5 February 2019 REF: WTJ18-289

Statement of Environmental Effects

Proposed Warehouse and Distribution Facility, Proposed Access Road and Bulk Earthworks

128 Andrews Road, Penrith
(Lot 20 DP 1216618) & 130-172 Andrews Road, Penrith
(Lot 13 DP 217705)

Prepared by Willowtree Planning Pty Ltd on behalf of Cadence Property

November 2018

Document Control Table

Document Reference:	SEE_WTJ18-289		
Date	**Version**	**Author**	**Checked By**
26/09/2018	1	T. Lythall	A. Cowan
28/09/2018	2	T. Lythall	A. Cowan
02/11/2018	3	T. Lythall	A. Cowan
04/02/2019	4	T. Lythall	A. Cowan

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

PART A PRELIMINARY

1.1 INTRODUCTION

This Statement of Environmental Effects (SEE) has been prepared by Willowtree Planning on behalf of the proponent, Cadence Property, and is submitted to Penrith City Council to support a proposed Warehouse and Distribution Facility, proposed access road and bulk earthworks, at 128 Andrews Road, Penrith (Lot 20 DP 1216618) and part of 130-172 Andrews Road, Penrith (Lot 13 DP 217705).

The proposed development entails the following key components, including:

- Construction of a proposed Warehouse & Distribution Facility;
- Construction of a proposed access road off Andrews Road (northern boundary), which would serve as the primary access to the proposed Warehouse and Distribution Facility;
- Construction of a proposed pavement on the Site identified at 130-172 Andrews Road, Penrith, connecting to the above access road;
- Two (2) new RSD openings on the Site identified at 130-172 Andrews Road, Penrith;
- New 6 m cantilevered canopy on the Site identified at 130-172 Andrews Road, Penrith;
- Proposed on-site detention; and,
- Proposed bulk earthworks concerning the Subject Site.

The proposed development is consistent with surrounding land uses within to which *Penrith Local Environmental Plan 2010* (PLEP2010) applies. The proposed development is located on land, zoned IN1 General Industrial, and is positioned within the Penrith Local Government Area (LGA). The proposed development is considered regionally significant development, and as a result would be determined by Penrith Ciy Council.

This SEE provides a comprehensive assessment concerning the proposed development against relevant legislative matters for consideration under framework items such as Section 4.15(1) of the *Environmental Planning and Assessment Act 1979* (EP&A Act); and, the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation). The prevailing Environmental Planning Instrument (EPI) applicable to the proposed development is PLEP2010.

The structure of this SEE is as follows:

- **Part A** Preliminary
- **Part B** Development & Planning History
- **Part C** Site Analysis
- **Part D** Proposed Development
- **Part E** Legislative and Policy Framework
- **Part F** Environmental Assessment
- **Part G** Conclusion

Based on the assessment undertaken, it is recommended that Council's favourable consideration be given.

PART B DEVELOPMENT & PLANNING HISTORY

2.1 PREVIOUS APPLICATIONS

The identified land portion has undergone assessment and determination for two (2) such Development Applications (DAs) in past years. **Table 1** below summarises the development history of the Subject Site – 128 Andrews Road, Penrith.

Table 1: Previous Development Applications at 128 Andrews Road, Penrith			
DA Reference	**Development Description**	**Lodged**	**Determination**
DA13/1378	Torrens Title Subdivision with Driveway Construction and Drainage Works	21/11/2013	Approved
DA13/1174	Industrial Development – Construction of Warehouse / Factory Building, Storage Yard, Tower and Offices Associated with a Plastic Manufacturing Facility including Drainage Infrastructure, Car Parking, Driveway Access and Landscaping Works.	15/11/2013	Approved

2.2 PRE-DA MEETING (PENRITH CITY COUNCIL)

A Pre-DA Meeting was held on Thursday 6 September 2018 to discuss the proposed development, involving a proposed industrial development, for the purposes of a Warehouse and Distribution Facility, proposed access road and proposed earthworks (refer to **Appendix 18**). The attendees at the meeting included the following key personnel:

Visitors:

- Andrew Cowan (Willowtree Planning);
- Travis Lythall (Willowtree Planning);
- Mark Wilson (Costin Roe Consulting);
- Danielle Adams-Bennett (Eco Logical Australia); and,
- Tim Lewis (Ason Group).

Council:

- Wendy Connell (Senior Environmental Planner);
- Abby Younan (Planning Administration Officer);
- Joshua Romeo (Senior Waste Planning Officer);
- Craig Squires (Supervisor Fire Safety);
- Stephen Masters (Senior Development Engineer);
- Graham Green (Senior Traffic Engineer); and,
- Paul Reynolds (Team Leader Environmental Health).

The items discussed at the meeting and further addressed throughout the contents of this SEE included:

- Scope of work indicative of the proposed development;
- Contamination;

- Acoustics;
- Fill importation;
- Hazardous building materials assessment;
- Biodiversity;
- Civil engineering (flooding, stormwater, access, earthworks, traffic);
- Traffic;
- BCA; and,
- Waste.

PART C SITE ANALYSIS

3.1 SITE LOCATION & EXISTING CHARACTERISTICS

The identified land portion that is the subject of this DA is legally defined as 128 Andrews Road, Penrith (Lot 20 DP 1216618) and part of 130-172 Andrews Road, Penrith (Lot 13 DP 217705).

The Subject Site comprises a total site area of approximately 27.04 hectares (ha) and is subject to applicable provisions outlined within PLEP2010. Access to the Site is proposed via Andrews Road along the northern perimeter of the Subject Site, which is subject to a proposed access road that would make provisions for both entry and exit points along the street frontage, as-well-as being accompanied by a turning loop within the identified land portion to control traffic volumes accordingly.

The Site is situated approximately 48.88 km west of the Sydney CBD, 29.74 km west of Parramatta and 28.75 northwest of Liverpool, within close proximity of major regional road networks including Andrews Road, Castlereagh Road, The Northern Road, Great Western Highway and the M4 Motorway, providing connectivity to the Subject Site and immediate vicinity, as-well-as the wider locality.

The Site's historical context is best described through its dormant agricultural / rural land portion. **Table 1** located above identifies the historical context of the Subject Site. Additionally, the Subject Site is adjoined by notable industrial development along its eastern and western interfaces.

Land surrounding the Site comprises of the following zoning categories, including:

- IN1 General Industrial;
- IN2 Light Industrial;
- SP2 Infrastructure;
- RE1 Public Recreation; and,
- R2 Low Density Residential.

The nearest sensitive land uses are comprised by the R2 Low Density Residential zone located to the northeast and east of the Subject Site off Andrews Road, which includes residential dwellings; and, the RE1 Public Recreation zone located to the east of the Subject Site, encompassing Andrews Road Baseball Complex and Nepean Rugby Park.

The identified land portion is subject to the provisions outlined within PLEP2010. PLEP2010 is the primary EPI and categorises the Site within the IN1 General Industrial zone as displayed in **Figure 1** below. The Site and surrounding context are best depicted and illustrated in **Figures 2** & **3**.

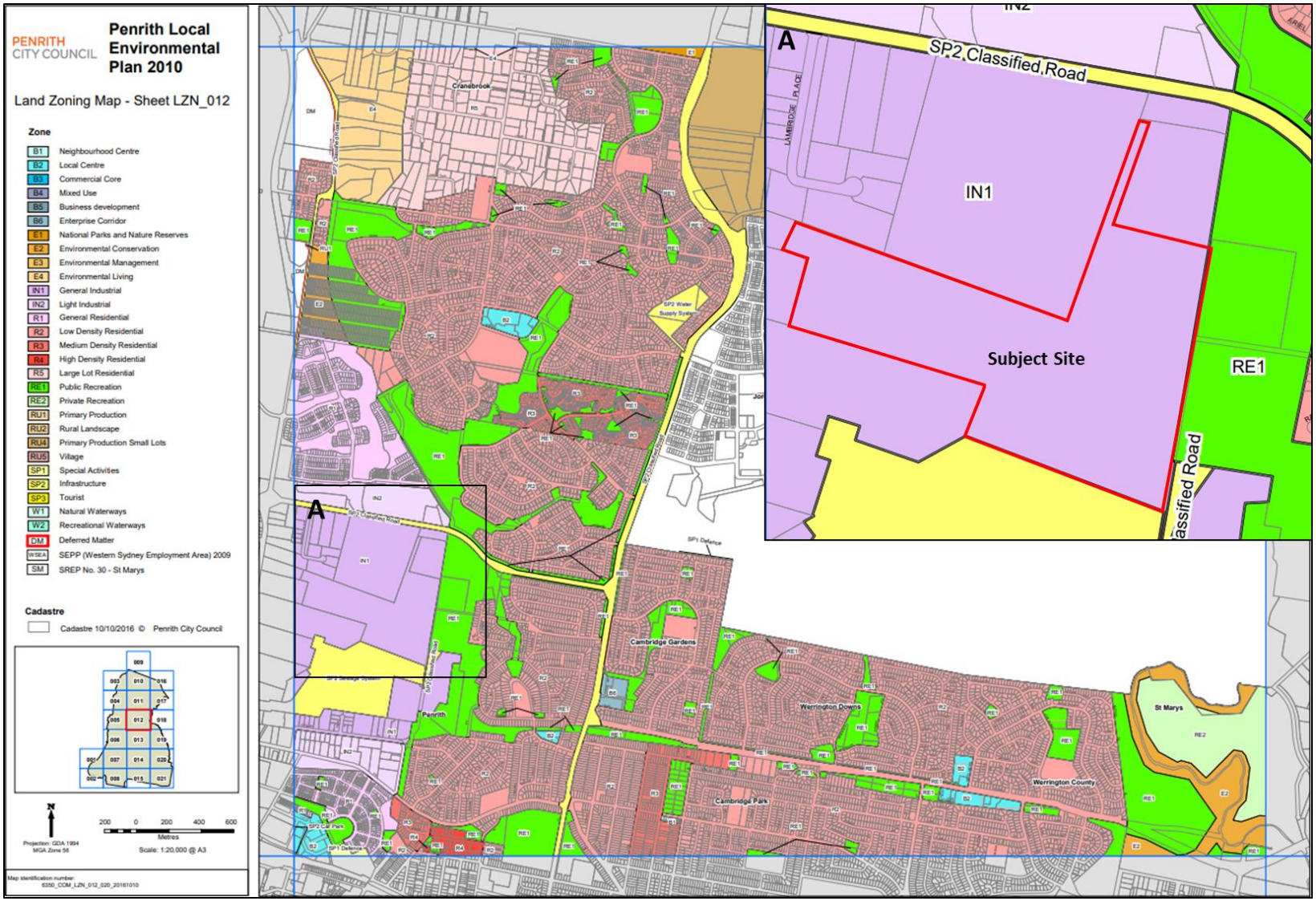

Figure 1 Applicable Zoning Concerning Subject Site and the Surrounding Area under *Penrith Local Environmental Plan 2010* (NSW Legislation, 2018)

Figure 2 Site Layout and Surrounding Context (NearMaps, 2018)

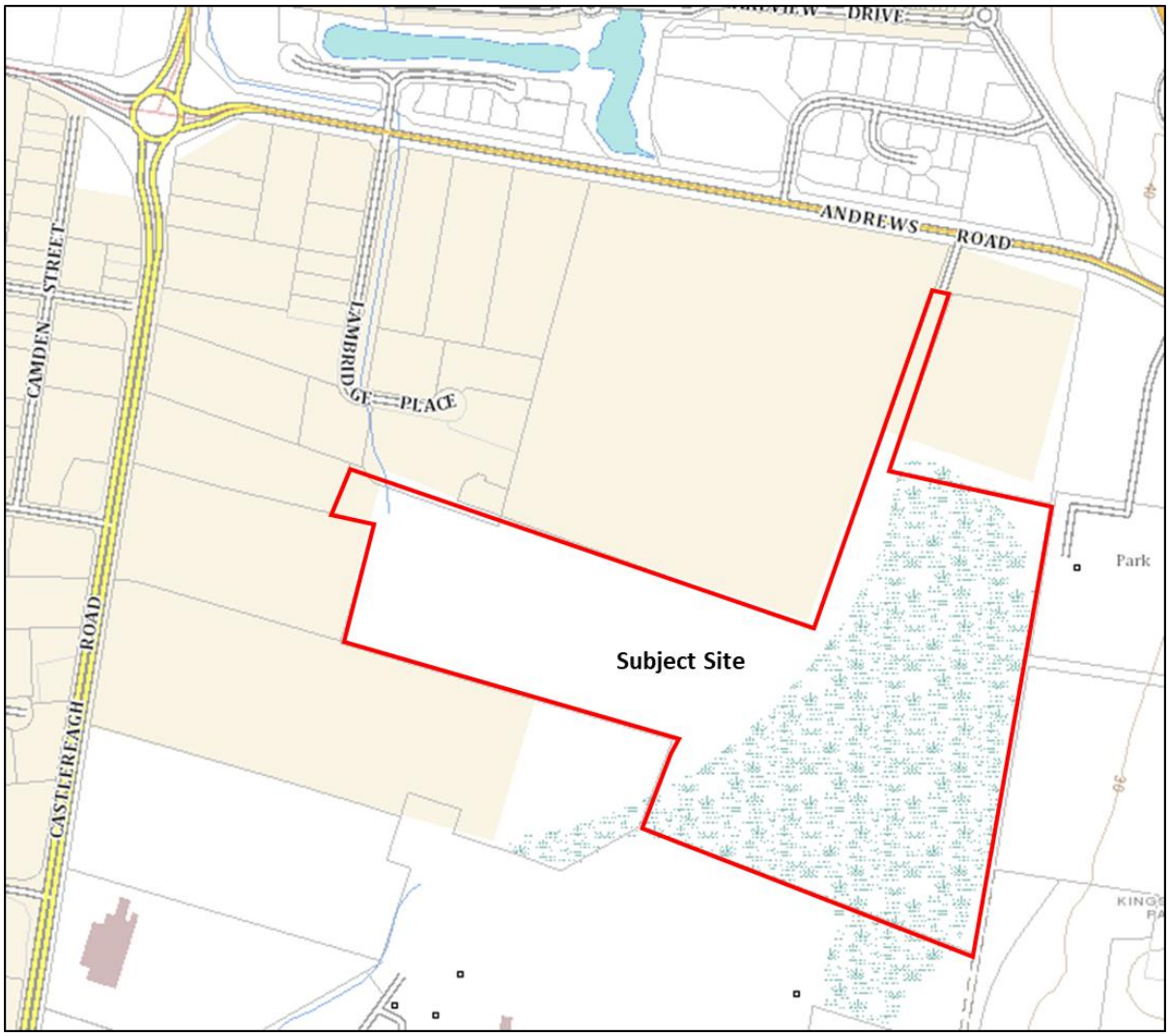

Figure 3 Site Surroundings and Context (SIXMaps, 2018)

PART D PROPOSED DEVELOPMENT

4.1 AIMS AND OBJECTIVES OF THE PROPOSAL

The subject DA seeks to obtain development consent for the construction and use of the identified land portion for warehousing and distribution, consistent with surrounding development's within close proximity of the Subject Site. The following objectives have been identified as forming the basis of the proposed development, as-well-as being in line with the aims set out within PLEP2010 to accommodate for the future operational growth of the proposed Warehouse and Distribution Facility, including:

- Promoting an economically sustainable development, and reinforcing the status of an employment-generating development that positively contributes to the IN1 General Industrial zone;
- Encourages assurance for the coordinated planning and development of land within the Penrith LGA;
- Ensures minimal environmental and amenity impacts; and,
- Ensures development is compatible with surrounding development and the local context.

The proposed development would meet the objectives identified above as it enables development (Warehousing and Distribution) on land that has been zoned for industrial development and related uses.

4.2 DESCRIPTION OF THE PROPOSAL

Consent is sought to develop the Site for the purpose of a Warehouse and Distribution Facility. Operational use of the facility would be for warehousing and distribution purposes on a 24-hour, 7-day basis, consistent with surrounding operations in the immediate vicinity of the Subject Site.

The proposed development particulars are outlined in **Table 2** as follows:

Table 2: Proposed Development Particulars

Project Element	Development Particular
Site Area	**Total Site Area:** - 270,400 m^2 **Proposed Warehouse Site Area:** - 102,277 m^2 **Proposed Shared Access Road:** - 8,159 m^2 **Reserved Area:** - 159,964 m^2
Warehouse/Ancillary Office	**Total:** 50,150 m^2 **Warehouse:** - 50,000 m^2 **Main Office:** - 150 m^2
Car Parking	- Cars spaces provided: 98 (includes two (2) accessible car parking spaces).
Building Height	- 13.65 m
Primary Land Use	- Warehouse and Distribution Facility.

Bulk Earthworks	- Bulk earthworks are proposed to be carried out, to establish the building pad on the Subject Site, as-well-as balance the cut/fill (refer to **Appendix 4**).
Site Access	- Access to the Site would be obtained via Andrews Road. As part of the proposed development a proposed access road is proposed traversing the northern boundary into the Subject Site.
Infrastructure and Services	- Services to the Site are able to be provided from Andrews Road to the Site via augmentation of the existing services, including water, electricity, sewer and communications.
Hours of operation	- 24/7 for warehousing and distribution.

Figures 4-6 illustrate the proposed site layout and elevations. Comprehensive Architectural Plans are further illustrated within **Appendix 2**.

Furthermore, the proposed development incorporates minor works concerning the existing Glass Manufacturing Facility currently operated and owned by the end user (O-I) at 130-172 Andrews Road, Penrith. These include:

- Proposed new crossover and driveway, which would traverse off the western portion of the proposed access road;
- Two (2) new RSD openings along the western-most portion of the newly proposed driveway; and,
- A new 6 m cantilevered canopy proposed along the north-western corner of the existing Glass Manufacturing Facility.

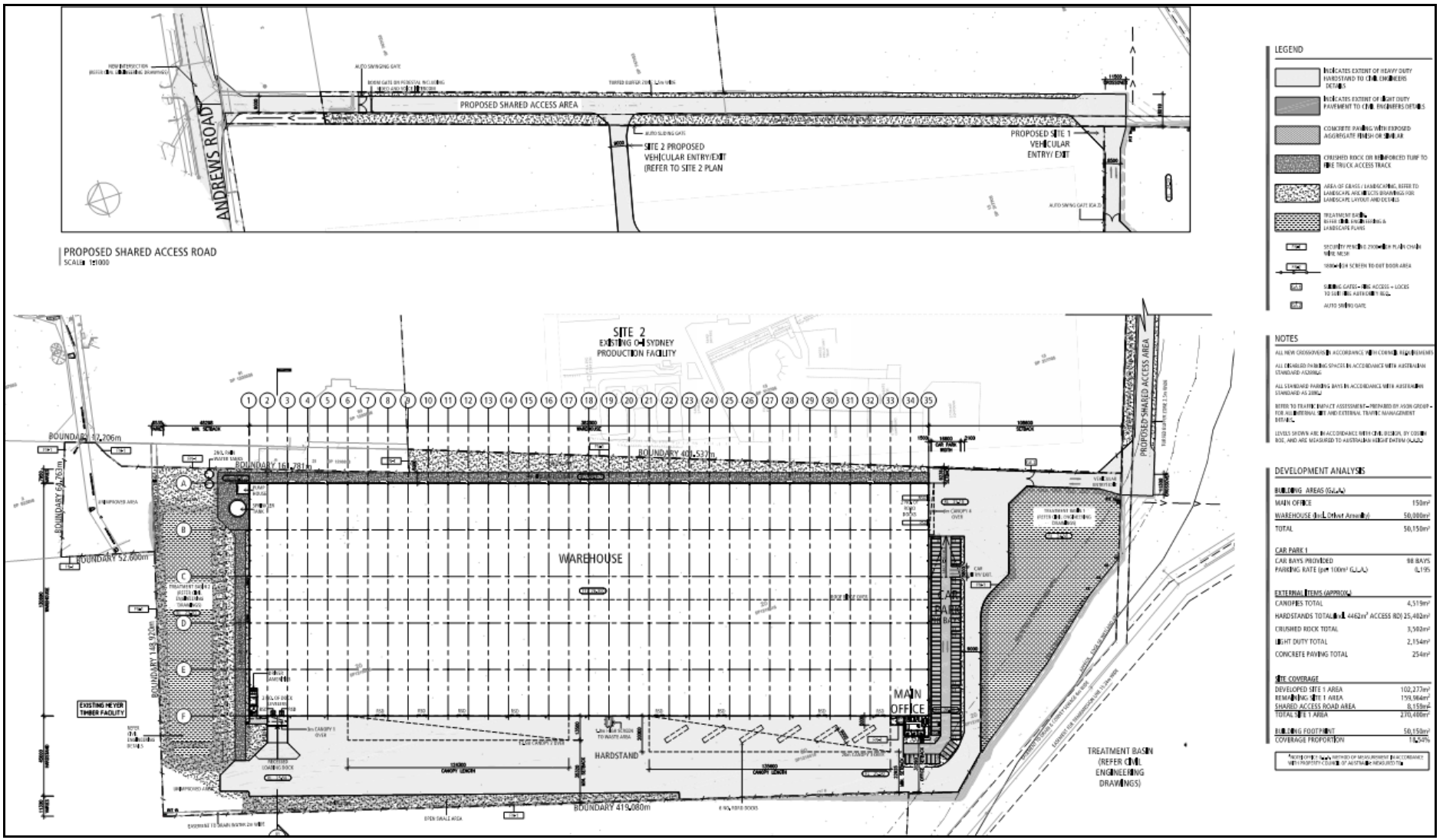

Figure 4 Proposed Site Plan (Source: Watson Young, 2018)

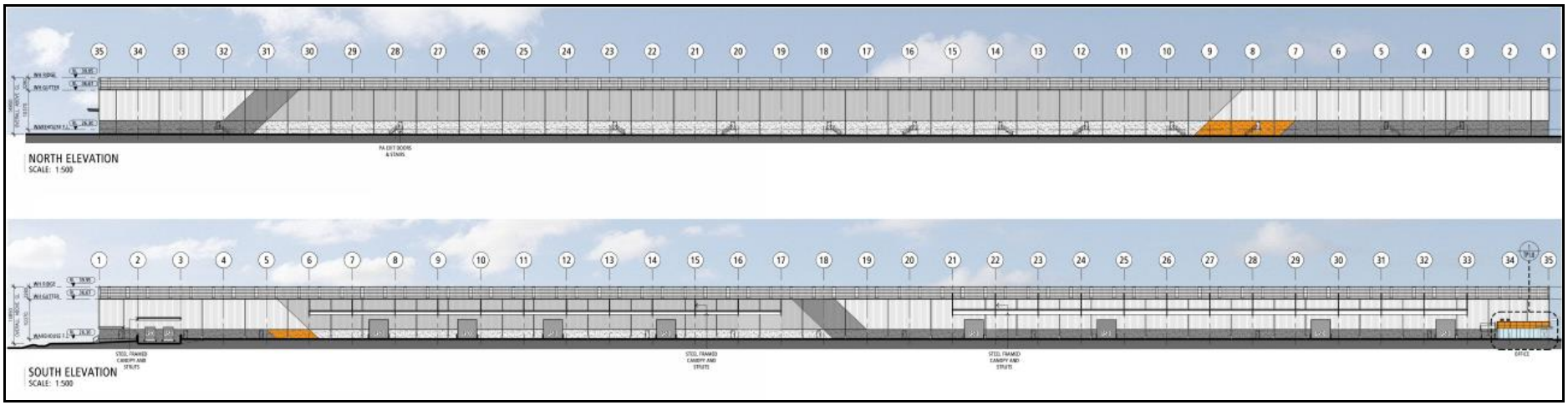

Figure 5 Proposed Elevations including the Northern Elevation (top) and Southern Elevation (bottom) (Source: Watson Young, 2018)

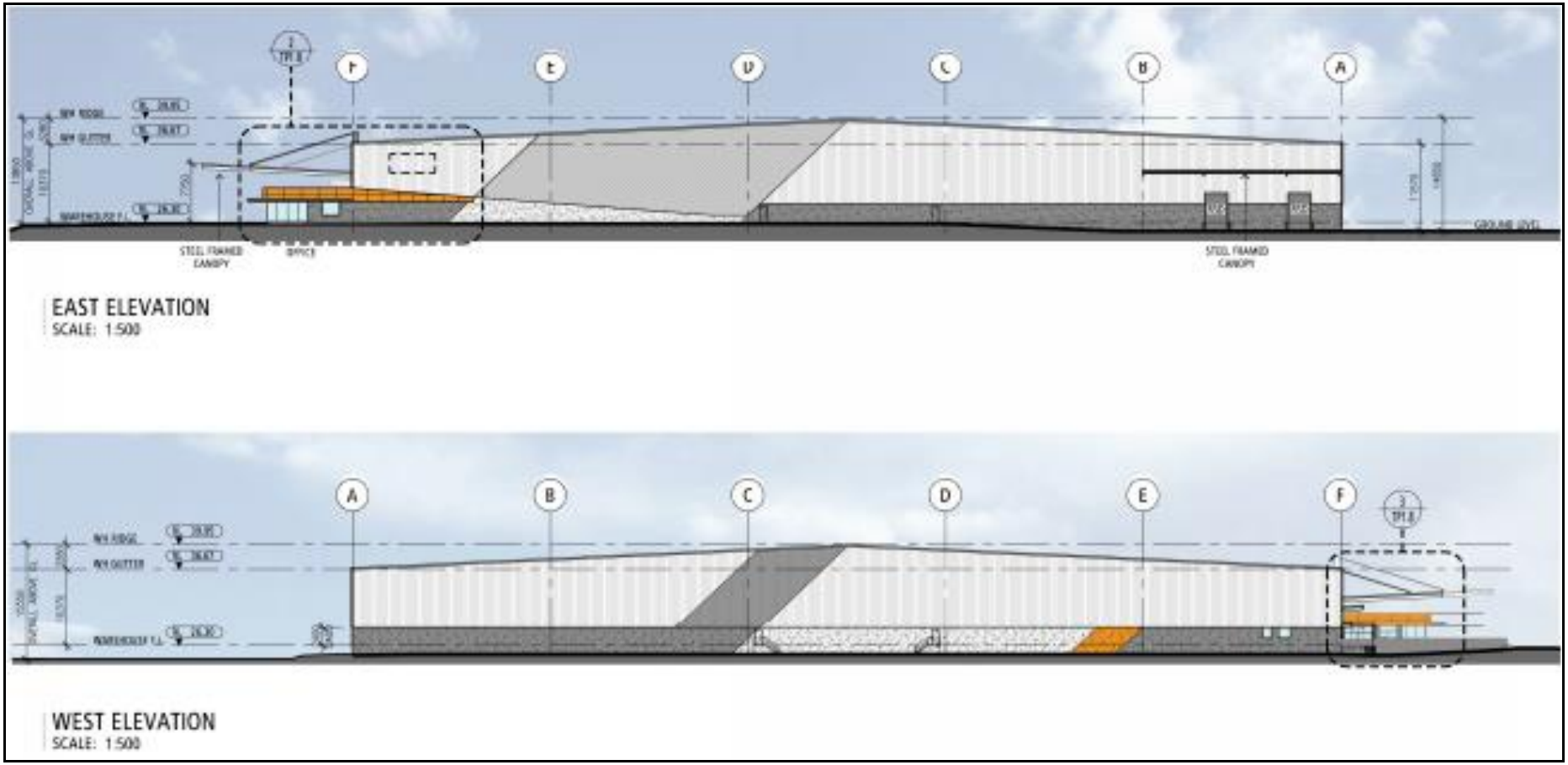

Figure 6 Proposed Elevations including the Eastern Elevation (top) and Western Elevation (bottom) (Source: Watson Young, 2018)

4.3 PROJECT NEED

In response to the operational needs of the future tenants involved, it has been determined that a proposed Warehouse and Distribution Facility is required to accommodate the increased need for warehousing and distribution space. The proposed development is considered necessary to improve the operational efficiencies of transport and logistics (warehouse and distribution facilities) businesses within NSW and facilitate their future growth.

Additionally, the proposed development is essential in ensuring that the attributing characteristics of the IN1 General Industrial zone is considered throughout the proposed development, by providing productive economic growth and employment opportunities through its construction and operational phases of development.

The environmental risk assessment undertaken in **Part F** concludes that the proposed development is consistent and commensurate with State, Regional and Local planning objectives; the environmental characteristics of the Site; the surrounding context; and, the principles of Ecologically Sustainable Development (ESD).

The end user for the proposed Warehouse and Distribution Facility would be O-I – identified as one (1) of the world's leading glass container manufacturer's. O-I own and operate their current manufacturing facility on the adjacent lot at 130-172 Andrews Road, Penrith (Lot 13 DP 217705), where they produce glass containers.

Part of this Application relates to minor works on their current site, through the provision of adjoining the access road to their current facility, as demonstrated within the Architectural Plans (refer to **Appendix 2**). The proposed Warehouse and Distribution Facility would form O-I's new point of warehousing and distribution, for which they would store finished glass products including bottles, jars, containers etc.

Additionally, the proposed development would be considered to provide a significant community benefit through provisions such as a reduction in road traffic on the regional road network associated with the Site, as all outbound finished goods from the O-I manufacturing facility would be delivered directly to the proposed development site, via the private access road between the both facilities. Further community benefit would be derived through the creation of employment generating opportunities during the construction and operational phases of development.

4.4 CONSIDERATION OF ALTERNATIVES

The purpose of the proposed development is to provide a Warehouse and Distribution Facility, which would meet the operational needs and requirements of the end user (O-I). It is considered that the proposed development:

- Would create employment-generating opportunities within both the construction and operational phases of development;
- Would utilise an undeveloped site, zoned for industrial development;
- Has appropriate access to the regional road network;
- Is compatible with surrounding development and the local context;
- Would result in minimal impact on the environment; and,
- Would allow for the implementation of suitable mitigation measures, where required.

The Site is considered to be appropriate for the proposed development as it allows for warehousing and distribution in an area zoned for industrial development, which is further complimented by existing industrial developments within close proximity of the Subject Site, particularly, along the northern and western interfaces. The Site design and layout of the built-form seeks to maintain consistency with the zone objectives under PLEP2010 and enhance the underlying character intended

for the identified land portion, zoned for such permissible uses. This would be achieved by the resultant built form, which reinforces the nature of the land use and is sensitive to the surrounding environment.

The options considered, and subsequently dismissed, in arriving to the current proposal with regard to the proposed development included:

(a) 'Do Nothing' Scenario

This option was dismissed as the proposed development objectives, including the objective of providing a wide range of industrial and warehouse land uses, would not be met. If the proposed development was not to proceed, the Site would be developed for another industrial development.

(b) Development on an Alternative Site

Due consideration with regard to alternative sites was given; however, these were dismissed as the Site resulted in the most beneficial outcomes for the proposed development as:

- It is located subject to the provisions of the IN1 General Industrial zone, which seeks to provide employment-generating land uses and allows for a wide range of industrial and warehouse related land uses;
- The Site is suitably located with respect to sensitive land activities, including residential development;
- All potential environmental impacts of the proposed development could be suitably mitigated within the Site;
- The proximity to the regional road network provides accessibility and linkages to the broader metropolitan area and regional areas of NSW;
- The proposed development has significant employment-generating potential, during both construction and operational phases;
- Sufficient separation is maintained to the interfaces of surrounding industrial developments;
- The proposed development does not adversely affect any area of heritage or archaeological significance; and,
- The proposed development could be developed with appropriate visual amenity achieved, given its surrounding context, particularly its proximity to existing industrial developments surrounding the Site.

The proposed development is justified on the basis it is compatible with the locality in which it is proposed, resulting in social and economic benefits, whilst managing and mitigating environmental impacts.

PART E LEGISLATIVE AND POLICY FRAMEWORK

This Part of the SEE assesses and responds to the legislative and policy requirements for the proposed development in accordance with the EP&A Act.

The following current and draft State, Regional and Local planning controls and policies have been considered in the preparation of this Application:

Commonwealth Planning Context

- *Environment Protection and Biodiversity Conservation Act 1999*

State & Regional Planning Context

- *Greater Sydney Region Plan;*
- *Western City District Plan;*
- *Environmental Planning and Assessment Act 1979;*
- *Environmental Planning and Assessment Regulation 2000;*
- *Protection of Environment & Operations Act 1997;*
- *Biodiversity Conservation Act 2016;*
- *Rural Fires Act 1997;*
- *State Environmental Planning Policy No.33 – Hazardous and Offensive Development;*
- *State Environmental Planning Policy No. 55 – Remediation of Land;*
- *State Environmental Planning Policy No. 64 – Advertising and Signage;*
- *State Environmental Planning Policy (Infrastructure) 2007; and,*

Local Planning Context

- *Penrith Local Environmental Plan* (LEP) *2010;*
- *Penrith Development Control Plan* (DCP) *2014; and,*
- *Penrith City Council Community Plan*

This planning framework is considered in detail in the following sections.

5.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

Under the *Commonwealth Environment Protection and Biodiversity Act 1999* (EPBC Act), any action (which includes a development, project or activity) that is considered likely to have a significant impact on Matters of National Environmental Significance (MNES) (including nationally threatened ecological communities and species and listed migratory species) must be referred to the Commonwealth Minister for the Environment. The purpose of the referral is to allow a decision to be made about whether an action requires approval on a Commonwealth level. If an action is considered likely to have significant impact on MNES, it is declared a "controlled action" and formal Commonwelath approval is required.

The proposed development is not considered to have a significant impact constituting a MNES; therefore, further consideration is not required in this respect.

5.2 A METROPOLIS OF THREE CITIES - GREATER SYDNEY REGION PLAN

A Metropolis of Three Cities – Greater Sydney Region Plan (**Figure 7**) aims to meet and recognise the warranted needs of an accelerated and vastly changing population. The overall vision pursues an objective of transforming 'Greater Sydney' into a metropolis of three (3) cities, including:

- The Western Parkland City;

- The Central River City; and,
- The Eastern Harbour City

The division into three (3) cities puts workers and the wider community closer to an array of characteristics such as, intensive jobs, 'city-scale' infrastructure & services, entertainment and cultural facilities. By managing and retaining industrial land close to city centres and transport, this will ensure critical and essential services are readily available to support local businesses and community members and residents. The proposed development would not only achieve economic growth and prosperity but would encourage employment-generating opportunities that are considered relatively close in conjunction with residential communities, for ease of commute.

The proposed development also contributes to the four (4) standardised elements communicated across for all three (3) cities, including:

- Infrastructure and collaboration – once in operation, the proposed development would be able to provide locally derived sources readily available for distribution for local use, as-well-as operating on a national and global scale (dependent on the end user's distribution range);
- Liveability – the proposed development encourages employment-generating opportunities and economic prosperity, which would have positive influences on the wider locality by promoting a sense of community engagement through locally sourced and supplied products;
- Productivity – the proposed development would be situated within the Western City District Plan (**section 5.3**); and,
- Sustainability – the proposed development would not cause any detrimental impacts to its wider ecological surroundings as identified in **Part F** of this SEE.

In summary, the proposed development would contribute to the objectives set out in the *A Metropolis of Three Cities – Greater Sydney Region Plan* by promoting minor environmental impacts and the further promotion of employment-generating opportunities to the wider locality and community by being positioned within the identified the Penrith LGA.

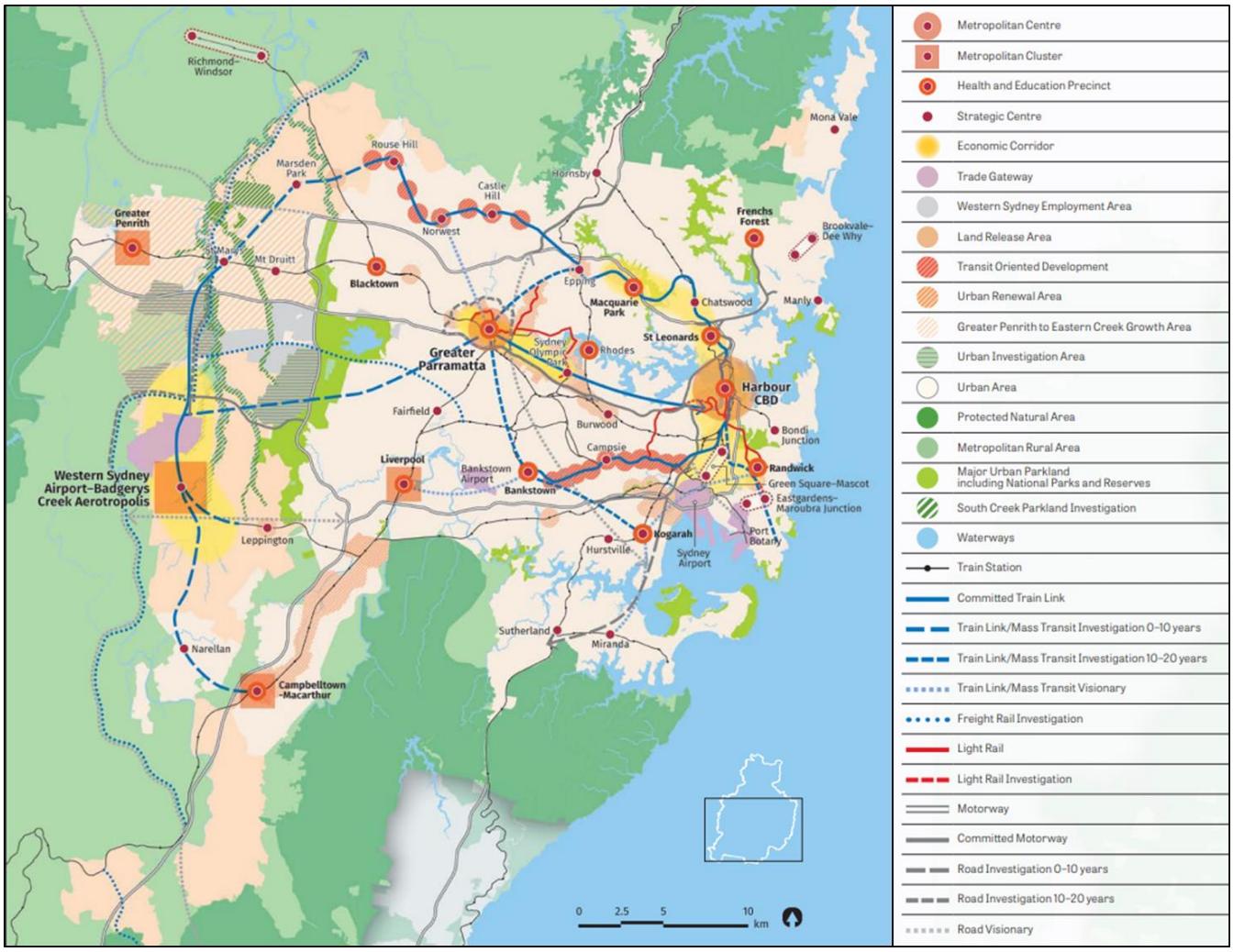

Figure 7 Metropolis of 3 Cities A Vision to 2056 (Greater Sydney Commission: Greater Sydney Region Plan, 2018)

5.3 WESTERN CITY DISTRICT PLAN

The *Western City District Plan* covers the Penrith LGA. The Plan encourages a twenty-year plan to help encourage and establish goals set out in the *Greater Sydney Region Plan* mentioned above. The Plan is considered the 'bridge' between Regional and Local planning.

Penrith is situated within the Western City District, which falls within the Western Parkland City (refer to **Figure 7** above).

The Plan reinforces the four (4) planning priorities and action items for concern as previously mentioned in **Section 5.2**. The Plan establishes a number of priorities and actions to guide growth, development and change, relating to infrastructure & collaboration, liveability, productivity and sustainability.

The Grater Sydney Commission webpage further reinforces the Plan's potential for achievement by outlining the following strategies, including:

- *Creating a once-in-a-generation economic boom with the Western Sydney Airport and Badgerys Creek Aerotropolis bringing together infrastructure, businesses and knowledge intensive jobs;*
- *Building on the Western Sydney City Deal to transform the Western City District over the next 20 to 40 years by building on natural and community assets and developing a more contained Western City District with a greater choice of jobs, transport and services aligned with growth;*
- *Delivering the first stage of the North South Rail Link;*
- *Collaborating and building strong relationships between Liverpool, Greater Penrith and Campbelltown-Macarthur reinforced by the emerging Badgerys Creek Aerotropolis forming a unique metropolitan cluster;*
- *Providing major transport links for people and freight by unprecedented transport investments;*
- *Developing a range of housing, providing access to public transport and infrastructure including schools, hospitals and community facilities;*
- *Linking walking and cycling paths, bushland and a green urban landscape framed by the Greater Blue Mountains World Heritage Area, the Scenic Hills and Western Sydney Parklands;*
- *Enhancing and protecting South Creek, Georges River and Hawkesbury-Nepean river systems;*
- *Mitigating the heat island effect and providing cooler places by extending urban tree canopy and retaining water in the landscape;*
- *Protecting the District's natural landscapes, heritage and tourism assets, unique rural areas and villages; and,*
- *Protecting the environmental, social and economic values of the Metropolitan Rural Area.*

The proposed development would contribute to a variety of the objectives set out in the *Western City District Plan* by promoting a greater range of land uses of benefit to the community including the proposed development for a Warehouse and Distribution Facility within a land portion zoned for industrial purposes and other supporting commensurate land uses; facilitating the provision of greater and improved open space, and community and pedestrian spaces; and promoting additional employment-generating opportunities to the wider locality and community closer to home, whilst supporting an economically and environmentally sustainable proposed development.

5.4 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The EP&A Act is the overarching governing statute for all development in NSW and pursuant to Part 4, the proposed development is considered Integrated Development, for which the DA would be submitted to and determined by the Sydney Western City Planning Panel.

5.5 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) contains a core list of activities that require a licence before they may be undertaken or carried out. The definition of an 'activity' for the purposes of the POEO Act is:

> *"an industrial, agricultural or commercial activity or an activity of any other nature whatever (including the keeping of a substance or an animal)."*

The proposed development would not involve any activity that would require the issue of an Environmental Protection Licence (EPL).

5.6 WATER MANAGEMENT ACT 2000

The Subject Site comprises a watercourse intersecting the north-western interface, being an inlet / tributary of the Nepean River; and, the southwestern interface, comprising an identified Wetland.

Whilst the proposed development, for purposes of a Warehouse and Distribution Facility would not be developed on these portions of the Site, some works for the purpose of remediation and on-site detention may be carried out within 40 m of the watercourse.

Pursuant to Section 91(2) of the *Water Management Act 2000* (Water Management Act) "*A controlled activity approval confers a right on its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land.*"

For purposes of the Water Management Act, *waterfront land* includes land 40 m inland of the highest bank of a river (inclusive of any tributary of a watercourse). A *controlled activity* means:

(a) the erection of a building or the carrying out of a work (within the meaning of the Environmental Planning and Assessment Act 1979), or
(b) the removal of material (whether or not extractive material) or vegetation from land, whether by way of excavation or otherwise, or
(c) the deposition of material (whether or not extractive material) on land, whether by way of landfill operations or otherwise, or
(d) the carrying out of any other activity that affects the quantity or flow of water in a water source.

Given that the proposed development includes the carrying out of a controlled activity on waterfront land, a controlled activity approval would be required. It is noted, that the proposed development would constitute Integrated Development requiring referral under Section 4.46 of the EP&A Act and Section 91 of the Water Management Act.

5.7 RURAL FIRES ACT 1997

The proposed development is situated / mapped within bushfire prone land; however, although mapped as bushfire prone land, the proposed development is surrounded by land that is consistent with land described as being actively grazed and well maintained paddocks and yards and existing industrial developments – meaning that there is minimal fuel requirement to allow for the spread of fire, and cause the impact of fire to the proposed development.

5.8 STATE ENVIRONMENTAL PLANNING POLICY NO 55 - REMEDIATION OF LAND

Under the provisions of *State Environmental Planning No 55 – Remediation of Land* (SEPP 55), where a Development Application is made concerning land that is contaminated, the consent authority must not grant consent unless:

(a) It has considered whether the land is contaminated;
(b) If the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out; and,
(c) If the land requires remediation to be made suitable for the purposes for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Recommendations provided by EIS (2018), state that the Subject Site could be made suitable for the future development of the Site, subject to implementing the following recommendations, including:

- The existing stockpiles should be characterised via additional sampling / analysis to meet the minimum sampling density outlined in the NEPM (2013). The results should be utilised to confirm what is to occur with the material (i.e. retain on-site or dispose offsite);
- The fill in the western section of the Site (and the surface soil to a minimum depth of 0.2m in areas where natural soil is present at the surface – see attached borehole logs), including the

proposed basin footprint and the area to the south of the basin in the south-western corner of the Site, is to be excavated and placed beneath the proposed hardstand provided that it is geotechnically suitable. If this cannot be achieved, the waste classification is to be confirmed and this material is to be disposed off-site to an appropriate facility; and,

- The fibre cement pipe is to be removed from the Site and disposed of appropriately. A surface clearance should be undertaken of the disturbed/stockpiled areas in the west section of the Site. A contingency plan should be prepared that can be implemented in the event that any additional ACM is encountered across the Site.

Furthermore, under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the *Contaminated Land Management Act 1997*, the requirements to notify the NSW EPA regarding site contamination should be assessed once any additional assessment(s) and removal of the fibre cement pipe and a surface clearance certificate is obtained and if a remedial strategy is required and has been selected.

Remediation of the Subject Site is not considered to be required. Potential risks associated with sources of contamination could be addressed via the proposed earthworks and implementation of the recommendations listed above (refer to **Appendix 5**).

5.9 STATE ENVIRONMENTAL PLANNING POLICY NO 64- ADVERTISING AND SIGNAGE

State Environmental Planning Policy No 64 - Advertising and Signage (SEPP 64) applies to all signage:

(a) that, under another environmental planning instrument that applies to the signage, can be displayed with or without development consent, and
(b) is visible from any public place or public reserve.

The proposed development includes the erection of signage for the purposes of identification.

The location of the proposed signage is provided within the Architectural Plans at **Appendix 2.**

Directional signage internal to the Site would also be provided to ensure a high level of legibility is achieved for all vehicles and pedestrians accessing the various areas of the Site.
Pursuant to Clause 8 of SEPP 64, a consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:

(a) that the signage is consistent with the aims/objectives of the Policy, and
(b) that the signage satisfies the assessment criteria specified in Schedule 1 of SEPP 64.

These matters are addressed below.

Aims and Objectives of SEPP 64

SEPP 64 aims:

(a) to ensure that signage (including advertising):
(i) is compatible with the desired amenity and visual character of an area, and
(ii) provides effective communication in suitable locations, and
(iii) is of high quality design and finish, and
(b) to regulate signage (but not content) under Part 4 of the Act, and
(c) to provide time-limited consents for the display of certain advertisements, and
(d) to regulate the display of advertisements in transport corridors, and
(e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.

The proposed signage is proposed for the purpose of business identification and is considered to achieve the objectives of SEPP 64 as it relates directly to the use of the Site for warehousing facilities and reinforces the industrial character of the Site in accordance with the prevailing industrial character of the area. The proposed signage would be of a high quality design and finish and would integrate with the built form on the Site in terms of siting, scale and design.

Assessment Criteria

The assessment criteria under Schedule 1 of SEPP 64 is addressed in **Table 3**.

Table 3: SEPP 64 Assessment Criteria	
Criteria	**Proposal Compliance**
1 Character of the area	
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	Yes, the proposed signage is compatible with the industrial character of the site and its surrounds and would support the operation of the proposed facility on the site.
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	Yes, as above.
2 Special areas	
Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	No, the site is not located in proximity of any significant built or natural sites or areas. The signage would be of a high quality design and finish and would improve the visual amenity of the site through effective identification.
3 Views and vistas	
Does the proposal obscure or compromise important views?	No, the proposed signage would be of a height and scale consistent with the built form on the site and would not disrupt any views or dominate views toward the site.
Does the proposal dominate the skyline and reduce the quality of vistas?	No, the proposed signage would be of a height and scale consistent with the built form on the site and would not dominate the skyline.
Does the proposal respect the viewing rights of other advertisers?	Yes, the signage would not obstruct any other signage or advertising.
4 Streetscape, setting or landscape	
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	Yes, the signage has been designed in respect of the proposed built form on the site to effectively identify the warehouse/industrial facilities whilst not being visually obtrusive. The proposed signage is compatible with the industrial character of the site and its surrounds.
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	Yes, the signage would visually define the facility on the site and would be integrated with façade treatment to create a visually coherent built form.

Does the proposal reduce clutter by rationalising and simplifying existing advertising?	No, there is no other signage in proximity of the subject site. Therefore the proposed signage would not cause any clutter.
Does the proposal screen unsightliness?	No, the signage is not used as a visual screen or filter.
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	No, the signage would not protrude above the roof line or tree canopy.
Does the proposal require ongoing vegetation management?	No, the proposed signage would not require ongoing management.
5 Site and building	
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	Yes, the signage is of suitable scale and design for its intended purpose to effectively identify the business operating on-site and would integrate with the proposed built form and façade design to achieve visual coherence.
Does the proposal respect important features of the site or building, or both?	Yes, the signage would be balanced with façade elements to integrate with the proposed built form. The proposed signage would not dominate the landscape or be visually obtrusive.
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	Yes, the signage has been integrated with the layout of the site so as not to obstruct any vehicle movements and achieve a positive visual outcome.
6 Associated devices and logos with advertisements and advertising structures	
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	Illumination is proposed for all signage to provide a high level of visibility.
7 Illumination	
Would illumination result in unacceptable glare?	Illumination would not result in unacceptable glare.
Would illumination affect safety for pedestrians, vehicles or aircraft?	Illumination would not detract from the safety of any pedestrians, vehicles or aircraft.
Would illumination detract from the amenity of any residence or other form of accommodation?	The site is not in proximity of any residential or other sensitive land uses and would not adversely affect the amenity of any development.
Is the illumination subject to a curfew?	No curfew is proposed.
Can the intensity of the illumination be adjusted, if necessary?	Illumination would be of a suitable intensity.
8 Safety	
Would the proposal reduce the safety for any public road?	No, the proposed signage is located within the site boundaries and is well set back from the street.
Would the proposal reduce the safety for pedestrians or bicyclists?	No, the proposal would not obstruct any pedestrian or cycle routes or infrastructure and therefore would not negate the safety of

	pedestrians or cyclists.
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	No, the proposed signage would not obscure any sightlines from public areas frequented by pedestrians. Neither would the proposed signage obstruct any vehicle sight lines from public roads.

Based on the above, the proposed development is considered consistent with the provisions of SEPP 64.

5.10 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) repeals the former *State Environmental Planning Policy No. 11 – Traffic Generating Development* and, pursuant to Clause 104, provides for certain proposals, known as Traffic Generating Development, to be referred to NSW Roads and Maritime Services (RMS) for concurrence.

Schedule 3 lists the types of development that are defined as Traffic Generating Development. The referral thresholds for 'Industry' development are:

- *20,000m^2 or more in area with site access to any road; or*
- *5,000m^2 or more in area where the site has access to a classified road or to a road that connects to a classified road (if access is within 90 metres of connection, measured along the alignment of the connecting road).*

As the proposal seeks consent for greater than 20,000 m^2, referral to the RMS is therefore required.

5.11 PENRITH LOCAL ENVIRONMENTAL PLAN 2010

PLEP2010 is the principal EPI applicable to the Site. The Site is zoned as follows:

- IN1 General Industrial.

Table 4 outlines the relevant planning controls applicable to the Site, as stated within PLEP2010.

Table 4: *Penrith Local Environmental Plan 2010* (PLEP2010) – General LEP Clauses	
Requirement	**Application to Proposed Development**
Clause 2.3 – Zone Objectives and Land Use Table	*(2) The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.*
IN1 General Industrial	
IN1 General Industrial – Objectives of Zone	▪ *To provide a wide range of industrial and warehouse land uses;* ▪ *To encourage employment opportunities;* ▪ *To minimise any adverse effect of industry on other land uses;* ▪ *To support and protect industrial land for industrial uses;* ▪ *To promote development that makes efficient use of industrial land; and,* ▪ *To permit facilities that serve the daily recreation and convenience needs of the people who work in the surrounding industrial area.*
Permitted without Consent	*Nil*

Pemitted with Consent	*Animal boarding or training establishments; Boat building and repair facilities; Car parks; Depots; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; Garden centres; General industries; Hardware and building supplies; Industrial retail outlets; Industrial training facilities; Industries; Kiosks; Landscaping material supplies; Light industries; Neighbourhood shops; Places of public worship; Plant nurseries; Recreation areas; Roads; Rural industries; Self-storage units; Signage; Storage premises; Take away food and drink premises; Timber yards; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations;* ***Warehouse or distribution centres****.*
Prohibited	*Hazardous industries; Offensive industries; Any other development not specified in item 2 or 3.*
PLEP2010 Clauses	
Clause 4.1 – Minimum Lot Size	The Site is subject to a minimum lot size of 2,000 m^2. The proposed development site comprises approximately 50,000 m^2 complying with Clause 4.1 (refer to **Figure 8**).
Clause 4.3 – Height of Buildings	The Site is subject to a maximum building height of **12 m** under Clause 4.3 of PLEP2010 (refer to **Figure 9**). The proposed Warehouse and Distribution Facility would exhibit a proposed maximum height of 13.65 m, for which, a Clause 4.6 height justification would be made for added due diligence, with regard to the proposed height.
Clause 4.4 – Floor Space Ratio	N/A
Clause 4.6 – Exceptions to Development Standards	The proposed Warehouse and Distribution Facility would exhibit a proposed maximum height of 13.65 m at the ridge height of the warehouse. This is a 1.65 m deficit with regard to compliance concerning the maximum building height under PLEP2010 of 12 m. For further information, refer to the Clause 4.6 Variation provided within **Appendix 10**.
Clause 5.3 – Development Near Zone Boundaries	The proposed development would not rely on adjoining zone boundaries as it is appropriately zoned for the proposed development.
Clause 5.10 – Heritage Conservation	Refer to **Section 6.9**.
Clause 5.11 – Bush Fire Hazard Reduction	The Site is subject to bushfire prone land. Refer to **Section 6.8** for further consideration.
Clause 6.2 – Public Utility Infrastructure	Infrastructure services such as potable water, waste water, electricity, gas and telecommunications could be successfully augmented to the Site.
Clause 7.1 – Earthwork	Earthworks are proposed to be carried out to establish building pads on the proposed development lot and balance the cut/fill accordingly. The proposed earthworks would be carried out in a staged manner upon issuance of development approval.
Clause 7.4 – Sustainable Development	The proposed development, specifically the proposed Warehouse and Distribution Facility would implement Ecologically Sustainable Development. Any future development on the land portion would also integrate similar controlled initiatives.
Clause 7.5 – Protection of Scenic Character and Landscape Values	The proposed development would ensure that compliance is ensured through minimalistic visual impact the proposed development would present with regard to this Clause. Furthermore, the design and appearance of the proposed development is summarised in **Section 6.3** (refer to **Figure 10**). Additionally, the Architectural & Landscape

	Plans provided in **Appendix 2** & **3** further reinforce compliance with Clause 7.5 of PLEP2010.
Clause 7.6 – Salinity	A Contamination and Salinity report has been provided by EIS (2018), which summarises the Site's potential contamination and salinity aspects.
Clause 7.7 – Servicing	The proposed development, specifically the Site, would be successfully serviced via augmentation of existing services directly to the Site.

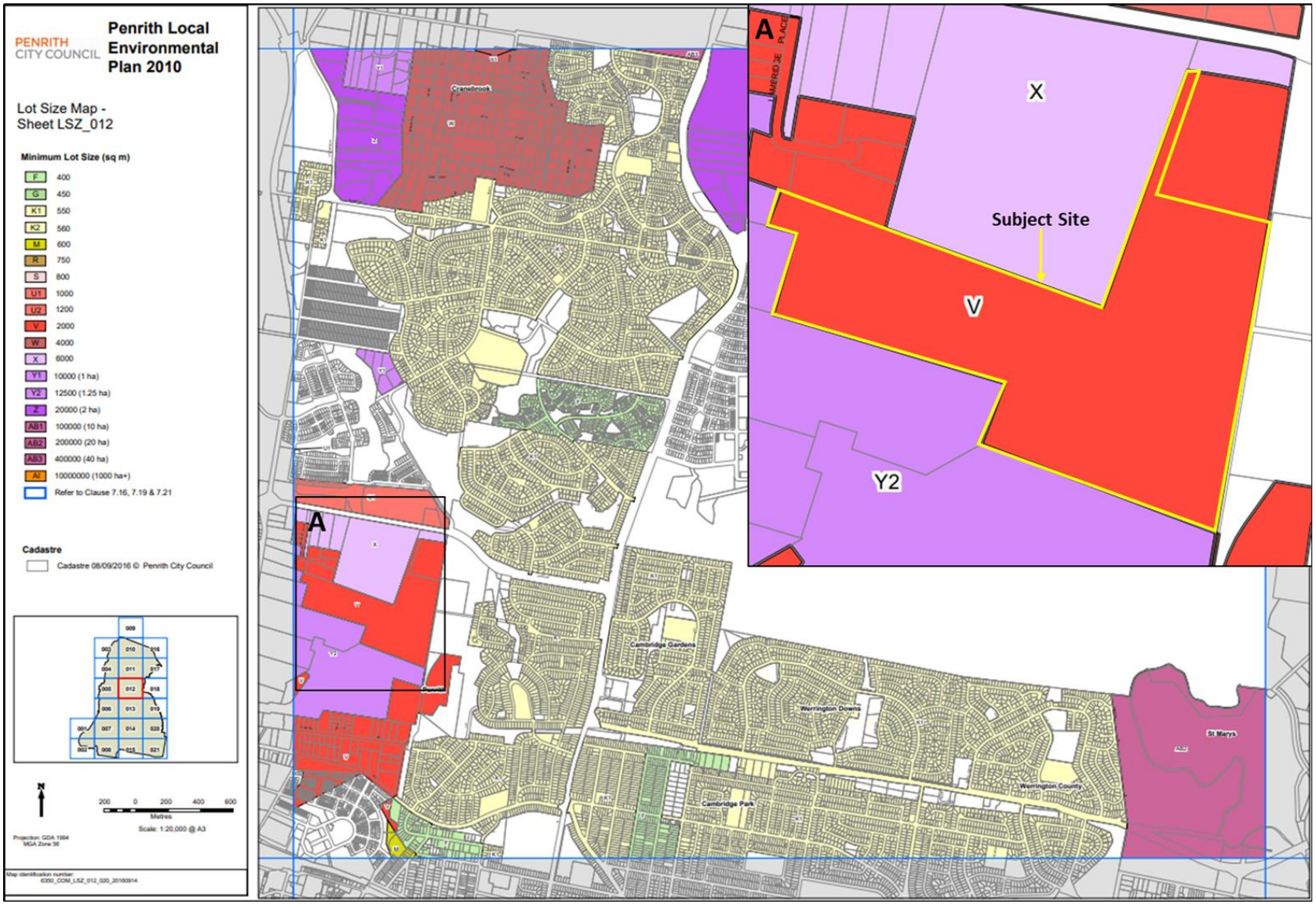

Figure 8 Minimum Lot Size of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

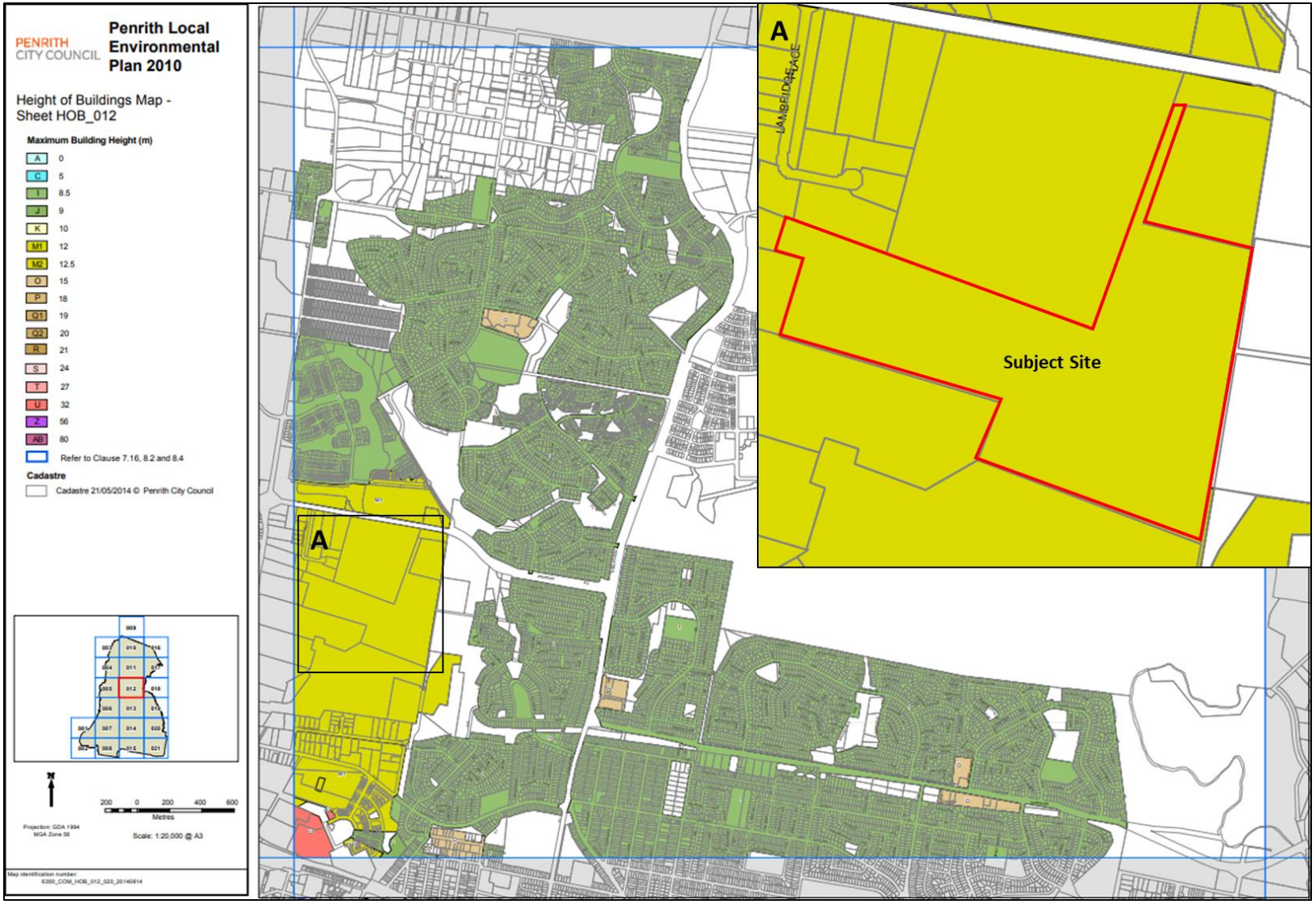

Figure 9 Maximum Building Height of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

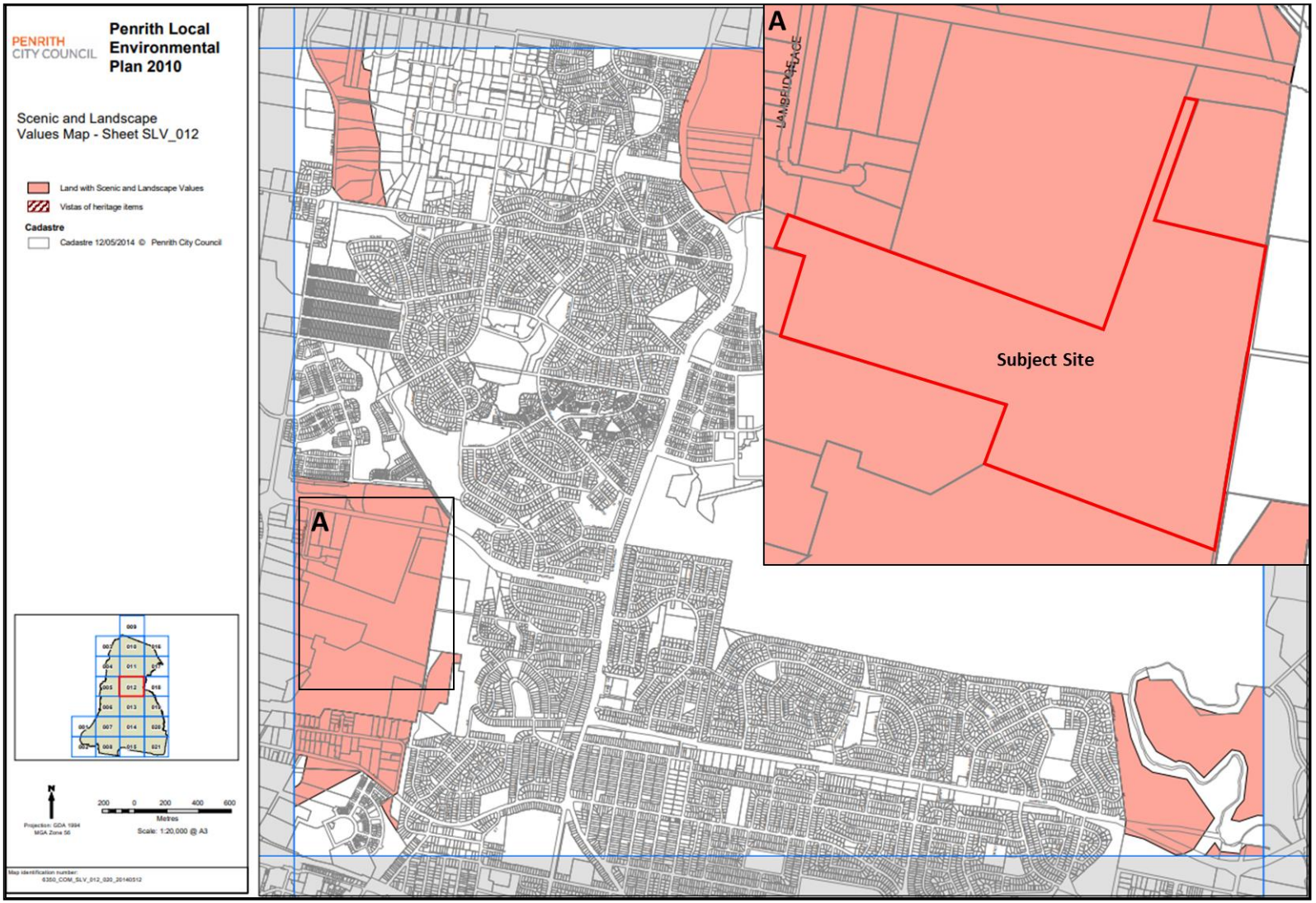

Figure 10 Scenic and Landscape Values Concerning the Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

5.12 DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS

No Draft Environmental Planning Instruments apply to the proposed development.

5.13 PENRITH DEVELOPMENT CONTROL PLAN 2014

The *Penrith Development Control Plan 2014* (PDCP2014) was formally adopted by Council on 23 March 2015 and came into regulatory effect as of 17 April 2015. The PDCP2014 is to be read and applied in retrospect to PLEP2010, for which, if there is any inconsistency between the two (2), the LEP would prevail over the DCP.

The objectives of the PDCP2014 are as follows:

- *To provide guidance to people wishing to carry out development within the City of Penrith;*
- *To promote development which is consistent with Council's vision for the City of Penrith, namely, one of a sustainable and prosperous region with a harmony of urban and rural qualities with a strong commitment to environmental protection and enhancement;*
- *To ensure development incorporates the principles of sustainable development through the delivery of balanced social, economic and environmental outcomes;*
- *To encourage development which 'lifts the bar' in terms of delivering sustainable and healthy communities in the long term;*
- *To foster development that responds appropriately to the natural and built environment, in particular, vegetation, biodiversity corridors, significant waterways, riparian land, significant buildings and gardens, and scenic landscapes and views;*
- *To provide for an urban environment that is active, attractive and safe for residents and visitors; and,*
- *To ensure the quality of development in the City of Penrith is of a high standard.*

A review of the core controls applicable to the proposed development concerning the proposed Warehouse and Distribution Facility, with an additional proposed access road and proposed bulk earthworks, with regard to the Subject Site can be found in **Appendix 9.**

PART F ENVIRONMENTAL ASSESSMENT

Pursuant to Section 4.15(1) of the EP&A Act, the following matters have been addressed.

6.1 CONTEXT & SETTING

The proposed development for a Warehouse and Distribution Facility is consistent with the intended development of land within the Penrith LGA. The proposed development would enable the efficient and sustainable use of such designated industrial land via adherence to the provisions, and overarching aims and objectives set out within PLEP2010 that allows for the construction and operation of warehouse or distribution centres. The proposed development would beneficially contribute to the regional and local economies, and population groups positioned in the wider locality.

The proposed development is compatible with surrounding industrial land uses (northern and western boundaries), including warehouses and industrial facilities alike that are designated for such employment-generating land uses of similar and parallel nature. The Site is not located in proximity of any residential development (~500 m east) or other sensitive land uses; therefore, would not exhibit any adverse environmental or amenity impacts (refer to **Section 6.3**).

The proposed site layout and building design would ensure the functional operation of the facility in accordance with the needs of the end user, whilst not impacting on any other operations. Similarly, the Site and built form have been designed in respect of the planned / existing road infrastructure, noting its direct linkages to the wider regional road network, including Andrews Road, The Northern Road, Great Western Highway and the M4 Motorway.

As mentioned above, the proposed development would not exhibit any significant environmental impacts and would not adversely impact on the amenity or operations of any adjoining sites within close proximity to the Subject Site. Therefore, the proposed development would be considered compatible with the site context.

6.2 TRAFFIC & TRANSPORT

The *Traffic Impact Assessment – Proposed Warehouse Development – 128 Andrews Road, Penrith* (Ason Group, 2018) considers the relevant traffic, transport and parking implications of the proposed development (refer to **Appendix 7**). Throughout the Report, Ason Group considered key planning documents and traffic and parking guidelines, including:

- PDCP2014;
- 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); and
- Australian Standard 2890.2: Parking Facilities – Off street commercial vehicle facilities (AS 2890.2).

The projected daily operational truck movement is estimated to be approximately 136 veh/day (inbound and outbound), which would be managed to be evenly distributed during the proposed development's operation (24/7 operation). **Table 5** depicts the anticipated daily truck movements with regard to the proposed development.

Table 5: Anticipated Daily Truck Movements

Description	Current Operation	Vehicle Type	Daily Movements
Inbound Movement to Proposed Warehouse at 128 Andrews Road			
Interstate Transfers	24/7	B-Doubles	2
Containers	24/7	40' Shipping Container	1 to 3
Packaging Loads	N/A	N/A	0

Total Inbound	N/A	N/A	3 to 5
Outbound Movement from Proposed Warehouse at 128 Andrews Road			
Transit Lane	24/7	B-Doubles	12
		Various	6
Customer Orders	24/7	48' Single	30 to 45
Containers	24/7	40' Shipping Container	1 to 3
Total Outbound	N/A	N/A	48 to 63

Access to the Site is currently obtained via Andrews Road (refer to **Figure 11**). The existing site does not generate any traffic based on its undeveloped nature. Accordingly, the anticipated traffic volumes as a result of the proposed development would be the net increase of traffic on the surrounding road network.

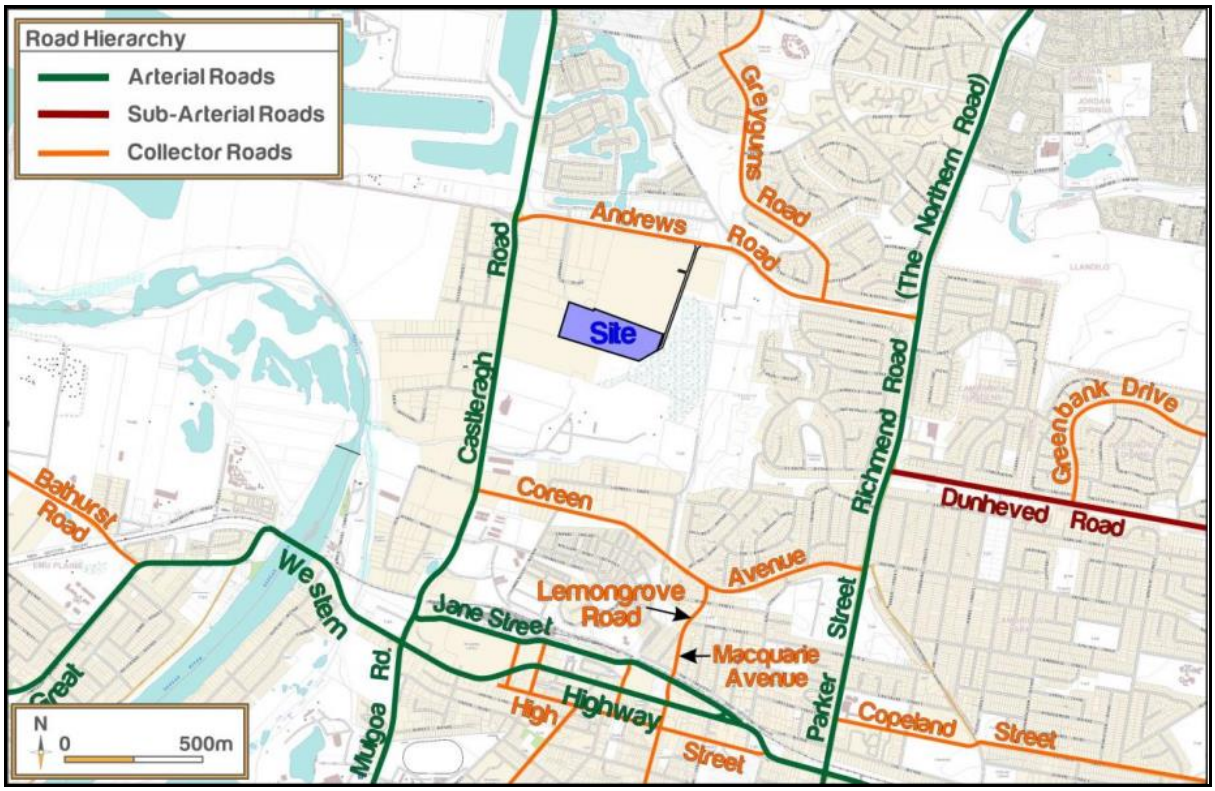

Figure 11 Road Hierarchy (Source: Ason Group, 2018)

The performance of the Andrews Road access has been analysed using the SIDRA computer program. The existing Andrews Road access performance under the existing year 2018 "basleine" scenarios is provided in **Figure 12** below.

Table 3: Local Network Performance – Existing Baseline Scenario

Intersection	Period	Intersection Delay	Level of Service
Andrews Road Access	AM	26.3 (0.4)	B
	PM	15.5 (0.2)	B

Notes: 1) The figures in bracket () presents the overall average intersection delays.

2) Having regard for the absence of traffic using the northern leg of this intersection, the access has been modelled as a full movement T-intersection in SIDRA.

Figure 12 Existing Baseline Scenario of Andrews Road (Source: Ason Group, 2018)

The analysis indicates that Andrews Road access operates satisfactorily under the baseline scenario with a Level of Service of 'B'[1] during both AM and PM peak hour periods with minimal delays and significant spare capacity.

The traffic generation rates adopted for any large format of industrial development on the Subject Site is estimated with regard to the rates related to the *vehicle-trips during adjacent road* AM and PM peak periods for the following three (3) industrial sites included in Appendix E of the RMS Technical Direction TDT 2013/04a. The three (3) sites include:

- Site 1: Erskine Park Industrial Estate, Erskine Park;
- Site 2: Wonderland Business Park, Eastern Creek; and,
- Site 3: Riverwood Business Park, Riverwood.

Accordingly, the average AM and PM peak hour trip rates are as follows:

- AM rate: 0.247 trips per 100 m^2 of GFA; and.
- PM rate: 0.182 trips per 100 m^2 of GFA.

Furthermore, Ason Group conducted a 7-day tube count survey at a large format industrial area in Penrith LGA to further confirm the actual traffic generation of such developments. The analysis undertaken on the actual survey data suggests the following AM and PM peak hour rates:

- AM rate: 0.155 trips per 100 m^2 of GFA; and.
- PM rate: 0.238 trips per 100 m^2 of GFA.

For the purposes of the Traffic Impact Assessment (TIA) undertaken, the TIA adopts the following trip rates:

- AM & PM Rates: 0.25 trips per 100 m^2 of GFA.

Figure 13 below depicts the vehicular traffic volumes with regard to the proposed development.

[1] Average Delay per Vehicle (secs/veh) is 15 to 28; Traffic Signals, Roundabout indicate 'good with acceptable delays & spare capacity; and, Give Way and Stop Signs indicate acceptable delays & spare capacity.

Table 4: Summary of Future Development Traffic

Land-use	GFA (m^2)	AM Peak (veh/hr)	PM Peak (veh/hr)
Warehouse Development	50,150	125	125

Figure 13 Anticipated Traffic Volumes (Ason Group, 2018)

The TIA notes, that the above estimated traffic figure (125 veh/hr) includes both entry and exit movements. Furthermore, the following operational traffic generation is anticipated for the Site:

- Commercial Vehicles: Future development is expected to generate in the order of 136 vehicle movements per day. Additionally, it is expected that roughly 8% of all movements would occur during the peak hours equating to approximately 11 trucks (in and out movements); and,
- Light Vehicle Movements: It is assumed (via a conservative approach) that all 30 staff would attend the Site using private vehicles during AM and PM peak hours. It is anticipated that these vehicle movements would occur over a dispersed timeframe and not at one singular interval. Notwithstanding, a vehicular generation of 30 veh/hr has been conservatively utilised for the assessment undertaken.

Accordingly, the total site-specific traffic generation is estimated to be approximately 41 veh/hr, which is significantly less (81 veh/hr) than the theoretical traffic generation estimation, should another more standard user operate out of the warehouse at some point in the future.

Using SIDRA modelling (refer to **Figure 14**), an analysis indicates that the access arrangement proposed along Andrews Road can comfortably accommodate the proposed development's traffic volumes under short-term conditions (existing plus development).

Table 5 : Local Network Performance

Intersection	Scenario	Period	Intersection Delay	Level of Service
Andrews Road Access	Existing Baseline	AM	26.3 (0.4)	B
		PM	15.5 (0.2)	B
	Existing + Development	AM	30.2 (3.0)	C
		PM	17.0 (2.6)	B

Note: 1) The figures in bracket () show the average intersection delays.

Figure 14 Local Road Network Performance (Ason Group, 2018)

Accordingly, this post development scenario suggests that the operation of the proposed access (with median storage and right / left turn bays) is supported in terms of intersection capacity. Furthermore, it is acknowledged that larger heavy vehicles (i.e. B-Doubles) may not have the benefit of using the median storage to make a two-stage right turn and as such they would likely wait for suitable gaps to

turn right in a single sweep. In this instance the TIA suggests the following arguments for the B-Double movements, including:

- From the operational assumptions it is expected that the proposed end user (O-I) would only require 28 B-Double movements per day, which is distributed throughout the day; therefore, this occurrence would occur relatively infrequently during peak periods;
- To assess the operation of the proposed access, the SIDRA analysis has also been undertaken, having regard for a single-stage right turn (as per the existing access configuration). The results of the SIDRA analysis for this option (Existing + Development) with the existing access configuration is also attached in Appendix B, which confirms good operational performance, with a LoS "C" and "B" during the AM and PM peak hours. Average delays are increased when comparing to the scenario with two-stage right turn model, but remain within acceptable limits; and,
- Accordingly, it can be concluded that the Andrews Road access can accommodate the proposed development traffic with minimal operational issues.

In summary, the proposed access design would improve the vehicular movements at this access while still maintaining the existing full movement nature of this access.

Additionally, the TIA notes, that the impacts of the proposed development on the broader road network are considered acceptable. Accordingly, in the the short-term, the proposed access arrangement – permitting all turning movements – are considered acceptable and would not have any material impact on the surrounding road network.

Furthermore, in the longer-term, the background traffic growth may (depending on actual growth in background traffic volumes) result in larger delays for other future larger industrial developments on this Site. The larger delays are mainly for the vehicles turning right out from the Site and is because of the traffic growth assumptions on Andrews Road, which is due to uncertainty. This could be reviewed over time in response to increased traffic flows and appropriate remedial measures taken, if required, only at such time that traffic delays do not result in an unacceptable outcome for network safety. However, even in the longer-term future, the estimated tenant-specific traffic generation is not anticipated to result in failure at the proposed access arrangement. Overall, Ason Group (2018) suggest that the proposed access arrangement is supportable from an operational perspective.

According to the site-specific operational information provided in the TIA (refer to **Appendix 7**), the immediate future proposed tenant (O-I) is expected to have a total of 30 staff on-site at any given time. A total of 98 car parking spaces, including 2 disabled bays, are provided which can readily meet this demand.

PDCP2014 Section C10 "Transport, Access and Parking" requires car parking for warehouse or distribution centres to be provided at the rate of:

- One (1) space per 100 m^2 of GFA (including ancillary office).

Adoption of the specified rate with regard to the proposed development (50,000 m^2) would result in a theoretical car parking requirement of 500 car parking spaces. Notwithstanding, there is an opportunity to provide parking at a lower rate, consistent with recently approved development at Oakdale South Industrial Estate and Mamre West Precinct (First Estate). These developments have provided parking at rates consistent with the RMS requirements for warehouse uses being:

- One (1) space per 300 m^2 of warehouse GFA; and,
- One (1) space per 40 m^2 of ancillary office.

Notwithstanding, application of the above RMS rate would result in a demand of 172 car parking spaces.

For contextual reference, surveys of eight (8) comparable industrial development's has been undertaken to establish the effective parking rate of operational development's that are located within the Western Sydney Employment Area (WSEA) – adopting the same methodology as that used in establishing the RMS rate. Upon review of the results from the surveys, the data utilised in contrast to the proposed development provides a parking requirement of 98 car parking spaces.

The 98 car parking spaces provided thus meets this requirement. Additionally, two (2) accessible (disabled) car parking space would be required. The proposed development would make provisions for two (2) such accessible car parking spaces.

It is noted, that the Site Plan (**Appendix 2**) does not provide any bicycle parking and / or end of journey facilities; however, there is ample space available on-site and the requirement for such facilitites can be further investigated during the Construction Certificate stage of the proposed development (subject to a condition of consent). Notwithstanding, the proposed development would require the following:

- Five (5) bicycle parking (two (2) for staff and three (3) for visitors);
- One (1) per three (3) locker racks;
- Two (2) showers (one (1) for male and one (1) for female); and,
- Two (2) change rooms (one (1) for male and one (1) for female).

The access driveways, car parking and hardstand areas have generally been designed having regard for relevant Australian Standards (AS2890 series). According to the operational details provided, with regard to the proposed development, access to the Site shall be required for articulated vehicles and B-Doubles. As such, a 26-metre B-Double has been used as the relevant 'design vehicle' when assessing the Site access driveway and internal layout. Additionally, the design vehicle for access to the RSD on the eastern side of the building should be restricted to rigid vehicles and / or articulated vehicles 19 metres or less in size (i.e. no B-Doubles). It is noted, that final resolution of the Site access and internal design would be expected to occur as part of the Construction Certificate design coordination in response to a general condition of consent requiring compliance with AS2890. Notwithstanding, the initial swept path analysis undertaken confirm the general suitability of the proposed design for its intended purpose.

The TIA concludes, that the proposed development is supportable and would not result in any adverse traffic or parking impacts on the surrounding road network's operational conditions.

6.3 DESIGN AND APPERANCE

The proposed development would be complemented by a high quality design and construction in order to positively reflect and contribute to the aesthetically pleasing characteristics set out in the aims and objectives of PLEP2010 with regard to the Penrith LGA.

The proposed Warehouse and Distribution Facility would display the appropriate scale and visual appearance that is consistent with the existing built-form, and surrounding development of industrial sites within the Penrith LGA (particularly bordering the Subject Site), and would reinforce the industrial character of the area. It is noted, that the Subject Site is applicable to the provisions of Clause 7.5 under PLEP2010, for which the Subject Site has integrated an aesthetically pleasing architectural landscape design, adhering to the objectives (where possible) of Clause 7.5, through the protection of landscape values, subject to the Site. Additionally, the proposed development would retain approximately 159,964 m^2 of reserved land for which the wetland setback has been incorporated into the design for adherence (and added due diligence).

The proposed development has been designed to address all street frontages in order to achieve a positive visual outcome and contribute to pleasant views toward the Site from the public domain. Although hidden from the Andrews Road interface by the industrial development to the north, façade

articulation would be utilised to create visual interest, and siting of offices to address the street frontage would provide additional modulation and opportunities for passive surveillance. This would also be complimented via the architecturally positioned landscape design in regards to the proposed development, which would contribute to enhancing the vegetated character of the Site – and, further, be visually pleasing for passersby.

Combined with significant building setbacks, deep-soil landscaping within all setbacks would ultimately soften the appearance of the built form and hard surfaces of the Site. This would introduce a human-scale to the Site and prevent the dominance of the built form. Deep soil landscaping would also screen all car parking and loading areas accordingly.

6.4 SAFETY, SECURITY AND CRIME PREVENTION

The principles of Crime Prevention Through Environmental Design (CPTED) have been considered in the design of the proposed development.

The CPTED guidelines were prepared by the NSW Police in conjunction with the Department of Planning. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods'. The main aim of the policy is to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and the encouraging the general public to become active guardians; and,
- Increase the perceived risk involved in committing crime.

The guidelines provide four (4) key principles to limit crime, including:

- Natural Surveillance;
- Access Control;
- Territorial Reiforcement; and,
- Space Management.

Principle 1 - Surveillance:

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The proposed development would orientate active areas such as the ancillary offices and building entrances towards surrounding roads, pedestrian paths, car parking areas and deep-soil landscaping. The Site comprises of an acillary office(s);
- The proposed development would utilise low lying landscaping in appropriate locations to ensure there would be no obstruction of surveillance opportunities; and,
- External lighting would enable the maintenance of sight-lines and surveillance after dark.

Principle 2 – Access Control

Access Control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- The Site would be secured by perimeter fencing and access gates to deter unauthorised access to the site; and,
- Directional signage to heavy vehicle, car parking, pedestrian paths and building entries will define the various areas of the site providing legibility and minimising vehicular and pedestrian conflict within the site.

Principle 3 - Territorial Reinforcement

Territorial Reinforcement can be described as creating a sense of ownership to a public space or vicinity, encouraging the usage of that space. By increasing the usage capability, this also deters crimes and, further increases the chances of a crime being witnessed and reported in a timely manner.

- The provision of security-controlled entrances to the site and building would emphasise the separation between the private and public domain; and,
- Well maintained landscape design would indicate the development is well-used and cared for to reduce criminal activity.

Principle 4 - Space Management

Space Management is intuitive of Principle 3 – Territorial Reinforcement – and, refers to ensuring a space is utilised and cared for appropriately.

- On the ground level, pathways and planters would be well maintained by a landscape contractor. Continued repairs and maintenance would discourage vandalism; and,
- High quality materials, varied façade treatments and landscaping along boundaries would assist in discouraging vandalism and graffiti.

The proposed development would successfully integrate the four (4) principles outlined to limit crime outlined in the Crime Prevention Through Environmental Design (CPTED) guidelines, which, are adopted into the PDCP2014.

6.5 SOIL AND WATER

The *Civil Engineering Report for Development Application – 128 Andrews Road, Penrith* considers the overall stormwater management, water quantity management, stormwater quality controls and erosion & sediment controls plans concerning the proposed development (refer to **Appendix 4**).

Stormwater

There is currently no such formal drainage on-site. The proposed stormwater drainage system for the proposed development would comprise a minor and major system to safely and efficiently convey collected stormwater runoff from the Subject Site, specifically the proposed Warehouse and Distribution Facility.
The minor system would consiste of a pipe drainage system designed to accommodate the 1 in 20-year ARI storm event (Q20). This results in the piped system being able to convey all stormwater runoff up to and including the Q20 event. The major system has been designed to cater for storms up to and including the 1 in 100-year Ari storm event (Q100). This major system employs overland flow paths to safely convey excess runoff from the Site. The design of the proposed stormwater system for the Subject Site is based on the following:

- Runoff from the canopy would generally be designed in accordance with AS3500.3 National Plumbing and Drainage Code Part 3 – Stormwater Drainage.
- Overall site runoff and stormwater management woud generally be designed in accordance with the Institution of Engineers, Australia publication "Australian Rainfall and Runoff" (1988 Edition), Volumes 1 and 2 (AR&R).
- Design recurrence intervals for major and minor storms will be in accordance with Part C3 of PCC PDCP2014.
- Stormwater harvesting is based on the requirements of Part C3 PCC PDCP2014 and the NSW Department of Environment and Conservation Document *Managing Urban Stormwater: Harvesting and Reuse.*

Additionally, water quality has been considered in the design, throughout new paved areas, ensuring that any increase in the detrimental effects of pollution are mitigated and PCC Water Quality Objectives are met. The means via which these objectives are achieved are as follows through the incorporation of a stormwater management basin consisting of an on-site detention basin (OSD), combined with a bioretention basin.

- Water Quantity:
  - An OSD system is proposed for the Subject Site. The objective for water quantity is to attenuate the post development flows to less than or equal to the pre-development flows from the Site.
- Water Quality:
  - Treatment of stormwater flows would be performed by a treatment train which comprises of pit inserts and bioretention.

It is important to note, that there are two (2) existing catchments on-site and the proposed legal points of discharge for the Site would generally match existing catchment breakdown. The majority of the Site would be drained to the eastern wetland, and a smaller portion to the Lambridge Place Culvert. Furthermore, existing pre-developed flows would be maintained for the post-development conditions.

Sewer

An existing sewer line has been identified that runs through the eastern portion of the Subject Site within a dedicated easement. The proposed development works would remain clear of the existing asset.

Earthworks

In a previous Geotechnical Report undertaken by JK Geotechnics in July 2018, the geotechnical profile of the Subject Site was described as containing an alluvial profile comprised of silty sands of 1-2m depths over silty sandy gravels. The silty sands exhibit CBR's of approximately 10-14%. The proposed earthworks are recommended to be carred out by an earthworks contractor experienced with silty soils, due to the intricate dealings required due to the optimum moisture content required, subject to development works.

Filling of the Subject Site will be required. The objective for the levels and earthworks proposed over the Site would be to provide a pad for the proposed Warehouse and Distribution Facility, to facilitate site access, to drain the site stormwater via gravity, keep building levels above the 1% AEP (1 in 100-year ARI flood level) – with appropriate freeboards, to maintain floodway during the 0.5% AEP (1 in 200-year ARI) event and to maximise efficiency in the retaining wall design for the proposed development.

It is proposed to ensure a minimum 500 mm layer of sandstone (minimum CBR = 25%) is included in the filling exercise. Proposed earthworks with regard to the Subject Site are illustrated in **Figures 15** & **16** below (as well as in **Appendix 4**) and the estimated earthworks volumes are as follows in **Table 6**.

Table 6: Cut / Fill Balance	
Earthworks Volume	
Cut	-12,700 m^3
Fill	+54,400 m^3
Detail Excavation	-4,900 m^3
Difference	+36,800 m^3

Imported fill would need to comprise ENM or VENM with suitable certification as such prior to placement or importation to the Subject Site. A formal fill management plan prepared by the contractor is recommended to form part of the CC approval stage. Additionally, all geotechnical testing and inspections performed during the earthworks operations would be undertaken to Level 1 geotechnical control, in accordance with AS3798-1996.

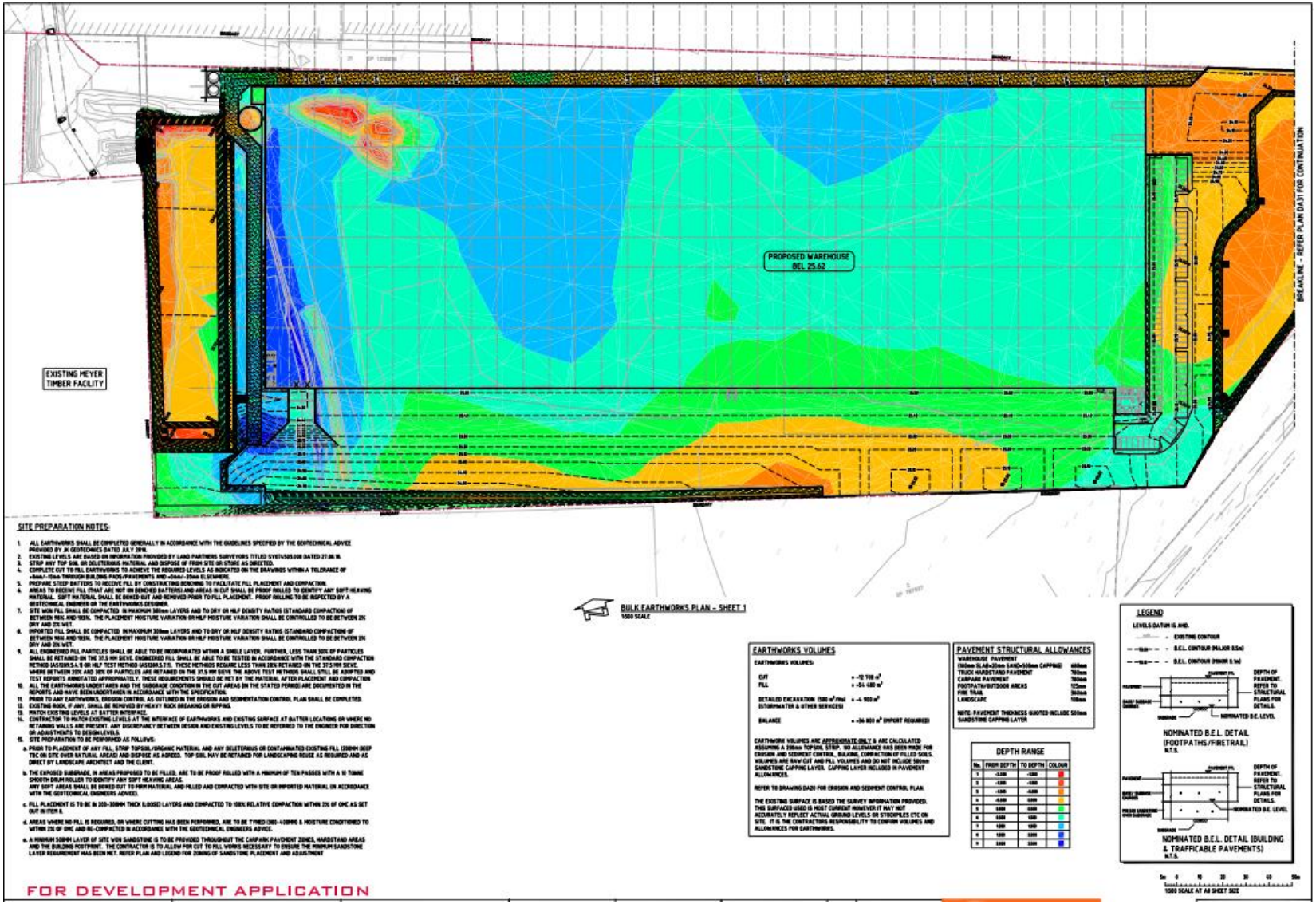

Figure 15 Proposed Bulk Earthworks at the Subject Site (Source: Costin Roe Consulting, 2018)

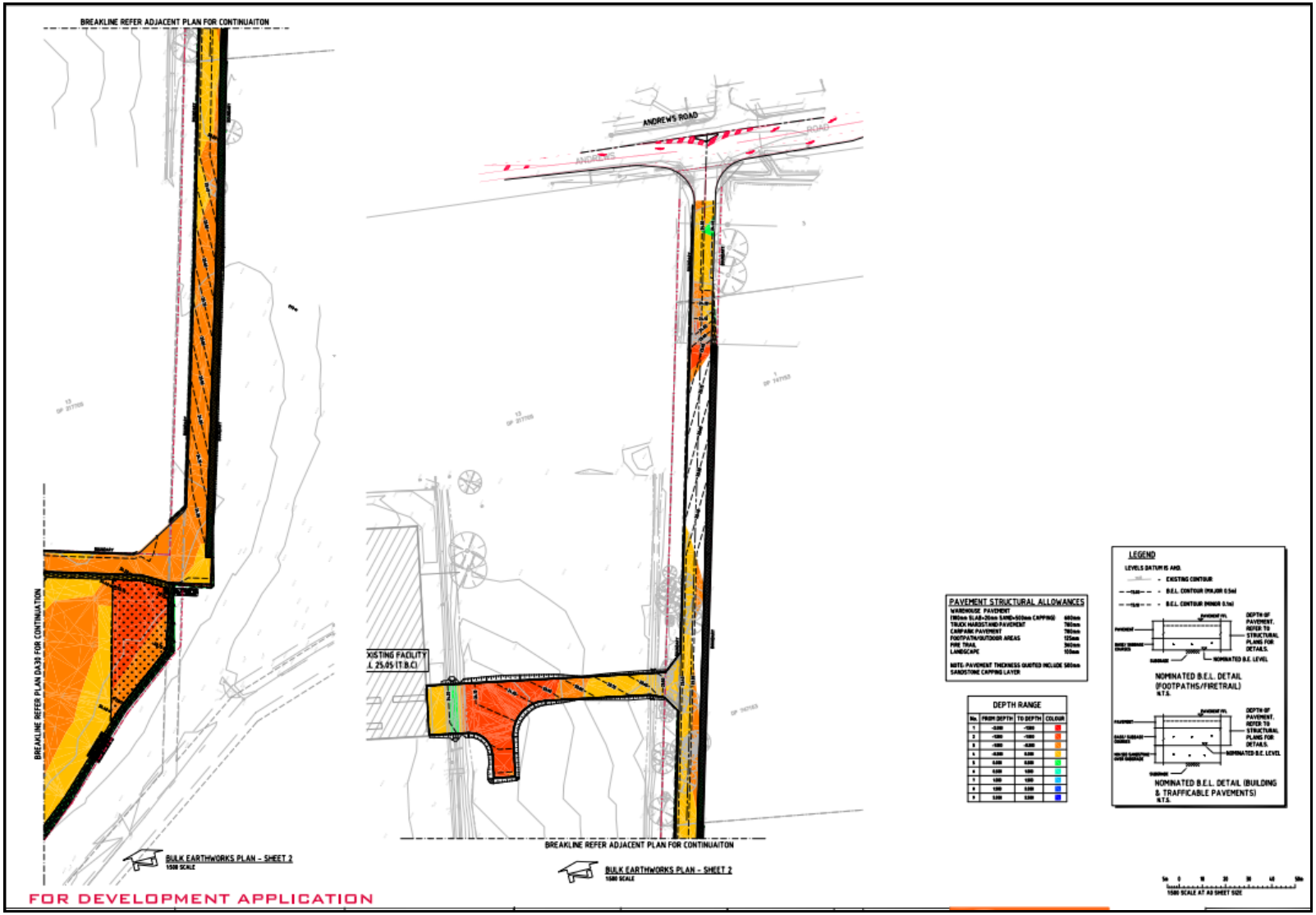

Figure 16 Proposed Bulk Earthworks at the Subject Site Access Road (Source: Costin Roe Consulting, 2018)

Geotechnical

The *Due Diligence Geotechnical Investigation* (JK Geotechnics, 2018) explains that, a detailed geotechnical investigation of the Site should be carried out once the final details of the proposed development have been determined (refer to **Appendix 6**).

Additionally, the long term successful performance of the floor slabs and pavements is suggested to be dependent on the completion of the proposed earthworks. Other critical factors associated with the proposed earthworks may include subgrade preparation, selection of fill materials, control of moisture content and drainage, etc.

Erosion and Sediment Control

All soil and sediment controls measures would be performed in accordance with Council requirements and recommendations set out in the Landcom document *Managing Urban Stormwater, Soils ad Construction (1998) – The Blue Book*. Measures would include sediment basins, construction entry / truck shakers, sediment fences, diversion drains and drainage pit protection.

An Erosion and Sediment Control Plan (ESCP) is included in the civil engineering drawings (refer to **Appendix 4**). The drawings show that the proposed development works can proceed without polluting receiving waters. A detailed ESCP would be prepared after development consent is obtained and before construction works commence. Further conditions requiring adherence to concerning the ESCP are detailed in Section 8.3 of **Appendix 4**.

Stormwater Hydrology

Rainfall Intensity Frequency Duration (IFD) data used as a basis for Drains modelling for the 2 to 100 Year ARI events was taken from *The Bureau of Meteorology Online IFD Tool.* Calculation of the runoff from storms of the design ARI have been calculated with the catchment modelling software DRAINS.

Additionally, hydraulic calculations would be carried out utilising DRAINS modelling software during the detail design stage to ensure that all surface and subsurface drainage systems meet or exceed the required standard. The calculated water surface level in open junctions of the piped stormwater system would not exceed a freeboard level of 150 mm below the finished ground level, for the peak runoff from the minor system runoff. It is noted, that where the pipes and junctions are sealed, this freeboard is not required.

Dedicated flow paths have been designed to convey all storms up to and including the 100-year ARI. These flow paths will convey stormwater from the Site to the detention systems prior to discharge.

Water Quantity Management

Council's preferred modelling software, DRAINS have been used to assess the Site detention discharge and storage relationship. **Tables 7** & **8** below show the existing and developed flows at the downstream boundaries for the western and eastern catchments respectively. As noted, in the Council Pre-DA Meeting Minutes (**Appendix 18**), peak flows are to match pre-development and flows are to be dissipated prior to entering the wetland on the eastern property catchment.

Table 7: Western Catchment – Q2, Q20 and Q100 ARI Peak Flows

ARI	Design Storm Duration	Peak Flow (m^3/s)		
		Undeveloped	Developed	
		Site	Site (no atten.)	Site (+ atten.)
2	30	0.565	0.128	0.171
	60	0.797	1.360	0.226
	120	0.770	1.310	0.304

20	30	1.770	2.340	0.414
	60	1.970	2.450	0.467
	120	2.070	2.440	0.493
ST100	30	2.530	2.990	0.483
	60	2.690	3.130	0.754
	120	2.780	3.110	0.955

Table 8: Eastern Catchment – Q2, Q20 and Q100 ARI Peak Flows

ARI	Design Storm Duration	Peak Flow (m^3/s)		
		Undeveloped	Developed	
		Site	Site (no atten.)	Site (+ atten.)
2	30	0.441	1.460	0.464
	60	0.621	1.270	0.474
	120	0.600	1.470	0.467
20	30	1.380	2.710	0.508
	60	1.540	2.270	0.525
	120	1.610	2.670	0.525
ST100	30	1.970	3.340	0.544
	60	2.100	2.880	0.895
	120	2.170	3.280	0.854

The post development (with site attenuation) flows can be seen to be lower than the pre-developed flows.

An above ground open basin is proposed in the western portion of the Site to attenuate the western portion of the Site catchment, and the existing land to the south known as 'Capral' land. The existing discharge point from the Capral land is to an existing unformed wetland on the Subject Site. The Capral land discharge point is to be maintained and attenuated within the western basin. The discharge location for the western basin will be to an existing drainage easement located to the northwest of the proposed Warehouse and Distribution Facility. Basin outflow will be limited to allow discharge into the existing easement without overloading the easement capacity.

Furthermore, a secondary basin is proposed to attenuate the eastern portion of the Site. The discharge location from the eastern basin would be made via an outlet pipe to the adjacent wetlands. The proposed eastern OSD system is an above ground basin located in the south-east corner of the Site, outside of the defined wetlands setback zone. The adopted model arrangements are displayed in **Tables 9** & **10** below.

Table 9: Western Catchment – OSD Characteristics (Post Development)

ARI	Duration (mins)	Peak Flow (m^3/s)					Depth (mm)	Storage (m^3)
		No Atten.	With Attentuation					
			Low	High	Bypass	Total		
2	60	1.36	0.22	0	0	0.22	450	2,200
20	120	2.45	0.43	0	0	0.49	900	4,250
100	120	3.13	0.54	0.41	0	0.93	1,100	5,100

Table 10: Eastern Catchment – OSD Characteristics (Post Development)

ARI	Duration (mins)	Peak Flow (m^3/s)					Depth (mm)	Storage (m^3)
		No Atten.	With Attentuation					
			Low	High	Bypass	Total		
2	60	1.27	0.47	0	0	0.47	110	690
20	120	2.71	0.52	0	0	0.52	320	2,000
100	120	3.34	0.56	0.33	0	0.89	450	2,700

The hydrologic analysis shows that, with the provision an OSD system (as detailed above), the post development peak flows from the Site would be attenuated to less than the pre-development; hence, the requirements of Council have been met accordingly. Additionally, a positive covenant over the stormwater management system would need to be provided in accordance with Council requirements.

Stormwater Quality Controls

The proposed development requires the incorporation of the principles of Water Sensitive Urban Design (WSUD) and to target pollutants that are present within stormwater, so as to minimise the adverse impacts these pollutants could have on receiving waters, as-well-as adhering to Council's requirements. The requirements for stormwater quality to be performed on a catchment wide basis include the following pollutant reduction controls:

- *Gross Pollutants 90%*
- *Total Suspended Solids 85%*
- *Total Phosphorus 60%*
- *Total Nitrogen 45%*
- *Free Oil and Grease 90%*

Additionally, roof, hardstand and other extensive paved areas are required to be treated by the Stormwater Treatment Measures (STMs). The STMs shall be sized according to the whole catchment area of the Site. The STM's for the proposed development are based on a treatment train approach as discussed in the NSW EPA document *Managing Urban Stormwater: Treatment Techniques* to ensure that all the objectives above are met. Components of the treatment train for the proposed development are as follows:

- Primary treatment to hardstand areas is via Enviropod pit inserts;
- Secondary treatment (overflow event only) is via trash screens and a sediment sump within the OSD system; and,
- Tertiary treatment of site water will be via a 250 m^2 and 1,000 m^2 bioretention system situated within the western and eastern on-site detention basins respectively.

The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) is suitable for simulating catchment areas of up to 100 km^2 and utilises a continuous simulation approach to model water quality. The MUSIC model *13620.00_Andrews Road Rev 3.sqz* was set up to examine the effectiveness of the water quality treatment train and to predict if Council's requirements have been achieved. **Table 11** below shows the results of the MUSIC model analysis. The reduction rate is expressed as a percentage and compares the post-development pollutant loads without treatment versus post-development loads with treatment.

Table 11: MUSIC Analysis Results

	Source	Residual Load	% Reduction
Flow (ML/yr)	51.4	46.8	9
Total Suspended Solids (kg/yr)	7,350	856	88.3
Total Phosphorus (kg/yr)	16.1	4.82	70.1
Total Nitrogen (kg/yr)	117	50.9	56.3
Gross Pollutants (kg/yr)	1,420	29.2	97.9

The MUSIC model results indicate that, through the use of STMs in the treatment train, pollutant load reduction for Total Suspended Solids, Total Phosphorus, Total Nitrogen and Gross Pollutants will meet the requirements of Part C3 of Council's PDCP2014 on an overall catchment basis.

Rainwater harvesting would be required for the proposed development regarding re-use in non-potable applications. Internal uses include such applications as toilet flushing while external applications will be used for irrigation. The requirements as per Part C3 of Council's PDCP2014 are to reduce the water demand and provide a minimum 100 kL rainwater tank on the Subject Site. In general terms, the rainwater harvesting system is expected to comprise an in-line tank for the collection and storage of rainwater. At times when the rainwater storage tank is full, rainwater can pass through the tank and continue to be discharged accordingly, via gravity into the stormwater drainage system. Rainwater from the storage tank would be pumped for distribution throughout the Subject Site in a dedicated non-potable water reticulation system. Additionally, as per Council requirements, a 100 kL rainwater reuse tank is required for the proposed development, for which it is proposed at the northwest corner of the proposed Warehouse and Distribution Facility.

Flooding

The Site has been identified by Penrith City Council as being flood affected during the 1% AEP and 0.5% AEP flood events. These events are associated with overbank flooding from the Nepean River, which is approximately 1 km west of the Subject Site.

An analysis of the impact of development on existing flooding has been completed to confirm affectation on upstream, downstream and adjoining properties in both the 1% AEP and 0.5% AEP events and to confirm the proposed building would meet flood immunity and flood planning requirements as noted in the Pre-DA Meeting Minutes (refer to **Appendix 18**).

Additionally, modelling has been completed using Council's preferred TUFLOW modelling engine. The model output shows that the 1% AEP level is RL25.3 m AHD and the 0.5% AEP flood level is 25.8 m AHD. Refer to **Figures 17** & **18** below identifying the 1% and 5% AEP flood levels post-development.

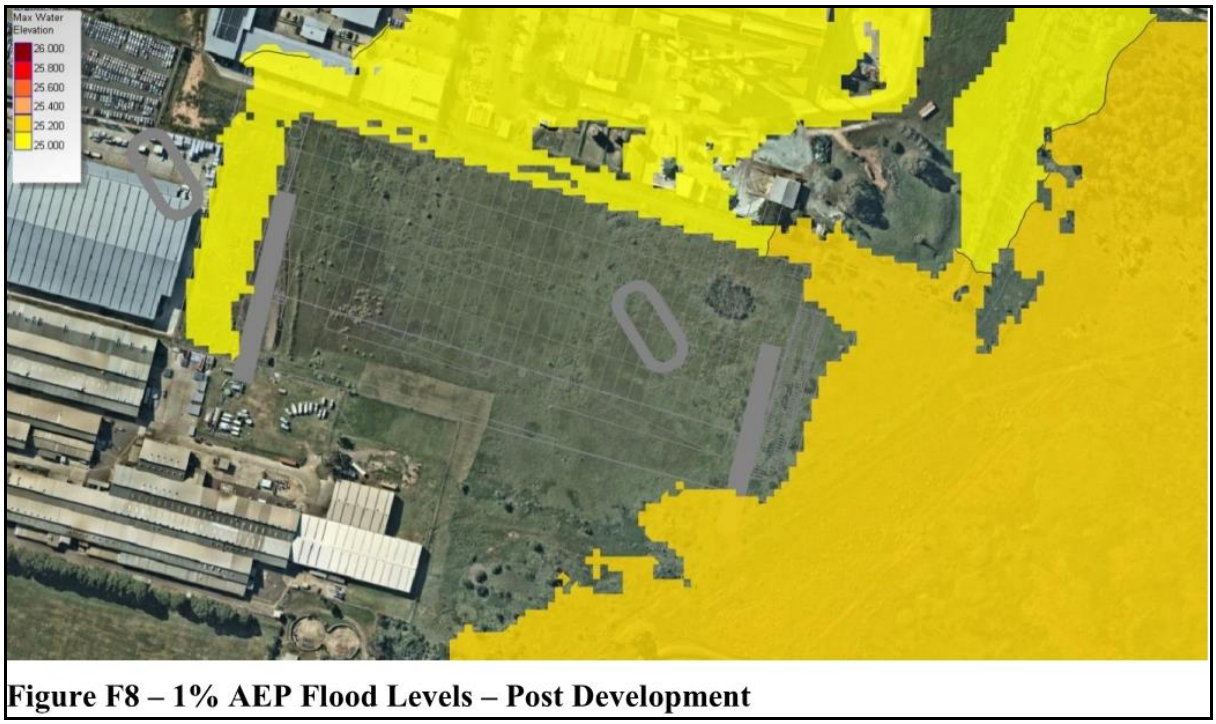

Figure 17 1% AEP Flood Levels Concerning the Subject Site Post Development (Source: Costin Roe Consulting, 2018)

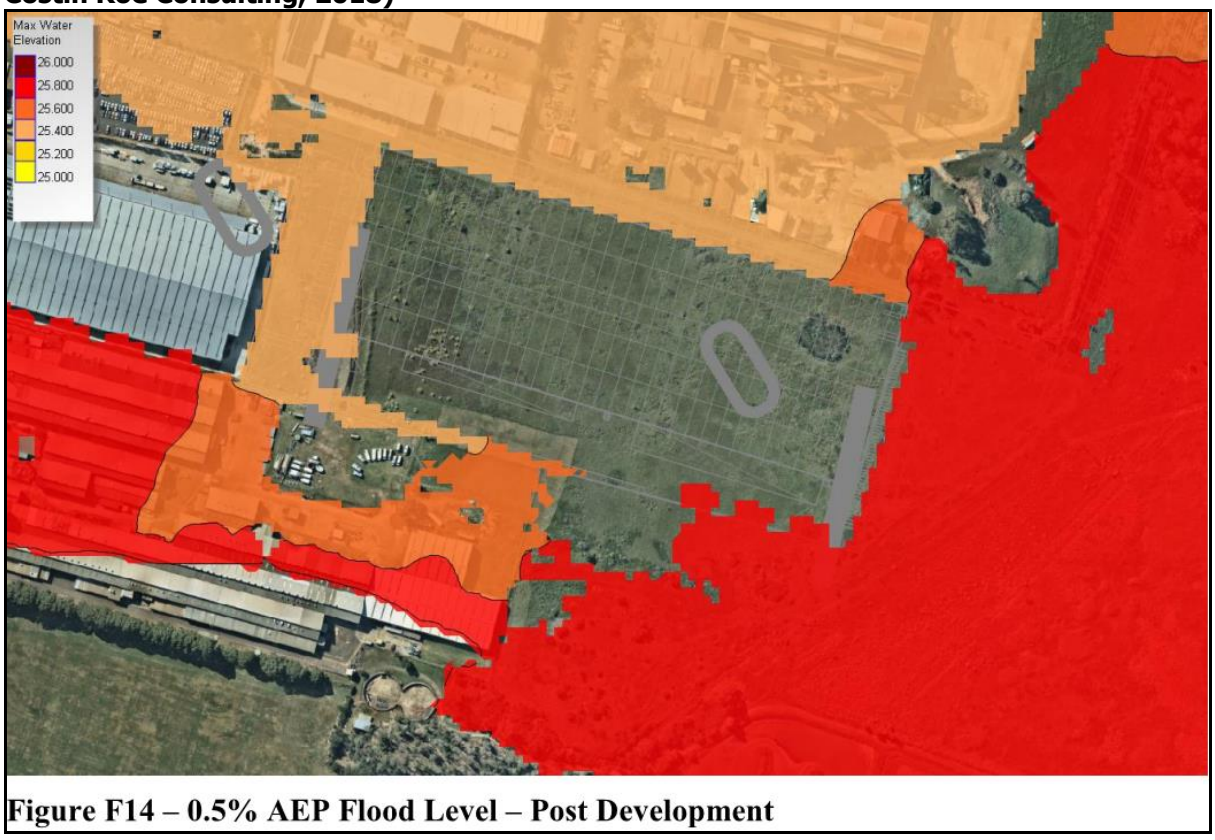

Figure 18 0.5% AEP Flood Levels Concerning the Subject Site Post Development (Source: Costin Roe Consulting, 2018)

The assessment shows that sufficient flood-ways are available during the 0.5% AEP event. Further that flood afflux is negligible during the 1% AEP event, and within Council recommendations during

the 0.5% AEP event. The modelling output also shows a minor afflux in flood levels of 98 mm during the 0.5% AEP post developed flooding events locally within the Site boundaries. This would be considered acceptable in terms of the requirements of Council's Part C3 from the PDCP2014.

The Report undertaken by Costin Roe Consulting (2018) concludes, that during the operational phase of the proposed development, a treatment train incorporating the use of a bioretention system is proposed to mitigate any increase in stormwater pollutant load generated by the proposed development. Additionally, MUSIC modelling results indicate that the proposed STM are effective in reducing pollutant loads in stormwater discharging from the Site and meet the requirements of Council's pollution reduction targets. Best management practices have been applied to the development to ensure that the quality of stormwater runoff is not detrimental to the receiving environment.

It is recommended that the management strategies in the Civil Engineering Report (refer to **Appendix 4**) be approved and incorporated into the future detailed design.

6.6 SALINITY

The *Stage 1 / Stage 2 Environmental Site Assessment and Preliminary Salinity Assessment* undertaken by Environmental Investigation Services (EIS) (2018) considers the potential for contamination and / or salinity to be present at the Subject Site, by making a detailed assessment of the soil, groundwater, and surface water contamination conditions (refer to **Appendix 5**).

The scope of work undertaken by EIS (2018) was made with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013), other guidelines made under or with regards to the Contaminated Land Management Act (1997) and SEPP 55.

A field survey ('walkover') of the Subject Site was undertaken on 25 July 2018 and during the Site works between 20 and 24 August 2018. As a result of the field survey undertaken, the following observations were recorded, including:

- At the time of the inspections, the Site was noted as vacant land;
- There were no buildings, structures or roads observed on-site;
- At the western end of the Site was a predominantly bare area showing some exposed soils. Signs of major erosion were not evident. An overland swale was also located in this area and the soils around the swale and at the base of it appeared to be predominantly silty and soft, potentially due to the ongoing contact with water within the swale;
- No staining or odours were noted on the Site surfaces. No indicators of Underground Storage Tanks (USTs) or Above Ground Strorage Tanks (ASTs) were observed;
- A piece of fibre cement pipe (potentially asbestos containing material – ACM) was observed at the ground surface within the bare area(in close proximity of BH181) in the western end of the Site;
- There may be areas of fill within the Site, particularly in the western section. Anthropogenic material such as solidified melted glass material, timber sheeting, metal stakes, plastic pipe pieces and other objects were observed scattered within the fill as-well-as on the surface, within the bare area in the western section of the Site;
- Some shipping containers with equipment in them, an oil drum store and a shed containing sodium hydroxide and potentially other chemicals were noted to the immediate north of the Site, within the adjacent glass bottle manufacturing plant;
- The overflow, overland drain on-site could be considered a sensitive environment in a similar effect as a wetland, pond or creek. Some of the natural vegetation on-site could also be considered part of the sensitive environment; and,
- The vegetation identified on-site, appeared to be very dry and brown, possibly due to the lack of rainfall over recent months.

It is important to note, that the Site is not located in an Acid Sulfate Soil risk area according to the risk maps prepared by the Department of Land and Water Conservation. Additionally, based on information ascertained from the Lotsearch Report (acquired by EIS, 2018), the subsurface conditions at the Subject Site are expected to consist of moderate to high permeability (alluvial) soils overlaying relatively deep bedrock. It is also noted, that the use of groundwater for the proposed development, is not recommended. There is aldso a reticulated water supply in the area and use of groundwater as a drinking water resource is considered unlikely.

Based on historical land title records obtained, the Subject Site has been identified as having undergone a previous farming / agricultural land use, which could have resulted in potential contamination of the Subject Site. It is unknown whether any activities were undertaken on-site under ownership of the timber merchant and business entities that occupied the Site from 1961 onwards. With regard to the contaminated fill identified in the south-western end of the Subject Site, historical records indicate, that this has since been excavated, treated on-site and then disposed of accordingly, offsite. The remediated area was then reinstated with imported fill and grassed over to a satisfactory standard.

With regard to the Subject Site, potential contamination sources / AEC and Contaminants of Potential Concern (CoPC) are presented in **Table 12** below.

Table 12: Potential (and / or known) Contamination Sources / AEC and Contaminants of Potential Concern

Source / AEC	CoPC
Fill Material – The Site appears to have been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated. The historical information indicates that the south-western end of the Site has been remediated previously and contaminated fill had been present on-site. Fill was also imported onto the Site, post-remediation.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
Historical Agricultural Use – The Site appears to have been used for grazing and market garden purposes. This could have resulted in contamination across the Site via use of machinery, application of pesticides and building/demolition of any structures. Irrigation pipes made from asbestos cement may also be associated with this AEC.	Heavy metals, TRH, PAHs, OCPs, PCBs and asbestos. EIS note, that pesticides only became commercially available in the 1940s. Prior to this time pesticides were predominantly heavy metal compounds.
Use of Pesticides – Pesticides may have been used around the Site.	Heavy metals and OCPs.
Hazardous Building Material – Hazardous building materials may be present as a result of fly tipping or importation of impacted fill or any other activities. These materials may also be present in the existing anthropogenic material scattered in the bare area of the western end of the Site. A potential ACM pipe was also observed on the surface in the bare area in the western end of the Site.	Asbestos, lead and PCBs.
Soil Stockpiles – Up to five (5) soil stockpiles (SP1 – SP5) were located in the western section of the Site. A concrete pipe was observed within one of	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPS, PCBs and asbestos.

these stockpiles. The origin of these soil stockpiles is unknown. These stockpiles may contain contaminated fill and/or waste material.	
Off-site Commercial / Industrial and other Properties – Various industrial premises are located immediately adjacent to the Site i.e. the metal processing business(es) to the south and south-west, wood preservation business to the west and the glass container and bottles production company to the north, to name a few. The groundwater bore information indicates that the groundwater is / was being remediated within the metal processing business(es) located to the immediate south and south-west of the Site. The Penrith Sewage Treatment Plant and various other industrial premises were also located within 500 m of the Site. These are considered to be potential sources of contamination.	Heavy metals, TRH, BTEX, PAHs and volatile organic compounds (VOCs), ammonia.

Note: Herbicides have not been included as CoPC as herbicides are not commonly found at residual concentrations likely to pose a risk to human health or the environment (NSW DEC, 2005, *Guidelines for Assessing Form Orchards and Market Gardens*).

Data Quality Objectives (DQOs) were developed by EIS (2018) to define the type and quality of data required to achieve the proposed development objectives outlined above at the commencement of **Section 6.6**. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013) and the Guidelines for the NSW Site Auditor Scheme, 3rd Edition (2017). The seven-step DQO approach for the proposed development is outlined as follows, including:

1. Step 1 – State the Problem;
2. Step 2 – Identify the Decisions of the Study;
3. Step 3 – Identify Information Inputs;
4. Step 4 – Define the Study Boundary;
5. Step 5 – Develop an Analytical Approach (or Decision Rule);
6. Step 6 – Specify Limits on Decision Errors; and,
7. Step 7 – Optimise the Deisgn for Obtaining Data

Pursuant to the above, a site assessment was undertaken, for which the results are specified below.

Subsurface Conditions

A summary of the subsurface conditions encountered during the investigations is presented in **Table 13** below.

Table 13: Summary of Subsurface Conditions

Profile	Description
Fill	Fill was encountered at the surface in all boreholes, except in BH1 to BH5, and extended to depths of approximately 0.2m to 1.1m Below Ground Level (BGL). Borehole BH189 was terminated in the fill at a depth of approximately 0.9m BGL. The fill typically comprised silt, clayey silt, silty clay and silty sand with inclusions of igneous gravel, ironstone gravel, organic material, roots, root fibres, ash, clay fines and anthropogenic material (concrete and brick

	fragments). No staining or odours were noted in the fill material. A fibre cement fragment (FCF) (sample MPF1) was observed in the fill material in BH189 at a depth of approximately 0.9m BGL. However, it was analysed at the laboratory and was found not to contain asbestos.
Natural Soil	Natural material was encountered at the surface or below the fill in all boreholes, except in BH189 which was terminated in the fill. The natural material typically comprised silty topsoil, silt, sandy silty gravel, clayey silt, silty sandy gravel, and silty gravel with inclusions of roots, sand, clay, cobbles, ash, ironstone gravel, sandstone gravel and river gravel. No staining or odours were noted in the natural material.
Bedrock	Bedrock was not encountered in any of the boreholes.
Groundwater	Groundwater seepage was not encountered in the boreholes during drilling. All boreholes remained dry on completion of drilling and a short time after.

Field Screening

A summary of the field screening results are presented in **Table 14** below.

Table 14: Summary of Field Screening	
Aspect	**Details**
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices (refer to **Appendix 5**). The results ranged from 0.0ppm to 0.8ppm equivalent isobutylene. These results indicate minor PID detectable VOCs in some soil samples. The PID readings in the groundwater wells were 0.0ppm (MW137, MW166 and MW170) and 0.7ppm (MW181) and indicates that minor PID detectable VOCs were present in groundwater.
Surface Water Depth & Flow	The surface water was encountered as ponded water in a depression of the overland drain at the southern boundary and in some other small depressions along the drain at shallow depths. The surface water was likely to flow in a northern and then a westerly direction along the direction of the overland drain.

Soil Laboratory Results

The soil laboratory results are compared to the relevant Site Assessment Criteria (SAC). A summary of the results assessed against the SAC is presented below in **Table 15**.

Table 15: Summary of Soil Laboratory Resuls – Human Health and Environmental (Ecological)	
Analyte	**Results Compared to SAC**
Heavy Metals	The concentrations of chromium were encountered above the EILs SAC of 673 mg/kg in the following samples: ▪ BH4 0.0-0.2 (930 mg/kg) ▪ SS1 (1,900 mg/kg) The concentrations of copper were encountered above the EILs SAC of 308 mg/kg in the following samples: ▪ BH4 0.0-0.2 (1,500 mg/kg) ▪ SS1 (7,200 mg/kg) ▪ BH179 0.0-0.2 (1,700 mg/kg) and it's duplicate sample DUPAM7 (1,900 mg/kg)

	▪ BH182 0.0-0.1 (760 mg/kg) ▪ BH183 0.0-0.2 (6,800 mg/kg) and it's duplicate sample DUPAM16 (6,600 mg/kg) ▪ BH185 0.0-0.2 (1,700 mg/kg) and it's duplicate sample DUPAM9 (8,400 mg/kg) ▪ BH187 0.0-0.2 (570 mg/kg) and it's duplicate sample DUPAM14 (370 mg/kg) The concentrations of nickel were encountered above the EILs SAC of 295 mg/kg in the following sample: ▪ BH4 0.0-0.2 (660 mg/kg) The concentrations of zinc were encountered above the EILs SAC of 742 mg/kg in the following samples: ▪ SS1 (7,300 mg/kg) ▪ BH179 0.0-0.2 (2,600 mg/kg) and it's duplicate sample DUPAM7 (2,600 mg/kg) ▪ BH182 0.0-0.1 (800 mg/kg) ▪ BH183 0.0-0.2 (17,000 mg/kg) and it's duplicate sample DUPAM16 (12,000 mg/kg) ▪ BH185 0.0-0.2 (1,700 mg/kg) and it's duplicate sample DUPAM9 (7,400 mg/kg) All other heavy metals results were below the SAC.
TRH	The concentrations of TRH F3 were encountered above the EILs SAC of 2500 mg/kg in samples SS1 (7,600 mg/kg) and BH179 0.0-0.2 (2,600 mg/kg). All other TRH results were below the SAC.
BTEX	All BTEX results were below the SAC.
PAHs	All PAH results were below the SAC.
OCPs and OPPs	All OCP and OPP results were below the SAC.
PCBs	All PCB results were below the SAC.
Asbestos – Soils	All asbestos results were below the SAC (i.e. asbestos was absent in the samples analysed for the investigation).
Asbestos – FCF	The FCF (MPF1) was analysed not to contain asbestos. The large piece of fibre cement pipe was not analysed for asbestos.

The concentration of TRH F3 in sample SS1 (7,600 mg/kg) was above the management limits SAC of 5,000 mg/kg. All of the remaining TRH concentrations were below the management limits SAC. Additionally, the laboratory results were assessed against the criteria presented in part 1 of the Waste Classification Guidelines. A summary of the results is present in **Tables 16** & **17** below.

Table 16: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	No. of Samples Analysed	No. of Results >CT Criteria	No. of Results >SCC Criteria	Comments
Heavy Metals	172	19	0	Chromium concentrations exceeded the CT1 criterion in two (2) fill samples collected from BH179 (0-0.2m) and it's duplicate DUPAM7 and two (2) silty clay samples BH4 (0.0-0.2m) and SS1. The maximum chromium concentration was 1,900mg/kg.

				Lead concentrations exceeded the CT1 criterion in six (6) fill samples collected from BH179 (0-0.2m) and it's duplicate DUPAM7, BH183 (0.0-0.2m) and it's duplicate DUPAM16, BH185 (0.0-0.2m) and it's duplicate DUPAM9 and one (1) silty clay sample SS1. The maximum lead concentration was 920mg/kg. Nickel concentrations exceeded the CT1 criterion in six (6) fill samples collected from BH102 (0.3-0.4m), BH179 (0-0.2m)and it's duplicate DUPAM7, BH183 (0.0-0.2m) and it's duplicate DUPAM16, and DUPAM9 (duplicate sample of BH185 (0.0-0.2m) and two (2) silty clay samples BH4 (0.0-0.2m) and SS1. The maximum nickel concentration was 660mg/kg.
TRH	170	0	0	-
BTEX	170	0	0	-
Total PAHs	170	0	0	-
Benzo(a)pyrene	170	1	0	Benzo(a)pyrene concentrations exceeded the CT1 criterion in one (1) fill sample collected from BH177 (0.6-0.9m). The maximum benzo(a)pyrene concentration was 1.4mg/kg.
OCPs & OPPs	103	0	0	-
PCBs	103	0	0	-
Asbestos	104	-	-	Asbestos was not detected in the soil samples or the FCF analysed.

Table 17: Summary of Soil Laboratory Results Compared to TCLP Criteria

Analyte	No. of Samples Analysed	No. of Results > TCLP Criteria	Comments
Chromium	2	0	One (1) selected fill and one (1) selected silty clay samples with chromium concentrations above the CT1 criterion were analysed for TCLP chromium. The concentrations were reported below the TCLP1 criteria for chromium.
Lead	4	0	Three (3) selected fill and one (1) selected silty clay samples with lead concentrations above the CT1 criterion were analysed for TCLP lead. The concentrations were reported below the TCLP1 criteria for lead.
Nickel	4	1	Three (3) selected fill and one (1) selected silty clay samples with nickel concentrations above the CT1 criterion were analysed for TCLP nickel. The concentration for the silty clay sample was reported above the TCLP1 criteria for nickel. The concentrations for the fill samples were reported below the TCLP1 criteria for nickel.
Benzo(a)pyrene	1	0	The fill sample with benzo(a)pyrene concentrations

			above the CT1 criterion was analysed for TCLP PAHs. The concentrations for TCLP benzo(a)pyrene was reported below the TCLP1 criteria for benzo(a)pyrene.

Surface Water Laboratory Results

A summary of the results assessed against the SAC is presented in **Table 18** below.

Table 18: Summary of Surface Water Laboratory Results – Human Health and Environmental (Ecological)

Analyte	Results Compared to SAC
Heavy Metals	The concentrations of copper (210µg/L) and zinc (64µg/L) were above the ecological SAC. All other heavy metals results were below the SAC.
TRH	All TRH results were below the SAC.
BTEX	All BTEX results were below the SAC.
Other VOCs	All other VOC results were below the SAC.
PAHs	All PAH results were below the SAC.
Other Parameters	The results for pH, EC and hardness are summarised below: ▪ pH was 7.7; ▪ EC was 660µS/cm; and ▪ Hardness was 130mgCaCO3/L.

Based on the results of the assessment undertaken, a preliminary classification of General Solid Waste (non-putrescble) applies to the fill, with the exception of the fill in the vicinity of Borehole 4 (BH4), that is preliminarily classified as Restricted Solid Waste (non-putrescible). Additionally, the underlying natural soil was found to be impacted by metals, PAHS and TRHs; therefore, does not meet the definition of VENM.

The Report prepared by EIS (2018) explains, in the event, that offsite disposal of soil is required, further waste classification assessment should be undertaken for the specific areas / materials that are to be disposed. Further assessment may be able to reduce the waste classification of the fill in the vicinity of BH4. The waste classification would also need to consider recommendations provided.

Recommendations provided by EIS (2018), state that the Subject Site could be made suitable for the future development of the Site, subject to implementing the following recommendations, including:

- The existing stockpiles should be characterised via additional sampling / analysis to meet the minimum sampling density outlined in the NEPM (2013). The results should be utilised to confirm what is to occur with the material (i.e. retain on-site or dispose offsite);
- The fill in the western section of the Site (and the surface soil to a minimum depth of 0.2m in areas where natural soil is present at the surface – see attached borehole logs), including the proposed basin footprint and the area to the south of the basin in the south-western corner of the Site, is to be excavated and placed beneath the proposed hardstand provided that it is geotechnically suitable. If this cannot be achieved, the waste classification is to be confirmed and this material is to be disposed off-site to an appropriate facility; and,
- The fibre cement pipe is to be removed from the Site and disposed of appropriately. A surface clearance should be undertaken of the disturbed/stockpiled areas in the west section of the Site. A contingency plan should be prepared that can be implemented in the event that any additional ACM is encountered across the Site.

Furthermore, under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the *Contaminated Land Management Act 1997*, the requirements to notify the NSW EPA regarding

site contamination should be assessed once any additional assessment(s) and removal of the fibre cement pipe and a surface clearance certificate is obtained and if a remedial strategy is required and has been selected.

The Report undertaken by EIS (2018) concludes, that the assessment indicated presence of chromium, copper, nickel, zinc and TRH F3 exceeding the ecological SAC in some soil samples and copper and zinc exceeding the ecological guideline in the surface water sample. The impacted soil material was located in the south-western section and the western end of the Site, in close proximity to the overland drain in this section of the Site.

The Site soils from the south-western section and the western end of the site are not suitable to remain within unpaved or grassed areas or to be excavated and reused within grassed, landscaped or unpaved areas of the Site. The soils from the south-western section and western end of the Site are suitable to be reused under the building (provided they are geotechnically suitable), and any other built or paved areas of the Site. The Site soils from the remaining areas of the site are suitable to be reused on-site, either in landscaped or built areas provided they are geotechnically suitable.

Remediation of the Subject Site is not considered to be required. Potential risks associated with sources of contamination could be addressed via the proposed earthworks and implementation of the recommendations listed above.

6.7 NOISE

The *128 Andrews Road, Penrith – Noise Impact Assessment* (Acoustic Logic, 2018) considered noise generated during earthworks, construction and operation and includes the identification of sensitive noise receivers, noise sources with potentially adverse impacts, noise emissions, relevant acoustic criteria from Penrith City Council and the EPA and controls necessary to ensure compliance with noise emission goals (refer to **Appendix 13**).

The following noise controls and guidelines have been utilised throughout the acoustic assessment of the Site, including:

- PDCP2014;
- NSW Department of Environment and Heritage, *Environmental Protection Agency document – Noise Policy for Industry (NPI) 2017*

Residential development in the vicinity of the proposed development is as follows:

- The nearest residential development (R1) lies approximately 500 m to the east, and consists of a variety of single and multi story single dwelling homes (refer to **Figure 19** below). Properties have direct line of sight to the proposed site through bushland; and,
- The next nearest residence is noted at Receiver R1, approximately 650 m to the west of the proposed development and 460 m from the nearest point of the proposed easement.

It is noted, that the primary existing noise source in the vicinity of the Site is road traffic from Andrews Road and other noted industrial development within close proximity to the Subject Site.

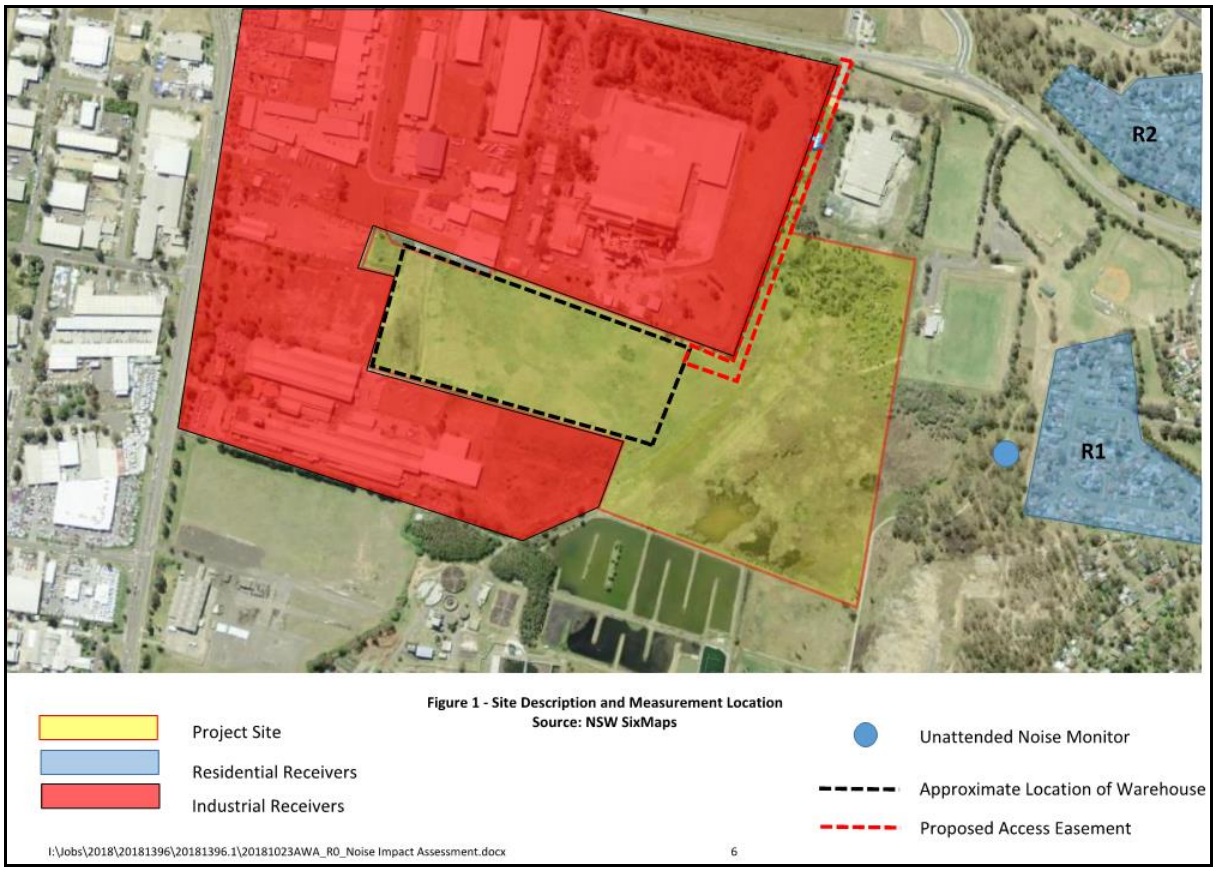

Figure 19 Receiver and Noise Monitoring Locations (Source: Acoustic Logic, 2018)

The Report notes, to accurately determine the environmental noise a 15-20 minute measurement interval is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise descriptions parameters. With regard to this, noise monitoring / logging (unattended and attended) was undertaken between the 8th – 17th October 2018 to measure background noise levels (refer to **Table 19**).

Table 19: Measured Noise Levels

Time of Day	Rating Background Noise Level $dB(A)_{L90(Period)}$
Day (7am-6pm)	43
Evening (6pm-10pm)	43
Night (10pm-7am)	43

The EPA's Noise Policy for Industry (NPI) sets out acceptable noise levels for various localities. The recommended noise amenity area is based upon the measured background noise levels at the sensitive receiver. Base on the measured background noise levels detailed in **Table 19** above, the NPI suggests the adoption of the 'suburban' categorisation.

The NPI requires project amenity noise levels to be calculated in the following manner:

- $L_{Aeq,15min}$ = *Recommended Amenity Noise Level – 5 dB(A) + 3 dB(A)*

The amenity levels appropriate for the receivers surrounding the Subject Site are summarised in **Table 20** below. Contrasted to **Table 20** below include summaries of noise emission with regard to sleep arousal (**Table 21**); noise emissions concerning nearby residents (**Table 22**); and, noise emission concerning nearby non-residential premises (**Table 23**).

Table 20: EPA Amenity Noise Levels			
Type of Receiver	**Time of Day**	**Recommended Noise Level dB(A)$L_{eq(Period)}$**	**Project Amenity Noise Level dB(A)$L_{eq(Period)}$**
Residential – Suburban	Day	55	53
	Evening	45	43
	Night	40	38
Commercial Premises	When in Use	65	63
Industrial Premises	When in Use	70	68

Table 21: Sleep Arousal Criteria for Residential Receivers		
Receiver	**Rating Background Noise Level (Night) dB(A)L_{90}**	**Emergence Level**
Residences Surrounding Site Night (10pm – 7am)	43 dB(A) L_{90}	48 dB(A)$L_{eq,\ 15min}$; 58 dB(A)L_{Fmax}

Table 22: EPA NPI Noise Emission Criteria (Residents Surrounding Project Site)				
Time Period	**Assessment Background Noise Level dB(A)L_{90}**	**Project Amenity Criteria dB(A)L_{eq}**	**Intrusiveness Criteria $L_{eq(15\ min)}$**	**NPI Criteria for Sleep Disturbance**
Day	43	53	48	N/A
Evening	43	43	48	N/A
Night	43	38	48	48 dB(A)$L_{eq,\ 15\ min}$; 58 dB(A)L_{AFmax}

Table 23: EPA NPI Noise Emission Criteria (Non-Residential)		
Receiver	**Time of Day**	**Amenity Criteria dB(A)L_{eq}**
Commercial	When in Use	63
Industrial	When in Use	68

Operational noise generated on-site is assessed with reference to the NSW EPA NPI relating to the development. As the intended operation is proposed to be 24 hours per day, the assessment has been conducted with reference to the night time criteria (most stringent). In predicting operational noise emissions, the Noise Impact Assessment (Acoustic Logic, 2018) makes reference to the Traffic Impact Assessment undertaken by Ason Group (2018) (refer to **Section 6.2** of this Report) as-well-as the following assumptions, including:

- There are heavy vehicle movements on-site. During a typical 15 minute period, the assumption is made, that there will be one (1) inbound or outbound semitrailer movement to/from the proposed development (based on a conservation assumption).
- It has been assumed that all trucks would enter/exit the Site via the proposed access road connecting the Site to Andrews Road.
- Daytime / Evening (7am – 10pm):
  - B-Double Total Truck Movements – 10 (average of less than 1 per hour);
  - 48 Foot Single – 57 (average of less than 4 per hour); and,
  - 40 Foot Shipping Container – 6 (average of less than 1 per hour).
- Night Time (10pm – 7am):
  - B-Double Total Truck Movements – 4 (average of less than 1 per hour);
  - 48 Foot Single – 29 (average of less than 4 per hour); and,
  - 40 Foot Shipping Container – No movements are anticipated.
- Truck movements detailed above are considered consistent with (and in fact less than) the predicted peak night time heavy vehicle movements assumed for this assessment, i.e. two movements at the Site in a 15 minute period.

- A sound power of 100-105dB(A) has been adopted for the heavy vehicle (B-Double).
- Continuous operation of a forklift (sound power 94dB(A)) in the hardstand area.
- The cumulative impact of vehicle noise and the internal activity noise is taken into account.

Analysis of the predicted noise emissions (refer to **Table 24** below) indicates that operational usage of the proposed Warehouse and Distribution Facility would be compliant with the requirements relating to the proposed development (even during the night time period).

Table 24: Noise Emissions from the Proposed Development

Noise Source	Noise Receiver Location	Predicted Noise Level* dB(A)L_{eq} (15min)	Compliance
Cumulative Noise from Use of Access Roadway, Internal and External Site Activity (AM/PM Peak Period Usage)	R1 Residential Receiver	35 dB(A)$L_{eq(15min)}$	Complies – Daytime criteria (48dB(A)$L_{eq(15min)}$, **Table 21** above)
	R2 Residential Receiver	37 dB(A)$L_{eq(15min)}$	Complies – Daytime criteria (48dB(A)$L_{eq(15min)}$, **Table 21** above)
Cumulative Noise from Use of Access Roadway, Internal and External Site Activity (Typical Night Time Usage)	R1 Residential Receiver	33 dB(A)$L_{eq(15min)}$	Complies – Night time criteria (38dB(A)$L_{eq(15min)}$, **Table 21** above)
	R2 Residential Receiver	35 dB(A)$L_{eq(15min)}$	Complies – Night time criteria (38dB(A)$L_{eq(15min)}$, **Table 21** above)

Noise events occurring between 10pm – 7am should be assessed for potential sleep disturbance impacts on nearby residents. The primary potential noise source will be the use of the pneumatic valve which engages when a truck stops. Based on measurements conducted, the sound power of this particular noise event is assumed to be approximately 113 dB(A)L_{Max}. Additionally, the noise emissions at the window of the nearest residences are presented below in **Table 25**.

Table 25: Sleep Arousal Assessment (Truck Air-Brake)

Noise Source	Receiver Location	Predicted Noise Level	Noise Limit	Compliance
Truck Air Brake	Receiver 1	51 dB(A)L_{max}	58 dB(A)L_{max}	Complies
Truck Air Brake	Receiver 2	54 dB(A)L_{max}	58 dB(A)L_{max}	Complies
Truck Leaving Site (Intersection of Andrews Road	Receiver 1	48 dB(A)L_{max}	58 dB(A)L_{max}	Complies
	Receiver 1	42 dB(A)L_{max}	58 dB(A)L_{max}	Complies

Based on the above data listed in **Table 25**, noise emissions from typical noise events are compliant with NSW EPA noise emission requirements.

The Noise Impact Assessment (Acoustic Logic, 2018), notes, that all external mechanical plant should be undertaken at the construction certificate (CC) stage (once plant selections and locations are finalised). Acoustic treatments should be determined in order to control plant noise emissions to the levels specified in **Table 25** above.

Furthermore, compliance with noise emission requirements would be achievable with appropriate acoustic treatment. It is unlikely that any large externally located equipment (even if used at night)

would require any acoustic treatment. The Noise Impact Assessment (Acoustic Logic, 2018) notes the following:

- Primary external mechanical plant is likely to consist of air conditioner condensers serving office areas and smoke exhaust fans.
- Condensers serving office areas will typically have a sound pressure level of no more than 65dB(A) at 1 distance, and will not require any form of acoustic treatment to ensure compliant noise emissions.
- Typical exhaust fans used for the purpose of ventilation will not require acoustic treatment provided that they have a sound pressure level of no more than 70dB(A) at a 3 m distance. In the event that fans exceed this noise level, acoustic treatment to the fan discharge (internally lined ducting or acoustic attenuator) will be required.

The analysis undertaken in the Noise Impact Assessment (Acoustic Logic, 2018), provides the following recommendations, including:

- To ensure ongoing compliance with operational noise requirements:
  - Between 10pm – 7am – it is assumed that on average there would not be more than two (2) truck movements to the Site in a 15 minute period.
  - If a diesel forklift is required for the purpose of large container movement, it is recommended that this only occur between the hours of 7am – 10pm.
- Detailed review of any proposed mechanical plant should be undertaken at the CC stage (once equipment selections are known). Given the distance from the Site to nearby residences, it is unlikely that any form of acoustic treatment will be needed; however, this should be confirmed once equipment selections are finalised.

The Noise Impact Assessment (Acoustic Logic, 2018) indicates that an analysis of typical operational noise (vehicle, mechanical plant / equipment) indicates that the proposed use of the Site as a proposed Warehouse and Distribution Facility would be compliant with noise emission requirements provided that the recommendations listed above are adopted.

6.8 BIODIVERSITY

The *128 Andrews Road, Penrith – Flora and Fauna Assessment* (Eco Logical Australia (ELA), 2018) considers the ecological values within the Subject Site and considers the impacts from the proposed development in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the *Biodiversity Conservation Act 2016* (BC Act). Additionally, there is a savings and transitional period for DAs under Part 4 of the EP&A Act to be assessed under previous legislation for specific LGAs identified as an interim designated area (refer to **Appendix 12**). The Penrith LGA is an interim designated area under the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*. It is under that the DA subject to the proposed development is to be lodged before 25 November 2018; hence, the Flora and Fauna Assessment undertaken by ELA (2018) has been prepared and assessed under the TSC Act.
ELA undertook a database review and site inspection, to determine the extent of native vegetation present and to inform an assessment of potential impacts to threatened species, their habitat and ecological communities. During the desktop literature review (DotEE 2018a and OEH 2013), eight (8) Threatened Ecological Communities (TECs) were identified as having the potential to occur within a 5 km radius of the Subject Site. These included:

- Castlereagh Scribbly Gum Woodland in the Sydney Basin Bioregion listed as vulnerable under the TSC Act and Agnes Banks Woodland in the Sydney Basin Bioregion listed as critically endangered under the TSC Act / Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion (Listed as endangered under the EPBC Act);

- Cooks River / Castlereagh Ironbark Forest in the Sydney Basin Bioregion (Listed as an Endangered Ecological Community (EEC) under the TSC Act and critically endangered under the EPBC Act);
- Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (Listed as endangered under the EPBC Act);
- Cumberland Plain Woodland in the Sydney Basin Bioregion (Listed as critically endangered under the TSC Act) / Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Listed as critically endangered under the EPBC Act);
- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (Listed as endangered under the TSC Act);
- River-flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (Listed as an endangered ecological community under the TSC Act);
- Shale Sandstone Transition Forest in the Sydney Basin Bioregion (Listed as a critically endangered ecological community under the TSC and EPBC Act);
- Western Sydney Dry Rainforest in the Sydney Basin Bioregion (Listed as an endangered ecological community under the TSC Act) / Western Sydney Dry Rainforest and Moist Woodland on Shale (listed as critically endangered under the EPBC Act).

Vegetation mapping conducted by OEH (2013) identified one (1) native vegetation community, Shale Plains Woodland within the Subject Site (refer to **Figure 20** below). The community identified is the equivalent to the BC and EPBC Act listed Critically Endangered Ecological Community (CEEC), Cumberland Plain Woodland in the Sydney Basin Bioregion.

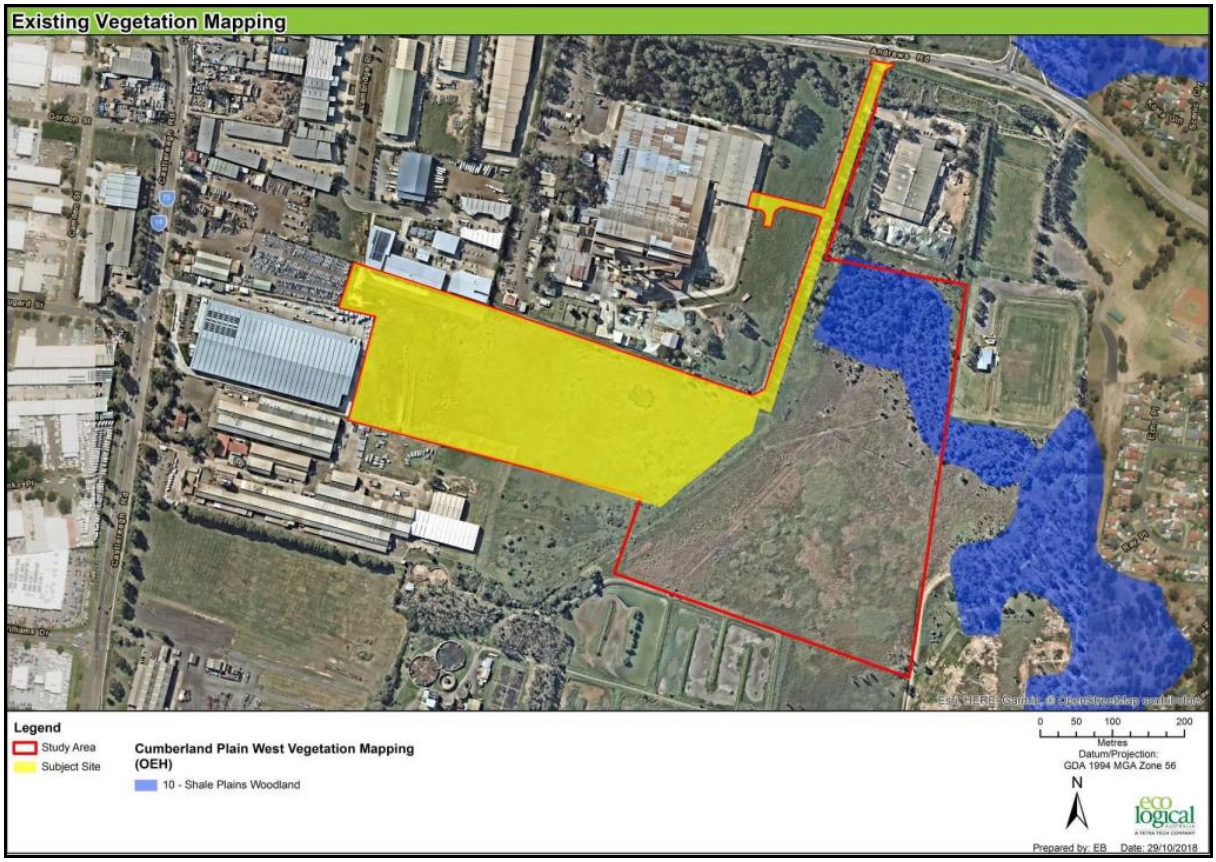

Figure 20 Existing Vegetation Mapping of the Subject Site and Surrounding Area (Source: ELA, 2018)

A total of 23 flora species and a total of 56 fauna species comprising of 37 birds, two (2) amphibians, 13 mammals (seven (7) of which are bats, three (3) fish and one (1) invertebrate listed as threatened

under the EPBC and / or BC Act(s), respectively, were identified as occurring or having the potential to occur within a five (5) km radius of the Subject Site (OEH 2018a / DotEE 2018a).

A comprehensive floristic species list was compiled during the survey to assist in validating previous vegetation mapping. Descriptions of the vegetation validated in the field are discussed below and further illustrated in **Figure 21**.

Cumberland Plain Woodland

The Cumberland Plain Woodland (CPW) identified in the study area was recorded in one (1) small patch of the Site, which was characterised by scattered *Eucalyptus crebra* (Narrow-leaved Ironbark). The understorey was disturbed and dominated by exotic species such as, *Bidens pilosa* (Cobblers Pegs), *Foeniculum vulgare* (Fennel), *Eragrostis curvula* (African Lovegrass) and *Paspalum dilatatum* (Paspalum).

The CPW identified within the Subject Site did not meet the area requirements or native perennial cover thresholds for listing requirements under the EPBC Act. A summary of the CPW condition and whether the vegetation within the Subject Site satisfies the listing criteria under the TSC or EPBC Act(s) is shown in **Table 26** below.

Table 26: Summary of the Vegetation Condition and Conservation Status

Vegetation	Condition	Description	BC Act	EPBC Act
Cumberland Plain Woodland	Low	▪ Mature native canopy >10%. ▪ Perennial ground cover exceed, 50% and patch size was less than 0.5 ha. ▪ Contiguous with other native vegetation that exceeds 5 ha.	Yes	Yes

River-flat Eucalypt Forest

River-flat Eucalypt Forest is not listed under the EPBC Act. The canopy identified consisted of *Eucalyptus tereticornis* (Forest Red Gum) and a row of *Casuarina glauca* (Swamp Oak) located along the fenceline with regeneration observed. The mid-storey was characterised by *Melaleuca linariifolia* (Flax-leaved Paperbark) and *Acacia parramattensis* (Parramatta Wattle). Exotic species influenced this community mainly around the edge of the patch and included species such as *Foeniculum vulgare* (Fennel), *Cestrum parqui* (Green Cestrum), *Sida rhombifolia* (Paddys Lucerne) *Rubus fruticosus* (Blackberry), *Bidens pilosa* (Cobblers Pegs) and *Asparagus asparagoides* (Bridal Creeper).

Additionally, the understorey was dominated by *Carex appressa* (Tall sedge) and *Cynodon dactylon* (Couch) where the vegetation is influenced by the adjacent wetland and overland water that this community receives from adjacent land. Other native species included *Microlaena stipoides* (Weeping grass), *Juncus usitatus* and *Bolboschoenus fluviatilis* (Marsh Club-rush).

Native Grassland

Native grassland was located within the vicinity yof the River-flat Eucalypt Forest where the groundcover was dominated by *Carex appressa* (Tall sedge) but lacked a mid-storey or native canopy.

Freshwater Wetland

The Freshwater Wetland in the eastern portion of the study area is recognised as Kingswood Park Wetland (No.158) under the *Sydney Regional Environmental Plan No 20 – Hawkesbury -Nepean (No 2-1997)*. At the time of the survey no standing water was present in either of the two (2) wetlands and the landscape was extremely dry. The only vegetation present within the artificial wetland was

Phragmites australis (Common Reed) located in the northern half of the wetland. The wetland to the east of the Subject Site was dominated by *Carex appressa* (Tall sedge), *Juncus usitatus*, *Bolboschoenus fluviatilis* (Marsh Club-rush) and *Typha orientalis* (Broadleaf Cumbungi).

Artificial Wetland

The artificial wetland has been identified in a previous assessment (EMM 2013) undertaken, as largely human induced with vegetation that did not conform to a vegetation community. It's occurrence is likely to be as a result of historical farming practices and changes to the surrounding built areas. During the site inspection the only native vegetation present within the 'wetland' was a patch of *Phragmites australis* (Common Reed) which is a colonising reed in the northern portion. Disturbance in this area is evident from the presence of exotic species such as *Cortaderia selloana* (Pampas Grass) and recent removal of vegetaion and soil. The wetland also currently receives untreated water from a stormwater pipe overflow and runoff from adjacent land.

Urban Native / Exotic

The Subject Site contained a large area of disturbed grassland that had been subjected to weed infestation and other disturbance. The groundcover was dominated by exotic grasses including *Eragrostis curvula* (African Lovegrass), *Paspalum dilatatum* (Paspalum) and *Chloris gayana* (Rhodes Grass). Other exotic species included *Verbena bonariensis* (Purpletop), *Lycium ferocissimum* (African Boxthorn) and *Cortaderia selloana* (Pampas Grass). Despite the area being dominated by exotic species some native species were present in low occurrences such as *Aristida vagans* (Threeawn Speargrass), *Rytidosperma sp.*, *Cheilanthes sieberi subsp. sieberi* (Mulga Fern) and *Echinopogon sp*. The Site also contained Cynodon dactylon (Common Couch) which is likely to have been seeded.
Derived native grassland is a sub-community of Cumberland Plain Woodland under the TSC Act. However, the perennial understorey did not meet the condition thresholds of 50 % or more native species to be considered as derived native grassland due to the disturbed nature of the grassland.

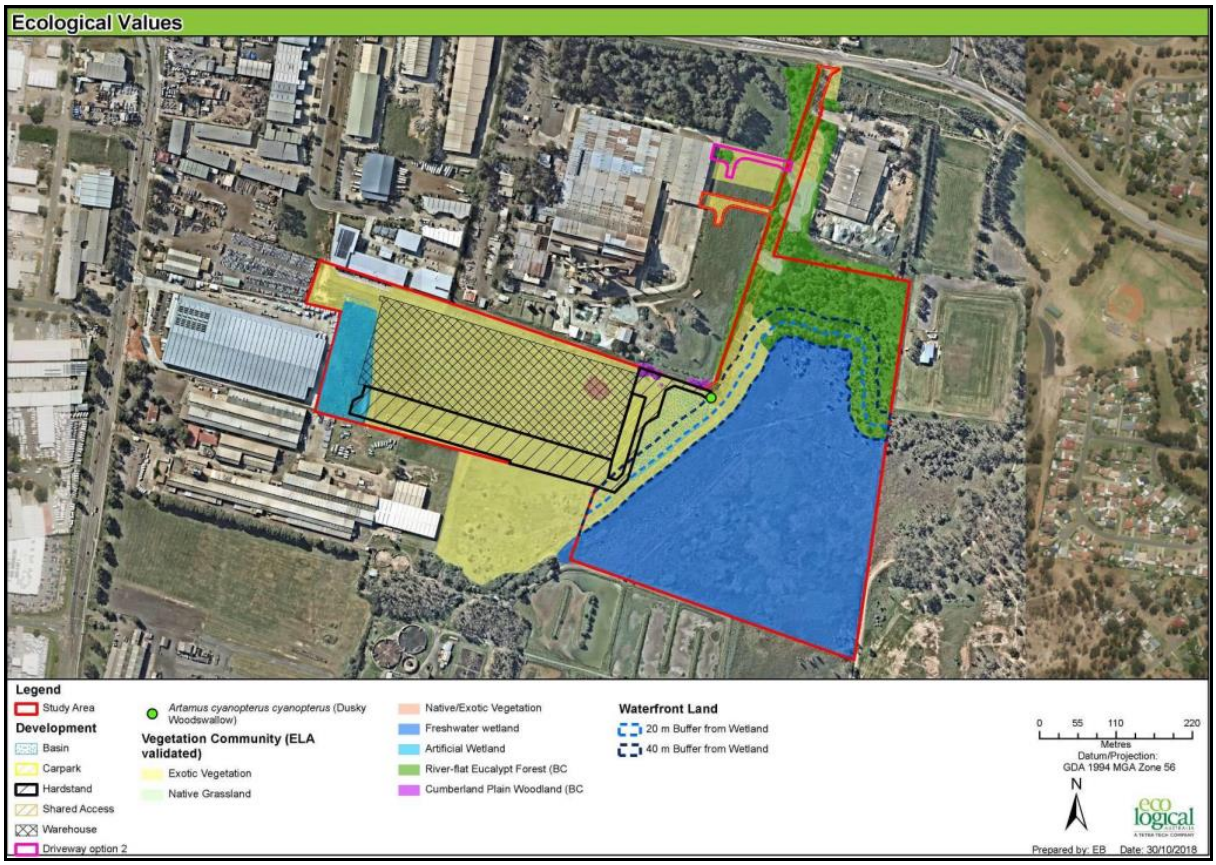

Figure 21 Ecological Values of the Subject Site (Source: ELA, 2018)

Weeds Listed Under the *Biosecurity Act 2015*

The *Biosecurity Act 2015* (and Regulations) provide specific legal requirements for State level priority weeds (refer to **Table 27** below). Of the weeds identified during field surveys, four (4) have been listed as State level priority weeds, one (1) as Regional priority weed and seven (7) listed as other weeds of Regional concern. The weeds present; their priority listing under the Act; the associated asset / value at risk; and, whether they are Weeds of National Significance (WoNS) are presented in **Table 27** below.

Table 27: State and Regional Level Priority Weeds and Other Weeds of Concern Present in the Subject Site

Scientific Name	Common Name	WoNS	Management Objectives
State Level Priority Weeds			
Asparagus asparagoides	Bridal Creeper	Yes	Asset Protection
Lycium ferocissimum	African Boxthorn	Yes	Asset Protection
Rubus fruticosus agg.	Blackberry	Yes	Asset Protection
Senecio madagascariensis	Fireweed	Yes	Asset Protection
Regional Priority Weed			
Cestrum parqui	Green Cestrum	No	Asset Protection
Other Weeds of Regional Concern			**Asset / Value at Risk**
Andropogon virginicus	Whisky Grass	No	Environment
Araujia sericifera	Moth Vine	No	Environment
Chloris gayana	Rhodes Grass	No	Environment
Eragrostis curvula	African Love Grass	No	Environment
Gleditsia triacanthos	Honey Locust	No	Environment and Agriculture
Pennisetum clandestinum	Kikuyu	No	Environment

Solanum mauritianum	Wild Tobacco Bush	No	Environment and Agriculture

A total of 20 fauna species identified during the field survey consisted of bird species common to peri-urban environments. One (1) threatened bird *Artamus cyanopterus* (Dusky Woodswallow) was recorded during the field survey undertaken. No other threatened fauna species were recorded during the field survey.

Direct Impacts

Both direct and indirect impacts during the construction phase and long-term impacts during post-construction, have been considered with regard to the impact assessment undertaken by ELA (2018) within the Flora and Fauna Assessment provided (refer to **Table 28** below).

Table 28: Summary of the Potential Impacts on Vegetation Communities

Vegetation Community	Local Occurrence	Study Area (ha)	Subject Site (ha)	Removal of Local Occurrence (%)
Cumberland Plain Woodland (TSC Act)	10.7	0.4	0.04	0.38
River-flat Eucalypt Forest (TSC Act)	3.64	3.64	0.51	14
River-flat Eucalypt Forest (TSC Act) – Option 2			0.56	15.4
Freshwater Wetlands (TSC Act) – good condition	14.7	11.5	0	N/A
Artificial Wetland	1.05	1.05	1.05	100
Native Grassland		0.15	0.07	46.7
Total Native Vegetation		16.38	1.46	N/A
Urban Native / Exotic		0.22	0.09	N/A
Exotic		10.2	9.5	N/A
Total		26.8	10.9	N/A

It is noted, that some threatened fauna species may utilise the Site intermittently as marginal foraging habitat; however, due to the highly mobile nature of these species and availability of foraging habitat in the adjacent landscape, no Assessments of Significance were considered necessary. Mitigation measures to minimise and mitigates potential impacts are detailed further below and with Section 6 of the Flora and Fauna Assessment (refer to **Appendix 12**).

Indirect Impacts

Indirect impacts are those impacts that do not directly affect habitat and individuals but that have the potential to interfere through indirect action. Indirect impacts considered for this assessment are site impacts (noise, light and weed invasion) and downstream or downwind impacts (sedimentation, dust, accidental spills and leaks.

During the construction, noise, dust and to a small degree vibration will be emitted which could have an indirect impact on local fauna. These impacts result from the operation of heavy machinery to clear vegetation and construct the infrastructure. These impacts are short term only and therefore

are unlikely to significantly impact fauna. Also, during the construction period there is a risk that sediment runoff may impact adjacent native vegetation and nearby drainage lines/creeks if appropriate sediment and erosion measures are not in place. This impact will be managed via an appropriate sediment and erosion control plan. The overall impact is likely to be minor.

Additionally, possible increase in weed infestation could result if weed propagules are introduced or moved around by machinery during the construction phase of the proposed development. Weed control measures are recommended below to minimise the risk. As such, indirect impacts to threatened species and native vegetation are unlikely to be significant and will be managed accordingly.

The proposed development may also result in indirect impacts such as light, noise, spread of weeds and changes to stormwater runoff and nutrients once the proposed development is completed and / or operational.

As a result of the encroachment into the outer 50% of the wetland buffer, it is anticipated that a condition of consent will require revegetation with riparian species to prevent the spread of weeds into the wetland and River-flat Eucalypt Forest. The proposed detention basins will collect water from the Site and capture stomwater during heavy rainfall. The interface of the proposed development to the wetland makes up only a small portion of the boundary of the wetland and the wetland will still receive overflow of water from surrounding land. The construction of the proposed detention basins is unlikely to excavate to a depth where they will interact with groundwater, and they will be lined / compacted to ensure water retention. The proposed development will increase impervious surfaces, but will also collect and treat run-off in the the two (2) proposed detention basins.

Assessments of Significance were undertaken for the following threatened flora and fauna species and ecological communities, which would be potentially impacted by the proposed development works:

- Vegetation Communities:
  - Cumberland Plain Woodland in the Sydney Basin Bioregion; and,
  - River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.

- Birds:
  - *Artamus cyanopterus* (Dusky Woodswallow); and,
  - *Hieraaetus morphnoides* (Little Eagle).
- Microbats:
  - *Falsistrellus tasmaniensis* (Eastern False Pipistrelle);
  - *Mormopterus norfolkensis* (Eastern Freetail-bat);
  - *Miniopterus schreibersii oceanensis* (Eastern Bentwing-bat);
  - *Myotis Macropus* (Southern Myotis); and,
  - *Scoteanax rueppellii* (Greater Broad-nosed Bat).

The Assessments of Significance concluded that the proposed works are not likely to result in a significant impact to the above species and that a Species Impact Statement is not required. Furthermore, it is noted, that some other threatened fauna species may utilise the Site intermittently as marginal foraging habitat; however, due to the highly mobile nature of these species and availability of foraging habitat in the adjacent landscape, no Assessments of Significance were considered necessary for these species. These assessments concluded that it is unlikely that the proposed development would significantly impact threatened species for the following reasons:

- The area to be impacted is small;
- No critical habitat will be impacted for these species;
- The proposed development will not fragment or isolate any fauna habitat;

- Large amounts of similar habitat are available within the survey area and adjacent to the study area; and,
- The habitat is likely to be used in a transitory nature as no key breeding habitat is likely to be present within the study area.

The following mitigation measures are designed to minimise potential impacts from works associated with clearing native vegetation for the proposed development. The mitigation measures should be considered (where applicable) during the Site planning phase and should form part of the overall development consent (where practicable). Mitigations measures suggested include:

- A Vegetation Management Plan (VMP) is to be prepared for the vegetation to be retained within the Subject Site to address the following matters:
    - specific measures to protect retained River-flat Eucalypt Forest and Freshwater Wetland from erosion, run-off and weed invasion;
    - contractors are to be aware of threatened fauna species that may occur within the study area, specifically any evidence of nesting birds;
    - best management practices for working in native vegetation communities;
    - weed management actions to protect existing ecological values and control the spread of exotic / noxious species;
    - pest management actions, where necessary;
    - all chemicals (herbicides) should be stored as far away from any waterways as possible and should be correctly stored within bunding;
    - over spraying and spray drift needs to be minimised as much as possible;
    - removal of woody weeds such as Lantana, should use the cut and paint or stem scrape methods of herbicide application and leave the stump in place if possible to avoid soil disturbance;
    - hand pulled weeds should be removed from the site and disposed of appropriately; and,
    - recommend particular plantings, such as sedges, to be planted below the lot layout to filter nutrients before they enter the wetland or native bushland.
- Implementation of the following mitigation measures should be undertaken as part of the construction process:
    - temporary tree protection measures (such as machinery exclusion zones from tree roots or tree trunk protection) should be in place during any construction works if trees are to be retained on site and to protect adjacent native vegetation;
    - establishment of clearly defined areas, such as the works area and any 'no-go' areas within/adjacent to work site boundaries that are not to be in any way disturbed or damaged by the works (e.g. native vegetation to the east of the site);
    - construction fencing pre-construction and during construction to ensure that related impacts are contained within the work areas;
    - soil and erosion measures such as sediment fencing, clean water diversion must be in place prior the commencement of the construction work in particular near any threatened fauna habitat;
    - soil and erosion measures should be inspected regularly (weekly at least), more often during rain periods to ensure that they are in proper working order;
    - no chemicals or rubbish should be allowed to escape the construction area; and,
    - all chemicals should be stored as far away from any waterways as possible and should be correctly stored within bunding.

No threatened ecological communities, flora or fauna species listed under the EPBC Act were recorded during the field surveys and based on habitat assessments none are unlikely to occur within the Site or, are unlikely to be adversely impacted by the proposed development. It is noted, that some threatened fauna species may utilise the Site intermittently as marginal foraging habitat. However, these species are highly mobile and the amount of habitat to be impacted is negligible in comparison to the availability of similar habitat in the adjacent landscape and locality. Therefore, no

Commonwealth significant impact assessments were considered to be required for threatened ecological communities, flora or fauna species.

Furthermore, the works would be conducted within land mapped as waterfront and triggers the requirement for a Control Activity Approval under the *Water Management Act 2000*, as previously discussed in the Report.

The Flora and Fauna Assessment undertaken by Eco Logical Australia (2018) concludes that the proposed development is unlikely to result in a significant impact to any threatened ecological communities, threatened flora or fauna listed under the BC or EPBC Act(s). Throughout the process of designing the proposed development options for access and siting the building have been explored and have taken practical steps to reduce the ecological impact by ensuring the detention basin, hardstand areas and access road was located in the outer 50 per centof the Vegetated Riparian Zone in accordance with the Natural Resources Access Regulator (NRAR) (formerly DPI Water) 'Guidelines for riparian corridors on waterfront land.'

Therefore, subject to implementation of the recommendations outlined above, it is recommended that the Application be supported by Council regarding potential impacts to biodiversity applicable to the Subject Site.

6.9 ABORIGINAL HERITAGE

The *128 Andrews Road, Penrith – Archaeological Survey Report* (Biosis, 2018) was conducted in accordance with the assessment process for this DA. The assessment undertaken involved background research and an archaeological survey in order to identify Aboriginal sites and areas of archaeological potential within the overall study area. The assessment undertaken was carried out in accordance with Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act). Additionally, (for added due diligence) the following relevant legislation and planning instruments were also utilised to aid in informing the assessment, including:

- NSW *National Parks and Wildlife Amendment Act 2010*;
- ISEPP;
- PLEP2010; and,
- PDCP2014.

Desktop analysis (08 October 2018) undertaken via a search of the Aboriginal Heritage Information Management System (AHIMS) register, identified a total of 103 Aboriginal archaeological sites within a five (5) kilometre search area of the Subject Site (refer to **Figure 22**). It is important to note, that none of the sites identified are located within the Subject Site.

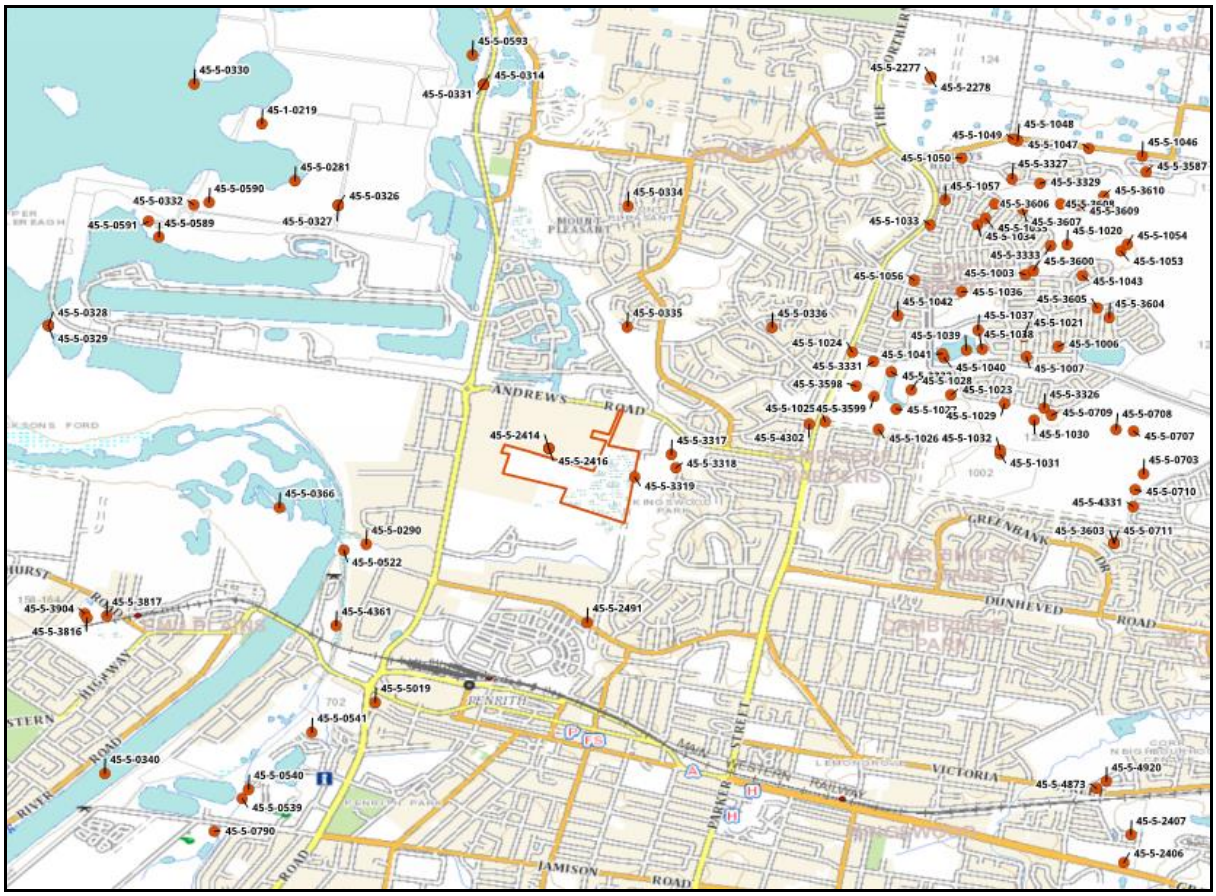

Figure 22 AHIMS Records Near the Study Area and Subject Site (Source: Biosis, 2018)

Some recorded sites consist of more than one (1) element, for example artefacts and a modified tree; however, for the purposes of this breakdown and the predictive modelling (undertaken in the assessment), all individual site types are studied and compared accordingly (refer to **Tables 29** & **30**).

Table 29: AHIMS Search Results		
AHIMS Site No.	**Site Name**	**Site Type**
45-5-2414	L1 (Penrith Lakeside Village)	Open camp site, artefact
45-5-2416[2]	L-1; Penrith Lakeside Village	Open camp site, artefact
45-5-3319	Western Sydney 7 and PAD	Artefact, PAD

Table 30: AHIMS Site Type Frequency		
Site Type	**Number of Occurrences**	**Frequency (%)**
Aboriginal Ceremony and Dreaming, Artefact	1	0.97
Isolated Find, Artefact	17	16.50
Open Camp Site, Artefact	54	52.43
Rock Engraving	1	0.97
PAD, Artefact	4	3.89
Artefact	26	25.24
Total	103	100.00

[2] Duplication of AHIMS site 45-5-2414 (Biosis, 2018)

As part of the assessment undertaken, a predictive model was development, indicating the site types most likely to be encountered during the survey and subsequent sub-surface investigations across the present study area (refer to **Table 31** below).

Table 31: Aboriginal Site Prediction Statements

Site Type	Site Description	Potential
Flaked stoned artefact scatters and isolated artefacts	Artefact scatter sites can range from high-density concentrations of flaked stone and ground stone artefacts to sparse, low-density 'background scatters and isolated finds.	**High:** Stone artefact sites have been previously recorded in the region across a wide range of landforms including alluvial flats, and also within the study area; they have the high potential to be present in undisturbed areas within the study area.
Potential archaeological deposits (PADs)	Potential sub-surface deposits of cultural material.	**Moderate to High:** PADs have been previously recorded in the region across a wide range of landforms including alluvial flats, and also withinthe study area. They have the potential to be present in undisturbed landforms.
Aboriginal ceremony and Dreaming Sites	Such sites are often intangible places and features and are identified through oral histories, ethnohistoric data, or Aboriginal informants.	**Low to Moderate:** There is currently one recorded mythological stories for the study area.
Shell middens	Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time.	**Low:** Shell midden sites have not been recorded within the study area. There is some potential for shell middens to be located in the vicinity of permanent water sources. As the nearest perennial water source is 1 km away from the study area, there is a low potential of Shell Middens being present within the study area.
Modified tress	Trees with cultural modifications.	**Low:** There is no record of any modified trees being within or surrounding the study area, due to extensive vegetation clearing from the 1800's ibwardsm therefore the potential is low.
Post-contract sites	These are sites relating to the shared history of Aboriginal and non-Aboriginal people of an area and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post-contact Aboriginal use.	**Low:** There are no post-contact sites previously recorded in the study area and historical sources do not identify one.
Aboriginal places	Aboriginal places may not contain any 'archaeoloigical' indicators of a site, but are nonetheless important to Aboriginal people. They may be places of cultural, spiritual or historic significance. Often they are places tied to community history	**Low:** There are currently no recorded Aboriginal historical associations for the study area.

	and may include natural features, places where Aboriginal political events commenced or particular buildings.	
Axe grinding grooves	Grooves created in stone platforms through ground stone tool manufacture.	**Low:** The geology of the study area lacks suitable horizontal sandstone rock outcrops for axe-grinding grooves. Therefore, there is low potential for axe grinding grooves to occur in the study area.
Burials	Aboriginal burial sites.	**Low:** Aboriginal burial sites are generally situated within deep, soft sediments, caves or hollow trees. Areas of deep sandy deposits will have the potential for Aboriginal burials. The soils profiles associated with the study area are not commonly associated with burials.
Rock shelters with art and / or deposit	Rock shelter sites include rock overhangs, shelters or caves, and generally occur on, or next to, moderate to steeply sloping ground characterised by cliff lines and escarpments. These naturally formed features may contain rock art, stone artefacts or midden deposits and may also be associated with grinding grooves.	**Low:** The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist, which are not present in the study area.
Quarries	Raw stone material procurement sites.	**Low:** There is no record of any quarries being within or surrounding the study area.

Additionally, a field survey of the study area was undertaken on 5 October 2018 (refer to **Figure 23**). Recorded during the survey followed the archaeological survey requirements of the Code and Industry best practice methodology. Information recorded during the survey included the following:

- Aboriginal objects or sites present in the study area during the survey;
- Survey coverage;
- Any resources that may have potentially been exploited by Aboriginal people;
- Landform;
- Photographs of the Site indicating landform;
- Evidence of disturbance; and,
- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

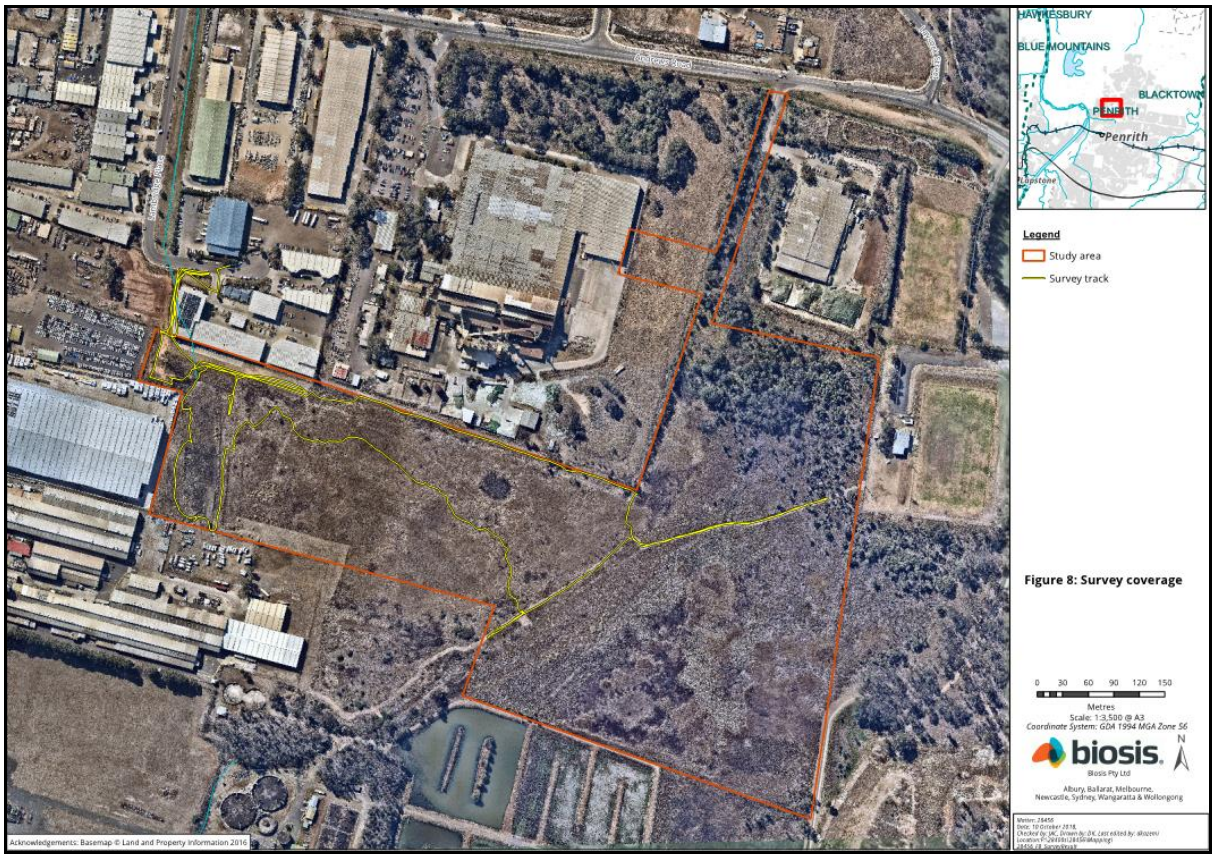

Figure 23 Survey Coverage from Field Survey Undertaken 5th October 2018 (Source: Biosis, 2018)

The lack of Aboriginal objects identified within the study area during the survey is primarily attributable to the extremely low Ground Surface Visibility (GSV) within the study area, as-well-as these disturbances. The majority of the ground surface was identified as being covered by dense grass, and exposures were limited to areas of disturbance. Exposures within the study area were targeted in an attempt to identify any visible surface artefacts but none were located (refer to **Figure 24**).

Figure 24 Assessment of Archaeological Potential with regard to the Proposed Development (Source: Biosis, 2018)

Furthermore, the study area have been the subject of extensive clearing and no mature trees were identified within the area subject to the proposed development, limiting the potential for scarred trees to be located within the study area. No sandstone rock outcroppings were located within the study area capable of supporting art sites or grinding grooves, and no midden or shell remains consistent with Aboriginal resource exploitation were visible within the study area at the time of the survey.

The archaeological survey was heavily hampered by very limited ground surface visibility and, existing disturbance; however, an area or archoaeological potential, PAD 1, was identified. This area is primarily associated with existing water courses and low-lying swampy areas within the study area. The following analysis has been undertaken for this area of archaeological potential:

Andrews Road PAD 1:

There is evidence of Aboriginal occupation in the immediate vicinity of the study area, with two (2) registered AHIMS sites located north-west and east of the study area. AHIMS site 45-5-2414 features a number of artefacts and an area of PAD north-west of the study area, while AHIMS site 45-5-3319 consisted of an isolated find and an area of PAD to the east of the study area. The excavations undertaken by Biosis with regard to AHIMS site 45-5-3319 did not identify any subsurface artefacts within the portions of the PAD excavated; however, two (2) artefacts were recovered from the surface of the PAD site. This was interpreted as the result of run-off into the PAD area from the ridgeline above the study area. With the wider area already featuring low density archaeological evidence, there is increased likelihood of further archaeological material being located within the study area. It is important to note, that it is not currently possible to determine the significance of Andrews Road PAD 1, without further exploration of the area of PAD.

A summary of the potential impacts of the area identified as holding archaeological potential within the Subject Site is provided within **Table 32** below.

Table 32: Summary of Potential Archaeological Impacts					
AHIMS Site No.	**Site Name**	**Significance**	**Type of Harm**	**Degree of Harm**	**Consequence of Harm**
AHIMS # pending	Andrews Road PAD 1	TBC	Direct	Partial	Partial loss of value.

Avoidance of impact to identified archaeological and cultural heritage sites through the design of the proposed development is the primary mitigation and management strategy, and should be implemented, where practicable. The area of PAD within the study area will be impacted by the proposed development under this DA.

It is recommended that an ACHA be undertaken in accordance with the consultation requirements and the code in order to consult with the Aboriginal community and to establish the presence, nature and extent of subsurface deposits associated with the areas of archaeological potential through a program of test excavation. Prior to any potential impacts occurring within the study area, the following is recommended:

Recommendation 1: ACHA Required in Advance of Physical Impacts

In advance of any physical impacts within the study area, an ACHA must be undertaken to assess any impacts the proposed works will have on identified Aboriginal sites within the study area. The ACHA must be undertaken in accordance with the consultation requirements and the code. Any impacts to areas of high or moderate archaeological potential should be addressed through a program of test excavation in accordance with the code. This ACHA should be completed prior to the issuance of Development Consent for the proposed development.

Recommendation 2: No Further Work Required for Areas of Low Archaeological Potential

No further assessment is required in areas of low archaeologicalpotential, and works can proceed with caution, subject to the unexpected finds protocol in Recommendation 3.

Recommendation 3: Discovery of Unanticipated Heritage Items

Aboriginal Objects

All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the OEH. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist, If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders.

Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:

1. Immediately cease all work at that location and not futher move or disturb the remains.
2. Notify the NSW Polic and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence works at that location unless authorised in writing by OEH.

6.10 BUSHFIRE

The *Bushfire Hazard Assessment Industrial Development – Warehouse Development at 128 Andrews Road, Penrith* (Blackash Bushfire Consulting, 2018) provides an assessment of the bushfire hazard of the Site (identified Bushfire Prone Land) and addresses the relevant requirements set out in the 'NSW Rural Fire Service' (RFS) document, *Planning for Bushfire Protection, 2006* (PBP 2006).

All development on bushfire prone land must consider and comply with PBP 2006. Industrial development in particular, has considerable flexibility and the nature of the development (i.e. concrete tilt slab construction) often results in the structures providing a higher degree of bushfire resistance than required by RFS. Accordingly, a site inspection was undertaken on 12 October 2018. The assessment include an analysis of the hazard, threat and subsequent risk with regard to the proposed development.

The assessment undertaken was necessary to determine the application of bushfire protection measures such as Asset Protection Zone (APZ) locations and dimensions and future building levels. The vegetation formations (bushfire fuels) and the topography (effective slope) combine to create the bushfire threat that may affect bushfire behaviour at the Site and which determine the planning and building response of PBP 2006.

It is proposed, that vegetation including trees would be removed from within the Subject Site. The existing forested wetland and freshwater wetland would be maintained to the east of the Site as it is not possible to manage these areas as they are wet and subject to ecological restrictions (as identified within **Section 6.8** above). **Table 33** below provides an explanation of the existing vegetation types confined to the Subject Site.

Table 33: Vegetation Types from the Proposed Warehouse

Vegetation	Aspect from the Proposed Warehouse			
	North	East	South	West
	N/A. Managed, industrial development.	Forested wetland along the access handle. Freshwater wetland to the east of the warehouse.	Managed land to the south west of the warehouse in the form of existing industrial development. Freshwater wetland to the south east.	N/A. Managed, industrial development.

Accordingly, all development in Bushfire Prone Areas needs to comply with the aims and objectives of PBP 2006. **Table 34** below demonstrates the compliance with PBP 2006, with regard to the proposed development.

Table 34: Compliance with the Aims & Objectives of PBP 2006

Aims	Meets Criteria	Comment
The aim of PBP 2006 is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.	Yes	Landscaping, defendable space, access and egress, emergency risk management and construction standards are in accordance with the requirements of PBP 2006. Accordingly, the aim of PBP 2006 have been satisfactorily addressed.

Objectives	Meets Criteria	Comment
Afford occupants of any building adequate protection from exposure to bushfire.	Yes	The Proposed Development provides opportunity for all occupants to be shielded from any external bushfire. The external cladding will be: ▪ Precast concrete dado panels of at least 2,400 mm high with Colorbond metal wall cladding above precast concrete panels. Insulation: The concrete panels will be 150 mm thick. The solid 150 mm thick panel achieves a 180 minute FRP. The proposed construction materials are above the fire resistance levels of AS3959. Ember protection will be provided in accordance with AS3959 to prevent ember penetration into the structures on the eastern façade and the south eastern portion of the proposed Warehouse and Distribution Facility.
Provide for defendable space to be located around buildings.	Yes	Defendable space is provided on all sides of the proposed development.
Provide appropriate separation between a hazard and buildings, which in combination with other measures, prevent direct flame contact and material ignition.	Yes	The precast concrete dado panels are to be 2,400 mm with Colorbond metal wall cladding above precast concrete panels eliminates combustible elements. The construction requirements for the warehouse exceeds the minimum requirements AS3959.
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	Yes	The Site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate. The proposed development provides for the movement of heavy articulated trucks about the Site with passing areas provided for fire trucks if needed. Heavy articulated trucks provide access provisions, including turning areas within the Site in excess of PBP 2006.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads, in the APZ.	Yes	The areas shown (shaded yellow) as APZ n **Figure 25** below, will be managed as an APZ in accordance with Appendix 2 outlined in **Appendix 11**.
Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).	Yes	Reticulated water is to be provided to the Subject Site for the proposed development. Fire hydrant spacing, design and sizing comply with the Australian Standard AS2419.1:2005, and hydrants are not to be located within any road carriageway. Utility services are adequate to meet the

		needs of firefighters (and others assisting in bushfire fighting).

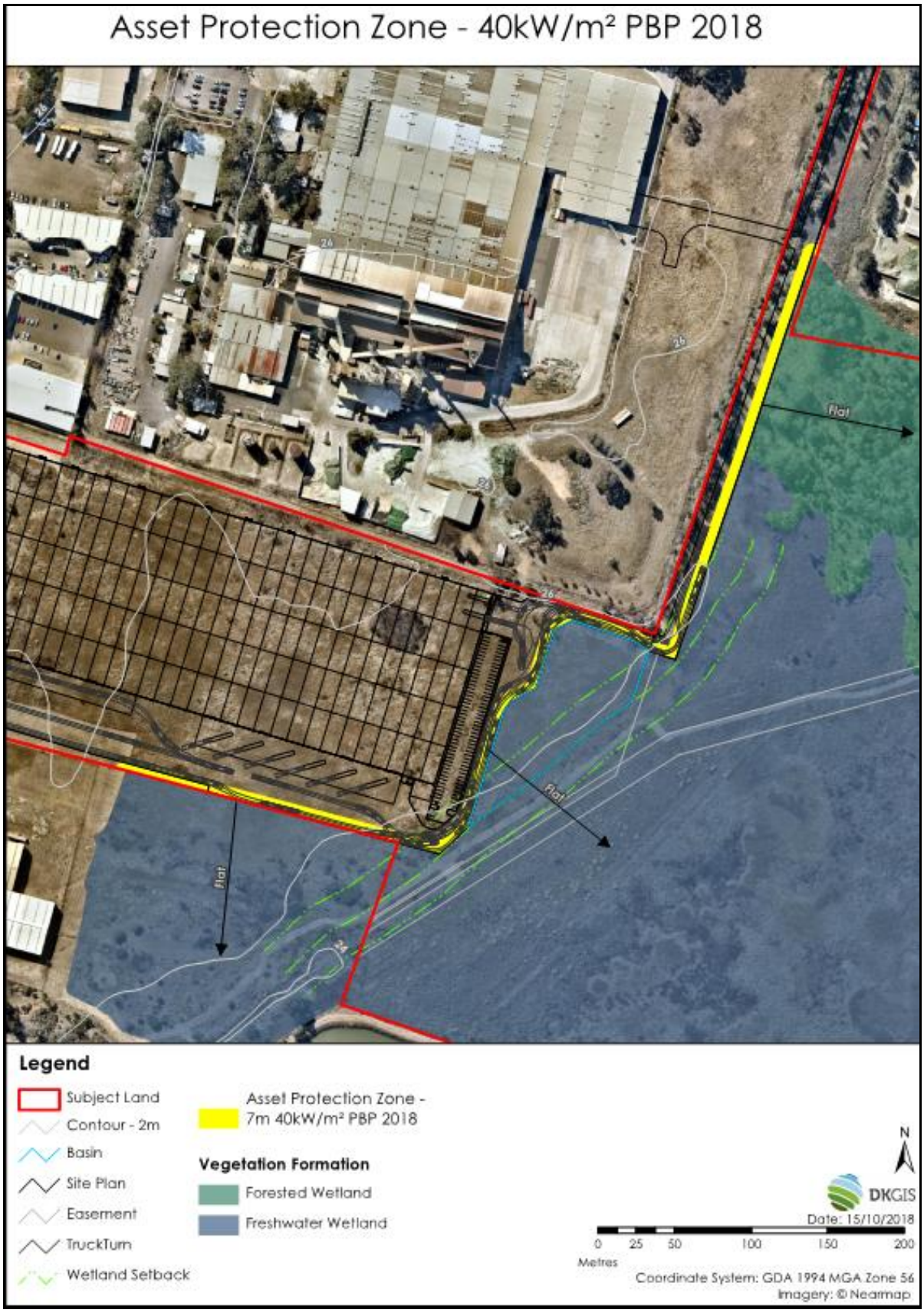

Figure 25 APZ PBP 2018 Showing BAL 40 Separation Distances (Source: Blackash Bushfire Consulting, 2018)

The Report notes the following recommendations with regard to the proposed development at 128 Andrews Road, Penrith, including:

1. **Construction Standard:** The proposed development should be constructed in accordance with the Bushfire Attack level 12.5 within the *Australian Standards for the Construction of Buildings in Bushfire Prone Areas* (AS3959) for the eastern façade and south eastern portion of the warehouse that is identified as being BAL 12.5.
2. **No Bushfire Construction** is proposed for the northern and western façade or for the south western portion of the façade that is not identified as BAL 12.5.
3. **Asset Protection Zones:** At the commencement of building works and in perpetuity, an Asset Protection Zone of 7 m shall be established and maintained from the edge of the wetland area toward the warehouse and along the access handle as depicted in the areas shaded yellow in **Figure 25** above. The APZ shall be maintained in accordance with *NSW Rural Fire Service Standards for Asset Protection Zones.*
4. **Access:** The capacity of road surfaces and any bridges / causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating;
    a. The access handle would be managed as an APZ.
5. **Water for Fire Fighting:** Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression, and hydrants are provided in accordance with AS 2419.1:2005.
    a. a connection for firefighting purposes is located within the IPA or non hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet; and,
    b. fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with AS 2441:2005 Installation of fire hose reels.
6. **Electricity:** Where practicable, electrical transmission lines are underground.
7. **Gas:** Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used, and all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side, and connections to and from gas cylinders are metal, and if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion.

The Report concludes, that the Site could be impacted by embers from adjoining lands to the south and east ember protection (BAL 12.5) has been proposed to the east and south east of the facility. As such, it is recommended that the proposed development will be constructed to the minimum standards required in accordance with the guidelines of Planning for Bushfire Protection 2006. Due to the size of the warehouse (approximately 50,000 m^2), it has been proposed to reduce the construction level in accordance with AS3959 so that ember protection is only provided for the portions of the building that are within 100 m from potential hazard vegetation.

Additionally, the Report considers all elements of bushfire attack and states that, provided the proposed development is constructed in accordance with the recommendations listed above, it is considered that the proposed development satisfies the aims and objectives of PBP 2006.

6.11 UTILITIES

All utility infrastructure and essential services could be successfully augmented to the Site.

6.12 WASTE

Details of construction and operational waste are provided within the Waste Management Plan at **Appendix 8.** Where possible all construction materials would be recycled either on-site through reuse or offsite at a licenced facility. Waste would be transported and disposed of off-site by a licenced constractor to a licensed landfill facility.

Similarly recyclable and non-recyclable materials generated during operation would be collected and desposed of by a licenced contractor. The ongoing management of waste would be promoted through the following:

- *Staff awareness of recyclable items, providing on site training. This would include the company's Waste and Recycle policy with clear objectives and expectations;*
- *Staff awareness and educational programs would be run which would supplement existing OH&S, and environmental programs on waste management;*
- *Suitable information would be supplied in staff induction kits, which would require refreshers on a yearly basis;*
- *The recycle and waste areas would be clearly marked and bins suitably labelled; and,*
- *Cleaning staff would be responsible for day to day management and control of all waste and recycle stations.*

Further details are provided within **Appendix 8.**

6.13 BUILDING CODE OF AUSTRALIA AND FIRE ENGINEERING

As demonstrated within the *128 Andrews Road, Penrith, NSW, 2750 – Schematic Design BCA Report* (Singh Consulting, 2018), the proposed Warehouse and Distribution Facility must be designed to comply with the BCA. Furthermore, the detailed design of the proposed Warehouse and Distribution Facility would be in accordance with the BCA and would be further assessed prior to the issue of a Construction Certificate (refer to **Appendix 15**).

6.14 CONSTRUCTION

All works on the Site would be carried out in accordance with the conditional requirements of any consent issued with the DA. Appropriate measures would be undertaken to mitigate potential impacts from the development including dust, noise, odours, traffic impact and erosion.

6.15 CUMULATIVE IMPACTS

No foreseeable cumulative impacts would be anticipated to result from the proposed development. Rather the proposed development provides a Warehouse and Distribution Facility within an area zoned IN1 General Industrial – which, is commensurate with the intended development of the Site and its surrounds.

6.16 SUITABILITY OF SITE FOR DEVELOPMENT

The Site is located within an industrial area and is zoned IN1 General Industrial use under PLEP2010. The proposed development would utilise the existing industrial building(s) for warehousing and distribution and general industry purposes, which would support the adjoining industrial developments. The proposed operation would entail the Subject Site being permitted to operate on a 24 basis 7 days per week. The proximity of the Site to major arterial roads serves as being ideal for the Site's intended uses.

Additionally, the Site is considered to be suitable for the development and is consistent with the aims and objectives of the IN1 General Industrial zone in that it seeks to provide a development that responds to the characteristics of the land and is compatible with surrounding land uses.

6.17 ANY SUBMISSIONS MADE IN ACCORDANCE WITH THE ACT

No submissions have been received in relation to the proposed development; however, the applicant is willing to address any submissions, should they be received by Council.

6.18 THE PUBLIC INTEREST

The proposed development would have no adverse impact on the public interest.

Through the provision of employment-generating development, the proposed development would contribute to serve the emerging Western Sydney region by providing employment-generating opportunities within the Penrith LGA.

PART G CONCLUSION

The proposed development for a Warehouse & Distribution Facility on the Site identified as 128 & 130-172 Andrews Road, Penrith, is permissible with consent pursuant to PLEP2010. The proposal would facilitate the development of the Site in accordance with the intended use of land within the Penrith LGA.

This SEE provides an assessment of the proposed development against the relevant environmental planning framework, including PLEP2010. The assessment finds that the proposed development is consistent with the objectives and controls of the relevant instruments and policies in place. No significant adverse environmental, economic or social impacts have been identified as likely to arise from the proposed development. Rather, the proposed development would provide for positive impacts, including the efficient and suitable development of industrial zoned land and the generation of significant employment opportunities in the manufacturing / warehousing and distribution sector.

Via means of conclusion, it is considered that the proposed development would warrant a positive assessment for the following compelling reasons:

(a) The proposed development facilitates the development of the Site for warehousing and distribution purposes through the provision of a modern day Warehouse & Distribution Facility;
(b) Furthermore, the proposed development would result in significant economic benefit deriving from the provision of jobs during the construction and operational phases of the development;
(c) The proposed development's built form and operational use are highly compatible with surrounding industrial land uses set out within the Penrith LGA, and positively contribute to the emerging industrial character of this designated land portion;
(d) The proposed development – Warehouse & Distribution Facility – is permitted with consent in the IN1 General Industrial zone pursuant to PLEP2010;
(e) The proposed development is consistent with the relevant provisions of PLEP2010;
(f) The proposed development is generally consistent with the provisions of the PDCP2014; and,
(g) The proposed development is supportable on traffic and parking grounds as confirmed by the Traffic Impact Assessment prepared by a qualified Traffic Engineer (Ason Group, 2018).

The proposed development is permissible within the zone and is compatible with the zone objectives. As stipulated previously in this SEE, the matters for consideration under Section 4.15(1) of the EP&A Act have been satisfactorily addressed demonstrating the built form and use is compatible with the surrounding environment.

Therefore, it is recommended that Council support the proposal for a favourable determination.

Appendix 1
Survey Plan

Appendix 2
Architectural Plans

Appendix 3
Landscape Plans

Appendix 4
Civil Engineering Drawings and Report

Appendix 5
Contamination and Salinity

Appendix 6
Geotechnical Report

Appendix 7
Traffic Impact Assessment

Appendix 8
Waste Management Plan

Appendix 9
Penrith Development Control Plan 2014 Compliance Table

Appendix 10
Clause 4.6 Variation

Appendix 11
Bushfire Report

Appendix 12
Flora and Fauna Assessment

Appendix 13
Noise Impact Assessment

Appendix 14
Aboriginal Heritage Assessment

Appendix 15
BCA Report

Appendix 16
Fire Engineering Letter of Support

Appendix 17
QS Report

Appendix 18
Council Pre-DA Meeting Minutes