

Industrial Warehouse Development: Storage and Distribution Warehouse

Construction Traffic Management Plan

18 November 2025

HB&B Property

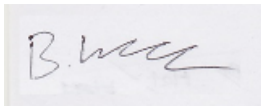
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Construction Traffic Management Plan

18 November 2025

Our Ref:

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Acronyms and abbreviations

Acronym	Definition
AIBP	Alspec Industrial Business Proposal
CTMP	Construction Traffic Management Plan
SSDA	State Significant Development Application
SEAR	Secretary's Environmental Assessment Requirements
DCP	Development Control Plan
EIS	Environmental Impact Assessment
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
HML	Higher Mass Limits
HV	Heavy Vehicle
LV	Light Vehicle
RAV	Restricted Access Vehicle
ROP	Road Occupancy Permit
TCP	Traffic Control Plan
TIA	Traffic Impact Assessment
TTM	Temporary Traffic Management
VMS	Variable Message Sign
WHS	Work, Health and Safety
WSA	Western Sydney Airport

Executive summary

This Construction Traffic Management Plan (CTMP) has been prepared by Arcadis to accompany a State Significant Development Application (SSDA) SSD-81434988 for a Storage and Distribution Warehouse. The project seeks detailed approval for a new Storage and Distribution Warehouse within the Alspec Industrial Business Park (AIBP) at 221-235 Luddenham Road, Orchard Hills (the site). The site is legally described as Lot 1 in DP 1293805. However, the proposed warehouse will be designated as lot 11 in the new community subdivision plan (DP271602) following completion of the estate subdivision.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-81434988).

This report concludes that the proposed development is suitable and warrants approval subject to the implementation of the following mitigation measures.

- Heavy vehicle exit route will be separate from the construction workers private vehicle access, to minimise traffic congestion within the AIBP internal road network
- Construction signage is to be placed on the approaches to the proposed site, visible for each transport mode, warning the public of the construction works
- Significant construction vehicles are to be fitted with safety flashing lights located on the top of the vehicle and functioning reverse beepers, with certified personnel operating them
- Temporary parking zones are to be set up within the construction site to allow workers to access a safe, separated area which will not impede on any of the warehouse construction activities
- Consultation be conducted with local council and relevant community stakeholders to ensure traffic changes during the works are communicated and managed.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.

1 Introduction

This report has been prepared in support of a development at 221-235 Luddenham Road, Orchard Hills (the site), including detailed approval for a Storage and Distribution Centre. The project seeks to deliver a new a new Storage and Distribution Warehouse within the Alspec Industrial Business Park (AIBP).

Specifically, the project comprises the following:

- Construction of a new warehouse with a two-level ancillary office. The warehouse is predominantly 14.7 metres in height, with a high-bay warehouse component at the western portion of the building which achieves a maximum height of 39 metres.
- A total building area of 45,449 m²; broken down as follows:
 - Warehouse area: 43,606 m²
 - Office Area: 1,843 m²
- Loading areas at the north and south sides of the warehouse, with hardstand surrounding the perimeter of the warehouse. Hardstand and carpark areas are accessed via four new driveways from the AIBP internal estate road.
- Provision of vehicular parking onsite to accommodate cars, vans, semi-trailers and B-doubles. It is envisaged that approximately 329 spaces will be provided on site within the proposed hardstand and carparking areas.
- Perimeter landscaping and tree planting with a total area of 10,134 m² (10%).

A Construction Traffic Management Plan (CTMP) is required for the development, where subsequent traffic impacts management strategies during construction are explored.

1.1 SEARs

This CTMP (and accompanying Traffic Impact Assessment (TIA)) has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 4 April 2025 and issued for the SSDA (SSD-81434988). Specifically, this report has been prepared to respond to the SEARs requirement and government agency comments issued below (Table 1-1).

Table 1-1 SEARs requirements and Government Agency comments

Item	Description of Requirement	Report Reference
6.1	Details of all daily and peak traffic volumes likely to be generated during all key stages of construction and operation, including a description of key access / haul routes.	Storage and Distribution Warehouse TIA, Section 5
6.2	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).	Storage and Distribution Warehouse CTMP, Section 4 Storage and Distribution Warehouse TIA, Section 5
6.3	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	Storage and Distribution Warehouse TIA, Section 7
6.4	Details and plans of the proposed internal road network, loading docks, pedestrian and cycling facilities and on-site parking in accordance with the relevant Australian Standards	Storage and Distribution Warehouse TIA, Section 6 and 7
6.5	Swept path analysis for the largest vehicle requiring access to the development	Storage and Distribution Warehouse TIA, Appendix B

Item	Description of Requirement	Report Reference
6.6	Details of road upgrades, infrastructure works, or new roads or access points required for the development if necessary.	Storage and Distribution Warehouse CTMP, Section 3
6.7	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	Storage and Distribution Warehouse CTMP, Section 3, 4 and 5

1.2 Background

Arcadis has been engaged by HB&B Property Ltd to prepare a CTMP for the proposed storage and distribution warehouse development at 221 Luddenham Road, Orchard Hills. The proposal is to develop a 45,449 m² warehouse at the above address to accommodate a mix of warehouse, industrial and office land uses. The AIBP development is proposed to be completed by 2028, with various road and other infrastructure works required. In preparing this assessment, the subject site and its surroundings have been inspected, along with development plans. Relevant construction traffic information available to date has been reviewed and analysed.

1.3 Scope of the report

This report has been structured as follows:

- Section 2 describes the existing conditions in relation to the site, including surrounding land uses, the road network and available transport modes.
- Section 3 outlines the development proposal for the construction of the storage and distribution warehouse and proposed construction access routes to the site.
- Section 4 outlines the predicted construction traffic, parking arrangements and potential construction impacts coordinating with other construction occurring in the area.
- Section 5 outlines the proposed mitigation measures in relation to the road traffic, pedestrian and cycling networks of the proposal.
- Section 6 summarises the expected construction traffic impacts associated with the storage and distribution warehouse SSDA.

1.4 Reference documents

In preparing this report, reference has been made to the following documents:

- Schedule of Classified Roads and Unclassified Regional Roads (Roads and Maritime, 2014)
- Development Control Plan (DCP) (Penrith Council, 2021)
- Guide to Traffic Impact Assessments (TfNSW, 2024)
- Technical Direction (TDT 2013/04a) (Roads and Maritime, 2013)
- 221 Luddenham Road, Orchard Hills –Alspeg Industrial Business Park Traffic Impact Assessment (Arcadis, April 2023)

2 Existing conditions

2.1 Site location

The subject site is located on Luddenham Road, south of Patons Lane, in Orchard Hills. Located approximately 30 kilometres west of Parramatta CBD and is part of the larger AIBP development. The AIBP site is irregular in shape, with frontages across both Luddenham Road and Patons Lane.

The storage and distribution warehouse site is rectangular, encompassing a total area of 104,959 m². It features frontage to an internal road within the AIBP site, providing access to the broader road network via Patons Lane and Luddenham Road. The site location of the warehouse site within AIBP is shown in Figure 2-1.



Figure 2-2 AIBP site location

2.2 Land use

As shown in Figure 2-3, the subject site is in a General Industrial Zone (E4). The region surrounding the site is a mix of Environmental Conservation (C2) and Rural Landscape Zone (RU2). To the east of Mamre Road, the more common land uses are General Industrial (IN1) and Low Density Residential (R2).

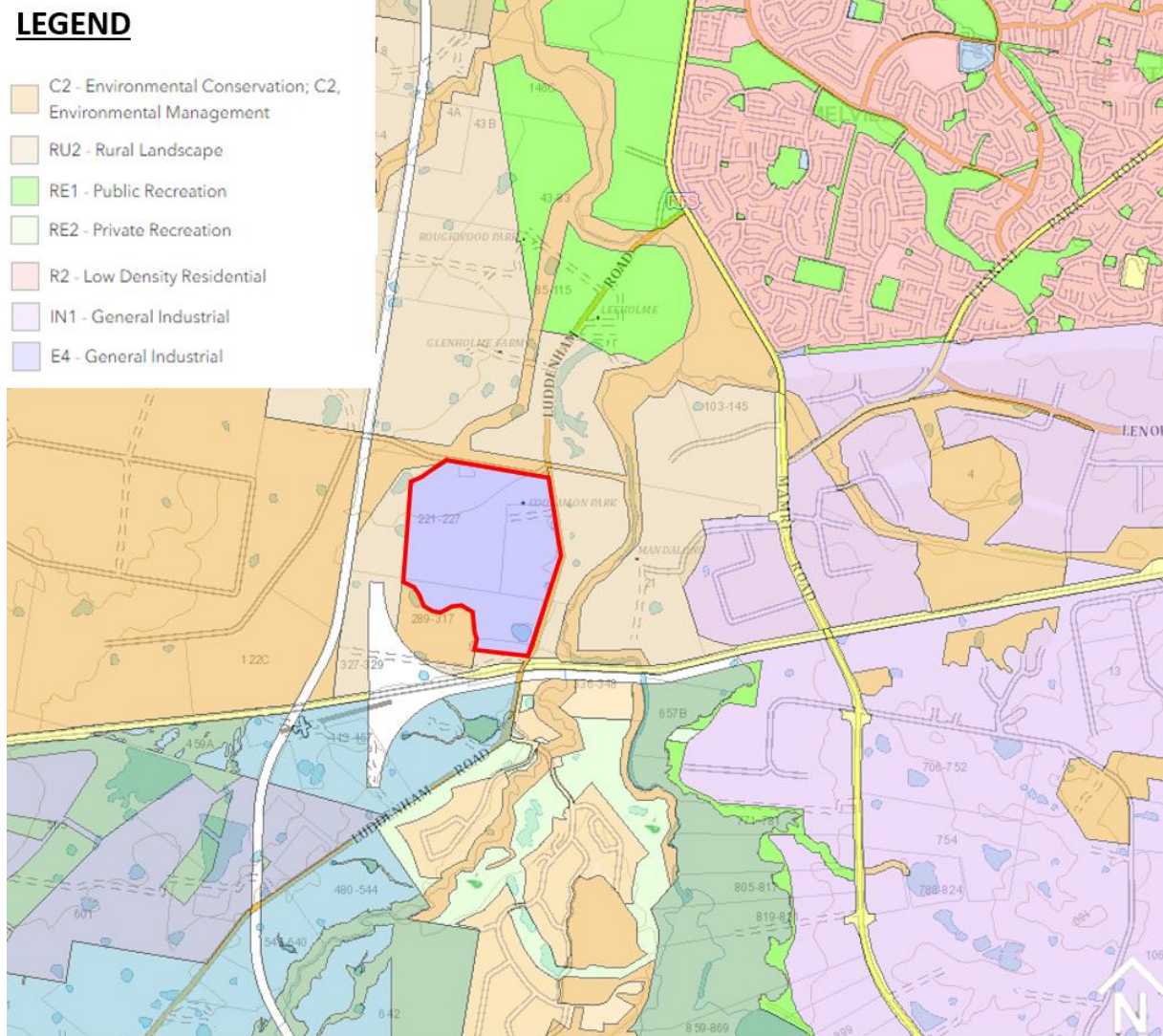


Figure 2-3 Land Zoning Map (Source: ePlanning Spatial Viewer – NSW Planning Portal)

2.3 Road network

The existing roads which will be impacted by the development application are described below:

Luddenham Road

Luddenham Road is a regional road under the control and management of Penrith City Council. Near the site, Luddenham Road is aligned in a general north-east/ south-west direction. It is a two-way road configured with a two-lane, seven-metre-wide carriageway, set within an approximately 21-metre-wide road reserve. Luddenham Road carries approximately 3,000 vehicles per day and has a posted speed limit of 80 km/h. Photos of Luddenham Road in the vicinity of the site are provided in Figure 2-4 and Figure 2-5.



Figure 2-4 Luddenham Road, facing north



Figure 2-5 Luddenham Road, facing south

Patons Lane

Patons Lane is a local road under the control and management of Penrith City Council. Near the site, Patons Lane has a posted speed limit of 50 km/h and is generally aligned in an east/west orientation. It is a two-way road configured with a two-lane, 6.6-metre-wide carriageway with 1.2-metre-wide sealed shoulders on both sides of the road, set within a road reserve that is approximately 19 metres wide.

Stations, Systems, Trains, Operations and Maintenance (SSTOM) Contractors conducted traffic surveys in March 2024 which indicated Patons Lane carries approximately 1,260 vehicles per day, due to the construction of the Sydney Metro project. Lower daily traffic volumes are to be expected once construction of the Metro is completed.

Photos of Patons Lane in the vicinity of the site are provided in Figure 2-6 and Figure 2-7.



Figure 2-6 Patons Lane, facing west



Figure 2-7 Patons Lane, facing east

Mamre Road

Mamre Road is a state road under the control and management of Transport for NSW (TfNSW). Within the context of the study area, Mamre Road is aligned in a north/ south orientation and is currently configured as a two-lane undivided carriageway, set within a 45-metre-wide road reserve.

Mamre Road carries approximately 15,000 vehicles per day and has a posted speed limit of 80 km/h. Mamre Road passes through the Western Sydney Priority Growth Area and provides connections to the Western Sydney Employment Area (WSEA), making it a key route for regional trips.

Photos of Mamre Road close to the intersection with Luddenham Road are shown in Figure 2-8 and Figure 2-9.



Figure 2-8 Mamre Road, facing north (Source: Google Earth)



Figure 2-9 Mamre Road, facing south (Source: Google Earth)

Elizabeth Drive

Elizabeth Drive is a state road under the control and management of TfNSW. It is aligned in an east/west orientation and carries approximately 11,000 vehicles per day.

Elizabeth Drive is configured as a two-lane undivided carriageway with unsealed shoulders and is set within a 35-metre-wide road reserve. The speed limit is posted as 80 km/h in both directions of travel. To the east, Elizabeth Drive connects to the Westlink M7 Motorway and to the west it connects with The Northern Road.

Photos of Elizabeth Drive near the intersection with Luddenham Road is shown in Figure 2-10 and Figure 2-11.



Figure 2-10 Elizabeth Drive, facing east (Source: Google Earth)



Figure 2-11 Elizabeth Drive, facing west (Source: Google Earth)

2.4 Public transport network

2.4.1 Rail

There are no stations close to the subject site. The closest rail stations are at Leppington and St Marys.

2.4.2 Bus

A review of the public transport available in the vicinity of the site indicates that there are three bus services (Routes 775, 776 and 779) that operate in the St Clair/ Erskine Park area to the northeast of the site. No TfNSW bus services connect past the site to the south or have routes that use Luddenham Road.

A school special bus service (Route 4642) operated by Busways, travels south on Luddenham Road once per school weekday in the afternoon, roughly between 3:30pm to 4:00pm. The service bypasses the site and travels towards Twin Creeks Drive before terminating. The 4642 bus service route is shown in Figure 2-12.

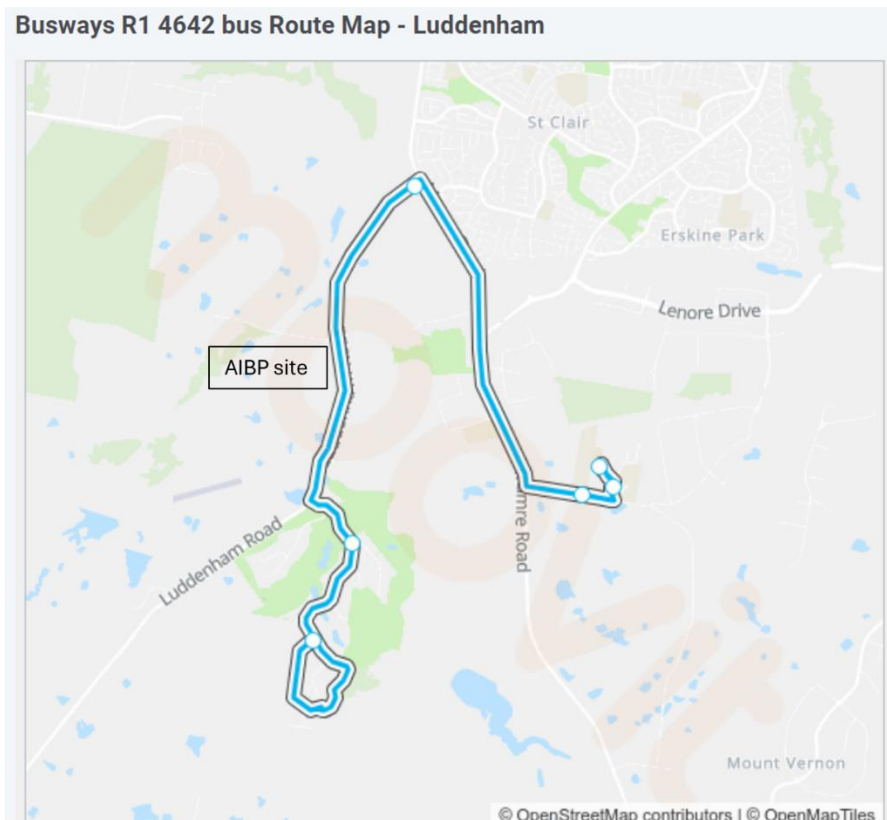


Figure 2-12 Busways school service, Route 4642

2.4.3 Taxi and ridesharing

Taxi and ridesharing opportunities may be available as they are in any location. However, major centres where taxi ranks are located, such as Penrith and Blacktown, may be too distant to provide quick transport options.

Overall, the area is currently underserved by public transport. However, the level of service provision reflects the low travel demands of the locality. Figure 2-13 shows a map of the existing public transport network for the Orchard Hills area.



Figure 2-13 Existing Public Transport Network - Orchard Hills area

2.5 Active transport

There are no dedicated active transport facilities currently around the subject site.

2.5.1 Pedestrian

Pedestrians can walk on the road verges. No facilities are provided for pedestrians

2.5.2 Cycling

There is currently limited cyclist infrastructure provided in the vicinity of the site, mainly due to the nature of land use in the vicinity and the limited demand for such facilities at present.

2.6 Road safety

Historical crash data has been evaluated between 2019 and 2023 as part of this assessment to obtain an understating of current road safety characteristics and trends for Luddenham Road between Mamre Road and Elizabeth Drive. A summary of the crash statistics for crashes occurring along Luddenham Road is provided in Table 2-1.

Table 2-1 Crash history along Luddenham Road for the five-year period between 2019-2023

Crash severity	Year				
	2019	2020	2021	2022	2023
Non-casualty	1	4	2	1	2
Minor/ other injury	-	2	1	-	-
Moderate injury	2	1	1	4	-
Serious injury	-	1	3	1	5
Fatal	-	-	-	-	-
Total	3	8	7	6	7

The crash data revealed:

- A total of 31 vehicles were involved in crashes occurring along the length of Luddenham Road between Mamre Road and Elizabeth Drive over a five-year period between 2019 and 2023, averaging 0.017 per day or 6.2 per year.
- 68 per cent of the crashes resulted in an injury, and there were no fatalities recorded.
- 26 per cent involved vehicles travelling off the road and hitting an object which resulted in an injury.
- 27 per cent of recorded crashes involved a head on collision.
- 47 per cent of recorded crashes involved multiple vehicles in this period.
- 47 per cent of crashes occurred in dusk or darkness conditions.
- Seven per cent of crashes involved vehicles striking animals while travelling along the roadway.

The crash statistics indicate that a relatively high number of crashes involved head on collisions and vehicles colliding objects after veering off the roadway. Any future upgrade to Luddenham Road should address this trend and related safety issues.



Figure 3-2 Existing access points to the site

Following consultation with Sydney Metro, and to minimise congestion through the Luddenham Road and Patons Lane intersection, AIBP construction vehicles are to access and egress the site via the third access point, located one kilometre south of the Luddenham Road and Patons Lane intersection. Sydney Metro's AM peak construction hours are between 7:30-8:30AM, and 4:30-5:30PM, as outlined in *SSTOM – Orchard Hills Stabling and Maintenance Facility EIS*. The proposed construction traffic flow during these hours is provided in Figure 3-3.

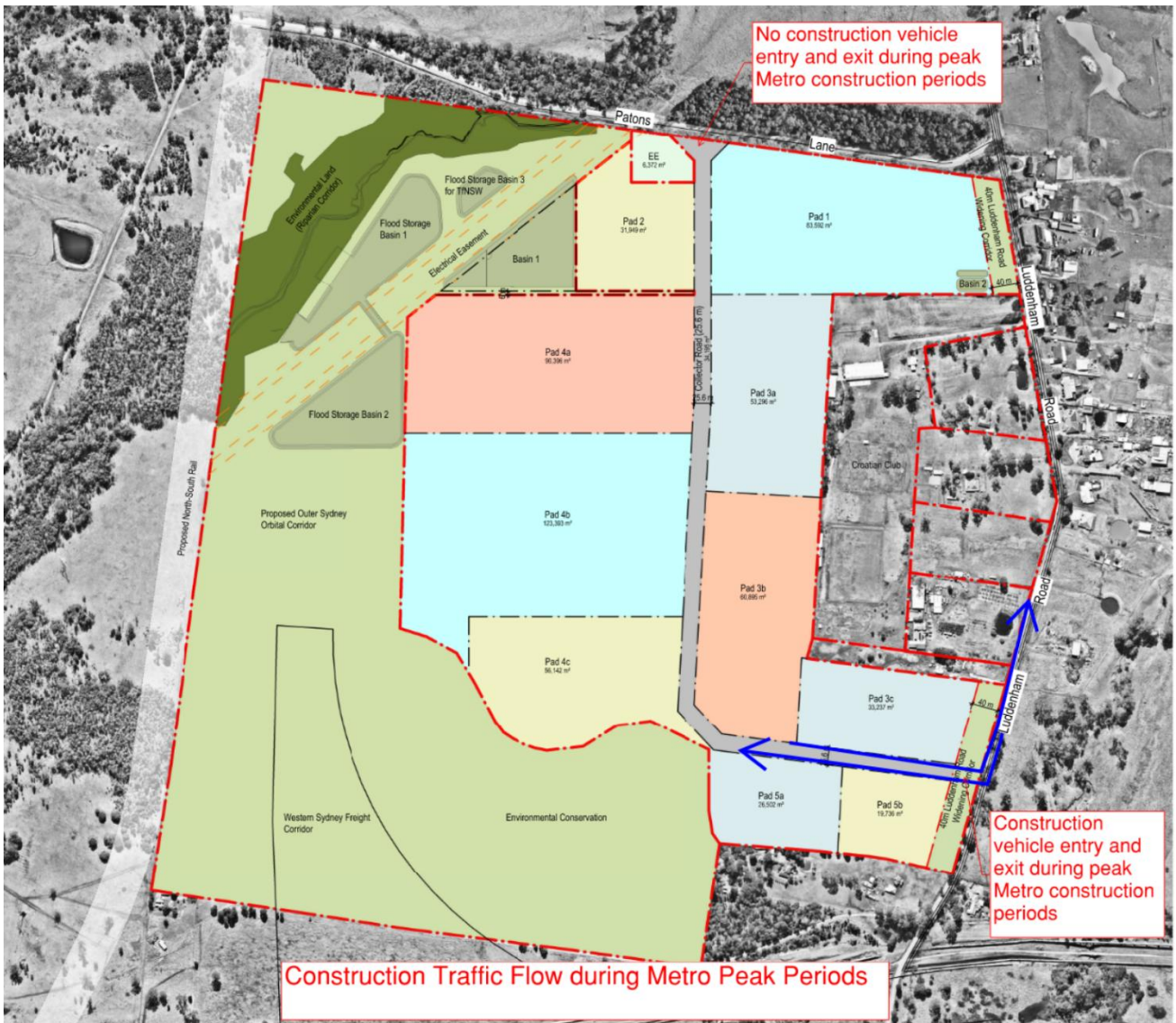


Figure 3-3 Construction traffic flow during Sydney Metro peak periods

During Sydney Metro's off peak hours, it is proposed that construction vehicles will enter the site using the Patons Lane site access via the priority-controlled intersection at Luddenham Road and Patons Lane. Heavy vehicles will exit the site via the third access point. The intensity of the vehicular movements onto Patons Lane will be reduced by enabling heavy vehicles to exit directly onto Luddenham Road via a left turn. The proposed vehicular movement is shown in Figure 3-4.

AIBP peak construction period

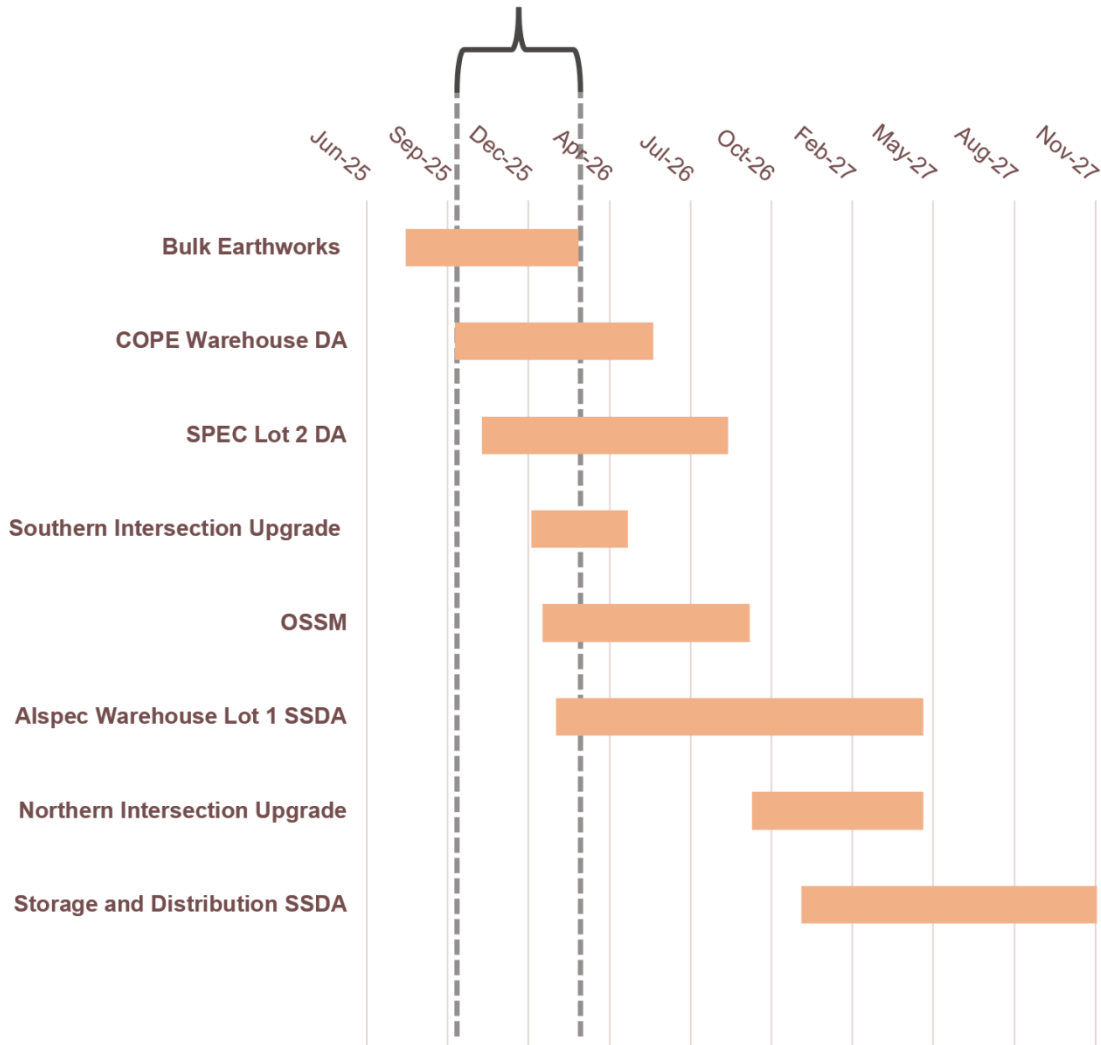


Figure 3-5 Indicative AIBP construction timeline

4 Construction traffic impact assessment

Refer to the associated TIA report for the Storage and Distribution warehouse for the SIDRA model outputs of the construction impact assessment.

4.1 Cumulative construction traffic generation

The estimated peak daily construction traffic volumes for each project are summarised in Table 4-1.

Table 4-1 AIBP peak daily construction traffic volumes - 2025/26

Project	Daily peak construction traffic – two-way movements	
	Light vehicles (LV)	Heavy vehicles (HV)
Bulk earthworks	160	100
COPE warehouse DA	60	20
Southern intersection upgrade	12	20
Alspect warehouse lot 1 SSDA	80	30
SPEC lot 2 DA	50	16
Northern intersection upgrade*	30	80
Storage and distribution warehouse SSDA*	80	35
Total (cumulative assessment)	362	186

*Northern Intersection Upgrade and Storage and distribution warehouse have not been considered in the cumulative construction assessment. See Figure 3-5.

The estimated peak hour traffic generated by the cumulative construction period, inclusive of concurrent AIBP construction activities are presented in Table 4-2.

Table 4-2 Estimated traffic volume for the proposal

Vehicle Type	AM peak hour (7am to 8am)			PM peak hour (4:30pm to 5:30pm)		
	IN	OUT	Total	IN	OUT	Total
Light vehicles (LV)	75	0	75	0	75	75
Heavy vehicles (HV)	10	10	20	0	0	0
Total	85	10	95	0	75	75

It has been assumed that:

- 50 per cent of construction worker employees will arrive and leave site during the peak hours, resulting in an increase of up to 95 vehicle trips along Patons Lane and Luddenham Road in the AM and PM peak hours. These vehicles are assumed to consist exclusively of light vehicles

- Up to 250 heavy vehicle (125 IN, 125 OUT) movements transporting construction equipment, materials, and earthworks is expected per day. It is anticipated that 10 per cent of the heavy vehicles, 25 vehicles, will arrive during the AM peak hour, and seven heavy vehicles are expected to leave in the PM peak hour.
- Light and heavy construction vehicles will enter and exit the southern site access located on Luddenham Road. Heavy vehicles will exit the site from the southern site access and travel northbound. Alternatively, light and heavy vehicles may use Patons Lane to access the site, if permitted by traffic controllers monitoring for congestion on site.
- During AM and PM peak periods, Sydney Metro’s construction traffic will be given priority access to Patons Lane. Communication between AIBP’s and Sydney Metro’s site teams/ traffic controllers will assess the periods during which AIBP traffic can use Patons Lane in coordination with Sydney Metro’s construction traffic.

4.2 Background traffic volumes

4.2.1 Sydney Metro – Western Sydney Airport stabling and maintenance facility

To assess the overall impact of traffic on the performance of Patons Lane and Luddenham Road, traffic generated by the Patons Lane Resource Recovery Centre (RRC) and the Sydney Metro – Western Sydney Airport stabling, and maintenance facility has been included in this assessment.

The Sydney Metro – Western Sydney Airport stabling and maintenance facility will be located at Orchard Hills, south of Blaxland Creek and north of Patons Lane. Access to the facilities is provided by Patons Lane.

Construction of the facility has commenced and is expected to be operational by 2027. It is forecasted that traffic will be generated from the stabling and maintenance facility during its construction and operation.

Peak hour construction traffic movements as reported in the *Construction Traffic Management Plan – SSTOM – Orchard Hills Stabling and Maintenance Facility Environmental Impact Statement (EIS)* and *Park Life Metro (PLM)*, is shown in Table 4-3 and , respectively.

Table 4-3 Peak construction movements in 2024/2025 for the Sydney Metro – Western Sydney Airport Stabling and Maintenance Facility (EIS)

Source: Construction Traffic Management Plan – Orchard Hills Stabling and Maintenance Facility (Table 10)

Vehicle type*	AM peak (7:30-8:30am)			PM peak (4:30-5:30pm)		
	IN	OUT	Total	IN	OUT	Total
LV staff	212	0	212	0	212	212
LV deliveries	2	2	4	2	2	4
HV	8	8	16	8	8	16
Total	222	10	232	10	222	232

Table 4-4 Peak construction movements in 2024/2025 for the Sydney Metro – Western Sydney Airport Stabling and Maintenance Facility (PLM)

Source: Construction Traffic Management Plan – Orchard Hills Stabling and Maintenance Facility (Table 10)

Vehicle type*	AM peak (7:30-8:30am)			PM peak (4:30-5:30pm)		
	IN	OUT	Total	IN	OUT	Total
LV staff	20	0	20	0	30	30
LV deliveries	1	1	2	1	1	2
HV	8	8	16	8	8	16
Total	29	9	38	9	39	48

The cumulative construction assessment has incorporated background traffic volumes from Figure 4-1, along with Table 4-3 and on Patons Lane.

Oversize overmass (OSOM) vehicles are expected to access the SSTOM site during 2025 and 2026, for deliveries of large items such as rolling stock, transformers and other large components. While there is no confirmed timeframe for OSOM vehicles required for SSTOM's construction site at this stage, OSOM deliveries are expected to be completed under full traffic control and using escort vehicles. Sydney Metro will provide notice of their scheduled deliveries to ensure access via Patons Lane is maintained and potential conflicts are managed. AIBP construction vehicle movements are anticipated to occur between 6am and 6pm only. SSTOM's OSOM vehicles will be provided priority access to Patons Lane once the delivery timeframes and scheduling are known.

4.2.2 Luddenham Road and Patons Lane traffic survey

Matrix was commissioned between Monday 24 March to Friday 28 March 2025, to provide five-day intersection traffic counts at the Luddenham Road and Patons Lane intersection. The survey captures current construction traffic volumes for the Sydney Metro stabling and maintenance facility and traffic generated by the operational Patons Lane Resource Recovery Centre.

To align with this assessment, the five-day survey data for the AM period between 6am and 9am and PM period between 3pm and 6pm was analysed. AM and PM peak hours for assessment were determined by taking the highest combined hourly northbound and southbound through movements on Luddenham Road from the survey. As a result, the AM peak hour assessed was based on survey data on 27 March, between 7am and 8am, while the PM peak hour assessed was based on survey data on 26 March, between 4:30pm and 5:30pm. The survey counts for the AM and PM peak have been summarised in Figure 4-1.

2025 Survey – AM (7am-8am)

2025 Survey – PM (4:30pm-5:30pm)

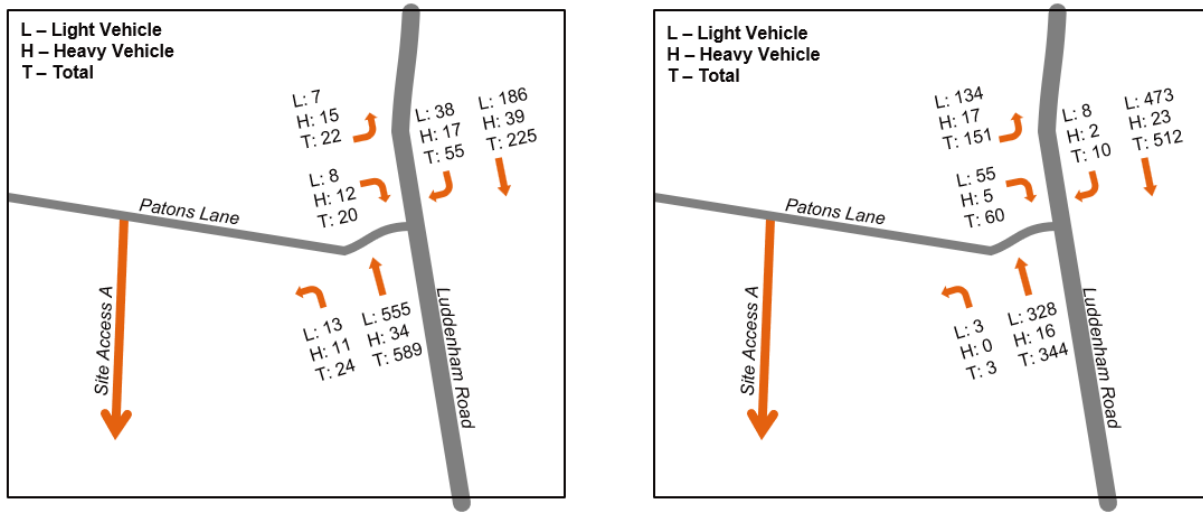


Figure 4-1 Matrix survey (2025) Luddenham Road / Patons Lane intersection counts

Furthermore, as part of the on-going consultation process, Sydney Metro / Park Life have provided traffic volumes during the identified survey peak periods illustrated above for the existing stabling and maintenance facility construction site. The traffic attributed to the existing Sydney Metro construction site is summarised in Table 4-5 below.

Table 4-5 Survey (2025) - Sydney Metro construction traffic volumes

Vehicle Type*	AM peak (7:00-8:00am)			PM peak (4:30-5:30pm)		
	IN	OUT	Total	IN	OUT	Total
LV	10	2	12	0	68	68
HV	2	6	8	1	5	6
Total	12	8	20	1	73	74

For the assessment, an annual traffic growth rate of 2.5% has been applied to the survey data. Sydney Metro construction traffic volumes above have been deducted from the peak construction traffic anticipated by the stabling and maintenance facility (refer Table 4-3).

4.2.3 Other construction surrounding the site

M12 Motorway Project

The M12 Motorway Project expects its peak construction volumes to occur in 2024. However, within the M12 Motorway EIS, Section 6.2.3 of Transport and Traffic describes the site access routes for the project, which is via Elizabeth Drive, Mame Road, The Northern Road and Wallgrove Road (Source: *M12 Motorway Amendment Report, Section 6.2*) The construction traffic assessment did not include Luddenham Road and Patons Lane as an access route during construction. Therefore, the cumulative traffic impact for this TIA did not consider the expected traffic induced by the M12 Motorway.

Western Sydney Airport

Construction for the Western Sydney Airport (WSA) is underway and expected to be completed by 2026. The WSA EIS report describes the construction traffic accesses the site via Elizabeth Drive, Anton Road, The Northern Road, and Badgerys Creek Road. The construction traffic assessment did not include Luddenham Road and Patons Lane as an access route during construction. Therefore, the cumulative traffic impact for this TIA did not consider the expected traffic induced by WSA.

4.2.4 Construction impact

For this assessment, the existing intersection of Luddenham Road and Patons Lane, with a through lane in each direction on Luddenham Road, a southbound right-turn lane from Luddenham Road into Patons Lane, and a left and right turn approach lane out of Patons Lane into Luddenham Road was modelled to assess:

- **Base Case** – 2025 traffic conditions, as per survey conducted by Matrix and calibrated to reflect the surveyed queue lengths.
- **Scenario A** – 2025 traffic conditions, as per survey conducted by Matrix and calibrated to reflect the surveyed queue lengths, Sydney Metro peak EIS construction traffic, without construction traffic from AIBP works.
- **Scenario B** – 2025 traffic conditions, as per survey conducted by Matrix and calibrated to reflect the surveyed queue lengths, Sydney Metro peak EIS construction traffic, cumulative peak hour AIBP construction traffic demand directed through the Patons Lane access.
- **Scenario C** – 2025 traffic conditions, as per survey conducted by Matrix and calibrated to reflect the surveyed queue lengths, Sydney Metro peak EIS construction traffic, cumulative peak hour AIBP construction traffic demand directed through the alternate access further south on Luddenham Road.

The results of the SIDRA assessment for the scenarios identified above is provided in Table 4-6.

Table 4-6 SIDRA modelling outputs - construction

Year	Intersection	Intersection treatment	Peak hour	Volume	Max. queue (m)	Average delay (sec)	DoS	LoS
2025	Base Case - Luddenham Rd/Patons Lane	Sign controlled intersection	AM	984	10	42.9	0.353	D
			PM	1137	64	84.9	0.888	F
	Scenario A - Luddenham Rd/Patons Lane	Sign controlled intersection	AM	1048	16	52.0	0.394	D
			PM	1151	90	100.8	0.947	F
	Scenario B - Luddenham Rd/Patons Lane	Sign controlled intersection	AM	1175	18	67.9	0.464	E
			PM	1234	372	297.1	1.244	F
	Scenario C - Luddenham Rd/Patons Lane	Sign controlled intersection	AM	1138	18	65.8	0.453	E
			PM	1211	183	193.5	1.106	F

For sign controlled intersections, the level of service is taken as the worst approach at the intersection. The following conclusions have been drawn from the construction traffic modelling results:

- Scenario A's results for the PM peak period indicates the existing intersection exceeds capacity due to Sydney Metro's peak construction phase, without any AIBP development. PM peak traffic volumes result in a LoS F for the existing intersection, with major treatment or traffic control measures to be implemented
- Furthermore, Scenario B's results which includes the cumulative peak construction traffic from AIBP, reduces the intersection performance to LoS E during the AM peak. The average delay during the PM peak hour is significantly increased when compared to Scenario A.
 - Note that Scenario B assumes all AIBP construction traffic will access the site from Patons Lane
- Scenario C assumes all AIBP construction traffic accesses the site via the southern access driveway, resulting in reductions to the max queue length and average delay when compared to Scenario B
- For each modelled scenario, the DoS and max queue lengths during the PM peak are governed by the Patons Lane approach. This highlights the need for Patons Lane to be upgraded to be able to handle the demand volumes for construction and development traffic.

Modelling results indicate that AIBP construction vehicles should access the site via the southern access driveway during peak periods.

To manage traffic access at the intersection of Luddenham Road and Patons Lane, when AIBP construction vehicles are using Patons Lane for access and egress during off peak periods, full time traffic control is recommended to be implemented at the intersection. Full time traffic controllers are also to be implemented while the southern access driveway on Luddenham Road is being used for AIBP construction vehicles. Traffic control will constantly monitor traffic flow through these intersections and communicate on site to distribute construction vehicle access, avoiding congestion. In addition, to reduce the impact of construction traffic associated with AIBP's cumulative construction activities, vehicles exiting the site would be required to turn left out of Patons Lane and/ or the southern access onto Luddenham Road towards Mamre Road.

4.3 Construction parking arrangements

During the site establishment phase, temporary or permanent parking arrangements are recommended to be constructed in an area of the site that does not impact the warehouse construction. Construction workers will be able to arrive and leave the site safely within this area each day, separated from the heavy vehicle access point. An option for the location of the parking area would be within the proposed private vehicle car park within the subject site as shown in Figure 4-2. Alternatively, temporary parking arrangements could be made elsewhere within the site, subject to the confirmation of construction staging.

To accommodate the estimated construction staff within the site (Table 4.1), 40 temporary private vehicle car spaces should be provided within the site boundary.

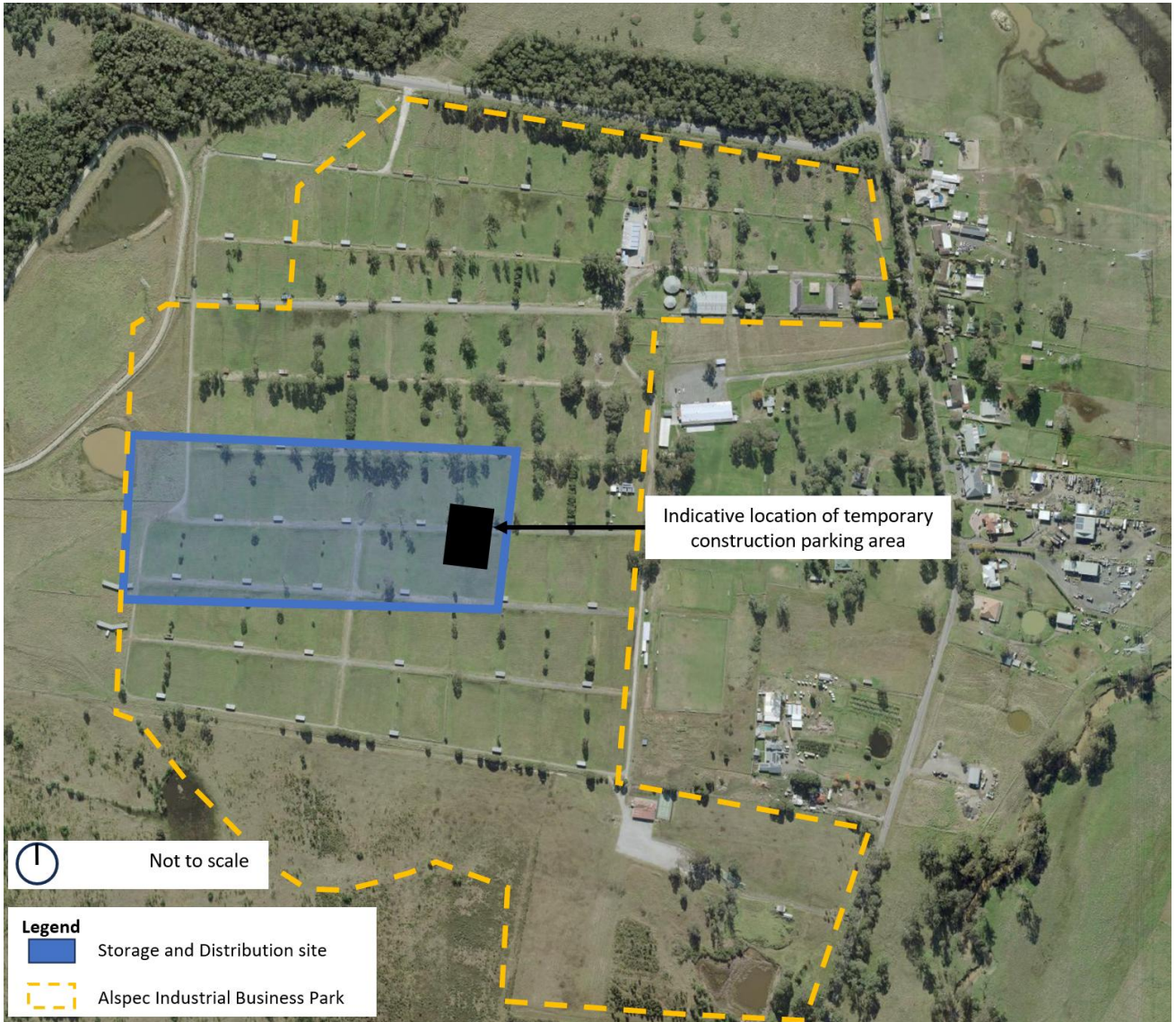


Figure 4-2 Indicative construction parking area

5 Construction impact mitigation measures

The following section outlines the broader construction traffic management approach, impact and likely mitigation measures required to support the construction works associated with storage and distribution warehouse SSDA.

Further documentation will be developed to manage related traffic impacts as required.

5.1 Management principles

The primary objectives of this CTMP are to:

- Maximise public safety
- Minimise disruption to pedestrians, cyclists and motorists
- Ensure construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site
- Ensure buses services run on time with no disruption to routes and stops, where possible
- Minimise changes to traffic operation and kerbside access
- Minimise construction traffic generation during network peak periods
- Maintain access to properties and businesses
- Work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts
- Incorporate innovative and improved approaches to minimise the impact of construction traffic.

5.2 Traffic management approach

5.2.1 Haulage routes and site access

Construction heavy trucks are expected to access the site via Patons Lane. Most heavy vehicles are expected to travel via Mamre Road that connects to Luddenham Road to access the site, with vehicles turning left into the site, and right out of the site. While main vehicular access will be via Patons Lane, heavy vehicles are permitted to use the exit located one kilometre south of the Luddenham Road.

The access and egress routes are to be utilised by all construction vehicles associated with the site and represents the shortest, two-way radios or application-based solutions route between the local and arterial road network – minimising the impacts of the civil and construction phases. No trucks are to be queued on local roads. Communication via mobile phones should be used to coordinate truck arrivals.

Based on the findings from the Bulk Earthworks TIA (Arcadis, January 2025), peak construction activity may result in higher wait times for traffic exiting Patons Lane to enter the surrounding road network. A summary of the likely haulage routes is provided in Figure 5-1.

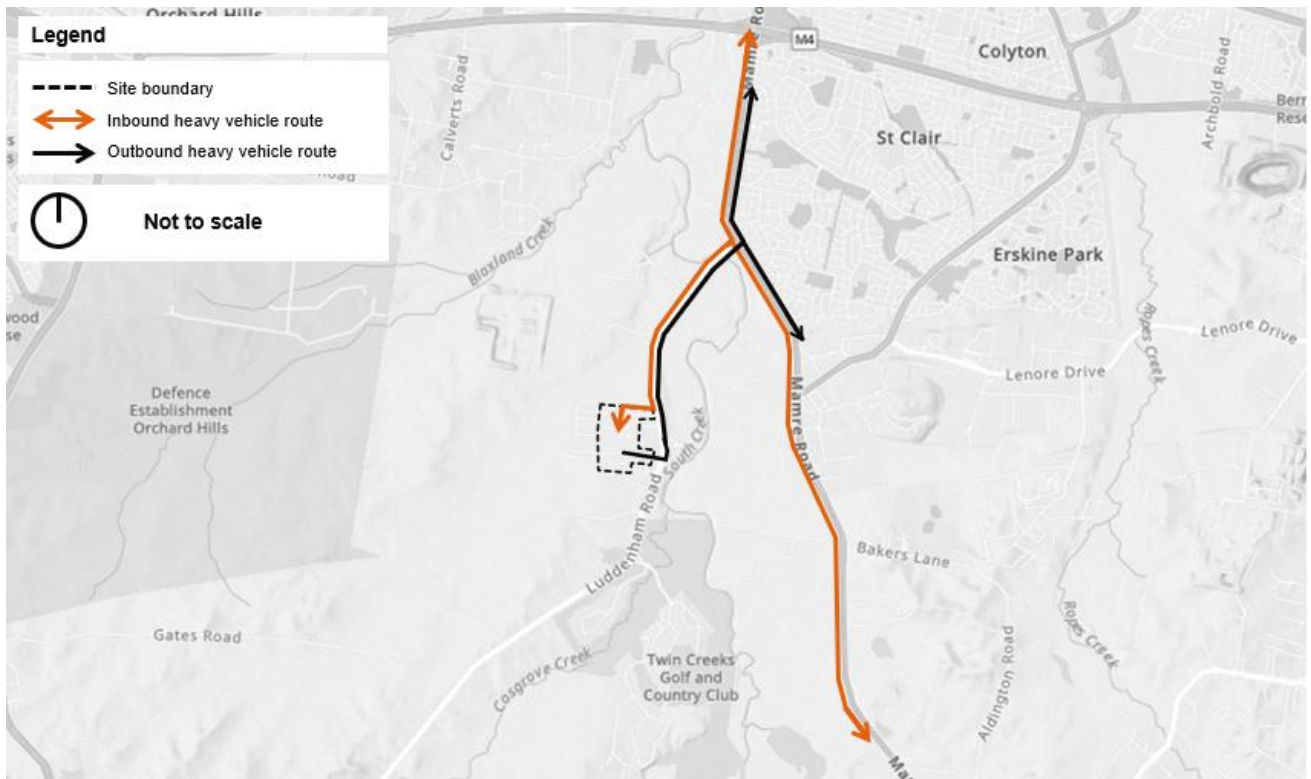


Figure 5-1 Proposed haulage routes for the storage and distribution warehouse construction phase.

5.2.2 Construction hours

Construction would largely be carried out during standard construction working hours in accordance with the Interim Construction Noise Guideline (DECC, 2009) and the Transport Guidelines on Noise Management and Noise Mitigation:

- Monday – Friday 7am – 6pm
- Saturday 8am – 1pm
- Sunday No work.

5.2.3 Cranage and materials

Delivery of materials, equipment, machinery, etc will be always undertaken within the confines of the project site boundary. If the site is required to use a mobile crane (or equivalent), these will also need to be contained within the site, along with any storage of equipment and materials.

5.2.4 Works zone

No Works Zones along Luddenham Road / Patons Lane are proposed. All civil and construction works will take place within the work site.

In the event that the implementation of any temporary traffic control measures on public road/ road related area the contractor will obtain a Road Occupancy Permit (ROP) from the relevant road authority. If excavation and/or road opening works on a public road is required, the contractor will obtain a Road Opening Permit.

5.2.5 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.

5.2.6 Signage and delineation

Signage where required, should be displayed during both daytime and at night with the retroreflective material used for the signs meeting the requirement for Class 1W sheeting as specified in AS1906.1. Additional to the requirement for the Class 1W retro-reflectivity all signs shall be free from defects, such as being bent or broken, and be kept free from accumulated dirt, road grime and other contaminants. Only "B" size signs should be used for the T-Series signs where there are both sizes "A" and "B" available. This should be updated during further documentation once Traffic Guidance Schemes (TGSs) are developed for the works.

Advisory truck turning signage shall be installed at the compound area access locations where heavy vehicle turn movements would occur.

5.2.7 Authorised traffic controllers

There is a requirement for an authorised traffic controllers to be present throughout the bulk earthworks, and construction stages of the project. The responsibilities include:

- Implementation of the relevant Traffic Control Plan.
- On-site traffic controllers to be required to manage and direct/ manage traffic at the Patons Lane/Luddenham Road intersection to minimise queue lengths and delays for vehicles during construction hours, prioritising Sydney Metro construction traffic.
- Pedestrian and cyclist management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur
- Supervision of all vehicle movements across pedestrian footpaths at all times
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project.

Traffic Guidance Schemes (TGS) will be prepared prior to the commencement of works, which will detail any proposed work zones, location of traffic controllers and associated traffic management measures.

5.2.8 Pedestrian and cycling management

There are currently no existing footpaths or cycleways located along Luddenham Road adjacent to the project boundary. Consequently, during construction, it is anticipated there will be very few pedestrians and cyclists impacted by the works for this proposal. In addition, construction activities generally will be confined within the project boundary and would require an exemption to cross over onto the existing Luddenham Road width.

Traffic controller(s) will be located at the site accesses to manage pedestrian and vehicular traffic to ensure public safety while construction vehicles enter and exit the site. Pedestrians will not be directed to use the other footpath by use of signage alone. Also, traffic controls would need to be in accordance with AS1742.3 and TfNSW 'Traffic Control at Worksites' manual at all times.

Should any unforeseen activities require the temporary closure of any pedestrian access, a TGS should be developed and implemented by the contractor to ensure a safe alternative for pedestrians traversing these routes near the site.

The following key principles would guide the development of safe active transport arrangements:

- Pedestrians and bicycle riders will be always kept clear of work sites. Construction areas will be defined by temporary pedestrian fencing.
- Where crane lifts extend beyond construction boundaries, pedestrians will be actively managed by the appropriate measures
- Crossing facilities and associated signs will be maintained where possible. If access to an existing crossing cannot be provided, alternative facilities as close as possible to the established crossing are to be provided
- Traffic management in the form of lowered speed limits will be implemented to facilitate a safer environment for pedestrians who may have been displaced from the footpath as a result of construction work
- Bicycle rider needs and visibility will need to be considered in providing lighting at night, where deemed necessary
- Roadworks signs will be positioned above the head height of bicycle riders
- Adjacent to the work site, pavement surfaces will be maintained in a clean smooth state to ensure Bicycle riders' comfort and safety. The edges of temporary surfaces will be 'feathered' to remove any hazardous edges.

5.2.9 Public transport

There are no current public transport routes operating adjacent to the site. As a result, no impacts are expected on the rail and bus networks for this proposal.

5.3 Construction mitigation measures

A range of mitigation and management measures would be needed to manage the impacts to traffic and transport during construction. These include:

- For each stage of construction, detailed Traffic Guidance Schemes would be prepared and implemented in accordance with the Traffic control at work sites, version 6.1 (TfNSW, 2022) by suitably qualified personnel.
- Dilapidation surveys of roads around the proposal area would be undertaken prior to their use for construction as well as after construction is complete. Any damage to roads will be repaired.
- When AIBP construction vehicles are using Patons Lane for access and egress during off peak periods, full time traffic controllers will be located at the Luddenham Road and Patons Lane intersection, east of the Patons Lane site access. In addition, full time traffic controllers will be located at the existing site access driveway on Luddenham Road, south of the existing Luddenham Road and Patons Lane intersection. This will ensure that traffic movements to/ from the AIBP site are coordinated with Sydney Metro construction vehicle movements, minimising disruptions for Sydney Metro's construction activities and deliveries.
- AIBP construction vehicles are restricted from using Patons Lane during Sydney Metro peak construction hours, which are between 7.30 AM and 8.30 AM, and 4.30 PM and 5.30 PM weekdays.
- During off peak hours, it is recommended that a one-way southbound flow arrangement through the construction site is adopted (refer Figure 3-4), where ingress would be via Patons Lane, and egress would be via the newly proposed southern intersection on Luddenham Road.
- During the AM and PM peak hours, Sydney Metro construction traffic will be given priority access via Patons Lane. The impacts of this mitigation measure have been modelled in Scenario C, where AIBP construction traffic demand exclusively uses an additional access located on Luddenham Road, south of Patons Lane.

- Traffic surveys are to be undertaken during construction (approximately once every three months) around the site of works, to monitor how the site is being accessed by AIBP vehicles and to give confidence that AIBP construction traffic is not contributing to delays for Sydney Metro construction vehicles. These surveys will also enable AIBP to monitor their contribution to the traffic on the surrounding road network throughout the construction period.
- Patons Lane access must always be maintained to not impede on Sydney Metro's construction activities. AIBP construction vehicles are not permitted to access the site during critical OSOM deliveries for Sydney Metro. OSOM deliveries such as rolling stock and transformers will have priority access to Patons Lane, with the Sydney Metro team providing notice to the AIBP site team of their delivery schedule.
- All vehicles accessing the site for the purpose of material delivery and construction works would be fitted with safety flashing lights located on the top of the vehicle and functioning reverse beepers. All operators will be licensed for the particular item of plant/ equipment and will demonstrate competence in the use of the plant/ equipment as part of the site management and safety plan.
- Direct access at the frontages would be provided with adequate sight distances relating to the posted road speed. This will allow vehicles on the main road to see vehicles emerging from the construction compound and will allow ample room to slow down and stop if necessary. Similarly, it will allow vehicles waiting to emerge from the site access, adequate sight distance to see approaching vehicles and determine acceptable gaps for them to enter the main road traffic.

Site access to Sydney Metro Western Sydney Airport stabling and maintenance facility

Patons Lane is the sole vehicular access road to the Sydney Metro Western Sydney Airport stabling and maintenance facility. Access to the Sydney Metro facility along Patons Lane must be always maintained as there are no alternative access options. Ongoing stakeholder consultation with Sydney Metro's D&C is required during construction to understand the vehicular movements associated with the stabling and maintenance facility and to mitigate any reduction in access and negative traffic impacts.

5.4 Monitoring and review

5.4.1 Work site inspections, recording and reporting

To inspect, review and audit the temporary traffic management (TTM) arrangements implemented on site, the following actions are to be undertaken by suitably qualified personnel in accordance with Traffic Control At Work Sites (TCAWS) 6.0 requirements during all phases of construction, being:

- Shift TTM inspections to be undertaken twice per shift by site personnel
- Monthly TTM inspection to ensure the TMP and relevant TGSs are appropriate and operating in a safe and effective manner.

5.4.2 Stakeholder notification

In the event that any disruptions to roadways/ footpath occur as a result of construction works, the procedure outlined below is to be followed:

- If any future disruptions to roadways/ footpaths are required, Penrith City Council and/ or TfNSW is to be notified first and depending on the extent of the disruption the contractor is to notify affected property occupiers using letter drops and Variable Message Sign (VMS)

- If any unforeseen disruptions to roadways/ footpaths occur, Penrith City Council and/or TfNSW is to be notified first and depending on the extent of the disruption the contractor is to notify affected property occupiers via traffic controllers and the construction management team
- In the event that heavy vehicle damage to Penrith City Council and/ or TfNSW/ TfNSW assets/ infrastructure, contractors will notify Penrith City Council's Traffic and Transport team and/ or Assets Branch.

6 Summary

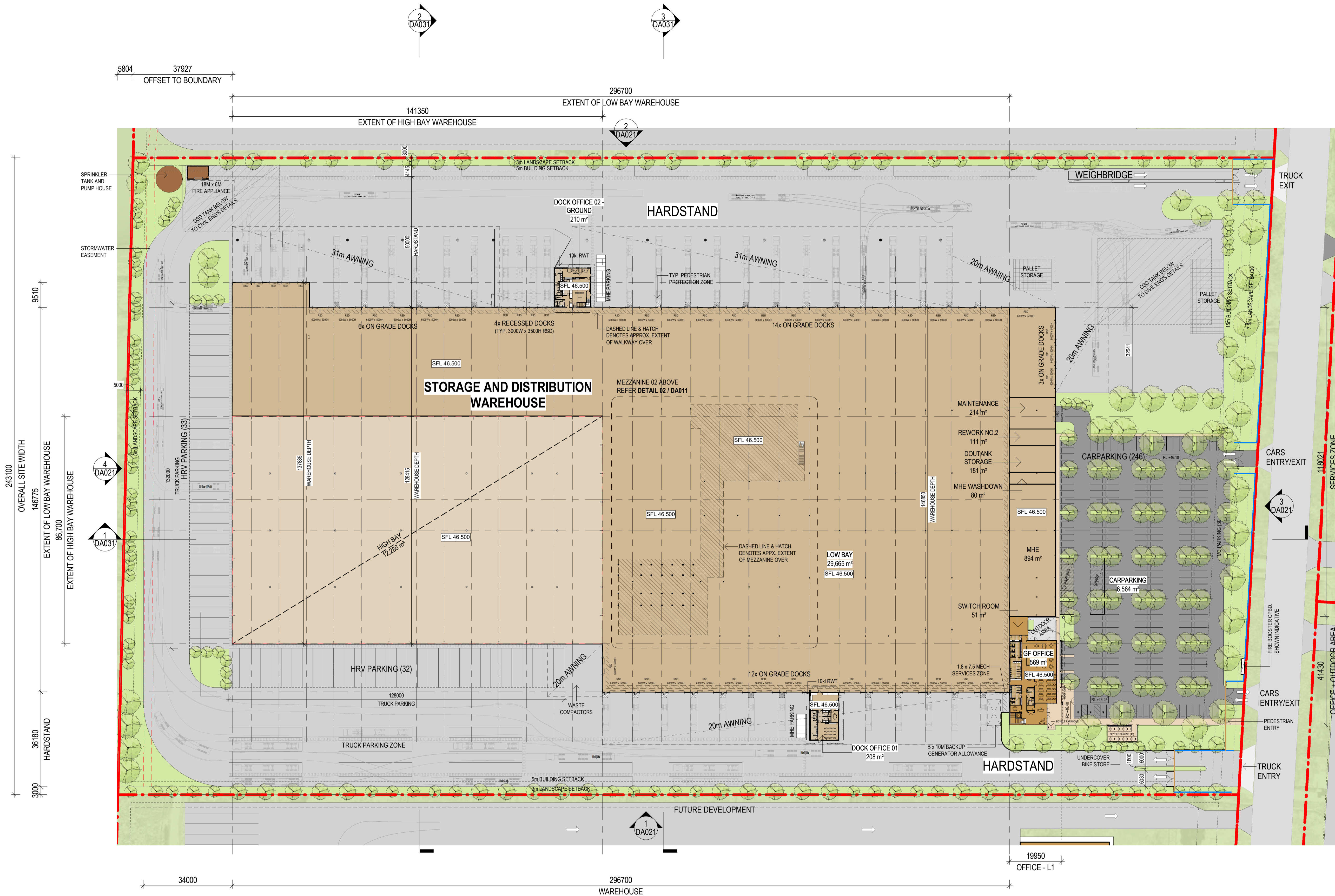
Based on the analysis and discussions presented within this CTMP, the following conclusions are made:

- The proposal is for the construction of a storage and distribution warehouse within the AIBP
- Heavy vehicle exit route will be separate from the construction workers private vehicle access, to minimise traffic congestion within the AIBP internal road network
- Minimal impacts are expected during construction for pedestrians and cyclists
- Road traffic impacts will require monitoring, suitable traffic management implementation and coordination with other construction sites in the vicinity, such as Sydney Metro
- Traffic impacts like higher waiting times are expected on surrounding road network due to peak construction activity
- Any traffic impacts associated with the proposed works and construction within the Orchard Hills district can be managed to reduce impact on the transport network.

It is recommended that:

- Site access is to be guided by the three options outlined in Section 3.1. Sydney Metro construction traffic will have priority access through the Luddenham Road and Patons Lane intersection during the 7:30-8:30am and 4:30-5:30pm peak periods. Outside of peak periods, traffic controllers will monitor traffic on site and advise AIBP construction vehicles of the appropriate site access and egress points.
- Construction signage is to be placed on the approaches to the proposed site, visible for each transport mode, warning the public of the construction works
- Significant construction vehicles are to be fitted with safety flashing lights located on the top of the vehicle and functioning reverse beepers, with certified personnel operating them
- Temporary parking zones are to be set up within the construction site to allow workers to access a safe, separated area which will not impede on any of the warehouse construction activities
- Consultation be conducted with local council and relevant community stakeholders to ensure traffic changes during the works are communicated and managed.

Appendix A **Site plans**



STORAGE AND DISTRIBUTION...	
LUDDENHAM ROAD, ORCHARD HILLS	
SITE AREA (m²)	104,959
Total Building Foot Print	44,593
WAREHOUSE AREA - GROUND FLOOR TOTAL (m²)	41,950
LOW BAY AREA (m ²)	29,665
HIGH BAY AREA (m ²)	12,285
WAREHOUSE AREA - MEZZANINES TOTAL (m²)	2,708
MEZZANINE 1 AREA (m ²)	2,385
MEZZANINE 2 AREA (m ²)	323
TOTAL WAREHOUSE AREA (m²)	44,658
MHE	894
MHE WASHDOWN	80
MAINTENANCE	214
REWORK NO.02	111
DOUTANK STORAGE	181
SWITCHROOM - MSB	51
PUMP ROOM AND TANKS	125
TOTAL SERVICES AREA (m²)	1,656
WAREHOUSE & SERVICES AREA	46,314
DOCK OFFICE 01(m ²)	208
DOCK OFFICE 02 (m ²) - Ground	210
DOCK OFFICE 02 (m ²) - Level 1	210
MAIN OFFICE (m ²) - Ground	569
MAIN OFFICE (m ²) - Level 1	646
TOTAL OFFICE AREA (m²)	1,843
TOTAL GLA AREA	48,157
FSR	0.46
PARKING	
BICYCLE PARKING	46
MOTORCYCLE PARKING	30
VEHICLE PARKING	
CAR PARKING	246
HRV PARKING	64
B-DOUBLE PARKING	19
TOTAL VEHICLE PARKING	329
EXTERNAL AREAS	
CANOPIES	12,062
CAR PARKING	6,564
HARDSTAND	30,939
LANDSCAPE AREA	10,134
LIGHTDUTY CONCRETE	n/a
PAVEMENT - BRUSHED CONCRETE	n/a
PAVEMENT - EXPOSED CONCRETE	570
OUTDOOR AREA	97
TOTAL	48,304
TOTAL	10,134
LANDSCAPE PERCENTAGE	10%



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