Attachment C7

Proponent Traffic Assessment

Appendix D – Traffic assessment

Transport Assessment

Planning Proposal
1-3 Burrows Road, St Peters

Ref: P0115r01
4/03/2020

Info@asongroup.com.au | +61 2 9083 6601 | Suite 5.02, Level 5, 1 Castlereagh Street. Sydney, NSW 2000

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Client: Goodman Property Services (Aust) Pty Limited

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Revision History

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-	05/02/2020	Draft	S. Hu	A. Rasouli
1	13/02/2020	Issue I	S. Hu	
2	02/03/2020	Issue II	M. Tangonan	A. Rasouli
3	04/03/2020	Issue III	M. Tangonan	

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1 Introduction

1.1 Overview

Ason Group has been engaged by Goodman Property Services (Aust) Pty Limited to prepare a Transport Assessment (TA) in support of a Planning Proposal (the Proposal) to increase permissible height of the development from 18 metres to 30 metres at 1-3 Burrows Road, St Peters (the Site).

The Site is legally known as Lot 11 in DP606737 and Lot 1 in DP1227450 and is located within the City of Sydney (CoS) Local Government Area (LGA) and is therefore subject to that Council's controls.

1.2 Transport Impact Assessment Tasks

An inception meeting between Goodman and City of Sydney (CoS) Council has been held on 20 November 2019 and **Table 1** outlines a summary of the relevant CoS's requirement.

Table 1: CoS Requirement Summary

#	CoS Requirement	Ason Group Response
The following Traffic and Access matters to be addressed to support the planning proposal request:		
1	A traffic and transport study is required to support the proposed higher density use, with associated increased truck movements and trip generation from staff and visitors.	This TA is in response to this requirement. From the outset, it should be noted that the subject proposal (additional height) does not, of itself, propose any higher density use from the existing FSR of 1.5:1, noting that both land-use and floor-space-ratio controls remain unchanged.
2	The study should include details on site access, particularly southbound right-turn access from Burrows Road, and connectivity to the St Peters Interchange. Appropriate input should be sought from Transport for NSW.	Refer Section 7.3 in relation to access which concludes that full-movement access points to Burrows Road is appropriate without any need for additional infrastructure.
3	The study should also cover the ability of the immediate road network and intersections to support increased truck movements, and consideration of staff travel to the site, including mode share targets and green travel initiatives.	As per Item 1 above, the proposal does NOT seek to increase the traffic generating potential of the Site from the existing maximum permissible FSR of 1.5:1. Notwithstanding, the impact of indicative development yield has been assessed and discussed in Section 7.3. Furthermore, a Travel Plan (TP) has been prepared separately to this TA to identify suitable travel mode share targets and proposed initiatives.

1.3 Consultation

Transport for NSW (TfNSW):

Having regard of the instructions from CoS Council, in the preparation of this TA, Ason Group has sought confirmation from TfNSW regarding:

- The future operation of the Burrows Road in the vicinity of the Site:
  - With reference to the Sydney Gateway Road Project, it is expected that the forecast traffic volume on Burrows Road will reduce as a result of the WestConnex changes.
- The scope of traffic modelling assessment that is required for the Proposal. Specifically, confirmation that detailed traffic modelling of the network is NOT required to support the PP, noting that:
  - Forecast traffic volume on Burrows Road will reduce as a result of the WestConnex changes, as discussed in Section 5.3, and that WestConnex will be operational prior to lodgement of the DA for the Site, at which point detailed modelling will be undertaken to confirm traffic movements.
  - The Proposal itself includes no increase to the existing maximum permissible Floor Space Ratio (FSR) on this land. In this regard it is noteworthy that the Site is under a permissible FSR of 1.5:1 at the moment but the existing constructed Site has been built with FSR of 0.6:1. Accordingly, detailed assessment of the built-form currently envisaged is a separate matter for further assessment as part of a future Development Application process.

It should be noted that a response from TfNSW has not been received during the time that this TA has been prepared.

CPB Contractors (Builders for WestConnex):

Additionally, Ason Group has also had the opportunity to speak to CPB Contractors – the Builders for WestConnex – to confirm that Burrows Road is not subject to any major changes other than the left-in, left-out intersection restrictions to be imposed at the future Campbell Road / Burrows Road intersection, as discussed in Section 5.1. This restriction is expected to further reduce forecast traffic volume on Burrows Road.

1.4 Reference Documents

In preparing this TA, Ason Group has referenced the following key planning documents:

- Sydney Local Environmental Plan 2012 (Sydney LEP 2012)
- Sydney Development Control Plan 2012 (Sydney DCP 2012)

- HASSELL, *WestConnex - New M5 Urban Design and Landscape Plan*, 19 February 2018 (New M5 Plan)
- TfNSW (former RMS) / Sydney Airport Corporation Limited, *Sydney Gateway Road Project - Environmental Impact Statement / Preliminary Draft Major Development Plan - Technical Working Paper 1 Transport, Traffic and Access*, November 2019

This TA also references general access, traffic and parking guidelines, including:

- Roads and Maritime Services (RMS) Guide to Traffic Generating Developments (RMS Guide)
- RMS Guide to Traffic Generating Developments – Updated Traffic Surveys TDT 2013/04a (RMS Guide Update)
- RMS Trip Generation Surveys Data Report – Business Parks and Industrial Estates
- Australian Standard 2890.1: Parking Facilities – Off-Street Car Parking (AS 2890.1)
- Australian Standard 2890.2: Parking Facilities – Off-Street Commercial Vehicle Facilities (AS 2890.2)
- Australian Standard 2890.6: Parking Facilities – Off-Street Parking for People with a Disability (AS 2890.6)

2 Overview of Proposal

The Proposal seeks to increase permissible height of the development at 1-3 Burrows Road, St Peters.

Accordingly, this would enable the development to facilitate a higher floor-space ratio, noting that the existing maximum FSR for the Site is 1.5:1. Currently, the existing built form has an FSR of 0.6:1. The Proposal will therefore enable the Site to achieve more efficient land use.

Notwithstanding, to inform assessment of the Proposal, an urban design exercise has been undertaken with an indicative development yield as summarised in **Table 2**:

Table 2: Indicative Development Yield (m^2)

Level	GFA
Ground level	15,478 m^2
Level 1	15,423 m^2
Level 2	15,423 m^2
Office	5,078 m^2
End of Trip/Gym	264 m^2
TOTAL GFA*:	**51,664 m^2**

Note) Slight variation in total GFA due to rounding.

The facility is intended to operate 24 hours a day, 7 days a week (similar to the existing operation of the Site). A preliminary estimate of 370 staff (145 warehouse staff and 225 office staff) is anticipated to be employed within the Site. It should be considered that this estimate might be subject to change at DA stage when more detailed information is available. Parking will be provided in accordance with the Council LEP rates.

Reference should be made to the plans prepared by SBA Architects, which are submitted separately. A reduced copy of the Site Plans are provided below for context.

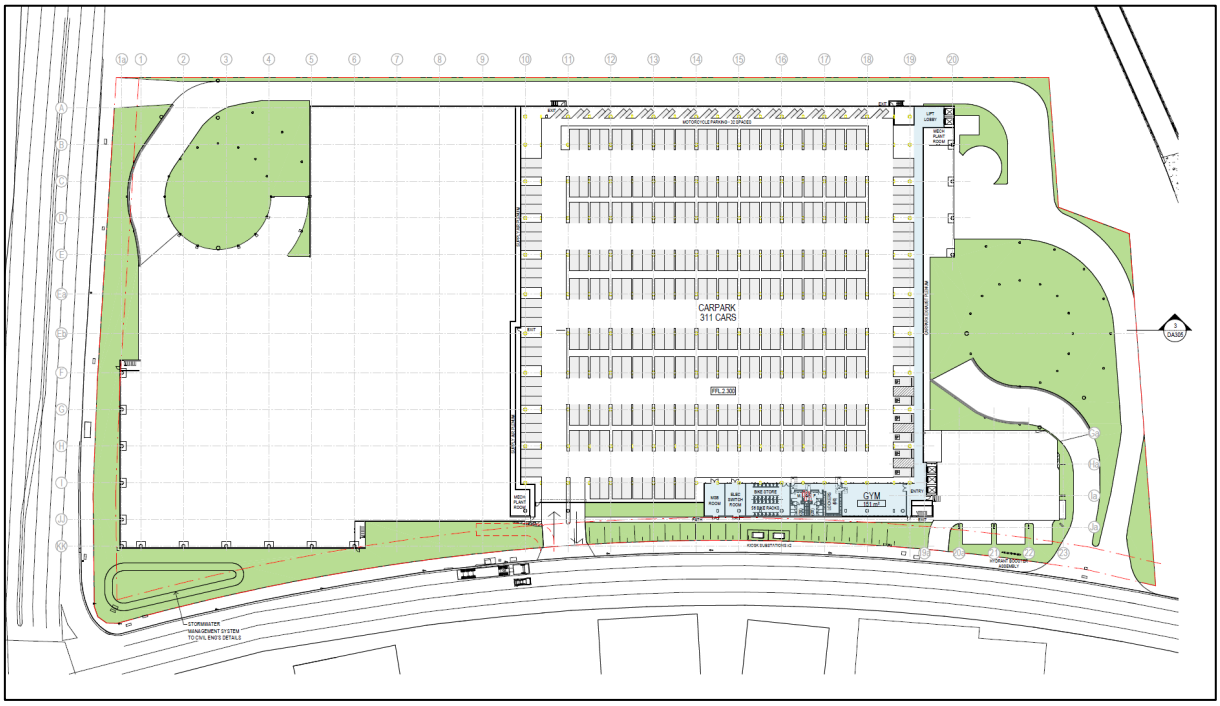

Figure 1: Proposed Site Plan – Undercroft Car Park

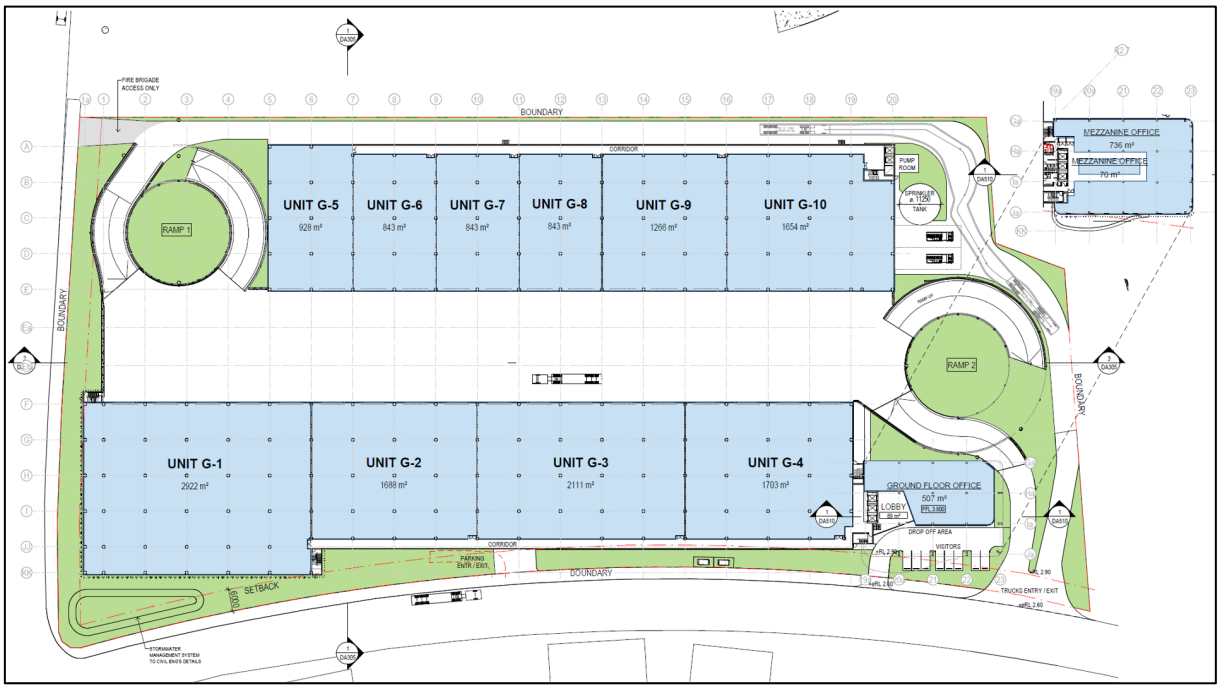

Figure 2: Proposed Site Plan – Ground Floor

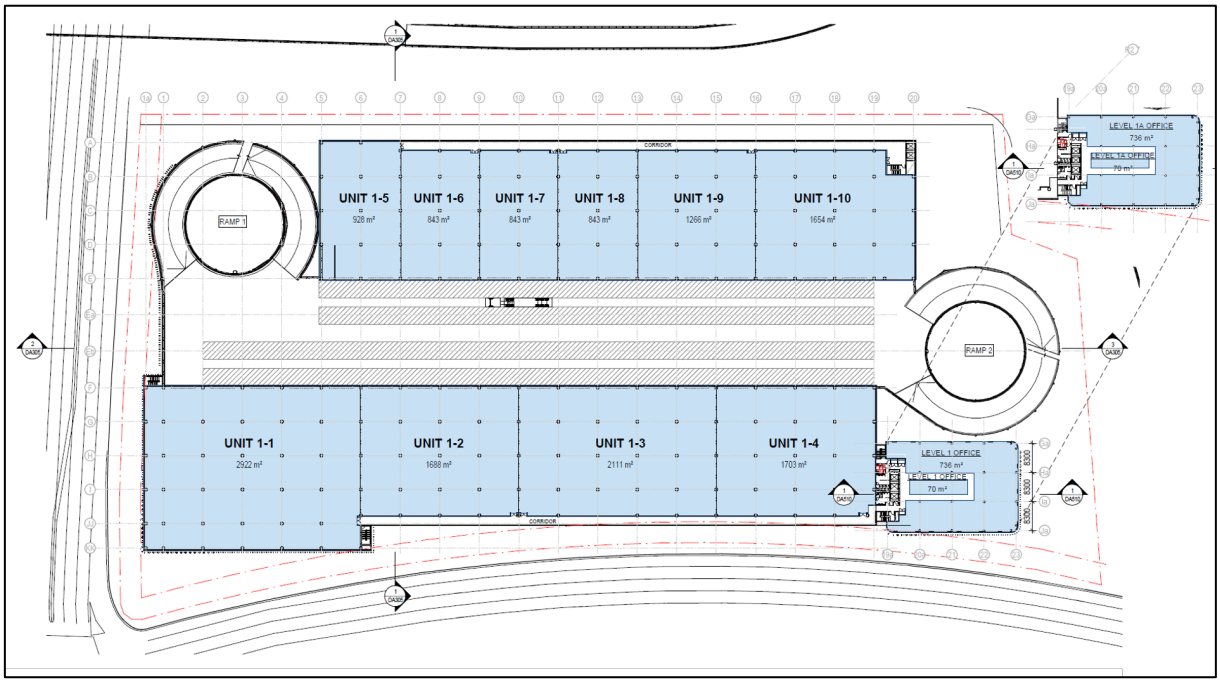

Figure 3: Proposed Site Plan – Level 1

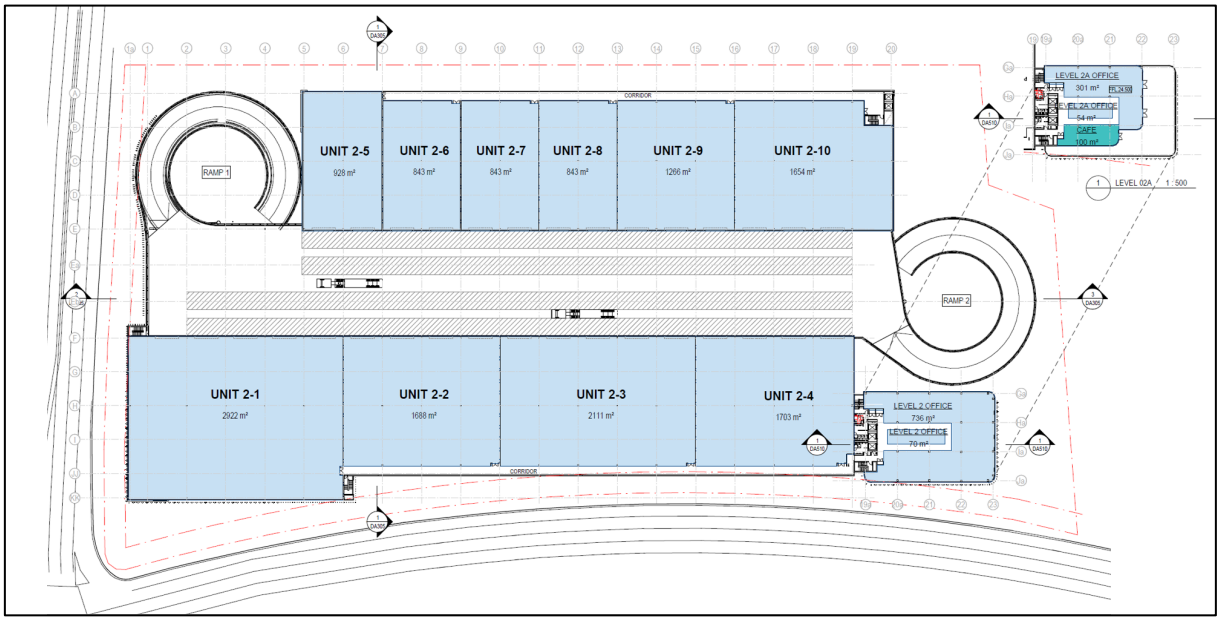

Figure 4: Proposed Site Plan – Level 2

3 Existing Site Conditions

3.1 Site Location

The Site is legally described as Lot 11 in DP606737 and Lot 1 in DP1227450, with a street address of 1-3 Burrows Road, St Peters. It has an area of some 34,500m^2 and is currently zoned as IN1: General Industrial under Sydney LEP 2012. **Figure 5** presents a Location Plan of the Site with respect to surrounding area and an aerial photograph of the subject and the immediate surrounds.

3.2 Existing Site Built form

According to the advice provided by Goodman the existing Site built form is as follows:

- 19,185m^2 of Warehouse GLA, and
- 2,213m^2 of Office GLA.

As discussed before, the Site is under a maximum permissible FSR of 1.5:1, however, it is currently constructed with a FSR of 0.6:1.

3.3 Existing Hours of Operation

Based on the advice provided by Goodman the existing Site can operate 24/7.

3.4 Road Hierarchy

The key roads of interest are:

Burrows Road - a local road running north-south, parallel to Princes Highway. In the vicinity of the Site, Burrows has a posted speed limit of 50km/h and carries 1 lane of through traffic, in addition to kerbside on-street parking, in each direction. Localised widening is provided at key intersections to facilitate necessary turning lanes.

Canal Road - a local road east-west perpendicular to Burrows Road. In the vicinity of the Site, Canal Road has 4 traffic lanes (two lanes in each direction) and a posted speed limit of 60km/h. On- street parking is prohibited, with a combination of No Stopping and Clearway restrictions on both sides.

Figure 5: Site Location and Road Hierarchy

3.5 Existing Site Access Arrangement

The Site is currently occupied by an industrial estate which has 2 direct accesses to Burrows Road, as indicated in **Figure 6**.

Figure 6: Existing Site Access

It is noted that in accordance with our site inspection the eastern access (Gate 02) is currently fenced off. Therefore, all vehicular access to the Site is via the western access (Gate 01).

3.6 Existing Site Traffic Generation

A PM site inspection has been conducted to estimate the existing traffic generation of the Site. It was noted that during site inspection, Gate 02 was closed – as such, no traffic movement was observed at this location. For Gate 01, a total of 9 light vehicles and 0 heavy vehicles were observed to access and egress the Site. It should be noted on the advice provided by Goodman, the existing Site is approximately 70% vacant, indicating relatively low levels of existing traffic generation and confirming the abovementioned assessment.

In order to establish the likely traffic generation of the existing Site, having regard for its full occupation (100% occupancy), the rates outlined in section 7.1 have been applied to the existing built form. Accordingly, the following traffic generation during AM and PM peak period have been estimated for the current built form (0.6:1).

- 131 vehicle trips in the AM Peak; and
- 123 vehicle trips in the PM Peak.

3.7 Existing Traffic Flow on Surrounding Road Network

To have an appreciation of the existing traffic flow on Burrows Road, Ason Group commissioned traffic surveys at the adjacent intersection of Burrows Road and Canal Road on Thursday, 17 May 2018. The results of both AM and PM peak hour traffic flows are presented in **Figure 7**.

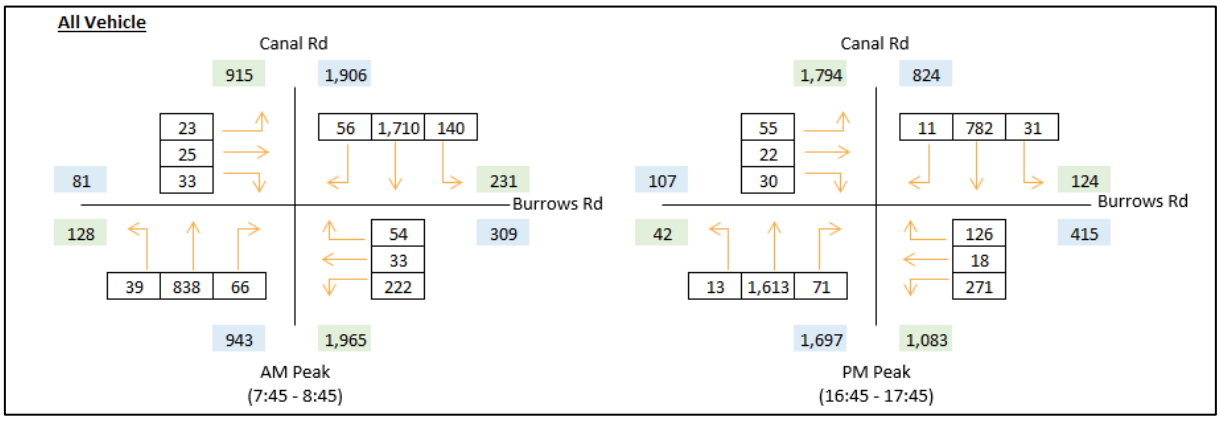

Figure 7: Existing Traffic Flow

3.8 Crash Data History

TfNSW crash data is available for basic interrogation from the Transport for NSW (TfNSW), Centre for Road Safety website. A snapshot of the crashes near the Site between 2014 and 2018 is shown in **Figure 8**.

A review of the TfNSW crash data suggests that there are 4 accidents (including 2 Right Through accidents) occurred at the T-intersection of Campbell Road and Burrows Road in this period. However, it is noted that this intersection is subject to be upgraded to a 4-way intersection with left-in/left-out access to Burrows Road as part of the New M5 Project— discussed further in Section 5.1 These upgrades will likely be introduced before construction and operation of the Proposed facility.

Therefore, it is expected that the overall road safety will be improved.

Source: NSW Centre for Road Safety, 2020

Figure 8: Crash Location and Type (2014-2018)

4 Public and Active Transport

4.1 Public Transport

Surrounding local public transport infrastructure; key rail and bus services in proximity to the Site are presented in **Figure 9** and summarised below.

4.1.1 Railway Services

The Site is situated between Sydenham Station approximately 2 kilometres to the west and Mascot Station 1 kilometre to the south-east. It is noted that the stations are between 10- and 20-minutes walking distance from the railway connections with sufficient pedestrian facilities. Notwithstanding, bus route 418 – within moderate walking distance of the site – provide connections to Mascot Station.

4.1.2 Bus Services

Transport for NSW guidelines state that bus services influence the travel mode choices of sites within 400 metres (approximately 5 minutes) of a bus stop. As shown in Figure 9, there are 2 bus stops on Canal Road, within 400 metres radius of the Site, and these bus stops are served by:

- Route 418: Kingsford to Burwood via Mascot, Sydenham & Dulwich Hill

Additionally, there are several bus stops located within 800m of the Site, providing access to the CBD, Kogarah and Stanford Plaza.

Accordingly, it is noted that the Site is well serviced via the existing public transport.

4.2 Active Transport

4.2.1 Pedestrian Accessibility

Pedestrian footpaths are provided on both sides of Burrows Road and Canal Road in the vicinity of the Site. The intersection of Burrows Road and Canal Road also provides pedestrian crossings on 3 approaches (N, E & W). Therefore, the Site is considered to have a good level of pedestrian accessibility.

4.2.2 Cycle Routes

There are currently limited cycling facilities and routes provided within the proximity of the Site. However, with reference to **Figure 9**, the New M5 Project provides for the introduction of off-road shared

cycleways on Canal Road and within the St Peters Interchange, which would link to existing cycleways around Mascot Station and Sydney Park.

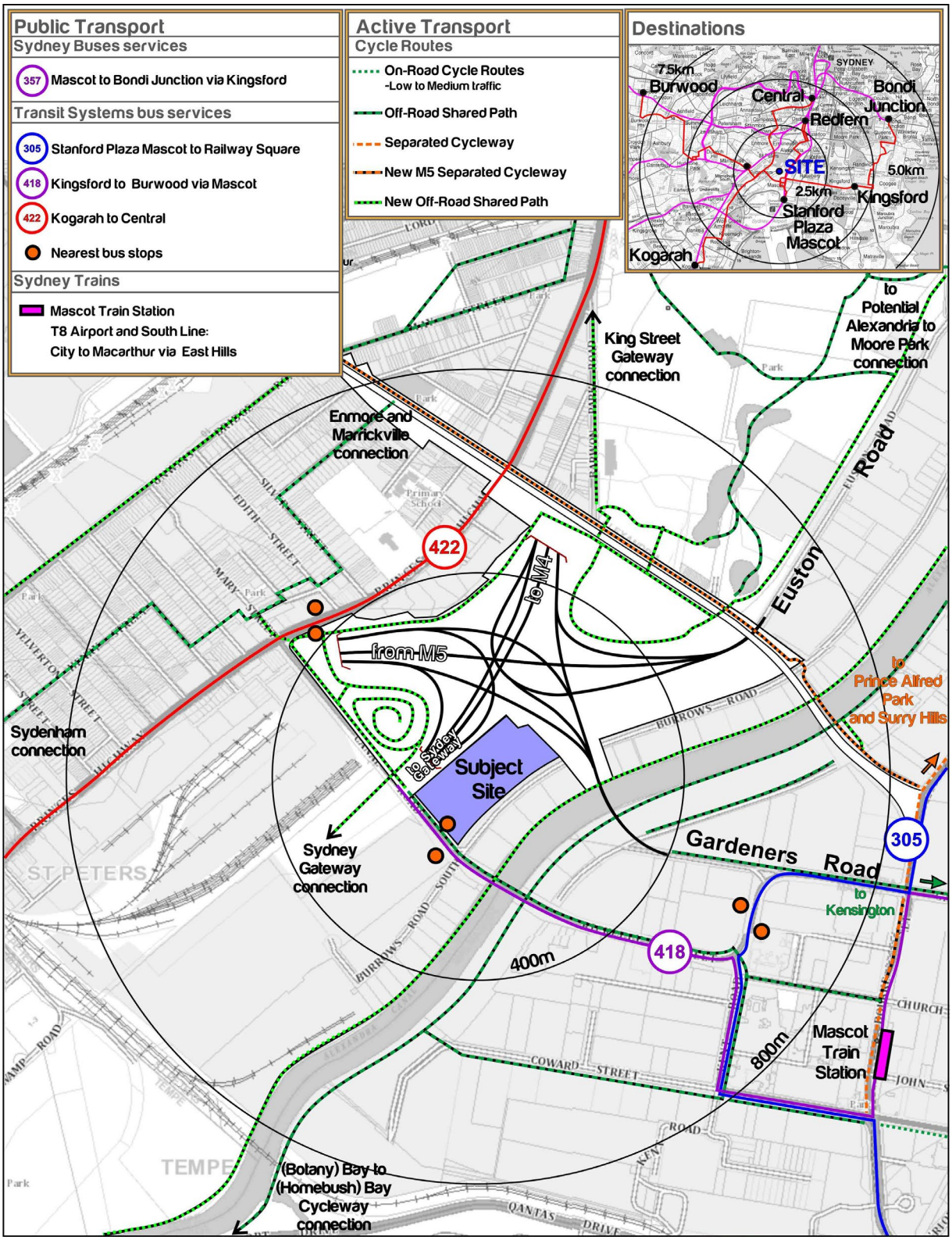

Figure 9: Public Transport Network

5 Future Context (Without Proposal)

5.1 WestConnex New M5 Project

The New M5 will provide twin underground motorway tunnels, 9 kilometres long, from Kingsgrove to the new St Peters Interchange. The St Peters Interchange will provide motorists with connections to Alexandria and Mascot. It also includes connections to the future Sydney Gateway and M4-M5 Link. Tunnels will initially be marked for 2 lanes in each direction, with capacity to add a third in the future and also include underground connection points for the M4-M5 Link and the proposed F6 Extension.

The New M5 Project has a late May 2020 target date for the opening of the tunnel between the new St Peters Interchange site and Beverly Hills. As discussed above, the A for the Site is only likely to be lodged at the end of 2020.

Changes to the local road network in the vicinity of the Site during interim stage and following the project completion are summarised and provided as follows:

Interim stage March 2020 – May 2020

- No through traffic between Burrows Road north and south of Campbell Road (Campbell Road bridge unopened).
- Northbound traffic on Burrows Road from Canal Road, left turn only to Campbell Road westbound.
- Southbound traffic on Burrows Road from Huntley Street – local access only. No access to Campbell Road or Burrows Road south of Campbell Road.

Following New M5 tunnel and Campbell Road bridge opening May 2020

- Entry to New M5 Tunnel – exit Burrows Road driveway northbound, left turn to Campbell Road, left turn to tunnel entry
- Exit from New M5 Tunnel to property – exit to Campbell Road westbound, Princes Highway southbound, Canal Road eastbound, left turn to Burrows Road.

Reference should be made to the WestConnex - New M5 Urban Design and Landscape Plan (New M5 Plan). The concept plan for St Peters Interchange and Campbell Road / Burrows Road intersection upgrade is extracted from the New M5 Plan and presented in **Figure 10** and **Figure 11** below.

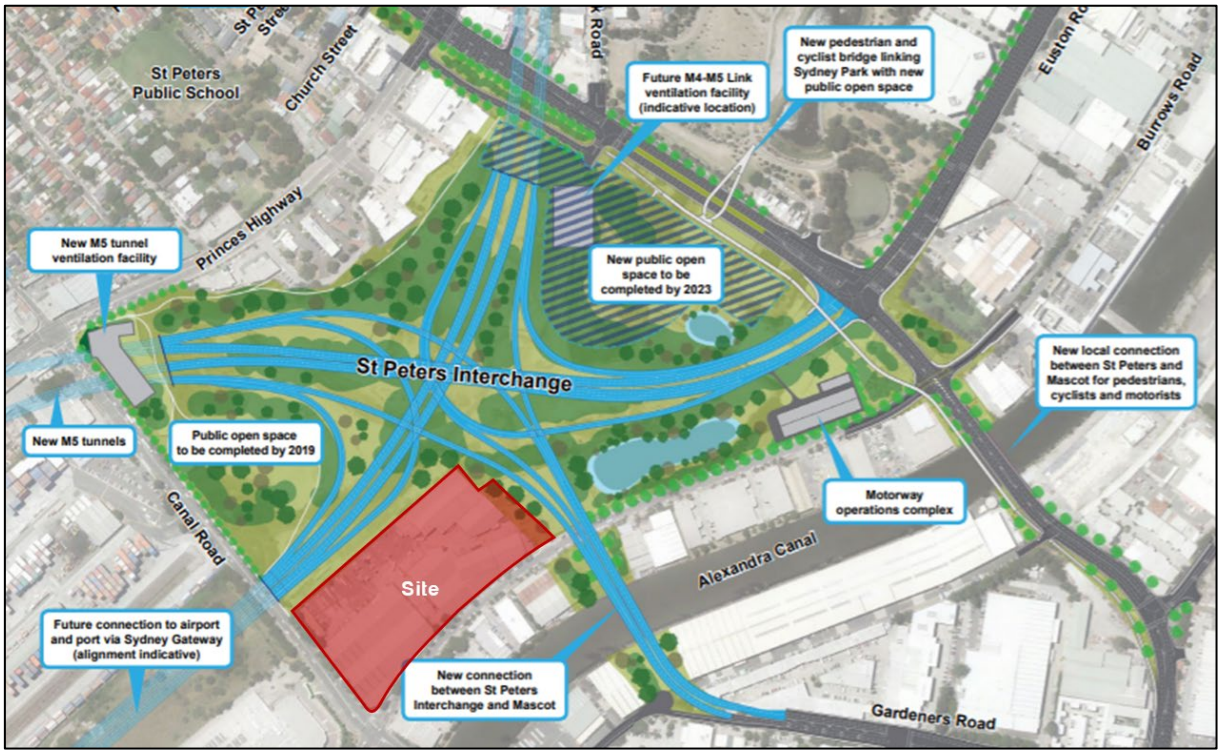

Figure 10: Concept Plan – St Peters Interchange

Figure 11: Concept Plan - Campbell Road / Burrows Road Intersection Upgrade

5.2 Sydney Gateway Road Project

Sydney Gateway Road Project (SSI – 9737) provides a new direct high capacity road connection linking the Sydney motorway network at the St Peters interchange with Sydney Kingsford Smith Airport. It involves constructing and operating new and upgraded sections of road connecting to the airport terminals, four new bridges over Alexandra Canal, and other operational infrastructure and road connections.

The connection between Sydney Gateway Road Project and WestConnex is shown in **Figure 12**.

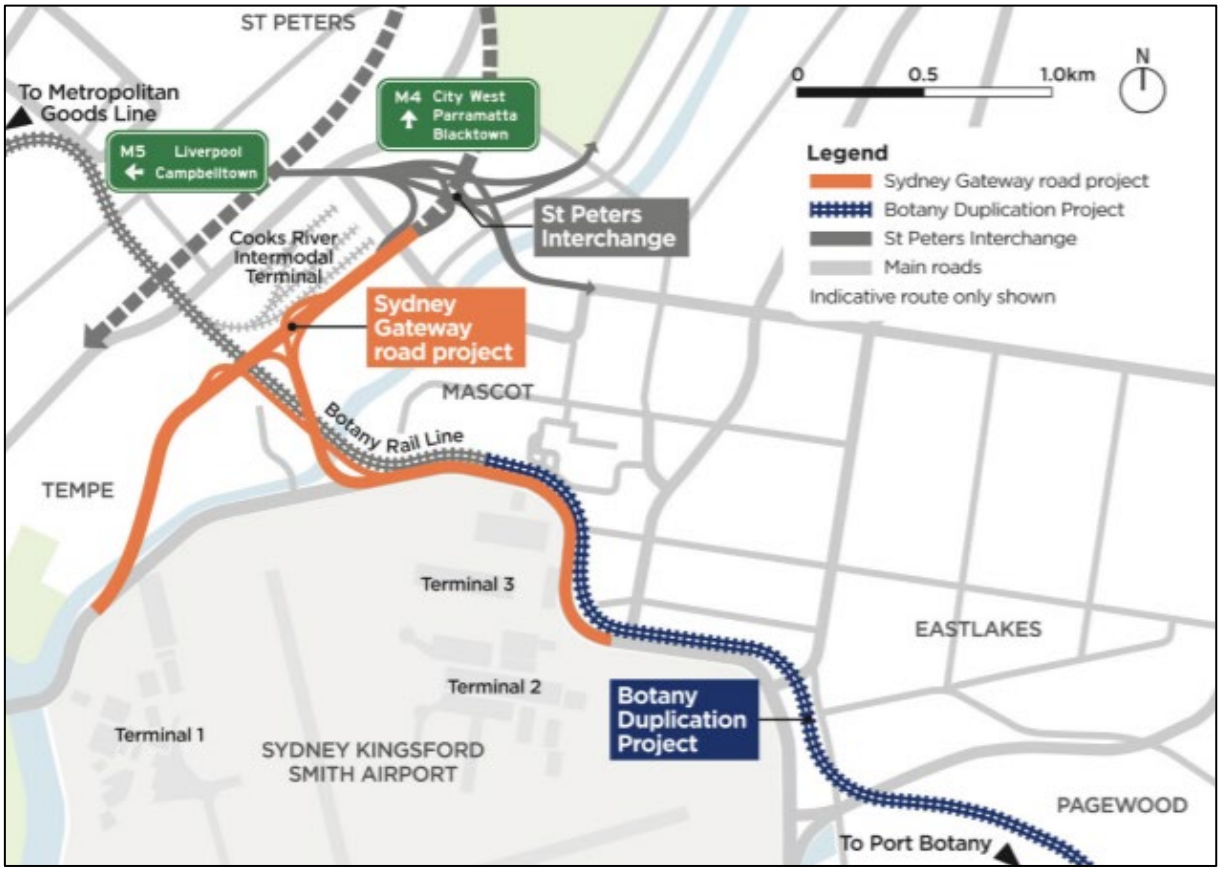

Figure 12: Sydney Gateway Road Project and WestConnex

It is anticipated that construction of the Sydney Gateway Road would start mid-2020 and take about 3.5 years to complete.

5.3 Forecast Traffic Volume on Future Road Network

With reference to *Sydney Gateway Road Project - Environmental Impact Statement / Preliminary Draft Major Development Plan - Technical Working Paper 1 Transport, Traffic and Access* (TfNSW (former RMS) / Sydney Airport Corporation Limited, November 2019) (Sydney Gateway Road Report):

"The opening of WestConnex would drive a substantial change to travel patterns in the area by shifting traffic from the M1, M5, Airport Drive, Southern Cross Drive and Canal Road towards the area surrounding St Peters interchange. For access to Sydney Airport and Port Botany, traffic would exit St Peters interchange and use the existing congested road network through Mascot, increasing pressure on Gardeners Road, Campbell Road, Botany Road, Bourke Street/Bourke Road and General Holmes Drive to Foreshore Drive."

Forecast traffic volume changes between the existing conditions and the future 2026 and 2036 conditions are presented in below figures. The green areas highlight a forecast reduction in traffic volumes in 2026 and 2036 primarily on the M1, M5, Southern Cross Drive, Canal Road and Burrows Road. Reductions on these roads is largely due to additional capacity introduced in the network by WestConnex, diverting regional traffic from these more local roads.

Figure 13: Change in Traffic Volumes Between 2016 and 2026 (without Sydney Gateway Road)

Figure 14: Change in Traffic Volumes Between 2016 and 2036 (without Sydney Gateway Road)

Furthermore, Sydney Gateway Road Report suggests that the opening of Sydney Gateway Road would again attract traffic away from Local and state Road within St Peters and Mascot local area. Therefore, a further reduction of forecast traffic volume on Burrows Road is expected, in addition to the resultant forecast reduction of WestConnex.

In summary, the opening of WestConnex and Sydney Gateway Road would result in a forecast increase in traffic volumes in 2026 and 2036 on Campbell Road, but a forecast reduction on both Canal Road and Burrows Road. However, it should be emphasised that, following the completion of New M5 tunnel and Campbell Road bridge opening, access to the intersection of Burrows Road and Campbell Road will be limited to left turn movements only, which is expected to improve the performance of this intersection.

6 Parking Requirements

6.1 City of Sydney Council Car Parking Requirements

6.1.1 Sydney LEP 2012 - Car Parking Rates

The Site is classified as ***Category F*** on the Sydney LEP 2012 Public Transport Accessibility Level (PTAL) Map with a maximum FSR of 1.5:1. Part 7.8 Sydney LEP 2012 provides the following MAXIMUM car parking rates for Industry, warehouse/ distribution centres and office/business premises:

- Industry:
  - If the building is on land in category F - 1 space for each 100m^2 of GFA of the building used for those purposes.
- Warehouse/distribution centres:
  - If the building is on land in category F - 1 space for each 300m^2 of GFA of the building used for those purposes.
- Office/business premises:
  - If the building is on land in category F and has a floor space ratio of no more than 1.5:1 - 1 space for each 75m^2 of GFA of the building used for those purposes.

It should be noted that the offices included in the indicative development plan is ancillary to the industry/warehouse units on-site. These offices shall only be used by tenants of the industry/warehouse units and shall not be used as stand-alone offices. However, for the purpose of car parking assessment, it is appropriate to adopt car parking rates of office premises to these ancillary offices having regard for the potential car parking demand.

Application of the above rates to the indicative development yield results in the following car parking being permissible for the future development now envisaged.

Table 3: Maximum Car Parking Requirement - Sydney LEP 2012

Site Component	GFA (m^2)	Parking Rate	Parking Required[1] (spaces)
Industry	15,478	1 space per 100m^2 GFA	155
Warehouse	30,846	1 space per 300m^2 GFA	103
Ancillary Office[2] (Including Café and Gym)	5,342	1 space per 75m^2 GFA	71

Site Component	GFA (m^2)	Parking Rate	Parking Required[1] (spaces)
Total	**51,664**		**329**

Note: 1) Rounded to the nearest whole number in accordance with Sydney LEP 2012.

2) Café and gym provided on-site are expected to be NOT open to the Public but only to the staff/visitors on-site and therefore considered as part of the ancillary office.

6.1.2 Sydney DCP 2012 - Car Share Scheme Parking Spaces

Section 3.11.1 Sydney DCP 2012 indicates the following minimum requirement of car share parking spaces for office premises.

- Office premises:
  - If the building is on land in category F - 1 per 50 car parking spaces should be made available for car share scheme vehicles.

Application of the above rates to the nominated 71 spaces for ancillary office use on-site results in a minimum requirement of 2 spaces provided for car share vehicles.

Sydney DCP 2012 states that car share parking spaces are to be provided in addition to the maximum number of car spaces permitted in the development.

6.2 RMS Car Parking Rates

Section 5 of the RMS Guide provides the following summary parking rates for warehouse and office premises:

- Factory (Industry): 1.3 space per 100m^2 GFA
- Warehouse: 1 space per 300m^2 GFA
- Office: 1 space per 40m^2 GFA

Table 4 below provides a summary of the parking requirements of the Site further to the application of the RMS Guide parking rates.

Table 4: Minimum Car Parking Requirement – RMS Guide

Site Component	GFA (m^2)	Parking Rate	Parking Required (spaces)
Industry	15,478	1.3 space per 100m^2 GFA	201
Warehouse	30,846	1 space per 300m^2 GFA	103
Ancillary Office[1] (Including Café and Gym)	5,342	1 space per 40m^2 GFA	134
Total	**51,664**		**438**

Note: 1) Café and gym provided on-site are expected to be NOT open to the Public but only to the staff/visitors on-site and therefore considered as part of the ancillary office.

6.3 Proposed Car Parking Assessment (GHD Advice)

GHD has advised that the indicative development will provide for a total of 328 parking spaces across the Site, based on the following **maximum built form** breakdown:

Table 5: Proposed Car Parking

Level	GFA	Provision Rate	Total car space allowance
Ground level	15,478 m^2	Industry (1/100 m^2)	155 spaces
Level 1	15,423 m^2	Warehousing (1/300 m^2)	51 spaces
Level 2	15,423 m^2	Warehousing (1/300 m^2)	51 spaces
Office	5,078 m^2	Industry (1/75 m2)	68 spaces
End of Trip/Gym	264 m^2	Industry (1/100 m^2)	3 spaces
TOTAL GFA:	**51 664 m^2**	**Total**	**328 spaces**

It should be noted that the above GFA refers to the maximum potential GFA allowance of the development plans.

The above provision rates appreciate that office areas and end of trip / gym facilities are ancillary and in support of the industry and warehouse uses at the Site. Accordingly, GHD have used an adjusted Industry rate to reflect more conservative ancillary office use.

Compliance of the car parking provision against the relevant controls is subject to further review as part of future **Development Application (DA)** process. It is noted that based on the advice provided by Goodman, the proposed parking will be provided in accordance with the LEP.

Furthermore, the existing maximum FSR of the Site is 1.5:1, the proposal does not seek to amend the FSR beyond the maximum permissible.

6.4 Additional Parking Considerations

6.4.1 Accessible Parking

Schedule 7.8.5 Sydney DCP 2012 provides the following parking rates for accessible parking spaces:

- 1 accessible parking space per 20 car parking spaces

Application of this rate to the 328 parking spaces suggests a requirement for 16 accessible parking spaces. All accessible parking spaces are to be designed with reference to AS 2890.6 and subject to certification by a qualified access consultant.

6.4.2 Motor Bike Parking

Schedule 7.8.4 Sydney DCP 2012 provides the following parking rates for motor bike parking:

- 1 motor bike parking space per 12 car parking spaces

Application of this rate to the indicative 328 parking spaces suggests a requirement for 27 motorcycle parking spaces. Each motorcycle parking space is to be designated and located so that parked motorcycles are not vulnerable to being struck by a manoeuvring vehicle, and all motorcycle parking spaces are to be designed with reference to AS 2890.1.

6.4.3 Bicycle Parking

Section 3.11.3 Sydney DCP 2012 provides the following parking rates for bicycle parking:

- Industry/Warehouse: 1 space per 10 staff
- Office:
  - Employees: 1 space per 150m^2 GFA
  - Visitors: 1 space per 400m^2 GFA

Ason Group has been advised that approximately 370 staff (including 145 warehouse staff and 225 office staff) are anticipated to be working on-site. Therefore, application of the above rates results in a total bicycle parking requirement of spaces, as summarised in the table below:

Table 6: Bicycle Parking Requirement – Sydney DCP 2012

Site Component	GFA/Staff Number	Parking Rate	Parking Required (spaces)
Industry/Warehouse	225	1 space per 10 staff	23
Ancillary Office[1] (Including Café and Gym)	5,078m^2	Employee - 1 space per 150m^2 GFA	34
		Visitor - 1 space per 400m^2 GFA	13
Total			**70**

Note: 1) Café and gym provided on-site are expected to be NOT open to the Public but only to the staff/visitors on-site and therefore considered as part of the ancillary office.

With regard to bicycle parking, it is noted that Sydney DCP 2012 provides additional controls in regard to:

- A safe path of travel from bike parking areas to entry/exit points is to be marked;
- Access to bike parking areas are to be:
  - a minimum of 1.8m wide to allow a pedestrian and a person on a bike to pass each other and may be shared with vehicles within buildings and at entries to buildings;
  - accessible via a ramp;
  - clearly identified by signage; and
  - accessible via appropriate security or intercom systems.
- For non-residential uses, the following facilities for bike parking are to be provided at the following rates:
  - 1 personal locker for each bike parking space;
  - 1 shower and change cubicle for up to 10 bike parking spaces;
  - 2 shower and change cubicles for 11 to 20 or more bike parking spaces are provided;
  - 2 additional showers and cubicles for each additional 20 bike parking spaces or part thereof;
  - showers and change facilities may be provided in the form of shower and change cubicles in a unisex area in both female and male change rooms; and
  - lockers, change room and shower facilities are to be located close to the bike parking area, entry and exit points and within an area of security camera surveillance where there are such building security systems.

It is proposed that the final design as part of the DA will provide full compliance with these additional Sydney DCP 2012 requirements, and that all bicycle parking spaces will be designed with reference to AS 2890.3.

7 Traffic Assessment

It is noted that a separate Travel Plan has been prepared for the Site to suggest appropriate strategies to encourage mode share shift towards non-motorised vehicles which is also a requirement from CoS (as discussed before). Accordingly, we anticipate that a first principal assessment might be undertaken based on further tenant's operational details (when they are available) and the suggested Travel Plan mode share targets as part of the DA stage of the project. As such the traffic assessments provided in this section are considered ***CONSERVATIVE*** and are intended to provide a robust analysis as part of the Planning Proposal.

7.1 Traffic Generation

For conservative assessment, the traffic generation of the proposed indicative development has been assessed with reference to trip rates provided in the RMS Guides:

- Factory (Industry):
  - Peak Period: 1 veh/hr per 100m^2 GFA
- Warehouse:
  - Peak Period: 0.5 veh/hr per 100m^2 GFA
- Office:
  - AM Peak: 1.6 veh/hr per 100m^2 GFA
  - PM Peak: 1.2 veh/hr per 100m^2 GFA

Table 7 below provides a summary of the trip generation of the Site further to the application of the RMS trip rates.

Table 7: Proposed Vehicle Traffic Generation Summary

Site Component	GFA (m^2)	AM Peak (trips)	PM Peak (trips)
Industry	15,478	155	155
Warehouse	30,846	154	154
Ancillary Office[1] (Including Café and Gym)	5,342	85	64
Total	**51,664**	**394**	**373**

Note: 1) Café and gym provided on-site are expected to NOT be open to the Public but only to the staff/visitors on-site and therefore considered as part of the ancillary office.

7.1.1 Net Traffic Increase

As mentioned in Section 3.6, the existing Traffic Generation for the site is minimal as a result of the 70% vacancy rate as informed by the client. For robust comparison, net traffic is based on the application of RMS traffic generation rates to the existing built form to establish vehicle movements more indicative of a higher tenancy occupancy.

Table 8 below provides a comparison between the indicative traffic of both the existing built form and the planning proposal.

Table 8: Net Traffic Impacts

Period	Existing (Built form)	Proposal	Net (Built form vs Proposal)
AM	131	394	+ 263
PM	123	373	+ 250

Note: 1) Existing site generation has been obtained from an on-site assessment during the PM Peak.

As demonstrated above, the net traffic generation for the Site is estimated to be 263 and 250 vehicles trips in the respective AM and PM peaks. However, for conservative estimation the TOTAL amount of vehicle trips associated with the Proposal has been used for preliminary modelling of the access crossovers.

7.2 Trip Distribution & Assignment

7.2.1 Light Vehicle / Heavy Split

In the absence of a detailed operating schedule for the future tenants, it is expected that roughly 15% of all movements will be associated with commercial vehicles equating to approximately 59 vehicles per hour during the peak hour. This proportion of trucks is based on the survey data of a similar site in Riverwood Business Park (Site 4) derived from RMS Trip Generation Surveys Data Report – Business Parks and Industrial Estates.

7.2.2 Arrival & Departure Distribution

The following inbound and outbound assumptions have been made for both light vehicles and heavy vehicles.

- Light Vehicles
  - 80% inbound traffic and 20% outbound traffic in AM Peak
  - 20% inbound traffic and 80% outbound traffic in PM Peak
- Heavy Vehicles
  - 50% inbound traffic and 50% outbound traffic in AM Peak
  - 50% inbound traffic and 50% outbound traffic in PM Peak

Table 9 summarises the projected traffic distribution for the Site during AM and PM peak periods.

Table 9: Traffic Generation (Arrival & Departure Distribution)

Peak	Inbound			Outbound			Total
	LV	HV	Total	LV	HV	Total	
AM	267	30	297	67	30	97	394
PM	63	28	91	254	28	282	373

7.2.3 Directional Distribution

In absence of the detailed operational information for future tenants, the Site's directional trip distribution to/from external origins and destinations has been determined with reference to the following:

- 2016 Journey to Work (JTW) Data.
- Travel patterns evident from the existing traffic flows on the intersection of Burrows Road and Canal Road.

Traffic volumes have therefore been assigned to the surrounding road network having regard for the catchment, likely traffic routes considering minimum travel time (using Google Maps). To assess the impact of the Proposal, the forecast traffic volumes have been assigned to the proposed site accesses, as shown in the figures below.

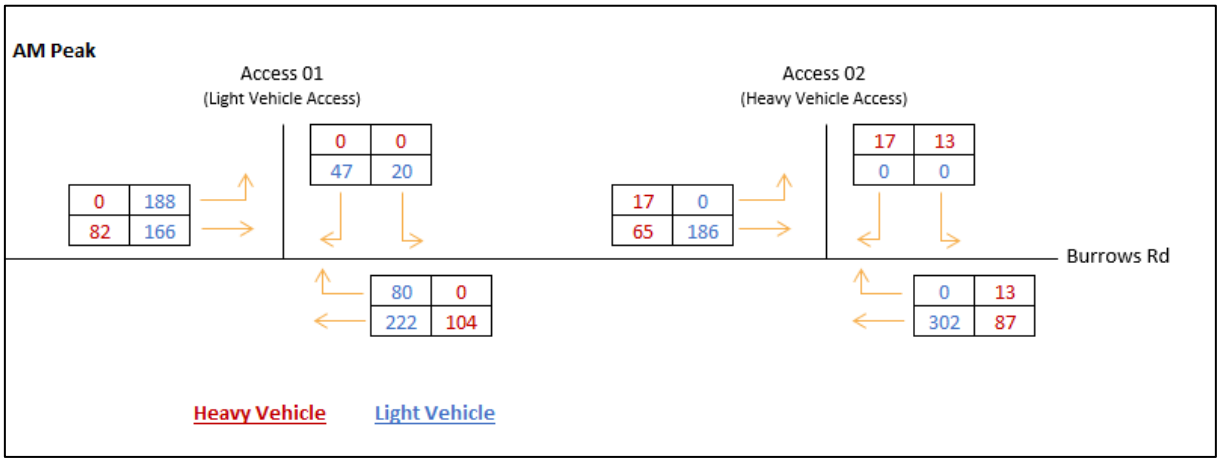

Figure 15: AM Peak Hour Traffic Flows (Existing + Proposal)

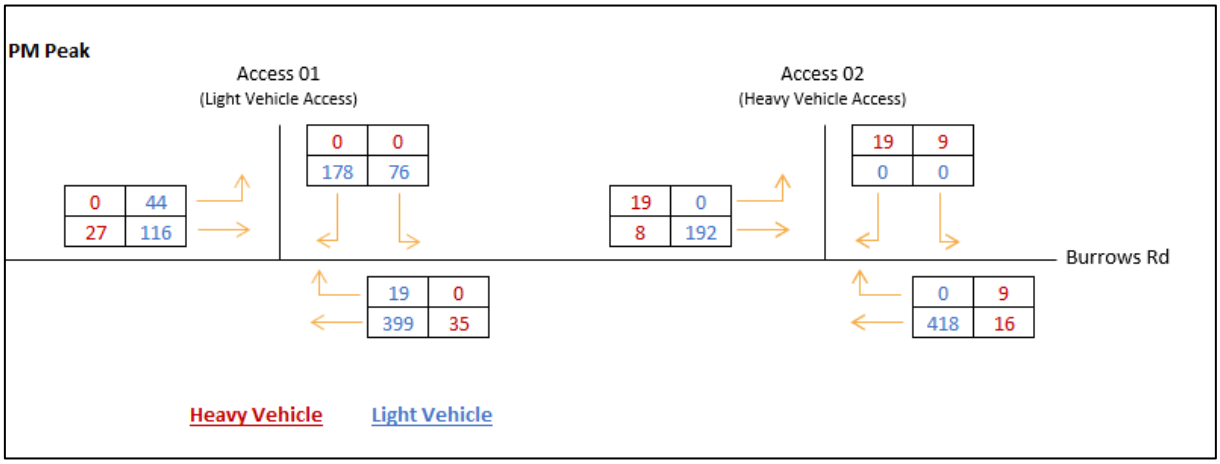

Figure 16: PM Peak Hour Traffic Flows (Existing + Proposal)

7.3 Traffic Impacts

As discussed in Section 1.3, detailed traffic modelling of traffic impacts on the surrounding road network is not possible to accurately decipher, given the following:

- An anticipated reduction in traffic generation on Burrows Road in line with information provided by TfNSW as demonstrated in Section 5.3,
- Uncertainty surrounding the future traffic volumes of surrounding intersections associated with WestConnex and the gateway project, as well as the planned intersection configuration changes.

It is considered that an assessment of the road network and updated traffic surveys will be undertaken, if required, as part of the DA stage, following the completion and operation of WestConnex and surrounding network upgrades. Subsequently, this will allow a more detailed investigation of potential traffic generation.

Notwithstanding, the operation of the proposed site accesses further to the Proposal has been assessed using the SIDRA software to confirm suitability of access arrangements—in response to Council queries. The results of the analysis are provided in **Table 10** below.

Table 10: Existing + Proposal Intersection Operations

Intersection	Peak Period	Existing + Proposal	
		Delay (sec)	LoS
Burrows Rd x Access 01 (light vehicle access)	AM	8.7	A
	PM	20.4	B
Burrows Rd x Access 02 (heavy vehicle access)	AM	23.5	B
	PM	21.1	B

SIDRA modelling results indicate that the proposed site accesses will operate at a good LoS during both AM and PM peak periods, without a requirement for additional infrastructure to facilitate the right-hand turning movements into the Site. It is again emphasised that the traffic assessments provided at this section are quite conservative to provide a robust traffic analysis as part of the Planning Proposal.

8 Design Review

It is noted that the design aspects of the proposed development will be further assessed as part of the DA stage of the project. Therefore, this section provides high-level design input to assist finalisation of the development plans prior to the DA submission.

8.1 Relevant Standards

The site access, car park and commercial vehicle facilities of the development (and access thereto) shall be designed to comply with the following relevant Australian Standards:

- AS2890.1 for car parking areas,
- AS2890.2 for commercial vehicle loading areas,
- AS2890.3 for bicycle parking, and
- AS2890.6 for accessible (disabled) parking.

It is expected that any detailed construction drawings in relation to the car park, site access and commercial vehicle facilities would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard condition of consent to any development approval and subject to further review as part of future Development Application (DA) process.

8.2 Access Design

8.2.1 Car Park Access Design

A total of 311 car parking spaces are proposed in the indicative development plan with a direct access to/from Burrows Road. Therefore, a Category 3 access driveway is nominally required (in accordance with Table 3.1 of AS2890.1).

8.2.2 Heavy Vehicle Access

The commercial (heavy) vehicle facilities of the indicative development have been designed having regard for requirements of AS2890.2 and the following is considered noteworthy:

- All heavy vehicles will access the site via 2 ramps (separated ramp up/down), an indicative heavy vehicle movement plan is provided in **Figure 17**.
- The internal design of the service area has been undertaken in accordance with the requirements of AS28090.2 for the maximum length vehicle accessing the Site being a B-double of 26m in length.

- All commercial vehicles can enter and exit the site in a forward direction.

A swept path analysis is provided on the plans attached at **Appendix A**, which demonstrates compliance with relevant sections of AS2890.2.

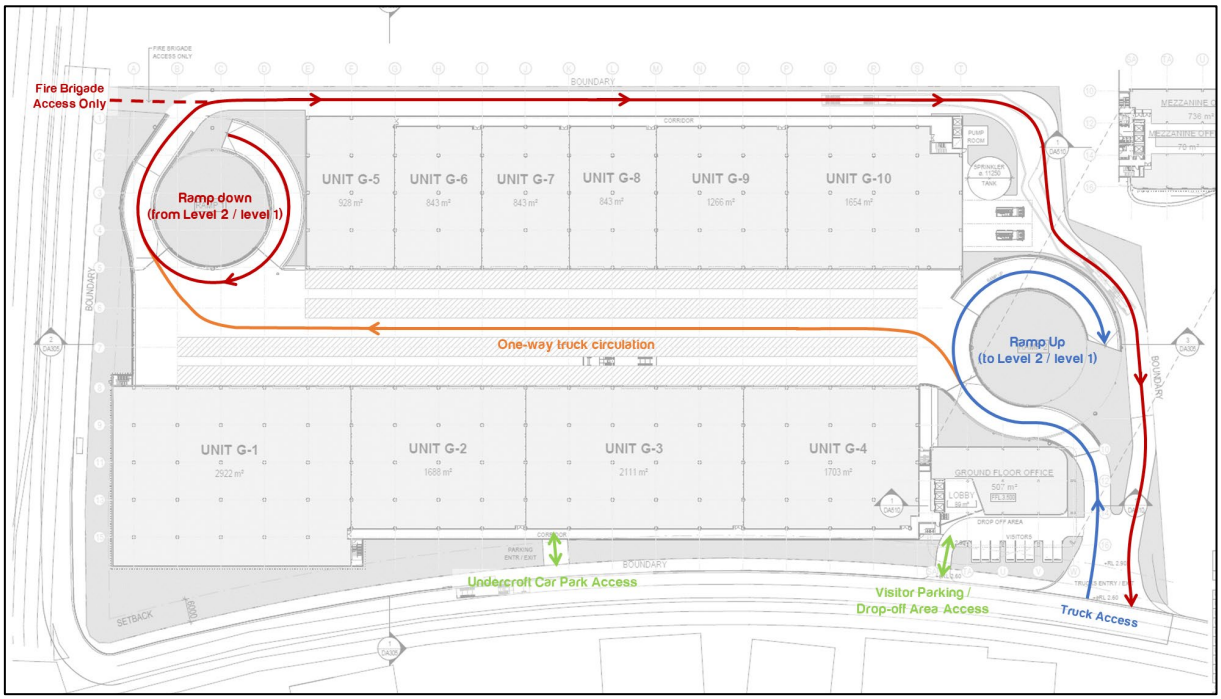

Figure 17: Heavy Vehicle Movement Plan (Ground floor)

It has been considered that the all the proposed security gates to the estate will remain open during business hours, and that no queueing is anticipated to occur from the crossovers along Burrows Rd.

9 Construction Traffic Management Plan

In accordance with Council requirements, a detailed Construction Traffic Management Plan (CTMP) will be provided in a subsequent stage of the development process and in response to a suitable Condition of Consent (CoC) as part of the Construction Certificate (CC).

It should be noted that that construction of the facility would readily accommodate all parking, equipment and material to be stored within the Site boundary. Additionally, the anticipated level of construction traffic is likely to be lower than the estimated operational traffic estimated in section 7.1 and as such the construction traffic would not warrant further assessment.

10 Summary & Conclusions

Ason Group has been engaged by Goodman Property Services (Aust) Pty Limited to prepare a Transport Assessment (TA) in support of a Planning Proposal (the Proposal) to increase permissible height of the development at 1-3 Burrows Road, St Peters (the Site). The Site is legally known as Lot 11 in DP606737 and Lot 1 in DP1227450 and is located within the City of Sydney (CoS) Local Government Area (LGA) and is therefore subject to that Council's controls.

10.1 Findings

The key findings of this Traffic Assessment are:

- The Proposal seeks to increase permissible height of the development from 18 metres to 30 metres. Notwithstanding, to inform assessment of the Proposal an urban design exercise has been undertaken with an indicative development yield.
- The Proposal does not intend to increase the maximum allowable Floor-Space-Ratio (FSR) of 1.5:1 on this land. However, the existing improvements on the Site are at a density of 0.6:1. As such the proposal intends to reach the maximum allowable FSR on this land.
- The Site is classified as Category F on the Sydney LEP 2012 Public Transport Accessibility Level (PTAL) Map with a maximum FSR of 1.5:1. According to Sydney LEP 2012 and Sydney DCP 2012, the maximum car parking requirement of the Proposal is 329 car parking spaces. Furthermore, 2 car share parking spaces should be provided in additional to the maximum number of car spaces permitted in the development.
- Based on the discussions with WestConnex New M5 Project Team, it has been confirmed that Burrows Road is not subject to any major changes other than the left-in, left-out access restrictions to be imposed at the future Campbell Road / Burrows Road intersection. It is not intended or necessary to make any infrastructure upgrades to Burrows Road as part of this Proposal.
- With reference to the Sydney Gateway Road Project, it is expected that the forecast traffic volume on Burrows Road will reduce as a result of the WestConnex changes. As a result, current modelling will not appropriately reflect the existing and post-development completion of the road network. If required, traffic surveys and detailed network assessment should be conducted following the completion of WestConnex and Gateway projects as part of a future DA.
- Notwithstanding, SIDRA modelling has been undertaken for the proposed site accesses and indicates that the proposed site accesses are expected to operate at a good LoS during both the AM and PM peak periods.

- It is expected that any detailed construction drawings in relation to the car park, site access and commercial vehicle facilities would comply with the relevant Australian Standards. Furthermore, compliance with the Standards would be expected to form a standard condition of consent to any development approval and subject to further review as part of future Development Application (DA) process.

10.2 Recommendations

It is noted that the Proposal itself does not directly relate to the higher density usage of the Site – rather, the increased height limit would enable the development to achieve the permissible 1.5:1 FSR on the Site, resulting in more efficient land use. However, to appropriately assess the impact of the future proposed development on-site, it is recommended to conduct traffic count survey at key intersections once the redistribution of traffic on surrounding roads has occurred following the WestConnex opening and further traffic modelling assessments can be undertaken as part of future DA process.

10.3 Conclusions

Having regard to the above, the Proposal is supportable on traffic and transport planning grounds and is not expected to result in any adverse impacts on the surrounding road network.

[end]