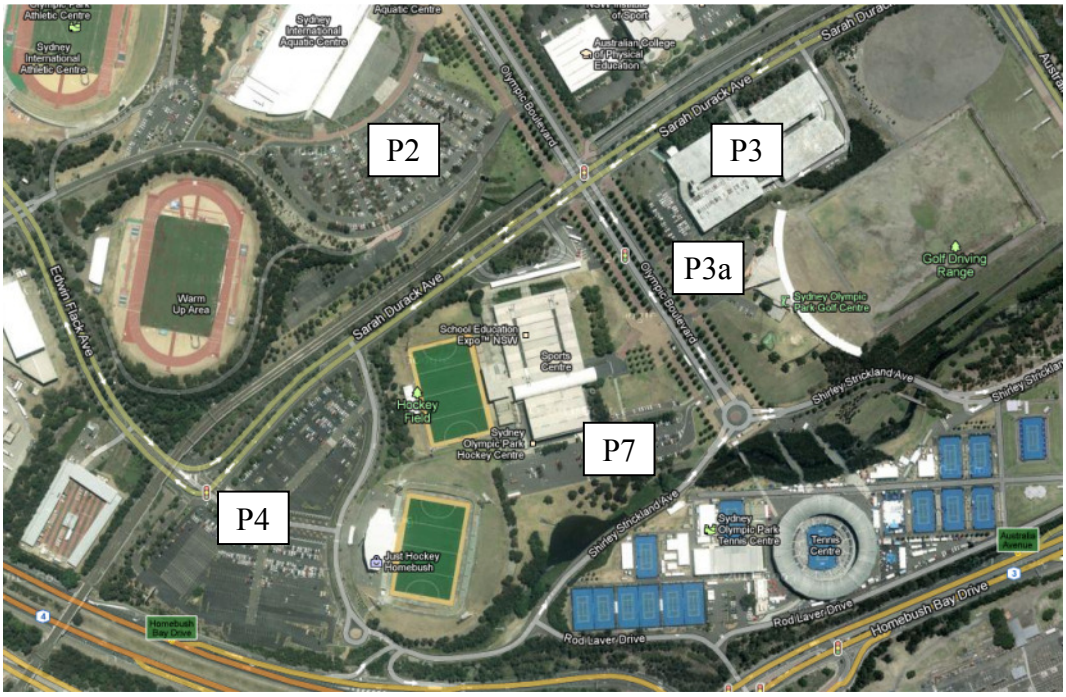

Figure 5: Parking areas around the Sports Centre

Table 1: Off-street car parking areas

Car park name and description	Number of spaces	Number of accessible spaces
P2 – Large at grade car park for the Aquatic Centre	495	9
P3 – Large multi-storey car park off Sarah Durack Avenue	1438	46
P3a – Small at grade car park adjacent to the Golf Centre	55	4
P4 – Large at grade car park for the hockey centre	980	32
P7 – Small at grade car park for the Sports Centre	263	4
Total	**3231**	**95**

2.5.3 Current parking demand

Currently the Sports Centre manages the parking area P7 for its internal use. The car park is used for staff and regular patrons who have organised parking permits with the Sports Centre.

Data was collected on Thursday the 3 May and Sunday the 6 May 2012 at the P7 car park during the AM and PM peaks on Thursday and during the NSW Swifts netball match, 11am-5pm. The results of the parking occupancy survey are shown in Table 2 below.

Table 2: Parking occupancy survey results

[Thursday]

Parking Type	Spaces Available	Occupancy					
		7:00	8:00	9:00	16:00	17:00	18:00
Normal	263	13	20	19	43	38	22
	% capacity	4.9%	7.6%	7.2%	16.3%	14.4%	8.4%
Disabled	4	0	0	0	0	0	0
	% capacity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

[Sunday]

Parking Type	Spaces Available	Occupancy						
		11:00	12:00	13:00	14:00	15:00	16:00	17:00
Normal	263	229	253	248	202	112	116	68
	% capacity	87.1%	96.2%	94.3%	76.8%	42.6%	44.1%	25.9%
Disabled	4	1	2	3	2	2	2	0
	% capacity	25.0%	50.0%	75.0%	50.0%	50.0%	50.0%	0.0%

2.6 Modal Split

The breakdown of travel to Olympic Park as a workplace is shown in Table 3 below. The data was obtained from Journey to Work data from the 2006 census. The table shows the high car dependency of workers in Sydney Olympic Park, despite the proximity of the train station.

Table 3: Mode split for Sydney Olympic Park

Description of Mode	Total by mode	% of Total
Car as driver	2358	77%
Train	410	13%
Car as passenger	189	6%
Bus	45	2%
Motorbike	17	1%
Walked only	28	1%
Bicycle	12	0%
Taxi	3	0%
Ferry/Tram/Truck	0	0%
TOTAL	**3062**	**100%**

2.7 Public Transport

2.7.1 Heavy Rail

The nearest railway station to the proposed development is Olympic Park, which operates on a branch line from Lidcombe station, with services every 10 minutes in the peak hours. During major events, direct services to Central Station and the western lines are made available. The train station is approximately a 12 minute walk from the Sports Centre.

2.7.2 Bus

Sydney Olympic Park is serviced by four bus routes that stop at the Olympic Park station.

- 401 Lidcombe to Olympic Park Station
- 525 Burwood to Parramatta via Rydalmere
- 526 Burwood to Olympic Park Ferry
- 533 Chatswood to Olympic Park Station

Route 401 operates between Lidcombe Railway station and Olympic Park station at 20 minute intervals in the peak and 40 minute intervals in the off peak. Services run between 6:00am and 7:00pm Monday to Friday and 8:30am to 5:50pm on Saturday.

Route 525/526 operates in both the peak and off peak with 10 minute intervals in the peak and 20 minute intervals in the off peak. Services operate between 5:30am and 10:00pm Monday to Friday and between 6:20am and 10:00pm Saturday and between 7:30am and 8:00pm on Sundays and Public Holidays.

Route 533 is a peak hour only service connecting Chatswood, Lane Cove and Ryde to Sydney Olympic Park. Services operate between 6:40am and 9:00am and between 4:40pm and 6:30pm to Olympic Park, Monday to Friday. Services operate at 15 minute intervals during these peak times.

The set down area for bus services is the eastern side of the Olympic Park Station in Park Street. This location is approximately a 15 minute walk to the Sports Centre.

Figure 6: Bus services in Sydney Olympic Park

2.8 Pedestrians

During the week, the site does not generate much pedestrian traffic, with very few pedestrians surveyed walking to the site during the weekday peaks. During the event survey, there were significantly more pedestrians generated by the site in an arrival peak and an egress peak. The recorded volumes are shown in Figure 7 below. It is likely that a significant proportion of the pedestrian traffic in the event arrival peak were visitors parking in P3.

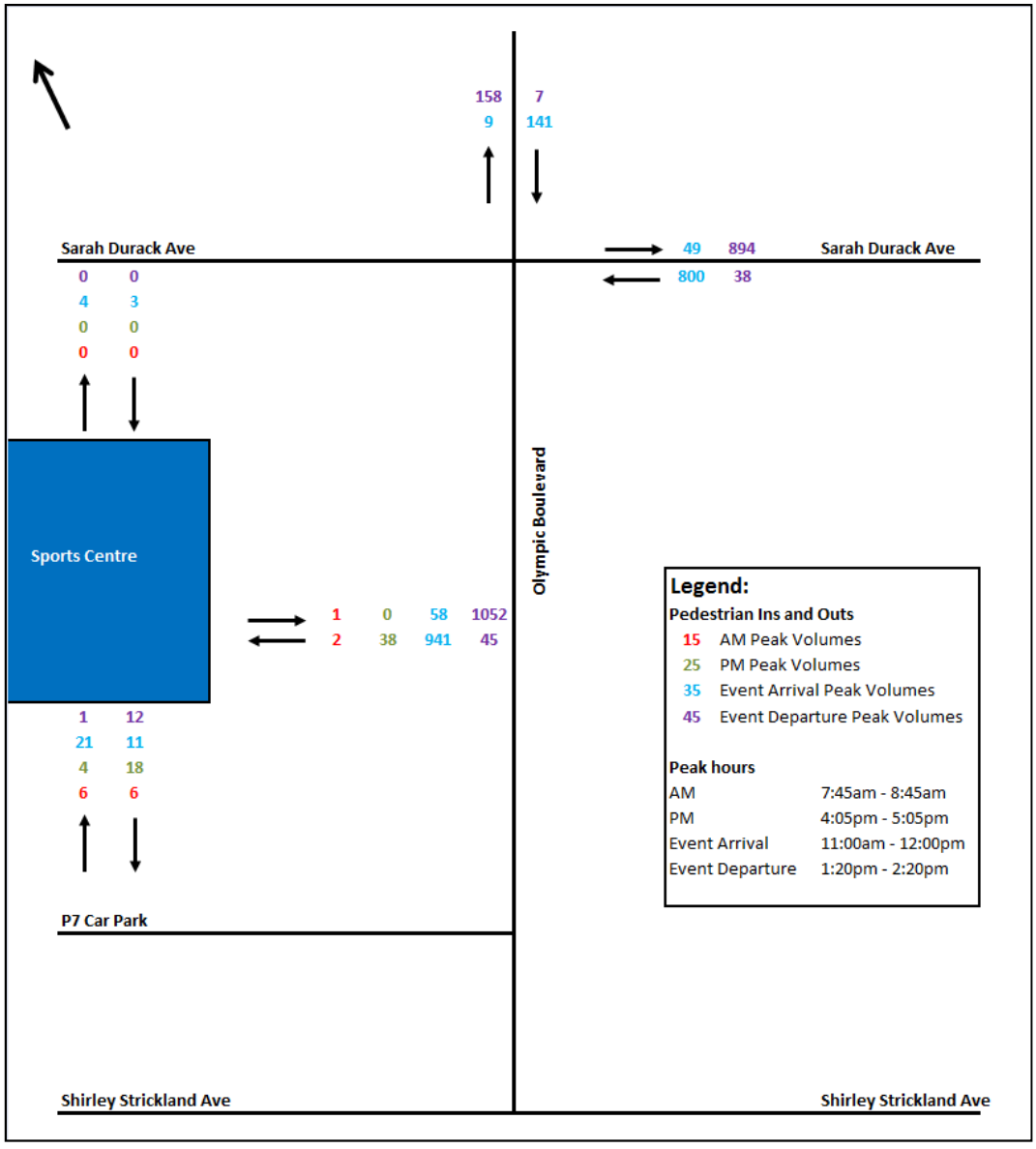

Figure 7: Pedestrian survey peak hour results

3 Proposed Development

3.1 Description of proposed development

The proposed Netball Central development consists of 6 netball courts, of which one is a show court seating 800 people. It is expected that when all courts are in use that there is likely to be about 2000 people on site.

The development also consists of 650m² of office space for Netball NSW.

The development has been designed to maintain the current independent operations of the adjacent Sports Centre with a shared northern forecourt and pedestrian ramp included in the development.

3.1.1 Staging and timing of development

The development is proposed to begin with excavation and compaction of the earth that was once landfill to ensure that an adequate building foundation is possible. During all phases of the project, access to the Sports Centre will be maintained. The development is expected to commence construction in late November 2012 with completion of the building by January 2013.

3.2 Access

The proposed development footprint removes the current access for the car park P7. Therefore one of the early works would be to construct a new access south of the current access to allow entry from the roundabout of Olympic Boulevard and Shirley Strickland Avenue. This layout is shown below in Figure 8.

The access has been designed to AS2890.1 (2004) with appropriate grades and widths to allow a 19m Articulated Vehicle to enter and exit the site. The access has a refuge island similar in specification to the islands of the other arms of the roundabout, with a 6m wide footpath provided. A 2m wide pedestrian footpath has been provided adjacent to the ramp. This has been designed to AS1428.1 (2009) with appropriate grades and landings provided.

The control point is proposed to be further within the site than the previous point was to ensure that a 19m articulated vehicle can be stored with the driveway and not impact on the operations of the roundabout.

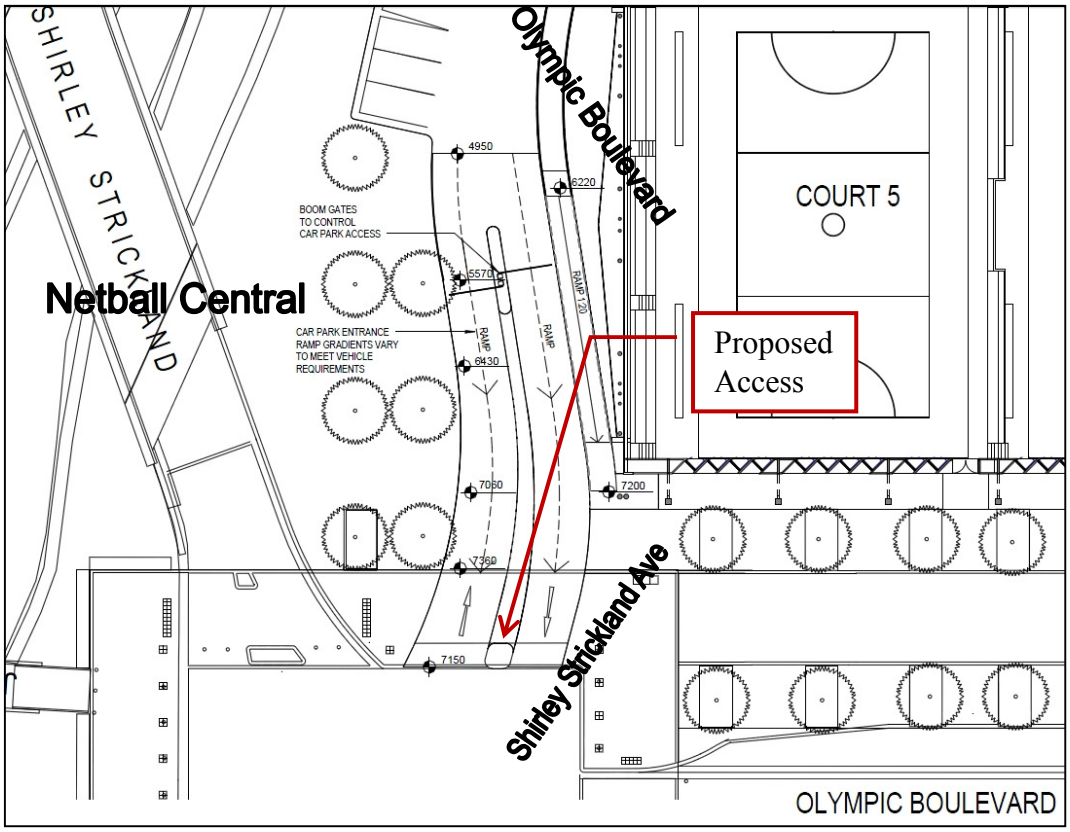

Figure 8: Proposed car park access off the roundabout of Olympic Boulevard and Shirley Strickland

3.2.1 Driveway location review

A review was undertaken on the ideal location for the car park entry. One option considered bringing the access around the building and utilising the existing car park exit. However this would have impacted on the pedestrian footpath, with vehicles driving along the footpath constituting a hazard to pedestrians. This option was therefore not considered feasible.

3.2.2 Service vehicle access

The proposed access off the roundabout has been designed to allow a 19m Articulated vehicle to enter the site. As noted previously, this size of vehicle is the largest expected to enter the car park.

The proposed development is proposed to be serviced by vans and rigid trucks only, with the largest trucks expected to be a 12.5m Heavy Rigid Vehicle.

3.3 Loading dock layout

The proposed loading dock of netball central is located adjacent to the eastern loading dock of the Sports Centre. It has been designed for two 12.5m HRVs, which is considered the worst case, when a large delivery is taking place when garbage collection is occurring. The area is to be hatched out with line marking signifying that this area is to be kept clear unless loading operations are underway. The area is separated from the Sports Centre loading dock and the car park by a 900mm wide nature strip with kerbs. The proposed layout is shown in Figure 9.

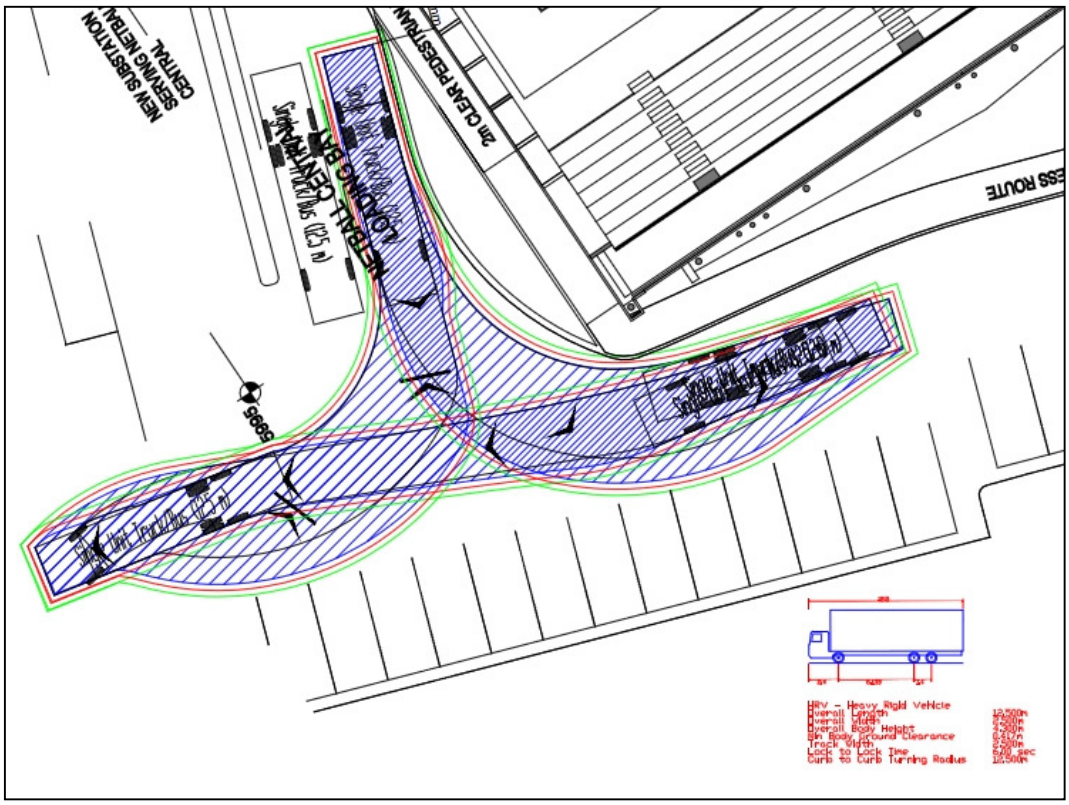

Figure 9: Loading dock layout

3.4 Car Parking

The development is proposed to impact on the number of parking spaces in P7, reducing the number from 263 to approximately 160. No new car parking spaces are proposed with this development. Car parking spaces for Netball Central office workers would be negotiated on an as need basis with SOPA.

3.5 Bicycle Provision

The SOPA Master Plan 2030 requires bicycle parking to be provided at a rate of 1 space per 150m² of office space floor area. There is also a requirement for the provision of visitor bicycle parking spaces at the rate of 1 space per 75m² of office space floor area. This means that eight employee spaces and 12 visitor spaces are required for the Netball central offices.

As part of the development eight bicycle parking spaces have been provided for staff adjacent to the loading dock and 12 spaces have been provided for visitors in the forecourt, which satisfies this requirement.

It is proposed that change facilities for staff be shared with the numerous change facilities currently provided for players and officials. These facilities are all provided within the office hub.

3.6 Sustainable Transport Initiatives

The development will encourage future users of Netball Central to make travel choices that support the state plan targets of increased public transport mode share and doubling the active transport mode share. The site is located within close proximity to heavy rail stations and bus stops with connections to western Sydney, making these targets achievable. The development will include five bicycle parking spaces for workers with shower facilities to be provided by the players change rooms. Additional bicycle parking will be provided for visitors in the north forecourt.

4 Impact of Proposed Development

4.1 Traffic Generation

4.1.1 Current traffic generation of site

The P7 car park currently accommodates 263 on-grade parking spaces. During week, the demand for parking is significantly reduced. Assuming 50% of the car park access occurs during the peak traffic period during an event, the car park would currently generate 131 vehicular trips (mostly inbound at the beginning of an event and outbound after the event) on the road network.

4.1.2 Forecast – Weekday

The proposed facility will reduce the number of car spaces to about 160 car parking spaces. Assuming 50% of the car arriving/ departing the site in the peak event period, the peak traffic generation will be 80 vehicles/ hour. Therefore, the peak hour net reduction of traffic to/ from the proposed site will be 51 vehicles/ hour.

The Netball Central loading dock is expected to generate several daily deliveries and other less frequent deliveries based on information of the current delivery schedule for the current Netball NSW offices in Lidcombe.

- Van deliveries – 3-5 per day
- Small rigid truck deliveries – 1-2 per day
- HRV deliveries – 1 per fortnight
- Waste collection – 1 per day

4.1.3 Forecast – Events

During events it is more appropriate to forecast traffic generation through the amount of people likely to attend the site. The Sports Centre has an event capacity of about 8,000 people. The proposed Netball Central development has been designed for events up to 2,000 people on site, when utilising all six courts for netball games. This gives a total maximum attendance to the existing Sports Centre and the proposed Netball Central facilities of 10,000 people.

Based upon mode split data, the car mode share is approximately 77%. Based upon the event day survey, approximately 50% of those cars utilise the network during the peak hour. Assuming car occupancy of 2.4, this gives a traffic generation of about 1,600 vehicles in the event peak.

4.1.4 Pedestrian generation and movements

The event arrival and departure peaks are likely to generate the highest numbers of pedestrian at the site. Therefore based on the event peak survey of the NSW Swifts netball match at the Sports Centre, which attracted a crowd of 3,000, 1,000 pedestrians departed the Sports Centre in the peak period.

Utilising the same methodology as the vehicle traffic generation, the pedestrian volumes expected into the site during the peak hour of the peak 10,000 people event is likely to be approximately 3,200 pedestrians. The world-class pedestrian facilities as a result of the Olympics allows for pedestrian flows on the footpaths of about 6,000 per hour. The pedestrian distribution is shown in Figure 10.

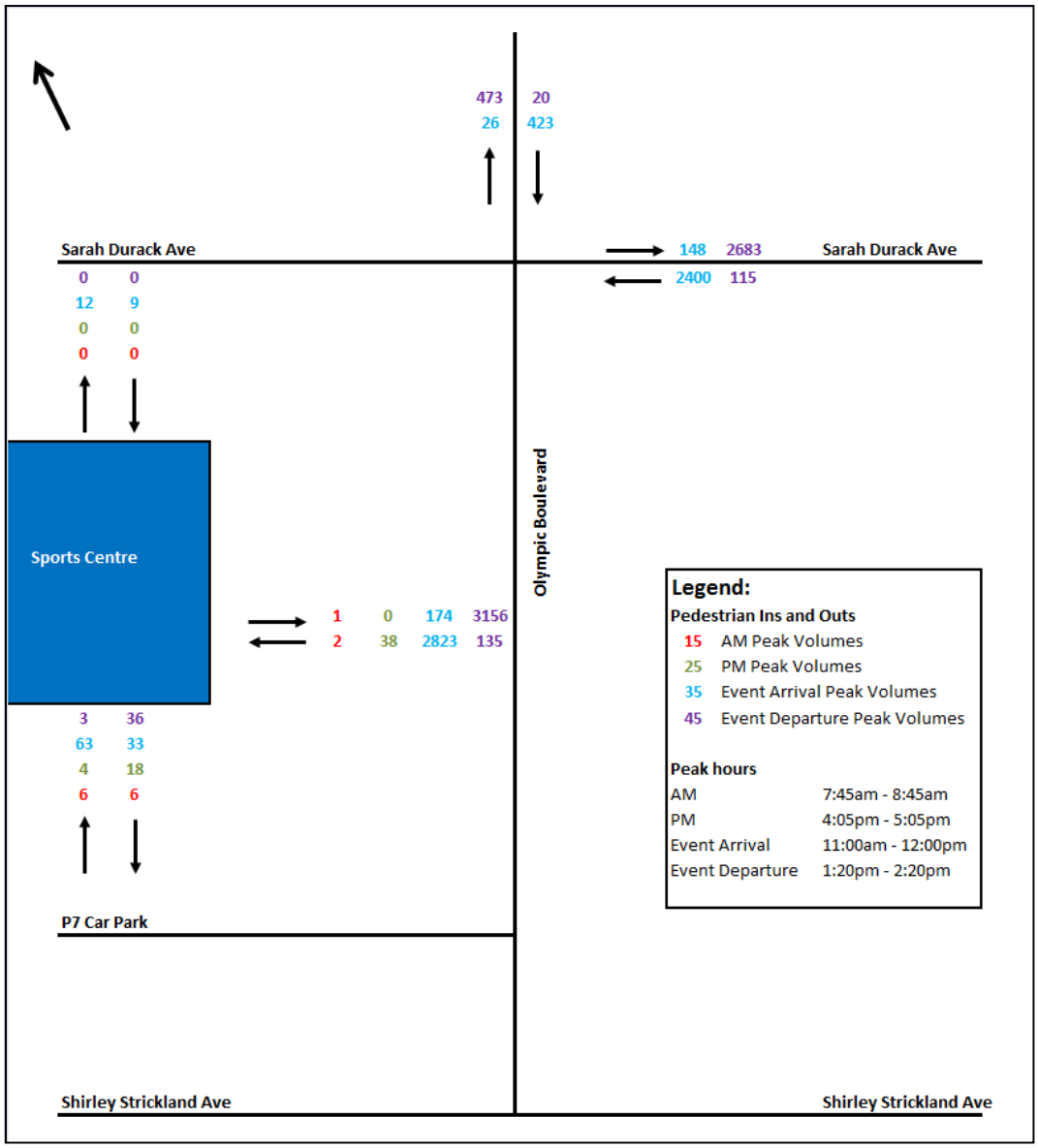

Figure 10: Future pedestrian generation

4.2 Traffic Distribution and Assignments

The proposed development shifts the entrance to the P7 car park to the roundabout, which impacts on the traffic distribution of the site. Figure 11 shows the redistributed flows utilising the roundabout car park access and accounts for the additional traffic redistribution during events.

From discussions with the SOPA Events and Precinct Coordination manager, during events when both the Sports Centre and Netball Central are at capacity, the traffic will be distributed around the site by SOPA major event coordinators. Visitors will be directed to use P3 in the first instance, then utilise P4, near the Hockey Centre and then utilising P2 at the Aquatic Centre. This distribution is shown in Figure 12.

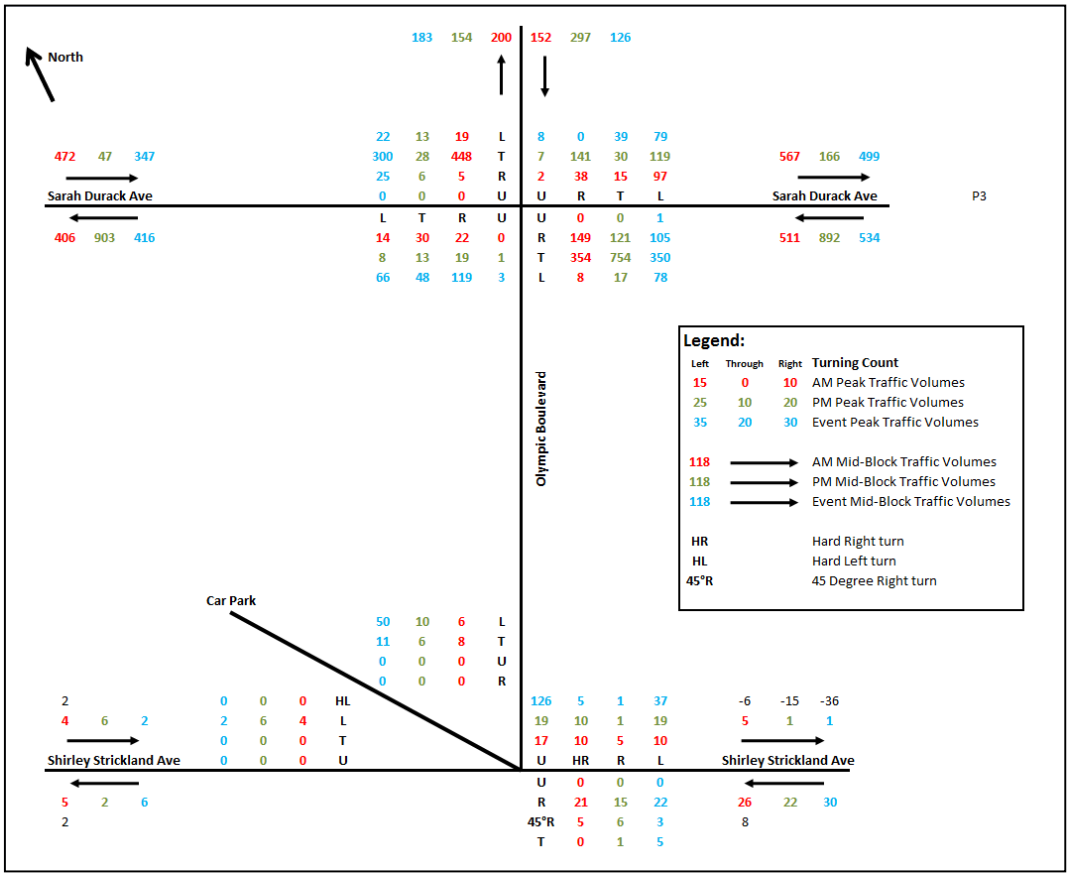

Figure 11: Future traffic volumes

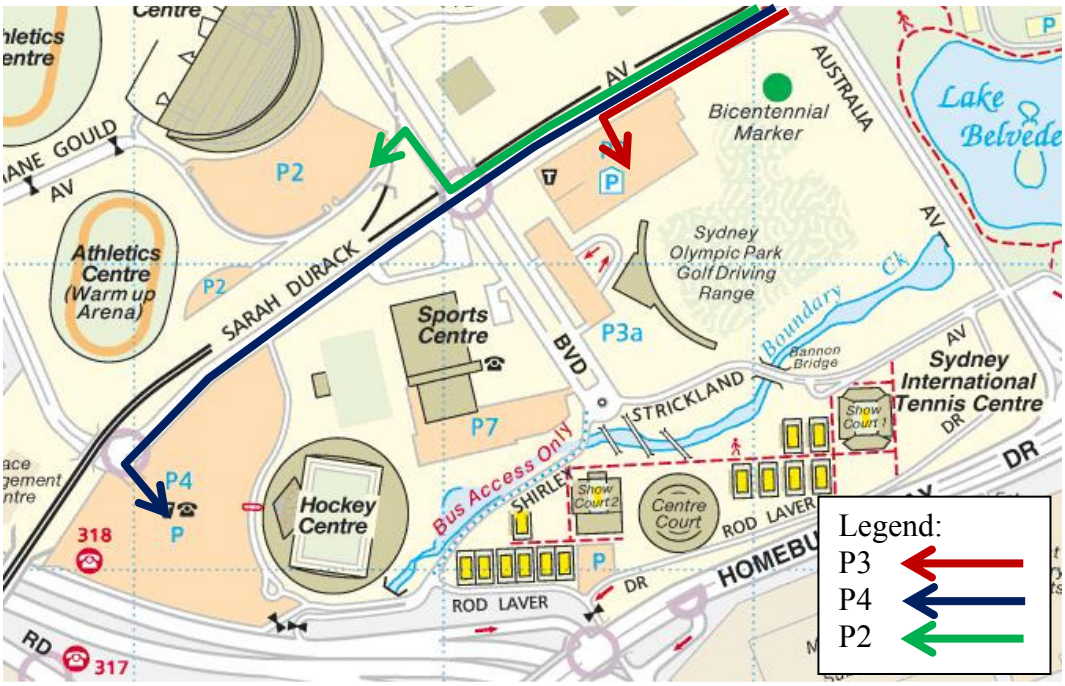

Figure 12: Routes to overflow parking areas

4.3 Traffic Safety

The new access location changes the access location from a right turn just before the roundabout, which could lead to crashes as vehicles exiting the roundabout conflict with the right turn into the car park. In the proposed arrangement, vehicles entering the car park would have right of way over the other vehicles entering the roundabout, therefore decreasing the likelihood of a crash while entering the car park. Therefore this proposed arrangement is likely to have a positive impact on traffic safety when entering and exiting P7.

4.4 Impact of Generated Traffic

In urban areas, the traffic capacity of the major road network is generally a function of the performance of traffic intersections. This performance is quantified in terms of the Level of Service (LOS), which is an index of the operational performance of traffic at an intersection and is based on the average delay per vehicle. LOS ranges from A = very good to F = highly congested travel conditions, as shown in Table 4.

Table 4: Level of Service Definitions

Description	Level of Service (RTA Definition)	Average Delay per Vehicle (s)
Very Good	A	< 14.5
Good	B	14.5 ≤ 28.5
Satisfactory	C	28.5 ≤ 42.5
Near Capacity	D	42.5 ≤ 56.5
At Capacity	E	56.5 ≤ 70.5
Over Capacity	F	≥ 70.5

Generally it is desirable to aim at achieving a Level of Service of C or better at all major road intersections. However, in practice, it is reasonable for some intersections to operate at Level of Service D at peak times.

Another common measure of intersection performance is the degree of saturation (DOS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DOS of 1.0 indicates that an intersection is operating at capacity. The desirable maximum degree of saturation for an intersection with traffic signals is 0.9.

Sidra intersection modelling program (version 5) has been used to assess the three major intersections discussed in the previous section. The existing intersection performance is assessed in this report in terms of the following four factors for each intersection:

- Level of Service
- Degree of Saturation
- Average Delay (AVD) in seconds per vehicle
- Length and direction of peak traffic queue (95th percentile traffic queue)

Table 5: Existing and Future Intersection performance

Intersection	Peak	Scenario	LOS	DOS	AVD (sec)	Max Queue (m)
Olympic Boulevard/ Sarah Durack Avenue	AM	Existing	B	0.53	16.0	59.4
		Future	B	0.54	15.8	57.2
	PM	Existing	B	0.64	17.4	92.6
		Future	B	0.65	17.3	94.8
	Event	Existing	B	0.45	18.8	51.8
		Future	B	0.43	17.7	50.4
Olympic Boulevard/ Shirley Strickland Avenue	AM	Existing	A	0.03	6.4	0.7
		Future	A	0.04	5.4	0.8
	PM	Existing	A	0.03	6.1	0.6
		Future	A	0.04	4.9	0.7
	Event	Existing	A	0.11	7.0	2.4
		Future	A	0.13	5.6	2.8

The results in Table 5 from SIDRA show the impact of the Netball Central development on the intersections in the vicinity of the site. In all cases the changes are negligible with small changes in degree of saturation and average vehicle delays.

As there are less vehicles turning south on Olympic Boulevard from Sarah Durack Avenue, the improved balance of traffic allows the intersection of Olympic Boulevard/ Sarah Durack Avenue to operate at a slightly reduced degree of saturation in the future event peak.

The addition of an arm to the roundabout does not have a substantial impact of the Olympic Boulevard/ Shirley Strickland Avenue intersection improving the average vehicle delay, increasing degree of saturation and queue lengths negligibly.

4.5 Public Transport

Olympic Park railway station is located approximately 800m from Netball Central, and is used by the vast majority of spectators during major sporting events. It has the capacity to accommodate in the order of 50,000 passengers per hour. Event bus services to the northern and eastern suburbs departing from the kerbside parking areas on Olympic Boulevard are not affected by this development. There is therefore not likely to be any impact on public transport.

5 Construction Traffic Management

5.1 Stages of Construction

Staging and sequencing of the works will be based around the operations of the adjoining SOP Sports Centre, contamination removal and geotechnical remediation of the uncontrolled fill. The key elements will include:

- Bulk excavation and geotechnical remediation including hazardous materials removal
- Utility services redirections and connections
- Alterations to Car Park P7 access
- The subsequent construction of:
    - Five (5) indoor netball courts of international standard, plus one (1) show court with seating for some eight hundred (800) spectators
    - Amenities for players, officials and the public
    - Cafe facility
    - Medical facilities – first aid, physiotherapy, massage etc
    - Ancillary storage facilities and equipment areas
    - Office/administration areas

5.2 Construction Overview

It is proposed to establish the Contractor's main site office and facilities within the existing P7 car park.

The new site access will be completed prior to the commencement of works onsite. Demolition will commence with the site cleared of structure and vegetation. Following demolition, excavation will commence. The full construction methodology will generally be established by the selected Contractor.

The preparation of a detailed Construction Traffic Management Plan (CTMP), which details the management of construction vehicles for all stages of construction in the vicinity of the site, would be prepared prior to the commencement of construction.

This plan would include measures to ameliorate the impact of the construction traffic on the network and detail measures to limit the impact of construction traffic on the operations of the Sports Centre.

6 Conclusions

This report describes the existing situation, development proposal, forecast traffic generation, transport impact assessment and compliance with government policy for the proposed Netball Central development located at Lot 107 Olympic Boulevard, Sydney Olympic Park Sydney. The conclusions of this study can be summarised as follows:

- Traffic generated by the proposed development can be accommodated on the existing road network with negligible impact
- A new car park access has been designed into the roundabout of Olympic Boulevard and Shirley Strickland Avenue which is likely to improve the level of safety for vehicles entering and exiting P7
- The development reduces the amount of car parking in P7, however sufficient parking is available in the vicinity of the site and will be managed by SOPA event coordinators
- The site is well-served by Olympic-level pedestrian facilities allowing for connections to the greater Sydney rail network via Olympic Park Station
- The development will provide adequate secure bike parking, shower facilities and locker facilities for staff
- All traffic and transport issues raised by Department of Planning DGRs and RMS have been considered in this report.

Appendix A

SIDRA Analysis Results

MOVEMENT SUMMARY

Site: Existing AM

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	15	0.0	0.079	22.2	LOS B	0.9	6.9	0.75	0.73	25.0
2	T	32	10.0	0.079	16.8	LOS B	0.9	6.9	0.75	0.56	23.3
3	R	20	10.5	0.079	25.7	LOS B	0.5	4.2	0.81	0.70	23.4
Approach		66	7.9	0.079	20.7	LOS B	0.9	6.9	0.77	0.64	23.7
East: Sarah Durack Ave E											
4	L	23	9.1	0.465	19.9	LOS B	8.2	59.4	0.74	0.93	39.6
5	T	373	3.4	0.465	12.5	LOS A	8.2	59.4	0.74	0.64	42.2
6	R	157	17.4	0.534	25.0	LOS B	3.9	32.7	0.85	0.80	34.1
Approach		553	7.6	0.534	16.4	LOS B	8.2	59.4	0.77	0.70	39.6
North: Olympic Blvd N											
7	L	102	5.2	0.226	25.7	LOS B	2.4	18.1	0.83	0.75	28.0
8	T	45	2.3	0.189	18.1	LOS B	1.9	14.0	0.79	0.62	28.3
9	R	40	2.6	0.189	23.5	LOS B	1.9	14.0	0.79	0.74	29.1
Approach		187	3.9	0.226	23.4	LOS B	2.4	18.1	0.82	0.72	28.3
West: Sarah Durack Ave W											
10	L	20	5.3	0.304	18.7	LOS B	4.8	35.3	0.68	0.92	40.3
11	T	455	4.6	0.304	11.8	LOS A	4.8	35.3	0.68	0.57	43.0
12	R	15	14.3	0.304	19.1	LOS B	4.5	33.6	0.69	0.87	39.8
Approach		489	4.9	0.304	12.3	LOS A	4.8	35.3	0.68	0.60	42.8
All Vehicles		1296	6.1	0.534	16.0	LOS B	8.2	59.4	0.74	0.66	37.7

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P7	Across W approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		212	21.4	LOS C			0.84	0.84

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: Existing PM

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	19	5.6	0.092	22.4	LOS B	1.1	7.9	0.75	0.73	25.0
2	T	31	6.9	0.092	16.5	LOS B	1.1	7.9	0.75	0.57	23.4
3	R	44	0.0	0.157	27.8	LOS B	1.1	7.9	0.86	0.72	22.5
Approach		94	3.4	0.157	23.0	LOS B	1.1	7.9	0.80	0.68	23.2
East: Sarah Durack Ave E											
4	L	15	0.0	0.641	21.1	LOS B	12.8	92.6	0.83	0.92	38.8
5	T	777	3.4	0.641	14.7	LOS B	12.8	92.6	0.84	0.74	40.1
6	R	127	13.2	0.641	23.3	LOS B	8.9	67.2	0.86	0.87	36.7
Approach		919	4.7	0.641	16.0	LOS B	12.8	92.6	0.84	0.76	39.6
North: Olympic Blvd N											
7	L	125	2.5	0.327	25.4	LOS B	3.8	27.4	0.85	0.78	28.2
8	T	32	3.3	0.327	19.6	LOS B	3.8	27.4	0.85	0.69	27.3
9	R	148	0.0	0.412	26.6	LOS B	3.8	26.7	0.88	0.78	27.8
Approach		305	1.4	0.412	25.4	LOS B	3.8	27.4	0.86	0.77	27.9
West: Sarah Durack Ave W											
10	L	14	0.0	0.191	18.6	LOS B	3.0	21.1	0.65	0.91	40.3
11	T	295	0.7	0.191	11.7	LOS A	3.0	21.1	0.66	0.54	43.1
12	R	6	0.0	0.191	18.8	LOS B	2.8	19.9	0.67	0.86	39.8
Approach		315	0.7	0.191	12.1	LOS A	3.0	21.1	0.66	0.56	42.9
All Vehicles		1633	3.2	0.641	17.4	LOS B	12.8	92.6	0.81	0.72	36.4

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P7	Across W approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		212	21.4	LOS C			0.84	0.84

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: Existing Event Day

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	84	1.3	0.250	22.5	LOS B	3.2	22.7	0.78	0.77	24.8
2	T	61	0.0	0.250	16.7	LOS B	3.2	22.7	0.78	0.63	23.1
3	R	153	0.7	0.444	26.2	LOS B	3.9	27.6	0.88	0.79	23.1
Approach		298	0.7	0.444	23.2	LOS B	3.9	27.6	0.83	0.75	23.6
East: Sarah Durack Ave E											
4	L	82	0.0	0.452	22.3	LOS B	7.4	51.8	0.79	0.89	37.7
5	T	368	0.0	0.452	15.7	LOS B	7.4	51.8	0.80	0.68	38.9
6	R	111	0.0	0.452	23.5	LOS B	5.3	37.4	0.82	0.83	36.0
Approach		561	0.0	0.452	18.2	LOS B	7.4	51.8	0.80	0.74	38.2
North: Olympic Blvd N											
7	L	83	0.0	0.156	23.5	LOS B	1.9	13.0	0.78	0.74	28.8
8	T	41	2.6	0.059	12.6	LOS A	0.8	5.6	0.66	0.50	31.1
9	R	1	0.0	0.059	18.0	LOS B	0.8	5.6	0.66	0.71	31.5
Approach		125	0.8	0.156	19.9	LOS B	1.9	13.0	0.74	0.66	29.5
West: Sarah Durack Ave W											
10	L	23	0.0	0.210	20.0	LOS B	3.1	22.1	0.69	0.90	39.2
11	T	228	0.9	0.210	13.7	LOS A	3.1	22.1	0.71	0.58	41.0
12	R	26	0.0	0.210	21.8	LOS B	2.4	17.3	0.74	0.84	37.7
Approach		278	0.8	0.210	15.0	LOS B	3.1	22.1	0.71	0.63	40.6
All Vehicles		1262	0.4	0.452	18.8	LOS B	7.4	51.8	0.78	0.71	34.3

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	981	20.0	LOS C	1.4	1.4	0.82	0.82
P3	Across E approach	53	22.5	LOS C	0.1	0.1	0.87	0.87
P5	Across N approach	53	20.0	LOS C	0.1	0.1	0.82	0.82
P7	Across W approach	174	22.5	LOS C	0.3	0.3	0.87	0.87
All Pedestrians		1261	20.5	LOS C			0.83	0.83

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: Existing AM

Olympic Blvd and Shirley Strickland Ave
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Shirley Strickland Ave E											
5	T	1	0.0	0.021	2.6	LOS A	0.1	0.7	0.11	0.26	37.5
6	R	24	4.3	0.021	6.8	LOS A	0.1	0.7	0.11	0.59	35.2
Approach		25	4.2	0.021	6.6	LOS A	0.1	0.7	0.11	0.58	35.3
North: Olympic Blvd											
7	L	11	10.0	0.025	4.0	LOS A	0.1	0.5	0.01	0.45	37.1
9	R	25	4.2	0.025	7.8	LOS A	0.1	0.5	0.01	0.67	34.9
Approach		36	5.9	0.025	6.7	LOS A	0.1	0.5	0.01	0.61	35.5
West: Shirley Strickland Ave W											
10	L	4	25.0	0.005	4.1	LOS A	0.0	0.2	0.17	0.41	36.9
11	T	1	0.0	0.005	2.8	LOS A	0.0	0.2	0.17	0.28	37.4
Approach		5	20.0	0.005	3.9	LOS A	0.0	0.2	0.17	0.39	37.0
All Vehicles		66	6.3	0.025	6.4	LOS A	0.1	0.7	0.06	0.58	35.5

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing PM

Olympic Blvd and Shirley Strickland Ave
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Shirley Strickland Ave E											
5	T	1	0.0	0.019	2.6	LOS A	0.1	0.6	0.10	0.26	37.6
6	R	22	4.8	0.019	6.8	LOS A	0.1	0.6	0.10	0.59	35.2
Approach		23	4.5	0.019	6.6	LOS A	0.1	0.6	0.10	0.58	35.3
North: Olympic Blvd											
7	L	17	0.0	0.027	3.9	LOS A	0.1	0.5	0.01	0.46	37.1
9	R	23	4.5	0.027	8.0	LOS A	0.1	0.5	0.01	0.69	34.8
Approach		40	2.6	0.027	6.2	LOS A	0.1	0.5	0.01	0.59	35.7
West: Shirley Strickland Ave W											
10	L	6	0.0	0.006	3.7	LOS A	0.0	0.2	0.15	0.41	36.9
11	T	1	0.0	0.006	2.7	LOS A	0.0	0.2	0.15	0.28	37.4
Approach		7	0.0	0.006	3.6	LOS A	0.0	0.2	0.15	0.39	37.0
All Vehicles		71	3.0	0.027	6.1	LOS A	0.1	0.6	0.06	0.57	35.7

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Existing Event Day

Olympic Blvd and Shirley Strickland Ave
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Shirley Strickland Ave E											
5	T	5	0.0	0.029	3.2	LOS A	0.1	0.9	0.28	0.32	36.7
6	R	26	4.0	0.029	7.4	LOS A	0.1	0.9	0.28	0.61	34.9
Approach		32	3.3	0.029	6.7	LOS A	0.1	0.9	0.28	0.56	35.2
North: Olympic Blvd											
7	L	39	0.0	0.110	3.9	LOS A	0.3	2.4	0.01	0.45	37.1
9	R	135	0.8	0.110	8.0	LOS A	0.3	2.4	0.01	0.68	34.7
Approach		174	0.6	0.110	7.1	LOS A	0.3	2.4	0.01	0.63	35.2
West: Shirley Strickland Ave W											
10	L	2	0.0	0.003	4.3	LOS A	0.0	0.1	0.31	0.43	36.5
11	T	1	0.0	0.003	3.3	LOS A	0.0	0.1	0.31	0.33	36.8
Approach		3	0.0	0.003	4.0	LOS A	0.0	0.1	0.31	0.40	36.6
All Vehicles		208	1.0	0.110	7.0	LOS A	0.3	2.4	0.06	0.61	35.2

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Future AM

Olympic Blvd and Shirley Strickland Ave
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Shirley Strickland Ave E											
5	T	1	0.0	0.024	2.7	LOS A	0.1	0.8	0.14	0.26	37.4
6	R	27	3.8	0.024	6.6	LOS A	0.1	0.8	0.14	0.58	34.9
Approach		28	3.7	0.024	6.4	LOS A	0.1	0.8	0.14	0.57	35.0
North: Olympic Blvd											
7	L	11	10.0	0.038	4.1	LOS A	0.1	0.8	0.05	0.43	36.9
9	R	34	9.4	0.038	7.4	LOS A	0.1	0.8	0.05	0.66	34.4
Approach		44	9.5	0.038	6.6	LOS A	0.1	0.8	0.05	0.61	34.9
North West: P7 Car Park Access											
27	L	15	28.6	0.018	0.8	LOS A	0.1	0.6	0.16	0.14	15.5
29	R	1	0.0	0.018	4.0	LOS A	0.1	0.6	0.16	0.68	18.9
Approach		16	26.7	0.018	1.0	LOS A	0.1	0.6	0.16	0.17	15.6
West: Shirley Strickland Ave W											
10	L	5	20.0	0.006	4.1	LOS A	0.0	0.2	0.20	0.42	36.5
11	T	1	0.0	0.006	2.9	LOS A	0.0	0.2	0.20	0.28	37.2
Approach		6	16.7	0.006	3.9	LOS A	0.0	0.2	0.20	0.40	36.6
All Vehicles		95	11.1	0.038	5.4	LOS A	0.1	0.8	0.10	0.51	29.3

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Future PM

Olympic Blvd and Shirley Strickland Ave
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Shirley Strickland Ave E											
5	T	1	0.0	0.019	2.6	LOS A	0.1	0.6	0.13	0.25	37.4
6	R	22	4.8	0.019	6.3	LOS A	0.1	0.6	0.13	0.58	34.8
Approach		23	4.5	0.019	6.2	LOS A	0.1	0.6	0.13	0.57	34.9
North: Olympic Blvd											
7	L	20	0.0	0.041	3.9	LOS A	0.1	0.7	0.04	0.44	37.0
9	R	32	0.0	0.041	7.3	LOS A	0.1	0.7	0.04	0.69	34.2
Approach		52	0.0	0.041	6.0	LOS A	0.1	0.7	0.04	0.60	35.2
North West: P7 Car Park Access											
27	L	18	5.9	0.017	0.7	LOS A	0.1	0.5	0.14	0.14	15.6
29	R	1	0.0	0.017	3.9	LOS A	0.1	0.5	0.14	0.64	18.8
Approach		19	5.6	0.017	0.9	LOS A	0.1	0.5	0.14	0.17	15.6
West: Shirley Strickland Ave W											
10	L	7	0.0	0.007	3.7	LOS A	0.0	0.2	0.17	0.42	36.7
11	T	1	0.0	0.007	2.8	LOS A	0.0	0.2	0.17	0.28	37.3
Approach		8	0.0	0.007	3.6	LOS A	0.0	0.2	0.17	0.40	36.7
All Vehicles		102	2.1	0.041	4.9	LOS A	0.1	0.7	0.09	0.49	28.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Future AM

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	15	0.0	0.084	22.2	LOS B	1.0	7.4	0.75	0.73	25.0
2	T	32	10.0	0.084	16.5	LOS B	1.0	7.4	0.75	0.56	23.5
3	R	23	18.2	0.089	26.9	LOS B	0.6	4.8	0.83	0.70	22.9
Approach		69	10.6	0.089	21.1	LOS B	1.0	7.4	0.77	0.64	23.6
East: Sarah Durack Ave E											
4	L	11	40.0	0.445	20.4	LOS B	7.8	57.2	0.73	0.94	39.7
5	T	373	3.4	0.445	12.4	LOS A	7.8	57.2	0.73	0.63	42.4
6	R	157	17.4	0.542	25.1	LOS B	3.9	32.8	0.85	0.80	34.1
Approach		540	8.2	0.542	16.2	LOS B	7.8	57.2	0.77	0.69	39.7
North: Olympic Blvd N											
7	L	102	5.2	0.226	25.7	LOS B	2.4	18.1	0.83	0.75	28.0
8	T	16	6.7	0.141	18.6	LOS B	1.3	9.4	0.80	0.61	27.9
9	R	40	2.6	0.141	24.1	LOS B	1.3	9.4	0.80	0.73	28.8
Approach		158	4.7	0.226	24.6	LOS B	2.4	18.1	0.82	0.73	28.2
West: Sarah Durack Ave W											
10	L	20	5.3	0.298	18.7	LOS B	4.7	34.5	0.67	0.92	40.3
11	T	472	4.5	0.298	11.4	LOS A	4.7	34.5	0.67	0.57	43.4
12	R	5	40.0	0.298	18.8	LOS B	4.6	34.3	0.67	0.88	40.3
Approach		497	4.9	0.298	11.8	LOS A	4.7	34.5	0.67	0.58	43.2
All Vehicles		1264	6.6	0.542	15.8	LOS B	7.8	57.2	0.74	0.65	38.2

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P7	Across W approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		212	21.4	LOS C			0.84	0.84

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: Future PM

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	8	12.5	0.043	22.2	LOS B	0.5	3.7	0.73	0.71	25.1
2	T	14	15.4	0.043	16.2	LOS B	0.5	3.7	0.73	0.53	23.6
3	R	20	0.0	0.071	27.2	LOS B	0.5	3.5	0.84	0.69	22.7
Approach		42	7.5	0.071	22.6	LOS B	0.5	3.7	0.78	0.64	23.4
East: Sarah Durack Ave E											
4	L	18	0.0	0.653	21.2	LOS B	13.1	94.8	0.83	0.92	38.8
5	T	794	3.3	0.653	14.9	LOS B	13.1	94.8	0.84	0.75	39.9
6	R	127	13.2	0.653	23.6	LOS B	9.3	69.9	0.87	0.88	36.6
Approach		939	4.6	0.653	16.2	LOS B	13.1	94.8	0.85	0.77	39.4
North: Olympic Blvd N											
7	L	125	2.5	0.327	25.4	LOS B	3.8	27.4	0.85	0.78	28.2
8	T	32	3.3	0.327	19.6	LOS B	3.8	27.4	0.85	0.69	27.3
9	R	148	0.0	0.405	26.6	LOS B	3.8	26.6	0.88	0.78	27.8
Approach		305	1.4	0.405	25.4	LOS B	3.8	27.4	0.86	0.77	27.9
West: Sarah Durack Ave W											
10	L	14	0.0	0.192	18.6	LOS B	3.0	21.1	0.65	0.91	40.2
11	T	295	0.7	0.192	11.7	LOS A	3.0	21.1	0.66	0.54	43.1
12	R	6	0.0	0.192	18.8	LOS B	2.8	19.9	0.67	0.86	39.8
Approach		315	0.7	0.192	12.1	LOS A	3.0	21.1	0.66	0.56	42.9
All Vehicles		1601	3.3	0.653	17.3	LOS B	13.1	94.8	0.81	0.72	36.7

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P7	Across W approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		212	21.4	LOS C			0.84	0.84

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: Future Event Day

Olympic Blvd and Sarah Durack Ave
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Blvd S											
1	L	69	1.5	0.232	24.0	LOS B	2.8	19.5	0.81	0.77	24.1
2	T	51	0.0	0.232	18.2	LOS B	2.8	19.5	0.81	0.64	22.4
3	R	125	0.8	0.408	28.4	LOS B	3.3	23.5	0.90	0.78	22.2
Approach		245	0.9	0.408	25.0	LOS B	3.3	23.5	0.86	0.75	22.8
East: Sarah Durack Ave E											
4	L	82	0.0	0.425	20.7	LOS B	7.2	50.4	0.75	0.90	38.7
5	T	368	0.0	0.425	14.0	LOS A	7.2	50.4	0.76	0.65	40.3
6	R	111	0.0	0.425	21.9	LOS B	4.9	34.3	0.78	0.83	37.0
Approach		561	0.0	0.425	16.6	LOS B	7.2	50.4	0.76	0.72	39.4
North: Olympic Blvd N											
7	L	83	0.0	0.177	25.3	LOS B	2.0	13.7	0.82	0.74	28.1
8	T	41	2.6	0.064	14.0	LOS A	0.8	5.9	0.69	0.52	30.3
9	R	1	0.0	0.064	19.4	LOS B	0.8	5.9	0.69	0.71	30.9
Approach		125	0.8	0.177	21.5	LOS B	2.0	13.7	0.78	0.67	28.8
West: Sarah Durack Ave W											
10	L	23	0.0	0.242	18.9	LOS B	3.8	26.9	0.67	0.92	40.1
11	T	316	0.7	0.242	12.3	LOS A	3.8	26.9	0.68	0.56	42.4
12	R	26	0.0	0.242	19.8	LOS B	3.2	22.4	0.70	0.86	39.1
Approach		365	0.6	0.242	13.2	LOS A	3.8	26.9	0.68	0.61	42.0
All Vehicles		1297	0.4	0.425	17.7	LOS B	7.2	50.4	0.76	0.69	35.6

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	2947	18.4	LOS B	3.9	3.9	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P7	Across W approach	519	24.3	LOS C	0.8	0.8	0.90	0.90
All Pedestrians		3572	19.4	LOS B			0.80	0.80

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.