

Transport and Accessibility Impact Assessment

State Significant Development Application

3 Johnston Crescent, Horsley Park – Horsley Logistics Park Stage 2

12/07/2024

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Document Control

Project No	P2521
Project	3 Johnston Crescent, Horsley Park - Horsley Logistics Park Stage 2
Client	ESR Australia
File Reference	P2521r01v01 SSDA TAIA_3 Johnston Crescent, Horsley Park - HLP Stage 2.docx

Revision History

Revision No.	Date	Details	Author	Approved by
-	05/06/2024	Draft I	J. D. Wu	
I	12/07/2024	Issue	J. D. Wu, M. Khodadadifard	A. Rasouli

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Glossary

Acronym	Description
AGRD	Austrroads Guide to Road Design
AGTM	Austrroads Guide to Traffic Management
CC	Construction Certificate
Council	Fairfield City Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
DPHI	Department of Planning, Housing and Infrastructure (formerly Department of Planning and Environment, DPE)
FSR	Floor space ratio
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
MOD	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
TfNSW Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
S4.55	Section 4.55 Modification (also referenced as MOD)
S96	Section 96 Modification (former process terminology for an S4.55)
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TAIA	Transport and Accessibility Impact Assessment
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

ESR Australia (ESR) have engaged Ason Group to prepare a Transport and Accessibility Impact Assessment (TAIA) as part of the State Significant Development Application for a proposed warehouse and distribution centre at 3 Johnston Crescent, Horsley Park (The Proposal) – known also as Horsley Logistics Park – Stage 2 (HLP S2).

1.2 Objectives

This document has been prepared to provide a detailed assessment of the traffic and transport impacts associated with the proposed development on the surrounding road network. It has been prepared to meet the following key objectives:

- To establish that the development of the Site is compliant and consistent with the access, traffic and parking principles outlined in Council's Development Control Plan (DCP).
- To demonstrate that there is an appropriate and sustainable provision of car parking within the Site.
- To establish that the trip generation of the proposal can appropriately be accommodated by completed/committed upgrades to the local road network.
- To demonstrate that the proposed access driveways, internal roads, car parks and service facilities can provide a design compliant with the relevant Australian Standards.

1.3 Key References

In preparing this TAIA, Ason Group has referenced the following key planning documents and transport standards and guidelines.

The Site lies within the Fairfield City Council (Council) Local Government Area (LGA). As such, Ason Group has referenced the following key planning controls:

- Fairfield City Council Development Control Plan 2016 (FDCP).
- Western Sydney Employment Area Development Control Plan 2016 (WSEADCP)
- Fairfield Local Environmental Plan 2013 (LEP).
- NSW Government, State Environmental Planning Policy (Industry and Employment) 2021 (SEPP 2021).

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

- TfNSW, RMS Guide to Traffic Generating Developments 2002 (TfNSW Guide).
- TfNSW, RMS Technical Direction TDT 2013/04a, Guide to Traffic Generating Developments – Updated Traffic Surveys (TDT 2013/04a).
- Australian Standard 2890.1 (2004): Off-street car parking (AS2890.1:2004).
- Australian Standard 2890.2 (2018): Off-street commercial vehicle facilities (AS2890.2:2018).

- Australian Standard 2890.3 (2015): Bicycle Parking (AS2890.2:2015).
- Australian Standard 2890.6 (2022): Off-street parking for people with disabilities (AS2890.6:2022).

Finally, this TAIA makes reference to the following approved traffic reports comprising of developments in ESR Horsley Logistics Park – Stage 1 (HLP S1) and Oakdale East Industrial Estate (OEE).

- Ason Group, *Transport Assessment – State Significant Development Application at Oakdale East Industrial Estate (SSD-37486043) – Concept Plan Approval*, 07 June 2023 (OEE-CP TA)
- Ason Group, *Transport Assessment – State Significant Development Application – Modification 1 – Oakdale East Industrial Estate*, 06 November 2023 (OEE-MOD 1 TA 2023)
- Ason Group, *Transport Assessment – ESR Horsley Logistics Park – SSD 10436, 327-355 Burley Rd, Horsley Park (Lots 201-204)*, 30 October 2020 (HLP TA)
- Ason Group, *Transport Assessment – ESR Horsley Logistics Park – SSD 10436 (Modification 1), 327-355 Burley Rd, Horsley Park (Lots 201-204)*, 20 July 2021 (HLP-MOD-1 TA)
- Ason Group, *Transport Statement – SSD-10436 Modification 3, Lot 202 ESR Horsley Logistics Park*, 27 August 2021 (HLP-Lot 202 TS)
- Ason Group, *Transport Statement – 327-335 Burley Road, Horsley Park (SSD-10436) – Modification Application 4 to Lot 204 (formerly 203 of Masterplan Approval)*, 12 November 2021 (HLP-Lot 204 TS)
- Ason Group, *Transport Statement – Lot 206 (formerly Lot 202 of the Masterplan Approval), 3 Johnston Crescent, Horsley Park (SSD-10436) – Modification 8*, 23 November 2022 (HLP-Lot 206 TS)

1.4 Response to SEARs

This TAIA also aims to address key requirements of the Secretary's Environmental Assessment Requirements (SEARs) in relation to traffic and transport elements of the SSD-71144719, issued recently on 29 May 2024. A copy of the relevant requirements are extracted and responded to below.

TABLE 1 RESPONSE TO SEARS

No.	Requirement	Response
6. Traffic, Transport and Accessibility		
i	Provide a transport and accessibility impact assessment, which includes:	-
ii	details of all traffic types and volumes likely to be generated during construction and operation, including a description of key access and haul routes.	Traffic volumes are detailed in Section 6.1.3 and Section 7.6 . Key construction access routes are detailed in Section 7.4 and access arrangements detailed in Section 4.2 .
iii	an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts on existing performance levels of nearby intersections (using industry standard modelling).	Refer Section 6 for detailed assessment of traffic impacts. SIDRA modelling has been undertaken and detailed in Section 6.3 .
iv	plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network.	Refer Sections 7.5-7.7 for details of traffic mitigation measures to avoid queuing on the street network. Details of loading, unloading and servicing provisions are provided in Section 5.2 .

v	details and plans of any proposed internal road network, loading dock provision and servicing, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards	Provisions for loading docks and servicing, on-site parking provisions, bicycle parking and End of Trip facilities are detailed in Section 5 .
vi	swept path analysis for the largest vehicle requiring access to the development	Refer Appendix A for swept path assessment demonstrating access of 26.0m B-Double.
vii	details of road upgrades, infrastructure works, or new roads or access points required for the development if necessary	Future potential upgrades proposed as part of TfNSW planning within the WSEA, specifically Mamre Road and Kemps Creek area, are detailed in Section 3.6.1 .
viii	Provide a Construction Traffic Management Plan detailing predicted construction vehicle, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	A Preliminary Construction Traffic Management Plan (PCTMP) has been prepared in Section 7 . A detailed CTMP would be prepared upon appointment of a Contractor where detailed construction traffic volumes and vehicles would be ascertained.

2 Strategic Context

2.1 Planning Context

2.1.1 Western Sydney Employment Area

The WSEA was established by the NSW Government to provide businesses in the region with land for industry and employment, including transport and logistics, warehousing and office space. Centred approximately 50 kilometres west of the Sydney CBD, the WSEA provides for employment generating development further to the provision of significant new transport infrastructure connecting the WSEA to the regional road network and to the future Badgerys Creek Airport.

2.2 Recent Approvals

An overview of recent approvals in the area, including Oakdale East Industrial Estate (OEE) and ESR Horsley Logistics Park – Stage 1 (HLP S1), are demonstrated in **Figure 1** below.



Figure 1: Recent Approvals

3 Existing Conditions

3.1 Site Location

The Site is located at 3 Johnston Crescent, Horsley Park and is shown in **Figure 2**.



Figure 2: Site Location and Context

3.2 Existing Land Use

The Site is situated within the Fairfield City LGA on land which is zoned IN1 – General Industrial as shown in **Figure 3**. The Proposal will facilitate warehouse and distribution uses consistent with IN1 Land Use Zone.

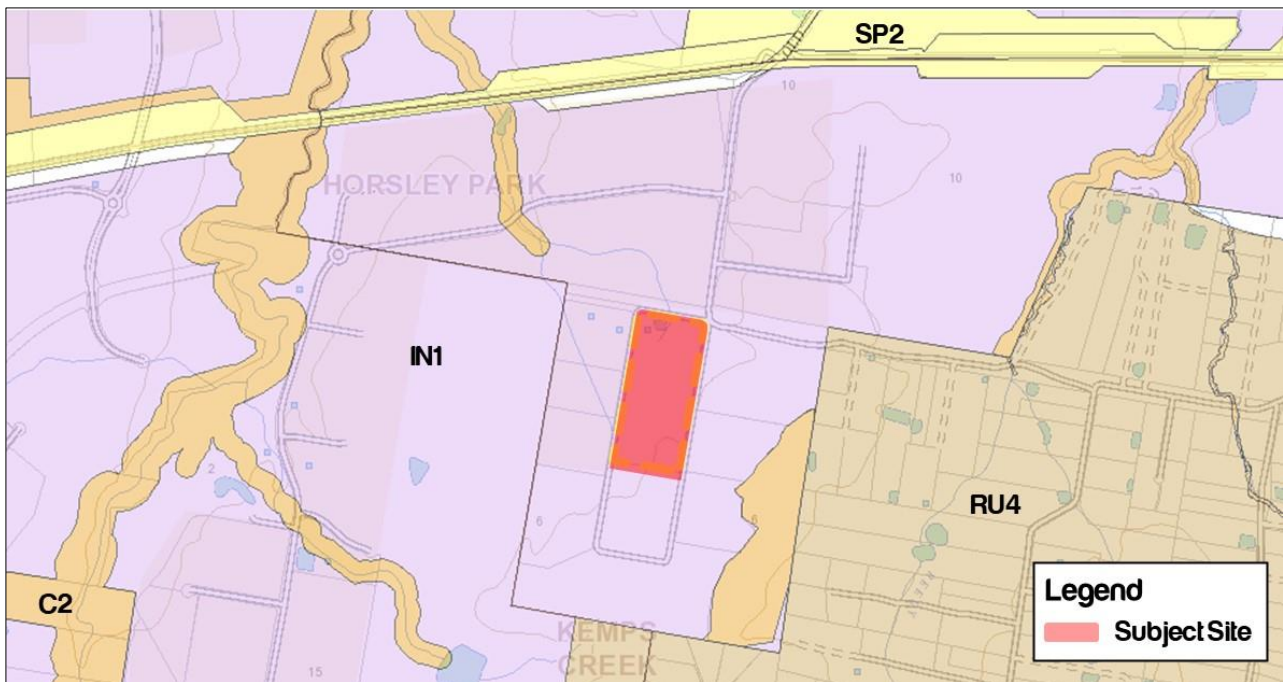


Figure 3: Land Zoning Context

3.3 Road Network and Road Hierarchy

Key roads and intersections within the study area are summarised in **Table 2** and shown in **Figure 4**.

TABLE 2 ROAD NETWORK

Road Name	Road Classification	Description
M7 Motorway	Arterial Road	<ul style="list-style-type: none"> The M7 Motorway runs north-south. It provides 4 traffic lanes, 2 lanes in each direction within a divided carriageway. Has a posted speed limit of 100km/h.
Wallgrove Road	Arterial Road	<ul style="list-style-type: none"> Wallgrove Road runs north-south. Further south of Roussell Road, it generally provides 2 traffic lanes, 1 lane in each direction within a divided carriageway. North of Roussell Road, it provides 4 traffic lanes, 2 lanes in each direction. Generally has a posted speed limit of 60km/h.
Lenore Drive	Collector Road	<ul style="list-style-type: none"> The M7 Motorway runs north-south. It provides 4 traffic lanes, 2 lanes in each direction within a divided carriageway. Off-road shared path along north side. Has a posted speed limit of 80km/h.
Old Wallgrove Road	Collector Road	<ul style="list-style-type: none"> The M7 Motorway runs north-south. It provides 4 traffic lanes, 2 lanes in each direction within a divided carriageway. Off-road shared path along west side.

		<ul style="list-style-type: none"> Generally has a posted speed limit of 60km/h.
Millner Avenue	Local Road	<ul style="list-style-type: none"> The M7 Motorway runs north-south. It provides 4 traffic lanes, 2 lanes in each direction within a divided carriageway. Has a 50km/h default speed limit in built-up area.
Johnston Crescent	Local Road	<ul style="list-style-type: none"> The M7 Motorway runs north-south. It provides 2 traffic lanes, 1 lane in each. Has a 50km/h default speed limit in built-up area.

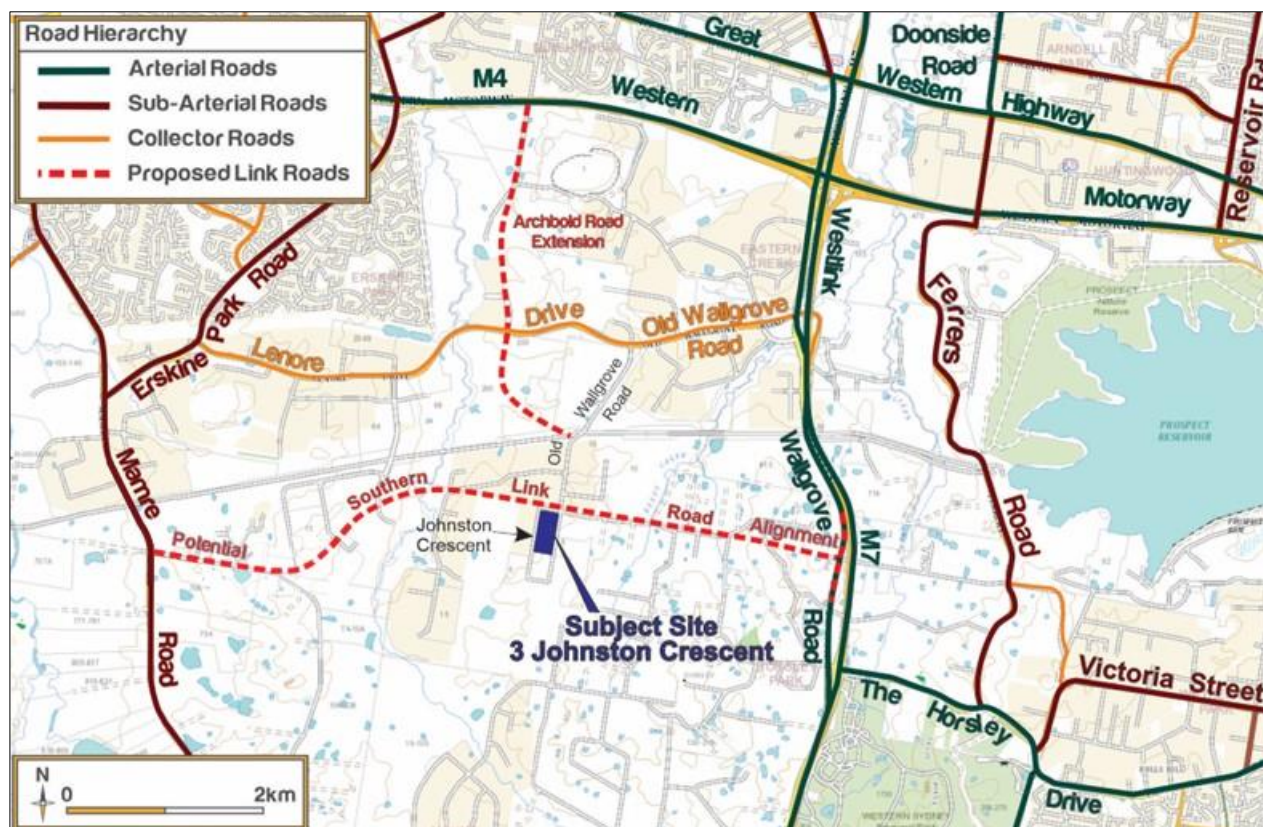


Figure 4: Surrounding Road Network¹

3.4 Truck Routes

As is appropriate for a predominately industrial area, all key roads providing access for the Site are designated for Restricted Access Vehicles (RAVs), as summarised in **Table 3** and **Figure 5**.

TABLE 3 TfNSW RESTRICTED ACCESS VEHICLE ROUTES

Road	Section	TfNSW Approval
Old Wallgrove Road	Entire Length	25/26m B-Double Routes
Wallgrove Road	Entire Length	
Lenore Drive	Entire Length	

¹ Southern Link Road would be an arterial road.

M7 Westlink	Entire Length	
Erskine Park Road	Entire Length	
M4 Western Motorway	Entire Length	
Mamre Road	Entire Length	
Johnston Crescent	Length of road anticlockwise, between intersection with Old Wallgrove Road / Millner Avenue, up to 5 Johnston Crescent (Lot 206).	

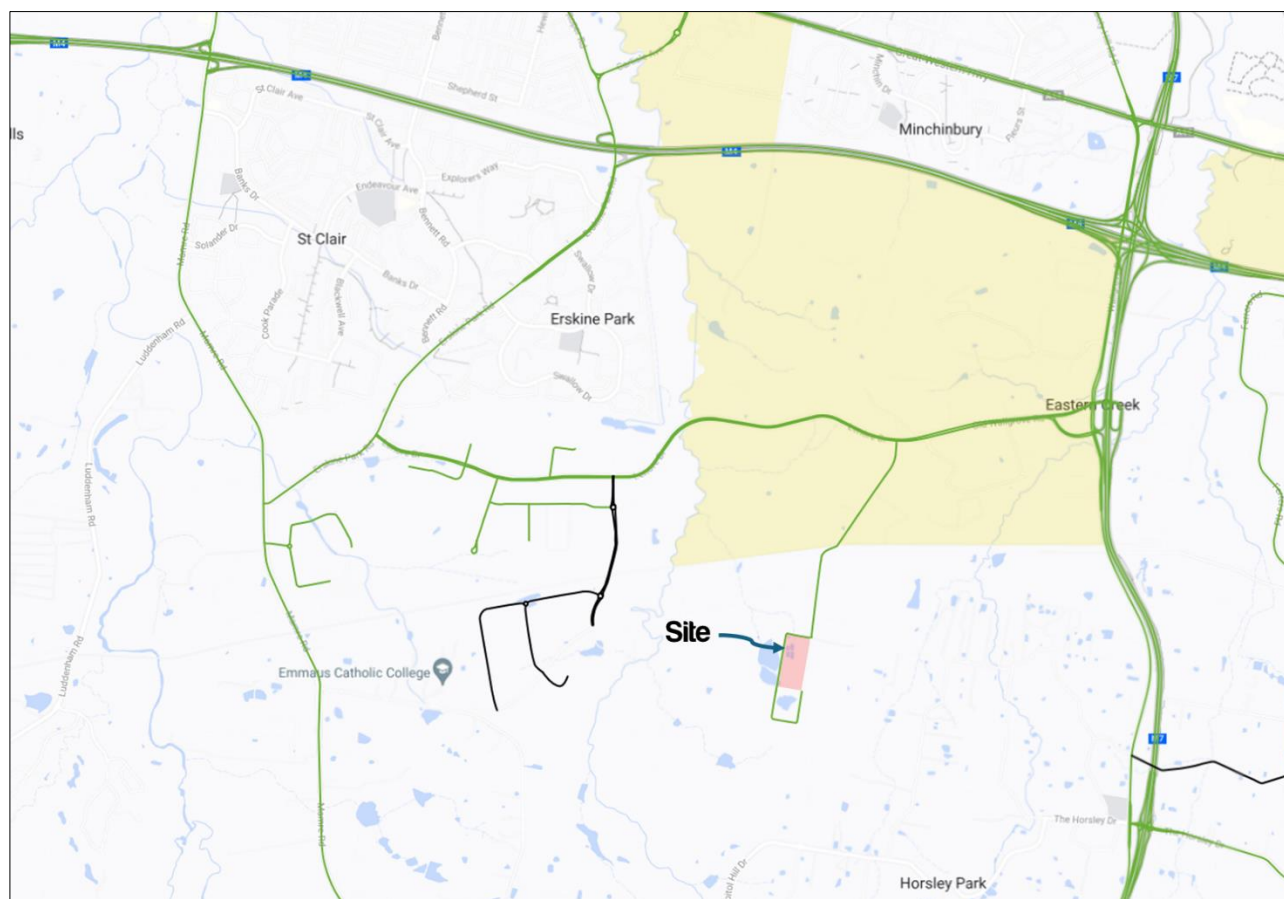


Figure 5: Restricted Access Vehicles Map (Source: TfNSW)²

The future SLR is also expected to similarly provide for 25.0m / 26.0m B-doubles.

3.5 Public Transport and Active Transport

End-to-end public transport connectivity to the Site is currently limited as outlined in the following sections.

² <https://maps.transport.nsw.gov.au/egeomaps/restricted-access-vehicles-map/>

3.5.1 Bus Services

TfNSW Guidelines state that bus services influence the travel mode choices of sites within 400m (approximately 5 minutes' walk) of a bus stop.

The nearest 2 bus stops are located at Delaware Road / Burley Road, 1,200 metres beyond the Site. This comprises bus service 813 which provides connections between Fairfield Station, South West Sydney TAFE, Prairiewood T-way, Horsley Park shops and Bonnyrigg T- way; bus service 779 also provides connectivity to Erskine Park, St Mary. Another 2 bus routes (738 and 835) are more than 2 kilometres away from the Site.

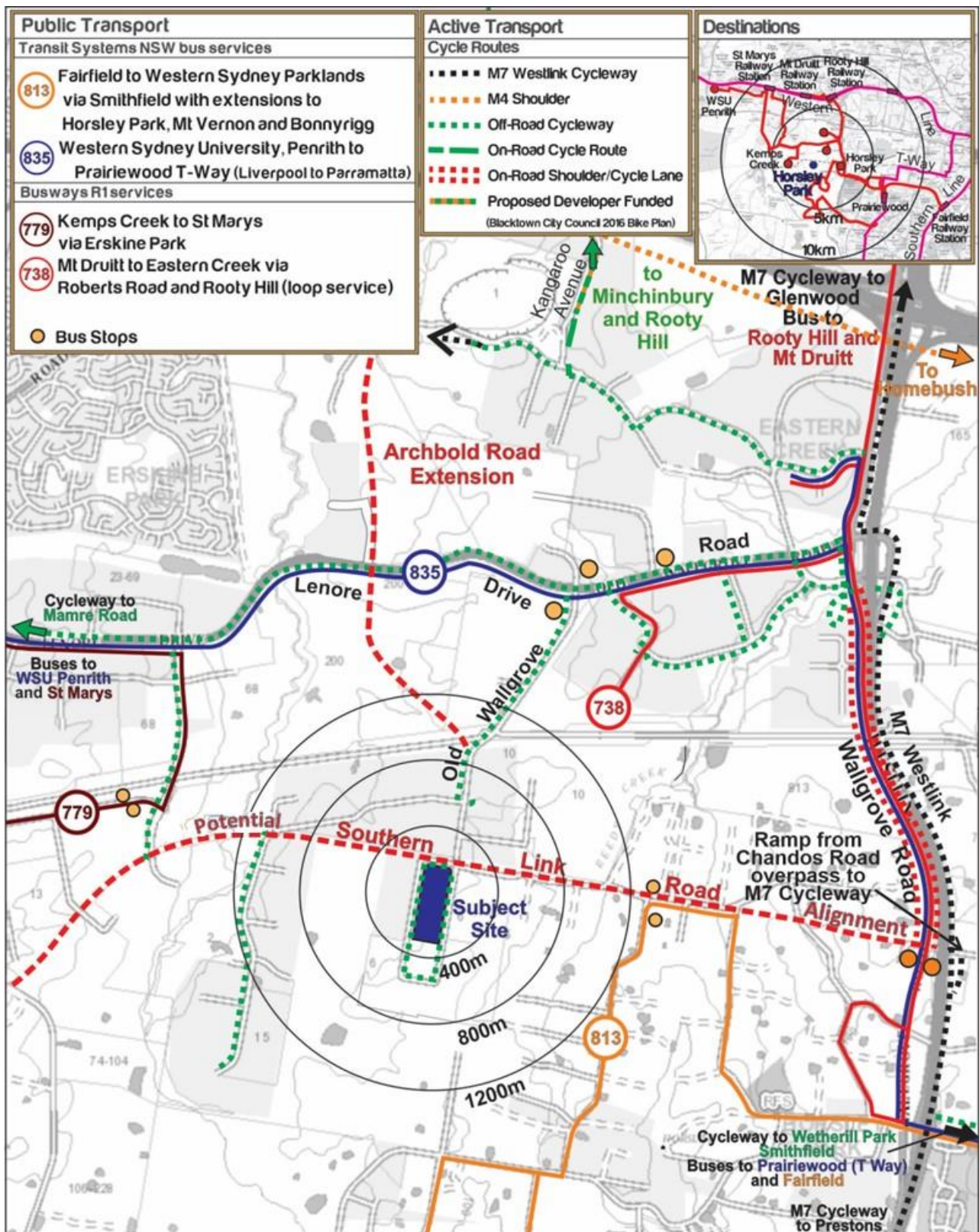


Figure 6: Public Transport and Bicycle Network

3.5.2 Train Services

The Site is not located in proximity (800 metres) of any existing train stations, with the closest train station at Rooty Hill Station being approximately 11 kilometres (or 17 - 25 minutes' driving distance) from the Site.

3.5.3 Active Transport

Johnston Crescent currently provides pedestrian paths in the subject site's vicinity. It is expected that Burley Road and other estate roads will provide pedestrian connection to facilitate a permeable and convenient walking opportunity to connect Old Wallgrove Road pedestrian network. See **Figure 6** above for the walking connectivity to existing public transport options.

Furthermore, Old Wallgrove Road includes shared footpaths to the north of Milner Avenue connecting to Lenore Dr and M7 cycleway.

There are currently limited cycling facilities and routes provided within the immediate proximity of the development. With reference to **Figure 6**, off-road cycleways are provided along Old Wallgrove Road further to the north of the Site.

3.6 Future Context

3.6.1 Future Road Network

The Southern Link Road (SLR) will provide additional road infrastructure to accommodate travel demand generated by employment areas within the Warragamba Pipeline area. The indicative route alignment for the SLR was initially identified in the SEPP (WSEA) 2009 and has since been refined to the current alignment as shown in **Figure 7**.



Figure 7: Potential Southern Link Road Network and Alignment (Source: TfNSW (2022))³

A key component of the potential SLR alignment includes:

- Stage 1:
 - A connection from Mamre Road to Old Wallgrove Road and then to a future North-South Link Road connection to Archbold Road at Lenore Road. The proposed Archbold Road extension would connect the M4 to Lenore Drive, with a new interchange of M4 Western Motorway and Archbold Road; this extension is currently being progressed by the TfNSW and is expected to be delivered in

³ <https://www.transport.nsw.gov.au/projects/current-projects/southern-link-road-corridor>

5-10 years (subject to further liaison between stakeholders), providing improved WSEA accessibility to the M4 Western Motorway without the need to access either Wallgrove Road or the M7 Motorway.

- At the SLR / Old Wallgrove Road/ Johnston Crescent intersection, a signalised intersection is proposed.

- Stage 2:

- As of May 2024, TfNSW has released a Revised Preferred Options Report 2024 (Revised SLR Options Report). The Revised SLR Options Report confirmed previous recommendations from 2009 and 2022, being, the preferred road corridor between Old Wallgrove Road and Wallgrove Road follows the existing Burley Road Corridor and connects Burley to Chandos Road (2B) via straight corridor.

It is noted that the SLR network planning and development process is ongoing and is therefore subject to change due to further refinement of the route alignment and access arrangements. As at the time of this report, SLR was not funded nor committed, hence the Site does not rely on this road for access. Should the SLR be constructed in the future, access to the Site via SLR can be possible via Old Wallgrove Road.

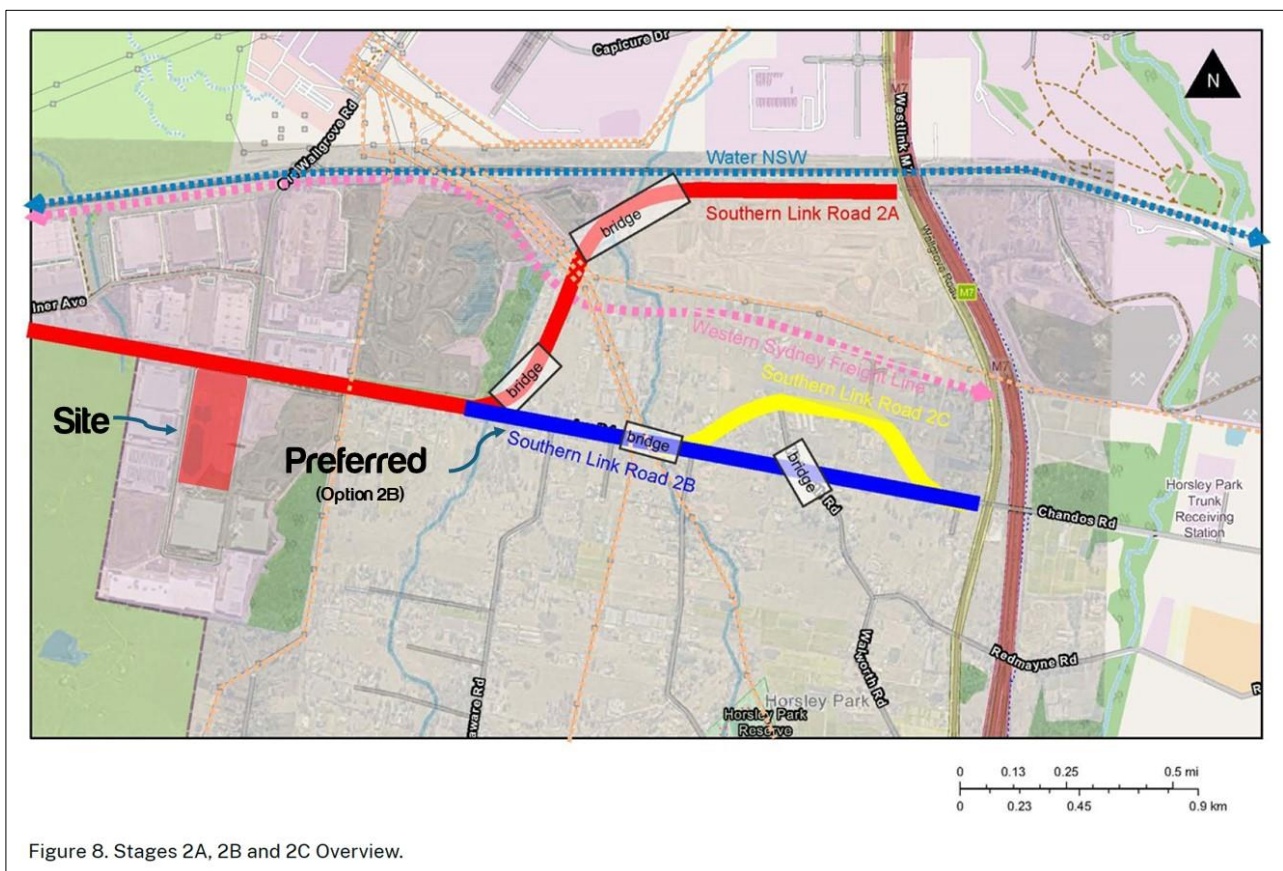


Figure 8. Stages 2A, 2B and 2C Overview.

Figure 8: Corridor Options for Southern Link Road - following the existing Burley Road to Chandos Road Proposed Corridor (2B)

Furthermore, the same comment also applies to Archbold Road extension. It is noted that the Archbold Road network planning and development process is ongoing and is therefore subject to change. Furthermore, at the time of this report, Archbold Road project has also not been funded nor committed, hence the Site does not rely on this road for access. Should Archbold Road be constructed in the future, access to the Site via Archbold Road can be possible (through Old Wallgrove Road). The most recent update was in 2023, with the concept design shown in **Figure 9**.



Figure 9: Archbold Road Concept (Source: TfNSW (May 2023))⁴

3.6.2 Approved Planned Upgrades

It is noted that as part of the approved SSD-37486043 a package of upgrades are planned for the following intersections:

- Old Wallgrove Road / Lenore Dr
- Old Wallgrove Road / Milner Avenue

Ason Group is unaware of the timing for these planned upgrades, however, our SIDRA modelling for the cumulative impact assessments, assumes a 2026 with and without planned upgrade scenario for completeness.

We have also conservatively assumed a full delivery of SSD-37486043 MOD 1 by 2026 to ensure the increased traffic from the development will not result in any additional traffic impacts to the planned upgrades.

Our 2036, modelling scenario assumes these planned upgrades are all in place regardless.

⁴ <https://www.transport.nsw.gov.au/sites/default/files/media/documents/rww/projects/01documents/archbold-road/archbold-road-map.pdf>

4 The Proposal

4.1 Project Description and Development Schedule

The Proposal comprises of two (2) warehouses, associated car and truck parking, office facilities, and loading bays. The Proposal will facilitate warehouse and distribution uses consistent with the IN1 General Industrial Zone under the State Environmental Planning Policy (Industry and Employment) 2021.

The Proposal comprises of the following yield, car parking and loading provision.

TABLE 4 DEVELOPMENT SCHEDULE

Component	Warehouse A	Warehouse B	Total
Warehouse GFA	19,213	33,581	52,794
Office GFA	1,037	2,069	3,106
Total GFA	20,250	35,650	55,900
Loading Dock Provision ^{1,2}	17	31	48
Car Parking Provision ^{3,4}	104	150	254

Note: 1) This provision includes 8 recessed dock service bays for Warehouse A

Note: 2) This provision includes 12 recessed dock service bays for Warehouse B

Note: 3) This provision includes 2 accessible spaces for Warehouse A

Note: 4) This provision includes 2 accessible spaces for Warehouse B

4.2 Vehicular Access Strategy

The Proposal proposes four vehicular access points on Johnston Crescent, comprising the following:

- Warehouse A (WHA)
 - Heavy Vehicle crossover: Separated entry and exit driveway to shared WHA / WHB hardstand
 - Light Vehicle crossover: Combined entry and exit driveway to WHA undercroft car park
- Warehouse B (WHB)
 - Heavy Vehicle crossover:
 - Separated entry and exit driveway to shared WHA / WHB (north) hardstand
 - Combined entry and exit driveway to WHB (south) hardstand
 - Light Vehicle crossover: Combined entry and exit driveway to WHB undercroft car park

This is further demonstrated in **Figure 10** below.

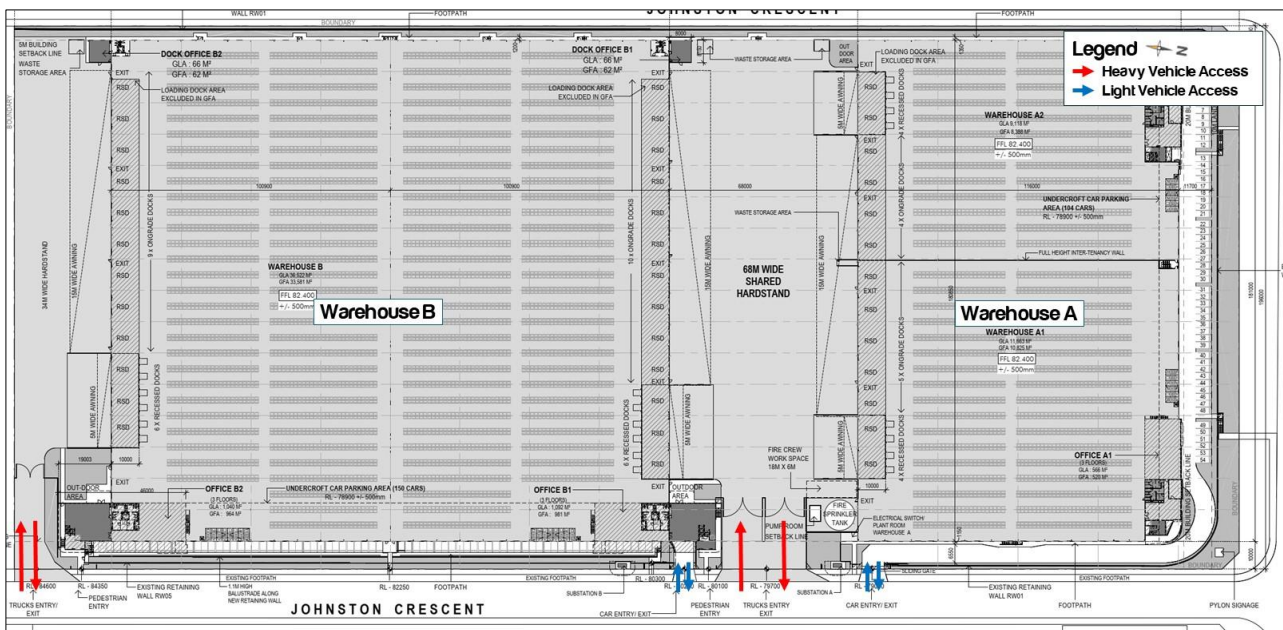


Figure 10: Vehicular Access Arrangement

5 Parking and Loading Assessment

5.1 Parking Requirements

5.1.1 Car Parking

Parking provision for the Proposal has been reviewed against Council's FDCP and *RMS Guide to Traffic Generating Developments* (TfNSW Guide). Further comparison is made to recently approved and operational sites in the Fairfield City Council LGA.

TABLE 5 FDCP CAR PARKING RATES

Land Use	Parking Rate ¹
IN1 (General Industrial)	1 space per 70m ² gross leasable area including ancillary plus 1 space per unit for factory units

It is noted that the site-specific DCP rate is actually higher than the 1 space per 80m² GLA rate referred in Chapter 9 (Industrial Development) Section 9.7.4 (Car Parking) of the Fairfield Citywide DCP 2013, suggesting some acknowledgement of varying demands for varying types of development.

These generic rates are more suitable to small developments, industrial business parks with high proportion of office areas and/or other specific tenants with high staffing level. Instead, this development generally provides for large-format industrial warehouse type facilities.

However, in general, significantly lower tenant parking requirements associated with these large-format warehouses demonstrate that the DCP rates generally far exceeds the anticipated actual parking demand. For likely users of this scale, parking provisions for similar industrial properties recently approved in the broader WSEA as well as those currently operating are demonstrated in **Table 6** below. Furthermore, from a commercial perspective, provision of such significant number of (surplus) parking for the development is not reasonable and does not align with sustainable development principles.

TABLE 6 TFNSW GUIDE CAR PARKING RATES

Land Use	Parking Rate ¹
Warehouse	1 space per 300m ²
Office	1 space per 40m ²

Note: 1) Parking calculations would be rounded up.

Therefore, the most appropriate car parking requirements, being those stipulated in most recent approved rates of 1 per 300m² and 1 per 40m² (in line with TfNSW Guides), have been adopted for the Proposal.

TABLE 7 CAR PARKING REQUIREMENTS

Component	Yield	Parking Requirement
Warehouse	52,794	176
Office	3,106	78
Parking	254	254

As such, the Proposal provides for 254 on-site car parking spaces and satisfies the parking provision requirements in accordance with the TfNSW Guide.

5.1.2 Parking Assessment Summary

In summary, the proposed car parking provisions are generally less than nominally required by the FDCP. Notwithstanding, the proposed car parking provision is deemed supportable having regard to the following:

- Based on preliminary tenant details provided by ESR, it is understood the car parking provision for each warehouse generally meets the anticipated demand from preliminary staff numbers (220 anticipated total staff). Further application of estimated single-occupant private vehicle mode share would demonstrate parking demand would be reasonably met by the proposed parking supply.
- The adopted parking rate assessed for the Proposal are consistent with Condition A8 (SSD-10436) of the most recent approved Lot 206, Horsley Park development. It is also consistent with many other approved warehouse / industrial precincts in the Fairfield LGA and wider Western Sydney Employment Area.
- The proposed overall car parking provision for the Proposal generally satisfies the TfNSW Guide parking requirement, which would ensure a suitable provision to 'future-proof' the facility, in case parking demand may increase in the longer term.
- General sentiment based on discussion and responses received from TfNSW on parking indicates support for reduced car parking provisions to encourage the use of public and active travel modes, where available.

The proposed parking provision strikes a well-informed balance which meets anticipated future parking demand, is in line with approved large-format industrial developments in the LGA, and generally aligned with sustainable objectives to reduce private single vehicle travel.

5.1.3 Accessible Parking

The FDCP requires accessible car parking to be provided at the following rate:

- *All developments providing 50 parking spaces or more must provide at least 2% or part thereof of those spaces for disabled drivers.*

Similarly, reference is made to Condition A8 (SSD-10436 MOD 8) for the neighbouring Lot 206 Horsley Park site:

- 1 space for accessible parking for every 100 car parking spaces.

Therefore, the latter parking rate has been adopted, consistent with the most recently approved rates.

TABLE 8 ACCESSIBLE PARKING REQUIREMENTS

Total Car Parking Provided	254
Accessible Parking Requirement	3
Accessible Parking Provision	4

Therefore, it is evident the proposed provision would satisfy anticipated accessible parking requirements.

5.1.4 Bicycle Parking and End of trip facilities (EoTF)

The FDCP does not provide bicycle parking or EoTF provision rates. Therefore, bicycle Parking has been assessed having regard for the *NSW Planning Guidelines for Walking and Cycling* (Walking and Cycling Guidelines). The Walking and Cycling Guidelines requires the following for industrial developments:

- Staff bicycle parking requirement: 3-5% of staff number
- Visitor bicycle parking requirement: 5-10% of staff number

Additional locker, shower and change room requirements per the guidelines is summarised in **Table 9**.

TABLE 9 MINIMUM LOCKER, SHOWER AND CHANGE ROOM PROVISION

Staff	Lockers	Showers	Change Rooms
0-12	1 per 3 racks	1	-
13-49	1 per 3 racks	2 (1 male and 1 female)	2 (1 male and 1 female)
50-149	1 per 3 racks	4 (2 male and 2 female)	2 (1 male and 1 female)
150-299	1 per 3 racks	6 (3 male and 3 female)	2 (1 male and 1 female)
300-500	1 per 3 racks	8 (4 male and 4 female)	2 (1 male and 1 female)

Noting preliminary tenant details received from ESR, it is anticipated the following would be provided as a minimum:

- Warehouse A
 - 6 bicycle spaces (2 staff and 4 visitor)
 - 2 lockers
 - 4 showers (2 male and 2 female)
 - 2 change rooms (1 male and 1 female)
- Warehouse B
 - 6 bicycle spaces (2 staff and 4 visitor)
 - 2 lockers
 - 4 showers (2 male and 2 female)
 - 2 change rooms (1 male and 1 female)

The Proposal provides for the following and satisfies requirements of the Walking and Cycling Guidelines.

- Warehouse A
 - 12 bicycle spaces
 - 6 showers (2 male, 2 female and 2 accessible)
 - 2 change rooms (1 male and 1 female) and associated lockers
- Warehouse B
 - 12 bicycle spaces
 - 12 showers (4 male, 4 female and 4 accessible)
 - 2 change rooms (1 male and 1 female) and associated lockers

It is expected that any detailed construction drawings in relation to the bicycle parking and EoTF would be provided in accordance with Australian Standard AS2890.3:2015.

5.2 Loading Bay Provisions

A review of large-format warehousing recently approved within the LGA in similar contexts is detailed in **Table 10** below to ascertain up-to-date practices for service bay provision.

TABLE 10 SERVICE BAY PROVISIONS

Development	Warehouse GFA (m ²)	No. Service Bays	Equivalent Service Bay Rate
ESR Horsley Logistics Park			
Lot 201	38,134	27	1 space per 1,412 m ²
Lot 202	14,531	21	1 space per 691 m ²
Lot 204	18,603	14	1 space per 1,328 m ²
Lot 206	27,220	20	1 space per 1,361 m ²
First Estate			
Lot 6A	5,000	6	1 space per 833 m ²
Lot 6B	4,575	4	1 space per 1,144 m ²
Lot 6C	13,950	6	1 space per 2,325 m ²
Lot 8A	21,000	25	1 space per 840 m ²
Lot 8B1	7,000	9	1 space per 778 m ²
Lot 8B2	11,734	13	1 space per 903 m ²
Oakdale East Industrial Estate			
1F	2,797	3	1 space per 932 m ²
3A	37,150	22	1 space per 1,689 m ²
3B	55,844	51	1 space per 1,095 m ²

Evidently, actual demand for service bay provision is expected to fall within the range of 1 service bay per 691m²-2,325m² of warehouse GFA.

- The Proposal provides for 48 bays, equivalent to a provision of 1 space per 1,099m².
- Accordingly, the proposed service bay provision falls within the acceptable range for similar large-format warehouses approved in the area and is deemed to be supportable on these grounds.

Furthermore, preliminary (speculative) tenant information received from ESR suggests that an estimated heavy vehicle peak hour trip generation of 5-6 heavy vehicles would occur. Whilst detailed dwell times of heavy vehicles within the Site are unavailable and the actual service bay occupancy cannot be determined, the current level of provision represents a factor of 8-9.6 to the peak hour heavy vehicle trip generation. This confirms the proposed provision is in line with recently approved developments within the LGA.

6 Traffic Assessment

6.1 Trip Generation Rate

6.1.1 WSEA Adopted Rates

The approved traffic modelling undertaken for the broader WSEA adopts the following trip generation rate for 'Lands south of Sydney Water Pipeline' with which the Site lies within.

- 21 trips per hectare for two-hour peak period.

A conversion factor of 0.55 has been assumed to identify the equivalent one-hour peak volume from the two-hour peak volume.

- As such, a one-hour peak hour generation of 11.6 trips per hectare of the Site area is referred (equivalent to 0.116 trips / 100m² of Site area).

Based on a Site area of 86,721m², an equivalent peak hour trip generation of 101 vehicles is conservatively estimated for the Site. This means that the traffic modelling underpinning the WSEA has allowed a 101 vehicle trips (to/from) this Site.

6.1.2 Horsley Logistics Park – Stage 1 Actual Surveyed Rates

To further inform the anticipated trip generation rate, reference is made to nearby approved, constructed, and fully-operational (as advised by ESR) sites in ESR Horsley Logistics Park – Stage 1 (HLP S1) identified in **Figure 11**. Classified driveway surveys were undertaken between 5AM–7PM over a 5-weekday period between 08 April 2024 to 12 April 2024. Hourly trip generation profiles have been illustrated in **Figure 11**.



Figure 11: Operational Sites within Horsley Logistics Park (surveyed 08/04/2024-12/04/2024)

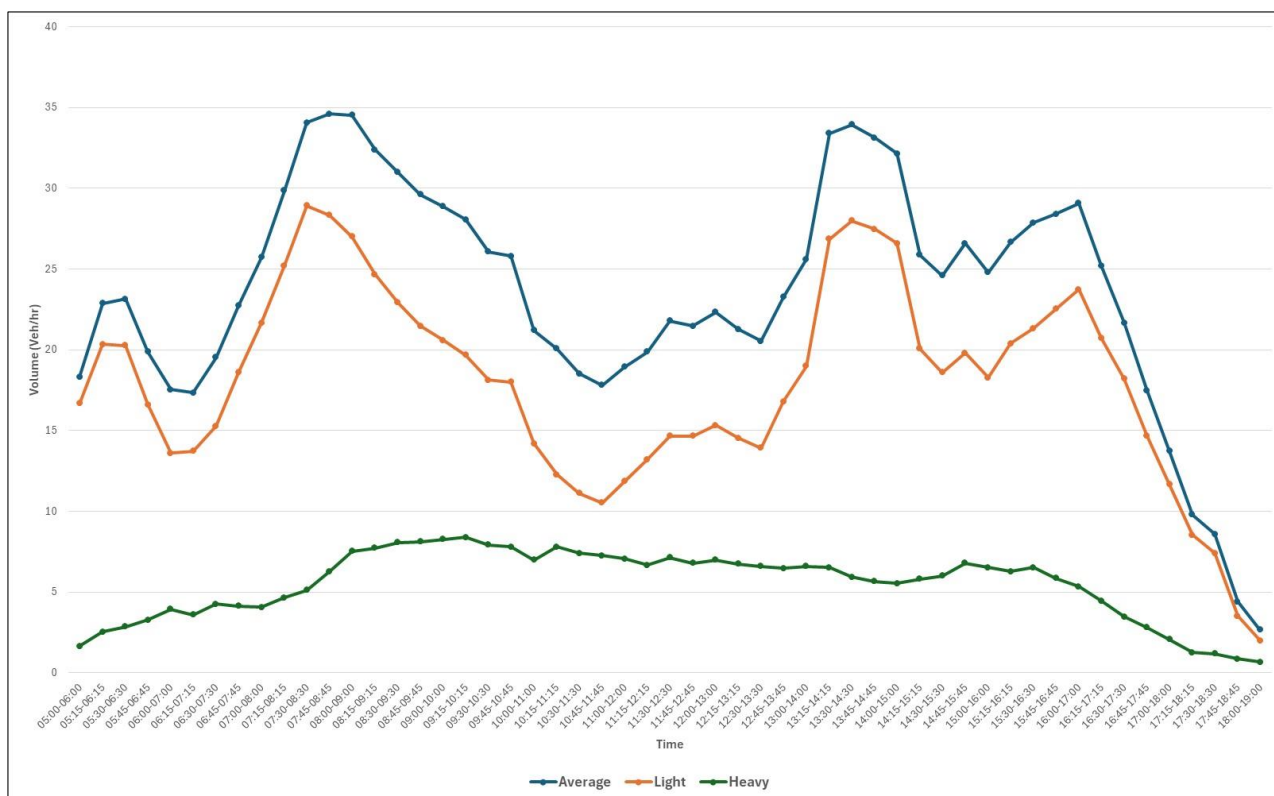


Figure 12: HLP S1 sites average hourly traffic generation profile (5AM-7PM)

Importantly, the average network peak trip generation rates can be identified for the operational sites.

TABLE 11 HLP S1 TRIP RATES

Network Peak Hour		Average Trip Generation for HLP S1 sites ¹		Equivalent Trip Rate per 100m ² GFA ¹	
AM	PM	AM	PM	AM	PM
07:30-08:30	15:00-16:00	102	74	0.13	0.10

Note 1: Two-way movement per hour

Per **Table 11**, a trip rate of 0.13 (AM peak) and 0.10 (PM peak) has been identified, which reflects considerably lower trip generation rates than that projected by WSEA rates. As such, the HLP S1 rates are considered an appropriate rate to adopt given comparable building typology and user mix of existing sites operating most recently in HLP S1.

6.1.3 Proposed Development Traffic Generation – Based on Surveys

Application of the above trip generation rates (0.13 trips per 100m² GFA in the AM peak, 0.10 trips per 100m² GFA in the PM peak) results in the following total vehicle movements (including inbound and outbound) for the Site:

- AM Network Peak: 75 veh/hr
- PM Network Peak: 54 veh/hr

It is our view that these traffic generation are deemed appropriate for the proposal since these traffic volumes are based on actual recent traffic surveys for comparable sites within immediate proximity of the Site.

6.1.4 Recently Approved Trip Rates

It is noted that the approved SSD-37486043 MOD 1 adopts the following approved trip generation rates:

- 0.18 trips per 100m² in road network AM peak hour, and
- 0.16 trips per 100m² in road network PM peak hour.

Application of the above rates provide a theoretically higher trip generation for the Proposal which are 102 in AM and 82 in PM peak hours respectively.

6.1.5 Trip Generation Estimation

According to the information outlined this TMAP estimates the proposed development traffic generation based on the recent surveys in the area and adopts the higher trip rates for the purpose of sensitivity testing.

6.2 Traffic Impacts

For conservative impact assessment, we have adopted both trip rates and compared with the approved WSEA rates underpinning the wider Western Sydney traffic modelling completed previously. According to the below Table, it is apparent that the built form of this proposal will not generate more than what was approved for its site area under WSEA modelling and therefore, it is reasonable to assume that the proposed development traffic generation had readily been included in WSEA **cumulative approved traffic modelling**. It is emphasised that the proposal for this land is in-line with the land-use zoning envisaged for this Site and the GFAs now proposed for the Site seems to generate within its approved threshold.

TABLE 12 TRIP RATE COMPARISON

Trip Rate	Trip Rate		Trip Generation	
	AM	PM	AM	PM
Approved WSEA (Trip Rates - Threshold)	0.116 trips / 100m ² of Site area	0.116 trips / 100m ² of Site area	101	101
Based on HLP S1 (Surveyed Rates)	0.13 trips / 100m ² GFA	0.10 trips / 100m ² GFA	75	54
Higher Trip Rates	0.18 trips / 100m ² GFA	0.16 trips / 100m ² GFA	101	89

Therefore, the traffic generation of the proposed development is deemed supportable.

6.3 SIDRA Modelling

Cumulative SIDRA modelling for the proposed development and other recent approval in the area has been undertaken to the best of Ason Group's knowledge on publicly available information and considering the key routes providing vehicular access for the Proposal.

It is noted that there are several key infrastructure road upgrade works envisaged by NSW Government in the area including Archbold Road extension and SLR which is likely to change the traffic patterns of the area quite significantly.

These upgrades are deemed to improve the traffic pressure of key intersections impacted by this development i.e. Old Wallgrove Road / Lenore Drive and Old Wallgrove Road / Milner Avenue. However, for completeness of this assessment, we have undertaken SIDRA modelling assuming no such upgrades to ascertain that the proposed development traffic would not rely on such improvements.

6.3.1 Intersection Performance

The performance of the key intersections has been analysed using the SIDRA Intersection 9.0 model. SIDRA provides a range of performance measures, including:

- Degree of Saturation (DOS): DOS is defined as the ratio of demand (arrival) flow to capacity.
- Average Vehicle Delay (AVD): Provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- Level of Service (LOS): Comparative measure that provides an indication of the operating performance, based on AVD. For signalised and roundabout intersections, it's based on average delay to all vehicles, while at priority-controlled intersections it's based on the worst approach delay.

Table 13 provides a summary of the SIDRA LOS parameters, which are based on the TfNSW Guide.

TABLE 13 SIDRA LEVEL OF SERVICE (LOS) SUMMARY

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

6.3.2 Modelling methodology

Traffic impact assessment has been undertaken in accordance with the approved Oakdale East Industrial SSD-37486043 MOD 1 Transport Assessment (OEE-MOD 1 TA 2023). The modelling scope – consistent with the approved modelling methodology in OEE-MOD 1 TA 2023 – assesses the net traffic volumes generated by the Proposal (Dev), plus cumulative traffic from the following developments (other existing or approved developments):

- Oakdale East Industrial Estate (OEE)
- Oakdale Central Industrial Estate (OCE)
- Oakdale South Industrial Estate (OSE)
- Fraser's Horsley Park Estate (HPE)
- ESR HLP S1.

As such, SIDRA modelling has been prepared for the Old Wallgrove Road / Lenore Drive intersection and Old Wallgrove Road / Millner Avenue intersection. The following scenarios are noted.

Modelling Scenarios

For conservativeness we have undertaken the modelling scenarios as follows:

- Scenarios 1 to 3 below assumes existing configuration of the signals without OEE full development traffic with and without the proposal (by 2026 development opening year).
- Scenarios 4 to 6 below assumes planned upgrades as part of SSD-37486043 MOD 1 plus OEE full development delivery with and without the proposal (conservatively assumed for 2026).
- Scenarios 7 to 9 below assumes planned upgrades as part of SSD-37486043 MOD 1 plus OEE full development delivery with and without the proposal (assumed for 2036).

TABLE 14: SIDRA MODELLING SCENARIOS AND INTERSECTION TYPOLOGY

Scenario #	Year	Other Existing or approved developments	Intersection Configuration	Site Trip Generation Rates
1	2026	-	Existing	-
2				Surveyed
3				Recently Approved
4	2026	✓	Planned Upgrade	-
5				Surveyed
6				Recently Approved
7	2036	✓	Planned Upgrade	-
8				Surveyed
9				Recently Approved

2026 Modelling Results

TABLE 15: SIDRA RESULTS – 2026 – SCENARIOS 1 TO 3

Intersection	Peak	Scenario 1			Scenario 2			Scenario 3		
		DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS
Old Wallgrove Road / Lenore Drive	AM	0.61	22	LOS B	0.60	23	LOS B	0.60	23	LOS B
	PM	0.61	30	LOS C	0.62	31	LOS C	0.64	32	LOS C
Old Wallgrove Road / Millner Avenue	AM	0.61	22	LOS B	0.46	30	LOS C	0.46	30	LOS C
	PM	0.46	38	LOS C	0.47	39	LOS C	0.49	40	LOS C

Note: this scenario does not include OEE approved masterplan traffic to arrive by 2026.

- It is noted that if the planned upgrades outlined in SSD-37486043 MOD 1 is not delivered by 2026, the existing signalised intersections can accommodate the proposed development traffic generation.

TABLE 16: SIDRA RESULTS – 2026 – SCENARIOS 4 TO 6

Intersection	Peak	Scenario 4			Scenario 5			Scenario 6		
		DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS
Old Wallgrove Road / Lenore Drive	AM	0.74	25	LOS B	0.78	25	LOS B	0.79	26	LOS B
	PM	0.85	41	LOS C	0.88	42	LOS C	0.91	43	LOS C
Old Wallgrove Road / Millner Avenue	AM	0.53	24	LOS B	0.54	25	LOS B	0.54	26	LOS B
	PM	0.67	38	LOS C	0.67	39	LOS C	0.67	39	LOS C

Note: this scenario conservatively includes full delivery of all other existing and approve development with the planned intersection upgrades.

- As can be seen the development traffic will not result in any material traffic impacts onto the surrounding key intersections.
- More importantly, the LoS will remain unchanged between approved SSD-37486043 MOD 1 traffic impact assessment with addition of the proposed development traffic.

2036 Modelling Results

TABLE 17: SIDRA RESULTS – 2036 – SCENARIOS 7 TO 9

Intersection	Peak	Scenario 7			Scenario 8			Scenario 9		
		DoS	Delay (s)	LoS	DoS	Delay (s)	LoS	DoS	Delay (s)	LoS
Old Wallgrove Road / Lenore Drive	AM	0.84	24	LOS B	0.84	24	LOS B	0.84	24	LOS B
	PM	0.91	42.5	LOS C	0.92	43.4	LOS D	0.96	45.4	LOS D
Old Wallgrove Road / Millner Avenue	AM	0.53	24	LOS B	0.54	25	LOS B	0.54	26	LOS B
	PM	0.67	38	LOS C	0.67	39	LOS C	0.67	39	LOS C

- Based on the SIDRA results the proposed development traffic is unlikely to have any material traffic impact onto the key intersections by 2036. The PM peak hour increased LoS from C to D is still acceptable and is a result of an increase of less than 1 second delay (0.9 seconds) when adopting the surveyed trip rates.

- It is noted that our 2036 modelling assessment does not include any of TfNSW's future road network upgrades including Archbold Road or SLR. These two state funded projects are likely to improve the performance of these intersections quite significantly.
- Also forecasting performance of these intersections, 12 years from now, would have some level of uncertainty having regard for potential mode share target changes as a result of additional public and active transport coverage in the area. Therefore, it is fair to assume that the 2036 scenarios are more of a theoretical guide to show the performance of the intersections if no other changes are expected. This is more of a wider precinct modelling matter which should be reviewed and assessed in consultation with TfNSW and other stakeholders in the area.

6.4 Traffic Impacts

As discussed above, the expected traffic generation of the Site falls well under the approved trip generation threshold as assessed under WSEA trip generation rates. It is our view these rates demonstrate supportable grounds for the proposed HLP S1 trip rates. Further sensitivity testing with higher OEE MOD 1 trip rates demonstrate both intersections operate satisfactorily in the 2026 model year – with net Proposal traffic volumes resulting in immaterial changes to DOS and AVD, and – importantly – LOS remaining unchanged in the 2026 model year. Therefore, the Proposal is not anticipated to result in adverse impacts on the surrounding road network.

7 Preliminary Construction Traffic Management Plan

7.1 Overview

A detailed CTMP will be provided as part of detailed construction planning and in response to a suitable Condition of Consent (CoC). For the purposes of this TAIA, the following general principles for managing construction traffic have been assumed and provide an understanding of the likely traffic impacts during the construction period.

7.2 Overview of Works

7.2.1 Staging and Duration of Work

Information received from ESR on 01 July 2024 confirm construction works would occur under one stage. Recognising that this CTMP has been prepared to support an SSD, detailed duration of works will be determined post approval as part of the CC phase inputs.

7.3 Proposed Working Hours

The construction work would vary depending on the phase of construction and associated activities and includes both construction and design personnel. The size of the on-site workforce has not been finalised and as a result, the peak working population on-site at any given time during the construction period may vary. Construction works would be undertaken during standard construction-working hours, which are likely to be as follows. The exact hours will be confirmed in the consent conditions:

- Monday to Friday: 7.00 AM to 6.00 PM.
- Saturday: 8.00 AM to 1.00 PM.
- Sunday and Public holidays: No planned work.

It may (on occasion) be necessary to undertake night works to minimise disruption to traffic or for oversize deliveries under a special permit.

7.4 Potential Haulage Routes

The primary potential haulage route to and from the Site would occur along Old Wallgrove Road, with trucks accessing the Site from the M7 Motorway to the east or Lenore Drive and Mamre Road to the West as shown in **Figure 13**. This is subject to further liaison with the contractor, once appointed, and can be finalised later and prior to the CC phase.

Any vehicles required to access the Site that do not comply with the mass, dimension or operating requirements as specified by the National Heavy Vehicle Regulator (NHVR) will need to apply for a class 1 Oversize Over-mass (OSOM) permit. Permits may be issued with conditional restrictions that limit the time

and days that these vehicles are allowed to access the Site. Additionally, specific Traffic Guidance Schemes (TGS) may be required to facilitate safe manoeuvring of these vehicles.



Figure 13: Construction Vehicle Routes for 3 Johnston Crescent, Horsley Park

7.5 Anticipated Construction Program Traffic Generation

Light vehicle traffic generation would be generally associated with contractor movements to and from the Site. Contractors would be comprised of project managers, various trades and general construction personnel. Over the full construction period, the peak workforce represents the worst-case scenario for vehicle movements during the AM or PM road network peak hour. The workforce arrival and departure periods (likely to be 6.00-7.00AM and 5.00-5.30PM) represent the peak construction traffic generation periods.

Light vehicle construction trips are expected to arrive in the morning and depart in the evening outside road network peak hours and the number of trips would be based on the workforce numbers. Parking for this construction related vehicles would be provided on-site.

Heavy vehicle traffic would mainly be generated by activities associated with the delivery of construction equipment and delivery of material for construction works. As the construction programme has yet to be finalised, a worst-case scenario for heavy vehicle movements per day required for the delivery of construction materials to the Site cannot be accurately determined.

Notwithstanding, majority of the deliveries are likely to occur outside of the peak road network traffic periods and would have limited (if any) impact onto surrounding road network traffic on Old Wallgrove Road, Lenore Drive, M7 Motorway and Mamre Road which currently have high proportions of heavy vehicles. Therefore, recognising that the key intersection is anticipated to perform satisfactorily once the Proposal is completed, it can be assumed that the intersection would satisfactorily accommodate the lower volumes of construction traffic. Again, it is emphasised that a detailed CTMP will be provided in response to a suitable CoC for the Proposal.

7.6 Construction Traffic Impact

The traffic generation outlined in **Section 6.1.3** provides the following relevant movement thresholds regarding future operational traffic volumes associated with the Site.

- AM Network Peak: 75 veh/hr
- PM Network Peak: 54 veh/hr
- Daily movements: 750 movements

Construction traffic is not expected to exceed the operational traffic generation of the Proposal. However, as part of the Monitoring Program outlined **Section 7.9** to be prepared as part of a detailed CTMP, regular reviews would be undertaken by the on-site coordinator during implementation and execution of the CTMP to ensure:

- Tracking deliveries against the volumes outlined within report. Deliveries would be tracked against approved volumes and would keep a vehicle log - including Rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- It is expected the Contractor would undertake a truck and car count/review to ensure volumes are within the approved thresholds and would be undertaken once a month. In addition, the Contractor is required to retain a log of all vehicles accessing the Site on a daily basis.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To regularly monitor the approved truck routes as outlined within this CTMP

7.7 Construction Traffic Mitigation Measures

While the traffic impacts of construction of the development are likely to be less than the operational phases, the following measures will be undertaken to minimise the impacts of the construction activities of the development:

- Traffic control would be required to manage and regulate traffic movements into and out of the Site during construction.
- Disruption to road users would be kept to a minimum by scheduling intensive delivery activities outside of peak network hours.
- Construction and delivery vehicles would be restricted to using Old Wallgrove Road and M7 Motorway; and Lenore Drive and Mamre Road.

7.7.1 Vehicle Management Principles

All vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site. Drivers are to be familiar with the Driver Code of Conduct before attending the Site.

All subcontractors must be inducted by the Contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The Head Contractor will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicle movements to, from and within the Site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points shall not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

7.7.2 Worker Induction

All workers and subcontractors engaged on-site would be required to complete a site induction. The induction should include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, work, health, and safety (WHS), driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain would be suitably trained and covered by adequate and appropriate insurances.

7.7.3 Construction Worker Parking

A small amount of on-site parking for key contractors and staff is expected to be provided throughout the construction works. The number and location of this temporary on-site car parking is expected to change throughout the various construction phases, depending on the surplus area available not required for truck loading and turning areas.

Carpooling will be actively encouraged to reduce the reliance on private vehicles and minimise parking demands.

Should parking be not available for specific stages of works, it is the incumbent contractor's responsibility to prepare relevant plan and documentation to ensure contractor parking demand and associated management measures are documented, implemented, continually monitored and managed.

7.8 Traffic Control

7.8.1 Traffic Guidance Schemes

Any Traffic Guidance Scheme (TGS's) associated risk assessment, consultation schedules, TGS verification checklist, and inspection checklists shall be prepared by an accredited person, in accordance with the TfNSW Traffic Control at Worksites Manual (Issue 6.1) and AS1742.3:2019.

All TGSs involving signage or impacts to public roads shall be approved by the Council and/or Traffic Management Centre (TMC), prior to the works for which they relate (depending on the road involved). These TGS's shall be updated to respond to any changes to prevailing traffic conditions throughout the life of the works.

A copy of all approved TGSs shall be kept on-site for reference at all times.

7.8.2 Authorised Traffic Controller

An authorised Traffic Controller is to be present on-site throughout the construction stage of the project. Responsibilities include:

- Supervision of all construction vehicle movements into and out of site at all times,
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project, and
- Pedestrian management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur, while maintaining radio communication with construction vehicles at all times.

7.8.3 Road Occupancy

For any works that will impact the traffic flows on the external road network, a permit will need to be obtained from the relevant road authority (Council and / or TfNSW) by the Contractor.

At all times, two-way traffic shall be maintained along Old Wallgrove Road. Any works within or affecting (e.g., signage within) Old Wallgrove Road shall only be undertaken in accordance with relevant TGS developed by an accredited person that has relevant Prepare Work Zone Traffic Management Plan accreditation.

All TGS shall be approved by TfNSW prior to commencement of any works. The Contractor shall adhere to any restrictions imposed by TfNSW (or Council) in the granting of those Road Occupancy Licenses (ROLs).

7.9 Monitoring & Communication Strategies

7.9.1 Development of a Monitoring Program

The development of a program to monitor the effectiveness of this CTMP shall be established by the lead contractor. It is not anticipated that the monitoring of the processes will have any material cost implications.

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator. As a minimum, review of the CTMP shall occur monthly, however a weekly review would be preferred.

- All and any reviews undertaken should be documented, however key considerations regarding the review of the CTMP shall be:
- Tracking deliveries against the estimated volumes.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TGS are updated (if necessary) by “Prepare a Work Zone Traffic Management Plan” card holders to ensure they remain consistent with the set-up on-site.
- Regular checks undertaken to ensure all loads are leaving site covered as outlined within this CTMP

7.9.2 Communication Strategies

A communications strategy shall be prepared by the Head Contractor and will outline the most effective communication methods to ensure adequate information within the community and assist the project team to deliver the traffic changes with minimal disruption to the road network.

Surrounding landowners shall be notified of any work that is deemed disruptive to the surrounding network prior to commencement. Ongoing communication is also proposed so that all key stakeholders are kept up to date of works and potential impacts. Nearby property owners that may be affected directly by the construction works shall be included within the communications strategy.

The contractor is to notify the community liaison representative when traffic is expected to exceed the parameters set within “Condition Green” of **Table 18**. Notwithstanding, outlines an indicative communication strategy to ensure that adequate communication with key stakeholders have been met.

TABLE 18 COMMUNICATIONS STRATEGY

Risk	Impact	Communications Channel
Wider Traffic Disruption	Wider community and stakeholders informed through local and wider advertising and notification.	Stakeholder Meetings Stakeholder email blast
Construction related traffic	Ensure construction crews use traffic routes identified in the Traffic Management Plan, and Ensure residents in area are notified in advance to any traffic changes that may affect them.	Stakeholder Meetings Stakeholder email blast

Furthermore, ongoing communication will be undertaken so that all stakeholders are kept up to date of works and potential impact.

7.10 Plan Administration

7.10.1 Monitoring Program

This preliminary CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator. As a minimum, review of the CTMP shall occur monthly. All and any reviews undertaken should be documented, with key considerations of the review of this CTMP shall be:

- Tracking deliveries against the volumes outlined within report. Deliveries will be tracked against approved volumes and will keep a vehicle log - including rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TGSs are updated (if necessary) by "Prepare a Work Zone Traffic Management Plan" card holders to ensure they remain consistent with the set-up on-site.
- Regular checks undertaken to ensure all loads are entering and leaving site covered.

The development of a program to monitor the effectiveness of this CTMP shall be established by the Contractor. This process is expected to form part of the monitoring plan required to be included as part of the overarching Construction Environmental Management Plan (CEMP), of which this CTMP forms a part.

7.10.2 Contingency Plan

A contingency plan shall be established by the Contractor and is to be included in an overarching CEMP. Notwithstanding, **Table 19** outlines an indicative plan to be undertaken by the builder in the event that the monitoring program identifies the management plan is not effective in managing the construction impacts.

TABLE 19 CONTINGENCY PLAN

Risk		Condition Green	Condition Amber	Condition Red
Construction Movements	Trigger	Construction traffic volume is in accordance with permissible and programmed volume and time constraints	Construction traffic volumes exceeds programmed volume but is within permissible volume constraints	Construction traffic volumes exceeds permissible volume and time constraints
	Response	No response required	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: <ul style="list-style-type: none"> • Review CTMP and update where necessary 	As with Condition Amber, plus; <ul style="list-style-type: none"> • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies.

			<ul style="list-style-type: none"> Provide additional training. 	<ul style="list-style-type: none"> Stop all transportation into and out of the site until rectified.
Queuing	Trigger	No queuing identified	Queuing identified within site	Queuing identified on the public road
	Response	No response required Continue monitoring program	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct	<p>As with Condition Amber, plus</p> <ul style="list-style-type: none"> Review and investigate construction activities. If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. Temporary halting of activities and resuming when conditions have improved. Stop all transportation into and out of the site. Review CTMP and update where necessary, provide additional training.
Noise	Trigger	Noise levels do not exceed imposed noise constraints	Noise levels in minor excess of imposed noise constraints	Noise levels greatly in excess of imposed noise constraints
	Response	No response required	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	As with Condition Amber, if noise levels cannot be kept below applicable limits, then a different construction methods or equipment must be utilised.
Traffic Guidance Schemes	Trigger	No observable issues	Minor inconsistencies with TGS to onsite operations	Near miss or incident occurring regardless of / as a result of the TCP being implemented
	Response	No response required	Traffic Controller to amend TGS on site and to keep a log of all changes	Stop work until an investigation has been undertaken into the incident. There are to be changes made to the TGS to ensure that the safety of all workers,

				students and civilians are catered for.
Dust	Trigger	No observable dust	Minor quantities of dust in the air and tracking on to the road	Large quantities of dust in the air and tracking on to the road
	Response	No response required	<p>Review and investigate construction activities and respective control measures, where appropriate. Implement additional remedial measures, such as:</p> <ul style="list-style-type: none"> • Deployment of additional water sprays • Relocation or modification of dust-generating sources • Check condition of vibrating grids to ensure they are functioning correctly. • Temporary halting of activities and resuming when conditions have improved 	<p>As with Condition Amber.</p> <ul style="list-style-type: none"> • If it is concluded that construction activities were solely responsible for the exceedance, submit an incident report to government agencies. • Implement relevant responses and undertake immediate review to avoid such occurrence in future.

It is therefore proposed to incorporate the above items within the communications strategy. The contingency plan outlines the most effective methods to ensure that each item identified within the Monitoring Program is adhered to, resulting in the impacts to the wider community being minimised.

8 Preliminary Green Travel Plan

8.1 Introduction

8.1.1 Context

This Preliminary Green Travel Plan (PGTP) has been prepared to support the State Significant Development Application in relation to the Site for the proposed warehouse/industrial development at 3 Johnston Crescent, Horsley Park.

Recognising that the Proposal is in its early stages, the purpose of this initial PGTP is to outline the overarching requirements for a future GTP. The future GTP, to be finalised prior to occupation, should include an audit of the existing conditions, and focus to effect change in staff travel to and from the Site.

It is anticipated that a Condition of Consent would apply to any approval, requiring the implementation of the final GTP, prior to occupation of the development.

8.1.2 Objectives of the GTP

The primary objectives of this Preliminary GTP (and subsequent final GTP) will be to:

- Reduce the environmental footprint of the Site.
- Set future staff travel mode share targets.
- Improve access, amenity, convenience, and safety of sustainable transport modes to/from the Site.
- Promote the use of 'active transport' modes such as walking and cycling, particularly for short-medium distance journeys.
- Reduce reliance on the use of private vehicles for all journeys.
- Encourage a healthier, happier, and more active & public transport use culture.

8.2 Existing Mode Share and Travel Mode Targets

8.2.1 Context

The proposed development considers active transport via the provision of active transport facilities. Bicycle parking spaces are provided within close proximity to building entrances; and End of trip facilities (EoTF) comprising of showers and change rooms, and lockers would be provided with each of the three offices.

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2021 Census and specifically Destination Zones (DZ) have been referenced to understand the baseline travel characteristics of the Site. This data informs the initial targets and should be refined and updated as part of the monitoring process through the use of travel survey data when the Site becomes operational.

A summary of key travel modes for those travelling to the locality for work have been reviewed with regard for the surrounding Destination Zone 115184212 within the Horsley Park area. DZN 115184212 shown in **Figure 14**, has been identified and assessed. The JTW information for this destination zone is presented in **Figure 15** and **Table 20**.

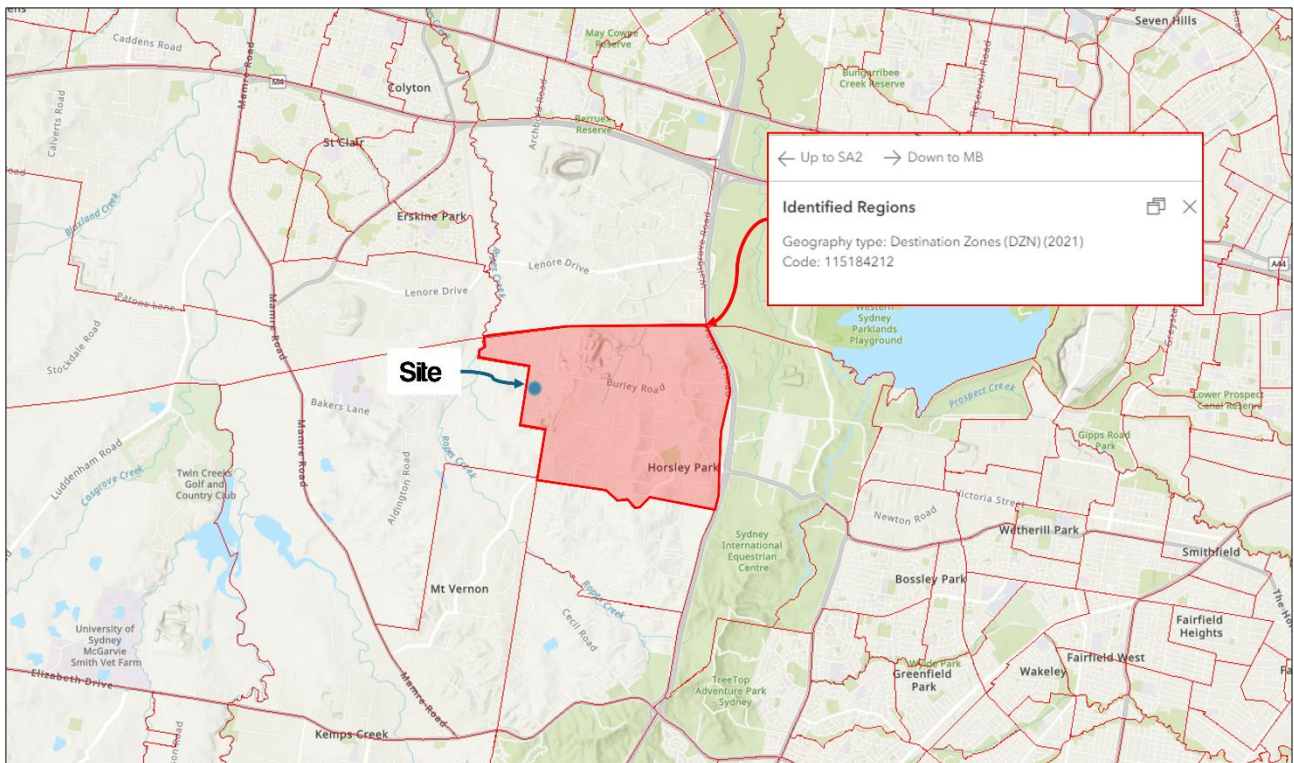


Figure 14: Site context within Destination Zone 115184212

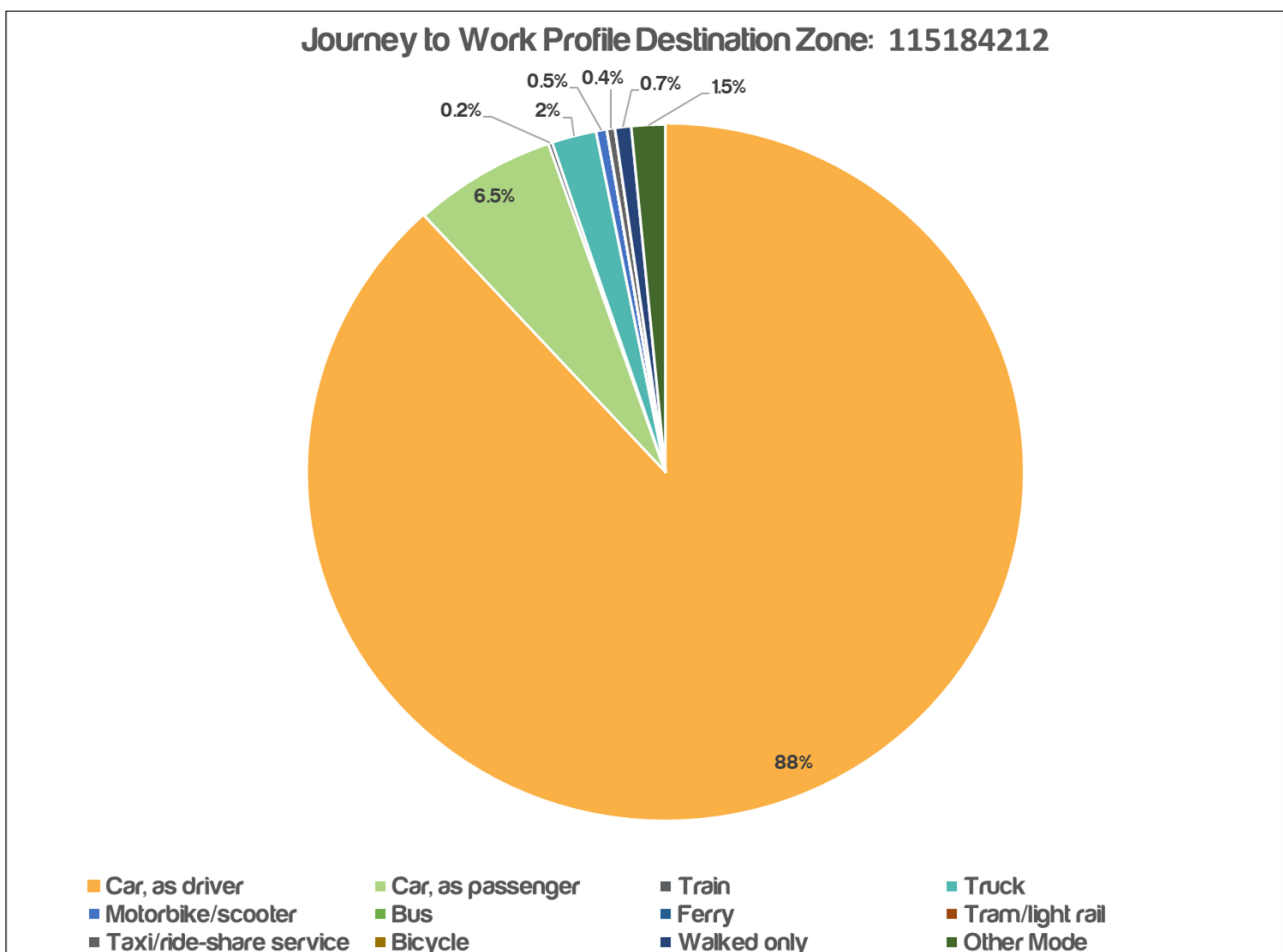


Figure 15: Journey-to-Work 2021 Profile

TABLE 20 TRAVEL MODE SUMMARY (JOURNEY TO WORK 2021 CENSUS)

Travel Mode	Mode Share of Employees
Car as driver	88%
Car as passenger	6.5%
Train	0.2%
Truck	2%
Motorbike/Scooter	0.5%
Bus	0.0%
Ferry	0%
Tram/light rail	0%
Taxi/ride-share service	0.4%
Bicycle	0%
Walked Only	0.7%
Other Mod	1.5%

Note: "Work from home" has been excluded from the total population travelling to work as it cannot be considered a mode of travel.

It is expected that the Site would experience a high proportion of private vehicle trips and a lower proportion of active transport modes at the early stages of operation.

8.2.2 Mode Share Targets

It is essential that Mode Share targets be achievable with consideration for the public transport, walking and cycling opportunities available within proximity to the Site. Targets should also be factoring in what future transport options could reasonably be used to access the Site, and also the nature of the development itself.

The preliminary short term and long term targets are nominated in **Table 21** and **Table 22** respectively, which represents a 1 year and 5-year target to coincide with the minimum 5 years of monitoring and review.

TABLE 21 MODE SHARE TARGETS (AFTER 1 YEAR)

Travel Mode	Mode Share of Employees – 2021 Census (DZN 115184212)	Proposed Targets	Relative Change
Car as driver	88%	73%	-15%
Car as passenger	6.5%	9%	2.5%
Train	0.2%	2.4%	2.2%
Truck	2%	2%	0.0%
Motorbike/Scooter	0.5%	2%	1.5%
Bus	0.0%	4%	4.0%
Ferry	0%	0%	0.0%
Tram/light rail	0%	0%	0.0%

Taxi/ride-share service	0.4%	0.4%	0.0%
Bicycle	0%	5%	5.0%
Walked Only	0.7%	0.7%	0.0%
Other Mode	1.5%	1.5%	0.0%

Notes: 1) "Work from home" has been excluded from the total population travelling to work adopting the travel modes outlined above as it cannot be considered a mode of travel.

2) The JTW classifies multi-modal journeys by indicating the 'primary' mode only and is considered train in this proposition.

TABLE 22 MODE SHARE TARGETS (AFTER 5 YEARS)

Travel Mode	Mode Share of Employees – 2021 Census (DZN 115184212)	Proposed Targets	Relative Change
Car as driver	88%	65%	-23%
Car as passenger	6.5%	11.4%	4.9%
Train	0.2%	3%	2.8%
Truck	2%	2%	0.0%
Motorbike/Scooter	0.5%	2%	1.5%
Bus	0.0%	9%	9%
Ferry	0%	0%	0.0%
Tram/light rail	0%	0%	0.0%
Taxi/ride-share service	0.4%	0.4%	0.0%
Bicycle	0%	5%	5.0%
Walked Only	0.7%	0.7%	0.0%
Other Mode	1.5%	1.5%	0.0%

Notes: 1) "Work from home" has been excluded from the total population travelling to work adopting the travel modes outlined above as it cannot be considered a mode of travel.

2) The JTW classifies multi-modal journeys by indicating the 'primary' mode only and is considered in this proposition.

Given the limited options for modal availability in the area, it is difficult to quantify the degree of modal shift potential from private vehicular usage to public and active transport modes. However, in the context of development outlined in the above sections, it is evident that there is clear direction in a strategic context for the expansion of public and active transport networks to serve the Western Sydney area.

In this context, the mode share targets identified above can be considered with a focus on reducing single-occupant private vehicle travel and increasing public transport and car share / carpooling patronage. It shall be necessary to adjust these mode share targets as future developments and planned transport infrastructure are realised, allowing for more ambitious targets to be set. "Vehicle Passenger" travel mode increase will primarily be met through site specific initiatives.

More aspirational public transport mode share targets can be adopted once there is clear commitment to provide additional services in the locality. Service delivery is a matter for ongoing review and at present, committed (or planned) service changes in the immediate vicinity of the Site (i.e. within 400m-800m walk) is not available which would support more aggressive targets. However, the ongoing review process detailed in this GTP ensure that the targets can be updated as these regionally significant improvements are realised.

8.3 Development, Scope and Implementation of the GTP

8.3.1 Implementation

A Travel Plan Co-ordinator (TPC) will be appointed by management and would act as the primary point of contact for enquiries relating to the progress of the GTP, and act separately to the Site management team. It is recommended that a consistent TPC be appointed for the Site so as to achieve a coordinated approach across the Site. A sub-management team shall be formed to ensure all of the actions of the GTP are enacted.

The TPC and sub-management team should be appointed before the Site becomes occupied, or within 1 month of the site becoming occupied. Details for the TPC role and responsibilities associated with the GTP are provided below.

The main duties of the TPC are envisaged to be:

- Overseeing final development and implementation of the GTP.
- Internal liaison to promote awareness of the GTP amongst staff within the Site.
- Liaison with outside bodies, such as Fairfield City Council (Council) and local bus operators, as required regarding the operation of the GTP.
- Providing updated travel information to staff and visitors, as necessary.
- Monitoring, review and (if necessary) updates to the GTP.

The TPC and the sub-management team will promote participation in and commitment to the GTP from the tenant and will ensure a smooth transition so that the tenant will be responsible for their ongoing monitoring and updating of the GTP. The TPC and the sub-management team shall make it clear to the tenant of the Site, that there are requirements to try and achieve sustainable transport mode shares for the Site, as a condition of the development, for the life of the development.

8.4 Communications, Measures and Action Strategies

8.4.1 Measures

The below is a range of measures which could achieve the objectives of this GTP and are expanded further within **Section 8.4.2**.

This section needs to be reviewed and confirmed prior to implementation of any future GTP.

- An introduction to the GTP for all staff, setting out its purpose and objectives.
- Provision of public transport travel information for staff, customers, and visitors.
- Encouragement of car sharing, both amongst staff on site and in the wider context.
- Provision of fuel-efficient vehicle spaces (including car share, car pool and / or EV's).
- Assisted cycle purchase schemes.
- Interest free loans to assist with cycle purchase, cycle equipment purchase etc.
- A transport section on the company website with links to local bus operator sites, to ensure that travel information is always up to date.
- The provision of transport information for visitors to the Site.

8.4.2 Strategies

Six main strategies are identified, and the actions required for each are detailed in **Table 23**. The table details specific actions that could be implemented as part of the future GTP (subject to tenant requirements) and the party responsible for implementing each action.

These actions must be reviewed at regular intervals to ensure that the mode split targets are being met. By that principle, this document is classed as a living document and subject to regular review. It is important to note, that the actions should not be taken as mandatory but potential options that should be investigated and implemented by future inhabitants of the development.

TABLE 23 PROPOSED ACTION STRATEGIES

STRATEGY	HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
1 Travel Planning and Demand Management				
1.1 Sustainable Travel Plans	<ul style="list-style-type: none"> Develop a Green Travel Plan (GTP) to provide information for Travel Access Guide (TAG) (to be prepared in a detailed Green Travel Plan). Management of GTPs. Promotion of GTPs. 	<p>Building Manager to be responsible for overall implementation of final GTP and providing annual reporting on GTP outcomes to Council.</p> <p>Tenant to develop Company specific travel plan based on Final GTP prior to the commencement of a new lease/sale of property.</p> <p>Company/Staff/Visitors shall be responsible for ongoing implementation of Company assigned actions and participation in annual monitoring and reporting process to Council</p>	Upon completion of the development and ongoing annual GTP events.	Tenant / Business Owner
1.2 Travel Information Points	<ul style="list-style-type: none"> Establish locations such as travel information points where staff and visitors and others can access travel information via interactive platforms. Promotion of GTPs Provision of travel and transport information options 	Tenant / Business Owner	Subject to employer preference.	Tenant / Business Owner
1.3 Flexible Working hours	Where practicable, allow employees the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / Visitors as part of an Employer specific GTP to be developed and forwarded to Council prior to building occupation.	Tenant / Business Owner
1.4 Teleworking	Provide the option to work remotely (where possible) to reduce the number of vehicles travelling to the development and encourage teleconferencing rather than travelling to meetings.	Tenant / Business Owner	Ongoing and subject to employer preference. Action to be considered by employers / visitors	Tenant / Business Owner
2 Promoting Public Transport				
2.1 Opal Card Loan Schemes / Subsidising	Company may consider subsidising staff public transport travel.	Tenant / Business Owner / Travel Plan Coordinator (TPC)	Ongoing and subject to employer. Can be implemented at building occupation.	Tenant / Business Owner

STRATEGY	HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
schemes for public transport travel through pre-paid credit cards	Alternatively, staff can pay for their own Opal Cards / pre-paid travel card through their salary, spreading the cost over the year to make it more affordable.			
2.2 Public Transport for work travel	The company and the TPC can promote public transport as one of the main preferences for work travel. This should be supported by all staff and visitors to the development having access to Opal Cards.	TPC	Ongoing and subject to employer. Can be implemented at building occupation.	Tenant / Business Owner
2.3 Provide bus stops with shelter facilities	Ensuring provision of bus stops suitable for waiting areas for commuters, the majority of which would likely be workers associated with the development.	Council	Subject to discretion of TfNSW. Advisable to be prior to the opening of the development	Council
2.4 Public Transport for work travel	The company and the TPC can promote public transport as one of the main preferences for work travel. This should be supported by all users and visitors to development having access to Opal Cards.	TPC	Upon completion of the development (building occupation).	Tenant / Business Owner
2.5 Promote train services	Rotty Hill train station is located outside of the recommended walking catchment. However, this does not mean it should not be made aware of or not promoted. Bus connectivity to the train station is available from the Site.	Tenant / Business Owner / TPC	To be undertaken at completion of development and updated ongoingly as necessary.	Estate Owner / Manager
3 Promoting Carpooling				
3.1 Open Car Sharing	Where anyone in a defined geographical area can join a ride sharing scheme. This involves no input from the employer and should be on the onus of staff to schedule.	Staff	Ongoing in the workplace.	Fuel costs can be arranged and split equitably by those involved
3.2 Closed Car Sharing	The company / department sets up an in-house car-matching scheme	Company, TPC	Ongoing in the workplace. Updates can be made to organisation as appropriate	Tenant / Business Owner
3.3 Third-party Car Sharing Program	Companies such as Liftshare are an online service that facilitates journey sharing between individual users, as well as providing separate services for businesses, organisations and events.	Staff – encouraged by TPC	Ongoing in the workplace.	Staff

STRATEGY	HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
3.4 Carpool week	Arrange for a dedicated carpool campaign week to promote the benefits of carpooling.	Tenant / Business Owner	One week per calendar year.	Tenant / Business Owner
3.5 Prioritise Parking Spaces	Arrange for parking spaces closest to the buildings entrance (bar accessible spaces) be dedicated to fuel efficient vehicles, car share and/or carpooling vehicles.	Tenant / Business Owner	Ongoing in the workplace.	Tenant / Business Owner
3.6 Electric Vehicle Program	As with Item 3.5, arrange for parking spaces closest to the buildings entrance (bar accessible spaces) be dedicated to Electric Vehicles and other more environmentally friendly vehicles.	Tenant / Business Owner	Ongoing in the workplace.	Tenant / Business Owner
4 Promoting Cycling				
4.1 Create a Bicycle Users Group (BUG)	BUGs are local groups of like-minded bike riders who get together generally for social riding in their area. For the purposes of the workplace, this can be adapted as a way of creating as social and healthy aspect of travelling to work.	Tenant / Business Owner, TPC	Ongoing in the workplace.	Tenant / Business Owner
4.2 Providing & Maintaining End of Trip Facilities	Providing facilities such as showers, change rooms, lockers. For the initial stages of development, it is recommended to provide facilities compliant with the relevant controls, and as the Site develops further, they should be reviewed as part of monitoring process to meet any increase in demand.	Developer / Estate &/or hospital Owner / Manager	To be provided at completion and maintained throughout the life of the building.	Developer / Estate &/or warehouse Owner / Manager
4.3 Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, Ride to Work etc.	TPC	To be promoted annually.	Developer / Estate &/or warehouse Owner / Manager
4.4 Advertise Bicycle Routes	Promotion of bike lanes through the TAG.	TPC	To be promoted and provided at communal areas such as key information kiosks within facility.	Tenant / Business Owner
5 Promoting Walking				

STRATEGY	HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
5.1 Providing End of Journey Facilities	Provision of sufficient end of trip facilities such as showers, change rooms, lockers etc to maximise pedestrian activity throughout the Site.	Developer	To be provided at completion of development.	Tenant / Business Owner
5.2 Walking routes	Incentivise travelling by foot by highlighting possible routes particularly those to nearest bus stops	Tenant / Business Owner	To be promoted and provided at communal areas such as key information kiosks within facility.	Tenant / Business Owner
5.3 Promote walking initiatives	Promotion of walking initiatives: walk to game / training day, pedometers / step challenge / gamification of walking / reward programs based on steps to elevate pedestrian activity throughout the Site and to / from public transport points.	Tenant / Business Owner, TPC	To be implemented monthly or as appropriate throughout the calendar year.	Tenant / Business Owner
6 Influencing Travel Behaviour				
6.1 Provision of Sustainable Travel Packs to employees and visitors	Introduces employees and visitors alike to the GTP and provides information on walking and cycling routes, and travel by bus & train, timetables, and access routes. This would include a TAG.	Tenant / Business Owner, TPC	Travel Packs to be provided upon occupancy of building to employees.	Tenant / Business Owner
6.2 Increase Public Transport Utilisation	Incentive to introduce altered shift times (flexible work place policies) in order to line up with public transport timetables.	Site Management	To be an ongoing consideration.	Tenant / Business Owner
6.3 Worker and Visitor Questionnaire	Utilise a questionnaire/ travel survey to develop a broader understanding of where staff and visitor travel origin / destination patterns. This would inform additional strategies to influence travel behaviour.	Site Management	To be an ongoing consideration.	Tenant / Business Owner

8.4.3 Welcome Packs

New staff shall be provided with a 'welcome pack' as part of the on-site induction process which includes a GTP pamphlet and other information in relation to sustainable transport choices. This pack shall include copy of the detailed GTP, and a Travel Access guide (TAG), as well as general information regarding the health and social benefits of active transport and advice on where to seek further information. It is recommended that an electric copy of the welcome pack be created and made available to staff and provide a website link to the TfNSW trip planner⁵ website.

8.4.4 Accurate Transport Information

In addition to these 'welcome packs', a copy of the TAG shall be clearly displayed in communal areas of the site including (but not limited to):

- Staff lunchroom
- Lift lobby area and entrances to buildings
- Any marketing material associated with the Site, such as websites and newsletters.

8.4.5 Travel Access Guide

A Travel Access Guide (TAG) will be prepared prior to the occupation of the Site to reflect up-to-date public and active transport networks and services more accurately within vicinity of the development.

8.5 Monitoring Strategy

8.5.1 Plan Maintenance

This Plan shall be subject to ongoing reviews and will be updated accordingly. Regular reviews will be undertaken by the TPC. As a minimum, a review of the GTP would occur every 1-2 years.

The key considerations when reviewing or monitoring the GTP are as follows:

- Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc.
- Track progress against target travel mode targets.
- Identify any shortfalls and develop an updated action plan to address issues.
- Ensure travel modes targets are updated (if necessary) to ensure they are realistic and remain ambitious.
- Update the TAG for when any new infrastructure comes in existence (new bus routes, newly constructed cycleways, or footpaths, etc.)

⁵ <https://transportnsw.info/trip#/trip>

8.5.2 Monitoring

So as to record the overall success, as well as the effectiveness of the individual measures, monitoring and review of the GTP is to be conducted at regular intervals. The TPC will act as the primary point of contact for all enquiries relating to the GTP's progress.

The GTP will be monitored annually with the first survey being carried out shortly (within 6 months) after first occupation of the Development. Travel mode surveys would determine the proportion of persons travelling to/from the Site by each transport mode. This will be in the form of annual travel mode questionnaire survey to be completed by all persons attending the Site, as far as practicable.

If targets are not met at the end of the initial period of monitoring, the GTP will be reviewed, new measures introduced and would be reassessed at the next monitoring stage.

9 Design Commentary

9.1 Relevant Design Standards

The site access, car park and loading areas shall be designed to comply with the following Australian Standards.

- Australian Standard 2890.1 (2004): Off-street car parking (AS2890.1:2004).
- Australian Standard 2890.2 (2018): Off-street commercial vehicle facilities (AS2890.2:2018).
- Australian Standard 2890.3 (2015): Bicycle Parking (AS2890.2:2015).
- Australian Standard 2890.6 (2022): Off-street parking for people with disabilities (AS2890.6:2022).

It is expected that any detailed construction drawings in relation to the car park or Site access would comply with these Standards, and moreover that compliance with the above Standards is anticipated to form a standard CoC to any development approval.

9.2 Design Vehicles

Access and internal circulation of the tenancies are provided below.

9.2.1 Heavy Vehicles

The following vehicles have been adopted as the relevant 'design vehicle' when assessing site access and circulation.

- Warehouse A
 - Check vehicle: 26.0m B-Double
 - Design vehicle: 20.0m Articulated Vehicle
- Warehouse B (north)
 - Check vehicle: 26.0m B-Double
 - Design vehicle: 20.0m Articulated Vehicle
- Warehouse B (south)
 - Check vehicle: 26.0m B-Double
 - Design vehicle: 20.0m Articulated Vehicle

9.2.2 Light Vehicles

Access and internal car parking facilities have been designed using the following check and design vehicles:

- Warehouse A
 - Check vehicle: B99 Vehicle

- Design Vehicle: B85 Vehicle
- Warehouse B
 - Check vehicle: B99 Vehicle
 - Design Vehicle: B85 Vehicle

9.3 Access Design

The truck driveway has been designed to provide for vehicles up to and including a 26.0m B-doubles. Maximum gradients and rates of change of grades, and maximum crossfalls are to be provided in accordance with the relevant standards applicable prior to obtaining Construction Certification.

It is anticipated that full car and truck access driveway design compliance with AS 2890.1:2004 and AS 2890.2:2018, and the relevant Council Engineering Guidelines, would form a standard Condition of Consent further to approval.

9.3.1 Sight Distance Requirements

Per AS2890.2:2018, the minimum sight distance along a 50km/h road requires 69 metres in both directions of egress. Similarly, per AS2890.1:2004, the minimum sight distance along a 50km/h road requires 69 metres in both directions of egress.

Sight distance checks are included in **Appendix A**. It should be considered that sight angles within these areas should not contain any permanent obstructions to impact visibility.

9.3.2 Vehicle Queuing

It has been considered that all lots have been designed to keep the gates open during the operation of the Site to minimise the potential queueing of light and heavy vehicles accessing the Sites and associated parking.

Accordingly, queueing onto the surrounding local road network is not anticipated during operational hours of these Lots. Furthermore, the design of the warehouses includes sufficient space to accommodate the need for the proposed heavy vehicle movements on the Site.

9.3.3 Access Roads

Ason Group has been advised that “No Stopping” restrictions would be in place on the frontage road of Johnston Crescent.

9.4 Commercial Hardstand Areas

The design review indicates that access and egress to recessed docks and roller shutter doors can generally occur noting that hardstand operational management would effectively facilitate the movements of trucks within the hardstand area.

All commercial vehicles can enter and exit the site in a forward direction. Consideration shall be given to the design commentary and RSD vehicle size limitations included in **Appendix A**.

9.5 Ramp Design

Detailed ramp and driveway gradients are to be provided in detailed design stages. It is noted as grades and transitions are not yet provided as at the time of this report, Ason Group has not yet reviewed the ramp and driveway gradient in detail.

9.5.1 Light Vehicles

- A maximum gradient of 5% (1:20) is permitted for the first 6.0 metres into the car park under AS2890.1:2004.
 - Warehouse B: The Proposal provides a 1:20 section for the first 6.0 metres within the property boundary.
- The maximum grade of 1:5 (20%) is permitted for ramps up to 20 metres long for public car parks
 - Warehouse B: A maximum ramp grade of 1:5 is provided.
- Grade transitions shall be provided in accordance with AS2890, as necessary. For a 1:4 (25%) ramp grade, this requires a minimum transition ramp length of 2.0 metres, and a 1:8 (12.5%) for summit grade changes and 1:6.7 (15%) for sag grade changes.
 - Warehouse B: The Proposal provides for minimum 2.0 metre-long 1:8 transitions with 1:5 (20%) ramp grades.

9.5.2 Heavy Vehicles

- A maximum grade of 1:8.3 (12%) is permitted for the first 6.0 metres into the Site (from the property boundary) as ramps serving B-Double / 20.0m Articulated Vehicles under AS2890.2:2018.
- The maximum grade of 1:8.3 (12%) is permitted for ramps serving B-Double vehicles under AS2890.2:2018.
- The maximum permitted rate of change of grade for roadways and ramps is 1:16 (6.25%) in 10 metres of travel (for B-Double Vehicles / 20.0m Articulated Vehicles) under AS2890.2018.

Design compliance with the above Standards would be expected to form a standard Condition of Consent further to approval.

9.6 Car Parking Design

- On-site parking spaces is demonstrated to generally comply with User Class 2 (AS2890.1:2004).
 - The Proposal provides for minimum space lengths of 5.5 metres, widths of 2.5 metres and minimum aisle widths of 6.2-6.4m metres.
- Accessible parking spaces are demonstrated to generally comply with AS2890.6:2022
 - The Proposal provides for accessible spaces 2.5 metres in width and associated 2.5m shared area. Note: Subject to approval by Access Consultant.
- It is anticipated that full parking area design compliance with AS 2890.1:2004 and AS 2890.6:2022 would form a standard Condition of Consent further to approval.

9.7 Specialist Fire Service Appliance Circulation

Reference is made to FDCP 3.7 *Bushfire Management Control* 9 which indicates perimeter access via the frontage road is to be provided for the Site.

As such, specialist fire service appliance circulation within each site has been tested for a 12.5m HRV and demonstrated in swept path assessment (**Appendix A**). Per the swept paths, a 3-point turn manoeuvre is demonstrated which has been deemed acceptable per the Fire Consultant and in Fire and Rescue NSW (FRNSW) Fire Safety Guideline.

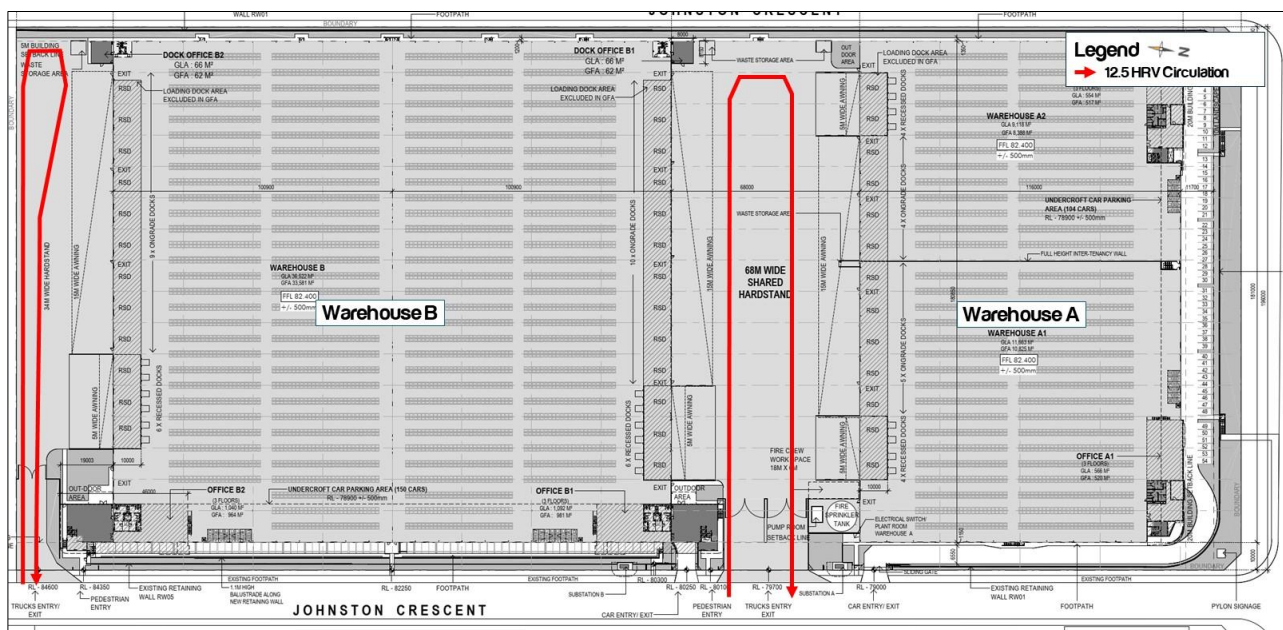


Figure 16: Specialist Fire service appliance circulation

9.8 Internal Circulation

9.8.1 Heavy Vehicle

The expected circulation for WHA, WHB (north) and WHB (south) are shown in **Figure 17**. Swept path assessment has been prepared (refer **Appendix A**) to demonstrate suitable circulation within the Site.

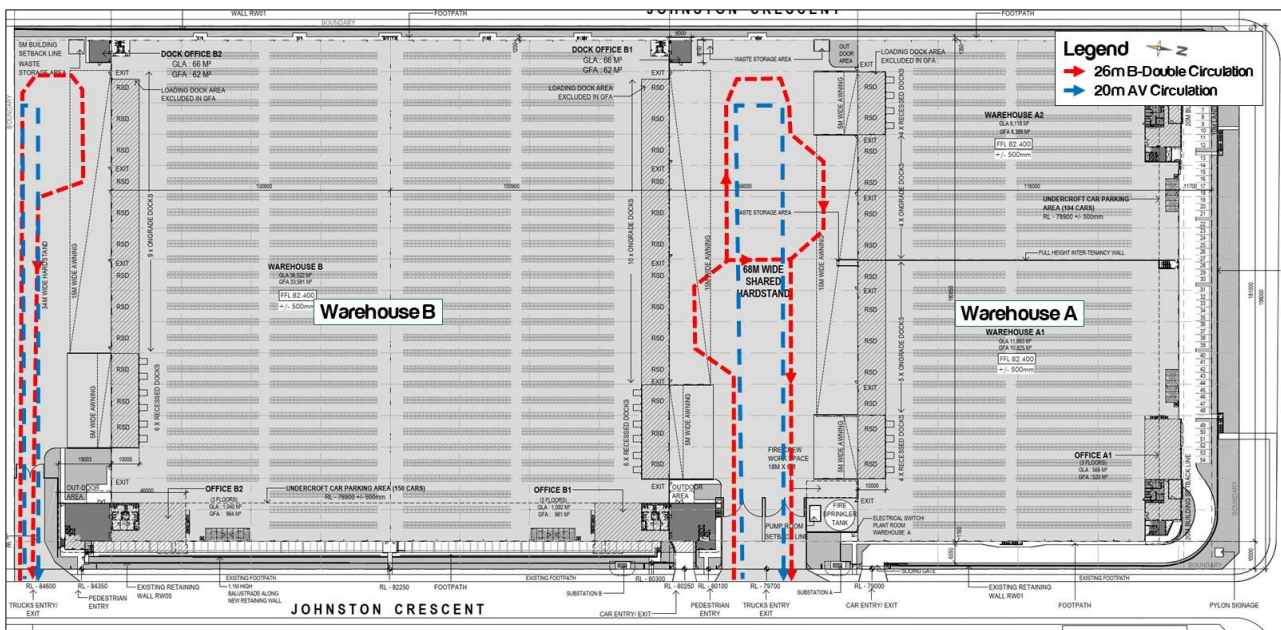


Figure 17: Heavy Vehicle Circulation

9.9 Traffic Management

Due to the shared nature of the hardstand, a Loading Dock Management Plan (LDMP) and Operational Traffic Management Plan (OTMP) would be implemented to ensure the efficient and efficient operation of the Site. These plans can readily be provided in response to a suitable Condition of Consent and prior to obtaining the Occupation Certificate (OC).

10 Summary

10.1 Overview

ESR Australia have engaged Ason Group to prepare this Transport and Accessibility Impact Assessment report to support the State Significant Development Application for a warehouse and distribution centre at 3 Johnston Crescent, Horsley Park – known also as Horsley Logistics Park – Stage 2.

10.2 Key Findings

The key findings of this TAIA are as follows.

- The parking provision of the Proposal has been assessed against TfNSW Guide requirements.
 - The proposed development would be required to provide at least 254 car parking spaces inclusive of 4 accessible parking spaces.
 - As such, the Proposal provides for a total of 254 car parking spaces, including 4 accessible parking spaces.
- The traffic generation and traffic impact of the Proposal has been reviewed against WSEA rates.
 - A trip rate of 0.13 trips / 100m² GFA and 0.10 trips / 100m² GFA (HLP S1 trip rates) have been obtained via classified driveway surveys on fully operational sites in ESR's Horsley Logistics Park – Stage 1.
 - Application of the HLP S1 trip rates demonstrate comparatively lower traffic generation than projected under WSEA adopted trip rates:

TABLE 24 TRIP RATE COMPARISON

Trip Rate	Trip Rate		Trip Generation	
	AM	PM	AM	PM
WSEA trip rates	0.116 trips / 100m ² of Site area	0.116 trips / 100m ² of Site area	101	101
HLP S1 trip rates	0.13 trips / 100m ² GFA	0.10 trips / 100m ² GFA	75	54
Difference	-		-26	-47

- Cumulative traffic assessment for the Old Wallgrove Road / Lenore Drive and Old Wallgrove Road / Millner Avenue intersections have been undertaken in accordance with the approved Oakdale East Industrial Estate (OEE) SSDA Modification 1 (SSD-37486043 MOD 1) Transport Assessment.
- With the addition of Proposal traffic volumes, SIDRA modelling for the 2026 model year show both intersections in the AM and PM peak would operate satisfactorily with no material changes in Degree of Saturation and Average Delay, and – importantly – Level of Service would remain unchanged.
- The Site access, car park and loading areas for all buildings have generally been designed in accordance with the relevant Australian Standards of AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022.

10.3 Conclusion

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

Appendix A. Swept path assessment

Appendix B. Survey Results