



Image source: COX Architecture

SSD 9835 Sydney Football Stadium Redevelopment Section 4.55 Modification

Precinct Village and Car Park (MOD 7)

Transport Assessment

Prepared for:

Venues NSW

PROJECT INFORMATION

Project Name:	Precinct Village and Car Park (MOD 7)
Client:	Venues NSW
Project Number:	2122
Prepared By:	JMT Consulting

DOCUMENT HISTORY

Document Title	Revision	Date issued	Author
SFS Precinct Village and Car Park – Transport Assessment	Draft	11.08.21	JM
SFS Precinct Village and Car Park – Transport Assessment	Draft 2	19.08.21	JM
SFS Precinct Village and Car Park – Transport Assessment	Final Draft	30.08.21	JM
SFS Precinct Village and Car Park – Transport Assessment	Issue	14.10.21	JM

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1 Introduction

1.1 Project background

On 6 December 2018, the then Minister for Planning approved a concept development application and concurrent early works package (SSD 9249) to facilitate redevelopment of the Sydney Football Stadium (SFS).

The concept approval established the maximum building envelope, design and operational parameters for a new stadium with up to 45,000 seats for patrons and allowing for 55,000 patrons in concert mode. The concurrent Stage 1 works, which were completed on 28 February 2020, facilitated the demolition of the former SFS and associated buildings.

Stage 2 of the Sydney Football Stadium (SFS) Redevelopment (SSD 9835) was approved by the Minister for Planning and Public Spaces on 6 December 2019. Stage 2 provides for:

- construction of the stadium, including:
 - 45,000 seats (additional 10,000 - person capacity in the playing field in concert mode) in four tiers including general admission areas, members seating and corporate / premium seating;
 - roof cover over all permanent seats and a rectangular playing pitch;
 - a mezzanine level with staff and operational areas;
 - internal pedestrian circulation zones, media facilities and other administration areas on the seating levels;
 - a basement level (at the level of the playing pitch) accommodating pedestrian and vehicular circulation zones, 50 car parking spaces, facilities for teams and officials, media and broadcasting areas, storage and internal loading areas;
 - food and drink kiosks, corporate and media facilities; and
 - four signage zones.
- construction and establishment of the public domain within the site, including:
 - hard and soft landscaping works;
 - publicly accessible event and operational areas;
 - public art; and
 - provision of pedestrian and cycling facilities.
- wayfinding signage and lighting design within the site;
- reinstatement of the existing Moore Park Carpark 1 (MP1) upon completion of construction works with 540 at-grade car parking spaces and vehicular connection to the new stadium basement level;

- operation and use of the new stadium and the public domain areas within the site for a range of sporting and entertainment events; and
- extension and augmentation of utilities and infrastructure.

SSD 9835 has been modified on five previous occasions:

- MOD 1 amended Conditions B14 and B15 to satisfy the regulatory requirements of the Contaminated Land Management Act 1997;
- MOD 2 approved the design, construction and operation of the Stadium Fitness Facilities;
- MOD 3 approved design refinements to the western mezzanine and introduced a new condition to facilitate approval of signage details within the approved signage zones;
- MOD 4 relocated the approved photovoltaic array from the SFS roof to the Level 5 plant room roofs and revised the approved sustainability strategy; and
- MOD 5 updated plan references and dates in the Instrument of Consent.

A sixth modification which seeks approval for the fit out and operation of the SFS' eastern mezzanine for the Sydney Roosters Centre of Excellence (MOD 6) is anticipated to be exhibited shortly.

1.2 Project vision

Venues NSW (VNSW) is proposing to introduce a village community space, event plaza and multi level car park to complement the SFS and adjoining Moore Park and Centennial Parklands. The proposed modification will facilitate the immediate removal of the northern portion of the EP2 (Upper Kippax) on-grass parking area within Moore Park opposite the MP1 car park and enable the permanent use of this space as public open space consistent with the Moore Park Masterplan 2040.

The vision for the Precinct Village and Car Park is set out below:

The Precinct Village and Car Park provides a platform and canvas for an exceptional community asset and iconic design, that visually and physically connects to the adjacent Moore Park East and Kippax Lake. It provides patrons with quality café and dining experiences in an idyllic parkland setting and well-being play and relaxation nodes which engage with all ages. An event plaza, connected to the Stadium plaza provides a seamless opportunity for greater patron and community engagement through non-event and event day functions (Architectural Design Statement, Cox August 2021).

1.3 Location

The Precinct Village and Car Park is proposed to be located on the land west of the SFS, currently approved under SSD 9835 as the MP1 Car Park. It will extend to Moore Park and Driver Avenue and will adjoin the existing UTS, Rugby Australia and NRL Central buildings, all of which are to be retained and do not form part of the project site. A Location Plan is provided at Figure 1.

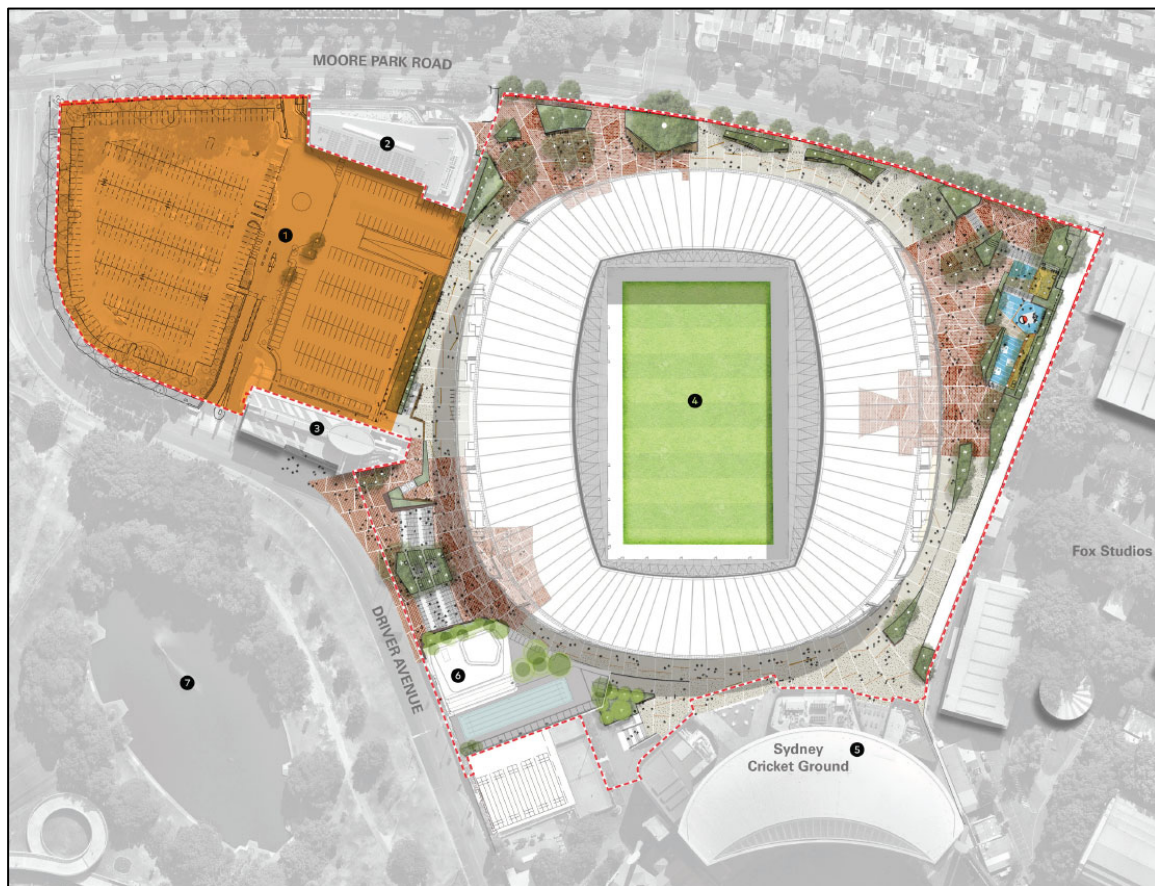


Figure 1 Site location

1.4 Proposed modification

To facilitate the Precinct Village and Car Park, SSD 9249 and SSD 9835 are required to be modified. The proposed modification to SSD 9249 (concept development application) has been submitted under separate cover. SSD 9835 is proposed to be modified to facilitate construction, fit-out and operation of Precinct Village and Car Park as described in Section 4 of this document.

1.5 Report purpose

This transport assessment report has been prepared to support the Precinct Village and Car Park modification, and specifically considers the following items:

- Existing transport conditions around the site
- Proposed access strategy for different users, including:
 - Pedestrians
 - Vehicles
 - Service / logistics vehicles
 - VIPs / accessible drop off vehicles
 - Emergency vehicles
- Parking supply in the Moore Park precinct
- Car park design and internal circulation arrangements
- Parking management measures
- Traffic generated by the proposal and associated road network impacts, both during and outside of events in the Moore Park precinct.

This transport assessment report is to be read in conjunction with the following reports and documents:

- Planning Statement prepared by Ethos Urban (August, 2021);
- Architectural plans/elevations/sections and Architectural Design Statement, prepared by Cox Architecture (August, 2021);
- Design Integrity Assessment Report prepared by Cox Architecture (August, 2021);
- Landscape plans and Landscape Design Report prepared by Aspect (August, 2021);
- Noise and Vibration Assessment prepared by Arup (August, 2021);
- Stormwater and Flooding Assessment prepared by Arup (August, 2021);
- Visual Impact Assessment prepared by Ethos Urban (August, 2021);
- Social/Economic Statement prepared by Ethos Urban (August, 2021);
- Heritage Impact Statement prepared by Artefact (August, 2021);
- Sustainability Assessment prepared by LCI (August, 2021);
- Security Statement/CPTED prepared by Intelligent Risks (August, 2021);
- Contamination Assessment prepared by Douglas Partners (August, 2021);
- Aboricultural Assessment prepared by Tree IQ (August, 2021);

- Wind Assessment prepared by Arup (August, 2021);
- Infrastructure Services Strategy prepared by Arup (August, 2021);
- Geotechnical Assessment prepared by Arup (August, 2021);
- Public Domain Lighting Assessment prepared by Arup (August, 2021);
- Accessibility Statement prepared by Before Compliance (August, 2021); and
- BCA Assessment prepared by Blackett Maguire Goldsmith (August, 2021).

1.6 Consultation

The transport access strategy for the Precinct Village and Car Park as detailed in this report has been developed in close consultation with the Transport for NSW (TfNSW) Customer Journey Planning team. Input has been received and incorporated into the design in relation to key items such as pedestrian routes, vehicle access and traffic management measures. Consultation commenced with TfNSW in April 2021 and has included weekly progress meetings where feedback was sought on the proposed layouts and to ensure the proposed access strategy aligned with TfNSW's broader planning work for the Moore Park precinct.

2 Transport Policy Context

2.1 Moore Park Masterplan 2040

The Moore Park Masterplan 2040 was developed to guide the direction and management of Moore Park up to 2040. One of the six 'key moves' identified in the Masterplan is to provide for greater integration between the Precinct and surrounds for pedestrians and cyclists (see Figure 2). The Precinct Village and Car Park project meets this objective by providing for a significantly improved pedestrian environment, removing the existing barrier to movement created by the MP1 car park as currently approved under SSD 9835. The Precinct Village will provide a seamless connection between the SFS and Moore Park east, available for use 24/7 by pedestrians both during and outside of events.

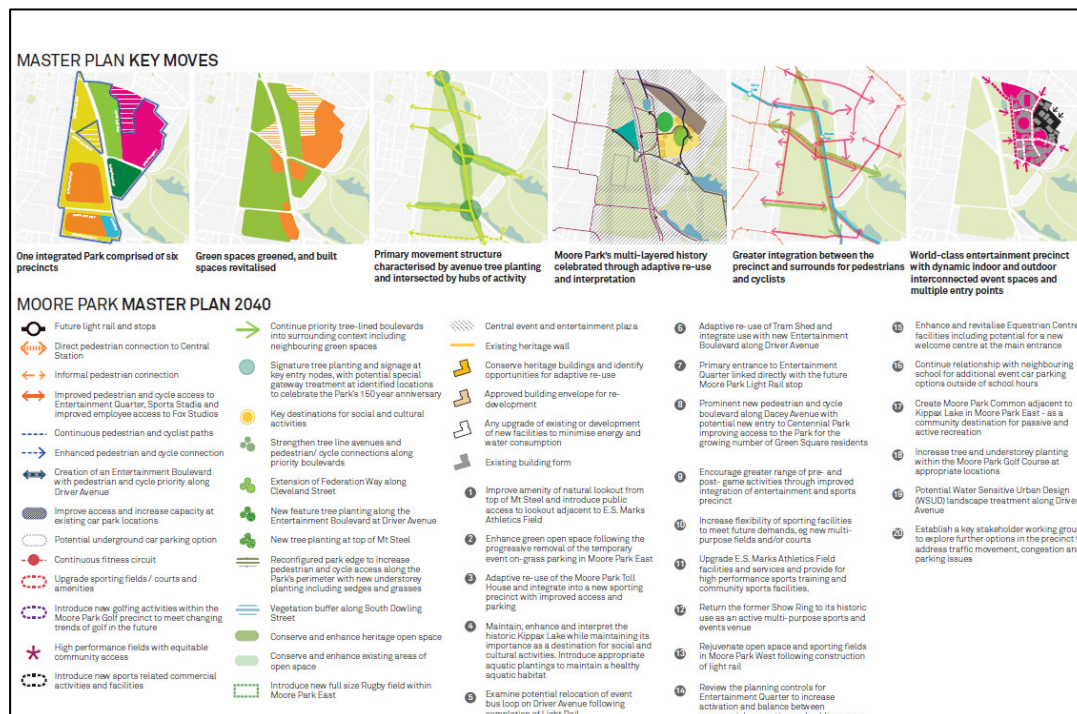


Figure 2 Extract from Moore Park Masterplan 2040

Another key move identified in the masterplan is to enhance green space in the Precinct through the gradual removal of the existing on-grass event parking. The strategy however acknowledges that such measures will not be implemented until supplementary parking in alternate locations has been created. The delivery of the Precinct Village and Car Park project will provide an alternate parking opportunity and facilitate the removal of the event grass parking areas as soon as the full development is built and commissioned.

The masterplan also identifies improved pedestrian and cycling connections to public transport infrastructure – specifically the Moore Park light rail stop. The Precinct Village and Car Park project will improve access for both pedestrians and cyclists between public transport stops and the SFS. The Precinct Village

and Car Park project provides improved legibility and accommodates natural pedestrian desire lines connecting Paddington to the Moore Park Light Rail stop that are truncated under the current SSD which allows for the reinstatement of the 540 space MP1 car park – forcing pedestrians to skirt around the site.

2.2 Future Transport 2056

Future Transport 2056 provides a 40-year strategy for how transport will be planned, amended and forecast within NSW. The strategy outlines that transport is an enabler of economic and social activity and contributes to long term economic, social and environmental outcome. The vision for the strategy is built on six outcomes which are as follows:

- Customer Focused
- Successful Places
- Growing the Economy
- Safety and Performance
- Accessible Services
- Sustainability

The Precinct Village and Car Park proposal aligns with many of the objectives of the Future Transport 2056 document, particularly in enabling the removal of the on-grass event car parking to provide an improved urban outcome. Enhancing access for pedestrians and cyclists is also a key objective of the strategy, with the proposal providing for significantly improved access for these users within the Moore Park Precinct.

2.3 Sydney's Walking Future

Sydney's Walking Future produced by TfNSW sets out a strategy to encourage people in Sydney to walk more through actions that make it a more convenient, better connected and safer mode of transport. Key points to emerge from the strategy that are relevant to the Precinct Village and Car Park project include:

- NSW Government commitment to invest in new walking links that connect people to public transport.
- Walking infrastructure to be prioritised within 2km of centres and public transport interchanges.

The Precinct Village and Car Park project has the potential to significantly enhance walkability in the local area in line with TfNSW's strategy. The project will enhance walkability between Moore Park Road and Driver Avenue, allowing pedestrians to more easily access the future green space within Moore Park east. Pedestrian access through to the main public transport node in the area (Moore Park light rail stop) will also be improved as a result of the project.

2.4 City of Sydney Cycling Strategy and Action Plan

The City of Sydney has developed a cycling strategy and action plan which commits to making cycling safer and easier so it is an attractive and feasible option for more people. It addresses the Sustainable Sydney 2030 target of 10% bicycle mode share within the City. The plan outlines four key priorities to increasing cycling in the City of Sydney:

- Connecting the network – Building a connected bike network that is suitable for all ages and abilities improving safety for all users. The permeability of the network should ensure all residents are within 250m of a designated route;
- Supporting people to ride – Address the current barriers to cycling in the City and develop mechanisms to overcome these issues;
- Supporting business – Engage employers to encourage staff to cycle to work due to the associated health and productivity benefits. This includes providing suitable end of trip facilities in all new developments; and
- Leading by example – Share expertise with other stakeholders and the wider city to influence sustainable travel patterns beyond the extents of the City of Sydney.

Routes identified within this plan which the site has an opportunity to interact with are outlined in Figure 3, with further details provided in Section 5.9 including additional bicycle parking to be provided as part of the project. The potential interface of the project on the cycleway is considered in Section 5.3.

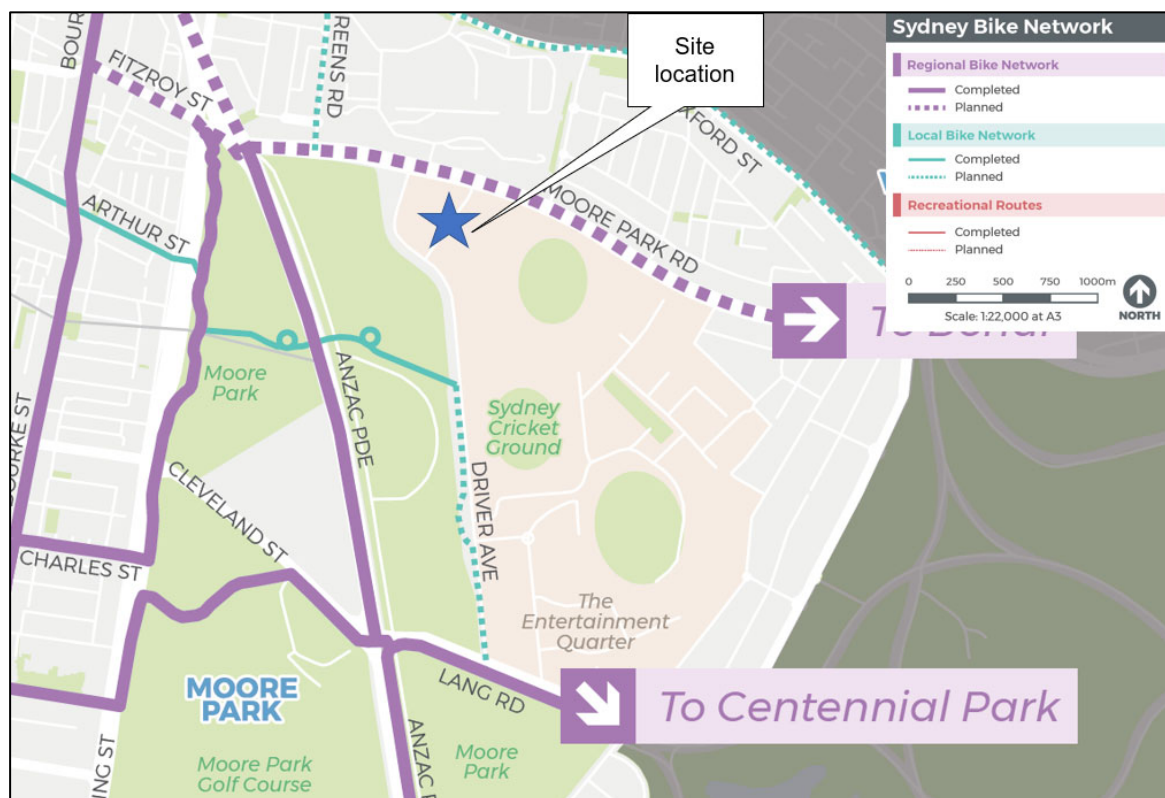


Figure 3 City of Sydney cycling action plan in the vicinity of Moore Park

2.5 Eastern Harbour City District Plan

The Greater Sydney Commission released the Greater Sydney Region Plan which included a sub plan for the Eastern City District outlining planning priorities and actions for improving the quality of life within the district. It is a 20-year plan to manage growth in the context of economic, social and environmental matters and informs Local Environmental Plans in the region.

One of the Plan's priorities is to deliver integrated land use and transport planning to create walkable and 30-minute cities. The Precinct Village and Car Park project will deliver enhanced pedestrian and cycling infrastructure through improved pedestrian connectivity between Moore Park Road and Driver Avenue along with additional bicycle parking for visitors. This infrastructure will be delivered in close proximity to public transport nodes and existing employment in Moore Park – aligning with the objectives of this strategy.

3 Existing Transport Conditions

The following section provides an overview of existing transport conditions in the vicinity of the SFS and more broadly in the Moore Park Precinct. A more detailed description is contained in the transport assessments undertaken to support SSD 9249 and SSD 9835.

3.1 Site location

The SFS is located at 40-44 Driver Avenue, Moore Park within the Sydney Cricket Ground Precinct. It is bound by Moore Park Road to the north, Paddington Lane to the east, the existing SCG stadium to the south and Driver Avenue to the west. The site is located within the City of Sydney local government area.

3.2 Pedestrian network

There is an extensive network of pedestrian routes which connects the SFS to its surroundings. This network supports walking as a transport mode accessing the SFS, whether it is the whole trip being made by foot or it is the final leg of the journey from another transport mode. These key routes are illustrated in Figure 4 below.

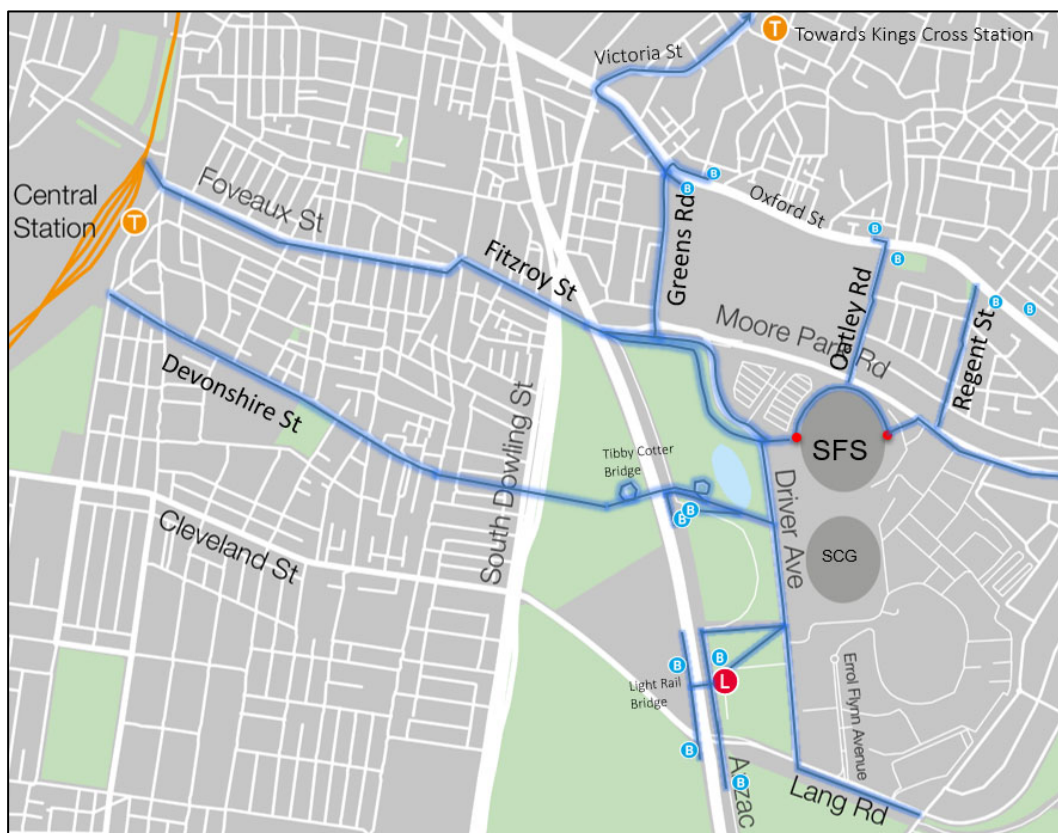


Figure 4 Key pedestrian routes

Source: Sydney Football Stadium (Stage 2 DA) Transport Assessment, May 2019

3.3 Public transport

3.3.1 Rail

Central Station is the closest station to the Moore Park Precinct, with the primary pedestrian link via the Albert Tibby Cotter Bridge and Devonshire Street as previously described in section 3.2. The walk between Central Station and the SFS takes between 20 and 25 minutes and is 1.8km in length.

3.3.2 Buses

Bus stops along Anzac Parade are serviced by bus routes travelling between the Sydney CBD, Surry Hills and the eastern suburbs. Many of these routes are serviced by the busway that runs adjacent to Anzac Parade

Bus stops along Oxford Street are serviced by bus routes travelling between the city, Chatswood, Marrickville, Rozelle to Bondi Junction. These routes are illustrated in Figure 5 , and typically run at frequencies of between 5 and 30 minutes on weekdays.

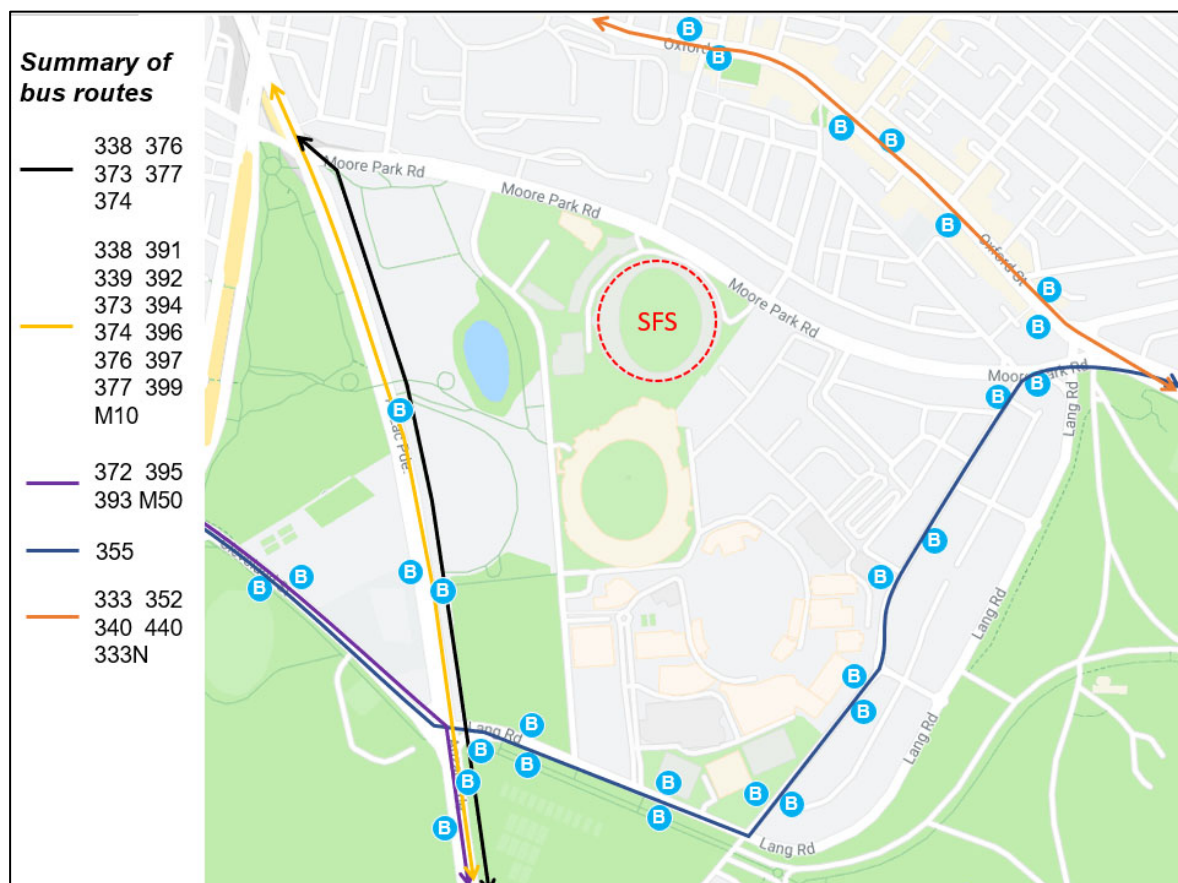


Figure 5 Existing bus routes

In addition to regular bus services, a special event bus loop exists which complements light rail services on event days. Services operate directly between Central Station and Moore Park, providing additional public transport capacity for patrons attending events in the precinct.



Figure 6 Moore Park special event bus loop

3.3.3 Light rail

The opening of the CBD and South East Light Rail in 2019 significantly improved public transport accessibility and further increased the attractiveness of public transport as a means of access to the SFS. The Moore Park light rail stop is located on the eastern side of Anzac Parade approximately 100m north of Lang Road.

Services operate every four to ten minutes outside of events and every two to four minutes during events. Up to 24 services per hour can operate between Central Station and Moore Park during events, providing capacity for nearly 11,000 people per hour. An additional 12 services per hour operate between Randwick/Kingsford and Moore Park which can accommodate a further 5,400 people per hour.

The area is heavily managed during events to facilitate the efficient movement of people on and off the platform.



Figure 7 Moore Park light rail stop

3.4 Car parking

The MP1 car park is located on the corner of Driver Avenue and Moore Park Road (see Figure 8). Prior to the demolition of the former SFS in January 2020 the car park contained approximately 600 parking spaces across a single surface level. One single access and egress point to the car park existed on Driver Avenue. Due to ongoing construction activities at the SFS, the existing MP1 car parking area adjacent to the site is currently unavailable to the general public.



Figure 8 Previous MP1 car park

The closest (currently operational) off-street car parking area is the Entertainment Quarter (EQ) car park – a 2,000 space multi-storey car park that is open from 6.00am to 2.00am, 7 days a week. The car park is approximately 650m (7 minute walk) away from the SFS.

During events, parking is also made available in the grass areas on the western side of Driver Avenue known as EP2 and EP3. These parking areas hold a combined capacity of approximately 2,100 car parking spaces, however are not available for general day to day use outside of event days. Event car parking is also available within Sydney Boys and Sydney Girls High School on the western side of Anzac Parade. Existing event car parking numbers in the Moore Park Precinct are summarised in Table 1 below and in Figure 9.

Table 1 Existing event car parking numbers

Car park	Car park type	Car parking numbers (2021)
Members Car Park (MP1)	Permanent car park	0*
Event Parking 2 (EP2)	Event car parking (grass)	1,000
Event Parking 3 (EP3)	Event car parking (grass)	1,100
Sydney Boys / Girls High School	Event car parking	750
Moore Park Golf Club	Event car parking	100
Entertainment Quarter	Permanent car park	2,000
Total		4,950

* 600 spaces in the MP1 car parking spaces existed prior to the demolition of the SFS in early 2020. The Stage 2 SFS redevelopment project (SSD 9835) allows for the reinstatement of 540 spaces in MP1 at the opening of the redeveloped SFS.

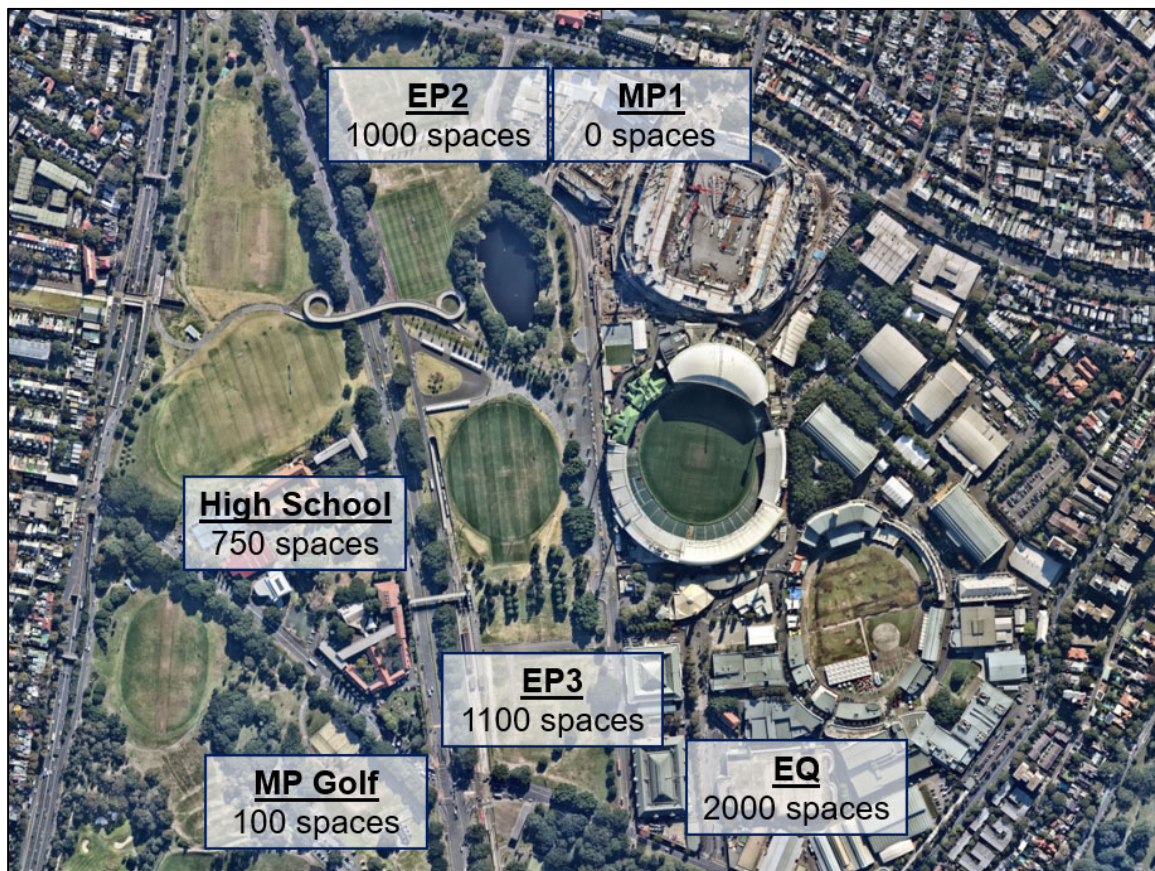


Figure 9 Existing event car parking

3.5 Cycling

The Moore Park Precinct sits within an extensive network of regional and local cycling routes and includes the following facilities:

- A 'pop up' bi-directional cycleway on Moore Park Road (see Figure 10) and Fitzroy Street which separates cyclists from passing traffic.
- Bi-directional separated cycleway along Bourke Street.
- An off-road shared path along Anzac Parade which provides a key connection to the precinct from both the Sydney CBD and the south-east.
- An off-road shared path on the southern side of Lang Road, providing a connection into Centennial Park.
- An off-road shared path on the southern side of Cleveland Street, which provides a connection across South Dowling Street into Surry Hills and Redfern.
- An off-road shared path on the southern side of Fitzroy Street, providing a connection from Surry Hills.
- An on-road cycle lane on Greens Road, providing a connection from the SFS through to Paddington and Darlinghurst.
- Future planned separated cycleway along Oxford Street.
- On-road cycleway on Lang Road



Figure 10 Moore Park Road 'pop up' cycleway

This network of cycleways servicing the Moore Park Precinct is illustrated in Figure 11 on the following page.

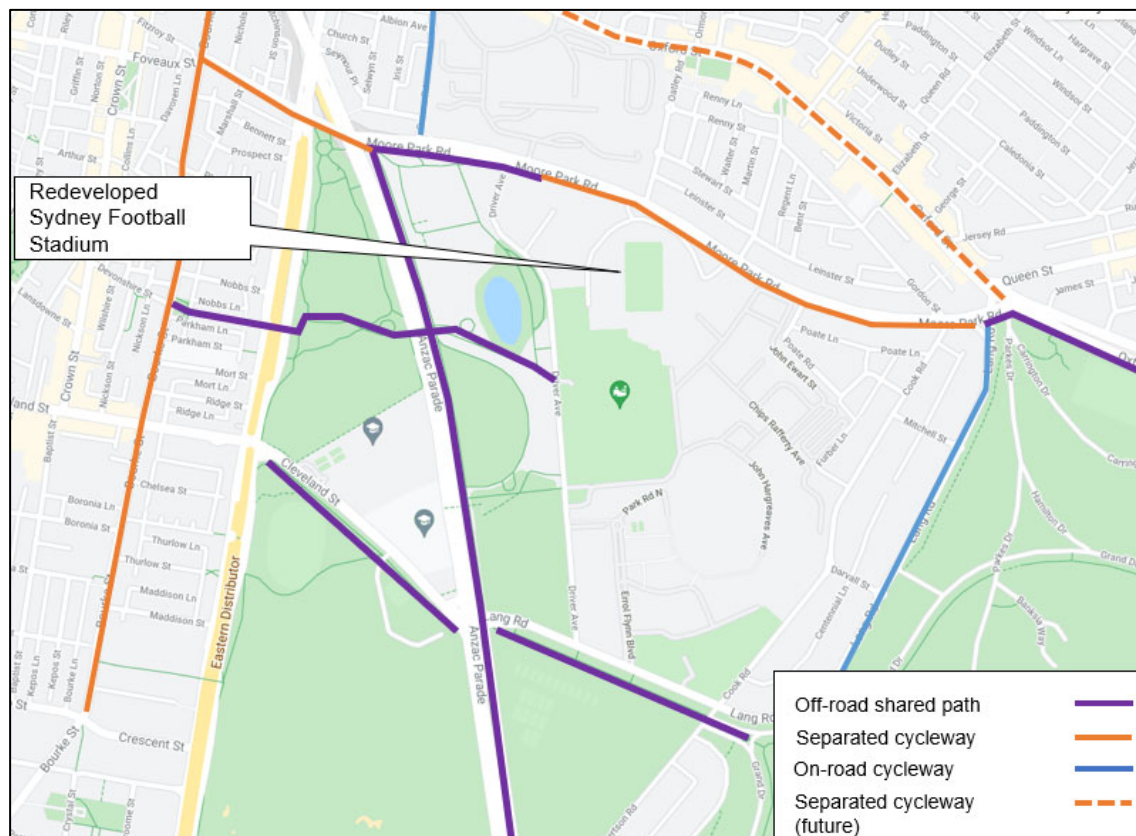


Figure 11 Existing cycleway network

There are a number of bicycle parking facilities in Moore Park in close proximity to the SFS (see example in Figure 12).



Figure 12 Existing bicycle parking

3.6 Vehicle drop off and pick up

Drop off for taxis, ride-share vehicles and the general public is available on event days at the northern and southern ends of Driver Avenue as indicated in Figure 13 below. These areas are heavily managed on event days to maximise the efficiency of the drop off areas for vehicles and minimise instances of congestion as shown in the images on the following page.

The extent of space available at the northern end of Driver Avenue is currently limited by the vehicle access point to the event car parking area within Moore Park east.

At the conclusion of events vehicle pick up occurs in the broader Moore Park Precinct with a formal taxi rank provided on Errol Flynn Boulevard within the Entertainment Quarter. No vehicles are permitted onto Driver Avenue during event egress mode to allow for the efficient egress of pedestrians and parked vehicles from the area.

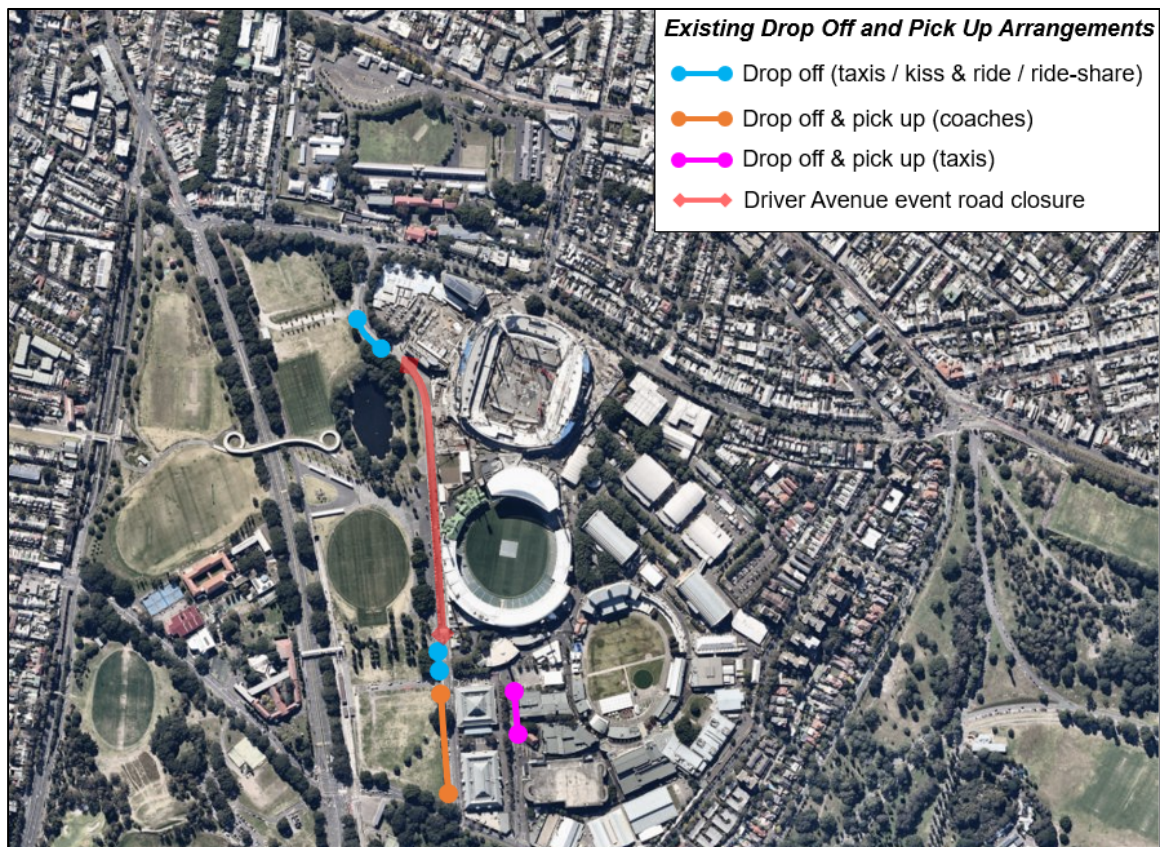


Figure 13 Existing event drop off and pick up arrangements



Figure 14 Event drop off – Driver Avenue north



Figure 15 Event drop off – Driver Avenue south

3.7 Event day road closure

When events are held at either the SCG or SFS a section of Driver Avenue is closed to vehicle movement as indicated in Figure 16 below. This temporary road closure allows for the efficient movement of pedestrians into and out of the Precinct, eliminating conflicts with vehicles. The northern extent of the closure commences immediately after the entry to the former MP1 car park, while the southern extent of the closure is at the drop off loop adjacent to the SCG. The temporary road closure allows for vehicles to access the event car parking area.

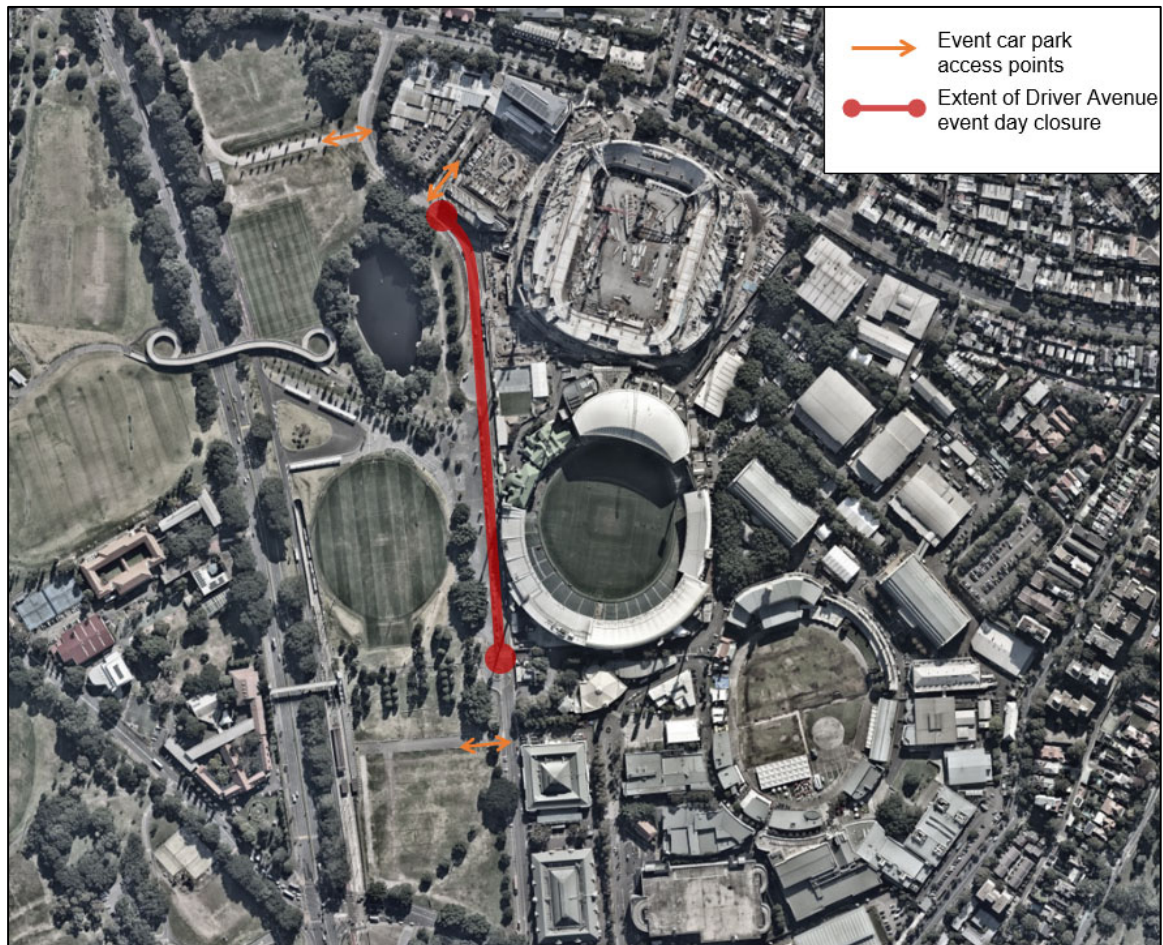


Figure 16 Event day road closure extents

4 Development Description

4.1 Overview of proposal

The Precinct Village and Car Park has been designed to align with the conditions and commitment established within SSD 9835, particularly relating to delivering a LEED Gold rated sustainable precinct, and will include:

- Up to a maximum of 1,500 space multilevel carpark below ground level with the following access arrangements:
 - 1 x egress point onto Moore Park Road to be used on event days only;
 - 1 x two-lane access point from Driver Ave to be used on event and non-event days; and
 - dedicated area within the car park for operation/servicing vehicles.
- Reconfiguration of the currently approved drop off requirements for the elderly and mobility impaired.
- Free flow level pedestrian access to and from the SFS concourse from Driver Ave and Moore Park Road.
- Electric car charging provision.
- A versatile and community public domain, comprising:
 - provision for 4 x north-south orientated tennis courts on non-event days with the potential to become an event platform on event days;
 - children's playground;
 - 1,500m² cafe / retail / restaurants with associated amenities in a single storey pavilion (6 metre) low level;
 - customer service office and ticket window; and
 - vertical transport provisions.
- Utilities provision augmentation.

Figure 17 illustrates the proposed Precinct Village and Car Park concept. Refer to the architectural within the Architectural Design Statement (Cox, August 2021) and landscape plans (Aspect, August 2021) for further details.



Figure 17 Project masterplan

Source: Cox Architecture

4.2 Hours of operation

The Precinct Village is proposed to be accessible from 8am to 11pm to align with the approved operating hours for the SFS.

The tennis court operating hours are proposed to be the same as the approved operating hours for the Stadium Fitness Facilities.

The car park will be automated, replicating the existing arrangements at the nearby Entertainment Quarter and will be accessible 24 hours a day, 7 days a week.

4.3 Event and activity types

The Precinct Village is proposed to be curated as a series of distinct, flexible and purpose specific settings for event day patrons and the general public. These inviting public places will offer rich, engaging and shared experiences.

Condition A17 of the SSD 9835 already permits the use of the public domain areas outside the stadium footprint for use by the public for a range of events

and activities. These include gathering spaces, organised temporary activities or event days, amenities, circulation purposes and active and passive outdoor recreational activities. The activities and events proposed within the Precinct Village are consistent with those approved under Condition A17.

For the purposes of this Section 4.55(2) modification, the following provides an indication of how the Precinct Village may be activated on event and non-event days. Consistent with Condition A18, the use of the public domain areas within the Precinct Village on event days will be documented in the Event Management Plan currently under preparation and required to be approved by the Planning Secretary.

Consent for any stand-alone events (particularly on non-event days) that are not captured by Conditions A17 and the Event Management Plan will be subject of a separate future approval.

Table 2 Potential activation of the Precinct Village (indicative only)

Use	Event Days	Non-Event Days
Gathering spaces	<ul style="list-style-type: none"> Live site for sold out events to encourage general public to enjoy the atmosphere Merchandise vans and marquees selling event and team merchandise 	<ul style="list-style-type: none"> Informal gatherings/picnics by families and small groups Garden style chairs and umbrellas
Organised temporary activities/events	<ul style="list-style-type: none"> Pop up bars/tents/marquees Mobile vans, ball kicking/hitting zone, etc Marquees including stand up cash bar, cocktail style functions, or more formal sit down style functions involving internal AV and big screens Accreditation/Media/Volunteer Centre and Ticket Collection facilities 	<ul style="list-style-type: none"> Markets and stalls (e.g.: farmers market, book fair, etc)
Amenities and circulation purposes	<ul style="list-style-type: none"> Cloaking area for concert and event patrons Queuing/holding area for concerts allowing patrons who wish to arrive early to secure premium positions (e.g.: front of the stage) to enjoy the Precinct Potential for public announcements/music 	<ul style="list-style-type: none"> Potential for public announcements/music
Active and passive outdoor recreational activities	<ul style="list-style-type: none"> Tennis court use (organised events) 	<ul style="list-style-type: none"> Tennis court use including personal training sessions for use by Stadium Fitness Facilities members Children play, sitting & eating, recreation (kicking footy, etc)

4.4 Delivery

The Precinct Village and Car Park is proposed to be delivered in two stages:

- Stage 1, herein referred to as the East Car Park, consists of the area between the Rugby Australia and NRL Central buildings, immediately adjacent to the SFS concourse.
- Stage 2, herein referred to as the West Car Park, consists of the residual area immediately adjacent to the proposed East Car Park, bounded by Driver Ave and Moore Park Road.

The East Car Park is proposed to be delivered ahead of the opening of the SFS in 2022. The West Car Park is proposed to be delivered after the SFS opening, sometime in 2023.

5 Transport Access Strategy

5.1 Car parking access

The vehicle access strategy for the car park is illustrated in Figure 18 and includes the following key elements:

- A primary access/egress point on Driver Avenue at the existing MP1 car park driveway. This facilitates access to a service road, with two lanes in each direction, connecting both the eastern and western car parking areas.
- An egress only onto Moore Park Road, to be utilised only following the conclusion of events at the SFS or neighbouring SCG. It is likely this egress would only be utilised for events with attendances of more than 20,000 people however this will form part of the pre-event planning carried out by the Moore Park Events Operations Group (MEOG). This egress is required to efficiently distribute traffic across the road network and not concentrate all traffic movements along Driver Avenue as is currently the case. This will provide for improved traffic flow and allow patrons to egress the car parking areas in a more timely manner compared to current conditions, with further details provided in Section 6 of this document.

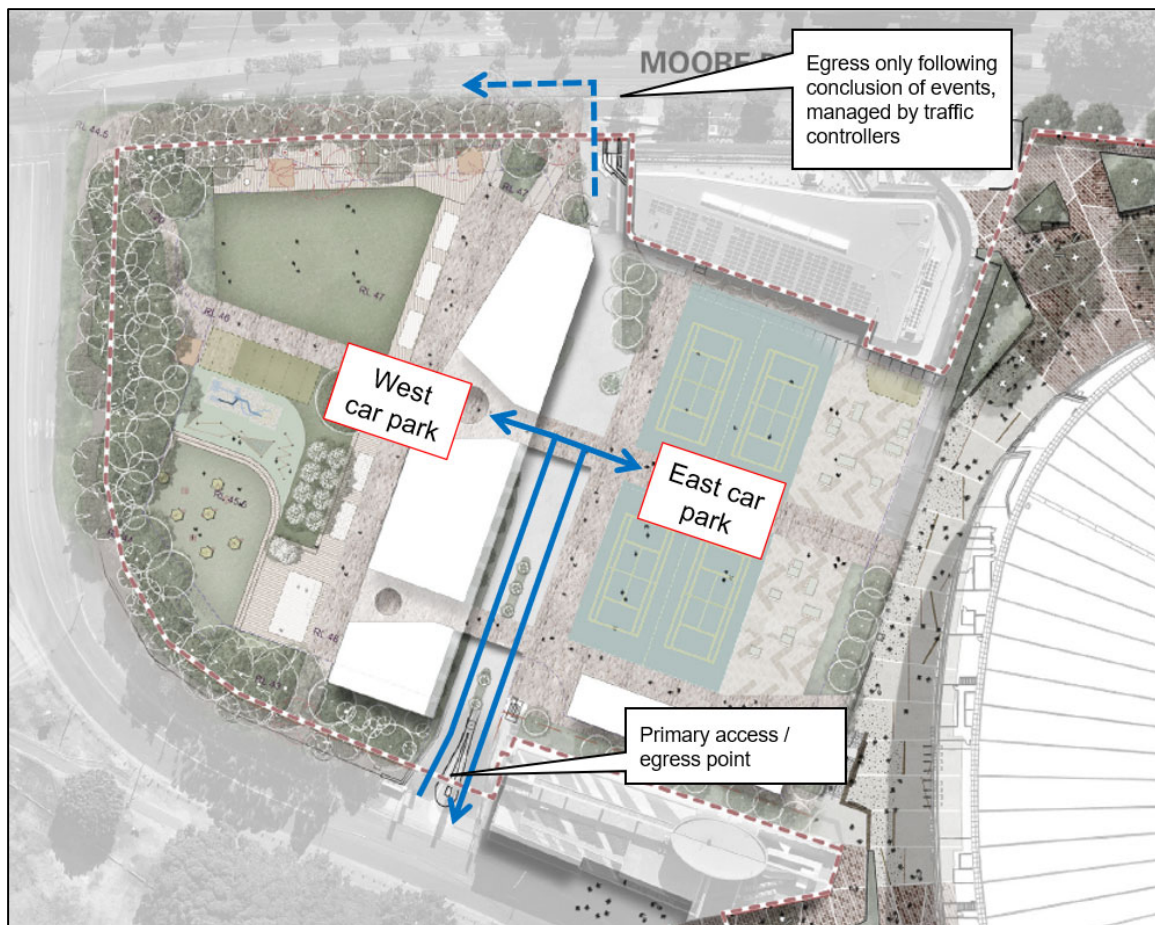


Figure 18 Vehicle access strategy

Consideration was given through the design process to introducing a formal set of traffic lights at the Driver Avenue car park access point including formal pedestrian crossings. This would replace the existing (and proposed) driveway entry treatment. The introduction of traffic lights at this location was not deemed to be suitable for the following reasons:

- Outside of event periods traffic movements on Driver Avenue are relatively low at less than 250 vehicles per hour. This level of traffic flow does not require signalised intersection control to accommodate expected traffic demands through the intersection.
- The volume of traffic on Driver Avenue (outside of event times) would not satisfy the warrants for the introduction of new traffic lights as outlined in Section 2 of the RMS Traffic Signal Design Manual.
- Operationally during event bump in and bump out NSW Police typically take control of signalised intersections and manually direct vehicles and pedestrians to cross when it is safe to do so.
- The introduction of traffic lights would not support existing drop off arrangements on the western kerb of Driver Avenue given vehicles would not be able to undertake a u-turn at the temporary road closure point. With the temporary road closure of Driver Avenue in place on event days there would be no way for vehicles to access the western kerb of Driver Avenue for drop off if traffic lights were in place.
- The closure of the Driver Avenue footpath on event days will redirect all pedestrians to the western side of the roadway and render the need for formal pedestrian crossings across the car park access road redundant.

5.2 Pedestrian access strategy

Pedestrians will be able to access the Precinct Village from a number of directions as indicated in Figure 19 below. This illustrates direct, level connections will be provided via a combination of at grade access points from Moore Park Road / Driver Avenue, the public domain as well as from the SFS concourse area (blue lines). From the car park, pedestrian access will be provided via stairs and lifts for the elderly and mobility impaired (both marked as pink boxes). The architectural plans and Architectural Design Statement (Cox, August 2021) and landscape plans and Landscape Design Statement (Aspect, August, 2021) should be referred to for further details. Pedestrians arriving from the light rail stop or Tibby Cotter Bridge to the south can access the Precinct Village directly across Driver Avenue or via the SFS concourse area through the main western staircase which will be open to the public at all times of the day. The proposal will allow for high quality linkages between the Precinct Village and the broader Moore Park area, including the EQ and Centennial Parklands.

The MP1 car parking area previously presented a major barrier to pedestrian movements, particularly for people accessing the SFS via Moore Park Road. The proposal removes this barrier by creating an open, permeable environment that provides for equitable pedestrian access from a variety of directions. The increased level of pedestrian circulation also opens up the opportunity to remove existing pedestrian/vehicle conflict points on Driver Avenue as further described in Section 5.4 of this document.

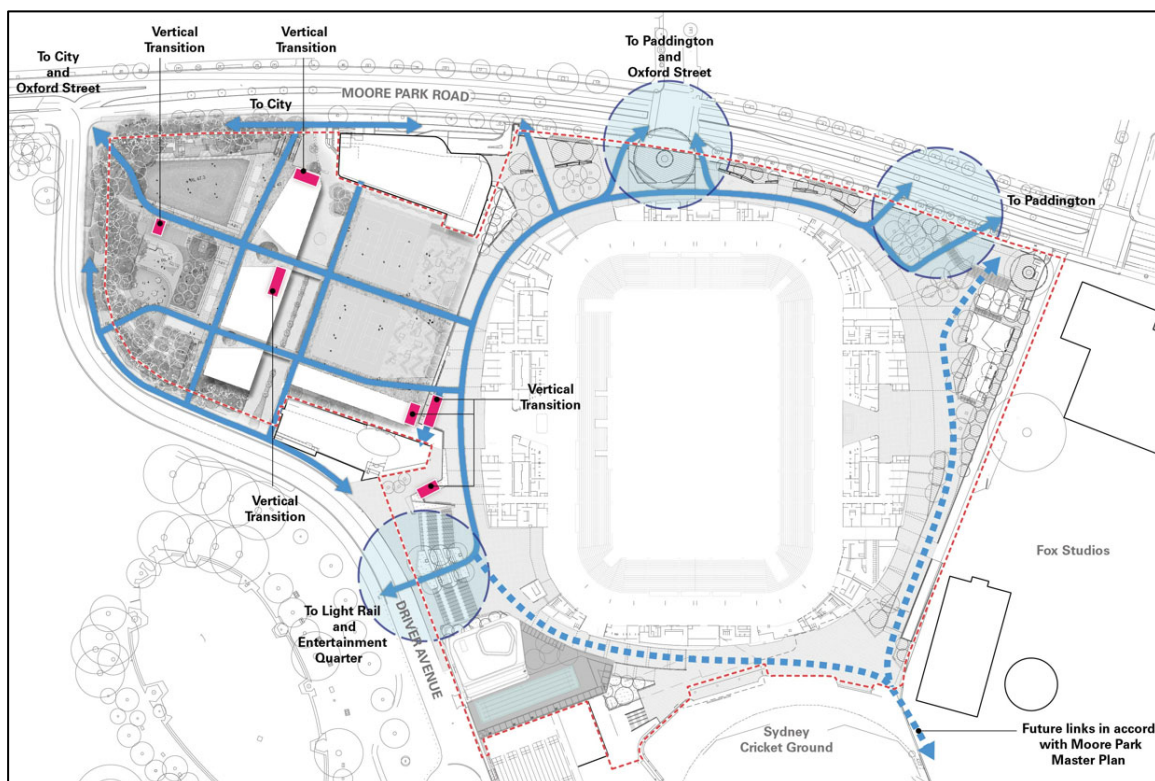


Figure 19 Non-event pedestrian access arrangements

5.3 Pedestrian arrival / departure routes

Based on the typical modes of transport used for major events at the SFS, and following discussions with Transport for NSW, the directions of travel for pedestrians accessing the Precinct during events has been forecast and is presented in Figure 20. This indicates that the majority of pedestrians will travel south from the SFS towards key public transport nodes such as the light rail stop, event bus area and Central Station via the Tibby Cotter Bridge. Pedestrians travelling towards Oxford Street will primarily use the pathways within Moore Park East and not conflict with vehicle traffic entering or exiting the car park. Just 2% of pedestrians are forecast to utilise the Moore Park Road southern footpath and cross over the event day driveway egress point. This location will be subject to traffic control following the conclusion of events to manage interactions between pedestrians and vehicles.

The interface between these key pedestrian routes and vehicles accessing the car park have been carefully considered in order to minimise conflict points and maximise the efficiency of the car park to reduce vehicle egress times. This is further described in Section 5.4 of this document.

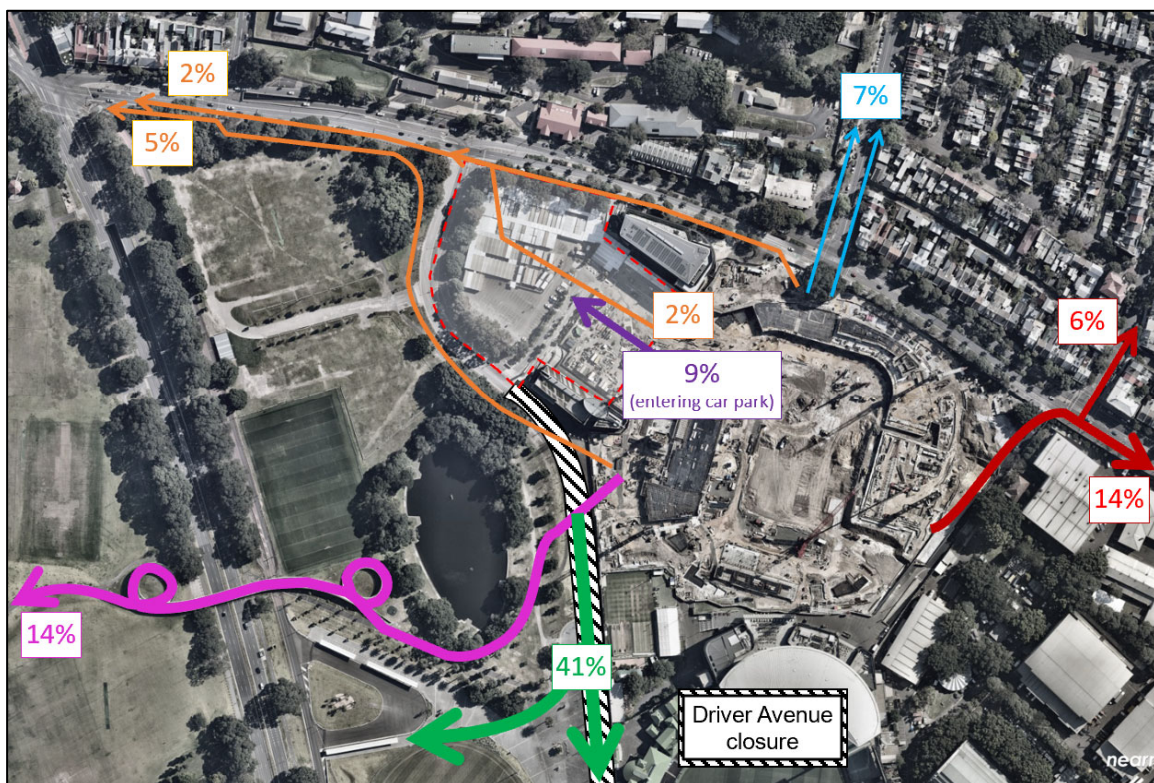


Figure 20 Event mode pedestrian circulation

5.4 Pedestrian modelling

Detailed pedestrian modelling has been undertaken by Arup in support of the Precinct Village and Car Park proposal. The expected level of pedestrian movements through the plaza and along Moore Park Road as considered in the model is presented in Figure 21.

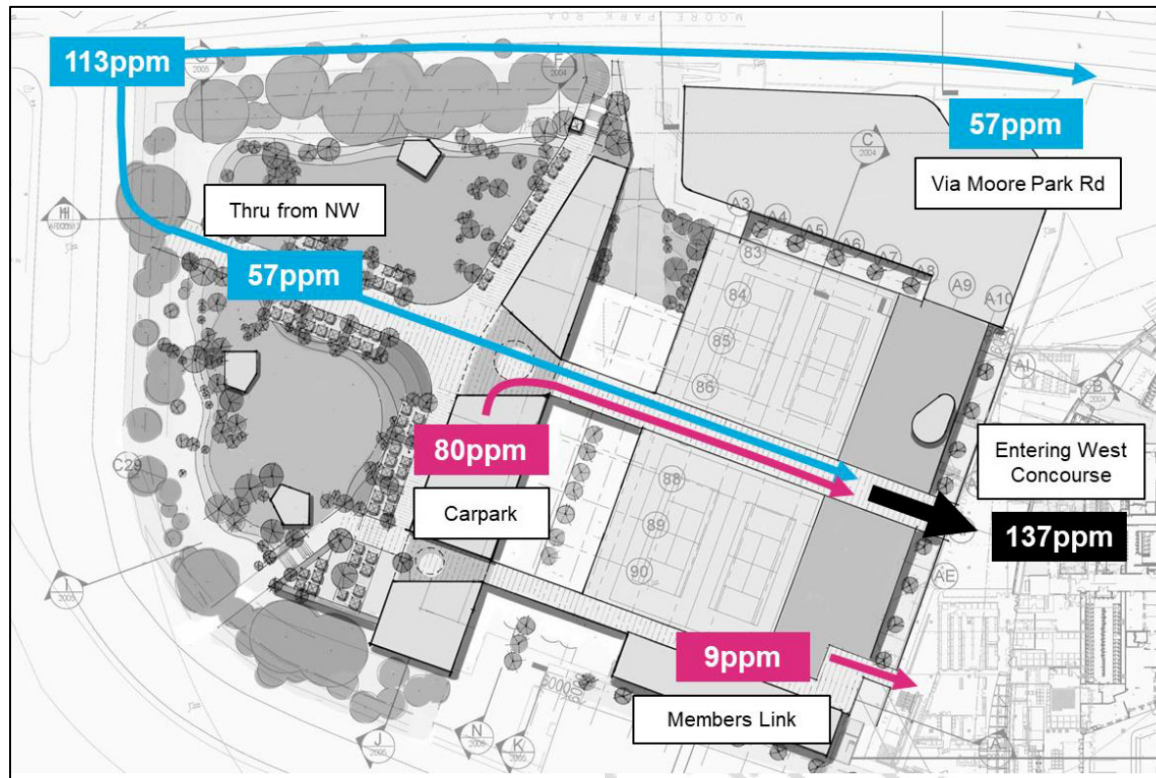


Figure 21 Expected peak pedestrian flows

Source: Arup

This modelling considers the change in pedestrian flows and densities, at a detailed level, within the SFS concourse as a result of the project. A micro-simulation pedestrian flow model was developed which determines the expected movement performance, identifies the impacts to the SFS and informs the spatial provisions for the development.

Key findings from the Arup pedestrian modelling undertaken for the project were as follows:

- The western concourse of SFS is able to accommodate the assumed change in ingress and egress movements caused by the proposed Precinct Village and Car park. That is that the western concourse continues to achieve circulation performance criteria with the change in demand (see Figure 22); and;
- The main car park walkway plays an important role in facilitating spectator movements to the car park and through to the northwest precinct. The modelling outputs indicate the egress flow entering the main walkway from the western concourse reaches a maximum of 321 people per metre per minute, requiring a minimum walkway width of 5.8m. The concept design provides a width of approximately 8m and therefore comfortably accommodates the expected demands. Even when combining the demands from the smaller (members) car park access point, the main walkway is comfortably able to accommodate the demands.
- Beyond the central vertical transport node of the car park, the through movements to the Moore Park Road / Driver Avenue intersection reach a peak minute flow rate of 113ppm. The minimum width to accommodate spectator demands is 2.6, with the pathway comfortably able to meet this demand.

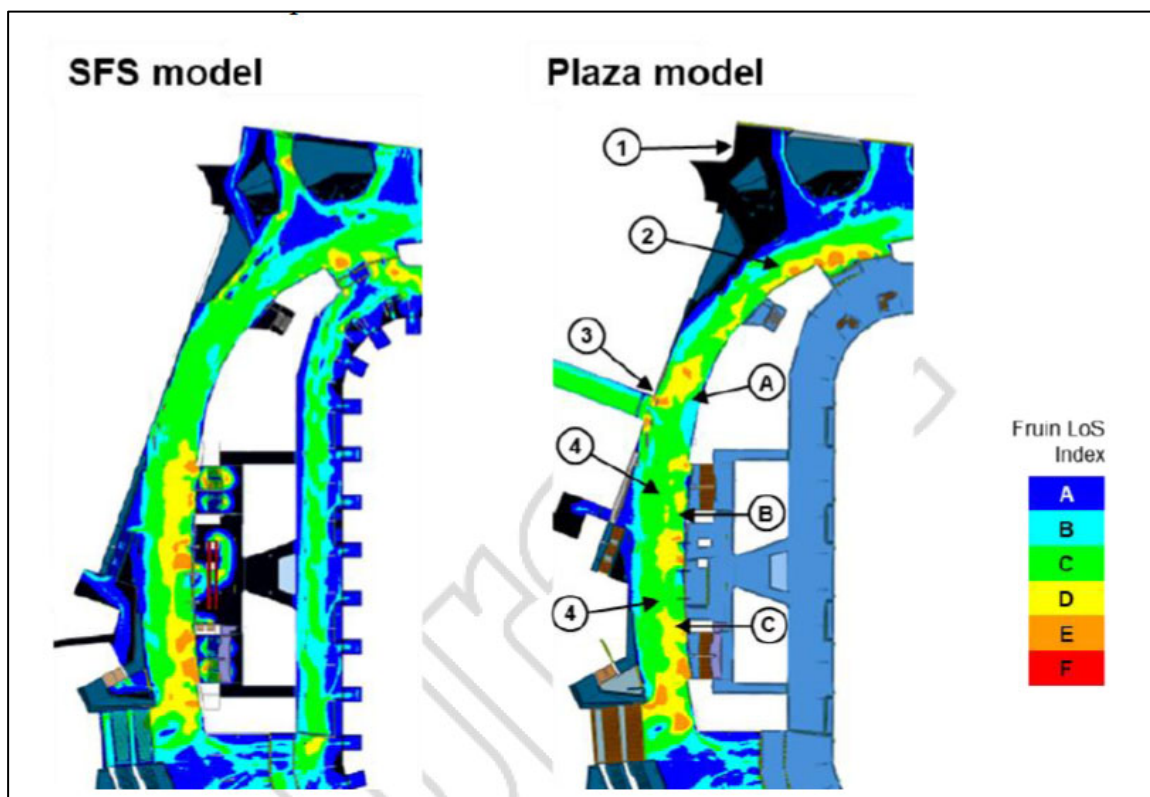


Figure 22 Pedestrian modelling outputs

Source: Arup

5.5 Event day traffic and pedestrian management

The Precinct Village and Car Park design will integrate with existing and future traffic management measures in place on event days in Moore Park, including:

- All traffic to enter the Driver Avenue access point prior to its closure to vehicles on event days.
- Event day drop off to be maintained along the western kerb of Driver Avenue (see Section 5.7 for further details).
- Pedestrian access to the SFS to be provided directly through the Precinct Village via a number of different locations.
- Eastern footpath of Driver Avenue (between Moore Park Road and car park access point) to be closed to pedestrians before and after events to eliminate conflicts between cars and pedestrians. The Precinct Village will offer a more attractive and convenient route to access the SFS, and therefore the Driver Avenue eastern footpath is no longer required for patrons to access the Precinct on events days. This will also provide benefits for the car park in allowing vehicles to egress more efficiently following the conclusion of events as cars will not have to be held back to allow pedestrians to leave the precinct.

These arrangements are illustrated in Figure 23.

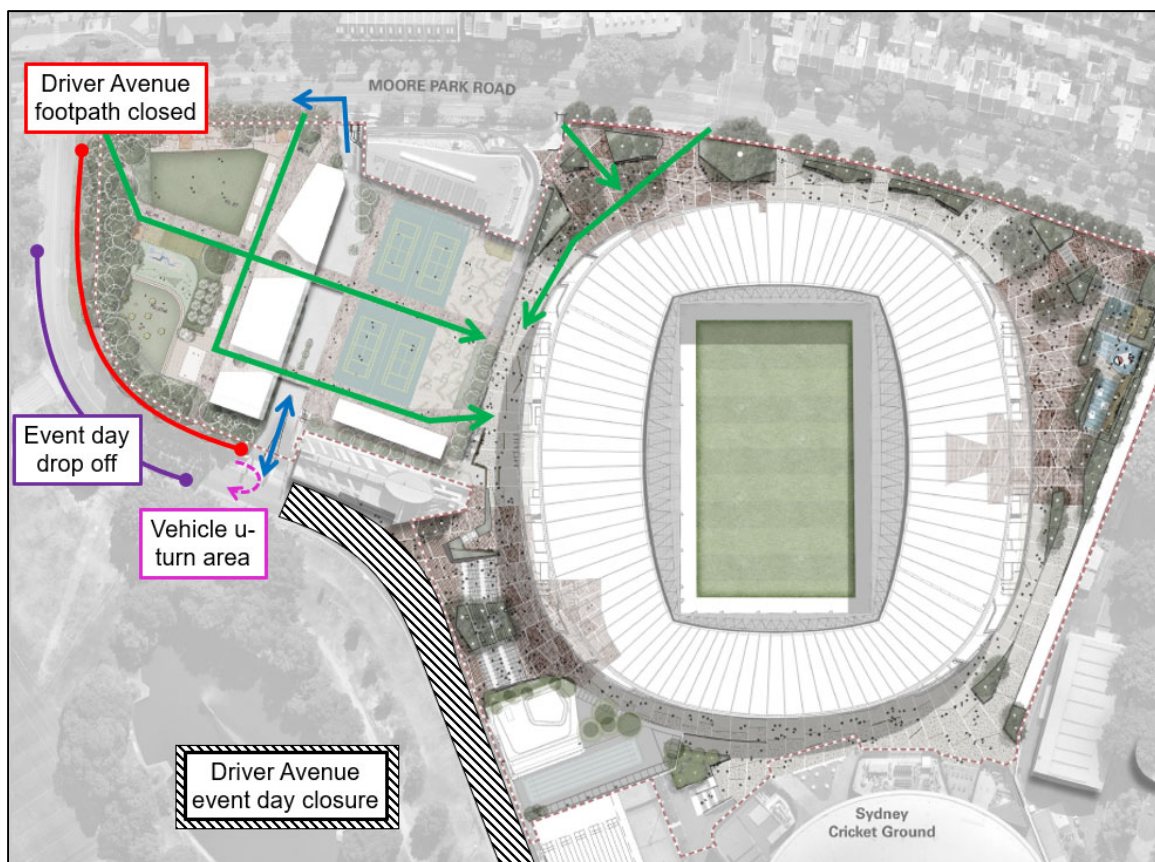


Figure 23 Event day traffic and pedestrian management

The vehicle and pedestrian routes to the Precinct Village and Car Park have been carefully planned in order to minimise conflicts between these user groups – particularly following the conclusion of an event. Figure 24 below illustrates the key pedestrian movements from the SFS and the minimal overlap with traffic movements into and out of the car park. The majority of pedestrians will head to the south and west of the venue, towards key transport hubs, which do not conflict at all with vehicle access and egress routes. The closure of the Driver Avenue eastern footpath will ensure pedestrians arriving from Foveaux Street and Flinders Street do not interact with vehicles using Driver Avenue. The only interaction expected between pedestrians and vehicles is the 2% of pedestrians that will enter and exit the SFS on Moore Park Road opposite Oatley Road which will cross the Moore Park Road vehicle exit driveway.

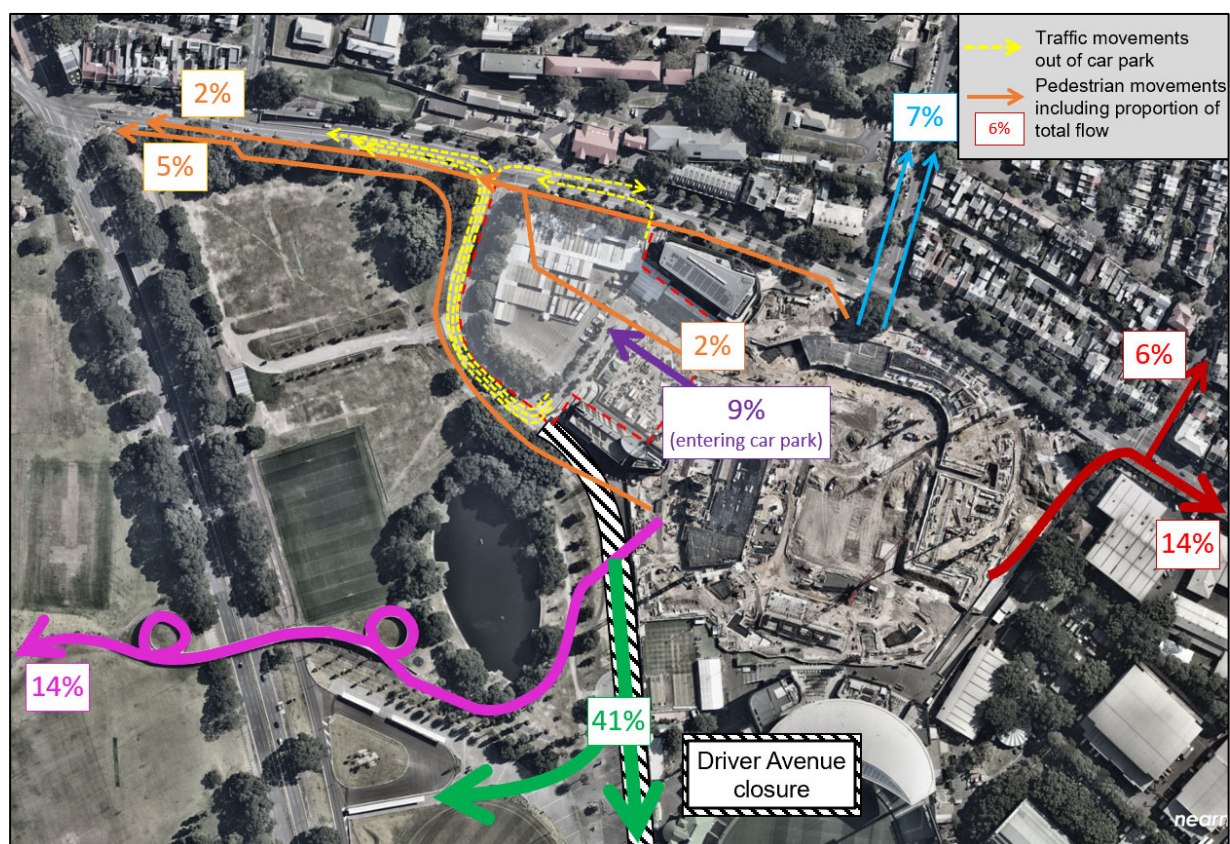


Figure 24 Pedestrian and vehicle movements

The dispersal of pedestrians travelling to the north-west of the site through the Precinct Village will benefit the transport network by reducing pedestrian demands along the Moore Park Road frontage of the site. This will in turn limit the requirements for any future closure of Moore Park Road to vehicles following the conclusion of events at the SFS. Discussions with TfNSW have indicated that even in the event that Moore Park Road is closed this will not impact the ability for vehicles to exit the car park, given the closure point is likely to be east of the future driveway egress.

Further details of the traffic movements in place following the conclusion of events in Moore Park is provided in Figure 25 below. Similar to existing arrangements, a 'tidal flow' system will be implemented which makes use of three traffic lanes on Driver Avenue to allow vehicles to most efficiently exit the site. Traffic control will be in place along Moore Park Road so as to allow exiting Driver Avenue traffic to utilise the existing eastbound right turn lane on Moore Park Road to directly access the Eastern Distributor. NSW Police will be positioned at the Driver Avenue / Moore Park Road intersection to manage both pedestrian movements as well as the traffic light phasing if required.

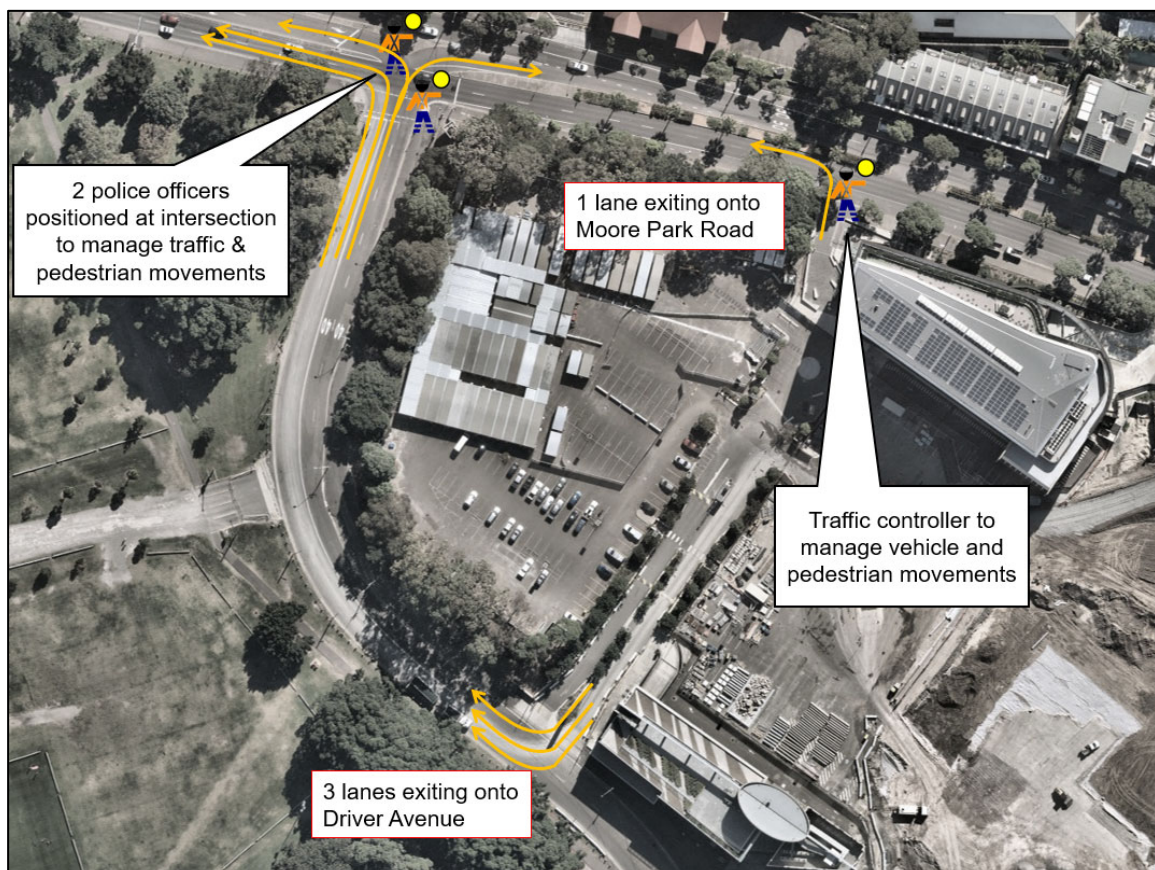


Figure 25 Event day traffic movements

Traffic control will also be in place at the proposed egress point on Moore Park Road to manage interactions between pedestrians and vehicles post event. This will operate in a similar manner to that already in place for the event car parking areas, where traffic controllers hold vehicles for a certain period of time to allow pedestrians to safely cross the driveway access points. An example of this is shown in Figure 26.



Figure 26 Existing pedestrian management at car park entry/exit

5.6 Loading and servicing

Currently, vehicular and servicing access for the SCG extends down Paddington Lane off Moore Park Road and then down to the SCG basement. Service vehicles can also access the exterior concourse of the SFS via Paddington Lane. Consistent with the approach taken in SSD 9835, the proposal will use Driver Avenue and the access ramp from the car park as the primary access and egress point for service vehicles down to the basement of the SFS. A 360 degree service ring road is provided in the basement of the SFS to allow full circulation of services vehicles within the SFS.

Service vehicles will enter the SFS ring road via a ramp accessed from the internal roadway from Driver Avenue. If the vehicle is authorised for entry it will be allowed to gain access into the basement ring road. If unauthorised, it will be rejected and will complete a 180 degree turn at the vehicle rejection roundabout

and leave the car park. Service vehicles will be able to circulate on the Basement service road in an anti clockwise direction.

As the Precinct Village and Car Park proposal includes approximately 1,500m² of retail floor space, a standalone additional loading dock will be provided immediately west of the vehicle rejection roundabout. This loading dock has been designed in accordance with Australian Standards and includes five service vehicle parking bays. This service vehicle parking provision is considered more than adequate to service the expected demands generated by the retail uses.

The on-site waste storage area is located adjacent to the future loading dock and vehicle rejection roundabout within the site boundary. The loading dock and rejection roundabout can accommodate the safe and efficient movement of vehicles of up to 12.5m and 19m in length respectively. These areas allow for vehicles to enter and exit the site in a forwards direction. Waste vehicles are typically 9.5m in length (or less) and therefore will comfortably be able to turn around within the site boundary.

The waste management procedures will align with the SFS waste management plan by way of timing of waste collection and frequency. Twice daily (or if necessary, more frequently) collection will be facilitated within the retail, commercial spaces and tennis court area to dispose of waste into the bin rooms. Collection of waste from the bin rooms will then be facilitated daily (either each morning or evening) to transfer the waste from the bin rooms into the compactors found within the waste management compound in the North West quadrant of level 0 (basement) of the SFS for commercial collection and transport to off-site waste facilities.

The loading dock can accommodate five service vehicles parked at any one time, including:

- One 12.5m Heavy Rigid Vehicle (HRV)
- One 8.8m Medium Rigid Vehicle (MRV)
- Two 6.4m Small Rigid Vehicles (SRVs)
- One van/ute

The proposed loading and servicing strategy is shown in Figure 27, with vehicle swept paths indicating the path of vehicles into the loading dock is provided in Figure 28.

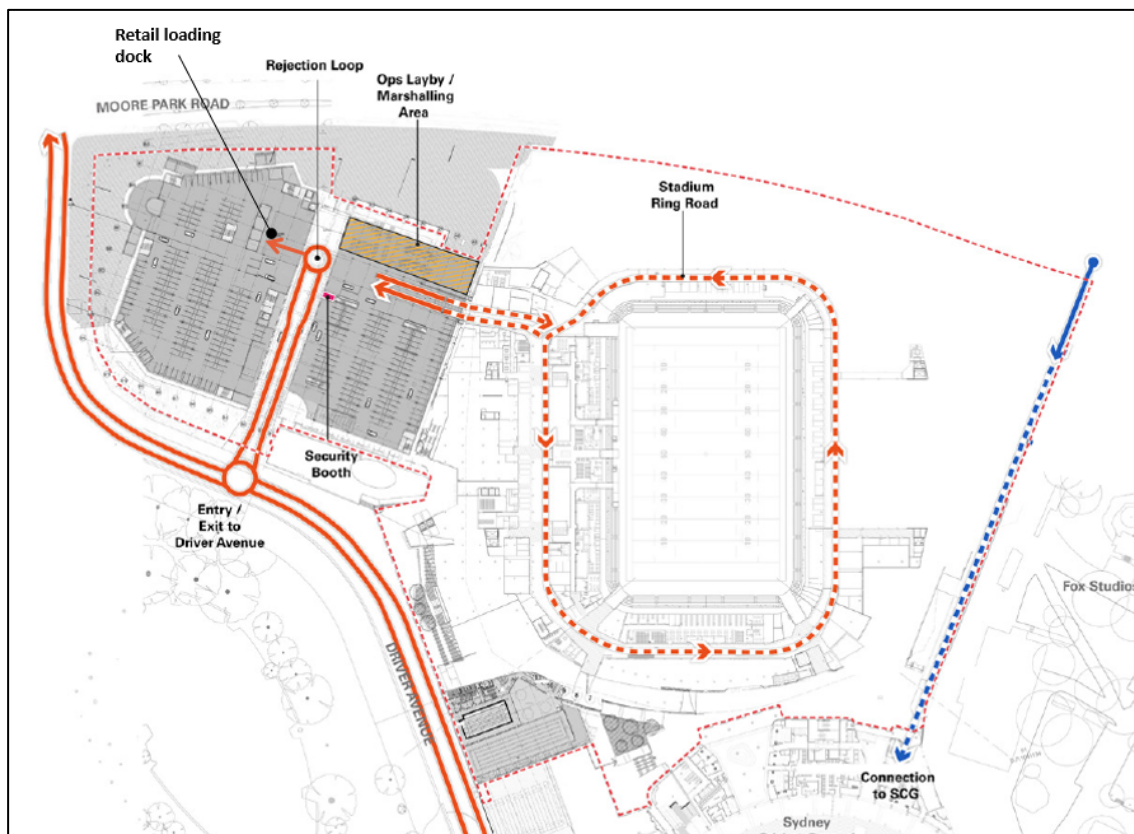


Figure 27 Loading and servicing arrangements

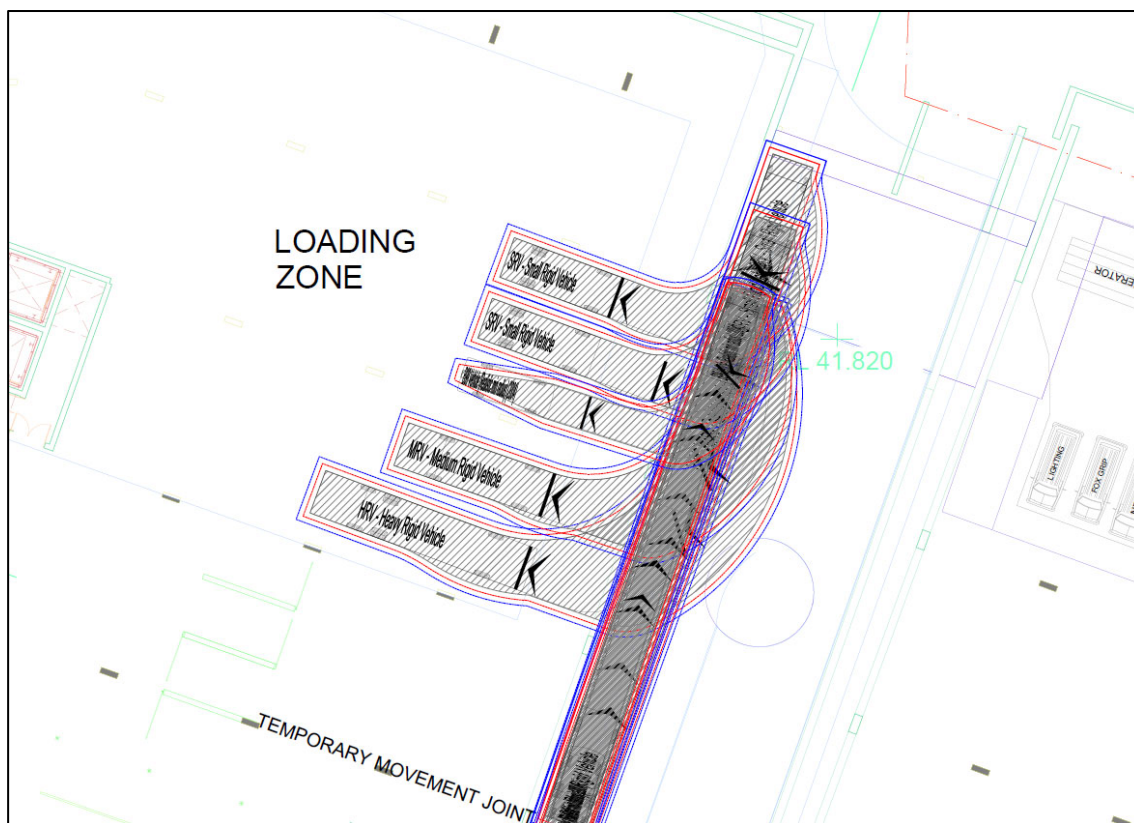


Figure 28 Vehicle swept paths – loading dock

5.7 Drop off and pick up

On non-event days public drop off and pick up will continue to occur along the Driver Avenue kerbside which is controlled by 'No Parking' restrictions in the vicinity of the SFS. With the removal of the existing access point into the EP2 car parking area the No Parking zone can be extended in length compared to current conditions. These No Parking zones allows drop off and pick up by a range of vehicles including taxis, ride-share vehicles (e.g. Ubers) and general kiss and ride – maintaining existing operations in the precinct.

The extent of drop off and pick up areas available on non-event days along Driver Avenue is presented in Figure 29 below.



Figure 29 Non-event drop off and pick up arrangements

On event days the existing drop off area on the western kerb of Driver Avenue, immediately north of the Driver Avenue temporary road closure, will be maintained and enhanced as indicated in Figure 30. The removal of the existing driveway to the EP2 car parking area will allow for the extension of this drop off zone by approximately 35m compared to current conditions – increasing the number of cars dropping off at any one time by six vehicles. This will reduce the extent of existing traffic congestion on Driver Avenue prior to the commencement of events in the precinct and provide for an improved transport outcome. Once patrons are dropped off on the Driver Avenue western kerb they then walk along the adjoining paved pathway towards the SFS as shown in Figure 31.

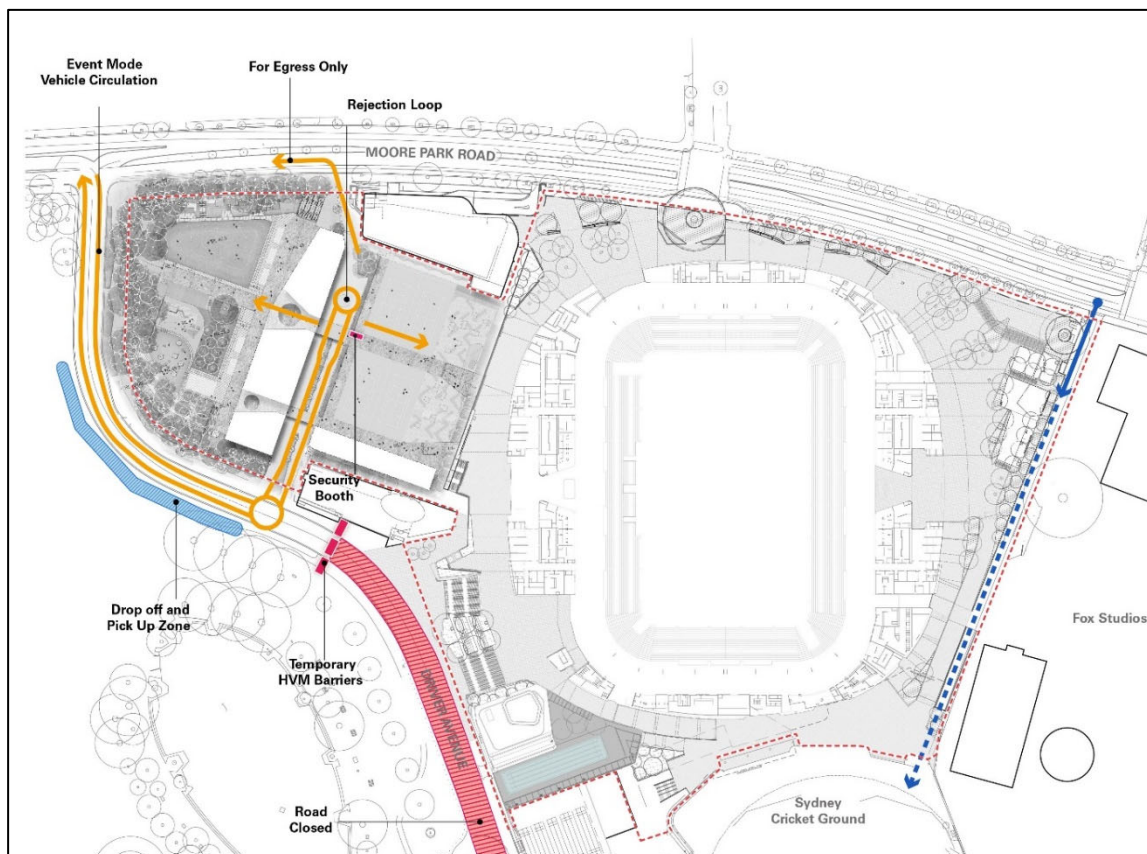


Figure 30 Event day public drop off area



Figure 31 Event day northern drop off area on Driver Avenue

Consistent with current arrangements, pick up for events will take place away from Driver Avenue so as to prevent vehicles from entering the Precinct while large numbers of people (both on foot and in the car park) are simultaneously trying to leave. Discussions with TfNSW have indicated that the primary pick up locations for taxis following the conclusion of events will be along Moore Park Road and Anzac Parade. A ride-share 'geofence' is also under investigation by TfNSW for post event pick up to disperse traffic around the Precinct and allow for more efficient egress for people leaving the SFS. Arrangements for post event pick up will be finalised by Transport for NSW as operational planning for the Moore Park Precinct is completed prior to the opening of the SFS in 2022.

Figure 32 below indicates the drop off arrangements for:

- VVIPs / officials which is maintained within the basement ring road of the SFS, consisted with the approval of SSD 9835; and
- Reconfiguration of the currently approved accessible drop off arrangements which previously provided 4 spaces within the MP1 car park for persons requiring assistance. The modification proposes that these four drop off spaces be provided within the eastern car park in close proximity to the SFS entry point. A level, accessible path of travel is provided from this drop off area that does not require any interactions with vehicles circulating within the car park.

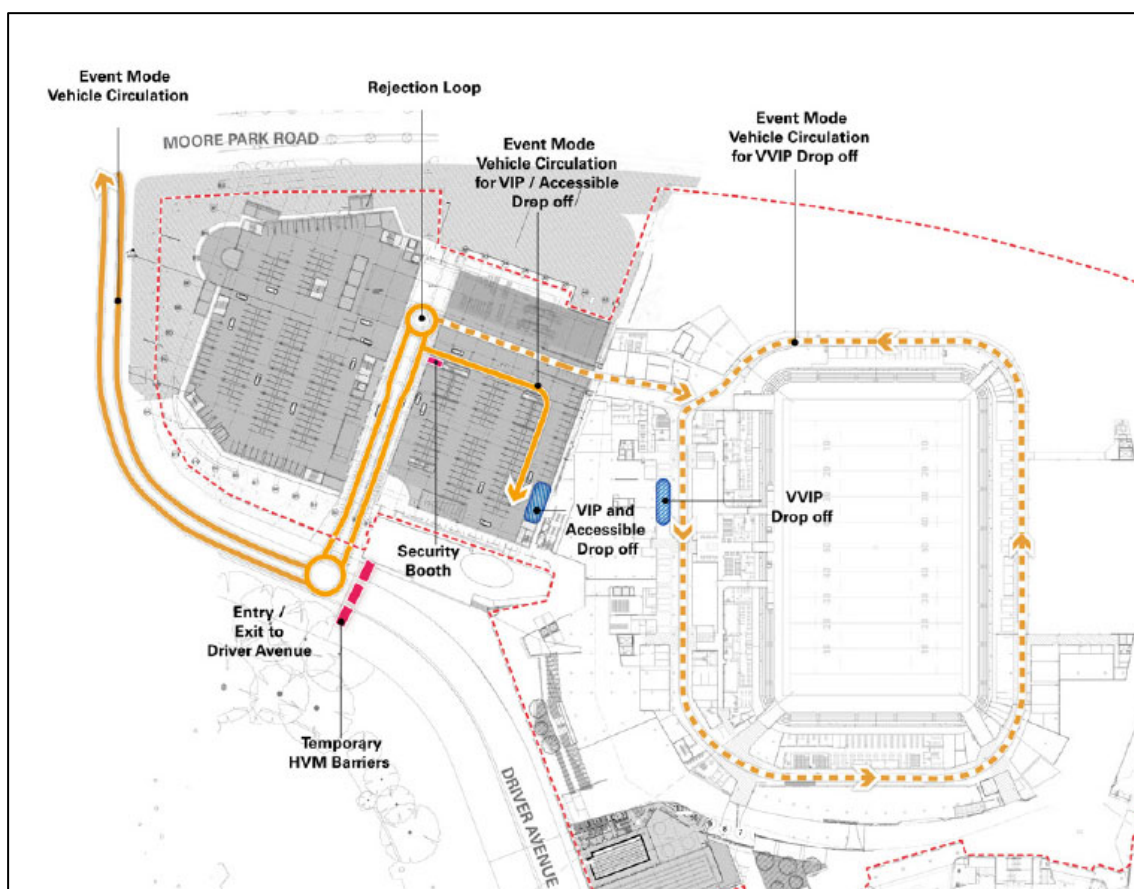


Figure 32 Event mode VIP and accessible drop off

5.8 Emergency vehicles

Consistent with the approval for SSD 9835, there will be access to all sides of the SFS and Precinct Village for emergency vehicles as presented in Figure 33. The west, north and east sides will be accessed off the external concourse to the SFS, with the ambulances, Police and fire appliances entering off Moore Park Road. Emergency vehicles, including ambulances and fire trucks, will have the ability to enter the precinct village directly via the western concourse area if required. A fire control room is located within the precinct village and fire appliance vehicles will have access to this if required.

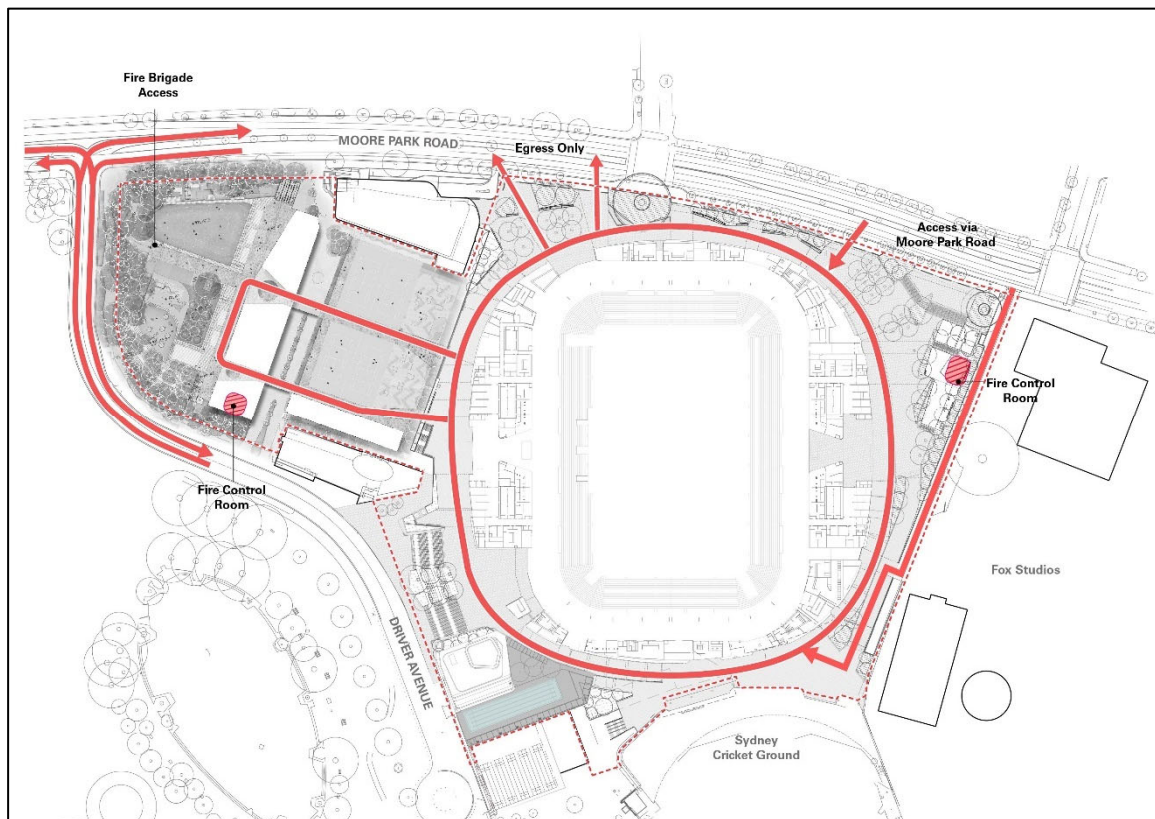


Figure 33 Emergency vehicle circulation

5.9 Cycling access and bicycle parking

The Precinct Village and Car Park project is located in close proximity to two major off-road regional cycleways, those being Moore Park Road and Anzac Parade. Additional cycleways along Cleveland Street, Oxford Street and Bourke Street are also located near the site. The Precinct Village and Car Park project will take advantage of this connectivity by ensuring cycling is better promoted as a mode of transport to the site. This will involve:

- Significantly increasing the number of bicycle parking spaces within the precinct, with 150 bicycle parking spaces to be delivered as part of the SFS redevelopment project. A further 20 bicycle parking spaces will be provided within the public domain of the Precinct Village which will increase the total bicycle parking allocation in close proximity of the site to at least 170 spaces.
- Promotion of cycling as a mode of transport on the Venues NSW website, and potentially following the purchase of tickets to events via the relevant ticketing providers website.
- Improved wayfinding from the local and regional cycling network to bicycle parking locations within the precinct which will be delivered as part of the SFS redevelopment project.
- Improved awareness of existing and future bicycle parking through the development of a transport access guide for the precinct, to be delivered as part of the broader Green Travel Plan to be developed for the SFS redevelopment.

Retail staff of the Precinct Village choosing to ride their bicycles to the site will be permitted to park their bikes within the secure bike parking area being delivered as part of the stadium redevelopment, with bicycle parking to be available for 5% of full time equivalent staff in accordance with Condition B50 of SSD 9835.

6 Car Parking and Traffic Assessment

6.1 Existing transport approvals

An extensive amount of traffic and transport analysis has been undertaken to inform the planning for the SFS redevelopment project. Detailed traffic modelling was undertaken to support the Stage 1 DA approval (SSD 9249) which considered the following parameters relevant to transport:

- A redeveloped stadium with capacity for up to 45,000 seats;
- Maximum attendance in the Moore Park precinct of 95,000 people during a major double header event; and
- 5,550 event day car parking spaces available in the Moore Park precinct, inclusive of 600 spaces in the MP1 car park.

The traffic modelling undertaken for the Stage 1 DA assessed the operation of signalised intersections in the vicinity of the SFS, including the Driver Avenue / Moore Park Road intersection. The traffic modelling considered traffic movements generated by the 5,550 event car parking spaces in the Moore Park precinct, including 1,600 combined spaces at the northern end of the precinct in MP1 and EP2. Traffic movements associated with taxis, ride-share and general kiss and ride vehicles during a major double header event were also incorporated in the traffic modelling undertaken for the Stage 1 DA. In addition to the traffic modelling undertaken for events, modelling also considered the operation of key intersections around the site during non-event periods.

No further traffic modelling was undertaken to support the Stage 2 DA for the SFS redevelopment (SSD 9835) despite the MP1 car park capacity reducing from 600 spaces (as approved under Stage 1) down to 540 spaces.

The traffic modelling for non-event periods, undertaken as part of the Stage 1 DA, was updated in late 2020 to support the Stadium Fitness Facilities (SFF) project (SSD 9835 Mod 2). This modelling considered the increased traffic movements associated with the general operations of the SFF as the traffic movements generated by 500 person functions at the venue.

This work previously undertaken for the SFS redevelopment has been used as the basis for the traffic and car parking assessment provided in the following sections of this document.

6.2 Event day parking needs

The Sydney Football Stadium, unlike Bankwest Stadium and Stadium Australia, does not have the benefit of being located within easy walking distance (1.2km or less) of a mass transit station. Instead the SFS is reliant upon lower capacity public transport modes, those being light rail and bus. Many patrons, particularly those living in the Eastern Suburbs supporting key tenants such as Sydney Roosters and NSW Waratahs, do not have access to light rail nor direct access by bus to Moore Park in many instances. Depending on scheduled sporting fixtures and events, the demographic composition (age, family groups, etc) and locational origin of fan bases varies significantly and generates different travelling profiles from across metropolitan Sydney, regional NSW and interstate. The holistic transport solution of the SFS must recognise that these patrons are generally reliant on cars to access the precinct.

The transport solution must also acknowledge that the SFS is magnet infrastructure that serves a much broader catchment than the immediate community or residents within the City of Sydney and immediately adjoining LGAs. A significant number of patrons travel to the SFS from Greater Sydney and beyond, where utilisation of public transport in the late evening after the conclusion of events to travel long distances is not feasible for most people. The accessibility, convenience, reliability and frequency of the proposed transport solution must be considered in this context.

Patrons have the option to walk from Central Station to access the precinct in lieu of using buses and light rail. This walk however is approximately 25-30 minutes long and not feasible for many people, particularly the elderly, mobility impaired and families with children. Cycling will be encouraged as a mode of access but this is only an option for a small number of people, particularly given most events finish in the evening and patrons are more reluctant to cycle at night.

The existing Entertainment Quarter car park experiences delays for exiting vehicles due to design constraints and the inability to turn left onto Lang Road after 10pm in the evening. Satellite parking at Randwick Racecourse has also been trialled, however, it has had relatively low utilisation because of the transfer from the parking area to light rail and to the SFS itself.

In this context, it is important that there is the successful development and implementation of precinct-wide transport plans in consultation with Venues NSW, Transport for NSW and the Moore Park Events Operations Group prior to other portions of parking on Moore Park (including the southern portion of EP2 (Lower Kippax) and EP3 (Showground) being removed by Greater Sydney Parklands. The introduction of transport initiatives will ensure congestion is reduced in the precinct.

It is noted that VNSW has continued to promote integrated ticketing for events, and encouraging the use of public transport when travelling to and from events. While this has always subject to discussions between individual clubs and TfNSW, integrated ticketing has been successfully implemented in the past and will continue to be championed in the ongoing operations of the SFS through the development and implementation of the Green Travel Plan under Condition D14 of the consent.

Importantly, the Precinct Village and Car Park project is one aspect of a multi-faceted event transport strategy for the SFS and broader Moore Park Precinct. The project does not in any way negate or compromise the obligations of the current conditions of approval which require VNSW to consider satellite parking opportunities and other transport initiatives to improve access to the Precinct.

6.3 Event day parking supply

The availability of parking is considered critical to the successful operation of the new SFS and underpins the attractiveness of the venue for patrons and event organisers. Maintaining an appropriate level of event day parking is essential to ensuring accessibility and equity for vulnerable and disadvantaged visitors. Venues NSW is committed to providing opportunities for all people to enjoy access to world-class events at its venues. The parking levels ensure that:

- Access is available for mobility-impaired patrons
- Regions poorly served by public transport have travel choices for accessing the venue
- Vulnerable patrons and families have an alternative to public transport for accessing the venue

There are currently 4,950 event day car parking spaces provided in the Moore Park precinct. Under the current approval (SSD 9835) for the SFS development a further 540 parking spaces would be delivered in the MP1 car park, taking the total event parking provision to 5,490 spaces¹.

The Precinct Village and Car Park project proposes to increase the number of parking spaces in MP1 from 540 (as approved under SD 9835) to 1,500 – an increase of 960 spaces. The proposal will however facilitate the immediate removal of the northern portion of the EP2 (Upper Kippax) on-grass parking area within Moore Park opposite the MP1 Car Park. There would be a total of 4,600 spaces available on event days in the Precinct on completion of Stage 1 of the project (eastern car park). All on-grass event car parking associated with the use of the stadium within EP2 (Lower Kippax) will cease prior to the commencement of operation of Stage 2 of the Precinct Village and Car Park.

¹ Note: Condition C39 of the Stage 1 Approval (SSD 9249) requires the future development application to maintain the number of car spaces currently available at the MP1 car park and maintain the same access point. At the time of SSD 9249's approval, the MP1 car park accommodated 600 spaces. Subsequently, the Stage 2 SFS Redevelopment (SSD 9835) approved 540 spaces on the MP1 car park.

The development will also enable on-grass parking in EP3 (Showground) to be progressively removed by Greater Sydney Parklands in consultation with VNSW, TfNSW and the MEOG pending the successful development and implementation of precinct-wide transport plans - with the view of removing all on-grass car parking in Moore Park once both stages of the Precinct Village and Car Park is operational. The Greater Sydney Parklands Trust Exposure Bill announced by the NSW Government seeks to legislate additional protections against on grass parking for Moore Park. A total of 4,350 event day spaces would be provided in the Precinct once all on-grass car parking is removed.

As part of the event car parking management plan, required under Condition D50 of SSD 9835, satellite car parking areas such as Randwick Racecourse are being considered to accommodate parking demands for major events held at the SFS. This approach is consistent with the Moore Park Masterplan which noted that on-grass parking would not be removed until supplementary parking in dispersed locations has been created. The need for additional satellite parking areas will be discussed as part of pre-event planning to be undertaken by the MEOG.

The proposed event car parking provision for the Moore Park Precinct at the completion of Stage 1 and Stage 2 of the development, compared against that approved for the SFS under SSD 9835, is shown in Table 3. This demonstrates that the delivery of the Precinct Village and Car Park will reduce overall car parking capacity in the Precinct by 1,140 spaces when compared with current approvals. This overall reduction in car parking spaces post development completion is in line with Transport for NSW's objective to reduce car parking in the Precinct.

Table 3 Event day car parking provision

Car park	Car park type	Number of event day parking spaces			
		<i>As per current SFS approval (SSD 9835)</i>	<i>On Stadium Opening</i>	<i>With Precinct Village and Car Park Proposal (Stage 1)</i>	<i>With Precinct Village and Car Park Proposal (Stage 2)</i>
Members Car Park (MP1)	Permanent car park	540	0*	300	1,500
Event Parking 2 (EP2)	Event car parking (grass)	1,000 (Upper & Lower Kippax)	350 (Lower Kippax)	350 (Lower Kippax)	0
Event Parking 3 (EP3)	Event car parking (grass)	1,100	1,100	1,100	0 – 1,100**
Sydney Boys / Girls High School	Event car parking	750	750	750	750
Moore Park Golf Club	Event car parking	100	100	100	100
Entertainment Quarter	Permanent car park	2,000	2,000	2,000	2,000
Total		5,490	4,300	4,600	4,350 – 5,450

* While it is intended that the stadium opening data coincides with the delivery of Stage 1 of the Precinct Village and Car Park project, a scenario has been considered where Stage 1 of the car park is delayed due to unforeseen circumstances.

** It is intended that all car parking in EP3 will be removed by Greater Sydney Parklands once both stages of the Precinct Village and Car Park is operational pending the successful development and implementation of precinct-wide transport plans.

6.4 Event day traffic assessment

As the project results in a reduction in event day parking supply the volume of traffic entering the Precinct during events days will also decrease compared to currently approved conditions. The Driver Avenue / Moore Park Road intersection will continue to accommodate all car park ingress movements into the Precinct to service the MP1 car park, consistent with current operations for the EP2 and MP1 car parks.

The primary change arising from the Precinct Village and Car Park project in relation to event traffic movements will be that vehicles departing the Precinct will no longer be solely concentrated through the southern approach of the Driver Avenue / Moore Park Road intersection. With the inclusion of a left only exit point onto Moore Park Road, the 1,500 vehicles in the car park will be distributed across both the southern and eastern approaches of the intersection. This distribution of traffic compared against currently approved conditions is illustrated in Figure 34 below, noting a reduction of 415 cars exiting the site via Driver Avenue.

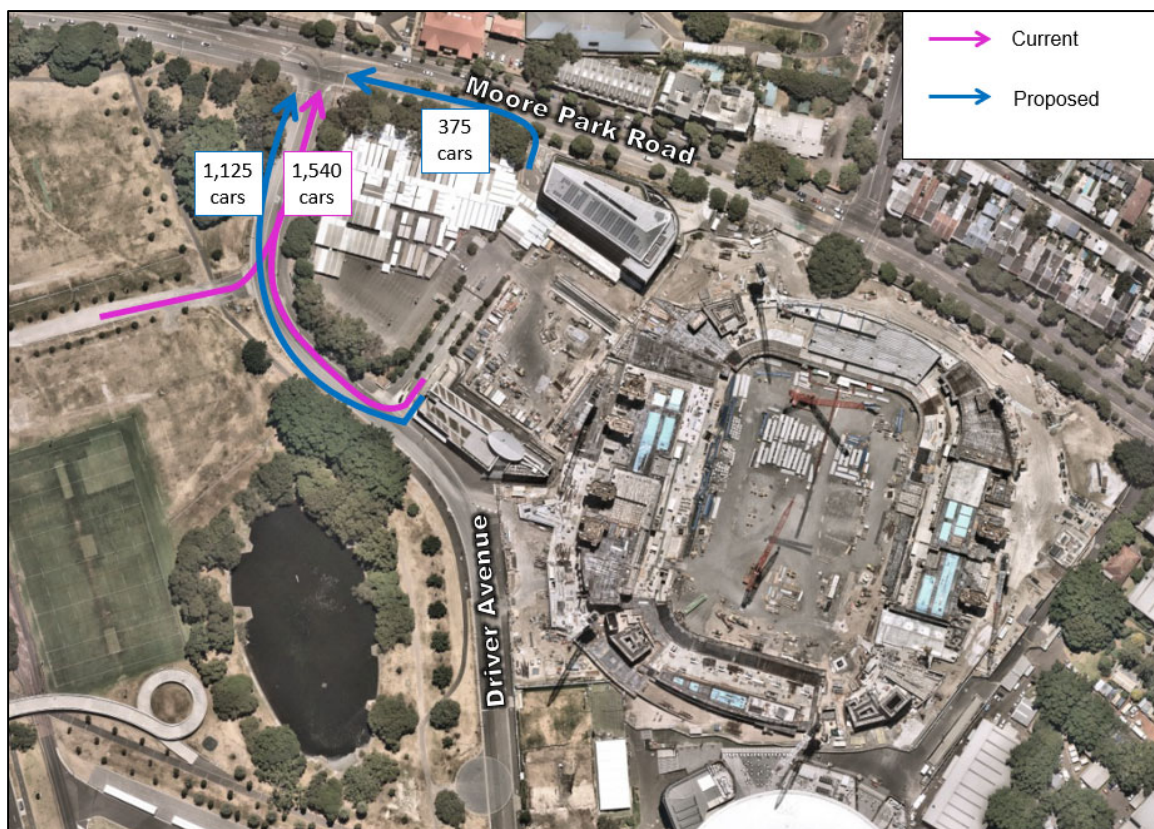


Figure 34 Event day traffic movements

The redistribution of traffic across two approaches of the Driver Avenue / Moore Park Road intersection will result in a more balanced road network outcome. During event egress this set of traffic lights operates as a two phase intersection

as indicated in Figure 35. By distributing event traffic across both the southern and eastern approaches, the intersection can operate in an improved manner when compared to current conditions more green time can be allocated to the 'A Phase' (i.e. Moore Park Road westbound). This will in turn reduce the extent of queueing experienced along Moore Park Road in the vicinity of the SFS.

Cars exiting the car park via Moore Park Road can travel straight through the intersection during the 'A Phase' when pedestrians will simultaneously cross Driver Avenue in an east-west direction.

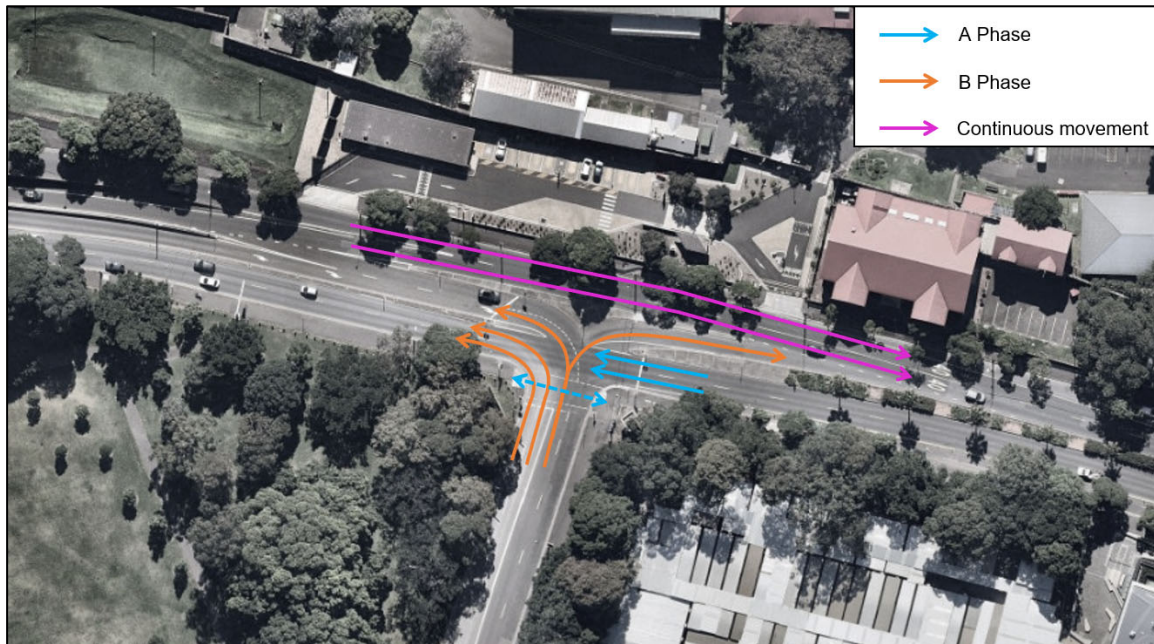


Figure 35 Moore Park Road / Driver Avenue traffic lights operations (event mode)

Therefore in relation to event day traffic impacts it can be concluded that the Precinct Village and Car Park project would:

- Decrease the volume of traffic moving through the Driver Avenue / Moore Park Road intersection compared to currently approved conditions; and
- Allow for a more balanced road network outcome given traffic movements can be distributed across two approaches of the Driver Avenue / Moore Park Road intersection, rather than being concentrated entirely on the southern approach as is currently the case.

In this context the proposal will not result in any additional event day traffic impacts compared with that already considered as part of planning for the SFS.

With the development enabling all other portions of event parking on Moore Park to be progressively removed by Greater Sydney Parklands, traffic movements in the Precinct on event days will be significantly reduced when compared with current conditions. This will provide for significantly improved road network operations both prior to and following the conclusion of events.

6.5 Non-event day traffic assessment

On non-event days additional traffic movements generated to the site will be associated with either:

- The 1,500m² retail floor space to be delivered as part of the project; or
- Use of the public domain area for various gatherings / events of up to 2,400 people – to be held outside of events at the SFS or the SCG.

Although the Precinct Village and Car Park project will increase parking supply in Moore Park outside of event days, parking demand and therefore traffic generation is not expected to significantly change for all other approved uses as a result of the proposed modification. Previous planning for the SFS has already considered the impacts of traffic movements generated by stadium tenants and members during peak hours, taking into consideration the recently approved Stadium Fitness Facilities project (SSD 9835 Mod 2). The Precinct Village and Car Park project will not alter the demands or activity generated by these approved uses.

Previous surveys undertaken at the nearby Entertainment Quarter (EQ) car park have demonstrated that there are significant levels of parking supply available on a typical non-event day. This is presented in Figure 36 which indicates parking never reaches 50% of total capacity on a weekday, with more than 1,000 spaces available at any given time. This demonstrates that parking in the Moore Park Precinct outside of event days is not capacity constrained. Increased parking supply, supported by an appropriate car park pricing structure, will not lead to increased parking demands and traffic generation by stadium users compared to that already considered as part of planning for the venue.

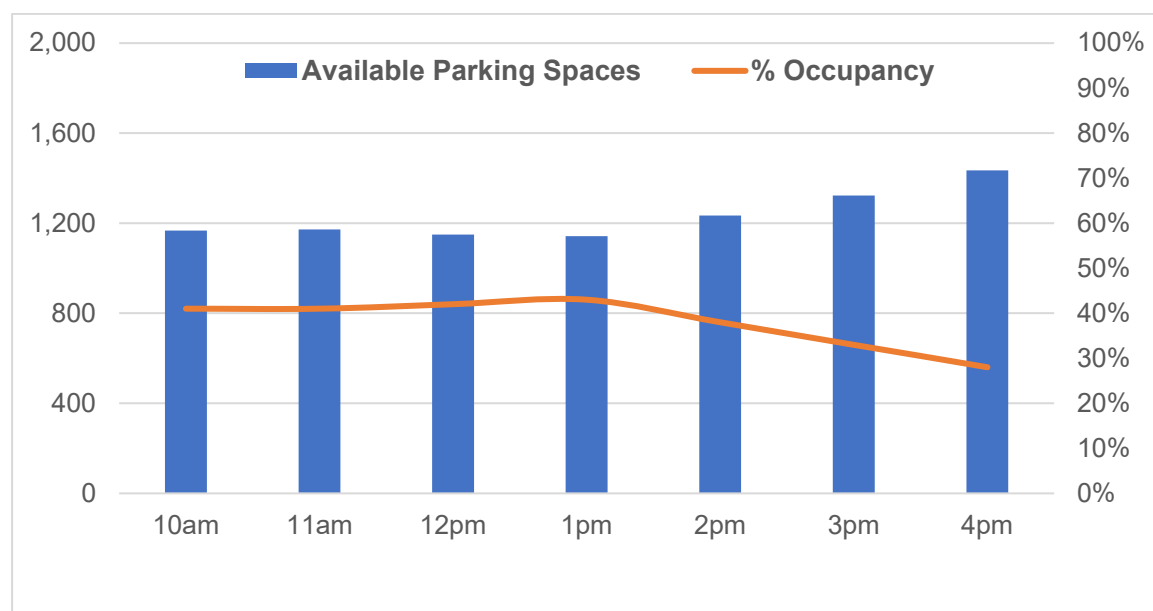


Figure 36 Parking profile – Entertainment Quarter car park
Source: GTA, 2019

Increased parking demands and traffic movements to the site are expected as a result of the new retail offering to be provided as part of the Precinct Village and Car Park project. Approximately 1,500m² of retail gross floor area (GFA) is to be provided that has not been considered as part of previous planning for the SFS and SFF. Based on typical rates of traffic generation for retail floor space as noted in the TfNSW *Guide to Traffic Generating Developments – Updated Traffic Surveys* document, Table 4 summaries the forecast additional traffic generation resulting from the modification proposal.

Table 4 Forecast increase in traffic generation – non-event

Peak Hour	Retail Floor Space ²	Traffic Generation Rate ³	No. of trips
AM Peak Hour	1,125m ² GLA	5.9 / 100m ² GLA	50
PM Peak Hour		12.3 / 100m ² GLA	104

Events may also be held within the public domain of the Precinct Village that accommodate up to 2,400 people. The majority of these events would occur on weekends or in the evenings outside of peak traffic periods, however as a worst case scenario it is assumed all attendees arrive in the critical PM peak hour of 5pm-6pm.

Analysis has been undertaken to specifically consider the traffic movements generated by a 2,400 person event in the public domain of the Precinct Village. The following factors have been used to determine the forecast traffic movements:

- Proportion of people that will travel to the site via car.
- Car occupancy (i.e. number of people travelling in each car). For an event held at the SFS this is typically 2.5 people per vehicle or more based on previous surveys undertaken at the venue.

² Consistent with Section 5.7 of the RMS Guide, GLFA: GFA=0.75:1

³ Consistent with TfNSW guidelines, 25% reduction factor has also been applied to retail vehicular trip rates to account for high passing trade and linked trips expected given the location of retail adjacent to the SFS

The forecast travel demand generated by a 2,400 person event held in the Precinct Village is provided in Table 5.

Table 5 Forecast travel demand during events held in the Precinct Village

Mode of travel	Mode Share	No. of people	People per vehicle	No. of cars
Car	30%	720	2.5	288
Public transport	30%	720	n/a	
Taxi / Uber	20%	480	2.5	192
Walk / Cycle	20%	480	n/a	
Total	100%	2,400		480

The analysis indicates that approximately 480 vehicle movements could be generated on arrival and departure to the Precinct Village during 2,400 person functions, 288 of which are private vehicles that would park in the car park. As a worst case scenario it is assumed 100% of these traffic movements enter and exit via the Moore Park Road / Driver Avenue intersection. More realistically traffic movements will be split across Driver Avenue at both Moore Park Road and Lang Road to the south.

Previous traffic analysis undertaken for the SFS redevelopment project determined that the weekday PM peak hour was the most critical in terms of road network operation, and for this reason the performance of the network in the afternoon peak period was assessed as part of both the Stage 1 DA (SSD 9249) as well as the recently approved Stadium Fitness Facilities project (SSD 9835 Mod 2). Consistent with the analysis previously undertaken for the site, the impact of the additional vehicle movements generated by the retail floor space on the operation of the adjacent Moore Park Road / Driver Avenue intersection has been analysed. This analysis has considered:

- Existing traffic flows on Moore Park Road and Driver Avenue (collected in 2019);
- Additional traffic flows from the recently approved Stadium Fitness Facilities project (taking into account demands generated by a 500 person function);
- Additional traffic flows generated by the retail floor space proposed as part of the Precinct Village and Car Park project; and
- Additional traffic flows generated by 2,400 person events held in the Precinct Village. This is inclusive of people already utilising the retail space in the Precinct Village.

The results of the traffic analysis for all assessed scenarios are presented in Table 6 below. The analysis demonstrates that the proposal does not significantly impact the operation of the Moore Park Road / Driver Avenue intersection, with this intersection forecast to continue to operate at an acceptable level of service. This is the case even in the unlikely scenario that a 2,400 person event is held in the Precinct Village that also coincides with the weekday PM peak hour.

More detailed intersection modelling outputs are provided in Appendix A of this document.

Table 6 Forecast road network performance

Intersection	Scenario	Intersection Performance		
		Degree of Saturation	Level of Service	Average delay (seconds)
Moore Park Road / Driver Avenue (PM Peak Hour)	Existing	0.56	A	9
	Existing + Stadium Fitness Facilities (as approved under SSD 9835 MOD 2)	0.61	A	10
	Existing + Stadium Fitness Facilities + Precinct Village Retail	0.65	A	11
	Existing + Stadium Fitness Facilities + Precinct Village Events	0.87	B	18

6.6 Car park design and circulation

The car park has been designed in accordance with AS2890.1 with respect to ramp gradients, circulation aisle widths and car space dimensions. A review of the plans has found that the car park layout complies with the requirements of AS2890.1-2004 for Class 2 parking areas. Accessible parking spaces are provided in accordance with AS2890.1.

The car park has been carefully designed in order to ensure vehicles can enter and exit efficiently on both event and non-event days. The eastern car park contains two boom gates (one entry / one exit) while the western car park contains four boom gates given it's increased capacity of over 1,200 cars. On events these boom gates will operate in a tidal flow manner so as to provide increased ingress and egress capacity. Given the reduced traffic flows on non-event days only two boom gates will be in operation in the western car park.

Licence plate recognition will be in place in the car park so as to provide greater entry and exit capacity for vehicles. For major events people have to pre-book parking which will allow vehicles to egress the car park more efficiently given that no transactions will be processed at the boom gates. This is consistent with arrangements in place at the major event car parks in Sydney Olympic Park.

This arrangement will result in significantly improved egress capacity, allowing the car park to clear efficiently and not resulting in significant queues within the car park as can occur at the nearby Entertainment Quarter car park after events. It is expected that under typical conditions the car park will be able to clear within 30-45 minutes of the conclusion of the event.

Australian Standards AS2890.1 provides guidance that free flow exit capacity of car parks is 600 vehicles / hour / lane. The four egress lanes to be provided can therefore comfortably accommodate the 1,500 car parking spaces to be provided. It is also important to note that typically between 10% and 20% of the spaces occupied in the car park will be for players, officials, VIPs, contractors and other staff members who will not leave the Precinct until well after the conclusion of the event. Therefore generally only between 1,200 and 1,350 cars will be departing the car park immediately after the completion of the event, with the four egress lanes provided to be sufficient to accommodate this demand.

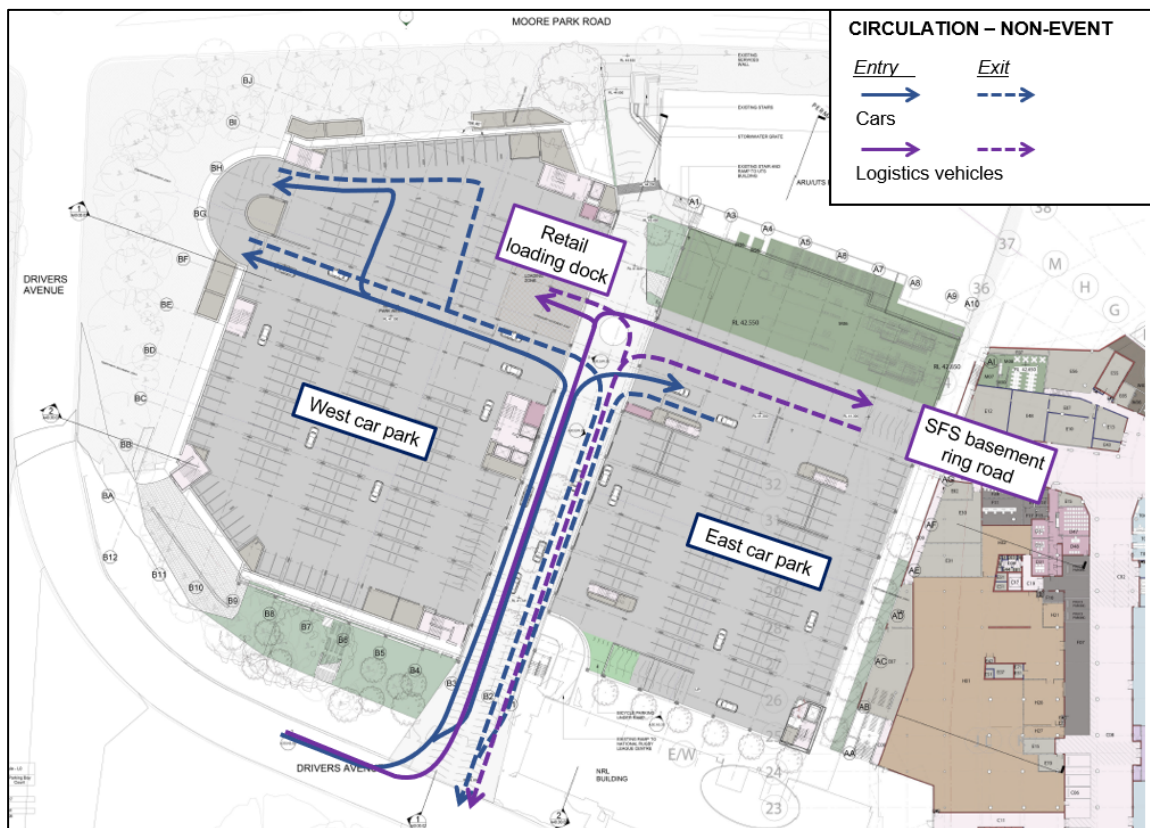


Figure 37 Vehicle circulation – non-event day

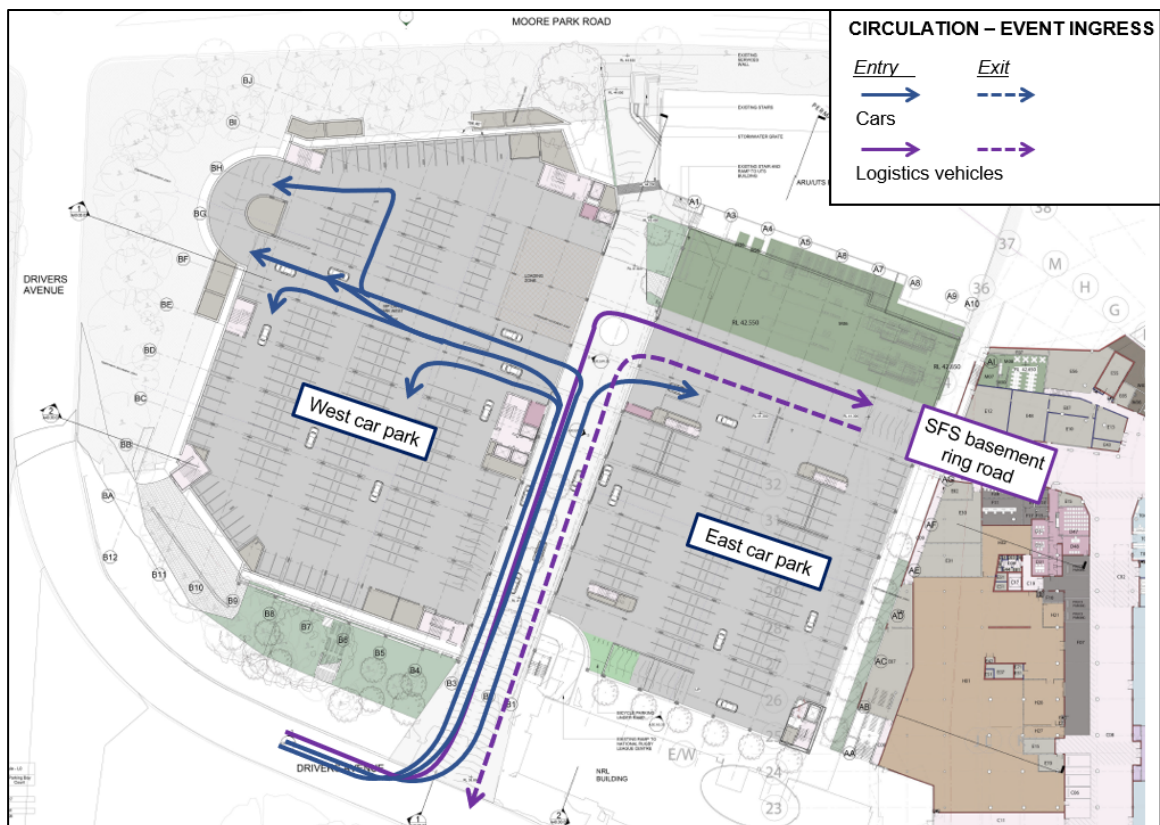


Figure 38 Vehicle circulation – event day (ingress)

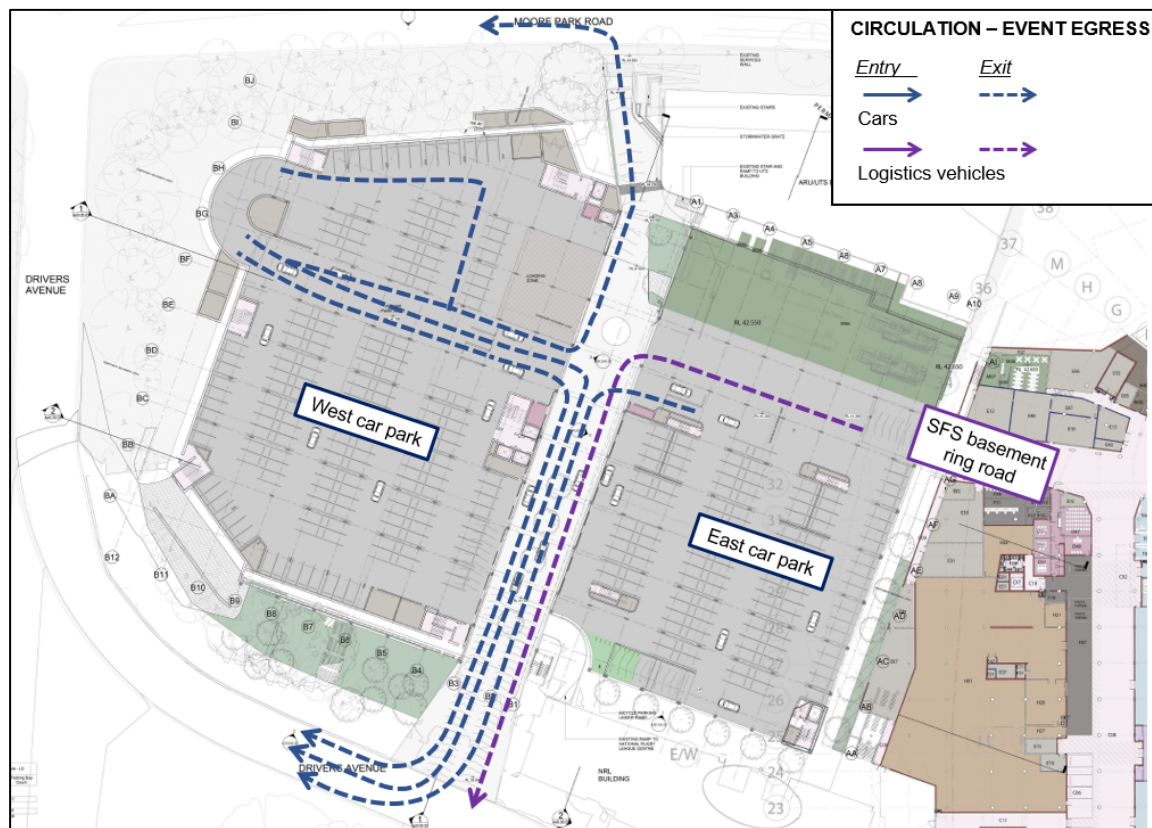


Figure 39 Vehicle circulation – event day (egress)

6.7 Parking management

It is important that the car parking spaces within the SFS site are managed effectively so that commuters are discouraged to utilise the car park for all day parking outside of events. Instead the objective of the public car park should be to provide for short stay parking to support the retail uses in the precinct village and discourage all day commuter parking.

In this context a parking rates structure would be implemented to discourage long stay parking. Venues NSW will set the price point for use of the car park to detract use by commuters in non-event mode to allow the car park to be utilised target users including the local community.

7 Construction Traffic Management Principles

7.1 Overview

Prior to construction, a Construction Traffic Pedestrian Management Plan (CTPMP) will be prepared. The purpose of the CTPMP is to assess the proposed access and operation of construction traffic associated with the proposed development with respect to safety and capacity. The Contractor will be responsible for preparing the CTPMP, ensuring the following are addressed:

- Proposed construction vehicle routes;
- Indicative construction programme;
- Expected construction vehicle types and volumes;
- Car parking arrangements and site access during construction;
- Safety measures to minimise impacts to pedestrians and cyclists. T

The Contractor will also be responsible for monitoring and coordinating all vehicles entering and exiting the site.

7.2 Construction vehicle routes

The construction vehicles routes to be utilised for the Precinct Village and Car Park would likely be consistent with those already in use for the SFS redevelopment project, which have been selected in order to:

- Restrict vehicle access to the State and Regional road network, and not impact the amenity of residential streets;
- Avoid impacting concurrent construction projects in the vicinity of the site; and
- Minimise impacts to the public transport network, including the CBD and South East Light Rail service.

The approach and departure routes for construction vehicles are illustrated in the figures on the following page. In accordance with Condition B38 of the project approvals for SSD 9335, the proposed truck routes to be followed by trucks transporting waste material from the site have been identified. The anticipated routes to be taken for construction waste will be consistent with those identified for general construction vehicles. No local roads will be used by trucks transporting waste from the site.

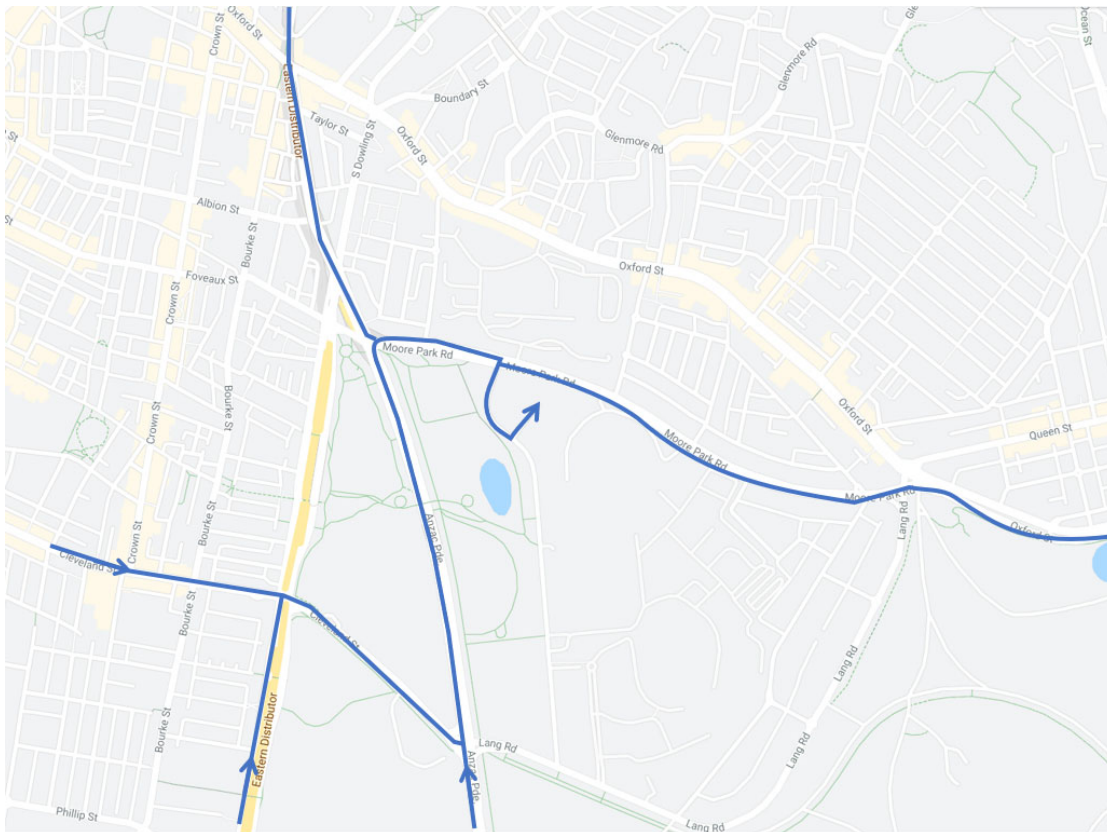


Figure 40 Construction vehicle access routes

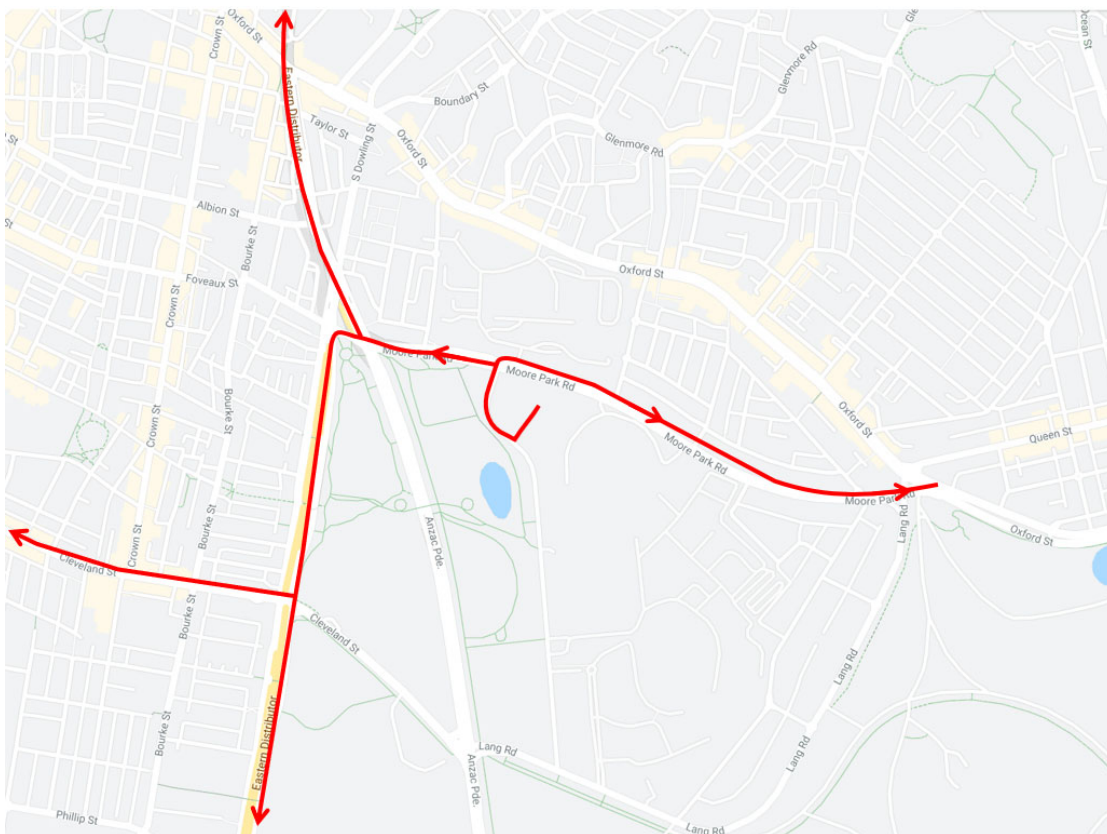


Figure 41 Construction vehicle egress routes

7.3 Work hours

Consistent with Condition C3 of SSD 9835 working hours for the project would be as follows:

- Monday to Friday 7.00am and 6.00pm
- Saturday 8:00am and 1:00pm
- Sunday/ public holiday No work

7.4 Size and type of vehicles

The site will have various types of construction vehicles accessing the site, including:

- 19m Single Articulated Vehicles (AVs) and 19m Truck and Dog Trailers;
- 12.5m Heavy Rigid Vehicles (HRVs)
- 8.8m Medium Rigid Vehicles (MRVs)
- 6.5m Small Rigid Vehicles (SRVs);
- Utes/vans

The largest construction vehicles accessing the site on a typical day will include 19m Articulated Vehicles and Truck and Dog Trailers. These vehicle types are consistent with those currently in use for the SFS redevelopment project. Use of these longer vehicles are considered acceptable given that their use is proposed outside of the core CBD context, and construction vehicles will be primarily using arterial roads to access the site.

7.5 Construction traffic movements

Based on the scale of the development the following number of construction vehicles are forecast:

- Up to 70 vehicles per day during the Stage 1 works
- Up to 100 vehicles per day during the Stage 2 works

These construction vehicle volumes are indicative only and would be confirmed following the appointment of a contractor.

7.6 Mitigation measures

Mitigation measures will be adopted during construction to ensure traffic movements have minimal impact on surrounding land uses and the community in general, and would include the following:

- Trucks to not use any local streets for access to the construction site;
- Trucks to enter and exit the site in a forward direction;
- Pedestrians near the ingress/egress points will not be held unnecessarily.
- At construction vehicle access/egress points, priority is to be given to trucks accessing the site over trucks egressing the site so as to have no impact to traffic flow on surrounding roads (unless exceptional circumstances do not permit)
- Trucks to not circulate on the road network to wait to enter the site (unless exceptional circumstances do not permit)
- Restrict construction vehicle activity to designated routes which do not utilise any local roads;
- Truck drivers will be advised of the designated truck routes to/ from the site;
- Construction access from the external road network to mainly occur at signalised intersection;
- Pedestrian movements adjacent the construction site will be managed and controlled by site personnel where required;
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;
- Construction activity to be carried out in accordance with approved hours of work;
- Truck loads would be covered during transportation off-site;
- Establishment and enforcement of appropriate on-site vehicle speed limits which would be reviewed depending on weather conditions or safety requirements;
- Activities related to the construction works would not impede traffic flow along adjacent roads;
- Materials would be delivered and spoil removed during standard construction hours;
- Construction vehicles not to queue on adjacent streets other than in the designated works zone on Driver Avenue
- During site induction, workers will be informed of the existing bus, train and light rail network servicing the site;

- To support construction workers in utilising public transport, appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements; and
- Development and enforcement of driver charter.

7.7 Driver code of conduct

The appointed contractor will include the following in all subcontract procurement packages:

- a copy of the approved truck routes as previously detailed in this document.
- the approved maximum truck size
- any other entry restrictions, or site access restrictions as agreed to by the authorities.

8 Summary

This transport assessment report has been prepared by JMT Consulting on behalf of Venues NSW to support the Precinct Village and Car Park project. The proposed development will facilitate the immediate removal of the northern portion of the EP2 (Upper Kippax) on-grass parking area within Moore Park opposite the MP1 Car Park (proposed to be formalised via condition of consent) and enable the permanent use of this space as public open space consistent with the Moore Park Masterplan 2040.

The proposal will significantly improve pedestrian access and circulation in and around the Moore Park Precinct, aligning with the objectives of the Moore Park Masterplan. Pedestrian pathways will be provided through the former MP1 car park which will provide connections directly through to the SFS concourse area, Moore Park east and the Moore Park light rail stop.

The interface between the key pedestrian routes and vehicles accessing the car park have been carefully considered in order to minimise conflict points and maximise the efficiency of the car park to reduce vehicle egress times. The project will facilitate the elimination of existing pedestrian/vehicle conflict points along Driver Avenue through the delivery of new pedestrian pathways – providing for a safer and more amenable environment.

The removal of the existing EP2 vehicle access point will allow for an extension of the existing event drop off zone on the western side of Driver Avenue which will reduce the extent of existing traffic congestion prior to the commencement of events in the precinct and provide for an improved transport outcome. The project will result in net decrease in event day parking spaces compared with the currently approved SFS redevelopment. With the inclusion of a vehicle egress only point onto Moore Park Road, the proposal will provide more balanced traffic movements through the Driver Avenue / Moore Park Road intersection.

Additional bicycle parking will be provided as part of the project within the public domain area, complementing the 150 spaces to be provided as part of the SFS redevelopment project. Cycling will be encouraged as a mode of transport to the site, particularly given the strong regional cycleway connections available.

Traffic analysis undertaken outside of events held at the SFS has demonstrated that the proposal does not significantly impact the operation of the Moore Park Road / Driver Avenue intersection, with this intersection forecast to continue to operate at an acceptable level of service. This is the case even in the unlikely scenario that a 2,400 person event is held in the Precinct Village that also coincides with the weekday PM peak hour.

Based on the above key findings, it is considered that the proposal's impact on the transport network will be acceptable.

Appendix A: Traffic Modelling Outputs

MOVEMENT SUMMARY

 **Site: [Existing]**

Moore Park Road/ Driver Avenue

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Driver Avenue												
1	L2	157	2.0	0.270	22.4	LOS B	3.5	25.0	0.79	0.76	0.79	39.6
3	R2	107	2.0	0.503	34.4	LOS C	3.2	22.6	0.98	0.77	0.98	33.7
Approach		264	2.0	0.503	27.3	LOS B	3.5	25.0	0.87	0.77	0.87	37.0
East: Moore Park Road												
4	L2	108	2.0	0.555	17.5	LOS B	10.5	75.1	0.76	0.70	0.76	45.4
5	T1	912	2.0	0.555	11.9	LOS A	10.8	76.9	0.76	0.68	0.76	43.6
Approach		1020	2.0	0.555	12.5	LOS A	10.8	76.9	0.76	0.68	0.76	43.9
West: Moore Park Rd												
11	T1	1593	2.0	0.517	1.1	LOS A	4.1	29.3	0.37	0.24	0.37	57.0
12	R2	112	2.0	0.305	34.7	LOS C	1.6	11.6	0.96	0.74	0.96	33.9
Approach		1704	2.0	0.517	3.3	LOS A	4.1	29.3	0.41	0.27	0.41	53.7
All Vehicles		2988	2.0	0.555	8.6	LOS A	10.8	76.9	0.57	0.45	0.57	47.6

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

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

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	65	14.0	LOS B	0.1	0.1	0.69	0.69	
All Pedestrians		65	14.0	LOS B			0.69	0.69	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\JMT Consulting\Projects\2122 - SFS car park\Internal\Report\Driver Avenue_Moore Park Road SIDRA (SFS Car Park).sip8

MOVEMENT SUMMARY

 **Site: [Existing + Stadium Fitness Facilities + Function]**

Moore Park Road/ Driver Avenue

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Driver Avenue												
1	L2	183	2.0	0.300	21.9	LOS B	4.1	28.9	0.78	0.77	0.78	39.9
3	R2	134	2.0	0.548	33.6	LOS C	3.9	28.0	0.98	0.79	0.99	34.0
Approach		317	2.0	0.548	26.8	LOS B	4.1	28.9	0.87	0.78	0.87	37.2
East: Moore Park Road												
4	L2	156	2.0	0.605	18.6	LOS B	11.6	82.4	0.80	0.74	0.80	44.3
5	T1	912	2.0	0.605	13.0	LOS A	12.0	85.3	0.80	0.72	0.80	42.5
Approach		1067	2.0	0.605	13.8	LOS A	12.0	85.3	0.80	0.72	0.80	42.8
West: Moore Park Rd												
11	T1	1593	2.0	0.517	1.1	LOS A	4.1	29.2	0.37	0.24	0.37	57.0
12	R2	159	2.0	0.434	35.2	LOS C	2.4	16.9	0.98	0.76	0.98	33.7
Approach		1752	2.0	0.517	4.2	LOS A	4.1	29.2	0.42	0.28	0.42	52.5
All Vehicles		3136	2.0	0.605	9.8	LOS A	12.0	85.3	0.59	0.48	0.60	46.5

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

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

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	65	14.7	LOS B	0.1	0.1	0.70	0.70	
All Pedestrians		65	14.7	LOS B			0.70	0.70	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\JMT Consulting\Projects\2122 - SFS car park\Internal\Report\Driver Avenue_Moore Park Road SIDRA (SFS Car Park).sip8

MOVEMENT SUMMARY



Site: [Existing + Stadium Fitness Facilities + SFF Function + Precinct Village Retail]

Moore Park Road/ Driver Avenue

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Driver Avenue												
1	L2	211	2.0	0.329	21.3	LOS B	4.6	32.9	0.78	0.77	0.78	40.2
3	R2	161	2.0	0.586	33.0	LOS C	4.7	33.6	0.98	0.81	1.02	34.2
Approach		372	2.0	0.586	26.4	LOS B	4.7	33.6	0.86	0.79	0.88	37.4
East: Moore Park Road												
4	L2	183	2.0	0.645	19.6	LOS B	12.4	88.0	0.83	0.77	0.83	43.5
5	T1	912	2.0	0.645	14.0	LOS A	12.9	91.7	0.83	0.75	0.83	41.5
Approach		1095	2.0	0.645	14.9	LOS B	12.9	91.7	0.83	0.75	0.83	41.9
West: Moore Park Rd												
11	T1	1593	2.0	0.517	1.1	LOS A	4.1	29.2	0.37	0.24	0.37	57.0
12	R2	186	2.0	0.509	35.5	LOS C	2.8	20.0	0.99	0.77	1.00	33.6
Approach		1779	2.0	0.517	4.7	LOS A	4.1	29.2	0.43	0.29	0.43	51.8
All Vehicles		3245	2.0	0.645	10.6	LOS A	12.9	91.7	0.62	0.50	0.62	45.7

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

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

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	65	15.5	LOS B	0.1	0.1	0.72	0.72	
All Pedestrians		65	15.5	LOS B			0.72	0.72	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\JMT Consulting\Projects\2122 - SFS car park\Internal\Report\Driver Avenue_Moore Park Road SIDRA (SFS Car Park).sip8

MOVEMENT SUMMARY



Site: [Existing + Stadium Fitness Facilities + SFF Function + Precinct Village Event]

Moore Park Road/ Driver Avenue

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Driver Avenue												
1	L2	299	2.0	0.426	20.5	LOS B	6.6	46.8	0.78	0.79	0.78	40.7
3	R2	249	2.0	0.817	37.4	LOS C	8.2	58.7	1.00	0.96	1.34	32.5
Approach		548	2.0	0.817	28.2	LOS B	8.2	58.7	0.88	0.87	1.04	36.5
East: Moore Park Road												
4	L2	429	2.0	0.873	33.4	LOS C	22.2	158.1	0.99	1.05	1.29	34.9
5	T1	912	2.0	0.873	27.1	LOS B	24.0	170.7	0.99	1.07	1.27	32.5
Approach		1341	2.0	0.873	29.1	LOS C	24.0	170.7	0.99	1.06	1.28	33.5
West: Moore Park Rd												
11	T1	1593	2.0	0.517	1.1	LOS A	4.1	29.0	0.37	0.24	0.37	57.0
12	R2	327	2.0	0.766	37.8	LOS C	5.3	37.8	1.00	0.91	1.29	32.7
Approach		1920	2.0	0.766	7.4	LOS A	5.3	37.8	0.47	0.35	0.52	48.7
All Vehicles		3809	2.0	0.873	18.0	LOS B	24.0	170.7	0.71	0.68	0.86	40.0

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

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

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	65	16.9	LOS B	0.1	0.1	0.75	0.75	
All Pedestrians		65	16.9	LOS B			0.75	0.75	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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