Environmental Impact Statement

Prestons Warehouse and Distribution Centre

SSD - 7155

March 2016

urbis

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Statement of Validity

ENVIRONMENTAL IMPACT STATEMENT PREPARED BY	
Name	David Hoy (Director) Ryan Macindoe (Consultant)
Address	Urbis Pty Ltd Level 23, Tower 2 201 Sussex Street Sydney NSW 2000
In respect of	Prestons Warehouse and Distribution Estate, Yarrunga Street, Prestons (SSD 7155)

I certify that the contents of the Environmental Impact Statement to the best of my knowledge, has been prepared as follows:

- In accordance with Schedule 2 of the *Environmental Planning and Assessment Regulations 2000;*
- In accordance with the requirements of the *Environmental Planning and Assessment Regulations 2000;* and *State Environmental Planning Policy (State and Regional Development) 2011;*
- The statement contains all available information that is relevant to the environmental assessment of the proposed development; and
- To the best of my knowledge the information contained in this report is neither false nor misleading.

NAME	QUALIFICATION	SIGNATURE	DATE
David Hoy	B/Urban and Regional Planning (University of New England) M/Commerce – Land Economy (University of Western Sydney)		7 March 2016
Ryan Macindoe	B/Urban and Regional Planning (Hons 1), (University of New South Wales)		7 March 2016

APPLICANT AND LAND DETAILS	
Applicant	The Trust Company (Australia) Limited as trustee for Logos Australian Logistics Venture Prestons Trust.
Applicant Address	Suite 1202, Level 12 167 Macquarie Street, Sydney NSW 2000

Land to be Redeveloped	Yarrunga Street, Prestons
Lot and DP	Lot 33, 34, 35, 43, DP 2359 Lot 20 DP 117483
Project Name	Prestons Industrial Warehouse and Distribution Centre
Project Description	Development of a new industrial estate for the purpose of distribution and warehousing). Key elements of the redevelopment are: ▪ Staged Construction ▪ Five warehouse facilities ranging from 3,700sqm to approx. 40,000sqm ▪ Internal roadways ▪ Main vehicle access from Yarrunga Street ▪ At grade open-air parking ▪ Landscaping works ▪ Service and infrastructure augmentation ▪ Use of the premises for Warehouse and Distribution activities with ancillary office uses.

Executive Summary

PURPOSE OF REPORT

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (the Department) for a Development Application (DA) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposal will comprise the staged construction of five warehouse or distribution centre buildings on land at the corner of Yarrunga Street and Bernera Road, Prestons, New South Wales.

The proposal is defined as State Significant Development (SSD) pursuant to Clause 12 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* as the proposed development involves an estimated capital investment value (CIV) of $131,145,000. Under Clause 12 Schedule 1, 'development that has a capital investment value of more than $50 million for the purpose of warehouses or distribution centres' is SSD for the purposes of the EP&A Act.

The Secretary's Environmental Assessment Requirements (SEARs) for the preparation of the Environmental Impact Statement were issued on 11 September 2015. A copy of the SEARs is included at **Appendix A** and **Section 2** of this EIS provides a summary of the SEARs and identifies the section of the report where the relevant requirement is addressed and/or the appendix reference for the specialist consultants' report associated with that requirement.

PROJECT OVERVIEW

This application seeks approval for the staged development of a warehouse and distribution centre, including:

- Construction of five warehouses with ancillary office space,
- Construction of hard stand areas, civil works and associated earthworks,
- Site landscaping,
- Early works and piling,
- 715 onsite car parking spaces,
- Two access roads from Yarrunga Street, and
- Use of the premises for warehousing and distribution activities with ancillary office use operating 24 hours a day, seven days a week.

SUBJECT SITE

The subject site is legally described as Lots 33, 34, 35, and 43 DP 2359, and Lot 20 DP 1173483.

The site has an area of approximately 207,260sqm (20.726ha) and is located in the suburb of Prestons in the Liverpool Local Government Area (LGA). The site and is situated amongst general industrial land uses and is adjacent to low density residential development immediately to the south.

Prestons is situated at the key road junction of the M5 South Western Motorway, the Hume Highway, and the Westlink M7, and therefore has good connectivity to Sydney's centre and north, as well as Canberra and Melbourne. All three roads can be accessed from Camden Valley Way, which also connects Prestons to Liverpool and Camden. Prestons is serviced by trains to the city via Granville and the Airport from Glenfield and Edmondson Park stations.

The northern portion of the site currently contains one dwelling with ancillary rural out buildings and infrastructure (including stock yards and sheds). There are also two small sheds and some scattered debris in the southern portion of the site. The south east corner of the site contains a high voltage Transgrid power line which runs north-south and a constructed drainage channel emanating from filter discharge pipes in the southern boundary. Small dams are also located within the site. The site is largely devoid of vegetation, with small patches of remnant vegetation remaining.

CONSULTATION

Consultation has been undertaken with a range of State authorities, service providers and members of the community during the preparation of the EIS, including:

- Liverpool City Council
- Roads and Maritime Services
- Office of Environment and Heritage
- Sydney Water
- Office of Water NSW
- Transgrid
- Endeavour Energy

The feedback provided during the consultation process has informed the design of the proposed development, with modifications to earlier schemes to minimise the potential impacts arising from the proposal.

ENVIRONMENTAL IMPACTS AND MITIGATIONS MEASURES

This EIS, with reference to the appended specialist consultant reports, assesses the environmental impacts of the proposed development in accordance with the SEARs and provides the commitments of the proponents to minimise, mitigate and manage potential impacts associated with the development. Environmental assessment considerations include:

- Traffic and Transport
- Biodiversity
- Air and Odour
- Hazards and Risks
- Soil and Water
- Contamination and Remediation
- Noise and Vibration
- Urban design and visual
- Aboriginal Heritage
- European Heritage
- Geotechnical
- Bushfire
- Demolition Management
- Waste
- Economic Impacts
- Greenhouse Gas and Energy Efficiency
- Ecologically Sustainable Development

All impacts that have been identified are address in this EIS and assessed for the potential environmental risk at **Section 25**. All impacts can be appropriately ameliorated through the implementation of mitigation measures also consolidated into a summary table at **Section 25**.

JUSTIFICATION AND CONCLUSION

The proposed development is aligned with underlying planning controls and of a nature that is consistent with other forms of development occupying in proximity to the site and in the general area. The scale and cost of the development is what is trigging the state significance of the proposal. Accordingly at a land use planning level, the proposal can be broadly justified.

When the scale of the proposal and the impacts associated with it are assessed against the provision of the SEARs, it has been assessed that the impacts are manageable and that the proposal is justifiable on these grounds.

1 Introduction

This EIS has been prepared by Urbis on behalf of Logos Australian Logistics Venture Prestons Trust and is submitted to the Department for a DA under Part 4 of the EP&A Act. The proposal will comprise the staged construction of five warehouse or distribution centre buildings on land at the corner of Yarrunga Street and Bernera Road, Prestons, New South Wales.

The proposal is defined as SSD pursuant to Clause 12 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* as the proposed development involves an estimated CIV of $131,145,000. Under Clause 12 Schedule 1, 'development that has a capital investment value of more than $50 million for the purpose of warehouses or distribution centres' is SSD for the purposes of the EP&A Act.

The SEARs for the preparation of this EIS were issued on 11 September 2015. A copy of the SEARs is included at **Appendix A** and **Section 2** of this EIS provides a summary of the SEARs and identifies the section of the report where the relevant requirement is addressed and/or the appendix reference for the specialist consultants' report associated with that requirement.

This EIS describes the site and proposed development, provides relevant background information, and assesses the development against relevant legislation, environmental planning instruments, and planning policies, and the SEARs issued.

1.1 PROPOSED DEVELOPMENT OVERVIEW

This application seeks approval for the staged development of a warehouse and distribution centre, which comprises:

- Construction of five warehouses with ancillary office space comprising the following areas (sourced from the architectural plans at **Appendix D**):
  - Warehouse 1: 26,950sqm of warehouse and 1,800sqm of ancillary office,
  - Warehouse 2: 30,005sqm of warehouse and 820sqm of ancillary office,
  - Warehouse 3: 12,280sqm of warehouse and 1,100sqm of ancillary office.
  - Warehouse 4: 3,285sqm of warehouse and 300sqm of ancillary office, and
  - Warehouse 5: 38,960sqm of warehouse and 705sqm of ancillary office.
- Early works, earth works and piling,
- Construction of hard stand areas, car parking areas and civil works,
- Site landscaping,
- 715 onsite car parking spaces,
- Two access roads from Yarrunga Street in the north, one fire truck emergency access road from Kurrajong Road in the south and three emergency access points, and
- Use of the premises for warehousing and distribution activities with ancillary office use operating 24 hours a day, seven days a week.

Full detail of the proposed development is provided at **Section 4** and in the architectural plans at **Appendix D**.

1.2 CONSULTANT TEAM

The following project team has been involved in the preparation of this application:

ROLE	ENTITY
Project Manager	DBL Property
Planning	Urbis
Cost Estimate	Altus Page Kirkland
Survey	Land Partners
Architect	AXIS Architectural
Landscape Design	Ground Ink
Traffic and Transport	Transport and Traffic Planning Associates
Ecology	Travers Bushfire and Ecology
Air Quality and Odour	Pacific Environment
Hazard and Risk	Core Engineering
Salinity, Acid Sulphate Soils, Geotechnical	Ground Technologies
Civil Engineering, Soil and Water	Costin Roe
Contamination	Ground Technologies
Nosie and Vibration	Acoustic Logic
Historical Archaeological Report, Aboriginal Cultural Assessment	Mary Dallas Consulting Archaeologists
Demolition and Construction Waste Management, Ongoing Waste Management	Waste Audit and Consultancy Services
Greenhouse Gas and Energy Efficiency	Pacific Environment
Ecologically Sustainable Development	Pacific Environment
Community Consultation	Urbis

1.3 VALUE OF THE PROJECT

The estimated capital investment value of Warehouse 5 is $51,002,000. The full development value is estimated at $131,145,000, subject to final costing and tender clarifications. The full statement of Capital investment Value is provided at **Appendix B**, and was prepared in accordance with the EP&A Act.

1.4 OBJECTIVES OF THE PROPOSAL

The intention of the proposal is to provide a warehouse and distribution facility that:

- Will be large enough to accommodate the intended operations of intended tenants,
- Has appropriate access and is compatible with surrounding developments and in the local context,
- Will result in an employment generating development,
- Will result in a minimal impact on the environment, and
- Implements appropriate mitigation measures for potential impacts where required.

1.5 PROJECT NEED

Colliers International has prepared advice on the demand for purpose built industrial warehouse accommodation in the area. This advice is provided at **Appendix U**, with the key discussion provided below:

> *Given the improved confidence within the economy in NSW most of the demand is coming from warehouse expansion, consolidation in some cases and a significant push from the South Sydney market. In the South Sydney market alone they have lost 1.6 million of industrial zoned land to mixed use development and the West Connex. This means that approximately 320 occupiers need to relocate in the medium term. We have already seen a sharp increase in enquiry coming from this market, however, we expect this to significantly increase into the future.*
>
> *We also anticipate other industrial occupiers will move from the South Sydney market due to road congestion as well.*
>
> *Within the South West market other industrial suburbs that have been earmarked for residential conversion are Kingsgrove, Riverwood and some parts of Moorebank which will again increase industrial demand into the future.*
>
> *Most industrial occupiers require good access to infrastructure and 34 Yarrunga Street, Prestons certainly provides excellent access to the M7 Motorway. Another important fact is that industrial buildings are much larger than they were 10 years ago. This has been driven by the need for businesses to gain more efficiencies to save costs. A large industrial building 10 years ago was 10,000sqm and now its 50,000sqm.*
>
> *In my opinion, there is a shortage of sites within the South West that can cater for large occupiers in today's market.*
>
> *Therefore, in our opinion there is currently strong demand for this site to be used for industrial purposes, let alone the strong demand into the future from occupiers relocating from the South Sydney market.*

Further detail on the demand for the project is provided in **Section 20**.

1.6 CONSIDERATION OF ALTERNATIVES

The intention of the proposal is to provide a warehouse and distribution facility at a location that:

- Is an appropriately zoned site,
- Has ready access to the regional road network,
- Is compatible with surrounding development and local context,
- Will result in minimal impact on the environment, and
- Will allow for the implementation of suitable mitigation measures where required.

The site is considered to be aligned to the objectives of the project. The site design and built form are consistent with the objectives of the zone and will contribute to the planned industrial character intended for the site and locality.

The options considered, and subsequently dismissed, in arriving to the current proposal included:

1.6.1 DO NOTHING OPTION

The 'do nothing' option was dismissed as the objectives of the project would not have been met. The current zoning for this site was established after a strategic review by Liverpool Council, confirming the suitability of the land for this form of development.

1.6.2 USE OF AN ALTERNATIVE DEVELOPMENT SITE

Consideration of alternative locations was carried out at early stages of the development. The subject site was selected as the most appropriate for the proposed development given its proximity to key road networks, size, industrial zoning, and existing condition of the site (largely cleared). It was determined that any potential impacts could be mitigated successfully on this site.

2 Secretary's Environmental Assessment Requirements

A request was made to the Minister for the Secretary's Environmental Assessment Requirements (SEARs), pursuant to Clause 3 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. The SEARs are addressed within this report and included in full at **Appendix A**.

Table 1 below provides a summary of the Secretary's requirements and identifies the section of the report where the relevant requirement is addressed and/or the appendix reference for the specialist consultants' report associated with that requirement. Additional requirements from other agencies have also been incorporated for completeness.

TABLE 1 – SEARS AND EIS REFERENCES

ITEM / DESCRIPTION	DOCUMENT REFERENCE
General Requirements	
The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (the Regulation). In addition, the EIS must include:	**Clause 6 – Statement of Validity and throughout EIS** **Clause 7 – Throughout EIS**
A detailed description of the development, including: ▪ The need for the proposed development;	**Section 1.5**
▪ Justification for the proposed development;	**Section 27**
▪ Likely staging of the development;	**Section 4.4**
▪ Likely interactions between the development and existing, approved and proposed operations in the vicinity of the site; and	**Section 3.2**
▪ Plans of any proposed building works.	**Appendix D**
Consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments	**Section 5**
A risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment	**Section 25**
A detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: ▪ A description of the existing environment, using sufficient baseline data;	**Section 6 – 22** **Appendix G – Appendix W**
▪ An assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes;	**Section 6 – 22**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
and	**Appendix G – Appendix W**
▪ A description of the measures that would be implemented to avoid, minimise, mitigate and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage significant risks to the environment.	**Section 25**
A consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS.	**Section 25** **Section 26**
The EIS must also be accompanied by a report from a qualified quantity surveyor providing: ▪ A detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV ▪ An estimate of jobs that will be created during the construction and operational phases of the proposed development; and ▪ Certification that the information provided is accurate at the date of preparation.	**Section 1.3** **Appendix B**
Key Issues	
The EIS must address the following specific matters: Statutory Planning Context	**Section 5**
Detailed justification for the proposal and the suitability of the site;	**Section 27** **Section 27.2**
Demonstration that the proposal is generally consistent with all relevant environmental planning instruments including: ▪ State Environmental Planning Policy (State & Regional Development) 2011 ▪ State Environmental Planning Policy No.33 ▪ Hazardous and Offensive Development; ▪ State Environmental Planning Policy No.55 Remediation of Land; ▪ State Environmental Planning Policy (infrastructure) 2007; ▪ Greater Metropolitan Regional Environmental Plan No. 2 Georges River Catchment; and ▪ Liverpool Local Environmental Plan 2008.	**Section 5** **Throughout EIS**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
▪ detail the nature and extent of any prohibitions that apply to the development; ▪ identify the development standards applying to the site; - ▪ justify any development standards not being met;	
Address the relevant planning provisions, goals and strategic planning objectives in the following: ▪ NSW 2021: A Plan to make NSW Number One; ▪ A Plan for Growing Sydney; ▪ South West Subregion: Draft Subregional Strategy ▪ relevant Development Contributions Plan/s; and ▪ Liverpool DCP 2008. Detail how the development promotes or is consistent with these provisions and strategic objectives.	**Section 5**
Traffic and Transport Including: ▪ Traffic Impact Assessment detailing all daily and peak traffic and transport movements likely to be generated (vehicle, public transport, pedestrian and cycle trips) during construction and operation of the development, including a description of vehicle access routes and modelling of key intersections including Westlink M7/Bernera Road and Camden Valley Way/Bernera Road; ▪ Details of access to the site from the road network including intersection location, design and sight distance in accordance with Council's requirements (see Attachment 2); ▪ An assessment of predicted impacts on road safety and the capacity of the road network to accommodate the development; ▪ Plans of any road upgrades or new roads required for the development, including those specified by Council (see Attachment 2); ▪ Detailed plans of the proposed layout of the internal road network; ▪ Identification of facilities and measures for sustainable travel and parking provision on-site in accordance with the relevant Australian Standards; and ▪ Details of any likely dangerous goods to be transported on arterial and local roads to/from the site, if any, and the preparation of an incident management strategy, if relevant.	**Section 6** **Appendix G**
Biodiversity Including:	**Section 7** **Appendix H**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
▪ Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with section 1428(1)(c) of the Threatened Species Conservation Act 1995.	
Air and Odour Including: ▪ An assessment of the potential air quality impacts (particularly dust) of the development on surrounding receivers, including impacts from construction, operation and transport; ▪ An assessment of the potential odour impacts; and ▪ Details of the proposed mitigation, management and monitoring measures.	**Section 8** **Appendix I**
Hazards and Risks The assessment must include : ▪ A preliminary risk screening carried out in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development, and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity, package size, and location of all dangerous goods and hazardous materials associated with the project; an assessment of the potential odour impacts; and details of the proposed mitigation, management and monitoring measures. ▪ Should the preliminary risk screening indicate that the project is "potentially hazardous", a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011), and Multi-Level Risk Assessment (DoP, 2011). The PHA must: – Identify the hazards associated with the proposed development to determine the potential for off-site impacts; – Estimate the combined risks from the existing site and the proposed development (overall site); – Demonstrate that the risks from the overall site (as modified by this project) comply with the criteria set out in Hazardous Industry Planning Advisory Paper No 4 Risk Criteria for Land Use Safefy Planning.	**Section 9** **Appendix J**
Soil and Water including: ▪ A detailed assessment of potential soil (including contamination and acid sulphate soil), surface water, groundwater and salinity impacts of the proposed development, including adequate mitigating and monitoring measures; ▪ An assessment of the potential impacts on groundwater and groundwater dependent	**Section 10** **Appendix K** **Appendix L** **Appendix M**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
ecosystems; ▪ An assessment of the potential impact of the development on streams in the vicinity of the development; ▪ An assessment of flooding impacts associated with the proposal, including details of any flood liability of the site and changes to flood behaviour ▪ A description of all surface and stormwater management measures including drainage design, on-site detention, and measures to treat or re-use water; ▪ Details of proposed erosion and sedimentation controls (during construction and operation); ▪ An outline of the proposed water requirements, including a consolidated site water balance, details of water supply sources, usage data and efficiency measures; ▪ Provide wastewater predictions, and the measures that would be implemented to treat, re-use and/or dispose of this water; ▪ Provide an assessment of any geotechnical and/or topographical limitations (such as site soils and slope) and, if necessary, design considerations that address these limitations; ▪ Provide details of proposed cut and fill works associated with the development, and measures to minimise the extent of cut and fill; and ▪ A description of any fill to be imported to the site, including quantity and its waste classification.	
Contamination and Remediation including: The EIS must include a Remedial Action Plan (RAP). The RAP must be accompanied by a Site Audit Statement from an Environmental Protection Authority (EPA) accredited Site Auditor and prepared in accordance with the *Contaminated Land Planning Guidelines* prepared in accordance with section 104 of the *Contaminated Land Management Act 1997*.	**Section 11** **Appendix O**
Noise and Vibration including: ▪ A quantitative noise and vibration assessment for construction and operation, including impacts on nearby sensitive receivers; ▪ Cumulative impacts of other developments; and ▪ Details of the proposed noise management mitigation and monitoring measures.	**Section 12** **Appendix P**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
Urban Design and Visual including: ▪ Layout of the development including staging, site coverage, setbacks, proposed open space and landscaped areas; suitable landscaping incorporating endemic species; ▪ A development control plan that includes controls for, but not limited to, building heights and design, setbacks, floor space ratio, lighting, stormwater management and drainage, flooding, access and parking, landscaping, waste removal and storage and energy and water efficiency/conservation requirements; and ▪ Outline and justify any inconsistencies with existing precinct plans or other DCPs that apply to the area; ▪ The layout and design of the development having regard to the surrounding vehicular, pedestrian and cycling networks, if applicable; ▪ A detailed assessment (including photomontages and perspectives) of the facility (buildings and storage areas) including height, colour, scale, building materials and finishes, signage and lighting, particularly from: – Nearby residential receivers; and – Significant vantage points within the surrounding public domain. ▪ Address potential land use conflicts associated with current and planned future neighbouring uses, in the layout and potential building footprints/envelopes. This should include spatial separation, siting, noise mitigation and a suitable urban design response incorporating appropriate presentation to the public domain.	**Section 13** **Appendix F**
Aboriginal Cultural Heritage including: ▪ The EIS must identify and describe the Aboriginal Cultural Heritage values that exist across the whole area that will be affected by the proposed development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the *Guide to Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011) and consultation with OEH regional officers; ▪ Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS; and ▪ Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impacts on cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures	**Section 14** **Appendix Q**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	
Historic Heritage including: ▪ The EIS must provide a Heritage Impact Assessment including, but not limited to, a statement of significance and assessment of impacts to State and local heritage including conservation areas, natural heritage areas, buildings, works, relics, gardens, landscapes, views and trees; ▪ An archaeological study, including test excavations in is to be carried out on the site to identify any archaeological impacts associated with the proposal; and ▪ Where impacts to State or locally significant heritage items are identified, the assessment shall: – Outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the *NSW Heritage Manual* (1996); – Be undertaken by a suitably qualified heritage consultant; – Include a statement of heritage impact for all heritage items (including significance assessment); – Consider impacts including, but not limited to, vibration , demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas and archaeological noise treatment (as relevant); – Where potential archaeological impacts have been identified, develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations and include the results of these test excavations; and – Address the recommendations in any archaeological zoning plan or archaeological management plan held by Liverpool City Council.	**Section 15** **Appendix R**
Bushfire including: Assess the level of hazard posed to future development by the land or adjacent land and how the hazards may change as a result of development; and address the requirements of Planning for Bush Fire Protection 2006 (RFS) and in particular the provision of access (including perimeter roads) and provision of water supply for firefighting purposes.	**Section 17** **Appendix S**
Infrastructure Requirements and Contributions including: ▪ Identification of the infrastructure upgrades that are required off-site to facilitate the orderly and	**Section 23**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
economic development of the project, and a description of the arrangements that would be put in place to ensure these upgrades are implemented in a timely manner and maintained; ▪ An assessment of impacts on Transgrid and Water NSWs' easements and infrastructure; ▪ Demonstrate how access to public utility infrastructure will be maintained; ▪ Demonstration that satisfactory arrangements have been or will be made to provide or contribute to the provision of the necessary local and regional infrastructure required to support the development; and ▪ Details of any planning agreement.	
Demolition Management including: Details of the proposed demolition process and techniques, structures to be demolished and details of materials handling and management.	**Section 18**
Waste including: ▪ The quantity and type of liquid and non-liquid waste generated, handled, stockpiled, processed or disposed of on and off site for both construction and operation; ▪ The proposed measures for managing all waste generated; and ▪ The measures implemented to reduce and (where possible) recycle waste in line with NSW Government waste policy.	**Section 19** **Appendix T**
Economic Impacts including: Clarify the nature of intended future land uses. Assess the supply and demand for the future land uses facilitated by the proposal and include a detailed justification in relation to the demand for the intended future land uses.	**Appendix U**
Greenhouse Gas and Energy Efficiency including: An assessment of the energy use on site and demonstrate what measures would be implemented to ensure the proposal is energy efficient	**Section 21** **Appendix V**
Ecologically Sustainable Development including:	**Section 22** **Appendix W**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
An assessment of how the development will incorporate ecological sustainable development principles in all phases of the development.	
Plans and Documents The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000.* Those documents should be included as part of the EIS rather than as separate documents. In addition, the EIS must include the following: ▪ Survey Plan of the site as existing ▪ Draft Plan of Subdivision prepared by a registered Surveyor ▪ Demolition Plan ▪ Remediation Plan (if applicable) ▪ Detailed Earthworks Plan ▪ Stormwater Concept Plan ▪ Concept Landscape Plan ▪ Construction Management Plan, inclusive of a Construction Traffic Management Plan and construction methodology.	**Appendix D** **Appendix N**
Consultation During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: ▪ Liverpool City Council; ▪ Roads and Maritime Services; ▪ Transport for NSW; ▪ Office of Environment and Heritage; ▪ Department of Primary Industries; ▪ NSW Rural Fire Service; ▪ Sydney Water; ▪ Office of Water NSW; ▪ Transgrid; and	**Section 24** **Appendix X**

ITEM / DESCRIPTION	DOCUMENT REFERENCE
▪ Endeavour Energy. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	

3 Site and Environs

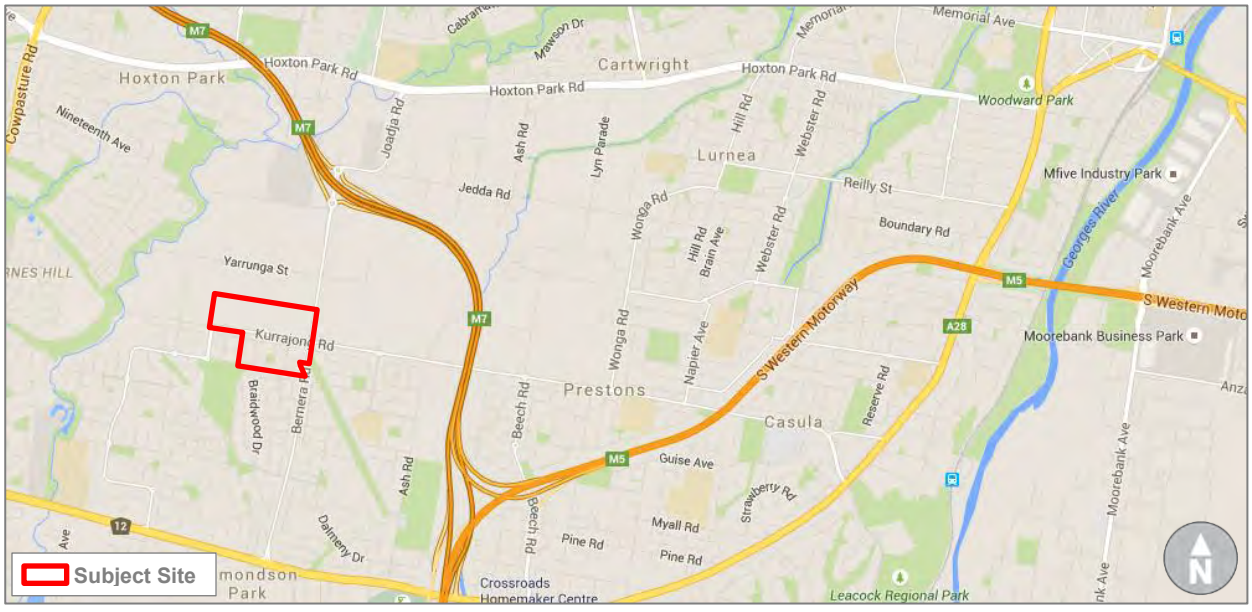
3.1 THE SITE

The site is located at Yarunga Street, Prestons, and is legally described as Lots 33-35 and 43 DP2359 and Lot 20 DP117483. These lots are bounded by Yarrunga Street to the north, Bernera Road to the east, and Kurrajong Road to the south. The site has an area of approximately 20.3 hectares within Liverpool Local Government Area (LGA). The site is approximately 5km from the Liverpool CBD, and is situated adjacent to other new and existing industrial land uses. Low density residential development is located adjacent to the site south of Kurrajong Road.

FIGURE 1 – SITE LOCATION

Source: Nearmap

FIGURE 2 – SITE CONTEXT



Source: Google Maps

3.1.1 EXISTING SITE CHARACTERISTICS

The site is predominantly vacant and largely cleared. It is irregular in shape, measuring approximately 625m wide along the Yarunga street frontage and 305m deep along the Bernera Road Frontage. The topographical high point of the site is located within lot 34, behind the existing metal shed, with ground sloping away in all directions from this point by grades of 3-7 degrees.

The following table briefly outlines the key features of each lot within the site.

TABLE 2 – EXISTING SITE FEATURES

LOT	FEATURES
Lot 33 & 35	Predominantly vacant grass covered block. A high voltage transmission line and associated 60m wide easement is located within the site. The transmission line extends through the site beginning at the south-eastern corner of the property, adjacent to the corner of Kurrajong Road and Bernera Road, and traversing in a north/ north-west direction to Yarrunga Street. Two transmission towers are located within the site adjacent to the Yarrunga Street and Kurrajong Road property boundaries.
Lot 34	Contains a single storey residential house, a metal shed and equipment for loading cattle onto trucks.
Lot 43	Contains a centrally located metal shed and is largely vacant.
Lot 20	Predominately vacant lot containing an old drainage line which has been re-aligned to function with a new culvert placed under Kurrajong Road.

3.1.2 DEVELOPMENT HISTORY OF THE SITE

Although predominantly covered by grass with a single residential building, the site has previously been utilised for market gardens and farming purposes. Liverpool Council has record of two DA's approved in 1993 for igloo greenhouses. Aerial photography contained within chapter 4 of the Stage 1 Contamination Assessment (**Appendix O**) confirms the following development history:

TABLE 3 – DEVELOPMENT HISTORY OF THE SITE

YEAR	DESCRIPTION
1947	The site is predominantly vacant with only a scattering of trees. A residential homestead has been constructed in the central portion of the site. No industrial or manufacturing plants are observable in surrounding area.
1970	Market gardening has been undertaken within the south western portion of the site.
1994	The original homestead, which had been destroyed by fire, has been replaced by a new residential house and shed which have been constructed along the Yarunga Street frontage.
2006	The green houses have been removed. Industrial or manufacturing plants have started to be constructed within the region and new residential subdivisions have been constructed to the south of the site.

FIGURE 3 – HISTORICAL SITE IMAGERY (CIRCA 1970)

Source: Ground Technologies

3.2 SITE ENVIRONS

3.2.1 SURROUNDING DEVELOPMENT

The following properties and development surround the site:

TABLE 4 – SURROUNDING DEVELOPMENT

DIRECTION	SURROUNDING DEVELOPMENT
North	Yarrunga Street, Favelle Favco Cranes Pty Ltd. Large industrial warehouse and storage yards. Two residential properties are located to the north however given both properties are zoned industrial and surrounded by industrial land uses, they are expected to be developed into industrial type facilities in the near future.
South	Kurrajong Road, low density residential development ranging from one to two storey detached houses. The majority of the residential properties are orientated away from the subject site.
East	Bernera Road, LDN Distribution Centre (flyer and publication printing). Large warehouses and car parking. There is also significant quantum's of vacant land.
West	Similar to subject site. Predominantly undeveloped, grass covered sites with evidence of market gardening.

The following photos illustrate the development surrounding the site.

FIGURE 4 – SURROUNDING DEVELOPMENT (NORTH)

PICTURE 1 – RESIDENTIAL PROPERTY TO THE NORTH ON YURRUNGA STREET ADJACENT TO SITE

PICTURE 2 – INDUSTRIAL DEVELOPMENT TO THE NORTH ON YARRUNGA STREET ADJACENT TO SITE (PROPERTY ADJACENT TO RESIDENTIAL PROPERTY ABOVE)

Source: Google Maps

FIGURE 5 – SURROUNDING DEVELOPMENT (WEST)

PICTURE 3 – ADJOINING SITE AT CORNER OF YARRUNGA STREET AND KOOKABURRA ROAD NORTH (LOOKING SOUTH-EAST)

PICTURE 4 – ADJOINING SITE AT CORNER OF KOOKARURRA ROAD NORTH AND KURRAJONG ROAD (LOOKING NORTH-EAST)

Source: Google Maps

FIGURE 6 – SURROUNDING DEVELOPMENT (SOUTH)

PICTURE 5 – RESIDENTIAL PROPERTIES TO THE SOUTH ON KURRAJONG ROAD

PICTURE 6 – DEVELOPMENT AT THE CORNER OF KURRAJONG ROAD AND BERNERA ROAD

Source: Google Maps

FIGURE 7 – SURROUNDING DEVELOPMENT (EAST)

PICTURE 7 – INDUSTRIAL DEVELOPMENT TO THE EAST ON BERNERA ROAD (ADJACENT TO SITE)

PICTURE 8 – VACANT LOT TO THE EAST AT CORNER OF BERNERA ROAD AND KURRAJONG ROAD

Source: Google Maps

3.3 ACCESS

Access to the site is currently available along Kurrajong Road 30m from the intersection with Bernera Road and along Yarrunga Street from the existing dwellings on Lot 34 DP 2359.

The subject site is located in Prestons which is situated at the key road junction of the M5 South Western Motorway, the Hume Highway, and the Westlink M7, and therefore has good connectivity to Sydney's centre and north, as well as Canberra and Melbourne. All three roads can be accessed from Camden Valley Way, which also connects Prestons to Liverpool and Camden. Prestons is serviced by trains to the city via Granville and the Airport from Glenfield and Edmondson Park stations.

4 Description of the Proposed Development

4.1 OVERVIEW OF PROPOSED DEVELOPMENT

The proposed works will comprise the staged construction of:

- Five warehouse buildings including ancillary office space.
- Operating on a 24 hours a day, seven days a week basis.
- Internal roadways, hardstand areas, emergency service roads and access gates, at grade open-air car parking and loading dock facilities.
- Vehicle access from Yarrunga Street with car park access and emergency vehicle access via Yarrunga Street, Bernera Road Kurrajong Road.
- Landscaping works including Aboriginal archaeological zone.
- Service and infrastructure augmentation, and civil works including stormwater infrastructure.
- Other associated works with full detail in the Architectural Drawings at **Appendix D** and Civil Drawings are provided at **Appendix N**.

4.1.1 NUMERICAL OVERVIEW

The proposal numerical development information is provided in **Table 5**.

TABLE 5 – PROPOSED DEVELOPMENT INFORMATION

COMPONENT	PROPOSAL
Site Area	207,260sqm
Gross Floor Area (GFA)	▪ **Warehouse 1:** 26,950sqm of warehouse and 1,800sqm of ancillary office. ▪ **Warehouse 2:** 30,005sqm of warehouse and 820sqm of ancillary office. ▪ **Warehouse 3:** 12,280sqm of warehouse and 1,100sqm of ancillary office. ▪ **Warehouse 4:** 3,285sqm of warehouse and 300sqm of ancillary office. ▪ **Warehouse 5:** 38,960sqm of warehouse and mezzanine, and 705sqm of ancillary office (including dock office). **Warehouse Total:** 111,480sqm **Office Total:** 4,725sqm **Overall Total:** 116,205sqm
Transmission Line Area	25,532sqm
Private Access Road Area	▪ **Private Access Road 1:** 2,986sqm ▪ **Private Access Road 2:** 3,131sqm

COMPONENT	PROPOSAL
Building Height RL (m)	▪ **Warehouse 1:** RL57.5 (13.7m) ▪ **Warehouse 2:** RL55.8 (13.7m) ▪ **Warehouse 3:** RL48.7 (13.7m) ▪ **Warehouse 4:** RL49.5 (13.7m) ▪ **Warehouse 5:** RL55.8 (13.7m)

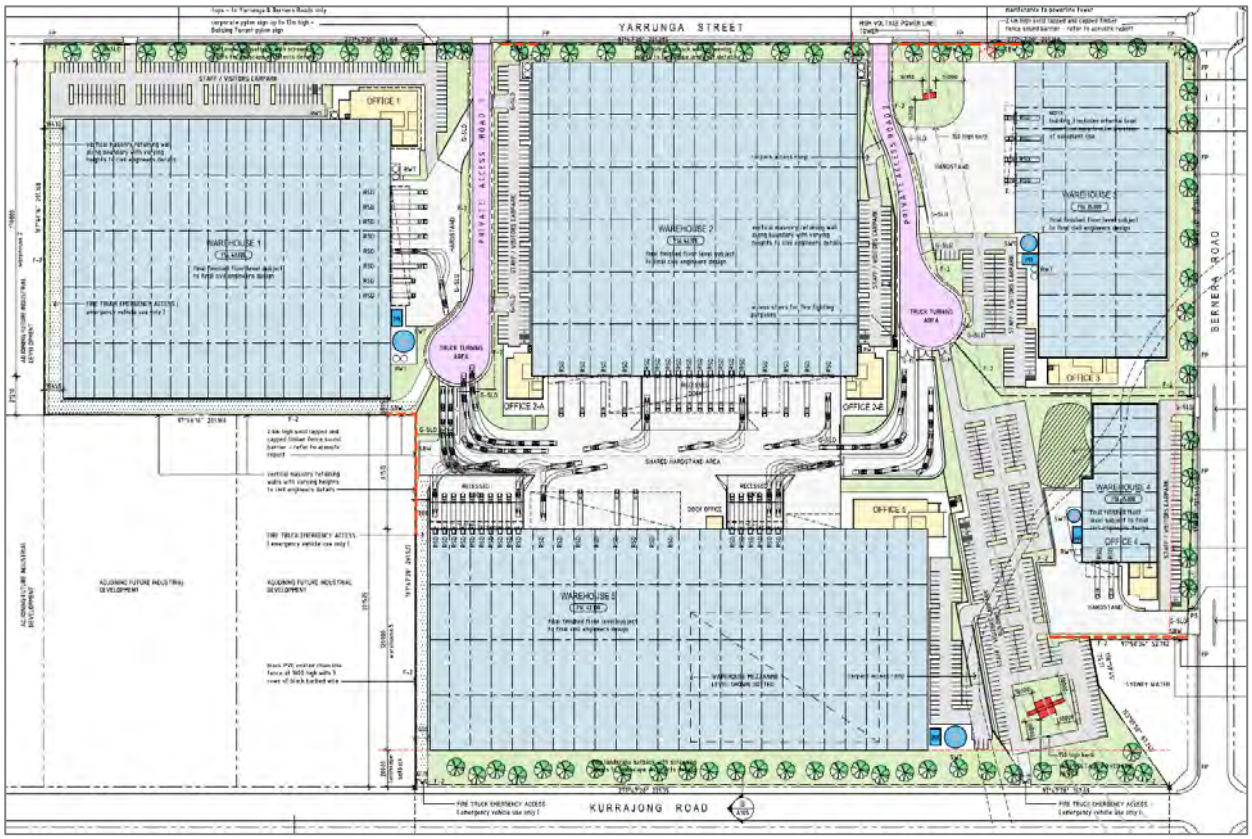
Source: Axis Architecture (**Appendix D**) unless otherwise stated.

4.2 SITE LAYOUT

The proposal consists of five warehouse buildings with associated facilities of varying sizes designed with consideration of street setbacks, easements, Aboriginal archaeological heritage zone, overland flow paths, landscaped areas and proposed cut and fills levels.

Architectural drawings of the proposed warehouses prepared by Axis Architectural have been provided at **Appendix D** and Civil Drawings are provided at **Appendix N**. The site layout plan is provided at **Figure 8**.

FIGURE 8 – SITE PLAN



Source: Axis Architecture (Cover Page – **Appendix D**)

4.3 LAND USE AND OPERATION

Approval is sought for the use of the five warehouse buildings for warehouse and distribution uses with ancillary office space.

It is expected the facilities will be used for the warehousing and distribution of goods, intended to operate on a 24 hours basis, 7 days a week.

Goods may include fast moving consumer goods, packing, and automotive and mechanical parts. No manufacturing will take place on site.

4.4 DEVELOPMENT STAGING

The proposed development will be constructed in four stages. The staging plan and delivery program of the individual warehouse buildings is indicative and is subject to tenant enquires and will depend upon tenant demand.

Works on the site will follow a logical sequence involving:

- Site clearing and demolition completed in one activity,
- Earthworks, retaining walls, civil works and services delivery completed in one activity, and
- Staged construction of individual warehouses (as per indicative staging plan at **Figure 9)**.

Initial tenant demand is strong and therefore works will likely happen sequentially of overlap to some extent to meet tenant time frames.

Earthworks on the site can only proceed after appropriate archaeological salvage has been undertaken in accordance with the European Heritage recommendations.

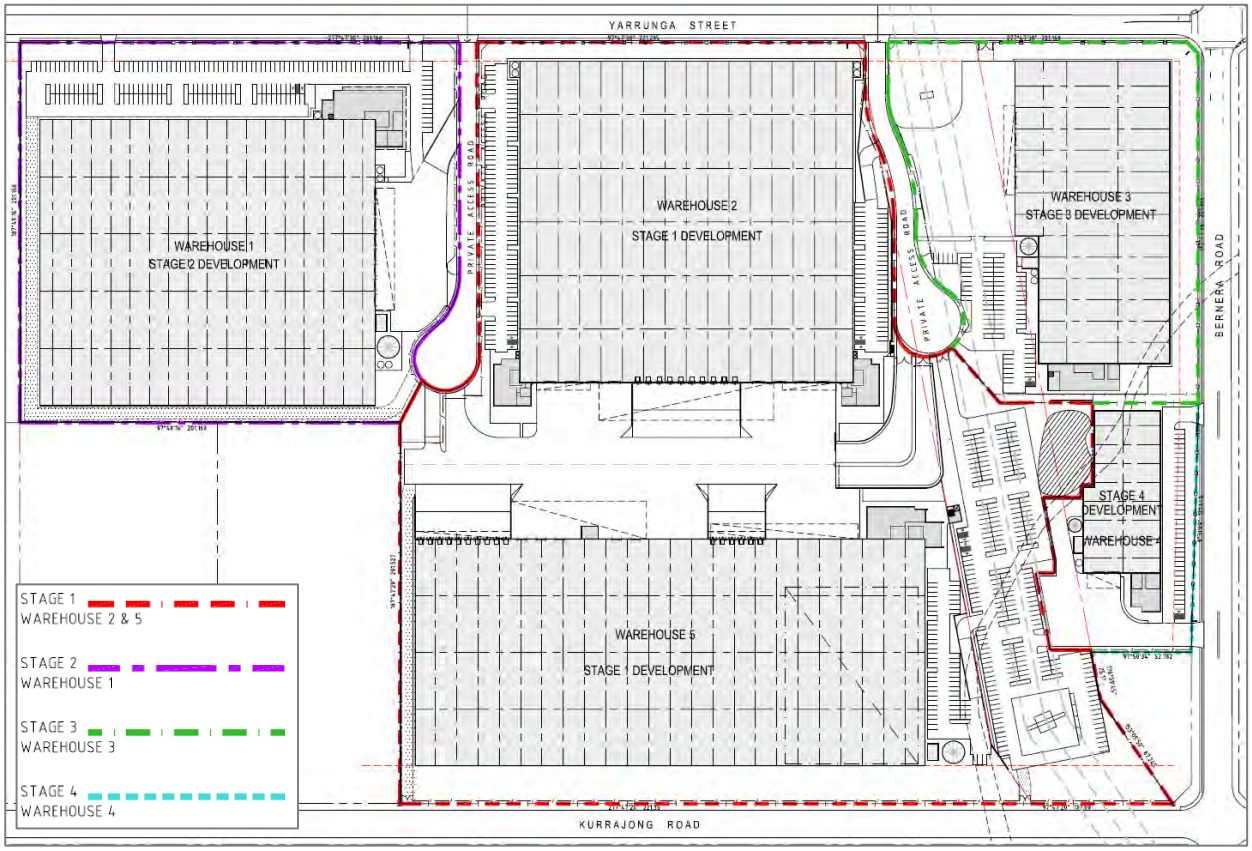
All civil works including site regrading and bulk earthworks will be carried out in a single continuous phase. Given the scale of the project it is anticipated that construction of building(s) is likely to occur on the first 'pads' concurrently with the later stages of bulk earthworks / civil works. **Table 6** illustrates the indicative construction methodology schedule (subject to tenancy agreements and construction program detailing).

Construction time for warehouses is expected to take approximately 9 – 12 months for the major warehouses, again depending upon tenant demand. **Figure 9** shows how the development will be staged and the following provides detail of works at each of the four stages.

TABLE 6 – CONSTRUCTION METHODOLOGY SCHEDULING (INDICATIVE)

DEVELOPMENT STAGE	TIMELINE
Site Clearing	3 months (approx.)
Bulk Earthworks / Civil	9 months (approx.)
Staged 1 (Warehouse 2 & 5)	12 months (approx.)
Staged 2 (Warehouse 1)	
Staged 3 (Warehouse 3)	
Staged 4 (Warehouse 4)	

FIGURE 9 – STAGING PLAN



Source: Axis Architecture

4.5 BUILT FORM

External building facades for the main warehouse buildings are mix of precast concrete wall panels and colorbond steel metal claddings. Office areas are a combination of precast concrete panels, fibre cement sheet wall cladding, prefinished aluminium cladding with performance glazing in aluminium framing.

Warehouse facades consist of painted dado panel precast with metal cladding above being the dominant material and utilises alternate colours to form a consistent unifying theme to connect all buildings of the industrial estate. Warehouse 5 southern elevation facing residential areas along Kurrajong Road incorporates additional elevation treatment incorporating areas of full height precast panels to reduce visual impact of the building length on the streetscape.

The following perspectives illustrate the built form of the proposed development.

FIGURE 10 – PERSPECTIVE LOOKING NORTH WEST

Source: Axis Architecture

FIGURE 11 – PERSPECTIVE LOOKING NORTH EAST

Source: Axis Architecture

FIGURE 12 – PERSPECTIVE LOOKING SOUTH WEST

Source: Axis Architecture

FIGURE 13 – PERSPECTIVE LOOKING SOUTH EAST

Source: Axis Architecture

FIGURE 14 – PERSPECTIVES FROM GROUND LEVEL

PICTURE 9 – VIEW NORTH-WEST ALONG KURRAJONG ROAD TOWARDS DEVELOPMENT

PICTURE 10 – VIEW NORTH-EAST ALONG KURRAJONG ROAD TOWARDS DEVELOPMENT SHOWING SERVICE ROAD

Source: Axis Architecture

4.6 LANDSCAPING

Significant setbacks have been created along the three main streets which surround the site. These range from 20m along Kurrajong Road to 10m along Yarrunga Street. Also new 1.2m wide footpaths are proposed along Bernera Road and Yarrunga Street. The Landscape design aims to achieve the following outcomes for these areas:

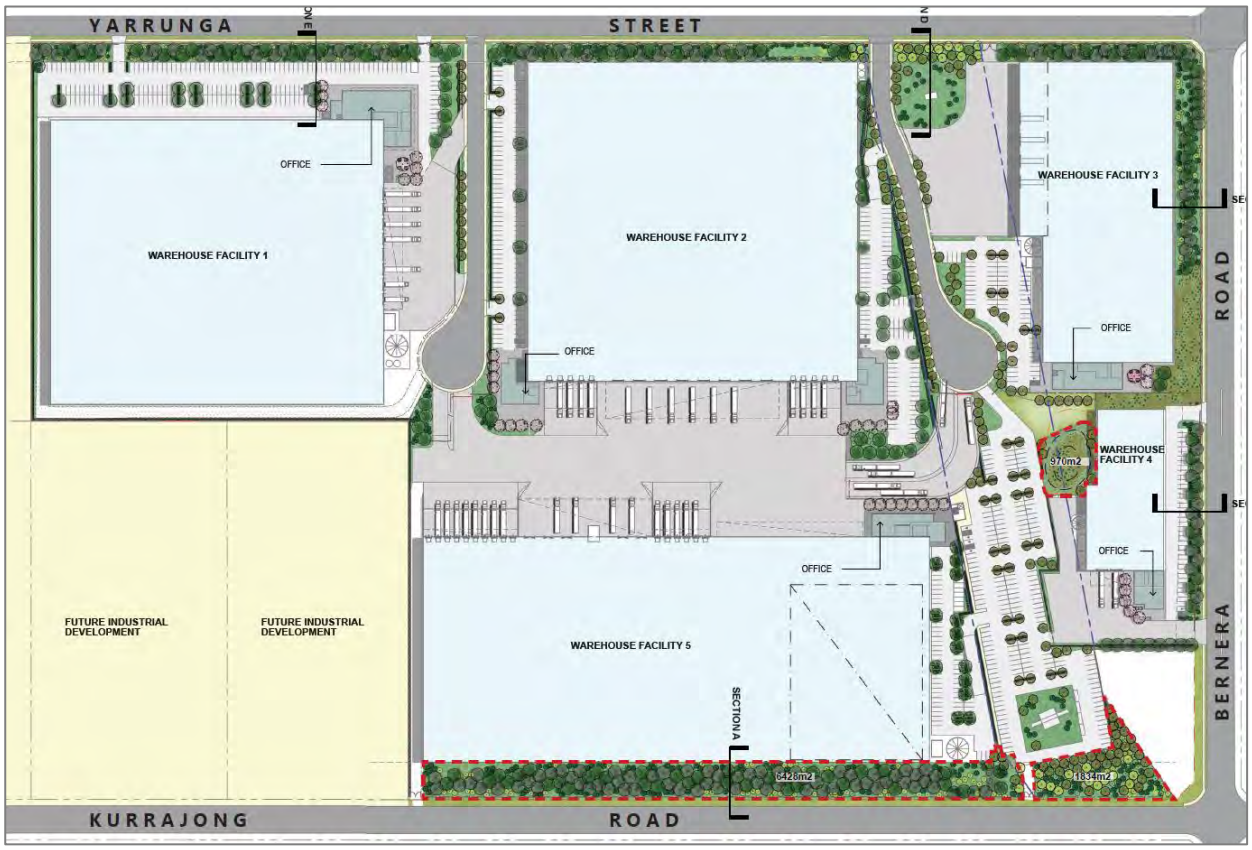
- Use native species that are local to the area.
- Use trees throughout the site to provide shade amenity and canopy cover within vegetated aread.
- Provide visual interest with the landscape at focal points around office buildings and staff outdoor areas.
- Screen the development from nearby residential receptors and road users, with a mix of tall tree and shrub planting. Trees to be planted at a rate of one per 30sqm (5.5m centres) as per Liverpool DCP Part 7 for industrial areas.

- Strengthen local character with the use of native and endemic species.
- Provide clear site lines for trucks and vehicular users.
- Meet CEPTD requirements.

The proposed landscaping has been designed to provide a natural buffer between the subject site and surrounding areas, and also enhance the onsite amenity for the estate. Additional advantages arise from the proposed landscaping including improved soil stabilisation and visual screening.

Figure 15 shows the overall landscape design. Refer to **Appendix F** for detailed landscape plans.

FIGURE 15 – LANDSCAPE PLAN



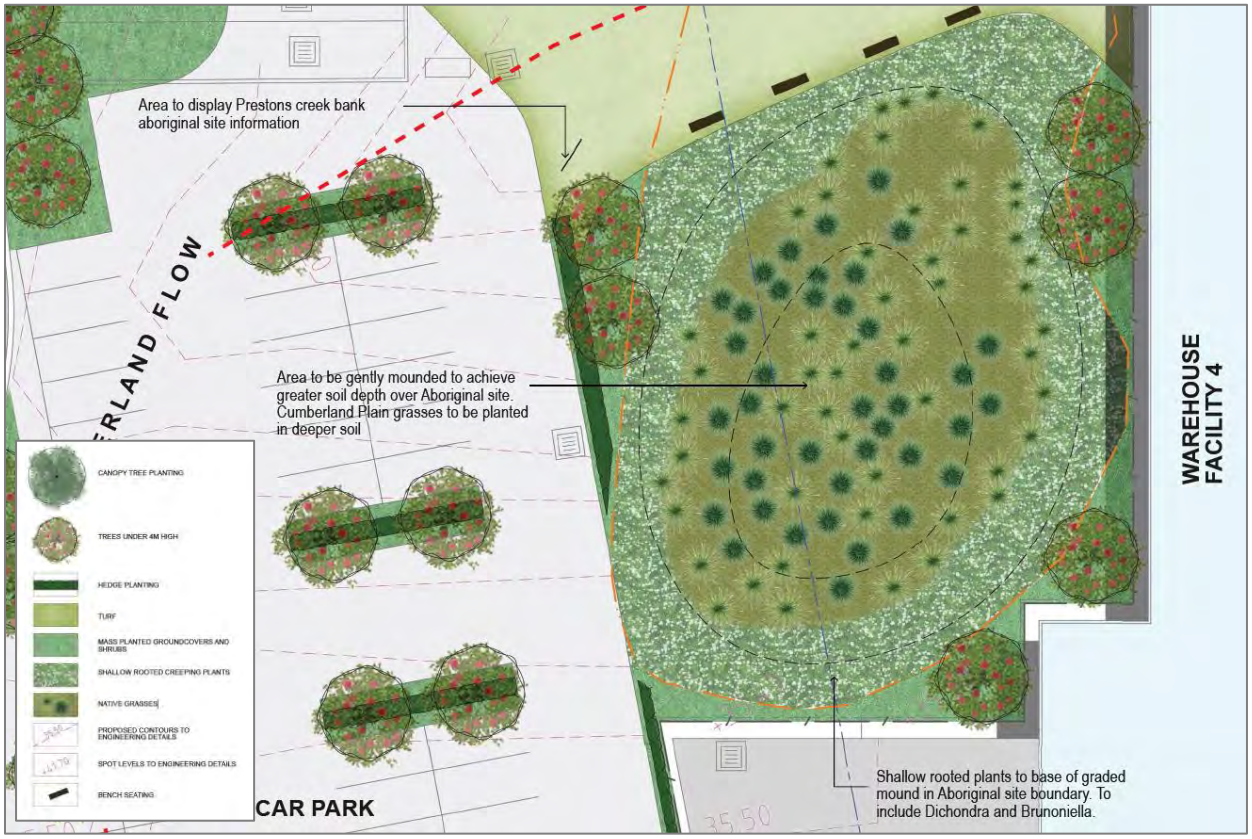
Source: Groundink

4.6.1 ABORIGINAL ARCHAEOLOGY AREA

The Aboriginal archaeological area (shown in **Figure 16**) is proposed to be used by users of the estate. It includes areas of seating and open turf. Overland flow from the adjacent carpark runs through the site and out to a swale along Bernera Road.

An indicative landscape plan has been provided which includes soil mounding with native grasses over the area of the Aboriginal archaeology area to ensure that the area is protected and proposed larger trees and shrubs are planted outside of this zone.

FIGURE 16 – ABORIGINAL ARCHAEOLOGY AREA



Source: Groundink

4.6.2 VEGETATION SPECIES

A mix of predominately endemic Eucalyptus, Casuarina, Angophora and Syncarpia trees are proposed, supplemented by mid storey planting such as Acacia, Hakea, Leptospermum and Pittosporum. Proposed groundcover planting includes native grasses and creeping planting intended to bind the soil. The combined planting will create a dense vegetated screen, with an informal natural looking appearance. The scale of the planting will help to sit the warehouses more comfortably in the landscape by reducing the visual prominence of the built form.

Plant species have been carefully selected for the heavy clay soils of Liverpool and are in accordance with the species in Liverpool DCP Part 1 Appendix 2. Refer to the planting species list at **Appendix F**.

4.7 STORMWATER

The proposed stormwater drainage system for the development will comprise a minor and major system to safely and efficiently convey collected stormwater run-off from the development to the legal point of discharge.

Stormwater infrastructure would include:

- Piped drainage system which has been designed to accommodate the 1 in 20-year ARI storm event.
- The use of defined overland flow paths, such as roads and open channels, to safely convey excess run-off from the site.
- Discharge from the site is proposed at three main points on the property boundary, corresponding to the existing catchments over the property:
  - The first discharge point is made on the north-west corner of the property, draining a catchment of 4.33ha,

- The second discharge will be made at the existing culverts under Bernera Road. A catchment of 12.75 Ha will be directed to existing culverts which matches the current catchment draining to this location.

- The third and last discharge point will be made via new drainage infrastructure in Yarrunga Street. This system will allow for a 2.28 Ha to be drained from the development.

- Eight detention tanks (locations at **Appendix N**).

- Stormwater treatment measures including gross pollutant traps and a humeceptor hydrodynamic separation system.

Stormwater Management is discussed in further detail at **Section 10.6**.

4.8 VEHICLE ACCESS, MOVEMENT AND PARKING

4.8.1 VEHICLE ACCESS

There will be nine access points to the site on Yarrunga Road, Bernera Road and Kurrajong Road:

- Two 12m wide ingress/egress driveways for trucks on the Yarrunga Street frontage.

- Three 6m wide ingress/egress driveways for cars on the Yarrunga Street and Bernera Road frontage serving car parks.

- One 12m wide ingress/egress driveway for trucks on the Bernera Street frontage.

- One fire truck emergency access to service road on western boundary.

- One fire truck access point to Warehouse carpark on Kurrajong Road frontage.

- One emergency gate on the Yarrunga Street frontage if Transgrid maintenance trucks are blocking access to Warehouse 3.

4.8.2 TRUCK ACCESS

- Driveway movements will be limited to left turn in and out by central median islands in Bernera Road across the driveways.

- The proposed private access roads allow trucks to enter and exit in a forward direction on Yarrunga Road.

- Only emergency access is provided on the Kurrajong Road frontage.

4.8.3 HARDSTAND AREAS, INTERNAL CIRCULATION AND SERVICING

The proposed development includes hardstand areas to service the warehouse operations. The purpose of the hardstand areas is to accommodate ramps, vehicle loading, servicing and parking. Two truck turning areas are proposed. One is between Warehouse 1 and Warehouse 2, and the other is between Warehouse 2 and Warehouse 3.

The design of the carpark areas complies with the requirements of AS2830.1 and 6 with quite satisfactory provision for turning and manoeuvring. The design of the loading dock areas including driveways and manoeuvring areas for warehouses 1, 2, 3 and 5 comply with AS2890.2 and will accommodate B Double trucks. The design of warehouse 4 will also comply with AS2890.2 and will accommodate semi-trailers.

Refuse and waste will be removed by a contractor. The waste truck and other service vehicles (fuel and tyre deliveries) will utilise the large hardstand area provided.

4.8.4 PARKING

The proposed development provides the following car parking spaces.

TABLE 7 – PARKING PROVISION

COMPONENT	QUANTUM
Warehouse 1	168 spaces
Warehouse 2	198 spaces
Warehouse 3	65 spaces
Warehouse 4	39 spaces
Warehouse 5	245 spaces
Total	715 spaces
Truck Parking	No formal truck parking areas are required, although overnight and temporary truck parking may occur on hardstand areas.

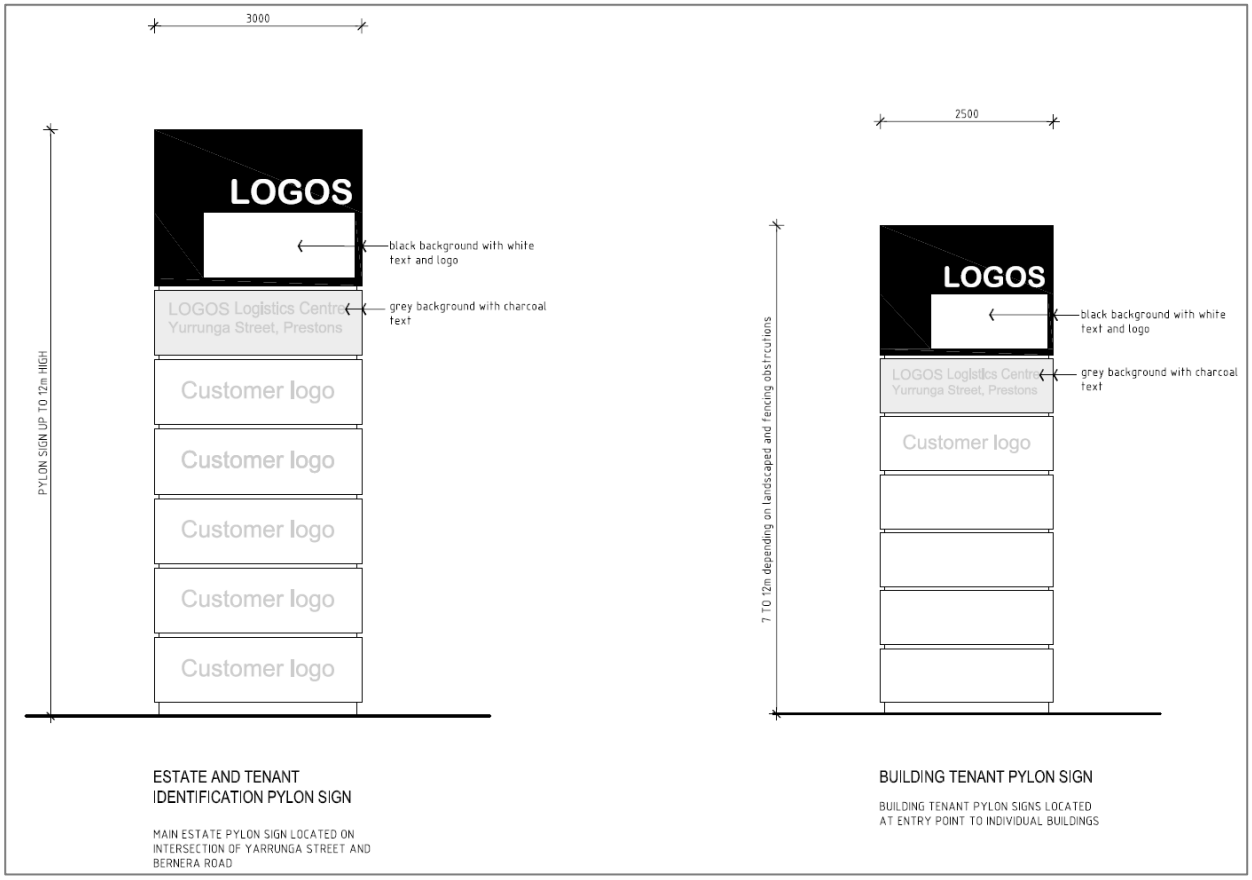
Source: Assessment of Traffic and Parking Implications (**Appendix G**) and Architectural Drawings (**Appendix D**)

4.9 SIGNAGE

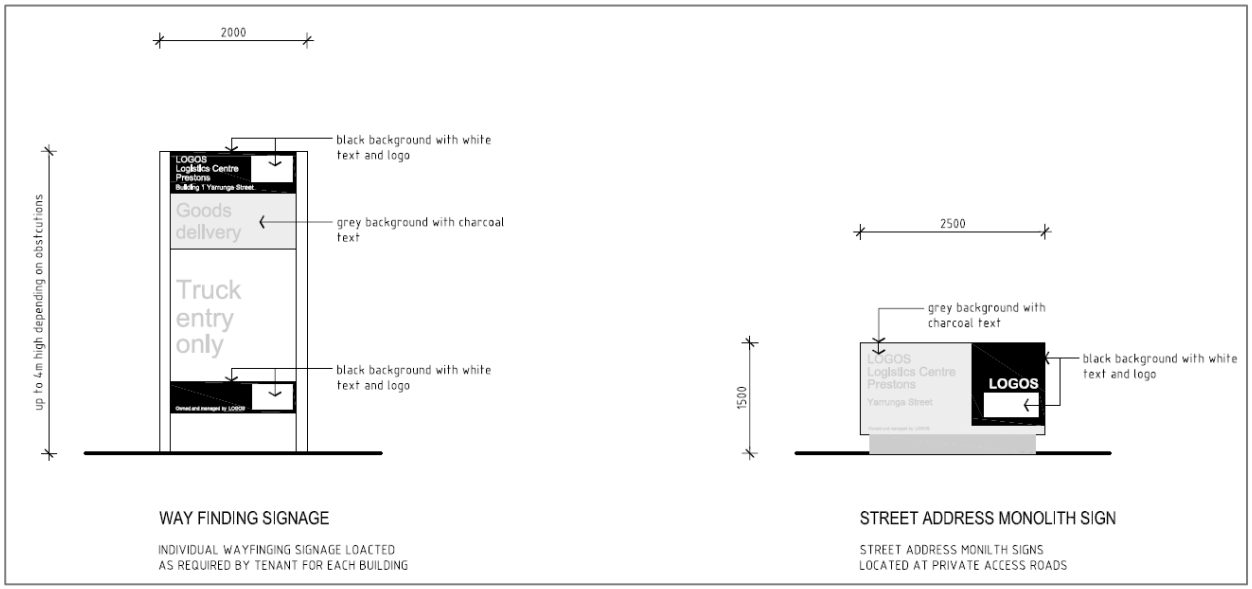
The proposed development includes the following signage, the location of which are identified on the Site Plan at Figure 8 and **Appendix D**:

- **Estate and tenant identification pylon sign** – main estate pylon sign located at the intersection of Yarrunga Street and Bernera Road. Max 12m high, 3m wide. No illumination.
- **Building tenant pylon sign** – located at entry point to each warehouse. 7-12m high (depending on warehouse), 2.5m wide. No illumination.
- **Way finding signage** – located as required by tenant for each warehouse. Up to 4m high, 2m wide. No illumination.
- **Street address monolith sign** – located at private access roads. 1.5m high, 2.5m wide. No illumination.

FIGURE 17 – SIGNAGE DETAILS



PICTURE 11 – ESTATE AND TENANT IDENTIFICATION PYLON SIGN EXAMPLE



PICTURE 12 – WAY FINDING AND STREET ADDRESS SIGNS

5 Legislative and Policy Framework

This chapter assesses and responds to the relevant legislative and policy frameworks in accordance with the EP&A Act, Regulations and the SEARs.

The following environmental planning instruments, policies and guidelines have been considered in the assessment of this proposal:

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

COMMONWEALTH LEGISLATION

- *Environment Protection and Biodiversity Conservation Act 1999*

STATE LEGISLATION

- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1979*
- *Threatened Species Conservation Act 1995*

STATE ENVIRONMENTAL PLANNING INSTRUMENTS

- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy (Western Sydney Employment Area) 2009*
- *State Environmental Planning Policy No. 16 – Bushland in Urban Areas*
- *State Environmental Planning Policy No.33 – Hazardous and Offensive Development*
- *State Environmental Planning Policy No. 44 – Koala Habitat Protection*
- *State Environmental Planning Policy No 55 – Remediation of Land*
- *State Environmental Planning Policy No.64 – Advertising Structures and Signage*
- *Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment*
- *Sydney Regional Environmental Plan No. 9 – Extractive Industry (No. 2)*

LOCAL PLANNING LEGISLATION AND POLICY

- *Liverpool Local Environmental Plan 2008*
- *Liverpool Development Control Plan 2008*
- *Liverpool Contribution Plan 2009*

STRATEGIC DOCUMENTS

- *A Plan for Growing Sydney*

- *NSW 2021 A Plan to Make NSW Number One*
- *Draft South West Subregional Strategy*

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

5.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The EP&A Act is the overarching governing document for all development in NSW and pursuant to Section 89D(2) provides that:

> *A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

The proposed development has been identified as State Significant Development under *State Environmental Planning Policy (State and Regional Development) 2011* as outlined below.

5.2 ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

This document is consistent with the requirements for Environmental Impact Statements in Clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000.

5.3 STATE ENVIRONMENTAL PLANNING INSTRUMENTS

5.3.1 STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

Proposals involving activities that are listed in Schedule 1 of *State Environmental Policy (State and Regional Development) 2011* are declared to be SSD under the framework introduced in 2011.

Schedule 1 Clause 12 identifies warehouses and distribution centres with a CIV over $50m to trigger the SEPP.

According to the capital investment report prepared by Altus Page Kirkland and attached at **Appendix B**, the proposed Warehouse 5 works has an approximate capital investment value of $51,002,000. The estimated value of the full development is $131,145,000.

5.3.2 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 for concurrence.

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

- 20,000sqm or more in area with site access to any road; or
- 5,000sqm 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).

The proposed development triggers the need for referral to the Roads and Maritime Services (RMS) under this SEPP. A traffic impact assessment has been prepared by Transport and Traffic Planning Associates. This report is provided at **Appendix G**. The report addresses matters required by the SEARs and those requested for consideration by the RMS.

5.3.3 STATE ENVIRONMENTAL PLANNING POLICY NO. 33 – HAZARDOUS AND OFFENSIVE DEVELOPMENT

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) provides definitions for hazardous and offensive development as well as potentially hazardous and offensive development and outlines the items that a consent authority must consider to assess whether the development is hazardous or offensive.

Based on the analysis conducted in the SEPP 33 application assessment at **Appendix J**, it can be seen that the proposed warehouse development will not exceed the threshold quantities listed in 'Applying SEPP33 (Ref.1)' and therefore SEPP 33 does not apply to the proposed development at Prestons, and a Preliminary Hazard analysis is not required.

5.3.4 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND

Under the provisions of State Environmental Planning Policy 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 been considered whether the land is contaminated, and

b) if the land is contaminated, it is satisfied that the land is 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.

A Phase 2 Environmental Site Assessment was prepared by Ground Technologies and concluded that the subject site is suitable for the proposed development and no Remediation Action Plan (RAP) is required. Refer to **Section 11** of this report and **Appendix O** for further details.

5.3.5 STATE ENVIRONMENTAL PLANNING POLICY NO. 64 – ADVERTISING STRUCTURES AND SIGNAGE

State Environmental Planning Policy No. 64 - Advertising Structures and Signage (SEPP 64) applies to all signage. Signage that is erected in accordance with the established design parameters is considered to be compatible with the stated aims as it provides only for business identification purposes and will not be out of context for the locality or intended purpose. Part 2 of SEPP 64 provides that a consent authority must consider the matters in Schedule 1 of the SEPP prior to granting consent to development involving signage.

The assessment criteria under Schedule 1 of the SEPP are addressed in the table below.

TABLE 8 – SEPP 64 SCHEDULE 1 ASSESSMENT CRITERIA

CRITERIA	PROPOSAL
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 subject site is within an industrial precinct and as such industrial business signage is considered compatible.
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	Yes, it is consistent with outdoor industrial business advertising.
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	No, the site is suitably distanced removed from sensitive receptors including residential areas, and open space.

CRITERIA	PROPOSAL
landscapes or residential areas?	
3 Views and vistas Does the proposal obscure or compromise important views?	No, the building on which the signage will be positioned is not located in any important view corridors.
Does the proposal dominate the skyline and reduce the quality of vistas?	No, the signage with be at most 12m high and will not dominate the skyline.
Does the proposal respect the viewing rights of other advertisers?	The signage will not obstruct the viewing rights of other advertisers.
4 Streetscape, setting or landscape Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	The signage is appropriate for the setting and the location within an industrial precinct.
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	Yes, the signage is to be used to provide an identity to a building without becoming visually dominant.
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	No existing advertising on the site.
Does the proposal screen unsightliness?	No, the signage is not proposed as a screen.
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	No.
Does the proposal require ongoing vegetation management?	No.
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?	The sign will be of suitable scale and design for the intended purposes.
Does the proposal respect important features of the site or building, or both?	The signage will present as the dominant visual feature of the estate.
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The signage will be logically positioned to identify the estate and tenants.
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?	No.
7. Illumination	No illumination proposed.

CRITERIA	PROPOSAL
8. Safety Would the proposal reduce the safety for any public road?	The signage will not be located or positioned to impact the safety of any public road.
Would the proposal reduce the safety for pedestrians or bicyclists?	The signage is not considered to reduce safety for pedestrians or bicyclists.
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public area?	The sign will not cause disruption of any sightlines from public area.

5.3.6 GREATER METROPOLITAN REGIONAL ENVIRONMENTAL PLAN NO. 2 GEORGES RIVER CATCHMENT

Greater Metropolitan Regional Environmental Plan No.2 – Georges River Catchment (REP 2) applies to the site. The general aims and objectives of REP 2 are:

> *(a) to maintain and improve the water quality and river flows of the Georges River and its tributaries and ensure that development is managed in a manner that is in keeping with the national, State, regional and local significance of the Catchment,*
>
> *(b) to protect and enhance the environmental quality of the Catchment for the benefit of all users through the management and use of the resources in the Catchment in an ecologically sustainable manner,*
>
> *(c) to ensure consistency with local environmental plans and also in the delivery of the principles of ecologically sustainable development in the assessment of development within the Catchment where there is potential to impact adversely on groundwater and on the water quality and river flows within the Georges River or its tributaries,*
>
> *(d) to establish a consistent and coordinated approach to environmental planning and assessment for land along the Georges River and its tributaries and to promote integrated catchment management policies and programs in the planning and management of the Catchment,*
>
> *(e) (Repealed)*
>
> *(f) to provide a mechanism that assists in achieving the water quality objectives and river flow objectives agreed under the Water Reform Package.*

The proposal is consistent with the aims and objectives of REP 2 as it seeks to construct a permissible industrial warehouse and distribution facility on land that has been modified and provided with essential infrastructure to manage stormwater quality and quantity. The development will also include management of stormwater flows as well as erosion and sediment control to mitigate potential impacts.

The civil engineering report and plans prepared by Costin Roe are provided at **Appendix N**. This document contains details on soil and water management on the site.

5.4 LOCAL PLANNING POLICIES AND LEGISLATION

5.4.1 LIVERPOOL LOCAL ENVIRONMENTAL PLAN 2008

ZONING

The site is zoned part IN1 General Industrial and part IN3 Heavy Industrial under the *Liverpool Local Environmental Plan 2008*.

Under these zones the proposed 'warehousing and distribution centre' is permitted with consent, along with ancillary offices to support the primary use of warehouse or distribution centres. 'Building identification signage' and 'business identification signage' is also permitted with consent.

The objectives and land use table for the IN1 General Industrial and IN3 Heavy Industrial zones are shown in **Table 12**.

TABLE 9 – ZONE OBJECTIVES AND LAND USES

ZONE OBJECTIVES AND LAND USES	
IN1 General Industrial	
Objectives	▪ *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 particularly encourage research and development industries by prohibiting land uses that are typically unsightly or unpleasant.* ▪ *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.*
Permitted with consent	*Boat sheds;* ***Building identification signs; Business identification signs****; Car parks; Cemeteries; Child care centres; Community facilities; Crematoria; Depots; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; General industries; Helipads; Heliports; Hotel or motel accommodation; Industrial training facilities; Industrial retail outlets; Information and education facilities; Kiosks; Light industries; Liquid fuel depots; Mortuaries; Neighbourhood shops; Passenger transport facilities; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Roads; Sex services premises; Storage premises; Take away food and drink premises; Transport depots; Vehicle body repair workshops; Vehicle repair stations;* ***Warehouse or distribution centres***
Prohibited	*Any development not specified* above.
IN3 Heavy Industrial	
Objectives	▪ *To provide suitable areas for those industries that need to be separated from other land uses.* ▪ *To encourage employment opportunities.* ▪ *To minimise any adverse effect of heavy industry on other land uses.* ▪ *To support and protect industrial land for industrial uses.* ▪ *To preserve opportunities for a wide range of industries and similar land uses by prohibiting land uses that detract from or undermine such opportunities.*

ZONE OBJECTIVES AND LAND USES	
Permitted with consent	*Boat building and repair facilities; Boat sheds;* ***Building identification signs; Business identification signs;*** *Cemeteries; Crematoria; Depots; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; General industries; Hazardous storage establishments; Heavy industrial storage establishments; Heavy industries; Helipads; Horticulture; Kiosks; Light industries; Mortuaries; Offensive storage establishments; Passenger transport facilities; Recreation areas; Recreation facilities (outdoor); Resource recovery facilities; Roads; Rural industries; Sex services premises; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations;* ***Warehouse or distribution centres***
Prohibited	*Any development not specified* above.

The proposed development is consistent with the zone objectives for the following reasons:

- Industrial warehouse and distribution will be compatible with the planned industrial character of the surrounding area.
- The currently underutilised site presents an opportunity to create long term employment opportunities through the development of the proposed distribution and warehouse development.
- The site is also located in close proximity to Kurrajong Road, the M5, M7, and Hume Highway, contributing to its convenient and accessible location within the region.
- Activities associated with the proposed use of the site will be appropriately managed given proximity to residential areas.

BUILDING HEIGHT

All buildings are below the maximum building height with a maximum height of 13.7m.

FLOOR SPACE RATIO

No Floor Space Ratio controls apply to the site.

PRESERVATION OF TREES OR VEGETATION

An ecological assessment has been conducted on the site. This report is provided at **Appendix H**. The site is largely cleared of vegetation from the site by past activities. Only a few scattered trees remain. New landscaping and planting on the site seeks to restore Cumberland Plan Woodland style vegetation to the site.

HERITAGE CONSERVATION

The site is identified as containing remnants of the former sandstone cottage 'Bernera' under the Liverpool LEP 2008. Heritage has been addressed in **Section 14** and **Section 15** and at **Appendix Q** and **Appendix R**.

BUSHFIRE PRONE LAND

The RFS has advised the subject site is not mapped as bushfire prone land on the Liverpool Council's Bushfire Prone Land Map.

This letter of advice is provided at **Appendix S.**

5.4.2 LIVEPOOL DEVELOPMENT CONTROL PLAN 2008

Part 7, 'Development in Industrial Areas' outlines a series of non-statutory controls for development on the site. The following table highlights the proposed developments compliance with DCP controls.

TABLE 10 – LIVERPOOL DCP ASSESSMENT

DCP MATTER	CONTROL	PROPOSAL
Site Area	Minimum site area of an allotment: 2,000sqm.	The subject site area is 207,260sqm.
Site Planning	Maintain existing significant trees on site.	The site is largely cleared of vegetation from past activities. Only isolated trees remain. New landscaping and planting on the site seeks to restore Cumberland Plan Woodland style vegetation to the site. An ecological report is provided at **Appendix H**.
Bernera House Heritage Site	Any DA for subdivision or development of this lot must be accompanied by an archaeological investigation and heritage report prepared by a suitably qualified person into the former house and outbuildings and any remnants or relics there of	An Aboriginal and Cultural Assessment is provided at **Appendix Q**, and a European Heritage Impact Assessment is provided at **Appendix R**.
Vehicular access	Truck access prohibited from Kurrajong Road. Any lot with frontage to Bernera Road in addition to a secondary street or planned future secondary street must utilise the secondary street for all vehicular access.	The majority of heavyweight vehicle access proposed via Yarrunga Street. Driveway movements will be limited to left turn in and out by central median islands in Bernera Road across the driveways. Given the floor space of the warehouse (and office) to be accessed via Bernera is 3,585sqm (3% of the total GFA on site), the quantum of trucks and car movements is relatively low. The proposed access arrangements are supported by the Traffic Impact Assessment provided at **Appendix G**.
Parking	1 space per 35sqm of office 1 space per 75sqm of warehouse	715 spaces are provided at a rate of 1 space per 162.5sqm total GFA. Justification is provided at **Section 6.3**. In summary, an analysis of comparable developments demonstrates that given the smaller number of employees in contemporary warehouse developments, the demand for high levels of onsite parking is low.
Setbacks	All buildings shall be setback 20m from Kurrajong Road.	20m setbacks are provided.

DCP MATTER	CONTROL	PROPOSAL
Landscaped Area	A minimum of 10% of the site is to be landscaped at ground level.	As stated in the Architectural Design Statement, the landscape areas provided exceeds the 10% requirement.
	A development must provide a landscaped area along the primary and secondary frontages of an allotment in accordance with: Primary setback: 10m Secondary setback: 5m	Kurrajong Road has a 20m landscaped setback. Bernera Road has a 15m landscaped setback on the northern portion of the street and a 6m landscaped on the southern portion.
Building Design, Streetscape and Layout **Controls** **Façade treatment**	The facades to a development must adopt a contemporary architectural appearance.	As shown in the perspectives drawings attached at **Appendix D**, the proposal provides a contemporary façade appearance.
	A development must use architectural elements to articulate facades, and minimise large expanses of blank walls.	As stated in the Architectural Design Statement: External building facades for the main warehouse buildings are mix of precast concrete wall panels and colorbond steel metal claddings. Office areas are a combination of precast concrete panels, fibre cement sheet wall cladding, prefinished aluminium cladding with performance glazing in aluminium framing.
	The street facade of a development on a corner allotment must incorporate architectural corner features to add visual interest to the streetscape.	As stated in the Architectural Design Statement: Warehouse 5 southern elevation facing residential areas along Kurrajong Road incorporates additional elevation treatment to reduce visual impact of the building length on the streetscape. Refer to the architectural perspectives.
Materials & Colours	A development must use: ▪ Quality materials such as brick, glass, and steel to construct the facades to a development. ▪ Masonry materials to construct a factory unit within a building, and all internal dividing walls separating the	As stated in the Architectural Design Statement: External building facades for the main warehouse buildings are mix of precast concrete wall panels and colorbond steel metal claddings. Office areas are a combination of precast concrete panels, fibre cement sheet wall cladding, prefinished aluminium cladding with

DCP MATTER	CONTROL	PROPOSAL
	factory units.	performance glazing in aluminium framing.
Building design	The administration office or showroom must be located at the front of the building.	Where possible the office component is located at the front of the building.
	Open style or transparent materials are encouraged on doors and/or walls of lifts and stairwells, where fire safety requirements allow.	Open style tinted glazing is used in the office component of the proposed development.
	Driveways must provide adequate sight distance for the safety of pedestrians using the footpath area.	The driveways are design to ensure pedestrian safety.
	Pathways should provide direct access and any edgework should be low in height or not reduce visibility of the pathway.	Pathways are design in accordance with the DCP.
	Blank walls in general that address street frontages or public open space are discouraged.	Refer to the elevations and perspectives.
Landscaping and Fencing **Landscape treatment in Industrial Areas**	Landscaping within industrial areas shall generally involve the provision of trees and shrubs in mulched garden beds.	Refer to the species schedule on the attached Landscape Plan.

5.5 STRATEGIC FRAMEWORK

5.5.1 A PLAN FOR GROWING SYDNEY

A Plan for Growing Sydney (the Plan) was released in March 2015 and aims to guide land use decisions in Sydney over the next 20 years. The subject site and surrounding locality is not specifically addressed in the Plan, however certain themes are relevant to the development.

The subject site is located on the outer periphery of, but not within the 'South West Growth Centre' and is located directly adjacent to the existing motorway network running north (M7 Westlink), south (M31) and east (M5). Growth Centres are identified in the Plan for future urban development.

The site is situated between two identified 'enterprise corridors' (Leppington to Western Sydney Airport, Liverpool to Bankstown). These enterprise corridors are designed to attract investment and stimulate employment generating development, aligned with transport infrastructure.

Direction 1.4 of the Plan 'Transform the productivity of Western Sydney through growth and investment' emphasises the increasingly significant role that Western Sydney will continue to play for NSW's economy. The Plan affirms the need to create diverse employment opportunities in Western Sydney through investing in industry and new infrastructure. Productivity, the strategy contends, will improve as commuting times are reduced by locating jobs and homes in close proximity. The proposed development supports this direction by contributing employment opportunities and economic activity close to Liverpool.

5.5.2 SOUTH WEST SUBREGION

The site is located within the south west subregion of Sydney. Subregional plans are expected to be released by the Greater Sydney Commission in early 2016. A Plan for Growing Sydney outlines the following priorities for the subregion:

- *Protect infrastructure of metropolitan significance including freight corridors, intermodal terminals and Sydney's drinking water supply catchment.*
- *Recognise and strengthen the subregions role in Sydney's manufacturing, construction and wholesale/logistics industries by maximising existing employment lands particularly in Fairfield and Liverpool.*
- *Work with Council to retain a commercial core in Liverpool, as required, for long term employment growth.*

5.5.3 NSW 2021: A PLAN TO MAKE NSW NUMBER ONE

NSW 2021 was developed by the NSW State Government to set economic, social and environmental directions for NSW. It sets targets, priorities and actions for delivery of services across the State. The strategies outlined in the Plan include:

- Rebuild the Economy
- Return Quality Services
- Renovate Infrastructure
- Strengthen our Local Environment and Communities
- Restore Accountability to Government

The chapter on Rebuilding the Economy is most relevant to this proposal as it provides objectives for achieving growth and prosperity. The plan makes a commitment to support large and small businesses and describes the importance of the private sectors role in maintaining and creating highly productive jobs to underpin the State's ability to realise a higher standard of living for all people.

The proposed use is consistent with these broad strategies as:

- It relies on existing zoned land, aligning private investment with the orderly and planned use of land.
- It will contribute to economic activity in a location that capitalises on the Governments existing and planned public infrastructure.
- It will support local and regional job creation.

6 Traffic, Transport and Parking

6.1 TRAFFIC GENERATION

6.1.1 DEMOLITION

Demolition will take place over a 3 month period with approximately 10 truck visitations per day. There will be some 10–20 workers associated with demolition, accounting for up to 40 vehicle movements per day using a new construction access on Yarrunga Road.

Estimated traffic generated by the proposed developments demolition stage is much less than expected by the normal operation of the site and as such demolition traffic is not anticipated to compromise the function and safety of the surrounding road network. A detailed demolition and construction management plan and a comprehensive Construction Traffic Management Plan for the development will be prepared prior to the issue of a construction certificate to mitigate impacts arising from the demolition stage of development.

6.1.2 CONSTRUCTION

Earthworks will take place over a 9 month period with an average of 80 movements per day. Earthwork vehicles may include:

- DC6 dozer
- Pad foot roller
- 825 compactor
- Smooth drum roller
- 30T excavator
- Water carts

Construction will take place in stages over 9–12 months per warehouse. The following truck activity will be associated with each stage:

- Steel erection – 15 semitrailer visits per day for 12 weeks.
- Concrete slab – 25 concrete truck visits per day for 12 weeks.
- Fitout – 10 truck visits per day and 100 worker cars.

There will be some overlap with the above movements, however the vehicle movements associated with construction will be less than that of the proposed uses on the site. Construction traffic access will be primarily from Yarrunga Street for Warehouses 1, 2, 3 and 5, and a combination of Yarrunga Street and Bernera Road Warehouse 4.

The movement of construction vehicles will be facilitated by the traffic signal controlled access intersections and the arrangements for site access will be incorporated in a comprehensive Construction Traffic Management Plan prepared and submitted as part of the Construction Certificate documentation.

6.1.3 OPERATION

The Assessment of Traffic and Parking Implications undertaken by TTPA (**Appendix G**) has modelled the proposed development in accordance with the RMS Guide to Traffic Generating Developments and assumption are based on the analysis of comparable developments in Erskine Park which has a total of 693,605sqm GFA and Wonderland Business Park with a total GFA of 406,600sqm.

Due to the similarities between the proposed development and Erskine Park and Wonderland it can be assumed that there will be similar levels of truck activity at the various times of the day. Therefore the proposed development would generate 258 vehicles per hour. In terms of daily rates the proposed development would generate 2,320 vehicles per day, based on the following breakdown:

- 1,624 cars (70%),

- 394 rigid commercial vehicles (17%), and
- 302 articulated vehicles (13%).

Further, TTPA undertook the assessment for Liverpool Council of the industrial zoning for Prestons adopting a network peak traffic generation rate closely aligned to that adopted in the current development under assessment. Also, the generation rate incorporates a “sensitivity factory” of +40% above that of the RMS derived network peak generation rate for Erskine Park and Wonderland.

There is no requirement for traffic growth analysis in Section 2 (Traffic Impact Studies) of the RMS Guidelines and as such this analysis is not provided (see the Assessment of Traffic and Parking Implications report at **Appendix G** for an extract of the Guideline).

Assessment of the potential directional distribution of the vehicle movements generated by the proposed development has had regard for the survey results of the existing industrial access movements at the Bernera Road/Yarrunga Street/Yato Road intersection. This assessment has indicated:

- A peak directional split (IN/OUT) of 70%/30%.
- A geographical split of 60% north and 40% south on Bernera.

Based on above, the expected directional movements of generated traffic of the proposed development are as follows:

TABLE 11 – DIRECTIONAL TRAFFIC GENERATION

DIRECTION	AM	PM
IN from North	90	35
IN from South	63	27
IN from West	27	16
OUT to North	35	90
OUT to South	27	63
OUT to West	16	27
Total	**258**	**258**

Source: TTPA (**Appendix G**)

The impacts of the above generation rates are considered below.

6.2 TRAFFIC IMPACT

6.2.1 CONSTRUCTION

The impact of the movement of construction vehicles will be minimised by the traffic signal controlled access intersections and the arrangements for site access will be incorporated in a detailed demolition and construction management plan and a comprehensive Construction Traffic Management Plan for the development will be prepared prior to the issue of a construction certificate to mitigate impacts arising from the demolition and construction stage of development.

6.2.2 OPERATIONAL

According to the application of the adopted peak traffic generation rate to the proposed development, the operation of the proposed development will generate a traffic impact of 258 vehicle trips per hour or 2,320 vehicles per day, comprising the following ratios:

- 1,624 cars (70%),
- 394 rigid commercial vehicles (17%), and
- 302 articulated vehicles (13%).

SIDRA modelling on the applicable intersections is provided at **Appendix G**, the following provides a comparison of existing traffic volumes with volumes generated by the proposed development. **Table 14** shows the incremental intersection performance post-development.

TABLE 12 – EXISTING LEVELS OF SERVICE AT SURROUNDING INTERSECTIONS

INTERSECTION	AM		PM	
	LOS*	AVD**	LOS	AVD
Bernera/Yarrunga	A	9.4	A	10.4
Bernera/Kurrajong	B	23.5	B	25.1
CVWY/Bernera	B	17.2	B	25.9
Bernera/M7	A	5.8	A	4.6
Jedda/M7	A	6.6	A	6.7

Source: Transport and Traffic Planning Associates (* Level of service, ** Average vehicle delay(sec))

TABLE 13 – PROPOSED LEVELS OF SERVICE AT SURROUNDING INTERSECTIONS

INTERSECTION	AM		PM	
	LOS*	AVD**	LOS	AVD
Bernera/Yarrunga	B	15.4	B	21.1
Bernera/Kurrajong	B	23.8	B	28.0
CVWY/Bernera	B	17.6	C	28.7
Bernera/M7	A	5.6	A	4.6
Jedda/M7	A	6.8	A	6.9

Source: Transport and Traffic Planning Associates (* Level of service, ** Average vehicle delay (sec))

TABLE 14 – INCREMENTAL INTERSECTION PERFORMANCE

INTERSECTION	AM		PM	
	LOS*	AVD**	LOS	AVD
Bernera/Yarrunga	A to B	+6.0	A to B	+10.7
Bernera/Kurrajong	-	+0.3	-	+2.9

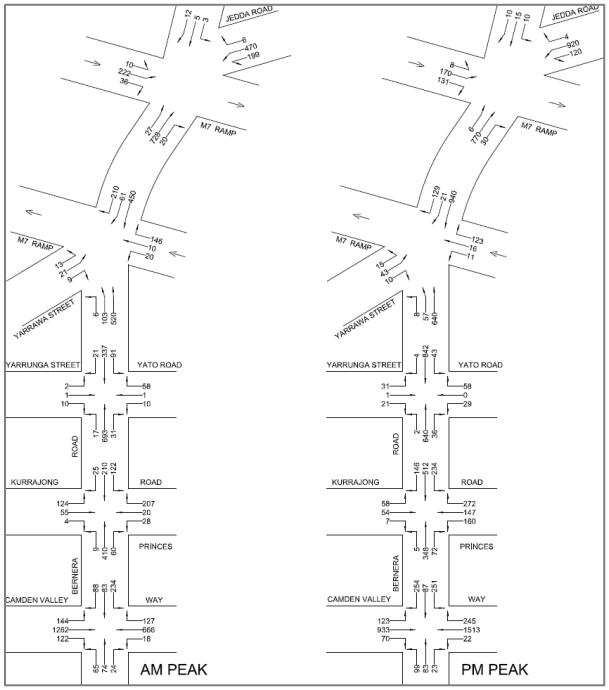
INTERSECTION	AM		PM	
	LOS*	AVD**	LOS	AVD
CVWY/Bernera	-	+0.4	B to C	+2.8
Bernera/M7	-	-0.2	-	0.0
Jedda/M7	-	-0.2	-	-0.2

Source: Transport and Traffic Planning Associates SIDRA data (* Level of service, ** Average vehicle delay (sec))

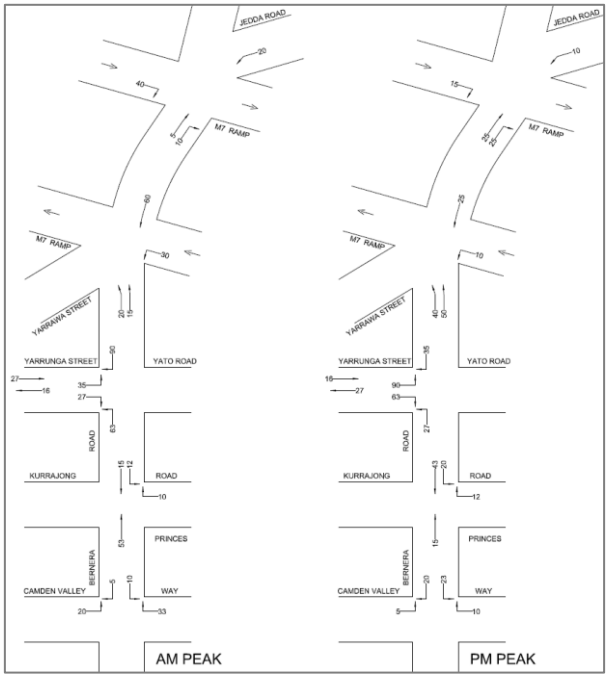
The following provides detail on Level of Service (LOS) for reference:

- **'A' – Good** (Average delay per vehicle: less than 14 seconds).
- **'B' – Good with acceptable delays and spare capacity** (Average delay per vehicle: 15 to 28 seconds).
- **'C' – Satisfactory** (Average delay per vehicle: 29 to 42 seconds).

FIGURE 18 – COMPARISON OF EXISTING AND PROPOSED TRAFFIC VOLUMES



PICTURE 13 – EXISTING MORNING AND AFTERNOON PEAK TRAFFIC CONDITIONS



PICTURE 14 – INCREMENTAL POST-DEVELOPMENT TRAFFIC CONDITIONS

Source: Transport and Traffic Planning Associates

The SIDRA analysis results are stated in the Traffic and Transport Report:

> *The results of the modelling indicate that these intersections will continue to operate satisfactorily.*

The above confirmation that the intersections will operate at satisfactory levels post-development means no upgrades works are required to offset the minimal impacts.

The only impact on external roads relates to the movement provision of large trucks at the Bernera Road/Yarrunga Road intersection. As such, there will be intersection upgrade works to the Yurrunga/Bernera intersection to improve access for trucks using the site in the form of a 6m splay on the boundary of the site. Refer to **Appendix G** for drawings associated with the intersection upgrade.

6.3 PARKING

Liverpool Development Control Plan 2008 specifies the following car parking rates:

- 1 space per 35sqm of office
- 1 space per 75sqm of warehouse

The proposed development provides the following GFA totals based on the areas provided at **Appendix D**:

- Office – 4,725sqm
- Warehouse – 111,480sqm

Therefore, the DCP requires the following car parking spaces for the proposed development:

- Office – 135 spaces
- Warehouse – 1,487 spaces
- Total – 1,621 spaces

The proposal provides 715 car parking spaces, which is 906 spaces under what is required under the DCP. However, the Traffic and Transport Report at **Appendix G** justifies the non-compliance. The following summarises the key matters informing the reduction of onsite parking provision:

> *The parking provision criteria for 'warehouse' use contained in the majority of Metropolitan Councils DCP's do not reflect the realities of very large contemporary warehouse and distribution centre types uses.*

Transport and Traffic Planning Associates *has undertaken a very extensive assessment of contemporary warehousing parking demands and details are provided in Appendix F* of the Traffic Report and the findings are as follows:

- *The provision of car parking for large contemporary warehouse developments presents a somewhat 'vexed' issue due to:*
  - *The wide range of variation between the relative available criteria*
  - *The disparities between large and small warehouse uses*
  - *The disparities between earlier uses and contemporary uses.*
- *The RMS Development Guidelines were formulated on the basis of statistical analysis of actual surveys of numerous existing sites (albeit undertaken in the late 1970's). The RMS parking criteria for warehouse use, which does not distinguish office areas, is 1 space per 300m2 GFA.*
- *The Institute of Transport Engineers (ITE) publication has a number of warehouse categories and the following are included:*
  - *Warehouse: primarily devoted to the storage of materials but also include office and maintenance areas. Study details: average size 35,000m2 and average employees 400.*
  - *Warehouse 'High Cube': used for storage of manufactured goods prior to distribution characterised by small number of employees and high level of mechanisation. Study details: average size 30,000m2 and average employees 53.*

  The ITE surveyed parking demand for 'warehouse' was 0.41 spaces per 100m2 or 1 space per 250m2. It is quite apparent due to the much smaller workforce that this demand would be significantly less.

In summary, the analysis detailed above demonstrates that given the smaller number of employees in contemporary warehouse developments, the demand for high levels of onsite parking is low (in the range of 200sqm – 300sqm).

As such, the proposed development utilises the RMS warehouse car parking rates given they are more appropriate for the proposed warehouse use and represent a more realistic expectation of employee numbers.

Transport and Traffic Planning Associates assert a parking provision in the range of 1 space per 200sqm to 300sqm is applicable to the proposed development. As such, the parking provision for the proposed warehouses at Prestons will be based on a rate in excess of 1 space per 250sqm GFA as follows:

- **Warehouse 1:** 28,750sqm – 168 spaces
- **Warehouse 2:** 30,825sqm – 198 spaces
- **Warehouse 3:** 13,380sqm – 65 spaces
- **Warehouse 4:** 3,585sqm – 39 spaces
- **Warehouse 5:** 39,665sqm – 245 spaces
- **Total:** 116,205sqm – 715 spaces (1 space per 162.5sqm)

Twelve accessible spaces will be provided overall.

No formal truck parking areas are required, although overnight and temporary truck parking may occur on internal hardstand areas without disrupting loading/unloading. The hardstand areas are large enough to accommodate truck parking should the need arise.

Hardstand areas have been designed to be separate for car parking areas to avoid conflict.

6.4 ACCESS

The following details the proposed access arrangements:

Yarrunga Street

- Two 12m wide ingress/egress driveways for trucks on the Yarrunga Street frontage.
- One emergency gate on the Yarrunga Street frontage if Transgrid maintenance trucks are blocking access to Warehouse 3.
- Two 6m wide ingress/egress driveways for cars on the Yarrunga Street.
- The proposed private access roads allow trucks to enter and exit in a forward direction on Yarrunga Road.

Berrnera Road

- One 6m wide ingress/egress driveway for cars on the Bernera Road frontage serving car parks.
- One 12m wide ingress/egress driveway for trucks on the Bernera Street frontage.
- Driveway movements will be limited to left turn in and out by central median islands in Bernera Road across the driveways. Liverpool DCP has provisions to ‘minimise access directly onto Bernera Road’. Given the floor space of the warehouse (and office) to be accessed via Bernera is 3,585sqm (3% of the total GFA on site), the quantum of trucks and car movements is relatively low.

  Also, the proposed left in and left out access arrangement will alleviate traffic impacts associated by

turning movements onto Bernera Road. The driveways on Bernera Road will be designed and arranged to provide adequate sight lines for pedestrians and motorist and as will alleviate potential safety impacts. As such the driveways on Bernera Road are consistent with the objectives of Section 8 of Part 7 of the DCP.

Kurrajong Road

- One fire truck emergency access point on Kurrajong Road frontage for service road.
- One fire truck access point to Warehouse carpark on Kurrajong Road frontage.

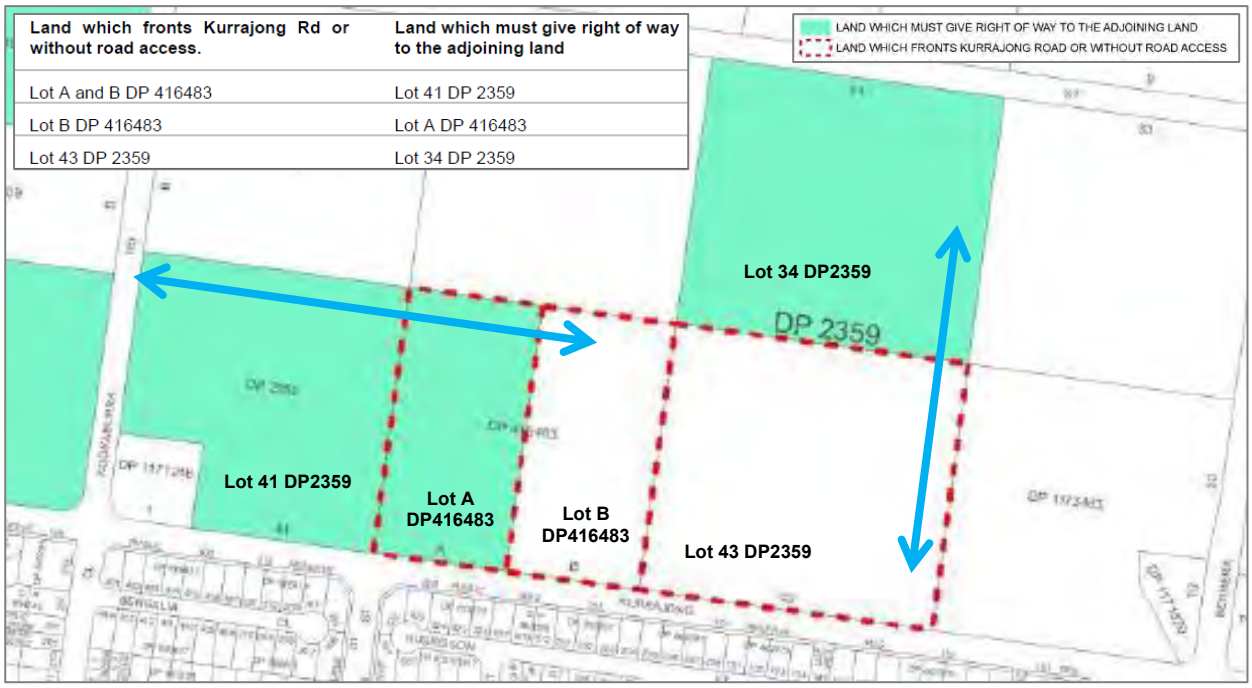
In terms of the DCP requirement for an internal service road to be provided adjacent Kurrajong Road which allows for safe car movements, TTPA provides the following justification for not provide such a provision:

> *The proposal does not provide a parallel service road to Kurrajong Road as per the DCP requirement as the proposal is able to meet all DCP access requirements without the need for the service road. This does not impact on the lots immediately to the west (being lots Lot A DP 416483, Lot B DP 416483 and Lot 41 DP 2359) that are required by the DCP to have a ROW link through from Kookaburra Road North. The fact that the internal service road does not connect through to these lots will not prejudice their access and is compliant with the ROW's as required in the DCP. Further we note that an existing approval for an industrial subdivision of Lot 41, DP 2359 has been issued that provides the ROW link through to Lot A, DP 416483. We therefore believe that the internal services road is not required from the subject site and that the key access provisions of the DCP have been met.*

6.4.1 RIGHT OF WAY

Liverpool DCP 2008 limits truck access onto Kurrajong Road however there are certain lots that front Kurrajong Road which do not have other access points to the road network. As such, certain allotments must retain right-of-way across land giving truck access to certain other lots. **Figure 21** shows which lots should provide right-of-way to affected lots (the blue arrow illustrates this). Development on Lot 34 DP2359 provides right-of-way for Lot 43 DP2359 and as such complies with the DCP.

FIGURE 19 – RIGHT OF WAY



The proposal is not required to provide right-of-way for Lot B DP416483 as per the DCP. DA-1110/2015 currently under assessment (at the date of this report) proposes to develop Lot A DP416483 for a

warehouse use. DA-1110/2015 proposes to construct a new rear access road adjacent to the northern boundary to provide truck access for the site to Kookaburra Road North via Lot 41 DP2359. In line with the DCP, should Lot B DP416483 be development Lot A DP416483 is required to provide right-of-way.

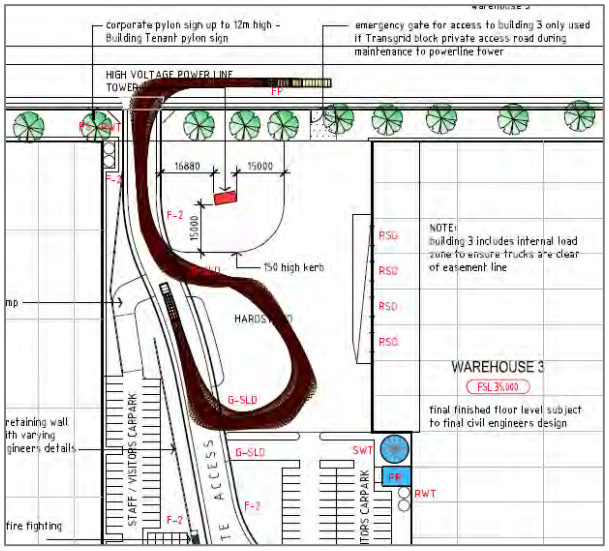
6.5 INTERNAL CIRCULATION

The design of the carpark, loading dock, driveway and manoeuvring areas are in accordance with the relevant Australian Standards and will suitably accommodate the required vehicle type.

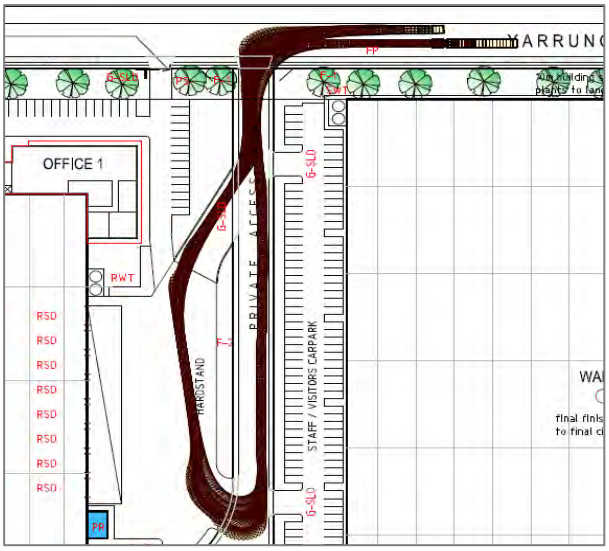
The design of the loading dock areas including driveways and manoeuvring areas for warehouses 1, 2, 3 and 5 comply with AS2890.2 and will accommodate B Double trucks. The design of warehouse 4 will also comply with AS2890.2 and will accommodate semi-trailers.

The following images show how trucks have adequate hardstand space to manoeuvre onsite.

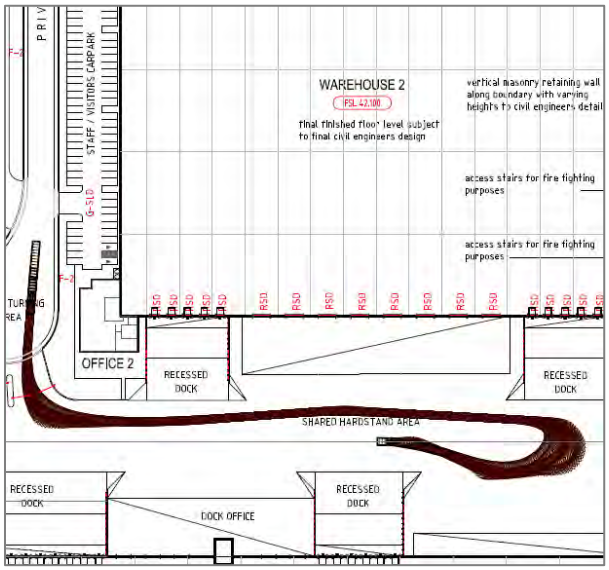
FIGURE 20 – SWEPT PATHS



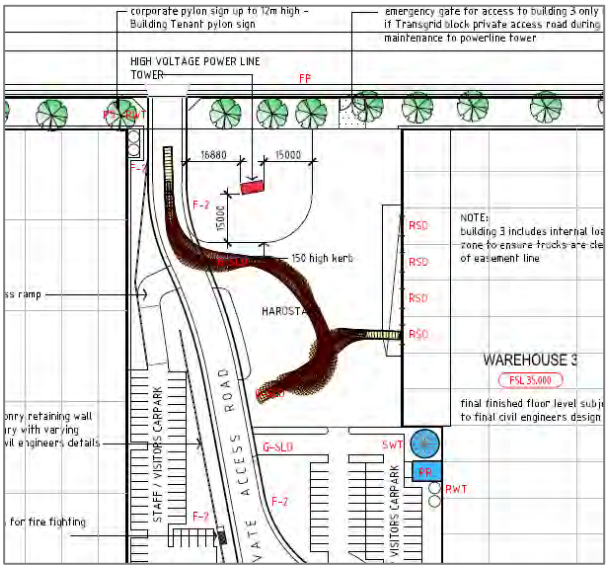
PICTURE 15 – BETWEEN WAREHOUSE 2 AND 3



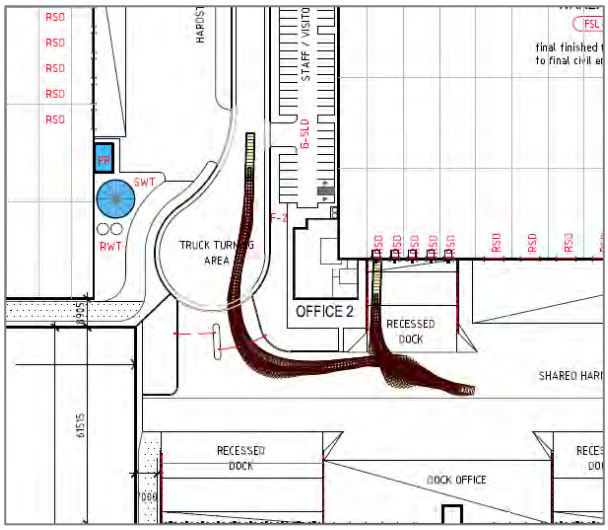
PICTURE 16 – BETWEEN WAREHOUSE 1 AND 2



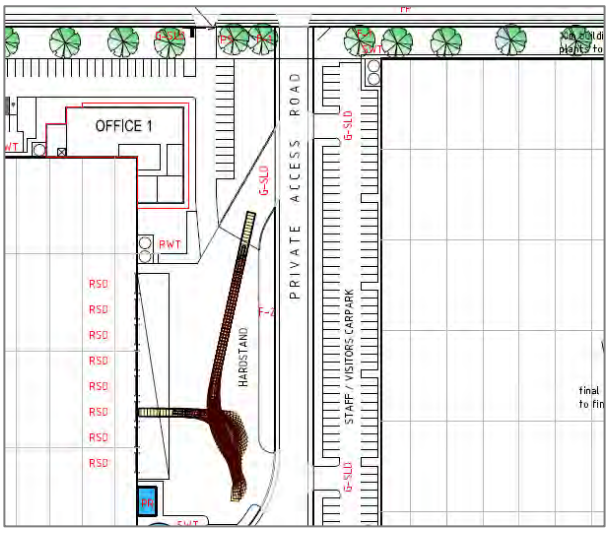
PICTURE 17 – ACCESSING HARDSTAND AREA



PICTURE 18 – ACCESSING WAREHOUSE 3



PICTURE 19 – ACCESSING WAREHOUSE 2



PICTURE 20 – ACCESSING WAREHOUSE 1

6.6 ROAD UPGRADES

As part of the proposed works, upgrades will be carried out to include:

- The provision of a 6m splay on the boundary of the Bernera Road/Yarrunga Road intersection the radius on the south western corner will be increased to facilitate the left turn of a B Double truck.
- The provision of a half road reconstruction to Council specification including kerb and gutter, footpath and street lighting.

Further detail on contributions is provided in **Section 23**. The Letter of Offer for works-in-kind is provided at **Appendix Z**.

The proposed treatment of the south-western corner of the Bernera Road/Yarrunga Street intersection is agreed with Council and the only very minor implications for RMS traffic signals is that two posts will be required to be relocated slightly. It is presumed that this will be dealt with by conditions of consent.

6.7 RECOMMENDATIONS

The assessment of the potential traffic and parking implications of proposed development finds:

- *There will not be any unsatisfactory traffic implications.*
- *The proposed parking provision will be suitable and adequate.*
- *The proposed vehicle access arrangements will appropriate and will accommodate all vehicles requiring to access the site.*
- *The proposed internal circulation arrangements will be suitable and appropriate for the manoeuvring and standing of trucks and cars.*

Therefore the proposed development will not result in any adverse road safety implications, and as such no mitigation measures are required to reduce risks to road safety. Although, the following design measures will improve the operation of the proposed development:

- Driveway movements will be limited to left turn in and out by central median islands in Bernera Road across the driveways.
- The provision of a 6m splay on the boundary of the Bernera Road/Yarrunga Road intersection the radius on the south western corner will be increased to facilitate the left turn of a B Double truck.

7 Biodiversity

7.1 ASSESSMENT METHODOLOGY

The potential impacts of any developments, land use changes or activities do not need to undergo an "Assessment of Significance" under Section 5A of the EP&A Act as the Project has been declared a SSD. The impacts of the proposed development are therefore assessed within this Biodiversity Assessment Report in accordance with the FBA Methodology.

The FBA requires the preparation of the following:

- Biodiversity Assessment Report: To describe the biodiversity values present within the development site and the impact of the project on these values.
- Biodiversity Offset Strategy: To outline how the proponent intends to offset the impacts of the project.

The Biodiversity Report at **Appendix H** describes the sites biodiversity values and the impact of the proposed development, and outlines the offset strategy.

7.1.1 NATIVE VEGETATION IDENTIFICATION

A review of the Atlas of NSW Wildlife (OEH 2014) was undertaken prior to the site visit to determine threatened species previously recorded within 10km of the subject site. An inspection of the site was conducted on 16 December 2014.

0.48ha of Grey Box - Forest Red Gum grassy woodland are located within the development site, identified in blue in the image below.

FIGURE 21 – SITE AERIAL SHOWING NATIVE VEGETATION

Source: Travers

7.1.2 TARGETED THREATENED SPECIES SURVEY

Flora

A review of the OEH Atlas of NSW Wildlife (OEH 2015 - November) was undertaken prior to the botanical survey to identify threatened species previously recorded within 10km of the development site and identify the targeted species searches that were required. Travers undertook random meander searches on 5 November 2015 to identify flora occurring on site and develop a broad species list. Target species survey locations are shown at the figure below.

FIGURE 22 – TARGET SPECIES SURVEY MAP

Source: Travers

Fauna

Diurnal fauna survey was undertaken on 5 November 2015 and included snail and reptile habitat searches in the woodland remnants, bird activity and call survey and habitat tree survey. Nocturnal fauna survey included spotlighting, frog call identification, Anabat recording (x2 passive recording stations) and nocturnal call-playback. Call-playback targeted Australasian Bittern near the eastern dam as well as Barking Owl and Masked Owl.

Full detail of the survey is provided at **Appendix H**.

7.2 IMPACT ASSESSMENT

The project involves the full removal of native vegetation. The total amount of native vegetation (Grey Box - Forest Red Gum grassy woodland) amounts to 0.48ha, over the total site area of 20.725ha.

Avoidance of such patches had not been considered feasible and retention of such vegetation would be of limited ecological value because of isolation and ongoing threats such as grazing pressures and continued slashing. There is no likelihood of restoring and regenerating habitat connectivity in the future due to the zoning of the land and lack of other remnants adjoining the development site.

The probable recording by Anabat of either Eastern Freetail-bat or Greater Broad-nosed bat has assumed both species are present given there are local and recent records for both species. There will be habitat loss for both species equating to 0.48 ha and removal of five hollow-bearing trees.

The impact on biodiversity has been assessed by using the BioBanking credit calculator, which considers landscape values, patch size, quality of vegetation and fauna habitat. The resulting ecosystem credits are:

- 14 ecosystem credits for ME020 (Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin)
- 11 species credits for Eastern Freetail-bat
- 11 species credits for Greater Broad-nosed Bat

7.3 MITIGATION MEASURES

Travers state, the following mitigation measures are proposed to minimise the potential ecological impacts, address threatening processes and to create a positive ecological outcome fauna, their habitat and endangered ecological communities:

Pre-construction phase

- Inspection and relocation of any wildlife in existing habitat trees under the supervision of a fauna ecologist.
- Sediment and erosion control measures are to be installed immediately prior to the commencement of demolition, construction and earthworks.
- Inspection and removal of any aquatic fauna from the existing dam and vegetation.
- Installation of protective fencing around drip zone of trees that interface with the development site.

Construction phase

- Sediments are to be effectively retained within the site to minimise deterioration of surface runoff during the construction works.
- Unnamed watercourse (watercourse 1) – first order stream.
  - Declassify as a watercourse to drainage line
  - Establish sediment basins to collect any sediment mobilised from the site Remove fill, stabilise and revegetate with wetland and CPW species
  - Stabilisation of proposed revegetation areas

Post construction phase

- Loss of vegetation compensated by the planting of CPW vegetation along the southern boundary of the site as shown in the Landscape plan. Revegetation will enhance replace lost foraging trees for birds and bats. A 0.92 ha revegetation area is proposed to compensate for the loss of habitat and existing vegetation caused by the proposal. The includes 0.64 ha of CPW planting along Kurrajong Road, 0.10 ha of CPW planting in the Aboriginal heritage area, 0.18 ha of partly structured CPW under the electrical easement along Kurrajong Road and the remainder along Yarrunga Street and Bernera Road to be landscaped with trees.
- Aim to filter any runoff through sedge planted filters to minimise deposition within stormwater systems.

- Target weed control should be undertaken in revegetation areas, focussing upon invasive and noxious weed species.

7.4 OFFSET STRATEGY

The proponent has put forward two options for meeting the requirements of the required credits:

1. Providing revegetation offsets within the site of undetermined biodiversity ecosystem credit value and gaining the balance from the BioBanking market

2. Full sourcing of the required ecosystem and species credits in accordance with the FBA methodology from the BioBanking market

Both options are considered below.

7.4.1 REVEGETATION OFFSETS

The proponent proposes the use of 0.92ha of revegetation areas within the development site to offset part or all of the required credits. Under a normal Part 5 development assessment, the CPW remnants would most likely not be conserved and revegetation works accepted as a suitable compensation for that loss. Given that the proposal will remove 0.48ha and revegetate 0.92ha, the biodiversity outcome appears to be a reasonable proposition in principle.

There are some limitations in terms of the proposed revegetation areas for offset purposes including:

- The revegetation offsets are within three separate patches of vegetation of linear nature up to 20m in width and will not be able to contain a full suite of CPW species due to safety reasons,

- Highly subject to edge affects and subject to disturbance from the surrounding land use, and

- In part affected by the existing electrical easement.

However, the proposed revegetation areas do have ecological value for the following reasons:

- *Maintain a vegetated habitat stepping stone within the site suitable for resident and common fauna species,*

- *Are able to contain hollow habitat for hollow dependent threatened species ,*

- *Assist in restoring maintaining CPW within the locality within a revegetated and managed landscape, and*

- *Provide ongoing vegetated visual screening.*

The proposed revegetation areas would need to be securely conserved and managed in perpetuity in accordance with an approved vegetation management plan.

7.4.2 SOURCING REQUIRED ECOSYSTEM END SPECIES CREDITS FROM THE BIOBANK MARKET

The Biodiversity Report states:

With respect to locating suitable offsets, the BioBanking Public Register was utilised to gain an appreciation of the availability of the required ecosystem credits and species credits. The outcome of the FBA was that 14 ecosystem credits were required for ME020 (PCT 849), 11 species credits for Eastern Free tail-bat and 11 species credits for Greater Broad-nosed Bat.

Refer to Biodiversity Report at **Appendix H**.

8 Air and Odour

8.1 ASSESSMENT METHODOLOGY

Impacts have been considered in relation to the nearest sensitive receptors to the subject site. The nearest residential receptors were identified as:

- R1: 72 Coffs Harbour Avenue (830 m to the northwest)
- R2: 10 Wingham Road (1.1 km to the east-northeast)
- R3: 35 Huskisson Street (360 m to the southwest)
- R4: 30 Michelago Circuit (immediately to the south)

The nearest industrial receptors were identified as:

- R5: Unidentified farm
- R6: WBG Trailer Repairs Pty Ltd.
- R7: Favelle Favco Cranes Pty Ltd.
- R8: Precision Fleet Maintenance Pty Ltd
- R9: Mainfreight Transport – Sydney
- R10: LDN - Local Direct Network
- R11: Boral Concrete Prestons

The location of these receptors is indicated in the figure below.

FIGURE 23 – NEAREST SENSITIVE RECEPTORS TO THE PROJECT

Source: Pacific Environment

The Air Quality and Odour Report at **Appendix I** provide detail on the methodology used to assess potential air quality, odour and dust emissions from the proposed development during construction, operation and from transport. Figure 24 below are extracts from The Air Quality and Odour Report at **Appendix I**. The tables summarise the air quality goals for pollutants, maximum acceptable increase in dust deposition over existing dust levels, and odour criteria relevant to the project. The potential air quality, dust and odour impacts from the proposed development were tested against these levels.

FIGURE 24 – RELEVANT AIR QUALITY AND DUST FALLOUT GOALS/CRITERIA

Pollutant	Standard	Averaging Period	Source
PM_{10}	50 µg/m³	24 hour	NSW DEC (2005) (assessment criteria) EPA impact assessment criteria; and Ambient Air NEPM reporting goal which allows five exceedances per year.
	30 µg/m³	Annual	NSW EPA impact assessment criteria
$PM_{2.5}$	25 µg/m³	24 hour	NEPM Advisory Reporting Standard
	8 µg/m³	Annual	NEPM Advisory Reporting Standard

Notes: µg/m³ – micrograms per cubic meter.

PICTURE 21 – EPA AIR QUALITY STANDARDS/GOALS FOR PARTICULATE MATTER CONCENTRATIONS

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m²/month	4 g/m²/month

Notes: g/m²/month – grams per square meter per month.

PICTURE 22 – EPA CRITERIA FOR DUST FALLOUT

Population of affected community	Odour performance criteria (OU) (nose response odour units at the 99th percentile)
Single residence (≤ ~2)	7
~10	6
~ 30	5
~ 125	4
~ 500	3
Urban (~ 2000)	2

PICTURE 23 – ODOUR PERFORMANCE CRITERIA

Source: Pacific Environment

8.2 POTENTIAL IMPACT IDENTIFICATION AND ASSESSMENT

8.2.1 CONSTRUCTION

Dust

The principal emissions from the construction phase will be dust and particulate matter, occurring from the following activities:

- Vegetation clearing and earthmoving during site preparation
- Excavation and stockpiling of excavated material
- Haul road construction within the site
- Wind erosion from exposed surfaces

Odour

The construction phase activities will not result in significant odour emissions.

Construction vehicle emissions

Construction vehicle emissions will occur from the following activities:

- Vegetation clearing
- Earthmoving during site preparation
- Excavation
- Movement of heavy plant and machinery within the site
- Haul roads

8.2.2 OPERATION

Dust

It is expected the proposed development will decrease windblown dust emissions given the proposed roofed warehouse and increase in hard-standing areas. Perimeter planting is also proposed which may assist in stabilising exposed soil.

Odour

The Air Quality and Odour Report (**Appendix I**) indicates that the Project will not result in any odours impacts based on the proposed activities.

Vehicle emissions

The Air Quality and Odour Report (**Appendix I**) finds:

The proposed development will serve as a distribution warehouse and may lead to addition vehicle emissions.

The applicant indicates there will be approximately 38 light commercial vehicles and 25 delivery trucks per hour operating on site during peak periods. Assuming peak operating hours of 0800 to 1800, and 50% activities during off-peak hours, the Project will result in the following vehicle activities:

- 250 delivery trucks per day during peak hours
- 380 light vehicles operating per day during peak hours
- 180 delivery trucks per day during off-peak hours
- 270 light vehicles operating per day during off-peak hours

Compliance

Although there are episodic exceedances of EPA and NEPM criteria/advisory goals for PM_{10} and $PM_{2.5}$, it is not anticipated that the proposed development will significantly impact local air quality as a result of increased vehicle emissions resulting from operational activities.

8.3 MITIGATION MEASURES

Although the project is not anticipated to cause any significant impacts on air quality during the construction or operational phase, the following mitigation measures are proposed as a precautionary measure:

- **Clearing/Excavation**

- Emissions can be effectively controlled by increasing the moisture content of the soil/surface.
- Modify working practices by limiting excavation during periods of high winds (greater than 20 km/hour).
- Limiting the extent of clearing of vegetation and topsoil to the designated footprint required for construction and appropriate staging of any clearing.

- **Haul Road**
  - Dust emissions from earth moving equipment can be controlled through the water sprays during internal haul road construction.

- **Haulage and Heavy Plant and Equipment**
  - All vehicles on-site should be confined to a designated route with speed limits enforced (20 km/hour);
  - Trips and trip distances should be controlled and reduced where possible, for example by coordinating delivery and removal of materials to avoid unnecessary trips; and
  - When conditions are excessively dusty and windy, and dust can be seen leaving the works site the use of a water truck (for water spraying of travel routes) should be used.

- **Wind Erosion**
  - Unnecessary vegetation clearing will be avoided. Additional planting will be incorporated on the site which will contribute to soil stabilisation.

- **Odour**
  - Traffic management procedures to co-ordinate the delivery schedule and avoid a queue of the incoming or outgoing trucks for extended periods of time;
  - Spill management procedures to include immediate clean-up of any spill/leakage from incoming and outgoing trucks;
  - Maintaining an odour complaint logbook and in the event of a complaint immediately investigate any unusual odour sources (including spill or leakage in the traffic areas) within the site boundary and take appropriate action to eliminate these.

9 Hazards and Risk

9.1 ASSESSMENT METHODOLOGY

The methodology used for the SEPP33 assessment of the proposed development is that recommended in the document 'Applying SEPP33 – Hazardous and Offensive Developments', published by the Department of Planning and Environment.

The study approach is as follows:

- Identify the materials proposed for storage at the site;
- Determine whether the materials are listed in the Australian Dangerous Goods Code (ADG, Ref.1) and are there for classified as Dangerous Goods (DGs);
- Where DGs are not listed in the ADG, SEPP33 does not apply;
- Where DGs are listed in the ADG; review the quantities stored and determine whether the quantities exceed the threshold levels listed in Applying SEPP33;
- Where quantities of DGs stored do not exceed SEPP33 thresholds, SEPP33 does not apply; and
- Where quantities of materials stored exceed the threshold levels, it is necessary to conduct a
- PHA study, which (if required) would be conducted in a separate assessment.

9.2 POTENTIAL IMPACT IDENTIFICATION AND ASSESSMENT

Based on the analysis conducted in the report at **Appendix J**, it can be seen that the proposed quantities of DGs to be stored at the proposed development do not exceed the threshold quantities listed in Applying SEPP33 (Ref.1). Hence, it is concluded that SEPP33 does not apply to the proposed development and therefore a Preliminary Hazard analysis is not required for the site.

A list of DGs that may be stored on the site, their DG class, maximum quantity to be stored and the SEPP 33 threshold are provided in **Appendix J**.

9.3 RECOMMENDATIONS

Should a user propose to store large amounts of DG, an additional use Application would need to be lodged for that particular user and building. The SEPP33 analysis would therefore need to be updated to deal with that particular user and the location on the site.

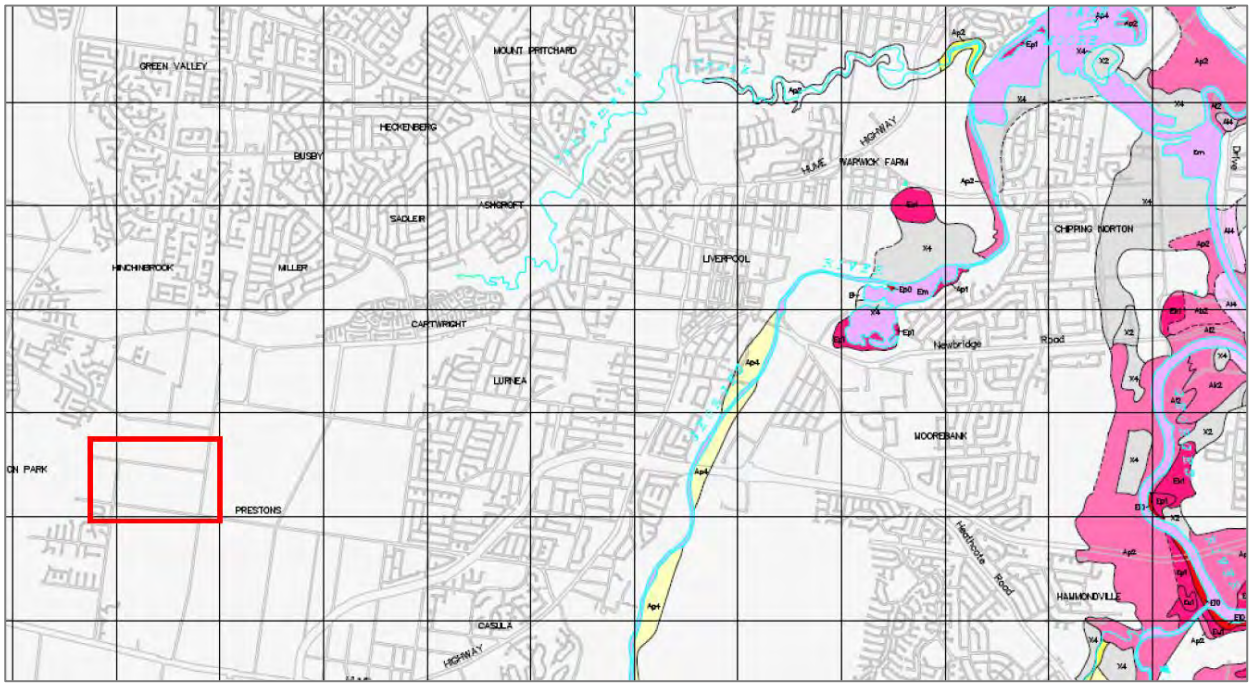
Notwithstanding the fact that SEPP33 does not apply to the site, the storage of DGs may trigger other requirements as part of the Work Health and Safety Regulation (2011). Hence, it is recommended that as part of the development approvals, the site is assessed for compliance with Section 7 of the Work Health and Safety Regulation (2011).

10 Soil and Water

10.1 ACID SULFATE SOIL

Acid Sulfate Soils (ASS) are naturally occurring and usually form in low lying coastal areas, creeks, rivers and flood plains. The sulfates present in the soil are stable when in the saturated/waterlogged state, but react to form sulphuric acid when disturbed and exposed to oxygen. With reference to the Acid Sulfate Soils Map produced by the Department of Land and Water Conservation, as shown in the figure below, the subject site is in an area of no known acid sulphate soils.

FIGURE 25 – LOCATION OF SITE ON THE LIVERPOOL ACID SULFATE SOILS MAP



Source: Ground Technologies

The Acid Sulfate Assessment at **Appendix K** indicates the analysis of the laboratory tests indicate low sulphur trails in the site's soil samples. As such, the results confirm the absence of Acid Sulfate Soils (ASS) or Potential Acid Sulfate Soils (PASS) within these soils.

Based on the findings of this report, Ground Technologies have indicated a salinity management plan is not required for the subject site.

Further details on the salinity assessment can be found in the report provided at **Appendix L**.

10.2 SALINITY

As established in the Salinity Report at **Appendix L**, laboratory test results indicated the underlying soils encountered within the site were predominately non saline to depths of 3.0m. The soils were also found to be mildly aggressive to both steel and concrete.

Given the low levels of salinity on site Ground Technologies concludes a Salinity Management Plan is not required for the subject site.

10.3 GROUNDWATER AND GROUNDWATER DEPENDANT ECOSYSTEMS

According to Preliminary Geotechnical Investigation and Groundwater Assessment provided at **Appendix M**, no groundwater was encountered during the course of the investigation. The civil report at **Appendix**

N suggests groundwater is unlikely to be disturbed during the course of the development, and as such the effect on groundwater and groundwater dependant ecosystem is expected to be minor.

No groundwater was encountered during the course of the investigation. Ground technologies have concluded groundwater is unlikely to be disturbed during the course of the development

10.4 STREAMS

Cabramatta Creek is located approximately 450m west of the subject site and is subject to flash flooding and overland flow. Costin Roe have indicated the Q100 ARI flood extent extends along Yarrunga Road some 250m to its intersection with Kookaburra Road North.

The Cabramatta Creek flood extent can be seen to be at least 200m from the closest boundary of the development site. The site is not affected by, nor will development on the site affect, flood events within Cabramatta Creek.

The subject site is above the flood planning levels related to Cabramatta Creek and no additional design measures are required to be introduced as a result of flooding in Cabramatta Creek.

10.5 FLOODING

An upstream catchment (approximately 29 Ha) to the south of the site currently drains through the property. The upstream catchment comprises residential development and piped flow from the catchment discharge onto the site via twin 900mm steel stormwater pipes. The existing twin 900mm pipes align with the low point in Kurrajong Road and overland flows from the residential catchment are directed to this point. In a flood situation, overland flow would overtop the kerb and join the flow piped flow, before being directed toward Bernera Road in a natural gully. Once reaching Bernera Road, three 1150mm wide by 600mm deep box culverts convey stormwater across Bernera Road to the east of the development. It is understood this system has limited capacity and a large proportion overtops the culvert system and continues north along Bernera Road as overland flow.

The Q100 Average Recurrence Interval (ARI) design flow, provided by Liverpool City Council in their Prestons Trunk Drainage Flooding and Drainage Assessment Report (by JW Prince Consulting Engineers dated Aug. 2014) is estimated to be 12.3m3/s at the upstream end and 13.3m3/s at the downstream end of the gully. The flow at the downstream end of the gully, following development, is based on based on attenuation of flows from the proposed development site. The flow regime in the Prestons Trunk Drainage Report has been reviewed and adopted by Costin Roe Consulting Pty Ltd for use in this analysis.

A new trunk drainage line and overland flow channel is proposed to convey the 1% AEP flow of 12.3m3/s to 13.3m3/s flow through the site. It is proposed to allow for conveyance of up to 1.5m3/s as overland flow through the car-parking area with the remaining 11.8m3/s of flow being provided in a box culvert system. Once downstream of the car parking area, the full flow will be conveyed as an open channel between Building 3 and 4 to the Bernera Road boundary. The channel will then run adjacent to Bernera Road, within a 14m setback zone within the property, to the existing Bernera Road culvert system where it will terminate.

The trunk drainage system is shown on drawings Co8753.11-DA41 to DA44 provided at **Appendix N**. The box culvert system will comprise two cells of 1800mm wide by 1500mm deep to convey the expected flow. The new trunk drainage system has been designed to bypass all site specific detention (OSD) measures and water quality devices.

Results of a HEC-RAS analysis are provided in **Appendix N**. The HEC-RAS assessment showed the overland flow which emanates from Kurrajong Road and the residential catchment to the south of the site can be conveyed through the property in a safe and effective manner.

10.6 STORMWATER MANAGEMENT

Full details of stormwater management, including hydraulic modelling and analysis, hydraulics, site drainage and external catchments and flooding are located in Section 5 of the Civil Report provided at **Appendix N**.

The proposed stormwater drainage system will comprise a minor and major system to safely and efficiently convey collected stormwater run-off from the development to the legal point of discharge.

The minor system is to consist of a piped drainage system which has been designed to accommodate the 1 in 20-year ARI storm event (Q20). The major system will be designed to cater for storms up to and including the 1 in 100-year ARI storm event (Q100). The major system will employ the use of defined overland flow paths, such as roads and open channels, to safely convey excess run-off from the site.

Further discussion on the Stormwater Management Strategy is provided in Section 7 and 8 of the Civil Report provided at **Appendix N**.

Drawing Co8753.11-DA41 to DA44 with the Civil Report provided at **Appendix N** show the proposed drainage layout.

Discharge from the site is proposed at three main points on the property boundary, corresponding to the existing catchments over the property. The first discharge point is made on the north-west corner of the property, the second discharge will be made at the existing culverts under Bernera Road, the third discharge point will be made via new drainage infrastructure in Yarrunga Street. Attenuation of stormwater runoff from the development is proposed to be managed via a number of detention tanks provided in strategic locations for each of the development lots. Further detail is provided in Section 6 'Water quantity Management' within the Civil Report provided at **Appendix N**. Table 7.1 'site and detention hydrology' within the report provide details of the storage for the total detention system.

10.6.1 SITE WATER BALANCE

Full detail of the water balance assessment is provided at Section 7.4 of the Civil Report provided at **Appendix N**. The assessment is based on the following assumptions/parameters:

- A minimum of 20% of roof catchment is directed to rainwater reuse (approx. 2Ha of 10Ha total roofs)
- Target of 80% reduction of non-potable water demand
- Internal Demand: 0.1kL/day per toilet demand for flushing – allowance of 50 toilets (including pans). 5kL/day used in assessment.
- External Demand: Allowance for 5000m2 of irrigation at 10mm application – 5000kL/year used in assessment.
- Water balance made for the site is based on meeting 80% of the above demands using local rainfall allowances in MUSIC.

From the assessment a total of 510kL of storage is required to meet the above parameters. The configuration of rainwater would be distributed depending on the size of the building and associated demand, with final arrangement subject to a detailed water balance assessment on the individual building. The tank volumes are to be generally as per below:

- WH1 (27000m2) – 130kL
- WH2 (30,000m2) – 145kL
- WH3 (27,000m2) – 60 kL
- WH4 (9,000m2) – 20 kL
- WH5 (32,000m2) – 155 kL

10.7 EROSION AND SEDIMENT CONTROLS

An erosion and sediment control plan is included in drawings Co8753.11-DA20 and DA25 within the Civil Report provided at **Appendix N**. These plans show the works can proceed without polluting receiving waters.

A detailed plan will be prepared after development consent is granted and before works commence.

Soil Erosion and Sediment Control measures including sedimentation basins will be provided during construction phase. All Soil and Sediment Control measures will be performed in accordance with Liverpool City Council requirements and Landcom Managing Urban Stormwater, Soils and Construction (1998) – The Blue Book.

Where practicable, the soil erosion hazard on the site will be kept as low as possible and as recommended in the table below.

TABLE 15 – LIMITATIONS TO ACCESS

LAND USE	LIMITATION	COMMENTS
Construction areas	Limited to 5m (preferably 2) from the edge of any essential construction activity as shown on the engineering plans.	All site workers will clearly recognise these areas that, where appropriate, are identified with barrier fencing (upslope) and sediment fencing (downslope), or similar materials.
Temporary construction access	Limited to a maximum width of 5m.	The site manager will determine and mark the location of these zones onsite. All site workers will comply with these restrictions.
Remaining lands	Entry prohibited except for essential management works	

10.8 WATER REQUIREMENTS

The proposed development does not involve large scale demand for water, with only limited demand for general water use in the offices and warehouses, and irrigation and fires services. Water harvesting is proposed on site to capture rainwater for re-use for toilet flushing, landscape irrigation and potentially for fire tanks. Any demand above and beyond this will use town water.

10.9 WASTEWATER

Large volumes of waste water will not be produced as a by-product. Any waste water will be discharged via sewer to the Sydney Water system. Discussions have taken place with Sydney Water with regards to the appropriate extensions required.

10.10 CUT AND FILL

Bulk earthworks will be required as part of the development to provide large flat building pads, facilitate site access, drain the site stormwater, keep building levels above the 1 in 100 year ARI flood level and perform a cut to fill balance of earthworks for the development.

High level earthworks and volume estimates have been completed and show a general balance to cut and fill activities. The Civil Engineering Report prepared by Costin Roe indicates the following earthwork volume estimates:

- Cut: -242,000m^3
- Fill: +227,500m^3
- Balance: +14,500m^3

As such, approximately 14,500m^3 of fill material will need to be imported to level the site. Fill will be largely from cut and fill, with any imported material being virgin excavated natural material (VENM).

All geotechnical testing and inspections performed during the earthworks operations will be undertaken to Level 1 geotechnical control, in accordance with AS3798-1996.

Retaining walls are shown on drawing Co8753.11-DA51 at **Appendix N**. Retaining walls, based on a flat pad arrangement, are required on the western, southern and northern boundaries to a maximum height of 6.5m.

11 Contamination and Remediation

11.1 ASSESSMENT METHODOLOGY

A Stage 1 desktop contamination assessment was prepared by Ground Technologies, dated May 2015 and provided at **Appendix O**. The Stage 1 Assessment found that filling was observed within the south-eastern corner of the site for the re-alignment of a drainage channel. This Area of Environmental Concern has been denoted as AEC1. Two areas of market gardening were also noted in the desk top study. These Areas of Environmental Concern have been denoted as AEC2 AEC3.

The location of these Areas of Environmental Concern are identified below.

FIGURE 26 – AREAS OF ENVIRONMENTAL CONCERN

Source: Ground Technologies

Chemical investigations of these materials was carried out in order to determine if the site is suitable for industrial and commercial development. Details of the methodology to assess the materials is provided in chapters 5, 6, and 7 for each of the Areas of Environmental Concern in the Stage 2 Contamination Report at **Appendix O**.

11.2 POTENTIAL IMPACT IDENTIFICATION AND ASSESSMENT

Full details of the Stage 1 and Stage 2 Contamination investigations can be found in the State 1 and Stage 2 Contamination Assessment Reports prepared by Ground Technologies, provided at **Appendix O**. The Stage 2 report finds:

> *Laboratory testing of the in-situ fill material (AEC1), revealed levels of heavy metals and TPH were well below the adopted assessment criteria (HILs (D)), and levels of PAH and BTEX were below the practical quantitation limit, and therefore interpreted to not be present on site. Therefore the results of the chemical analyses indicate that the Area of Environmental Concern 1 (AEC1) does not present a risk to human health or the environment in the exposure setting; 'Commercial / Industrial' ('D'). The results also show the material within the chemical threshold limits of "The Excavated Natural Material Order 2014" prepared by the NSW EPA.*

The laboratory results of the areas identified as being used for market gardening, revealed levels of heavy metals and pesticides were well below the adopted assessment criteria (HILs (D)). Therefore the results of the chemical analyses indicate Area of Environmental Concern 2 (AEC2) and Area of Environmental Concern 3 (AEC3) do not present a risk to human health or the environment in the exposure setting; 'Commercial / Industrial' ('D'). The results also show the material within the chemical threshold limits of Guidelines for Assessing Former Orchards and Market Gardens" Department of Environment and Conservation (NSW).

11.3 RECOMMENDATIONS

Given there is no present of material that poses a risk to human health is the Stage 1 and Stage 2 Assessments conclude the subject site is suitable for the proposed development and a Remediation Action Plan (RAP) is not required.

12 Noise and Vibration

12.1 ASSESSMENT METHODOLOGY

Both long term unattended noise monitoring conducted between 13 October and 20 October 2015, and attended noise measurements were conducted on 13 October 2015 to quantify the existing acoustic environment at the site. In addition, an attended measurement to both compliment unattended background noise levels and measure existing noise levels generated by traffic on Kurrajong Road.

This measurement was made using a Norsonic 140 Type 1 Sound Analyser set on A-weighted, fast response mode.

The measurement locations and noise receivers are indicated in the figure below.

FIGURE 27 – ACOUSTIC MEASUREMENT LOCATIONS AND RECIEVERS RELATIVE TO PROPOSED DEVELOPMENT

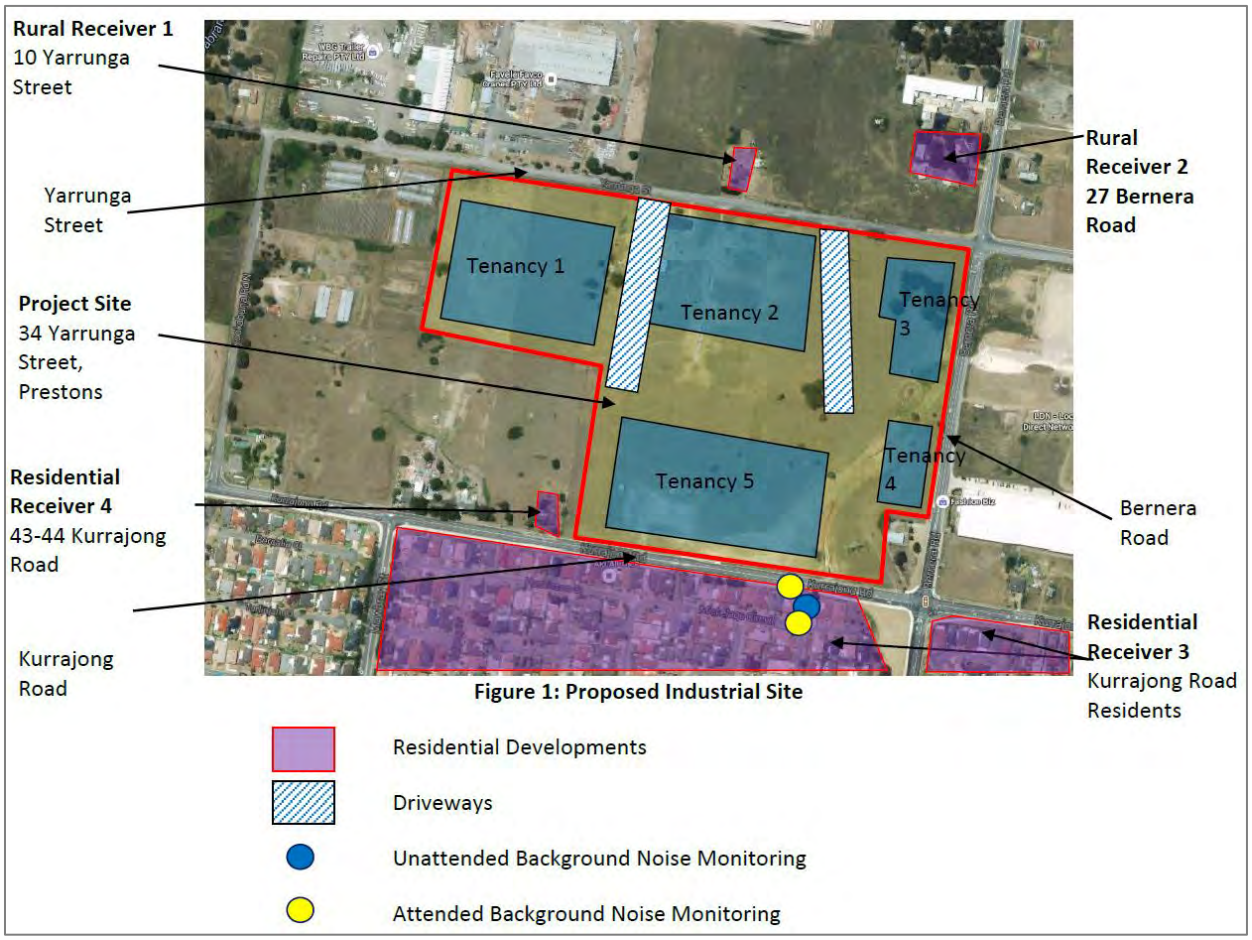


Figure 1: Proposed Industrial Site

Source: Acoustic Logic

The following noise controls and guidelines were used in the acoustic assessment of the site:

- Liverpool City Council DCP
- The EPA Industrial Noise Policy
- The EPA Road Noise Policy
- EPA Guidelines for Sleep Arousal
- The EPA Document – Assessing Vibration
- The EPA Interim Construction Noise Guidelines

12.1.1 NOISE ASSESSMENT CRITERIA

To assess the noise generated by the proposed developments vehicle and mechanical service operation, both the intrusiveness and amenity criteria is assessed.

EPA NSW Industrial Noise Policy – Intrusiveness Assessment

The intrusiveness criteria permits noise generation to be no more than 5dB(A) above existing background noise levels. The following table shows the surveyed background noise and the intrusiveness objective (background + 5dB)

FIGURE 28 – EPA INP INTRUSIVENESS NOISE CRITERIA

Location	Time of Day	Background noise Level - dB(A)L_{90}	Intrusiveness Noise Objective dB(A)$L_{eq(15min)}$ (Background + 5dB)
All Potentially Affected Residential Properties	Day Time (7am - 6pm)	43	48
	Evening (6pm - 10pm)	43	48
	Night (10pm - 7am)	37	42

Source: Acoustic Logic

EPA NSW Industrial Noise Policy – Amenity Criteria

The EPA Industrial Noise Policy states 'to limit continuing increases in noise levels, the maximum ambient noise level within an area from industrial noise sources should not normally exceed the acceptable noise levels specified'.

The table below provides the relevant amenity noise objectives for suburban receiver at day, evening and night times.

FIGURE 29 – EPA INP AMENITY CRITERIA

Receiver Location	Land Type	Time of Day	Amenity Noise Objective dB(A)$L_{eq(Period)}$
All Potentially Affected Residential Properties	Rural Residential	Day Time (7am – 6pm)	50
		Evening (6pm – 10pm)	45
		Night (10pm-7am)	40
Commercial	All	When in use	65
Industrial	All	When in use	70

Source: Acoustic Logic

Metrological Considerations

Acoustic Logic state:

> *Section 5.2 of the Industrial Noise Policy states the following with regard to meteorological conditions that may have an adverse effect on noise levels due to temperature inversions;*
>
> *To assess the level by which noise is increased as a result of inversion effects, it is generally necessary to analyse meteorological data from the area in question. However, before doing any detailed analyses, the potential for temperature inversions to increase noise impact should be determined. Detailed analyses of meteorological data are not required where there is little or no potential for impact, as in the following cases:*

- *Where the development in question does not operate during the night-time hours. As temperature inversions are usually prominent during night-time hours, there is no need to consider their effects for a development that does not operate at night (10 pm to 7 am)*

- *Where, by using the default values, (see Appendix C Table C1 for screening test default values), it can be shown that there would be no significant additional noise impacts during inversion conditions (for example, less than a 3-dB increase). In this situation, no further analysis of inversion effects is required.*

The above states that an increase of less than 3dB due to meteorological conditions is considered not significant, and no further analysis of inversion effects will be required.

Acoustic Logic note in response:

- *Table C1 of Appendix C of the INP states that a noise source 300m from a receiver in a non-arid area may incur a noise increase by up to 3dB.*

- *Therefore it can be deduced that temperature inversion effects must be analysed only if the distance between source and receiver is greater than 300m.*

- *For distances less than 300m between source and receiver, analysis of inversion effects is not significant and so is not required. As the receivers to the proposed industrial site are less than 300m, consideration of meteorological conditions is not required, as per the INP.*

EPA NSW Road Noise Policy

The NSW Road Noise Policy states the noise levels generated by traffic should not exceed the noise levels set out in the table below when measured at a nearby building facade.

FIGURE 30 – CRITERIA FOR TRAFFIC NOISE GENERATED BY NEW DEVELOPMENTS

Road Type	Time of day	Permissible Noise Generation
Sub-Arterial Bernera Road	Day (7am to 10pm)	60 dB(A)$L_{eq(15hr)}$
	Night (10pm to 7am)	55 dB(A)$L_{eq(9hr)}$
Local Road Kurrajong Road	Day (7am to 10pm)	55dB(A)$L_{eq(1hr)}$
	Night (10pm to 7am)	50 dB(A)$L_{eq(1hr)}$
Local Road Yarrunga Street	Day (7am to 10pm)	55dB(A)$L_{eq(1hr)}$
	Night (10pm to 7am)	50 dB(A)$L_{eq(1hr)}$

Source: Acoustic Logic

12.2 POTENTIAL NOISE IMPACT IDENTIFICATION AND ASSESSMENT

The following noise impacts were assessed in association with the construction and operation of the proposed development.

12.2.1 CONSTRUCTION NOISE

Demolition will take place over a 3 month period with approximately 10 truck visitations per day. There will be some 10–20 workers associated with demolition, accounting for up to 40 vehicle movements per day using a new construction access on Yarrunga Road. Earthworks will take place over a 9 month period with an average of 80 movements per day.

Excavation and piling works tend to be the loudest typical construction activity. Work close to the northern and southern boundaries will have greatest potential impact on residential dwellings. Primary noise emissions will occur during excavation/site levelling. Equipment items will typically have sound power levels of approximately 110dB(A)Leq(15min).

Construction may be as close as 25m from the nearest residents along Kurrajong Road. At this point noise emissions are predicted to be between 69-74dB(A) Leq, but will be closer to 58-63dB(A) when working throughout the industrial site. Although this is technically an exceedance of EPA "background+10dB(A)" Noise Affected Level guidelines, noise generated at 53-58dB(A) will still be quieter than the daytime traffic noise level from Kurrajong Road, and as such is considered acceptable in the context of the existing noise environment.

Otherwise, construction noise will be generally below the EPA "Highly Noise Affected" level of 75dB(A). Noise levels at all other residences (to the north along Yarrunga Street and Bernera) will also be generally compliant with EPA guidelines.

A Construction Management Plan (CMP) will detail the hours (7am – 6pm) in which demolition and construction activities occur and also manage what machinery and equipment will be used. The CMP will detail the movement and access points of trucks and can be prepared to minimise the acoustic impact of construction activities to nearby receivers.

12.2.2 OPERATION NOISE

Vehicular Noise Generated Onsite

Noise emissions from the site associated with onsite vehicles indicate 24-hour use of the site can be mitigated guidelines with the provision of 2.4m high acoustic barriers, refer to plans. An assessment vehicle noise impact against the intrusiveness and amenity criteria is provided in the figures below.

FIGURE 31 – VEHICLE NOISE IMPACT - INTRUSIVENESS

Noise Source	Noise Receiver Location	Predicted Noise Level	Criteria	Compliance
Articulated trucks driving to/from site, forklift operating on site	Rural Receiver 1 (Yarrunga Street)	40dB(A) $L_{eq(15min)}$	Night time 42dB(A) $L_{eq(15min)}$	Yes
	Rural Receiver 2 (Bernera Road)	38dB(A) $L_{eq(15min)}$	Night time 42dB(A) $L_{eq(15min)}$	Yes
	Residential Receiver 3 (Kurrajong Street Residential Developments)	35dB(A) $L_{eq(15min)}$	Night time 42dB(A) $L_{eq(15min)}$	Yes
	Rural Receiver 4 (43-44Kurrajong Street)	35dB(A) $L_{eq(15min)}$	Night time 42dB(A) $L_{eq(15min)}$	Yes

Source: Acoustic Logic

FIGURE 32 – VEHICLE NOISE IMPACT – AMENITY

Noise Source	Noise Receiver Location	Predicted Noise Level	Criteria	Compliance
Articulated trucks driving to/from site, forklift operating on site	Rural Receiver 1 (Yarrunga Street)	40dB(A) $L_{eq(Period}$	Night time 40dB(A) $L_{eq(Period)}$	Yes
	Rural Receiver 2 (Bernera Road)	38dB(A) $L_{eq(Period}$	Night time 40dB(A) $L_{eq(Period)}$	Yes
	Residential Receiver 3 (Kurrajong Street Residential Developments)	35dB(A) $L_{eq(Period}$	Night time 40dB(A) $L_{eq(Period)}$	Yes
	Rural Receiver 4 (43-44Kurrajong Street)	35dB(A) $L_{eq(Period}$	Night time 40dB(A) $L_{eq(Period)}$	Yes

Source: Acoustic Logic

Proposed Use Generated Noise on Public Roads

As trucks enter/leave the premises, it is assumed that they will exit along Yarrunga Street towards Bernera Road. From the traffic report provided by Transport and Traffic Planning Associates, it is assumed there will be a 60%-40% split onto Bernera Road. 60% of traffic will go north along Bernera Road, while 40% of traffic will go south along Bernera Road.

Noise emission predictions of noise generation are based on the following:

- A daily traffic generation of articulated/b-double trucks of:
  - Up to 13 truck movements per hour during the night time (10pm-7am), distributed evenly through the two site driveways; and
  - Up to 26 truck movements per hour during the day time (7am-10pm), distributed through the two site driveways.
- Noise emissions are predicted at the building façade of the effected residences on Yarrunga Street and Bernera Road.

FIGURE 33 – PREDICTED NOISE BY ADDITIONAL ROAD TRAFFIC FROM PROPOSED DEVELOPMENT

Time of Day	Receiver Location	Predicted Noise Level – dB(A)L_{eq}	Compliance
Daytime (7am-10pm)	Receiver 1 Fronting Yarrunga Street (Local Road)	52 dB(A)$L_{eq(1hr)}$	Complies with 55dB(A)$L_{eq(1hr)}$ criteria.
Night (10pm-7am)		49 dB(A)$L_{eq(1Hr)}$	Complies with 50dB(A)$L_{eq(1hr)}$ criteria.
Daytime (7am-10pm)	Receiver 2 Fronting Bernera Road (Sub-Arterial Road)	52 dB(A)$L_{eq(Day)}$	Complies with 60dB(A)$L_{eq(15hr)}$ criteria.
Night (10pm-7am)		49 dB(A)$L_{eq(Night)}$	Complies with 55dB(A)$L_{eq(9hr)}$ criteria.
Daytime (7am-10pm)	Receiver 3 Fronting Bernera Road (Sub-Arterial Road)	51 dB(A)$L_{eq(Day)}$	Complies with 60dB(A)$L_{eq(15hr)}$ criteria.
Night (10pm-7am)		48 dB(A)$L_{eq(Night)}$	Complies with 55dB(A)$L_{eq(9hr)}$ criteria.

Source: Acoustic Logic

Sleep disturbance from night time use of the premises

The primary potential noise source will be the use of the pneumatic valve which engages when a truck moves from a stationary position. Based on measurements conducted by this office, the sound power of this noise event is 110dB(A)L1(1min).

The nearest affected residential receiver is the resident along Yarrunga Street, as this receiver is nearest to the driveway of the project site. Compliance at this receiver indicates compliance at all remaining residential receivers.

The level predicted internally within the bedroom if the closest residential receiver is below the recommended 50-55dB(A)L1(1min). On this basis, use of the site during the night time period between 10pm and 7am (to allow for vehicles to enter/leave the site) is capable of being compliant with EPA sleep disturbance guidelines.

Noise from mechanical plant

Acoustic Logic state:

Compliance with noise emission requirements will be achievable with appropriate acoustic measures such as appropriately positioning of external mechanical plant, use of screening if required and re-selection of a quieter unit if necessary. Generally, if the external mechanical plant is not along the

property boundary and does not have line of site to the receiver, then noise emissions should be compliant with the requirements of the INP.

In a typical scenario below, the following assumptions are taken;

- *A rooftop refrigeration condenser unit with a sound power level of 85dB(A), and there are a total of 3 units on the rooftop located together.*
- *The units are located a minimum of 40 metres from a receiver property boundary*
- *The units are located a minimum of 5 metres from the edge of the warehouse rooftop.*
- *The plant will be in operation continuously.*

FIGURE 34 – SAMPLE OF POTENTIAL MECHANICAL PLANT TO RECEIVER

Noise Source / Correction	Noise Level
Refrigeration Condenser Unit	85
Distance Correction (40m)	-40
Barrier (rooftop/building shell breaking line of sight)	-13
% of sound (assuming 3 plant units total)	+4.8
TOTAL	**36.8dB(A)**
Night Time Amenity Goal	40dB(A)L_{eq} Period

Source: Acoustic Logic

The sample calculation above indicates that through appropriate location of plant, noise level can be successfully attenuated through minimal acoustic treatment to meet the night time amenity criteria. Given that this criteria is met, it will be compliant at all other times of the day.

For large external equipment items such as cooling towers, refrigeration plant or similar:

- *If the building shell breaks the line of site between the equipment item and the resident, it is unlikely that acoustic treatment will be required to the equipment item.*
- *However, if the equipment item is located such that there is a line of sight between the resident and the equipment item, it is very likely that a screen will be required to be constructed around the equipment items.*

Once mechanical plans are finalised, a detailed and specific mechanical plant assessment can be undertaken if required at construction certification stage.

12.3 VIBRATION

Vibration goals for the amenity of nearby land users are recommended by the EPAs *Assessing Vibration: A Technical Guideline*.

Excavation, earth retention and civil works are the primary vibration generating activities.

Given the distance between the site and the nearest residential buildings, it is unlikely that construction vibration will exceed EPA guidelines (for amenity) and *highly* unlikely to approach vibration levels with the potential to cause building damage.

12.3.1 CUMULATIVE IMPACTS

It is noted that operational noise emissions associated with the proposed development have been assessed cumulatively against existing baseline noise conditions, and with reference to relevant EPA and

Liverpool Council acoustic guidelines. Acoustic Logic has found the development is capable of complying with relevant noise emission criteria.

In the future, the remaining land within the block of the subject site may be developed for industrial purposes. Such future developments are likely to contribute additional noise emissions. The proposed screening on the site separation between Receivers 1 and 2 and potential future industrial developments will significantly reduce potential cumulative industrial noise increases at these most sensitive noise receivers.

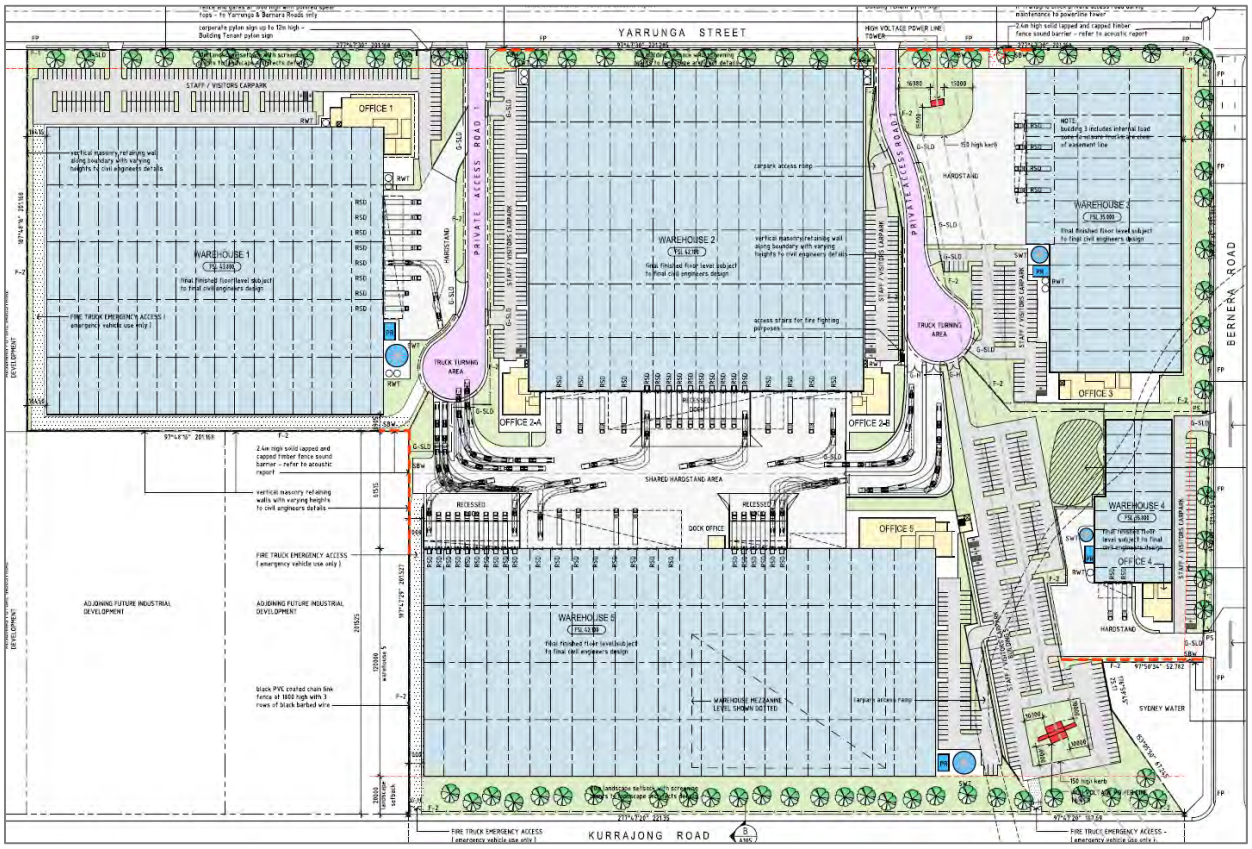
12.4 RECOMMENDATIONS

Acoustic Walls

To reduce noise emission to be in compliance with the EPA Guidelines, the following acoustic treatments will be required to be implemented for the use of the development:

- Construct a 2.4 metre solid fence in the locations identified on the site plan below.
- The fence along the boundary of the project site may be constructed of lapped and capped timber, flexi-glass, 4mm Perspex, Colorbond, 9mm fibrous cement sheet or equivalent, installed with no gaps between the panels.
- Should the rural residential properties to the north of site be redeveloped into industrial uses the acoustic walls shall be decommissioned.

FIGURE 35 – LOCATION OF ACOUSTIC WALLS



Source: Axis Architecture

Mechanical Plant

Given specific acoustic treatments to mechanical plant cannot be given at this stage, as selection and location of plant is yet to be determined. It is recommended to conduct a detailed mechanical assessment at construction stage once location and plant selection is known.

13 Urban Design and Visual

13.1 URBAN DESIGN RATIONALE

The Architectural Design Statement at Appendix D provides the urban design rationale for the proposed development:

The estate design and layout will provide a high quality work environment for warehousing / distribution and administrative uses not dissimilar to nearby facilities of similar size. The location close to the West Link M7 freeway to the north puts the estate within easy reach of main transport links suitable for this type of development. Site planning and landscaping are such that building heights and scale will not adversely impact on the streetscape of the adjoining area with buildings size and colours blending in with the proposed street screen landscaping.

The site has included 10m and 20m wide landscape buffers to soften the visual impact on the streetscape and adjoining properties and provide a more pleasing outlook for the residential areas to the south of the development by screening and blending the buildings within a natural landscape setting.

The project will fulfill a need for a high quality industrial estate that will fit in with the surrounding environment and provide long term benefits.

13.2 DEVELOPMENT LAYOUT

The proposed layout consists of 5 warehouses of varying sizes across the site. The arrangement takes into account street setbacks, easements, archaeological heritage, / overland flow paths, landscaped zones and proposed cut and fills levels.

Warehouses 1 and 2 address Yarrunga Street. While the Liverpool DCP requires a 10m landscape zone at the boundary, the buildings have been setback further to accommodate staff and visitor parking zones, thus lessening the visibility of the buildings to the streetscape. A private access road has been provided between warehouse 1 and 2 to allow for hardstand areas for loading and unloading of trucks and waste collection areas away from the street fronts. This access road also serves as an access to warehouse 5 which has limited access due to site constraints with level differences and no access from Kurrajong Road to the south facing existing residential areas.

Warehouse 3 addresses the corner of Yurrunga Street and Bernera Road. Heavy vehicle and carpark access has been provided with a private access road from Yurrunga Street that utilises the transmission power line easement which negates the need for vehicle access from Bernera Road. The building is setback from Bernera Road including required 10m landscape zones and a 14m wide easement for drainage required by local council along a portion of Bernera Road.

Warehouse 4 addresses the Bernera Road street frontage with access for trucks and cars limited to left in and left out only driveways from Bernera Road. Hardstand and waste collection areas are located behind the single storey office on the south side of the facility and well screened from the street. Street front staff and visitor parking are located between the main building and a 10m required landscape setback along Bernera Road further moving the building back reducing the visual bulk along the street front.

Warehouse 5 addresses Kurrajong Road to the south side of the site. Access to and from Kurrajong Road is prohibited (except for emergency vehicles) and a 20m wide landscape buffer is required along this street frontage. The proposed floor level has Warehouse 5 above the Kurrajong Road street level at its eastern end, but below the street level at its western end because of the fall of Kurrajong Road from west to east. A landscaped embankment along the Kurrajong Road frontage of approximately 1:3 grade will meet the building at its eastern end, but partly conceal the building at its western end. The building facing the residential zones along Kurrajong Road will be well screened with dense planting of native endemic species to create a natural setting of varying height and depth.

Access for heavy vehicles to warehouse 5 is via the private access road from Yarrunga Street between warehouse 1 and 2. Loading hardstand and waste collections areas are screened from street fronts by building 5 and building 2. Carparking for warehouse 5 is contained at the lower level along the

transmission line easement with access from the private access road from Yurrunga Street along the power easement area. Lift and stair entry points have been provided from the carpark for staff for warehouse 5.

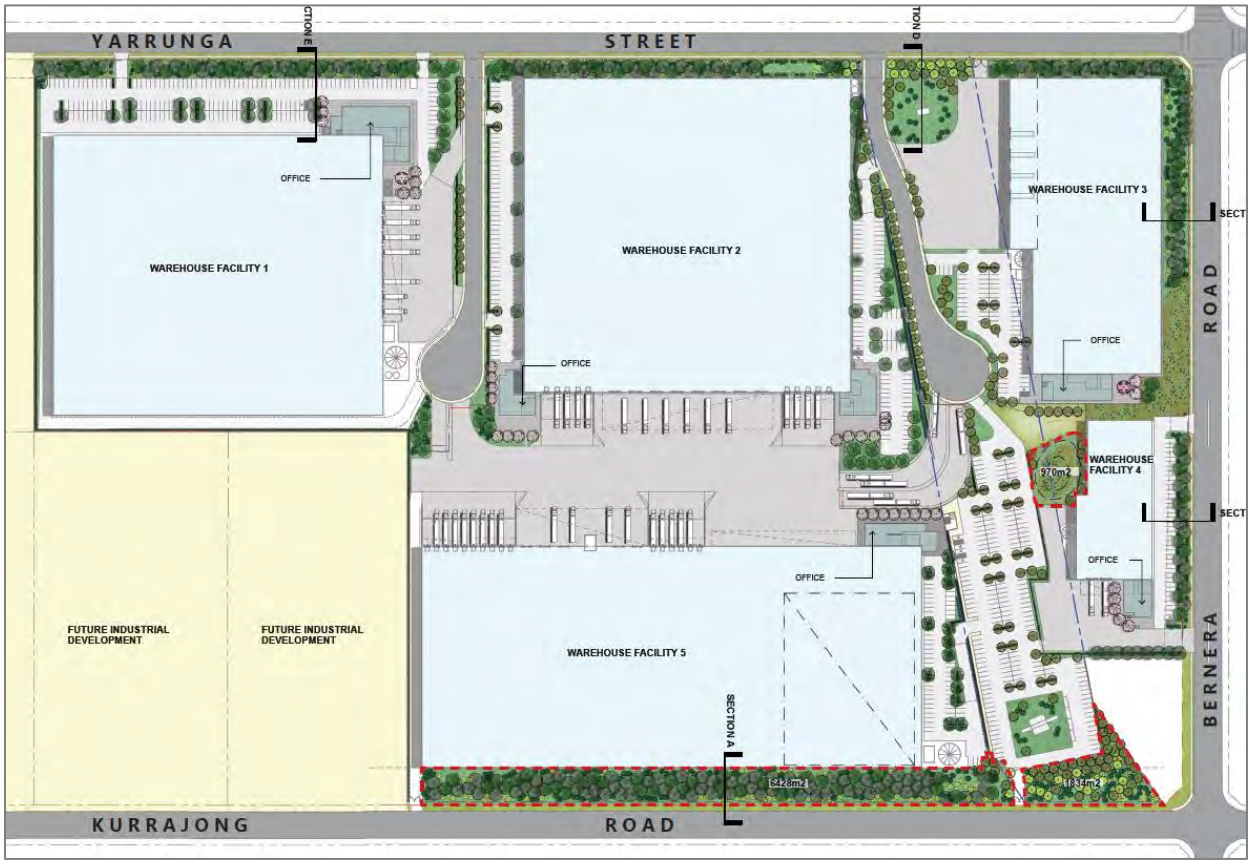
Each building has been provided with staff outdoor open space areas adjacent to each office facility within landscaped garden areas. Street front setbacks have been respected providing landscaped visual buffer zones along Yarrunga Street, Bernera Road and Kurrajong Road. The dense natural landscape proposed, screens the building facades along the streetscape with denser landscape treatment provided along Kurrajong Road screening the south elevation of warehouse 5 from the adjoining residential developments across Kurrajong Road. Refer to landscape architects details for landscaped zones.

Drawing DA-A 109 provided at **Appendix D** details the indicative construction staging. A staged consent is not being sought. Construction may take place over approximately 4 stages.

13.3 LANDSCAPING

The proposed landscaping in the setbacks to the surrounding roads screens the development from nearby residential receptors and road users, with a mix of tall tree and shrub planting. This landscaping will also strengthen the local character with selection of native and endemic species suiting the context. The Landscape Report at **Appendix E** provides additional details on each frontage, fencing and species proposed, and provides an illustration of how the site will present from each of the surrounding roads. The figure below pictures a section and elevation of the site from Bernera Road.

FIGURE 36 – LANDSCAPE PLAN



Source: GroundInk

Trees will be planted at a rate of 1 per 30m2 (5.5m centres) as per Liverpool Council DCP Part 7 for industrial areas.

All tree and shrub planting within the transmission easement will have a maximum mature height of 4m as per the Transgrid Guidelines. Landscaping close to the electrical towers will mostly consist of native groundcovers and grasses to ensure easy access for maintenance teams.

The Prestons Aboriginal Creek Bank Site is proposed to be used for the enjoyment of users of the Estate, with seating and open turf incorporated into the design. Overland flow from the adjacent carpark runs through the site and out to a swale along Bernera Road.

Across the site the landscaping will create a unified natural endemic environment that will help to mitigate the development from visual receptors. A low maintenance and low water use philosophy has been adopted with harvested rainwater available for irrigation within the site should it be required. Within the site shade is provided with tall canopy trees within carparks and deciduous trees for staff outdoor areas. Landscaping is used to break up areas of hardscape wherever possible and provide a visual relief from the built form.

A significant area of the site has been dedicated to revegetate with Cumberland Plain Woodland species. This represents an offset for the removal of existing Cumberland Plain species as part of this proposal. Further details on this offset area are provided in drawing LA01 at **Appendix E**).

An indicative landscape plan has been provided which includes soil mounding with native grasses over the area of the Aboriginal Creek Bank Site.

The design is subject to preparation of an Aboriginal Heritage Management Plan and incorporation of heritage elements. Refer to **Appendix Q** for further details.

13.4 VISUAL IMPACT

Ground Link has prepared a Landscape and Visual Impact Assessment Report (**Appendix F**) to assess the visual impact of the proposed development. The visual impact of the proposal was extensively assessed from the locations shown in Figure 37. Viewpoint 1 and 2 are nearby sensitive receivers from ground level.

- **Viewpoint 1** – This view has been taken from ground level from the shared footpath and cycleway of Kurrajong Road near the intersection with Benera Road.

- **Viewpoint 2** – This view has been taken from ground level from the shared footpath and cycleway of Kurrajong Road opposite the eastern site boundary and delineating fence line.

- **Viewpoint 3** – This is an aerial view from the south west corner of the site looking over the proposed development. Although there are no visual receptors at this height it is nevertheless a useful view to demonstrate the context in which the proposed development is sitting and how the setbacks offer dense screen planting at maturity to Kurrajong Road.

- **Viewpoint 4** – This is an aerial view from the south east corner of the site looking over the proposed development. This image is useful to demonstrate that some existing vegetation does exist on the south side of Kurrajong Road between the residential housing and the proposed development.

- **Viewpoint 5** – This is an aerial view from the North West corner of the site looking over the proposed development. To the top of the image residential dwellings are visible to the south of Kurrajong Road and also ground at higher topography to the west.

- **Viewpoint 6** – This is an aerial view from the North East corner of the site looking over the proposed development. The industrial yard of Favelle Favco Cranes is visible at the bottom of the image and is next to WGB Trailer Repairs which is out of the shot to the right.

FIGURE 37 – VIEWPOINT LOCATION

Source: Ground Ink (full size plan is attached at **Appendix F**)

The following visual impact assessment summarises the findings of the assessment of Viewpoint 1 and 2 Landscape and Visual Impact Assessment Report attached at **Appendix F**. Refer to the separate report for the assessment related to Viewpoint 3-6.

Viewpoint 1

The majority of residential properties along Kurrajong Road are single storey bungalows and have south facing street addresses on Huskisson Street and Michelago Circuit. Rear gardens face the site however a retaining wall, fencing and some landscaping prevent views directly to the development site. Four properties are double storey and would potentially experience views of the development.

The significance of the impact from Viewpoint 1 is as follows:

- The significance of the impact for motorists, cyclists and pedestrians would be moderate/minor.
- Rear facing Single storey dwellings on Huskisson Street and Michelago Circuit would be negligible/none.
- The few residential properties with second storey windows overlooking the development would experience a moderate significance of impact.

FIGURE 38 – VIEWPOINT 1 – EXISTING AND PROPOSED PHOTOMONTAGE

PICTURE 24 – EXISTING

PICTURE 25 – PROPOSED

Source: Ground Ink

Viewpoint 2

The majority of residential properties along Kurrajong Road are single storey bungalows and have south facing street addresses on Huskisson Street and Michelago Circuit. Rear gardens face the site however a retaining wall, fencing and some landscaping prevent views directly to the development site. A small number of properties are double storey and would potentially experience views of the development.

At year 15 of the development, filtered views of Warehouse 5 will be possible with more open views of Warehouse 2 due to the height restriction to vegetation within the transmission easement. The transmission tower would be less visible at ground level due to new planting.

The significance of the impact from Viewpoint 2 is as follows:

- The significance of the impact for motorists, cyclists and pedestrians would be moderate/minor.
- Rear facing Single storey dwellings on Huskisson Street and Michelago Circuit would be negligible/none.
- The few residential properties with second storey windows overlooking the development would experience a major significance of impact. However it should be noted that these receptors are very much in the minority.

FIGURE 39 – VIEWPOINT 2 – EXISTING AND PROPOSED PHOTOMONTAGE

PICTURE 26 – EXISTING

PICTURE 27 – PROPOSED

Source: Ground Ink

13.5 POTENTIAL LAND USE CONFLICTS

The following lists the potential land use conflicts associated with the site's proximity to existing residential uses, in terms of visual impact and urban design, followed by proposed design elements which mitigate the potential conflict:

Views to the proposed development

The proximity of the proposed development to sensitive residential receivers nearby will result in minor visual impacts. The provision of significant setbacks with landscaping and dense canopy tree planting softens the appearance of the proposed warehouse buildings, as shown in the image below.

FIGURE 40 – VIEW TO THE PROPOSED DEVELOPMENT

Source: Axis Architecture

Bulk, scale and design

Given the proximity to residential properties, the bulk and scale of the proposed development may give rise to potential land use conflicts associated with warehouse buildings fronting Kurrajong Road. As above, the provision of significant setbacks with landscaping and dense canopy tree planting softens the bulk and scale of the warehouse buildings, as shown in the image below.

The character / height and scale of the proposed warehouse and office buildings will blend in with the existing adjoining and nearby industrial sites already populating the industrial zoned areas to the north, east and west. Using a combination of similar building materials and elements will further enhance the industrial character of the area. Typical external façade material palette consisting of painted precast cast, painted fibre cement sheet cladding, prefinished aluminum cladding and colorbond steel metal wall claddings will be used in various combinations to provide high standard of building façade to each building. Colours generally will be of neutral tones to warehouse buildings and office facades with additional swatches of highlight colour to office areas for individual identification of each building.

The material and pattern for the main warehouse facades to each facility will be consistent throughout the site to form a unifying appearance and character for the overall estate making it identifiable as a cohesive whole rather than a group of individual large buildings. The high standard of development sought for this site will encourage a higher level of building design to the adjoining vacant industrial sites within the immediate local area.

FIGURE 41 – KURRAJONG ROAD INTERFACE

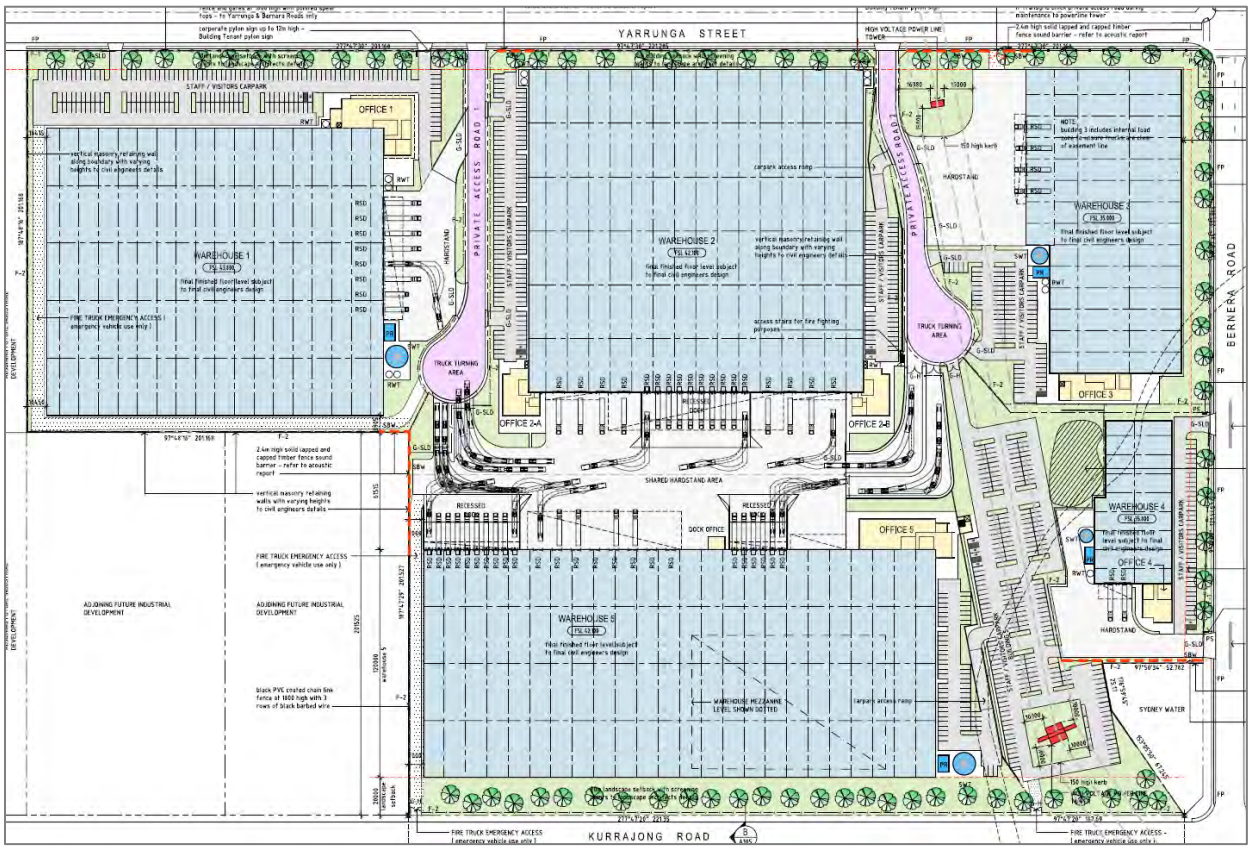
Source: Axis Architecture

Noise

A full assessment of acoustic impacts is attached at **Appendix P** and **Section 12** of this report. The Acoustic Report details the design measures that will mitigations acoustic impacts to surrounding properties, particularly a 2.4m solid acoustic wall at the locations shown in the figure below, and the fences along the boundary of the project site may be constructed of lapped and capped timber, flexi-glass, 4mm Perspex, Colorbond, 9mm fibrous cement sheet or equivalent, installed with no gaps between the panels.

Furthermore, all loading docks are accessed internally and face towards the centre of the site, therefore noise associated with operational vehicular movements will be contained within the site.

FIGURE 42 – ACOUSTIC BARRIERS



Source: Acoustic Logic

Odour

As stated in the Air Quality and Odour Report (**Appendix I**) the Project is not anticipated to cause any significant impacts on air quality during the construction or operational phase. Specific mitigation measures are detailed at **Section 8.3** of this report.

Spatial separation and siting

The siting and orientation of the proposed warehouse buildings and the distance between nearby uses ensures the environmental amenity is maintained for residential properties and allows for adequate separation, respectively. The visual amenity of the surrounding area is not significantly impacted given the provision of significant landscaping throughout the site, as shown in the image below.

Furthermore, the site layout has been arranged with consideration of the local context and in particular with the adjoining residential zoning to the south side of the site along Kurrajong Road. Building layouts incorporate inward loading zones away from street frontages to service the warehouse areas. Private access roads of Yarrunga Street provide access for all vehicles into the internal loading areas. This configuration of loading areas places buildings on the perimeter edges of the site assisting in noise mitigation and light beam spillage during nocturnal operations. Heavy vehicle access is restricted to the Yarrunga Street access points with the smallest facility – warehouse 4 being accessed from Bernera road.

FIGURE 43 – OVERALL SITE PERSPECTIVE

Source: Axis Architecture

13.6 ASSESSMENT AGAINST DEVELOPMENT CONTROL PLAN

The development control plan applying to the site is the Liverpool DCP 2008. The relevant controls in this document have been addressed in **Section 5.4.2** of this report, in summary:

- The proposed landscaping exceeds the 10% required by the DCP.
- The proposed setbacks are consistent with the DCP requirements of a primary landscaped setback of 10m and a secondary landscaped setback of 5m.
- As shown in the perspectives drawings attached at **Appendix D**, the proposal provides a contemporary façade appearance with the use of a mix of quality materials including precast concrete

wall panels and colorbond steel metal claddings. Office areas are a combination of precast concrete panels, fibre cement sheet wall cladding, prefinished aluminium cladding with performance glazing in aluminium framing.

- The siting, orientation and design of the proposed warehouse buildings are generally consistent with the DCP.

The Liverpool LEP also applies to this site. This instrument has been addressed in **Section 5.4.1**.

The Architectural Design Statement at **Appendix D** similarly summarises and addresses the key controls applying to the subject site.

14 Aboriginal and Cultural Heritage

14.1 CONSULTATION AND DETERMINATION OF AFFECTED ABORIGINAL CULTURAL HERITAGE VALUES

In order to determine the Aboriginal cultural significance of the subject site, consultation with the local Aboriginal community was undertaken in accordance with the requirements of the National Parks and Wildlife Regulation 2009(s80C).

A public notice was lodged in the Liverpool Leader, direct and indirect community notices were provided, and relevant agencies including Liverpool City Council, National Native Title Tribunal, and the Greater Sydney Local Land Services were directly contacted.

Details of these parties, dates of correspondence, and comments are provided in **Appendix Q**. Community groups included the Darug Custodian Aboriginal Corp, Badu, and the Darug Tribal Aboriginal Corp.

All Registered Aboriginal Parties were sent project information and the proposed assessment methodology in June 2015 with a response deadline of July 10th, 2015. Specifically, all Registered Aboriginal Parties were requested to provide comment on:

- The proposed assessment methodology
- Any objects or places of cultural value to Aboriginal people which may be located within the area proposed for archaeological test excavations, or be relevant to those excavations.
- The potential management of artefacts retrieved during the proposed Aboriginal archaeological test excavations

In addition, Registered Aboriginal Parties were requested to inform MDCA of any information of a culturally sensitive nature so that appropriate protocols of access and use could be developed.

Registered Aboriginal parties who provided responses to the information mail out, and responses received were as follows:

- Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTCAC)- response was in agreement with the proposed methodology but requested a test pit layout plan, which was subsequently provided. CBNTCAC suggested all excavated material should be wet sieved using the smallest sieve size available (3mm) as opposed to the Code recommended size (5mm). The CBNTCAC also observed that the knoll may have been used for ceremonial purposes rather than a camp site due to its elevated nature and views of the surrounding terrain.
- Darug Custodian Aboriginal Corporation (DCAC)- supported the proposed methodology and stated the subject land is important to the Darug people as it represents continued occupation and is within close proximity to a number of significant sites. DCAC also voiced concern about Aboriginal groups registering from ‘outside of the area’.
- Goobah developments - supported the proposed assessment methodology.
- Phil Khan - Agreed with the proposed methodology.
- Darug Aboriginal Cultural Heritage Assessments (DACHA) - supported the proposed methodology.

The comments received are provided in the Aboriginal Cultural Heritage Assessment Report provided at **Appendix Q**.

These comments from the Registered Aboriginal Parties were used in the formulation of the draft Aboriginal Cultural Heritage Assessment Report which was prepared on completion of the archaeological

test excavations. These draft documents were sent to all Registered Aboriginal Parties for comment. Specifically, all Registered Aboriginal Parties were requested to provide comment on:

- Their views on the draft recommendations including a proposal for the reburial of the excavated artefacts.
- Any other views or information relating to the Aboriginal Cultural Heritage Assessment parties believed should be considered in relation to assessment of the current State Significant Development application.

The comments received are shown in the table below and detailed further in in **Appendix Q**.

TABLE 16 – RESPONSES TO DRAFT ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

HEADER TREGISTERED ABORIGINAL PARTY	RESPONSE
CBNTCAC	The CBNTCAC were pleased with the preservation outcome and supported the draft Recommendations, suggesting a caveat be placed on the land title to ensure that the Prestons Creek Bank site is protected in relation to further future uses of the land. This suggestion is discussed further in Section 7.0 of **Appendix Q**.
GLALC	The GLALC responded in full support of the draft report recommendations.
Council's Aboriginal Committee	The Liverpool City Council Aboriginal Consultative Committee supported the recommendations of the report but suggested that monitoring should be undertaken during development works and any artefacts retrieved should be recorded. They further suggested that a plan should be made for the relocation of any retrieved artefacts – these recommendations are discussed further in Section 7.0 of **Appendix Q**.

The Aboriginal community consultation undertaken did not identify any specific Aboriginal cultural connections or significance with regards to the subject site. Though it is apparent from correspondence that several registered Aboriginal Parties regard the general area as being part of their area of cultural association, and that a general level of significance is ascribed to the area and its potential to contain Aboriginal archaeological remains as an indicator of past Aboriginal presence in the landscape.

The CBNTCAC have specifically noted that the elevated knoll "may have been used more for ceremonial purposes, as to a camp site, where people sat and made stone tools. The 360 degree outlook, with views to the mountains and out towards the Heathcote area certainly make it a place that Aboriginal people would have used for one purpose or another."

Accordingly, one of the aims of the Aboriginal archaeological investigations was to seek to determine the nature of past Aboriginal use of the knoll and surrounding areas within the subject site. These investigations have shown that the knoll was used for stone artefact manufacture in the past, but that very little evidence of this has survived more recent historical uses of the land.

14.2 ASSESSMENT METHODOLOGY

The subject site comprises residual soils in which archaeological deposits are likely to be confined to the uppermost soil horizons. As such, it could be expected that any Aboriginal archaeological remains or archaeological deposit present in the locations proposed for bulk earthworks and construction will be impacted by the proposal. For this reason, the investigation carried out aimed to determine the presence or absence, extent and significance of any Aboriginal archaeological remains across the subject site as the basis for formulating an appropriate management strategy for the proposal.

The following sections detail the various methodologies involved in the assessment. Some

14.2.1 OFFICE OF ENVIRONMENT AND HERITAGE ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM

Office of Environment and Heritage ('OEH') Aboriginal Heritage Information Management System ('the AHIMS Register') and Catalogue of Archaeological Reports were consulted. A search of the AHIMS Register of an area 4km x4km centred on the subject land revealed that 65 Aboriginal sites have been previously recorded in the area. No Aboriginal sites are currently registered within, or immediately adjacent to the subject site. The below figure indicates the location of the nearby Registered Aboriginal sites.

FIGURE 44 – REGISTERED ABORIGINAL SITES IN THE VACINITY OF THE SUBJECT SITE

Source: MDCA

14.2.2 AUSTRALIAN HERITAGE DATABASE

A search of the Australian Heritage Database (incorporating the Register of the National Estate) for Aboriginal heritage items within the Liverpool Local Government Area returned no items listed for their Aboriginal heritage values within the vicinity of the subject land.

14.2.3 NSW STATE HERITAGE INVENTORY

A search of the NSW State Heritage Inventory (incorporating the NSW State Heritage Register) for Aboriginal heritage items within the Liverpool Local Government Area revealed no items within or in close proximity to the subject site on the State Heritage Inventory or Register for their Aboriginal heritage values.

14.2.4 LOCAL ARCHAEOLOGICAL RESEARCH

Many archaeological investigations have been undertaken in the surrounding area. Aboriginal archaeological sites in the surrounding area comprise mainly campsites consisting of surface and/or subsurface deposits of stone artefacts in the vicinity of creek lines. Most of these show some degree of historical disturbance and generally consist of relatively low densities of artefacts. More complex sites with greater densities of artefacts do occur. A summary of relevant past assessments within the vicinity of the subject land are provided in **Appendix Q**.

14.2.5 FIELD INSPECTION

An inspection of the entire subject site took place over two dates, with particular notice of the knoll area of the site. An appraisal of ground disturbance, surface visibility and estimated effective survey coverage was carried out during the site inspection to allow a tabulation of data in a format consistent with the requirements of the DECCW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

See chapter 1.5 for methods (consultation and investigation)

14.3 POTENTIAL IMPACT IDENTIFICATION AND ASSESSMENT

14.3.1 ABORIGINAL OBJECTS WITHIN THE SITE

The field survey did not result in the identification of any surface Aboriginal sites. Specifically, no Aboriginal stone artefacts were located, and none of the few mature trees within the subject site were found to contain scars of potential Aboriginal cultural origin. However, combining the observations during the field inspection with the background archaeological, historical and environmental reviews, two areas of Aboriginal archaeological sensitivity were defined within the subject site as shown in the figure below. Note in this figure the area of historical archaeological sensitivity is shown in white outline.

FIGURE 45 – AREAS OF ABORIGINAL ARCHEOLOGICAL SENSITIVITY (BLUE SHADING)

Source: MDCA

The kinds of archaeological evidence that may be present within these areas of Aboriginal archaeological sensitivity are most likely stone artefacts. Specifically, the following types of archaeological evidence may be anticipated.

- Artefact scatters (open campsites) - surface or subsurface concentrations of stone artefacts, representing past activity by Aboriginal people. This evidence will be restricted to the uppermost horizons of the original soil profile

- Isolated artefacts – may occur without any other evidence for Aboriginal activity or occupation. Isolated finds can occur anywhere in the landscape and may represent the random loss, deliberate discard or abandonment of artefacts, or the remains of dispersed artefact scatters.

14.3.1.1 TEST EXCAVATIONS

Based on the archaeological assessment it was recommended Aboriginal archaeological test excavations be undertaken within the areas of identified Aboriginal archaeological sensitivity. The principal objective of the archaeological test excavations was to determine if Aboriginal cultural remains were located within the defined areas of Aboriginal Archaeological Sensitivity, and to characterise the extent and nature of any archaeological deposits encountered.

Full details of the field procedure and sampling strategy are provided in Chapter 5 of **Appendix Q**.

14.3.2 FINDINGS

In general terms, the areas of Aboriginal archaeological sensitivity were found to retain little or no intact original topsoil horizons, showing clear evidence of disturbance and/or erosion in most pits. This was reflected in the low number of pits containing stone artefacts and low densities of artefacts in most of these pits.

A total of 194 pieces of flaked stone and chips were recovered from 34 out of 137 excavated test pits. The vast majority of these artefacts were found within an approximately 25m x 50m area on the western side of the creek above the dam. This has been defined as the Prestons Creek Bank site.

The Registered Aboriginal Parties consulted did not identify any Aboriginal cultural or historical information relating to the subject land suggesting the subject land retains any specific significance to the local Aboriginal community. The significance of the Prestons Creek Bank site specifically, has also been considered by the Registered Aboriginal Parties in their review of the draft version of this report and while no information about the site has been provided, it is clear from support for the preservation of the site that it has some significance to Aboriginal people as a surviving trace of past Aboriginal use of the area. Due to the assessed significance of the Prestons Creek Bank site, it has been agreed the site will be preserved in an area proposed for passive recreation as part of the development.

14.4 RECOMMENDATIONS

The recommendations made by Mary Dallas Consulting Archaeologists are based on:

- The legal requirements and automatic statutory protection provided to items of Aboriginal heritage under the terms of the National Parks and Wildlife Act of 1974 (as amended),where it is an offence to knowingly or unknowingly harm an Aboriginal object

- The results of the current study which are documented in this report

- The views and concerns of the Registered Aboriginal Parties to the current assessment, as discussed in **Appendix Q**.

It is recommended that:

1. The Prestons Creek Bank site be managed for preservation, through incorporation into a grassed recreational area within the Prestons Industrial Estate.

2. The Prestons Creek Bank site be protected from impacts during construction works through the placement of protective fencing to prevent access to the area.

3. An Aboriginal Heritage Management Plan be prepared for the preservation and conservation of the Prestons Creek Bank site, outlining short, medium and long term management requirements for the preservation of the site and permissible used of the area containing the site, once a final approved development layout is known.

4. Provided that Recommendations 1, 2 and 3 above are undertaken, there are no Aboriginal archaeological constraints to the current proposal and no further archaeological works are considered warranted within the subject land.

5. There are no archaeological grounds to prevent development impacts to Aboriginal archaeological remains within the subject land outside of the area of the Prestons Creek Bank site. Accordingly, permission should be granted to allow impacts to all such areas that are proposed for development impact.

6. An AHIMS site record should be submitted to the AHIMS Registrar for the Prestons Creek Bank site and for the other Aboriginal archaeological remains within the subject land outside of this area.

7. On completion of impacts to the Aboriginal archaeological remains outside of the Prestons Creek Bank site, an Aboriginal Site Impact Form should be submitted to the AHIMS Registrar to reflect these impacts.

8. One copy of this report should be forwarded to all Registered Aboriginal Parties and the AHIMS Registrar.

The Proponent accepts these recommendations and will adopt accordingly.

15 European Heritage

15.1 EXISTING ITEMS OF HERITAGE SIGNIFICANCE

The site contains a heritage item, being the remnants of the former sandstone cottage, “Benera”. The item is identified as of local significance under the *Liverpool Local Environmental Plan 2008* and the NSW State Heritage Inventory. As the Benera Homestead is considered to be the only item of European heritage significance, the investigation was targeted to this location.

Benera was a mid-19th century timber homestead set on the crest of a knoll with views to Sydney Town and the Blue Mountains. The dwelling was effectively ‘U’-shaped, including a central residence with kitchen and nursery wings. It was constructed of pit-sawn ironbark, believed to have been sourced from the property, and was built on wooden stumps and log footings with weatherboard exterior walls, timber interior walls, canvas ceilings and a roof of Manchester iron. A photograph of the cottage from circa 1972 is shown below at **Figure 46**.

The homestead was destroyed by fire in the 1980s.

FIGURE 46 – BENERA HOMESTEAD (CIRCA 1972)

Source: Trove

15.2 ASSESSMENT METHODOLOGY

The historic heritage investigation comprised of desktop research and a site inspection. The site inspection included test excavations, in accordance with Australian historical archaeological best practice guidelines (as endorsed by the NSW Heritage Division), and included the following:

- Excavation of three test trenches and discrete excavation over the collapsed cistern/tank in the north-west corner of the homestead site.

- Test trenches were machine excavated, using a medium-sized excavator with a batter/mud bucket, under direct archaeological supervision.
- Excavation ceased where archaeological remains were exposed or sterile subsoil was encountered. At this point, the trenches were manually cleaned, recorded, mapped and photographed.
- Trenches were between 13 and 15 metres long and 1.3 metres wide, and were located so as to identify any remains associated with the extreme northern and southern wings and central core of the homestead. The cistern/tank trench was excavated to expose it for recording.
- All trenches were backfilled, made safe and the corners marked with wooden stakes upon completion of the testing.
- Recordings of findings comprised the following:
  - Use of a field notebook to create a running record of the testing program.
  - Preparation of annotated site plans that plotted the location of all archaeological features and deposits.
  - Photographs of all excavations.
  - Plotting of the location of all trenches by a licensed surveyor using a robotic total station.

The test excavation locations are indicated in **Figure 47** below.

FIGURE 47 – INDICATIVE LOCATION OF BENERA TEST EXCAVATIONS

Source: MDCA

15.3 INVESTIGATION FINDINGS

The findings of the testing program are summarised as follows:

Tank/Cistern

Machine removal of the brush and underlying mixed fill revealed the rim of the pebble aggregate concrete tank/cistern at a depth of 600mm below ground level. The fabric of the tank is suggestive of an early to mid-20th century period and contained fill which was highly disturbed and likely occurred in the 1980s.

Trench 1

While much of the trench was devoid of features, the southern section of the trench containing a section of linear, sandstone brick footing base, two sandstone blocks and some sandstock brick edging believed to be related to the eastern side of the northern wing of the house.

Trench 2

A burnt out stump was observed midway along the trench, likely relating to the homestead footing arrangements.

The trench also contained concrete, stone, dry-pressed brick rubble, two sections of ferris pipe, modern plastic fragments and a white plastic PVC pipe. These items are likely relatively recent and probably related to post-fire clean up and site levelling.

Trench 3

The trench contained stone and concrete demolition rubble, likely relating to a free standing structure, and a concrete sump/pit in association with what may be the remains of a stone wall footing and the drainage system of the building.

Aboriginal Test Excavations

The test excavations carried out during the Aboriginal and Cultural Heritage Assessment (detailed above in previous section**)** overlapped with a portion of the area of the historical archaeological investigation. Where they overlapped, test pits were monitored in case any items of significance were encountered. While isolated fragments of brick, ceramic, glass and metal were found, the fragments were generally small and indicative of background scatter rather than a feature-related concentration.

15.4 SUMMARY STATEMENT OF SIGNIFICANCE

The investigation concluded that the site of the former Benera Homestead retains some cultural heritage significance as an item of potential archaeological value. However, this significance is limited by the scarcity and short-lived nature of the in-ground relics that relate to it. While archaeological investigation could capture the remnants of the place and create a record of the remains, it is acknowledged that excavation can only contribute to the greater public understanding of the history and heritage of the site in a limited way.

15.5 RECOMMENDATIONS

The following recommendations are made in the report, acknowledging the results of the test excavation, the history and heritage of the study area, NSW Heritage Council guidelines, local planning controls and the nature of the proposed development of the site:

- Historical archaeological testing has demonstrated that limited in-ground remains of Benera Homestead exist within Lot 34 of DP 2359. While these remains are not evident at a level that would require conservation, a program of historical archaeological salvage excavation should be undertaken to capture archaeological information about the site. This should be undertaken prior to the levelling of the top of the knoll located in the south-eastern quadrant of the lot.

- Salvage excavation should be a condition of approval for the development of the site.

- Excavation should be in accordance with any additional approval conditions and the excavation methodology presented in the original s140 supporting document.

- The salvage excavations will take place within an area that retains no intact Aboriginal archaeological deposit, however it is possible that isolated stone artefacts may be incorporated into the historical archaeological deposit that is to be excavated. The Aboriginal Cultural Heritage Assessment Report for the current proposal (MDCA 2015c) has identified dispersed and largely disturbed Aboriginal stone artefacts across the development area, with the sole exception of a relatively intact concentration of artefacts known as the Prestons Creek Bank site located 300m to the south-east of the Benera Homestead site along a tributary of Maxwells Creek. The Prestons Creek Bank site has been recommended for preservation within a grassed recreational area within the proposed Prestons Industrial Estate, however all other areas of the property, including within and around the Benera Homestead site, have been recommended for development impact without further archaeological investigation. The recommended historical archaeological salvage excavations will therefore take place once approval of these Aboriginal heritage managements recommendations has been given as a condition of approval.

- Results of the excavation program should be detailed in an archaeological report prepared within a reasonable timeframe after the conclusion of the site works.

- A Heritage Interpretation Plan (HIP) should be prepared prior to development with its recommendations instigated during the construction process. The HIP should present a strategy for the effective interpretation of the site's history to the public and future users of the industrial estate.

- Consideration should be given to remember the history of the site in the naming of the industrial estate and/or its elements (such as access driveways).

The proponent acknowledges the recommendations and would accept conditions of consent that reflect these recommendations.

16 Geotechnical

16.1 GEOTECHNICAL INVESTIGATION

Ground Technologies have indicated the subject site is likely to be underlain by Bringelly Shale of the Wianamatta Group dating back to the Middle Triassic period and generally comprises shale, carbonaceous claystone, laminate and rare coal/tuff.

The geotechnical investigation involved six deep boreholes (TS1,TS13-17) and eleven shallow boreholes (TS2-TS12). The locations of these boreholes is indicated in the figure below.

FIGURE 48 – LOCATION OF TEST BOREHOLES

Source: Ground Technologies

Eight (8) distinct geological units were encountered during the field investigation. Details of these units is provided in **Appendix M**.

Two (2) soil samples were recovered during the course of the field investigation. A summary of the California Bearing Ratio and Shrink/Swell Index of the underlying soil profile are summarised in the table below. The full report is appended to **Appendix M.**

FIGURE 49 – SUMMARY OF SOIL TEST RESULTS

Laboratory	Borehole	Depth	CBR	Shrink / Swell
L1	TS1	0.2-0.6m	4.5%	-
L2	TS4	0.3-0.7m	-	3.3

Source: Ground Technologies

16.2 EARTHWORKS

The report at **Appendix M** includes general specifications for earthworks for the purpose of geotechnical testing and is written in general accordance with AS3798 – 2007 'Guidelines on Earthworks for Commercial and Residential Development'. Fill placed in accordance with these specifications can be denoted as "Controlled" fill.

Specifications are provided for:

- Site stripping
- Subgrade inspections
- Imported fill material
- Fill placement
- Fill inspection and testing

Preliminary geotechnical design recommendations are also set out by Ground technologies in relation to site classification, footings, floor slabs/pavements, batter slopes, site excavations, and retaining wall design parameters.

It is also worth noting:

- No retaining walls or filling is being included in the proposal that will impede, divert or concentrate stormwater runoff passing through the site;
- Earthworks and retaining walls will comply with the requirements of Liverpool DCP 2008;
- No additional fill material is expected to be brought onto site. In the event it is bought to site it will be confirmed as Virgin Excavated Natural Material (VENM).

17 Bushfire

In its advice to the DoPE dated 10 September 2015, the RFS stated the following:

> *"The assessment of the proposal undertaken by the New South Wales Rural Fire Service (NSW RFS) has demonstrated that subject site is not mapped as bush fire prone land on the Liverpool City Council's Bush Fire Prone Land Map. Due to this the NSW RFS raises no concerns or objections in relation to bush fire protection matters in relation to the proposed warehouse and distribution centre."*

As such, satisfaction of the above stated SEARs relating to bushfire hazard are not considered necessary, as the site is not mapped as bushfire prone and the RFS has no concerns or objections to the proposal in relation to bushfire protection matters.

18 Demolition Management

Demolition on the site is limited to only a single house and associated small out buildings and sheds, therefore no major demolition is proposed.

Treatment of the demolition material and waste will be as per the Waste strategy attached at **Appendix T**.

19 Waste

19.1 DEMOLITION AND CONSTRUCTION WASTE

19.1.1 WASTE MANAGEMENT STRATEGY

The CDWMP details the waste management principles which will be used as guiding principles for waste management on the site. Specifically the following waste hierarchy (from most preferable to least)

- Avoid
- Reduce
- Reuse
- Recycle
- Recover
- Treat
- Dispose

The following waste sources are relevant to the project:

- Excavation material
- Green waste
- Brick, tiles, concrete
- Plaster board
- Metals
- Paper and cardboard
- Liquid waste

All waste and recycling materials will be stored in bins provided by the appointed contractor(s) on the subject site. These bins will be appropriately coloured and signed to indicate what materials are to be deposited into them and located so as to maximise the recovery of reusable/recyclable materials.

There will be no treatment of wastes or recyclables on-site except for possible removal of contaminants prior to forwarding to off-site recyclers.

19.1.2 DEMOLITION MATERIALS

Table 1 of the CDWMP details the different waste streams expected in the demolition phase. The relevant disposal/recycling facilities have not been detailed as the waste contractor and sub-contractors have not yet been appointed for the project.

For each type of material, estimated volume, onsite use, off site contractor or disposal destination is provided.

Types of materials expected are timber, plasterboard, metals, tiles, concrete, green waste, and excavation material.

19.2 CONSTRUCTION MATERIALS

The quantity of waste materials to be generated onsite are estimates and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

Table 2 of the DCWMP details the estimated composition of construction waste to be generated for the total site.

Finalisation of the system(s) that will be implemented for the recovery of materials and for disposal of others to landfill will occur following appointment of contractor(s).

A component of the appointment will be that contractors will be required to provide data as to the disposal pathway (eg. materials, volumes and final disposal site), as well as a validation process for this information.

The appointed contractor(s) will also be responsible for sourcing speciality recycling facilities for the materials that cannot be reused on site. The waste management systems proposed are as per the City of Liverpool requirements.

19.3 CONTRACTOR, PURCHASING, TRAINING AND EDUCATION

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

Responsibilities of the Head Contractor and Site Manager are detailed in the DCWMP.

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.

20 Economic Impacts

20.1 FUTURE LAND USE

The intended development of the site comprises:

- Construction of five warehouses with ancillary office space,
- Early works, earth works and piling,
- Construction of hard stand areas, car parking areas and civil works,
- Site landscaping,
- 715 onsite car parking spaces, and
- Two access roads from Yarrunga Street in the north, one fire truck emergency access road from Kurrajong Road in the south and three emergency access points.

The intended use is for warehousing and distribution activities with ancillary office use. This use is consistent with the permissible uses and objectives under the zoning of the subject land, and therefore is consistent with Liverpool Council's vision for the site.

20.2 SUPPLY AND DEMAND FOR INDUSTRIAL

Colliers International have prepared advice on the demand for purpose built industrial warehouse accommodate in the area. This advice is provided at **Appendix U**. Colliers has confirmed there is significant leasing demand from industrial occupiers wanting to secure purpose built warehouse accommodation in South West Sydney. Colliers have advised:

> *The demand is being mainly driven by warehouse and logistics companies, transport operators, ecommerce, retail and manufacturing companies.*
>
> *Given the improved confidence within the economy in NSW most of the demand is coming from warehouse expansion, consolidation in some cases and a significant push from the South Sydney market. In the South Sydney market alone they have lost 1.6 million of industrial zoned land to mixed use development and the West Connex. This means that approximately 320 occupiers need to relocate in the medium term. We have already seen a sharp increase in enquiry coming from this market, however, we expect this to significantly increase into the future.*

Additionally, the potential rezoning of industrial land to residential in the South West (Kingsgrove, Riverwood, Moorebank) will also play a role in increasing industrial demand in the future. Specific advantages of the site include strong access to M7, and the proposed large size warehouses which are key requirements for modern industrial occupiers.

Below is a list of industrial occupiers seeking to relocate to the Prestons area, as per advice from Colliers:

- *Volvo – 8,000m²*
- *Mainfreight – 40,000m²*
- *DHL – 15,000m²*
- *McPhee Distribution – 20,000m²*
- *Toyota – 40,000m²*

21 Greenhouse Gas and Energy Efficiency

21.1 ASSESSMENT METHODOLOGY

21.1.1 ENERGY EFFICIENCY

Assumptions for the range of electricity consumption relevant to the proposed development include (according to the 'Australian Institute of Refrigeration, Air-conditioning and Heating handbook and AUS/NZ Standard AS/NZS 3000:2007 (Electrical Installations)):

- 2500 operating hours per year
- All heating and hot water is provided via electricity
- Warehouse areas are not air conditioned but employ mechanical ventilation
- To convert VA to W a Power Factor = 0.85 has been used
- Office usage - 125 – 261 kWh/m2 per year.
- Warehouse usage - 5 - 15 VA/m2 (Light & Power) and 5 VA/m2 (ventilation)

Annual energy consumption for all warehouses is taken to be as follows:

FIGURE 50 – ANNUAL ENERGY CONSUMPTION BASED ON AIRAH DATA FOR ALL WAREHOUSES

	Area (m²)	Energy Consumption (MWh/yr)	
		Lower	Upper
Warehouse Area	104,570	2,222	4,444
Warehouse Mezzanine Level	8,000	170	340
Dock Office	60	8	16
Office Area	21,480	2,685	5,606

Source: Pacific Environment

21.1.2 GREENHOUSE GAS

The *National Greenhouse and Energy Reporting Act 2007* (Cth) (the NGER Act) establishes a mandatory obligation on corporations which exceed defined thresholds to report GHG emissions, energy consumption, energy production and other related information.

Corporate and facility reporting thresholds for GHG emissions and energy consumption or energy production are provided in the table below. Emissions are measured in terms of tonnes of CO_2-e. Emissions are normalised to their equivalent Global Warming Potential (GWP) of CO_2.

FIGURE 51 – NGER REPORTING THRESHOLDS

Corporate Threshold		Facility Threshold	
GHG Emissions (Scope 1&2) ($t CO_2$-e)	Energy Usage (TJ)	GHG Emissions (Scope 1&2) ($t CO_2$-e)	Energy Usage (TJ)
50,000	200	25,000	100

Source: Pacific Environment

21.2 POTENTIAL IMPACT IDENTIFICATION AND ASSESSMENT

21.2.1 ENERGY EFFICIENCY

The major contributors to energy use on site during operation will be:

- Mechanical ventilation of warehouse and storage areas.
- Air conditioning of office areas.
- Internal and external lighting.
- Office and warehouse equipment.

21.2.2 GREENHOUSE GAS

Potential greenhouse gas impacts from the proposed development are broken into the following categories:

- Scope 1 – Direct emissions from sources owned or controlled by the reporting entity:
  - Contractor-owned vehicles used during the construction of the Project
  - Tenant-owned vehicles used during the operation of the Project.
  - Operator-owned vehicles used during the operation of the Project
  - Carbon sequestered within cleared vegetation.
  - Project facilities (not including electricity).
  - Back-up power generators (if relevant).
- Scope 2 - Indirect Emissions from the generation of purchased energy by the Project. Scope 2 emissions for the proposed warehouses have been calculated in the table below:

FIGURE 52 – ANNUAL GREENHOUSE GAS EMISSIONS FOR ALL WAREHOUSES

	Area (m²)	GHG Emissions (tCO_2e)	
		Lower	Upper
Warehouse Area	104,570	1,867	3,733
Warehouse Mezzanine Level	8,000	143	286
Dock Office	60	6	13
Office Area	21,480	2,255	4,709

Source: Pacific Environment

- Scope 3 – Other indirect emissions - those that are a consequence of the activities of the entity, but which arise from sources not owned or controlled by the entity. For the proposed development, other indirect greenhouse gas emissions primarily result from:
  - Privately owned vehicles travelling to and from the Project site during the construction and operational phase.
  - Tenants' employee business travel.
  - Taxis to and from the Project.
  - Public transport serving the Project.
  - Off-site waste disposal.

21.3 RECOMMENDATIONS

21.3.1 ENERGY EFFICIENCY

A full list of recommended energy efficiency mitigation measures is provided at Table 2-2 of the Energy Efficiency and Greenhouse Gas Assessment report provided at Appendix V. Recommendations include using natural ventilation in warehouse and mezzanine storage level to reduce the need for mechanical ventilation, investigating the viability of solar water heating with gas boost, use of solar panels as energy sources, and using LED lighting strategies that abides by the illuminance recommendations for particular tasks (detailed in Table 2-3 of **Appendix V**).

All recommendations considered viable will recommended for adoption by future operators.

21.3.2 GREENHOUSE GAS

A full list of recommended greenhouse gas mitigation measures for Scope 1, 2, and 3 emissions is provided at Table 2-6 of the Energy Efficiency and Greenhouse Gas Assessment report provided at **Appendix V**. Recommendations include:

- **Scope 1** – Installation of tenant energy sub-metering systems, educate contractors in techniques to conserve fuel during the construction phase e.g. implement a no-idling policy
- **Scope 2** – Design energy efficient buildings to meet national / international benchmarking schemes (e.g. 5-star National Australian Built Environment Rating System (NABERS) and Green Star ratings).
- **Scope 3** – Consider the use of high capacity public transport to and from the site, and support the use of the low emission vehicles to and from the site

All recommendations considered viable will recommended for adoption by future operators.

22 Ecologically Sustainable Development

22.1 RECOMMENDATIONS

Ecologically Sustainable Development Report addresses the key issue of Ecologically Sustainable Development as required by the SEARs and under Section 78A(8A) of the *Environmental Planning and Assessment Act* and Schedule 2 of the Environmental Planning and Assessment Regulation 2000. The report provides an assessment of how the development will incorporate ecological sustainable development principles in all phases of the development.

Table 2-1 of the Ecologically Sustainable Development Report sets out recommended sustainable design strategies. A summary of the strategies is provided below.

- **Transport:** Reduce reliance on private vehicles and relieve any traffic pressures on nearby roads and local communities by investigating secure bicycle parking facilities, extension of existing bus routes/ provision of a regular bus service, reward drivers for using fuel efficient vehicles by providing space for small cars and motorbikes., and promote car-pooling/car-sharing initiatives.

- **Materials:** Use insulation and refrigerants with zero ozone depleting potential, and promote the use of regional or local manufacturers.

- **Water:** Develop a stormwater management plan that incorporates water sensitive urban design, implement rainwater harvesting techniques, and adopt a landscaping plan that promotes the use of plants that are drought resistant and have low water requirements.

- **Management:** Adopt an independent consultant to provide tuning and maintenance for fire, mechanical, electric and hydraulic services to ensure all aspects are running to their design specification as efficient as possible.

- **Indoor environment quality:** Consider a design to optimise occupant satisfaction in accessibility, usability, air quality and public space utility by adopting a high level of indoor environmental quality.

- **Noise:** Consider a warehouse wall and roofing design that limits internal noise transmission to nearby neighbourhood residences

- **Energy efficiency:** Adopt the use of energy efficient appliances and equipment used within the office and warehouse space, and investigate viability of alternative energy sources to reduce bought electricity

- **Waste:** Ensure bulk earthworks on-site balance cut and fill where possible, develop and implements a Waste Management Plan.

- **Land use and ecology impact:** Use indigenous planting appropriate to the area, design external lighting to avoid releasing light into the night sky or beyond the site boundary, and employ specialist advice to develop an independent ecological report to identify any protected local flora and fauna.

Some of the listed strategies have already been adopted, including the engagement of a specialist to prepare an ecological report to identify any protected flora and fauna, and the adoption of water sensitive urban design. Where the strategy has not already been adopted, it will be adopted where appropriate.

23 Infrastructure Requirements and Contributions

A review of the various municipal services and the need for extensions or upgrades to and within the site to suit the Project has been carried out. These are discussed in the following sections.

It is also noted the subject site is subject to the passage of a Transgrid Easement running north to south generally on the western side of the site.

23.1 POTABLE WATER

Land Partners, a Sydney Water Servicing Coordinator, has been appointed for the project. Land Partners have undertaken a review of likely extension and upgrade works required for and sought feasibility advice from Sydney Water (Case Number: 142400, 14 January 2015). A formal Notification of Requirements will be sought from Sydney Water following issuance of a final Consent.

To date the following has been determined:

The site is well-serviced by substantial Sydney Water potable and recycled water assets. These assets have all been sized to provide adequate pressure and flows for industrial development that will occur in the Prestons Industrial precinct. Water demand has been estimated at 290 kL/day and the reticulation mains that are constructed will adequately provide for that demand.

- Within Bernera Road, the site has frontage to:
  - (a) a 750mm SCL Trunk main (not available for connection).
  - (b) a 150mm CICL reticulation main.
  - (c) a 250mm SCL Trunk main (partly constructed adjacent to Yato Place intersection).
  - (d) a 375mm DICL Trunk main (not available for connection).
  - (e) a 250mm Recycled Water main.
- Within Yarrunga Street, the site has frontage to:
  - 100 CICL reticulation main – that is not correctly sized for industrial development and will eventually be a redundant main. Not available for connection.
  - At the intersection of Bernera Road on a previous development process for Aldi, a 250mm SCL/DICL main has been extended into Yarrunga Street from Bernera Road. This main will need to be extended along Yarrunga Street for the full frontage of the site and will be the main which will service the site.
- Within Kurrajong Road, the site has frontage to:
  - 250mm CICL reticulation main.
  - A 450mm recycled water main (not available for connection).
- Sydney Water will require development of the subject site to extend the 250mm lead in water main at the intersection of Yarrunga Street and Bernera Road for the full frontage of the site. This water main will be the main which will be available for connection for development of the site.

23.2 RECYCLED WATER

The Prestons Industrial Area is one of the only precincts left within Sydney Water's area of operations that requires recycled water mains to be provided. No recycled water is yet available to supply recycled water

in the area. Recycled water product will be available in the next few years when further upstream connecting mains are constructed. However, a recycled water main has also been extended into Yarrunga Street from Bernera Road and this main will likely be required to extend along Yarrunga Street to facilitate connection.

In any event the proposal includes significant rainwater harvesting in the form of in ground catchment. This water can be reused on site for toilet flushing, landscape irrigation and where possible for fire tanks. As such, the recycled water extension to the site will not be required due to the range of water reuse initiatives already built into the site.

23.3 WASTE WATER

The topography of the site is such that 80% of the site falls from west to east. In 2010 an extension of Yarrunga Street waste water carrier Sec. 2 was extended and is available for connection on the north-east corner of the site. The catchment analysis and flow schedules which were developed for that carrier extension correctly sized the downstream pipes. Therefore, adequate capacity exists within that waste water system to handle flows from this development which have been estimated as 260 kL/day.

The reticulation system for the adjacent development provides a lead-out waste water main into Lot A DP 416 483. Development of the subject site will require obtaining a Notice of Entry from the property-owner of Lot A to facilitate extension into the subject site.

23.4 ELECTRICITY

JDG Electrical Consulting (JDG) were engaged to review the existing electrical supply and the need for expanded supply. In doing so JDG contacted Endeavour Energy who created reference number ENL2456 for the Project.

1. Existing Zone Substation and Capacity.

The area surrounding the Prestons site is supplied by West Liverpool Zone Substation.

West Liverpool Zone Substation is located at the corner of Jedda Road and Joadja Road, approx. 1km (feeder route) from the cnr of Bernera Rd and Yarrunga Street. This Substation predominantly supplies the local area.

West Liverpool Zone Substation has a rated capacity of 70MVA. The Summer Peak Load during 2014 was 31.5MVA and a winter peak load of 27.4MVA. Endeavour Energy forecasts West Liverpool Zone Substation will have in 2018, a summer peak load of 37.5MVA and a winter peak of 33.2MVA. Therefore West Liverpool Zone Substation currently has a large amount of spare capacity for the foreseeable future.

Endeavour Energy GIS shows spare conduits for the entire length of the route for new 11kV feeders. While existing conduits do exist, excavation works will be required at open points as well as for cable installation and cable jointing.

2. Existing Endeavour Energy Infrastructure in the local area

Yarrunga Street

Endeavour assets at the site are minor in nature and are located on the northern side of Yarrunga Street (ie on the opposite side of the road to the subject site). Overhead 11kV runs the entire length of the proposed site, some LV overhead towards the west and very minor street lighting. The 11kV in Yarrunga Street does not have the capacity to provide supply for this development, however it may be used as an interconnection point as well as possible temporary builders supplies.

These assets will remain in place and be dealt with (ie. undergrounding) as part of development on the northern side of Yarrunga Street.

Kurrajong Road

Kurrajong Road has an 11kV overhead feeder running on the Northern Side of the road along the entire frontage of the development, this overhead line does not have Street Lighting or Low Voltage.

Street Lighting is provided on the southern side of Kurrajong Ave.

The 11kV overhead line and the street lighting would remain in place an unchanged as part of this development as no major access is permitted or proposed to Kurrajong Road.

Bernera Road

Existing 2 x 50mm Conduits and 6 x 125mm conduits run the entire length of the development along Bernera Road. Of the 6 x 125mm conduits, two are used with 11kV Cables installed, leaving 4 spare.

33kV Overhead and underground assets are located on the Eastern Side of Bernera Road, these assets should not impact on the development site.

23.5 COMMUNICATIONS

Contact has been made with Telstra about the extension of services. Existing service are available in Benerna Road and Yarrunga Street. Communications services will therefore be extended to suit each warehouse as required and agreed with Telstra or other communications provider.

23.6 GAS

Contact has been made with Jemena, who have indicated that there is no suitable infrastructure in the locality. Jemena does not normally extend its infrastructure to a location unless there is a specific user demand. In the event that a specific user has demand for a gas supply in the future contact will be made with Jemena to determine if there is any possibility for an extension for that particular user.

23.7 STORMWATER

Refer to the Costin Roe Report for proposed stormwater and water details, **Appendix N**, and **Section 10** of this report.

23.8 TRANSGRID EASEMENT

Refer report by UAE on Transgrid Easement impact, **Appendix Y**

23.9 S.94 CONTRIBUTIONS

Contact has been made with Liverpool City Council to identify applicable S.94 Contributions for the site under the Liverpool Contribution Plan, 2009 as escalated.

Published Contribution Rates for the June 2015 Quarter show the required contribution rates in respect of the subject site as follows:

FIGURE 53 – RELEVANT REQUIRED CONTRIBUTION RATES FOR THE SUBJECT SITE UNDER THE LIVERPOOL CONTRIBUTIONS PLAN 2009

Liverpool city council

Liverpool Contributions Plan 2009

Prestons Industrial – Buildings (Where contribution for subdivision has not been paid)

Purpose	Per Sqm
Transport	
District - Land	$1.45
District - Works	$3.62
Local (select sub catchment)	
East of M7 - Works	$1.08
West of M7 - Land	$0.86
West of M7 - Works	$0.82
West of M7 & Road A2 East of Bernera Road - Land	$5.34
West of M7 & Road A2 East of Bernera Road - Works	$3.31
West of M7 & Road B East of Bernera Road - Land	$8.46
West of M7 & Road B East of Bernera Road - Works	$5.06
West of M7 & Road C West of Kookaburra Road - Land	$34.33
West of M7 & Road C West of Kookaburra Road - Works	$22.21
West of M7 & Road D East of Kookaburra Road - Land	$33.42
West of M7 & Road D East of Kookaburra Road - Works	$17.75
Drainage	
District - Land	$7.57
District - Works	$1.99
Local (select sub catchment)	
East of M7 - Land	$1.57
East of M7 - Works	$7.14
West of M7 - Land	$1.94
West of M7 - Works	$7.12
North of M7 - Land	$9.12
Other	
Landscape - Buffer Land	$0.91
Landscape - Buffer Works	$0.09
Administration	$0.30
Professional and Legal Fees	$0.63

Contributions payable per sqm are based on site area.

A total contribution of $26.30 per sqm is therefore required under the Liverpool Contributions Plan, 2009 on the site area at 20.3 Hectares. However we note a large portion of the site is subject to a Transgrid Easement and therefore has no ability to deliver development space. Accordingly the corridor does not generate a demand for public services and facilities. We therefore see that the site area which should be subject to S.94 contributions should be limited to the actual development area of the site, namely, 17.76 Hectares, allowing for the removal of the Easement area of 25,325m2.

This therefore equates to a total required contribution $4.67 million.

A Letter of Offer accompanies this EIS at **Appendix Z** outlines the works included in the SSD proposal as identified within the Liverpool Contributions Plan 2009 (works-in-kind). The works-in-kind include the following, to be subject to an agreeable VPA:

TABLE 17 – WORKS-IN-KIND

ITEM	WORKS	SCOPE OF WORKS	ESTIMATED VALUE OF WORKS
(a)	Construction of Drainage Culverts F9 – F8 and F7 (per Liverpool Contributions Plan, 2009 Infrastructure Map No. 9 and 13.	Construction of underground culvert drainage system, per Costin Roe engineering plans submitted with SSD 7155.	The value of works to be confirmed by an independent QS, but initial pricing for these works as advised by our Contractor is **$3,491,899**.
(b)	Minor additional works to the Bernera Road, Yarrunga Street intersection (per Liverpool Contributions Plan, 2009 Infrastructure Map No. 9 and 13.	Roadworks to improve swept paths for large industrial vehicles per Costin Roe engineering plans submitted with SSD 7155.	The value of works to be confirmed by an independent QS, but pricing for these works as advised by our Contractor is **$250,000**.
(c)	Half road reconstruction including street lighting along the frontage of the site on Yarrunga Street.	Half road reconstruction to Council specification including kerb and gutter, footpath and street lighting per Costin Roe engineering plans submitted with SSD 7155.	The value of works to be confirmed by an independent QS, but pricing for these works as advised by our Contractor is **$1,130,779**
Total			**$4,872,678** – to be confirmed by independent QS in final VPA.

Source: Logos Property (see attached Letter of Offer)

24 Consultation

24.1 CONSULTATION CONDUCTED

During design development and the preparation of the EIS, consultation was carried out with the local Prestons community, including nearby business owners and residents, and the above listed agencies.

The community consultation was carried out by Urbis, the details of which are provided in **Section 24.2** below, while the agency consultation was carried out by the relevant technical consultant in the project team. Details of the consultation, including means of communication, any issues raised, and actions taken as a result are detailed in the proceeding sections.

24.2 COMMUNITY CONSULTATION

Urbis was engaged to conduct community and stakeholder engagement for affected landowners according to the SEARs. Full details of the community consultation process to date and feedback received are provided in the Community Consultation Outcomes Report provided at **Appendix X**.

Consultation focussed on key landowners and residents likely to be directly impacted or affected by the proposal. It included:

- Stakeholder analysis to define key interests and catchment for engagement
- Project 1800 telephone number and email address for all enquiries and responses
- A Project Factsheet, issued by letterbox drop, email and invitation to seek further information and/or provide feedback and post to neighbouring residents and businesses.

The consultation process commenced in October 2015, involving detailed stakeholder analysis and mapping, and the preparation of a consultation factsheet (appended to the report at **Appendix X**). The consultation factsheet was distributed to approximately 300 neighbouring landowners on the 28th October 2015. Additional supporting communications included dedicated project email and 1800 number.

Of the 300 adjoining neighbours provided with the consultation factsheet, only one response was received from a local childcare provider outlining support for the project. The feedback was as follows:

> *"We're really happy to see your project happening!"*

There were no significant issues or concerns raised by neighbouring residents and landowners as a result of the information circulated.

As such, design revisions or other actions in response to issues raised were not necessary.

24.3 AGENCY CONSULTATION

Agency consultation took place as follows:

STAKEHOLDER	CONTACTED BY	MEANS OF COMMUNICATION AND CONTACT	DATE	ITEMS DISCUSSED	ANY CHANGES TO PROPOSAL AS A RESULT OF CONSULTATION
Liverpool Council	Logos and DBL Property	Pre DA Meeting held at Council to review initial site	1 Oct 2014	Overall proposal, zoning, DCP, Landscaping	Access and arrangements reviewed and

STAKEHOLDER	CONTACTED BY	MEANS OF COMMUNICATION AND CONTACT	DATE	ITEMS DISCUSSED	ANY CHANGES TO PROPOSAL AS A RESULT OF CONSULTATION
		plan option		requirements Setbacks Road access, etc	altered.
	Logos and DBL Property, MDA Heritage Consultants	Follow up phone calls and questions	April, May and June 2015	Heritage and Archaeological Issues; Drainage and Setback Questions	Council provided consent to undertake initial archaeological investigations on the site; Resolved queries relating to drainage and setbacks
	Logos and DBL Property	Meeting with Mayor and GM to present the Project	8 September, 2015	Overall project. Summary provided.	
	DBL Property and Costin Roe Engineering	Meeting with Council Engineers and subsequent emails	15 Oct 2015	Discussion on drainage, water quality, flooding and access. Costin Roe and Council confirmed Minutes of the meeting by subsequent emails;	Resolved drainage treatments, overall flow and water quality approach. Agreed that full flood assessment could be done prior to CC.
	Costin Roe Engineers	Emails and telephone discussions regarding the required drainage easement along Bernera Road	20-24 November, 2015	Drainage issues along Bernera Road and the possibility of the proponent undertaking the works now so pavement so future installation does not impact	Still discussing with Council.

STAKEHOLDER	CONTACTED BY	MEANS OF COMMUNICATION AND CONTACT	DATE	ITEMS DISCUSSED	ANY CHANGES TO PROPOSAL AS A RESULT OF CONSULTATION
				on new build, with appropriate S.94 Contribution.	
	Groundink Traffic and Transport Planners	Contact with Council officers regarding traffic and landscape issues	October and November, 2015	Discussion of existing and proposed road treatments and modelling assumptions; Discussions regarding landscaping requirements.	Design and modelling works were undertaken with the input of Council advice.
RMS	Traffic and Transport Planners	Contact with RMS Development Assessments - Parramatta	October/November 2015	Discussion regarding main roads and traffic modelling	Input to project traffic modelling
Transport for NSW		Contact through the SEAR's process only.			
OEH	Mary Dallas Consulting	Phone Contact and Lodgement of Application	June, July, August 2015	Contact regarding S.140 Permit for Archaeological Investigations. Contact to advise OEH of Aboriginal investigations to be undertaken	Permit No. permit # 2015/s140/16). Issued on July 23, 2015 All archaeological investigations undertaken in accordance with OEH guidelines and permit.
NSW RFS		Contact through the SEAR's process only. RFS raised no issue.			
Sydney Water	Land Partners – Acting as the Sydney Water Servicing	Acting as Sydney Water Coordinator and Application for	October/November 2014	Established water, sewer and recycled water requirements	

STAKEHOLDER	CONTACTED BY	MEANS OF COMMUNICATION AND CONTACT	DATE	ITEMS DISCUSSED	ANY CHANGES TO PROPOSAL AS A RESULT OF CONSULTATION
	Coordinator for the Project.	Feasibility		and determined likely extensions required to Sydney Water assets to suit development.	
Water NSW		Contact through the SEAR's process only.			
Transgrid	JDG Consulting	Phone calls and emails.	November 2014	Provided Transgrid with a preliminary site plan and proposal for the Transgrid Easement. Transgrid advised that the proposal was generally acceptable and provided their requirements for DA lodgement.	Transgrid provided general support for the use of the Easement, subject to final information being lodged with the DA.
	DBL Property/UAE	Phone calls, emails and meeting held with Transgrid at their offices. Contact with Skye Shanahan and Tim Cowdroy	Meeting held at Transgrid on 17/11/15	Confirmed their previous general support with some comments and requests for information.	Changes made to layout: around towers to create working areas; Warehouse 3 – truck loading areas recessed into building so trucks don't stand under easement; Alternative emergency access created for Warehouse 3.
Endeavour	JDG Consulting	Phone calls and emails to establish	October/November 2014	Established Electrical supply	

STAKEHOLDER	CONTACTED BY	MEANS OF COMMUNICATION AND CONTACT	DATE	ITEMS DISCUSSED	ANY CHANGES TO PROPOSAL AS A RESULT OF CONSULTATION
		power supply requirements.		available and requirements for the new development.	

25 Environmental Risk Assessment

25.1 RISK ASSESSMENT AND MITIGATION MEASURES

The SEARs require an environmental risk analysis to identify potential environmental impacts associated with the proposed warehouse and distribution centre.

This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines* (Standards Australia 2009). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence'.

TABLE 18 – RISK DESCRIPTORS

LIKELIHOOD	CONSEQUENCE
A Almost certain	1 Widespread irreversible impact
B Likely	2 Extensive but reversible (within 2 years) impact or irreversible local impact
C Possible	3 Local, acceptable or reversible impact
D Unlikely	4 Local, reversible, short term (<3 months) impact
E Rare	5 Local, reversible, short term (<1 month) impact

The risk levels for likely and potential impacts were derived using the following risk matrix.

TABLE 19 – RISK MATRIX

		LIKELIHOOD				
		A	B	C	D	E
CONSEQUENCE	1	High	High	Medium	Low	Very Low
	2	High	High	Medium	Low	Very Low
	3	Medium	Medium	Medium	Low	Very Low
	4	Low	Low	Low	Low	Very Low
	5	Very Low	Very Low	Very Low	Very Low	Very Low

The results of the environmental risk assessment for the proposed development are presented in **Table 20** and are based upon the range of technical and specialist consultant reports appended to this EIS.

The table has directly related mitigation measures responding to each impact (satisfying the SEAR for a consolidated summary of all proposed mitigation measures) also based upon the range of technical and specialist consultant reports appended to this EIS.

TABLE 20 – RISK ASSESSMENT

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
Traffic & Parking	Impacts of road network from demolition / construction phase.	B	3	Medium	A detailed demolition and construction management plan and a comprehensive Construction Traffic Management Plan for the development will be prepared prior to the issue of a construction certificate to mitigate impacts arising from the demolition and construction stage of development.
	Adverse impact on key intersections as a result of increased operational traffic generation on the site.	C	3	Medium	Modelled intersections will continue to operate satisfactory. The provision of a 6m splay on the boundary of the Bernera Road/Yarrunga Road intersection will facilitate an improved left turn of a B Double truck. The proposed treatment is agreed with Council and the only very minor implications for RMS traffic signals is that two posts will be required to be relocated slightly.
	Additional demand for on street car parking spaces.	D	5	Very Low	Not required. Onsite car parking provision is adequate for the proposed use.
	Adverse traffic impacts of trucks accessing site via Bernera Road.	C	4	Low	Driveway movements will be limited to left turn in and out by central median islands in Bernera Road across the driveways.
	Right-of-way impacts for surrounding properties.	D	5	Very Low	Not required. Adequate right-of-way is provided on adjoining site.
	Impact of internal road designed for truck use.	D	5	Very Low	Not required. Adequate internal circulation is provided.
	Adverse impact on pedestrian movements	C	5	Very Low	The driveways on Bernera Road will be designed and arranged to provide adequate sight lines for

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
	around and into site.				pedestrians and as such will alleviate potential safety impacts.
Biodiversity	Impact on sites ecological values	B	3	Medium	Pre-construction phase: ▪ Inspection and relocation of any wildlife in existing habitat trees under the supervision of a fauna ecologist. ▪ Sediment and erosion control measures are to be installed immediately prior to the commencement of demolition, construction and earthworks. ▪ Inspection and removal of any aquatic fauna from the existing dam and vegetation. ▪ Installation of protective fencing around drip zone of trees that interface with the development site. Construction phase: ▪ Sediments are to be effectively retained within the site to minimise deterioration of surface runoff during the construction works. ▪ Unnamed watercourse (watercourse 1) – first order stream. – Declassify as a watercourse to drainage line; – Establish sediment basins to collect any sediment mobilised from the site Remove fill, stabilise and revegetate with wetland and CPW

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					species; and – Stabilisation of proposed revegetation areas. Post construction phase: ▪ Loss of vegetation compensated by the planting of CPW vegetation along the southern boundary of the site. Revegetation will enhance replace lost foraging trees for birds and bats. A 0.92 ha revegetation area is proposed to compensate for the loss of habitat and existing vegetation caused by the proposal. Including 0.64 ha of CPW planting along Kurrajong Road, 0.10 ha of CPW planting in the Aboriginal heritage area, 0.18 ha of partly structured CPW under the electrical easement along Kurrajong Road and the remainder along Yarrunga Street and Bernera Road to be landscaped with trees. ▪ Aim to filter any runoff through sedge planted filters to minimise deposition within stormwater systems. ▪ Target weed control should be undertaken in revegetation areas, focussing upon invasive and noxious weed species.
	Impact of clearing of 0.48ha native vegetation	A	3	Medium	Loss of native vegetation will be offset by 0.9232 ha of revegetation within the site and by acquiring and retiring offset credits from the open biobank market.
	Impact resultant of loss of ecological stepping stone	B	3	Medium	The existing remnants will be replaced by three remnants within the site as revegetation areas. The

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					revegetation areas will be secured by a covenant and managed in accordance with an approved vegetation management plan in perpetuity.
	Impact of fauna habitat loss	C	3	Medium	The revegetated habitat will have artificial naturalised habitat structures, reused hollows and artificial hollows suited to the fauna of the locality.
	Impact of tree hollow loss	A	3	Medium	All hollows will be inspected by removal using a camera probe under the inspection of a fauna ecologist. Artificial hollows are proposed for re installation on artificial poles and structures within proposed revegetation areas. 13 small hollows, 10 medium hollows, 5 microbat boxes and 1 large hollow will be installed. Existing hollows are to be recovered from the hollow bearing trees where possible before any construction works to be used as on ground habitat or reused as replacements for artificial hollows.
	Impact of EEC loss	B	2	High	The listing of vegetation communities to be cleared is accounted for in the FBA calculations.
	Impact of threatened fauna species loss	B	2	High	Foraging habitat for the Greater Broad-nosed Bat and Eastern Freetail-bat is included in the FBA calculations.
	Impact of threatened flora species loss	D	5	Very Low	Not required. The proposed development is unlikely to have an impact on any threatened flora species.
	Impact of degradation of aquatic habitats	B	3	Medium	Construction of vegetated drainage swales.

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
Air & Odour	Emission impact resulting from clearing and excavation	B	5	Very Low	▪ Modify working practices by limiting excavation during periods of high winds (greater than 20 km/hour). ▪ Limiting the extent of clearing of vegetation and topsoil to the designated footprint required for construction and appropriate staging of any clearing.
	Dust and emission impacts from earth moving equipment	B	5	Very Low	▪ Use of water sprays during internal haul road construction. ▪ Where conditions are excessively dusty and windy, and fugitive dust can be seen leaving the site, work practices should be modified by limiting the use of machinery.
	Impact of dust/dirt from truck movements	B	5	Very Low	▪ All vehicles on-site should be confined to a designated route with speed limits enforced (20 km/hour). ▪ Trips and trip distances should be controlled and reduced where possible, for example by coordinating delivery and removal of materials to avoid unnecessary trips. ▪ When conditions are excessively dusty and windy, and dust can be seen leaving the works site the use of a water truck (for water spraying of travel routes) should be used.

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
	Impact from wind erosion	B	5	Very Low	▪ Wind erosion from exposed ground should be limited by avoiding unnecessary vegetation clearing and ensure rehabilitation occurs as quickly as possible. ▪ Wind erosion from temporary soil stockpiles can be limited by minimizing the number of stockpiles on-site and minimizing the number of work faces on stockpiles.
	Impact from emission odour	C	5	Very Low	▪ Traffic management procedures to co-ordinate the delivery schedule and avoid a queue of the incoming or outgoing trucks for extended periods of time. ▪ Spill management procedures to include immediate clean-up of any spill/leakage from incoming and outgoing trucks. ▪ Maintaining an odour complaint logbook and in the event of a complaint immediately investigate any unusual odour sources (including spill or leakage in the traffic areas) within the site boundary and take appropriate action to eliminate these.
Hazards & Risks	Impact from the storage of dangerous goods	D	4	Low	Not required. The proposed quantities of dangerous goods to be stored at the development do not exceed the threshold quantities listed in Applying SEPP33 (Ref.1). Hence, it is concluded that SEPP33 does not apply to the proposed development and therefore a Preliminary Hazard analysis is not required for the site.

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
Soil & Water	Impact from potential acid sulfate soils	D	4	Low	Not required. The analysis of the laboratory tests indicate low sulphur trails in the site's soil samples. As such, the results confirm the absence of Acid Sulfate Soils (ASS) or Potential Acid Sulfate Soils (PASS) within these soils. Given the absence of AAS and PASS on site, an Acid Sulfate Soil Management Plan for the site is not required.
	Impact from salinity	D	4	Low	Not required. Laboratory test results indicated the underlying soils encountered within the site were predominately non saline to depths of 3.0m. Given the low levels of salinity on site a Salinity Management Plan is not required for the subject site.
	Impact on groundwater	D	3	Low	Not required. No groundwater was encountered during the course of the investigation and as such groundwater is unlikely to be disturbed during the course of the development.
	Impact from flooding	C	5	Very Low	A new trunk drainage line and overland flow channel is proposed to convey the 1% AEP flow of 12.3m3/s to 13.3m3/s flow through the site. It is proposed to allow for conveyance of up to 1.5m3/s as overland flow through the car-parking area with the remaining 11.8m3/s of flow being provided in a box culvert system.
	Impact of stormwater resulting from increase of impervious area	B	5	Very Low	Stormwater drainage infrastructure will be constructed to manage stormwater. Refer to Civil Drawings and Report.

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
	Impact from erosion and sediment occurrences, including water pollutants.	C	4	Low	Refer to the Erosion and Sediment Control Plan for full detail of the control measures.
Land Contamination	Impact associated with land contamination	D	3	Low	Not needed. A Remediation Action Plan (RAP) is not required.
Noise & Vibration	Impact from construction noise	A	3	Medium	Implementation of a Construction Management Plan to minimise acoustic impact.
	Impact from construction vibration	D	3	Low	Implementation of a Construction Management Plan to minimise vibration impact.
	Impact from operational noise generated on site	C	3	Medium	Provision of acoustic walls as shown on architectural plans.
	Impact from traffic generation on public roads	B	4	Low	Not required. The proposed use of the site is capable of meeting EPA Road Noise Policy guidelines.
	Impact on sleep disturbance	C	5	Very Low	Not required. The use of the site during the night time period between 10pm and 7am (to allow for vehicles to enter/leave the site) is compliant with EPA sleep disturbance guidelines.
	Impact from mechanical plant equipment	C	5	Very Low	Acoustic testing when upon plant commission to determine if acoustic treatment is required
Visual Impact	Impact on key views of the site from key public places	A	1	High	▪ The provision of significant landscaping treatment reduces the visual impact of the warehouse buildings. ▪ The orientation and design of the buildings positions all operational functions away from sensitive

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					receivers.
Aboriginal Cultural Heritage	Impact on the Aboriginal cultural heritage values on site	C	1	Medium	▪ The Prestons Creek Bank site be managed for preservation, through incorporation into a grassed recreational area within the Prestons Industrial Estate. ▪ The Prestons Creek Bank site be protected from impacts during construction works through the placement of protective fencing to prevent access to the area. ▪ An Aboriginal Heritage Management Plan be prepared for the preservation and conservation of the Prestons Creek Bank site.
European Heritage	Impact of the European heritage values on site	C	1	Medium	A program of historical archaeological salvage excavation should be undertaken to capture archaeological information about the site in advance of the levelling of the knoll top as part of the site's redevelopment.
Bushfire	Impact for potential bushfire threat	E	1	Very Low	Not needed. RFS has confirmed the subject site is not mapped as bushfire prone.
Waste Management	Impacts associated with construction waste	C	5	Very Low	A Demolition and Construction Waste Management Plan has been prepared.
	Impacts associated with operation waste	C	5	Very Low	A Waste Management Plan has been prepared.
Greenhouse Gas	Impacts associated with direction and indirect emmissions	C	1	Medium	▪ Support the education of contractor owned vehicle drivers in techniques to conserve fuel during the

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					construction phase. ▪ Support alternatively fuelled and 'modernised' tenant owned equipment and vehicles used during the operational phase – including compressed natural gas, hydrogen, electric, compressed air and hybrid vehicles. ▪ Support tenant management procedures that consider the reduction of fuel use as far as practical during the operation phase. ▪ Make use of renewable energy sources where practical for the generation, use or purchase of electricity, heating and cooling. ▪ Install tenant energy sub-metering systems. ▪ Design energy efficient buildings to meet national / international benchmarking schemes (e.g. 5-star National Australian Built Environment Rating System (NABERS) and Green Star ratings). ▪ Consider the use of high capacity public transport to and from the proposed Project. ▪ Support the use of the low emission vehicles to and from the proposed Project, including the provision of recharging stations priority queuing and parking. ▪ Develop an integrated solid waste management plan to implement waste saving initiatives such as

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					composting and recycling.
Energy Efficiency	Impacts associated with mechanical ventilation, onsite air conditioning, internal and external lighting and office and warehouse equipment	C	1	Medium	▪ Use natural ventilation in warehouse and mezzanine storage level to reduce mechanical ventilation costs. ▪ Incorporate passive solar design principles that reduce the air conditioning of office space and mechanical ventilation of warehouse space. ▪ Investigate the viability of the following energy sources to reduce bought electricity: – Solar water heating with gas boost. – Solar panels (photovoltaics) or future proofing building for future installation. – On-site co-generation plant. ▪ Adopt the use of the following air conditioning design features to minimise the associated bought electricity. ▪ Use LED lighting strategies that abides by Table 2-3 and advanced controls systems to dim or turn off lights when not in use. ▪ Optimise natural light in warehouse by using clear roof sheeting to reduce lighting costs. ▪ Adopt the use of energy efficient appliances and

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					equipment used within the office and warehouse space.
Ecologically Sustainable Development	Impacts associated with ecologically unsustainable development	D	1	Low	▪ Transport: Reduce reliance on private vehicles and relieve any traffic pressures on nearby roads and local communities by investigating secure bicycle parking facilities, extension of existing bus routes/ provision of a regular bus service, reward drivers for using fuel efficient vehicles by providing space for small cars and motorbikes., and promote car-pooling/car-sharing initiatives. ▪ Materials: Use insulation and refrigerants with zero ozone depleting potential, and promote the use of regional or local manufacturers. ▪ Water: Develop a stormwater management plan that incorporates water sensitive urban design, implement rainwater harvesting techniques, and adopt a landscaping plan that promotes the use of plants that are drought resistant and have low water requirements. ▪ Management: Adopt an independent consultant to provide tuning and maintenance for fire, mechanical, electric and hydraulic services to ensure all aspects are running to their design specification as efficient as possible. ▪ Indoor environment quality: Consider a design to optimise occupant satisfaction in accessibility, usability, air quality and public space utility by

MATTER	POTENTIAL IMPACT	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PROPOSED MITIGATION MEASURE
					adopting a high level of indoor environmental quality. ▪ Noise: Consider a warehouse wall and roofing design that limits internal noise transmission to nearby neighbourhood residences ▪ Energy efficiency: Adopt the use of energy efficient appliances and equipment used within the office and warehouse space, and investigate viability of alternative energy sources to reduce bought electricity ▪ Waste: Ensure bulk earthworks on-site balance cut and fill where possible, develop and implements a Waste Management Plan. ▪ Land use and ecology impact: Use indigenous planting appropriate to the area, design external lighting to avoid releasing light into the night sky or beyond the site boundary, and employ specialist advice to develop an independent ecological report to identify any protected local flora and fauna.

26 Draft Statement of Commitments

A consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS.

The Proponent, The Trust Company (Australia) Limited as trustee for Logos Australian Logistics Venture Prestons Trust, will undertake the proposed works in accordance with the following draft Statement of Commitments in relation to the proposed Prestons Warehouse and Distribution Estate, 34 Yarrunga Street, Prestons (SSD 7155)

26.1 INTERPRETATIONS

The following defines some of the terms and abbreviations used in the Statement of Commitments:

TERM/ABBREVIATION	EXPLANATION
Approval	The Minister's approval to the Project
BCA	Building Code of Australia
Council	Council Liverpool City Council
Department	Department of Planning and Environment
Director-General	Director-General of the Department (or delegate)
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
Logos	The Trust Company (Australia) Limited as trustee for Logos Australian Logistics Venture Prestons Trust
Project	The development as described in the EIS
Site	Land to which the project application applies
WorkCover	NSW WorkCover

26.2 ADMINISTRATIVE COMMITMENTS

26.2.1 COMMITMENT TO MINIMISE HARM TO THE ENVIRONMENT

Logos will implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the project.

26.2.2 OCCUPATION CERTIFICATE

Logos will ensure an Occupation Certificate is obtained prior to the occupation of the facility.

26.2.3 TERMS OF APPROVAL

Logos will carry out the project generally in accordance with:

- This EIS
- The Architectural, Landscape and Civil Drawings (**Appendix D**, **Appendix F**, and **Appendix N**)
- This Statement of Commitments
- Any Conditions of Approval.

If there is any inconsistency between the above, the Conditions of Approval shall prevail to the extent of the inconsistency.

Logos will ensure compliance with any reasonable requirement/s of the Director-General arising from the Department's assessment of this SSDA.

26.3 SPECIFIC ENVIRONMENTAL COMMITMENTS

26.3.1 TRAFFIC AND TRANSPORT

As part of the proposed works, upgrades will be carried out along the site frontages to Bernera Road and Yarrunga Street (half road construction), subject to appropriate s.94 offsets per Letter of Offer for VPA.

26.3.2 BIODIVERSITY

The loss of 0.48 ha of heavily degraded Cumberland Plain Woodland will be offset through onsite revegetation works at a minimum 2:1 biodiversity offset ratio. This is to be achieved to ensure no net loss of this community within the site. The landscaping plan provides an effective 0.905 ha area of offset along the southern boundary with a further 970sqm afforded near the existing dam around an aboriginal site. The effective offset ratio is 2.1:1.

Tree felling will be conducted under the supervision of a fauna ecologist to ensure appropriate animal welfare procedures are taken, particularly for threatened species. If the hollow is found to contain threatened fauna, then the hollow section should be reattached to a nearby appropriate tree along Cabramatta Creek for continued use. The temporary welfare and relocation of fauna should be under careful discretion of the fauna ecologist to ensure local biodiversity and animal ethics is maintained.

26.3.3 AIR AND ODOUR

During clearing/excavation, potential emissions from vegetation stripping, topsoil clearing and excavation will be effectively controlled by increasing the moisture content of the soil/surface. Other controls that will be employed are limiting excavation during periods of high winds (>20km/hr), and limiting the extent of vegetation clearing topsoil removal to the designated construction footprint.

Dust emissions from earth moving equipment will be controlled through water sprays during internal haul road construction.

Wheel generated dust and dirt track-out on paved surfaces surrounding work areas will be minimised by confining vehicle movements to a designated route with speed limits enforced (20 km/hour). Number of vehicle trips and distances will also be kept to a minimum where possible by ensuring trip efficiency. When dust can be seen leaving the works site, water spraying of travel routes will be employed.

Unnecessary vegetation clearing will be avoided. Additional planting will be incorporated on the site which will contribute to soil stabilisation.

26.3.4 SOIL AND WATER

Soil Erosion and Sediment Control measures including sedimentation basins will be provided during construction phase. All Soil and Sediment Control measures will be performed in accordance with Liverpool City Council requirements and Landcom Managing Urban Stormwater, Soils and Construction (1998) – The Blue Book.

Soil erosion hazard on the site will be kept as low as possible and as recommended in the table below.

TABLE 21 – LIMITATIONS TO ACCESS

LAND USE	LIMITATION	COMMENTS
Construction areas	Limited to 5m (preferably 2) from the edge of any essential construction activity as shown on the engineering plans.	All site workers will clearly recognise these areas that, where appropriate, are identified with barrier fencing (upslope) and sediment fencing (downslope), or similar materials.
Temporary construction access	Limited to a maximum width of 5m.	The site manager will determine and mark the location of these zones onsite. All site workers will comply with these restrictions.
Remaining lands	Entry prohibited except for essential management works	

All geotechnical testing and inspections performed during the earthworks operations will be undertaken to Level 1 geotechnical control, in accordance with AS3798-1996.

26.3.5 NOISE AND VIBRATION

A detailed review of all external mechanical plant will be undertaken at construction certificate stage (once plant selections and locations are finalised). At this point, acoustic treatments will be determined in order to control plant noise emissions to the required levels.

Construction works will be limited to standard construction hours (7am-6pm), and use of very noisy equipment will be managed, especially when working close to site boundaries.

On completion of a construction program for any given warehouse, an acoustic review of the proposed construction activities and plant/methods will be undertaken to identify the extent and duration of potential exceedances of EPA Noise Affected levels (ie – “background+10dB(A)”).

When an exceedance of Noise Affected levels is anticipated during constriction, acoustic controls and/or management techniques will be put in place, such as:

- Considered plant selection
- Screens around static plant
- Scheduling of noisy works
- Notification of adjoining land users

26.3.6 URBAN DESIGN AND VISUAL

Logos will ensure that all new buildings and structures on the site are constructed in accordance with the relevant requirements of the BCA.

26.3.7 ABORIGINAL AND CULTURAL HERITAGE

The Prestons Creek Bank site will be managed for preservation, through incorporation into a grassed recreational area within the Prestons Industrial Estate.

The Prestons Creek Bank site will be protected from impacts during construction works through the placement of protective fencing to prevent access to the area.

An Aboriginal Heritage Management Plan will be prepared for the preservation and conservation of the Prestons Creek Bank site, outlining short, medium and long term management requirements for the preservation of the site and permissible used of the area containing the site, once a final approved development layout is known.

An AHIMS site record will be submitted to the AHIMS Registrar for the Prestons Creek Bank site and for the other Aboriginal archaeological remains within the subject land outside of this area.

On completion of impacts to the Aboriginal archaeological remains outside of the Prestons Creek Bank site, an Aboriginal Site Impact Form will be submitted to the AHIMS Registrar to reflect these impacts.

One copy of this report will be forwarded to all Registered Aboriginal Parties and the AHIMS Registrar.

26.3.8 HISTORIC HERITAGE

A program of historical archaeological salvage excavation will be undertaken to capture archaeological information about the site prior to the levelling of the top of the knoll located in the south-eastern quadrant of the lot.

Results of the excavation program will be detailed in an archaeological report prepared within a reasonable timeframe after the conclusion of the site works.

A Heritage Interpretation Plan (HIP) will be prepared prior to development with its recommendations instigated during the construction process. The HIP will present a strategy for the effective interpretation of the site's history to the public and future users of the industrial estate.

Consideration will be given to remember the history of the site in the naming of the industrial estate and/or its elements (such as access driveways).

27 Project Justification

The proposal is considered to be justified in the context of environmental, social and economic terms and is compatible with the locality in which it is proposed.

27.1 CONSISTENCY WITH COMMONWEALTH, STATE, REGIONAL AND LOCAL PLANNING PROVISIONS

The proposal is consistent with the objectives, provisions and strategies outlined within **Section 5** of this report, 'Legislative and Policy Framework'. Specifically, the *Environmental Planning and Assessment Act 1979,* State Environmental Planning Policy (State and Regional Development) 2011, A Plan for Growing Sydney, and the *Liverpool Local Environmental Plan 2008.*

27.2 SITE SUITABILITY

The site is considered suitable for the development given the following:

- The site zoning which permits warehouse and distribution uses.
- Compatibility with surrounding development and zoning.
- Adequate separation from sensitive land uses including residential.
- All potential environmental impacts of the proposal can be suitably mitigated within the site.
- Proximity to the regional road network.
- The proposal will not negatively affect the Aboriginal or European heritage or archaeological significance of the site.

The site has been previously disturbed and any impacts on the natural environment will be mitigated

27.3 EMPLOYMENT GENERATION

The proposal will contribute to the growth of the industrial sector in the Western Sydney region. The proposed development is expected to generate 20-40 jobs per developable hectare, equating to between 188 and 375 jobs during operation.

Approximately 500 full time equivalent jobs are anticipated during construction.

This is a net increase from the existing use of the site.

27.4 ENVIRONMENTAL IMPACTS

Technical consultants practicing in each of the fields identified in the SEARs have been engaged to conduct assessments of the impacts of the proposed development. The consultants have determined the development can be carried out with minimal environmental impacts. No significant impacts will take place as a result of the proposal.

28 Conclusion

The proposed development of Yarrunga Street, Prestons for the purpose of warehousing and distribution will involve the staged construction of five warehouses with ancillary office space, internal road ways, and hardstand areas, and associated earthworks, landscaping and service extensions.

It is proposed to construct the industrial estate in multiple stages. This application seeks approval for the development of the whole site, including Warehouse 5 which is a SSD. A preliminary indicative Staging Plan is provided in the architectural set at **Appendix B**.

The proposal is defined as State Significant Development (SSD) pursuant to Clause 12 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* as the proposed development involves an estimated capital investment value (CIV) of $131,145,000. Under Clause 12 Schedule 1, 'development that has a capital investment value of more than $50 million for the purpose of warehouses or distribution centres' is SSD for the purposes of the EP&A Act.

The SEARs assigned to the project have been addressed in turn within this document and throughout the technical appendices.

The proposed use is consistent with the permitted uses under the industrial zones applying to the site, and upholds the objectives of these zones with employment generating land uses proposed.

Demand for the proposed use in this location has been demonstrated, with the subject site being well suited for warehouse and distribution given the proximate major road network.

Any potential impacts are able to be reasonably mitigated, thus avoiding any unreasonable impact on amenity of surrounding residential areas, useability of surrounding sites, and environment.

Based on the findings of this EIS, the proposal supports the continued development jobs in Western Sydney. The proposal is suitable for the local context and is appropriate based on social, cultural, economic and environmental considerations.

As such, it is recommended the proposal be supported by the Department of Planning and Environment.

Disclaimer

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

Appendix A Secretary's Environmental Assessment Requirements

Appendix B CIV

Appendix C Site Survey

Appendix D Proposed Development Architectural Plans

Appendix E BCA Assessment Report

Appendix F Landscape Plans

Appendix G Traffic and Transport Report

Appendix H Biodiversity Report

Appendix I Air Quality and Odour Report

Appendix J Hazard and Risk Assessment

Appendix K Acid Sulfate Soil Report

Appendix L Salinity Report

Appendix M Preliminary Geotechnical Investigation and Groundwater Assessment

Appendix N Civil Engineering Plans and Report

Appendix O Contamination Reports

Appendix P Acoustic Environmental Impact Assessment

Appendix Q Aboriginal Cultural Heritage Assessment Report

Appendix R European Heritage Impact Assessment

Appendix S RFS Advice

Appendix T Waste Management Reports

Appendix U Economic Demand Advice

Appendix V Greenhouse Gas and Energy Efficiency Report

Appendix W Ecologically Sustainable Development Report

Appendix X Community Consultation Outcomes Report

Appendix Y Transgrid Impact Report

Appendix Z Letter of Offer for VPA

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