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# **Development Application – Transport Assessment**

24 - 27 Lambridge Place, Penrith

3/09/2021  
P1777



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## Document Control

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	02/09/2021	Draft	M. Tangonan	A. Rasouli
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### APPENDICES

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#### Appendix A. Swept Paths

# Glossary

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

# 1 Introduction

## 1.1 Overview

Ason Group has been commissioned by Vaughan Construction to prepare a Transport Assessment (TA) for a proposed expansion to an existing warehouse development at 24-27 Lambridge Place, Penrith (the Site). The proposal consists of a freezer facility, shed storage, hardstand and parking area to service an existing facility to the Sites' west. The Site is located within the Penrith City Council (PCC) Local Government Area (LGA); the Proposal is therefore subject to that Council's controls.

A location plan is presented in **Figure 1** to demonstrate the extent of the Site in relation to the existing road network in this immediate vicinity.



Figure 1: Site Location

This TA provides an assessment of the relevant traffic, transport and parking implications of the Proposal.

## 1.2 References

In preparing this TIA, Ason Group has referenced key planning documents, these include Penrith City Council Development Control Plan (2014).

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

- Roads and Maritime Services, *Guide to Traffic Generating Developments* (RMS Guide)

- Roads and Maritime Services, *Technical Direction – TDT 2013/04a*, August 2013
- Australian Standard 2890.1: Parking Facilities – Off Street Car Parking (AS 2890.1:2004)
- Australian Standard 2890.2: Parking Facilities – Off-street commercial vehicle facilities (AS 2890.2:2018)

# 2 Overview of the Proposal

## 2.1 Summary of the Proposed Development

A detailed description of the Proposal is provided within the Statement of Environmental Effects prepared separately by the project team Planning.

The Proposal consists of an expansion to an existing development situated at 24-27 Lambridge Place, Penrith. Foodboss Transport Pty Ltd, the existing tenancy for the Site, specialize in cold storage warehousing and transportation. **Table 1** below summarises key aspects of the Proposal as they relate to traffic and parking considerations:

TABLE 1: PROPOSED EXPANSION YIELD		
Element	Yield	Purpose
Freezer Facility	878 m <sup>2</sup> GLA	Additional freezer warehouse to supplement existing facility adjacent to the property.
Storage Shed	306 m <sup>2</sup> GLA	Storage area for miscellaneous equipment.
Battery Recharge	150 m <sup>2</sup> GLA	Equipment charging.
Parking	23 Parking spaces (inc. 1 accessible space)	Provisional parking.

It is noted that the proposed development already exists in some operational capacity in its existing state. Thus, the proposed development intends to formalize and supplement the hardstand area based on existing traffic movements and patterns related to the Site.

Reference should be made to the plans prepared by Pace Architects which are submitted separately. A reduced copy of the locality plan is reproduced at a reduced scale for context in **Figure 2**.

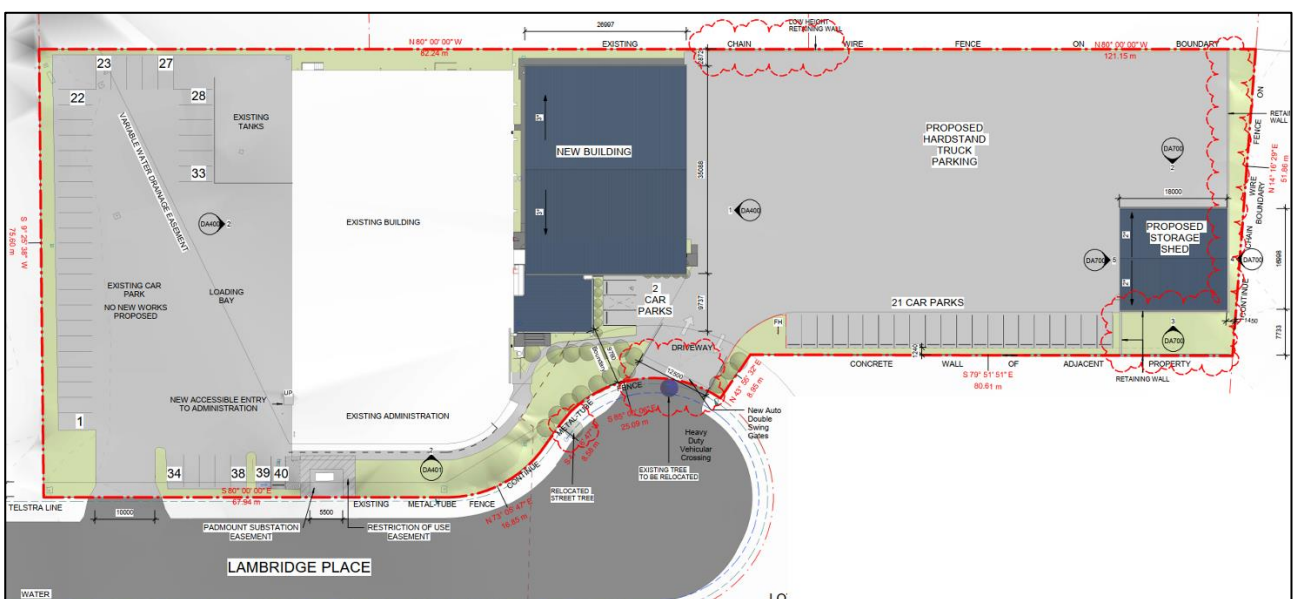


Figure 2: Reduced Architectural Plans



## 2.2 Proposed Access Arrangement

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The Proposal retains an existing access location to and from Lambridge Place cul-de-sac. There are no additional Site accesses or crossovers planned as part of the Proposal.

Consequently, the Proposal seeks the widening of the existing access crossover to allow for the servicing of 19m Articulated Vehicles (AV) simultaneously.

# 3 Existing Conditions

## 3.1 Site & Location

The Site is located at 24-27 and 22-23 Lambridge Place, Penrith and is legally known as Lot 11 and 12 in DP1087962. A site location is presented in **Figure 3** providing the context of the site in the broader road network.

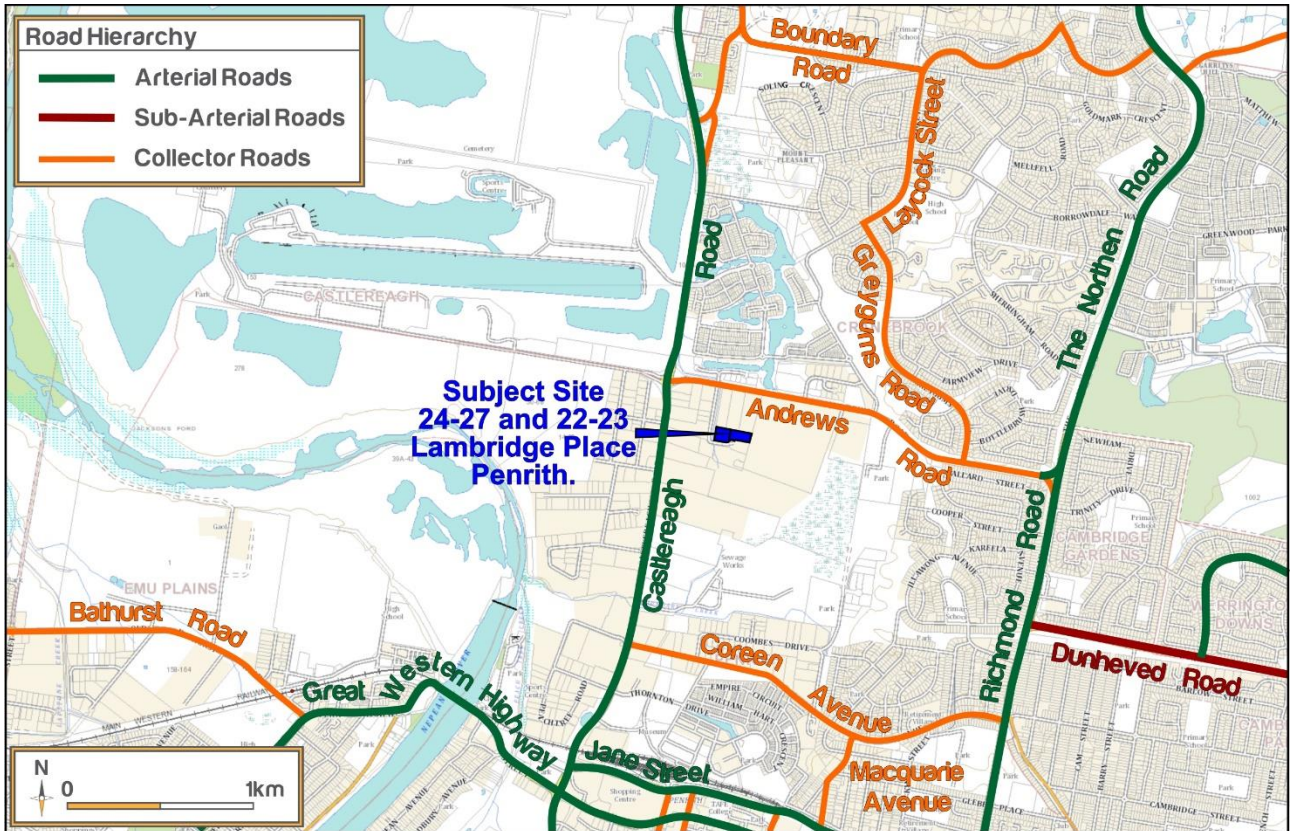


Figure 3: Site & Location

### 3.1.1 Existing Land Use

The existing Site is zoned IN1 General Industrial under the Penrith Local Environmental Plan 2010 (LEP). Currently, the land forms part of an existing development at 24-27 Lambridge Place, Penrith, and serves as a truck waiting area, trailer storage facility and driver parking area.

The existing on-site building is currently being utilised as a temperature-controlled warehouse facility for Foodboss Transport Pty Ltd and constitutes a total of 2,676 m<sup>2</sup> GLA, and a provision of 40 parking spaces for staff, employees and visitors.

### 3.1.2 Existing Site Characteristics

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Based on advice provided by the client, the warehouse currently operates 24 hours a day, 7 days a week. A total of 33 staff are employed on-site at the facility (24 during day shift, 9 during afternoon shift). Typical weekdays movements for commercial vehicles demonstrate approximately 60 vehicle trips (in and out) throughout the operational period on average.

Based on a first principles' assessment, the warehouse indicatively generates the following vehicle trips as broken down in **Table 2**.

<b>TABLE 2: EXISTING SITE TRAFFIC GENERATION (FIRST PRINCIPLES)</b>		
	<b>AM Peak</b>	<b>PM Peak</b>
<b>Staff Movements<sup>1</sup></b>	12	12
<b>Commercial Vehicle Movements<sup>2</sup></b>	6	6
<b>Total</b>	18	18

Notes) 1. Staff Movements are based on the 24 staff attending the facility during the day shift, and are assumed to arrive and depart between 7:00 – 9:00am and 4:00 – 6:00pm respectively. The 12 movements reflect average movements within a single peak hour.  
2. The movements assume approximately 10% of total daily movements occur during peak periods.

### 3.1.3 RMS Guide Theoretical Site Generation

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A benchmark traffic generation assessment of the existing facility has been undertaken to determine typical traffic generation of warehouse developments at this scale. Based on typical industrial estates surveyed as part of the RMS Technical Direction TD 2013/04a, indicative traffic generation rates within the Sydney metropolitan area are defined below:

- AM Peak: 0.52 vehicle trips per 100 m<sup>2</sup> GFA; and
- PM Peak: 0.56 vehicle trips per 100 m<sup>2</sup> GFA.

Having regard for the nature of the development and existing form as an owner-occupied structure, GLA has been adopted as GFA for conservativeness. Based on the existing storage and distribution facility (2,676 m<sup>2</sup> GLA/GFA), indicative traffic generation for the Site equates to approximately:

- 14 vehicle trips during the AM peak; and
- 15 vehicle trips during the PM peak.

## 3.2 Road Hierarchy

With reference to **Figure 4**, the key roads relevant for the application are defined in the table below.

TABLE 3: ROAD HIERARCHY			
Road Name	Road Classification	Typical Volumes	Sign-posted Speed Limit
Andrews Road	Collector Road / Industrial Road	~ 1,100 veh/hr during peak periods. <sup>1</sup>	70 km/h
Lambridge Place	Local Road	< 1,000 veh/hr during peak periods. <sup>2</sup>	50 km/h

Notes) 1. Numbers obtained from surveys undertaken by AG conducted in 2018.

2. Estimates only.

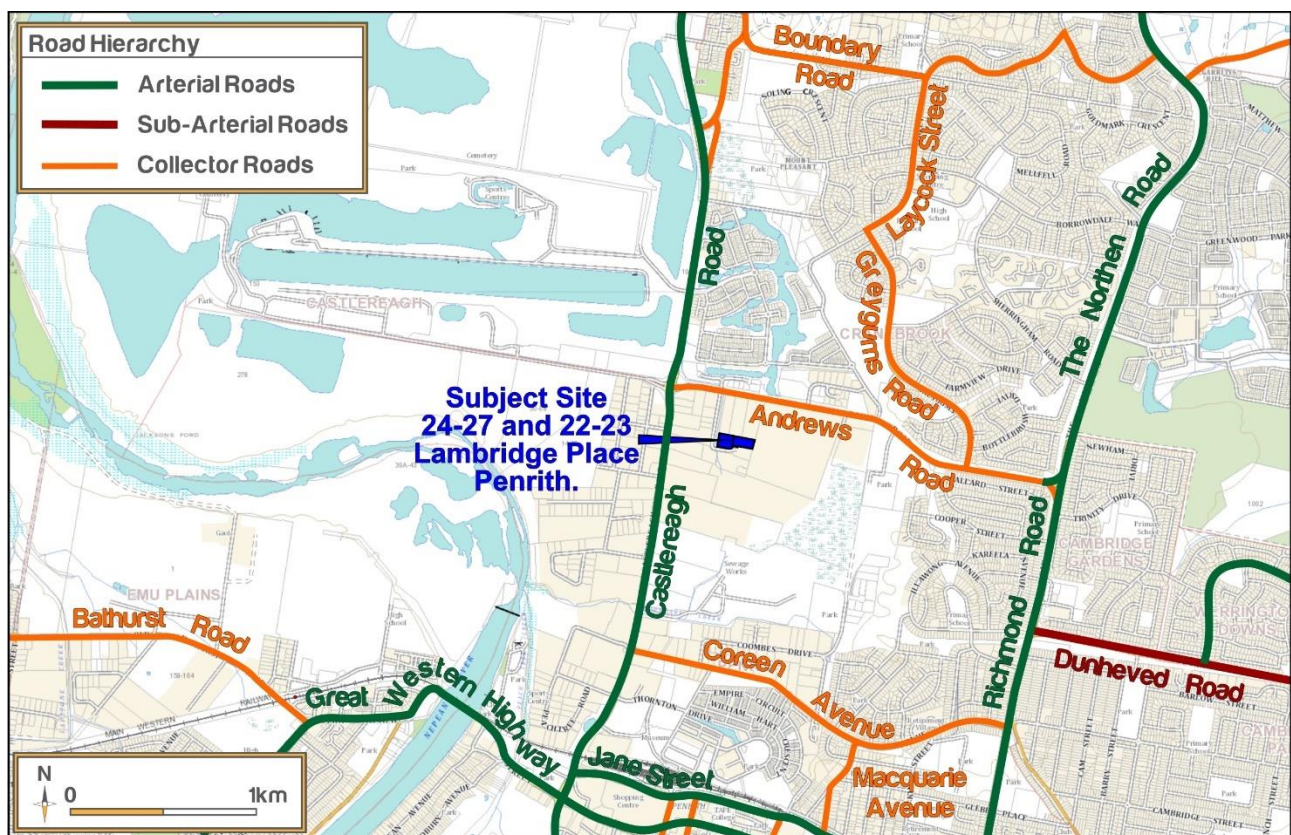


Figure 4: Road Hierarchy

## 3.3 RAV Classification

As referred in the TfNSW Restricted Access Vehicles map, Andrews Road, Castlereagh Road and Richmond Road in this area are designated as approved 25/26 metres B-Double routes. The extents of the RAV network are demonstrated in proximity of the Site as referred in below.

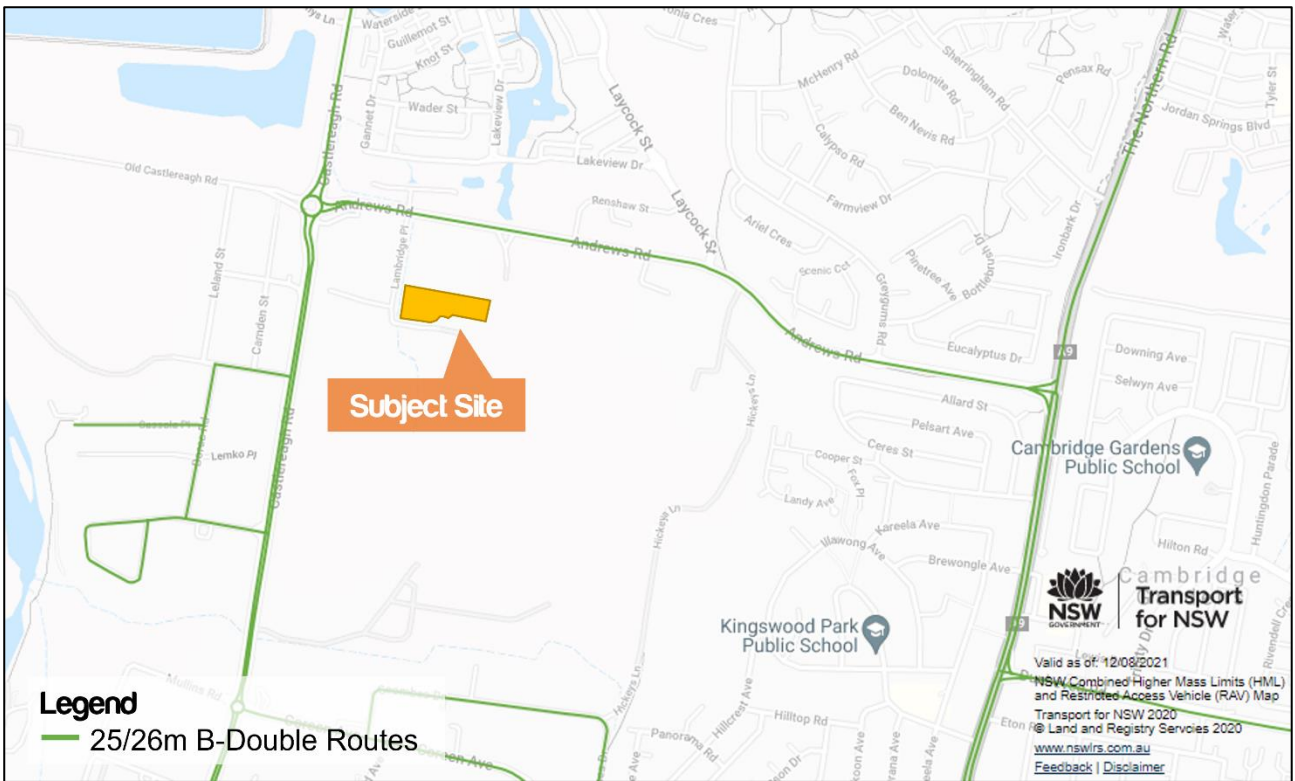


Figure 5: RAV maps

## 3.4 Public Transport

### 3.4.1 Railway Services

The Site is not located within 800 metres of any train stations. However, bus services – discussed below – provide connectivity for the Site to/from Penrith Train Station, providing access to the rail network serving the wider metropolitan area.

### 3.4.2 Bus Services

Three bus routes traversing Andrews Road and Castlereagh Road currently service the subject site. Details of the available bus services are shown in **Figure 6** and briefly discussed in below:

TABLE 4: BUS SERVICES		
Route	Description	Frequency
673	Windsor to Penrith via Cranebrook	1-2 services during peak periods.
783	Werrington to Penrith via Jordan Springs	2-3 services during peak periods.
784	Penrith to Cranebrook (Loop Service)	1 service during peak periods.

## 3.5 Active Transport

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### 3.5.1 Pedestrian and Cycling Connectivity

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Pedestrian footpaths are currently provided along Andrews Road in this general vicinity, connecting Lambridge Place to Castlereagh Road. This pedestrian path extends into the Lambridge Place cul-de-sac via the western edge, providing connectivity to the Site.

With reference to **Figure 6**, off-road shared paths are provided along Andrews Road to the north and Castlereagh Road to the west of the Site. Furthermore, Castlereagh Road to the north of its roundabout intersection with Andrews Road provides on-road cycle routes.

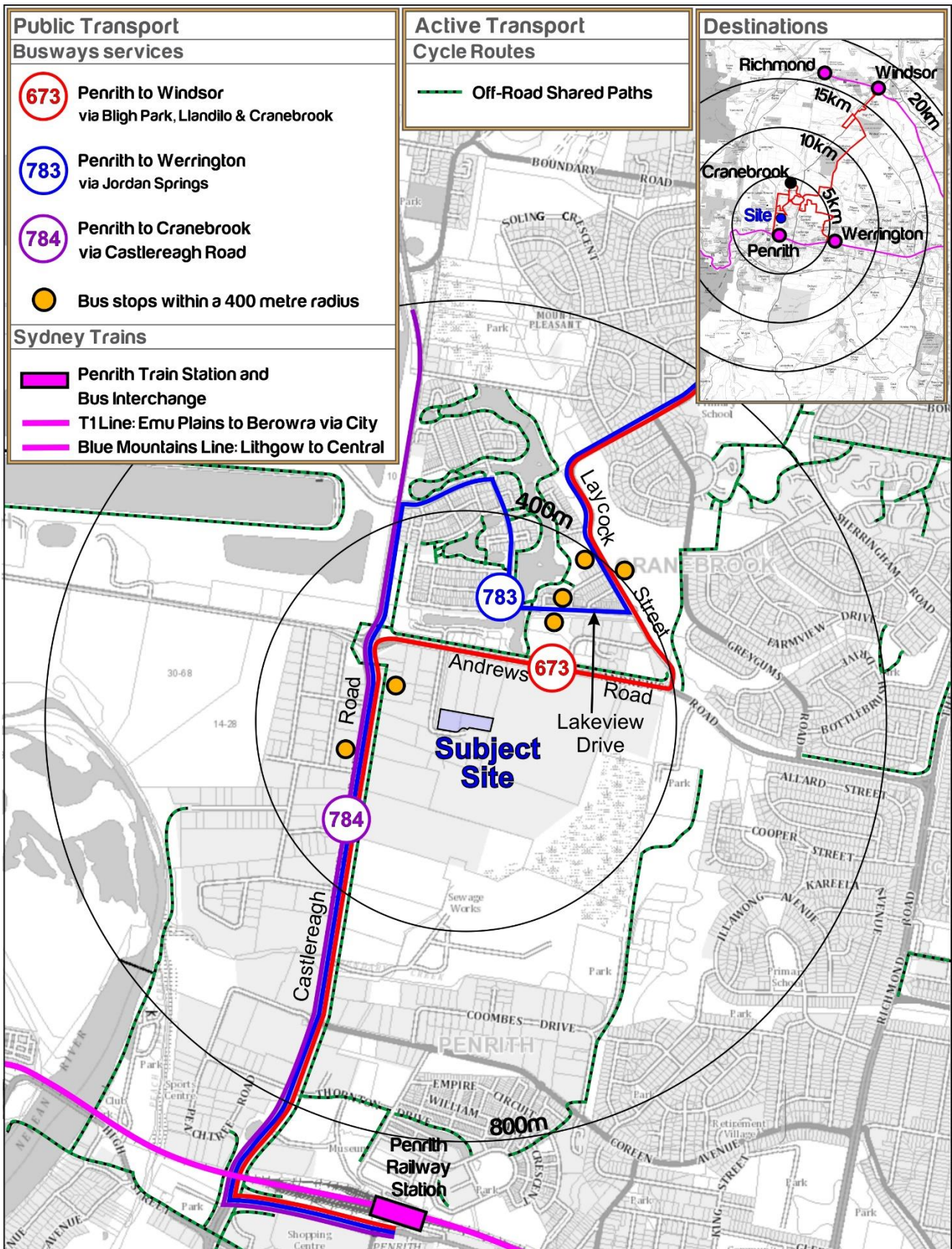


Figure 6: Public Transport Network

## 4 Strategic Context

In broader context of the locality, NSW Government and TfNSW have envisioned a corridor upgrade strategy relating to the *Mulgoa Road / Castlereagh Road Corridor Upgrade*, which was previously contemplated in 2017. Subsequently, the upgrade strategy has undergone key updates as of March 2020<sup>1</sup>, with key updates relevant to the proposed development captured below.

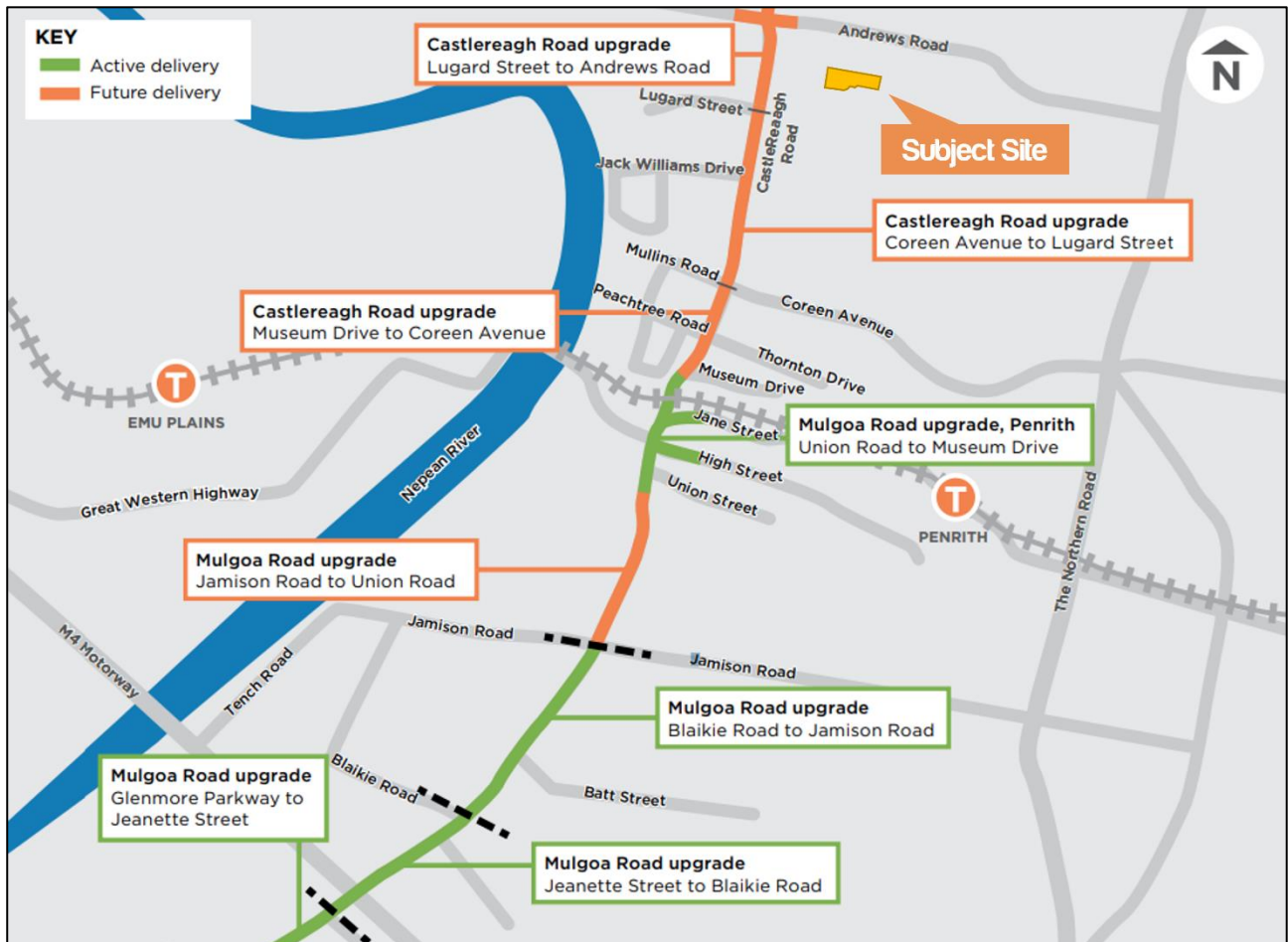


Figure 7: Mulgoa Road/Castlereagh Road corridor – stages map

**Figure 7** above demonstrates the Site on proximity of the key corridor upgrades – specifically the Castlereagh Road Upgrade – Lugard Street to Andrews Road section to the north, which are currently proposed and subject to future funding priorities.

Previous traffic studies for the future upgrade configuration of the Andrews Road / Castlereagh Road intersection has involved the formal signalisation of the existing roundabout, captured as part of the previous 2017 consultation report in **Figure 8** below.

<sup>1</sup> NSW Government – Mulgoa Road and Castlereagh Road Community Update March 2020  
<https://roads-waterways.transport.nsw.gov.au/projects/01documents/mulgoa-rd-castlereagh-rd/mulgoa-rd-castlereagh-rd-community-update-mar-2020.pdf>





Figure 8: Section E Strategic Concept Design (Sourced from Preferred Option Report)

Notwithstanding, it has been considered that capacity and configuration upgrades are expected for the Andrews Road / Castlereagh Road intersection at some stage in the future.

## 5 Parking Compliance

With reference to the overview of the Proposal in section 2.1, it has been communicated by the tenancy that the proposed expansion is anticipated to support the core operations of the existing industrial site, and that the proposed additional structures on the hardstand area would not induce any additional commercial vehicle trips, nor would there be an increase to existing on-site staff and employees.

Existing parking provisions on-site have been advised by the client to fully satisfy the operational requirements of staff and visitors, as well as provide adequate capacity during shift rotation periods.

Accordingly, it should be considered that the parking compliance assessment has been undertaken to capture the full extents of the Site to ensure posterity of operations beyond Council requirements.

### 5.1 Council DCP Rates

The proposed development is located within the Penrith City Council LGA and is therefore subject to that Councils' Controls. The following rates have been specified based on Industrial land use for *Warehouses/distribution centres including ancillary office*, based from the operations of the existing tenancy.

TABLE 5: PARKING RATES (COUNCIL DCP)		
Source	Land Use	Parking Rate (Minimum)
Penrith City Council DCP (2014)	Industrial – Warehouses or distribution centres, including ancillary office	1 space per 100 m <sup>2</sup> GFA

### 5.2 Parking Assessment

Having regard for the full extents of the Site, the proposed freezer, storage and battery recharge facility (1,334 m<sup>2</sup> GLA/GFA) are assessed in addition to the existing 2,676 m<sup>2</sup> GLA/GFA on-site, equating to a total area of 4,010 m<sup>2</sup> GLA/GFA.

Application of the abovementioned rate to the total area equates to a formal Council minimum requirement of 40 parking spaces. In response, the existing hardstand area provides a total of 40 dedicated spaces, with an additional 23 provisional spaces proposed as part of the submission, equating to a total of 63 parking spaces.

Accordingly, the parking provisions of the Proposal readily satisfies Council minimum parking requirements and can be deemed adequate to service the theoretical demands of the facility and is furthermore noted that that the existing level of observed parking demand is NOT anticipated to increase as part of the Proposal.

## 5.3 Accessible Parking

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The Council DCP requires accessible parking to be provided in accordance with the Building Code of Australia (BCA). This Standard requires accessible parking for industrial developments to be provided at a rate of:

- 1 space for every 100 car parking spaces or part thereof (rounded up).

Accordingly, a single accessible space currently exists for the development, a further 1 space is proposed for a total of 2 accessible spaces, thus readily satisfying BCA requirements.

## 5.4 Bicycle Facilities

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Section 10.7 of Council's DCP, C10 (Transport, Access and Parking) outlines the bicycle requirements for commercial developments providing employment for 20 people or more. This Section requires bicycle parking to be provided in secured and accessible locations with weather protection in accordance with AS2890.3:2015. Furthermore, this section states that the bicycle parking and end-of-journey facilities (showers, change rooms, lockers) should be provided in accordance with the Planning Guidelines for Walking and Cycling (NSW Government 2004) document.

The relevant Guideline rates are therefore as follows:

- 3-5%\*S for staff, and
- 5-10%\*S for customers/visitors (short-term use).

Where S is the staff number (33 in this instance), indicating for a requirement of 5 bicycle spaces.

Furthermore, the Guideline suggests provision of the following minimum locker, shower and change rooms for 13-49 on-site staff:

- Lockers: 1 per 3 racks,
- Showers: 2 (1 for male and 1 for female), and
- Change rooms: 2 (1 for male and 1 for female).

Based on advice provided to Ason Group, the existing site does not provide for any on-site bicycle parking and EoTF and such provisions are not proposed as part of this DA. Notwithstanding, bicycle parking provision and the requirement for end-of-journey facilities (to Councils' satisfaction) can be readily further investigated at a later stage of development.

# 6 Traffic Analysis

With reference to the overview of the Proposal in section 2.1, it has been communicated by the tenancy that the proposed expansion is anticipated to support the core operations of the existing industrial site, and that the additional structures on the hardstand area would not induce any additional commercial vehicle trips, nor would there be an increase to existing on-site staff and employees.

It is noted that the proposed development already exists in some operational capacity in its existing state. Thus, the proposed development intends to formalize and supplement the hardstand area based on existing traffic movements and patterns related to the Site.

Accordingly, in reality this DA is NOT expected to increase the existing traffic generation of the Site hence the actual anticipated traffic increase as a result of this DA is zero.

Notwithstanding, the below captures a traffic assessment for the Site based on TfNSW Guidelines.

## 6.1 RMS Traffic Generation

As referred in section 3.1.3, a theoretical traffic generation assessment was undertaken to gain an appreciation for the magnitude in which the proposed expansion of the facility may induce. The theoretical assessment was conducted based on guidance from the RMS Technical Direction TD 2013/04a document, which defines the following traffic generation rates in the Sydney Metropolitan area for industrial land uses:

- AM Peak: 0.52 vehicle trips per 100 m<sup>2</sup> GFA; and
- PM Peak: 0.56 vehicle trips per 100 m<sup>2</sup> GFA.

## 6.2 Traffic Assessment

While it is understood that the expansion is not anticipated to create additional trips for the facility, the below table captures the application of the abovementioned traffic generation rates in a theoretical magnitude assessment for the Site.

Period	Traffic Generation for existing structures (2,676 m <sup>2</sup> )	Traffic Generation for existing + proposed (4,010 m <sup>2</sup> )	Difference
AM	14	21	+ 7
PM	15	22	+ 7

In accordance with the assessment, it can be inferred that the expansion of the freezer storage area would theoretically warrant an increase in vehicle trips by only 7 vehicles during peak periods

Accordingly, it is not anticipated that an increase of 7 vehicle trips (both inbound and outbound) would warrant material impacts to the road network, and is deemed acceptable, with recognition that actual trips are not expected to increase.

# 7 Design Commentary

## 7.1 Relevant Design Standards

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The site access, car park and loading areas should be designed to comply with the following relevant Australian Standards:

- AS2890.1:2004 for car parking areas,
- AS2890.2:2018 for commercial vehicle loading areas, and
- AS2890.6:2009 for accessible (disabled) parking.

It is expected that any detailed construction drawings in relation to the car park or site access would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard condition of consent to any development approval.

## 7.2 Proposed Expansion Design Amendments

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The proposed site expansion is associated with the formalization of the eastern partition of the Site. The design assessment accordingly assesses the extents of the proposal only and excludes the existing structures.

## 7.3 Design Vehicles

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In accordance with information provided by the client, the anticipated vehicle specified for primary usage on-site is the 19m Articulated Vehicle (semi). In consideration that there are no RSD's or loading bays situated on the eastern face of the freezer area, clockwise circulation only has been tested for the Site to ensure vehicle permeability.

## 7.4 Design Commentary

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In general, the development has been designed having regard for the above Standards. Notwithstanding, the following key points are detailed relating to the design outcomes of the project:

- The crossover has been widened to allow commercial vehicles to enter and exit the Site simultaneously. Site owners shall ensure that the security gate remains open during operational hours to mitigate on-street vehicle queueing associated with the Site.
- Final resolution of the site access and internal design would be expected to occur as part of Construction Certificate design coordination in response to a general condition of consent requiring compliance with AS2890. However, the initial swept path analysis undertaken confirms the general suitability of the proposed design for its intended purpose. Reference should be made to the swept paths included in Appendix A.

# 8 Conclusions

## 8.1 Summary

The key findings of the transport assessment undertaken as part of this TA are summarised below:

- The Proposal relates to a warehouse expansion development of 24-27 Lambridge Place, Penrith (the Site). The proposed development consists of structures to support the existing warehouse and distribution facility, and includes an additional freezer room, storage shed, battery charge area, and a commercial vehicle hardstand and parking area. The Site is located within the Penrith City Council LGA and therefore subject to that Councils' controls.
- A summary of the development yield is provided below.

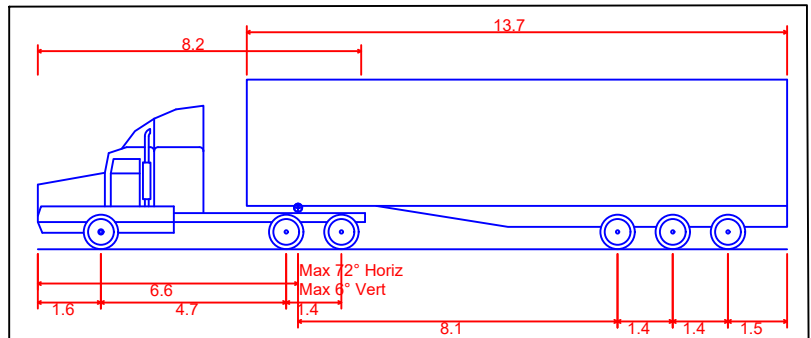
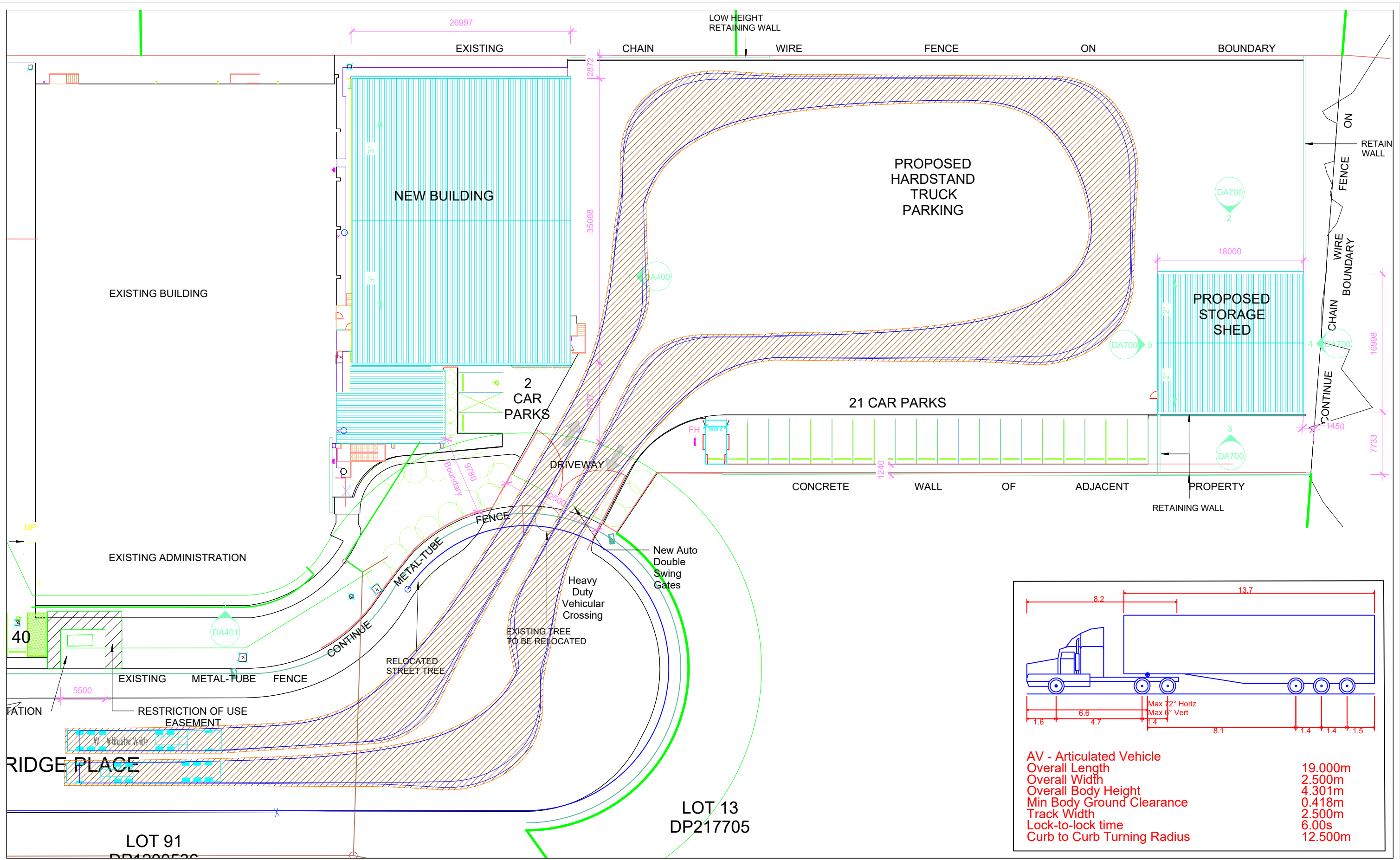
DEVELOPMENT YIELD		
Element	Yield	Purpose
Freezer Facility	878 m <sup>2</sup> GLA	Additional freezer warehouse to supplement existing facility adjacent to the property.
Storage Shed	306 m <sup>2</sup> GLA	Storage area for miscellaneous equipment.
Battery Recharge	150 m <sup>2</sup> GLA	Equipment charging.
Parking	23 Parking spaces (inc. 1 accessible space)	Provisional parking.

- It is noted that the proposed development already exists in some operational capacity in its existing state. Thus, the development intends to formalize and supplement the hardstand area based on existing traffic movements and patterns related to the Site.
- The existing context for the Site typically demonstrates favourable access via public and active transport. The facility is situated close to RAV approved routes along Andrews Road.
- A parking assessment has been undertaken for the Site and suggests that the combination of existing and proposed provisions readily satisfy and exceed the minimum requirements outlined in Council's DCP.
- It should be noted that the proposed development is not intended to increase operational capacity of the existing Site, nor is it anticipated to increase the number of existing staff and employees. Accordingly, the proposed development would not warrant additional operational traffic over and above the existing.
- Notwithstanding, a theoretical traffic assessment based on the RMS Guide has been undertaken to determine the potential magnitude of an increase in vehicle trips would not warrant any extenuating impacts to the road network.
- Reference should be made to the design commentary included with the swept paths in Appendix A.

## 8.2 Recommendations

In summary, the proposed industrial development, as part of the DA, is deemed supportable from a traffic and transport grounds and is not expected to result in any adverse impacts to the surrounding road network.

# Appendix A. Swept Paths



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

Revision notes:		
Rev:	Date:	Notes:
For information purposes only - not for construction		

Drawn By: M TANGONAN	Project: P1777 24-27 Lambridge Place, Penrith
Client: -	Drawing Title: 19m AV Hardstand Circulation

Date: 3-Sep-21
Scale @ A3: [scale]
Drawing Number: AG01

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