Prepared for

GOODMAN PROPERTY SERVICES (AUST) PTY LTD

Traffic Impact Assessment Report

Costco Warehouse and Distribution Centre
Lot 4A, Oakdale South Industrial Estate, Horsley Park

Ref: 0393r01v1
19/07/2017

Info@asongroup.com.au | +61 2 9083 6601 | Suite 1202, Level 12, 220 George Street, Sydney NSW 2000

Document Control

Project: Costco Warehouse and Distribution Centre; Lot 4A, Oakdale South Industrial Estate Horsley Park

Reference: 0393r01v1

Revision History

Revision	Date	Details	Author	Approved by
1	22/03/2017	Issue I	K. Ho	T. Lewis
2	15/05/2017	Issue II	J. Laidler	A. Johnson
3	14/06/2017	Issue III	J. Laidler	A. Johnson
4	19/07/2017	Issue IV	J. Laidler	A. Johnson

Table of Contents

Appendices

Appendix A: Reduced Plans

Appendix B: Swept Path Analysis

Appendix C: Secretary's Environmental Assessment Requirements

Appendix D: Incident Management Strategy

1 Introduction

1.1 Background

Ason Group has been commissioned by Goodman Property Services Pty Ltd to prepare a Traffic Impact Assessment (TIA) report to support a Development Application for a proposed warehouse/industrial development (the Proposal) on the subject site at Lot 4A, Oakdale South Industrial Estate, Horsley Park (the Site). The Proposal generally seeks approval for the following:

- A purpose-built warehouse with a building area of 35,743m^2 GFA, to be operated by Costco Wholesale Australia and to be delivered over two stages consisting of:
  - Stage 1: Approximately 20,523m^2 of warehouse Gross Floor Area (GFA) and 2,156m^2 of office GFA to operate as a depot for Costco's distribution network.
  - Stage 2: Approximately 13,065m^2 of warehouse GFA to be developed as required by future market demand.
  - Total: 33,588m^2 of warehouse GFA and 2,156m^2 of office GFA.
- A car park providing a total of 328 car parking spaces.

It is noted that the future facility would involve the relocation and consolidation of Costco's existing logistical operations at Wetherill Park and Prestons to the Site.

1.2 Assessment Objectives

This TIA report addresses the relevant traffic, transport and parking implications of the development, including compliance with relevant State and Local Government controls and Australian Standards. In preparing this TIA report, Ason Group has referenced the following key planning documents that are relevant to development at the site:

- Penrith Development Control Plan 2014 (PDCP2014).
- State Environmental Planning Policy (Western Sydney Employment Area) 2009 (SEPP WSEA).
- Eastern Creek Precinct – *Employment Lands Precinct Plan* 2005 (Eastern Creek Precinct Plan)

Also, referenced in this TIA are general access, traffic and parking guidelines, including:

- RMS Technical Direction TDT 2013/04a, *Guide to Traffic Generating Developments – Updated traffic surveys* (RMS Guide Update).
- Australian Standard 2890.1 (2004): *Off-street car parking* (AS2890.1).

- Australian Standard 2890.2 (2002): *Off-street commercial vehicle facilities* (AS2890.2).
- Australian Standard 2890.6 (2009): *Off-street parking for people with disabilities* (AS2890.6).

1.3 Planning Context

The application has been lodged having regard to the approved Oakdale South Estate (OSE) Concept Plan (SSDA 6917) and the subsequent Section 96 Application has been approved by the Department of Planning and Environment (DP&E). The approved Concept Plan and subsequent Section 96 sets out the development principles including estate infrastructure, warehouse / industrial floor space, car parking provision and the future access principles to the regional road network.

A further application (MOD 4) is currently being assessed by the DP&E which seeks approval for a further reduction of the approved Concept Plan and the Stage 1 DA proposal. This application seeks approval for the redistribution of building area across the Concept Plan generally associated with Precinct 1 and Precinct 2, while minor changes are also proposed to Precincts 3, 4 & 6. The Concept Plan as proposed to be modified is provided in **Figure 1** and generally includes:

<u>Modifications to Concept Plan</u>

- Realignment of internal estate roads to facilitate access to new super lots,
- Alterations to the layout of Precincts 3, 4 & 5 resulting in the reduction in total GFA from 395,880m^2 to 331,311 m^2.

<u>Modifications to Stage 1 DA</u>

- Amendments to reflect the changes made to the Concept Plan,
- Amend the subdivision layout to reflect changes to the masterplan, and
- Changes to the estate road works to reflect the amended road alignment including the deletion of Estate Road 5.

<u>Modifications to Concept Plan (MOD 4)</u>

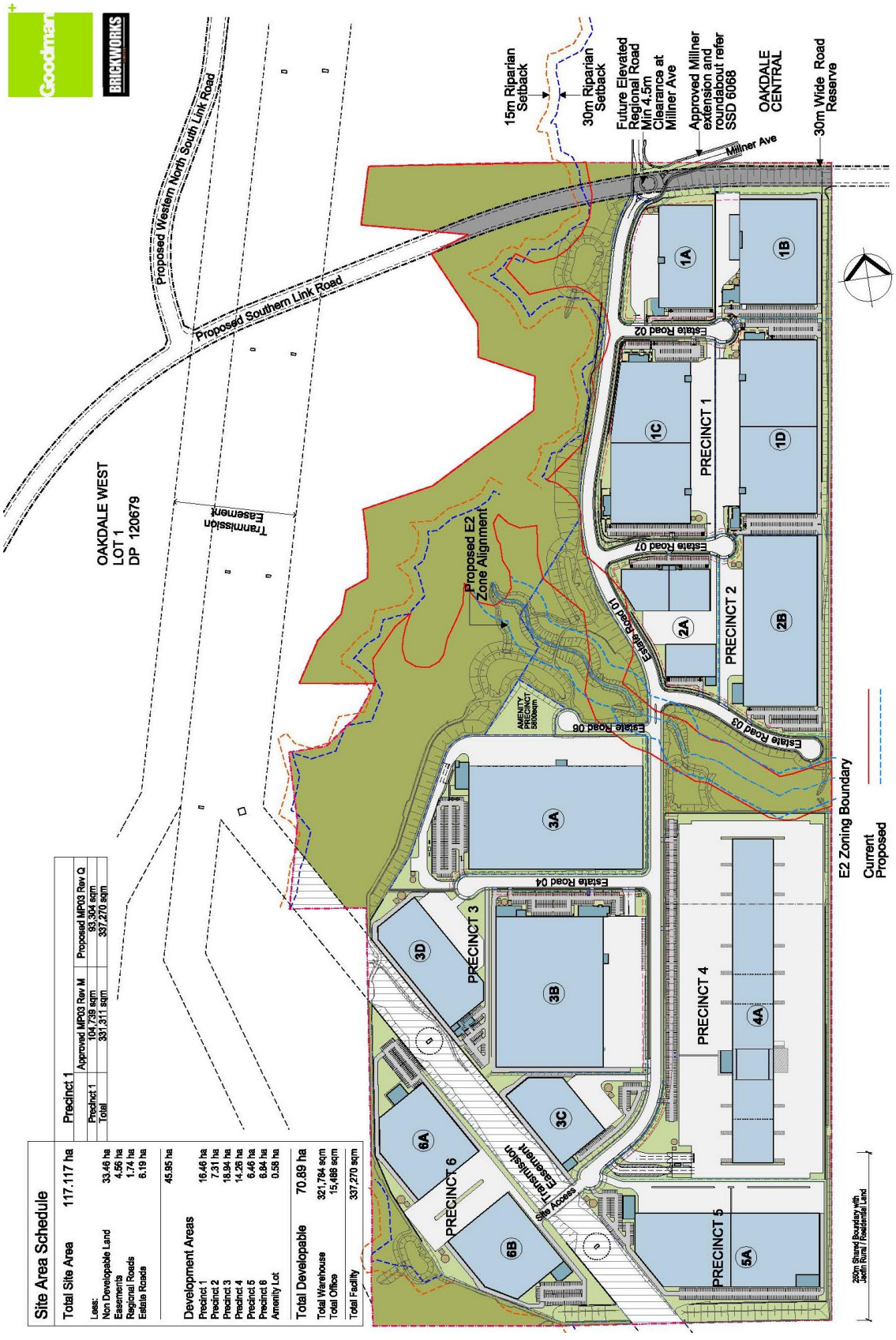
- Amendments to reflect the changes made to the Precincts 1 and Precincts 2 resulting in a total GFA of 337,270m^2
- Realignment of internal estate roads to facilitate access to new super lots,
- Provision of new Estate Road 07

Reference should be made to the Environmental Impact Statement (EIS) which provides further clarification on the planning framework and approvals for the OSE.

1.4 Report Structure

The remainder of this report is structured as follows:

- Section 2 provides a summary of the proposed development.
- Section 3 describes the site, existing road network and accessibility to alternative transport modes.
- Section 4 describes the traffic impacts of the proposed development including projected trip generation and forecasted network performance.
- Section 5 describes the parking requirements of the proposed development.
- Section 6 describes the access, internal configuration of the proposed car parking and servicing facilities of the development.
- Section 7 responds the SEARs.
- Section 8 provides a conclusion of the key traffic and parking impacts.



Site Area Schedule		Precinct 1		
Total Site Area	117.117 ha		Approved MP03 Rev M	Proposed MP03 Rev Q
Less:		Precinct 1	104,739 sqm	93,304 sqm
Non Developable Land	33.46 ha	Total	331,311 sqm	337,270 sqm
Easements	4.56 ha			
Regional Roads	1.74 ha			
Estate Roads	6.19 ha			
	45.95 ha			
Development Areas				
Precinct 1	16.46 ha			
Precinct 2	7.31 ha			
Precinct 3	18.94 ha			
Precinct 4	14.26 ha			
Precinct 5	6.46 ha			
Precinct 6	6.84 ha			
Amenity Lot	0.58 ha			
Total Developable	70.89 ha			
Total Warehouse	321,784 sqm			
Total Office	15,486 sqm			
Total Facility	337,270 sqm			

Figure 1: Proposed Masterplan Layout (Subject to MOD 4 Approval)

2 Overview of Proposed Development

The development for which approval is now sought is detailed in the EIS prepared by Hawes and Swan. The Proposal generally seeks approval for the construction of a warehouse and distribution facility for Costco with the following characteristics:

- Stage 1:
  - Dry Depot – 12,081 m^2 GFA;
  - Wet Depot – 8,442 m^2 GFA; and
  - Office – 2,156 m^2 GFA;
- Stage 2:
  - Wet Depot – 3,116 m^2 GFA;
  - Future Development Area – 9,949 m^2 GFA;
- A car park providing a total of 328 car parking spaces including disabled parking.

Figure 2 below presents a plan illustrating the proposed development showing the general layout of the warehouse and associated traffic circulation, loading, and parking areas. This plan, prepared by Group GSA, is also attached at reduced scale at **Appendix A**.

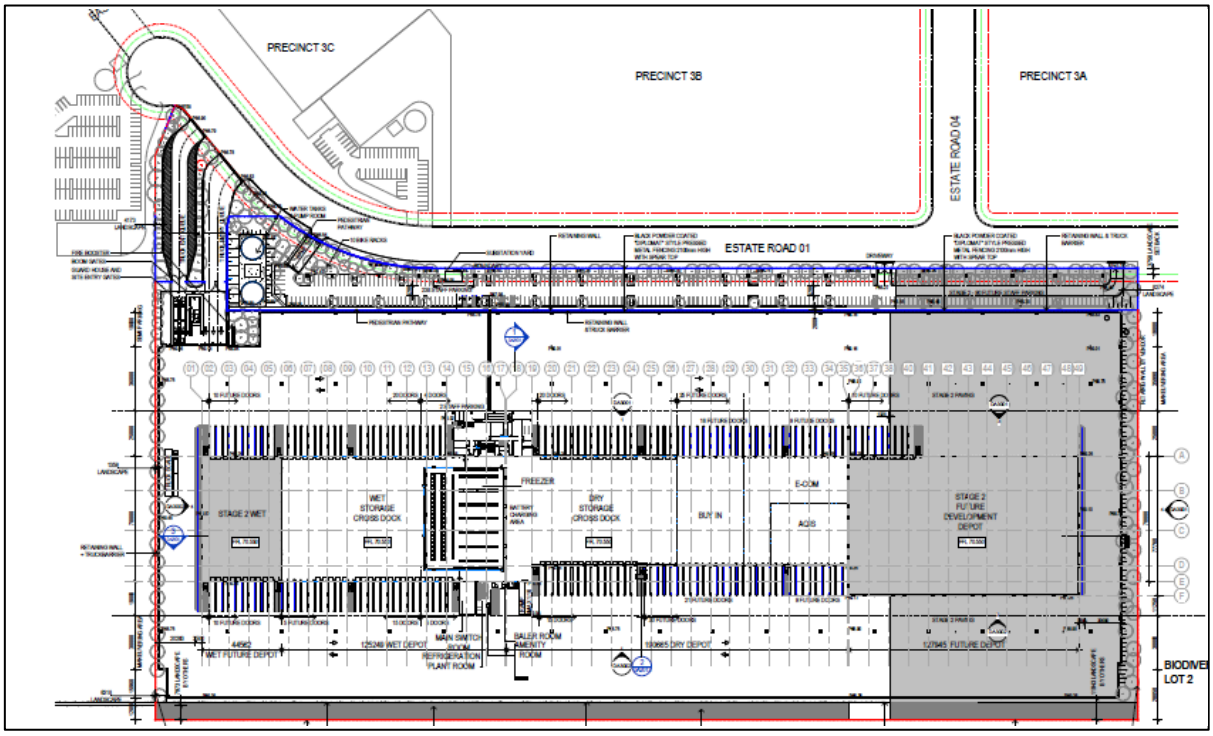


Figure 2: Proposed Development

3 Existing Conditions

3.1 Site Overview

The Oakdale Industrial Estate comprises some 421 hectares of industrial/employment-zoned land within the broader Western Sydney Employment Area (WSEA), and sits to the immediate south of the Sydney Water Pipeline (previously referenced as Lands South of Sydney Water Pipeline). The OSE is irregular in its configuration and is bisected by Ropes Creek and some smaller tributaries. Oakdale South is located within the overall Estate and adjoins other Oakdale Precincts to the west and north (Oakdale West and Oakdale Central, respectively). OSE and the broader Oakdale Estate in its local and regional context are shown in **Figure 3** and **Figure 4**.

Oakdale South currently forms the southern extent of the WSEA, with lands further south being rural and rural-residential in character. It is noted however that the current *Draft Structure Plan* for the WSEA proposes the inclusion of lands to the south of OSE at Kemps Creek in an expansion of the WSEA. Once implemented, it is anticipated that a future formal *Structure Plan* for an expanded 'Broader Western Sydney Employment Area' (BWSEA) would provide for changes in the land use zoning and character of these additional lands to an industrial/employment focus consistent with that of the existing WSEA.

Figure 3: Oakdale South Location, Local Context

Source: Urban Advisory Services

Figure 4: Oakdale Location, Sub-Regional Context

Source: Urban Advisory Services

At a regional level, the Site is located approximately 3 kilometres south of the nearest suburban area, Erskine Park, 18 kilometres west of Parramatta, and 37 kilometres west of the Sydney CBD. It is within the Local Government Area (LGA) of Penrith City Council, however is also subject to controls of the State Environmental Planning Policy (Western Sydney Employment Area) 2009 (SEPP WSEA).

Within the context of the OSE, Lot 4A is located on the eastern side of the proposed Estate Road 1 and comprises a total site area of 142,762m^2. f

3.2 Road Network

The existing/proposed road hierarchy in the vicinity of Oakdale South is shown in **Figure 5** and key roads and intersections providing access for Oakdale South are detailed below. From the outset, it is important to note that the SSDA will not rely on local connections to the south or west nor on a connection to the proposed Southern Link Road. All access will be provided via the estate roads (formerly Milner Avenue) to Old Wallgrove Road (OWR) and thence via either OWR or the proposed North-South 'Red' Link Road to the north or via OWR to the south.

3.2.1 M7 Motorway

The M7 is a major arterial road a key orbital route around inner metropolitan Sydney and provides key linkages to the broader sub-regional and regional road network including key interchanges with the M4 and M5 motorways to the north and south respectively.

3.2.2 Erskine Park Link Road / Lenore Drive

Erskine Park Link Road (or Lenore Drive) is a newly constructed road (MR 629) that generally runs in an east west connection between Erskine Park Road in the west and continues into Old Wallgrove Road in the east.

3.2.3 Wallgrove Road

Wallgrove Road is a classified road (MR 515) that runs in a north-south direction (parallel to the M7) to the east of the Site. Wallgrove road carries approximately 25,000 vehicles per day and generally provides an alternate north – south route to the M7 Motorway.

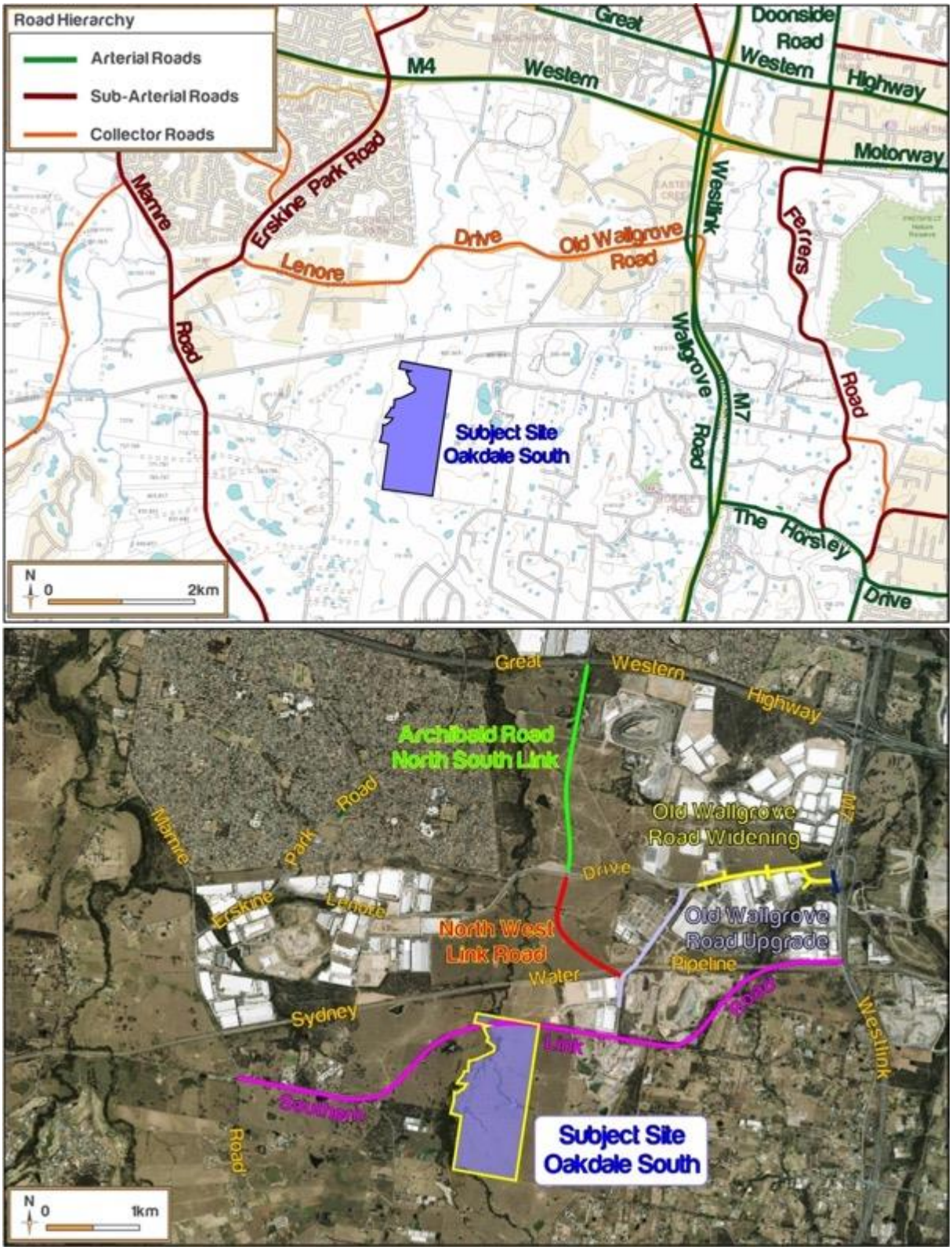


Figure 5: Road Hierarchy

3.2.4 Old Wallgrove Road

Old Wallgrove Road (OWR) generally runs from a south – east alignment and forms both a RMS Main Road (MR 629) that generally forms an extension of the Erskine Park Link Road to the east and a local road (providing a collector road function) to the south. OWR is currently being upgraded, with the works nearing completion. The upgrades include the following:

- Widening of OWR to two lanes in each direction between Roberts Road and Southridge Street with a central median to allow for three lanes in the future
- Widening of OWR to three lanes in each direction between Southridge Street and the M7 Motorway and Wallgrove Road interchanges
- Construction of a 400-metre link road with two lanes in each direction from Quarry Road to connect to Wallgrove Road and the northbound on and off ramps to the M7
- Provision of bus stops near each intersection on Old Wallgrove Road and installing traffic lights that give priority to buses

3.2.5 Lenore Drive

Lenore Drive is a recently upgraded sub-arterial route providing an east-west connection linking OWR to the east and Mamre Road to the west.

3.2.6 Milner Avenue

Milner Avenue connects west from OWR through Oakdale Central, at this time to a roundabout which is currently under construction at the southwest corner of Oakdale Central. Further to the SSDA, Milner Avenue will be extended to the south to provide all vehicle access to Oakdale South.

3.2.7 North-South 'Red' & Archbold Road Links

The RMS has recently commissioned detailed design assessments for a new north-south link road – known as the Red Link Road – between OWR (north of Estate Road) and the M4 Motorway. The potential exists for the future red link road to then connect to a further north-south extension of Archbold Road south from the M4.

3.2.8 Southern Link Road Network

The Southern Link Road (SLR) is a proposed east-west link generally running parallel to the Erskine Park Link Road (EPLR). The SLR will provide additional road infrastructure required to accommodate travel demand generated by employment areas within the South of Warragamba Pipeline area. The indicative route alignment for the proposed road network was initially identified in the SEPP (WSEA) 2009 and has since been refined to the current alignment as shown in **Figure 6**.

The SLR network planning and development process is ongoing and is therefore potentially subject to change due to further refinement of the route alignment and access arrangements. It is expected however that a review of the staging options and the development of the concept design plans will be undertaken within the next 5 years. Whilst no completion date for the SLR has been made available at this time, it is generally expected that the road would be delivered by 2026.

The most recent assessment of the preferred route options and alignment was completed by Aecom in 2014 and detailed in the *Southern Link Road Network Strategic Transport Assessment Report* (the Aecom Report), which made the following key findings / recommendations:

- The SLR will form a future connection with an upgraded Mamre Road in the west. Traffic generated by the WSEA would use Mamre Road to connect to the wider road network to and from the north and south.
- No direct connection between the M7 and the SLR is proposed. All eastern access to the SLR will be via an upgraded Wallgrove Road Interchange.
- Access to Old Wallgrove Road is considered beneficial and that this should be extended to join with the Archbold Road extension, and
- All future intersections are to operate at an acceptable level of service (“D” or better) under the 2036 design year assuming full development of the WSEA.

Land reservations have been made in the OSE Concept Plan for the future SLR. The SLR would provide a regional connection generally similar to that currently provided via the EPLR. It is noted that no direct access between Oakdale South and the SLR is proposed. Access to the SLR from the OSE would be provided from a new connection with the CSR Industrial Estate to the east OR via the Oakdale West Precinct to the west of the OSE as depicted in **Figure 6**.

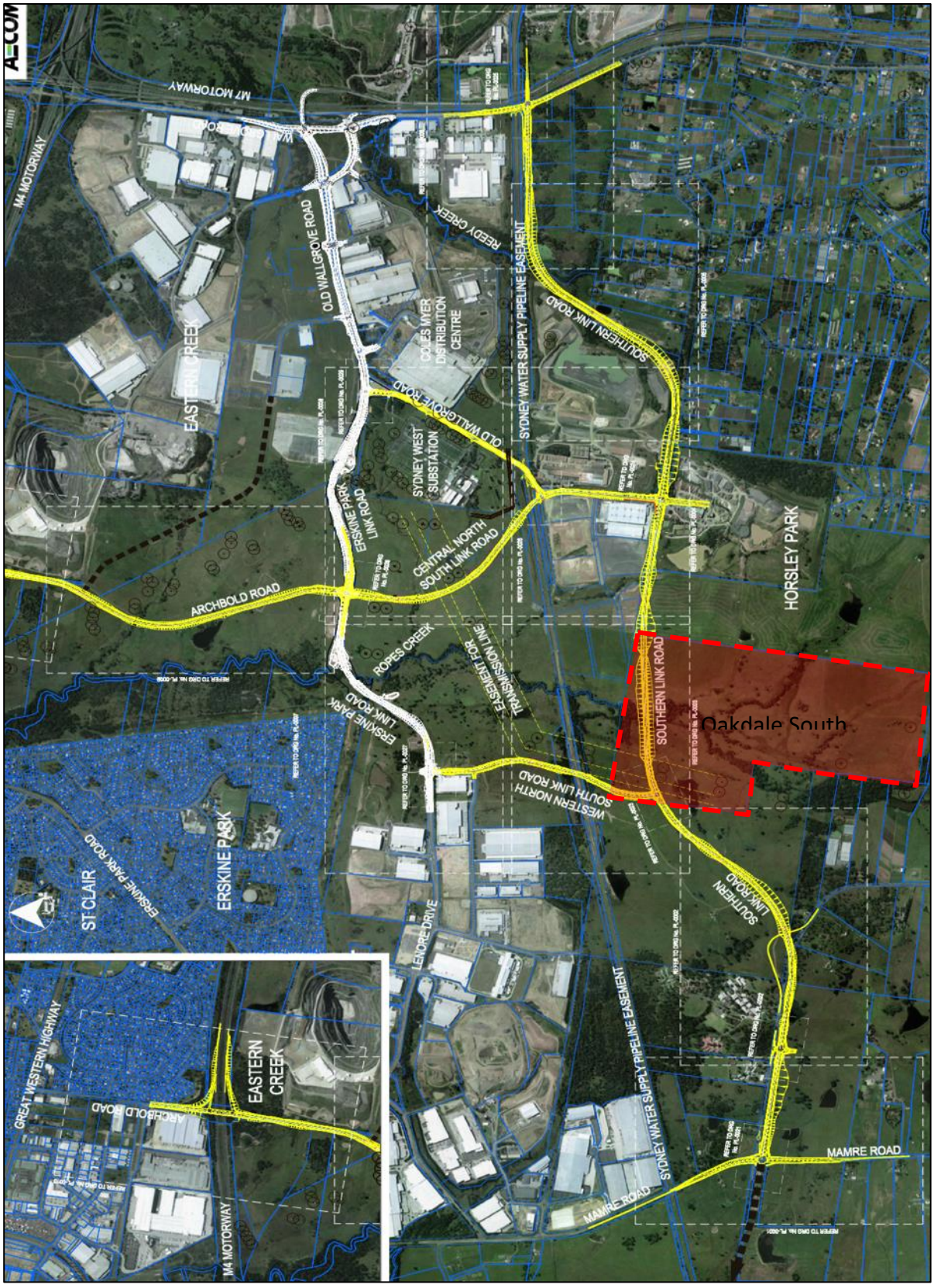


Figure 6: Proposed Southern Link Road Network and Alignment

Source: Western Sydney Employment Area – Southern Link Road Network Strategic Transport Assessment, AECOM, 2011

As part of the approved Oakdale South Concept Plan, the current SLR alignment (as proposed under the Aecom Report) has subsequently been revised as shown in **Figure 7**.

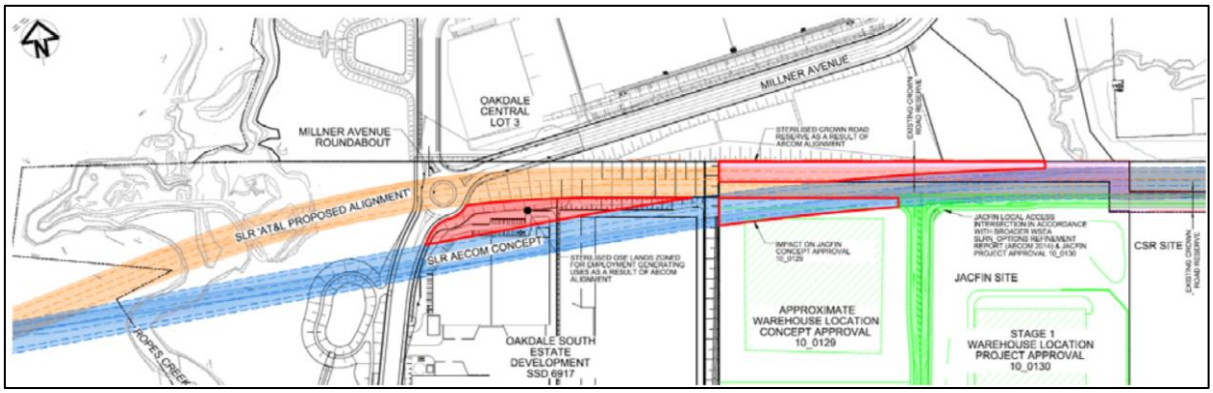


Figure 7: Comparison of Current SLR Alignment & Revised SLR Alignment

The alignment has been revised to continue along the northern boundary of OSE, the northern boundary of the neighbouring property (Jacfin Lands) and pass over the Milner Avenue roundabout. This would require the construction of a long span bridge over the Milner Avenue roundabout. Within the locality of OSE, the revised SLR alignment provides the following benefits:

- Better suit the surrounding topography,
- Avoid Crown Road reserve sterilisation,
- Avoid impacts on the approved Jacfin Concept Plan 10_0129 by better utilising the existing Crown Road reserve, and
- Ensure a more efficient use of the OSE lands zoned for employment generating uses.

A technical analysis was undertaken by GHD, which concluded that the construction of the SLR over the Milner Avenue roundabout was feasible. This option would utilise standard bridge construction techniques without having an adverse impact on cost, design or safety. As such, the revised alignment would result in an improved outcome compared to the current alignment, as proposed in the Aecom Report.

3.3 Public Transport

The OSE's proximity to public transport is shown in **Figure 8**, which demonstrates the locations and distances to bus services surrounding the Site. The services which travel in proximity to the Site include the 738 bus route, connecting Mt. Druitt Railway Station to Eastern Creek and Horsley Park, and the 835 bus route, connecting St. Mary's Railway Station to the Prairiewood T-Way Station. These services operate every 30 minutes during morning and evening periods, Monday to Friday.

3.4 Cycle Paths

The existing cycle network in the vicinity of the Site is also shown in **Figure 8**. The regional cycle routes include the Westlink M7 Shared Path, which extends along the western side of the Westlink M7 Motorway and connects to Prestons and Baulkham Hills, running through employment areas such as the Norwest Business Park and Eastern Creek. In addition, the cycle lanes on the M4 cater for regional bicycle travel.

As part of the upgrade of Old Wallgrove Road, which is currently underway, the existing off-road shared pathway along the northern side of Lenore Drive will be extended to continue to Wallgrove Road. This will provide a key connection to the existing regional pedestrian and cycle network.

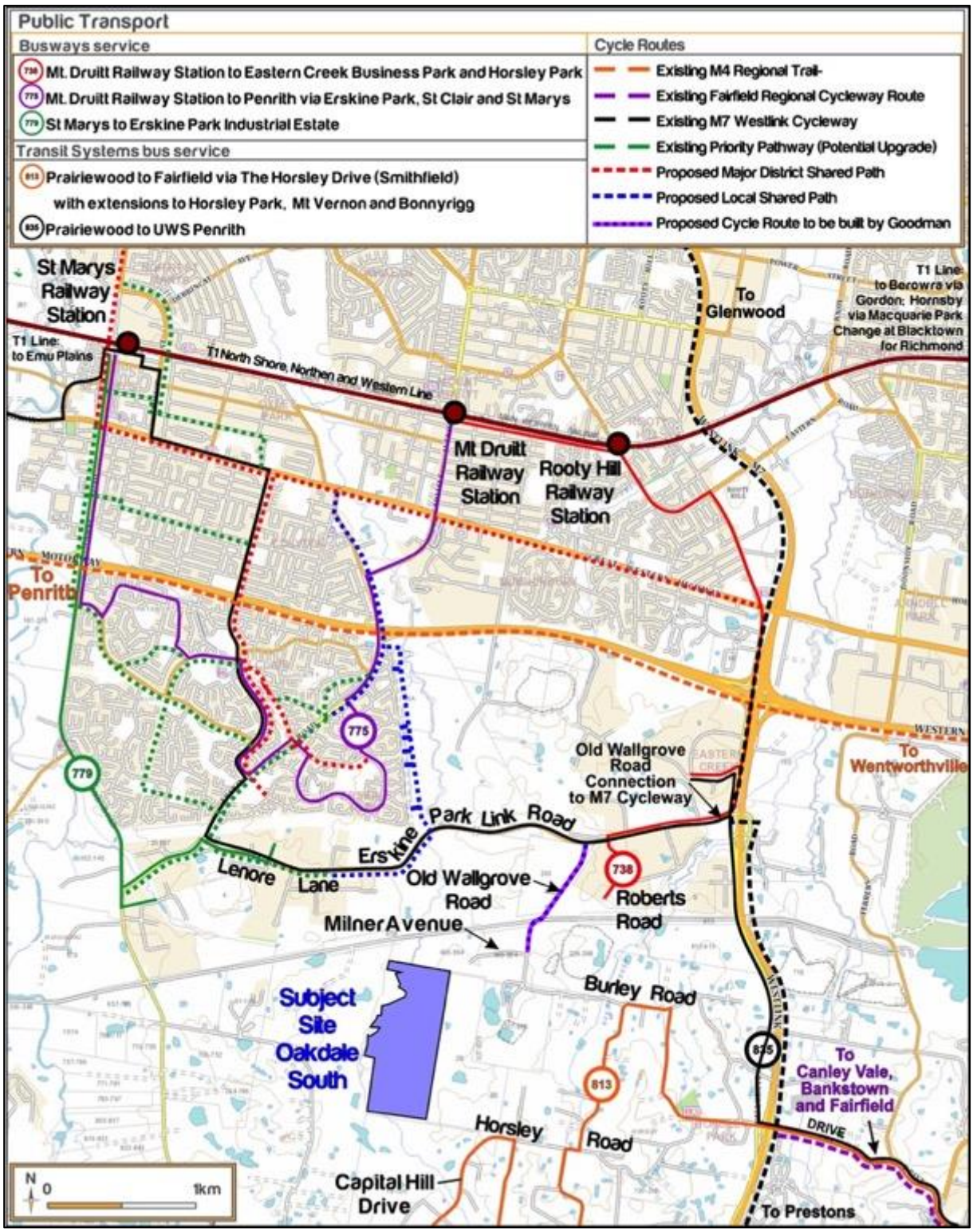


Figure 8: Existing and Proposed Public Transport and Cycle Links

3.5 Mode Share

Based on Journey to Work (JTW) data provided by the Bureau of Transport Statistics (BTS) of employee mode share for WSEA (Travel Zone 3477, 3479, 4045 and 5002) is shown in **Figure 9**. The data indicates that approximately 90% of employees travel to work via private vehicle transport with minimal usage of non-vehicle alternatives.

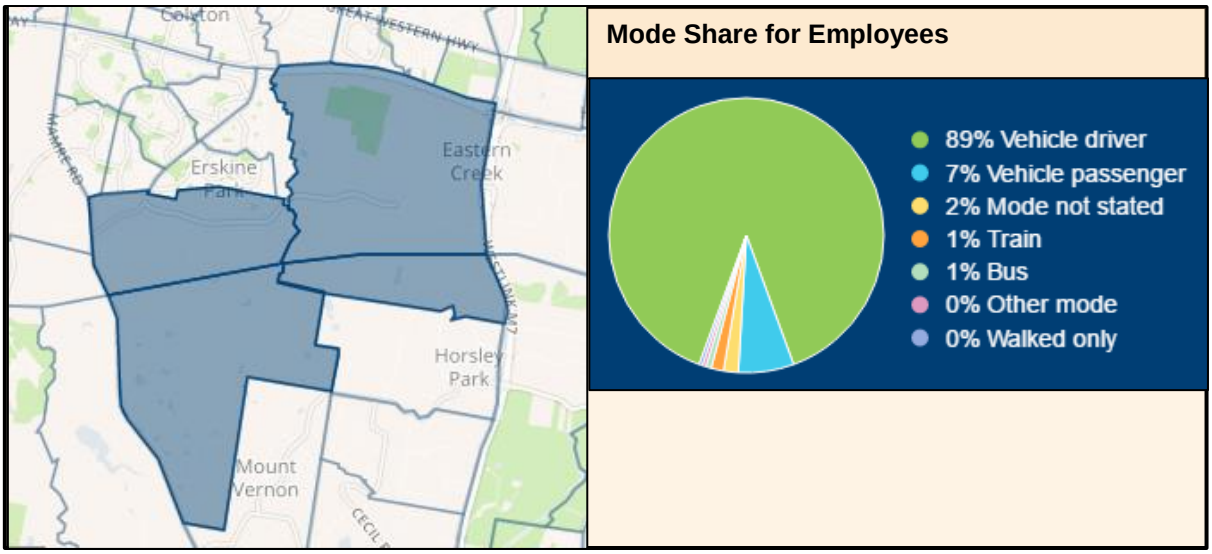


Figure 9: Journey to Work Data of Employee Mode Share

4 Traffic Impacts

4.1 Estate Concept Plan Traffic Generation and Impacts Assumptions

The traffic impacts of the Concept Plan (for the approved and proposed modification) have been assessed having regard to the historic traffic generation assumptions that informed the local and regional infrastructure upgrades within the WSEA, including the Erskine Park Link Road, Old Wallgrove Road upgrade and Wallgrove Road upgrades. It has been established that the rates adopted for the broader infrastructure assessments are consistent with the rates published by the RMS in its *Technical Direction 04a: Traffic Generated Developments – Updated traffic surveys* (RMS Guide Update) being:

- 1.892 daily vehicle trips per 100m^2 of industrial GFA including ancillary office floor space.
- 0.163 peak hour vehicle trips per 100m^2 of industrial GFA including ancillary office floor space.

Application of the above rates to the areas approved under the Concept Plan and the modifications currently being considered are provided in **Table 1**.

Table 1: Oakdale South Estate Approved Precinct Peak Hour Generation Rates

Precinct	MOD 1 GFA (m^2)	MOD 4 GFA (m^2)	MOD 1 (vph)	MOD 4 (vph)
1	104,739	93,304	171	152
4	30,607	35,349	50	58
5	29,929	29,929	49	49
2,3 & 6	166,036	178,688	271	291
Total	**331,311**	**337,270**	**541**	**550**

The comparative analysis demonstrates that the future traffic generation of the OSE is expected to increase from 541 veh/hr (as approved) to 550 veh/hr under the proposed modification. Critically, this remains less than the estimated traffic generation (645veh/hr) adopted in all traffic modelling undertaken to date. It is this modelling that underpins the package of sub-regional road upgrades within the broader WSEA plan - both planned and approved. Furthermore, these rates are less than the assumed traffic generation that forms the basis of the design of the local access routes including the intersection of Milner Avenue with Old Wallgrove Road and Old Wallgrove Road with Erskine Park Link Road.

4.2 Operational Assumptions

4.2.1 Operational Traffic

Based on operational traffic data provided by the proposed future tenant (Costco), the following assumptions have been adopted for this assessment:

2017 Operational Design Year

- An average of 139 commercial vehicle movements per day consisting of:
  - 20 x B-double movements
  - 14 x semi-trailers
  - 104 x rigid trucks & vans
- Staffing requirements:
  - Mon-Fri: 5:30-13:30 – 67 employees
  - Mon-Fri: 6:00-14:00 – 7 employees
  - Mon-Fri: 9:00-5:00 – 18 employees

2027 Operational Design Year

- An average of 229 commercial vehicle movements per day consisting of:
  - 40 x B-double movements
  - 28 x semi-trailers
  - 161 x rigid trucks & vans
- Staffing requirements:
  - Mon-Fri: 5:30-13:30 – 95 employees
  - Mon-Fri: 6:00-14:00 – 11 employees
  - Mon-Fri: 9:00-5:00 – 27 employees

4.2.2 Heavy Vehicle Daily Traffic Distribution

The forecast daily distribution of heavy vehicles at the proposed facility has been based on the existing distribution of heavy vehicles at the Costco Wetherill Park facility. A 24 hour/7-day survey of heavy vehicle movements was undertaken of this facility, with the results of this survey being presented in **Figure 10**.

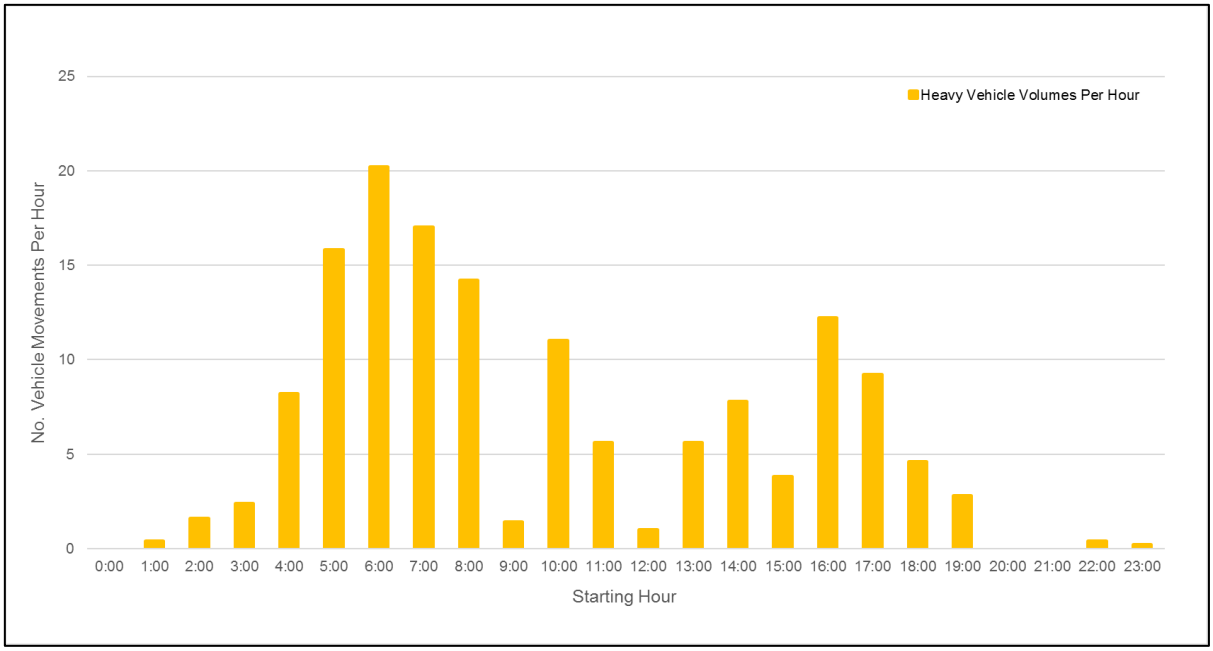


Figure 10: Costco Wetherill Park – Daily Heavy Vehicle Distribution

The results above demonstrate that the majority of truck movements mainly between the hours of 5:00-9:00am during the morning peak and 4:00-6:00pm during the evening peak. As such, it is forecast that future heavy vehicle movements at the new facility would also operate with a similar distribution.

4.2.3 Staff Vehicle Daily Traffic Distribution

Based on projected staffing and shift times, it is anticipated that the majority of vehicle arrivals and departures would occur in the hour before and after shift periods. With reference to the mode share data described in Section 3.5, it is assumed that 90% of staff would be vehicle drivers and 10% of staff would be picked-up/dropped-off as a vehicle passengers or by other transport modes. However, for the purposes of a conservative assessment, the following analysis assumes that every staff member would drive their own vehicle and no carpooling would occur.

4.3 Lot 4A Traffic Generation

4.3.1 RMS Traffic Generation Test

This application seeks approval for the development of 35,743 m^2 of building area GFA associated with Precinct 4, consistent with the MOD 4 application. The overall traffic generation of the OSE under the approved Concept Plan and subsequent MOD 4 application is summarised in **Table 2** below.

Table 2: Oakdale South Estate Peak Hour Traffic Generation with Lot 4A DA

Precinct	Concept Plan (m^2)	MOD 4 GFA (m^2)	Proposed GFA (m^2)	Concept Plan (vph)	Mod 4 (vph)	Proposed (vph)
1	105,385	93,304	93,304	173	152	152
4	48,025	35,743	35,743	78	58	58
5	84,290	29,929	29,929	137	49	49
2,3 & 6	158,000	178,688	178,688	257	291	291
Total	**395,880**	**337,270**	**337,664**	**645**	**550**	**550**

Having regard for the approved floor-area based traffic generation rates, the Proposal would generate in the order of 58 veh/hr during peak periods with approximately 46 in and 12 out in the morning peak (assuming 80% traffic in and 20% out) with the reverse during the evening peak hour. This results in an overall estate generation less than that approved under the Concept Plan Application.

4.3.2 Sensitivity Test

Based on operational data and assumptions discussed in Section 4.2, the estimated peak traffic volumes generated by the Proposal for 2017 and 2027 are as follows. It is noted that the estimates for 2017 have been provided below however the development is expected to operate at the 2017 levels until at least 2027. A breakdown of the 2017 and 2027 volumes for both commercial vehicles and light vehicles under the morning and evening peak periods is provided in **Table 3**.

Table 3: Operational Traffic Generation

Vehicle Type	AM (5:00-6:00am)		PM (14:00-15:00pm)	
	2017	2027	2017	2027
Heavy Vehicle	15	25	7	12
Light Vehicle	81	117	81	117
Total	**96**	**142**	**88**	**129**

The proposed facility operations results in a peak hour traffic generation higher than that considered under the methodology adopted for the Concept Plan application (0.163 vehicle trips per 100m^2). Nonetheless, the total traffic generated by the OSE will result in a traffic generation commensurate to that approved under the Concept Plan application. A comparison of the OSE generation rates as now proposed for both the 2017 and 2027 scenarios is provided in **Table 4** and **Table 5**

Table 4: 2017 Oakdale South Estate Peak Hour Traffic Generation

Precinct	Concept Plan (vph)	MOD 4 (vph)	Proposed (vph)
1	171	152	152
4	79	58	96
5	137	49	49
2,3 & 6	258	291	291
Total	**645**	**550**	**588**

Table 5: 2027 Oakdale South Estate Peak Hour Traffic Generation

Precinct	Concept Plan (vph)	MOD 4 (vph)	Proposed (vph)
1	171	152	152
4	79	58	142
5	137	49	49
2,3 & 6	258	291	291
Total	**645**	**550**	**634**

4.4 Operational Traffic Impacts

The comparative analysis demonstrates that the future traffic generation of the OSE under the proposed modification results in a peak hour generation of approximately 588 veh/hr under the 2017 operational development scenario. This remains under the threshold approved under the original Concept Plan application (645veh/hr). The 2027 operational development scenario (634 veh/hr) also remains less than that originally approved.

The traffic impacts of the Proposal are therefore consistent with that assessed under the Concept Plan and is therefore acceptable. On this basis, it is anticipated that the road and intersection upgrades that are currently being delivered would be sufficient to cater for the traffic generated by the Proposal. Accordingly, no further road upgrades are considered to be required to support the Proposal.

4.5 Construction Traffic Impacts

Light vehicle traffic generation would be generally associated with staff movements to and from the Site. Staff would be comprised of project managers, various trades and general construction staff. Over the full construction period, the peak workforce represents the worst-case scenario for vehicle movements during the morning or evening road network peak hour. The workforce arrival and departure periods (6.30-7.00AM and 5.00-5.30PM) represent the peak construction traffic generation periods. It is anticipated that most, if not all, staff would travel by private vehicle with minimal cycling, public transport and pedestrian trips. This would be reflective of the nature of construction work, where staff must carry construction equipment and tools, which are necessary to undertake the required tasks.

Heavy vehicle traffic would mainly be generated by activities associated with the delivery of construction equipment and delivery of material for construction works. The heavy vehicle traffic associated with the removal of excavated material would be low having regard for the earthwork requirements.

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. However, these deliveries are likely to occur outside of the peak network traffic periods and would have limited (if any) impact on traffic on Wallgrove Road / Old Wallgrove Road intersections, which currently both have high proportions of heavy vehicles.

Most construction vehicles are expected to access the site via the M7 Motorway, M4 Motorway, Wallgrove Road, OWR and Milner Avenue and therefore would have impacts on intersections along this route. Importantly, the construction traffic volumes are expected to be lower than the daily and peak hour volumes assessed for the Proposal once it becomes operational. Therefore, recognising that the key intersections are 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.

5 Parking Requirements

5.1 Proposed Parking Provisions

The applicable parking rates relevant to the development are provided in the conditions of the approved Concept Plan. The approval outlines the following minimum car parking rates:

- 1 space per 300m^2 of warehouse GFA; and
- 1 space per 40m^2 of office GFA.

Table 6 provides a summary of the parking spaces required for the Proposal based on the application of the approved Concept Plan parking rates on the proposed warehouse and office floor areas.

Table 6: Proposed Parking Provisions

Land Use	Area (m^2 GFA)	Parking Rate	Parking Required	Parking Provided
Stage 1				
Warehouse	20,523	1 space per 300m^2 GFA	68	238
Office	2,156	1 space per 40m^2 GFA	54	
Stage 2				
Warehouse	13,065	1 space per 300m^2 GFA	44	90
Total			**166**	**328**

The application proposes the provision of 328 spaces (238 as part of Stage 1 and 90 as part of Stage 2), which exceeds the minimum requirement of 166 parking spaces as per the application of the approved Concept Plan parking rates. This provision maintains consistency with relevant planning controls, accommodates the anticipated operational requirements of the future tenant and ensures all future parking demands are kept off-street.

5.2 Accessible Parking

The approved Concept Plan parking rates makes provisions for 2 disabled spaces for every 100 car parking spaces. In response, application of this rate to the proposed 328 parking spaces results in a requirement of 6 disabled spaces. In response, the development provides 6 accessible parking spaces for disabled users, thereby complying with the Concept Plan approval.

5.3 Bicycle Parking and Facilities

Although it is anticipated that the majority of employees would arrive by private transport, end-of-trip cycling facilities (i.e. lockers, showers and change rooms) would be provided on-site to accommodate and encourage cycling to work as an alternative to private vehicle travel. These facilities would be provided to achieve mode share target objectives outlined in the Sustainable Travel Plan outlined below.

6 Sustainable Travel Plan

6.1 Objectives

A Sustainable Travel Plan (STP) details a package of measures by which to promote alternative travel choices and reduce private vehicle usage of employees commuting to the Site. This STP identifies the pedestrian and cyclist facilities proposed to service the Proposal.

The objectives of this STP is to:

- Reduce the environmental footprint of the development;
- 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; and
- Encourage a healthier, happier and more active social culture.

Having regard for the above, this Plan adopts the following movement hierarchy with priority given to 'active transport' followed by mass public transport and lastly the use of private vehicles.

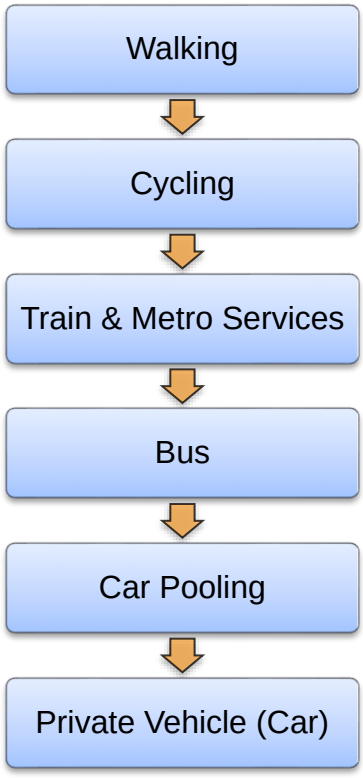


Figure 11: Movement Hierarchy

6.2 Mode Share Targets

With the objectives in mind, the mode share targets sought to be achieved is outlined in **Table 7**.

Table 7: Staff Mode Share Targets

Travel Mode	Existing	Target
Walking	0%	5%
Cycling	0%	5%
Train	1%	2%
Bus	1%	10%
Car Passenger	7%	5%
Car Driver	89%	73%
Other	2%	-

The targets provided in the above table would be considered realistic and achievable. It should be considered in the context of the ongoing development of WSEA and the provision of shared pedestrian / cycle paths (particularly along OWR and Lenore Drive) to support non-car travel modes. End of trip facilities, including showers and change facilities, have been provided to service cyclists and pedestrians. Direct footpath access has been provided to the building entrance. Furthermore, as the employee population of WSEA increases, it is anticipated that additional bus services would be provided and therefore would form a viable alternative.

6.3 Action Plan

The following specific actions, as shown in **Table 8**, have been identified to aid achievement of the targets outlined in the previous section.

Table 8: Action Plan Measures

Item No.		Action / Description	Responsibility
1. General			
	1.1	Establish a site-specific transport committee which is to include (but not limited to) the Travel Plan Coordinator (TPC)	TPC
	1.2	Preparation and maintenance of a Transport Access Guide	TPC
	1.3	Provide ‘Travel Welcome Pack’ to new staff	TPC
	1.4	Include travel demand management as a regular item on the agenda for team meetings	Team Management

Item No.		Action / Description	Responsibility
2. Walking			
	2.1	Promote participation in Walk to Work day activities	TPC
	2.2	Provide advice in relation to the location of key transport services within walking distance of the site	TPC
	2.3	Promote and provide marketing material (such as posters on noticeboards, flyers or pamphlets) regarding the health benefits of walking	TPC
3. Cycling			
	3.1	Improve bicycle connectivity on surrounding roads	Council
	3.2	Promote participation in the National Ride2Work Day activity	TPC
	3.3	Clearly signpost the location of on-site bicycle facilities from building entrances and position bicycle parking near the entrance for convenient access	TPC
	3.4	Ensure bicycle facilities are maintained in a clean condition	TPC
	3.6	Promote and provide marketing material (such as posters on noticeboards, flyers or pamphlets) regarding the health benefits of cycling. This can be combined with the marketing material for walking	TPC
4. Public Transport			
	4.1	Provide increased public transport services in response to increased industrial development associated with WSEA	TfNSW / Council
	4.2	Ongoing updates to the TAG to reflect changes to any bus routes and service times	TPC
	4.3	Advertise updated editions of the TAG with copies placed in a visible location, such as employee lunch areas.	TPC
5. Car Pooling			
	5.1	Advertise the benefits of ride sharing or carpooling and provide a contact point who will assist in connecting employees who could benefit from carpooling.	TPC
	5.2	Facilitate engagement between employees with a view to encourage ride sharing or carpooling.	TPC

6.4 Communication Strategy

6.4.1 Welcome Packs

Each new employee shall be provided with a 'welcome pack' which includes a Transport Access Guide and other information in relation to sustainable transport choices. This shall include a copy of the Transport Access Guide (TAG) as well as general information regarding the health and social benefits of active transport.

6.4.2 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 lunch room;
- Lobby area and entrances to buildings; and
- Any marketing material associated with the site, such as websites and newsletters.

The TAG shall be presented in a form that is reflective of the commitment to achieving positive transport objectives. This may involve provision of a laminated cover or other protective frame. The TAG is not to be presented on loose paper.

6.5 Travel Plan Coordinator

A representative from the management team shall be designated as the overall Travel Plan Coordinator. This person(s) shall be responsible for:

- Implementation and promotion of the STP actions;
- Monitoring the effectiveness of the STP and ongoing maintenance of the Plan;
- Provide advice in relation to transport-related queries to employees as required; and
- Liaise with external parties (i.e. Council, State Transit Authority and Transport for NSW) in relation to Travel Plan matters.

This role does not necessarily require full-time position; however it shall be clearly designated among the key responsibilities of management.

6.6 Resourcing

It is not anticipated that the maintenance of the STP will have significant ongoing cost implications. The majority of time, including surveys, will be undertaken by the TPC and therefore not necessarily require the service of external parties. However, a small budget should be set aside for regular updates to the TAG and other miscellaneous costs such as the preparation of welcome packs for new employees.

6.7 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the Travel Plan Coordinator. As a minimum, a review of the STP should occur on an annual basis. The following key considerations should be made upon each update:

- 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 proposed travel mode targets;
- Identify any shortfalls and develop an updated action plan to address issues; and
- Ensure travel mode targets are updated (if necessary) to ensure they are realistic and remain ambitious.

7 Access and Internal Design Aspects

The site access, internal circulation and car parking arrangements have been developed with consideration of the requirements of Council's DCP and relevant Australian Standards (i.e. AS2890.1, AS2890.2 and AS2890.6). The following characteristics are noteworthy with regard to the design of the site access driveway, loading docks and on-grade car park.

7.1 Site Access

Access to the site is proposed via four driveways, as shown in the site plan which is attached at reduced scale at **Appendix A**. The Proposal includes:

- A separated entry and exit driveway for commercial (heavy) vehicles only, near the cul-de-sac of Estate Road 01;
- Three entry/exit driveways for passenger vehicles to the staff car parking areas.

The proposed access arrangements have been developed to achieve the following desirable outcomes:

- To permit entry to and exit from the site in a forward direction;
- To separate commercial (heavy) vehicle and passenger vehicle traffic;
- To accommodate vehicles up to and including 26.0m B-Doubles;
- To minimise pedestrian crossing distances at the driveways; and
- To provide adequate sight distance to oncoming traffic or pedestrians on the public roadway or footpath.

7.2 Car Park Design

- All staff and employee parking is to be provided in accordance with AS2890.1 for a Class 1A user, which requires a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- All spaces located adjacent to obstructions greater than 150mm in height are to be provided with an additional width of 300mm. This includes any landscaping that exceeds 150mm.
- All accessible parking spaces are designed in accordance with AS2890.6. Spaces are provided with a minimum clear width of 2.4m and located adjacent to a minimum shared area of 2.4m.

7.3 Commercial Facilities

With consideration of no through roads adjacent to the site, Estate Road 01 and Estate Road 04, it is assumed that all commercial (heavy) vehicles will approach the site from the north. For this reason, the loading dock is designed with the following considerations:

- Left-turn entry from Estate Road 01;
- Loading docks located on the right-hand side, providing direct line of site from commercial (heavy) vehicle drivers when reversing; and
- Right-turn exit onto Estate Road 01.

The circulation areas for commercial (heavy) vehicles have been designed having regard for the operational requirements of the future tenant and the requirements of AS2890.2. In this regard, the following is noteworthy:

- Swept path analysis has been performed using a B-Double combination vehicle, to verify the design widths of the circulation roads and driveways. The results of this analysis, which are presented on plans attached as **Appendix B**, reveal that the necessary manoeuvres of the largest vehicle expected to access the site can be accommodated under the Proposal.
- In light of the above, the internal circulation road would also accommodate the BCA fire truck perimeter access requirements for large isolated buildings.

7.4 Design Summary

The internal configuration of the Site – including light and heavy vehicular access, car parking and servicing areas – has been designed generally in accordance with the requirements of Council's DCP and the relevant Australian Standards (AS2890.1, AS2890.2 and AS2890.6).

8 Response to SEARs

A Secretary's Environmental Assessment Requirements (SEARs) was issued by the DP&E on 27 February 2017 (included at **Appendix C**), which outlines the key areas for consideration in any SSD application. Relevant responses to the traffic and transport issues raised in the SEARs are outlined in **Table 9** below:

Table 9: Response to SEARs

<table>
<tr><th>Ref.</th><th>SEARs Requirement</th><th>Response</th></tr>
<tr><td>8.1</td><td>A Traffic Impact Assessment detailing all daily and peak traffic and transport movements likely to be generated (vehicle, public transport, pedestrian and cycle trips) during construction and operation of the development, including a description of vehicle access routes and the impacts on nearby intersections.</td><td>Based on operational data and assumptions discussed in Section 4.2, the estimated peak hour vehicle traffic volumes generated by the Proposal for 2017 and 2027 are as follows:
<table>
<tr><th rowspan="2">Vehicle Type</th><th colspan="2">AM (5:00-6:00am)</th><th colspan="2">PM (14:00-15:00pm)</th></tr>
<tr><th>2017</th><th>2027</th><th>2017</th><th>2027</th></tr>
<tr><td>Heavy Vehicle</td><td>15</td><td>25</td><td>7</td><td>12</td></tr>
<tr><td>Light Vehicle</td><td>81</td><td>117</td><td>81</td><td>117</td></tr>
<tr><td>Total</td><td>96</td><td>142</td><td>88</td><td>129</td></tr>
</table>
Having regard for the JTW mode share data, it is anticipated that there would be minimal walking, cycling and public transport trips during the operation of the development.

Construction traffic volumes and vehicle access routes are discussed in Section 4.5.

The traffic and transport movements during the construction of the development are expected to be lower than the movements anticipated for the Proposal once it becomes operational. It is anticipated that most, if not all, traffic generated by staff would be private vehicles with minimal cycling, public transport and pedestrian trips. This would be reflective of the nature of construction work, where workers must carry construction equipment and tools, which are necessary to undertake the required tasks.

Most vehicles (operation and construction) are expected to access the site via the M7/M4 Motorways, Wallgrove Road, OWR and Milner Avenue and therefore would have impacts on intersections along this route.</td></tr>
<tr><td>8.2</td><td>Details of access to the site from the road network including intersection location, design and sight distance.</td><td>Details of access to the site from the road network can be found in Section 6.

The proposed access arrangements have been developed to achieve compliance with the relevant Australian Standards with consideration of appropriate intersection location, suitable access design to accommodate the intended use and adequate sight distance to vehicles and pedestrians on public roads.</td></tr>
</table>

Ref.	SEARs Requirement	Response
8.3	An assessment of predicted impacts on road safety and the capacity of the road network to accommodate the development.	The Site is estimated to generate at most 142 vehicles per hour based on an assessment of the operational requirements of the proposed facility. An assessment of the overall OSE traffic including modifications proposed demonstrates that the overall OSE (as modified) would generate traffic consistent with that of the original Concept Plan application assessment. As such, the conclusions and recommendations of the detailed background traffic and transport assessments of key sub-regional intersections remain entirely relevant and valid. Therefore, further detailed analysis of road safety and capacity is not warranted.
8.4	Plans of any road upgrades or new roads required for the development, if necessary.	Recognising that the traffic generated by the Proposal is consistent with the approved Concept Plan, it is anticipated that the road and intersection upgrades that are currently being delivered are adequate to cater for the traffic generated by the Proposal and consistent with the planning for the WSEA. Accordingly, no further road upgrades would be required to support the Proposal.
8.5	Details of swept path analysis for the largest vehicle type likely to be used on-site.	Refer to swept path analysis in Appendix B.
8.6	Detailed plans of the proposed layout of the internal road network and parking provision on-site in accordance with the relevant Australian Standards.	Refer to **Figure 2** and Appendix A. The site access, internal circulation and car parking arrangements have been developed with consideration of the requirements of the relevant Australian Standards (i.e. AS2890.1, AS2890.2 and AS2890.6).
8.7	Details of any likely dangerous goods to be transported on arterial and local roads to/from the site, if any, and the preparation of an incident management strategy, if necessary.	Refer to the Incident Management Strategy at Appendix D of this report. This document details the overarching goals and measures envisaged to manage incidents involving the transport of dangerous goods. Included in the report are details of the likely dangerous goods to be transported on arterial and local roads to/from the site.
8.8	Details of bicycle parking and end of trip facilities.	Refer to Section 5.3. End-of-trip cycling facilities (i.e. lockers, showers and change rooms) would be provided on-site to accommodate and encourage cycling to work as an alternative to private vehicle travel. These facilities would be provided to achieve mode share target objectives outlined in the STP.
8.9	<u>Additional RMS requirement</u> The cumulative study area traffic impacts associated with the development (and any other known proposed developments in the area).	Refer to Section 4.1. The cumulative traffic impacts associated with the other Oakdale South Precincts was assessed with the Proposal. The assessment indicates that the traffic generation of the Precinct has been accounted for in infrastructure provisions of the overall WSEA.

9 Conclusions

The key findings of this Traffic Impact Assessment can be summarised as follows:

- The Site is located with the Western Sydney Employment Area (WSEA), which was established by the New South Wales Government to provide businesses in the region with land for industry and employment, including transport and logistics, warehousing and office space.
- The Proposal is consistent with the planning for the WSEA, seeking approval for a purpose-built warehouse with a building area of 35,743m^2 GFA, to be operated by Costco Wholesale Australia and to be delivered over two stages.
- The future development is expected to generate the following peak hour traffic volumes:

Vehicle Type	AM (5:00-6:00am)		PM (14:00-15:00pm)	
	2017	2027	2017	2027
Heavy Vehicle	15	25	7	12
Light Vehicle	81	117	81	117
Total	**96**	**142**	**88**	**129**

- The proposed generation is consistent with that assumed for the generation adopted in all traffic modelling undertaken to date that underpins the package of sub-regional road upgrades within the broader WSEA both planned and approved. Furthermore, the overall Estate traffic will be less than the assumed traffic generation that forms the basis of the design of the local access routes including the intersection of Milner Avenue with Old Wallgrove Road and Old Wallgrove Road with Erskine Park Link Road.
- The proposed level of on-site car parking (328 spaces) exceeds the minimum car parking requirements of the Concept Plan approval and therefore considered supportable. It is therefore anticipated that the Proposal would readily accommodate all parking demands on-site.
- The proposed access arrangements have been developed to permit entry to and exit from the site in a forward gear, separate commercial (heavy) vehicle and passenger vehicle traffic, minimise pedestrian crossing distances at the driveways, and encourage one-way circulation of commercial (heavy) vehicle traffic through the site.

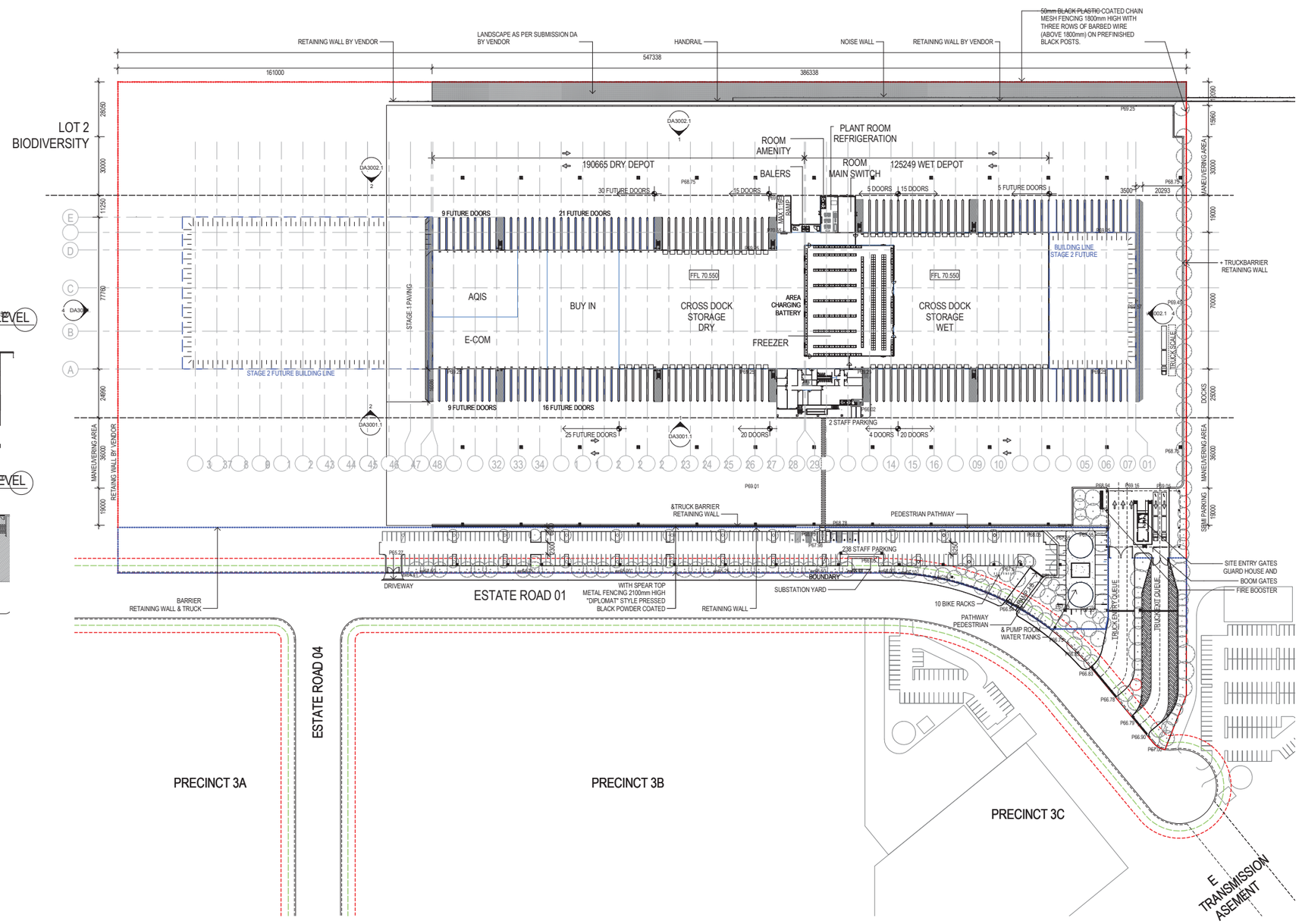
It is therefore concluded that the proposed development at Lot 4A, Oakdale South, Horsley Park is supportable on traffic planning grounds.

Appendix A

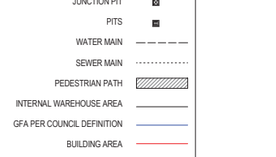
NORTH | @ B1 As indicated SCALE | 18/07/17 DATE | F REVISION | DA1101.1 NUMBER | SITE PLAN STAGE 1 DRAWING | ISSUE ISSUE FOR DA

OAKDALE DEPOT

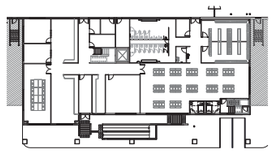
1 SITE PLAN STAGE 1



3 OFFICE FIRST LEVEL



2 OFFICE GROUND LEVEL



NOTE:
REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR DETAILS OF ALL LANDSCAPE WORKS WITHIN THE SITE INCLUDING PLANTING, PAVING AND SCREENING.

LEGEND

- CHAIN MESH FENCE
- DIPLOMAT STYLE FENCE
- STAGE 2 BUILDING LINE
- LANDSCAPE SETBACK
- BUILDING SETBACK
- JUNCTION PIT
- PITS
- WATER MAIN
- SEWER MAIN
- PEDESTRIAN PATH
- INTERNAL WAREHOUSE AREA
- GFA PER COUNCIL DEFINITION
- BUILDING AREA
- SITE BOUNDARY

PROJECT DATA

PROJECT ADDRESS:	HORSLEY PARK NSW, 2175 OAKDALE INDUSTRIAL SITE
CLIENT:	LIDCOMBE NSW 2141 17-21 PARRAMATTA RD COSTCO WHOLESALE

SITE DATA

65602 m²	STAGE 1 - HARDSTAND
Area	HARDSTAND

HARDSTAND

238	Grand total: 238
238	STAGE 1 STAFF PARKING

PARKING DATA

139	Grand total: 139
139	STAGE 1- TOTAL DOCKS
TOTAL	STAGE COUNT
5	WET STORAGE SHIPPING KNOCKOUT DOORS
30	DRY STORAGE SHIPPING KNOCKOUT DOORS
TOTAL	NON-BONDED KNOCKOUT SHIPPING DOORS
35	Grand total: 35
20	WET STORAGE SHIPPING DOORS
15	DRY STORAGE SHIPPING DOORS
TOTAL	NON-BONDED SHIPPING DOORS
25	DRY STORAGE KNOCKOUT RECEIVING DOORS
TOTAL	NON-BONDED KNOCKOUT RECEIVING DOORS
44	Grand total: 44
24	WET STORAGE RECEIVING DOORS
20	DRY STORAGE RECEIVING DOORS
TOTAL	NON-BONDED RECEIVING DOORS

TRUCK DOOR DATA

8442 m²		Grand total: 2
2598 m²	27963 ft²	FREEZER
5844 m²	62906 ft²	WET STORAGE CROSS DOCK
m²	ft²	WET STORAGE AREA
12081 m²	130038 ft²	Grand total: 4
1504 m²	16189 ft²	AQIS
2088 m²	22480 ft²	E-COM
2240 m²	24114 ft²	BUY IN
6248 m²	67256 ft²	DRY STORAGE CROSS DOCK
m²	ft²	DRY STORAGE AREA
22691 m²	244245 ft²	
m²	ft²	TOTAL STAGE 1 DEPOT & BUILDING AREA
2168 m²	23338 ft²	Grand total: 8
150 m²	1610 ft²	STAGE 1 REFRIGERATION PLANT ROOM
1689 m²	18175 ft²	STAGE 1 OFFICE
167 m²	1793 ft²	STAGE 1 MAIN SWITCH ROOM
84 m²	907 ft²	STAGE 1 GUARD HOUSE
62 m²	669 ft²	STAGE 1 BALER ROOM
17 m²	184 ft²	STAGE 1 AMENITY ROOM
m²	ft²	STAGE 1 SITE BUILDING AREA
20523 m²	220907 ft²	Grand total: 6
8442 m²	90869 ft²	STAGE 1 WET DEPOT
12081 m²	130038 ft²	STAGE 1 DRY DEPOT
m²	ft²	STAGE 1 DEPOT

BUILDING DATA

105057 m²	1130826 ft²	Grand total: 14
105057 m²	1130826 ft²	STAGE 1 SITE AREA
m²	ft²	SITE AREA

NORTH | @ B1 As indicated SCALE | 18/07/17 DATE | H REVISION | DA1101 NUMBER | SITE PLAN STAGE 2 DRAWING | ISSUE ISSUE FOR DA

OAKDALE DEPOT

83640 m²	Grand total: 3
19532 m²	STAGE 2 - HARDSTAND
64108 m²	STAGE 1 - HARDSTAND
Area	HARDSTAND

HARDSTAND

328	Grand total: 328
90	STAGE 2 STAFF PARKING
238	STAGE 1 STAFF PARKING
	PARKING DATA

PARKING DATA

169	Grand total: 169
30	STAGE 2- TOTAL DOCKS
139	STAGE 1- TOTAL DOCKS
TOTAL	STAGE COUNT
10	FUTURE WET STORAGE SHIPPIN DOORS
10	FUTURE WET STORAGE RECEIVING DOORS
10	FUTURE E-COM RECEIVING DOORS
	FUTURE RECEIVING DOORS
5	WET STORAGE SHIPPING KNOCKOUT DOORS
30	DRY STORAGE SHIPPING KNOCKOUT DOORS
TOTAL	NON-BONDED KNOCKOUT SHIPPING DOORS
35	Grand total: 35
20	WET STORAGE SHIPPING DOORS
15	DRY STORAGE SHIPPING DOORS
TOTAL	NON-BONDED SHIPPING DOORS
25	DRY STORAGE KNOCKOUT RECEIVING DOORS
TOTAL	NON-BONDED KNOCKOUT RECEIVING DOORS
44	Grand total: 44
24	WET STORAGE RECEIVING DOORS
20	DRY STORAGE RECEIVING DOORS
TOTAL	NON-BONDED RECEIVING DOORS

TRUCK DOOR DATA

8442 m²		Grand total: 2
2598 m²	27963 ft²	FREEZER
5844 m²	62906 ft²	WET STORAGE CROSS DOCK
m²	ft²	WET STORAGE AREA
12081 m²	130038 ft²	Grand total: 4
1504 m²	16189 ft²	AQIS
2088 m²	22480 ft²	E-COM
2240 m²	24114 ft²	BUY IN
6248 m²	67256 ft²	DRY STORAGE CROSS DOCK
m²	ft²	DRY STORAGE AREA
35756 m²	384872 ft²	
m²	ft²	TOTAL STAGE 1&2 DEPOT & BUILDING AREA
33588 m²	361534 ft²	
m²	ft²	TOTAL DEPOT AREA
13065 m²	140627 ft²	Grand total: 3
3116 m²	33537 ft²	STAGE 2 WET DEPOT
9949 m²	107090 ft²	STAGE 2 FUTURE DEVELOPMENT AREA
m²	ft²	STAGE 2 DEPOT AREA
22691 m²	244245 ft²	
m²	ft²	TOTAL STAGE 1 DEPOT & BUILDING AREA
2168 m²	23338 ft²	Grand total: 8
150 m²	1610 ft²	STAGE 1 REFRIGERATION PLANT ROOM
1689 m²	18175 ft²	STAGE 1 OFFICE
167 m²	1793 ft²	STAGE 1 MAIN SWITCH ROOM
84 m²	907 ft²	STAGE 1 GUARD HOUSE
62 m²	669 ft²	STAGE 1 BALER ROOM
17 m²	184 ft²	STAGE 1 AMENITY ROOM
m²	ft²	STAGE 1 SITE BUILDING AREA
20523 m²	220907 ft²	Grand total: 6
8442 m²	90869 ft²	STAGE 1 WET DEPOT
12081 m²	130038 ft²	STAGE 1 DRY DEPOT
m²	ft²	STAGE 1 DEPOT

BUILDING DATA

142762 m²	1536678 ft²	Grand total: 19
26457 m²	284786 ft²	STAGE 2 FUTURE DEVELOPMENT SITE AREA
13065 m²	140627 ft²	STAGE 2 FUTURE DEVELOPMENT BUILDING AREA
103240 m²	1111266 ft²	STAGE 1 SITE AREA
m²	ft²	SITE AREA

SITE DATA

HORSLEY PARK NSW, 2175
OAKDALE INDUSTRIAL SITE

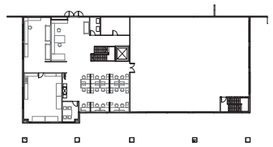
PROJECT ADDRESS:

LIDCOMBE NSW 2141
17-21 PARRAMATTA RD
COSTCO WHOLESALE

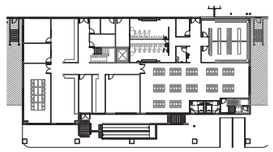
CLIENT:

PROJECT DATA

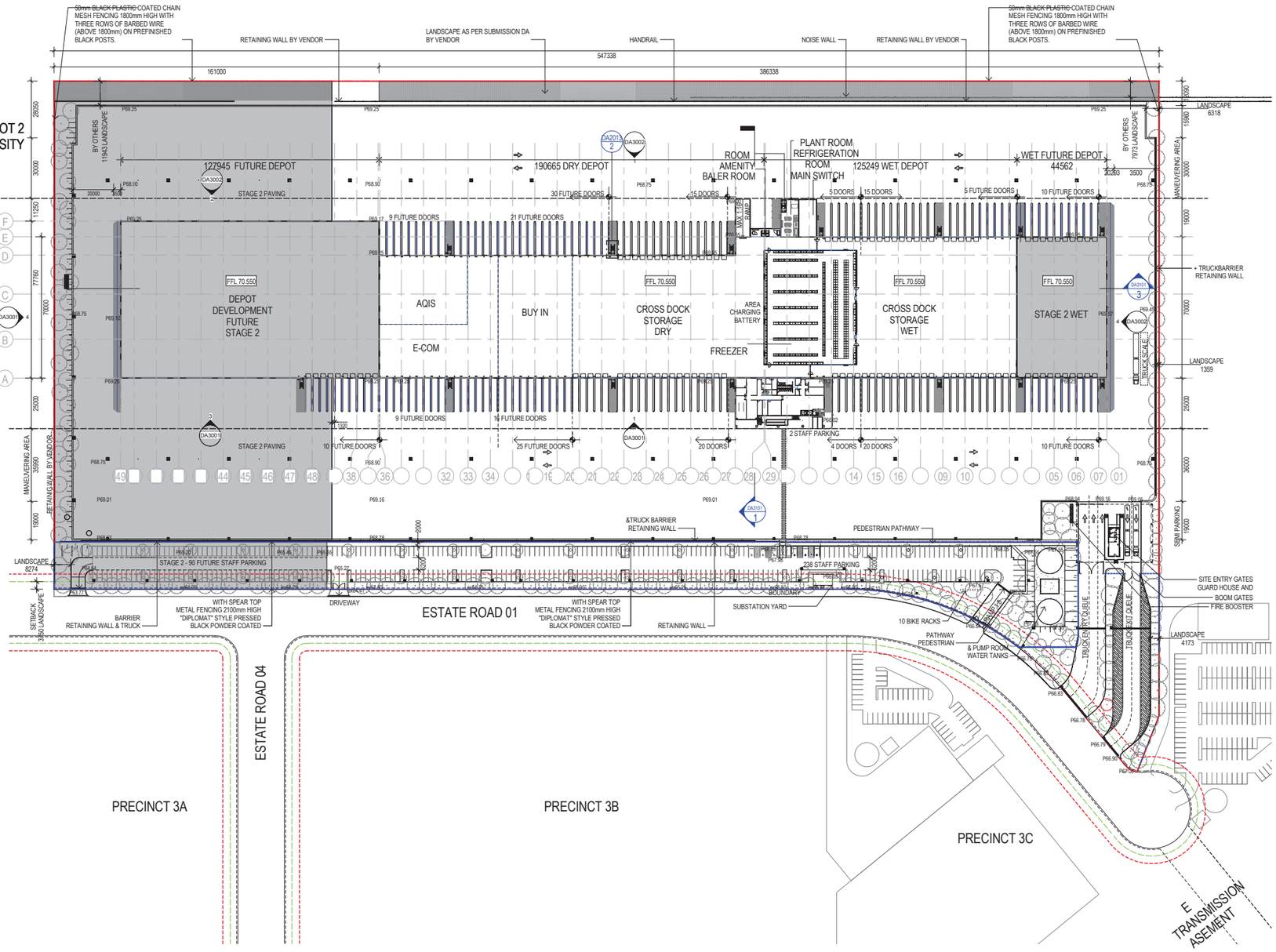
3 OFFICE FIRST LEVEL



2 OFFICE GROUND LEVEL



1 SITE PLAN

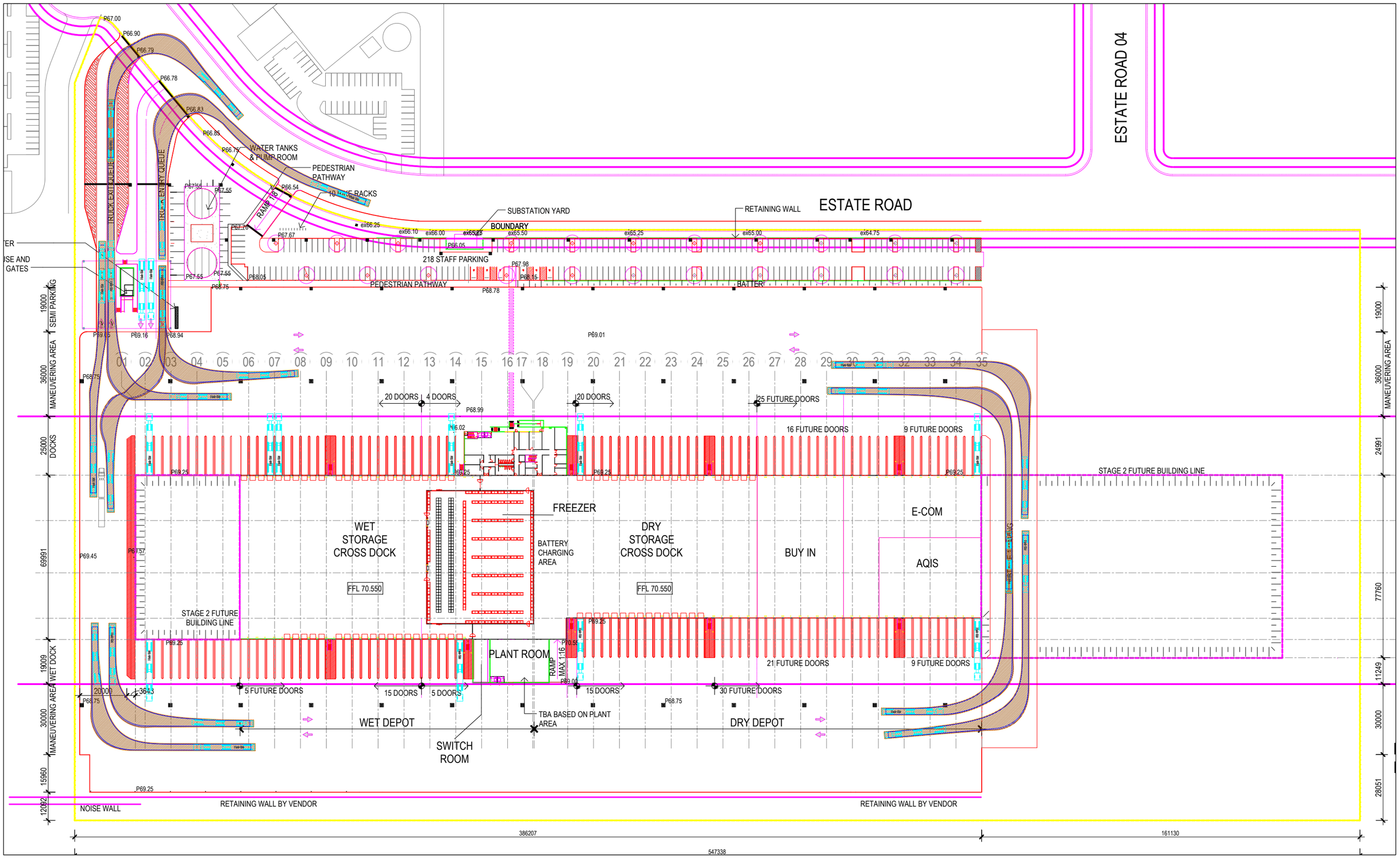


NOTE:
REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR DETAILS OF ALL LANDSCAPE WORKS WITHIN THE SITE INCLUDING PLANTING, PAVING AND SCREENING.

LEGEND

- CHAIN MESH FENCE
- DIPLOMAT STYLE FENCE
- STAGE 2
- LANDSCAPE SETBACK
- BUILDING SETBACK
- JUNCTION PIT
- PITS
- WATER MAIN
- SEWER MAIN
- PEDESTRIAN PATH
- INTERNAL WAREHOUSE AREA
- GFA PER COUNCIL DEFINITION
- BUILDING AREA
- SITE BOUNDARY

Appendix B



Revision notes:

Rev:	Date:	Notes:

Drawn By: KH

Client: Goodman Property Services

Project: 0393 Lot 4A, Oakdale South Industrial Estate

Drawing Title: Stage 1 - B-double Circulation

Date: 22-Mar-17

Scale @ A3: 1:1500

Drawing Number: AG0393d01.1

asongroup
Suite 1202, Level 12, 220 George Street
Sydney NSW 2000
info@asongroup.com.au

ESTATE ROAD 04

ESTATE ROAD

WATER TANKS & PUMP ROOM

PEDESTRIAN PATHWAY

10 TYRE RACKS

TRUCK EXIT QUEUE LANE

TRUCK ENTRY QUEUE

RAMP 1:6

SUBSTATION YARD

BOUNDARY

RETAINING WALL

DRIVEWAY TBC

RETAINING WALL + BATTER

218 STAFF PARKING

PEDESTRIAN PATHWAY

BATTER

STAGE 2 - 108 FUTURE STAFF PARKING

SEMI PARKING

MANEUVERING AREA

DOCKS

MANEUVERING AREA

WET DOCK

MANEUVERING AREA

20 DOORS | 4 DOORS | 20 DOORS | 25 FUTURE DOORS | 10 FUTURE DOORS

16 FUTURE DOORS | 9 FUTURE DOORS

STAGE 2 PAVING

FREEZER

STAGE 2 WET BUY-IN

WET STORAGE CROSS DOCK

BATTERY CHARGING AREA

DRY STORAGE CROSS DOCK

BUY IN

E-COM

AQIS

STAGE 2 FUTURE DEVELOPMENT DEPOT

FFL 70.550

FFL 70.550

FFL 70.550

PLANT ROOM

RAMP MAX 1:16

21 FUTURE DOORS | 9 FUTURE DOORS

10 FUTURE DOORS | 5 FUTURE DOORS | 15 DOORS | 5 DOORS | 15 DOORS | 30 FUTURE DOORS

DRY DEPOT

WET DEPOT

TBA BASED ON PLANT AREA

SWITCH ROOM

STAGE 2 PAVING

RETAINING WALL BY VENDOR

NOISE WALL

RETAINING WALL BY VENDOR

RETAINING WALL BY VENDOR

386207 | 161130 | 547338

Revision notes:		
Rev:	Date:	Notes:

Drawn By: KH	Project: 0393 Lot 4A, Oakdale South Industrial Estate	Date: 22-Mar-17	asongroup	
Client: Goodman Property Services	Drawing Title: Stage 2 - B-double Circulation	Scale @ A3: 1:1500	Suite 1202, Level 12, 220 George Street Sydney NSW 2000	
		Drawing Number: AG0393d01.2	info@asongroup.com.au	

Appendix C

Secretary's Environmental Assessment Requirements

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

State Significant Development

Application Number	SSD 8209
Development	Construction, fit-out and operation of a warehouse and distribution facility with: • 33,519 m^2 of warehousing space and 2,163 m^2 of office space; • a 103 m^2 guardhouse; • 310 car parking spaces; and • on-lot stormwater and infrastructure works.
Location	Lot 4A, Precinct 4, Oakdale South Industrial Estate, Kemps Creek, Penrith LGA (Part Lot 12 DP 1178389)
Applicant	Goodman Property Services (Aust) Pty Ltd
Date of Issue	27 February 2017
General Requirements	The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. In addition, the EIS must include: • a detailed description of the development, including: – the need for the proposed development; – justification for the proposed development; – a description of feasible options within the project which may include a layout options analysis; – likely staging of the development; – likely interactions between the development and existing, approved and proposed operations in the vicinity of the site; and – plans of any proposed building works. • consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments; • a risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment; • a detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: – a description of the existing environment, using sufficient baseline data; – an assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; and – a description of the measures that would be implemented to avoid, minimise, mitigate and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage significant risks to the environment. • a consolidated summary of all proposed environmental management and monitoring measures, highlighting commitments included in the EIS; and • an assessment demonstrating the proposal is consistent with the conditions, requirements, development standards and environmental impact envelope of any Concept Proposal applying to the site. The EIS must also be accompanied by a report from a qualified quantity surveyor providing: • a detailed calculation of the capital investment value (CIV) of the development as defined in clause 3 of the *Environmental Planning and Assessment Regulation 2000*, including details of all components of the CIV; • an estimate of the jobs that will be created by the development during the

	construction and operational phases of the development; and • certification the information provided is accurate at the date of preparation.
Key issues	The EIS must address the following specific matters: • **Strategic and Statutory Context** – including: – detailed justification for the proposal and the suitability of the site; and – a demonstration the proposal is generally consistent with all relevant planning strategies including draft district plans, environmental planning instruments, development control plans (DCPs); and – a demonstration the proposal is consistent with the requirements, development standards and environmental impact envelope of the Oakdale South Concept Proposal, as modified (if at all) (SSD 6917). • **Traffic and Transport** – including: – a Traffic Impact Assessment detailing all daily and peak traffic and transport movements likely to be generated (vehicle type, public transport, pedestrian and cycle trips) during construction and operation of the development, including a description of likely arrival/departure times, vehicle access routes and the impacts on nearby intersections; – details of access to, from and within the site from the road network including intersection location, design and sight distance; – an assessment of predicted impacts on road safety and the capacity of the road network to accommodate the development; – plans of any road upgrades or new roads required for the development, if necessary; – details of swept path analysis for the largest vehicle type likely to be used on-site; – detailed plans of the proposed layout of the internal road network and parking provision on-site in accordance with the relevant Australian Standards; – details of any likely dangerous goods to be transported on arterial and local roads to/from the site, if any, and the preparation of an incident management strategy, if necessary; and – details of bicycle parking and end of trip facilities. • **Urban Design and Visual** – including: – layout of the development including staging, site coverage, setbacks, proposed open space, landscaped areas, fencing and lighting; – suitable landscaping incorporating endemic species; – the layout and design of the development having regard to the surrounding vehicular, pedestrian and cycling networks, if applicable; and – a detailed assessment (including photomontages and perspectives) of the facility (buildings and storage areas) including height, colour, scale, bulk, building materials and architectural treatments and finishes, signage, lighting and any retaining walls particularly from nearby public receivers and significant vantage points within the broader public domain. • **Noise and Vibration**– including: – a description of all potential noise and vibration sources during the construction and operational phases of the development, including on and off-site traffic noise and external mechanical plant; – a quantitative noise impact assessment, including a cumulative noise impact assessment in accordance with relevant Environment Protection Authority guidelines demonstrating the proposal is able to comply with the estate wide noise limits under SSD 6917; and – details of noise mitigation, management and monitoring measures. • **Soils and Water** – including: – a description of the water demands, servicing arrangements and a breakdown of water supplies; – a description of the measures to minimise water use; – a detailed water balance; – a description of all wastewater generated on-site; – a description of the proposed erosion and sediment controls during

	construction and operation; – a description of the surface and stormwater management system, including on-site detention, and measures to treat or re-use water; – an assessment of potential surface and groundwater impacts associated with the development; – details of Water Sensitive Urban Design measures to be implemented; – an assessment of the impact of flooding on the proposed development for the full range of flood events up to the probable maximum flood; – an assessment of the impact of the proposed development on flood behaviour; and – details of impact mitigation, management and monitoring measures. • **Hazards and Risks** including: – a Preliminary Hazardous Analysis (PHA) undertaken for the proposed development. The PHA shall be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis*, and in particular: ▪ identify the hazards associated with all the dangerous goods to be stored on-site and the proposed storage quantities; ▪ demonstrate that the proposed development complies with the criteria set out in *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning*; and ▪ estimate the cumulative impacts from the overall site and the surrounding potentially hazardous developments in the area (if any), and demonstrate that the proposed development does not increase the cumulative risk of the area to unacceptable levels. – details of the proposed volumes of dangerous goods to be stored on-site. • **Air Quality** – including: – an assessment of the air quality impacts at private properties during construction and operation of the development, in accordance with the relevant Environment Protection Authority guidelines; and – details of any mitigation, management and monitoring measures required to prevent and/or minimise emissions. • **Infrastructure Requirements** – including: – a detailed written and/or geographical description of the existing infrastructure on-site; – identification of any infrastructure upgrades required to facilitate the development, and describe any arrangements to ensure the upgrades will be implemented in a timely manner and maintained; and – a detailed description of cooling/heating systems to be installed on-site. • **Bushfire** – including: – details of how the proposal addresses the requirements of *Planning for Bush Fire Protection 2006* (RFS) and in particular the provision of access (including perimeter roads) and provision of water supply for firefighting purposes. • **Waste** – including: – details of the quantities and classification of all waste streams to be generated on-site; – details of waste storage, handling and disposal; and – details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021*. • **Heritage** – including consideration of the management and mitigation measures of the indigenous and non-indigenous archaeological assessments submitted under SSD 6917. • **Greenhouse Gas and Energy Efficiency** – including an assessment of the energy use on-site, and a demonstration of the measures proposed to ensure the development is energy efficient. • **Ecologically Sustainable Development** – including an assessment of how the development will incorporate ecologically sustainable development principles in all phases of the development including rainwater harvesting.

	• **Planning Agreement / Contributions** – including consideration of the Voluntary Planning Agreement applicable to the site and a demonstration that satisfactory arrangements have been made or would be made to provide, or contribute to the provision of the necessary local and regional infrastructure required to support the proposed development.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*. These documents should be provided as part of the EIS rather than as separate documents.
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: • Penrith City Council; • Fairfield City Council; • Department of Primary Industries; • Transport for NSW; • Roads and Maritime Services; • Rural Fire Service; and • local residents and stakeholders. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.
Further consultation after 2 years	If you do not lodge an EIS for the development within 2 years of the issue date of these SEARs, you must consult with the Secretary in relation to any further requirements for lodgement.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this development.

Transport
Roads & Maritime
Services

20 February 2017

Roads and Maritime Reference: SYD17/00198/01 (A16182896)
DP&E Reference: SSD 8209

Director
Department of Planning and Environment
Industry Assessments
GPO Box 39
SYDNEY NSW 2001

Attention: **Thomas Piovesan**

Dear Sir/Madam

COSTCO WAREHOUSE AND DISTRIBUTION FACILITY
LOT 4A, OAKDALE SOUTH INDUSTRIAL ESTATE, KEMPS CREEK

Reference is made to your letter dated 6 February 2017 requesting Roads and Maritime Services (Roads and Maritime) to provide details of key issues and assessment requirements regarding the abovementioned development for inclusion in the Secretary's Environmental Assessment (EA) requirements.

Roads and Maritime require the following issues to be included in the transport and traffic impact assessment of the proposed development:

1. Daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required).

2. Details of the proposed site access and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards (ie: turn paths, sight distance requirements, aisle widths, etc).

3. Detailing vehicle circulation, proposed number of car parking spaces and compliance with the appropriate parking codes.

4. Details of light and heavy vehicle movements (including vehicle type and likely arrival and departure times).

5. To ensure that the above requirements are fully addressed, the transport and traffic study must properly ascertain the cumulative study area traffic impacts associated with the development (and any other known proposed developments in the area). This process provides an opportunity to identify a package of traffic and transport infrastructure measures required to

support future development. Regional and local intersection and road improvements, vehicular access options for adjoining sites, public transport needs, the timing and cost of infrastructure works and the identification of funding responsibilities associated with the development should be identified.

Any inquiries in relation to this Application can be directed to Malgy Coman on 8849 2413 or development.sydney@rms.nsw.gov.au.

Yours sincerely

RJCumming

Rachel Cumming
Senior Land Use Assessment Coordinator
Network and Safety Section

Appendix D